

| LTE<br><br>Band 2<br><br>5MHz<br><br>QPSK  | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-17<br/>Test Engineer: 45585<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables<br/>Substitution: Horn 3115[00161451], 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBi)</th><th>EIRP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1852.50</td><td>11.61</td><td>V</td><td>4.5</td><td>9.5</td><td>16.60</td><td>33.0</td><td>-16.4</td></tr><tr><td>1852.50</td><td>14.78</td><td>H</td><td>4.5</td><td>9.5</td><td>19.77</td><td>33.0</td><td>-13.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>13.38</td><td>V</td><td>4.5</td><td>9.2</td><td>18.06</td><td>33.0</td><td>-14.9</td></tr><tr><td>1880.00</td><td>15.50</td><td>H</td><td>4.5</td><td>9.2</td><td>20.18</td><td>33.0</td><td>-12.8</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1907.50</td><td>12.65</td><td>V</td><td>4.6</td><td>8.9</td><td>16.99</td><td>33.0</td><td>-16.0</td></tr><tr><td>1907.50</td><td>14.62</td><td>H</td><td>4.6</td><td>8.9</td><td>18.96</td><td>33.0</td><td>-14.0</td></tr></table>  |                     |                    |                    |                       |               |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 1852.50 | 11.61 | V | 4.5 | 9.5 | 16.60 | 33.0 | -16.4 | 1852.50 | 14.78 | H | 4.5 | 9.5 | 19.77 | 33.0 | -13.2 | Mid Ch |  |  |  |  |  |  |  | 1880.00 | 13.38 | V | 4.5 | 9.2 | 18.06 | 33.0 | -14.9 | 1880.00 | 15.50 | H | 4.5 | 9.2 | 20.18 | 33.0 | -12.8 | High Ch |  |  |  |  |  |  |  | 1907.50 | 12.65 | V | 4.6 | 8.9 | 16.99 | 33.0 | -16.0 | 1907.50 | 14.62 | H | 4.6 | 8.9 | 18.96 | 33.0 | -14.0 |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|----------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|--------|--|--|--|--|--|--|--|---------|-------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|--------|--|--|--|--|--|--|--|---------|-------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|---------|--|--|--|--|--|--|--|---------|-------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|
|                                            | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1852.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11.61               | V                  | 4.5                | 9.5                   | 16.60         | 33.0           | -16.4         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1852.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 14.78               | H                  | 4.5                | 9.5                   | 19.77         | 33.0           | -13.2         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 13.38               | V                  | 4.5                | 9.2                   | 18.06         | 33.0           | -14.9         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15.50               | H                  | 4.5                | 9.2                   | 20.18         | 33.0           | -12.8         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1907.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 12.65               | V                  | 4.6                | 8.9                   | 16.99         | 33.0           | -16.0         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| 1907.50                                    | 14.62                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                   | 4.6                | 8.9                | 18.96                 | 33.0          | -14.0          |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| LTE<br><br>Band 2<br><br>5MHz<br><br>16QAM | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-17<br/>Test Engineer: 45585<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables<br/>Substitution: Horn 3115[00161451], 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBi)</th><th>EIRP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1852.50</td><td>10.60</td><td>V</td><td>4.5</td><td>9.5</td><td>15.59</td><td>33.0</td><td>-17.4</td></tr><tr><td>1852.50</td><td>13.81</td><td>H</td><td>4.5</td><td>9.5</td><td>18.80</td><td>33.0</td><td>-14.2</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>12.42</td><td>V</td><td>4.5</td><td>9.2</td><td>17.10</td><td>33.0</td><td>-15.9</td></tr><tr><td>1880.00</td><td>14.49</td><td>H</td><td>4.5</td><td>9.2</td><td>19.17</td><td>33.0</td><td>-13.8</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1907.50</td><td>11.69</td><td>V</td><td>4.6</td><td>8.9</td><td>16.03</td><td>33.0</td><td>-17.0</td></tr><tr><td>1907.50</td><td>13.63</td><td>H</td><td>4.6</td><td>8.9</td><td>17.97</td><td>33.0</td><td>-15.0</td></tr></table> |                     |                    |                    |                       |               |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 1852.50 | 10.60 | V | 4.5 | 9.5 | 15.59 | 33.0 | -17.4 | 1852.50 | 13.81 | H | 4.5 | 9.5 | 18.80 | 33.0 | -14.2 | Mid Ch |  |  |  |  |  |  |  | 1880.00 | 12.42 | V | 4.5 | 9.2 | 17.10 | 33.0 | -15.9 | 1880.00 | 14.49 | H | 4.5 | 9.2 | 19.17 | 33.0 | -13.8 | High Ch |  |  |  |  |  |  |  | 1907.50 | 11.69 | V | 4.6 | 8.9 | 16.03 | 33.0 | -17.0 | 1907.50 | 13.63 | H | 4.6 | 8.9 | 17.97 | 33.0 | -15.0 |
|                                            | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1852.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10.60               | V                  | 4.5                | 9.5                   | 15.59         | 33.0           | -17.4         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1852.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 13.81               | H                  | 4.5                | 9.5                   | 18.80         | 33.0           | -14.2         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 12.42               | V                  | 4.5                | 9.2                   | 17.10         | 33.0           | -15.9         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 14.49               | H                  | 4.5                | 9.2                   | 19.17         | 33.0           | -13.8         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                            | 1907.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11.69               | V                  | 4.6                | 8.9                   | 16.03         | 33.0           | -17.0         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| 1907.50                                    | 13.63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                   | 4.6                | 8.9                | 17.97                 | 33.0          | -15.0          |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |       |   |     |     |       |      |       |         |       |   |     |     |       |      |       |

LTE

Band 2

3MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-17

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equipment:

Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables

Substitution: Horn 3115[00161451], 3m N-type Cable

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Low Ch   |                     |                    |                    |                       |               |                |               |       |
| 1851.50  | 7.99                | V                  | 4.5                | 9.5                   | 12.99         | 33.0           | -20.0         |       |
| 1851.50  | 15.11               | H                  | 4.5                | 9.5                   | 20.11         | 33.0           | -12.9         |       |
| Mid Ch   |                     |                    |                    |                       |               |                |               |       |
| 1880.00  | 9.53                | V                  | 4.5                | 9.2                   | 14.21         | 33.0           | -18.8         |       |
| 1880.00  | 13.40               | H                  | 4.5                | 9.2                   | 18.08         | 33.0           | -14.9         |       |
| High Ch  |                     |                    |                    |                       |               |                |               |       |
| 1908.50  | 12.11               | V                  | 4.6                | 8.9                   | 16.43         | 33.0           | -16.6         |       |
| 1908.50  | 14.97               | H                  | 4.6                | 8.9                   | 19.29         | 33.0           | -13.7         |       |

LTE

Band 2

3MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-17

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_16QAM Band 2 Fundamentals, 3MHz Bandwidth

Test Equipment:

Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables

Substitution: Horn 3115[00161451], 3m N-type Cable

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|
| Low Ch   |                     |                    |                    |                       |               |                |               |       |
| 1851.50  | 6.92                | V                  | 4.5                | 9.5                   | 11.92         | 33.0           | -21.1         |       |
| 1851.50  | 14.06               | H                  | 4.5                | 9.5                   | 19.06         | 33.0           | -13.9         |       |
| Mid Ch   |                     |                    |                    |                       |               |                |               |       |
| 1880.00  | 8.55                | V                  | 4.5                | 9.2                   | 13.23         | 33.0           | -19.8         |       |
| 1880.00  | 12.38               | H                  | 4.5                | 9.2                   | 17.06         | 33.0           | -15.9         |       |
| High Ch  |                     |                    |                    |                       |               |                |               |       |
| 1908.50  | 11.22               | V                  | 4.6                | 8.9                   | 15.54         | 33.0           | -17.5         |       |
| 1908.50  | 13.94               | H                  | 4.6                | 8.9                   | 18.26         | 33.0           | -14.7         |       |

| LTE<br><br>Band 2<br><br>1.4MHz<br><br>QPSK  | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-17<br/>Test Engineer: 45585<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables<br/>Substitution: Horn 3115[00161451], 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBi)</th><th>EIRP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.70</td><td>6.54</td><td>V</td><td>4.5</td><td>9.5</td><td>11.55</td><td>33.0</td><td>-21.5</td></tr><tr><td>1850.70</td><td>12.26</td><td>H</td><td>4.5</td><td>9.5</td><td>17.26</td><td>33.0</td><td>-15.7</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>8.47</td><td>V</td><td>4.5</td><td>9.2</td><td>13.15</td><td>33.0</td><td>-19.9</td></tr><tr><td>1880.00</td><td>13.70</td><td>H</td><td>4.5</td><td>9.2</td><td>18.38</td><td>33.0</td><td>-14.6</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.30</td><td>8.70</td><td>V</td><td>4.6</td><td>8.9</td><td>13.01</td><td>33.0</td><td>-20.0</td></tr><tr><td>1909.30</td><td>12.25</td><td>H</td><td>4.6</td><td>8.9</td><td>16.56</td><td>33.0</td><td>-16.4</td></tr></table>  |                     |                    |                    |                       |               |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 1850.70 | 6.54 | V | 4.5 | 9.5 | 11.55 | 33.0 | -21.5 | 1850.70 | 12.26 | H | 4.5 | 9.5 | 17.26 | 33.0 | -15.7 | Mid Ch |  |  |  |  |  |  |  | 1880.00 | 8.47 | V | 4.5 | 9.2 | 13.15 | 33.0 | -19.9 | 1880.00 | 13.70 | H | 4.5 | 9.2 | 18.38 | 33.0 | -14.6 | High Ch |  |  |  |  |  |  |  | 1909.30 | 8.70 | V | 4.6 | 8.9 | 13.01 | 33.0 | -20.0 | 1909.30 | 12.25 | H | 4.6 | 8.9 | 16.56 | 33.0 | -16.4 |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|----------|---------------------|--------------------|--------------------|-----------------------|---------------|----------------|---------------|-------|--------|--|--|--|--|--|--|--|---------|------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|--------|--|--|--|--|--|--|--|---------|------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|---------|--|--|--|--|--|--|--|---------|------|---|-----|-----|-------|------|-------|---------|-------|---|-----|-----|-------|------|-------|
|                                              | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1850.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 6.54                | V                  | 4.5                | 9.5                   | 11.55         | 33.0           | -21.5         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1850.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12.26               | H                  | 4.5                | 9.5                   | 17.26         | 33.0           | -15.7         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8.47                | V                  | 4.5                | 9.2                   | 13.15         | 33.0           | -19.9         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13.70               | H                  | 4.5                | 9.2                   | 18.38         | 33.0           | -14.6         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1909.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8.70                | V                  | 4.6                | 8.9                   | 13.01         | 33.0           | -20.0         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| 1909.30                                      | 12.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                   | 4.6                | 8.9                | 16.56                 | 33.0          | -16.4          |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| LTE<br><br>Band 2<br><br>1.4MHz<br><br>16QAM | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-17<br/>Test Engineer: 45585<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: Horn 3117[00168724], and Chamber 2 SMA Cables<br/>Substitution: Horn 3115[00161451], 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBi)</th><th>EIRP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1850.70</td><td>5.56</td><td>V</td><td>4.5</td><td>9.5</td><td>10.57</td><td>33.0</td><td>-22.4</td></tr><tr><td>1850.70</td><td>11.23</td><td>H</td><td>4.5</td><td>9.5</td><td>16.23</td><td>33.0</td><td>-16.8</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1880.00</td><td>7.55</td><td>V</td><td>4.5</td><td>9.2</td><td>12.23</td><td>33.0</td><td>-20.8</td></tr><tr><td>1880.00</td><td>12.73</td><td>H</td><td>4.5</td><td>9.2</td><td>17.41</td><td>33.0</td><td>-15.6</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1909.30</td><td>7.58</td><td>V</td><td>4.6</td><td>8.9</td><td>11.89</td><td>33.0</td><td>-21.1</td></tr><tr><td>1909.30</td><td>11.28</td><td>H</td><td>4.6</td><td>8.9</td><td>15.59</td><td>33.0</td><td>-17.4</td></tr></table> |                     |                    |                    |                       |               |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 1850.70 | 5.56 | V | 4.5 | 9.5 | 10.57 | 33.0 | -22.4 | 1850.70 | 11.23 | H | 4.5 | 9.5 | 16.23 | 33.0 | -16.8 | Mid Ch |  |  |  |  |  |  |  | 1880.00 | 7.55 | V | 4.5 | 9.2 | 12.23 | 33.0 | -20.8 | 1880.00 | 12.73 | H | 4.5 | 9.2 | 17.41 | 33.0 | -15.6 | High Ch |  |  |  |  |  |  |  | 1909.30 | 7.58 | V | 4.6 | 8.9 | 11.89 | 33.0 | -21.1 | 1909.30 | 11.28 | H | 4.6 | 8.9 | 15.59 | 33.0 | -17.4 |
|                                              | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1850.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5.56                | V                  | 4.5                | 9.5                   | 10.57         | 33.0           | -22.4         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1850.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 11.23               | H                  | 4.5                | 9.5                   | 16.23         | 33.0           | -16.8         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 7.55                | V                  | 4.5                | 9.2                   | 12.23         | 33.0           | -20.8         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1880.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12.73               | H                  | 4.5                | 9.2                   | 17.41         | 33.0           | -15.6         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                    |                       |               |                |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
|                                              | 1909.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 7.58                | V                  | 4.6                | 8.9                   | 11.89         | 33.0           | -21.1         |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |
| 1909.30                                      | 11.28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                   | 4.6                | 8.9                | 15.59                 | 33.0          | -17.4          |               |       |          |                     |                    |                    |                       |               |                |               |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |        |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |         |  |  |  |  |  |  |  |         |      |   |     |     |       |      |       |         |       |   |     |     |       |      |       |

**LTE Band 13**

LTE

Band 13

10MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-25

Test Engineer:

47989

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_QPSK Band 13 Fundamentals, 10MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f      | SG reading | Ant. Pol. | Cable Loss | Antenna Gain | ERP   | Limit | Delta | Notes |
|--------|------------|-----------|------------|--------------|-------|-------|-------|-------|
| MHz    | (dBm)      | (H/V)     | (dB)       | (dBd)        | (dBm) | (dBm) | (dB)  |       |
| Mid Ch |            |           |            |              |       |       |       |       |
| 782.00 | 15.62      | V         | 0.9        | -1.6         | 13.13 | 34.8  | -21.6 |       |
| 782.00 | 3.15       | H         | 0.9        | -1.6         | 0.66  | 34.8  | -34.1 |       |

LTE

Band 13

10MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-25

Test Engineer:

47989

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_16QAM Band 13 Fundamentals, 10MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f      | SG reading | Ant. Pol. | Cable Loss | Antenna Gain | ERP   | Limit | Delta | Notes |
|--------|------------|-----------|------------|--------------|-------|-------|-------|-------|
| MHz    | (dBm)      | (H/V)     | (dB)       | (dBd)        | (dBm) | (dBm) | (dB)  |       |
| Mid Ch |            |           |            |              |       |       |       |       |
| 782.00 | 14.71      | V         | 0.9        | -1.6         | 12.22 | 34.8  | -22.6 |       |
| 782.00 | 2.26       | H         | 0.9        | -1.6         | -0.23 | 34.8  | -35.0 |       |

| LTE<br><br>Band 13<br><br>5MHz<br><br>QPSK  | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 47989<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_QPSK Band 13 Fundamentals, 5MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: VULB9163-749, and Chamber 2 SMA Cables<br/>Substitution: Dipole 3121_DB4, 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBd)</th><th>ERP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>779.50</td><td>16.71</td><td>V</td><td>0.9</td><td>-1.6</td><td>14.22</td><td>34.8</td><td>-20.5</td></tr><tr><td>779.50</td><td>4.35</td><td>H</td><td>0.9</td><td>-1.6</td><td>1.85</td><td>34.8</td><td>-32.9</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>782.00</td><td>16.61</td><td>V</td><td>0.9</td><td>-1.6</td><td>14.12</td><td>34.8</td><td>-20.7</td></tr><tr><td>782.00</td><td>4.56</td><td>H</td><td>0.9</td><td>-1.6</td><td>2.07</td><td>34.8</td><td>-32.7</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>784.50</td><td>16.76</td><td>V</td><td>0.9</td><td>-1.6</td><td>14.27</td><td>34.8</td><td>-20.5</td></tr><tr><td>784.50</td><td>4.35</td><td>H</td><td>0.9</td><td>-1.6</td><td>1.85</td><td>34.8</td><td>-32.9</td></tr></table>  |                     |                    |                    |                       |              |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 779.50 | 16.71 | V | 0.9 | -1.6 | 14.22 | 34.8 | -20.5 | 779.50 | 4.35 | H | 0.9 | -1.6 | 1.85 | 34.8 | -32.9 | Mid Ch |  |  |  |  |  |  |  | 782.00 | 16.61 | V | 0.9 | -1.6 | 14.12 | 34.8 | -20.7 | 782.00 | 4.56 | H | 0.9 | -1.6 | 2.07 | 34.8 | -32.7 | High Ch |  |  |  |  |  |  |  | 784.50 | 16.76 | V | 0.9 | -1.6 | 14.27 | 34.8 | -20.5 | 784.50 | 4.35 | H | 0.9 | -1.6 | 1.85 | 34.8 | -32.9 |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|--------------------|-----------------------|--------------|----------------|---------------|-------|----------|---------------------|--------------------|--------------------|-----------------------|--------------|----------------|---------------|-------|--------|--|--|--|--|--|--|--|--------|-------|---|-----|------|-------|------|-------|--------|------|---|-----|------|------|------|-------|--------|--|--|--|--|--|--|--|--------|-------|---|-----|------|-------|------|-------|--------|------|---|-----|------|------|------|-------|---------|--|--|--|--|--|--|--|--------|-------|---|-----|------|-------|------|-------|--------|------|---|-----|------|------|------|-------|
|                                             | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 779.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16.71               | V                  | 0.9                | -1.6                  | 14.22        | 34.8           | -20.5         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 779.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.35                | H                  | 0.9                | -1.6                  | 1.85         | 34.8           | -32.9         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 782.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16.61               | V                  | 0.9                | -1.6                  | 14.12        | 34.8           | -20.7         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 782.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.56                | H                  | 0.9                | -1.6                  | 2.07         | 34.8           | -32.7         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 784.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16.76               | V                  | 0.9                | -1.6                  | 14.27        | 34.8           | -20.5         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
| 784.50                                      | 4.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                   | 0.9                | -1.6               | 1.85                  | 34.8         | -32.9          |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
| LTE<br><br>Band 13<br><br>5MHz<br><br>16QAM | <div>UL Verification Services, Inc.<br/>High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-20<br/>Test Engineer: 45585<br/>Configuration: EUT / Z-Position<br/>Location: Chamber 2<br/>Mode: LTE_16QAM Band 13 Fundamentals, 5MHz Bandwidth</div> <div>Test Equipment:<br/>Receiving: VULB9163-749, and Chamber 2 SMA Cables<br/>Substitution: Dipole 3121_DB4, 3m N-type Cable</div> <table><tr><th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Cable Loss<br/>(dB)</th><th>Antenna Gain<br/>(dBd)</th><th>ERP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr><tr><td>Low Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>779.50</td><td>15.62</td><td>V</td><td>0.9</td><td>-1.6</td><td>13.13</td><td>34.8</td><td>-21.6</td></tr><tr><td>779.50</td><td>3.41</td><td>H</td><td>0.9</td><td>-1.6</td><td>0.91</td><td>34.8</td><td>-33.9</td></tr><tr><td>Mid Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>782.00</td><td>15.55</td><td>V</td><td>0.9</td><td>-1.6</td><td>13.06</td><td>34.8</td><td>-21.7</td></tr><tr><td>782.00</td><td>3.49</td><td>H</td><td>0.9</td><td>-1.6</td><td>1.00</td><td>34.8</td><td>-33.8</td></tr><tr><td>High Ch</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>784.50</td><td>16.56</td><td>V</td><td>0.9</td><td>-1.6</td><td>14.07</td><td>34.8</td><td>-20.7</td></tr><tr><td>784.50</td><td>3.15</td><td>H</td><td>0.9</td><td>-1.6</td><td>0.65</td><td>34.8</td><td>-34.1</td></tr></table> |                     |                    |                    |                       |              |                |               |       | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch |  |  |  |  |  |  |  | 779.50 | 15.62 | V | 0.9 | -1.6 | 13.13 | 34.8 | -21.6 | 779.50 | 3.41 | H | 0.9 | -1.6 | 0.91 | 34.8 | -33.9 | Mid Ch |  |  |  |  |  |  |  | 782.00 | 15.55 | V | 0.9 | -1.6 | 13.06 | 34.8 | -21.7 | 782.00 | 3.49 | H | 0.9 | -1.6 | 1.00 | 34.8 | -33.8 | High Ch |  |  |  |  |  |  |  | 784.50 | 16.56 | V | 0.9 | -1.6 | 14.07 | 34.8 | -20.7 | 784.50 | 3.15 | H | 0.9 | -1.6 | 0.65 | 34.8 | -34.1 |
|                                             | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | Low Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 779.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15.62               | V                  | 0.9                | -1.6                  | 13.13        | 34.8           | -21.6         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 779.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.41                | H                  | 0.9                | -1.6                  | 0.91         | 34.8           | -33.9         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | Mid Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 782.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15.55               | V                  | 0.9                | -1.6                  | 13.06        | 34.8           | -21.7         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 782.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.49                | H                  | 0.9                | -1.6                  | 1.00         | 34.8           | -33.8         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | High Ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                    |                       |              |                |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
|                                             | 784.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16.56               | V                  | 0.9                | -1.6                  | 14.07        | 34.8           | -20.7         |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |
| 784.50                                      | 3.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | H                   | 0.9                | -1.6               | 0.65                  | 34.8         | -34.1          |               |       |          |                     |                    |                    |                       |              |                |               |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |        |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |         |  |  |  |  |  |  |  |        |       |   |     |      |       |      |       |        |      |   |     |      |      |      |       |

**LTE Band 12**

LTE

Band 12

10MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-20

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_QPSK Band 12 Fundamentals, 10MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 704.00  | 18.26            | V               | 0.9             | -1.6               | 15.79     | 34.8        | -19.0      |       |
| 704.00  | 3.46             | H               | 0.9             | -1.6               | 1.00      | 34.8        | -33.8      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 18.33            | V               | 0.9             | -1.6               | 15.86     | 34.8        | -18.9      |       |
| 707.50  | 2.42             | H               | 0.9             | -1.6               | -0.05     | 34.8        | -34.8      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 711.00  | 18.55            | V               | 0.9             | -1.6               | 16.08     | 34.8        | -18.7      |       |
| 711.00  | 1.33             | H               | 0.9             | -1.6               | -1.14     | 34.8        | -35.9      |       |

LTE

Band 12

10MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-20

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_16QAM Band 12 Fundamentals, 10MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 704.00  | 17.27            | V               | 0.9             | -1.6               | 14.80     | 34.8        | -20.0      |       |
| 704.00  | 2.41             | H               | 0.9             | -1.6               | -0.05     | 34.8        | -34.9      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 17.29            | V               | 0.9             | -1.6               | 14.82     | 34.8        | -20.0      |       |
| 707.50  | 1.41             | H               | 0.9             | -1.6               | -1.06     | 34.8        | -35.9      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 711.00  | 17.46            | V               | 0.9             | -1.6               | 14.99     | 34.8        | -19.8      |       |
| 711.00  | 0.36             | H               | 0.9             | -1.6               | -2.11     | 34.8        | -36.9      |       |

LTE

Band 12

5MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Project #:

Date:

Test Engineer:

Configuration:

Location:

Mode:

Samsung

4788371689

2018-03-20

45585

EUT / Z-Position

Chamber 2

LTE\_QPSK Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 701.50  | 17.81            | V               | 0.9             | -1.6               | 15.34     | 34.8        | -19.5      |       |
| 701.50  | 2.29             | H               | 0.9             | -1.6               | -0.18     | 34.8        | -35.0      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 17.91            | V               | 0.9             | -1.6               | 15.44     | 34.8        | -19.4      |       |
| 707.50  | 2.60             | H               | 0.9             | -1.6               | 0.13      | 34.8        | -34.7      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 713.50  | 17.47            | V               | 0.9             | -1.6               | 15.00     | 34.8        | -19.8      |       |
| 713.50  | 3.95             | H               | 0.9             | -1.6               | 1.47      | 34.8        | -33.3      |       |

LTE

Band 12

5MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Project #:

Date:

Test Engineer:

Configuration:

Location:

Mode:

Samsung

4788371689

2018-03-20

45585

EUT / Z-Position

Chamber 2

LTE\_16QAM Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 701.50  | 16.77            | V               | 0.9             | -1.6               | 14.30     | 34.8        | -20.5      |       |
| 701.50  | 1.29             | H               | 0.9             | -1.6               | -1.18     | 34.8        | -36.0      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 17.01            | V               | 0.9             | -1.6               | 14.54     | 34.8        | -20.3      |       |
| 707.50  | 1.67             | H               | 0.9             | -1.6               | -0.80     | 34.8        | -35.6      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 713.50  | 16.58            | V               | 0.9             | -1.6               | 14.11     | 34.8        | -20.7      |       |
| 713.50  | 3.00             | H               | 0.9             | -1.6               | 0.52      | 34.8        | -34.3      |       |

LTE

Band 12

3MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-20

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_QPSK Band 12 Fundamentals, 3MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|----------------|---------------|-------|
| Low Ch   |                     |                    |                    |                       |              |                |               |       |
| 700.50   | 17.67               | V                  | 0.9                | -1.6                  | 15.21        | 34.8           | -19.6         |       |
| 700.50   | 2.63                | H                  | 0.9                | -1.6                  | 0.17         | 34.8           | -34.6         |       |
| Mid Ch   |                     |                    |                    |                       |              |                |               |       |
| 707.50   | 17.92               | V                  | 0.9                | -1.6                  | 15.45        | 34.8           | -19.4         |       |
| 707.50   | 1.86                | H                  | 0.9                | -1.6                  | -0.61        | 34.8           | -35.4         |       |
| High Ch  |                     |                    |                    |                       |              |                |               |       |
| 714.50   | 18.09               | V                  | 0.9                | -1.6                  | 15.61        | 34.8           | -19.2         |       |
| 714.50   | 4.37                | H                  | 0.9                | -1.6                  | 1.89         | 34.8           | -32.9         |       |

LTE

Band 12

3MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Samsung

Project #:

4788371689

Date:

2018-03-20

Test Engineer:

45585

Configuration:

EUT / Z-Position

Location:

Chamber 2

Mode:

LTE\_16QAM Band 12 Fundamentals, 3MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|----------------|---------------|-------|
| Low Ch   |                     |                    |                    |                       |              |                |               |       |
| 700.50   | 16.62               | V                  | 0.9                | -1.6                  | 14.16        | 34.8           | -20.6         |       |
| 700.50   | 1.65                | H                  | 0.9                | -1.6                  | -0.81        | 34.8           | -35.6         |       |
| Mid Ch   |                     |                    |                    |                       |              |                |               |       |
| 707.50   | 16.88               | V                  | 0.9                | -1.6                  | 14.41        | 34.8           | -20.4         |       |
| 707.50   | 0.84                | H                  | 0.9                | -1.6                  | -1.63        | 34.8           | -36.4         |       |
| High Ch  |                     |                    |                    |                       |              |                |               |       |
| 714.50   | 17.40               | V                  | 0.9                | -1.6                  | 14.92        | 34.8           | -19.9         |       |
| 714.50   | 3.37                | H                  | 0.9                | -1.6                  | 0.89         | 34.8           | -33.9         |       |

LTE

Band 12

1.4MHz

QPSK

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Project #:

Date:

Test Engineer:

Configuration:

Location:

Mode:

Samsung

4788371689

2018-03-20

45585

EUT / Z-Position

Chamber 2

LTE\_QPSK Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 699.70  | 15.19            | V               | 0.9             | -1.6               | 12.73     | 34.8        | -22.1      |       |
| 699.70  | -0.37            | H               | 0.9             | -1.6               | -2.84     | 34.8        | -37.6      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 15.62            | V               | 0.9             | -1.6               | 13.15     | 34.8        | -21.7      |       |
| 707.50  | -0.90            | H               | 0.9             | -1.6               | -3.37     | 34.8        | -38.2      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 715.30  | 15.51            | V               | 0.9             | -1.6               | 13.03     | 34.8        | -21.8      |       |
| 715.30  | 1.98             | H               | 0.9             | -1.6               | -0.50     | 34.8        | -35.3      |       |

LTE

Band 12

1.4MHz

16QAM

UL Verification Services, Inc.

High Frequency Substitution Measurement

Company:

Project #:

Date:

Test Engineer:

Configuration:

Location:

Mode:

Samsung

4788371689

2018-03-20

45585

EUT / Z-Position

Chamber 2

LTE\_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equipment:

Receiving: VULB9163-749, and Chamber 2 SMA Cables

Substitution: Dipole 3121\_DB4, 3m N-type Cable

| f MHz   | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBd) | ERP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---------|------------------|-----------------|-----------------|--------------------|-----------|-------------|------------|-------|
| Low Ch  |                  |                 |                 |                    |           |             |            |       |
| 699.70  | 14.24            | V               | 0.9             | -1.6               | 11.78     | 34.8        | -23.0      |       |
| 699.70  | -1.29            | H               | 0.9             | -1.6               | -3.76     | 34.8        | -38.6      |       |
| Mid Ch  |                  |                 |                 |                    |           |             |            |       |
| 707.50  | 14.56            | V               | 0.9             | -1.6               | 12.09     | 34.8        | -22.7      |       |
| 707.50  | -1.90            | H               | 0.9             | -1.6               | -4.37     | 34.8        | -39.2      |       |
| High Ch |                  |                 |                 |                    |           |             |            |       |
| 715.30  | 14.39            | V               | 0.9             | -1.6               | 11.91     | 34.8        | -22.9      |       |
| 715.30  | 0.99             | H               | 0.9             | -1.6               | -1.49     | 34.8        | -36.3      |       |

## 10.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §27. 53

### LIMIT

Part 22.917(a) & Part 24.238(a) & Part 27.53(h) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge and  $(55 + 10 \log (P))$  dB at the 5.5 MHz from the channel edges.

Part 27.53(f) - For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

Part 27.53(c) (2) - On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB.

Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB.

Part 27.53 (h) AWS emission limits—the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log (P)$  dB.

### TEST PROCEDURE

ANSI / TIA / EIA 603 E Clause 2.2.12; ESU40 setting reference to 971168 D01 v03

For peak power measurement with a ESU40:

- a) Set the RBW = 100 KHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 1.5$  times the OBW;
- d) Sweep time = auto couple;
- e) Detector = peak;
- f) Ensure that the number of measurement points  $\geq$  span/RBW;
- g) Trace mode = max hold;

NOTE : Radiated spurious emissions were investigated 30MHz – 1GHz and above 1GHz. There were no emissions found on 30MHz – 1GHz.

### RESULTS



**GSM 1900**

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                    |                 |                |                |               |                |               |       |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| GSM<br>GSM1900<br>GPRS  | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4788372835<br/> <b>Date:</b> 2018-03-09<br/> <b>Test Engineer:</b> 45585<br/> <b>Configuration:</b> EUT / Adapter / Earphone, Z-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> GPRS 1900 MHz Harmonics </p>  |                     |                    |                 |                |                |               |                |               |       |
|                         | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| GSM<br>GSM1900<br>EGPRS | <b>Low Ch, 1850.2MHz</b>                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                         | 3700.40                                                                                                                                                                                                                                                                                                                                                                                                            | -4.9                | V                  | 3.0             | 43.8           | 1.0            | -47.7         | -13.0          | -34.7         |       |
|                         | 5550.60                                                                                                                                                                                                                                                                                                                                                                                                            | -5.5                | V                  | 3.0             | 43.7           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                         | 7400.80                                                                                                                                                                                                                                                                                                                                                                                                            | -5.5                | V                  | 3.0             | 42.5           | 1.0            | -47.1         | -13.0          | -34.1         |       |
|                         | 3700.40                                                                                                                                                                                                                                                                                                                                                                                                            | -5.4                | H                  | 3.0             | 43.8           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                         | 5550.60                                                                                                                                                                                                                                                                                                                                                                                                            | -6.0                | H                  | 3.0             | 43.7           | 1.0            | -48.7         | -13.0          | -35.7         |       |
|                         | 7400.80                                                                                                                                                                                                                                                                                                                                                                                                            | -4.8                | H                  | 3.0             | 42.5           | 1.0            | -46.4         | -13.0          | -33.4         |       |
|                         | <b>Mid Ch, 1880MHz</b>                                                                                                                                                                                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                         | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                            | -4.7                | V                  | 3.0             | 43.8           | 1.0            | -47.5         | -13.0          | -34.5         |       |
|                         | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                            | -5.3                | V                  | 3.0             | 43.7           | 1.0            | -48.0         | -13.0          | -35.0         |       |
|                         | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                            | -4.4                | V                  | 3.0             | 42.5           | 1.0            | -45.9         | -13.0          | -32.9         |       |
|                         | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                            | -6.0                | H                  | 3.0             | 43.8           | 1.0            | -48.8         | -13.0          | -35.8         |       |
|                         | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                            | -5.8                | H                  | 3.0             | 43.7           | 1.0            | -48.5         | -13.0          | -35.5         |       |
|                         | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                            | -2.3                | H                  | 3.0             | 42.5           | 1.0            | -43.8         | -13.0          | -30.8         |       |
|                         | <b>High Ch, 1909.8MHz</b>                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                 |                |                |               |                |               |       |
|                         | 3819.60                                                                                                                                                                                                                                                                                                                                                                                                            | -4.6                | V                  | 3.0             | 43.8           | 1.0            | -47.4         | -13.0          | -34.4         |       |
|                         | 5729.40                                                                                                                                                                                                                                                                                                                                                                                                            | -4.2                | V                  | 3.0             | 43.7           | 1.0            | -46.9         | -13.0          | -33.9         |       |
|                         | 7639.20                                                                                                                                                                                                                                                                                                                                                                                                            | -3.6                | V                  | 3.0             | 42.4           | 1.0            | -45.0         | -13.0          | -32.0         |       |
|                         | 3819.60                                                                                                                                                                                                                                                                                                                                                                                                            | -5.2                | H                  | 3.0             | 43.8           | 1.0            | -48.0         | -13.0          | -35.0         |       |
|                         | 5729.40                                                                                                                                                                                                                                                                                                                                                                                                            | -4.8                | H                  | 3.0             | 43.7           | 1.0            | -47.5         | -13.0          | -34.5         |       |
|                         | 7639.20                                                                                                                                                                                                                                                                                                                                                                                                            | -3.3                | H                  | 3.0             | 42.4           | 1.0            | -44.7         | -13.0          | -31.7         |       |
| GSM<br>GSM1900<br>EGPRS | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4788372835<br/> <b>Date:</b> 2018-03-09<br/> <b>Test Engineer:</b> 45585<br/> <b>Configuration:</b> EUT / Adapter / Earphone, Z-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> EGPRS 1900 MHz Harmonics </p> |                     |                    |                 |                |                |               |                |               |       |
|                         | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                         | <b>Low Ch, 1850.2MHz</b>                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                         | 3700.40                                                                                                                                                                                                                                                                                                                                                                                                            | -7.2                | V                  | 3.0             | 43.8           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                         | 5550.60                                                                                                                                                                                                                                                                                                                                                                                                            | -5.5                | V                  | 3.0             | 43.7           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                         | 7400.80                                                                                                                                                                                                                                                                                                                                                                                                            | -6.0                | V                  | 3.0             | 42.5           | 1.0            | -47.5         | -13.0          | -34.5         |       |
|                         | 3700.40                                                                                                                                                                                                                                                                                                                                                                                                            | -7.7                | H                  | 3.0             | 43.8           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                         | 5550.60                                                                                                                                                                                                                                                                                                                                                                                                            | -5.5                | H                  | 3.0             | 43.7           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                         | 7400.80                                                                                                                                                                                                                                                                                                                                                                                                            | -3.4                | H                  | 3.0             | 42.5           | 1.0            | -45.0         | -13.0          | -32.0         |       |
|                         | <b>Mid Ch, 1880MHz</b>                                                                                                                                                                                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                         | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                            | -7.1                | V                  | 3.0             | 43.8           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                         | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                            | -5.5                | V                  | 3.0             | 43.7           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                         | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                            | -5.1                | V                  | 3.0             | 42.5           | 1.0            | -46.6         | -13.0          | -33.6         |       |
|                         | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                            | -7.3                | H                  | 3.0             | 43.8           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                         | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                            | -4.6                | H                  | 3.0             | 43.7           | 1.0            | -47.3         | -13.0          | -34.3         |       |
|                         | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                            | -5.3                | H                  | 3.0             | 42.5           | 1.0            | -46.7         | -13.0          | -33.7         |       |
|                         | <b>High Ch, 1909.8MHz</b>                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                 |                |                |               |                |               |       |
|                         | 3819.60                                                                                                                                                                                                                                                                                                                                                                                                            | -5.3                | V                  | 3.0             | 43.8           | 1.0            | -48.1         | -13.0          | -35.1         |       |
|                         | 5729.40                                                                                                                                                                                                                                                                                                                                                                                                            | -4.2                | V                  | 3.0             | 43.7           | 1.0            | -46.9         | -13.0          | -33.9         |       |
|                         | 7639.20                                                                                                                                                                                                                                                                                                                                                                                                            | -4.5                | V                  | 3.0             | 42.4           | 1.0            | -45.9         | -13.0          | -32.9         |       |
|                         | 3819.60                                                                                                                                                                                                                                                                                                                                                                                                            | -6.4                | H                  | 3.0             | 43.8           | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                         | 5729.40                                                                                                                                                                                                                                                                                                                                                                                                            | -4.6                | H                  | 3.0             | 43.7           | 1.0            | -47.3         | -13.0          | -34.3         |       |
|                         | 7639.20                                                                                                                                                                                                                                                                                                                                                                                                            | -4.3                | H                  | 3.0             | 42.4           | 1.0            | -45.7         | -13.0          | -32.7         |       |

|                              |                                                                                                                                                                                                                                                                                                  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                 |              |                   |             |            |             |            |       |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------|--------------|-------------------|-------------|------------|-------------|------------|-------|
| WCDMA<br><br>Band 5<br>REL99 | Company: Samsung<br>Project #: 4788372835<br>Date: 2018-02-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone , X-Position<br>Location: Chamber 1<br>Mode: Rel99 Band 5 Harmonics                                                                                             |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | f MHz                                                                                                                                                                                                                                                                                            | SG reading (dBm)                                                                     | Ant. Pol. (H/V) | Distance (m) | Preamplifier (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|                              | <b>Low Ch, 826.4MHz</b>                                                                                                                                                                                                                                                                          |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | 1652.80                                                                                                                                                                                                                                                                                          | -9.3                                                                                 | V               | 3.0          | 43.6              | 1.0         | -51.9      | -13.0       | -38.9      |       |
|                              | 2479.20                                                                                                                                                                                                                                                                                          | -9.5                                                                                 | V               | 3.0          | 43.4              | 1.0         | -51.9      | -13.0       | -38.9      |       |
|                              | 3305.60                                                                                                                                                                                                                                                                                          | -8.1                                                                                 | V               | 3.0          | 43.6              | 1.0         | -50.7      | -13.0       | -37.7      |       |
|                              | 1652.80                                                                                                                                                                                                                                                                                          | -8.2                                                                                 | H               | 3.0          | 43.6              | 1.0         | -50.8      | -13.0       | -37.8      |       |
|                              | 2479.20                                                                                                                                                                                                                                                                                          | -8.5                                                                                 | H               | 3.0          | 43.4              | 1.0         | -50.9      | -13.0       | -37.9      |       |
|                              | 3305.60                                                                                                                                                                                                                                                                                          | -7.6                                                                                 | H               | 3.0          | 43.6              | 1.0         | -50.2      | -13.0       | -37.2      |       |
|                              | <b>Mid Ch, 836.6MHz</b>                                                                                                                                                                                                                                                                          |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | 1673.20                                                                                                                                                                                                                                                                                          | -9.7                                                                                 | V               | 3.0          | 43.6              | 1.0         | -52.2      | -13.0       | -39.2      |       |
|                              | 2509.80                                                                                                                                                                                                                                                                                          | -9.5                                                                                 | V               | 3.0          | 43.4              | 1.0         | -51.9      | -13.0       | -38.9      |       |
|                              | 3346.40                                                                                                                                                                                                                                                                                          | -8.7                                                                                 | V               | 3.0          | 43.6              | 1.0         | -51.3      | -13.0       | -38.3      |       |
|                              | 1673.20                                                                                                                                                                                                                                                                                          | -10.0                                                                                | H               | 3.0          | 43.6              | 1.0         | -52.5      | -13.0       | -39.5      |       |
|                              | 2509.80                                                                                                                                                                                                                                                                                          | -10.0                                                                                | H               | 3.0          | 43.4              | 1.0         | -52.4      | -13.0       | -39.4      |       |
|                              | 3346.40                                                                                                                                                                                                                                                                                          | -7.9                                                                                 | H               | 3.0          | 43.6              | 1.0         | -50.5      | -13.0       | -37.5      |       |
|                              | <b>High Ch, 846.6MHz</b>                                                                                                                                                                                                                                                                         |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | 1693.20                                                                                                                                                                                                                                                                                          | -8.6                                                                                 | V               | 3.0          | 43.6              | 1.0         | -51.2      | -13.0       | -38.2      |       |
|                              | 2539.80                                                                                                                                                                                                                                                                                          | -9.6                                                                                 | V               | 3.0          | 43.4              | 1.0         | -52.0      | -13.0       | -39.0      |       |
|                              | 3386.40                                                                                                                                                                                                                                                                                          | -8.4                                                                                 | V               | 3.0          | 43.7              | 1.0         | -51.0      | -13.0       | -38.0      |       |
|                              | 1693.20                                                                                                                                                                                                                                                                                          | -9.6                                                                                 | H               | 3.0          | 43.6              | 1.0         | -52.1      | -13.0       | -39.1      |       |
|                              | 2539.80                                                                                                                                                                                                                                                                                          | -9.5                                                                                 | H               | 3.0          | 43.4              | 1.0         | -51.9      | -13.0       | -38.9      |       |
|                              | 3386.40                                                                                                                                                                                                                                                                                          | -7.7                                                                                 | H               | 3.0          | 43.7              | 1.0         | -50.4      | -13.0       | -37.4      |       |
|                              |                                                                                                                                                                                                                                                                                                  |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              |                                                                                                                                                                                                                                                                                                  |                                                                                      |                 |              |                   |             |            |             |            |       |
| WCDMA<br><br>Band 5<br>HSDPA | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement<br><br>Company: Samsung<br>Project #: 4788372835<br>Date: 2018-02-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone , X-Position<br>Location: Chamber 1<br>Mode: HSDPA Band 5 Harmonics |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | f MHz                                                                                                                                                                                                                                                                                            | SG reading (dBm)                                                                     | Ant. Pol. (H/V) | Distance (m) | Preamplifier (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|                              | <b>Low Ch, 826.4MHz</b>                                                                                                                                                                                                                                                                          |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | 1652.80                                                                                                                                                                                                                                                                                          | -10.0                                                                                | V               | 3.0          | 43.6              | 1.0         | -52.6      | -13.0       | -39.6      |       |
|                              | 2479.20                                                                                                                                                                                                                                                                                          | -9.8                                                                                 | V               | 3.0          | 43.4              | 1.0         | -52.2      | -13.0       | -39.2      |       |
|                              | 3305.60                                                                                                                                                                                                                                                                                          | -8.1                                                                                 | V               | 3.0          | 43.6              | 1.0         | -50.8      | -13.0       | -37.8      |       |
|                              | 1652.80                                                                                                                                                                                                                                                                                          | -9.6                                                                                 | H               | 3.0          | 43.6              | 1.0         | -52.2      | -13.0       | -39.2      |       |
|                              | 2479.20                                                                                                                                                                                                                                                                                          | -9.7                                                                                 | H               | 3.0          | 43.4              | 1.0         | -52.1      | -13.0       | -39.1      |       |
|                              | 3305.60                                                                                                                                                                                                                                                                                          | -7.6                                                                                 | H               | 3.0          | 43.6              | 1.0         | -50.3      | -13.0       | -37.3      |       |
|                              | <b>Mid Ch, 836.6MHz</b>                                                                                                                                                                                                                                                                          |                                                                                      |                 |              |                   |             |            |             |            |       |
|                              | 1673.20                                                                                                                                                                                                                                                                                          | -10.1                                                                                | V               | 3.0          | 43.6              | 1.0         | -52.6      | -13.0       | -39.6      |       |
|                              | 2509.80                                                                                                                                                                                                                                                                                          | -9.5                                                                                 | V               | 3.0          | 43.4              | 1.0         | -51.9      | -13.0       | -38.9      |       |
|                              | 3346.40                                                                                                                                                                                                                                                                                          |                                                                                      |                 |              |                   |             |            |             |            |       |

**WCDMA Band 2**

|                          |                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| WCDMA<br>Band 2<br>REL99 | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788372835<br/>Date: 2018-02-25<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, Z-Position<br/>Location: Chamber 1<br/>Mode: Rel99 Band 2 Harmonics</p> |                     |                    |                 |                |                |               |                |               |       |
|                          | f<br>MHz                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| WCDMA<br>Band 2<br>HSDPA | Low Ch, 1852.4MHz                                                                                                                                                                                                                                                                                                                                       |                     |                    |                 |                |                |               |                |               |       |
|                          | 3704.80                                                                                                                                                                                                                                                                                                                                                 | -10.7               | V                  | 3.0             | 43.8           | 1.0            | -53.5         | -13.0          | -40.5         |       |
|                          | 5557.20                                                                                                                                                                                                                                                                                                                                                 | -8.2                | V                  | 3.0             | 43.7           | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                          | 7409.60                                                                                                                                                                                                                                                                                                                                                 | -8.1                | V                  | 3.0             | 42.5           | 1.0            | -49.6         | -13.0          | -36.6         |       |
|                          | 3704.80                                                                                                                                                                                                                                                                                                                                                 | -10.1               | H                  | 3.0             | 43.8           | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                          | 5557.20                                                                                                                                                                                                                                                                                                                                                 | -8.3                | H                  | 3.0             | 43.7           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                          | 7409.60                                                                                                                                                                                                                                                                                                                                                 | -7.7                | H                  | 3.0             | 42.5           | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                          | Mid Ch, 1880MHz                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|                          | 3760.00                                                                                                                                                                                                                                                                                                                                                 | -9.6                | V                  | 3.0             | 43.8           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                          | 5640.00                                                                                                                                                                                                                                                                                                                                                 | -7.7                | V                  | 3.0             | 43.7           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                          | 7520.00                                                                                                                                                                                                                                                                                                                                                 | -7.4                | V                  | 3.0             | 42.5           | 1.0            | -48.9         | -13.0          | -35.9         |       |
|                          | 3760.00                                                                                                                                                                                                                                                                                                                                                 | -9.2                | H                  | 3.0             | 43.8           | 1.0            | -51.9         | -13.0          | -38.9         |       |
|                          | 5640.00                                                                                                                                                                                                                                                                                                                                                 | -7.9                | H                  | 3.0             | 43.7           | 1.0            | -50.6         | -13.0          | -37.6         |       |
|                          | 7520.00                                                                                                                                                                                                                                                                                                                                                 | -7.0                | H                  | 3.0             | 42.5           | 1.0            | -48.4         | -13.0          | -35.4         |       |
|                          | High Ch, 1907.6MHz                                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                          | 3815.20                                                                                                                                                                                                                                                                                                                                                 | -10.8               | V                  | 3.0             | 43.8           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                          | 5722.80                                                                                                                                                                                                                                                                                                                                                 | -7.7                | V                  | 3.0             | 43.7           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                          | 7630.40                                                                                                                                                                                                                                                                                                                                                 | -7.9                | V                  | 3.0             | 42.4           | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                          | 3815.20                                                                                                                                                                                                                                                                                                                                                 | -10.9               | H                  | 3.0             | 43.8           | 1.0            | -53.7         | -13.0          | -40.7         |       |
|                          | 5722.80                                                                                                                                                                                                                                                                                                                                                 | -7.3                | H                  | 3.0             | 43.7           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                          | 7630.40                                                                                                                                                                                                                                                                                                                                                 | -7.2                | H                  | 3.0             | 42.4           | 1.0            | -48.6         | -13.0          | -35.6         |       |
| WCDMA<br>Band 2<br>HSDPA | Low Ch, 1852.4MHz                                                                                                                                                                                                                                                                                                                                       |                     |                    |                 |                |                |               |                |               |       |
|                          | 3704.80                                                                                                                                                                                                                                                                                                                                                 | -10.6               | V                  | 3.0             | 43.8           | 1.0            | -53.3         | -13.0          | -40.3         |       |
|                          | 5557.20                                                                                                                                                                                                                                                                                                                                                 | -7.8                | V                  | 3.0             | 43.7           | 1.0            | -50.5         | -13.0          | -37.5         |       |
|                          | 7409.60                                                                                                                                                                                                                                                                                                                                                 | -8.8                | V                  | 3.0             | 42.5           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                          | 3704.80                                                                                                                                                                                                                                                                                                                                                 | -10.2               | H                  | 3.0             | 43.8           | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                          | 5557.20                                                                                                                                                                                                                                                                                                                                                 | -6.4                | H                  | 3.0             | 43.7           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                          | 7409.60                                                                                                                                                                                                                                                                                                                                                 | -6.8                | H                  | 3.0             | 42.5           | 1.0            | -48.4         | -13.0          | -35.4         |       |
|                          | Mid Ch, 1880MHz                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|                          | 3760.00                                                                                                                                                                                                                                                                                                                                                 | -9.3                | V                  | 3.0             | 43.8           | 1.0            | -52.1         | -13.0          | -39.1         |       |
|                          | 5640.00                                                                                                                                                                                                                                                                                                                                                 | -7.7                | V                  | 3.0             | 43.7           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                          | 7520.00                                                                                                                                                                                                                                                                                                                                                 | -7.7                | V                  | 3.0             | 42.5           | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                          | 3760.00                                                                                                                                                                                                                                                                                                                                                 | -9.9                | H                  | 3.0             | 43.8           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                          | 5640.00                                                                                                                                                                                                                                                                                                                                                 | -7.8                | H                  | 3.0             | 43.7           | 1.0            | -50.5         | -13.0          | -37.5         |       |
|                          | 7520.00                                                                                                                                                                                                                                                                                                                                                 | -6.5                | H                  | 3.0             | 42.5           | 1.0            | -48.0         | -13.0          | -35.0         |       |
|                          | High Ch, 1907.6MHz                                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                          | 3815.20                                                                                                                                                                                                                                                                                                                                                 | -10.6               | V                  | 3.0             | 43.8           | 1.0            | -53.4         | -13.0          | -40.4         |       |
|                          | 5722.80                                                                                                                                                                                                                                                                                                                                                 | -6.9                | V                  | 3.0             | 43.7           | 1.0            | -49.6         | -13.0          | -36.6         |       |
|                          | 7630.40                                                                                                                                                                                                                                                                                                                                                 | -7.3                | V                  | 3.0             | 42.4           | 1.0            | -48.7         | -13.0          | -35.7         |       |
|                          | 3815.20                                                                                                                                                                                                                                                                                                                                                 | -10.4               | H                  | 3.0             | 43.8           | 1.0            | -53.2         | -13.0          | -40.2         |       |
|                          | 5722.80                                                                                                                                                                                                                                                                                                                                                 | -6.8                | H                  | 3.0             | 43.7           | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                          | 7630.40                                                                                                                                                                                                                                                                                                                                                 | -6.6                | H                  | 3.0             | 42.4           | 1.0            | -48.0         | -13.0          | -35.0         |       |

**WCDMA Band 4**

|                          |                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| WCDMA<br>Band 4<br>REL99 | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-27<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 2<br/>Mode: Rel99 Band 4 Harmonics</p> |                     |                    |                 |                |                |               |                |               |       |
|                          | f<br>MHz                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| WCDMA<br>Band 4<br>HSDPA | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-27<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 2<br/>Mode: HSDPA Band 4 Harmonics</p> |                     |                    |                 |                |                |               |                |               |       |
|                          | f<br>MHz                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| WCDMA<br>Band 4<br>HSDPA | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-27<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 2<br/>Mode: HSDPA Band 4 Harmonics</p> |                     |                    |                 |                |                |               |                |               |       |
|                          | f<br>MHz                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |

**LTE Band 5**

|                                 |                                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br>Band 5<br>10MHz<br>QPSK  | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788372835<br/>Date: 2018-03-05<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 1<br/>Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth</p>  |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                     | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                 | Low Ch, 829MHz                                                                                                                                                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1658.00                                                                                                                                                                                                                                                                                                                                                                      | -8.9                | V                  | 3.0             | 43.6           | 1.0            | -51.5         | -13.0          | -38.5         |       |
|                                 | 2487.00                                                                                                                                                                                                                                                                                                                                                                      | -8.4                | V                  | 3.0             | 43.4           | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                                 | 3316.00                                                                                                                                                                                                                                                                                                                                                                      | -9.0                | V                  | 3.0             | 43.6           | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                                 | 1658.00                                                                                                                                                                                                                                                                                                                                                                      | -8.4                | H                  | 3.0             | 43.6           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                 | 2487.00                                                                                                                                                                                                                                                                                                                                                                      | -9.2                | H                  | 3.0             | 43.4           | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                                 | 3316.00                                                                                                                                                                                                                                                                                                                                                                      | -8.1                | H                  | 3.0             | 43.6           | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                 | Mid Ch, 836.5MHz                                                                                                                                                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1673.00                                                                                                                                                                                                                                                                                                                                                                      | -10.1               | V                  | 3.0             | 43.6           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                                 | 2509.50                                                                                                                                                                                                                                                                                                                                                                      | -6.4                | V                  | 3.0             | 43.4           | 1.0            | -48.8         | -13.0          | -35.8         |       |
|                                 | 3346.00                                                                                                                                                                                                                                                                                                                                                                      | -8.4                | V                  | 3.0             | 43.6           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                 | 1673.00                                                                                                                                                                                                                                                                                                                                                                      | -9.9                | H                  | 3.0             | 43.6           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                                 | 2509.50                                                                                                                                                                                                                                                                                                                                                                      | -7.6                | H                  | 3.0             | 43.4           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                 | 3346.00                                                                                                                                                                                                                                                                                                                                                                      | -8.1                | H                  | 3.0             | 43.6           | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                 | High Ch, 844MHz                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1688.00                                                                                                                                                                                                                                                                                                                                                                      | -9.8                | V                  | 3.0             | 43.6           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                                 | 2532.00                                                                                                                                                                                                                                                                                                                                                                      | -9.5                | V                  | 3.0             | 43.4           | 1.0            | -52.0         | -13.0          | -39.0         |       |
|                                 | 3376.00                                                                                                                                                                                                                                                                                                                                                                      | -8.7                | V                  | 3.0             | 43.7           | 1.0            | -51.4         | -13.0          | -38.4         |       |
|                                 | 1688.00                                                                                                                                                                                                                                                                                                                                                                      | -9.4                | H                  | 3.0             | 43.6           | 1.0            | -51.9         | -13.0          | -38.9         |       |
|                                 | 2532.00                                                                                                                                                                                                                                                                                                                                                                      | -8.8                | H                  | 3.0             | 43.4           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                 | 3376.00                                                                                                                                                                                                                                                                                                                                                                      | -8.7                | H                  | 3.0             | 43.7           | 1.0            | -51.4         | -13.0          | -38.4         |       |
|                                 |                                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                 |                                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
| LTE<br>Band 5<br>10MHz<br>16QAM | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788372835<br/>Date: 2018-03-05<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 1<br/>Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth</p> |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                     | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                 | Low Ch, 829MHz                                                                                                                                                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1658.00                                                                                                                                                                                                                                                                                                                                                                      | -8.5                | V                  | 3.0             | 43.6           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                 | 2487.00                                                                                                                                                                                                                                                                                                                                                                      | -9.3                | V                  | 3.0             | 43.4           | 1.0            | -51.7         | -13.0          | -38.7         |       |
|                                 | 3316.00                                                                                                                                                                                                                                                                                                                                                                      | -8.9                | V                  | 3.0             | 43.6           | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                                 | 1658.00                                                                                                                                                                                                                                                                                                                                                                      | -7.6                | H                  | 3.0             | 43.6           | 1.0            | -50.2         | -13.0          | -37.2         |       |
|                                 | 2487.00                                                                                                                                                                                                                                                                                                                                                                      | -8.3                | H                  | 3.0             | 43.4           | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                 | 3316.00                                                                                                                                                                                                                                                                                                                                                                      | -8.2                | H                  | 3.0             | 43.6           | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                 | Mid Ch, 836.5MHz                                                                                                                                                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1673.00                                                                                                                                                                                                                                                                                                                                                                      | -9.9                | V                  | 3.0             | 43.6           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                                 | 2509.50                                                                                                                                                                                                                                                                                                                                                                      | -6.2                | V                  | 3.0             | 43.4           | 1.0            | -48.6         | -13.0          | -35.6         |       |
|                                 | 3346.00                                                                                                                                                                                                                                                                                                                                                                      | -8.3                | V                  | 3.0             | 43.6           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                 | 1673.00                                                                                                                                                                                                                                                                                                                                                                      | -9.6                | H                  | 3.0             | 43.6           | 1.0            | -52.2         | -13.0          | -39.2         |       |
|                                 | 2509.50                                                                                                                                                                                                                                                                                                                                                                      | -7.0                | H                  | 3.0             | 43.4           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                 | 3346.00                                                                                                                                                                                                                                                                                                                                                                      | -7.6                | H                  | 3.0             | 43.6           | 1.0            | -50.2         | -13.0          | -37.2         |       |
|                                 | High Ch, 844MHz                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                 | 1688.00                                                                                                                                                                                                                                                                                                                                                                      | -9.7                | V                  | 3.0             | 43.6           | 1.0            | -52.2         | -13.0          | -39.2         |       |
|                                 | 2532.00                                                                                                                                                                                                                                                                                                                                                                      | -9.1                | V                  | 3.0             | 43.4           | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                                 | 3376.00                                                                                                                                                                                                                                                                                                                                                                      | -9.1                | V                  | 3.0             | 43.7           | 1.0            | -51.7         | -13.0          | -38.7         |       |
|                                 | 1688.00                                                                                                                                                                                                                                                                                                                                                                      | -9.5                | H                  | 3.0             | 43.6           | 1.0            | -52.1         | -13.0          | -39.1         |       |
|                                 | 2532.00                                                                                                                                                                                                                                                                                                                                                                      | -8.7                | H                  | 3.0             | 43.4           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                 | 3376.00                                                                                                                                                                                                                                                                                                                                                                      | -8.4                | H                  | 3.0             | 43.7           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                 |                                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                 |                                                                                                                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |

|                                            |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|--------------------------------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 5<br><br>5MHz<br><br>QPSK  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                            | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | Project #: 4788372835                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                            | Date: 2018-03-05                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | Test Engineer: 45585                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                            | Configuration: EUT / Adapter / Earphone, X-Position                                  |                     |                    |                 |                |                |               |                |               |       |
|                                            | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                            | Mode: LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth                                      |                     |                    |                 |                |                |               |                |               |       |
|                                            |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                            | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                            | Low Ch, 826.5MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | 1653.00                                                                              | -8.8                | V                  | 3.0             | 43.6           | 1.0            | -51.3         | -13.0          | -38.3         |       |
|                                            | 2479.50                                                                              | -9.3                | V                  | 3.0             | 43.4           | 1.0            | -51.7         | -13.0          | -38.7         |       |
|                                            | 3306.00                                                                              | -8.4                | V                  | 3.0             | 43.6           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                            | 1653.00                                                                              | -7.0                | H                  | 3.0             | 43.6           | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                                            | 2479.50                                                                              | -7.9                | H                  | 3.0             | 43.4           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                            | 3306.00                                                                              | -8.1                | H                  | 3.0             | 43.6           | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                            | Mid Ch, 836.5MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | 1673.00                                                                              | -9.9                | V                  | 3.0             | 43.6           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                                            | 2509.50                                                                              | -7.0                | V                  | 3.0             | 43.4           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                            | 3346.00                                                                              | -9.2                | V                  | 3.0             | 43.6           | 1.0            | -51.9         | -13.0          | -38.9         |       |
|                                            | 1673.00                                                                              | -9.7                | H                  | 3.0             | 43.6           | 1.0            | -52.2         | -13.0          | -39.2         |       |
|                                            | 2509.50                                                                              | -7.4                | H                  | 3.0             | 43.4           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                            | 3346.00                                                                              | -7.8                | H                  | 3.0             | 43.6           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                                            | High Ch, 846.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
| 1693.00                                    | -11.1                                                                                | V                   | 3.0                | 43.6            | 1.0            | -53.7          | -13.0         | -40.7          |               |       |
| 2539.50                                    | -8.6                                                                                 | V                   | 3.0                | 43.4            | 1.0            | -51.0          | -13.0         | -38.0          |               |       |
| 3386.00                                    | -7.1                                                                                 | V                   | 3.0                | 43.7            | 1.0            | -49.7          | -13.0         | -36.7          |               |       |
| 1693.00                                    | -11.2                                                                                | H                   | 3.0                | 43.6            | 1.0            | -53.8          | -13.0         | -40.8          |               |       |
| 2539.50                                    | -8.3                                                                                 | H                   | 3.0                | 43.4            | 1.0            | -50.7          | -13.0         | -37.7          |               |       |
| 3386.00                                    | -8.7                                                                                 | H                   | 3.0                | 43.7            | 1.0            | -51.4          | -13.0         | -38.4          |               |       |
|                                            |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                            |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| LTE<br><br>Band 5<br><br>5MHz<br><br>16QAM | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                            | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | Project #: 4788372835                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                            | Date: 2018-03-05                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | Test Engineer: 45585                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                            | Configuration: EUT / Adapter / Earphone, X-Position                                  |                     |                    |                 |                |                |               |                |               |       |
|                                            | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                            | Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                            | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                            | Low Ch, 826.5MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | 1653.00                                                                              | -8.1                | V                  | 3.0             | 43.6           | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                            | 2479.50                                                                              | -8.7                | V                  | 3.0             | 43.4           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                            | 3306.00                                                                              | -8.6                | V                  | 3.0             | 43.6           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                            | 1653.00                                                                              | -7.5                | H                  | 3.0             | 43.6           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                            | 2479.50                                                                              | -7.6                | H                  | 3.0             | 43.4           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                            | 3306.00                                                                              | -7.8                | H                  | 3.0             | 43.6           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                                            | Mid Ch, 836.5MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                            | 1673.00                                                                              | -9.8                | V                  | 3.0             | 43.6           | 1.0            | -52.4         | -13.0          | -39.4         |       |
|                                            | 2509.50                                                                              | -6.9                | V                  | 3.0             | 43.4           | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                                            | 3346.00                                                                              | -9.3                | V                  | 3.0             | 43.6           | 1.0            | -51.9         | -13.0          | -38.9         |       |
|                                            | 1673.00                                                                              | -9.7                | H                  | 3.0             | 43.6           | 1.0            | -52.3         | -13.0          | -39.3         |       |
|                                            | 2509.50                                                                              | -7.4                | H                  | 3.0             | 43.4           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                            | 3346.00                                                                              | -8.2                | H                  | 3.0             | 43.6           | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                                            | High Ch, 846.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
| 1693.00                                    | -11.1                                                                                | V                   | 3.0                | 43.6            | 1.0            | -53.7          | -13.0         | -40.7          |               |       |
| 2539.50                                    | -8.5                                                                                 | V                   | 3.0                | 43.4            | 1.0            | -50.9          | -13.0         | -37.9          |               |       |
| 3386.00                                    | -8.4                                                                                 | V                   | 3.0                | 43.7            | 1.0            | -51.1          | -13.0         | -38.1          |               |       |
| 1693.00                                    | -10.5                                                                                | H                   | 3.0                | 43.6            | 1.0            | -53.1          | -13.0         | -40.1          |               |       |
| 2539.50                                    | -8.8                                                                                 | H                   | 3.0                | 43.4            | 1.0            | -51.2          | -13.0         | -38.2          |               |       |
| 3386.00                                    | -9.0                                                                                 | H                   | 3.0                | 43.7            | 1.0            | -51.7          | -13.0         | -38.7          |               |       |
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| LTE<br><br>Band 5<br><br>3MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |  |  |  |  |  |  |  |  |  |
|                                           | Company: Samsung                                                                     |  |  |  |  |  |  |  |  |  |
|                                           | Project #: 4788372835                                                                |  |  |  |  |  |  |  |  |  |
|                                           | Date: 2018-02-27                                                                     |  |  |  |  |  |  |  |  |  |
|                                           | Test Engineer: 45585                                                                 |  |  |  |  |  |  |  |  |  |
|                                           | Configuration: EUT / Adapter / Earphone , X-Position                                 |  |  |  |  |  |  |  |  |  |
|                                           | Location: Chamber 1                                                                  |  |  |  |  |  |  |  |  |  |
|                                           | Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth                                      |  |  |  |  |  |  |  |  |  |
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|                                  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                       |                     |                    |                 |                      |                |               |                |               |       |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------------|----------------|---------------|----------------|---------------|-------|
|                                  | Company: Samsung<br>Project #: 4788372835<br>Date: 2018-02-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone , X-Position<br>Location: Chamber 1<br>Mode: LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth  |                     |                    |                 |                      |                |               |                |               |       |
| LTE<br>Band 5<br>1.4MHz<br>QPSK  | f<br>MHz                                                                                                                                                                                                                   | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                  | Low Ch, 824.7MHz                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1649.40                                                                                                                                                                                                                    | -7.2                | V                  | 3.0             | 43.6                 | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                  | 2474.10                                                                                                                                                                                                                    | -7.7                | V                  | 3.0             | 43.4                 | 1.0            | -50.2         | -13.0          | -37.2         |       |
|                                  | 3298.80                                                                                                                                                                                                                    | -7.9                | V                  | 3.0             | 43.6                 | 1.0            | -50.5         | -13.0          | -37.5         |       |
|                                  | 1649.40                                                                                                                                                                                                                    | -6.8                | H                  | 3.0             | 43.6                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                                  | 2474.10                                                                                                                                                                                                                    | -5.7                | H                  | 3.0             | 43.4                 | 1.0            | -48.1         | -13.0          | -35.1         |       |
|                                  | 3298.80                                                                                                                                                                                                                    | -7.7                | H                  | 3.0             | 43.6                 | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                  | Mid Ch, 836.5MHz                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1673.00                                                                                                                                                                                                                    | -9.1                | V                  | 3.0             | 43.6                 | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                                  | 2509.50                                                                                                                                                                                                                    | -9.0                | V                  | 3.0             | 43.4                 | 1.0            | -51.4         | -13.0          | -38.4         |       |
|                                  | 3346.00                                                                                                                                                                                                                    | -8.5                | V                  | 3.0             | 43.6                 | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                  | 1673.00                                                                                                                                                                                                                    | -8.3                | H                  | 3.0             | 43.6                 | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                  | 2509.50                                                                                                                                                                                                                    | -7.5                | H                  | 3.0             | 43.4                 | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                  | 3346.00                                                                                                                                                                                                                    | -7.7                | H                  | 3.0             | 43.6                 | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                  | High Ch, 848.3MHz                                                                                                                                                                                                          |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1696.60                                                                                                                                                                                                                    | -4.1                | V                  | 3.0             | 43.6                 | 1.0            | -46.6         | -13.0          | -33.6         |       |
|                                  | 2544.90                                                                                                                                                                                                                    | -8.4                | V                  | 3.0             | 43.4                 | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                  | 3393.20                                                                                                                                                                                                                    | -8.6                | V                  | 3.0             | 43.7                 | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                  | 1696.60                                                                                                                                                                                                                    | -4.9                | H                  | 3.0             | 43.6                 | 1.0            | -47.5         | -13.0          | -34.5         |       |
|                                  | 2544.90                                                                                                                                                                                                                    | -9.4                | H                  | 3.0             | 43.4                 | 1.0            | -51.8         | -13.0          | -38.8         |       |
|                                  | 3393.20                                                                                                                                                                                                                    | -7.7                | H                  | 3.0             | 43.7                 | 1.0            | -50.4         | -13.0          | -37.4         |       |
| LTE<br>Band 5<br>1.4MHz<br>16QAM | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                       |                     |                    |                 |                      |                |               |                |               |       |
|                                  | Company: Samsung<br>Project #: 4788372835<br>Date: 2018-02-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone , X-Position<br>Location: Chamber 1<br>Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth |                     |                    |                 |                      |                |               |                |               |       |
| LTE<br>Band 5<br>1.4MHz<br>16QAM | f<br>MHz                                                                                                                                                                                                                   | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                  | Low Ch, 824.7MHz                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1649.40                                                                                                                                                                                                                    | -7.2                | V                  | 3.0             | 43.6                 | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                  | 2474.10                                                                                                                                                                                                                    | -6.8                | V                  | 3.0             | 43.4                 | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                                  | 3298.80                                                                                                                                                                                                                    | -7.8                | V                  | 3.0             | 43.6                 | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                                  | 1649.40                                                                                                                                                                                                                    | -6.4                | H                  | 3.0             | 43.6                 | 1.0            | -49.0         | -13.0          | -36.0         |       |
|                                  | 2474.10                                                                                                                                                                                                                    | -5.9                | H                  | 3.0             | 43.4                 | 1.0            | -48.3         | -13.0          | -35.3         |       |
|                                  | 3298.80                                                                                                                                                                                                                    | -7.3                | H                  | 3.0             | 43.6                 | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                  | Mid Ch, 836.5MHz                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1673.00                                                                                                                                                                                                                    | -9.3                | V                  | 3.0             | 43.6                 | 1.0            | -51.9         | -13.0          | -38.9         |       |
|                                  | 2509.50                                                                                                                                                                                                                    | -8.4                | V                  | 3.0             | 43.4                 | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                                  | 3346.00                                                                                                                                                                                                                    | -8.4                | V                  | 3.0             | 43.6                 | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                  | 1673.00                                                                                                                                                                                                                    | -8.5                | H                  | 3.0             | 43.6                 | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                  | 2509.50                                                                                                                                                                                                                    | -6.9                | H                  | 3.0             | 43.4                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                                  | 3346.00                                                                                                                                                                                                                    | -7.8                | H                  | 3.0             | 43.6                 | 1.0            | -50.5         | -13.0          | -37.5         |       |
|                                  | High Ch, 848.3MHz                                                                                                                                                                                                          |                     |                    |                 |                      |                |               |                |               |       |
|                                  | 1696.60                                                                                                                                                                                                                    | -3.7                | V                  | 3.0             | 43.6                 | 1.0            | -46.2         | -13.0          | -33.2         |       |
|                                  | 2544.90                                                                                                                                                                                                                    | -8.9                | V                  | 3.0             | 43.4                 | 1.0            | -51.3         | -13.0          | -38.3         |       |
|                                  | 3393.20                                                                                                                                                                                                                    | -8.1                | V                  | 3.0             | 43.7                 | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                  | 1696.60                                                                                                                                                                                                                    | -4.8                | H                  | 3.0             | 43.6                 | 1.0            | -47.3         | -13.0          | -34.3         |       |
|                                  | 2544.90                                                                                                                                                                                                                    | -8.7                | H                  | 3.0             | 43.4                 | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                  | 3393.20                                                                                                                                                                                                                    | -8.2                | H                  | 3.0             | 43.7                 | 1.0            | -50.8         | -13.0          | -37.8         |       |

|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|---------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br>Band 41<br>20MHz<br>QPSK |  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement<br><br>Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone, X-Position<br>Location: Chamber 2<br>Mode: LTE_QPSK Band 41 Harmonics, 20MHz Bandwidth |                     |                    |                 |                |                |               |                |               |       |
|                                 |  | f<br>MHz                                                                                                                                                                                                                                                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                 |  | Low Ch, 2506MHz                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  | 5012.00                                                                                                                                                                                                                                                                                                              | -10.1               | V                  | 3.0             | 39.8           | 1.0            | -48.9         | -25.0          | -23.9         |       |
|                                 |  | 7518.00                                                                                                                                                                                                                                                                                                              | -8.3                | V                  | 3.0             | 39.4           | 1.0            | -46.7         | -25.0          | -21.7         |       |
|                                 |  | 10024.00                                                                                                                                                                                                                                                                                                             | -3.5                | V                  | 3.0             | 38.6           | 1.0            | -41.0         | -25.0          | -16.0         |       |
|                                 |  | 5012.00                                                                                                                                                                                                                                                                                                              | -9.7                | H                  | 3.0             | 39.8           | 1.0            | -48.5         | -25.0          | -23.5         |       |
|                                 |  | 7518.00                                                                                                                                                                                                                                                                                                              | -7.7                | H                  | 3.0             | 39.4           | 1.0            | -46.1         | -25.0          | -21.1         |       |
|                                 |  | 10024.00                                                                                                                                                                                                                                                                                                             | -7.7                | H                  | 3.0             | 38.6           | 1.0            | -45.3         | -25.0          | -20.3         |       |
|                                 |  | Mid Ch, 2593MHz                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  | 5186.00                                                                                                                                                                                                                                                                                                              | -12.2               | V                  | 3.0             | 39.8           | 1.0            | -51.0         | -25.0          | -26.0         |       |
|                                 |  | 7779.00                                                                                                                                                                                                                                                                                                              | -8.7                | V                  | 3.0             | 39.3           | 1.0            | -47.0         | -25.0          | -22.0         |       |
|                                 |  | 10372.00                                                                                                                                                                                                                                                                                                             | -7.9                | V                  | 3.0             | 38.6           | 1.0            | -45.5         | -25.0          | -20.5         |       |
|                                 |  | 5186.00                                                                                                                                                                                                                                                                                                              | -12.5               | H                  | 3.0             | 39.8           | 1.0            | -51.4         | -25.0          | -26.4         |       |
|                                 |  | 7779.00                                                                                                                                                                                                                                                                                                              | -9.5                | H                  | 3.0             | 39.3           | 1.0            | -47.8         | -25.0          | -22.8         |       |
|                                 |  | 10372.00                                                                                                                                                                                                                                                                                                             | -10.3               | H                  | 3.0             | 38.6           | 1.0            | -47.8         | -25.0          | -22.8         |       |
|                                 |  | High Ch, 2680MHz                                                                                                                                                                                                                                                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                 |  | 5360.00                                                                                                                                                                                                                                                                                                              | -11.0               | V                  | 3.0             | 39.9           | 1.0            | -49.9         | -25.0          | -24.9         |       |
|                                 |  | 8040.00                                                                                                                                                                                                                                                                                                              | 3.8                 | V                  | 3.0             | 39.2           | 1.0            | -34.4         | -25.0          | -9.4          |       |
|                                 |  | 10720.00                                                                                                                                                                                                                                                                                                             | -5.8                | V                  | 3.0             | 38.5           | 1.0            | -43.3         | -25.0          | -18.3         |       |
|                                 |  | 5360.00                                                                                                                                                                                                                                                                                                              | -9.8                | H                  | 3.0             | 39.9           | 1.0            | -48.7         | -25.0          | -23.7         |       |
|                                 |  | 8040.00                                                                                                                                                                                                                                                                                                              | 0.3                 | H                  | 3.0             | 39.2           | 1.0            | -37.9         | -25.0          | -12.9         |       |
|                                 |  | 10720.00                                                                                                                                                                                                                                                                                                             | -7.1                | H                  | 3.0             | 38.5           | 1.0            | -44.7         | -25.0          | -19.7         |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                 |  |                                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |

|                                              |                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 41<br><br>15MHz<br><br>QPSK  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone, X-Position<br>Location: Chamber 2<br>Mode: LTE_QPSK Band 41 Harmonics, 15MHz Bandwidth  |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                                                                                                                                                                  | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 2503.5MHz                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5007.00                                                                                                                                                                                                                   | -10.9               | V                  | 3.0             | 39.8           | 1.0            | -49.7         | -25.0          | -24.7         |       |
|                                              | 7510.50                                                                                                                                                                                                                   | -9.0                | V                  | 3.0             | 39.4           | 1.0            | -47.4         | -25.0          | -22.4         |       |
|                                              | 10014.00                                                                                                                                                                                                                  | -5.5                | V                  | 3.0             | 38.6           | 1.0            | -43.1         | -25.0          | -18.1         |       |
|                                              | 5007.00                                                                                                                                                                                                                   | -13.6               | H                  | 3.0             | 39.8           | 1.0            | -52.4         | -25.0          | -27.4         |       |
|                                              | 7510.50                                                                                                                                                                                                                   | -8.8                | H                  | 3.0             | 39.4           | 1.0            | -47.2         | -25.0          | -22.2         |       |
|                                              | 10014.00                                                                                                                                                                                                                  | -3.0                | H                  | 3.0             | 38.6           | 1.0            | -40.6         | -25.0          | -15.6         |       |
|                                              | Mid Ch, 2593MHz                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5186.00                                                                                                                                                                                                                   | -9.8                | V                  | 3.0             | 39.8           | 1.0            | -48.7         | -25.0          | -23.7         |       |
|                                              | 7779.00                                                                                                                                                                                                                   | -4.4                | V                  | 3.0             | 39.3           | 1.0            | -42.7         | -25.0          | -17.7         |       |
|                                              | 10372.00                                                                                                                                                                                                                  | -2.3                | V                  | 3.0             | 38.6           | 1.0            | -39.9         | -25.0          | -14.9         |       |
|                                              | 5186.00                                                                                                                                                                                                                   | -10.8               | H                  | 3.0             | 39.8           | 1.0            | -49.6         | -25.0          | -24.6         |       |
|                                              | 7779.00                                                                                                                                                                                                                   | -8.3                | H                  | 3.0             | 39.3           | 1.0            | -46.6         | -25.0          | -21.6         |       |
|                                              | 10372.00                                                                                                                                                                                                                  | -8.5                | H                  | 3.0             | 38.6           | 1.0            | -46.0         | -25.0          | -21.0         |       |
|                                              | High Ch, 2682.5MHz                                                                                                                                                                                                        |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5365.00                                                                                                                                                                                                                   | -10.2               | V                  | 3.0             | 39.9           | 1.0            | -49.1         | -25.0          | -24.1         |       |
|                                              | 8047.50                                                                                                                                                                                                                   | 6.9                 | V                  | 3.0             | 39.2           | 1.0            | -31.3         | -25.0          | -6.3          |       |
|                                              | 10730.00                                                                                                                                                                                                                  | -5.7                | V                  | 3.0             | 38.5           | 1.0            | -43.2         | -25.0          | -18.2         |       |
|                                              | 5365.00                                                                                                                                                                                                                   | -11.0               | H                  | 3.0             | 39.9           | 1.0            | -49.9         | -25.0          | -24.9         |       |
|                                              | 8047.50                                                                                                                                                                                                                   | 6.3                 | H                  | 3.0             | 39.2           | 1.0            | -31.9         | -25.0          | -6.9          |       |
|                                              | 10730.00                                                                                                                                                                                                                  | -7.5                | H                  | 3.0             | 38.5           | 1.0            | -45.1         | -25.0          | -20.1         |       |
|                                              |                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
| LTE<br><br>Band 41<br><br>15MHz<br><br>16QAM | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-27<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone, X-Position<br>Location: Chamber 2<br>Mode: LTE_16QAM Band 41 Harmonics, 15MHz Bandwidth |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                                                                                                                                                                  | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 2503.5MHz                                                                                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5007.00                                                                                                                                                                                                                   | -11.4               | V                  | 3.0             | 39.8           | 1.0            | -50.2         | -25.0          | -25.2         |       |
|                                              | 7510.50                                                                                                                                                                                                                   | -9.1                | V                  | 3.0             | 39.4           | 1.0            | -47.4         | -25.0          | -22.4         |       |
|                                              | 10014.00                                                                                                                                                                                                                  | -5.1                | V                  | 3.0             | 38.6           | 1.0            | -42.7         | -25.0          | -17.7         |       |
|                                              | 5007.00                                                                                                                                                                                                                   | -13.3               | H                  | 3.0             | 39.8           | 1.0            | -52.1         | -25.0          | -27.1         |       |
|                                              | 7510.50                                                                                                                                                                                                                   | -7.5                | H                  | 3.0             | 39.4           | 1.0            | -45.9         | -25.0          | -20.9         |       |
|                                              | 10014.00                                                                                                                                                                                                                  | -3.5                | H                  | 3.0             | 38.6           | 1.0            | -41.1         | -25.0          | -16.1         |       |
|                                              | Mid Ch, 2593MHz                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5186.00                                                                                                                                                                                                                   | -9.3                | V                  | 3.0             | 39.8           | 1.0            | -48.1         | -25.0          | -23.1         |       |
|                                              | 7779.00                                                                                                                                                                                                                   | -4.1                | V                  | 3.0             | 39.3           | 1.0            | -42.4         | -25.0          | -17.4         |       |
|                                              | 10372.00                                                                                                                                                                                                                  | -2.6                | V                  | 3.0             | 38.6           | 1.0            | -40.2         | -25.0          | -15.2         |       |
|                                              | 5186.00                                                                                                                                                                                                                   | -11.0               | H                  | 3.0             | 39.8           | 1.0            | -49.8         | -25.0          | -24.8         |       |
|                                              | 7779.00                                                                                                                                                                                                                   | -8.9                | H                  | 3.0             | 39.3           | 1.0            | -47.2         | -25.0          | -22.2         |       |
|                                              | 10372.00                                                                                                                                                                                                                  | -8.1                | H                  | 3.0             | 38.6           | 1.0            | -45.6         | -25.0          | -20.6         |       |
|                                              | High Ch, 2682.5MHz                                                                                                                                                                                                        |                     |                    |                 |                |                |               |                |               |       |
|                                              | 5365.00                                                                                                                                                                                                                   | -10.7               | V                  | 3.0             | 39.9           | 1.0            | -49.6         | -25.0          | -24.6         |       |
|                                              | 8047.50                                                                                                                                                                                                                   | 7.0                 | V                  | 3.0             | 39.2           | 1.0            | -31.1         | -25.0          | -6.1          |       |
|                                              | 10730.00                                                                                                                                                                                                                  | -5.9                | V                  | 3.0             | 38.5           | 1.0            | -43.4         | -25.0          | -18.4         |       |
|                                              | 5365.00                                                                                                                                                                                                                   | -11.0               | H                  | 3.0             | 39.9           | 1.0            | -49.9         | -25.0          | -24.9         |       |
|                                              | 8047.50                                                                                                                                                                                                                   | 6.4                 | H                  | 3.0             | 39.2           | 1.0            | -31.7         | -25.0          | -6.7          |       |
|                                              | 10730.00                                                                                                                                                                                                                  | -7.9                | H                  | 3.0             | 38.5           | 1.0            | -45.4         | -25.0          | -20.4         |       |
|                                              |                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |

| LTE<br><br>Band 41<br><br>10MHz<br><br>QPSK  | <div>UL Verification Services, Inc.<br/>Above 1GHz High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-27<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 2<br/>Mode: LTE_QPSK Band 41 Harmonics, 10MHz Bandwidth</div> <table><thead><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance (m)</th><th>Preamp (dB)</th><th>Filter (dB)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr></thead><tbody><tr><td colspan="10">Low Ch, 2501MHz</td></tr><tr><td>5002.00</td><td>-7.7</td><td>V</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-46.5</td><td>-25.0</td><td>-21.5</td><td></td></tr><tr><td>7503.00</td><td>-7.5</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-45.9</td><td>-25.0</td><td>-20.9</td><td></td></tr><tr><td>10004.00</td><td>-1.5</td><td>V</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-39.1</td><td>-25.0</td><td>-14.1</td><td></td></tr><tr><td>5002.00</td><td>-11.6</td><td>H</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-50.4</td><td>-25.0</td><td>-25.4</td><td></td></tr><tr><td>7503.00</td><td>-6.4</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-44.8</td><td>-25.0</td><td>-19.8</td><td></td></tr><tr><td>10004.00</td><td>-6.1</td><td>H</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-43.7</td><td>-25.0</td><td>-18.7</td><td></td></tr><tr><td colspan="10">Mid Ch, 2593MHz</td></tr><tr><td>5186.00</td><td>-8.7</td><td>V</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-47.5</td><td>-25.0</td><td>-22.5</td><td></td></tr><tr><td>7779.00</td><td>-5.3</td><td>V</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-43.6</td><td>-25.0</td><td>-18.6</td><td></td></tr><tr><td>10372.00</td><td>-5.3</td><td>V</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-42.9</td><td>-25.0</td><td>-17.9</td><td></td></tr><tr><td>5186.00</td><td>-9.3</td><td>H</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-48.1</td><td>-25.0</td><td>-23.1</td><td></td></tr><tr><td>7779.00</td><td>-9.5</td><td>H</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-47.8</td><td>-25.0</td><td>-22.8</td><td></td></tr><tr><td>10372.00</td><td>-7.0</td><td>H</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-44.5</td><td>-25.0</td><td>-19.5</td><td></td></tr><tr><td colspan="10">High Ch, 2685MHz</td></tr><tr><td>5370.00</td><td>-10.5</td><td>V</td><td>3.0</td><td>39.9</td><td>1.0</td><td>-49.4</td><td>-25.0</td><td>-24.4</td><td></td></tr><tr><td>8055.00</td><td>8.3</td><td>V</td><td>3.0</td><td>39.2</td><td>1.0</td><td>-29.8</td><td>-25.0</td><td>-4.8</td><td></td></tr><tr><td>10740.00</td><td>-5.1</td><td>V</td><td>3.0</td><td>38.5</td><td>1.0</td><td>-42.7</td><td>-25.0</td><td>-17.7</td><td></td></tr><tr><td>5370.00</td><td>-11.1</td><td>H</td><td>3.0</td><td>39.9</td><td>1.0</td><td>-49.9</td><td>-25.0</td><td>-24.9</td><td></td></tr><tr><td>8055.00</td><td>6.9</td><td>H</td><td>3.0</td><td>39.2</td><td>1.0</td><td>-31.2</td><td>-25.0</td><td>-6.2</td><td></td></tr><tr><td>10740.00</td><td>-7.8</td><td>H</td><td>3.0</td><td>38.5</td><td>1.0</td><td>-45.3</td><td>-25.0</td><td>-20.3</td><td></td></tr></tbody></table>  |                  |                 |              |             |             |            |             |            |       | f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes | Low Ch, 2501MHz |  |  |  |  |  |  |  |  |  | 5002.00 | -7.7 | V | 3.0 | 39.8 | 1.0 | -46.5 | -25.0 | -21.5 |  | 7503.00 | -7.5 | V | 3.0 | 39.4 | 1.0 | -45.9 | -25.0 | -20.9 |  | 10004.00 | -1.5 | V | 3.0 | 38.6 | 1.0 | -39.1 | -25.0 | -14.1 |  | 5002.00 | -11.6 | H | 3.0 | 39.8 | 1.0 | -50.4 | -25.0 | -25.4 |  | 7503.00 | -6.4 | H | 3.0 | 39.4 | 1.0 | -44.8 | -25.0 | -19.8 |  | 10004.00 | -6.1 | H | 3.0 | 38.6 | 1.0 | -43.7 | -25.0 | -18.7 |  | Mid Ch, 2593MHz |  |  |  |  |  |  |  |  |  | 5186.00 | -8.7 | V | 3.0 | 39.8 | 1.0 | -47.5 | -25.0 | -22.5 |  | 7779.00 | -5.3 | V | 3.0 | 39.3 | 1.0 | -43.6 | -25.0 | -18.6 |  | 10372.00 | -5.3 | V | 3.0 | 38.6 | 1.0 | -42.9 | -25.0 | -17.9 |  | 5186.00 | -9.3 | H | 3.0 | 39.8 | 1.0 | -48.1 | -25.0 | -23.1 |  | 7779.00 | -9.5 | H | 3.0 | 39.3 | 1.0 | -47.8 | -25.0 | -22.8 |  | 10372.00 | -7.0 | H | 3.0 | 38.6 | 1.0 | -44.5 | -25.0 | -19.5 |  | High Ch, 2685MHz |  |  |  |  |  |  |  |  |  | 5370.00 | -10.5 | V | 3.0 | 39.9 | 1.0 | -49.4 | -25.0 | -24.4 |  | 8055.00 | 8.3 | V | 3.0 | 39.2 | 1.0 | -29.8 | -25.0 | -4.8 |  | 10740.00 | -5.1 | V | 3.0 | 38.5 | 1.0 | -42.7 | -25.0 | -17.7 |  | 5370.00 | -11.1 | H | 3.0 | 39.9 | 1.0 | -49.9 | -25.0 | -24.9 |  | 8055.00 | 6.9 | H | 3.0 | 39.2 | 1.0 | -31.2 | -25.0 | -6.2 |  | 10740.00 | -7.8 | H | 3.0 | 38.5 | 1.0 | -45.3 | -25.0 | -20.3 |  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|-------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|-------|-----------------|--|--|--|--|--|--|--|--|--|---------|------|---|-----|------|-----|-------|-------|-------|--|---------|------|---|-----|------|-----|-------|-------|-------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|---------|-------|---|-----|------|-----|-------|-------|-------|--|---------|------|---|-----|------|-----|-------|-------|-------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|-----------------|--|--|--|--|--|--|--|--|--|---------|------|---|-----|------|-----|-------|-------|-------|--|---------|------|---|-----|------|-----|-------|-------|-------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|---------|------|---|-----|------|-----|-------|-------|-------|--|---------|------|---|-----|------|-----|-------|-------|-------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|------------------|--|--|--|--|--|--|--|--|--|---------|-------|---|-----|------|-----|-------|-------|-------|--|---------|-----|---|-----|------|-----|-------|-------|------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|---------|-------|---|-----|------|-----|-------|-------|-------|--|---------|-----|---|-----|------|-----|-------|-------|------|--|----------|------|---|-----|------|-----|-------|-------|-------|--|
|                                              | f MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | Low Ch, 2501MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5002.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -7.7             | V               | 3.0          | 39.8        | 1.0         | -46.5      | -25.0       | -21.5      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7503.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -7.5             | V               | 3.0          | 39.4        | 1.0         | -45.9      | -25.0       | -20.9      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10004.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -1.5             | V               | 3.0          | 38.6        | 1.0         | -39.1      | -25.0       | -14.1      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5002.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -11.6            | H               | 3.0          | 39.8        | 1.0         | -50.4      | -25.0       | -25.4      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7503.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -6.4             | H               | 3.0          | 39.4        | 1.0         | -44.8      | -25.0       | -19.8      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10004.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -6.1             | H               | 3.0          | 38.6        | 1.0         | -43.7      | -25.0       | -18.7      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | Mid Ch, 2593MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5186.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -8.7             | V               | 3.0          | 39.8        | 1.0         | -47.5      | -25.0       | -22.5      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7779.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -5.3             | V               | 3.0          | 39.3        | 1.0         | -43.6      | -25.0       | -18.6      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10372.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -5.3             | V               | 3.0          | 38.6        | 1.0         | -42.9      | -25.0       | -17.9      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5186.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -9.3             | H               | 3.0          | 39.8        | 1.0         | -48.1      | -25.0       | -23.1      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7779.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -9.5             | H               | 3.0          | 39.3        | 1.0         | -47.8      | -25.0       | -22.8      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10372.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -7.0             | H               | 3.0          | 38.6        | 1.0         | -44.5      | -25.0       | -19.5      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | High Ch, 2685MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5370.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -10.5            | V               | 3.0          | 39.9        | 1.0         | -49.4      | -25.0       | -24.4      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 8055.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.3              | V               | 3.0          | 39.2        | 1.0         | -29.8      | -25.0       | -4.8       |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10740.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -5.1             | V               | 3.0          | 38.5        | 1.0         | -42.7      | -25.0       | -17.7      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 5370.00                                      | -11.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                | 3.0             | 39.9         | 1.0         | -49.9       | -25.0      | -24.9       |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 8055.00                                      | 6.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | H                | 3.0             | 39.2         | 1.0         | -31.2       | -25.0      | -6.2        |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 10740.00                                     | -7.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | H                | 3.0             | 38.5         | 1.0         | -45.3       | -25.0      | -20.3       |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| LTE<br><br>Band 41<br><br>10MHz<br><br>16QAM | <div>UL Verification Services, Inc.<br/>Above 1GHz High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-27<br/>Test Engineer: 45585<br/>Configuration: EUT / Adapter / Earphone, X-Position<br/>Location: Chamber 2<br/>Mode: LTE_16QAM Band 41 Harmonics, 10MHz Bandwidth</div> <table><thead><tr><th>f MHz</th><th>SG reading (dBm)</th><th>Ant. Pol. (H/V)</th><th>Distance (m)</th><th>Preamp (dB)</th><th>Filter (dB)</th><th>EIRP (dBm)</th><th>Limit (dBm)</th><th>Delta (dB)</th><th>Notes</th></tr></thead><tbody><tr><td colspan="10">Low Ch, 2501MHz</td></tr><tr><td>5002.00</td><td>-8.2</td><td>V</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-47.0</td><td>-25.0</td><td>-22.0</td><td></td></tr><tr><td>7503.00</td><td>-8.1</td><td>V</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-46.5</td><td>-25.0</td><td>-21.5</td><td></td></tr><tr><td>10004.00</td><td>-1.6</td><td>V</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-39.2</td><td>-25.0</td><td>-14.2</td><td></td></tr><tr><td>5002.00</td><td>-11.3</td><td>H</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-50.1</td><td>-25.0</td><td>-25.1</td><td></td></tr><tr><td>7503.00</td><td>-6.4</td><td>H</td><td>3.0</td><td>39.4</td><td>1.0</td><td>-44.8</td><td>-25.0</td><td>-19.8</td><td></td></tr><tr><td>10004.00</td><td>-6.8</td><td>H</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-44.3</td><td>-25.0</td><td>-19.3</td><td></td></tr><tr><td colspan="10">Mid Ch, 2593MHz</td></tr><tr><td>5186.00</td><td>-8.8</td><td>V</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-47.6</td><td>-25.0</td><td>-22.6</td><td></td></tr><tr><td>7779.00</td><td>-5.4</td><td>V</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-43.6</td><td>-25.0</td><td>-18.6</td><td></td></tr><tr><td>10372.00</td><td>-5.3</td><td>V</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-42.8</td><td>-25.0</td><td>-17.8</td><td></td></tr><tr><td>5186.00</td><td>-9.8</td><td>H</td><td>3.0</td><td>39.8</td><td>1.0</td><td>-48.7</td><td>-25.0</td><td>-23.7</td><td></td></tr><tr><td>7779.00</td><td>-9.1</td><td>H</td><td>3.0</td><td>39.3</td><td>1.0</td><td>-47.3</td><td>-25.0</td><td>-22.3</td><td></td></tr><tr><td>10372.00</td><td>-7.6</td><td>H</td><td>3.0</td><td>38.6</td><td>1.0</td><td>-45.2</td><td>-25.0</td><td>-20.2</td><td></td></tr><tr><td colspan="10">High Ch, 2685MHz</td></tr><tr><td>5370.00</td><td>-10.6</td><td>V</td><td>3.0</td><td>39.9</td><td>1.0</td><td>-49.5</td><td>-25.0</td><td>-24.5</td><td></td></tr><tr><td>8055.00</td><td>8.1</td><td>V</td><td>3.0</td><td>39.2</td><td>1.0</td><td>-30.0</td><td>-25.0</td><td>-5.0</td><td></td></tr><tr><td>10740.00</td><td>-4.8</td><td>V</td><td>3.0</td><td>38.5</td><td>1.0</td><td>-42.3</td><td>-25.0</td><td>-17.3</td><td></td></tr><tr><td>5370.00</td><td>-11.9</td><td>H</td><td>3.0</td><td>39.9</td><td>1.0</td><td>-50.7</td><td>-25.0</td><td>-25.7</td><td></td></tr><tr><td>8055.00</td><td>6.6</td><td>H</td><td>3.0</td><td>39.2</td><td>1.0</td><td>-31.6</td><td>-25.0</td><td>-6.6</td><td></td></tr><tr><td>10740.00</td><td>-7.3</td><td>H</td><td>3.0</td><td>38.5</td><td>1.0</td><td>-44.8</td><td>-25.0</td><td>-19.8</td><td></td></tr></tbody></table> |                  |                 |              |             |             |            |             |            |       | f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes | Low Ch, 2501MHz |  |  |  |  |  |  |  |  |  | 5002.00 | -8.2 | V | 3.0 | 39.8 | 1.0 | -47.0 | -25.0 | -22.0 |  | 7503.00 | -8.1 | V | 3.0 | 39.4 | 1.0 | -46.5 | -25.0 | -21.5 |  | 10004.00 | -1.6 | V | 3.0 | 38.6 | 1.0 | -39.2 | -25.0 | -14.2 |  | 5002.00 | -11.3 | H | 3.0 | 39.8 | 1.0 | -50.1 | -25.0 | -25.1 |  | 7503.00 | -6.4 | H | 3.0 | 39.4 | 1.0 | -44.8 | -25.0 | -19.8 |  | 10004.00 | -6.8 | H | 3.0 | 38.6 | 1.0 | -44.3 | -25.0 | -19.3 |  | Mid Ch, 2593MHz |  |  |  |  |  |  |  |  |  | 5186.00 | -8.8 | V | 3.0 | 39.8 | 1.0 | -47.6 | -25.0 | -22.6 |  | 7779.00 | -5.4 | V | 3.0 | 39.3 | 1.0 | -43.6 | -25.0 | -18.6 |  | 10372.00 | -5.3 | V | 3.0 | 38.6 | 1.0 | -42.8 | -25.0 | -17.8 |  | 5186.00 | -9.8 | H | 3.0 | 39.8 | 1.0 | -48.7 | -25.0 | -23.7 |  | 7779.00 | -9.1 | H | 3.0 | 39.3 | 1.0 | -47.3 | -25.0 | -22.3 |  | 10372.00 | -7.6 | H | 3.0 | 38.6 | 1.0 | -45.2 | -25.0 | -20.2 |  | High Ch, 2685MHz |  |  |  |  |  |  |  |  |  | 5370.00 | -10.6 | V | 3.0 | 39.9 | 1.0 | -49.5 | -25.0 | -24.5 |  | 8055.00 | 8.1 | V | 3.0 | 39.2 | 1.0 | -30.0 | -25.0 | -5.0 |  | 10740.00 | -4.8 | V | 3.0 | 38.5 | 1.0 | -42.3 | -25.0 | -17.3 |  | 5370.00 | -11.9 | H | 3.0 | 39.9 | 1.0 | -50.7 | -25.0 | -25.7 |  | 8055.00 | 6.6 | H | 3.0 | 39.2 | 1.0 | -31.6 | -25.0 | -6.6 |  | 10740.00 | -7.3 | H | 3.0 | 38.5 | 1.0 | -44.8 | -25.0 | -19.8 |  |
|                                              | f MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | Low Ch, 2501MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5002.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -8.2             | V               | 3.0          | 39.8        | 1.0         | -47.0      | -25.0       | -22.0      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7503.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -8.1             | V               | 3.0          | 39.4        | 1.0         | -46.5      | -25.0       | -21.5      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10004.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -1.6             | V               | 3.0          | 38.6        | 1.0         | -39.2      | -25.0       | -14.2      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5002.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -11.3            | H               | 3.0          | 39.8        | 1.0         | -50.1      | -25.0       | -25.1      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7503.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -6.4             | H               | 3.0          | 39.4        | 1.0         | -44.8      | -25.0       | -19.8      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10004.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -6.8             | H               | 3.0          | 38.6        | 1.0         | -44.3      | -25.0       | -19.3      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | Mid Ch, 2593MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5186.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -8.8             | V               | 3.0          | 39.8        | 1.0         | -47.6      | -25.0       | -22.6      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7779.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -5.4             | V               | 3.0          | 39.3        | 1.0         | -43.6      | -25.0       | -18.6      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10372.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -5.3             | V               | 3.0          | 38.6        | 1.0         | -42.8      | -25.0       | -17.8      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5186.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -9.8             | H               | 3.0          | 39.8        | 1.0         | -48.7      | -25.0       | -23.7      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 7779.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -9.1             | H               | 3.0          | 39.3        | 1.0         | -47.3      | -25.0       | -22.3      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10372.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -7.6             | H               | 3.0          | 38.6        | 1.0         | -45.2      | -25.0       | -20.2      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | High Ch, 2685MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |                 |              |             |             |            |             |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 5370.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -10.6            | V               | 3.0          | 39.9        | 1.0         | -49.5      | -25.0       | -24.5      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 8055.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.1              | V               | 3.0          | 39.2        | 1.0         | -30.0      | -25.0       | -5.0       |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
|                                              | 10740.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -4.8             | V               | 3.0          | 38.5        | 1.0         | -42.3      | -25.0       | -17.3      |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 5370.00                                      | -11.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | H                | 3.0             | 39.9         | 1.0         | -50.7       | -25.0      | -25.7       |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 8055.00                                      | 6.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | H                | 3.0             | 39.2         | 1.0         | -31.6       | -25.0      | -6.6        |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |
| 10740.00                                     | -7.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | H                | 3.0             | 38.5         | 1.0         | -44.8       | -25.0      | -19.8       |            |       |       |                  |                 |              |             |             |            |             |            |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |          |      |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |     |   |     |      |     |       |       |      |  |          |      |   |     |      |     |       |       |       |  |

|                                            |                                                                                      |  |  |  |  |  |  |  |  |  |
|--------------------------------------------|--------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| LTE<br><br>Band 41<br><br>5MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |  |  |  |  |  |  |  |  |  |
|                                            | Company: Samsung                                                                     |  |  |  |  |  |  |  |  |  |
|                                            | Project #: 4788371689                                                                |  |  |  |  |  |  |  |  |  |
|                                            | Date: 2018-03-26                                                                     |  |  |  |  |  |  |  |  |  |
|                                            | Test Engineer: 45585                                                                 |  |  |  |  |  |  |  |  |  |
|                                            | Configuration: EUT / Adapter / Earphone, X-Position                                  |  |  |  |  |  |  |  |  |  |
|                                            | Location: Chamber 2                                                                  |  |  |  |  |  |  |  |  |  |
|                                            | Mode: LTE_QPSK Band 41 Harmonics, 5MHz Bandwidth                                     |  |  |  |  |  |  |  |  |  |
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| <div>LTE</div> <div>Band 66</div> <div>20MHz</div> <div>QPSK</div> |                     | <div>UL Verification Services, Inc.</div> <div>Above 1GHz High Frequency Substitution Measurement</div> <div> <div>Company:</div> Samsung <div>Project #:</div> 4788371689 <div>Date:</div> 2018-03-25 <div>Test Engineer:</div> 45574 <div>Configuration:</div> EUT / AC Adapter / Earphone, X-Position <div>Location:</div> Chamber 3 <div>Mode:</div> LTE_QPSK Band 66 Harmonics, 20MHz Bandwidth </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
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|                                                                    |                     | <table> <tr> <th>f<br/>MHz</th><th>SG reading<br/>(dBm)</th><th>Ant. Pol.<br/>(H/V)</th><th>Distance<br/>(m)</th><th>Preamp<br/>(dB)</th><th>Filter<br/>(dB)</th><th>EIRP<br/>(dBm)</th><th>Limit<br/>(dBm)</th><th>Delta<br/>(dB)</th><th>Notes</th></tr> <tr><td colspan="10">Low Ch, 1720MHz</td></tr> <tr><td>3440.00</td><td>-9.0</td><td>V</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-49.0</td><td>-13.0</td><td>-36.0</td><td></td></tr> <tr><td>5160.00</td><td>-13.0</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-52.2</td><td>-13.0</td><td>-39.2</td><td></td></tr> <tr><td>6880.00</td><td>-8.9</td><td>V</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-48.0</td><td>-13.0</td><td>-35.0</td><td></td></tr> <tr><td>3440.00</td><td>-5.8</td><td>H</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-45.8</td><td>-13.0</td><td>-32.8</td><td></td></tr> <tr><td>5160.00</td><td>-14.0</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-53.1</td><td>-13.0</td><td>-40.1</td><td></td></tr> <tr><td>6880.00</td><td>-9.0</td><td>H</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-48.0</td><td>-13.0</td><td>-35.0</td><td></td></tr> <tr><td colspan="10">Mid Ch, 1745MHz</td></tr> <tr><td>3490.00</td><td>-10.6</td><td>V</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-50.6</td><td>-13.0</td><td>-37.6</td><td></td></tr> <tr><td>5235.00</td><td>-12.7</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-51.8</td><td>-13.0</td><td>-38.8</td><td></td></tr> <tr><td>6980.00</td><td>-9.3</td><td>V</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-48.3</td><td>-13.0</td><td>-35.3</td><td></td></tr> <tr><td>3490.00</td><td>-4.4</td><td>H</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-44.4</td><td>-13.0</td><td>-31.4</td><td></td></tr> <tr><td>5235.00</td><td>-13.7</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-52.8</td><td>-13.0</td><td>-39.8</td><td></td></tr> <tr><td>6980.00</td><td>-10.2</td><td>H</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-49.3</td><td>-13.0</td><td>-36.3</td><td></td></tr> <tr><td colspan="10">High Ch, 1770MHz</td></tr> <tr><td>3540.00</td><td>-12.6</td><td>V</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-52.6</td><td>-13.0</td><td>-39.6</td><td></td></tr> <tr><td>5310.00</td><td>-11.6</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-50.7</td><td>-13.0</td><td>-37.7</td><td></td></tr> <tr><td>7080.00</td><td>-8.8</td><td>V</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-47.9</td><td>-13.0</td><td>-34.9</td><td></td></tr> <tr><td>3540.00</td><td>-6.6</td><td>H</td><td>3.0</td><td>41.0</td><td>1.0</td><td>-46.5</td><td>-13.0</td><td>-33.5</td><td></td></tr> <tr><td>5310.00</td><td>-13.7</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-52.8</td><td>-13.0</td><td>-39.8</td><td></td></tr> <tr><td>7080.00</td><td>-10.9</td><td>H</td><td>3.0</td><td>40.0</td><td>1.0</td><td>-49.9</td><td>-13.0</td><td>-36.9</td><td></td></tr> </table> |                 |                |                |               |                |               |       |  |  | f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes | Low Ch, 1720MHz |  |  |  |  |  |  |  |  |  | 3440.00 | -9.0 | V | 3.0 | 41.0 | 1.0 | -49.0 | -13.0 | -36.0 |  | 5160.00 | -13.0 | V | 3.0 | 40.1 | 1.0 | -52.2 | -13.0 | -39.2 |  | 6880.00 | -8.9 | V | 3.0 | 40.0 | 1.0 | -48.0 | -13.0 | -35.0 |  | 3440.00 | -5.8 | H | 3.0 | 41.0 | 1.0 | -45.8 | -13.0 | -32.8 |  | 5160.00 | -14.0 | H | 3.0 | 40.1 | 1.0 | -53.1 | -13.0 | -40.1 |  | 6880.00 | -9.0 | H | 3.0 | 40.0 | 1.0 | -48.0 | -13.0 | -35.0 |  | Mid Ch, 1745MHz |  |  |  |  |  |  |  |  |  | 3490.00 | -10.6 | V | 3.0 | 41.0 | 1.0 | -50.6 | -13.0 | -37.6 |  | 5235.00 | -12.7 | V | 3.0 | 40.1 | 1.0 | -51.8 | -13.0 | -38.8 |  | 6980.00 | -9.3 | V | 3.0 | 40.0 | 1.0 | -48.3 | -13.0 | -35.3 |  | 3490.00 | -4.4 | H | 3.0 | 41.0 | 1.0 | -44.4 | -13.0 | -31.4 |  | 5235.00 | -13.7 | H | 3.0 | 40.1 | 1.0 | -52.8 | -13.0 | -39.8 |  | 6980.00 | -10.2 | H | 3.0 | 40.0 | 1.0 | -49.3 | -13.0 | -36.3 |  | High Ch, 1770MHz |  |  |  |  |  |  |  |  |  | 3540.00 | -12.6 | V | 3.0 | 41.0 | 1.0 | -52.6 | -13.0 | -39.6 |  | 5310.00 | -11.6 | V | 3.0 | 40.1 | 1.0 | -50.7 | -13.0 | -37.7 |  | 7080.00 | -8.8 | V | 3.0 | 40.0 | 1.0 | -47.9 | -13.0 | -34.9 |  | 3540.00 | -6.6 | H | 3.0 | 41.0 | 1.0 | -46.5 | -13.0 | -33.5 |  | 5310.00 | -13.7 | H | 3.0 | 40.1 | 1.0 | -52.8 | -13.0 | -39.8 |  | 7080.00 | -10.9 | H | 3.0 | 40.0 | 1.0 | -49.9 | -13.0 |
| f<br>MHz                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| Low Ch, 1720MHz                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3440.00                                                            | -9.0                | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -49.0         | -13.0          | -36.0         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5160.00                                                            | -13.0               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -52.2         | -13.0          | -39.2         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 6880.00                                                            | -8.9                | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -48.0         | -13.0          | -35.0         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3440.00                                                            | -5.8                | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -45.8         | -13.0          | -32.8         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5160.00                                                            | -14.0               | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -53.1         | -13.0          | -40.1         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 6880.00                                                            | -9.0                | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -48.0         | -13.0          | -35.0         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| Mid Ch, 1745MHz                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3490.00                                                            | -10.6               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -50.6         | -13.0          | -37.6         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5235.00                                                            | -12.7               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -51.8         | -13.0          | -38.8         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 6980.00                                                            | -9.3                | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -48.3         | -13.0          | -35.3         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3490.00                                                            | -4.4                | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -44.4         | -13.0          | -31.4         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5235.00                                                            | -13.7               | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -52.8         | -13.0          | -39.8         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 6980.00                                                            | -10.2               | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -49.3         | -13.0          | -36.3         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| High Ch, 1770MHz                                                   |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3540.00                                                            | -12.6               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -52.6         | -13.0          | -39.6         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5310.00                                                            | -11.6               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -50.7         | -13.0          | -37.7         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 7080.00                                                            | -8.8                | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -47.9         | -13.0          | -34.9         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 3540.00                                                            | -6.6                | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 41.0           | 1.0            | -46.5         | -13.0          | -33.5         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 5310.00                                                            | -13.7               | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.1           | 1.0            | -52.8         | -13.0          | -39.8         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
| 7080.00                                                            | -10.9               | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.0             | 40.0           | 1.0            | -49.9         | -13.0          | -36.9         |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
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|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |
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|                                                                    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |                |               |                |               |       |  |  |          |                     |                    |                 |                |                |               |                |               |       |                 |  |  |  |  |  |  |  |  |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |                 |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |                  |  |  |  |  |  |  |  |  |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |      |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |       |  |         |       |   |     |      |     |       |       |

|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|----------------------------------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 66<br><br>15MHz<br><br>QPSK  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Project #: 4788371689                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                              | Date: 2018-03-25                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Test Engineer: 45574                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                              | Configuration: EUT / AC Adapter / Earphone, X-Position                               |                     |                    |                 |                |                |               |                |               |       |
|                                              | Location: Chamber 3                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                              | Mode: LTE_QPSK Band 66 Harmonics, 15MHz Bandwidth                                    |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 1717.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3435.00                                                                              | -8.8                | V                  | 3.0             | 41.0           | 1.0            | -48.8         | -13.0          | -35.8         |       |
|                                              | 5152.50                                                                              | -11.8               | V                  | 3.0             | 40.1           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                              | 6870.00                                                                              | -7.0                | V                  | 3.0             | 40.0           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                                              | 3435.00                                                                              | -6.0                | H                  | 3.0             | 41.0           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                                              | 5152.50                                                                              | -14.4               | H                  | 3.0             | 40.1           | 1.0            | -53.5         | -13.0          | -40.5         |       |
|                                              | 6870.00                                                                              | -10.9               | H                  | 3.0             | 40.0           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                              | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3490.00                                                                              | -9.8                | V                  | 3.0             | 41.0           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                              | 5235.00                                                                              | -12.0               | V                  | 3.0             | 40.1           | 1.0            | -51.1         | -13.0          | -38.1         |       |
| 6980.00                                      | -9.1                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -48.2          | -13.0         | -35.2          |               |       |
| 3490.00                                      | -4.7                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -44.7          | -13.0         | -31.7          |               |       |
| 5235.00                                      | -13.8                                                                                | H                   | 3.0                | 40.1            | 1.0            | -52.9          | -13.0         | -39.9          |               |       |
| 6980.00                                      | -10.2                                                                                | H                   | 3.0                | 40.0            | 1.0            | -49.2          | -13.0         | -36.2          |               |       |
| High Ch, 1772.5MHz                           |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| 3545.00                                      | -11.3                                                                                | V                   | 3.0                | 41.0            | 1.0            | -51.3          | -13.0         | -38.3          |               |       |
| 5317.50                                      | -12.0                                                                                | V                   | 3.0                | 40.1            | 1.0            | -51.1          | -13.0         | -38.1          |               |       |
| 7090.00                                      | -10.0                                                                                | V                   | 3.0                | 40.0            | 1.0            | -49.0          | -13.0         | -36.0          |               |       |
| 3545.00                                      | -6.4                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -46.4          | -13.0         | -33.4          |               |       |
| 5317.50                                      | -13.8                                                                                | H                   | 3.0                | 40.1            | 1.0            | -52.9          | -13.0         | -39.9          |               |       |
| 7090.00                                      | -11.1                                                                                | H                   | 3.0                | 40.0            | 1.0            | -50.2          | -13.0         | -37.2          |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| LTE<br><br>Band 66<br><br>15MHz<br><br>16QAM | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Project #: 4788371689                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                              | Date: 2018-03-25                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Test Engineer: 45574                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                              | Configuration: EUT / AC Adapter / Earphone, X-Position                               |                     |                    |                 |                |                |               |                |               |       |
|                                              | Location: Chamber 3                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                              | Mode: LTE_16QAM Band 66 Hamonics, 15MHz Bandwidth                                    |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 1717.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3435.00                                                                              | -8.6                | V                  | 3.0             | 41.0           | 1.0            | -48.7         | -13.0          | -35.7         |       |
|                                              | 5152.50                                                                              | -11.9               | V                  | 3.0             | 40.1           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                                              | 6870.00                                                                              | -6.9                | V                  | 3.0             | 40.0           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                                              | 3435.00                                                                              | -5.7                | H                  | 3.0             | 41.0           | 1.0            | -45.8         | -13.0          | -32.8         |       |
|                                              | 5152.50                                                                              | -14.6               | H                  | 3.0             | 40.1           | 1.0            | -53.7         | -13.0          | -40.7         |       |
|                                              | 6870.00                                                                              | -10.7               | H                  | 3.0             | 40.0           | 1.0            | -49.7         | -13.0          | -36.7         |       |
|                                              | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3490.00                                                                              | -10.1               | V                  | 3.0             | 41.0           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                              | 5235.00                                                                              | -11.2               | V                  | 3.0             | 40.1           | 1.0            | -50.3         | -13.0          | -37.3         |       |
| 6980.00                                      | -8.7                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -47.7          | -13.0         | -34.7          |               |       |
| 3490.00                                      | -5.3                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -45.3          | -13.0         | -32.3          |               |       |
| 5235.00                                      | -14.1                                                                                | H                   | 3.0                | 40.1            | 1.0            | -53.2          | -13.0         | -40.2          |               |       |
| 6980.00                                      | -10.2                                                                                | H                   | 3.0                | 40.0            | 1.0            | -49.2          | -13.0         | -36.2          |               |       |
| High Ch, 1772.5MHz                           |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| 3545.00                                      | -10.7                                                                                | V                   | 3.0                | 41.0            | 1.0            | -50.6          | -13.0         | -37.6          |               |       |
| 5317.50                                      | -11.8                                                                                | V                   | 3.0                | 40.1            | 1.0            | -50.9          | -13.0         | -37.9          |               |       |
| 7090.00                                      | -8.9                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -47.9          | -13.0         | -34.9          |               |       |
| 3545.00                                      | -6.6                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -46.6          | -13.0         | -33.6          |               |       |
| 5317.50                                      | -13.3                                                                                | H                   | 3.0                | 40.1            | 1.0            | -52.4          | -13.0         | -39.4          |               |       |
| 7090.00                                      | -10.8                                                                                | H                   | 3.0                | 40.0            | 1.0            | -49.8          | -13.0         | -36.8          |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |

|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|----------------------------------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 66<br><br>10MHz<br><br>QPSK  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Project #: 4788371689                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                              | Date: 2018-03-25                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Test Engineer: 45574                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                              | Configuration: EUT / AC Adapter / Earphone, X-Position                               |                     |                    |                 |                |                |               |                |               |       |
|                                              | Location: Chamber 3                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                              | Mode: LTE_QPSK Band 66 Harmonics, 10MHz Bandwidth                                    |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 1715MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3430.00                                                                              | -8.7                | V                  | 3.0             | 41.0           | 1.0            | -48.8         | -13.0          | -35.8         |       |
|                                              | 5145.00                                                                              | -11.6               | V                  | 3.0             | 40.1           | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                              | 6860.00                                                                              | -7.2                | V                  | 3.0             | 40.0           | 1.0            | -46.2         | -13.0          | -33.2         |       |
|                                              | 3430.00                                                                              | -6.9                | H                  | 3.0             | 41.0           | 1.0            | -47.0         | -13.0          | -34.0         |       |
|                                              | 5145.00                                                                              | -14.2               | H                  | 3.0             | 40.1           | 1.0            | -53.3         | -13.0          | -40.3         |       |
|                                              | 6860.00                                                                              | -11.0               | H                  | 3.0             | 40.0           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                              | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3490.00                                                                              | -10.3               | V                  | 3.0             | 41.0           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                              | 5235.00                                                                              | -10.8               | V                  | 3.0             | 40.1           | 1.0            | -49.9         | -13.0          | -36.9         |       |
| 6980.00                                      | -9.0                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -48.0          | -13.0         | -35.0          |               |       |
| 3490.00                                      | -5.0                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -45.0          | -13.0         | -32.0          |               |       |
| 5235.00                                      | -13.8                                                                                | H                   | 3.0                | 40.1            | 1.0            | -52.9          | -13.0         | -39.9          |               |       |
| 6980.00                                      | -10.0                                                                                | H                   | 3.0                | 40.0            | 1.0            | -49.0          | -13.0         | -36.0          |               |       |
| High Ch, 1775MHz                             |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| 3550.00                                      | -11.3                                                                                | V                   | 3.0                | 41.0            | 1.0            | -51.2          | -13.0         | -38.2          |               |       |
| 5325.00                                      | -11.2                                                                                | V                   | 3.0                | 40.1            | 1.0            | -50.3          | -13.0         | -37.3          |               |       |
| 7100.00                                      | -9.2                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -48.2          | -13.0         | -35.2          |               |       |
| 3550.00                                      | -5.5                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -45.5          | -13.0         | -32.5          |               |       |
| 5325.00                                      | -13.6                                                                                | H                   | 3.0                | 40.1            | 1.0            | -52.7          | -13.0         | -39.7          |               |       |
| 7100.00                                      | -11.3                                                                                | H                   | 3.0                | 40.0            | 1.0            | -50.4          | -13.0         | -37.4          |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| LTE<br><br>Band 66<br><br>10MHz<br><br>16QAM | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                                              | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Project #: 4788371689                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                              | Date: 2018-03-25                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                              | Test Engineer: 45574                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                              | Configuration: EUT / AC Adapter / Earphone, X-Position                               |                     |                    |                 |                |                |               |                |               |       |
|                                              | Location: Chamber 3                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                              | Mode: LTE_16QAM Band 66 Harmonics, 10MHz Bandwidth                                   |                     |                    |                 |                |                |               |                |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 1715MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3430.00                                                                              | -8.5                | V                  | 3.0             | 41.0           | 1.0            | -48.6         | -13.0          | -35.6         |       |
|                                              | 5145.00                                                                              | -12.4               | V                  | 3.0             | 40.1           | 1.0            | -51.5         | -13.0          | -38.5         |       |
|                                              | 6860.00                                                                              | -7.0                | V                  | 3.0             | 40.0           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                                              | 3430.00                                                                              | -7.1                | H                  | 3.0             | 41.0           | 1.0            | -47.2         | -13.0          | -34.2         |       |
|                                              | 5145.00                                                                              | -13.2               | H                  | 3.0             | 40.1           | 1.0            | -52.3         | -13.0          | -39.3         |       |
|                                              | 6860.00                                                                              | -10.6               | H                  | 3.0             | 40.0           | 1.0            | -49.6         | -13.0          | -36.6         |       |
|                                              | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                              | 3490.00                                                                              | -10.4               | V                  | 3.0             | 41.0           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                                              | 5235.00                                                                              | -11.9               | V                  | 3.0             | 40.1           | 1.0            | -51.0         | -13.0          | -38.0         |       |
| 6980.00                                      | -8.5                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -47.5          | -13.0         | -34.5          |               |       |
| 3490.00                                      | -5.1                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -45.1          | -13.0         | -32.1          |               |       |
| 5235.00                                      | -14.1                                                                                | H                   | 3.0                | 40.1            | 1.0            | -53.2          | -13.0         | -40.2          |               |       |
| 6980.00                                      | -9.8                                                                                 | H                   | 3.0                | 40.0            | 1.0            | -48.8          | -13.0         | -35.8          |               |       |
| High Ch, 1775MHz                             |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| 3550.00                                      | -11.3                                                                                | V                   | 3.0                | 41.0            | 1.0            | -51.3          | -13.0         | -38.3          |               |       |
| 5325.00                                      | -11.7                                                                                | V                   | 3.0                | 40.1            | 1.0            | -50.8          | -13.0         | -37.8          |               |       |
| 7100.00                                      | -8.8                                                                                 | V                   | 3.0                | 40.0            | 1.0            | -47.8          | -13.0         | -34.8          |               |       |
| 3550.00                                      | -5.4                                                                                 | H                   | 3.0                | 41.0            | 1.0            | -45.4          | -13.0         | -32.4          |               |       |
| 5325.00                                      | -14.3                                                                                | H                   | 3.0                | 40.1            | 1.0            | -53.4          | -13.0         | -40.4          |               |       |
| 7100.00                                      | -10.9                                                                                | H                   | 3.0                | 40.0            | 1.0            | -50.0          | -13.0         | -37.0          |               |       |
|                                              |                                                                                      |                     |                    |                 |                |                |               |                |               |       |

|                                 |                                                                                                                                                                                                                                                                                                                                                                    |                     |                    |                 |                |                |               |                |               |       |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br>Band 66<br>5MHz<br>QPSK  | <p align="center"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth</p>  |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| LTE<br>Band 66<br>5MHz<br>16QAM | <p align="center"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_16QAM Band 66 Harmonics, 5MHz Bandwidth</p> |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |

|                                 |                                                                                                                                                                                                                                                                                                                                                                    |                     |                    |                 |                |                |               |                |               |       |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br>Band 66<br>3MHz<br>QPSK  | <p align="center"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_QPSK Band 66 Harmonics, 3MHz Bandwidth</p>  |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| LTE<br>Band 66<br>3MHz<br>16QAM | <p align="center"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_16QAM Band 66 Harmonics, 3MHz Bandwidth</p> |                     |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |

|                                              |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 66<br><br>1.4MHz<br><br>QPSK | <div>UL Verification Services, Inc.<br/>Above 1GHz High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_QPSK Band 66 Harmonics, 1.4MHz Bandwidth</div> |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|                                              | f<br>MHz                                                                                                                                                                                                                                                                                                                                       | SG reading<br>(dBm)                                                                                                                                                                                                                                                                                                                             | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                              | Low Ch, 1710.7MHz                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|                                              | 3421.40                                                                                                                                                                                                                                                                                                                                        | -9.4                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 41.0           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                              | 5132.10                                                                                                                                                                                                                                                                                                                                        | -11.6                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                              | 6842.80                                                                                                                                                                                                                                                                                                                                        | -7.9                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -47.0         | -13.0          | -34.0         |       |
|                                              | 3421.40                                                                                                                                                                                                                                                                                                                                        | -5.1                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -45.2         | -13.0          | -32.2         |       |
|                                              | 5132.10                                                                                                                                                                                                                                                                                                                                        | -12.9                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -52.0         | -13.0          | -39.0         |       |
|                                              | 6842.80                                                                                                                                                                                                                                                                                                                                        | -10.2                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.0           | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                                              | Mid Ch, 1745MHz                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|                                              | 3490.00                                                                                                                                                                                                                                                                                                                                        | -10.6                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 41.0           | 1.0            | -50.6         | -13.0          | -37.6         |       |
|                                              | 5235.00                                                                                                                                                                                                                                                                                                                                        | -11.7                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -50.8         | -13.0          | -37.8         |       |
|                                              | 6980.00                                                                                                                                                                                                                                                                                                                                        | -8.3                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -47.3         | -13.0          | -34.3         |       |
|                                              | 3490.00                                                                                                                                                                                                                                                                                                                                        | -4.9                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -44.9         | -13.0          | -31.9         |       |
|                                              | 5235.00                                                                                                                                                                                                                                                                                                                                        | -13.4                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -52.5         | -13.0          | -39.5         |       |
|                                              | 6980.00                                                                                                                                                                                                                                                                                                                                        | -8.6                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 40.0           | 1.0            | -47.6         | -13.0          | -34.6         |       |
|                                              | High Ch, 1779.3MHz                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|                                              | 3558.60                                                                                                                                                                                                                                                                                                                                        | -11.8                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 41.0           | 1.0            | -51.8         | -13.0          | -38.8         |       |
|                                              | 5337.90                                                                                                                                                                                                                                                                                                                                        | -10.8                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                              | 7117.20                                                                                                                                                                                                                                                                                                                                        | -7.8                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -46.9         | -13.0          | -33.9         |       |
|                                              | 3558.60                                                                                                                                                                                                                                                                                                                                        | -5.5                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -45.5         | -13.0          | -32.5         |       |
|                                              | 5337.90                                                                                                                                                                                                                                                                                                                                        | -14.0                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                                              | 7117.20                                                                                                                                                                                                                                                                                                                                        | -11.8                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.0           | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                                              |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
|                                              | LTE<br><br>Band 66<br><br>1.4MHz<br><br>16QAM                                                                                                                                                                                                                                                                                                  | <div>UL Verification Services, Inc.<br/>Above 1GHz High Frequency Substitution Measurement</div> <div>Company: Samsung<br/>Project #: 4788371689<br/>Date: 2018-03-25<br/>Test Engineer: 45574<br/>Configuration: EUT / AC Adapter / Earphone, X-Position<br/>Location: Chamber 3<br/>Mode: LTE_16QAM Band 66 Harmonics, 1.4MHz Bandwidth</div> |                    |                 |                |                |               |                |               |       |
| f<br>MHz                                     |                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm)                                                                                                                                                                                                                                                                                                                             | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| Low Ch, 1710.7MHz                            |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
| 3421.40                                      |                                                                                                                                                                                                                                                                                                                                                | -9.3                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 41.0           | 1.0            | -49.4         | -13.0          | -36.4         |       |
| 5132.10                                      |                                                                                                                                                                                                                                                                                                                                                | -11.6                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -50.7         | -13.0          | -37.7         |       |
| 6842.80                                      |                                                                                                                                                                                                                                                                                                                                                | -7.1                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -46.1         | -13.0          | -33.1         |       |
| 3421.40                                      |                                                                                                                                                                                                                                                                                                                                                | -6.0                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -46.1         | -13.0          | -33.1         |       |
| 5132.10                                      |                                                                                                                                                                                                                                                                                                                                                | -13.9                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -53.0         | -13.0          | -40.0         |       |
| 6842.80                                      |                                                                                                                                                                                                                                                                                                                                                | -10.8                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.0           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| Mid Ch, 1745MHz                              |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
| 3490.00                                      |                                                                                                                                                                                                                                                                                                                                                | -10.4                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 41.0           | 1.0            | -50.4         | -13.0          | -37.4         |       |
| 5235.00                                      |                                                                                                                                                                                                                                                                                                                                                | -11.7                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -50.8         | -13.0          | -37.8         |       |
| 6980.00                                      |                                                                                                                                                                                                                                                                                                                                                | -8.7                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -47.7         | -13.0          | -34.7         |       |
| 3490.00                                      |                                                                                                                                                                                                                                                                                                                                                | -5.3                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -45.3         | -13.0          | -32.3         |       |
| 5235.00                                      |                                                                                                                                                                                                                                                                                                                                                | -13.2                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -52.3         | -13.0          | -39.3         |       |
| 6980.00                                      |                                                                                                                                                                                                                                                                                                                                                | -9.3                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 40.0           | 1.0            | -48.4         | -13.0          | -35.4         |       |
| High Ch, 1779.3MHz                           |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |
| 3558.60                                      |                                                                                                                                                                                                                                                                                                                                                | -11.6                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 41.0           | 1.0            | -51.5         | -13.0          | -38.5         |       |
| 5337.90                                      |                                                                                                                                                                                                                                                                                                                                                | -11.3                                                                                                                                                                                                                                                                                                                                           | V                  | 3.0             | 40.1           | 1.0            | -50.4         | -13.0          | -37.4         |       |
| 7117.20                                      |                                                                                                                                                                                                                                                                                                                                                | -8.6                                                                                                                                                                                                                                                                                                                                            | V                  | 3.0             | 40.0           | 1.0            | -47.6         | -13.0          | -34.6         |       |
| 3558.60                                      |                                                                                                                                                                                                                                                                                                                                                | -5.3                                                                                                                                                                                                                                                                                                                                            | H                  | 3.0             | 41.0           | 1.0            | -45.3         | -13.0          | -32.3         |       |
| 5337.90                                      |                                                                                                                                                                                                                                                                                                                                                | -13.6                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.1           | 1.0            | -52.7         | -13.0          | -39.7         |       |
| 7117.20                                      |                                                                                                                                                                                                                                                                                                                                                | -11.4                                                                                                                                                                                                                                                                                                                                           | H                  | 3.0             | 40.0           | 1.0            | -50.4         | -13.0          | -37.4         |       |
|                                              |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                |                |               |                |               |       |

|                                             |  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                        |                     |                    |                 |                |                |               |                |               |       |
|---------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br><br>Band 2<br><br>20MHz<br><br>QPSK  |  | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-25<br>Test Engineer: 45574<br>Configuration: EUT / AC Adapter / Earphone, Z-Position<br>Location: Chamber 3<br>Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth  |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | f<br>MHz                                                                                                                                                                                                                    | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                             |  | Low Ch, 1860MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | 3720.00                                                                                                                                                                                                                     | -5.0                | V                  | 3.0             | 40.9           | 1.0            | -44.9         | -13.0          | -31.9         |       |
|                                             |  | 5580.00                                                                                                                                                                                                                     | -13.9               | V                  | 3.0             | 40.0           | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                                             |  | 7440.00                                                                                                                                                                                                                     | -7.4                | V                  | 3.0             | 40.0           | 1.0            | -46.4         | -13.0          | -33.4         |       |
|                                             |  | 3720.00                                                                                                                                                                                                                     | -9.1                | H                  | 3.0             | 40.9           | 1.0            | -49.0         | -13.0          | -36.0         |       |
|                                             |  | 5580.00                                                                                                                                                                                                                     | -14.6               | H                  | 3.0             | 40.0           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                             |  | 7440.00                                                                                                                                                                                                                     | -8.3                | H                  | 3.0             | 40.0           | 1.0            | -47.3         | -13.0          | -34.3         |       |
|                                             |  | Mid Ch, 1880MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | 3760.00                                                                                                                                                                                                                     | -6.2                | V                  | 3.0             | 40.8           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                                             |  | 5640.00                                                                                                                                                                                                                     | -13.6               | V                  | 3.0             | 40.0           | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                                             |  | 7520.00                                                                                                                                                                                                                     | -5.4                | V                  | 3.0             | 40.0           | 1.0            | -44.4         | -13.0          | -31.4         |       |
|                                             |  | 3760.00                                                                                                                                                                                                                     | -8.3                | H                  | 3.0             | 40.8           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                                             |  | 5640.00                                                                                                                                                                                                                     | -13.7               | H                  | 3.0             | 40.0           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                                             |  | 7520.00                                                                                                                                                                                                                     | -5.9                | H                  | 3.0             | 40.0           | 1.0            | -45.0         | -13.0          | -32.0         |       |
|                                             |  | High Ch, 1900MHz                                                                                                                                                                                                            |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | 3800.00                                                                                                                                                                                                                     | -7.7                | V                  | 3.0             | 40.8           | 1.0            | -47.5         | -13.0          | -34.5         |       |
|                                             |  | 5700.00                                                                                                                                                                                                                     | -13.3               | V                  | 3.0             | 40.0           | 1.0            | -52.3         | -13.0          | -39.3         |       |
|                                             |  | 7600.00                                                                                                                                                                                                                     | -6.3                | V                  | 3.0             | 40.0           | 1.0            | -45.3         | -13.0          | -32.3         |       |
|                                             |  | 3800.00                                                                                                                                                                                                                     | -9.8                | H                  | 3.0             | 40.8           | 1.0            | -49.6         | -13.0          | -36.6         |       |
|                                             |  | 5700.00                                                                                                                                                                                                                     | -13.0               | H                  | 3.0             | 40.0           | 1.0            | -52.0         | -13.0          | -39.0         |       |
|                                             |  | 7600.00                                                                                                                                                                                                                     | -6.1                | H                  | 3.0             | 40.0           | 1.0            | -45.1         | -13.0          | -32.1         |       |
|                                             |  |                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                             |  |                                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                        |                     |                    |                 |                |                |               |                |               |       |
| LTE<br><br>Band 2<br><br>20MHz<br><br>16QAM |  | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-25<br>Test Engineer: 45574<br>Configuration: EUT / AC Adapter / Earphone, Z-Position<br>Location: Chamber 3<br>Mode: LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | f<br>MHz                                                                                                                                                                                                                    | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                             |  | Low Ch, 1860MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                                             |  | 3720.00                                                                                                                                                                                                                     | -5.1                | V                  | 3.0             | 40.9           | 1.0            | -44.9         | -13.0          | -31.9         |       |
|                                             |  | 5580.00                                                                                                                                                                                                                     | -14.0               | V                  | 3.0             | 40.0           | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                                             |  | 7440.00                                                                                                                                                                                                                     | -7.5                | V                  | 3.0             | 40.0           | 1.0            | -46.5         | -13.0          | -33.5         |       |
|                                             |  | 3720.00                                                                                                                                                                                                                     | -8.7                | H                  | 3.0             | 40.9           | 1.0            | -48.6         | -13.0          | -35.6         |       |
|                                             |  | 5580.00                                                                                                                                                                                                                     | -14.5               | H                  | 3.0             | 40.0           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                             |  | 7440.00                                                                                                                                                                                                                     | -8.3                | H                  |                 |                |                |               |                |               |       |

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| LTE<br><br>Band 2<br><br>15MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |  |  |  |  |  |  |  |  |  |
|                                            | Company: Samsung                                                                     |  |  |  |  |  |  |  |  |  |
|                                            | Project #: 4788371689                                                                |  |  |  |  |  |  |  |  |  |
|                                            | Date: 2018-03-25                                                                     |  |  |  |  |  |  |  |  |  |
|                                            | Test Engineer: 45574                                                                 |  |  |  |  |  |  |  |  |  |
|                                            | Configuration: EUT / AC Adapter / Earphone, Z-Position                               |  |  |  |  |  |  |  |  |  |
|                                            | Location: Chamber 3                                                                  |  |  |  |  |  |  |  |  |  |
|                                            | Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth                                     |  |  |  |  |  |  |  |  |  |
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**LTE Band 13**

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                  |                 |               |               |             |              |              |              |
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| <p>LTE<br/>Band 13<br/>10MHz<br/>QPSK</p>  | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4788371689<br/> <b>Date:</b> 2018-03-26<br/> <b>Test Engineer:</b> 45585<br/> <b>Configuration:</b> EUT / Adapter / Earphone, Z-Position<br/> <b>Location:</b> Chamber 3<br/> <b>Mode:</b> LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth </p>  |                   |                  |                 |               |               |             |              |              |              |
|                                            | <b>f</b>                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>SG reading</b> | <b>Ant. Pol.</b> | <b>Distance</b> | <b>Preamp</b> | <b>Filter</b> | <b>EIRP</b> | <b>Limit</b> | <b>Delta</b> | <b>Notes</b> |
|                                            | MHz                                                                                                                                                                                                                                                                                                                                                                                                                                    | (dBm)             | (H/V)            | (m)             | (dB)          | (dB)          | (dBm)       | (dBm)        | (dB)         |              |
|                                            | Mid Ch, 782MHz                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                  |                 |               |               |             |              |              |              |
|                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -19.3             | V                | 3.0             | 41.8          | 1.0           | -60.1       | -40.0        | -20.1        |              |
|                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.2             | V                | 3.0             | 41.8          | 1.0           | -57.0       | -13.0        | -44.0        |              |
|                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.1             | V                | 3.0             | 41.2          | 1.0           | -56.3       | -13.0        | -43.3        |              |
|                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -18.8             | H                | 3.0             | 41.8          | 1.0           | -59.6       | -40.0        | -19.6        |              |
|                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.3             | H                | 3.0             | 41.8          | 1.0           | -57.1       | -13.0        | -44.1        |              |
|                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.9             | H                | 3.0             | 41.2          | 1.0           | -57.1       | -13.0        | -44.1        |              |
| <p>LTE<br/>Band 13<br/>10MHz<br/>16QAM</p> | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4788371689<br/> <b>Date:</b> 2018-03-26<br/> <b>Test Engineer:</b> 45585<br/> <b>Configuration:</b> EUT / Adapter / Earphone, Z-Position<br/> <b>Location:</b> Chamber 3<br/> <b>Mode:</b> LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth </p> |                   |                  |                 |               |               |             |              |              |              |
|                                            | <b>f</b>                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>SG reading</b> | <b>Ant. Pol.</b> | <b>Distance</b> | <b>Preamp</b> | <b>Filter</b> | <b>EIRP</b> | <b>Limit</b> | <b>Delta</b> | <b>Notes</b> |
|                                            | MHz                                                                                                                                                                                                                                                                                                                                                                                                                                    | (dBm)             | (H/V)            | (m)             | (dB)          | (dB)          | (dBm)       | (dBm)        | (dB)         |              |
|                                            | Mid Ch, 782MHz                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                  |                 |               |               |             |              |              |              |
|                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -19.4             | V                | 3.0             | 41.8          | 1.0           | -60.2       | -40.0        | -20.2        |              |
|                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.3             | V                | 3.0             | 41.8          | 1.0           | -57.1       | -13.0        | -44.1        |              |
|                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.5             | V                | 3.0             | 41.2          | 1.0           | -56.7       | -13.0        | -43.7        |              |
|                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -19.0             | H                | 3.0             | 41.8          | 1.0           | -59.8       | -40.0        | -19.8        |              |
|                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.9             | H                | 3.0             | 41.8          | 1.0           | -57.7       | -13.0        | -44.7        |              |
|                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                | -16.2             | H                | 3.0             | 41.2          | 1.0           | -56.4       | -13.0        | -43.4        |              |

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|                                  |  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                      |                     |                    |                 |                |                |              |                |                 |       |
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| LTE<br>Band 12<br>10MHz<br>QPSK  |  | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-26<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone, Z-Position<br>Location: Chamber 3<br>Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth  |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | f<br>MHz                                                                                                                                                                                                                  | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB)   | Notes |
|                                  |  | Low Ch, 704MHz                                                                                                                                                                                                            |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | 1408.00                                                                                                                                                                                                                   | -14.4               | V                  | 3.0             | 41.7           | 1.0            | -55.1        | -13.0          | -42.1           |       |
|                                  |  | 2112.00                                                                                                                                                                                                                   | -13.6               | V                  | 3.0             | 42.0           | 1.0            | -54.6        | -13.0          | -41.6           |       |
|                                  |  | 2816.00                                                                                                                                                                                                                   | -16.8               | V                  | 3.0             | 41.5           | 1.0            | -57.3        | -13.0          | -44.3           |       |
|                                  |  | 3520.00                                                                                                                                                                                                                   | -11.9               | V                  | 3.0             | 41.0           | 1.0            | -51.9        | -13.0          | -38.9           |       |
|                                  |  | 1408.00                                                                                                                                                                                                                   | -14.2               | H                  | 3.0             | 41.7           | 1.0            | -54.8        | -13.0          | -41.8           |       |
|                                  |  | 2112.00                                                                                                                                                                                                                   | -9.9                | H                  | 3.0             | 42.0           | 1.0            | -50.9        | -13.0          | -37.9           |       |
|                                  |  | 2816.00                                                                                                                                                                                                                   | -17.3               | H                  | 3.0             | 41.5           | 1.0            | -57.7        | -13.0          | -44.7           |       |
|                                  |  | 3520.00                                                                                                                                                                                                                   | -14.0               | H                  | 3.0             | 41.0           | 1.0            | -54.0        | -13.0          | -41.0           |       |
|                                  |  | Mid Ch, 707.5MHz                                                                                                                                                                                                          |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | 1415.00                                                                                                                                                                                                                   | -16.4               | V                  | 3.0             | 41.7           | 1.0            | -57.1        | -13.0          | -44.1           |       |
|                                  |  | 2122.50                                                                                                                                                                                                                   | -13.4               | V                  | 3.0             | 41.9           | 1.0            | -54.3        | -13.0          | -41.3           |       |
|                                  |  | 2830.00                                                                                                                                                                                                                   | -16.4               | V                  | 3.0             | 41.4           | 1.0            | -56.8        | -13.0          | -43.8           |       |
|                                  |  | 3537.50                                                                                                                                                                                                                   | -12.9               | V                  | 3.0             | 41.0           | 1.0            | -52.9        | -13.0          | -39.9           |       |
|                                  |  | 1415.00                                                                                                                                                                                                                   | -16.2               | H                  | 3.0             | 41.7           | 1.0            | -56.9        | -13.0          | -43.9           |       |
|                                  |  | 2122.50                                                                                                                                                                                                                   | -19.5               | H                  | 3.0             | 41.9           | 1.0            | -60.5        | -13.0          | -47.5           |       |
|                                  |  | 2830.00                                                                                                                                                                                                                   | -17.1               | H                  | 3.0             | 41.4           | 1.0            | -57.6        | -13.0          | -44.6           |       |
|                                  |  | 3537.50                                                                                                                                                                                                                   | -15.5               | H                  | 3.0             | 41.0           | 1.0            | -55.5        | -13.0          | -42.5           |       |
|                                  |  | High Ch, 711MHz                                                                                                                                                                                                           |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | 1422.00                                                                                                                                                                                                                   | -18.4               | V                  | 3.0             | 41.7           | 1.0            | -59.1        | -13.0          | -46.1           |       |
|                                  |  | 2133.00                                                                                                                                                                                                                   | -12.8               | V                  | 3.0             | 41.9           | 1.0            | -53.7        | -13.0          | -40.7           |       |
|                                  |  | 2844.00                                                                                                                                                                                                                   | -16.7               | V                  | 3.0             | 41.4           | 1.0            | -57.1        | -13.0          | -44.1           |       |
|                                  |  | 3555.00                                                                                                                                                                                                                   | -11.3               | V                  | 3.0             | 41.0           | 1.0            | -51.3        | -13.0          | -38.3           |       |
|                                  |  | 1422.00                                                                                                                                                                                                                   | -17.9               | H                  | 3.0             | 41.7           | 1.0            | -58.6        | -13.0          | -45.6           |       |
|                                  |  | 2133.00                                                                                                                                                                                                                   | -10.4               | H                  | 3.0             | 41.9           | 1.0            | -51.4        | -13.0          | -38.4           |       |
|                                  |  | 2844.00                                                                                                                                                                                                                   | -16.6               | H                  | 3.0             | 41.4           | 1.0            | -57.1        | -13.0          | -44.1           |       |
|                                  |  | 3555.00                                                                                                                                                                                                                   | -13.2               | H                  | 3.0             | 41.0           | 1.0            | -53.1        | -13.0          | -40.1           |       |
|                                  |  |                                                                                                                                                                                                                           |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  |                                                                                                                                                                                                                           |                     |                    |                 |                |                |              |                |                 |       |
| LTE<br>Band 12<br>10MHz<br>16QAM |  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                      |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | Company: Samsung<br>Project #: 4788371689<br>Date: 2018-03-26<br>Test Engineer: 45585<br>Configuration: EUT / Adapter / Earphone, Z-Position<br>Location: Chamber 3<br>Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth |                     |                    |                 |                |                |              |                |                 |       |
|                                  |  | f<br>MHz                                                                                                                                                                                                                  | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB)</ |       |