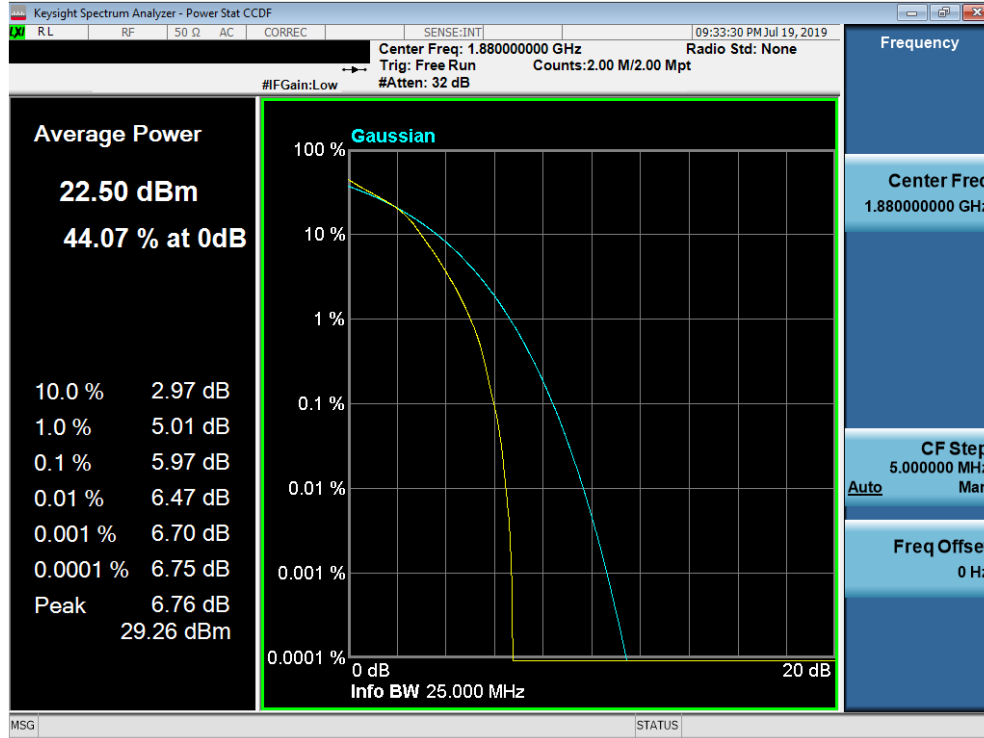
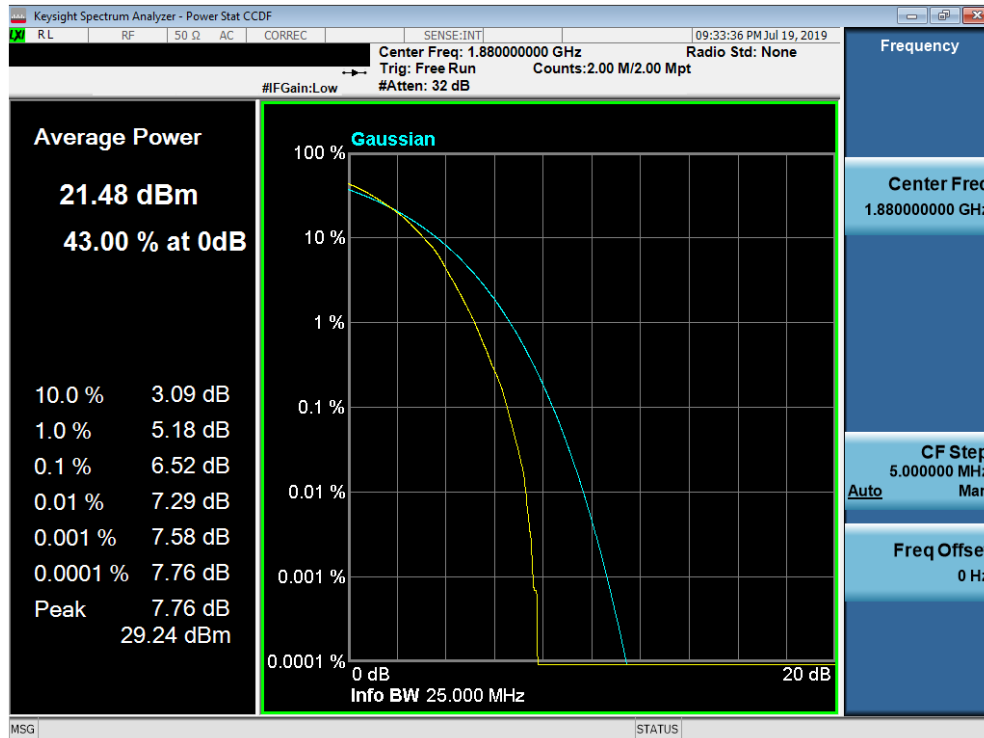




Plot 7-255. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-256. PAR Plot (Band 2 - 20.0MHz 64-QAM - Full RB Configuration)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMT545                       | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019        | EUT Type:<br>Portable Tablet          |                | Page 149 of 184                 |

## 7.6 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

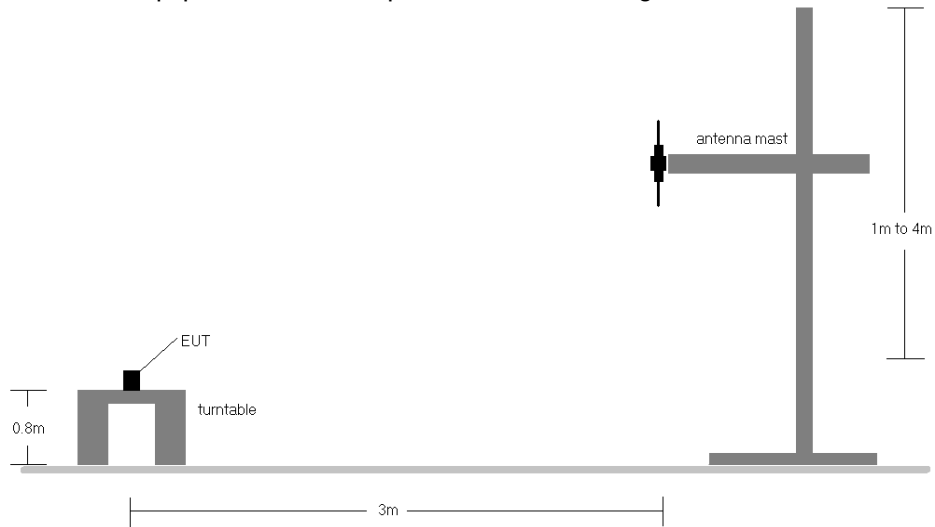
### Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
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".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

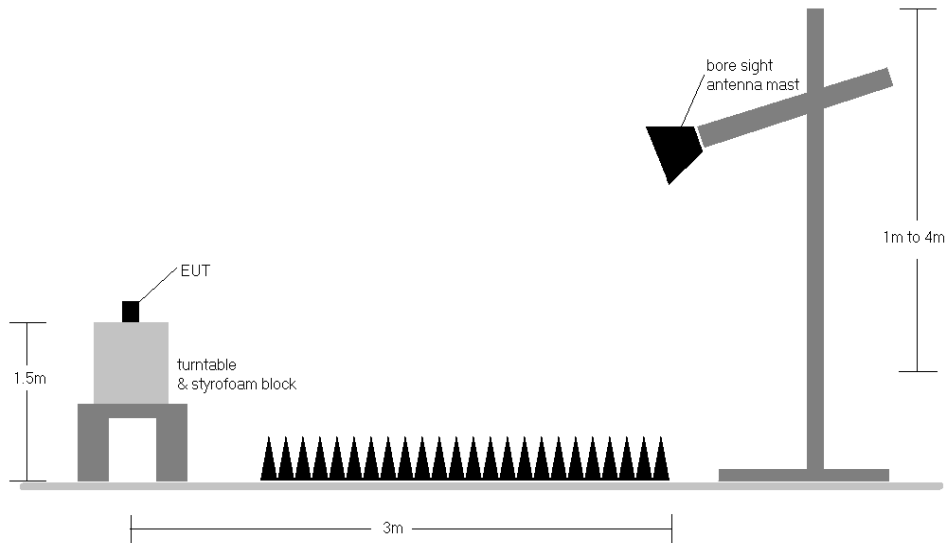
|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 150 of 184                 |

## Test Setup

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



**Figure 7-5. Radiated Test Setup <1GHz**



**Figure 7-6. 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: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 151 of 184                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | H               | 165                 | 2                          | 1 / 5          | 15.07                  | 3.40            | 16.32        | 0.043       | 34.77           | -18.45      | 18.47        | 0.070        | 36.99            | -18.52      |
| 707.50          | 1.4                     | QPSK   | H               | 165                 | 1                          | 1 / 5          | 15.11                  | 3.65            | 16.61        | 0.046       | 34.77           | -18.16      | 18.76        | 0.075        | 36.99            | -18.23      |
| 715.30          | 1.4                     | QPSK   | H               | 164                 | 358                        | 1 / 5          | 15.16                  | 3.70            | <b>16.71</b> | 0.047       | 34.77           | -18.06      | <b>18.86</b> | 0.077        | 36.99            | -18.13      |
| 715.30          | 1.4                     | 16-QAM | H               | 164                 | 358                        | 1 / 5          | 14.41                  | 3.70            | <b>15.96</b> | 0.039       | 34.77           | -18.81      | <b>18.11</b> | 0.065        | 36.99            | -18.88      |
| 715.30          | 1.4                     | 64-QAM | H               | 164                 | 358                        | 1 / 5          | 13.58                  | 3.70            | <b>15.13</b> | 0.033       | 34.77           | -19.64      | <b>17.28</b> | 0.053        | 36.99            | -19.71      |
| 700.50          | 3                       | QPSK   | H               | 160                 | 358                        | 1 / 14         | 15.19                  | 3.40            | 16.44        | 0.044       | 34.77           | -18.33      | 18.59        | 0.072        | 36.99            | -18.40      |
| 707.50          | 3                       | QPSK   | H               | 161                 | 357                        | 1 / 14         | 15.22                  | 3.65            | 16.72        | 0.047       | 34.77           | -18.05      | 18.87        | 0.077        | 36.99            | -18.12      |
| 714.50          | 3                       | QPSK   | H               | 163                 | 357                        | 1 / 14         | 15.26                  | 3.70            | <b>16.81</b> | 0.048       | 34.77           | -17.96      | <b>18.96</b> | 0.079        | 36.99            | -18.03      |
| 714.50          | 3                       | 16-QAM | H               | 163                 | 357                        | 1 / 14         | 14.58                  | 3.70            | <b>16.13</b> | 0.041       | 34.77           | -18.64      | <b>18.28</b> | 0.067        | 36.99            | -18.71      |
| 714.50          | 3                       | 64-QAM | H               | 163                 | 357                        | 1 / 14         | 13.74                  | 3.70            | <b>15.29</b> | 0.034       | 34.77           | -19.48      | <b>17.44</b> | 0.055        | 36.99            | -19.55      |

Table 7-3. ERP Data (Band 12)

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 701.50          | 5                       | QPSK   | H               | 163                 | 4                          | 1 / 24         | 15.29                  | 3.40            | 16.54        | 0.045        | 34.77           | -18.23      | 18.69        | 0.074        | 36.99            | -18.30      |
| 707.50          | 5                       | QPSK   | H               | 163                 | 5                          | 1 / 24         | 15.30                  | 3.65            | 16.80        | 0.048        | 34.77           | -17.97      | 18.95        | 0.079        | 36.99            | -18.04      |
| 713.50          | 5                       | QPSK   | H               | 160                 | 2                          | 1 / 24         | 15.38                  | 3.70            | <b>16.93</b> | <b>0.049</b> | 34.77           | -17.84      | <b>19.08</b> | <b>0.081</b> | 36.99            | -17.91      |
| 713.50          | 5                       | 16-QAM | H               | 160                 | 2                          | 1 / 24         | 14.59                  | 3.70            | <b>16.14</b> | 0.041        | 34.77           | -18.63      | <b>18.29</b> | 0.067        | 36.99            | -18.70      |
| 713.50          | 5                       | 64-QAM | H               | 160                 | 2                          | 1 / 24         | 13.61                  | 3.70            | <b>15.16</b> | 0.033        | 34.77           | -19.61      | <b>17.31</b> | 0.054        | 36.99            | -19.68      |
| 704.00          | 10                      | QPSK   | H               | 150                 | 356                        | 1 / 49         | 14.73                  | 3.50            | 16.08        | 0.041        | 34.77           | -18.69      | 18.23        | 0.067        | 36.99            | -18.76      |
| 707.50          | 10                      | QPSK   | H               | 155                 | 362                        | 1 / 49         | 14.72                  | 3.65            | 16.22        | 0.042        | 34.77           | -18.55      | 18.37        | 0.069        | 36.99            | -18.62      |
| 711.00          | 10                      | QPSK   | H               | 164                 | 360                        | 1 / 49         | 14.76                  | 3.70            | <b>16.31</b> | 0.043        | 34.77           | -18.46      | <b>18.46</b> | 0.070        | 36.99            | -18.53      |
| 711.00          | 10                      | 16-QAM | H               | 164                 | 360                        | 1 / 49         | 13.87                  | 3.70            | <b>15.42</b> | 0.035        | 34.77           | -19.35      | <b>17.57</b> | 0.057        | 36.99            | -19.42      |
| 711.00          | 10                      | 64-QAM | H               | 164                 | 360                        | 1 / 49         | 12.95                  | 3.70            | <b>14.50</b> | 0.028        | 34.77           | -20.27      | <b>16.65</b> | 0.046        | 36.99            | -20.34      |
| 713.50          | 5                       | QPSK   | V               | 143                 | 109                        | 1 / 24         | 13.61                  | 4.60            | 16.06        | 0.040        | 34.77           | -18.71      | 18.21        | 0.066        | 36.99            | -18.78      |

Table 7-4. ERP Data (Band 12/17)

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | V               | 197                 | 120                        | 1 / 24         | 12.42                  | 5.70            | 15.97        | 0.040        | 34.77           | -18.80      | 18.12        | 0.065        | 36.99            | -18.87      |
| 782.00          | 5                       | QPSK   | V               | 183                 | 1116                       | 1 / 24         | 13.19                  | 5.80            | 16.84        | 0.048        | 34.77           | -17.93      | 18.99        | 0.079        | 36.99            | -18.00      |
| 784.50          | 5                       | QPSK   | V               | 182                 | 114                        | 1 / 24         | 13.61                  | 5.80            | <b>17.26</b> | <b>0.053</b> | 34.77           | -17.51      | <b>19.41</b> | <b>0.087</b> | 36.99            | -17.58      |
| 784.50          | 5                       | 16-QAM | V               | 182                 | 114                        | 1 / 24         | 12.85                  | 5.80            | <b>16.50</b> | 0.045        | 34.77           | -18.27      | <b>18.65</b> | 0.073        | 36.99            | -18.34      |
| 784.50          | 5                       | 64-QAM | V               | 182                 | 114                        | 1 / 24         | 11.96                  | 5.80            | <b>15.61</b> | 0.036        | 34.77           | -19.16      | <b>17.76</b> | 0.060        | 36.99            | -19.23      |
| 782.00          | 10                      | QPSK   | V               | 182                 | 119                        | 1 / 49         | 13.42                  | 5.80            | <b>17.07</b> | 0.051        | 34.77           | -17.70      | <b>19.22</b> | 0.084        | 36.99            | -17.77      |
| 782.00          | 10                      | 16-QAM | V               | 182                 | 119                        | 1 / 49         | 12.76                  | 5.80            | <b>16.41</b> | 0.044        | 34.77           | -18.36      | <b>18.56</b> | 0.072        | 36.99            | -18.43      |
| 782.00          | 10                      | 64-QAM | V               | 182                 | 119                        | 1 / 49         | 11.44                  | 5.80            | <b>15.09</b> | 0.032        | 34.77           | -19.68      | <b>17.24</b> | 0.053        | 36.99            | -19.75      |
| 784.50          | 5                       | QPSK   | H               | 255                 | 339                        | 1 / 24         | 11.76                  | 5.80            | 15.41        | 0.035        | 34.77           | -19.36      | 17.56        | 0.057        | 36.99            | -19.43      |

Table 7-5. ERP Data (Band 13)

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet | Page 152 of 184                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | V               | 149                 | 95                         | 1 / 0          | 14.75                  | 6.30            | 18.90        | 0.078        | 38.45           | -19.55      | 21.05        | 0.127        | 40.61            | -19.56      |
| 836.50          | 1.4                     | QPSK   | V               | 147                 | 93                         | 1 / 0          | 14.82                  | 6.40            | <b>19.07</b> | 0.081        | 38.45           | -19.38      | <b>21.22</b> | 0.132        | 40.61            | -19.39      |
| 848.30          | 1.4                     | QPSK   | V               | 150                 | 91                         | 1 / 0          | 14.71                  | 6.50            | 19.06        | 0.081        | 38.45           | -19.39      | 21.21        | 0.132        | 40.61            | -19.40      |
| 836.50          | 1.4                     | 16-QAM | V               | 147                 | 93                         | 1 / 0          | 14.16                  | 6.40            | <b>18.41</b> | 0.069        | 38.45           | -20.04      | <b>20.56</b> | 0.114        | 40.61            | -20.05      |
| 836.50          | 1.4                     | 64-QAM | V               | 147                 | 93                         | 1 / 0          | 13.17                  | 6.40            | <b>17.42</b> | 0.055        | 38.45           | -21.03      | <b>19.57</b> | 0.091        | 40.61            | -21.04      |
| 825.50          | 3                       | QPSK   | V               | 156                 | 91                         | 1 / 0          | 15.08                  | 6.30            | 19.23        | 0.084        | 38.45           | -19.22      | 21.38        | 0.137        | 40.61            | -19.23      |
| 836.50          | 3                       | QPSK   | V               | 160                 | 93                         | 1 / 0          | 15.18                  | 6.40            | 19.43        | 0.088        | 38.45           | -19.02      | 21.58        | 0.144        | 40.61            | -19.03      |
| 847.50          | 3                       | QPSK   | V               | 155                 | 90                         | 1 / 0          | 15.09                  | 6.50            | <b>19.44</b> | 0.088        | 38.45           | -19.01      | <b>21.59</b> | 0.144        | 40.61            | -19.02      |
| 836.50          | 3                       | 16-QAM | V               | 160                 | 93                         | 1 / 0          | 14.41                  | 6.40            | <b>18.66</b> | 0.073        | 38.45           | -19.79      | <b>20.81</b> | 0.121        | 40.61            | -19.80      |
| 836.50          | 3                       | 64-QAM | V               | 160                 | 93                         | 1 / 0          | 13.41                  | 6.40            | <b>17.66</b> | 0.058        | 38.45           | -20.79      | <b>19.81</b> | 0.096        | 40.61            | -20.80      |
| 826.50          | 5                       | QPSK   | V               | 155                 | 96                         | 1 / 0          | 15.31                  | 6.30            | 19.46        | 0.088        | 38.45           | -18.99      | 21.61        | 0.145        | 40.61            | -19.00      |
| 836.50          | 5                       | QPSK   | V               | 151                 | 97                         | 1 / 0          | 15.39                  | 6.40            | 19.64        | 0.092        | 38.45           | -18.81      | 21.79        | 0.151        | 40.61            | -18.82      |
| 846.50          | 5                       | QPSK   | V               | 151                 | 91                         | 1 / 0          | 15.32                  | 6.50            | <b>19.67</b> | <b>0.093</b> | 38.45           | -18.78      | <b>21.82</b> | <b>0.152</b> | 40.61            | -18.79      |
| 836.50          | 5                       | 16-QAM | V               | 151                 | 97                         | 1 / 0          | 14.68                  | 6.40            | <b>18.93</b> | 0.078        | 38.45           | -19.52      | <b>21.08</b> | 0.128        | 40.61            | -19.53      |
| 836.50          | 5                       | 64-QAM | V               | 151                 | 97                         | 1 / 0          | 13.75                  | 6.40            | <b>18.00</b> | 0.063        | 38.45           | -20.45      | <b>20.15</b> | 0.104        | 40.61            | -20.46      |
| 829.00          | 10                      | QPSK   | V               | 166                 | 114                        | 1 / 0          | 14.76                  | 6.30            | 18.91        | 0.078        | 38.45           | -19.54      | 21.06        | 0.128        | 40.61            | -19.55      |
| 836.50          | 10                      | QPSK   | V               | 152                 | 110                        | 1 / 0          | 14.80                  | 6.40            | <b>19.05</b> | 0.080        | 38.45           | -19.40      | <b>21.20</b> | 0.132        | 40.61            | -19.41      |
| 844.00          | 10                      | QPSK   | V               | 153                 | 113                        | 1 / 0          | 14.78                  | 6.40            | 19.03        | 0.080        | 38.45           | -19.42      | 21.18        | 0.131        | 40.61            | -19.43      |
| 829.00          | 10                      | 16-QAM | V               | 166                 | 114                        | 1 / 0          | 14.09                  | 6.30            | <b>18.24</b> | 0.067        | 38.45           | -20.21      | <b>20.39</b> | 0.109        | 40.61            | -20.22      |
| 829.00          | 10                      | 64-QAM | V               | 166                 | 114                        | 1 / 0          | 13.19                  | 6.30            | <b>17.34</b> | 0.054        | 38.45           | -21.11      | <b>19.49</b> | 0.089        | 40.61            | -21.12      |
| 846.50          | 5                       | QPSK   | H               | 135                 | 359                        | 1 / 0          | 14.38                  | 6.70            | 18.93        | 0.078        | 38.45           | -19.52      | 21.08        | 0.128        | 40.61            | -19.53      |

Table 7-6. ERP Data (Band 5)

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet | Page 153 of 184                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | H               | 105                 | 321                        | 1 / 5          | 15.68                  | 9.44            | 25.12        | 0.325        | 30.00            | -4.88       |
| 1745.00         | 1.4                     | QPSK   | H               | 100                 | 317                        | 1 / 5          | 16.52                  | 9.23            | <b>25.75</b> | 0.376        | 30.00            | -4.25       |
| 1779.30         | 1.4                     | QPSK   | H               | 108                 | 318                        | 1 / 5          | 15.63                  | 9.26            | 24.89        | 0.308        | 30.00            | -5.11       |
| 1745.00         | 1.4                     | 16-QAM | H               | 100                 | 317                        | 1 / 5          | 15.60                  | 9.23            | <b>24.83</b> | 0.304        | 30.00            | -5.17       |
| 1745.00         | 1.4                     | 64-QAM | H               | 100                 | 317                        | 1 / 5          | 14.74                  | 9.23            | <b>23.97</b> | 0.249        | 30.00            | -6.03       |
| 1711.50         | 3                       | QPSK   | H               | 109                 | 333                        | 1 / 14         | 15.74                  | 9.44            | 25.18        | 0.329        | 30.00            | -4.82       |
| 1745.00         | 3                       | QPSK   | H               | 100                 | 320                        | 1 / 14         | 16.59                  | 9.23            | <b>25.82</b> | 0.382        | 30.00            | -4.18       |
| 1778.50         | 3                       | QPSK   | H               | 105                 | 322                        | 1 / 14         | 15.68                  | 9.26            | 24.94        | 0.312        | 30.00            | -5.06       |
| 1745.00         | 3                       | 16-QAM | H               | 100                 | 320                        | 1 / 14         | 15.73                  | 9.23            | <b>24.96</b> | 0.313        | 30.00            | -5.04       |
| 1745.00         | 3                       | 64-QAM | H               | 100                 | 320                        | 1 / 14         | 14.67                  | 9.23            | <b>23.90</b> | 0.246        | 30.00            | -6.10       |
| 1712.50         | 5                       | QPSK   | H               | 107                 | 326                        | 1 / 24         | 15.84                  | 9.43            | 25.27        | 0.337        | 30.00            | -4.73       |
| 1745.00         | 5                       | QPSK   | H               | 102                 | 319                        | 1 / 24         | 16.70                  | 9.23            | <b>25.93</b> | 0.392        | 30.00            | -4.07       |
| 1777.50         | 5                       | QPSK   | H               | 103                 | 325                        | 1 / 24         | 15.77                  | 9.26            | 25.03        | 0.318        | 30.00            | -4.97       |
| 1745.00         | 5                       | 16-QAM | H               | 102                 | 319                        | 1 / 24         | 15.75                  | 9.23            | <b>24.98</b> | 0.315        | 30.00            | -5.02       |
| 1745.00         | 5                       | 64-QAM | H               | 102                 | 319                        | 1 / 24         | 14.88                  | 9.23            | <b>24.11</b> | 0.258        | 30.00            | -5.89       |
| 1715.00         | 10                      | QPSK   | H               | 101                 | 319                        | 1 / 49         | 15.55                  | 9.42            | 24.97        | 0.314        | 30.00            | -5.03       |
| 1745.00         | 10                      | QPSK   | H               | 100                 | 318                        | 1 / 49         | 16.37                  | 9.23            | <b>25.60</b> | 0.363        | 30.00            | -4.40       |
| 1775.00         | 10                      | QPSK   | H               | 101                 | 321                        | 1 / 49         | 15.41                  | 9.25            | 24.66        | 0.292        | 30.00            | -5.34       |
| 1745.00         | 10                      | 16-QAM | H               | 100                 | 318                        | 1 / 49         | 15.54                  | 9.23            | <b>24.77</b> | 0.300        | 30.00            | -5.23       |
| 1745.00         | 10                      | 64-QAM | H               | 100                 | 318                        | 1 / 49         | 14.61                  | 9.23            | <b>23.84</b> | 0.242        | 30.00            | -6.16       |
| 1717.50         | 15                      | QPSK   | H               | 103                 | 325                        | 1 / 74         | 15.54                  | 9.40            | 24.94        | 0.312        | 30.00            | -5.06       |
| 1745.00         | 15                      | QPSK   | H               | 100                 | 319                        | 1 / 74         | 16.37                  | 9.23            | <b>25.60</b> | 0.363        | 30.00            | -4.40       |
| 1772.50         | 15                      | QPSK   | H               | 104                 | 326                        | 1 / 74         | 15.40                  | 9.25            | 24.65        | 0.291        | 30.00            | -5.35       |
| 1745.00         | 15                      | 16-QAM | H               | 100                 | 319                        | 1 / 74         | 15.41                  | 9.23            | <b>24.64</b> | 0.291        | 30.00            | -5.36       |
| 1745.00         | 15                      | 64-QAM | H               | 100                 | 319                        | 1 / 74         | 14.64                  | 9.23            | <b>23.87</b> | 0.244        | 30.00            | -6.13       |
| 1720.00         | 20                      | QPSK   | H               | 100                 | 320                        | 1 / 0          | 16.57                  | 9.38            | 25.95        | 0.394        | 30.00            | -4.05       |
| 1745.00         | 20                      | QPSK   | H               | 102                 | 320                        | 1 / 99         | 16.80                  | 9.23            | <b>26.03</b> | <b>0.401</b> | 30.00            | -3.97       |
| 1770.00         | 20                      | QPSK   | H               | 100                 | 323                        | 1 / 0          | 16.55                  | 9.24            | 25.79        | 0.379        | 30.00            | -4.21       |
| 1745.00         | 20                      | 16-QAM | H               | 102                 | 320                        | 1 / 99         | 15.95                  | 9.23            | <b>25.18</b> | 0.330        | 30.00            | -4.82       |
| 1745.00         | 20                      | 64-QAM | H               | 102                 | 320                        | 1 / 99         | 14.94                  | 9.23            | <b>24.17</b> | 0.261        | 30.00            | -5.83       |
| 1745.00         | 20                      | QPSK   | V               | 100                 | 317                        | 1 / 99         | 15.61                  | 9.11            | 24.72        | 0.296        | 30.00            | -5.28       |

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

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet | Page 154 of 184                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | H               | 100                 | 322                        | 1 / 0          | 15.47                  | 9.88            | <b>25.35</b> | 0.343        | 33.01            | -7.66       |
| 1880.00         | 1.4                     | QPSK   | H               | 107                 | 321                        | 1 / 0          | 14.70                  | 10.10           | 24.80        | 0.302        | 33.01            | -8.21       |
| 1909.30         | 1.4                     | QPSK   | H               | 108                 | 322                        | 1 / 0          | 14.58                  | 10.31           | 24.89        | 0.308        | 33.01            | -8.12       |
| 1850.70         | 1.4                     | 16-QAM | H               | 100                 | 322                        | 1 / 0          | 14.56                  | 9.88            | <b>24.44</b> | 0.278        | 33.01            | -8.57       |
| 1850.70         | 1.4                     | 64-QAM | H               | 100                 | 322                        | 1 / 0          | 13.62                  | 9.88            | <b>23.50</b> | 0.224        | 33.01            | -9.51       |
| 1851.50         | 3                       | QPSK   | H               | 105                 | 325                        | 1 / 0          | 14.89                  | 9.88            | <b>24.77</b> | 0.300        | 33.01            | -8.24       |
| 1880.00         | 3                       | QPSK   | H               | 106                 | 326                        | 1 / 0          | 14.14                  | 10.10           | 24.24        | 0.266        | 33.01            | -8.77       |
| 1908.50         | 3                       | QPSK   | H               | 105                 | 328                        | 1 / 0          | 14.02                  | 10.30           | 24.32        | 0.271        | 33.01            | -8.69       |
| 1851.50         | 3                       | 16-QAM | H               | 105                 | 325                        | 1 / 0          | 14.18                  | 9.88            | <b>24.06</b> | 0.255        | 33.01            | -8.95       |
| 1851.50         | 3                       | 64-QAM | H               | 105                 | 325                        | 1 / 0          | 13.28                  | 9.88            | <b>23.16</b> | 0.207        | 33.01            | -9.85       |
| 1852.50         | 5                       | QPSK   | H               | 100                 | 326                        | 1 / 0          | 15.54                  | 9.89            | <b>25.43</b> | <b>0.349</b> | 33.01            | -7.58       |
| 1880.00         | 5                       | QPSK   | H               | 101                 | 330                        | 1 / 0          | 14.80                  | 10.10           | 24.90        | 0.309        | 33.01            | -8.11       |
| 1907.50         | 5                       | QPSK   | H               | 103                 | 331                        | 1 / 0          | 14.68                  | 10.30           | 24.98        | 0.315        | 33.01            | -8.03       |
| 1852.50         | 5                       | 16-QAM | H               | 100                 | 326                        | 1 / 0          | 14.66                  | 9.89            | <b>24.55</b> | 0.285        | 33.01            | -8.46       |
| 1852.50         | 5                       | 64-QAM | H               | 100                 | 326                        | 1 / 0          | 13.94                  | 9.89            | <b>23.83</b> | 0.242        | 33.01            | -9.18       |
| 1855.00         | 10                      | QPSK   | H               | 102                 | 323                        | 1 / 0          | 14.80                  | 9.91            | <b>24.71</b> | 0.296        | 33.01            | -8.30       |
| 1880.00         | 10                      | QPSK   | H               | 100                 | 319                        | 1 / 0          | 13.94                  | 10.10           | 24.04        | 0.254        | 33.01            | -8.97       |
| 1905.00         | 10                      | QPSK   | H               | 105                 | 321                        | 1 / 0          | 13.82                  | 10.28           | 24.10        | 0.257        | 33.01            | -8.91       |
| 1855.00         | 10                      | 16-QAM | H               | 102                 | 323                        | 1 / 0          | 14.13                  | 9.91            | <b>24.04</b> | 0.254        | 33.01            | -8.97       |
| 1855.00         | 10                      | 64-QAM | H               | 102                 | 323                        | 1 / 0          | 13.25                  | 9.91            | <b>23.16</b> | 0.207        | 33.01            | -9.85       |
| 1857.50         | 15                      | QPSK   | H               | 100                 | 327                        | 1 / 0          | 14.92                  | 9.93            | <b>24.85</b> | 0.306        | 33.01            | -8.16       |
| 1880.00         | 15                      | QPSK   | H               | 107                 | 325                        | 1 / 0          | 13.98                  | 10.10           | 24.08        | 0.256        | 33.01            | -8.93       |
| 1902.50         | 15                      | QPSK   | H               | 105                 | 322                        | 1 / 0          | 13.84                  | 10.27           | 24.11        | 0.258        | 33.01            | -8.90       |
| 1857.50         | 15                      | 16-QAM | H               | 100                 | 327                        | 1 / 0          | 14.13                  | 9.93            | <b>24.06</b> | 0.255        | 33.01            | -8.95       |
| 1857.50         | 15                      | 64-QAM | H               | 100                 | 327                        | 1 / 0          | 13.19                  | 9.93            | <b>23.12</b> | 0.205        | 33.01            | -9.89       |
| 1860.00         | 20                      | QPSK   | H               | 100                 | 322                        | 1 / 0          | 14.88                  | 9.95            | <b>24.83</b> | 0.304        | 33.01            | -8.18       |
| 1880.00         | 20                      | QPSK   | H               | 102                 | 325                        | 1 / 99         | 14.41                  | 10.10           | 24.51        | 0.283        | 33.01            | -8.50       |
| 1900.00         | 20                      | QPSK   | H               | 111                 | 334                        | 1 / 0          | 13.90                  | 10.26           | 24.16        | 0.260        | 33.01            | -8.85       |
| 1860.00         | 20                      | 16-QAM | H               | 100                 | 322                        | 1 / 0          | 14.26                  | 9.95            | <b>24.21</b> | 0.264        | 33.01            | -8.80       |
| 1860.00         | 20                      | 64-QAM | H               | 100                 | 322                        | 1 / 0          | 13.38                  | 9.95            | <b>23.33</b> | 0.215        | 33.01            | -9.68       |
| 1852.50         | 5                       | QPSK   | V               | 100                 | 95                         | 1 / 0          | 12.74                  | 9.95            | 22.69        | 0.186        | 33.01            | -10.32      |

Table 7-8. EIRP Data (Band 2)

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet | Page 155 of 184                 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod.   | 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   | H               | 100                 | 335                        | 1 / 0          | 16.10                  | 9.43            | <b>25.53</b> | 0.358        | 33.01            | -7.48       |
| 2593.00         | 5                       | QPSK   | H               | 122                 | 301                        | 1 / 0          | 14.38                  | 9.55            | 23.93        | 0.247        | 33.01            | -9.08       |
| 2687.50         | 5                       | QPSK   | H               | 105                 | 333                        | 1 / 0          | 13.14                  | 9.82            | 22.96        | 0.198        | 33.01            | -10.05      |
| 2498.50         | 5                       | 16-QAM | H               | 100                 | 335                        | 1 / 0          | 15.35                  | 9.43            | <b>24.78</b> | 0.301        | 33.01            | -8.23       |
| 2498.50         | 5                       | 64-QAM | H               | 100                 | 335                        | 1 / 0          | 14.21                  | 9.43            | <b>23.64</b> | 0.231        | 33.01            | -9.37       |
| 2501.00         | 10                      | QPSK   | H               | 100                 | 333                        | 1 / 0          | 16.51                  | 9.43            | <b>25.94</b> | <b>0.393</b> | 33.01            | -7.07       |
| 2593.00         | 10                      | QPSK   | H               | 114                 | 309                        | 1 / 0          | 14.94                  | 9.55            | 24.49        | 0.281        | 33.01            | -8.52       |
| 2685.00         | 10                      | QPSK   | H               | 108                 | 321                        | 1 / 0          | 13.16                  | 9.82            | 22.98        | 0.199        | 33.01            | -10.03      |
| 2501.00         | 10                      | 16-QAM | H               | 100                 | 333                        | 1 / 0          | 15.20                  | 9.43            | <b>24.63</b> | 0.290        | 33.01            | -8.38       |
| 2501.00         | 10                      | 64-QAM | H               | 100                 | 333                        | 1 / 0          | 13.80                  | 9.43            | <b>23.23</b> | 0.210        | 33.01            | -9.78       |
| 2503.50         | 15                      | QPSK   | H               | 100                 | 332                        | 1 / 0          | 16.50                  | 9.43            | <b>25.93</b> | 0.392        | 33.01            | -7.08       |
| 2593.00         | 15                      | QPSK   | H               | 107                 | 331                        | 1 / 0          | 14.74                  | 9.55            | 24.29        | 0.269        | 33.01            | -8.72       |
| 2682.50         | 15                      | QPSK   | H               | 109                 | 325                        | 1 / 0          | 13.05                  | 9.83            | 22.88        | 0.194        | 33.01            | -10.13      |
| 2503.50         | 15                      | 16-QAM | H               | 100                 | 332                        | 1 / 0          | 15.43                  | 9.43            | <b>24.86</b> | 0.306        | 33.01            | -8.15       |
| 2503.50         | 15                      | 64-QAM | H               | 100                 | 332                        | 1 / 0          | 14.74                  | 9.43            | <b>24.17</b> | 0.261        | 33.01            | -8.84       |
| 2506.00         | 20                      | QPSK   | H               | 100                 | 341                        | 1 / 0          | 15.36                  | 9.42            | <b>24.78</b> | 0.301        | 33.01            | -8.23       |
| 2593.00         | 20                      | QPSK   | H               | 100                 | 342                        | 1 / 99         | 13.40                  | 9.55            | 22.95        | 0.197        | 33.01            | -10.06      |
| 2680.00         | 20                      | QPSK   | H               | 100                 | 333                        | 1 / 0          | 11.26                  | 9.83            | 21.09        | 0.129        | 33.01            | -11.92      |
| 2506.00         | 20                      | 16-QAM | H               | 100                 | 341                        | 1 / 0          | 14.52                  | 9.42            | <b>23.94</b> | 0.248        | 33.01            | -9.07       |
| 2506.00         | 20                      | 64-QAM | H               | 100                 | 341                        | 1 / 0          | 13.66                  | 9.42            | <b>23.08</b> | 0.203        | 33.01            | -9.93       |
| 2501.00         | 10                      | QPSK   | V               | 314                 | 86                         | 1 / 0          | 14.37                  | 9.55            | 23.92        | 0.247        | 33.01            | -9.09       |

**Table 7-9. EIRP Data (Band 41)**

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet | Page 156 of 184                 |

## 7.7 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

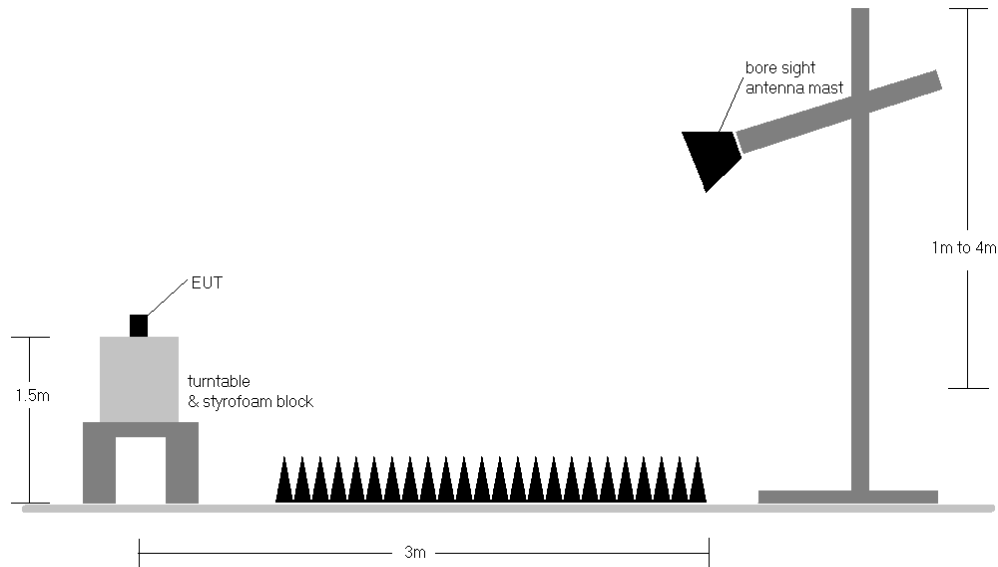
### Test Settings

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: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 157 of 184                 |

## Test Setup

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



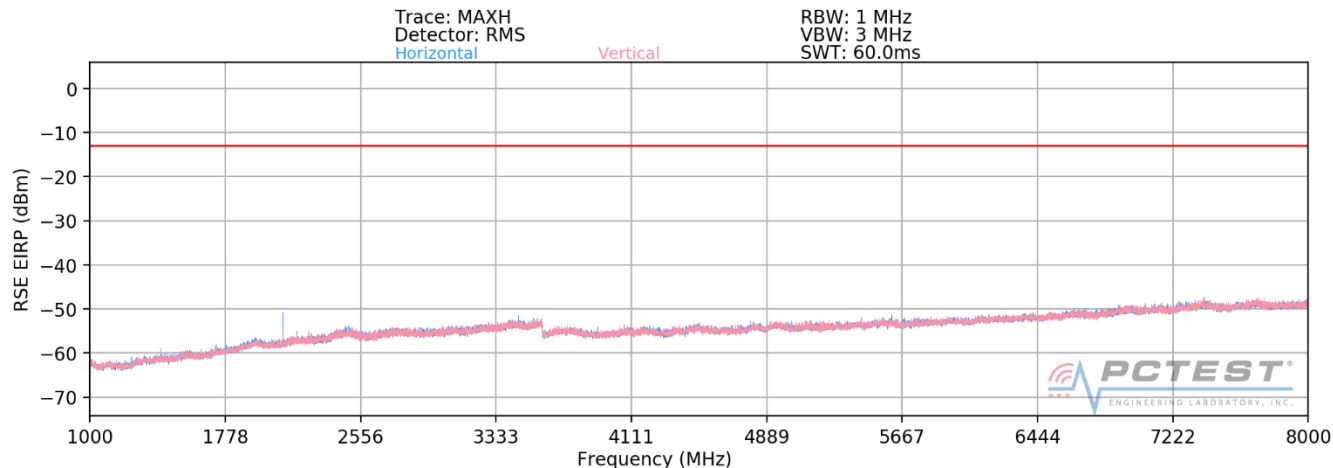
**Figure 7-7. Test Instrument & Measurement Setup**

## 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: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 158 of 184                 |

## Band 12/17



**Plot 7-257. Radiated Spurious Plot above 1GHz (Band 12/17)**

OPERATING FREQUENCY: 701.50 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1403.00         | H               | 140                 | 250                        | -65.33                           | 2.71                          | -62.62                        | -49.6       |
| 2104.50         | H               | 135                 | 255                        | -56.17                           | 3.57                          | -52.60                        | -39.6       |
| 2806.00         | H               | 136                 | 241                        | -67.50                           | 4.98                          | -62.53                        | -49.5       |
| 3507.50         | H               | 121                 | 242                        | -67.80                           | 6.33                          | -61.47                        | -48.5       |
| 4209.00         | H               | -                   | -                          | -69.57                           | 7.75                          | -61.81                        | -48.8       |
| 4910.50         | H               | -                   | -                          | -69.45                           | 8.56                          | -60.88                        | -47.9       |

**Table 7-10. Radiated Spurious Data (Band 12/17 – Low Channel)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 159 of 184                 |

OPERATING FREQUENCY: 707.50 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1415.00         | H               | 105                 | 318                        | -64.69                           | 2.80                          | -61.89                        | -48.9       |
| 2122.50         | H               | 132                 | 256                        | -54.22                           | 3.57                          | -50.64                        | -37.6       |
| 2830.00         | H               | 110                 | 245                        | -67.53                           | 5.02                          | -62.51                        | -49.5       |
| 3537.50         | H               | 105                 | 243                        | -66.55                           | 6.31                          | -60.25                        | -47.2       |
| 4245.00         | H               | -                   | -                          | -69.55                           | 7.80                          | -61.75                        | -48.8       |
| 4952.50         | H               | -                   | -                          | -69.91                           | 8.56                          | -61.35                        | -48.3       |

**Table 7-11. Radiated Spurious Data (Band 12/17 – Mid Channel)**

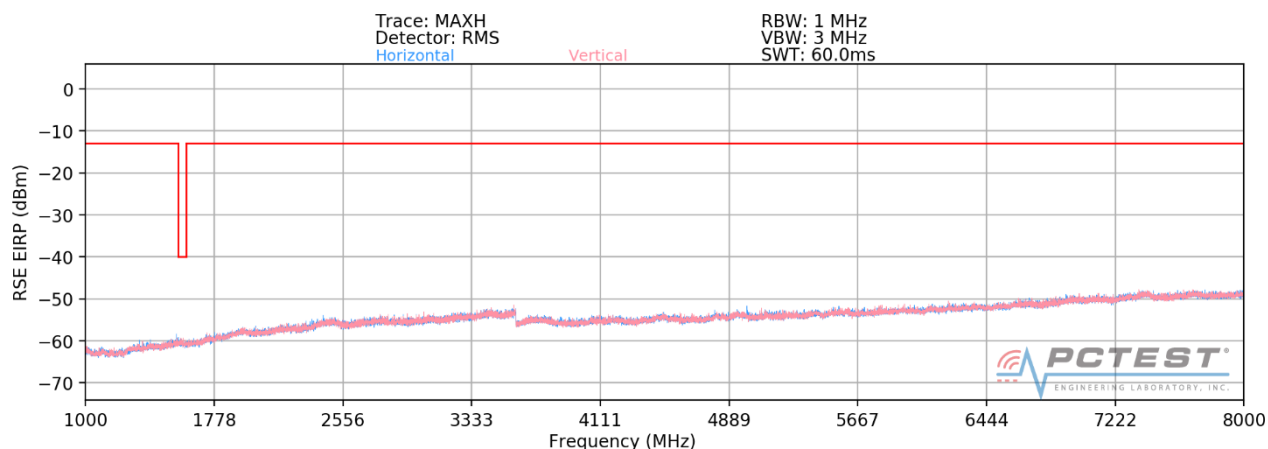
OPERATING FREQUENCY: 713.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1427.00         | H               | 153                 | 253                        | -67.90                           | 2.88                          | -65.02                        | -52.0       |
| 2140.50         | H               | 168                 | 251                        | -54.51                           | 3.58                          | -50.92                        | -37.9       |
| 2854.00         | H               | 156                 | 254                        | -66.91                           | 5.07                          | -61.84                        | -48.8       |
| 3567.50         | H               | 141                 | 241                        | -64.89                           | 6.31                          | -58.58                        | -45.6       |
| 4281.00         | H               | -                   | -                          | -69.74                           | 7.84                          | -61.89                        | -48.9       |
| 4994.50         | H               | -                   | -                          | -69.93                           | 8.56                          | -61.37                        | -48.4       |

**Table 7-12. Radiated Spurious Data (Band 12/17 – High Channel)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 160 of 184                 |

## Band 13



**Plot 7-258. Radiated Spurious Plot above 1GHz (Band 13)**

OPERATING FREQUENCY: 782.00 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2346.00         | H               | 158                 | 68                         | -58.98                           | 4.00                          | -54.97                        | -42.0       |
| 3128.00         | H               | -                   | -                          | -68.25                           | 5.38                          | -62.87                        | -49.9       |
| 3910.00         | H               | -                   | -                          | -69.58                           | 7.09                          | -62.49                        | -49.5       |

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

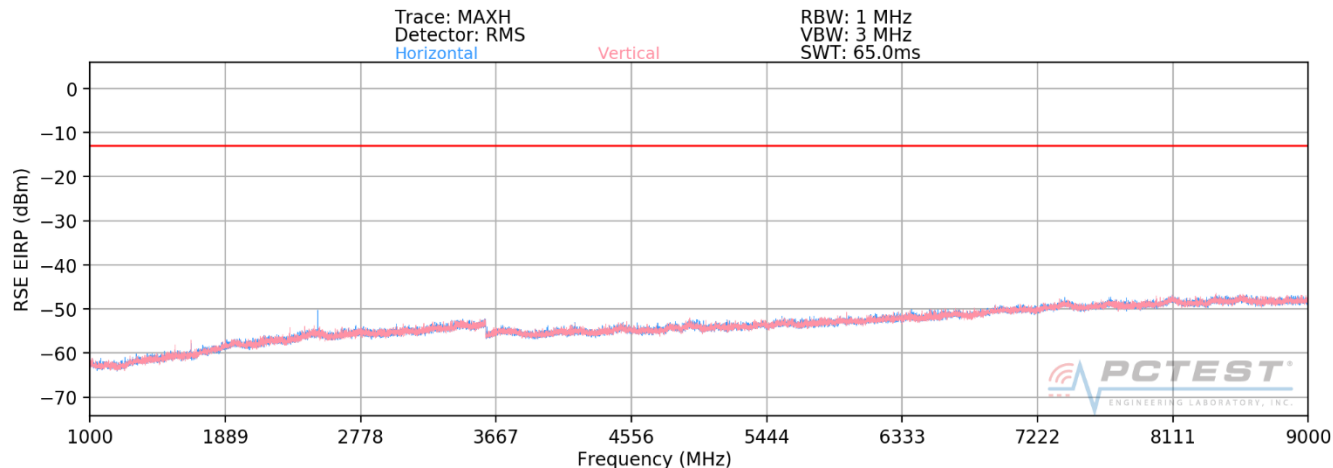
MODULATION SIGNAL: QPSK  
BANDWIDTH: 10.00 MHz  
DISTANCE: 3 meters  
NARROWBAND EMISSION LIMIT: -50 dBm  
WIDEBAND EMISSION LIMIT: -40 dBm/MHz

| 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1564.00         | H               | 362                 | 4                          | -68.45                           | 3.53                          | -64.93                        | -24.9       |

**Table 7-14. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 161 of 184                 |

## Band 5



**Plot 7-259. Radiated Spurious Plot above 1GHz (Band 5)**

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               | 255                 | 310                        | -67.15                           | 3.61                          | -63.54                        | -50.5       |
| 2479.50         | H               | 146                 | 295                        | -58.84                           | 4.25                          | -54.59                        | -41.6       |
| 3306.00         | H               | -                   | -                          | -68.18                           | 5.83                          | -62.35                        | -49.4       |
| 4132.50         | H               | -                   | -                          | -69.44                           | 7.66                          | -61.78                        | -48.8       |

**Table 7-15. Radiated Spurious Data (Band 5 – Low Channel)**

|                                         |                                        |                                       |  |                                 |
|-----------------------------------------|----------------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMT545                       | PCTEST<br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019 | EUT Type:<br>Portable Tablet          |  | Page 162 of 184                 |

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               | 239                 | 315                        | -60.68                           | 3.62                          | -57.06                        | -44.1       |
| 2509.50         | H               | 122                 | 126                        | -57.14                           | 4.33                          | -52.81                        | -39.8       |
| 3346.00         | H               | -                   | -                          | -67.93                           | 5.92                          | -62.01                        | -49.0       |
| 4182.50         | H               | -                   | -                          | -69.28                           | 7.69                          | -61.59                        | -48.6       |

Table 7-16. Radiated Spurious Data (Band 5 – Mid Channel)

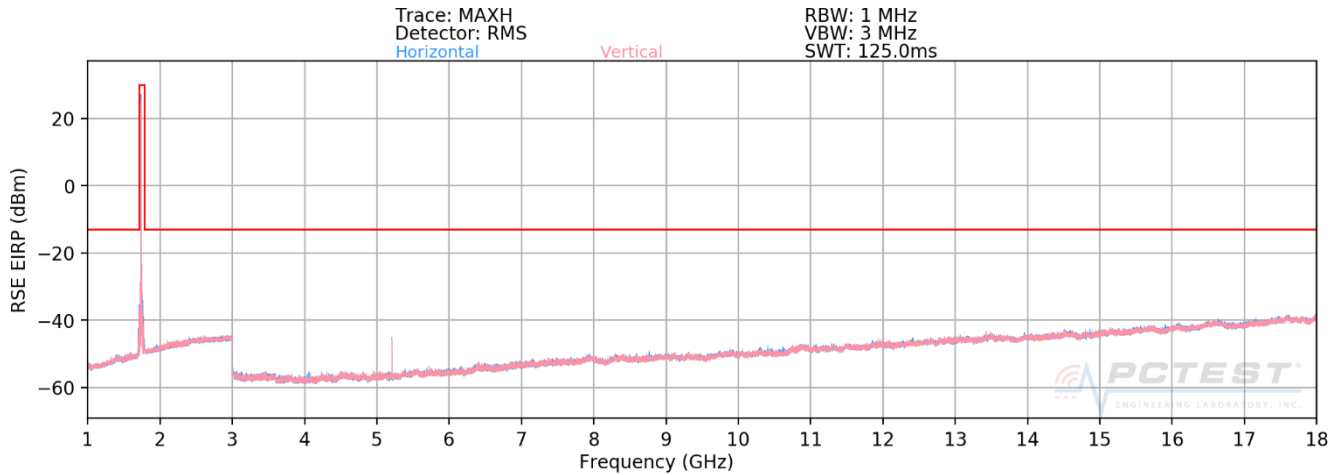
OPERATING FREQUENCY: 846.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| 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               | 229                 | 314                        | -67.63                           | 3.63                          | -64.00                        | -51.0       |
| 2539.50         | H               | 108                 | 128                        | -61.44                           | 4.47                          | -56.97                        | -44.0       |
| 3386.00         | H               | -                   | -                          | -67.61                           | 6.05                          | -61.56                        | -48.6       |
| 4232.50         | H               | -                   | -                          | -69.26                           | 7.75                          | -61.51                        | -48.5       |

Table 7-17. Radiated Spurious Data (Band 5 – High Channel)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 163 of 184                 |

## Band 66/4



**Plot 7-260. Radiated Spurious Plot above 1GHz (Band 66/4)**

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               | 106                 | 340                        | -58.82                           | 6.22                          | -52.60                        | -39.6       |
| 5160.00         | H               | 121                 | 220                        | -40.06                           | 8.68                          | -31.39                        | -18.4       |
| 6880.00         | H               | 106                 | 340                        | -62.53                           | 8.76                          | -53.77                        | -40.8       |
| 8600.00         | H               | 100                 | 250                        | -59.19                           | 9.17                          | -50.01                        | -37.0       |
| 10320.00        | H               | -                   | -                          | -64.81                           | 9.64                          | -55.17                        | -42.2       |
| 12040.00        | H               | -                   | -                          | -61.29                           | 9.23                          | -52.06                        | -39.1       |

**Table 7-18. Radiated Spurious Data (Band 66/4 – Low Channel)**

|                                         |                                               |                                               |  |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|--|----------------|---------------------------------|
| FCC ID: A3LSMT545                       | <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>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019        | EUT Type:<br>Portable Tablet                  |  |                | Page 164 of 184                 |

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               | 109                 | 338                        | -59.48                           | 6.32                          | -53.15                        | -40.2       |
| 5235.00         | H               | 146                 | 176                        | -35.88                           | 8.71                          | -27.16                        | -14.2       |
| 6980.00         | H               | 346                 | 263                        | -65.16                           | 8.74                          | -56.42                        | -43.4       |
| 8725.00         | H               | 109                 | 264                        | -57.68                           | 9.42                          | -48.26                        | -35.3       |
| 10470.00        | H               | -                   | -                          | -65.07                           | 9.62                          | -55.45                        | -42.4       |
| 12215.00        | H               | -                   | -                          | -60.97                           | 9.09                          | -51.88                        | -38.9       |

Table 7-19. Radiated Spurious Data (Band 66/4 – Mid Channel)

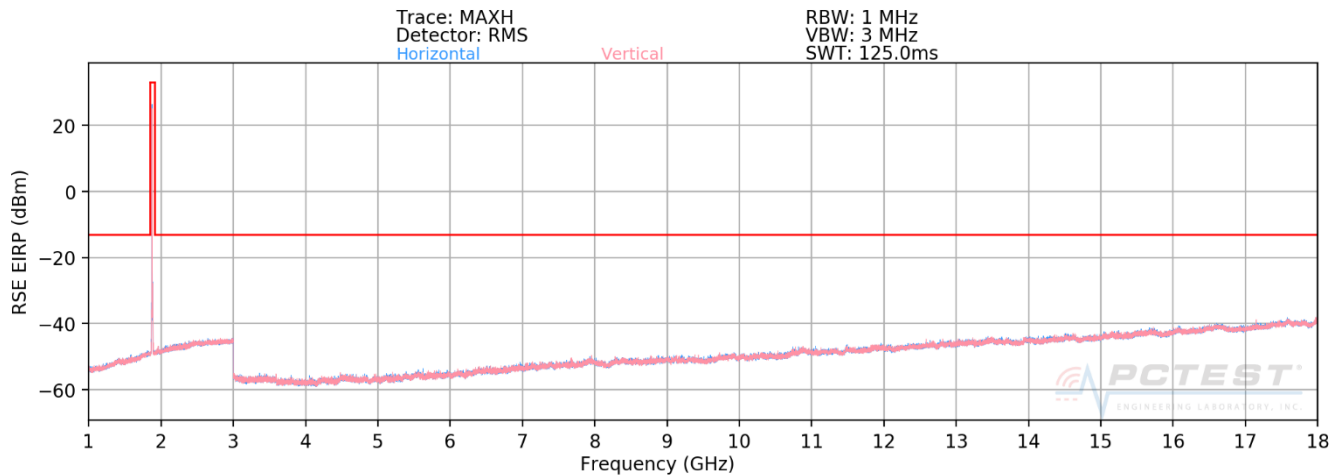
OPERATING FREQUENCY: 1770.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| 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               | 105                 | 337                        | -65.27                           | 6.31                          | -58.97                        | -46.0       |
| 5310.00         | H               | 177                 | 193                        | -34.69                           | 8.74                          | -25.95                        | -13.0       |
| 7080.00         | H               | 352                 | 261                        | -64.72                           | 8.66                          | -56.06                        | -43.1       |
| 8850.00         | H               | 100                 | 243                        | -59.49                           | 9.53                          | -49.96                        | -37.0       |
| 10620.00        | H               | -                   | -                          | -64.63                           | 9.50                          | -55.12                        | -42.1       |
| 12390.00        | H               | -                   | -                          | -61.19                           | 9.12                          | -52.06                        | -39.1       |

Table 7-20. Radiated Spurious Data (Band 66/4 – High Channel)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 165 of 184                 |

## Band 2



**Plot 7-261. Radiated Spurious Plot above 1GHz (Band 2)**

OPERATING FREQUENCY: 1852.50 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3705.00         | H               | -                   | -                          | -68.59                           | 6.58                          | -62.01                        | -49.0       |
| 5557.50         | H               | -                   | -                          | -68.80                           | 8.74                          | -60.07                        | -47.1       |

**Table 7-21. Radiated Spurious Data (Band 2 – Low Channel)**

|                                         |                                               |                                       |  |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|--|----------------|---------------------------------|
| FCC ID: A3LSMT545                       | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) |  | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019        | EUT Type:<br>Portable Tablet          |  |                | Page 166 of 184                 |

OPERATING FREQUENCY: 1880.00 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3760.00         | H               | -                   | -                          | -68.72                           | 6.67                          | -62.05                        | -49.0       |
| 5640.00         | H               | -                   | -                          | -68.86                           | 8.81                          | -60.05                        | -47.0       |

Table 7-22. Radiated Spurious Data (Band 2 – Mid Channel)

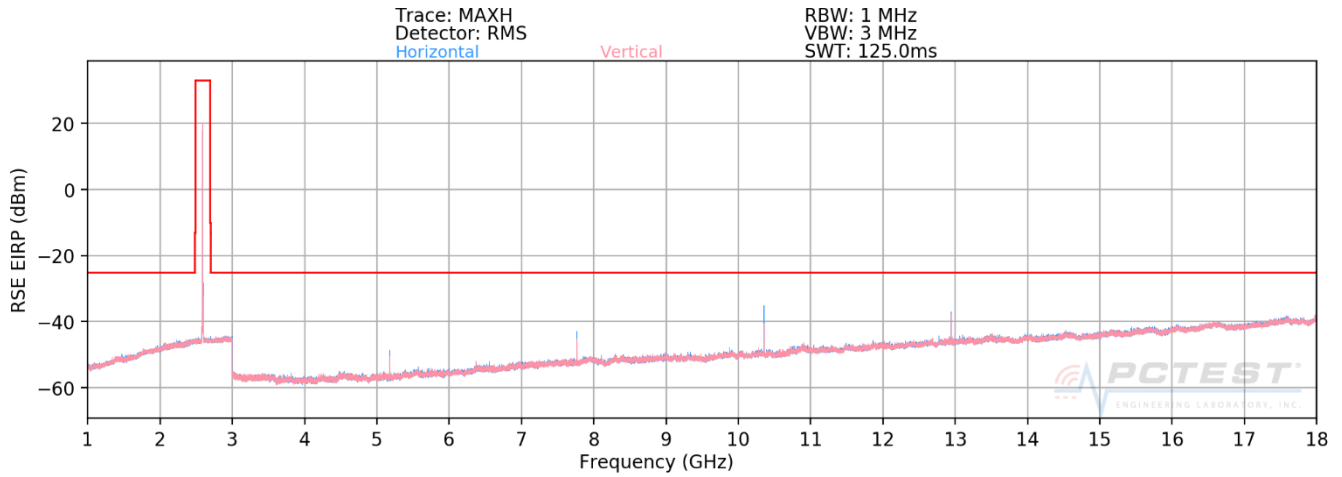
OPERATING FREQUENCY: 1907.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 5.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

| 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3815.00         | H               | -                   | -                          | -68.52                           | 6.87                          | -61.64                        | -48.6       |
| 5722.50         | H               | -                   | -                          | -68.79                           | 8.76                          | -60.02                        | -47.0       |

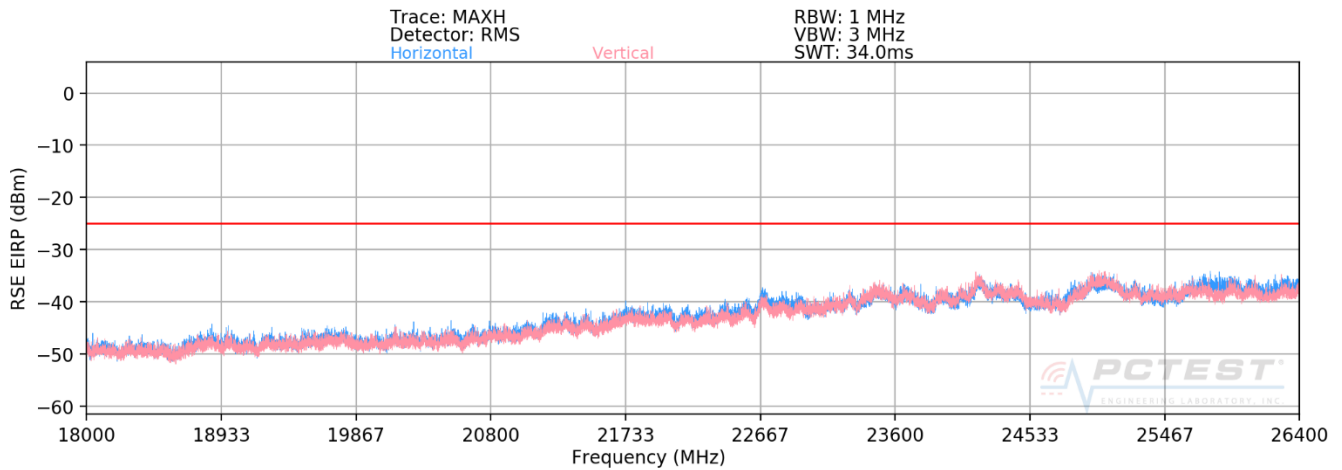
Table 7-23. Radiated Spurious Data (Band 2 – High Channel)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 167 of 184                 |

## Band 41



**Plot 7-262. Radiated Spurious Plot 1GHz - 18GHz (Band 41)**



**Plot 7-263. Radiated Spurious Plot 18GHz - 26.5GHz (Band 41)**

|                                         |                                               |                                               |                |                                 |
|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMT545                       | <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>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019        | EUT Type:<br>Portable Tablet                  |                | Page 168 of 184                 |

OPERATING FREQUENCY: 2501.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5002.00         | H               | 167                 | 95                         | -70.17                           | 10.93                         | -59.24                        | -34.2       |
| 7503.00         | H               | 182                 | 83                         | -60.87                           | 11.08                         | -49.79                        | -24.8       |
| 10004.00        | H               | 170                 | 16                         | -53.74                           | 12.00                         | -41.74                        | -16.7       |
| 12505.00        | H               | 285                 | 9                          | -46.89                           | 13.56                         | -33.33                        | -8.3        |
| 15006.00        | H               | 258                 | 336                        | -58.19                           | 13.42                         | -44.77                        | -19.8       |
| 17507.00        | H               | -                   | -                          | -59.84                           | 11.81                         | -48.03                        | -23.0       |

**Table 7-24. Radiated Spurious Data (Band 41 – Low Channel)**

OPERATING FREQUENCY: 2593.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 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               | 305                 | 25                         | -56.23                           | 10.74                         | -45.49                        | -20.5       |
| 7779.00         | H               | 290                 | 49                         | -53.68                           | 11.44                         | -42.24                        | -17.2       |
| 10372.00        | H               | 288                 | 58                         | -47.96                           | 12.42                         | -35.53                        | -10.5       |
| 12965.00        | H               | 299                 | 54                         | -48.68                           | 13.29                         | -35.38                        | -10.4       |
| 15558.00        | H               | 132                 | 14                         | -65.78                           | 16.33                         | -49.45                        | -24.5       |

**Table 7-25. Radiated Spurious Data (Band 41 – Mid Channel)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 169 of 184                 |

OPERATING FREQUENCY: 2685.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 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] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 5370.00         | H               | 152                 | 10                         | -63.42                           | 10.69                         | -52.73                        | -27.7       |
| 8055.00         | H               | 318                 | 347                        | -56.38                           | 11.17                         | -45.22                        | -20.2       |
| 10740.00        | H               | 237                 | 24                         | -45.99                           | 12.61                         | -33.38                        | -8.4        |
| 13425.00        | H               | 252                 | 17                         | -44.45                           | 12.59                         | -31.86                        | -6.9        |
| 16110.00        | H               | 132                 | 7                          | -70.32                           | 16.59                         | -53.73                        | -28.7       |

**Table 7-26. Radiated Spurious Data (Band 41 – High Channel)**

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 170 of 184                 |

## 7.8 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.

### 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: A3LSMT545                       |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                                  | EUT Type:<br>Portable Tablet | Page 171 of 184                 |

## Band 12/17 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz  
 CHANNEL: 23790  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 707,499,972    | -28             | -0.0000040    |
| 100 %          |             | - 20      | 707,500,078    | 78              | 0.0000110     |
| 100 %          |             | - 10      | 707,500,019    | 19              | 0.0000027     |
| 100 %          |             | 0         | 707,500,038    | 38              | 0.0000054     |
| 100 %          |             | + 10      | 707,500,126    | 126             | 0.0000178     |
| 100 %          |             | + 20      | 707,500,254    | 254             | 0.0000359     |
| 100 %          |             | + 30      | 707,499,770    | -230            | -0.0000325    |
| 100 %          |             | + 40      | 707,500,135    | 135             | 0.0000191     |
| 100 %          |             | + 50      | 707,499,898    | -102            | -0.0000144    |
| BATT. ENDPOINT | 3.80        | + 20      | 707,499,643    | -357            | -0.0000505    |

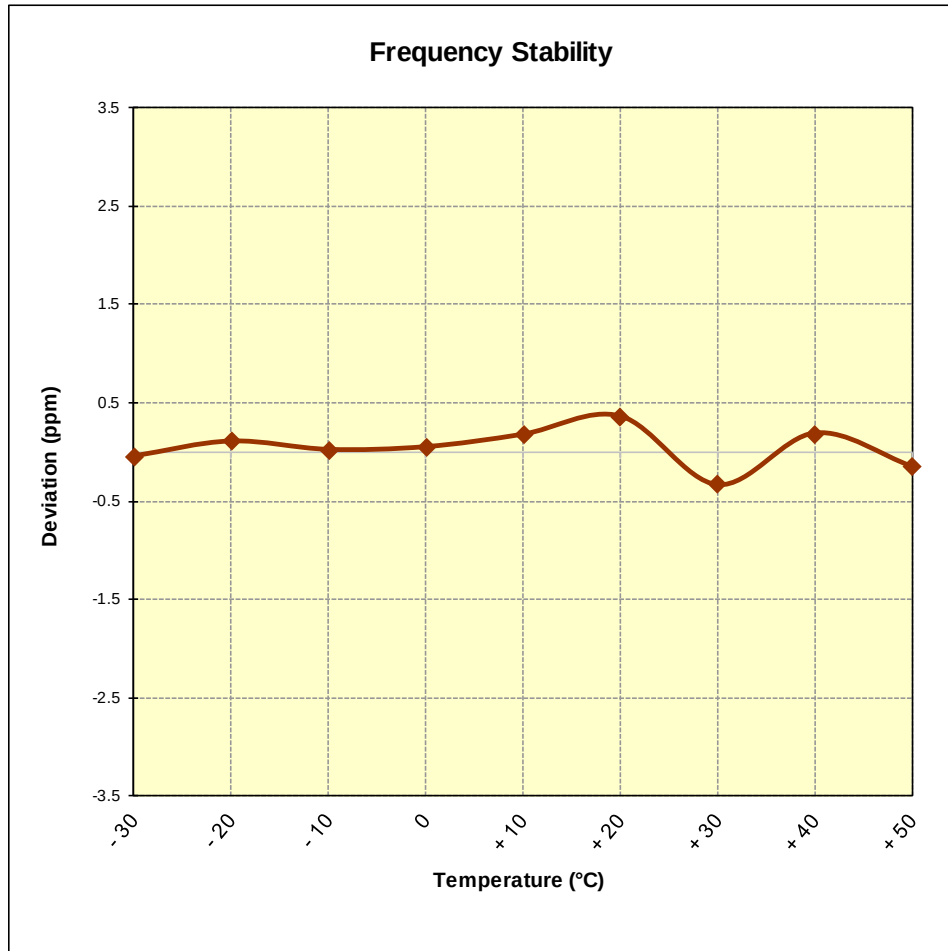
**Table 7-27. Frequency Stability Data (Band 12/17)**

### 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: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          | Page 172 of 184                                                                       |                                 |

## Band 12/17 Frequency Stability Measurements



**Figure 7-8. Frequency Stability Graph (Band 12/17)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 173 of 184                        |

## Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz  
 CHANNEL: 23230  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 782,000,148    | 148             | 0.0000189     |
| 100 %          |             | - 20      | 781,999,994    | -6              | -0.0000008    |
| 100 %          |             | - 10      | 781,999,893    | -107            | -0.0000137    |
| 100 %          |             | 0         | 781,999,518    | -482            | -0.0000616    |
| 100 %          |             | + 10      | 781,999,827    | -173            | -0.0000221    |
| 100 %          |             | + 20      | 782,000,168    | 168             | 0.0000215     |
| 100 %          |             | + 30      | 781,999,900    | -100            | -0.0000128    |
| 100 %          |             | + 40      | 781,999,898    | -102            | -0.0000130    |
| 100 %          |             | + 50      | 782,000,097    | 97              | 0.0000124     |
| BATT. ENDPOINT | 3.80        | + 20      | 782,000,314    | 314             | 0.0000402     |

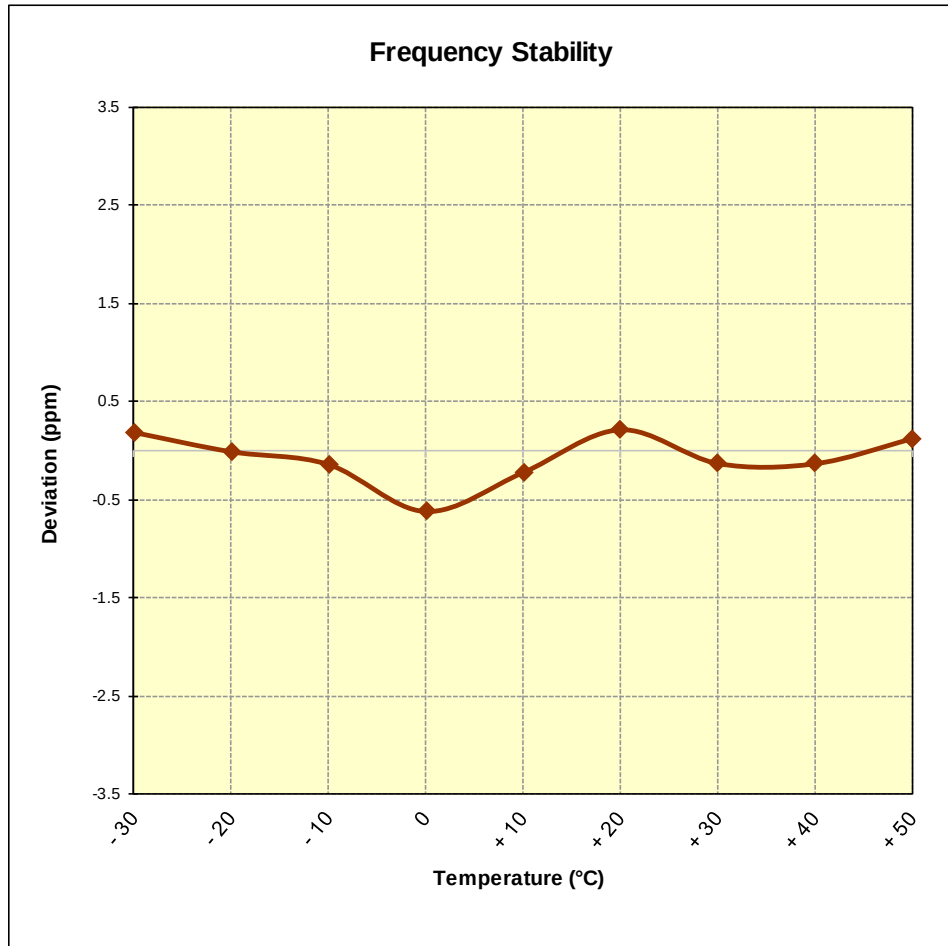
**Table 7-28. Frequency Stability Data (Band 13)**

### 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: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet |                                 |
|                                         |                                                                                                                                                                                                                     |                              | Page 174 of 184                 |

## Band 13 Frequency Stability Measurements



**Figure 7-9. Frequency Stability Graph (Band 13)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 175 of 184                        |

## Band 5 Frequency Stability Measurements

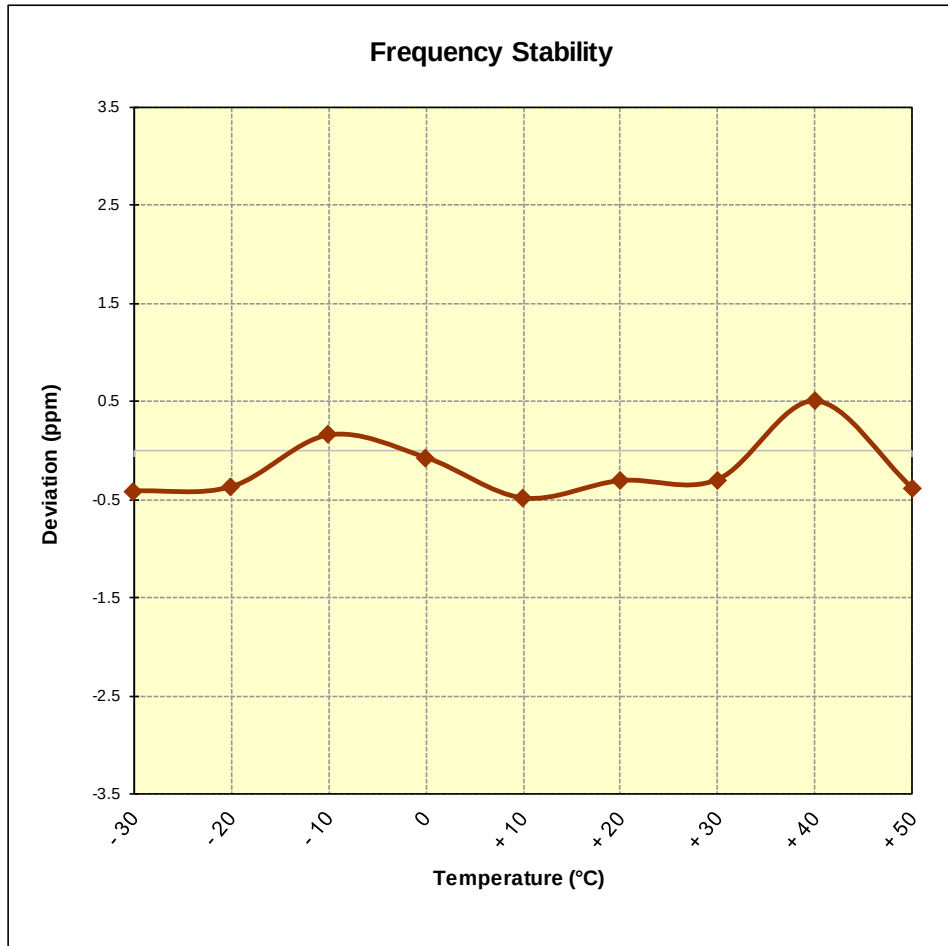
OPERATING FREQUENCY: 836,500,000 Hz  
 CHANNEL: 20525  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 836,499,655    | -345            | -0.0000412    |
| 100 %          |             | - 20      | 836,499,693    | -307            | -0.0000367    |
| 100 %          |             | - 10      | 836,500,136    | 136             | 0.0000163     |
| 100 %          |             | 0         | 836,499,943    | -57             | -0.0000068    |
| 100 %          |             | + 10      | 836,499,596    | -404            | -0.0000483    |
| 100 %          |             | + 20      | 836,499,745    | -255            | -0.0000305    |
| 100 %          |             | + 30      | 836,499,754    | -246            | -0.0000294    |
| 100 %          |             | + 40      | 836,500,428    | 428             | 0.0000512     |
| 100 %          |             | + 50      | 836,499,685    | -315            | -0.0000377    |
| BATT. ENDPOINT | 3.80        | + 20      | 836,500,017    | 17              | 0.0000020     |

Table 7-29. Frequency Stability Data (Band 5)

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          |                                                                                       | Page 176 of 184                 |

## Band 5 Frequency Stability Measurements



**Figure 7-10. Frequency Stability Graph (Band 5)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 177 of 184                        |

## Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz  
 CHANNEL: 132322  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 1,745,000,182  | 182             | 0.0000104     |
| 100 %          |             | - 20      | 1,745,000,017  | 17              | 0.0000010     |
| 100 %          |             | - 10      | 1,744,999,965  | -35             | -0.0000020    |
| 100 %          |             | 0         | 1,745,000,160  | 160             | 0.0000092     |
| 100 %          |             | + 10      | 1,745,000,001  | 1               | 0.0000001     |
| 100 %          |             | + 20      | 1,745,000,140  | 140             | 0.0000080     |
| 100 %          |             | + 30      | 1,745,000,036  | 36              | 0.0000021     |
| 100 %          |             | + 40      | 1,744,999,990  | -10             | -0.0000006    |
| 100 %          |             | + 50      | 1,744,999,760  | -240            | -0.0000138    |
| BATT. ENDPOINT | 3.80        | + 20      | 1,744,999,962  | -38             | -0.0000022    |

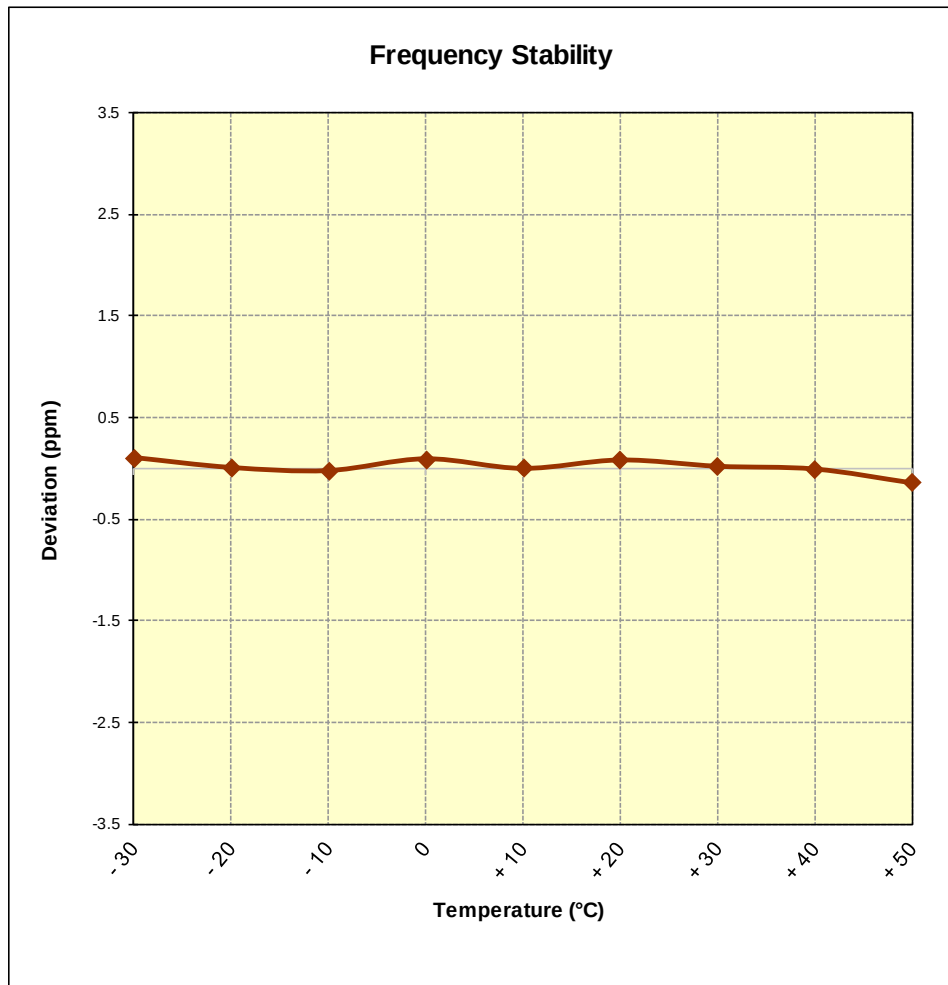
Table 7-30. Frequency Stability Data (Band 66/4)

### 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: A3LSMT545                       |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                              | EUT Type:<br>Portable Tablet          | Page 178 of 184                                                                       |                                 |

## Band 66/4 Frequency Stability Measurements



**Figure 7-11. Frequency Stability Graph (Band 66/4)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 179 of 184                        |

## Band 2 Frequency Stability Measurements

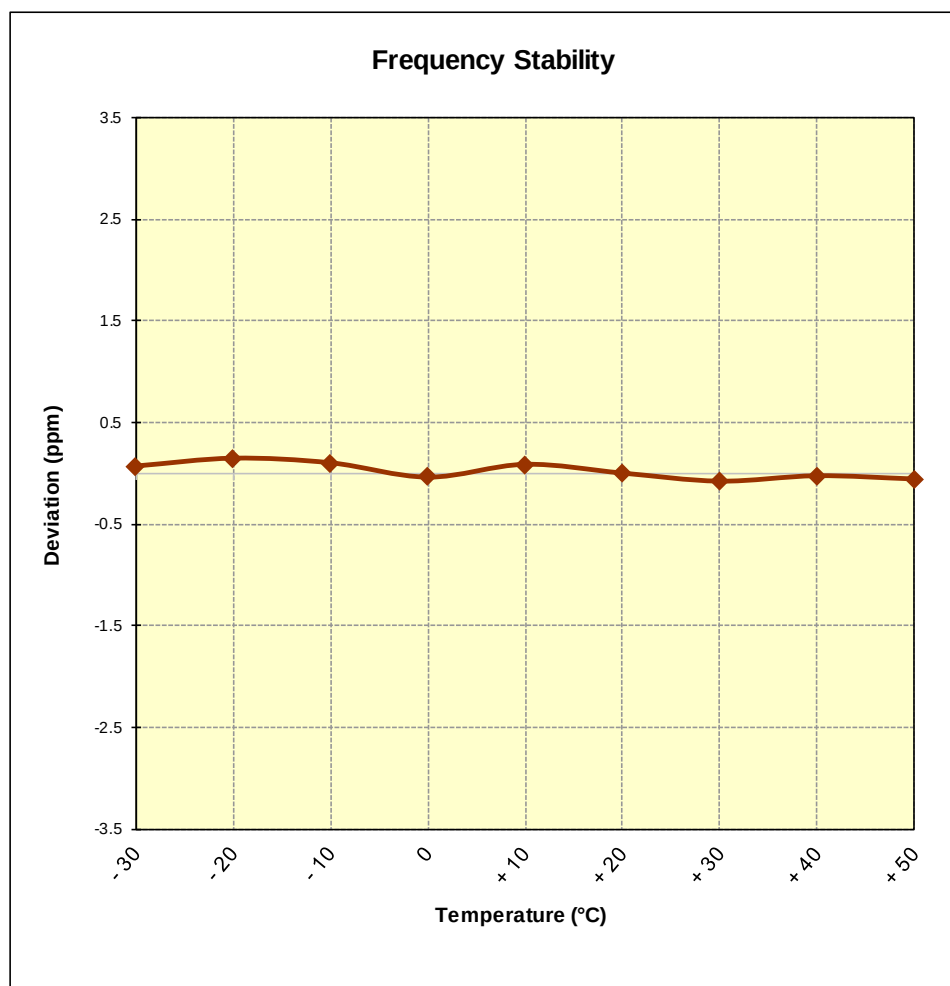
OPERATING FREQUENCY: 1,880,000,000 Hz  
 CHANNEL: 18900  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 1,880,000,142  | 142             | 0.0000076     |
| 100 %          |             | - 20      | 1,880,000,282  | 282             | 0.0000150     |
| 100 %          |             | - 10      | 1,880,000,199  | 199             | 0.0000106     |
| 100 %          |             | 0         | 1,879,999,942  | -58             | -0.0000031    |
| 100 %          |             | + 10      | 1,880,000,172  | 172             | 0.0000091     |
| 100 %          |             | + 20      | 1,880,000,015  | 15              | 0.0000008     |
| 100 %          |             | + 30      | 1,879,999,870  | -130            | -0.0000069    |
| 100 %          |             | + 40      | 1,879,999,967  | -33             | -0.0000018    |
| 100 %          |             | + 50      | 1,879,999,909  | -91             | -0.0000048    |
| BATT. ENDPOINT | 3.80        | + 20      | 1,879,999,955  | -45             | -0.0000024    |

**Table 7-31. Frequency Stability Data (Band 2)**

|                                         |                                                                                                                                                                                                                     |                              |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| FCC ID: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet |                                 |
|                                         |                                                                                                                                                                                                                     |                              | Page 180 of 184                 |

## Band 2 Frequency Stability Measurements



**Figure 7-12. Frequency Stability Graph (Band 2)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 181 of 184                        |

## Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz  
 CHANNEL: 40620  
 REFERENCE VOLTAGE: 4.23 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 %          | 4.23        | - 30      | 2,592,999,615  | -385            | -0.0000148    |
| 100 %          |             | - 20      | 2,593,000,025  | 25              | 0.0000010     |
| 100 %          |             | - 10      | 2,592,999,931  | -69             | -0.0000027    |
| 100 %          |             | 0         | 2,593,000,231  | 231             | 0.0000089     |
| 100 %          |             | + 10      | 2,592,999,872  | -128            | -0.0000049    |
| 100 %          |             | + 20      | 2,592,999,897  | -103            | -0.0000040    |
| 100 %          |             | + 30      | 2,593,000,125  | 125             | 0.0000048     |
| 100 %          |             | + 40      | 2,593,000,306  | 306             | 0.0000118     |
| 100 %          |             | + 50      | 2,593,000,345  | 345             | 0.0000133     |
| BATT. ENDPOINT | 3.80        | + 20      | 2,593,000,054  | 54              | 0.0000021     |

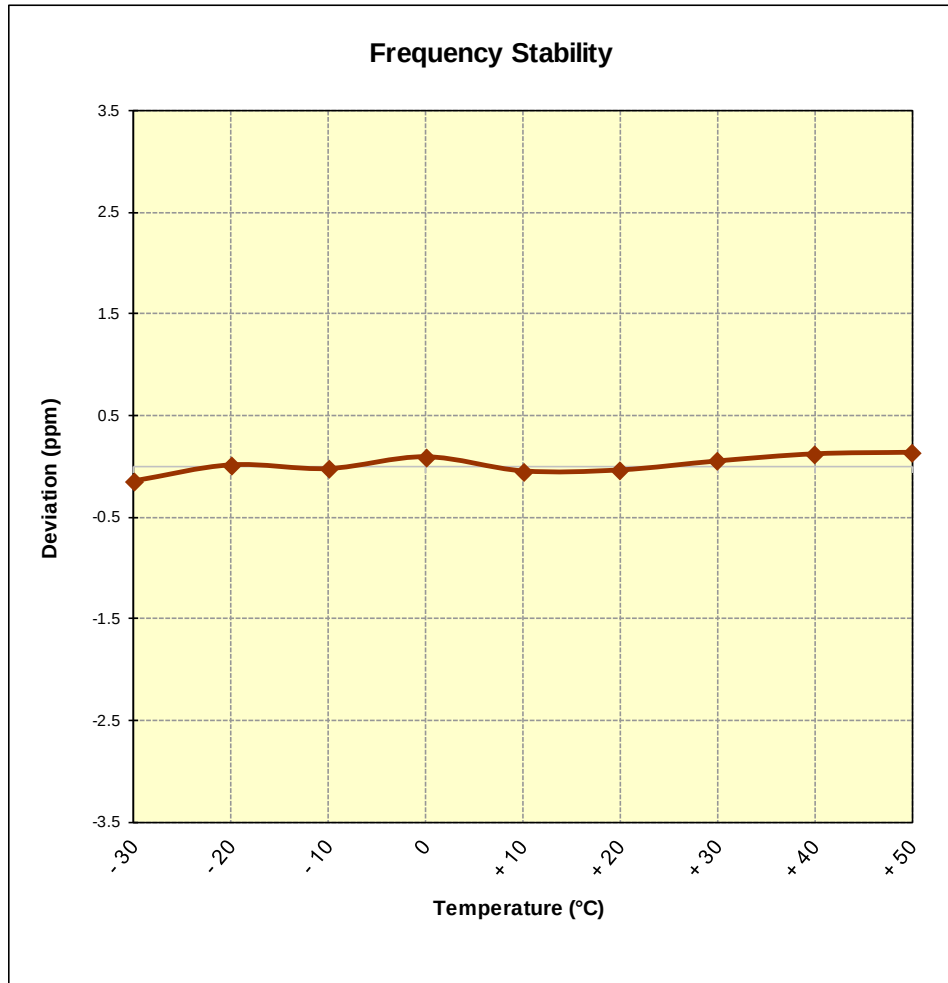
**Table 7-32. Frequency Stability Data (Band 41)**

### 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: A3LSMT545                       |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                              | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1907080115-03.A3L | Test Dates:<br>07/13/2019 - 08/26/2019                                                                                                                                                                              | EUT Type:<br>Portable Tablet |                                 |
|                                         |                                                                                                                                                                                                                     |                              | Page 182 of 184                 |

## Band 41 Frequency Stability Measurements



**Figure 7-13. Frequency Stability Graph (Band 41)**

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 183 of 184                        |

## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Tablet FCC ID: A3LSMT545** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

|                                                |                                                                                     |                                               |                                                                                       |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMT545                       |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1907080115-03.A3L | <b>Test Dates:</b><br>07/13/2019 - 08/26/2019                                       | <b>EUT Type:</b><br>Portable Tablet           |                                                                                       | Page 184 of 184                        |