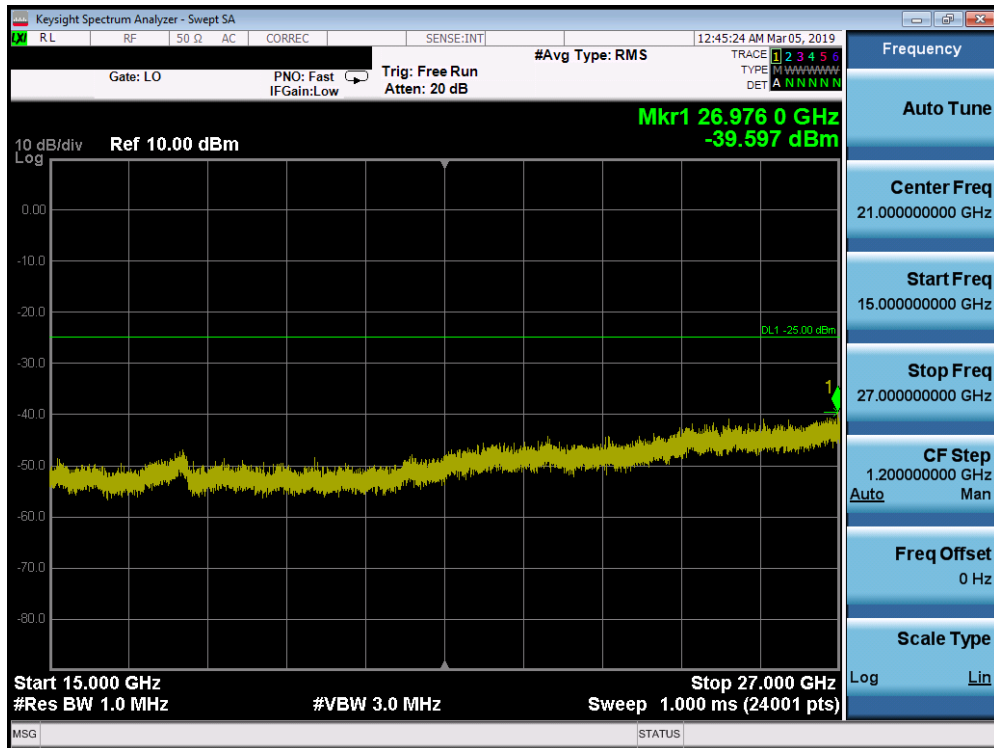
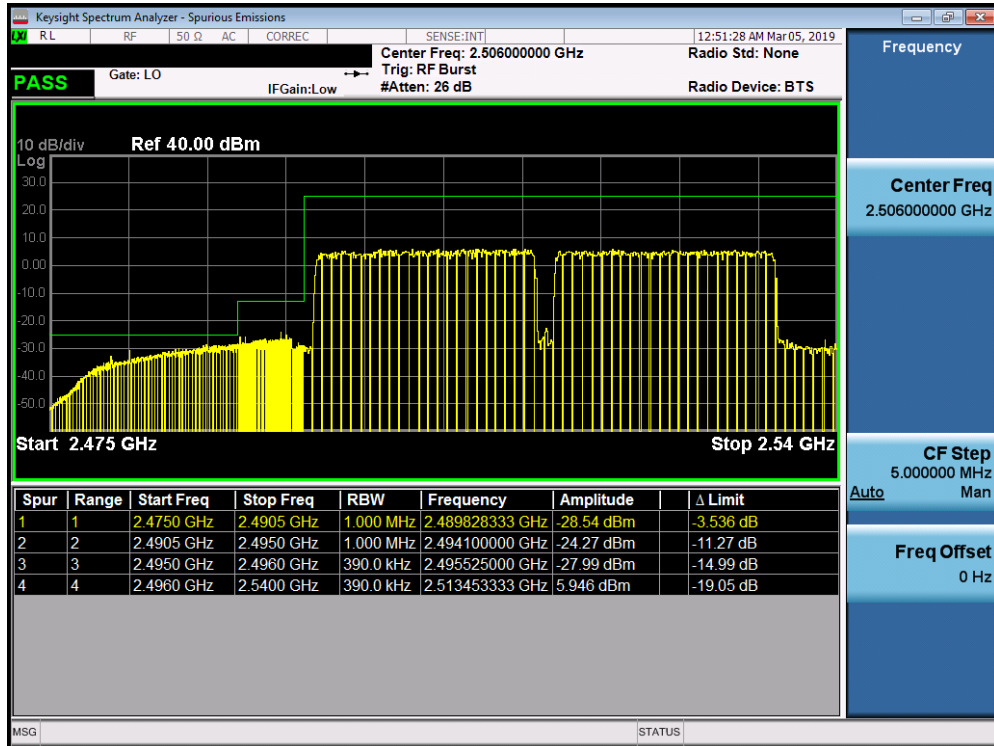


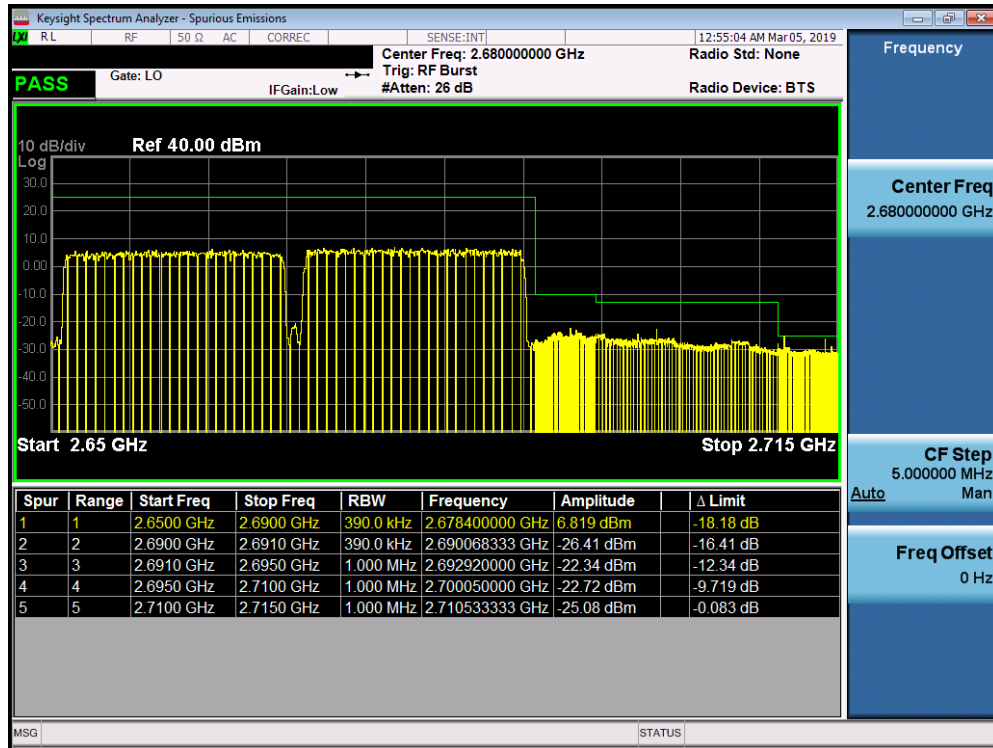


Plot 7-405. Conducted Spurious Plot (Band 41C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)



Plot 7-406. Lower ACP Plot (Band 41C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 237 of 340                 |



Plot 7-407. Upper ACP Plot (Band 41C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

|                                         |                                               |                               |                                 |
|-----------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset |                                 |
|                                         |                                               |                               | Page 238 of 340                 |

## Uplink CA Configuration 5B

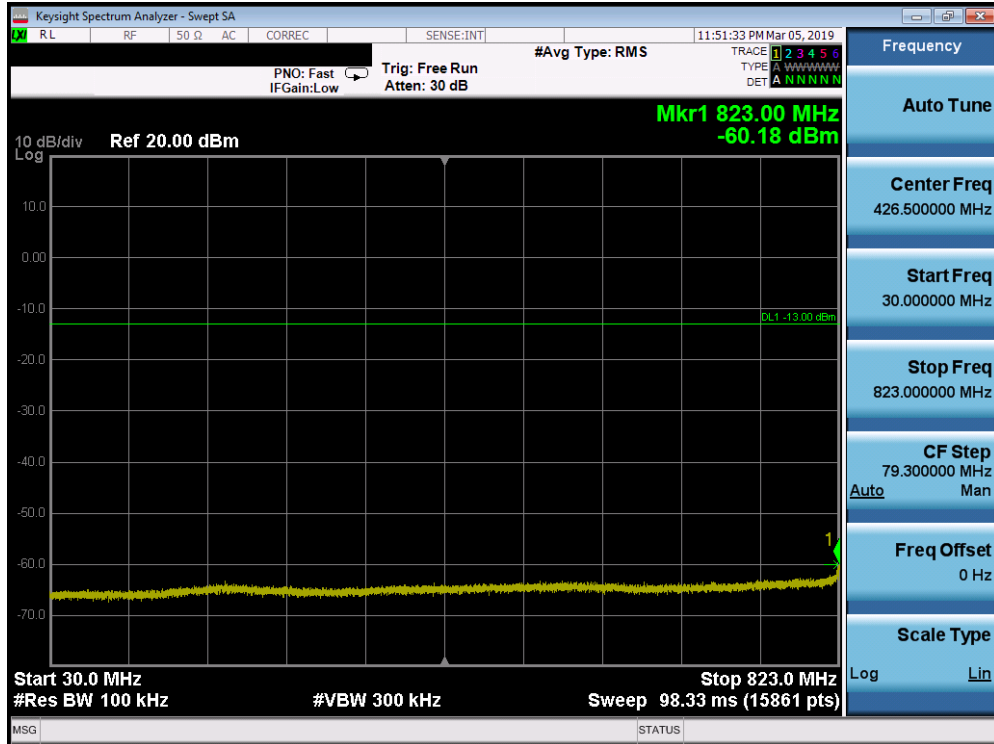
| Power State | PCC      |                     |                  |                          |            |            |                  | SCC      |                     |                  |                          |            |            |                  | Power<br>ULCA<br>Tx.Power<br>(dBm) |
|-------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|------------------------------------|
|             | PCC Band | PCC Bandwidth [MHz] | PCC (UL) Channel | PCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | SCC Band | SCC Bandwidth [MHz] | SCC (UL) Channel | SCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset |                                    |
| Max         | LTE B5   | 3                   | 20415            | 825.5                    | QPSK       | 1          | 14               | LTE B5   | 5                   | 20454            | 829.4                    | QPSK       | 1          | 0                | 23.00                              |
| Max         | LTE B5   | 5                   | 20425            | 826.5                    | QPSK       | 1          | 24               | LTE B5   | 3                   | 20464            | 830.4                    | QPSK       | 1          | 0                | 23.06                              |
| Max         | LTE B5   | 5                   | 20425            | 826.5                    | QPSK       | 1          | 24               | LTE B5   | 10                  | 20497            | 833.7                    | QPSK       | 1          | 0                | 25.01                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 49               | LTE B5   | 5                   | 20522            | 836.2                    | QPSK       | 1          | 0                | 24.80                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 49               | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 0                | 24.84                              |
| Max         | LTE B5   | 3                   | 20525            | 836.5                    | QPSK       | 1          | 14               | LTE B5   | 5                   | 20564            | 840.4                    | QPSK       | 1          | 0                | 22.82                              |
| Max         | LTE B5   | 5                   | 20525            | 836.5                    | QPSK       | 1          | 24               | LTE B5   | 3                   | 20564            | 840.4                    | QPSK       | 1          | 0                | 22.95                              |
| Max         | LTE B5   | 5                   | 20525            | 836.5                    | QPSK       | 1          | 24               | LTE B5   | 10                  | 20597            | 843.7                    | QPSK       | 1          | 0                | 23.64                              |
| Max         | LTE B5   | 10                  | 20525            | 836.5                    | QPSK       | 1          | 49               | LTE B5   | 5                   | 20597            | 843.7                    | QPSK       | 1          | 0                | 24.81                              |
| Max         | LTE B5   | 3                   | 20635            | 847.5                    | QPSK       | 1          | 0                | LTE B5   | 5                   | 20596            | 843.6                    | QPSK       | 1          | 24               | 23.06                              |
| Max         | LTE B5   | 5                   | 20625            | 846.5                    | QPSK       | 1          | 0                | LTE B5   | 3                   | 20586            | 842.6                    | QPSK       | 1          | 14               | 23.04                              |
| Max         | LTE B5   | 5                   | 20625            | 846.5                    | QPSK       | 1          | 0                | LTE B5   | 10                  | 20553            | 839.3                    | QPSK       | 1          | 49               | 24.67                              |
| Max         | LTE B5   | 10                  | 20600            | 844                      | QPSK       | 1          | 0                | LTE B5   | 5                   | 20528            | 836.8                    | QPSK       | 1          | 24               | 24.74                              |
| Max         | LTE B5   | 10                  | 20600            | 844                      | QPSK       | 1          | 0                | LTE B5   | 10                  | 20501            | 834.1                    | QPSK       | 1          | 49               | 24.83                              |

**Table 7-8. Conducted Powers (5B)**

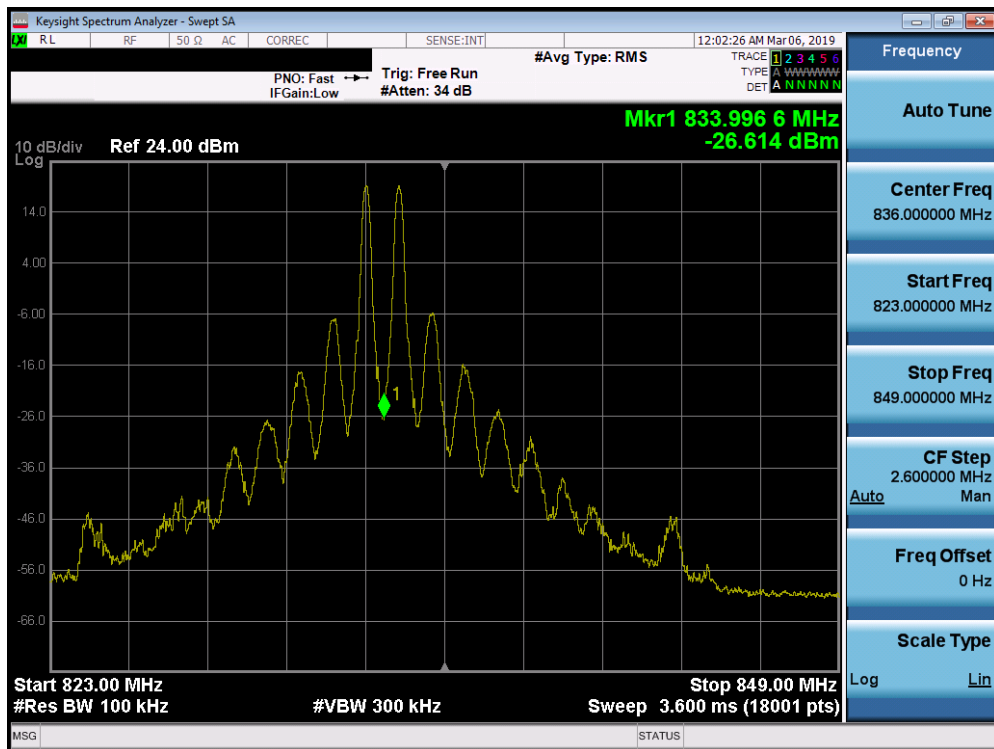
| Power State | PCC      |                     |                  |                          |            |            |                  | SCC      |                     |                  |                          |            |            |                  | Power<br>ULCA<br>Tx.Power<br>(dBm) |
|-------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|------------------------------------|
|             | PCC Band | PCC Bandwidth [MHz] | PCC (UL) Channel | PCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | SCC Band | SCC Bandwidth [MHz] | SCC (UL) Channel | SCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset |                                    |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 0                | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 0                | 13.87                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 49               | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 49               | 14.51                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 0                | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 49               | 13.72                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 25               | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 25               | 14.33                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 1          | 49               | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 1          | 0                | 24.84                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | QPSK       | 50         | 0                | LTE B5   | 10                  | 20549            | 838.9                    | QPSK       | 50         | 0                | 23.02                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | 16-QAM     | 50         | 0                | LTE B5   | 10                  | 20549            | 838.9                    | 16-QAM     | 50         | 0                | 22.11                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | 64-QAM     | 50         | 0                | LTE B5   | 10                  | 20549            | 838.9                    | 64-QAM     | 50         | 0                | 21.02                              |
| Max         | LTE B5   | 10                  | 20450            | 829                      | 256-QAM    | 50         | 0                | LTE B5   | 10                  | 20549            | 838.9                    | 256-QAM    | 50         | 0                | 18.85                              |

**Table 7-9. Conducted Powers (5B with Various Combinations for 10MHz Channel Bandwidth)**

|                                         |                                                                                     |                               |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  |                               | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset |                                       | Page 239 of 340                                                                       |                                 |

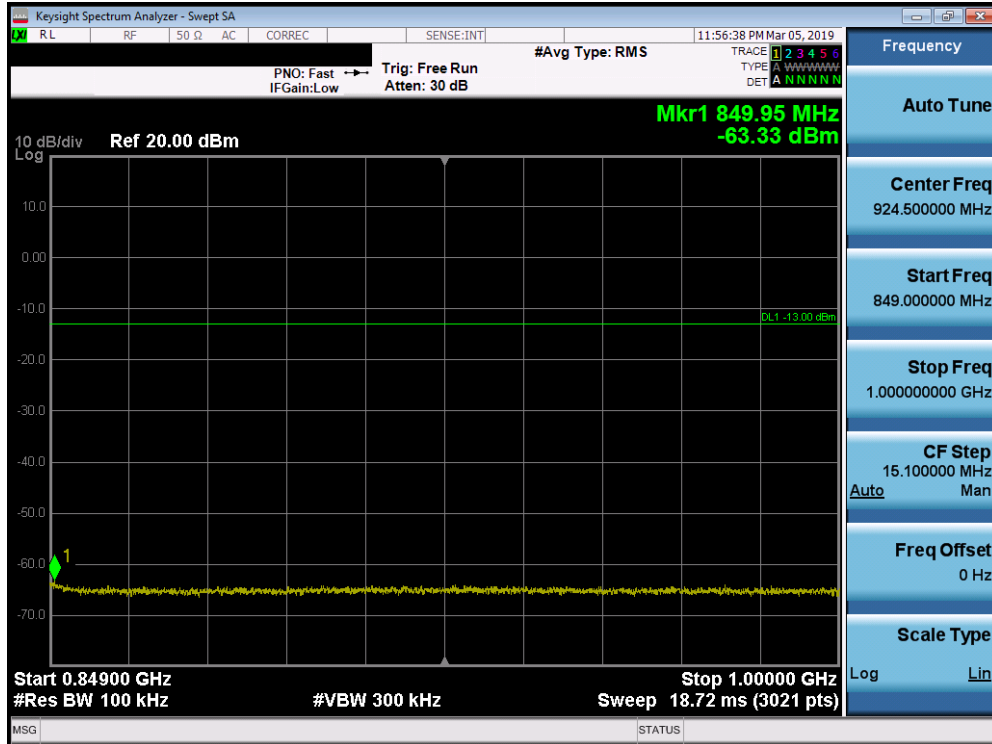


Plot 7-408. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

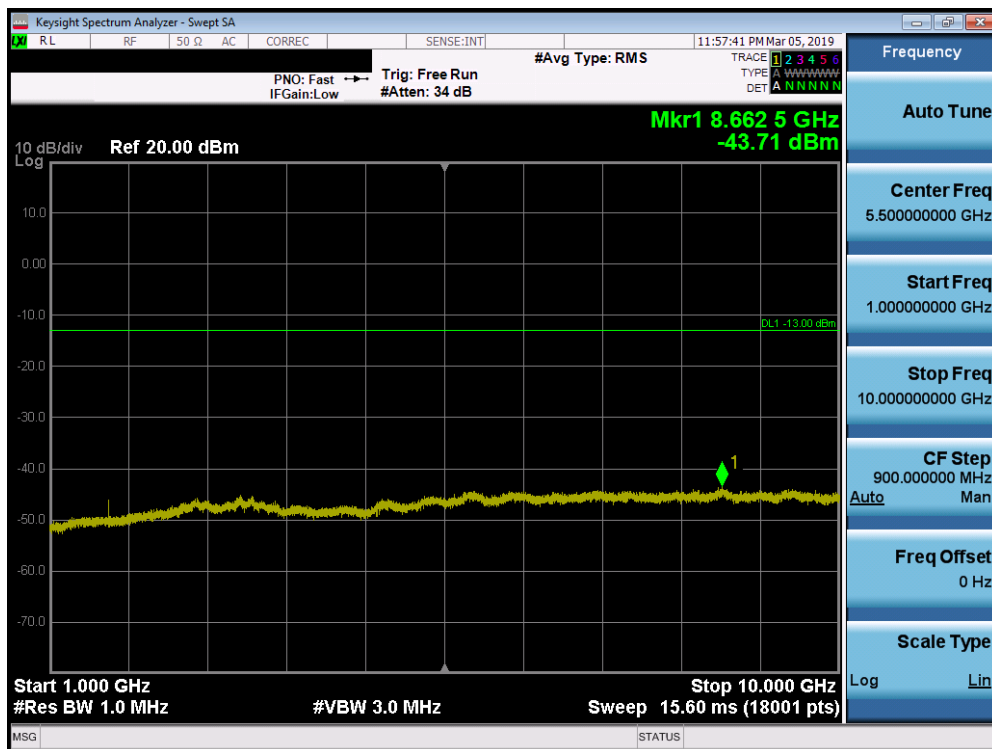


Plot 7-409. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 240 of 340                 |

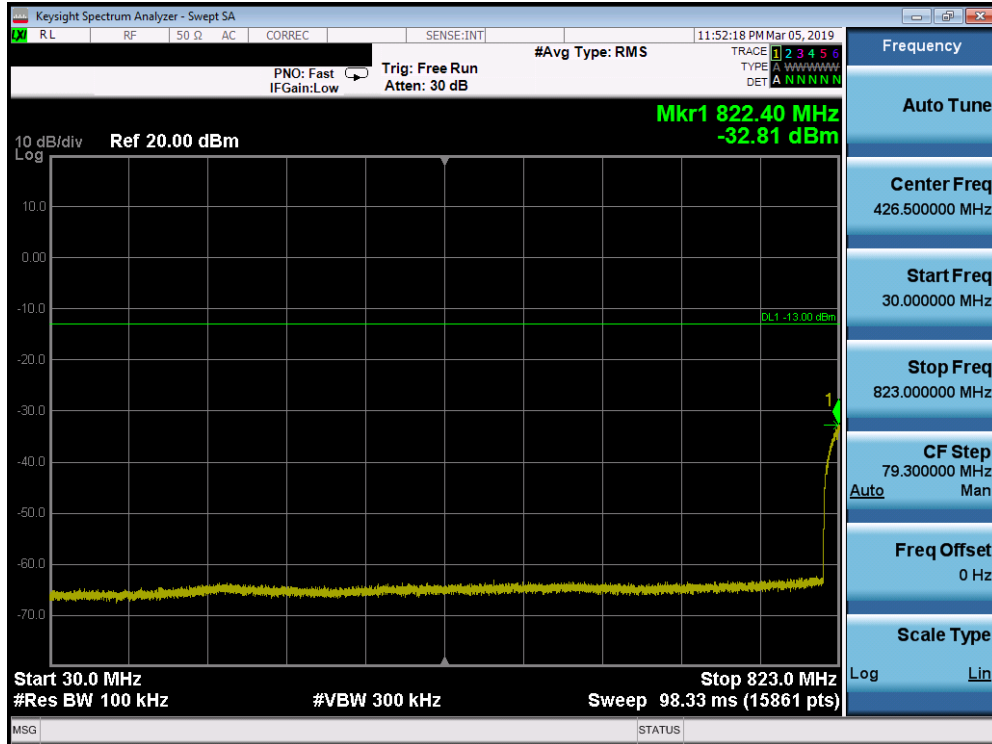


Plot 7-410. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Mid Channel)



Plot 7-411. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 241 of 340                 |

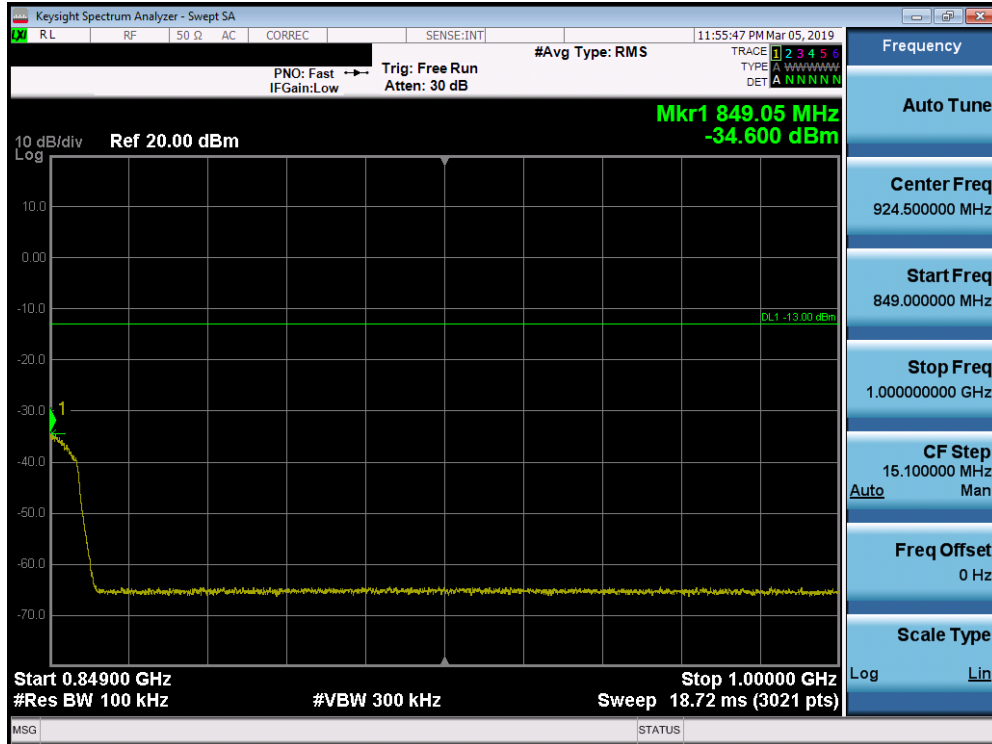


Plot 7-412. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 50/0 SCC 50/0 – Low Channel)

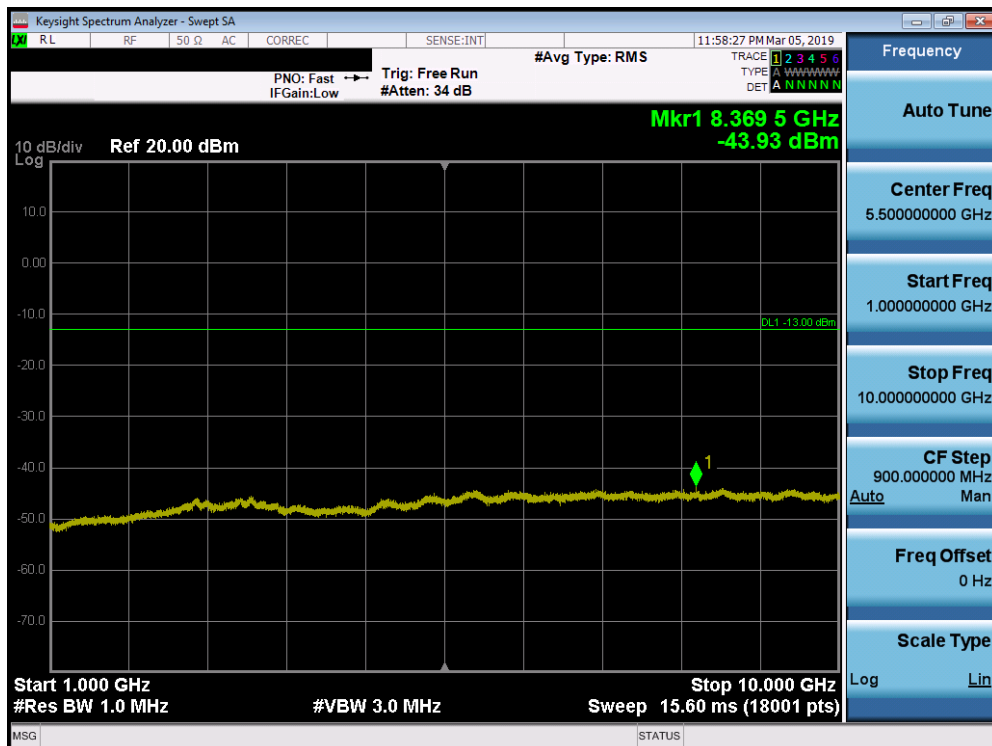


Plot 7-413. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 50/0 SCC 50/0 – Low Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 242 of 340                 |

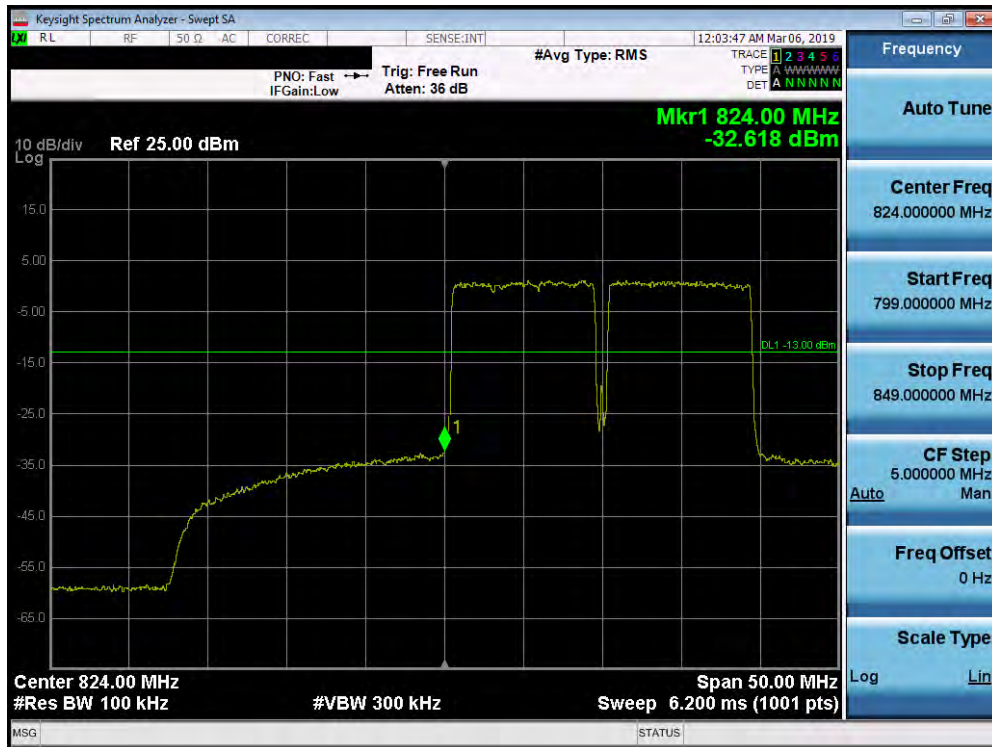


Plot 7-414. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 50/0 SCC 50/0 – Low Channel)

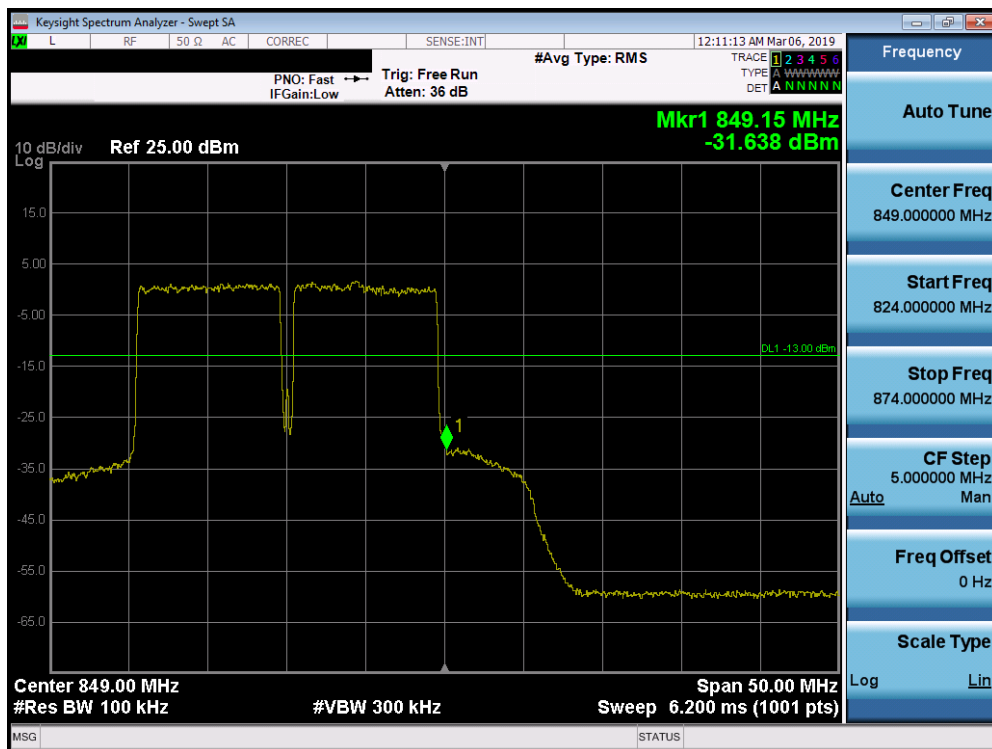


Plot 7-415. Conducted Spurious Plot (Band 5B – 10.0MHz QPSK – PCC 50/0 SCC 50/0 – Low Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 243 of 340                 |



Plot 7-416. Lower Band Edge Plot (Band 5B QPSK – PCC:10 MHz SCC:10 MHz – Full RB)



Plot 7-417. Upper Band Edge Plot (Band 5B QPSK – PCC:10 MHz SCC:10 MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 244 of 340                 |

## Uplink CA Configuration 66B

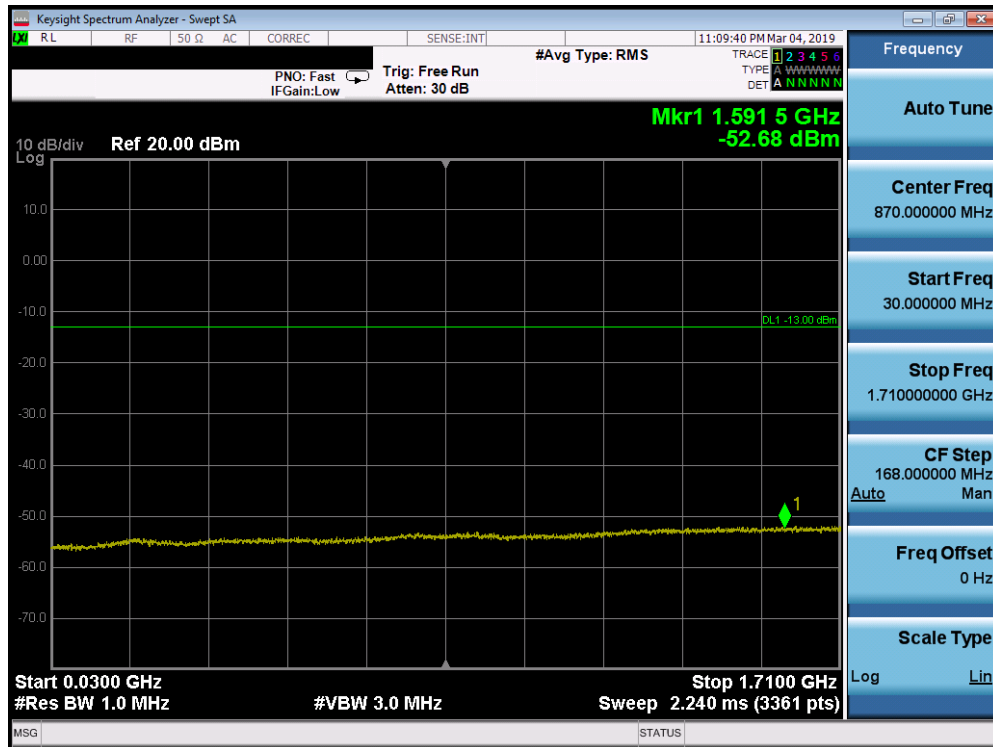
| Power State | PCC      |                     |                  |                          |            |            |                  | SCC      |                     |                  |                          |            |            |                  | Power<br>ULCA<br>Tx.Power<br>(dBm) |
|-------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|------------------------------------|
|             | PCC Band | PCC Bandwidth [MHz] | PCC (UL) Channel | PCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | SCC Band | SCC Bandwidth [MHz] | SCC (UL) Channel | SCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset |                                    |
| Max         | LTE B66  | 5                   | 131997           | 1712.5                   | QPSK       | 1          | 24               | LTE B66  | 5                   | 132045           | 1717.3                   | QPSK       | 1          | 0                | 22.10                              |
| Max         | LTE B66  | 5                   | 131997           | 1712.5                   | QPSK       | 1          | 24               | LTE B66  | 10                  | 132069           | 1719.7                   | QPSK       | 1          | 0                | 22.43                              |
| Max         | LTE B66  | 5                   | 131997           | 1712.5                   | QPSK       | 1          | 24               | LTE B66  | 15                  | 132090           | 1721.8                   | QPSK       | 1          | 0                | 22.10                              |
| Max         | LTE B66  | 10                  | 132022           | 1715                     | QPSK       | 1          | 49               | LTE B41  | 5                   | 132094           | 1722.2                   | QPSK       | 1          | 0                | 22.41                              |
| Max         | LTE B66  | 10                  | 132022           | 1715                     | QPSK       | 1          | 49               | LTE B41  | 10                  | 132121           | 1724.9                   | QPSK       | 1          | 0                | 22.25                              |
| Max         | LTE B66  | 15                  | 132047           | 1717.5                   | QPSK       | 1          | 74               | LTE B66  | 5                   | 132140           | 1726.8                   | QPSK       | 1          | 0                | 22.80                              |
| Max         | LTE B66  | 5                   | 132322           | 1745                     | QPSK       | 1          | 24               | LTE B66  | 5                   | 132370           | 1749.8                   | QPSK       | 1          | 0                | 22.49                              |
| Max         | LTE B66  | 5                   | 132322           | 1745                     | QPSK       | 1          | 24               | LTE B66  | 10                  | 132394           | 1752.2                   | QPSK       | 1          | 0                | 22.82                              |
| Max         | LTE B66  | 5                   | 132322           | 1745                     | QPSK       | 1          | 24               | LTE B66  | 15                  | 132415           | 1754.3                   | QPSK       | 1          | 0                | 22.49                              |
| Max         | LTE B66  | 10                  | 132322           | 1745                     | QPSK       | 1          | 49               | LTE B66  | 5                   | 132394           | 1752.2                   | QPSK       | 1          | 0                | 22.80                              |
| Max         | LTE B66  | 10                  | 132322           | 1745                     | QPSK       | 1          | 49               | LTE B66  | 10                  | 132421           | 1754.9                   | QPSK       | 1          | 0                | 22.64                              |
| Max         | LTE B66  | 15                  | 132322           | 1745                     | QPSK       | 1          | 74               | LTE B66  | 5                   | 132415           | 1754.3                   | QPSK       | 1          | 0                | 23.19                              |
| Max         | LTE B66  | 5                   | 132647           | 1777.5                   | QPSK       | 1          | 0                | LTE B66  | 5                   | 132599           | 1772.7                   | QPSK       | 1          | 24               | 23.13                              |
| Max         | LTE B66  | 5                   | 132647           | 1777.5                   | QPSK       | 1          | 0                | LTE B66  | 10                  | 132575           | 1770.3                   | QPSK       | 1          | 49               | 23.46                              |
| Max         | LTE B66  | 5                   | 132647           | 1777.5                   | QPSK       | 1          | 0                | LTE B66  | 15                  | 132554           | 1768.2                   | QPSK       | 1          | 74               | 23.13                              |
| Max         | LTE B66  | 10                  | 132622           | 1775                     | QPSK       | 1          | 0                | LTE B66  | 5                   | 132550           | 1767.8                   | QPSK       | 1          | 24               | 23.44                              |
| Max         | LTE B66  | 10                  | 132622           | 1775                     | QPSK       | 1          | 0                | LTE B66  | 10                  | 132523           | 1765.1                   | QPSK       | 1          | 49               | 23.28                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 0                | LTE B66  | 5                   | 132504           | 1763.2                   | QPSK       | 1          | 24               | 23.83                              |

**Table 7-10. Conducted Powers (66B)**

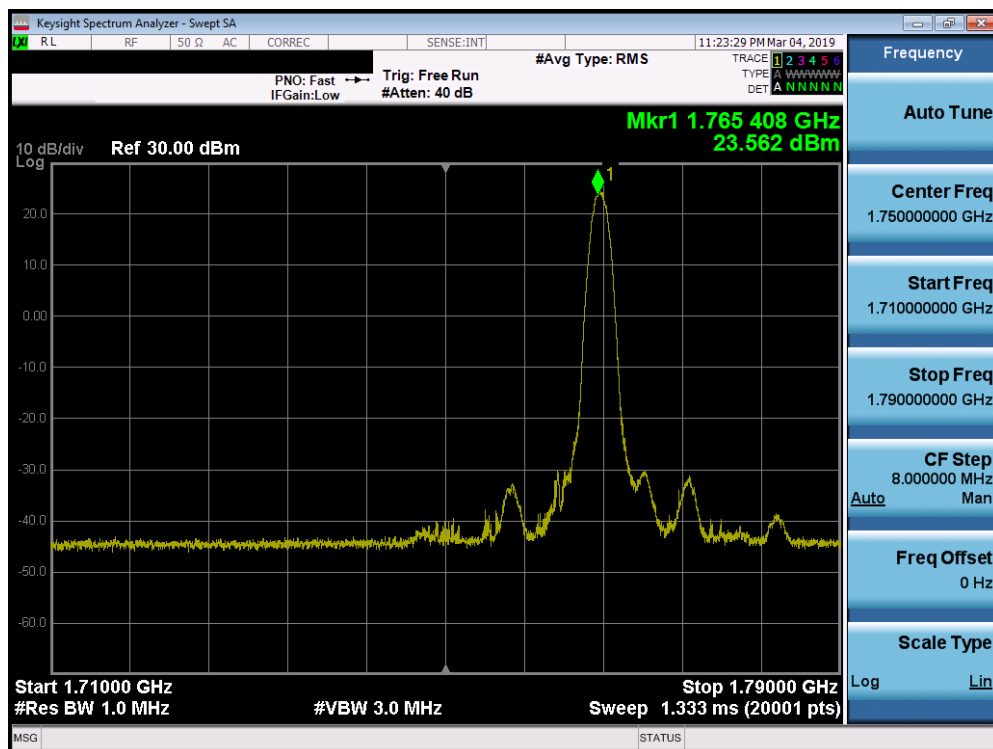
| Power State | PCC      |                     |                  |                          |            |            |                  | SCC      |                     |                  |                          |            |            |                  | Power<br>ULCA<br>Tx.Power<br>(dBm) |
|-------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|------------------------------------|
|             | PCC Band | PCC Bandwidth [MHz] | PCC (UL) Channel | PCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | SCC Band | SCC Bandwidth [MHz] | SCC (UL) Channel | SCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset |                                    |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 1          | 0                | 15.83                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 73               | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 1          | 24               | 14.87                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 1          | 24               | 23.83                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 38               | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 1          | 13               | 14.72                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 1          | 73               | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 1          | 0                | 12.85                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | QPSK       | 75         | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | QPSK       | 25         | 0                | 21.41                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | 16-QAM     | 75         | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | 16-QAM     | 25         | 0                | 20.40                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | 64-QAM     | 75         | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | 64-QAM     | 25         | 0                | 19.23                              |
| Max         | LTE B66  | 15                  | 132597           | 1772.5                   | 256-QAM    | 75         | 0                | LTE B66  | 5                   | 132690           | 1781.8                   | 256-QAM    | 25         | 0                | 17.14                              |

**Table 7-11. Conducted Powers (66B with Various Combinations for 15 + 5MHz Channel Bandwidth)**

|                                         |                                                                                     |                               |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  |                               | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset |                                       | Page 245 of 340                                                                       |                                 |

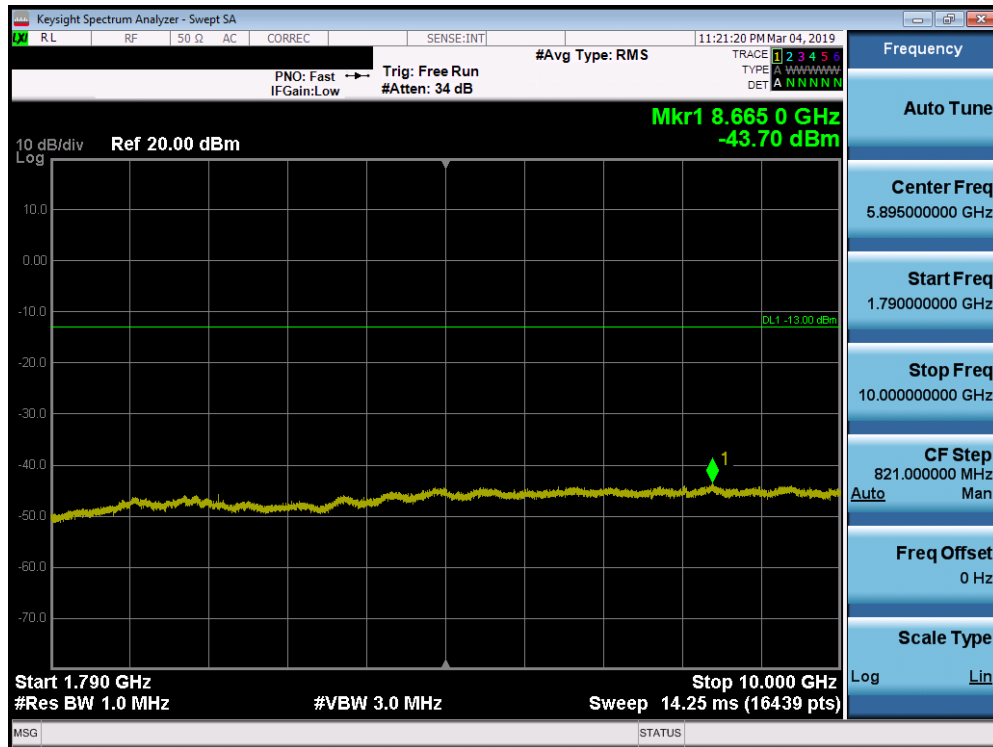


Plot 7-418. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 1/74 SCC 1/0 – High Channel)

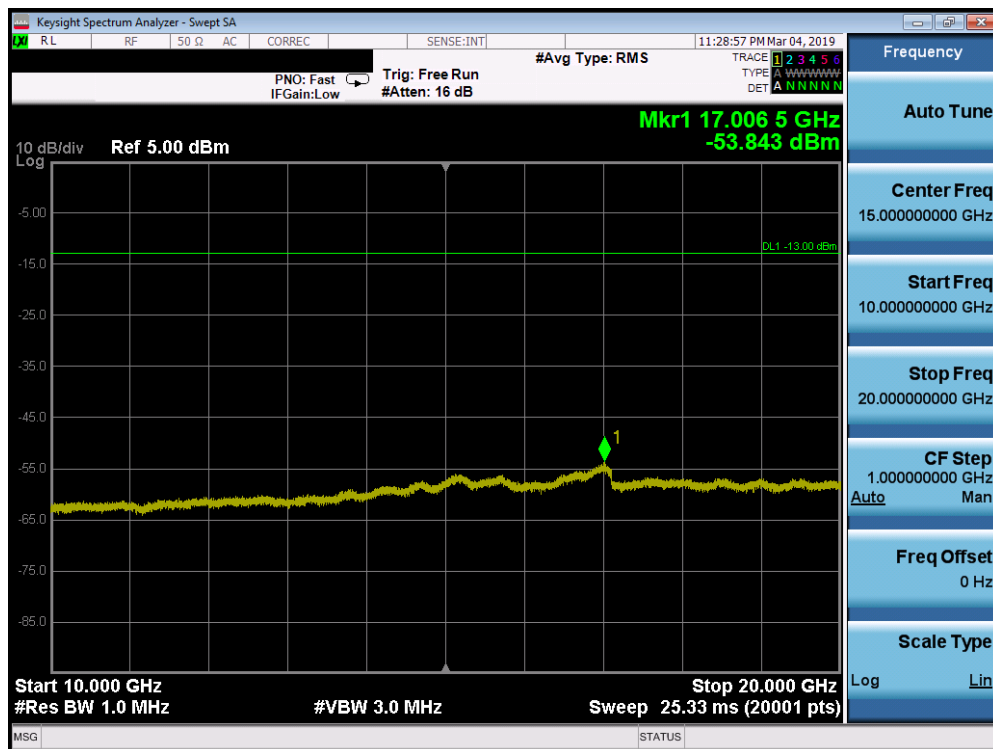


Plot 7-419. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 1/74 SCC 1/0 – High Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 246 of 340                 |

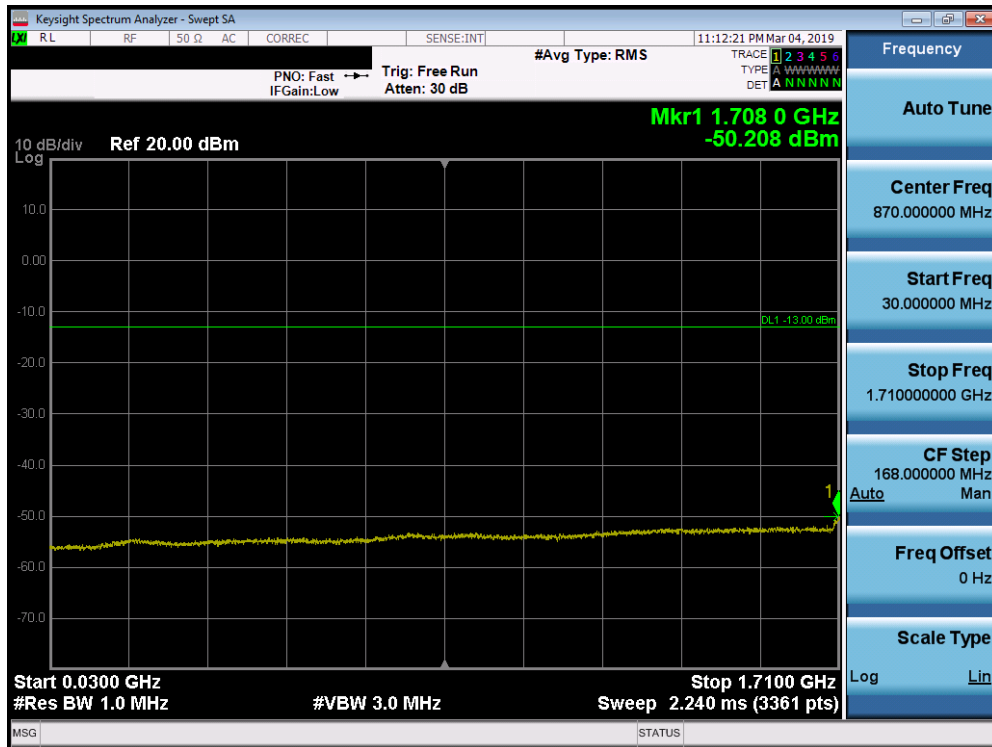


Plot 7-420. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 1/74 SCC 1/0 – High Channel)

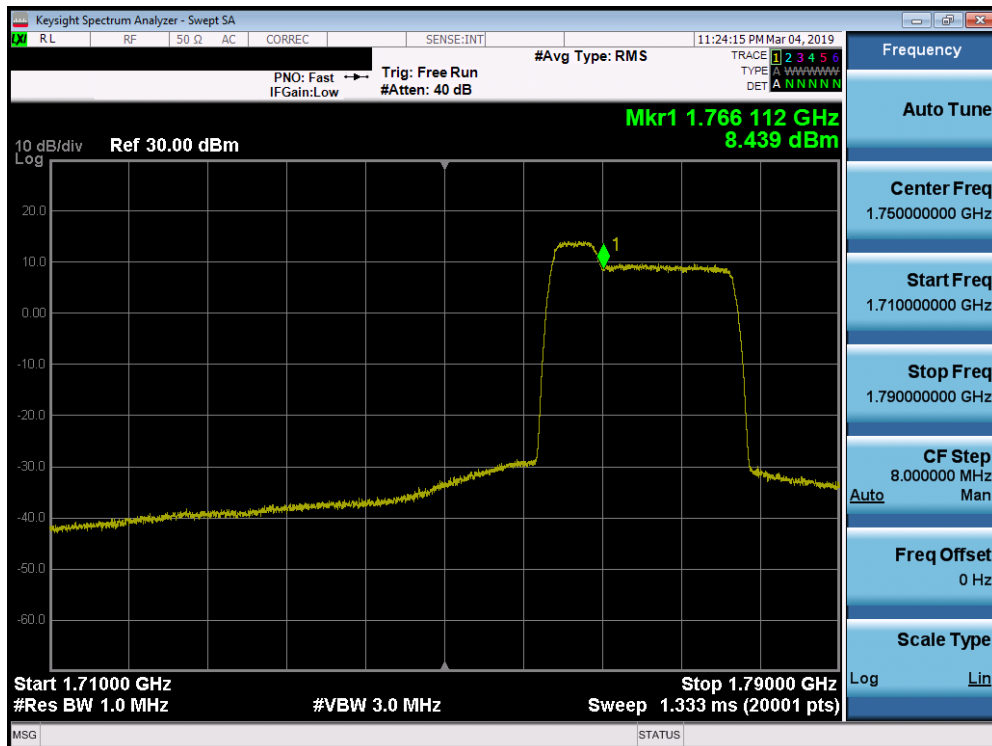


Plot 7-421. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 1/74 SCC 1/0 – High Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 247 of 340                 |

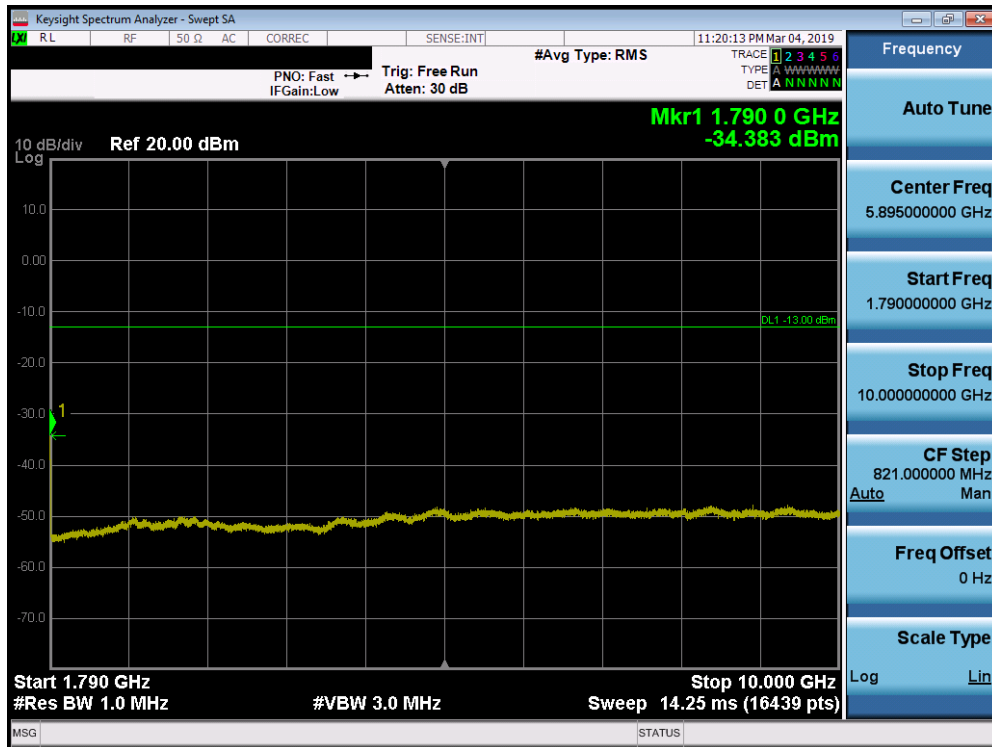


Plot 7-422. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 75/0 SCC 25/0 – High Channel)

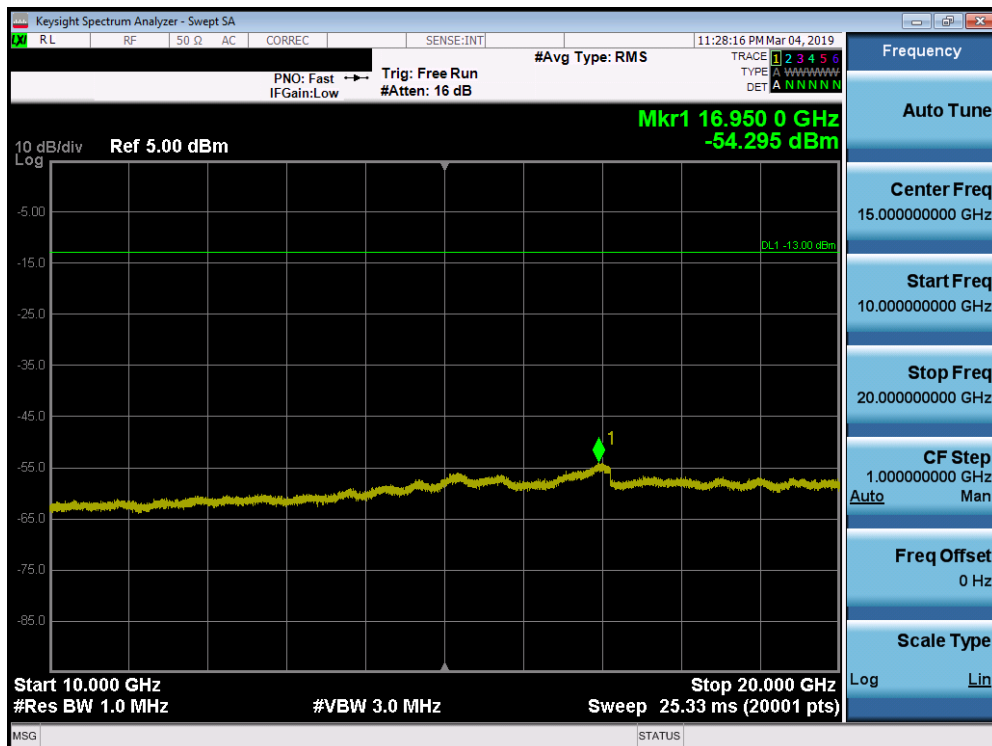


Plot 7-423. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 75/0 SCC 25/0 – High Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 248 of 340                 |

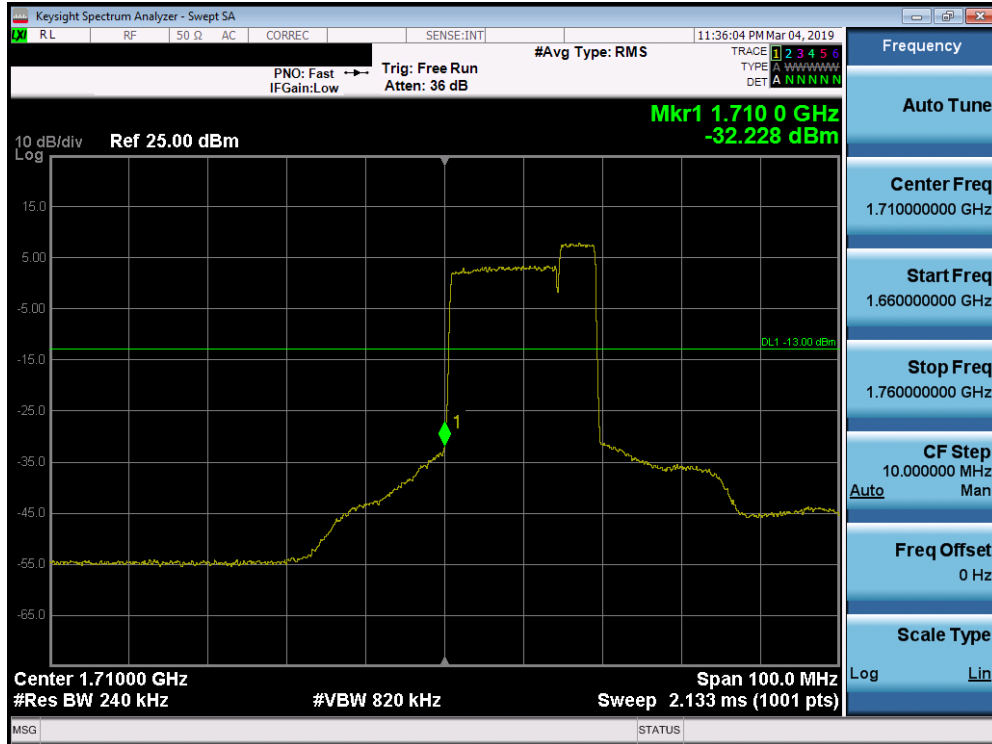


Plot 7-424. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 75/0 SCC 25/0 – High Channel)

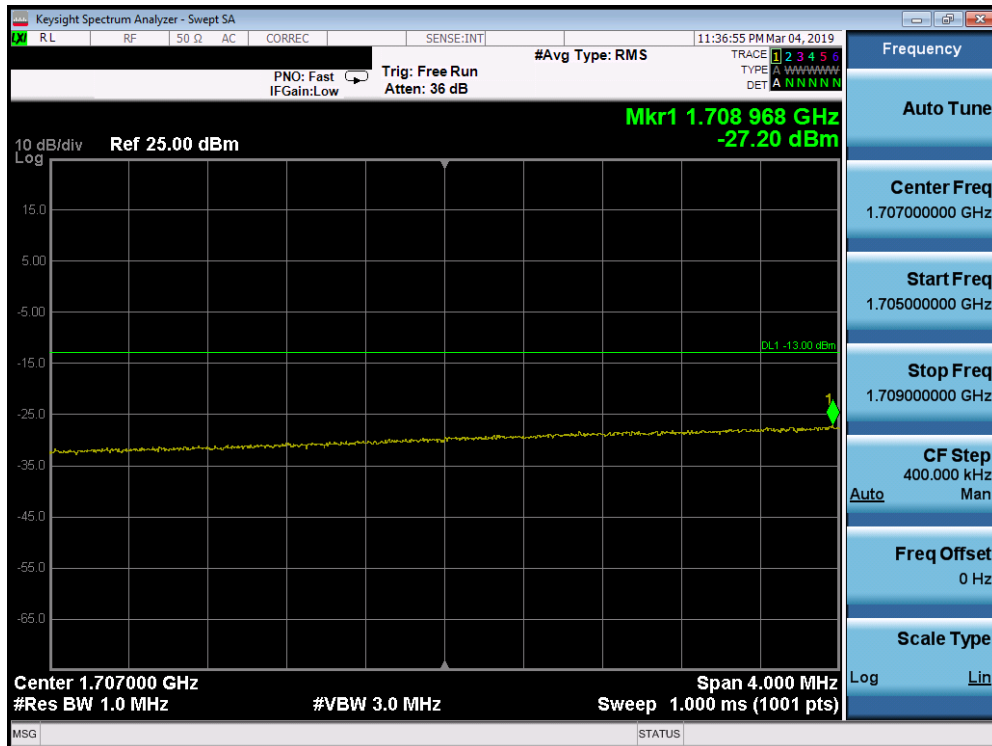


Plot 7-425. Conducted Spurious Plot (Band 66B – 15 + 5MHz QPSK – PCC 75/0 SCC 25/0 – High Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 249 of 340                 |

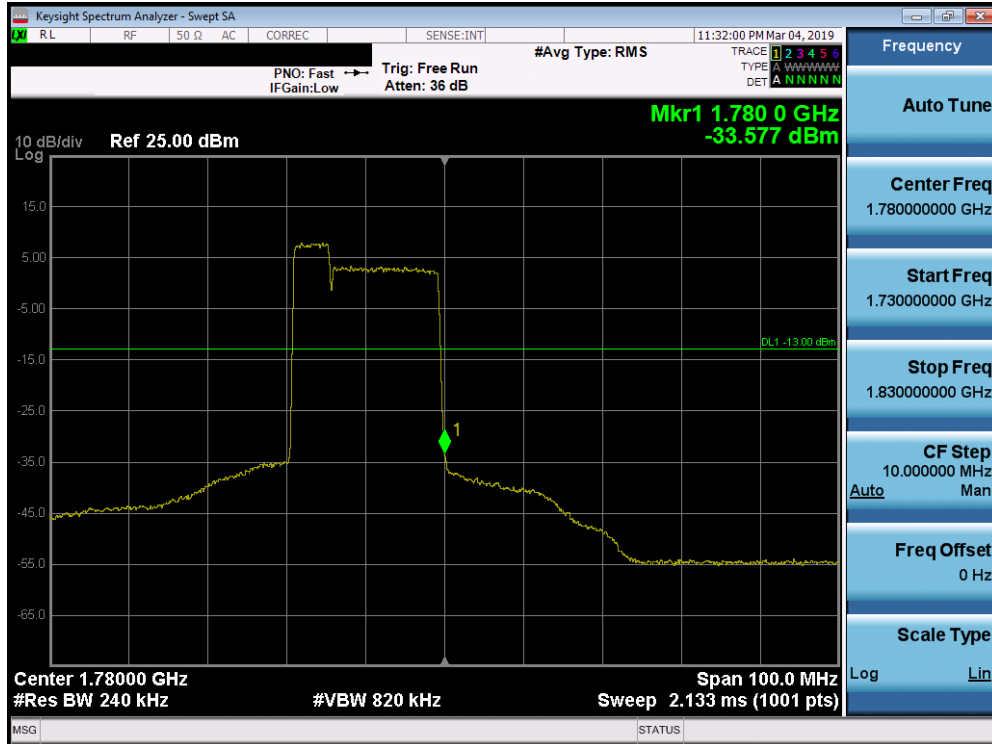


Plot 7-426. Lower Band Edge Plot (Band 66B QPSK – PCC: 15.0MHz SCC: 5.0MHz – Full RB)

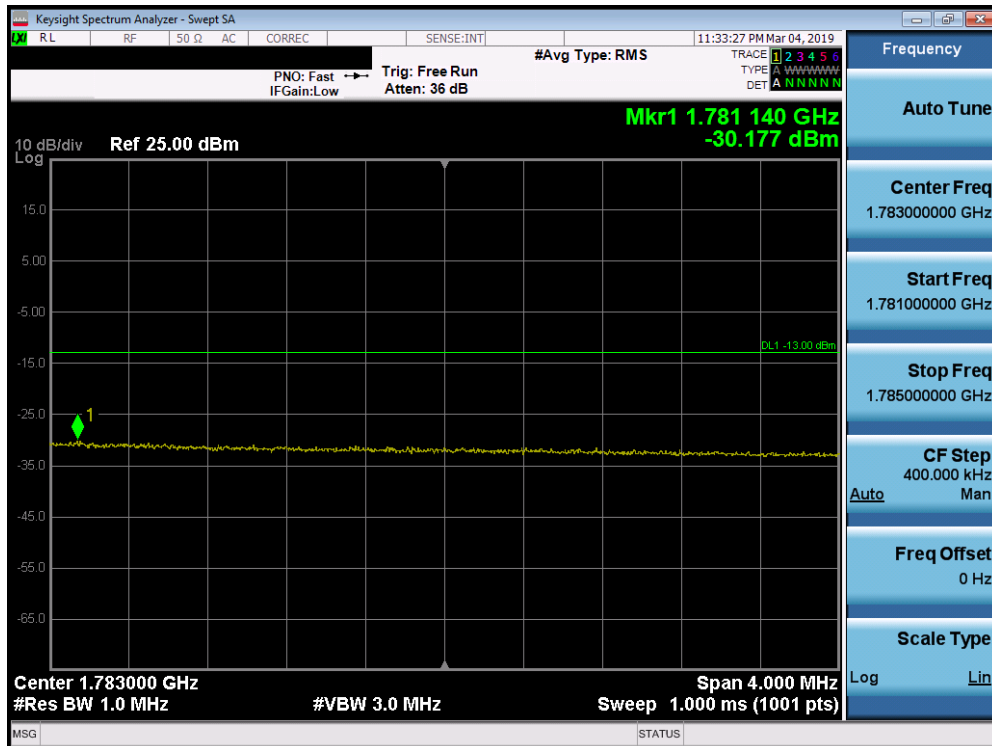


Plot 7-427. Lower Extended Band Edge Plot (Band 66B QPSK – PCC: 15.0MHz SCC: 5.0MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 250 of 340                 |



Plot 7-428. Upper Band Edge Plot (Band 66B QPSK – PCC: 15.0MHz SCC: 5.0MHz – Full RB)



Plot 7-429. Upper Extended Band Edge Plot (Band 66B QPSK – PCC: 15.0MHz SCC: 5.0MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 251 of 340                 |

## Uplink CA Configuration 66C

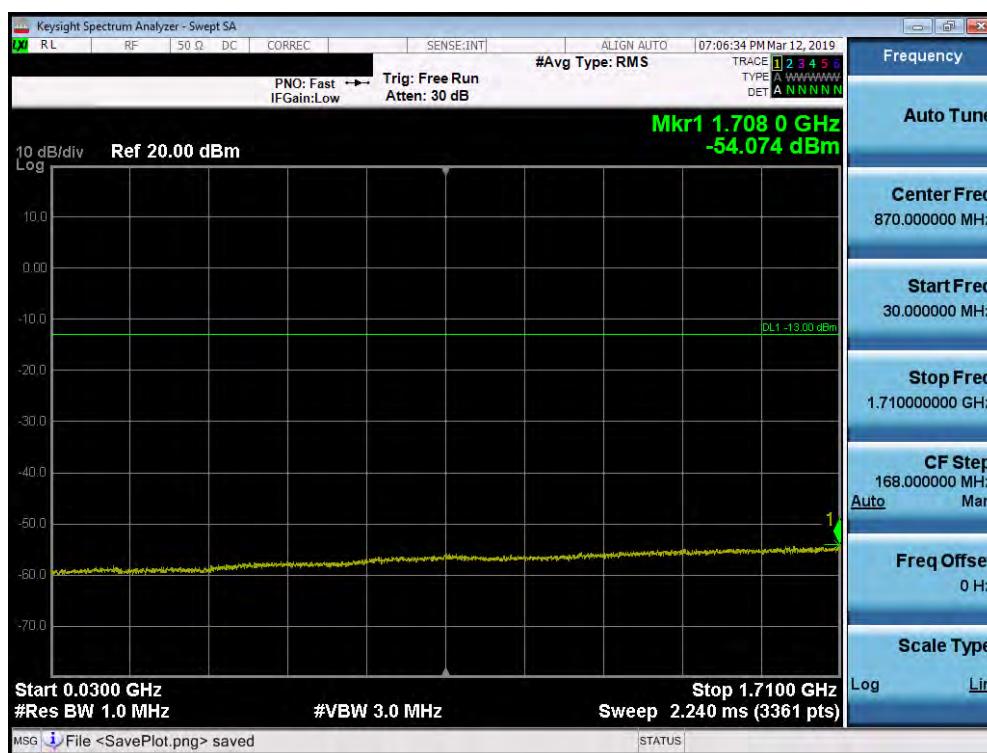
| Power State | PCC      |                        |                     |                                |            |               |                     | SCC      |                        |                     |                                |            |               |                     | Power<br>ULCA<br>Tx.Power<br>(dBm) |
|-------------|----------|------------------------|---------------------|--------------------------------|------------|---------------|---------------------|----------|------------------------|---------------------|--------------------------------|------------|---------------|---------------------|------------------------------------|
|             | PCC Band | PCC Bandwidth<br>[MHz] | PCC (UL)<br>Channel | PCC (UL)<br>Frequency<br>[MHz] | Modulation | PCC UL#<br>RB | PCC UL<br>RB Offset | SCC Band | SCC Bandwidth<br>[MHz] | SCC (UL)<br>Channel | SCC (UL)<br>Frequency<br>[MHz] | Modulation | PCC UL#<br>RB | PCC UL<br>RB Offset |                                    |
| Max         | LTE B66  | 5                      | 131997              | 1712.5                         | QPSK       | 1             | 24                  | LTE B66  | 20                     | 132114              | 1724.2                         | QPSK       | 1             | 0                   | 21.93                              |
| Max         | LTE B66  | 10                     | 132022              | 1715                           | QPSK       | 1             | 49                  | LTE B66  | 15                     | 132142              | 1727                           | QPSK       | 1             | 0                   | 22.09                              |
| Max         | LTE B66  | 10                     | 132022              | 1715                           | QPSK       | 1             | 49                  | LTE B66  | 20                     | 132166              | 1729.4                         | QPSK       | 1             | 0                   | 22.08                              |
| Max         | LTE B66  | 15                     | 132047              | 1717.5                         | QPSK       | 1             | 74                  | LTE B66  | 10                     | 132167              | 1729.5                         | QPSK       | 1             | 0                   | 22.10                              |
| Max         | LTE B66  | 15                     | 132047              | 1717.5                         | QPSK       | 1             | 74                  | LTE B66  | 15                     | 132197              | 1732.5                         | QPSK       | 1             | 0                   | 22.15                              |
| Max         | LTE B66  | 15                     | 132047              | 1717.5                         | QPSK       | 1             | 74                  | LTE B66  | 20                     | 132218              | 1734.6                         | QPSK       | 1             | 0                   | 22.02                              |
| Max         | LTE B66  | 20                     | 132072              | 1720                           | QPSK       | 1             | 99                  | LTE B66  | 5                      | 132189              | 1731.7                         | QPSK       | 1             | 0                   | 22.22                              |
| Max         | LTE B66  | 20                     | 132072              | 1720                           | QPSK       | 1             | 99                  | LTE B66  | 10                     | 132216              | 1734.4                         | QPSK       | 1             | 0                   | 22.04                              |
| Max         | LTE B66  | 20                     | 132072              | 1720                           | QPSK       | 1             | 99                  | LTE B66  | 15                     | 132243              | 1737.1                         | QPSK       | 1             | 0                   | 22.09                              |
| Max         | LTE B66  | 20                     | 132072              | 1720                           | QPSK       | 1             | 99                  | LTE B66  | 20                     | 132270              | 1739.8                         | QPSK       | 1             | 0                   | 22.12                              |
| Max         | LTE B66  | 5                      | 132322              | 1745                           | QPSK       | 1             | 24                  | LTE B66  | 20                     | 132439              | 1756.7                         | QPSK       | 1             | 0                   | 21.92                              |
| Max         | LTE B66  | 10                     | 132322              | 1745                           | QPSK       | 1             | 49                  | LTE B66  | 15                     | 132442              | 1757                           | QPSK       | 1             | 0                   | 23.01                              |
| Max         | LTE B66  | 10                     | 132322              | 1745                           | QPSK       | 1             | 49                  | LTE B66  | 20                     | 132466              | 1759.4                         | QPSK       | 1             | 0                   | 23.02                              |
| Max         | LTE B66  | 15                     | 132322              | 1745                           | QPSK       | 1             | 74                  | LTE B66  | 10                     | 132442              | 1757                           | QPSK       | 1             | 0                   | 23.10                              |
| Max         | LTE B66  | 15                     | 132322              | 1745                           | QPSK       | 1             | 74                  | LTE B66  | 15                     | 132472              | 1760                           | QPSK       | 1             | 0                   | 23.06                              |
| Max         | LTE B66  | 15                     | 132322              | 1745                           | QPSK       | 1             | 74                  | LTE B66  | 20                     | 132493              | 1762.1                         | QPSK       | 1             | 0                   | 23.10                              |
| Max         | LTE B66  | 20                     | 132322              | 1745                           | QPSK       | 1             | 99                  | LTE B66  | 5                      | 132439              | 1756.7                         | QPSK       | 1             | 0                   | 23.20                              |
| Max         | LTE B66  | 20                     | 132322              | 1745                           | QPSK       | 1             | 99                  | LTE B66  | 10                     | 132466              | 1759.4                         | QPSK       | 1             | 0                   | 23.15                              |
| Max         | LTE B66  | 20                     | 132322              | 1745                           | QPSK       | 1             | 99                  | LTE B66  | 15                     | 132493              | 1762.1                         | QPSK       | 1             | 0                   | 23.19                              |
| Max         | LTE B66  | 20                     | 132322              | 1745                           | QPSK       | 1             | 99                  | LTE B66  | 20                     | 132520              | 1764.8                         | QPSK       | 1             | 0                   | 23.33                              |
| Max         | LTE B66  | 5                      | 132647              | 1777.5                         | QPSK       | 1             | 0                   | LTE B66  | 20                     | 132530              | 1765.8                         | QPSK       | 1             | 99                  | 22.15                              |
| Max         | LTE B66  | 10                     | 132622              | 1775                           | QPSK       | 1             | 0                   | LTE B66  | 15                     | 132502              | 1763                           | QPSK       | 1             | 74                  | 22.78                              |
| Max         | LTE B66  | 10                     | 132622              | 1775                           | QPSK       | 1             | 0                   | LTE B66  | 20                     | 132478              | 1760.6                         | QPSK       | 1             | 99                  | 22.69                              |
| Max         | LTE B66  | 15                     | 132597              | 1772.5                         | QPSK       | 1             | 0                   | LTE B66  | 10                     | 132477              | 1760.5                         | QPSK       | 1             | 49                  | 22.36                              |
| Max         | LTE B66  | 15                     | 132597              | 1772.5                         | QPSK       | 1             | 0                   | LTE B66  | 15                     | 132447              | 1757.5                         | QPSK       | 1             | 74                  | 22.13                              |
| Max         | LTE B66  | 15                     | 132597              | 1772.5                         | QPSK       | 1             | 0                   | LTE B66  | 20                     | 132426              | 1755.4                         | QPSK       | 1             | 99                  | 22.09                              |
| Max         | LTE B66  | 20                     | 132572              | 1770                           | QPSK       | 1             | 0                   | LTE B66  | 5                      | 132455              | 1758.3                         | QPSK       | 1             | 24                  | 22.23                              |
| Max         | LTE B66  | 20                     | 132572              | 1770                           | QPSK       | 1             | 0                   | LTE B66  | 10                     | 132428              | 1755.6                         | QPSK       | 1             | 49                  | 22.74                              |
| Max         | LTE B66  | 20                     | 132572              | 1770                           | QPSK       | 1             | 0                   | LTE B66  | 15                     | 132401              | 1752.9                         | QPSK       | 1             | 74                  | 22.51                              |
| Max         | LTE B66  | 20                     | 132572              | 1770                           | QPSK       | 1             | 0                   | LTE B66  | 20                     | 132374              | 1750.2                         | QPSK       | 1             | 99                  | 22.84                              |

Table 7-12. Conducted Powers (66C)

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 252 of 340                 |

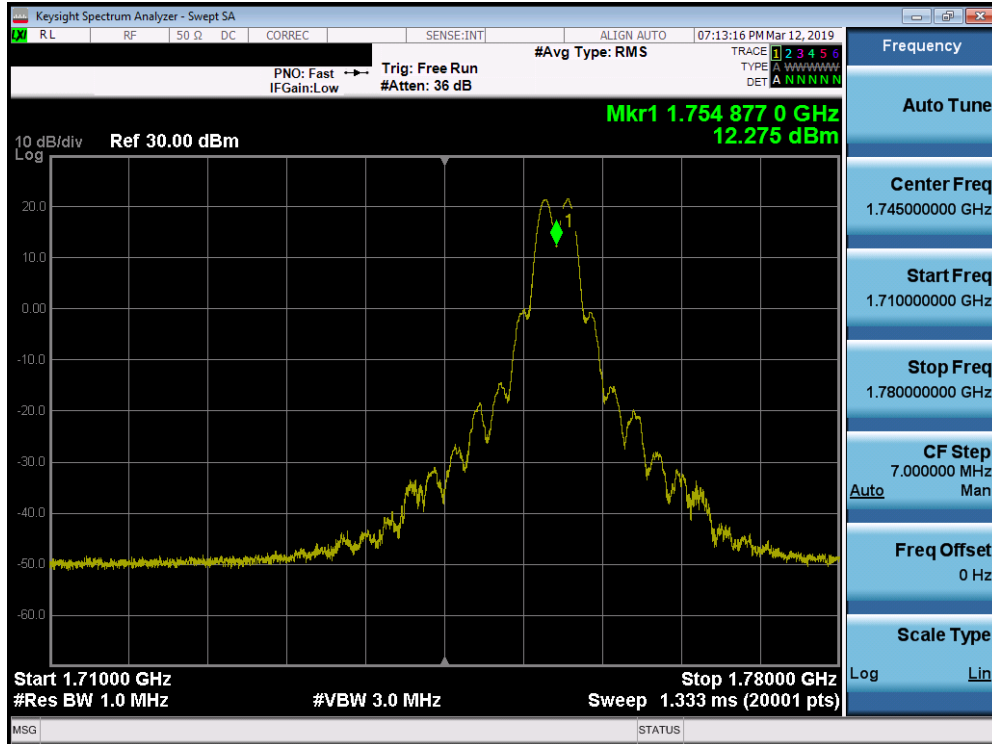
| Power State | PCC      |                     |                  |                          |            |            |                  | SCC      |                     |                  |                          |            |            |                  | Power               |
|-------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|----------|---------------------|------------------|--------------------------|------------|------------|------------------|---------------------|
|             | PCC Band | PCC Bandwidth [MHz] | PCC (UL) Channel | PCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | SCC Band | SCC Bandwidth [MHz] | SCC (UL) Channel | SCC (UL) Frequency [MHz] | Modulation | PCC UL# RB | PCC UL RB Offset | ULCA Tx.Power (dBm) |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 1          | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 1          | 0                | 17.24               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 1          | 99               | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 1          | 99               | 17.61               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 1          | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 1          | 99               | 16.76               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 1          | 50               | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 1          | 50               | 18.88               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 1          | 99               | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 1          | 0                | 23.33               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | QPSK       | 100        | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | QPSK       | 100        | 0                | 21.64               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | 16-QAM     | 100        | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | 16-QAM     | 100        | 0                | 20.74               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | 64-QAM     | 100        | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | 64-QAM     | 100        | 0                | 19.55               |
| Max         | LTE B66  | 20                  | 132322           | 1745                     | 256-QAM    | 100        | 0                | LTE B66  | 20                  | 132520           | 1764.8                   | 256-QAM    | 100        | 0                | 17.47               |

**Table 7-13. Conducted Powers (66C with Various Combinations for 20MHz Channel Bandwidth)**

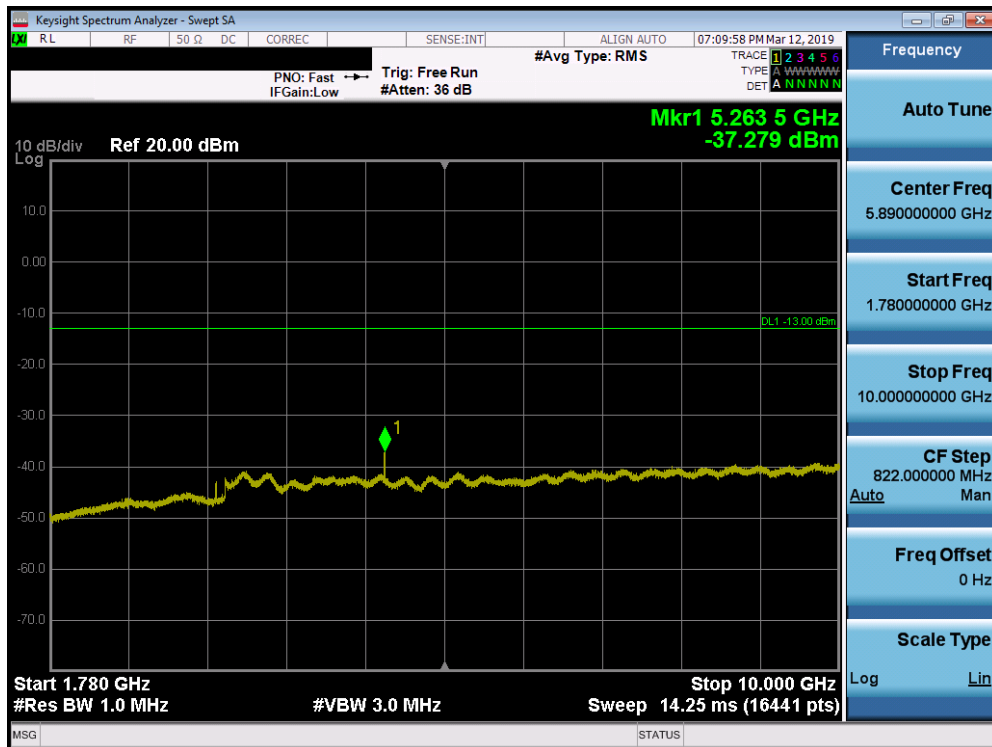


**Plot 7-430. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)**

|                                         |                                           |                               |                                 |
|-----------------------------------------|-------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>MEASUREMENT REPORT (CERTIFICATION)</b> |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019         | EUT Type:<br>Portable Handset | Page 253 of 340                 |

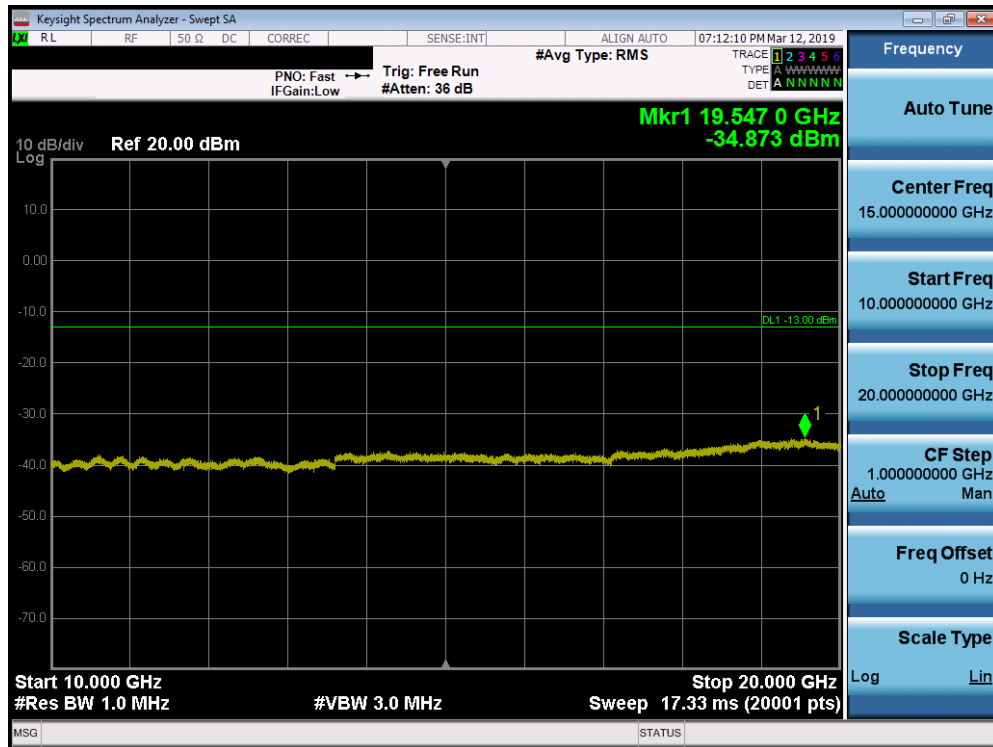


Plot 7-431. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

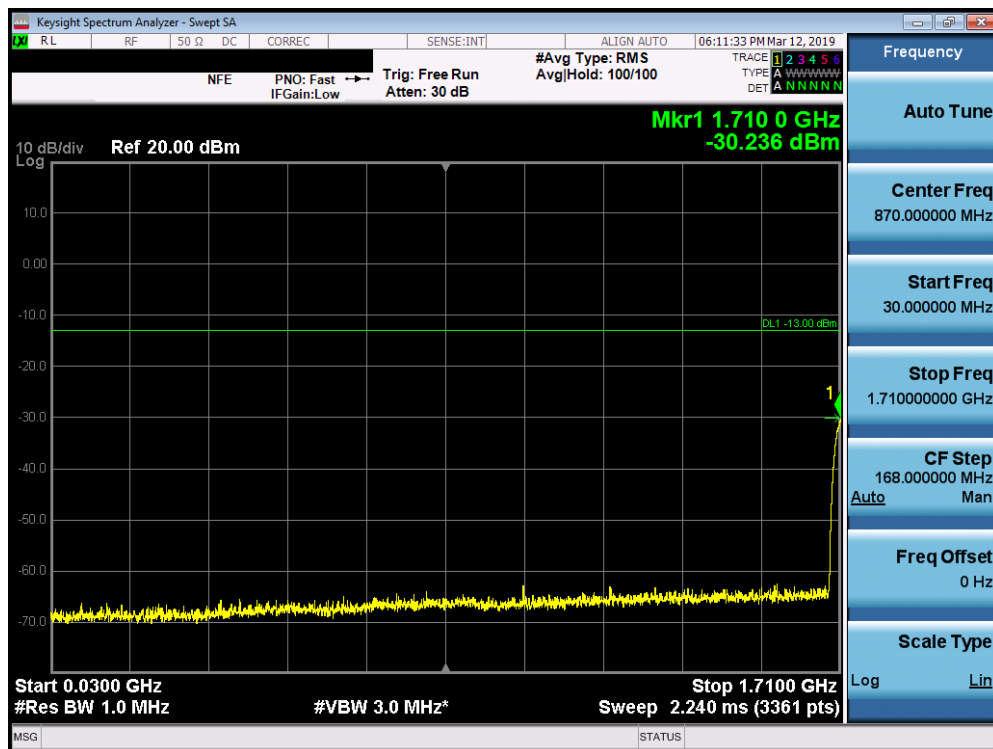


Plot 7-432. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 254 of 340                 |

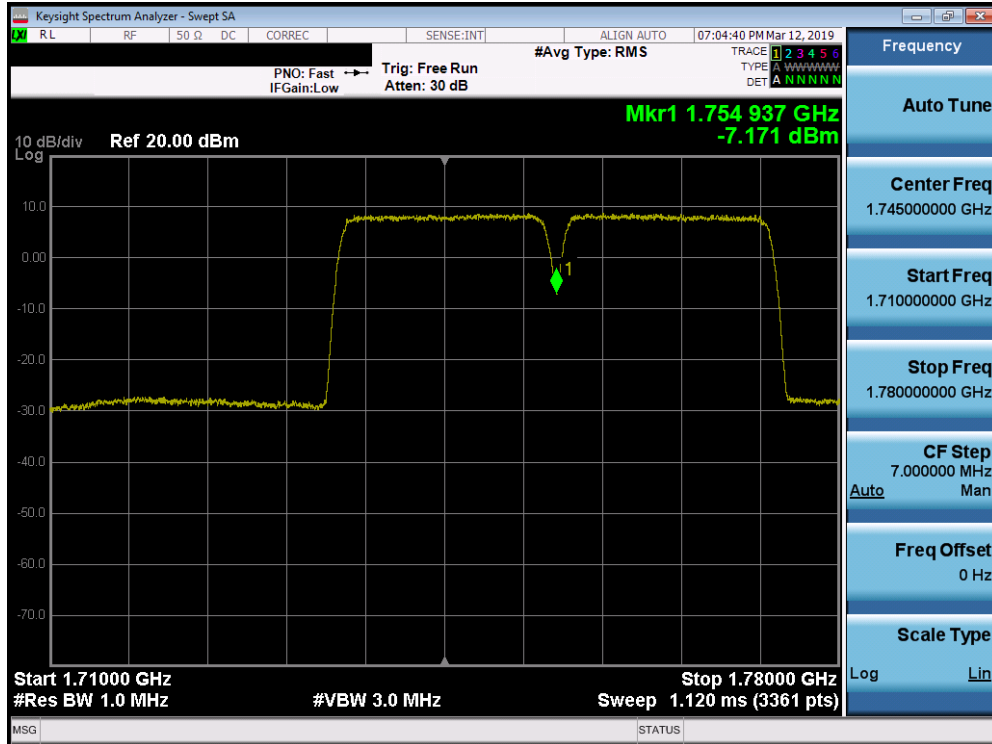


Plot 7-433. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

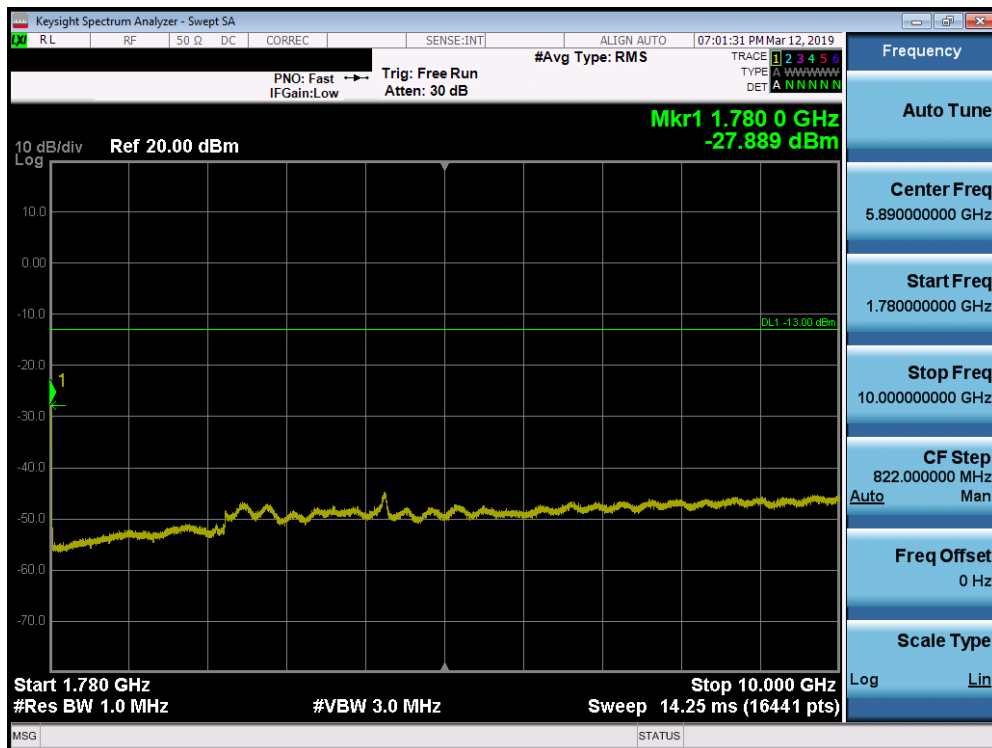


Plot 7-434. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 255 of 340                 |

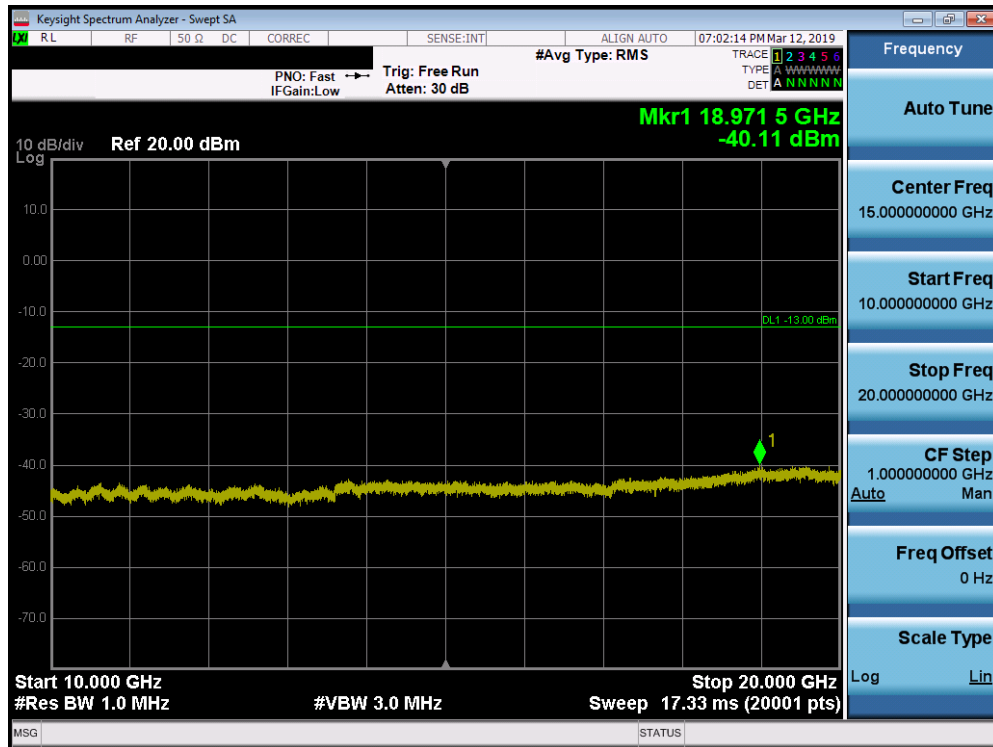


Plot 7-435. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

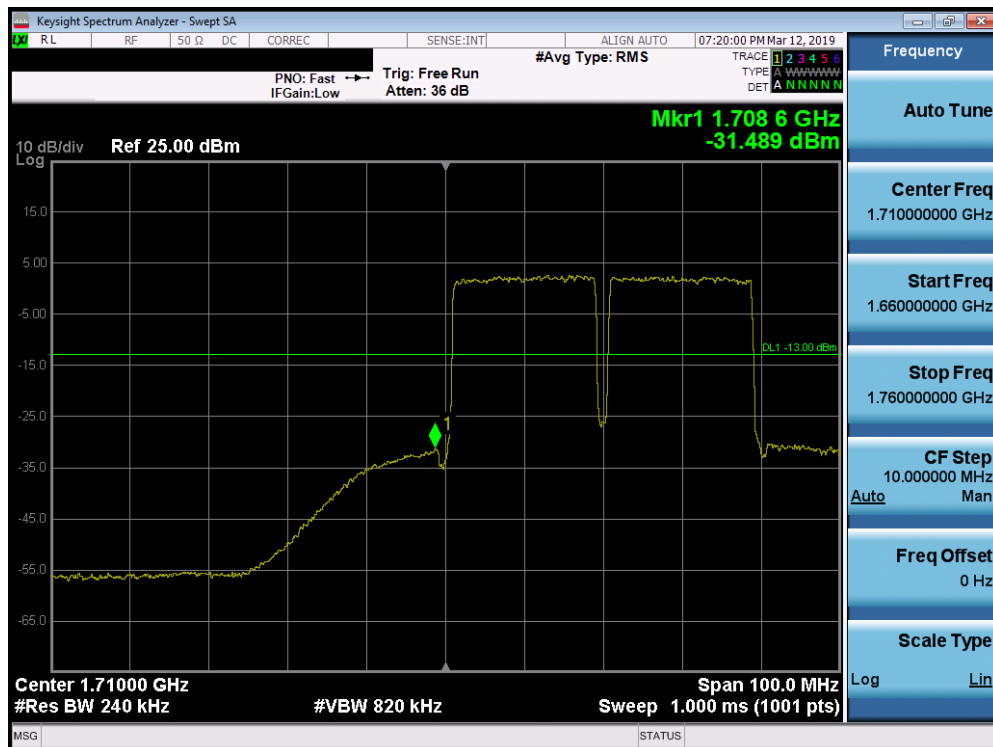


Plot 7-436. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 256 of 340                 |

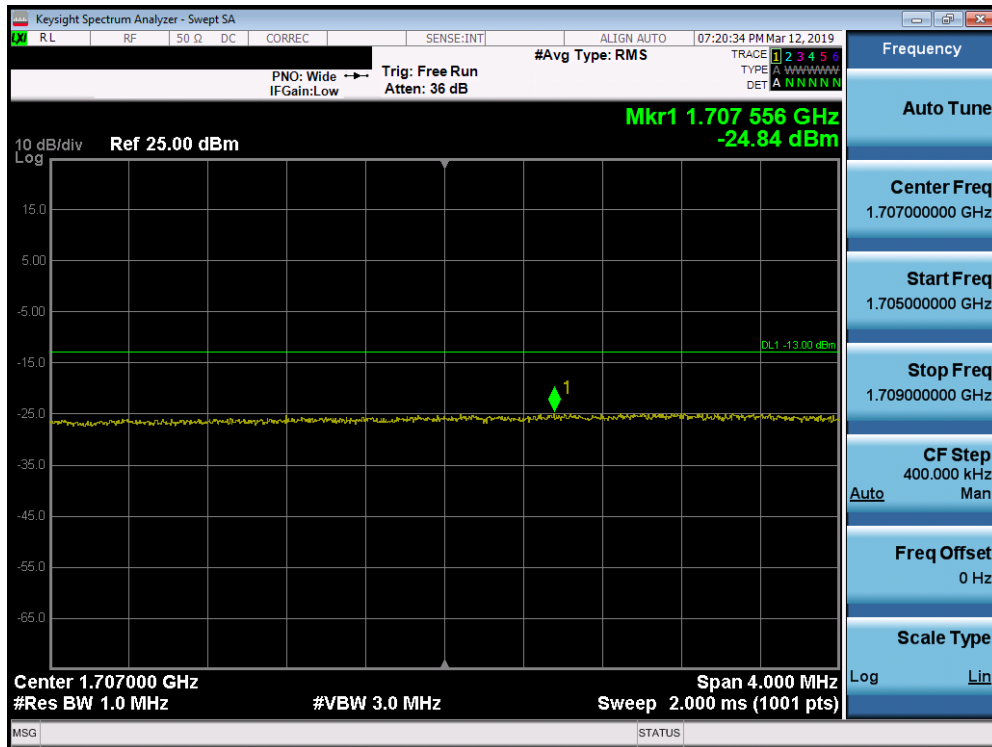


Plot 7-437. Conducted Spurious Plot (Band 66C – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

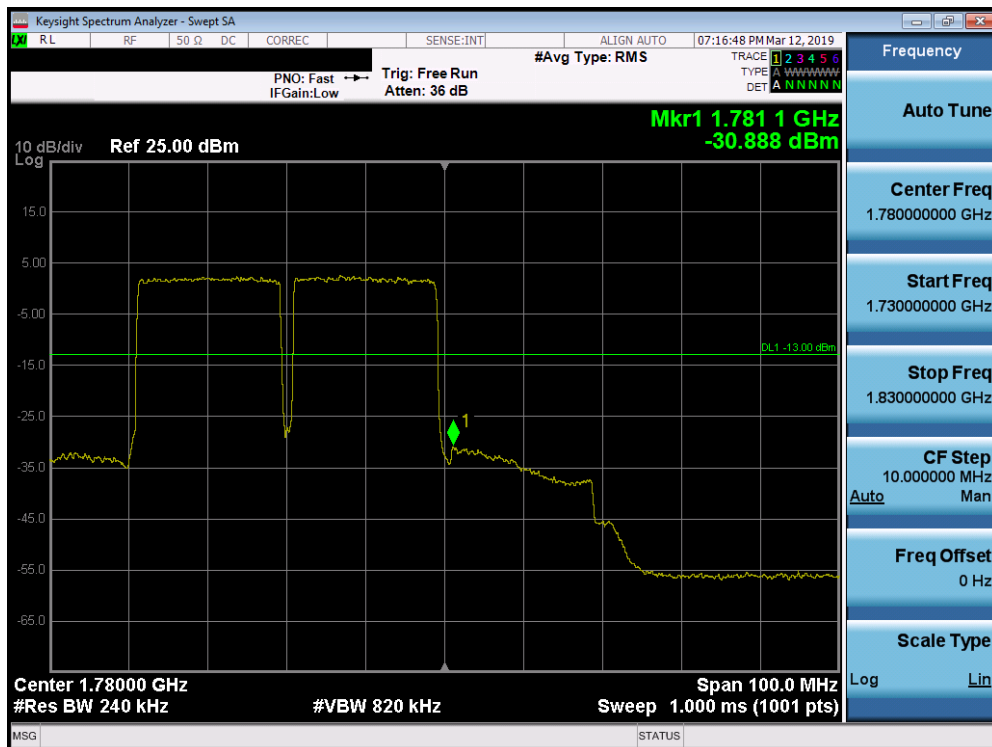


Plot 7-438. Lower Band Edge Plot (Band 66C QPSK – PCC:20.0MHz SCC:20.0MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 257 of 340                 |

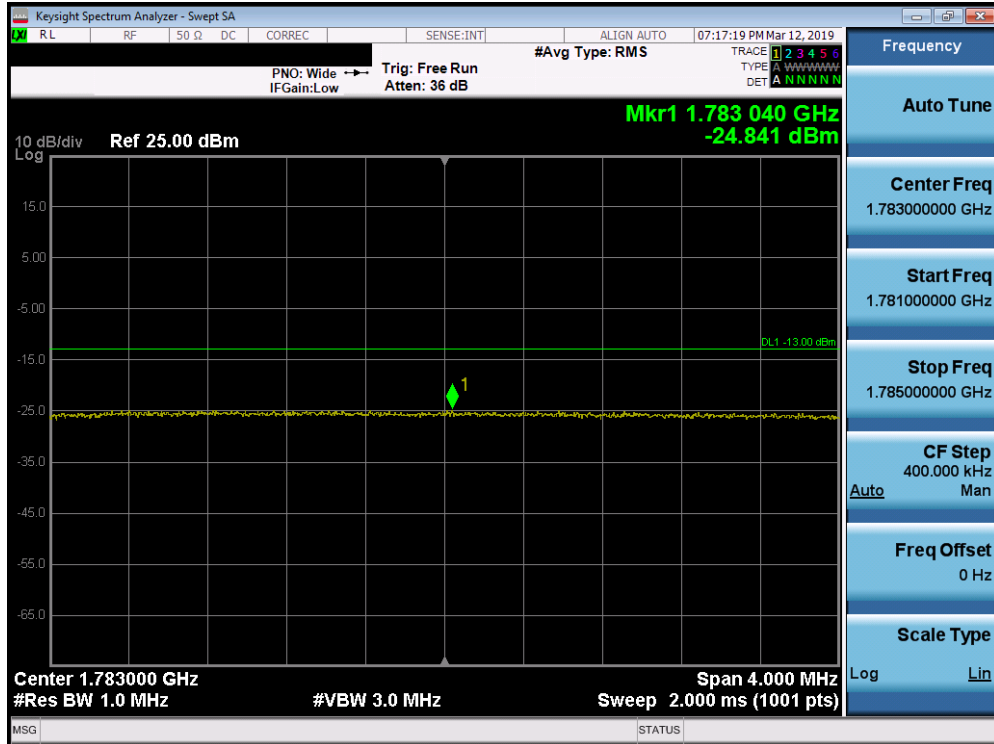


Plot 7-439. Lower Extended Band Edge Plot (Band 66C QPSK – PCC:20.0MHz SCC:20.0MHz – Full RB)



Plot 7-440. Upper Band Edge Plot (Band 66C QPSK – PCC:20.0MHz SCC:20.0MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 258 of 340                 |



Plot 7-441. Upper Extended Band Edge Plot (Band 66C QPSK – PCC:20.0MHz SCC:20.0MHz – Full RB)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 259 of 340                 |

## 7.8 Radiated Power (ERP/EIRP)

### Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

### Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW  $\geq 3 \times$  RBW
4. Span = 1.5 times the OBW
5. No. of sweep points  $\geq 2 \times$  span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 260 of 340                 |

## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

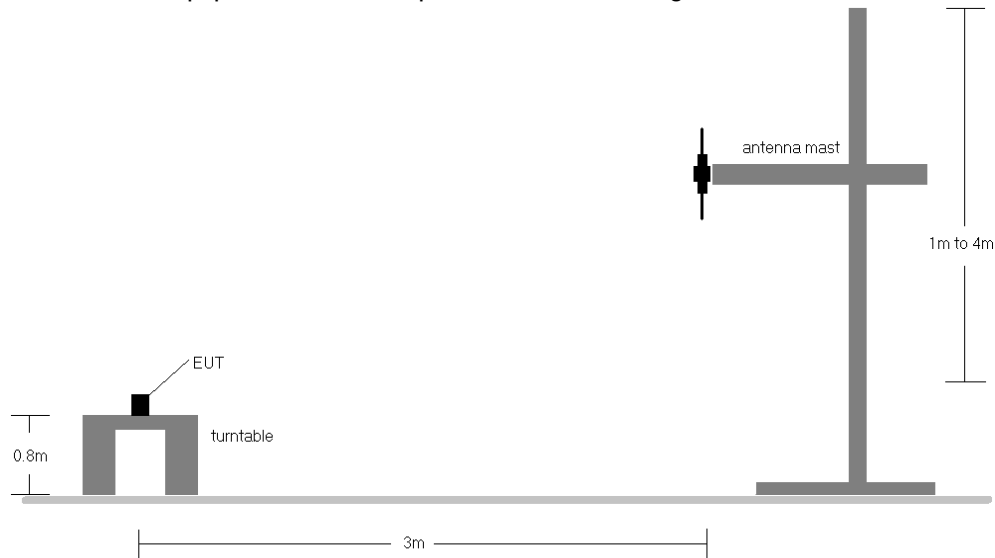


**Figure 7-7. Radiated Test Setup <1GHz**

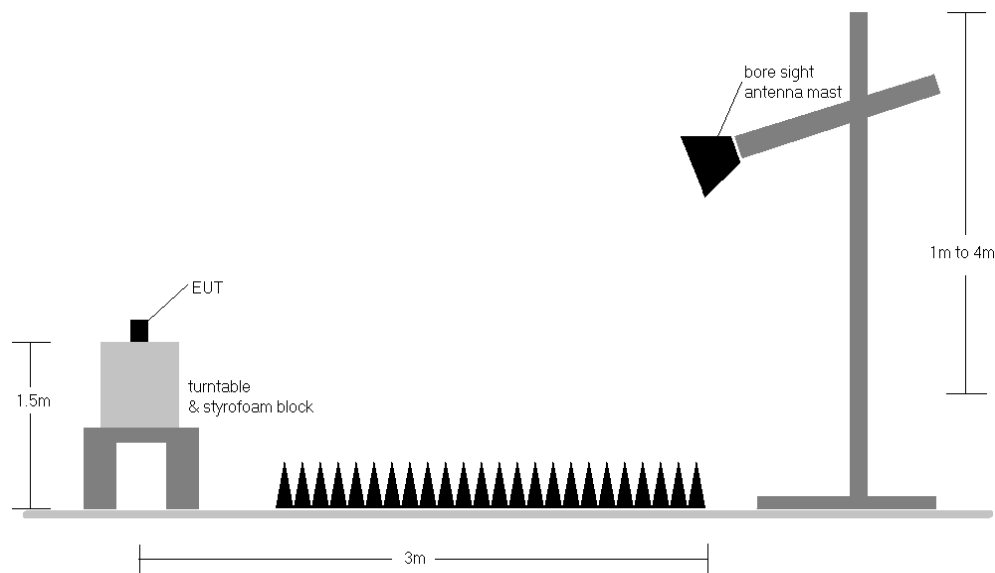


**Figure 7-8. Radiated Test Setup >1GHz**

## Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 261 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm]    | ERP [Watts]  | ERP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|
| 665.50          | 5                       | QPSK   | Open        | H               | 171                 | 301                        | 1 / 24         | 17.49                  | 3.84            | 19.18        | 0.083        | 34.77           | -15.60      |
| 680.50          | 5                       | QPSK   | Open        | H               | 171                 | 301                        | 1 / 0          | 17.15                  | 3.91            | 18.91        | 0.078        | 34.77           | -15.86      |
| 695.50          | 5                       | QPSK   | Open        | H               | 171                 | 30                         | 1 / 24         | 17.41                  | 3.98            | <b>19.24</b> | 0.084        | 34.77           | -15.53      |
| 695.50          | 5                       | 16-QAM | Open        | H               | 171                 | 30                         | 1 / 24         | 16.76                  | 3.98            | <b>18.59</b> | 0.072        | 34.77           | -16.18      |
| 695.50          | 5                       | 64-QAM | Open        | H               | 171                 | 30                         | 1 / 24         | 15.99                  | 3.98            | <b>17.82</b> | 0.061        | 34.77           | -16.95      |
| 668.00          | 10                      | QPSK   | Open        | H               | 179                 | 136                        | 1 / 49         | 16.59                  | 3.85            | 18.29        | 0.067        | 34.77           | -16.48      |
| 680.50          | 10                      | QPSK   | Open        | H               | 179                 | 138                        | 1 / 0          | 16.49                  | 3.91            | 18.25        | 0.067        | 34.77           | -16.52      |
| 693.00          | 10                      | QPSK   | Open        | H               | 148                 | 131                        | 1 / 49         | 17.08                  | 3.97            | <b>18.90</b> | 0.078        | 34.77           | -15.87      |
| 693.00          | 10                      | 16-QAM | Open        | H               | 148                 | 131                        | 1 / 49         | 16.03                  | 3.97            | <b>17.85</b> | 0.061        | 34.77           | -16.92      |
| 693.00          | 10                      | 64-QAM | Open        | H               | 148                 | 131                        | 1 / 49         | 15.13                  | 3.97            | <b>16.95</b> | 0.050        | 34.77           | -17.82      |
| 670.50          | 15                      | QPSK   | Open        | H               | 177                 | 134                        | 1 / 74         | 16.63                  | 3.86            | 18.34        | 0.068        | 34.77           | -16.43      |
| 680.50          | 15                      | QPSK   | Open        | H               | 177                 | 146                        | 1 / 0          | 16.79                  | 3.91            | 18.55        | 0.072        | 34.77           | -16.22      |
| 690.50          | 15                      | QPSK   | Open        | H               | 177                 | 134                        | 1 / 0          | 17.74                  | 3.96            | <b>19.55</b> | <b>0.090</b> | 34.77           | -15.23      |
| 690.50          | 15                      | 16-QAM | Open        | H               | 177                 | 134                        | 1 / 0          | 17.01                  | 3.96            | <b>18.82</b> | 0.076        | 34.77           | -15.96      |
| 690.50          | 15                      | 64-QAM | Open        | H               | 177                 | 134                        | 1 / 0          | 15.61                  | 3.96            | <b>17.42</b> | 0.055        | 34.77           | -17.36      |
| 673.00          | 20                      | QPSK   | Open        | H               | 100                 | 174                        | 1 / 99         | 16.83                  | 3.87            | 18.55        | 0.072        | 34.77           | -16.22      |
| 680.50          | 20                      | QPSK   | Open        | H               | 100                 | 174                        | 1 / 0          | 16.56                  | 3.91            | 18.32        | 0.068        | 34.77           | -16.45      |
| 688.00          | 20                      | QPSK   | Open        | H               | 100                 | 174                        | 1 / 0          | 17.66                  | 3.94            | <b>19.45</b> | 0.088        | 34.77           | -15.32      |
| 688.00          | 20                      | 16-QAM | Open        | H               | 100                 | 174                        | 1 / 0          | 17.00                  | 3.94            | <b>18.79</b> | 0.076        | 34.77           | -15.98      |
| 688.00          | 20                      | 64-QAM | Open        | H               | 100                 | 174                        | 1 / 0          | 15.56                  | 3.94            | <b>17.35</b> | 0.054        | 34.77           | -17.42      |
| 690.50          | 15                      | QPSK   | Open        | V               | 221                 | 56                         | 3.96           | 15.37                  | 3.96            | 17.18        | 0.052        | 34.77           | -17.60      |
| 690.50          | 15 (WCP)                | QPSK   | Open        | H               | 163                 | 155                        | 3.96           | 16.88                  | 3.96            | 18.69        | 0.074        | 34.77           | -16.09      |
| 690.50          | 15                      | QPSK   | Closed      | H               | 177                 | 134                        | 3.96           | 16.68                  | 3.96            | 18.49        | 0.071        | 34.77           | -16.29      |

Table 7-14. ERP Data (Band 71)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 262 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm]    | ERP [Watts]  | ERP Limit [dBm] | Margin [dB] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 699.70          | 1.4                     | QPSK   | Open        | H               | 256                 | 301                        | 1 / 5          | 16.62                  | 4.00            | 18.47        | 0.070        | 34.77           | -16.30      | 20.62        | 0.115        | 36.99            | -16.37      |
| 707.50          | 1.4                     | QPSK   | Open        | H               | 263                 | 315                        | 1 / 5          | 16.87                  | 4.22            | 18.94        | 0.078        | 34.77           | -15.84      | 21.09        | 0.128        | 36.99            | -15.90      |
| 715.30          | 1.4                     | QPSK   | Open        | H               | 265                 | 311                        | 1 / 5          | 16.80                  | 4.44            | <b>19.09</b> | 0.081        | 34.77           | -15.68      | <b>21.24</b> | 0.133        | 36.99            | -15.75      |
| 715.30          | 1.4                     | 16-QAM | Open        | H               | 265                 | 311                        | 1 / 0          | 16.24                  | 4.44            | <b>18.53</b> | 0.071        | 34.77           | -16.24      | <b>20.68</b> | 0.117        | 36.99            | -16.31      |
| 715.30          | 1.4                     | 64-QAM | Open        | H               | 265                 | 311                        | 1 / 0          | 15.25                  | 4.44            | <b>17.54</b> | 0.057        | 34.77           | -17.23      | <b>19.69</b> | 0.093        | 36.99            | -17.30      |
| 700.50          | 3                       | QPSK   | Open        | H               | 258                 | 325                        | 1 / 14         | 16.51                  | 4.01            | 18.37        | 0.069        | 34.77           | -16.40      | 20.52        | 0.113        | 36.99            | -16.47      |
| 707.50          | 3                       | QPSK   | Open        | H               | 260                 | 325                        | 1 / 0          | 16.97                  | 4.22            | 19.04        | 0.080        | 34.77           | -15.74      | 21.19        | 0.131        | 36.99            | -15.80      |
| 714.50          | 3                       | QPSK   | Open        | H               | 262                 | 312                        | 1 / 0          | 16.87                  | 4.41            | <b>19.13</b> | 0.082        | 34.77           | -15.64      | <b>21.28</b> | 0.134        | 36.99            | -15.71      |
| 714.50          | 3                       | 16-QAM | Open        | H               | 262                 | 312                        | 1 / 0          | 16.04                  | 4.41            | <b>18.30</b> | 0.068        | 34.77           | -16.47      | <b>20.45</b> | 0.111        | 36.99            | -16.54      |
| 707.50          | 3                       | 64-QAM | Open        | H               | 260                 | 325                        | 1 / 0          | 15.26                  | 4.22            | <b>17.33</b> | 0.054        | 34.77           | -17.45      | <b>19.48</b> | 0.089        | 36.99            | -17.51      |
| 701.50          | 5                       | QPSK   | Open        | H               | 258                 | 303                        | 1 / 24         | 17.31                  | 4.04            | <b>19.20</b> | 0.083        | 34.77           | -15.57      | <b>21.35</b> | 0.137        | 36.99            | -15.64      |
| 707.50          | 5                       | QPSK   | Open        | H               | 265                 | 299                        | 1 / 0          | 17.12                  | 4.22            | 19.19        | 0.083        | 34.77           | -15.59      | 21.34        | 0.136        | 36.99            | -15.65      |
| 713.50          | 5                       | QPSK   | Open        | H               | 270                 | 308                        | 1 / 24         | 16.91                  | 4.39            | 19.15        | 0.082        | 34.77           | -15.62      | 21.30        | 0.135        | 36.99            | -15.69      |
| 701.50          | 5                       | 16-QAM | Open        | H               | 258                 | 303                        | 1 / 24         | 16.65                  | 4.04            | <b>18.54</b> | 0.072        | 34.77           | -16.23      | <b>20.69</b> | 0.117        | 36.99            | -16.30      |
| 701.50          | 5                       | 64-QAM | Open        | H               | 258                 | 303                        | 1 / 24         | 15.64                  | 4.04            | <b>17.53</b> | 0.057        | 34.77           | -17.24      | <b>19.68</b> | 0.093        | 36.99            | -17.31      |
| 704.00          | 10                      | QPSK   | Open        | H               | 263                 | 297                        | 1 / 49         | 17.04                  | 4.12            | 19.01        | 0.080        | 34.77           | -15.77      | 21.16        | 0.130        | 36.99            | -15.83      |
| 707.50          | 10                      | QPSK   | Open        | H               | 260                 | 316                        | 1 / 0          | 17.13                  | 4.22            | 19.20        | 0.083        | 34.77           | -15.58      | 21.35        | 0.136        | 36.99            | -15.64      |
| 711.00          | 10                      | QPSK   | Open        | H               | 269                 | 309                        | 1 / 49         | 17.07                  | 4.32            | <b>19.24</b> | <b>0.084</b> | 34.77           | -15.54      | <b>21.39</b> | <b>0.138</b> | 36.99            | -15.60      |
| 711.00          | 10                      | 16-QAM | Open        | H               | 269                 | 309                        | 1 / 49         | 16.46                  | 4.32            | <b>18.63</b> | 0.073        | 34.77           | -16.15      | <b>20.78</b> | 0.120        | 36.99            | -16.21      |
| 711.00          | 10                      | 64-QAM | Open        | H               | 269                 | 309                        | 1 / 49         | 15.46                  | 4.32            | <b>17.63</b> | 0.058        | 34.77           | -17.15      | <b>19.78</b> | 0.095        | 36.99            | -17.21      |
| 711.00          | 10                      | QPSK   | Open        | V               | 147                 | 200                        | 4.32           | 15.03                  | 3.99            | 16.87        | 0.049        | 34.77           | -17.90      | 19.02        | 0.080        | 36.99            | -17.97      |
| 711.00          | 10 (WCP)                | QPSK   | Open        | H               | 251                 | 313                        | 4.32           | 14.84                  | 4.32            | 17.01        | 0.050        | 34.77           | -17.77      | 19.16        | 0.082        | 36.99            | -17.83      |
| 711.00          | 10                      | QPSK   | Closed      | H               | 269                 | 309                        | 4.32           | 15.46                  | 4.32            | 17.63        | 0.058        | 34.77           | -17.15      | 19.78        | 0.095        | 36.99            | -17.21      |

Table 7-15. ERP Data (Band 12)

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm]    | ERP [Watts]  | ERP Limit [dBm] | Margin [dB] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 779.50          | 5                       | QPSK   | Open        | H               | 234                 | 319                        | 1 / 24         | 17.54                  | 6.18            | 21.57        | 0.143        | 34.77           | -13.21      | 23.72        | 0.235        | 36.99            | -13.27      |
| 782.00          | 5                       | QPSK   | Open        | H               | 237                 | 321                        | 1 / 0          | 17.94                  | 6.24            | <b>22.03</b> | <b>0.160</b> | 34.77           | -12.74      | <b>24.18</b> | <b>0.262</b> | 36.99            | -12.81      |
| 784.50          | 5                       | QPSK   | Open        | H               | 240                 | 321                        | 1 / 0          | 17.59                  | 6.30            | 21.74        | 0.149        | 34.77           | -13.03      | 23.89        | 0.245        | 36.99            | -13.10      |
| 779.50          | 5                       | 16-QAM | Open        | H               | 234                 | 319                        | 1 / 24         | 16.83                  | 6.18            | 20.86        | 0.122        | 34.77           | -13.92      | 23.01        | 0.200        | 36.99            | -13.98      |
| 782.00          | 5                       | 16-QAM | Open        | H               | 237                 | 321                        | 1 / 0          | 17.20                  | 6.24            | <b>21.29</b> | 0.135        | 34.77           | -13.48      | <b>23.44</b> | 0.221        | 36.99            | -13.55      |
| 784.50          | 5                       | 16-QAM | Open        | H               | 240                 | 321                        | 1 / 0          | 16.86                  | 6.30            | 21.01        | 0.126        | 34.77           | -13.76      | 23.16        | 0.207        | 36.99            | -13.83      |
| 779.50          | 5                       | 64-QAM | Open        | H               | 234                 | 319                        | 1 / 24         | 15.80                  | 6.18            | 19.83        | 0.096        | 34.77           | -14.95      | 21.98        | 0.158        | 36.99            | -15.01      |
| 782.00          | 5                       | 64-QAM | Open        | H               | 237                 | 321                        | 1 / 0          | 16.21                  | 6.24            | <b>20.30</b> | 0.107        | 34.77           | -14.47      | <b>22.45</b> | 0.176        | 36.99            | -14.54      |
| 784.50          | 5                       | 64-QAM | Open        | H               | 240                 | 321                        | 1 / 0          | 15.83                  | 6.30            | 19.98        | 0.100        | 34.77           | -14.79      | 22.13        | 0.163        | 36.99            | -14.86      |
| 782.00          | 10                      | QPSK   | Open        | H               | 234                 | 327                        | 1 / 0          | 17.15                  | 6.24            | <b>21.24</b> | 0.133        | 34.77           | -13.53      | <b>23.39</b> | 0.218        | 36.99            | -13.60      |
| 782.00          | 10                      | 16-QAM | Open        | H               | 234                 | 327                        | 1 / 0          | 16.42                  | 6.24            | <b>20.51</b> | 0.112        | 34.77           | -14.26      | <b>22.66</b> | 0.184        | 36.99            | -14.33      |
| 782.00          | 10                      | 64-QAM | Open        | H               | 234                 | 327                        | 1 / 0          | 15.42                  | 6.24            | <b>19.51</b> | 0.089        | 34.77           | -15.26      | <b>21.66</b> | 0.147        | 36.99            | -15.33      |
| 782.00          | 5                       | QPSK   | Open        | V               | 146                 | 10                         | 6.24           | 12.93                  | 5.77            | 16.55        | 0.045        | 34.77           | -18.22      | 18.70        | 0.074        | 36.99            | -18.29      |
| 782.00          | 5 (WCP)                 | QPSK   | Open        | H               | 165                 | 17                         | 6.24           | 11.94                  | 6.24            | 16.03        | 0.040        | 34.77           | -18.74      | 18.18        | 0.066        | 36.99            | -18.81      |
| 782.00          | 5                       | QPSK   | Closed      | H               | 240                 | 260                        | 6.24           | 16.33                  | 6.24            | 20.42        | <b>0.110</b> | 34.77           | -14.35      | 22.57        | <b>0.181</b> | 36.99            | -14.42      |

Table 7-16. ERP Data (Band 13)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 263 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm]    | ERP [Watts]  | ERP Limit [dBm] | Margin [dB] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 824.70          | 1.4                     | QPSK   | Open        | H               | 216                 | 325                        | 1 / 5          | 15.50                  | 6.75            | <b>20.10</b> | 0.102        | 38.45           | -18.35      | <b>22.25</b> | 0.168        | 40.61            | -18.36      |
| 836.50          | 1.4                     | QPSK   | Open        | H               | 212                 | 318                        | 1 / 0          | 14.20                  | 6.78            | 18.83        | 0.076        | 38.45           | -19.63      | 20.98        | 0.125        | 40.61            | -19.63      |
| 848.30          | 1.4                     | QPSK   | Open        | H               | 210                 | 331                        | 1 / 0          | 13.51                  | 6.80            | 18.16        | 0.065        | 38.45           | -20.29      | 20.31        | 0.107        | 40.61            | -20.30      |
| 824.70          | 1.4                     | 16-QAM | Open        | H               | 216                 | 325                        | 1 / 5          | 14.76                  | 6.75            | <b>19.36</b> | 0.086        | 38.45           | -19.09      | <b>21.51</b> | 0.142        | 40.61            | -19.10      |
| 824.70          | 1.4                     | 64-QAM | Open        | H               | 216                 | 325                        | 1 / 5          | 13.75                  | 6.75            | <b>18.35</b> | 0.068        | 38.45           | -20.10      | <b>20.50</b> | 0.112        | 40.61            | -20.11      |
| 825.50          | 3                       | QPSK   | Open        | H               | 213                 | 319                        | 1 / 14         | 15.78                  | 6.75            | <b>20.38</b> | 0.109        | 38.45           | -18.07      | <b>22.53</b> | 0.179        | 40.61            | -18.07      |
| 836.50          | 3                       | QPSK   | Open        | H               | 201                 | 322                        | 1 / 0          | 14.60                  | 6.78            | 19.23        | 0.084        | 38.45           | -19.23      | 21.38        | 0.137        | 40.61            | -19.23      |
| 847.50          | 3                       | QPSK   | Open        | H               | 197                 | 319                        | 1 / 0          | 12.66                  | 6.80            | 17.31        | 0.054        | 38.45           | -21.14      | 19.46        | 0.088        | 40.61            | -21.15      |
| 825.50          | 3                       | 16-QAM | Open        | H               | 213                 | 319                        | 1 / 14         | 15.03                  | 6.75            | <b>19.63</b> | 0.092        | 38.45           | -18.82      | <b>21.78</b> | 0.151        | 40.61            | -18.82      |
| 825.50          | 3                       | 64-QAM | Open        | H               | 213                 | 319                        | 1 / 14         | 13.99                  | 6.75            | <b>18.59</b> | 0.072        | 38.45           | -19.86      | <b>20.74</b> | 0.119        | 40.61            | -19.86      |
| 826.50          | 5                       | QPSK   | Open        | H               | 203                 | 317                        | 1 / 24         | 15.99                  | 6.76            | <b>20.60</b> | <b>0.115</b> | 38.45           | -17.86      | <b>22.75</b> | <b>0.188</b> | 40.61            | -17.86      |
| 836.50          | 5                       | QPSK   | Open        | H               | 203                 | 317                        | 1 / 0          | 15.36                  | 6.76            | 19.97        | 0.099        | 38.45           | -18.49      | <b>22.12</b> | <b>0.163</b> | 40.61            | -18.49      |
| 846.50          | 5                       | QPSK   | Open        | H               | 208                 | 323                        | 1 / 0          | 15.08                  | 6.78            | 19.71        | 0.093        | 38.45           | -18.75      | 21.86        | 0.153        | 40.61            | -18.75      |
| 826.50          | 5                       | 16-QAM | Open        | H               | 203                 | 317                        | 1 / 24         | 15.33                  | 6.76            | <b>19.94</b> | 0.099        | 38.45           | -18.52      | <b>22.09</b> | 0.162        | 40.61            | -18.52      |
| 826.50          | 5                       | 64-QAM | Open        | H               | 203                 | 317                        | 1 / 24         | 14.24                  | 6.76            | <b>18.85</b> | 0.077        | 38.45           | -19.61      | <b>21.00</b> | 0.126        | 40.61            | -19.61      |
| 829.00          | 10                      | QPSK   | Open        | H               | 217                 | 326                        | 1 / 0          | 15.66                  | 6.76            | <b>20.27</b> | 0.106        | 38.45           | -18.18      | <b>22.42</b> | 0.175        | 40.61            | -18.19      |
| 836.50          | 10                      | QPSK   | Open        | H               | 202                 | 315                        | 1 / 0          | 14.96                  | 6.78            | 19.59        | 0.091        | 38.45           | -18.87      | 21.74        | 0.149        | 40.61            | -18.87      |
| 844.00          | 10                      | QPSK   | Open        | H               | 212                 | 338                        | 1 / 49         | 12.84                  | 6.79            | 17.48        | 0.056        | 38.45           | -20.97      | 19.63        | 0.092        | 40.61            | -20.98      |
| 829.00          | 10                      | 16-QAM | Open        | H               | 217                 | 326                        | 1 / 0          | 14.59                  | 6.76            | <b>19.20</b> | 0.083        | 38.45           | -19.25      | <b>21.35</b> | 0.136        | 40.61            | -19.26      |
| 829.00          | 10                      | 64-QAM | Open        | H               | 217                 | 326                        | 1 / 0          | 13.61                  | 6.76            | <b>18.22</b> | 0.066        | 38.45           | -20.23      | <b>20.37</b> | 0.109        | 40.61            | -20.24      |
| 826.50          | 5                       | QPSK   | Open        | V               | 139                 | 150                        | 6.76           | 13.83                  | 6.35            | 18.03        | 0.064        | 38.45           | -20.42      | 20.18        | 0.104        | 40.61            | -20.43      |
| 826.50          | 5 (WCP)                 | QPSK   | Open        | H               | 145                 | 320                        | 6.76           | 12.36                  | 6.76            | 16.97        | 0.050        | 38.45           | -21.49      | 19.12        | 0.082        | 40.61            | -21.49      |
| 826.50          | 5                       | QPSK   | Closed      | H               | 212                 | 332                        | 6.76           | 13.12                  | 6.76            | 17.73        | <b>0.059</b> | 38.45           | -20.73      | 19.88        | <b>0.097</b> | 40.61            | -20.73      |

Table 7-17. ERP Data (Band 26/5)

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm]    | ERP [Watts] | ERP Limit [dBm] | Margin [dB] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|-------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 831.50          | 15                      | QPSK   | Open        | H               | 203                 | 317                        | 1 / 0          | 15.69                  | 6.77            | 20.31        | 0.107       | 38.45           | -18.15      | 22.46        | 0.176        | 40.61            | -18.15      |
| 836.50          | 15                      | QPSK   | Open        | H               | 205                 | 321                        | 1 / 0          | 15.84                  | 6.78            | <b>20.47</b> | 0.111       | 38.45           | -17.99      | <b>22.62</b> | 0.183        | 40.61            | -17.99      |
| 841.50          | 15                      | QPSK   | Open        | H               | 207                 | 319                        | 1 / 0          | 14.82                  | 6.79            | 19.46        | 0.088       | 38.45           | -19.00      | 21.61        | 0.145        | 40.61            | -19.00      |
| 836.50          | 15                      | 16-QAM | Open        | H               | 205                 | 321                        | 1 / 0          | 15.19                  | 6.78            | <b>19.82</b> | 0.096       | 38.45           | -18.64      | <b>21.97</b> | 0.157        | 40.61            | -18.64      |
| 836.50          | 15                      | 64-QAM | Open        | H               | 205                 | 321                        | 1 / 0          | 14.19                  | 6.78            | <b>18.82</b> | 0.076       | 38.45           | -19.64      | <b>20.97</b> | 0.125        | 40.61            | -19.64      |

Table 7-18. ERP Data (Band 26)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 264 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 1710.70         | 1.4                     | QPSK   | Open        | H               | 141                 | 167                        | 1 / 5          | 16.75                  | 8.16            | <b>24.91</b> | <b>0.309</b> | 30.00            | -5.09       |
| 1745.00         | 1.4                     | QPSK   | Open        | H               | 142                 | 168                        | 1 / 5          | 16.36                  | 8.19            | 24.55        | 0.285        | 30.00            | -5.45       |
| 1779.30         | 1.4                     | QPSK   | Open        | H               | 143                 | 162                        | 1 / 5          | 16.38                  | 8.25            | 24.63        | 0.290        | 30.00            | -5.37       |
| 1710.70         | 1.4                     | 16-QAM | Open        | H               | 141                 | 167                        | 1 / 5          | 15.92                  | 8.16            | <b>24.08</b> | 0.256        | 30.00            | -5.92       |
| 1710.70         | 1.4                     | 64-QAM | Open        | H               | 141                 | 167                        | 1 / 5          | 15.21                  | 8.16            | <b>23.37</b> | 0.217        | 30.00            | -6.63       |
| 1711.50         | 3                       | QPSK   | Open        | H               | 145                 | 162                        | 1 / 14         | 16.54                  | 8.16            | <b>24.70</b> | 0.295        | 30.00            | -5.30       |
| 1745.00         | 3                       | QPSK   | Open        | H               | 146                 | 160                        | 1 / 14         | 16.17                  | 8.19            | 24.36        | 0.273        | 30.00            | -5.64       |
| 1778.50         | 3                       | QPSK   | Open        | H               | 142                 | 161                        | 1 / 14         | 16.11                  | 8.25            | 24.36        | 0.273        | 30.00            | -5.64       |
| 1711.50         | 3                       | 16-QAM | Open        | H               | 145                 | 162                        | 1 / 14         | 15.77                  | 8.16            | <b>23.93</b> | 0.247        | 30.00            | -6.07       |
| 1711.50         | 3                       | 64-QAM | Open        | H               | 145                 | 162                        | 1 / 14         | 15.01                  | 8.16            | <b>23.17</b> | 0.207        | 30.00            | -6.83       |
| 1712.50         | 5                       | QPSK   | Open        | H               | 140                 | 163                        | 1 / 24         | 16.47                  | 8.16            | <b>24.63</b> | 0.290        | 30.00            | -5.37       |
| 1745.00         | 5                       | QPSK   | Open        | H               | 139                 | 161                        | 1 / 24         | 16.11                  | 8.19            | 24.30        | 0.269        | 30.00            | -5.70       |
| 1777.50         | 5                       | QPSK   | Open        | H               | 141                 | 161                        | 1 / 24         | 16.01                  | 8.25            | 24.26        | 0.266        | 30.00            | -5.74       |
| 1712.50         | 5                       | 16-QAM | Open        | H               | 140                 | 163                        | 1 / 24         | 15.75                  | 8.16            | <b>23.91</b> | 0.246        | 30.00            | -6.09       |
| 1712.50         | 5                       | 64-QAM | Open        | H               | 140                 | 163                        | 1 / 24         | 14.88                  | 8.16            | <b>23.04</b> | 0.201        | 30.00            | -6.96       |
| 1715.00         | 10                      | QPSK   | Open        | H               | 142                 | 168                        | 1 / 49         | 16.31                  | 8.16            | <b>24.47</b> | 0.280        | 30.00            | -5.53       |
| 1745.00         | 10                      | QPSK   | Open        | H               | 141                 | 165                        | 1 / 49         | 15.98                  | 8.19            | 24.17        | 0.261        | 30.00            | -5.83       |
| 1775.00         | 10                      | QPSK   | Open        | H               | 146                 | 166                        | 1 / 49         | 15.90                  | 8.24            | 24.14        | 0.260        | 30.00            | -5.86       |
| 1715.00         | 10                      | 16-QAM | Open        | H               | 142                 | 168                        | 1 / 49         | 15.49                  | 8.16            | <b>23.65</b> | 0.232        | 30.00            | -6.35       |
| 1715.00         | 10                      | 64-QAM | Open        | H               | 142                 | 168                        | 1 / 49         | 14.77                  | 8.16            | <b>22.93</b> | 0.196        | 30.00            | -7.07       |
| 1717.50         | 15                      | QPSK   | Open        | H               | 142                 | 165                        | 1 / 74         | 16.28                  | 8.16            | <b>24.44</b> | 0.278        | 30.00            | -5.56       |
| 1745.00         | 15                      | QPSK   | Open        | H               | 142                 | 166                        | 1 / 74         | 15.95                  | 8.19            | 24.14        | 0.260        | 30.00            | -5.86       |
| 1772.50         | 15                      | QPSK   | Open        | H               | 145                 | 161                        | 1 / 74         | 15.87                  | 8.24            | 24.11        | 0.258        | 30.00            | -5.89       |
| 1717.50         | 15                      | 16-QAM | Open        | H               | 142                 | 165                        | 1 / 74         | 15.41                  | 8.16            | <b>23.57</b> | 0.228        | 30.00            | -6.43       |
| 1717.50         | 15                      | 64-QAM | Open        | H               | 142                 | 165                        | 1 / 74         | 14.90                  | 8.16            | <b>23.06</b> | 0.202        | 30.00            | -6.94       |
| 1720.00         | 20                      | QPSK   | Open        | H               | 146                 | 169                        | 1 / 99         | 16.31                  | 8.17            | <b>24.48</b> | 0.280        | 30.00            | -5.52       |
| 1745.00         | 20                      | QPSK   | Open        | H               | 142                 | 171                        | 1 / 99         | 15.81                  | 8.19            | 24.00        | 0.251        | 30.00            | -6.00       |
| 1770.00         | 20                      | QPSK   | Open        | H               | 144                 | 168                        | 1 / 99         | 15.90                  | 8.23            | 24.13        | 0.259        | 30.00            | -5.87       |
| 1720.00         | 20                      | 16-QAM | Open        | H               | 146                 | 169                        | 1 / 99         | 15.53                  | 8.17            | <b>23.70</b> | 0.234        | 30.00            | -6.30       |
| 1720.00         | 20                      | 64-QAM | Open        | H               | 146                 | 169                        | 1 / 99         | 14.78                  | 8.17            | <b>22.95</b> | 0.197        | 30.00            | -7.05       |
| 1710.70         | 1.4                     | QPSK   | Open        | V               | 251                 | 174                        | 8.16           | 15.68                  | 8.19            | 23.87        | 0.244        | 30.00            | -6.13       |
| 1710.70         | 1.4 (WCP)               | QPSK   | Open        | H               | 153                 | 161                        | 8.16           | 15.88                  | 8.19            | 24.07        | 0.256        | 30.00            | -5.93       |
| 1710.70         | 1.4                     | QPSK   | Closed      | V               | 269                 | 168                        | 8.16           | 15.53                  | 9.19            | 24.72        | 0.297        | 30.00            | -5.28       |

**Table 7-19. EIRP Data (Band 66/4)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 265 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 1850.70         | 1.4                     | QPSK   | Open        | H               | 151                 | 48                         | 1 / 5          | 15.48                  | 8.37            | 23.85        | 0.243        | 33.01            | -9.16       |
| 1882.50         | 1.4                     | QPSK   | Open        | H               | 149                 | 94                         | 1 / 5          | 15.73                  | 8.42            | <b>24.15</b> | 0.260        | 33.01            | -8.86       |
| 1914.30         | 1.4                     | QPSK   | Open        | H               | 144                 | 107                        | 1 / 0          | 15.14                  | 8.47            | 23.61        | 0.230        | 33.01            | -9.40       |
| 1882.50         | 1.4                     | 16-QAM | Open        | H               | 149                 | 94                         | 1 / 5          | 14.92                  | 8.42            | <b>23.34</b> | 0.216        | 33.01            | -9.67       |
| 1882.50         | 1.4                     | 64-QAM | Open        | H               | 149                 | 94                         | 1 / 5          | 13.97                  | 8.42            | <b>22.39</b> | 0.173        | 33.01            | -10.62      |
| 1851.50         | 3                       | QPSK   | Open        | H               | 152                 | 103                        | 1 / 0          | 14.00                  | 8.37            | 22.37        | 0.173        | 33.01            | -10.64      |
| 1882.50         | 3                       | QPSK   | Open        | H               | 152                 | 103                        | 1 / 14         | 14.93                  | 8.42            | 23.35        | 0.216        | 33.01            | -9.66       |
| 1913.50         | 3                       | QPSK   | Open        | H               | 141                 | 105                        | 1 / 0          | 15.24                  | 8.47            | <b>23.71</b> | 0.235        | 33.01            | -9.30       |
| 1913.50         | 3                       | 16-QAM | Open        | H               | 141                 | 105                        | 1 / 0          | 14.46                  | 8.47            | <b>22.93</b> | 0.196        | 33.01            | -10.08      |
| 1913.50         | 3                       | 64-QAM | Open        | H               | 141                 | 105                        | 1 / 0          | 13.79                  | 8.47            | <b>22.26</b> | 0.168        | 33.01            | -10.75      |
| 1852.50         | 5                       | QPSK   | Open        | H               | 100                 | 68                         | 1 / 0          | 14.12                  | 8.37            | 22.49        | 0.177        | 33.01            | -10.52      |
| 1882.50         | 5                       | QPSK   | Open        | H               | 149                 | 95                         | 1 / 0          | 15.42                  | 8.42            | <b>23.84</b> | 0.242        | 33.01            | -9.17       |
| 1912.50         | 5                       | QPSK   | Open        | H               | 141                 | 97                         | 1 / 0          | 15.07                  | 8.47            | 23.54        | 0.226        | 33.01            | -9.47       |
| 1882.50         | 5                       | 16-QAM | Open        | H               | 149                 | 95                         | 1 / 0          | 14.74                  | 8.42            | <b>23.16</b> | 0.207        | 33.01            | -9.85       |
| 1882.50         | 5                       | 64-QAM | Open        | H               | 149                 | 95                         | 1 / 0          | 13.77                  | 8.42            | <b>22.19</b> | 0.166        | 33.01            | -10.82      |
| 1855.00         | 10                      | QPSK   | Open        | H               | 102                 | 57                         | 1 / 0          | 15.03                  | 8.37            | 23.40        | 0.219        | 33.01            | -9.61       |
| 1882.50         | 10                      | QPSK   | Open        | H               | 146                 | 106                        | 1 / 0          | 15.62                  | 8.42            | 24.04        | 0.253        | 33.01            | -8.97       |
| 1910.00         | 10                      | QPSK   | Open        | H               | 139                 | 109                        | 1 / 0          | 15.91                  | 8.46            | <b>24.37</b> | 0.274        | 33.01            | -8.64       |
| 1910.00         | 10                      | 16-QAM | Open        | H               | 139                 | 109                        | 1 / 0          | 14.79                  | 8.46            | <b>23.25</b> | 0.211        | 33.01            | -9.76       |
| 1910.00         | 10                      | 64-QAM | Open        | H               | 139                 | 109                        | 1 / 0          | 13.95                  | 8.46            | <b>22.41</b> | 0.174        | 33.01            | -10.60      |
| 1857.50         | 15                      | QPSK   | Open        | H               | 146                 | 290                        | 1 / 0          | 14.79                  | 8.38            | 23.17        | 0.207        | 33.01            | -9.84       |
| 1882.50         | 15                      | QPSK   | Open        | H               | 146                 | 290                        | 1 / 74         | 15.69                  | 8.42            | <b>24.11</b> | 0.258        | 33.01            | -8.90       |
| 1907.50         | 15                      | QPSK   | Open        | H               | 146                 | 290                        | 1 / 0          | 14.01                  | 8.46            | 22.47        | 0.177        | 33.01            | -10.54      |
| 1882.50         | 15                      | 16-QAM | Open        | H               | 146                 | 290                        | 1 / 74         | 14.86                  | 8.42            | <b>23.28</b> | 0.213        | 33.01            | -9.73       |
| 1882.50         | 15                      | 64-QAM | Open        | H               | 146                 | 290                        | 1 / 74         | 13.94                  | 8.42            | <b>22.36</b> | 0.172        | 33.01            | -10.65      |
| 1860.00         | 20                      | QPSK   | Open        | H               | 176                 | 186                        | 1 / 99         | 16.15                  | 8.38            | 24.53        | 0.284        | 33.01            | -8.48       |
| 1882.50         | 20                      | QPSK   | Open        | H               | 176                 | 186                        | 1 / 0          | 16.27                  | 8.42            | <b>24.69</b> | <b>0.294</b> | 33.01            | -8.32       |
| 1905.00         | 20                      | QPSK   | Open        | H               | 176                 | 186                        | 1 / 0          | 15.83                  | 8.45            | 24.28        | 0.268        | 33.01            | -8.73       |
| 1882.50         | 20                      | 16-QAM | Open        | H               | 176                 | 186                        | 1 / 0          | 15.64                  | 8.42            | <b>24.06</b> | 0.255        | 33.01            | -8.95       |
| 1882.50         | 20                      | 64-QAM | Open        | H               | 176                 | 186                        | 1 / 0          | 14.55                  | 8.42            | <b>22.97</b> | 0.198        | 33.01            | -10.04      |
| 1882.50         | 20                      | QPSK   | Open        | V               | 244                 | 313                        | 8.42           | 15.55                  | 8.42            | 23.97        | 0.249        | 33.01            | -9.04       |
| 1882.50         | 20 (WCP)                | QPSK   | Open        | H               | 165                 | 176                        | 8.42           | 15.04                  | 8.42            | 23.46        | 0.222        | 33.01            | -9.55       |
| 1882.50         | 20                      | QPSK   | Closed      | H               | 170                 | 182                        | 8.42           | 15.23                  | 8.42            | 23.65        | 0.232        | 33.01            | -9.36       |

**Table 7-20. EIRP Data (Band 25/2)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 266 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 2307.50         | 5                       | QPSK   | Open        | V               | 248                 | 334                        | 1 / 0          | 14.11                  | 8.23            | <b>22.34</b> | <b>0.171</b> | 23.98            | -1.64       |
| 2312.50         | 5                       | QPSK   | Open        | V               | 248                 | 334                        | 1 / 0          | 13.92                  | 8.22            | 22.14        | 0.164        | 23.98            | -1.84       |
| 2312.50         | 5                       | 16-QAM | Open        | V               | 248                 | 334                        | 1 / 0          | 13.58                  | 8.22            | <b>21.80</b> | 0.151        | 23.98            | -2.18       |
| 2312.50         | 5                       | 64-QAM | Open        | V               | 248                 | 334                        | 1 / 0          | 12.80                  | 8.22            | 21.02        | 0.126        | 23.98            | -2.96       |
| 2310.00         | 10                      | QPSK   | Open        | V               | 242                 | 331                        | 1 / 49         | 13.80                  | 8.23            | <b>22.03</b> | 0.159        | 23.98            | -1.95       |
| 2310.00         | 10                      | 16-QAM | Open        | V               | 242                 | 331                        | 1 / 49         | 12.92                  | 8.23            | 21.15        | 0.130        | 23.98            | -2.83       |
| 2310.00         | 10                      | 64-QAM | Open        | V               | 242                 | 331                        | 1 / 49         | 12.06                  | 8.23            | 20.29        | 0.107        | 23.98            | -3.69       |
| 2307.50         | 5                       | QPSK   | Open        | H               | 126                 | 133                        | 8.23           | 13.06                  | 8.23            | 21.29        | 0.134        | 23.98            | -2.69       |
| 2307.50         | 5 (WCP)                 | QPSK   | Open        | H               | 232                 | 43                         | 8.23           | 12.89                  | 8.23            | 21.12        | 0.129        | 23.98            | -2.86       |
| 2312.50         | 5                       | QPSK   | Closed      | H               | 241                 | 30                         | 1 / 24         | 12.48                  | 8.22            | <b>20.70</b> | <b>0.117</b> | 23.98            | -3.28       |

**Table 7-21. EIRP Data (Band 30)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset |                                 |
|                                         |                                                                                                                                                                                                                     |                               | Page 267 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 2502.50         | 5                       | QPSK   | Open        | H               | 100                 | 4                          | 1 / 24         | 15.91                  | 7.89            | 23.80        | 0.240        | 33.01            | -9.21       |
| 2535.00         | 5                       | QPSK   | Open        | H               | 100                 | 4                          | 1 / 24         | 16.07                  | 7.83            | <b>23.90</b> | 0.245        | 33.01            | -9.11       |
| 2567.50         | 5                       | QPSK   | Open        | H               | 110                 | 108                        | 1 / 24         | 14.65                  | 7.76            | 22.41        | 0.174        | 33.01            | -10.60      |
| 2535.00         | 5                       | 16-QAM | Open        | H               | 100                 | 4                          | 1 / 24         | 15.35                  | 7.83            | <b>23.18</b> | 0.208        | 33.01            | -9.83       |
| 2535.00         | 5                       | 64-QAM | Open        | H               | 100                 | 4                          | 1 / 24         | 14.64                  | 7.83            | <b>22.47</b> | 0.176        | 33.01            | -10.54      |
| 2505.00         | 10                      | QPSK   | Open        | H               | 144                 | 325                        | 1 / 49         | 16.69                  | 7.89            | <b>24.58</b> | 0.287        | 33.01            | -8.43       |
| 2535.00         | 10                      | QPSK   | Open        | H               | 144                 | 325                        | 1 / 0          | 16.56                  | 7.83            | 24.39        | 0.275        | 33.01            | -8.62       |
| 2565.00         | 10                      | QPSK   | Open        | H               | 118                 | 51                         | 1 / 49         | 15.08                  | 7.77            | 22.85        | 0.193        | 33.01            | -10.16      |
| 2505.00         | 10                      | 16-QAM | Open        | H               | 144                 | 325                        | 1 / 49         | 15.85                  | 7.89            | <b>23.74</b> | 0.237        | 33.01            | -9.27       |
| 2505.00         | 10                      | 64-QAM | Open        | H               | 144                 | 325                        | 1 / 49         | 14.98                  | 7.89            | <b>22.87</b> | 0.194        | 33.01            | -10.14      |
| 2507.50         | 15                      | QPSK   | Open        | H               | 100                 | 203                        | 1 / 74         | 16.63                  | 7.88            | 24.51        | 0.283        | 33.01            | -8.50       |
| 2535.00         | 15                      | QPSK   | Open        | H               | 100                 | 203                        | 1 / 74         | 16.77                  | 7.83            | <b>24.60</b> | 0.288        | 33.01            | -8.41       |
| 2562.50         | 15                      | QPSK   | Open        | H               | 100                 | 203                        | 1 / 0          | 15.94                  | 7.77            | 23.71        | 0.235        | 33.01            | -9.30       |
| 2535.00         | 15                      | 16-QAM | Open        | H               | 100                 | 203                        | 1 / 74         | 15.98                  | 7.83            | <b>23.81</b> | 0.240        | 33.01            | -9.20       |
| 2535.00         | 15                      | 64-QAM | Open        | H               | 100                 | 203                        | 1 / 74         | 15.18                  | 7.83            | <b>23.01</b> | 0.200        | 33.01            | -10.00      |
| 2510.00         | 20                      | QPSK   | Open        | H               | 146                 | 14                         | 1 / 99         | 16.74                  | 7.88            | <b>24.62</b> | <b>0.290</b> | 33.01            | -8.39       |
| 2535.00         | 20                      | QPSK   | Open        | H               | 149                 | 369                        | 1 / 0          | 16.04                  | 7.83            | 23.87        | 0.244        | 33.01            | -9.14       |
| 2560.00         | 20                      | QPSK   | Open        | H               | 113                 | 365                        | 1 / 0          | 15.86                  | 7.78            | 23.64        | 0.231        | 33.01            | -9.37       |
| 2510.00         | 20                      | 16-QAM | Open        | H               | 146                 | 14                         | 1 / 99         | 15.98                  | 7.88            | <b>23.86</b> | 0.243        | 33.01            | -9.15       |
| 2510.00         | 20                      | 64-QAM | Open        | H               | 146                 | 14                         | 1 / 99         | 15.06                  | 7.88            | <b>22.94</b> | 0.197        | 33.01            | -10.07      |
| 2510.00         | 20                      | QPSK   | Open        | V               | 231                 | 217                        | 7.88           | 15.08                  | 7.83            | 22.91        | 0.195        | 33.01            | -10.10      |
| 2510.00         | 20 (WCP)                | QPSK   | Open        | H               | 156                 | 28                         | 7.88           | 14.18                  | 7.83            | 22.01        | 0.159        | 33.01            | -11.00      |
| 2510.00         | 20                      | QPSK   | Closed      | H               | 146                 | 14                         | 1 / 99         | 14.25                  | 7.88            | <b>22.13</b> | <b>0.163</b> | 33.01            | -10.88      |

**Table 7-22. EIRP Data (Band 7)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 268 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 2498.50         | 5                       | QPSK   | Open        | V               | 187                 | 200                        | 1 / 24         | 17.95                  | 8.39            | 26.34        | 0.430        | 33.01            | -6.67       |
| 2502.50         | 5                       | QPSK   | Open        | V               | 187                 | 200                        | 1 / 24         | 18.28                  | 8.39            | 26.67        | 0.464        | 33.01            | -6.34       |
| 2593.00         | 5                       | QPSK   | Open        | V               | 190                 | 165                        | 1 / 24         | 16.61                  | 8.74            | 25.35        | 0.343        | 33.01            | -7.66       |
| 2687.50         | 5                       | QPSK   | Open        | V               | 129                 | 187                        | 1 / 0          | 18.26                  | 8.73            | <b>26.99</b> | 0.500        | 33.01            | -6.02       |
| 2502.50         | 5                       | 16-QAM | Open        | V               | 187                 | 200                        | 1 / 24         | 17.97                  | 8.39            | <b>26.36</b> | 0.432        | 33.01            | -6.65       |
| 2502.50         | 5                       | 64-QAM | Open        | V               | 187                 | 200                        | 1 / 24         | 17.10                  | 8.39            | <b>25.49</b> | 0.354        | 33.01            | -7.52       |
| 2501.00         | 10                      | QPSK   | Open        | V               | 190                 | 231                        | 1 / 0          | 17.97                  | 8.38            | 26.35        | 0.432        | 33.01            | -6.66       |
| 2505.00         | 10                      | QPSK   | Open        | V               | 392                 | 234                        | 1 / 0          | 16.90                  | 8.40            | 25.30        | 0.339        | 33.01            | -7.71       |
| 2593.00         | 10                      | QPSK   | Open        | V               | 392                 | 234                        | 1 / 0          | 18.40                  | 8.74            | <b>27.14</b> | 0.518        | 33.01            | -5.87       |
| 2685.00         | 10                      | QPSK   | Open        | V               | 124                 | 234                        | 1 / 0          | 16.53                  | 8.73            | 25.26        | 0.336        | 33.01            | -7.75       |
| 2593.00         | 10                      | 16-QAM | Open        | V               | 392                 | 234                        | 1 / 0          | 17.61                  | 8.74            | <b>26.35</b> | 0.432        | 33.01            | -6.66       |
| 2593.00         | 10                      | 64-QAM | Open        | V               | 392                 | 234                        | 1 / 0          | 16.72                  | 8.74            | <b>25.46</b> | 0.352        | 33.01            | -7.55       |
| 2503.50         | 15                      | QPSK   | Open        | V               | 195                 | 222                        | 1 / 0          | 18.07                  | 8.39            | 26.46        | 0.443        | 33.01            | -6.55       |
| 2507.50         | 15                      | QPSK   | Open        | V               | 182                 | 205                        | 1 / 0          | 18.34                  | 8.41            | <b>26.75</b> | 0.473        | 33.01            | -6.26       |
| 2593.00         | 15                      | QPSK   | Open        | V               | 144                 | 192                        | 1 / 0          | 17.80                  | 8.74            | 26.54        | 0.451        | 33.01            | -6.47       |
| 2682.50         | 15                      | QPSK   | Open        | V               | 163                 | 189                        | 1 / 0          | 17.10                  | 8.73            | 25.83        | 0.383        | 33.01            | -7.18       |
| 2507.50         | 15                      | 16-QAM | Open        | V               | 182                 | 205                        | 1 / 0          | 17.92                  | 8.41            | <b>26.33</b> | 0.429        | 33.01            | -6.68       |
| 2507.50         | 15                      | 64-QAM | Open        | V               | 182                 | 205                        | 1 / 0          | 16.74                  | 8.41            | <b>25.15</b> | 0.327        | 33.01            | -7.86       |
| 2506.00         | 20                      | QPSK   | Open        | V               | 194                 | 219                        | 1 / 0          | 18.27                  | 8.40            | 26.67        | 0.465        | 33.01            | -6.34       |
| 2510.00         | 20                      | QPSK   | Open        | V               | 162                 | 200                        | 1 / 0          | 18.51                  | 8.42            | 26.93        | 0.493        | 33.01            | -6.08       |
| 2593.00         | 20                      | QPSK   | Open        | V               | 163                 | 189                        | 1 / 0          | 18.63                  | 8.74            | <b>27.37</b> | <b>0.546</b> | 33.01            | -5.64       |
| 2680.00         | 20                      | QPSK   | Open        | V               | 143                 | 183                        | 1 / 0          | 18.44                  | 8.73            | 27.17        | 0.522        | 33.01            | -5.84       |
| 2593.00         | 20                      | 16-QAM | Open        | V               | 163                 | 189                        | 1 / 0          | 18.18                  | 8.74            | <b>26.92</b> | 0.492        | 33.01            | -6.09       |
| 2593.00         | 20                      | 64-QAM | Open        | V               | 163                 | 189                        | 1 / 0          | 16.90                  | 8.74            | <b>25.64</b> | 0.367        | 33.01            | -7.37       |
| 2593.00         | 20                      | QPSK   | Open        | H               | 149                 | 274                        | 8.74           | 15.88                  | 8.74            | 24.62        | 0.290        | 33.01            | -8.39       |
| 2593.00         | 20 (WCP)                | QPSK   | Open        | V               | 165                 | 185                        | 8.74           | 16.19                  | 8.74            | 24.93        | 0.311        | 33.01            | -8.08       |
| 2593.00         | 20                      | QPSK   | Closed      | V               | 163                 | 189                        | 1 / 0          | 18.07                  | 8.74            | <b>26.81</b> | <b>0.480</b> | 33.01            | -6.20       |

Table 7-23. EIRP Data (Band 41 PC2)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 269 of 340                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | EUT Config. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm]   | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-------------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 2498.50         | 5                       | QPSK   | Open        | V               | 119                 | 301                        | 12 / 6         | 14.90                  | 7.72            | 22.62        | 0.183        | 33.01            | -10.39      |
| 2593.00         | 5                       | QPSK   | Open        | V               | 326                 | 327                        | 12 / 6         | 13.17                  | 7.66            | 20.83        | 0.121        | 33.01            | -12.18      |
| 2687.50         | 5                       | QPSK   | Open        | V               | 187                 | 274                        | 12 / 6         | 13.04                  | 7.62            | 20.66        | 0.117        | 33.01            | -12.35      |
| 2498.50         | 5                       | 16-QAM | Open        | V               | 112                 | 307                        | 12 / 6         | 14.67                  | 7.70            | <b>22.37</b> | 0.173        | 33.01            | -10.64      |
| 2498.50         | 5                       | 64-QAM | Open        | V               | 112                 | 307                        | 12 / 6         | 13.87                  | 7.70            | <b>21.57</b> | 0.144        | 33.01            | -11.44      |
| 2501.00         | 10                      | QPSK   | Open        | V               | 121                 | 299                        | 25 / 12        | 15.13                  | 7.72            | 22.85        | 0.193        | 33.01            | -10.16      |
| 2593.00         | 10                      | QPSK   | Open        | V               | 125                 | 215                        | 25 / 12        | 13.02                  | 7.66            | 20.68        | 0.117        | 33.01            | -12.33      |
| 2685.00         | 10                      | QPSK   | Open        | V               | 209                 | 274                        | 1 / 0          | 13.17                  | 7.63            | 20.80        | 0.120        | 33.01            | -12.22      |
| 2501.00         | 10                      | 16-QAM | Open        | V               | 115                 | 311                        | 25 / 12        | 14.83                  | 7.70            | <b>22.53</b> | 0.179        | 33.01            | -10.48      |
| 2501.00         | 10                      | 64-QAM | Open        | V               | 115                 | 311                        | 25 / 12        | 13.74                  | 7.70            | <b>21.44</b> | 0.139        | 33.01            | -11.57      |
| 2503.50         | 15                      | QPSK   | Open        | V               | 124                 | 299                        | 1 / 0          | 14.88                  | 7.72            | 22.60        | 0.182        | 33.01            | -10.41      |
| 2593.00         | 15                      | QPSK   | Open        | V               | 205                 | 206                        | 1 / 0          | 13.15                  | 7.66            | 20.81        | 0.121        | 33.01            | -12.20      |
| 2682.50         | 15                      | QPSK   | Open        | V               | 209                 | 276                        | 36 / 18        | 13.05                  | 7.63            | 20.68        | 0.117        | 33.01            | -12.33      |
| 2503.50         | 15                      | 16-QAM | Open        | V               | 111                 | 307                        | 1 / 0          | 14.71                  | 7.70            | <b>22.41</b> | 0.174        | 33.01            | -10.60      |
| 2503.50         | 15                      | 64-QAM | Open        | V               | 111                 | 307                        | 1 / 0          | 13.62                  | 7.70            | <b>21.32</b> | 0.135        | 33.01            | -11.69      |
| 2506.00         | 20                      | QPSK   | Open        | V               | 122                 | 298                        | 1 / 0          | 15.00                  | 7.72            | 22.72        | 0.187        | 33.01            | -10.29      |
| 2593.00         | 20                      | QPSK   | Open        | V               | 121                 | 213                        | 50 / 25        | 12.90                  | 7.66            | 20.56        | 0.114        | 33.01            | -12.45      |
| 2680.00         | 20                      | QPSK   | Open        | V               | 206                 | 271                        | 50 / 25        | 13.51                  | 7.63            | 21.14        | 0.130        | 33.01            | -11.87      |
| 2506.00         | 20                      | 16-QAM | Open        | V               | 297                 | 254                        | 1 / 0          | 15.19                  | 7.70            | <b>22.89</b> | 0.194        | 33.01            | -10.12      |
| 2506.00         | 20                      | 64-QAM | Open        | V               | 297                 | 254                        | 1 / 0          | 14.14                  | 7.70            | <b>21.84</b> | 0.153        | 33.01            | -11.17      |
| 2506.00         | 20                      | QPSK   | Open        | H               | 144                 | 180                        | 7.70           | 15.33                  | 7.70            | 23.03        | 0.201        | 33.01            | -9.98       |
| 2506.00         | 20 (WCP)                | QPSK   | Open        | V               | 145                 | 174                        | 7.70           | 15.03                  | 7.70            | 22.73        | 0.187        | 33.01            | -10.28      |
| 2506.00         | 20                      | QPSK   | Closed      | V               | 145                 | 174                        | 7.70           | 14.64                  | 7.70            | 22.34        | <b>0.171</b> | 33.01            | -10.67      |

Table 7-24. EIRP Data (Band 41/38 PC3 - OPEN)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 270 of 340                 |

## 7.9 Radiated Spurious Emissions Measurements

### Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

### Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW  $\geq 3 \times$  RBW
3. Span = 1.5 times the OBW
4. No. of sweep points  $\geq 2 \times$  span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 271 of 340                 |

## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

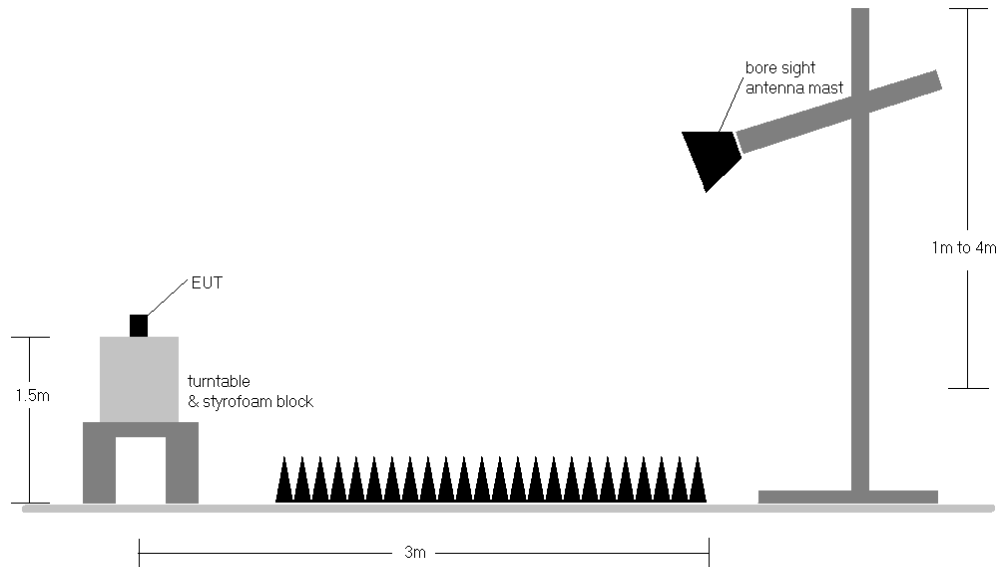


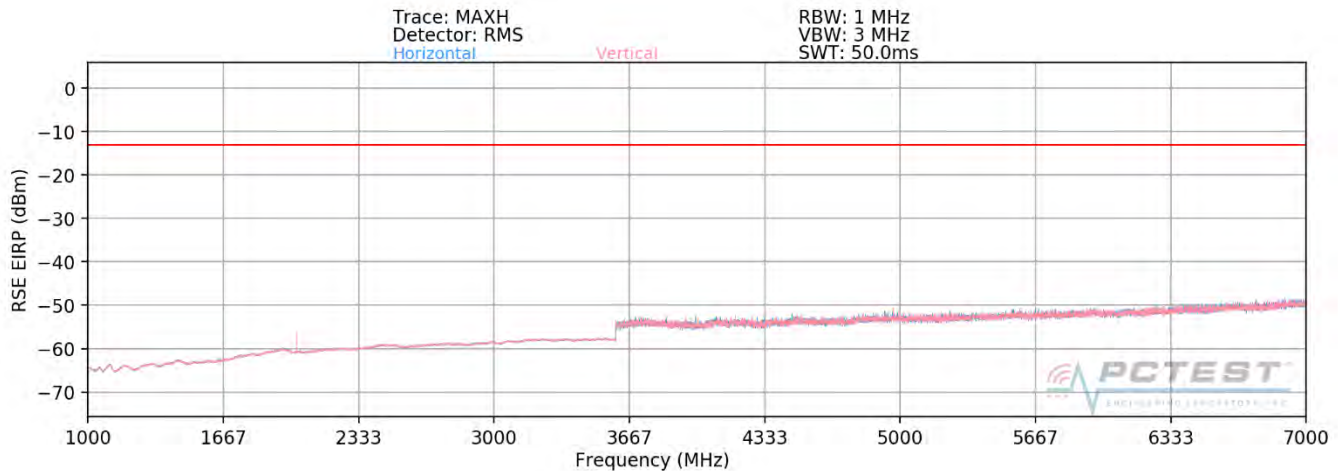
**Figure 7-9. Test Instrument & Measurement Setup**

## Test Notes

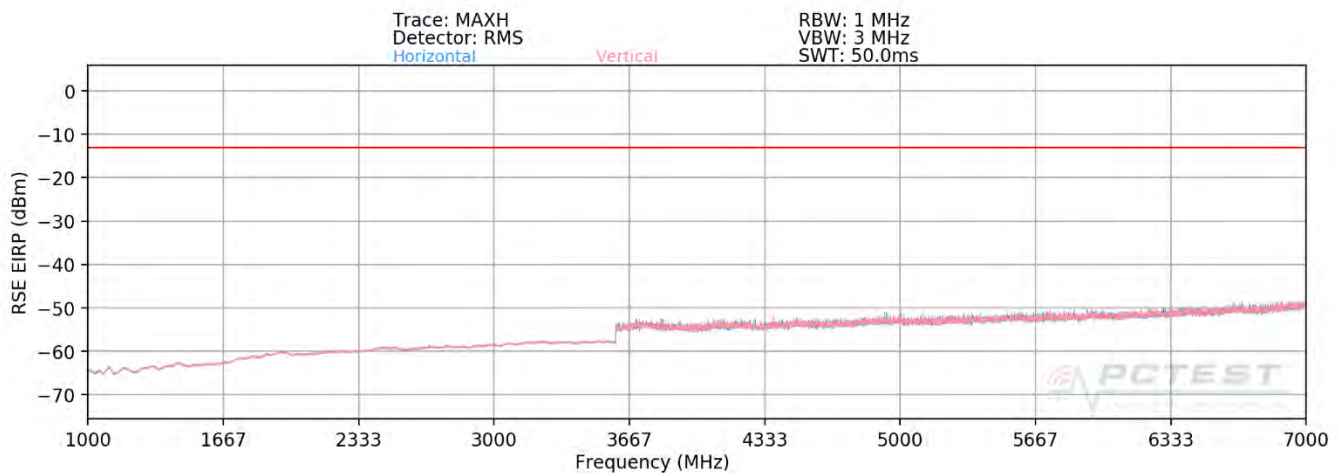
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 272 of 340                 |

## Band 71



**Plot 7-442. Radiated Spurious Plot above 1GHz (Band 71 - CLOSED)**



**Plot 7-443. Radiated Spurious Plot above 1GHz (Band 71 - OPEN)**

OPERATING FREQUENCY: 673.00 MHz  
MODULATION SIGNAL: QPSK  
BANDWIDTH: 20.0 MHz  
DISTANCE: 3 meters  
LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1346.00         | H               | 111                 | 327                        | -69.36                           | 7.47                          | -61.89                        | -48.9       |
| 2019.00         | H               | -                   | -                          | -69.91                           | 8.68                          | -61.23                        | -48.2       |
| 2692.00         | H               | -                   | -                          | -69.79                           | 9.99                          | -59.80                        | -46.8       |

**Table 7-25. Radiated Spurious Data (Band 71 – Low Channel - CLOSED)**

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 273 of 340                 |

OPERATING FREQUENCY: 680.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1361.00         | H               | -                   | -                          | -70.27                           | 7.48                          | -62.78                        | -49.8       |
| 2041.50         | H               | -                   | -                          | -69.80                           | 8.76                          | -61.04                        | -48.0       |

**Table 7-26. Radiated Spurious Data (Band 71 – Mid Channel - CLOSED)**

OPERATING FREQUENCY: 688.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1376.00         | H               | -                   | -                          | -71.28                           | 7.46                          | -63.82                        | -50.8       |
| 2064.00         | H               | -                   | -                          | -70.27                           | 8.80                          | -61.46                        | -48.5       |

**Table 7-27. Radiated Spurious Data (Band 71 – High Channel - CLOSED)**

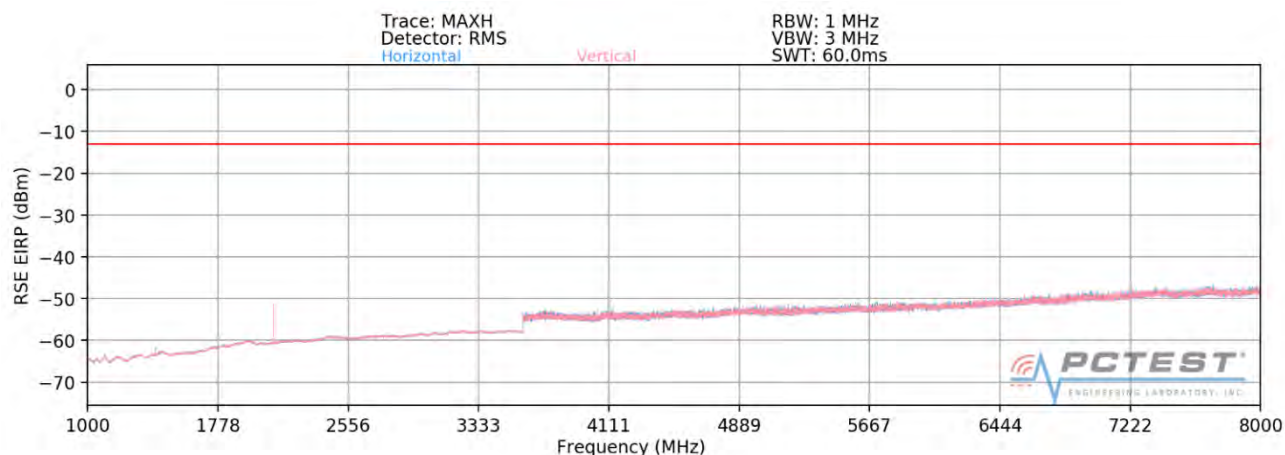
OPERATING FREQUENCY: 673.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1346.00         | H               | -                   | -                          | -70.86                           | 7.47                          | -63.39                        | -50.4       |
| 2019.00         | H               | -                   | -                          | -70.59                           | 8.68                          | -61.91                        | -48.9       |

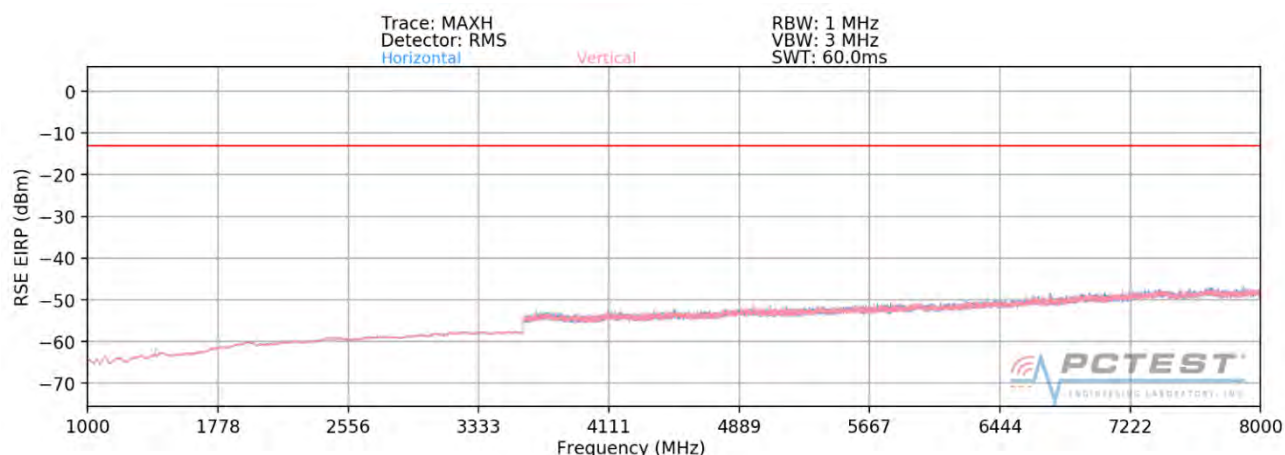
**Table 7-28. Radiated Spurious Data with WCP (Band 71 – Low Channel - CLOSED)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 274 of 340                 |

## Band 12



**Plot 7-444. Radiated Spurious Plot above 1GHz (Band 12 - CLOSED)**



**Plot 7-445. Radiated Spurious Plot above 1GHz (Band 12 - OPEN)**

OPERATING FREQUENCY: 704.00 MHz  
MODULATION SIGNAL: QPSK  
BANDWIDTH: 10.0 MHz  
DISTANCE: 3 meters  
LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1408.00         | H               | 372                 | 218                        | -66.94                           | 7.54                          | -59.40                        | -46.4       |
| 2112.00         | H               | 301                 | 12                         | -46.26                           | 8.85                          | -37.41                        | -24.4       |
| 2816.00         | H               | -                   | -                          | -66.13                           | 10.12                         | -56.01                        | -43.0       |
| 3520.00         | H               | -                   | -                          | -65.75                           | 9.91                          | -55.84                        | -42.8       |

**Table 7-29. Radiated Spurious Data (Band 12 – Low Channel - CLOSED)**

|                                         |                                               |                                       |  |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|--|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) |  | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |  |                | Page 275 of 340                 |

OPERATING FREQUENCY: 707.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1415.00         | H               | 365                 | 215                        | -67.85                           | 7.63                          | -60.22                        | -47.2       |
| 2122.50         | H               | 305                 | 18                         | -48.25                           | 8.86                          | -39.39                        | -26.4       |
| 2830.00         | H               | -                   | -                          | -66.64                           | 10.10                         | -56.55                        | -43.5       |
| 3537.50         | H               | -                   | -                          | -65.82                           | 9.90                          | -55.92                        | -42.9       |

**Table 7-30. Radiated Spurious Data (Band 12 – Mid Channel - CLOSED)**

OPERATING FREQUENCY: 711.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1422.00         | H               | -                   | -                          | -67.95                           | 7.72                          | -60.23                        | -47.2       |
| 2133.00         | H               | -                   | -                          | -65.94                           | 8.87                          | -57.07                        | -44.1       |

**Table 7-31. Radiated Spurious Data (Band 12 – High Channel - CLOSED)**

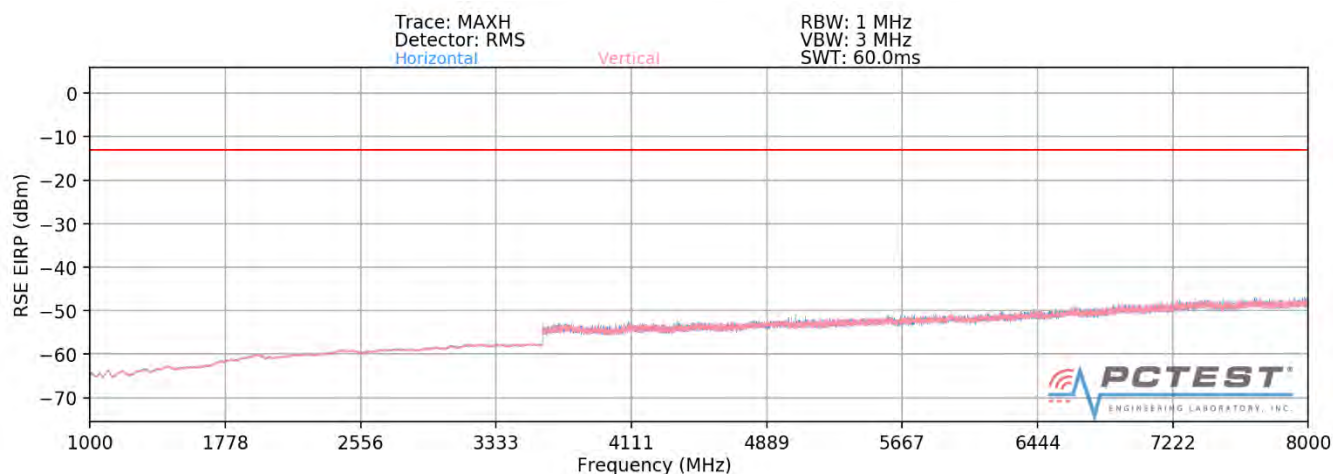
OPERATING FREQUENCY: 704.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1408.00         | H               | -                   | -                          | -68.64                           | 7.54                          | -61.10                        | -48.1       |
| 2112.00         | H               | 278                 | 21                         | -52.40                           | 8.85                          | -43.55                        | -30.6       |
| 2816.00         | H               | -                   | -                          | -65.84                           | 10.12                         | -55.72                        | -42.7       |
| 3520.00         | H               | -                   | -                          | -65.65                           | 9.91                          | -55.74                        | -42.7       |

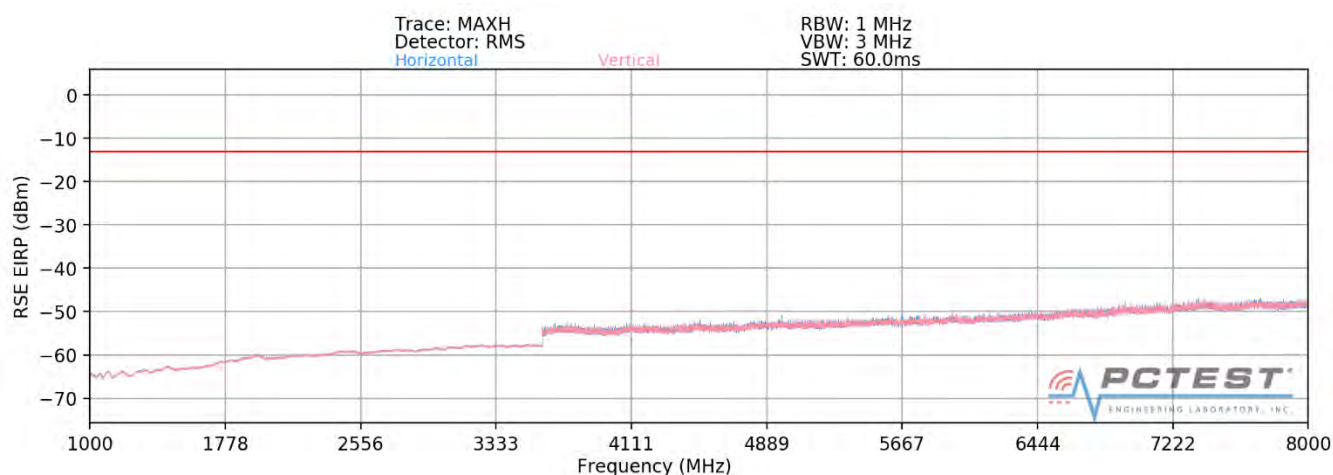
**Table 7-32. Radiated Spurious Data with WCP (Band 12 – Low Channel - CLOSED)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 276 of 340                 |

## Band 13



**Plot 7-446. Radiated Spurious Plot above 1GHz (Band 13 - CLOSED)**



**Plot 7-447. Radiated Spurious Plot above 1GHz (Band 13 - OPEN)**

OPERATING FREQUENCY: 779.50 MHz  
MODULATION SIGNAL: QPSK  
BANDWIDTH: 5.0 MHz  
DISTANCE: 3 meters  
LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2338.50         | H               | -                   | -                          | -72.67                           | 9.47                          | -63.20                        | -50.2       |
| 3118.00         | H               | -                   | -                          | -69.95                           | 9.35                          | -60.60                        | -47.6       |

**Table 7-33. Radiated Spurious Data (Band 13 – Low Channel - CLOSED)**

|                                         |                                               |                                       |  |  |  |                 |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|--|--|--|-----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) |  |  |  | <b>SAMSUNG</b>  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |  |  |  | Page 277 of 340 |                                 |

OPERATING FREQUENCY: 782.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2346.00         | H               | -                   | -                          | -72.48                           | 9.43                          | -63.05                        | -50.1       |
| 3128.00         | H               | -                   | -                          | -70.86                           | 9.34                          | -61.52                        | -48.5       |

Table 7-34. Radiated Spurious Data (Band 13 – Mid Channel - CLOSED)

OPERATING FREQUENCY: 782.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2346.00         | H               | -                   | -                          | -72.87                           | 9.43                          | -63.44                        | -50.4       |
| 3128.00         | H               | -                   | -                          | -71.27                           | 9.34                          | -61.93                        | -48.9       |

Table 7-35. Radiated Spurious Data (Band 13 – High Channel - CLOSED)

MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.00 MHz  
 DISTANCE: 3 meters  
 NARROWBAND EMISSION LIMIT: -50 dBm  
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1559.00         | H               | -                   | -                          | -74.53                           | 8.51                          | -66.02                        | -26.0       |
| 1564.00         | H               | -                   | -                          | -74.54                           | 8.53                          | -66.01                        | -26.0       |
| 1564.00         | H               | -                   | -                          | -74.34                           | 8.53                          | -65.81                        | -25.8       |

Table 7-36. Radiated Spurious Data (Band 13 – 1559-1610MHz Band - CLOSED)

|                                         |                                                                                     |                                    |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset      |                                                                                       | Page 278 of 340                 |

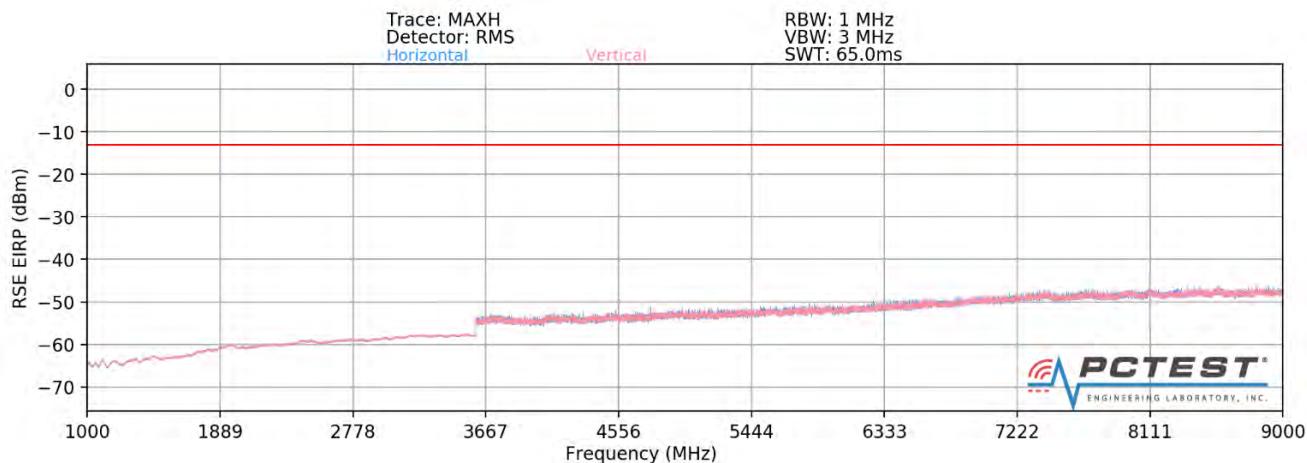
OPERATING FREQUENCY: 782.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2346.00         | H               | -                   | -                          | -72.87                           | 9.43                          | -63.44                        | -50.4       |
| 3128.00         | H               | -                   | -                          | -71.47                           | 9.34                          | -62.13                        | -49.1       |

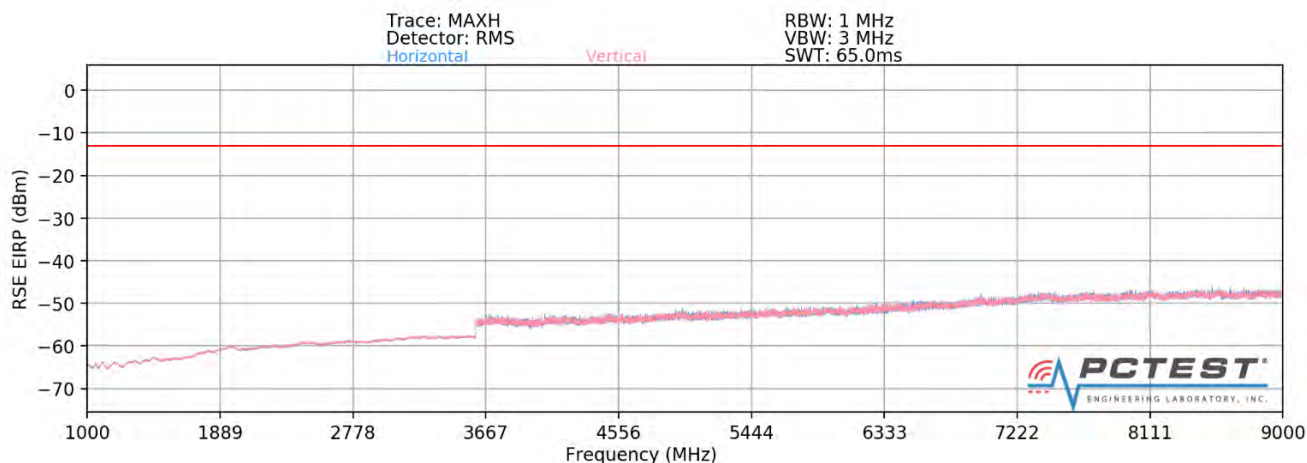
Table 7-37. Radiated Spurious Data with WCP (Band 13 – High Channel - CLOSED)

|                                         |                                                                                     |                                    |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset      |                                                                                       | Page 279 of 340                 |

## Band 26/5



**Plot 7-448. Radiated Spurious Plot above 1GHz (Band 26 - CLOSED)**



**Plot 7-449. Radiated Spurious Plot above 1GHz (Band 26 - OPEN)**

OPERATING FREQUENCY: 826.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz

DISTANCE: 3 meters

LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1653.00         | H               | -                   | -                          | -66.59                           | 8.95                          | -57.64                        | -44.6       |
| 2479.50         | H               | -                   | -                          | -61.51                           | 9.67                          | -51.83                        | -38.8       |
| 3306.00         | H               | -                   | -                          | -61.77                           | 9.58                          | -52.19                        | -39.2       |

**Table 7-38. Radiated Spurious Data (Band 26/5 – Low Channel - CLOSED)**

|                                         |                                               |                                       |  |  |  |                 |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|--|--|--|-----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) |  |  |  | <b>SAMSUNG</b>  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |  |  |  | Page 280 of 340 |                                 |

OPERATING FREQUENCY: 836.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1673.00         | H               | -                   | -                          | -67.12                           | 8.95                          | -58.17                        | -45.2       |
| 2509.50         | H               | -                   | -                          | -64.33                           | 9.75                          | -54.58                        | -41.6       |

Table 7-39. Radiated Spurious Data (Band 26/5 – Mid Channel - CLOSED)

OPERATING FREQUENCY: 846.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1693.00         | H               | -                   | -                          | -66.53                           | 8.95                          | -57.58                        | -44.6       |
| 2539.50         | H               | -                   | -                          | -64.00                           | 9.74                          | -54.26                        | -41.3       |

Table 7-40. Radiated Spurious Data (Band 26/5 – High Channel - CLOSED)

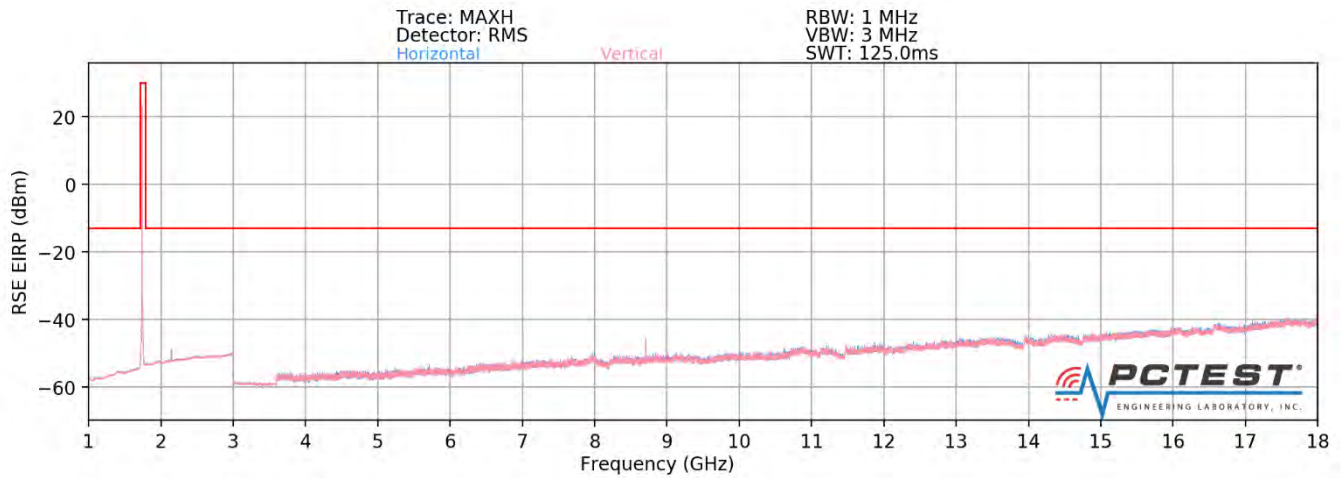
OPERATING FREQUENCY: 826.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1653.00         | H               | -                   | -                          | -65.58                           | 8.95                          | -56.63                        | -43.6       |
| 2479.50         | H               | -                   | -                          | -61.99                           | 9.67                          | -52.31                        | -39.3       |

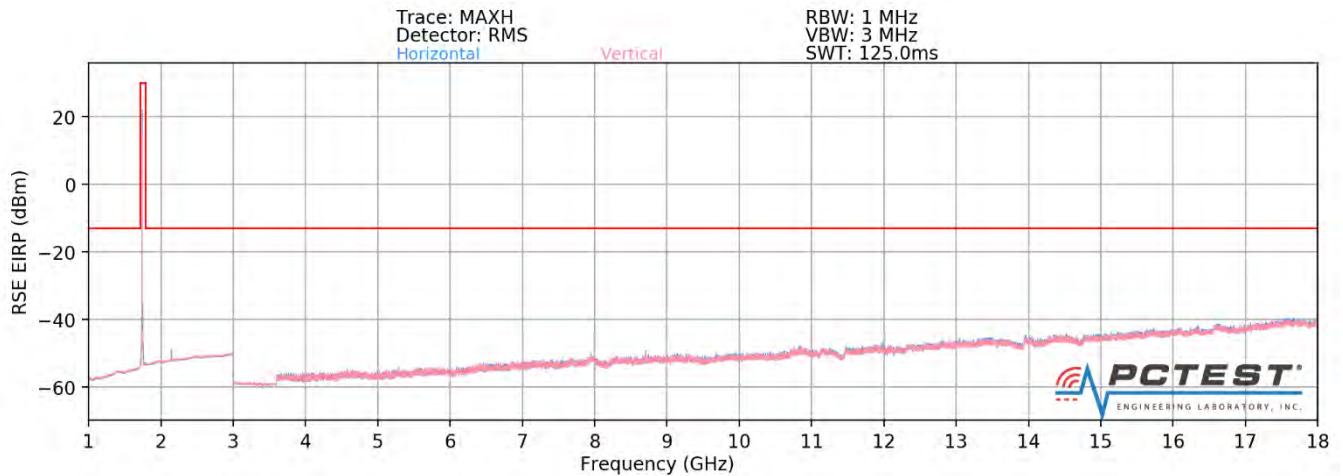
Table 7-41. Radiated Spurious Data with WCP (Band 26/5 – Low Channel - CLOSED)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 281 of 340                 |

## Band 66/4



**Plot 7-450. Radiated Spurious Plot above 1GHz (Band 66/4 - CLOSED)**



**Plot 7-451. Radiated Spurious Plot above 1GHz (Band 66/4 - OPEN)**

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 282 of 340                 |

OPERATING FREQUENCY: 1720.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3440.00         | H               | -                   | -                          | -74.34                           | 9.84                          | -64.50                        | -51.5       |
| 5160.00         | H               | 315                 | 30                         | -62.78                           | 10.71                         | -52.07                        | -39.1       |
| 6880.00         | H               | 315                 | 57                         | -68.96                           | 11.68                         | -57.27                        | -44.3       |
| 8600.00         | H               | 120                 | 77                         | -57.98                           | 11.08                         | -46.90                        | -33.9       |
| 10320.00        | H               | -                   | -                          | -69.92                           | 12.38                         | -57.54                        | -44.5       |
| 12040.00        | H               | -                   | -                          | -67.58                           | 12.71                         | -54.87                        | -41.9       |
| 13760.00        | H               | 163                 | 259                        | -64.15                           | 11.99                         | -52.17                        | -39.2       |
| 15480.00        | H               | -                   | -                          | -70.99                           | 15.88                         | -55.11                        | -42.1       |
| 17200.00        | H               | -                   | -                          | -63.56                           | 13.05                         | -50.51                        | -37.5       |

Table 7-42. Radiated Spurious Data (Band 66/4 – Low Channel - OPEN)

OPERATING FREQUENCY: 1745.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3490.00         | H               | -                   | -                          | -74.49                           | 9.91                          | -64.58                        | -51.6       |
| 5235.00         | H               | 122                 | 49                         | -61.87                           | 10.73                         | -51.14                        | -38.1       |
| 6980.00         | H               | 284                 | 57                         | -68.03                           | 11.82                         | -56.21                        | -43.2       |
| 8725.00         | H               | 120                 | 69                         | -59.10                           | 11.00                         | -48.10                        | -35.1       |
| 10470.00        | H               | -                   | -                          | -69.85                           | 12.58                         | -57.26                        | -44.3       |
| 12215.00        | H               | -                   | -                          | -67.69                           | 13.11                         | -54.58                        | -41.6       |
| 13960.00        | H               | 112                 | 312                        | -62.43                           | 11.85                         | -50.58                        | -37.6       |
| 15705.00        | H               | -                   | -                          | -71.35                           | 16.63                         | -54.72                        | -41.7       |
| 17450.00        | H               | -                   | -                          | -61.71                           | 12.24                         | -49.47                        | -36.5       |

Table 7-43. Radiated Spurious Data (Band 66/4 – Mid Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 283 of 340                 |

OPERATING FREQUENCY: 1770.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3540.00         | H               | -                   | -                          | -74.38                           | 9.89                          | -64.49                        | -51.5       |
| 5310.00         | H               | 122                 | 59                         | -62.60                           | 10.69                         | -51.91                        | -38.9       |
| 7080.00         | H               | 192                 | 184                        | -71.59                           | 11.79                         | -59.81                        | -46.8       |
| 8850.00         | H               | 141                 | 70                         | -61.68                           | 11.00                         | -50.69                        | -37.7       |
| 10620.00        | H               | -                   | -                          | -69.28                           | 12.58                         | -56.70                        | -43.7       |
| 12390.00        | H               | -                   | -                          | -68.73                           | 13.33                         | -55.39                        | -42.4       |
| 14160.00        | H               | 119                 | 318                        | -61.15                           | 11.53                         | -49.62                        | -36.6       |
| 15930.00        | H               | -                   | -                          | -72.18                           | 16.76                         | -55.42                        | -42.4       |
| 17700.00        | H               | -                   | -                          | -58.10                           | 10.54                         | -47.57                        | -34.6       |

Table 7-44. Radiated Spurious Data (Band 66/4 – High Channel - OPEN)

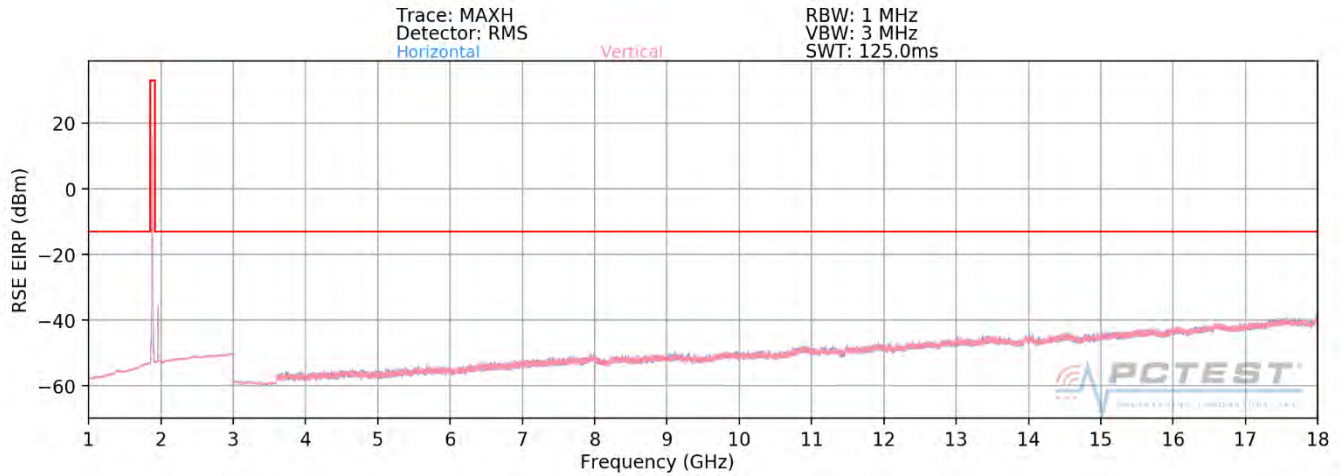
OPERATING FREQUENCY: 1720.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3440.00         | H               | -                   | -                          | -63.11                           | 9.91                          | -53.20                        | -40.2       |
| 5160.00         | H               | 152                 | 184                        | -64.56                           | 10.73                         | -53.83                        | -40.8       |
| 6880.00         | H               | 100                 | 239                        | -64.59                           | 11.82                         | -52.77                        | -39.8       |
| 8600.00         | H               | 100                 | 222                        | -59.33                           | 11.00                         | -48.33                        | -35.3       |
| 10320.00        | H               | -                   | -                          | -69.69                           | 12.58                         | -57.10                        | -44.1       |
| 12040.00        | H               | -                   | -                          | -67.21                           | 13.11                         | -54.10                        | -41.1       |

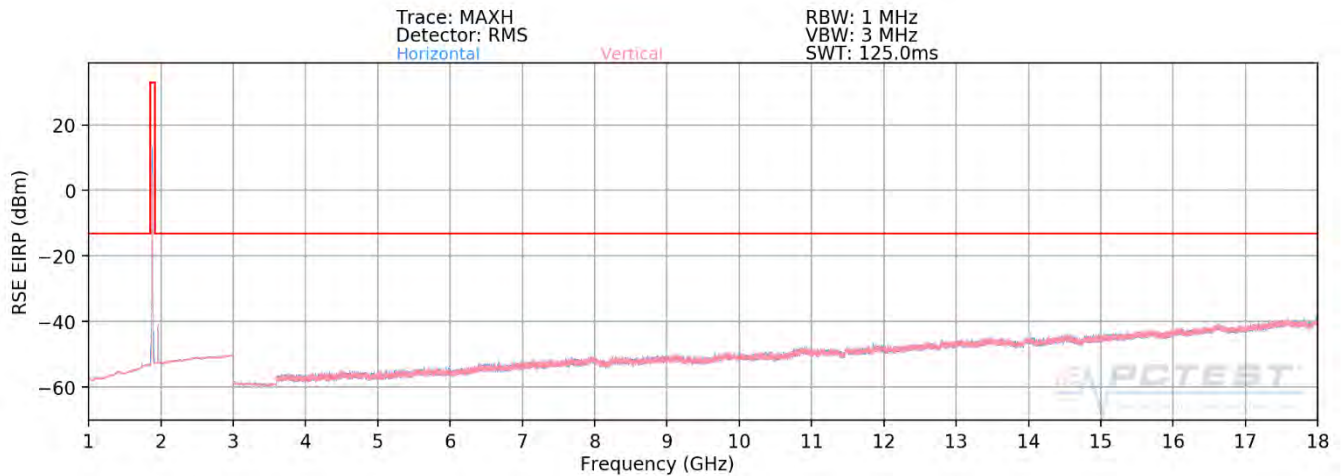
Table 7-45. Radiated Spurious Data with WCP (Band 66/4 – Low Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 284 of 340                 |

## Band 25/2



**Plot 7-452. Radiated Spurious Plot above 1GHz (Band 25 - CLOSED)**



**Plot 7-453. Radiated Spurious Plot above 1GHz (Band 25 - OPEN)**

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 285 of 340                 |

OPERATING FREQUENCY: 1860.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3720.00         | H               | -                   | -                          | -73.23                           | 9.51                          | -63.72                        | -50.7       |
| 5580.00         | H               | 299                 | 56                         | -63.02                           | 10.99                         | -52.03                        | -39.0       |
| 7440.00         | H               | 397                 | 66                         | -61.21                           | 10.99                         | -50.22                        | -37.2       |
| 9300.00         | H               | -                   | -                          | -69.04                           | 11.61                         | -57.44                        | -44.4       |
| 11160.00        | H               | -                   | -                          | -68.69                           | 12.73                         | -55.96                        | -43.0       |

Table 7-46. Radiated Spurious Data (Band 25 – Low Channel - OPEN)

OPERATING FREQUENCY: 1882.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3765.00         | H               | -                   | -                          | -72.73                           | 9.36                          | -63.38                        | -50.4       |
| 5647.50         | H               | 291                 | 56                         | -67.07                           | 11.19                         | -55.87                        | -42.9       |
| 7530.00         | H               | 115                 | 58                         | -65.60                           | 11.13                         | -54.47                        | -41.5       |
| 9412.50         | H               | -                   | -                          | -68.49                           | 11.57                         | -56.92                        | -43.9       |
| 11295.00        | H               | -                   | -                          | -67.94                           | 12.71                         | -55.23                        | -42.2       |

Table 7-47. Radiated Spurious Data (Band 25 – Mid Channel - OPEN)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 286 of 340                 |

OPERATING FREQUENCY: 1905.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3810.00         | H               | -                   | -                          | -73.26                           | 9.29                          | -63.97                        | -51.0       |
| 5715.00         | H               | 113                 | 0                          | -70.60                           | 11.35                         | -59.26                        | -46.3       |
| 7620.00         | H               | 111                 | 63                         | -60.88                           | 11.29                         | -49.59                        | -36.6       |
| 9525.00         | H               | -                   | -                          | -69.03                           | 11.73                         | -57.30                        | -44.3       |
| 11430.00        | H               | -                   | -                          | -68.34                           | 12.83                         | -55.51                        | -42.5       |

Table 7-48. Radiated Spurious Data (Band 25 – High Channel - OPEN)

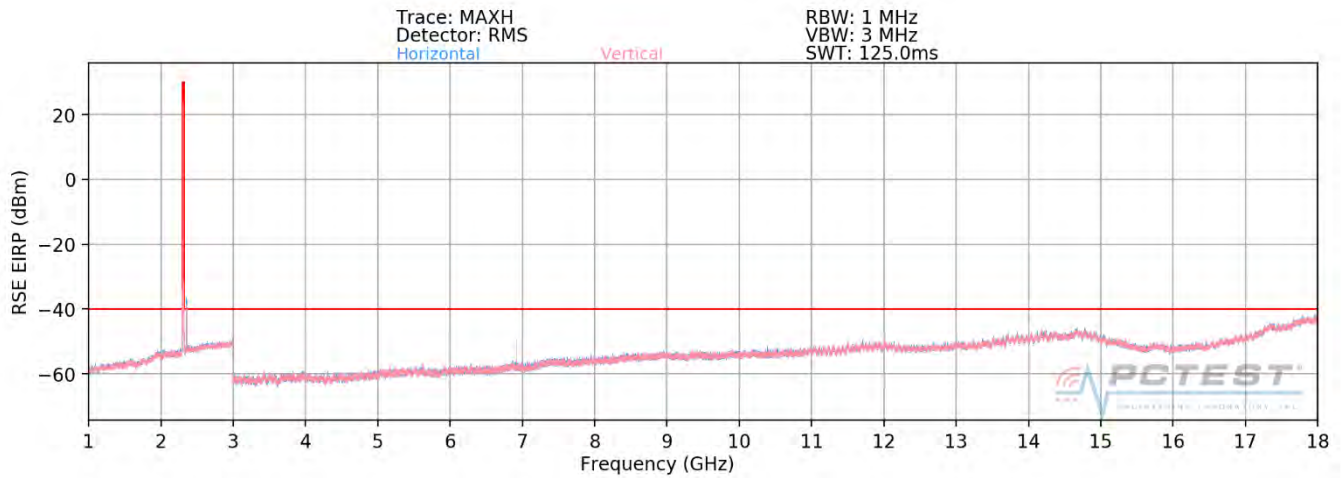
OPERATING FREQUENCY: 1905.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3810.00         | H               | -                   | -                          | -73.84                           | 9.29                          | -64.55                        | -51.5       |
| 5715.00         | H               | -                   | -                          | -73.80                           | 11.35                         | -62.46                        | -49.5       |
| 7620.00         | H               | -                   | -                          | -70.28                           | 11.29                         | -58.99                        | -46.0       |

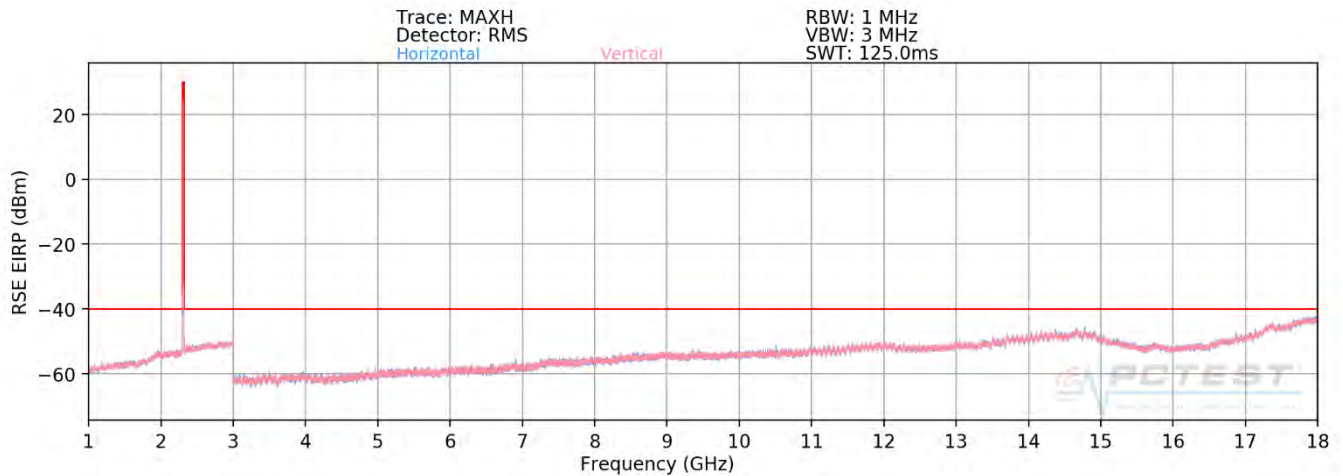
Table 7-49. Radiated Spurious Data with WCP (Band 25 – High Channel - OPEN)

|                                         |                                                                                     |                                    |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset      |                                                                                       | Page 287 of 340                 |

## Band 30

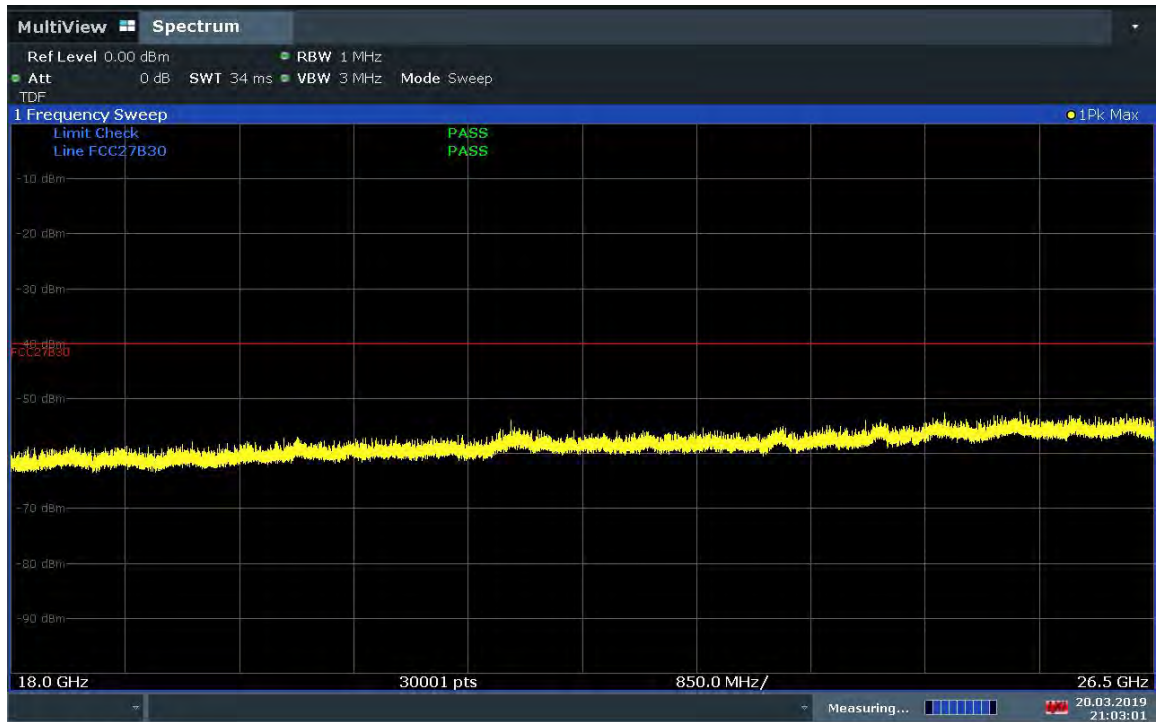


**Plot 7-454. Radiated Spurious Plot 1GHz - 18GHz (Band 30 - CLOSED)**



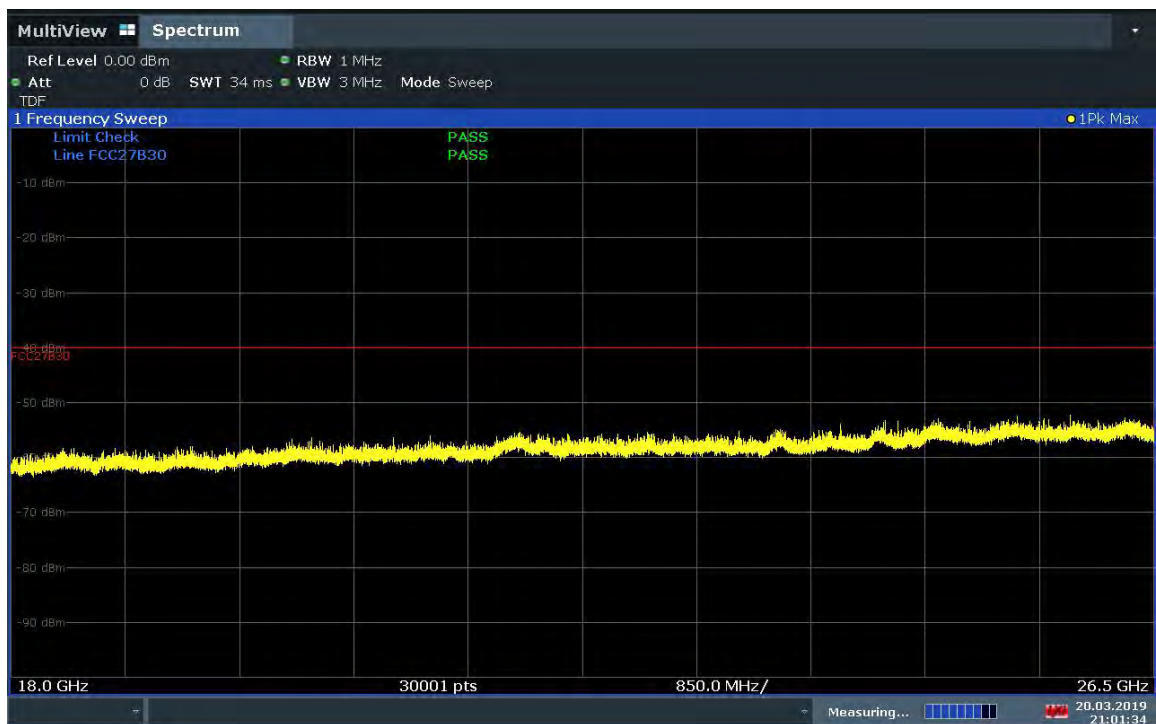
**Plot 7-455. Radiated Spurious Plot 1GHz - 18GHz (Band 30 - OPEN)**

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 288 of 340                 |



21:03:02 20.03.2019

**Plot 7-456. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 – H – CLOSED)**



21:01:34 20.03.2019

**Plot 7-457. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 – V - CLOSED)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 289 of 340                 |

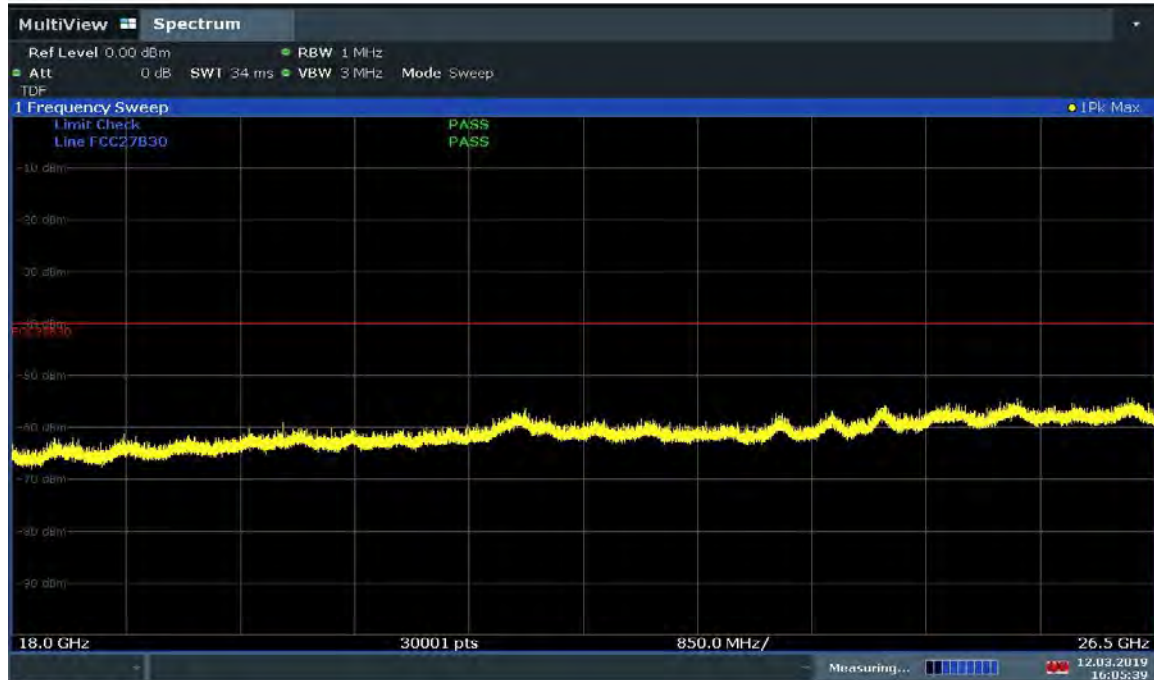
ACLRRResults



16:02:42 12.03.2019

Plot 7-458. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 – H - OPEN)

ACLRRResults



16:05:39 12.03.2019

Plot 7-459. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 – V - OPEN)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 290 of 340                 |

OPERATING FREQUENCY: 2310.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -40 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 4620.00         | H               | 158                 | 16                         | -71.33                           | 10.92                         | -60.42                        | -20.4       |
| 6930.00         | H               | 113                 | 54                         | -70.91                           | 11.74                         | -59.16                        | -19.2       |
| 9240.00         | H               | -                   | -                          | -68.73                           | 11.62                         | -57.11                        | -17.1       |
| 11550.00        | H               | -                   | -                          | -66.07                           | 12.72                         | -53.36                        | -13.4       |

**Table 7-50. Radiated Spurious Data (Band 30 – Mid Channel - OPEN)**

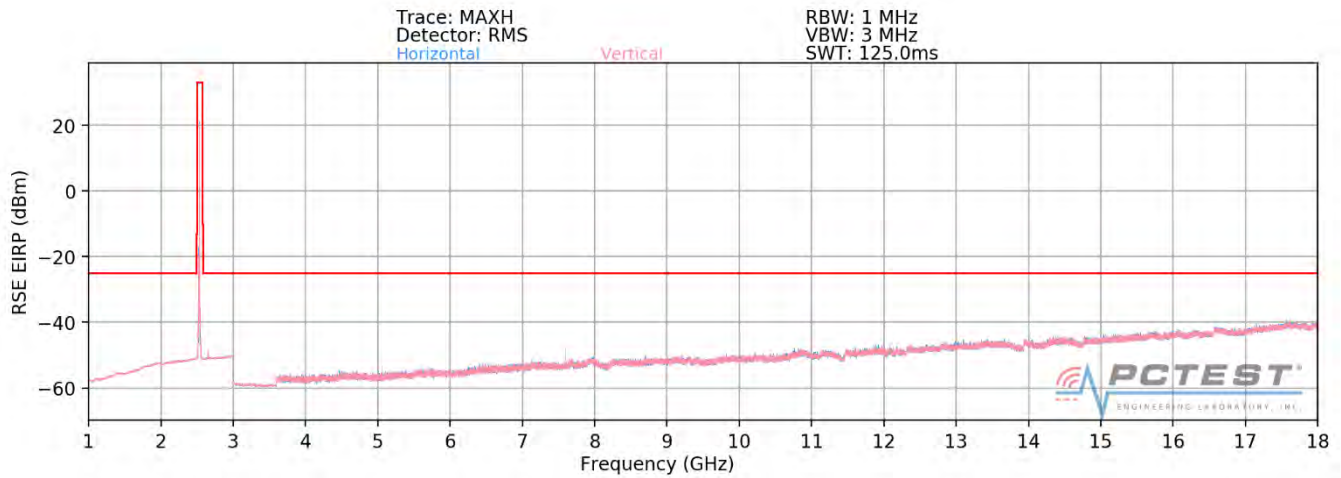
OPERATING FREQUENCY: 2307.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -40 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 4615.00         | H               | -                   | -                          | -67.23                           | 10.92                         | -56.32                        | -16.3       |
| 6922.50         | H               | 294                 | 184                        | -63.07                           | 11.74                         | -51.32                        | -11.3       |
| 9230.00         | H               | -                   | -                          | -68.32                           | 11.62                         | -56.70                        | -16.7       |
| 11537.50        | H               | -                   | -                          | -66.03                           | 12.72                         | -53.32                        | -13.3       |

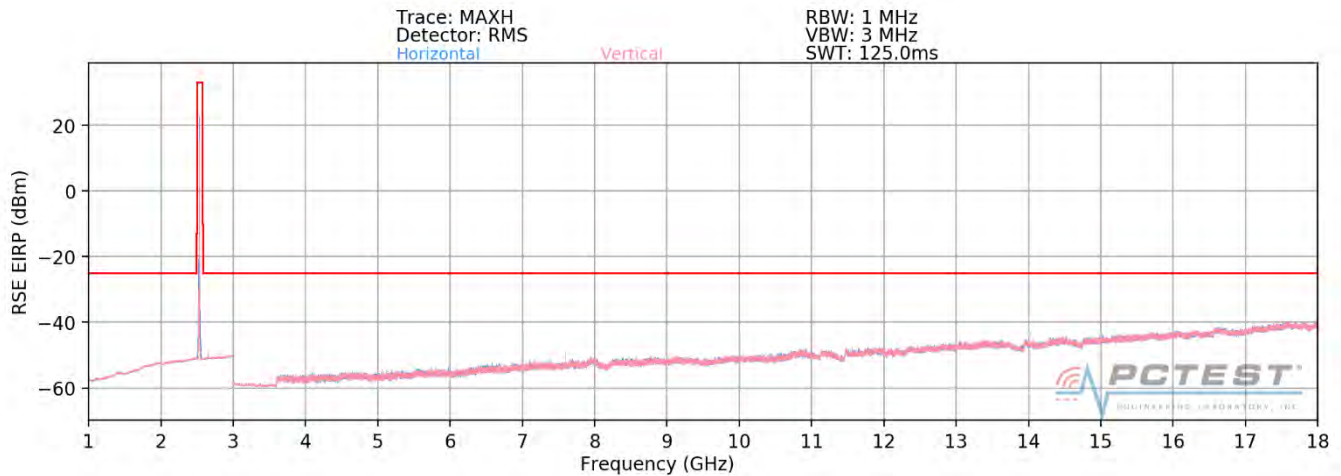
**Table 7-51. Radiated Spurious Data with WCP (Band 30 –Mid Channel - OPEN)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 291 of 340                 |

## Band 7

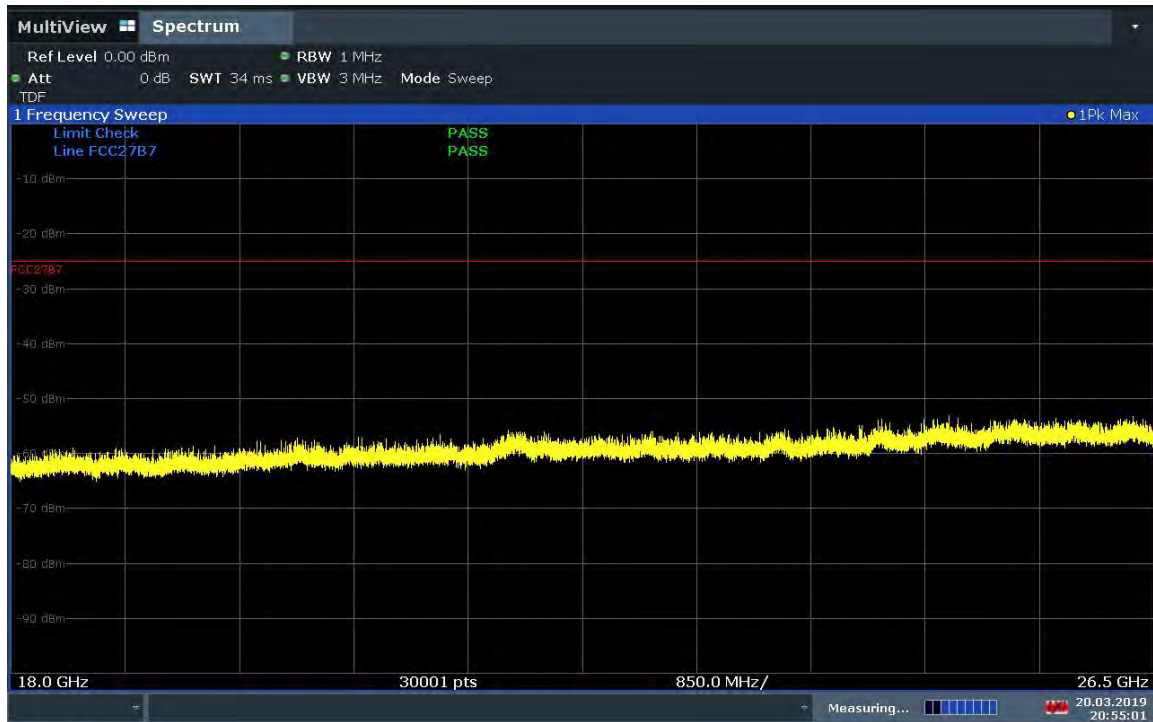


**Plot 7-460. Radiated Spurious Plot 1GHz - 18GHz (Band 7 - CLOSED)**



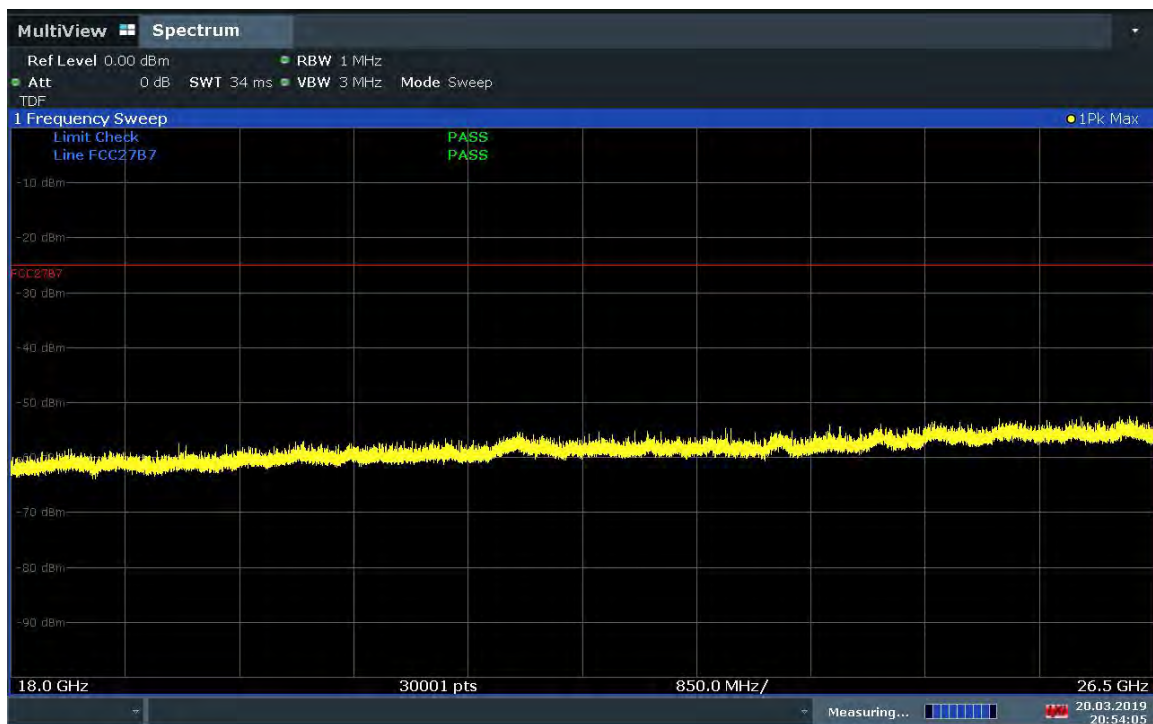
**Plot 7-461. Radiated Spurious Plot 1GHz - 18GHz (Band 7 - OPEN)**

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 292 of 340                 |



20:55:02 20.03.2019

Plot 7-462. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 – H - CLOSED)



20:54:05 20.03.2019

Plot 7-463. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 – V - CLOSED)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 293 of 340                 |

ACLRRResults



16:23:23 12.03.2019

Plot 7-464. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 – H - OPEN)

ACLRRResults



16:13:12 12.03.2019

Plot 7-465. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 – V - OPEN)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 294 of 340                 |

OPERATING FREQUENCY: 2510.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5020.00         | H               | 400                 | 329                        | -56.16                           | 10.88                         | -45.28                        | -20.3       |
| 7530.00         | H               | 112                 | 64                         | -57.36                           | 11.13                         | -46.23                        | -21.2       |
| 10040.00        | H               | -                   | -                          | -69.40                           | 11.99                         | -57.42                        | -32.4       |
| 12550.00        | H               | -                   | -                          | -68.73                           | 13.56                         | -55.17                        | -30.2       |

**Table 7-52. Radiated Spurious Data (Band 7 – Low Channel - OPEN)**

OPERATING FREQUENCY: 2510.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5020.00         | H               | 396                 | 49                         | -50.94                           | 10.75                         | -40.19                        | -15.2       |
| 7530.00         | H               | 116                 | 63                         | -57.30                           | 11.25                         | -46.05                        | -21.0       |
| 10040.00        | H               | -                   | -                          | -68.64                           | 12.07                         | -56.57                        | -31.6       |
| 12550.00        | H               | -                   | -                          | -68.64                           | 13.66                         | -54.98                        | -30.0       |

**Table 7-53. Radiated Spurious Data (Band 7 – Mid Channel - OPEN)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 295 of 340                 |

OPERATING FREQUENCY: 2535.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5070.00         | H               | 400                 | 26                         | -55.28                           | 10.68                         | -44.60                        | -19.6       |
| 7605.00         | H               | 111                 | 62                         | -57.59                           | 11.39                         | -46.20                        | -21.2       |
| 10140.00        | H               | -                   | -                          | -69.37                           | 12.18                         | -57.18                        | -32.2       |
| 12675.00        | H               | -                   | -                          | -68.54                           | 13.50                         | -55.04                        | -30.0       |

Table 7-54. Radiated Spurious Data (Band 7 – High Channel - OPEN)

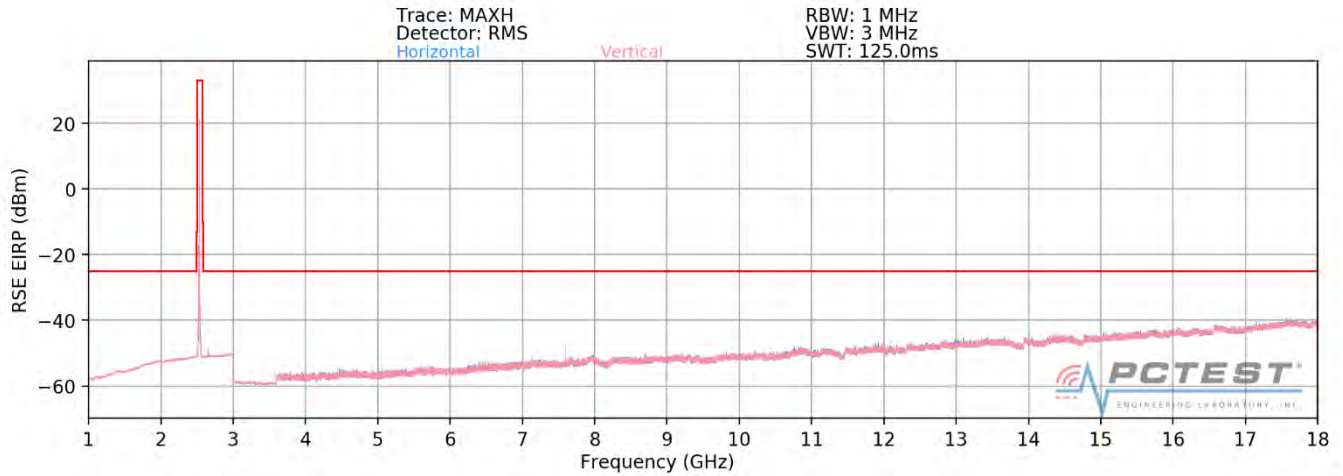
OPERATING FREQUENCY: 2510.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5020.00         | H               | 226                 | 141                        | -65.95                           | 10.88                         | -55.07                        | -30.1       |
| 7530.00         | H               | 155                 | 169                        | -69.47                           | 11.13                         | -58.34                        | -33.3       |
| 10040.00        | H               | -                   | -                          | -72.09                           | 11.99                         | -60.11                        | -35.1       |

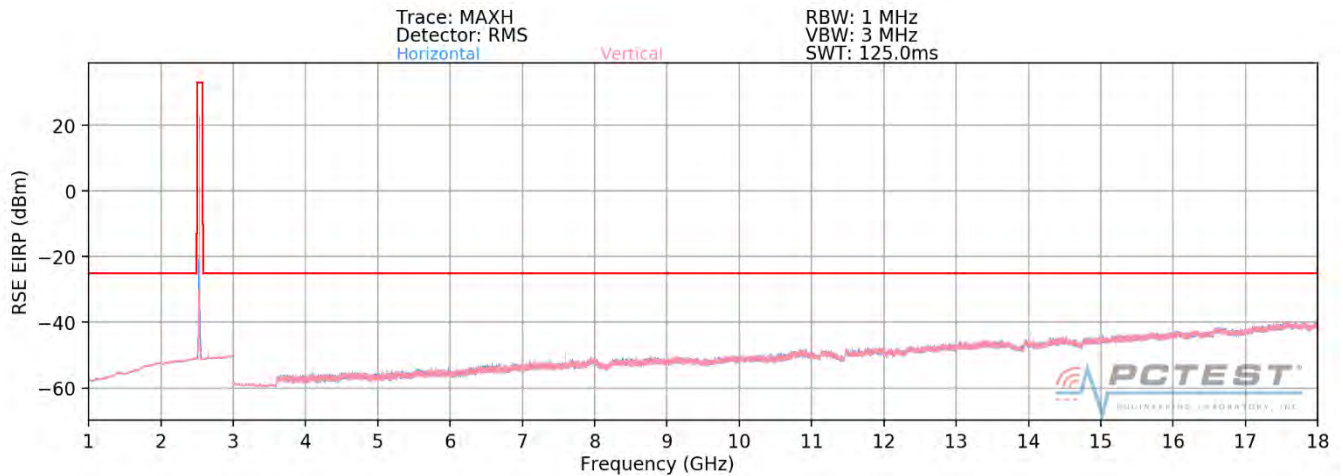
Table 7-55. Radiated Spurious Data with WCP (Band 7 – Low Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 296 of 340                 |

## Band 41 PC2



**Plot 7-466. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC2 - CLOSED)**



**Plot 7-467. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC2 - OPEN)**

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 297 of 340                 |



20:48:04 20.03.2019

**Plot 7-468. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC2 – H - CLOSED)**



20:49:45 20.03.2019

**Plot 7-469. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC2 – V - CLOSED)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 298 of 340                 |

ACLRRResults



16:37:28 12.03.2019

Plot 7-470. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC2 – H - OPEN)

ACLRRResults



16:39:30 12.03.2019

Plot 7-471. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC2 – V - OPEN)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 299 of 340                 |

OPERATING FREQUENCY: 2510.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5020.00         | H               | 118                 | 332                        | -66.71                           | 10.88                         | -55.83                        | -30.8       |
| 7530.00         | H               | 350                 | 62                         | -56.52                           | 11.13                         | -45.39                        | -20.4       |
| 10040.00        | H               | -                   | -                          | -67.20                           | 11.99                         | -55.22                        | -30.2       |
| 12550.00        | H               | -                   | -                          | -68.77                           | 13.56                         | -55.21                        | -30.2       |

Table 7-56. Radiated Spurious Data (Band 41 PC2 – Low Channel - OPEN)

OPERATING FREQUENCY: 2593.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5186.00         | H               | 112                 | 328                        | -66.74                           | 10.74                         | -56.00                        | -31.0       |
| 7779.00         | H               | 115                 | 68                         | -59.81                           | 11.44                         | -48.37                        | -23.4       |
| 10372.00        | H               | -                   | -                          | -67.29                           | 12.42                         | -54.86                        | -29.9       |
| 12965.00        | H               | -                   | -                          | -66.30                           | 13.29                         | -53.00                        | -28.0       |

Table 7-57. Radiated Spurious Data (Band 41 PC2 – Mid Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 300 of 340                 |

OPERATING FREQUENCY: 2593.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5186.00         | H               | 117                 | 26                         | -67.70                           | 10.70                         | -57.00                        | -32.0       |
| 7779.00         | H               | 112                 | 76                         | -53.44                           | 11.16                         | -42.28                        | -17.3       |
| 10372.00        | H               | -                   | -                          | -67.58                           | 12.59                         | -54.98                        | -30.0       |
| 12965.00        | H               | -                   | -                          | -64.74                           | 12.59                         | -52.15                        | -27.1       |

Table 7-58. Radiated Spurious Data (Band 41 PC2 – High Channel - OPEN)

OPERATING FREQUENCY: 2593.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5186.00         | H               | 126                 | 210                        | -69.70                           | 10.70                         | -59.00                        | -34.0       |
| 7779.00         | H               | 119                 | 127                        | -56.73                           | 11.16                         | -45.57                        | -20.6       |
| 10372.00        | H               | -                   | -                          | -67.20                           | 12.59                         | -54.60                        | -29.6       |
| 12965.00        | H               | -                   | -                          | -64.83                           | 12.59                         | -52.24                        | -27.2       |

Table 7-59. Radiated Spurious Data with WCP (Band 41 PC2 – High Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 301 of 340                 |

## 7.10 Uplink Carrier Aggregation Radiated Measurements

§2.1053, §27.53(m)

### Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

### Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

### Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW  $\geq 3 \times$  RBW
3. No. of sweep points  $\geq 2 \times$  span / RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. The trace was allowed to stabilize

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 302 of 340                 |

## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

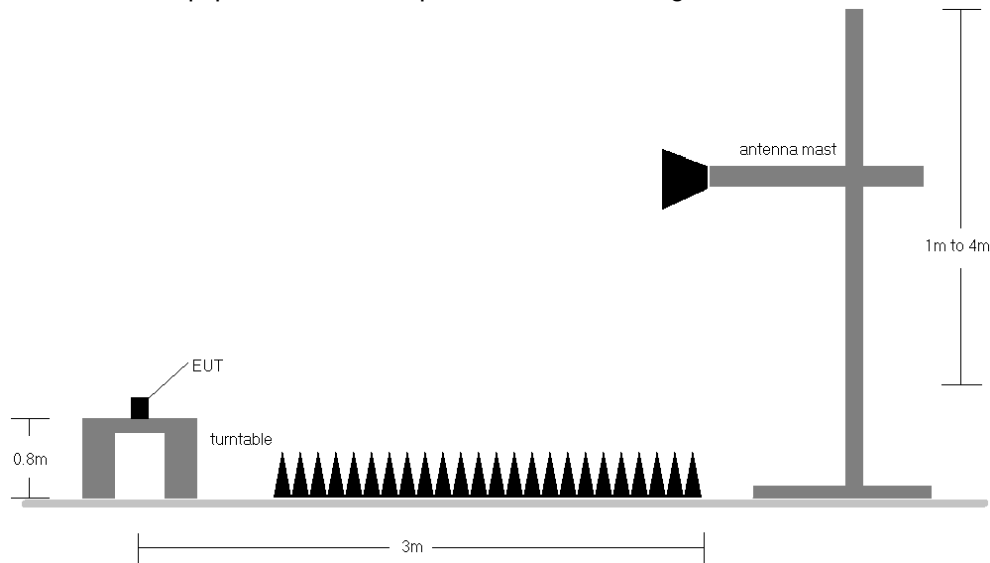


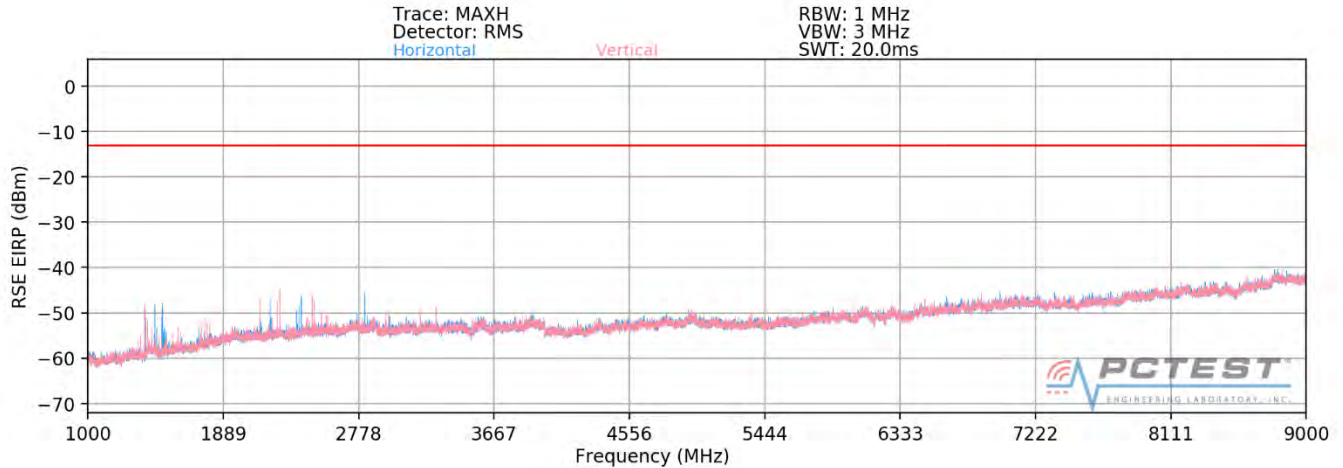
**Figure 7-10. Test Instrument & Measurement Setup**

## Test Notes

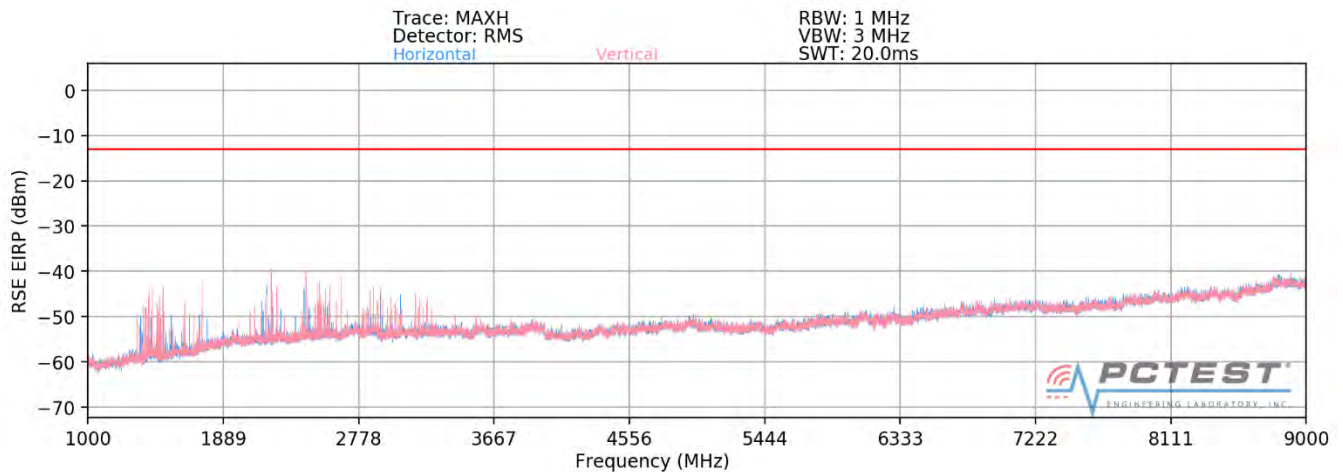
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) Radiated spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. The worst case (highest) emissions were found while operating with QPSK modulation with both carriers set to transmit using 1RB.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) No significant emissions were found as a result of two uplink carriers operating contiguously.

|                                                |                                               |                                               |                |                                        |
|------------------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|----------------------------------------|
| FCC ID: A3LSMF900U                             | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019      | <b>EUT Type:</b><br>Portable Handset          |                | Page 303 of 340                        |

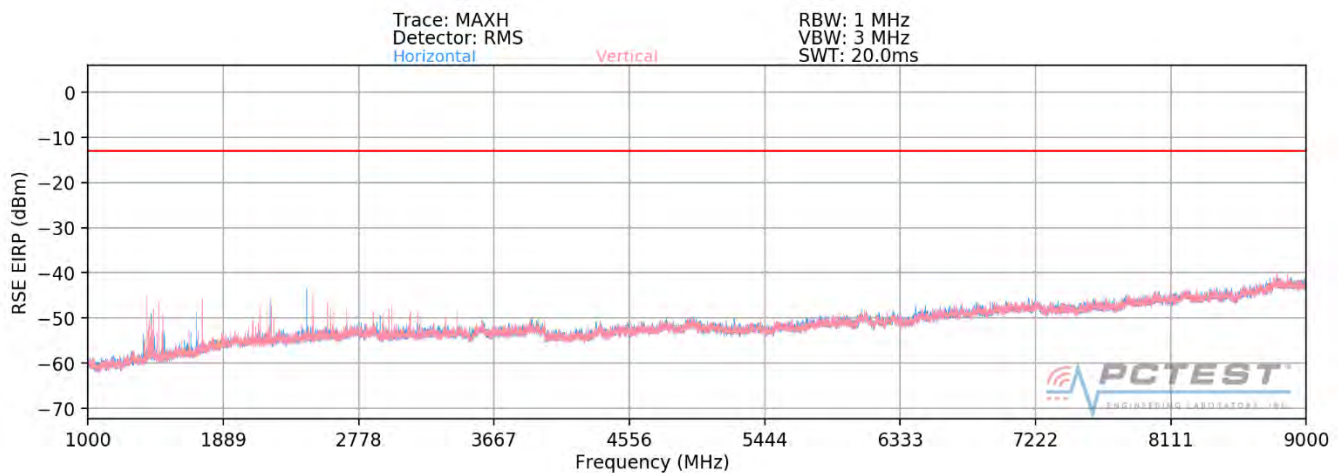
## Uplink CA Configuration 5B



Plot 7-472. Radiated Spurious Plot (ULCA 5B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel - CLOSED)

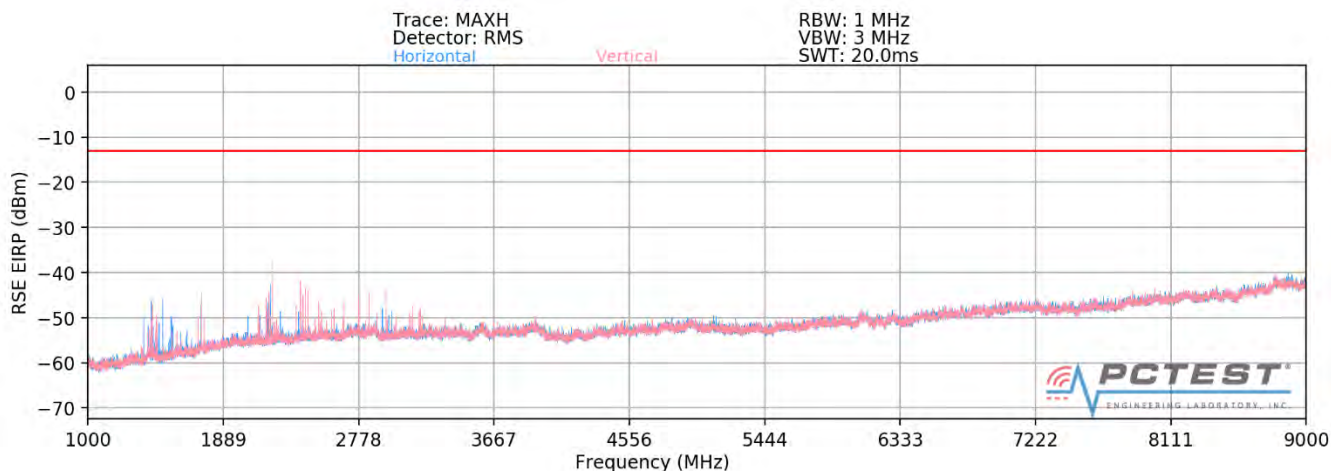


Plot 7-473. Radiated Spurious Plot (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel - CLOSED)



Plot 7-474. Radiated Spurious Plot (ULCA 5B PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – Low Channel - CLOSED)

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 304 of 340                 |



**Plot 7-475. Radiated Spurious Plot (ULCA 5B PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – High Channel - CLOSED)**

OPERATING FREQUENCY (PCC): 829.00 MHz

OPERATING FREQUENCY (SCC): 838.90 MHz

CHANNEL: 20450

CHANNEL: 20549

MODULATION SIGNAL: QPSK

BANDWIDTH: 10 + 10 MHz

DISTANCE: 3 meters

LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1658.00         | H               | -                   | -                          | -68.88                           | 3.12                          | -65.76                        | -52.8       |
| 2487.00         | H               | -                   | -                          | -66.72                           | 3.87                          | -62.85                        | -49.8       |

**Table 7-60. Radiated Spurious Data (ULCA 5B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel - CLOSED)**

|                                         |                                               |                                               |  |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|--|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |  |                | Page 305 of 340                 |

OPERATING FREQUENCY: 844.00 MHz  
 OPERATING FREQUENCY: 834.10 MHz  
 CHANNEL: 20600  
 CHANNEL: 20501  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10 + 10 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1688.00         | H               | -                   | -                          | -68.80                           | 3.18                          | -65.63                        | -52.6       |
| 2532.00         | H               | -                   | -                          | -66.50                           | 4.10                          | -62.41                        | -49.4       |

Table 7-61. Radiated Spurious Data (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel - CLOSED)

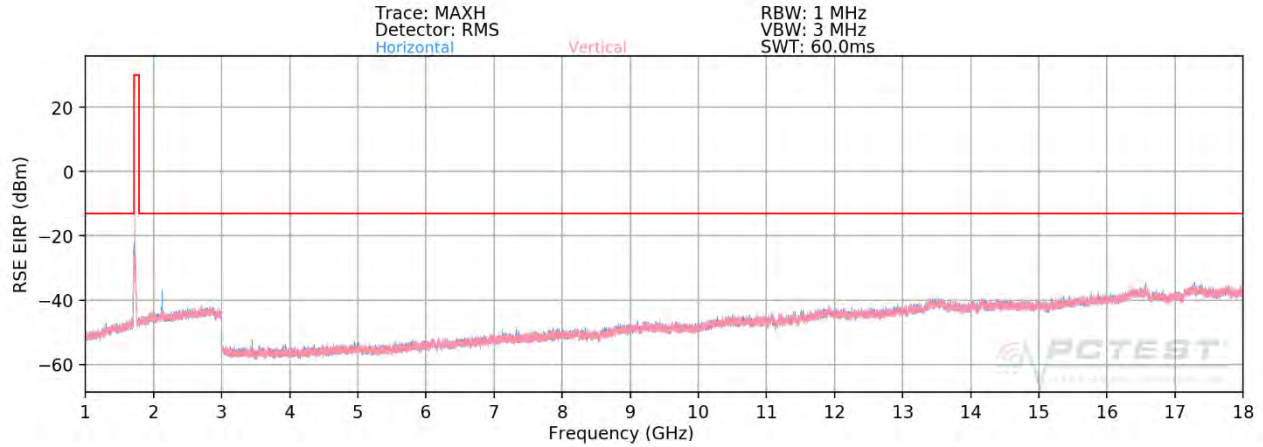
OPERATING FREQUENCY: 844.00 MHz  
 OPERATING FREQUENCY: 834.10 MHz  
 CHANNEL: 20600  
 CHANNEL: 20501  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10 + 10 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1688.00         | H               | -                   | -                          | -68.86                           | 3.18                          | -65.69                        | -52.7       |
| 2532.00         | H               | -                   | -                          | -66.63                           | 4.10                          | -62.54                        | -49.5       |

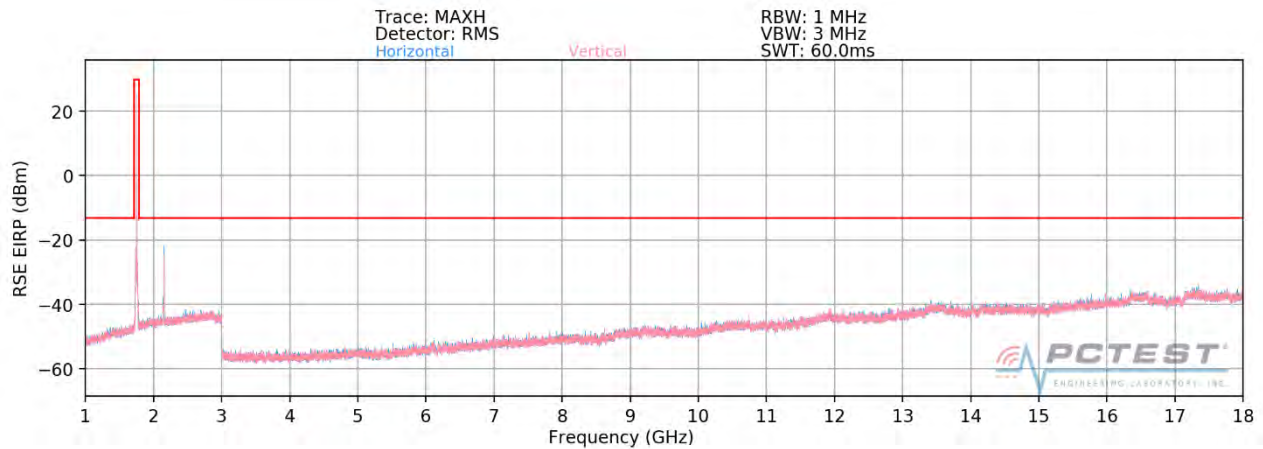
Table 7-62. Radiated Spurious Data with WCP (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel - CLOSED)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 306 of 340                 |

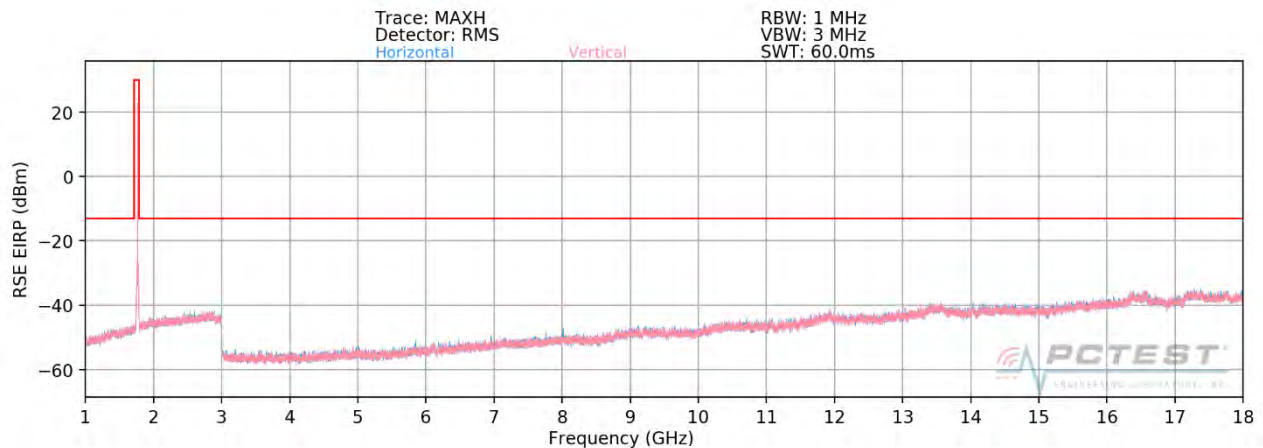
## Uplink CA Configuration 66B



Plot 7-476. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Low Channel – OPEN)

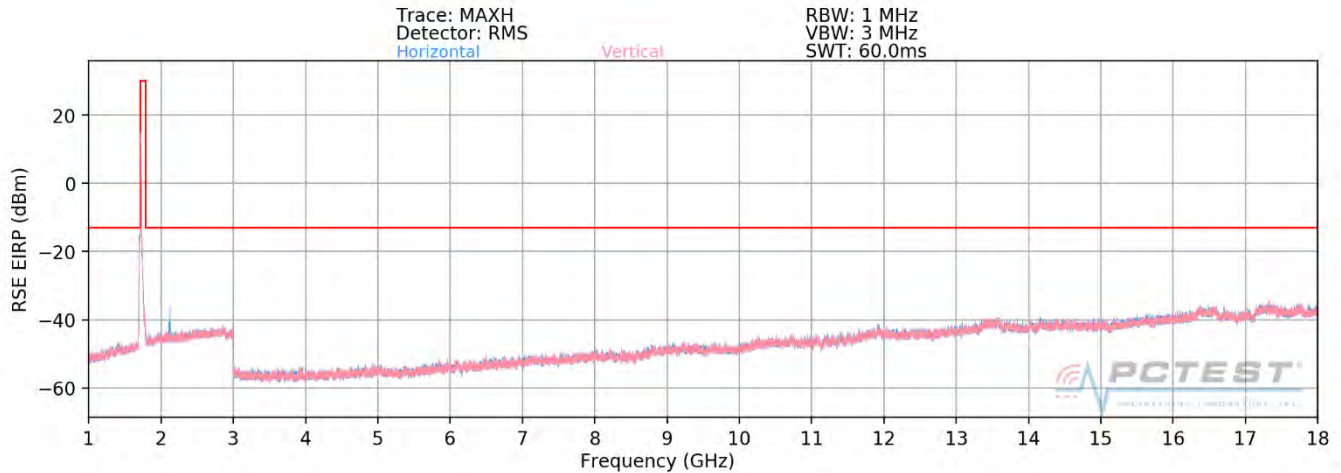


Plot 7-477. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

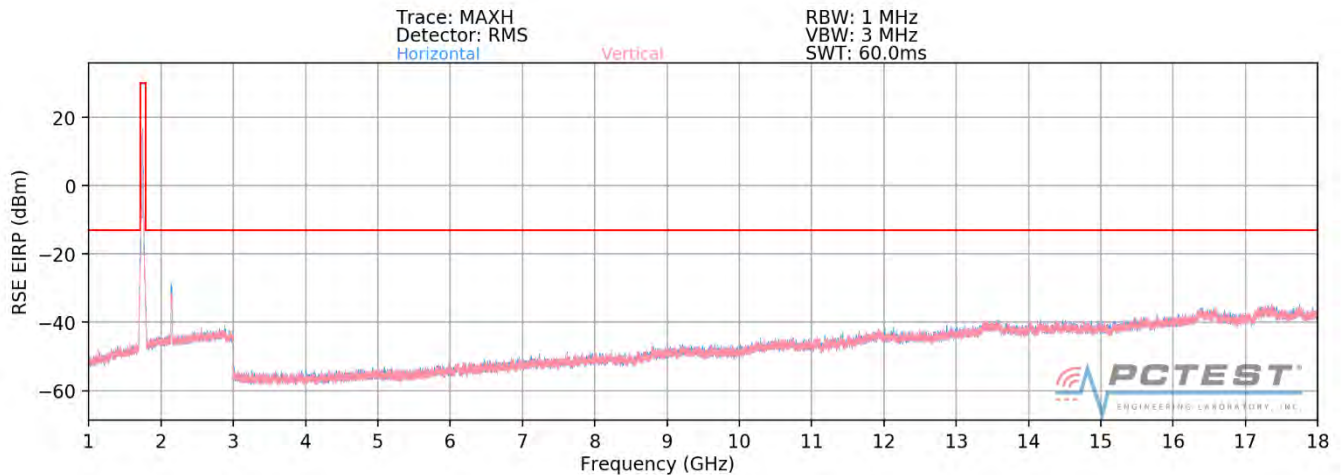


Plot 7-478. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 0, SCC: RB 1 Offset 24 – High Channel - OPEN)

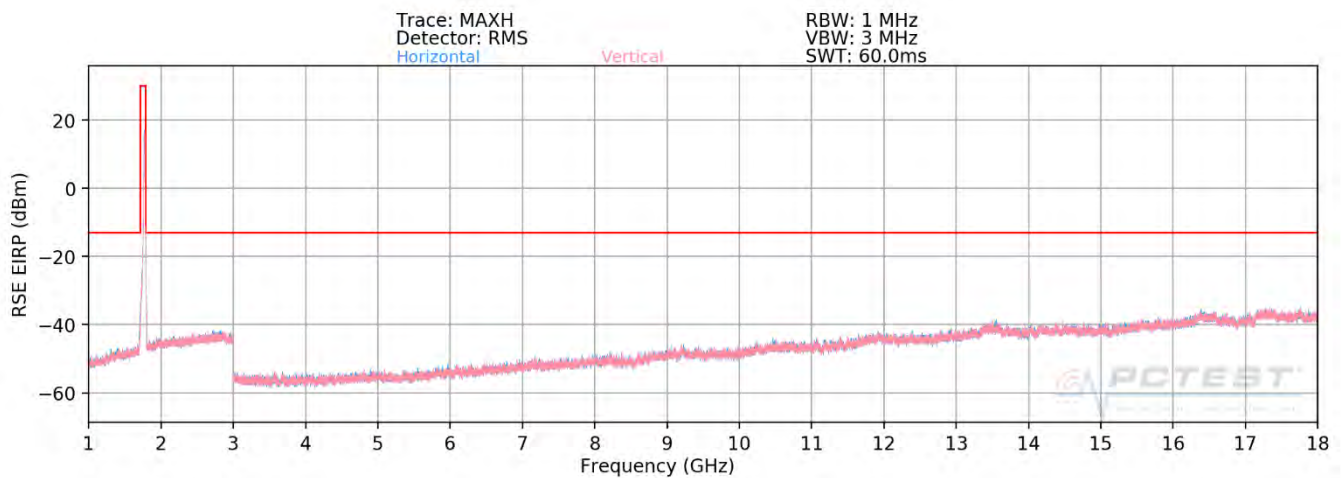
|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 307 of 340                 |



**Plot 7-479. Radiated Spurious Plot (ULCA 66B PCC: RB 75 Offset 0, SCC: RB 25 Offset 0 – Low Channel - OPEN)**



**Plot 7-480. Radiated Spurious Plot (ULCA 66B PCC: RB 75 Offset 0, SCC: RB 25 Offset 0 – Mid Channel - OPEN)**



**Plot 7-481. Radiated Spurious Plot (ULCA 66B PCC: RB 75 Offset 0, SCC: RB 25 Offset 0 – High Channel - OPEN)**

|                                         |                                               |                                               |  |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|--|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |  |                | Page 308 of 340                 |

OPERATING FREQUENCY: 1717.50 MHz  
 OPERATING FREQUENCY: 1726.80 MHz  
 CHANNEL: 132047  
 CHANNEL: 132140  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 15+5 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3435.00         | H               | 100                 | 357                        | -62.60                           | 6.28                          | -56.32                        | -43.3       |
| 5155.00         | H               | -                   | -                          | -68.29                           | 8.97                          | -59.33                        | -46.3       |
| 6875.00         | H               | -                   | -                          | -66.77                           | 9.43                          | -57.35                        | -44.3       |

Table 7-63. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Low Channel - OPEN)

OPERATING FREQUENCY: 1745.00 MHz  
 OPERATING FREQUENCY: 1754.30 MHz  
 CHANNEL: 132322  
 CHANNEL: 132415  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 15 + 5 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3490.00         | H               | -                   | -                          | -67.87                           | 6.47                          | -61.41                        | -48.4       |
| 5235.00         | H               | -                   | -                          | -67.46                           | 8.97                          | -58.50                        | -45.5       |

Table 7-64. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 309 of 340                 |

OPERATING FREQUENCY: 1772.50 MHz  
 OPERATING FREQUENCY: 1763.20 MHz  
 CHANNEL: 132597  
 CHANNEL: 132504  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 15+5 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3545.00         | H               | -                   | -                          | -67.44                           | 6.43                          | -61.01                        | -48.0       |
| 5315.00         | H               | -                   | -                          | -69.64                           | 9.07                          | -60.57                        | -47.6       |

Table 7-65. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 0, SCC: RB 1 Offset 74 – High Channel - OPEN)

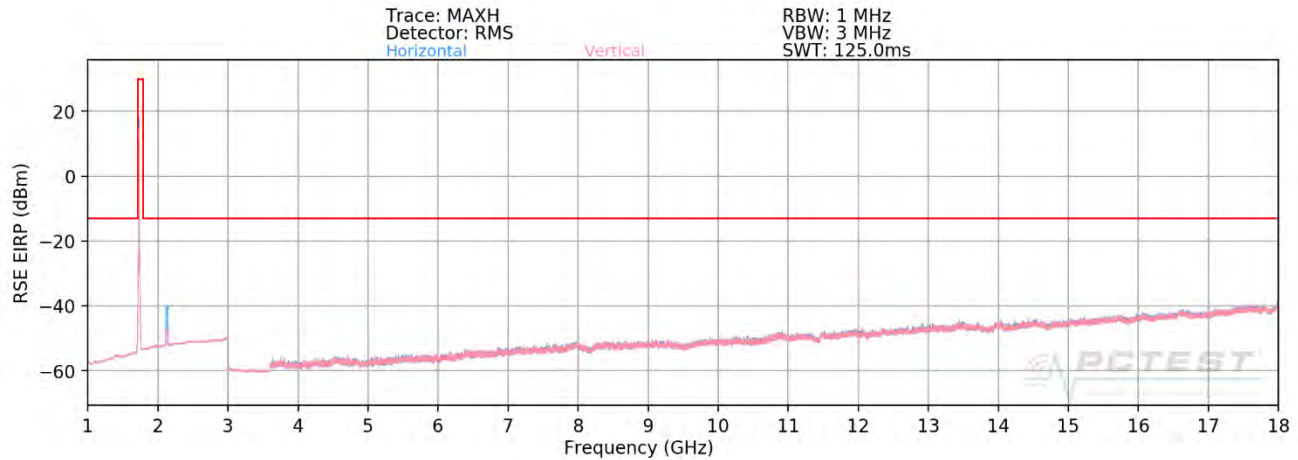
OPERATING FREQUENCY: 1717.50 MHz  
 OPERATING FREQUENCY: 1726.80 MHz  
 CHANNEL: 132047  
 CHANNEL: 132140  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 15+5 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3435.00         | V               | 113                 | 14                         | -63.28                           | 6.28                          | -57.00                        | -44.0       |
| 5155.00         | V               | -                   | -                          | -68.53                           | 8.97                          | -59.57                        | -46.6       |
| 6875.00         | V               | -                   | -                          | -66.65                           | 9.43                          | -57.23                        | -44.2       |

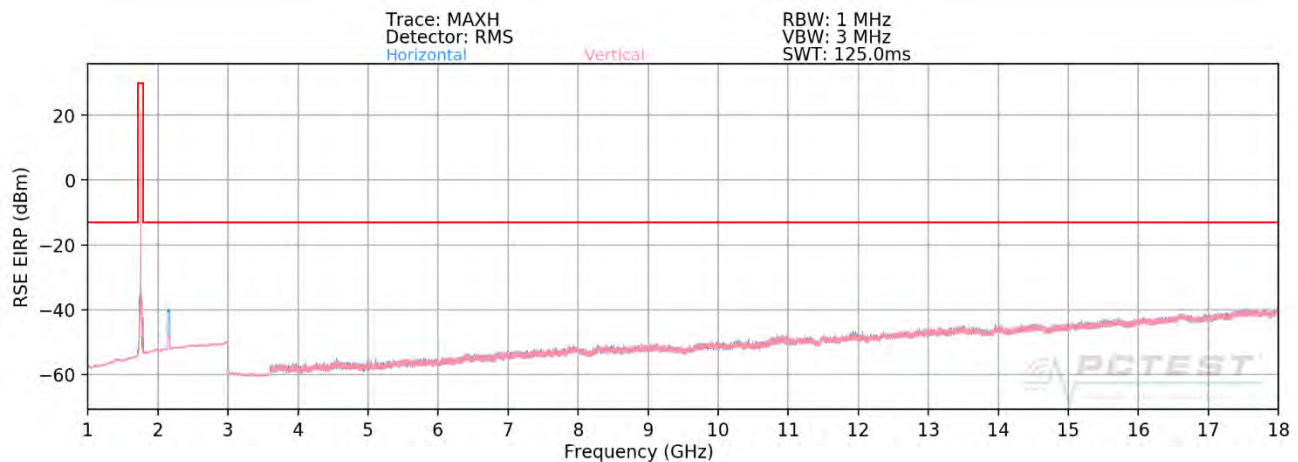
Table 7-66. Radiated Spurious Data with WCP (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Low Channel - OPEN)

|                                         |                                                                                     |                                    |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset      |                                                                                       | Page 310 of 340                 |

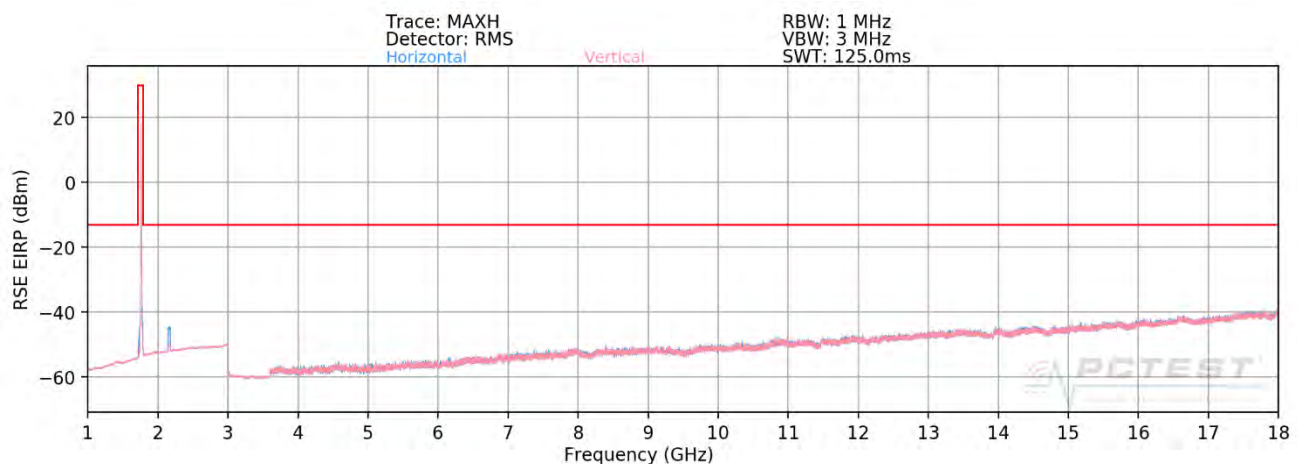
## Uplink CA Configuration 66C



**Plot 7-482. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel - OPEN)**

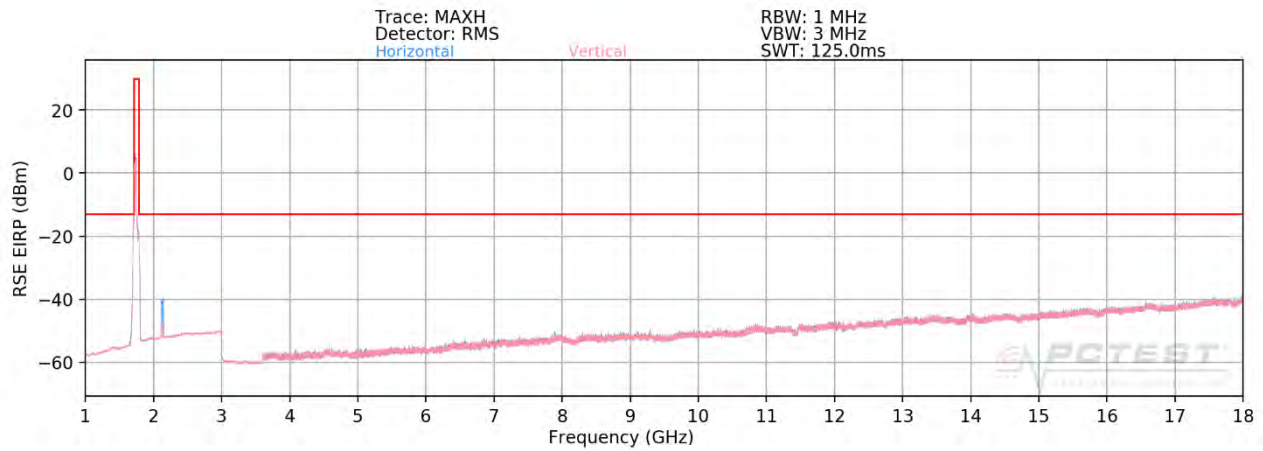


**Plot 7-483. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel - OPEN)**

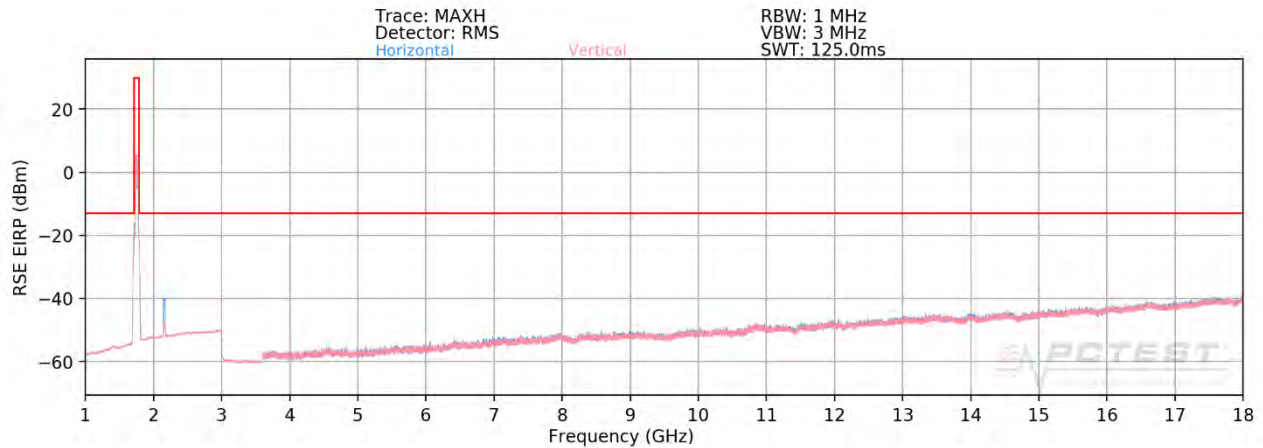


**Plot 7-484. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)**

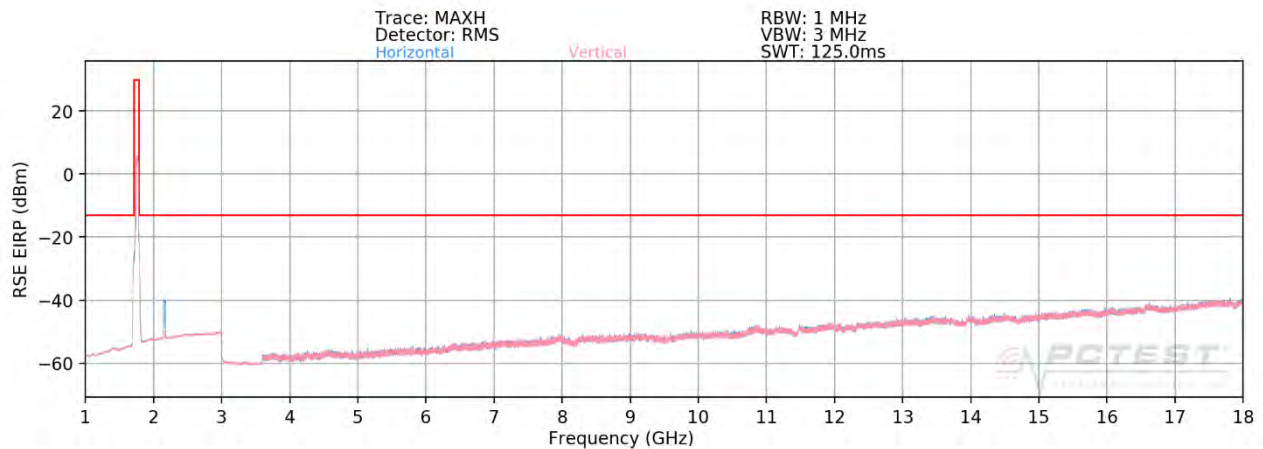
|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 311 of 340                 |



Plot 7-485. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel - OPEN)



Plot 7-486. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel - OPEN)



Plot 7-487. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel - OPEN)

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 312 of 340                 |

OPERATING FREQUENCY: 1720.00 MHz  
 OPERATING FREQUENCY: 1739.80 MHz  
 CHANNEL: 132072  
 CHANNEL: 132520  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20+20 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3440.00         | H               | 110                 | 192                        | -68.17                           | 6.22                          | -61.95                        | -48.9       |
| 5160.00         | H               | 269                 | 63                         | -68.89                           | 8.68                          | -60.22                        | -47.2       |
| 6880.00         | H               | 261                 | 128                        | -66.28                           | 8.76                          | -57.52                        | -44.5       |
| 8600.00         | H               | 176                 | 159                        | -65.59                           | 9.17                          | -56.41                        | -43.4       |
| 10320.00        | H               | -                   | -                          | -64.26                           | 9.64                          | -54.62                        | -41.6       |
| 12040.00        | H               | -                   | -                          | -60.91                           | 9.23                          | -51.68                        | -38.7       |

Table 7-67. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel - OPEN)

OPERATING FREQUENCY: 1745.00 MHz  
 OPERATING FREQUENCY: 1764.80 MHz  
 CHANNEL: 132322  
 CHANNEL: 132250  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20+20 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3490.00         | H               | 291                 | 256                        | -68.01                           | 6.32                          | -61.69                        | -48.7       |
| 5235.00         | H               | -                   | -                          | -69.29                           | 8.71                          | -60.58                        | -47.6       |
| 6980.00         | H               | 101                 | 46                         | -65.05                           | 8.74                          | -56.32                        | -43.3       |
| 8725.00         | H               | -                   | -                          | -66.05                           | 9.42                          | -56.64                        | -43.6       |
| 10470.00        | H               | -                   | -                          | -64.43                           | 9.62                          | -54.81                        | -41.8       |

Table 7-68. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 313 of 340                 |

OPERATING FREQUENCY: 1770.00 MHz  
 OPERATING FREQUENCY: 1750.20 MHz  
 CHANNEL: 132572  
 CHANNEL: 132374  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20+20 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3540.00         | H               | 310                 | 144                        | -67.87                           | 6.31                          | -61.56                        | -48.6       |
| 5310.00         | H               | 100                 | 29                         | -68.29                           | 8.74                          | -59.56                        | -46.6       |
| 7080.00         | H               | 136                 | 356                        | -66.43                           | 8.66                          | -57.77                        | -44.8       |
| 8850.00         | H               | -                   | -                          | -66.81                           | 9.53                          | -57.28                        | -44.3       |
| 10620.00        | H               | -                   | -                          | -63.42                           | 9.50                          | -53.92                        | -40.9       |

Table 7-69. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)

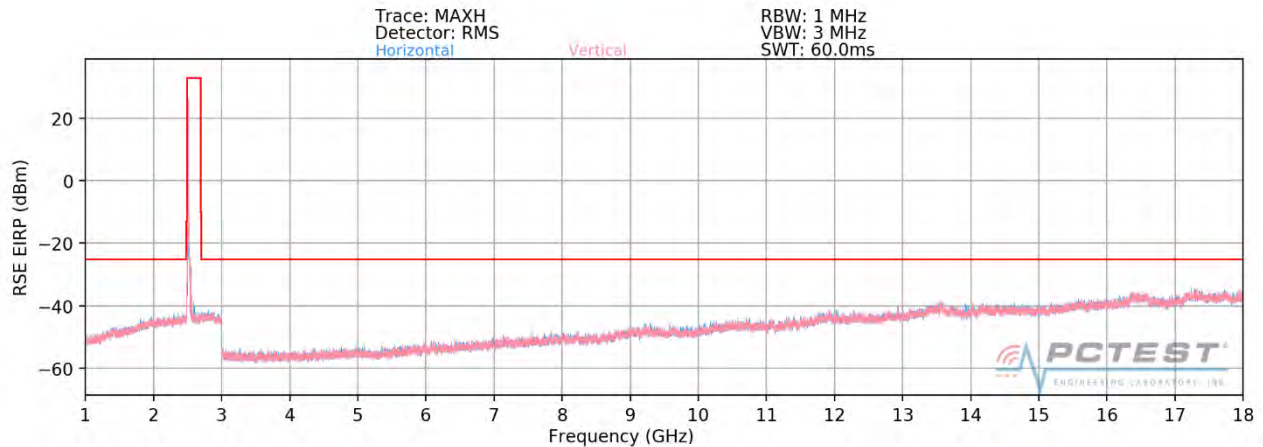
OPERATING FREQUENCY: 1745.00 MHz  
 OPERATING FREQUENCY: 1764.80 MHz  
 CHANNEL: 132322  
 CHANNEL: 132250  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20+20 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3490.00         | H               | 266                 | 111                        | -68.15                           | 6.32                          | -61.83                        | -48.8       |
| 5235.00         | H               | -                   | -                          | -69.42                           | 8.71                          | -60.71                        | -47.7       |
| 6980.00         | H               | -                   | -                          | -66.23                           | 8.74                          | -57.50                        | -44.5       |

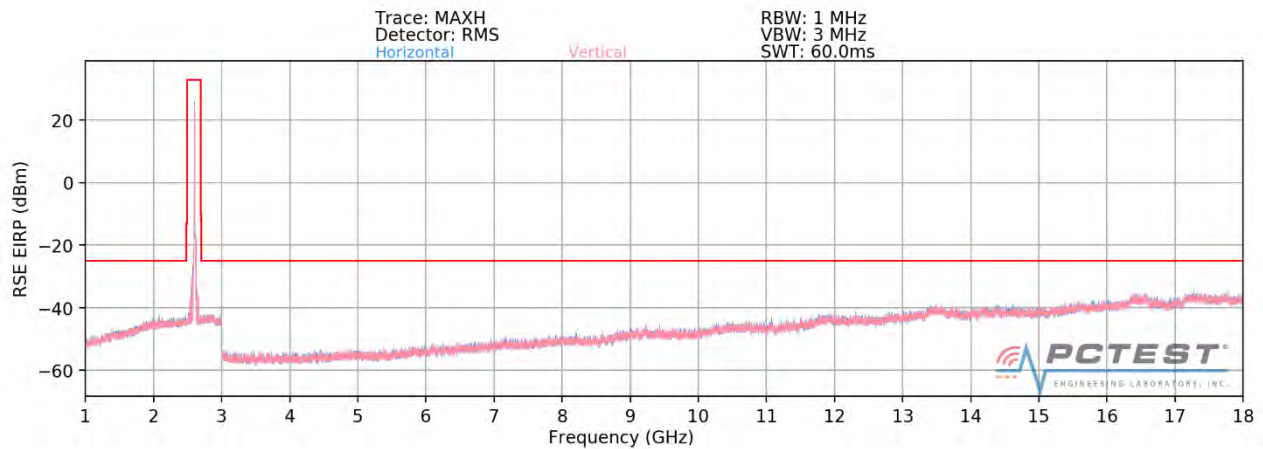
Table 7-70. Radiated Spurious Data with WCP (ULCA 66C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 314 of 340                 |

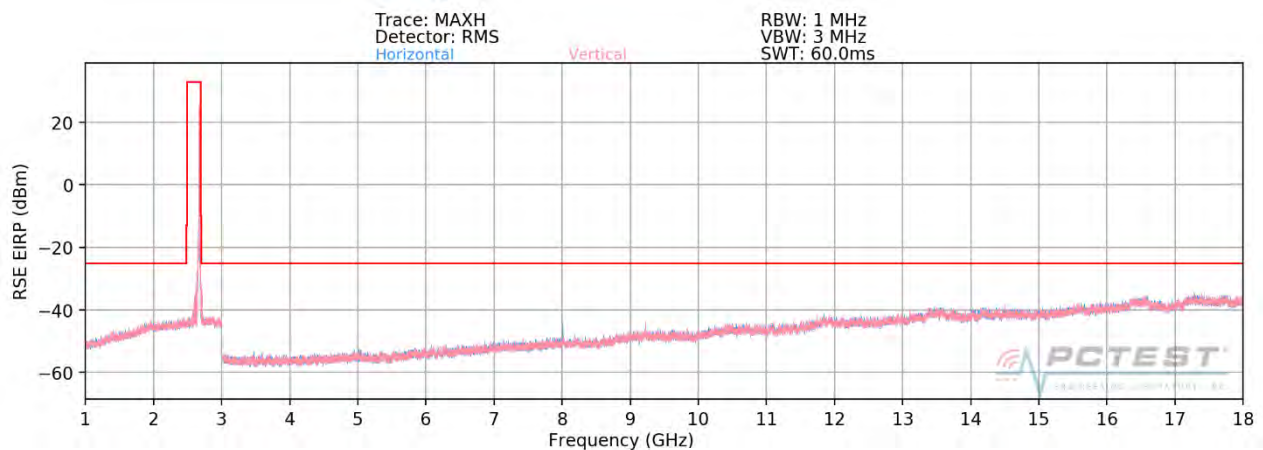
## Uplink CA Configuration 41C (PC3)



Plot 7-488. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel - OPEN)

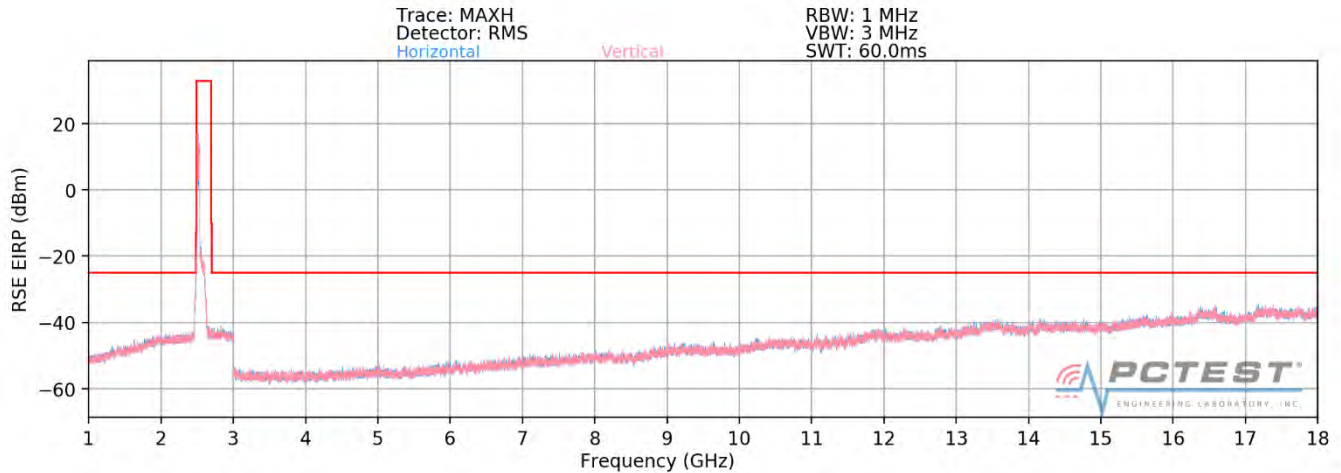


Plot 7-489. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

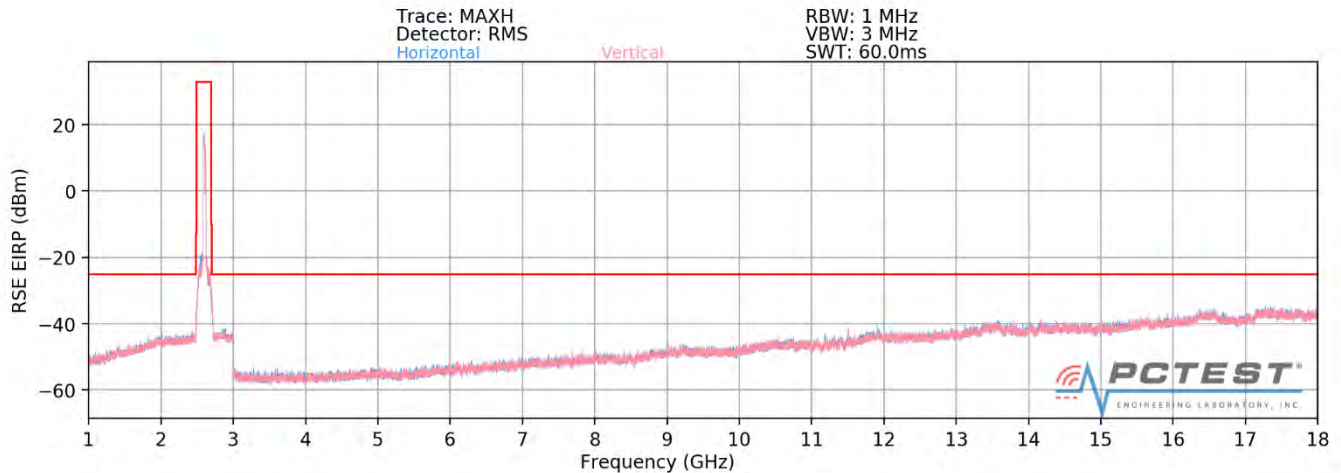


Plot 7-490. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)

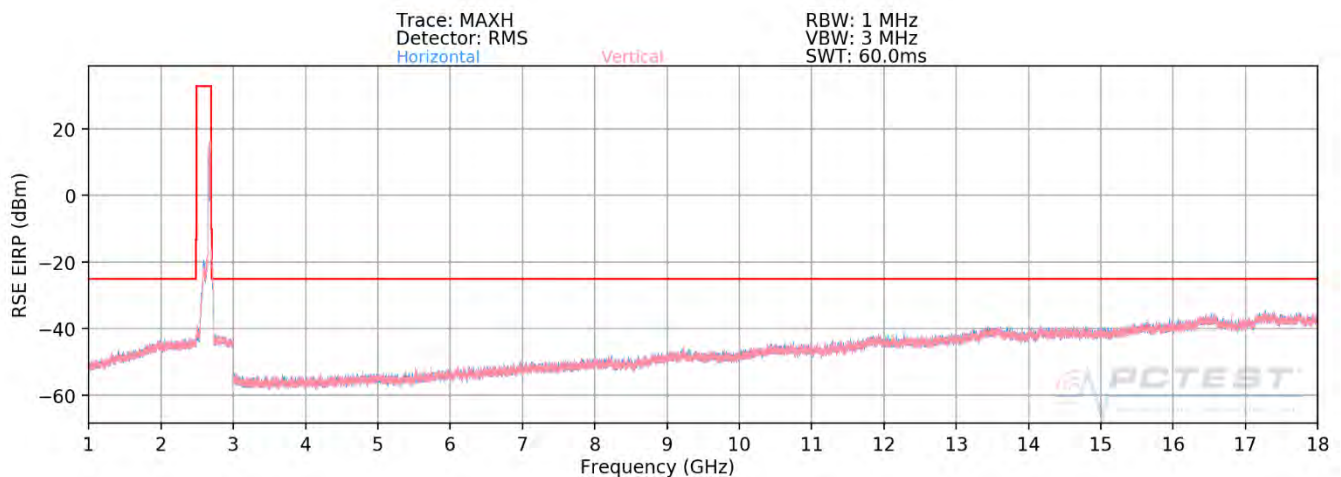
|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 315 of 340                 |



Plot 7-491. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel - OPEN)



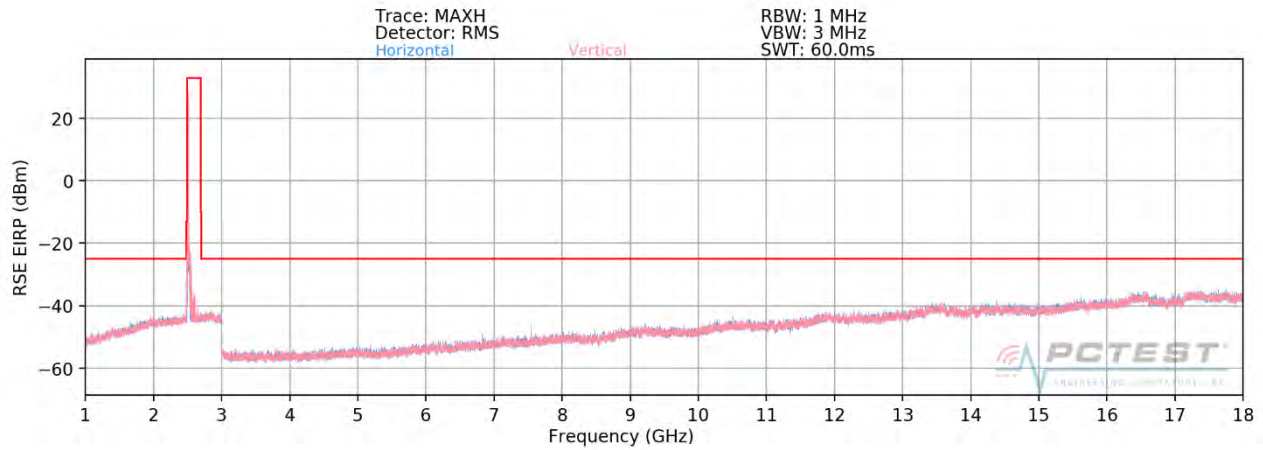
Plot 7-492. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel - OPEN)



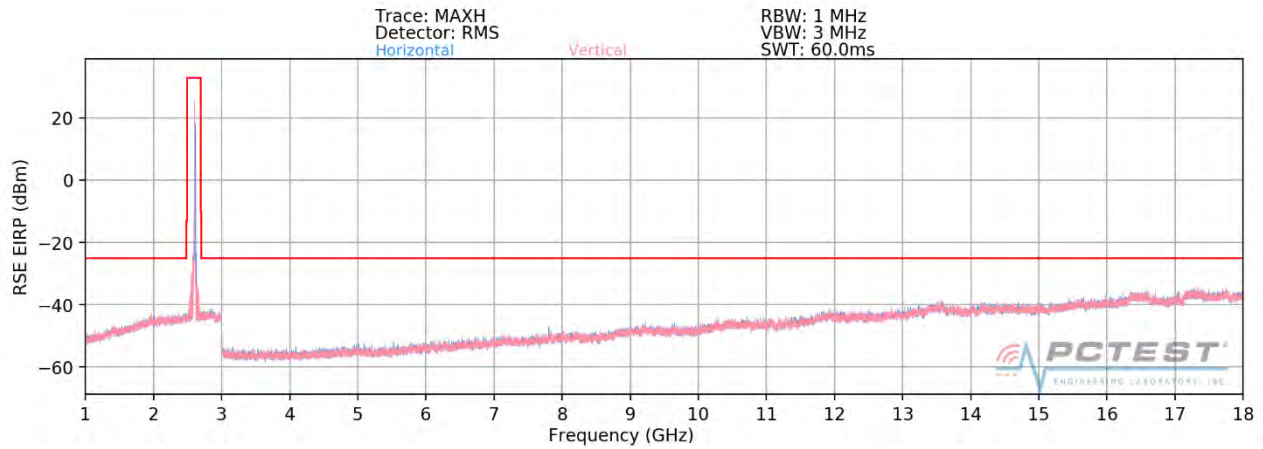
Plot 7-493. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel - OPEN)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 316 of 340                 |

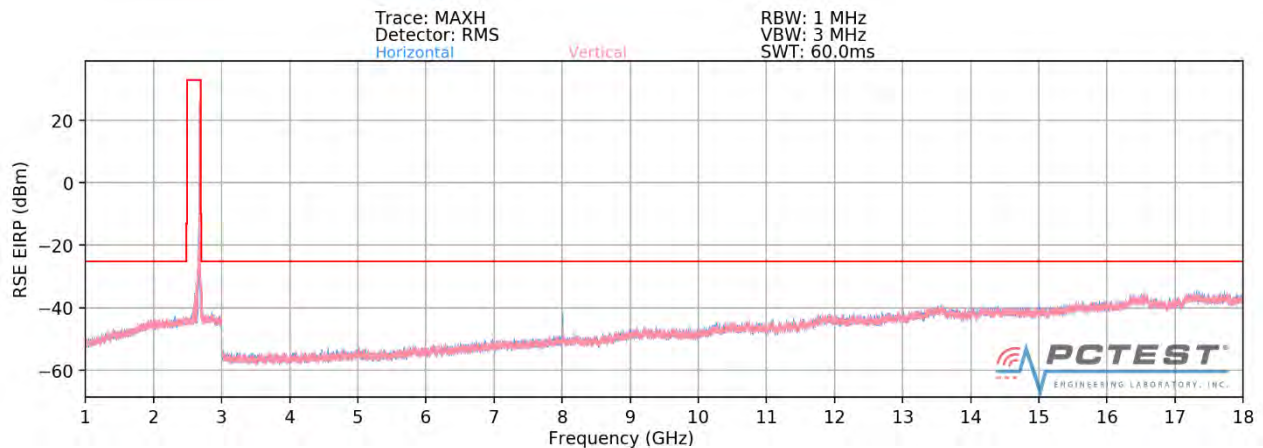
## Uplink CA Configuration 41C (PC2)



Plot 7-494. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel - OPEN)

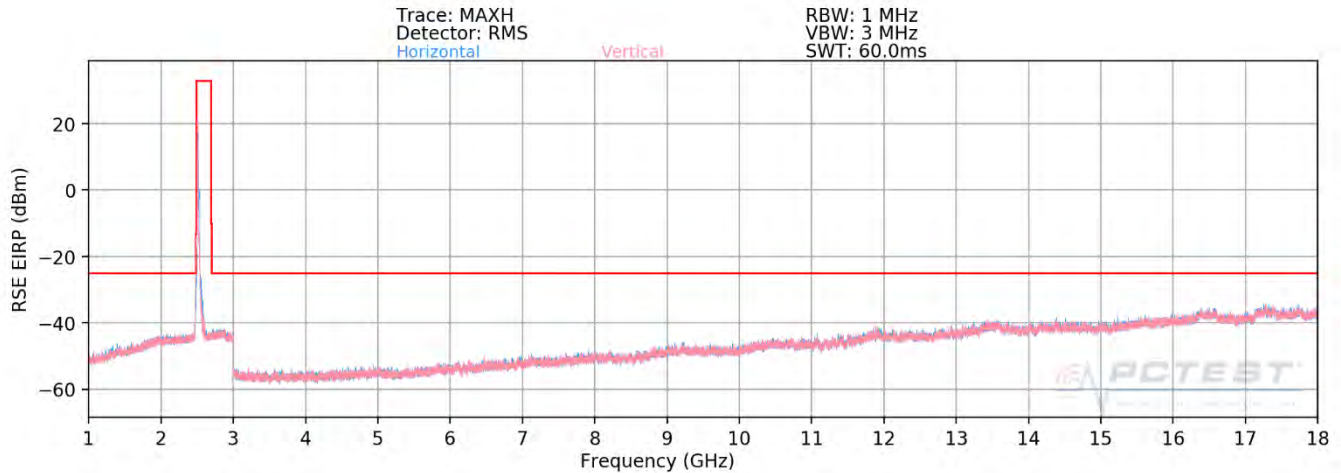


Plot 7-495. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

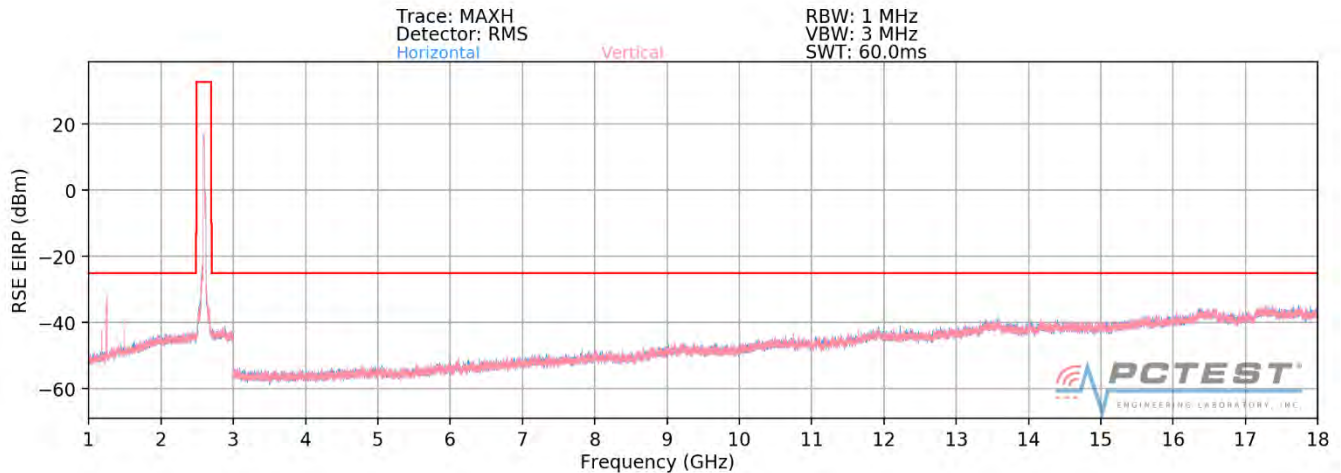


Plot 7-496. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)

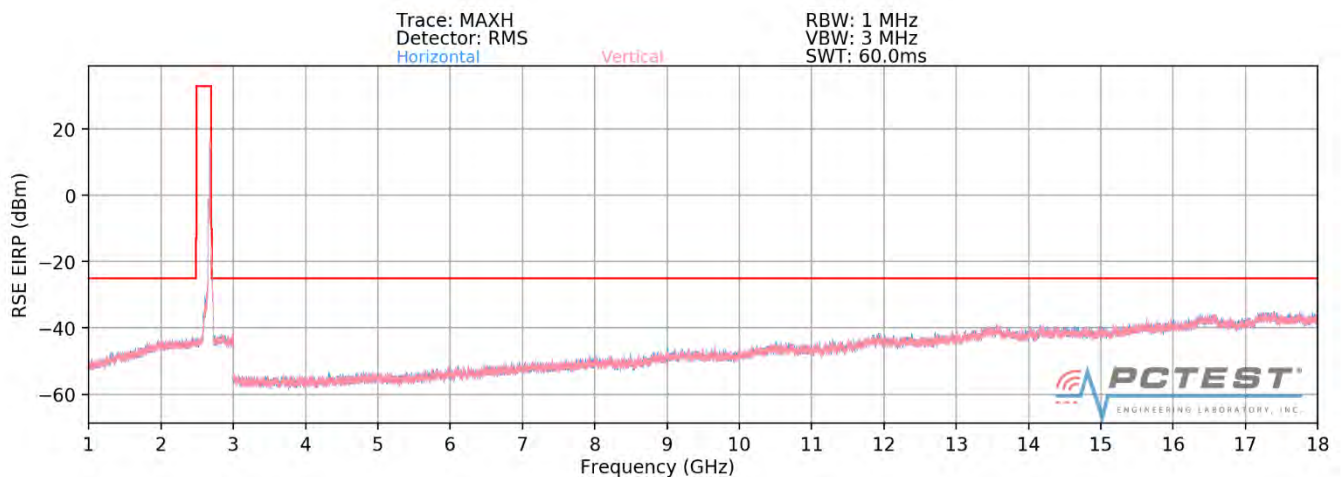
|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset                 |                | Page 317 of 340                 |



Plot 7-497. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel - OPEN)



Plot 7-498. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel - OPEN)



Plot 7-499. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel - OPEN)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMF900U                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019             | EUT Type:<br>Portable Handset         |                | Page 318 of 340                 |

OPERATING FREQUENCY (PCC): 2506.00 MHz  
 OPERATING FREQUENCY (SCC): 2525.80 MHz  
 CHANNEL (PCC): 39750  
 CHANNEL (SCC): 39948  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5012.00         | H               | 105                 | 53                         | -68.28                           | 8.75                          | -59.53                        | -34.5       |
| 7518.00         | H               | 135                 | 342                        | -53.81                           | 9.32                          | -44.49                        | -19.5       |
| 10024.00        | H               | -                   | -                          | -64.16                           | 9.80                          | -54.36                        | -29.4       |
| 12530.00        | H               | -                   | -                          | -59.32                           | 8.87                          | -50.46                        | -25.5       |

Table 7-71. Radiated Spurious Data (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel - OPEN)

OPERATING FREQUENCY (PCC): 2593.00 MHz  
 OPERATING FREQUENCY (SCC): 2612.80 MHz  
 CHANNEL (PCC): 40620  
 CHANNEL (SCC): 40818  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5186.00         | H               | 119                 | 47                         | -58.87                           | 9.03                          | -49.85                        | -24.8       |
| 7779.00         | H               | 106                 | 52                         | -53.48                           | 9.29                          | -44.19                        | -19.2       |
| 10372.00        | H               | -                   | -                          | -63.24                           | 9.50                          | -53.74                        | -28.7       |
| 12965.00        | H               | -                   | -                          | -58.49                           | 8.75                          | -49.74                        | -24.7       |

Table 7-72. Radiated Spurious Data (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel - OPEN)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 319 of 340                 |

OPERATING FREQUENCY (PCC): 2680.00 MHz  
 OPERATING FREQUENCY (SCC): 2660.20 MHz  
 CHANNEL (PCC): 41490  
 CHANNEL (SCC): 41292  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5360.00         | H               | -                   | -                          | -68.57                           | 8.99                          | -59.58                        | -34.6       |
| 8040.00         | H               | 123                 | 79                         | -47.67                           | 9.35                          | -38.32                        | -13.3       |
| 10720.00        | H               | -                   | -                          | -61.54                           | 9.39                          | -52.15                        | -27.2       |
| 13400.00        | H               | -                   | -                          | -56.93                           | 8.67                          | -48.26                        | -23.3       |

Table 7-73. Radiated Spurious Data (ULCA 41C - PC2 - PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel - OPEN)

OPERATING FREQUENCY: 2680.00 MHz  
 OPERATING FREQUENCY: 2660.20 MHz  
 CHANNEL: 41490  
 CHANNEL: 41292  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -25 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5360.00         | V               | -                   | -                          | -62.08                           | 8.99                          | -53.09                        | -28.1       |
| 8040.00         | V               | 235                 | 81                         | -55.21                           | 9.35                          | -45.86                        | -20.9       |
| 10720.00        | V               | -                   | -                          | -55.98                           | 9.39                          | -46.59                        | -21.6       |
| 13400.00        | V               | -                   | -                          | -51.92                           | 8.67                          | -43.25                        | -18.2       |

Table 7-74. Radiated Spurious Data with WCP (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – High Channel - OPEN)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 320 of 340                 |

## 7.11 Frequency Stability / Temperature Variation

### Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

***For Part 22, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.***

### Test Procedure Used

ANSI/TIA-603-E-2016

### Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

### Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

### Test Notes

None

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 321 of 340                 |

## Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz  
 CHANNEL: 133297  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 680,500,375    | 375             | 0.0000551     |
| 100 %          |             | - 20      | 680,499,682    | -318            | -0.0000467    |
| 100 %          |             | - 10      | 680,499,747    | -253            | -0.0000372    |
| 100 %          |             | 0         | 680,500,128    | 128             | 0.0000188     |
| 100 %          |             | + 10      | 680,499,623    | -377            | -0.0000554    |
| 100 %          |             | + 20      | 680,499,876    | -124            | -0.0000182    |
| 100 %          |             | + 30      | 680,500,134    | 134             | 0.0000197     |
| 100 %          |             | + 40      | 680,499,742    | -258            | -0.0000379    |
| 100 %          |             | + 50      | 680,500,249    | 249             | 0.0000366     |
| BATT. ENDPOINT | 3.45        | + 20      | 680,499,640    | -360            | -0.0000529    |

**Table 7-75. Frequency Stability Data (Band 71)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         | Page 322 of 340                                                                       |                                 |

## Band 71 Frequency Stability Measurements

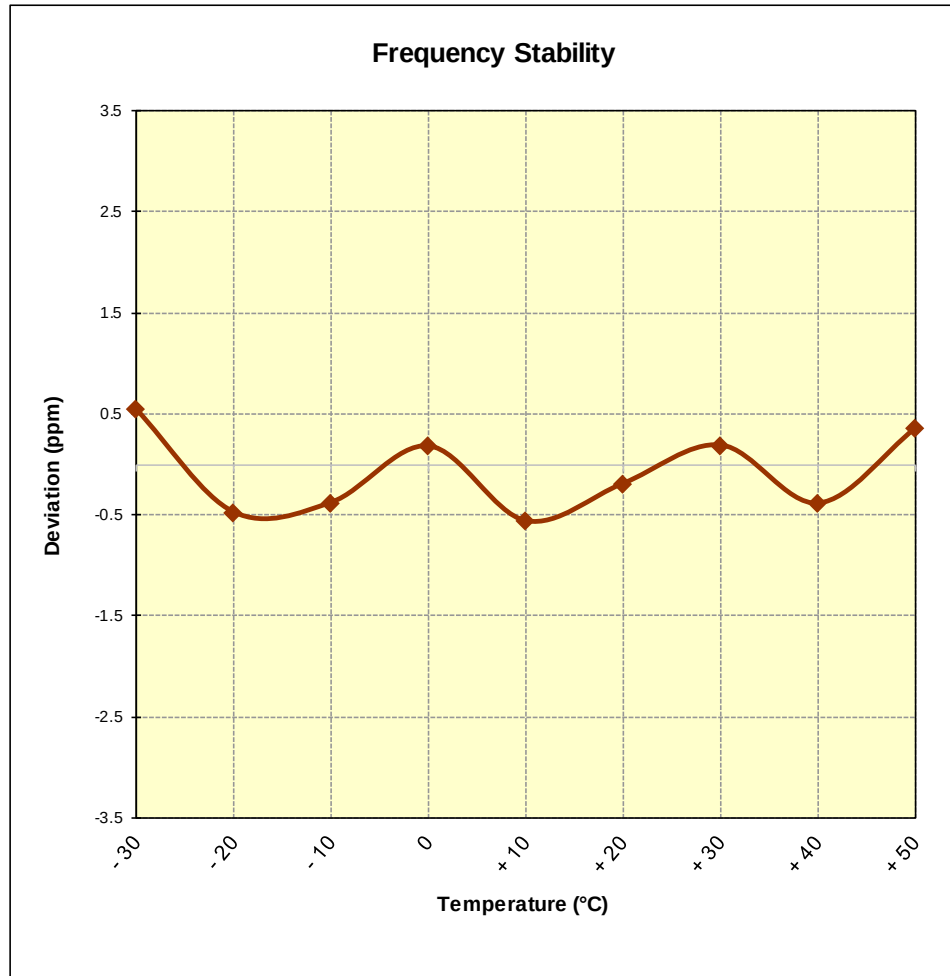


**Figure 7-11. Frequency Stability Graph (Band 71)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 323 of 340                 |

## Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz  
 CHANNEL: 23790  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 707,500,282    | 282             | 0.0000399     |
| 100 %          |             | - 20      | 707,500,246    | 246             | 0.0000348     |
| 100 %          |             | - 10      | 707,500,014    | 14              | 0.0000020     |
| 100 %          |             | 0         | 707,499,940    | -60             | -0.0000085    |
| 100 %          |             | + 10      | 707,499,988    | -12             | -0.0000017    |
| 100 %          |             | + 20      | 707,499,918    | -82             | -0.0000116    |
| 100 %          |             | + 30      | 707,500,007    | 7               | 0.0000010     |
| 100 %          |             | + 40      | 707,499,769    | -231            | -0.0000327    |
| 100 %          |             | + 50      | 707,499,863    | -137            | -0.0000194    |
| BATT. ENDPOINT | 3.45        | + 20      | 707,500,196    | 196             | 0.0000277     |

**Table 7-76. Frequency Stability Data (Band 12)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset |                                 |
|                                         |                                                                                                                                                                                                                     |                               | Page 324 of 340                 |

## Band 12 Frequency Stability Measurements

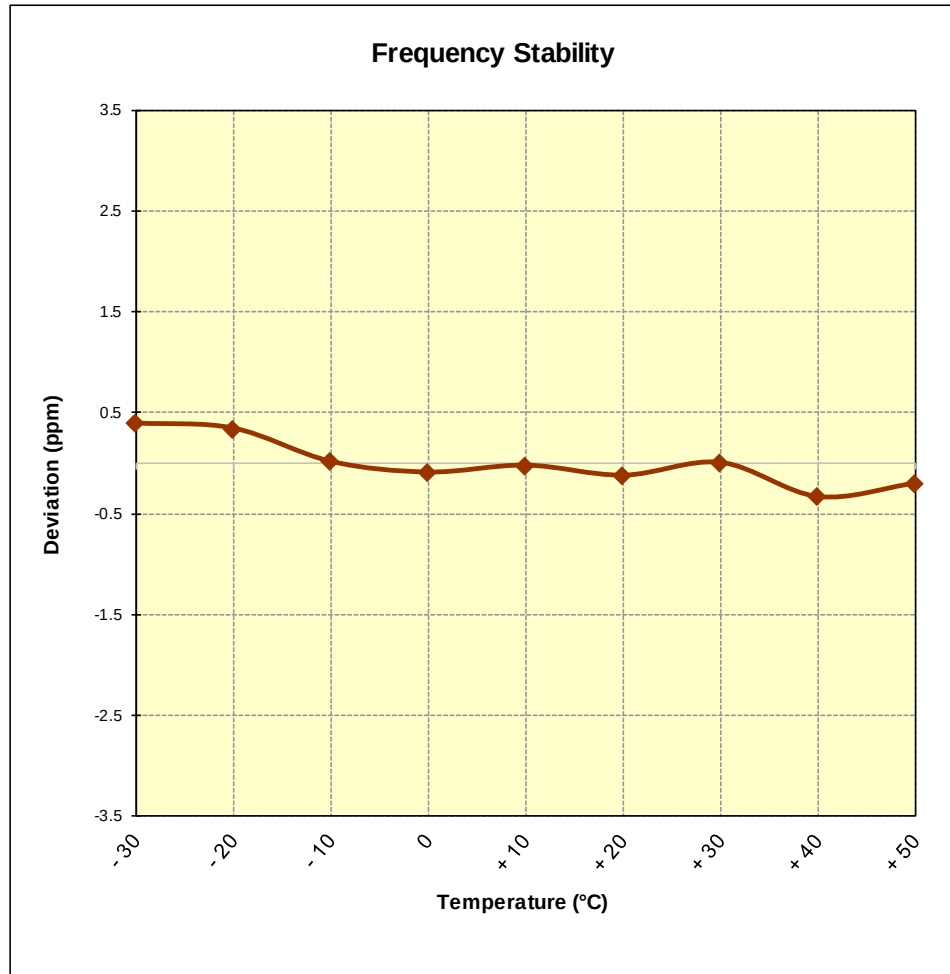


**Figure 7-12. Frequency Stability Graph (Band 12)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 325 of 340                 |

## Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz  
 CHANNEL: 23230  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 781,999,848    | -152            | -0.0000194    |
| 100 %          |             | - 20      | 782,000,201    | 201             | 0.0000257     |
| 100 %          |             | - 10      | 782,000,136    | 136             | 0.0000174     |
| 100 %          |             | 0         | 781,999,833    | -167            | -0.0000214    |
| 100 %          |             | + 10      | 782,000,106    | 106             | 0.0000136     |
| 100 %          |             | + 20      | 781,999,981    | -19             | -0.0000024    |
| 100 %          |             | + 30      | 781,999,817    | -183            | -0.0000234    |
| 100 %          |             | + 40      | 781,999,727    | -273            | -0.0000349    |
| 100 %          |             | + 50      | 781,999,587    | -413            | -0.0000528    |
| BATT. ENDPOINT | 3.45        | + 20      | 781,999,970    | -30             | -0.0000038    |

**Table 7-77. Frequency Stability Data (Band 13)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 326 of 340                 |

## Band 13 Frequency Stability Measurements

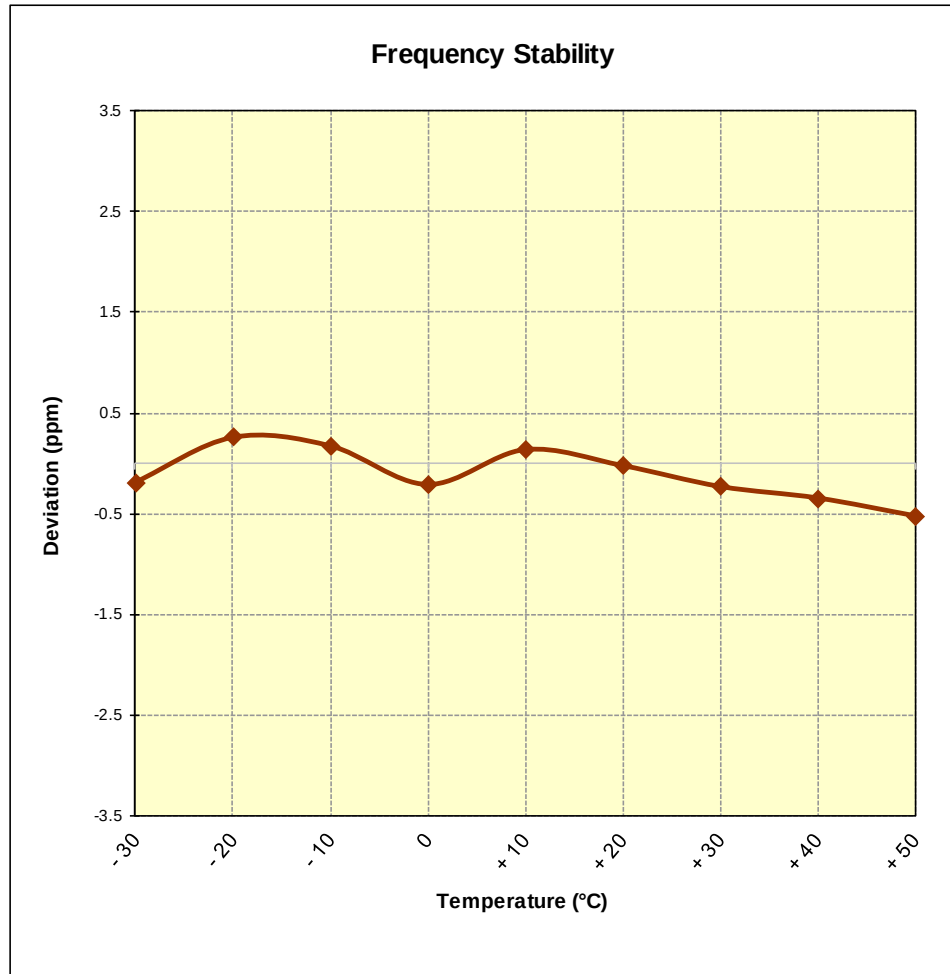


**Figure 7-13. Frequency Stability Graph (Band 13)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMF900U                      |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019                                            | <b>EUT Type:</b><br>Portable Handset          |                                                                                       | Page 327 of 340                        |

## Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 831,500,000 Hz  
 CHANNEL: 26865  
 REFERENCE VOLTAGE: 4.27 VDC  
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 831,500,270    | 270             | 0.0000325     |
| 100 %          |             | - 20      | 831,500,222    | 222             | 0.0000267     |
| 100 %          |             | - 10      | 831,499,864    | -136            | -0.0000164    |
| 100 %          |             | 0         | 831,500,015    | 15              | 0.0000018     |
| 100 %          |             | + 10      | 831,499,857    | -143            | -0.0000172    |
| 100 %          |             | + 20      | 831,499,852    | -148            | -0.0000178    |
| 100 %          |             | + 30      | 831,500,042    | 42              | 0.0000051     |
| 100 %          |             | + 40      | 831,499,903    | -97             | -0.0000117    |
| 100 %          |             | + 50      | 831,499,991    | -9              | -0.0000011    |
| BATT. ENDPOINT | 3.45        | + 20      | 831,500,053    | 53              | 0.0000064     |

**Table 7-78. Frequency Stability Data (Band 26/5)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 328 of 340                 |

## Band 26/5 Frequency Stability Measurements

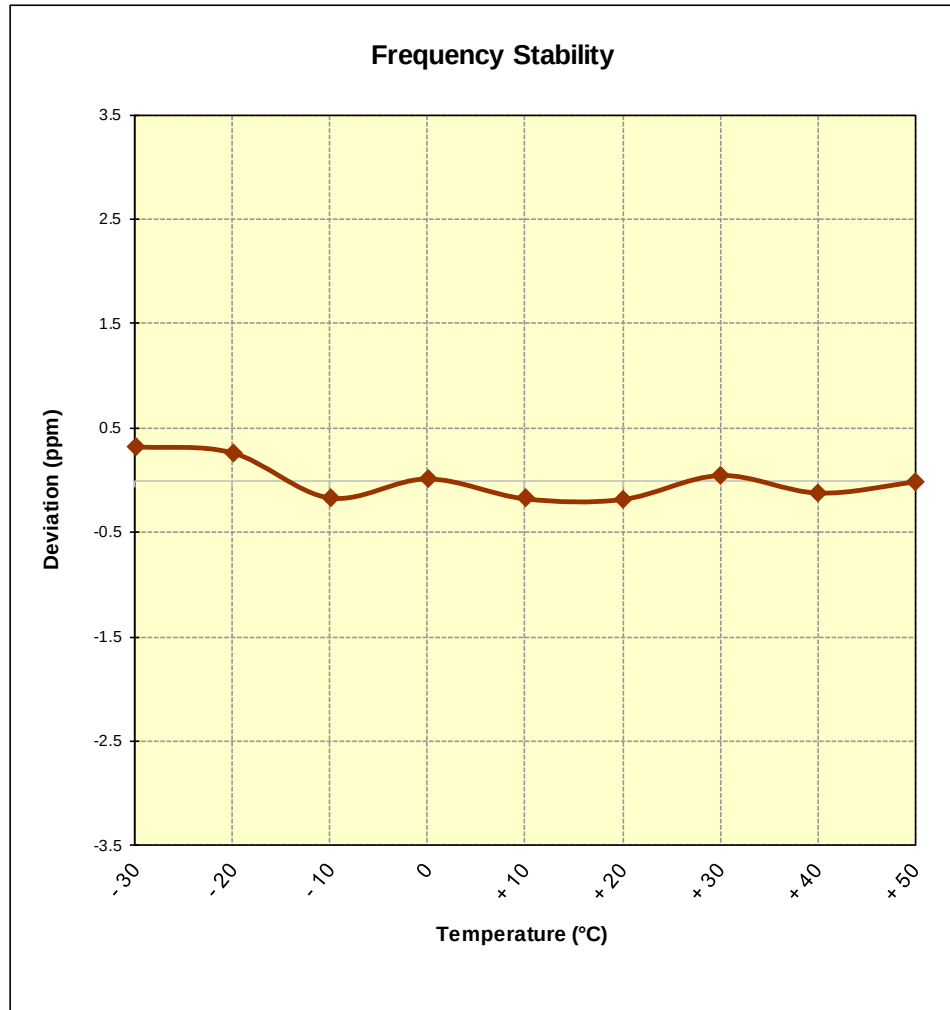


**Figure 7-14. Frequency Stability Graph (Band 26/5)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMF900U                      |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019                                            | <b>EUT Type:</b><br>Portable Handset          |                                                                                       | Page 329 of 340                        |

## Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz  
 CHANNEL: 132322  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 1,745,000,067  | 67              | 0.0000038     |
| 100 %          |             | - 20      | 1,745,000,097  | 97              | 0.0000056     |
| 100 %          |             | - 10      | 1,744,999,983  | -17             | -0.0000010    |
| 100 %          |             | 0         | 1,744,999,979  | -21             | -0.0000012    |
| 100 %          |             | + 10      | 1,745,000,347  | 347             | 0.0000199     |
| 100 %          |             | + 20      | 1,745,000,162  | 162             | 0.0000093     |
| 100 %          |             | + 30      | 1,744,999,932  | -68             | -0.0000039    |
| 100 %          |             | + 40      | 1,745,000,038  | 38              | 0.0000022     |
| 100 %          |             | + 50      | 1,744,999,786  | -214            | -0.0000123    |
| BATT. ENDPOINT | 3.45        | + 20      | 1,744,999,569  | -431            | -0.0000247    |

**Table 7-79. Frequency Stability Data (Band 66/4)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 330 of 340                 |

## Band 66/4 Frequency Stability Measurements

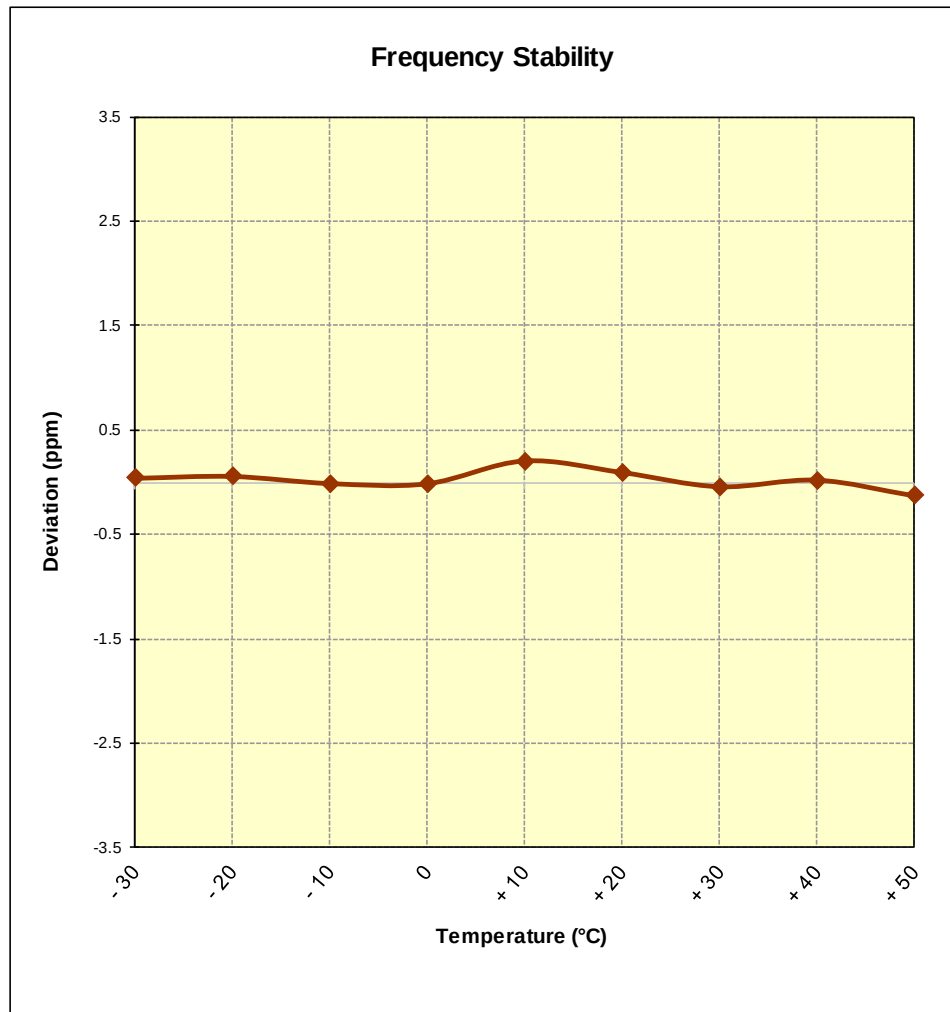


**Figure 7-15. Frequency Stability Graph (Band 66/4)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMF900U                      |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019                                            | <b>EUT Type:</b><br>Portable Handset          |                                                                                       | Page 331 of 340                        |

## Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz  
 CHANNEL: 26365  
 REFERENCE VOLTAGE: 4.27 VDC  
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 1,882,499,839  | -161            | -0.0000086    |
| 100 %          |             | - 20      | 1,882,499,897  | -103            | -0.0000055    |
| 100 %          |             | - 10      | 1,882,500,056  | 56              | 0.0000030     |
| 100 %          |             | 0         | 1,882,500,181  | 181             | 0.0000096     |
| 100 %          |             | + 10      | 1,882,500,192  | 192             | 0.0000102     |
| 100 %          |             | + 20      | 1,882,499,955  | -45             | -0.0000024    |
| 100 %          |             | + 30      | 1,882,500,051  | 51              | 0.0000027     |
| 100 %          |             | + 40      | 1,882,500,067  | 67              | 0.0000036     |
| 100 %          |             | + 50      | 1,882,500,057  | 57              | 0.0000030     |
| BATT. ENDPOINT | 3.45        | + 20      | 1,882,499,962  | -38             | -0.0000020    |

Table 7-80. Frequency Stability Data (Band 25/2)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 332 of 340                 |

## Band 25/2 Frequency Stability Measurements

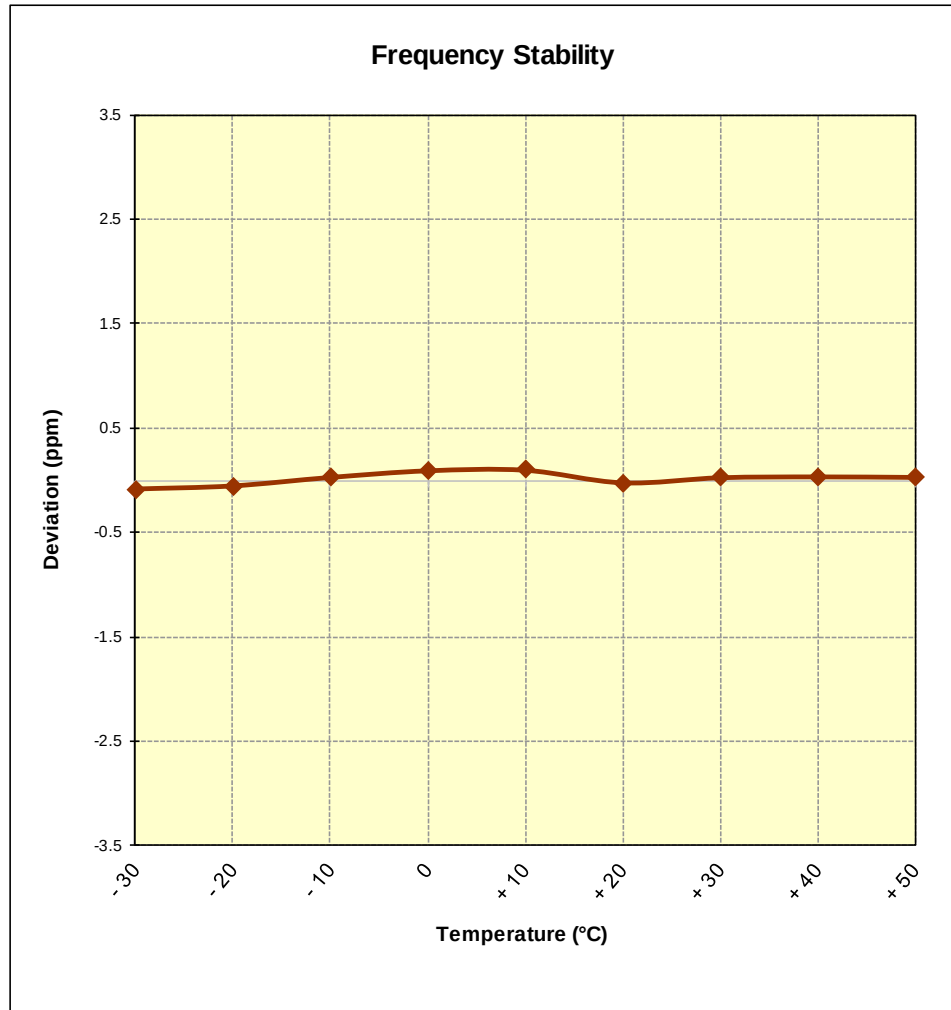


**Figure 7-16. Frequency Stability Graph (Band 25/2)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMF900U                      |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019                                            | <b>EUT Type:</b><br>Portable Handset          |                                                                                       | Page 333 of 340                        |

## Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz  
 CHANNEL: 27710  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 2,309,999,780  | -220            | -0.0000095    |
| 100 %          |             | - 20      | 2,309,999,889  | -111            | -0.0000048    |
| 100 %          |             | - 10      | 2,310,000,090  | 90              | 0.0000039     |
| 100 %          |             | 0         | 2,310,000,326  | 326             | 0.0000141     |
| 100 %          |             | + 10      | 2,309,999,893  | -107            | -0.0000046    |
| 100 %          |             | + 20      | 2,309,999,826  | -174            | -0.0000075    |
| 100 %          |             | + 30      | 2,310,000,177  | 177             | 0.0000077     |
| 100 %          |             | + 40      | 2,309,999,848  | -152            | -0.0000066    |
| 100 %          |             | + 50      | 2,309,999,974  | -26             | -0.0000011    |
| BATT. ENDPOINT | 3.45        | + 20      | 2,310,000,181  | 181             | 0.0000078     |

**Table 7-81. Frequency Stability Data (Band 30)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         | Page 334 of 340                                                                       |                                 |

## Band 30 Frequency Stability Measurements

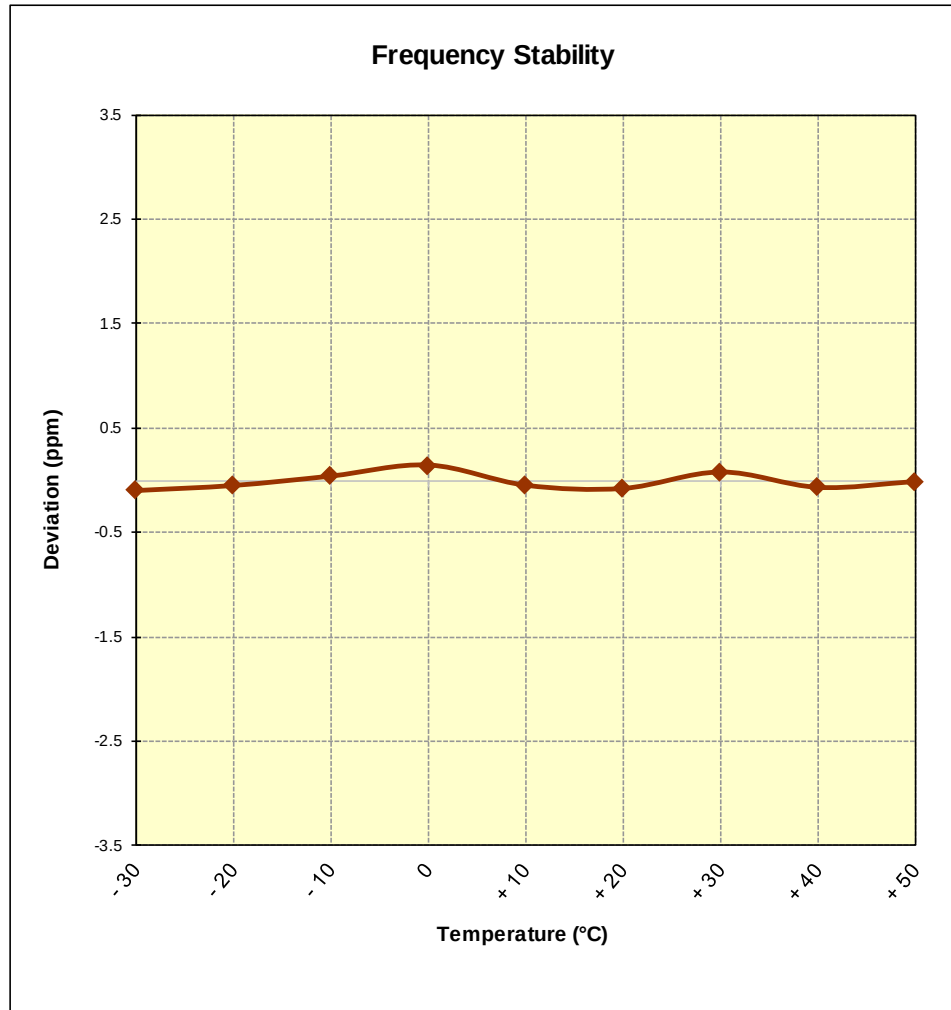


**Figure 7-17. Frequency Stability Graph (Band 30)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 335 of 340                 |

## Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz  
 CHANNEL: 21100  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 2,534,999,979  | -21             | -0.0000008    |
| 100 %          |             | - 20      | 2,535,000,285  | 285             | 0.0000112     |
| 100 %          |             | - 10      | 2,535,000,028  | 28              | 0.0000011     |
| 100 %          |             | 0         | 2,535,000,149  | 149             | 0.0000059     |
| 100 %          |             | + 10      | 2,534,999,835  | -165            | -0.0000065    |
| 100 %          |             | + 20      | 2,535,000,329  | 329             | 0.0000130     |
| 100 %          |             | + 30      | 2,535,000,118  | 118             | 0.0000047     |
| 100 %          |             | + 40      | 2,534,999,813  | -187            | -0.0000074    |
| 100 %          |             | + 50      | 2,535,000,113  | 113             | 0.0000045     |
| BATT. ENDPOINT | 3.45        | + 20      | 2,535,000,147  | 147             | 0.0000058     |

**Table 7-82. Frequency Stability Data (Band 7)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 336 of 340                 |

## Band 7 Frequency Stability Measurements

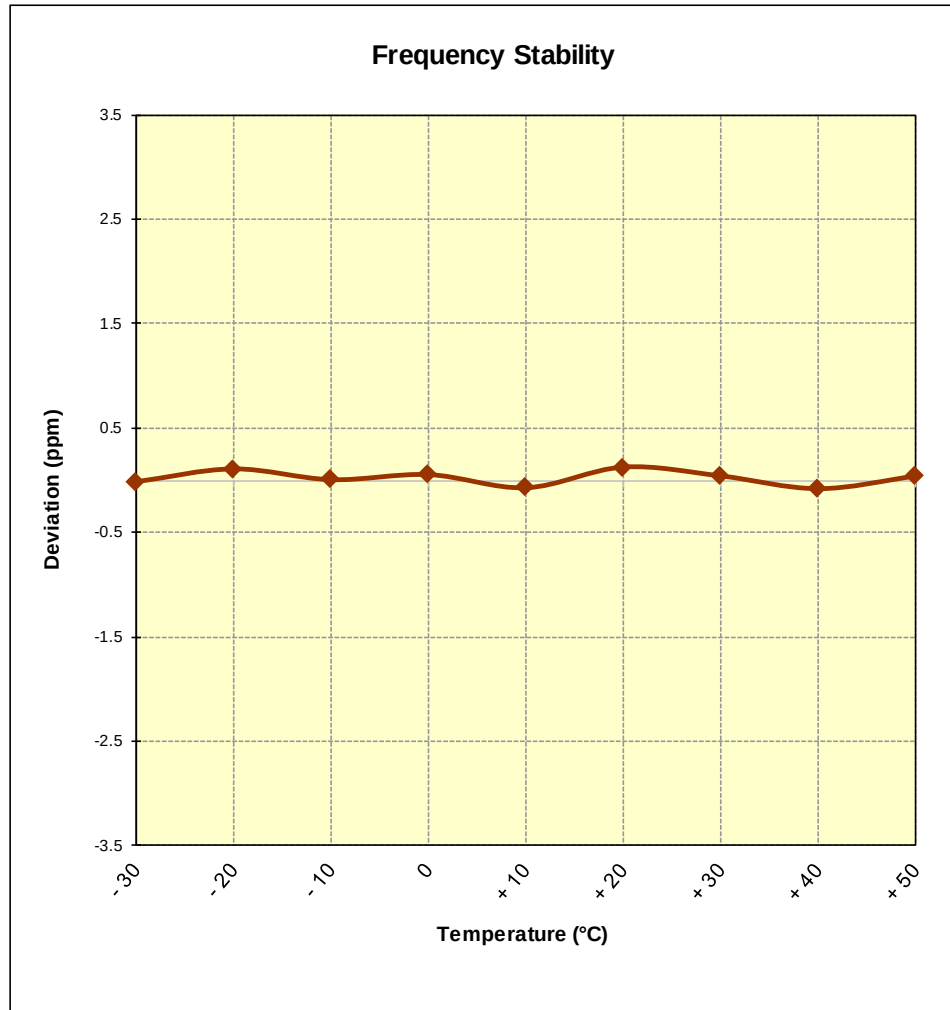


**Figure 7-18. Frequency Stability Graph (Band 7)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 337 of 340                 |

## Band 41/38 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz  
 CHANNEL: 40620  
 REFERENCE VOLTAGE: 4.27 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.27        | - 30      | 2,593,000,166  | 166             | 0.0000064     |
| 100 %          |             | - 20      | 2,593,000,280  | 280             | 0.0000108     |
| 100 %          |             | - 10      | 2,592,999,853  | -147            | -0.0000057    |
| 100 %          |             | 0         | 2,593,000,123  | 123             | 0.0000047     |
| 100 %          |             | + 10      | 2,592,999,808  | -192            | -0.0000074    |
| 100 %          |             | + 20      | 2,593,000,020  | 20              | 0.0000008     |
| 100 %          |             | + 30      | 2,593,000,086  | 86              | 0.0000033     |
| 100 %          |             | + 40      | 2,592,999,929  | -71             | -0.0000027    |
| 100 %          |             | + 50      | 2,593,000,420  | 420             | 0.0000162     |
| BATT. ENDPOINT | 3.45        | + 20      | 2,592,999,779  | -221            | -0.0000085    |

**Table 7-83. Frequency Stability Data (Band 41/38)**

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 338 of 340                 |

## Band 41/38 Frequency Stability Measurements

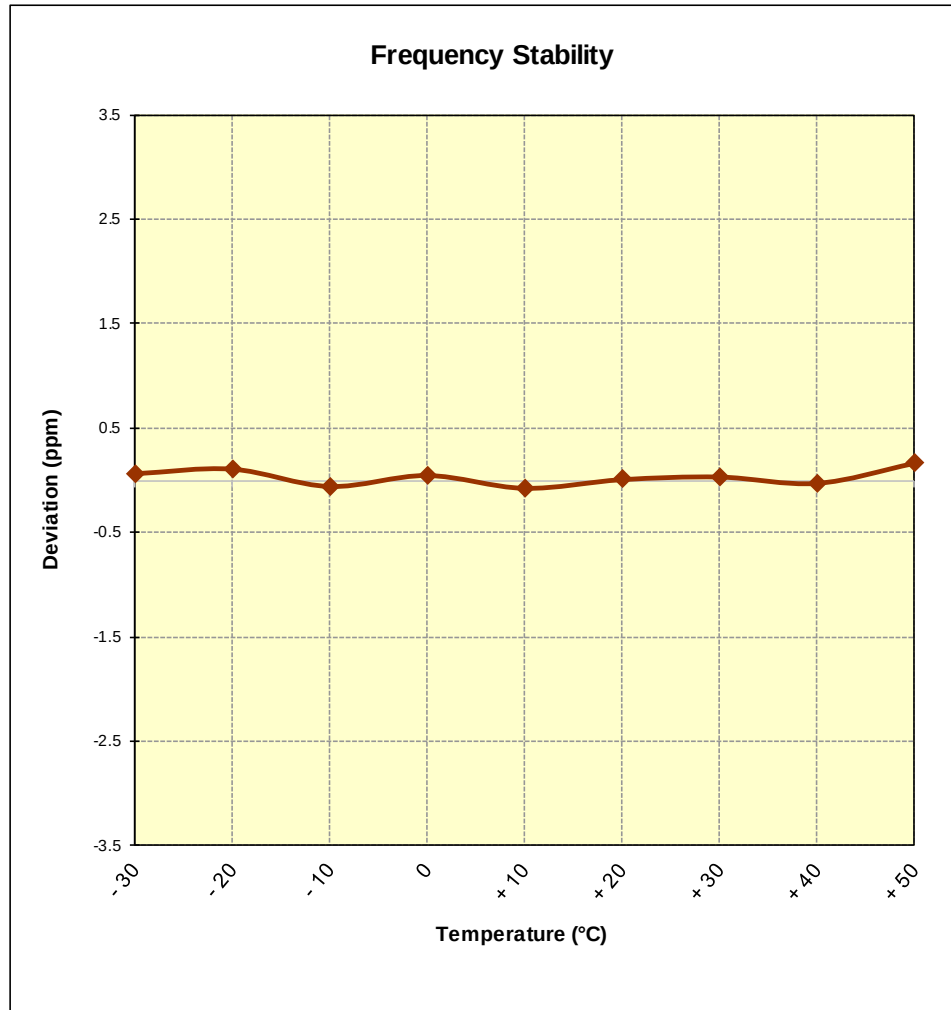


**Figure 7-19. Frequency Stability Graph (Band 41/38)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMF900U                      |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1901160007-03.A3L | <b>Test Dates:</b><br>01/22 - 03/29/2019                                            | <b>EUT Type:</b><br>Portable Handset          |                                                                                       | Page 339 of 340                        |

## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMF900U** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMF900U                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1901160007-03.A3L | Test Dates:<br>01/22 - 03/29/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 340 of 340                 |