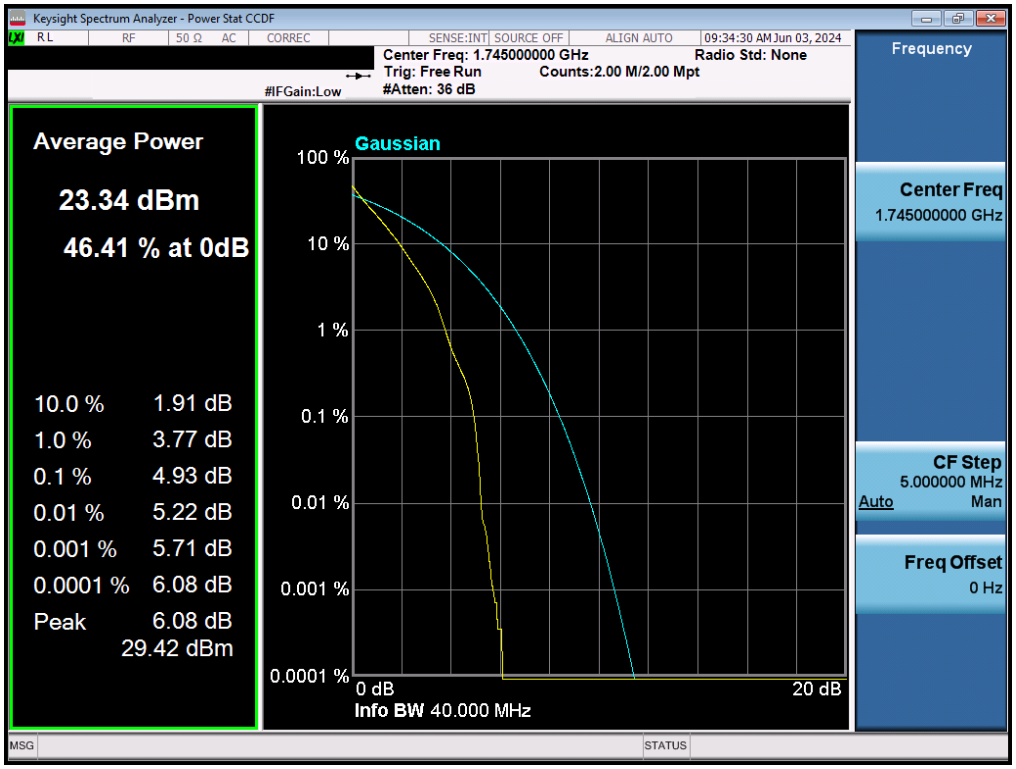
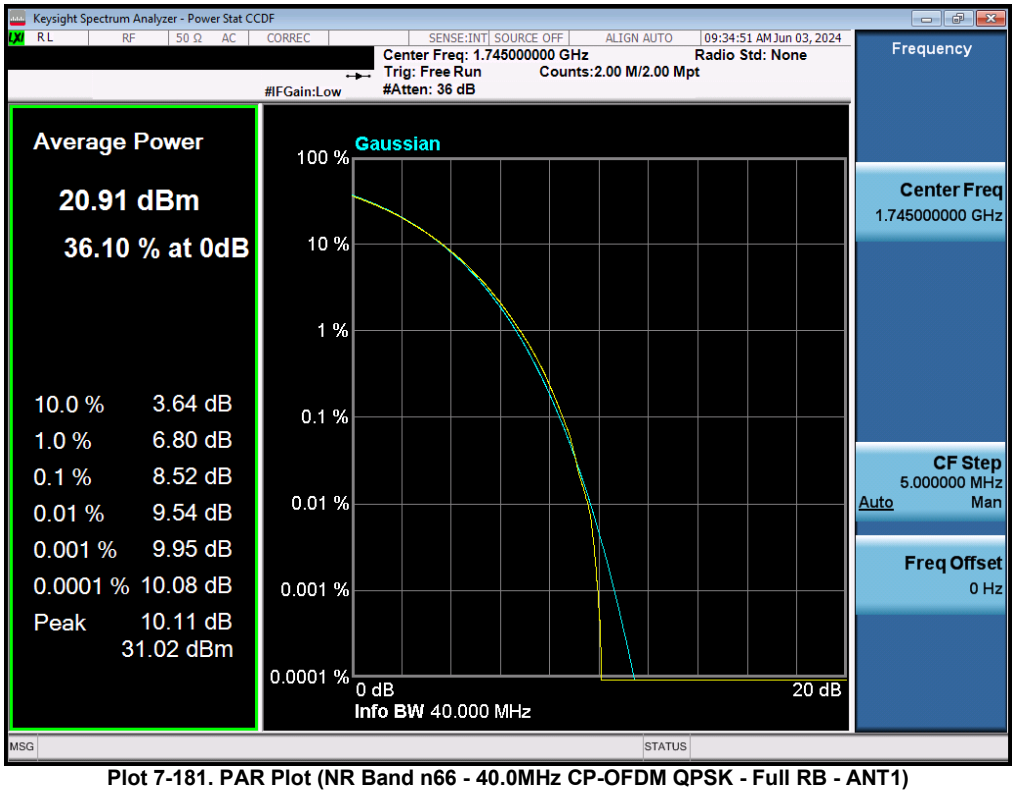
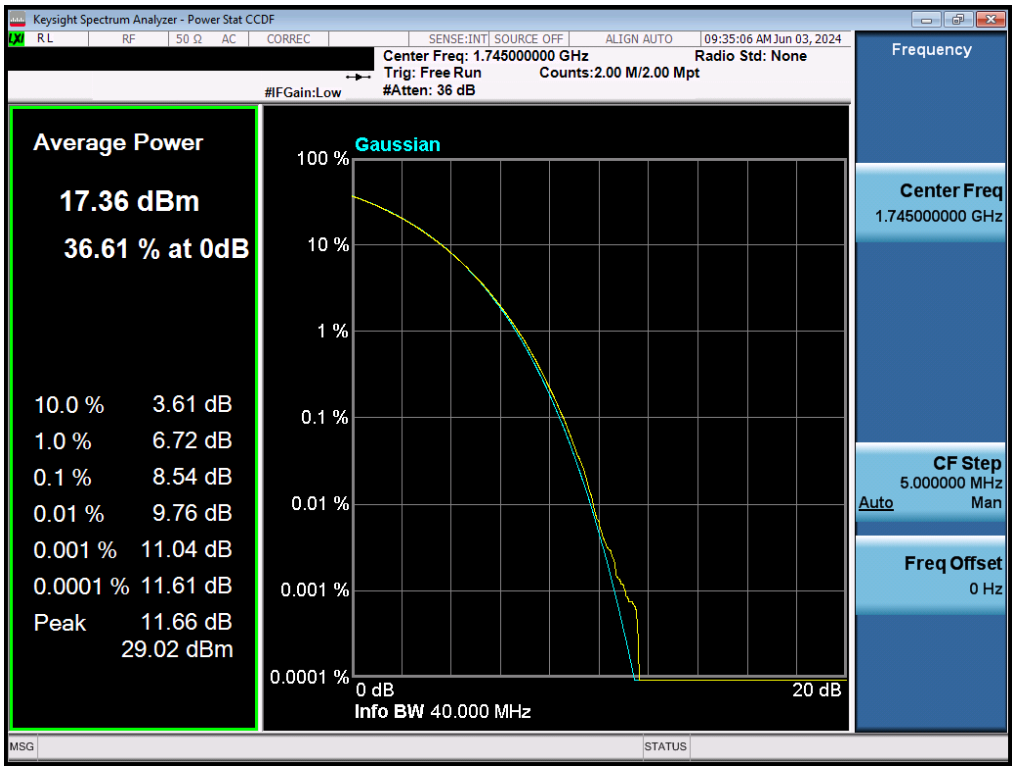
## NR Band n66 – ANT1




**Plot 7-180. PAR Plot (NR Band n66 - 40.0MHz DFT-s-OFDM π/2 BPSK- Full RB - ANT1)**




**Plot 7-181. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM QPSK - Full RB - ANT1)**

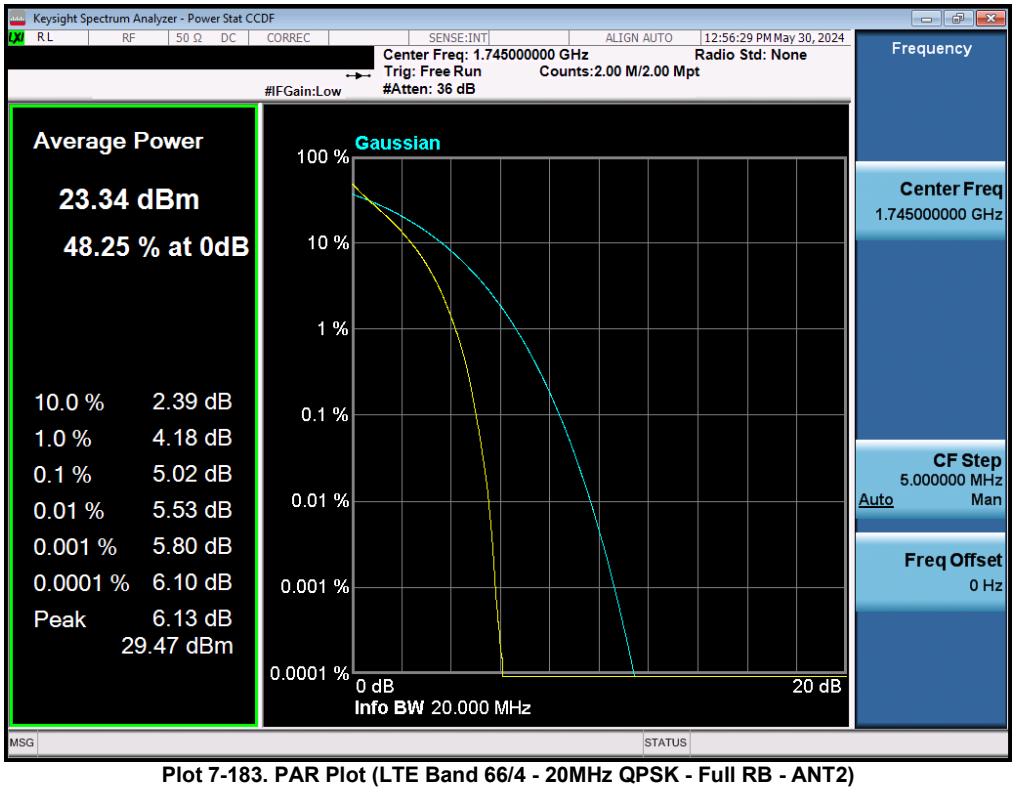



**Plot 7-182. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB - ANT1)**

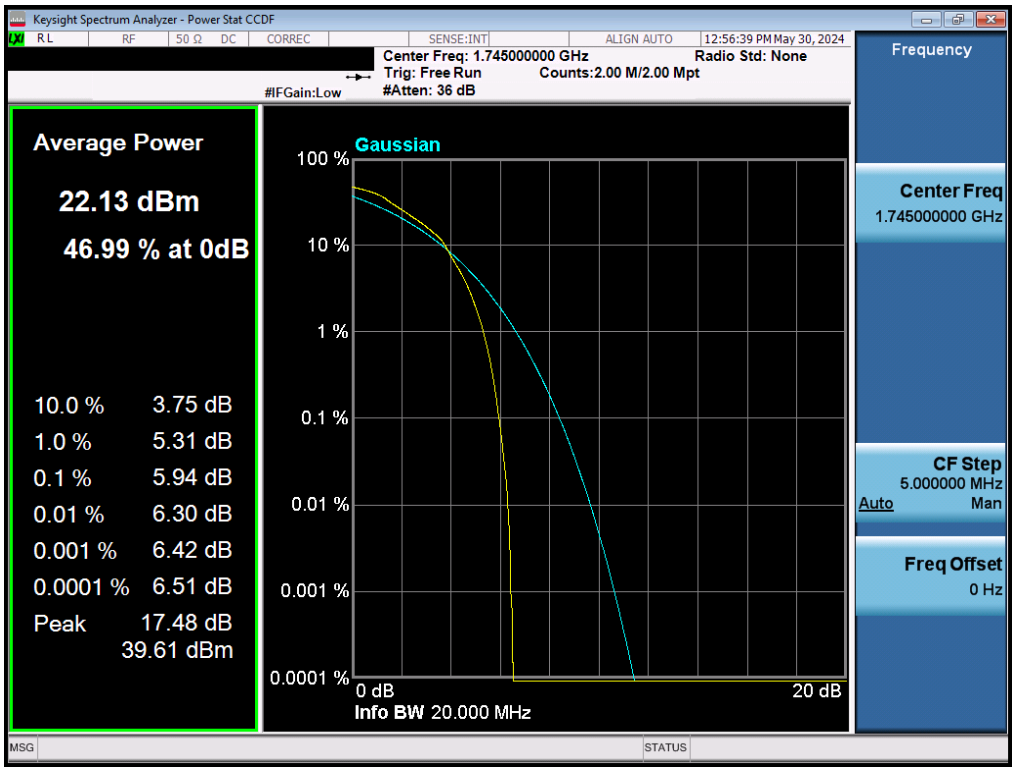
| Mode | Bandwidth | Modulation | Average Power [dBm] | PAR at 0.1% [dB] | PAR Limit [dB] | Margin [dB] |
|---|---|---|---|---|---|---|
| LTE-B66-4 | 20MHz | QPSK | 23.34 | 5.02 | 13 | -7.98 |
| | | 256QAM | 22.13 | 5.94 | 13 | -7.06 |
| | 15MHz | QPSK | 23.34 | 5.09 | 13 | -7.91 |
| | | 256QAM | 23.17 | 8.38 | 13 | -4.62 |
| | 10MHz | QPSK | 23.40 | 5.17 | 13 | -7.83 |
| | | 256QAM | 22.07 | 8.40 | 13 | -4.60 |
| | 5MHz | QPSK | 23.38 | 5.13 | 13 | -7.87 |
| | | 256QAM | 22.04 | 5.93 | 13 | -7.07 |
| | 3MHz | QPSK | 23.30 | 5.18 | 13 | -7.82 |
| | | 256QAM | 22.12 | 7.89 | 13 | -5.11 |
| | 1.4MHz | QPSK | 23.04 | 5.32 | 13 | -7.68 |
| | | 256QAM | 22.10 | 7.90 | 13 | -5.10 |

**Table 7-28. Peak-Average Ratio Results – Ant2**

## LTE Band 66/4 – ANT2




**Plot 7-183. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB - ANT2)**




**Plot 7-184. PAR Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB - ANT2)**

## 7.7 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 C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

**Test Procedures Used**

ANSI C63.26-2015 – Section 5.2.4.4

**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 ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x 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

## Test Setup

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

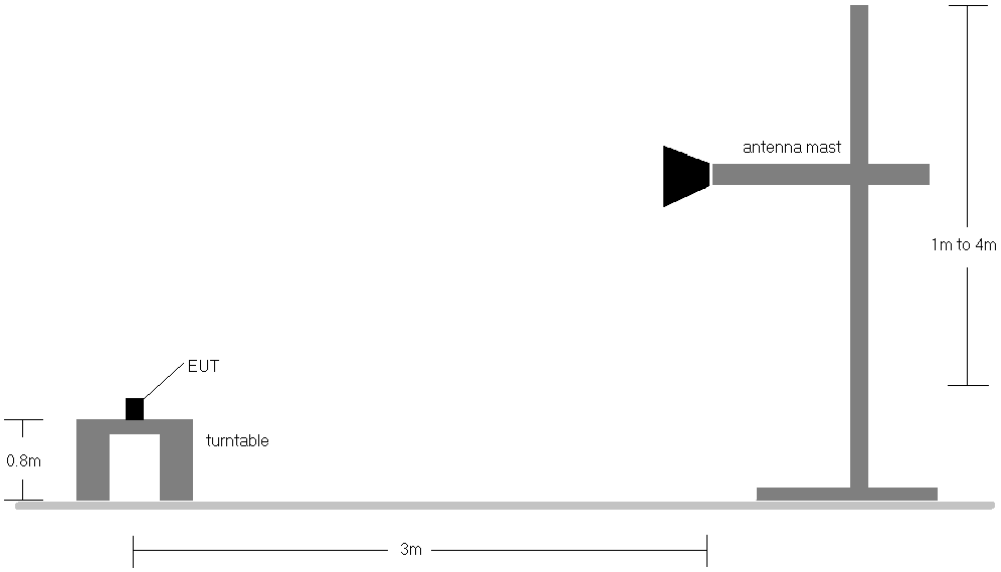



**Figure 7-6. Radiated Test Setup <1GHz**

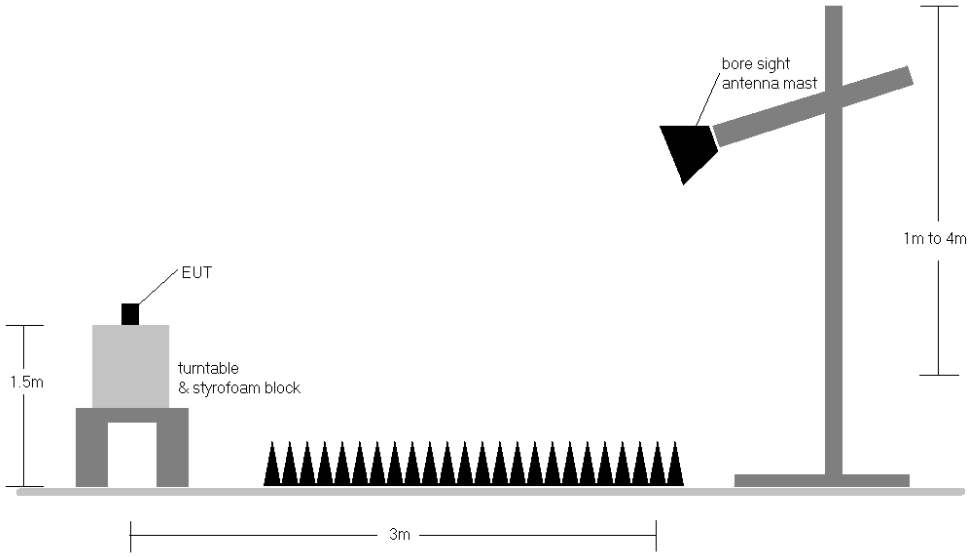



**Figure 7-7. Radiated Test Setup >1GHz**

## 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) 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.

3) This unit was tested with its standard battery.

4) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 MHz | QPSK | 673.00 | H | 104 | 366 | 0.69 | 1 / 50 | 21.81 | 20.35 | 0.108 | 34.77 | -14.42 |
| | QPSK | 680.50 | H | 104 | 359 | 0.81 | 1 / 50 | 22.38 | **21.04** | 0.127 | 34.77 | -13.73 |
| | QPSK | 688.00 | H | 107 | 363 | 0.93 | 1 / 0 | 22.25 | 21.03 | 0.127 | 34.77 | -13.74 |
| | 16-QAM | 680.50 | H | 104 | 359 | 0.81 | 1 / 50 | 21.61 | 20.27 | 0.106 | 34.77 | -14.50 |
| 15 MHz | QPSK | 670.50 | H | 104 | 366 | 0.65 | 1 / 0 | 21.81 | 20.31 | 0.107 | 34.77 | -14.46 |
| | QPSK | 680.50 | H | 104 | 359 | 0.81 | 1 / 0 | 22.29 | 20.95 | 0.124 | 34.77 | -13.82 |
| | QPSK | 690.50 | H | 107 | 363 | 0.97 | 1 / 0 | 22.21 | **21.03** | 0.127 | 34.77 | -13.75 |
| | 16-QAM | 680.50 | H | 104 | 359 | 0.81 | 1 / 0 | 21.45 | 20.11 | 0.103 | 34.77 | -14.66 |
| 10 MHz | QPSK | 668.00 | H | 104 | 366 | 0.61 | 1 / 0 | 21.98 | 20.44 | 0.111 | 34.77 | -14.33 |
| | QPSK | 680.50 | H | 104 | 359 | 0.81 | 1 / 0 | 22.30 | 20.96 | 0.125 | 34.77 | -13.81 |
| | QPSK | 693.00 | H | 107 | 363 | 1.01 | 1 / 0 | 22.12 | **20.98** | 0.125 | 34.77 | -13.79 |
| | 16-QAM | 693.00 | H | 107 | 363 | 1.01 | 1 / 0 | 21.21 | 20.07 | 0.102 | 34.77 | -14.70 |
| 5 MHz | QPSK | 665.50 | H | 104 | 366 | 0.57 | 1 / 0 | 21.88 | 20.30 | 0.107 | 34.77 | -14.47 |
| | QPSK | 680.50 | H | 104 | 359 | 0.81 | 1 / 0 | 22.24 | 20.90 | 0.123 | 34.77 | -13.87 |
| | QPSK | 695.50 | H | 107 | 363 | 1.05 | 1 / 0 | 22.28 | **21.18** | 0.131 | 34.77 | -13.59 |
| | 16-QAM | 695.50 | H | 107 | 363 | 1.05 | 1 / 0 | 21.09 | 19.99 | 0.100 | 34.77 | -14.78 |
| 20 MHz | Opposite Pol. | 680.50 | V | 155 | 70 | 0.71 | 1 / 0 | 22.28 | 20.84 | 0.121 | 34.77 | -13.93 |

**Table 7-185. ERP Data (LTE Band 71) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 MHz | QPSK | 704.00 | H | 105 | 369 | 1.14 | 1 / 49 | 22.55 | 21.54 | 0.143 | 34.77 | -13.23 |
| | QPSK | 707.50 | H | 102 | 360 | 1.16 | 1 / 25 | 23.21 | **22.22** | 0.167 | 34.77 | -12.55 |
| | QPSK | 711.00 | H | 103 | 363 | 1.17 | 1 / 25 | 23.12 | 22.14 | 0.164 | 34.77 | -12.63 |
| | 16-QAM | 711.00 | H | 103 | 363 | 1.17 | 1 / 25 | 22.50 | 21.52 | 0.142 | 34.77 | -13.25 |
| 5 MHz | QPSK | 701.50 | H | 105 | 369 | 1.13 | 1 / 0 | 22.76 | 21.74 | 0.149 | 34.77 | -13.03 |
| | QPSK | 707.50 | H | 102 | 360 | 1.16 | 1 / 0 | 23.14 | **22.15** | 0.164 | 34.77 | -12.63 |
| | QPSK | 713.50 | H | 103 | 363 | 1.19 | 1 / 0 | 22.81 | 21.84 | 0.153 | 34.77 | -12.93 |
| | 16-QAM | 707.50 | H | 102 | 360 | 1.16 | 1 / 0 | 22.58 | 21.59 | 0.144 | 34.77 | -13.18 |
| 3 MHz | QPSK | 700.50 | H | 105 | 369 | 1.12 | 1 / 0 | 22.55 | 21.52 | 0.142 | 34.77 | -13.25 |
| | QPSK | 707.50 | H | 102 | 360 | 1.16 | 1 / 7 | 23.02 | **22.02** | 0.159 | 34.77 | -12.75 |
| | QPSK | 714.50 | H | 103 | 363 | 1.19 | 1 / 7 | 22.55 | 21.59 | 0.144 | 34.77 | -13.18 |
| | 16-QAM | 707.50 | H | 102 | 360 | 1.16 | 1 / 7 | 22.43 | 21.44 | 0.139 | 34.77 | -13.33 |
| 1.4 MHz | QPSK | 699.70 | H | 105 | 369 | 1.12 | 1 / 0 | 22.66 | 21.63 | 0.145 | 34.77 | -13.15 |
| | QPSK | 707.50 | H | 102 | 360 | 1.16 | 1 / 0 | 23.28 | **22.29** | 0.169 | 34.77 | -12.48 |
| | QPSK | 715.30 | H | 103 | 363 | 1.20 | 1 / 0 | 22.45 | 21.49 | 0.141 | 34.77 | -13.28 |
| | 16-QAM | 707.50 | H | 102 | 360 | 1.16 | 1 / 3 | 22.57 | 21.58 | 0.144 | 34.77 | -13.19 |
| 10 MHz | Opposite Pol. | 707.50 | V | 102 | 105 | 1.14 | 1 / 25 | 22.42 | 21.41 | 0.138 | 34.77 | -13.36 |

**Table 7-186. ERP Data (LTE Band 12) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 MHz | QPSK | 782.00 | V | 140 | 69 | 0.89 | 1 / 25 | 22.97 | **21.71** | 0.148 | 34.77 | -13.06 |
| | 16-QAM | 782.00 | V | 140 | 69 | 0.89 | 1 / 25 | 22.22 | 20.96 | 0.125 | 34.77 | -13.81 |
| 5 MHz | QPSK | 779.50 | V | 140 | 69 | 0.94 | 1 / 12 | 23.04 | 21.83 | 0.152 | 34.77 | -12.95 |
| | QPSK | 782.00 | V | 140 | 69 | 0.89 | 1 / 12 | 23.05 | 21.79 | 0.151 | 34.77 | -12.98 |
| | QPSK | 784.50 | V | 140 | 69 | 0.85 | 1 / 0 | 23.14 | **21.84** | 0.153 | 34.77 | -12.93 |
| | 16-QAM | 782.00 | V | 140 | 69 | 0.89 | 1 / 12 | 22.54 | 21.28 | 0.134 | 34.77 | -13.49 |
| 10 MHz | Opposite Pol. | 782.00 | H | 205 | 4 | 1.09 | 1 / 25 | 21.52 | 20.46 | 0.111 | 34.77 | -14.31 |

**Table 7-187. ERP Data (LTE Band 13) – Ant1**

| Frequency [MHz] | Mode | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1712.40 | WCDMA1700 | H | 231 | 106 | 19.36 | 2.89 | **22.25** | **0.168** | 30.00 | -7.75 |
| 1732.60 | WCDMA1700 | H | 179 | 124 | 18.78 | 2.86 | 21.64 | 0.146 | 30.00 | -8.36 |
| 1752.60 | WCDMA1700 | H | 136 | 106 | 17.92 | 2.83 | 20.75 | 0.119 | 30.00 | -9.25 |

**Table 7-188. EIRP Data (WCDMA AWS) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 MHz | π/2 BPSK | 673.00 | V | 165 | 86 | 0.56 | 1 / 104 | 20.92 | 19.33 | 0.086 | 34.77 | -15.44 |
| | π/2 BPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 104 | 21.36 | 19.92 | 0.098 | 34.77 | -14.85 |
| | π/2 BPSK | 688.00 | V | 165 | 126 | 0.86 | 1 / 53 | 21.56 | **20.27** | 0.106 | 34.77 | -14.51 |
| | QPSK | 673.00 | V | 165 | 86 | 0.56 | 1 / 104 | 20.92 | 19.33 | 0.086 | 34.77 | -15.44 |
| | QPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 104 | 21.20 | 19.76 | 0.095 | 34.77 | -15.01 |
| | QPSK | 688.00 | V | 165 | 126 | 0.86 | 1 / 53 | 21.50 | 20.21 | 0.105 | 34.77 | -14.57 |
| | 16-QAM | 688.00 | V | 165 | 126 | 0.86 | 1 / 53 | 20.51 | 19.22 | 0.083 | 34.77 | -15.56 |
| 15 MHz | π/2 BPSK | 670.50 | V | 165 | 86 | 0.51 | 1 / 1 | 20.97 | 19.33 | 0.086 | 34.77 | -15.44 |
| | π/2 BPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 1 | 21.35 | 19.91 | 0.098 | 34.77 | -14.86 |
| | π/2 BPSK | 690.50 | V | 165 | 126 | 0.90 | 1 / 1 | 21.35 | **20.10** | 0.102 | 34.77 | -14.67 |
| | QPSK | 670.50 | V | 165 | 86 | 0.51 | 1 / 1 | 20.96 | 19.32 | 0.086 | 34.77 | -15.45 |
| | QPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 1 | 21.04 | 19.60 | 0.091 | 34.77 | -15.18 |
| | QPSK | 690.50 | V | 165 | 126 | 0.90 | 1 / 1 | 21.28 | 20.03 | 0.101 | 34.77 | -14.74 |
| | 16-QAM | 690.50 | V | 165 | 126 | 0.90 | 1 / 1 | 20.21 | 18.97 | 0.079 | 34.77 | -15.80 |
| 10 MHz | π/2 BPSK | 668.00 | V | 165 | 86 | 0.46 | 1 / 1 | 21.02 | 19.33 | 0.086 | 34.77 | -15.44 |
| | π/2 BPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 1 | 21.28 | 19.84 | 0.096 | 34.77 | -14.93 |
| | π/2 BPSK | 693.00 | V | 165 | 126 | 0.95 | 1 / 26 | 21.36 | **20.17** | 0.104 | 34.77 | -14.61 |
| | QPSK | 668.00 | V | 165 | 86 | 0.46 | 1 / 1 | 20.99 | 19.31 | 0.085 | 34.77 | -15.47 |
| | QPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 1 | 20.92 | 19.48 | 0.089 | 34.77 | -15.29 |
| | QPSK | 693.00 | V | 165 | 126 | 0.95 | 1 / 50 | 21.09 | 19.89 | 0.097 | 34.77 | -14.88 |
| | 16-QAM | 693.00 | V | 165 | 126 | 0.95 | 1 / 26 | 20.02 | 18.82 | 0.076 | 34.77 | -15.95 |
| 5 MHz | π/2 BPSK | 665.50 | V | 165 | 86 | 0.41 | 1 / 12 | 20.97 | 19.23 | 0.084 | 34.77 | -15.54 |
| | π/2 BPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 1 | 21.02 | 19.58 | 0.091 | 34.77 | -15.20 |
| | π/2 BPSK | 695.50 | V | 165 | 126 | 1.00 | 1 / 1 | 21.18 | **20.03** | 0.101 | 34.77 | -14.74 |
| | QPSK | 665.50 | V | 165 | 86 | 0.41 | 1 / 12 | 21.02 | 19.28 | 0.085 | 34.77 | -15.49 |
| | QPSK | 680.50 | V | 156 | 90 | 0.71 | 1 / 12 | 20.82 | 19.38 | 0.087 | 34.77 | -15.39 |
| | QPSK | 695.50 | V | 165 | 126 | 1.00 | 1 / 1 | 21.09 | 19.94 | 0.099 | 34.77 | -14.83 |
| | 16-QAM | 695.50 | V | 165 | 126 | 1.00 | 1 / 1 | 19.92 | 18.77 | 0.075 | 34.77 | -16.01 |
| 20 MHz | QPSK (CP-OFDM) | 688.00 | V | 163 | 131 | 0.71 | 1 / 53 | 20.11 | 18.67 | 0.074 | 34.77 | -16.10 |

**Table 7-189. EIRP Data (NR Band n71) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 MHz | π/2 BPSK | 706.50 | V | 169 | 98 | 1.14 | 1 / 77 | 22.21 | 21.20 | 0.132 | 34.77 | -13.57 |
| | π/2 BPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 77 | 23.23 | 22.22 | 0.167 | 34.77 | -12.55 |
| | π/2 BPSK | 708.50 | V | 146 | 53 | 1.15 | 1 / 77 | 23.22 | 22.22 | 0.167 | 34.77 | -12.55 |
| | QPSK | 706.50 | V | 169 | 98 | 1.14 | 1 / 77 | 22.28 | 21.27 | 0.134 | 34.77 | -13.50 |
| | QPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 77 | 23.26 | 22.25 | 0.168 | 34.77 | -12.52 |
| | QPSK | 708.50 | V | 146 | 53 | 1.15 | 1 / 77 | 23.28 | **22.28** | 0.169 | 34.77 | -12.49 |
| | 16-QAM | 708.50 | V | 146 | 53 | 1.15 | 1 / 77 | 22.33 | 21.33 | 0.136 | 34.77 | -13.44 |
| 10 MHz | π/2 BPSK | 704.00 | V | 169 | 98 | 1.12 | 1 / 26 | 22.25 | 21.22 | 0.132 | 34.77 | -13.55 |
| | π/2 BPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 26 | 23.30 | 22.29 | 0.169 | 34.77 | -12.48 |
| | π/2 BPSK | 711.00 | V | 146 | 53 | 1.17 | 1 / 1 | 22.97 | 21.99 | 0.158 | 34.77 | -12.78 |
| | QPSK | 704.00 | V | 169 | 98 | 1.12 | 1 / 1 | 22.38 | 21.35 | 0.136 | 34.77 | -13.42 |
| | QPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 26 | 23.29 | 22.28 | 0.169 | 34.77 | -12.49 |
| | QPSK | 711.00 | V | 146 | 53 | 1.17 | 1 / 1 | 23.46 | **22.49** | 0.177 | 34.77 | -12.28 |
| | 16-QAM | 711.00 | V | 146 | 53 | 1.17 | 1 / 1 | 22.34 | 21.36 | 0.137 | 34.77 | -13.41 |
| 5 MHz | π/2 BPSK | 701.50 | V | 169 | 98 | 1.10 | 1 / 1 | 22.18 | 21.13 | 0.130 | 34.77 | -13.65 |
| | π/2 BPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 12 | 23.32 | **22.31** | 0.170 | 34.77 | -12.46 |
| | π/2 BPSK | 713.50 | V | 146 | 53 | 1.19 | 1 / 12 | 22.91 | 21.95 | 0.157 | 34.77 | -12.82 |
| | QPSK | 701.50 | V | 169 | 98 | 1.10 | 1 / 1 | 22.20 | 21.14 | 0.130 | 34.77 | -13.63 |
| | QPSK | 707.50 | V | 149 | 53 | 1.14 | 1 / 12 | 23.29 | 22.28 | 0.169 | 34.77 | -12.49 |
| | QPSK | 713.50 | V | 146 | 53 | 1.19 | 1 / 1 | 23.05 | 22.09 | 0.162 | 34.77 | -12.68 |
| | 16-QAM | 701.50 | V | 169 | 98 | 1.10 | 1 / 1 | 22.31 | 21.26 | 0.134 | 34.77 | -13.51 |
| 15 MHz | QPSK (CP-OFDM) | 708.50 | V | 163 | 52 | 1.14 | 1 / 77 | 21.37 | 20.36 | 0.109 | 34.77 | -14.41 |

**Table 7-190. EIRP Data (NR Band n12) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 MHz | QPSK | 1720.00 | H | 144 | 152 | 2.88 | 1 / 50 | 19.64 | 22.52 | 0.179 | 30.00 | -7.48 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 0 | 20.37 | **23.21** | 0.210 | 30.00 | -6.79 |
| | QPSK | 1770.00 | H | 132 | 156 | 2.79 | 1 / 0 | 19.19 | 21.98 | 0.158 | 30.00 | -8.02 |
| | 16-QAM | 1720.00 | H | 144 | 152 | 2.88 | 1 / 50 | 19.68 | 22.56 | 0.180 | 30.00 | -7.44 |
| 15 MHz | QPSK | 1717.50 | H | 144 | 152 | 2.88 | 1 / 37 | 19.61 | 22.49 | 0.177 | 30.00 | -7.51 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 74 | 20.27 | **23.11** | 0.205 | 30.00 | -6.89 |
| | QPSK | 1772.50 | H | 132 | 156 | 2.78 | 1 / 74 | 19.32 | 22.10 | 0.162 | 30.00 | -7.90 |
| | 16-QAM | 1717.50 | H | 144 | 152 | 2.88 | 1 / 37 | 19.98 | 22.86 | 0.193 | 30.00 | -7.14 |
| 10 MHz | QPSK | 1715.00 | H | 144 | 152 | 2.88 | 1 / 25 | 19.69 | 22.58 | 0.181 | 30.00 | -7.42 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 25 | 20.33 | **23.17** | 0.208 | 30.00 | -6.83 |
| | QPSK | 1775.00 | H | 132 | 156 | 2.78 | 1 / 49 | 19.22 | 22.00 | 0.158 | 30.00 | -8.00 |
| | 16-QAM | 1715.00 | H | 144 | 152 | 2.88 | 1 / 25 | 19.92 | 22.80 | 0.191 | 30.00 | -7.20 |
| 5 MHz | QPSK | 1712.50 | H | 144 | 152 | 2.89 | 1 / 0 | 19.71 | 22.60 | 0.182 | 30.00 | -7.40 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 24 | 20.34 | **23.18** | 0.208 | 30.00 | -6.82 |
| | QPSK | 1777.50 | H | 132 | 156 | 2.77 | 1 / 0 | 19.22 | 21.99 | 0.158 | 30.00 | -8.01 |
| | 16-QAM | 1712.50 | H | 144 | 152 | 2.89 | 1 / 0 | 20.00 | 22.88 | 0.194 | 30.00 | -7.12 |
| 3 MHz | QPSK | 1711.50 | H | 144 | 152 | 2.89 | 1 / 14 | 19.73 | 22.61 | 0.183 | 30.00 | -7.39 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 0 | 20.32 | **23.16** | 0.207 | 30.00 | -6.84 |
| | QPSK | 1778.50 | H | 132 | 156 | 2.77 | 1 / 14 | 19.30 | 22.07 | 0.161 | 30.00 | -7.93 |
| | 16-QAM | 1711.50 | H | 144 | 152 | 2.89 | 1 / 14 | 19.77 | 22.66 | 0.185 | 30.00 | -7.34 |
| 1.4 MHz | QPSK | 1710.70 | H | 144 | 152 | 2.89 | 1 / 3 | 19.41 | 22.30 | 0.170 | 30.00 | -7.70 |
| | QPSK | 1745.00 | H | 132 | 155 | 2.84 | 1 / 0 | 20.39 | **23.23** | 0.211 | 30.00 | -6.77 |
| | QPSK | 1779.30 | H | 132 | 156 | 2.77 | 1 / 3 | 19.41 | 22.18 | 0.165 | 30.00 | -7.82 |
| | 16-QAM | 1710.70 | H | 144 | 152 | 2.89 | 1 / 5 | 19.81 | 22.70 | 0.186 | 30.00 | -7.30 |
| 20 MHz | Opposite Pol. | 1745.00 | V | 105 | 102 | 2.94 | 1 / 0 | 17.87 | 20.81 | 0.121 | 30.00 | -9.19 |

**Table 7-191. EIRP Data (LTE Band 66/4) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 MHz | π/2 BPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 39 | 18.82 | **21.72** | 0.149 | 30.00 | -8.28 |
| | QPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 39 | 18.76 | 21.66 | 0.147 | 30.00 | -8.34 |
| | 16-QAM | 1702.50 | H | 192 | 26 | 2.90 | 1 / 39 | 17.83 | 20.73 | 0.118 | 30.00 | -9.27 |
| 10 MHz | π/2 BPSK | 1700.00 | H | 192 | 26 | 2.90 | 1 / 1 | 18.77 | 21.68 | 0.147 | 30.00 | -8.32 |
| | π/2 BPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 26 | 18.71 | 21.62 | 0.145 | 30.00 | -8.38 |
| | π/2 BPSK | 1705.00 | H | 192 | 26 | 2.90 | 1 / 26 | 18.80 | **21.70** | 0.148 | 30.00 | -8.30 |
| | QPSK | 1700.00 | H | 192 | 26 | 2.90 | 1 / 50 | 18.73 | 21.64 | 0.146 | 30.00 | -8.36 |
| | QPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 26 | 18.76 | 21.66 | 0.147 | 30.00 | -8.34 |
| | QPSK | 1705.00 | H | 192 | 26 | 2.90 | 1 / 1 | 18.67 | 21.57 | 0.144 | 30.00 | -8.43 |
| | 16-QAM | 1700.00 | H | 192 | 26 | 2.90 | 1 / 50 | 18.11 | 21.01 | 0.126 | 30.00 | -8.99 |
| 5 MHz | π/2 BPSK | 1697.50 | H | 192 | 26 | 2.91 | 1 / 12 | 18.79 | 21.70 | 0.148 | 30.00 | -8.30 |
| | π/2 BPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 23 | 18.90 | 21.80 | 0.151 | 30.00 | -8.20 |
| | π/2 BPSK | 1707.50 | H | 192 | 26 | 2.89 | 1 / 1 | 19.01 | **21.91** | 0.155 | 30.00 | -8.09 |
| | QPSK | 1697.50 | H | 192 | 26 | 2.91 | 1 / 23 | 18.68 | 21.59 | 0.144 | 30.00 | -8.41 |
| | QPSK | 1702.50 | H | 192 | 26 | 2.90 | 1 / 1 | 18.53 | 21.43 | 0.139 | 30.00 | -8.57 |
| | QPSK | 1707.50 | H | 192 | 26 | 2.89 | 1 / 12 | 18.71 | 21.60 | 0.145 | 30.00 | -8.40 |
| | 16-QAM | 1697.50 | H | 192 | 26 | 2.91 | 1 / 12 | 18.29 | 21.21 | 0.132 | 30.00 | -8.79 |
| 15 MHz | QPSK (CP-OFDM) | 1702.50 | H | 156 | 149 | 2.90 | 1 / 1 | 17.22 | 20.12 | 0.103 | 30.00 | -9.88 |

**Table 7-192. EIRP Data (NR Band n70) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 MHz | π/2 BPSK | 1730.00 | H | 194 | 25 | 2.86 | 1 / 1 | 19.83 | 22.69 | 0.186 | 30.00 | -7.31 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 1 | 19.97 | 22.81 | 0.191 | 30.00 | -7.19 |
| | π/2 BPSK | 1760.00 | H | 222 | 21 | 2.81 | 1 / 1 | 18.96 | 21.77 | 0.150 | 30.00 | -8.23 |
| | QPSK | 1730.00 | H | 194 | 25 | 2.86 | 1 / 1 | 19.90 | 22.76 | 0.189 | 30.00 | -7.24 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 1 | 20.00 | **22.84** | 0.192 | 30.00 | -7.16 |
| | QPSK | 1760.00 | H | 222 | 21 | 2.81 | 1 / 1 | 18.86 | 21.67 | 0.147 | 30.00 | -8.33 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 1 | 18.84 | 21.68 | 0.147 | 30.00 | -8.32 |
| 35 MHz | π/2 BPSK | 1725.00 | H | 194 | 25 | 2.86 | 1 / 186 | 19.60 | 22.47 | 0.177 | 30.00 | -7.53 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 1 | 19.57 | 22.41 | 0.174 | 30.00 | -7.59 |
| | π/2 BPSK | 1765.00 | H | 222 | 21 | 2.81 | 1 / 94 | 18.10 | 20.92 | 0.123 | 30.00 | -9.08 |
| | QPSK | 1725.00 | H | 194 | 25 | 2.86 | 1 / 94 | 19.35 | 22.21 | 0.166 | 30.00 | -7.79 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 94 | 19.60 | 22.44 | 0.175 | 30.00 | -7.56 |
| | QPSK | 1765.00 | H | 222 | 21 | 2.81 | 1 / 1 | 18.11 | 20.92 | 0.124 | 30.00 | -9.08 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 94 | 18.58 | 21.43 | 0.139 | 30.00 | -8.57 |
| 30 MHz | π/2 BPSK | 1725.00 | H | 194 | 25 | 2.86 | 1 / 80 | 19.70 | 22.56 | 0.181 | 30.00 | -7.44 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 80 | 20.05 | **22.89** | 0.195 | 30.00 | -7.11 |
| | π/2 BPSK | 1765.00 | H | 222 | 21 | 2.81 | 1 / 80 | 18.87 | 21.69 | 0.147 | 30.00 | -8.31 |
| | QPSK | 1725.00 | H | 194 | 25 | 2.86 | 1 / 80 | 20.01 | 22.87 | 0.194 | 30.00 | -7.13 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 80 | 20.04 | 22.88 | 0.194 | 30.00 | -7.12 |
| | QPSK | 1765.00 | H | 222 | 21 | 2.81 | 1 / 80 | 18.78 | 21.59 | 0.144 | 30.00 | -8.41 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 80 | 19.07 | 21.91 | 0.155 | 30.00 | -8.09 |
| 25 MHz | π/2 BPSK | 1722.5 | H | 194 | 25 | 2.86 | 1 / 104 | 19.80 | 22.67 | 0.185 | 30.00 | -7.33 |
| | π/2 BPSK | 1745.0 | H | 182 | 27 | 2.84 | 1 / 104 | 20.01 | 22.85 | 0.193 | 30.00 | -7.15 |
| | π/2 BPSK | 1767.5 | H | 222 | 21 | 2.81 | 1 / 104 | 18.81 | 21.62 | 0.145 | 30.00 | -8.38 |
| | QPSK | 1722.5 | H | 194 | 25 | 2.86 | 1 / 104 | 19.98 | 22.84 | 0.192 | 30.00 | -7.16 |
| | QPSK | 1745.0 | H | 182 | 27 | 2.84 | 1 / 104 | 19.92 | 22.77 | 0.189 | 30.00 | -7.23 |
| | QPSK | 1767.5 | H | 222 | 21 | 2.81 | 1 / 104 | 18.42 | 21.23 | 0.133 | 30.00 | -8.77 |
| | 16-QAM | 1745.0 | H | 182 | 27 | 2.84 | 1 / 104 | 18.75 | 21.60 | 0.144 | 30.00 | -8.40 |
| 20 MHz | π/2 BPSK | 1720.00 | H | 194 | 25 | 2.86 | 1 / 104 | 19.80 | 22.66 | 0.185 | 30.00 | -7.34 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 104 | 20.09 | 22.94 | 0.197 | 30.00 | -7.06 |
| | π/2 BPSK | 1770.00 | H | 222 | 21 | 2.81 | 1 / 104 | 18.92 | 21.73 | 0.149 | 30.00 | -8.27 |
| | QPSK | 1720.00 | H | 194 | 25 | 2.86 | 1 / 53 | 19.62 | 22.49 | 0.177 | 30.00 | -7.51 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 104 | 20.10 | **22.94** | 0.197 | 30.00 | -7.06 |
| | QPSK | 1770.00 | H | 222 | 21 | 2.81 | 1 / 104 | 18.85 | 21.66 | 0.147 | 30.00 | -8.34 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 104 | 19.04 | 21.88 | 0.154 | 30.00 | -8.12 |
| 15 MHz | π/2 BPSK | 1717.50 | H | 194 | 25 | 2.86 | 1 / 39 | 19.83 | 22.69 | 0.186 | 30.00 | -7.31 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 77 | 20.00 | 22.84 | 0.192 | 30.00 | -7.16 |
| | π/2 BPSK | 1772.50 | H | 222 | 21 | 2.81 | 1 / 39 | 19.01 | 21.82 | 0.152 | 30.00 | -8.18 |
| | QPSK | 1717.50 | H | 194 | 25 | 2.86 | 1 / 77 | 19.68 | 22.54 | 0.180 | 30.00 | -7.46 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 77 | 20.06 | **22.90** | 0.195 | 30.00 | -7.10 |
| | QPSK | 1772.50 | H | 222 | 21 | 2.81 | 1 / 39 | 18.95 | 21.77 | 0.150 | 30.00 | -8.23 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 39 | 18.88 | 21.72 | 0.149 | 30.00 | -8.28 |
| 10 MHz | π/2 BPSK | 1715.00 | H | 194 | 25 | 2.86 | 1 / 26 | 19.78 | 22.64 | 0.184 | 30.00 | -7.36 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 50 | 20.08 | **22.92** | 0.196 | 30.00 | -7.08 |
| | π/2 BPSK | 1775.00 | H | 222 | 21 | 2.81 | 1 / 50 | 18.93 | 21.74 | 0.149 | 30.00 | -8.26 |
| | QPSK | 1715.00 | H | 194 | 25 | 2.86 | 1 / 26 | 19.90 | 22.76 | 0.189 | 30.00 | -7.24 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 26 | 20.06 | 22.90 | 0.195 | 30.00 | -7.10 |
| | QPSK | 1775.00 | H | 222 | 21 | 2.81 | 1 / 50 | 18.90 | 21.71 | 0.148 | 30.00 | -8.29 |
| | 16-QAM | 1715.00 | H | 194 | 25 | 2.86 | 1 / 26 | 19.00 | 21.87 | 0.154 | 30.00 | -8.13 |
| 5 MHz | π/2 BPSK | 1712.50 | H | 194 | 25 | 2.86 | 1 / 12 | 19.97 | 22.83 | 0.192 | 30.00 | -7.17 |
| | π/2 BPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 12 | 20.16 | **23.00** | 0.200 | 30.00 | -7.00 |
| | π/2 BPSK | 1777.50 | H | 222 | 21 | 2.81 | 1 / 1 | 19.01 | 21.83 | 0.152 | 30.00 | -8.17 |
| | QPSK | 1712.50 | H | 194 | 25 | 2.86 | 1 / 1 | 19.64 | 22.51 | 0.178 | 30.00 | -7.49 |
| | QPSK | 1745.00 | H | 182 | 27 | 2.84 | 1 / 12 | 20.15 | 22.99 | 0.199 | 30.00 | -7.01 |
| | QPSK | 1777.50 | H | 222 | 21 | 2.81 | 1 / 12 | 18.98 | 21.79 | 0.151 | 30.00 | -8.21 |
| | 16-QAM | 1745.00 | H | 182 | 27 | 2.84 | 1 / 12 | 18.86 | 21.71 | 0.148 | 30.00 | -8.29 |

**Table 7-193. EIRP Data (NR Band n66) – Ant1**

| Bandwidth | Mod. | Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Ant. Gain [dBi] | RB Size/Offset | Substitute Level [dBm] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 MHz | QPSK | 1720.00 | H | 202 | 35 | 2.88 | 1 / 99 | 20.33 | **23.21** | 0.209 | 30.00 | -6.79 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 0 | 20.19 | 23.03 | 0.201 | 30.00 | -6.97 |
| | QPSK | 1770.00 | H | 143 | 33 | 2.79 | 1 / 50 | 20.05 | 22.84 | 0.192 | 30.00 | -7.16 |
| | 16-QAM | 1720.00 | H | 202 | 35 | 2.88 | 1 / 99 | 19.63 | 22.51 | 0.178 | 30.00 | -7.49 |
| 15 MHz | QPSK | 1717.50 | H | 202 | 35 | 2.88 | 1 / 0 | 20.34 | **23.22** | 0.210 | 30.00 | -6.78 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 0 | 20.13 | 22.97 | 0.198 | 30.00 | -7.03 |
| | QPSK | 1772.50 | H | 143 | 33 | 2.78 | 1 / 37 | 20.11 | 22.90 | 0.195 | 30.00 | -7.10 |
| | 16-QAM | 1745.00 | H | 146 | 31 | 2.84 | 1 / 0 | 19.60 | 22.44 | 0.175 | 30.00 | -7.56 |
| 10 MHz | QPSK | 1715.00 | H | 202 | 35 | 2.88 | 1 / 0 | 20.47 | **23.36** | 0.217 | 30.00 | -6.64 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 49 | 20.29 | 23.13 | 0.206 | 30.00 | -6.87 |
| | QPSK | 1775.00 | H | 143 | 33 | 2.78 | 1 / 0 | 20.14 | 22.92 | 0.196 | 30.00 | -7.08 |
| | 16-QAM | 1745.00 | H | 146 | 31 | 2.84 | 1 / 49 | 19.88 | 22.73 | 0.187 | 30.00 | -7.27 |
| 5 MHz | QPSK | 1712.50 | H | 202 | 35 | 2.89 | 1 / 12 | 20.58 | **23.47** | 0.222 | 30.00 | -6.53 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 12 | 20.28 | 23.13 | 0.205 | 30.00 | -6.87 |
| | QPSK | 1777.50 | H | 143 | 33 | 2.77 | 1 / 12 | 20.20 | 22.97 | 0.198 | 30.00 | -7.03 |
| | 16-QAM | 1712.50 | H | 202 | 35 | 2.89 | 1 / 12 | 19.74 | 22.63 | 0.183 | 30.00 | -7.37 |
| 3 MHz | QPSK | 1711.50 | H | 202 | 35 | 2.89 | 1 / 0 | 20.28 | **23.17** | 0.207 | 30.00 | -6.83 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 14 | 20.07 | 22.92 | 0.196 | 30.00 | -7.08 |
| | QPSK | 1778.50 | H | 143 | 33 | 2.77 | 1 / 7 | 20.08 | 22.85 | 0.193 | 30.00 | -7.15 |
| | 16-QAM | 1745.00 | H | 146 | 31 | 2.84 | 1 / 14 | 19.84 | 22.68 | 0.186 | 30.00 | -7.32 |
| 1.4 MHz | QPSK | 1710.70 | H | 202 | 35 | 2.89 | 1 / 0 | 20.37 | **23.26** | 0.212 | 30.00 | -6.74 |
| | QPSK | 1745.00 | H | 146 | 31 | 2.84 | 1 / 0 | 20.14 | 22.98 | 0.199 | 30.00 | -7.02 |
| | QPSK | 1779.30 | H | 143 | 33 | 2.77 | 1 / 0 | 20.05 | 22.81 | 0.191 | 30.00 | -7.19 |
| | 16-QAM | 1710.70 | H | 202 | 35 | 2.89 | 1 / 0 | 19.61 | 22.50 | 0.178 | 30.00 | -7.50 |

**Table 7-194. EIRP Data (LTE Band 66/4) – Ant2**

## 7.8 Radiated Spurious Emissions Measurements

**Test Overview**

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

**Test Procedures Used**

ANSI C63.26-2015 – Section 5.5.4

**Test Settings**

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

## Test Setup

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

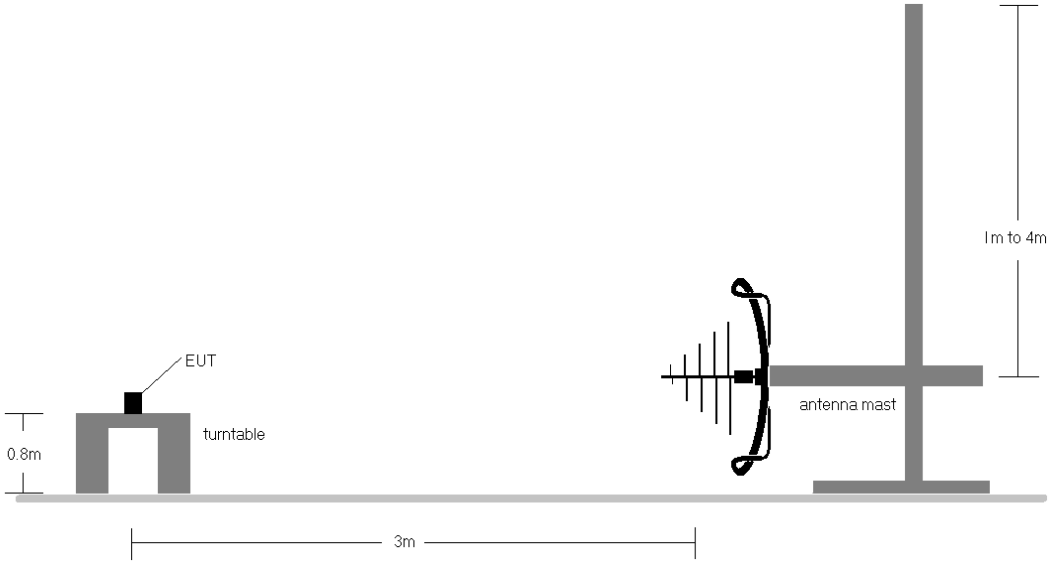



**Figure 7-8. Test Instrument & Measurement Setup < 1GHz**

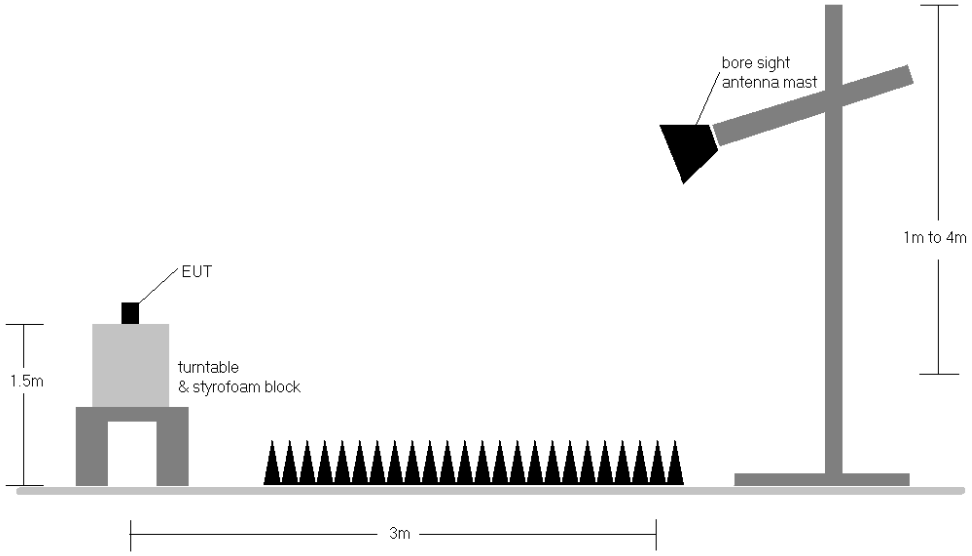



**Figure 7-9. Test Instrument & Measurement Setup > 1GHz**

## Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2) 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.

3) This unit was tested with its standard battery.

4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

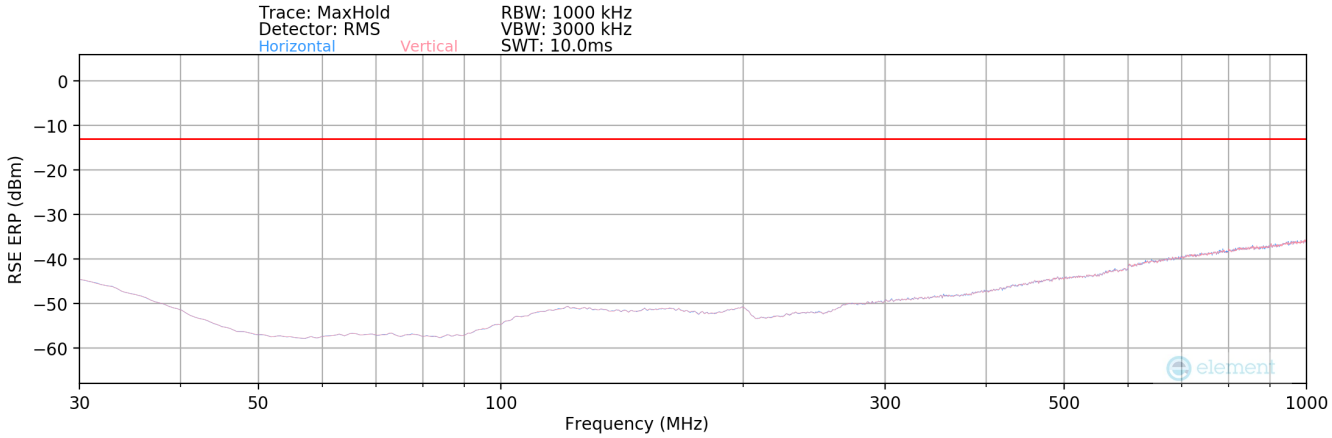
6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

7) ULCA spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.

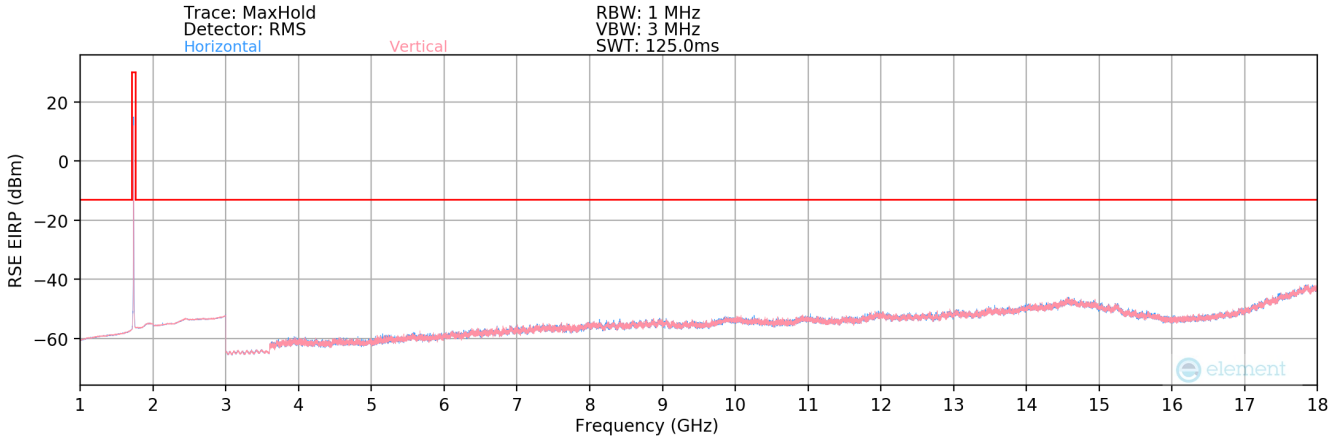
8) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

9) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates

## WCDMA AWS – Ant1




**Plot 7-195. Radiated Spurious Plot (WCDMA AWS) – Ant1**




**Plot 7-196. Radiated Spurious Plot (WCDMA AWS) – Ant1**

| | |
|---|---|
| **Channel:** | 1413 |
| **Frequency (MHz):** | 1732.6 |
| **Detector / Trace Mode:** | RMS / Average |
| **RBW / VBW:** | 1MHz / 3MHz |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 106.05 | H | - | - | -84.11 | 18.65 | 41.54 | -55.87 | -13.00 | -42.87 |
| 505.68 | H | - | - | -83.92 | 25.93 | 49.01 | -48.40 | -13.00 | -35.40 |
| 726.66 | H | - | - | -83.97 | 29.34 | 52.37 | -45.04 | -13.00 | -32.04 |

**Table 7-29. Radiated Spurious Data (WCDMA AWS – Mid Channel) – Ant1**

| | |
|---|---|
| **Channel:** | 1312 |
| **Frequency (MHz):** | 1712.4 |
| **Detector / Trace Mode:** | RMS / Average |
| **RBW / VBW:** | 1MHz / 3MHz |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3424.80 | H | - | - | -76.95 | 1.37 | 31.42 | -63.83 | -13.00 | -50.83 |
| 5137.20 | H | 288 | 119 | -76.86 | 4.02 | 34.16 | -61.09 | -13.00 | -48.09 |
| 6849.60 | H | - | - | -79.00 | 8.21 | 36.21 | -59.05 | -13.00 | -46.05 |
| 8562.00 | H | - | - | -79.80 | 9.81 | 37.01 | -58.25 | -13.00 | -45.25 |
| 10274.40 | H | - | - | -80.03 | 11.58 | 38.55 | -56.71 | -13.00 | -43.71 |

**7-30. Radiated Spurious Data (WCDMA AWS – Low Channel) – Ant1**

| | |
|---|---|
| **Channel:** | 1413 |
| **Frequency (MHz):** | 1732.6 |
| **Detector / Trace Mode:** | RMS / Average |
| **RBW / VBW:** | 1MHz / 3MHz |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3465.20 | H | - | - | -76.89 | 1.21 | 31.32 | -63.94 | -13.00 | -50.94 |
| 5197.80 | H | 277 | 127 | -77.16 | 4.22 | 34.06 | -61.19 | -13.00 | -48.19 |
| 6930.40 | H | - | - | -78.28 | 7.70 | 36.42 | -58.84 | -13.00 | -45.84 |
| 8663.00 | H | - | - | -79.05 | 10.06 | 38.01 | -57.25 | -13.00 | -44.25 |
| 10395.60 | H | - | - | -80.55 | 11.68 | 38.13 | -57.13 | -13.00 | -44.13 |

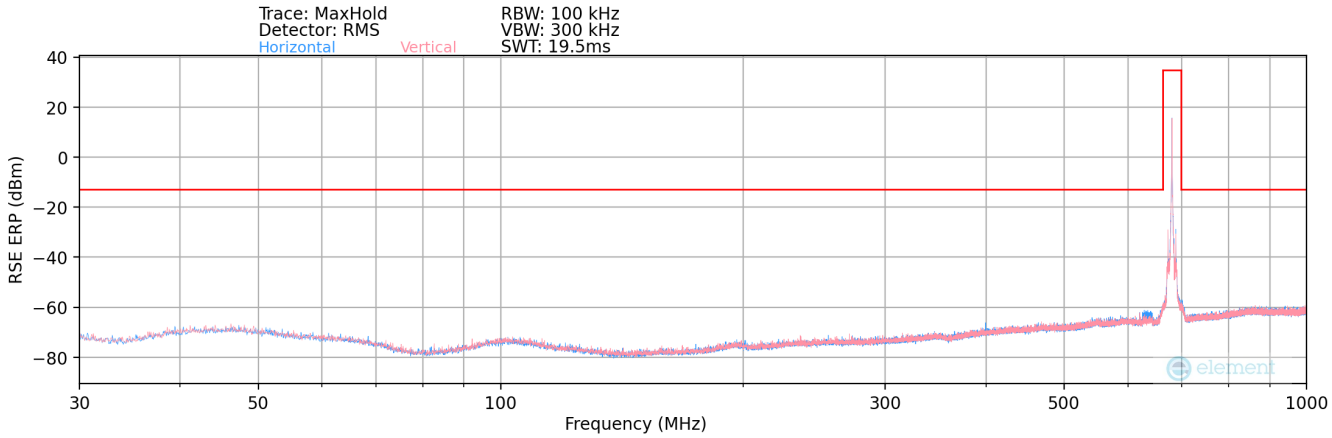
**Table 7-31. Radiated Spurious Data (WCDMA AWS – Mid Channel) – Ant1**

| | |
|---|---|
| **Channel:** | 1513 |
| **Frequency (MHz):** | 1752.6 |
| **Detector / Trace Mode:** | RMS / Average |
| **RBW / VBW:** | 1MHz / 3MHz |

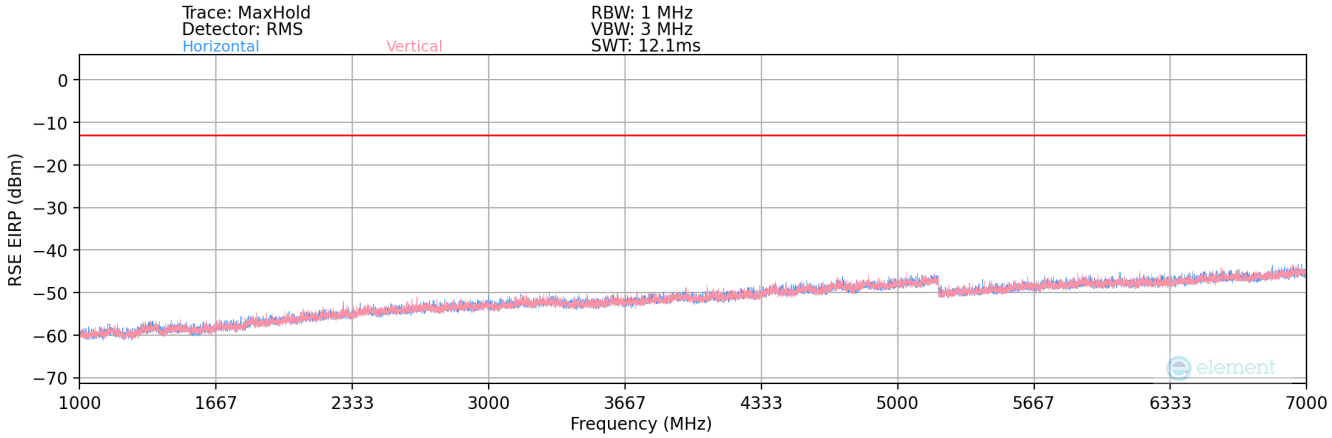
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3505.20 | H | - | - | -76.89 | 1.18 | 31.29 | -63.96 | -13.00 | -50.96 |
| 5257.80 | H | 277 | 127 | -77.16 | 3.97 | 33.81 | -61.44 | -13.00 | -48.44 |
| 7010.40 | H | - | - | -78.28 | 7.14 | 35.86 | -59.40 | -13.00 | -46.40 |
| 8763.00 | H | - | - | -79.05 | 9.65 | 37.60 | -57.66 | -13.00 | -44.66 |
| 10515.60 | H | - | - | -80.55 | 11.74 | 38.19 | -57.06 | -13.00 | -44.06 |

**Table 7-32. Radiated Spurious Data (WCDMA AWS – High Channel) – Ant1**

## LTE Band 71 – Ant1




**Plot 7-197. Radiated Spurious Plot (LTE Band 71) – Ant1**




**Plot 7-198. Radiated Spurious Plot (LTE Band 71) – Ant1**

| | |
|---|---|
| **Mode:** | 20 |
| **Channel:** | 680.5 |
| **Frequency (MHz):** | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 92.00 | V | - | - | -80.04 | -15.04 | 11.92 | -85.49 | -13.00 | -72.49 |

**Table 7-33. Radiated Spurious Data (LTE Band 71) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 673 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1346.00 | V | 300 | 49 | -73.45 | -0.35 | 33.20 | -62.05 | -13.00 | -49.05 |
| 2019.00 | V | 376 | 83 | -78.43 | 2.42 | 30.99 | -64.27 | -13.00 | -51.27 |
| 2692.00 | V | - | - | -79.32 | 4.85 | 32.53 | -62.73 | -13.00 | -49.73 |
| 3365.00 | V | - | - | -79.83 | 6.55 | 33.72 | -61.54 | -13.00 | -48.54 |
| 4038.00 | V | - | - | -80.21 | 7.93 | 34.72 | -60.53 | -13.00 | -47.53 |

**Table 7-34. Radiated Spurious Data (LTE Band 71 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 680.5 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1361.00 | V | 212 | 70 | -74.93 | -0.27 | 31.80 | -63.45 | -13.00 | -50.45 |
| 2041.50 | V | - | - | -78.38 | 1.85 | 30.47 | -64.79 | -13.00 | -51.79 |
| 2722.00 | V | - | - | -79.54 | 4.93 | 32.39 | -62.87 | -13.00 | -49.87 |
| 3402.50 | V | - | - | -79.87 | 6.42 | 33.55 | -61.71 | -13.00 | -48.71 |

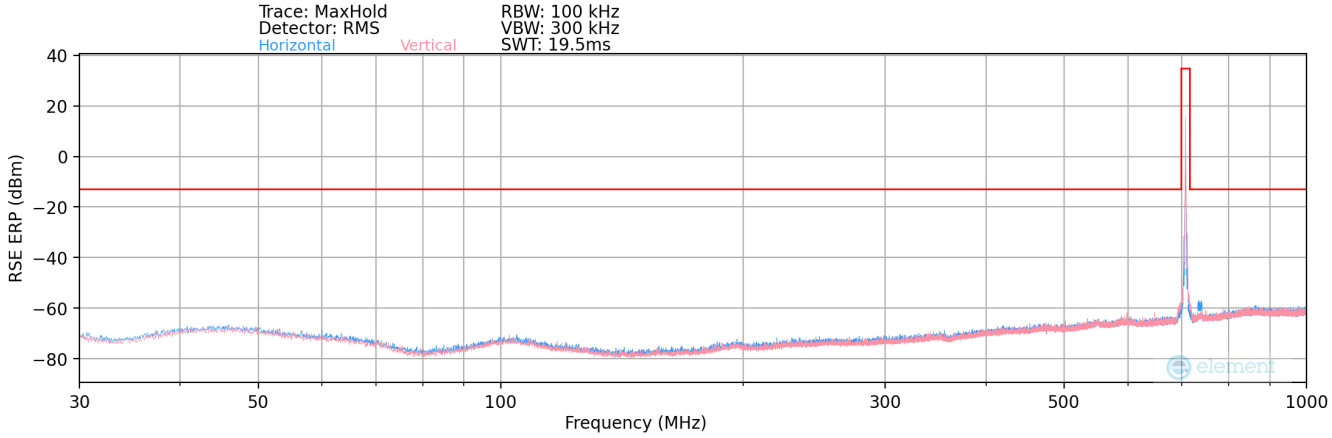
**Table 7-35. Radiated Spurious Data (LTE Band 71 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 688 |
| RB / Offset: | 1 / 50 |

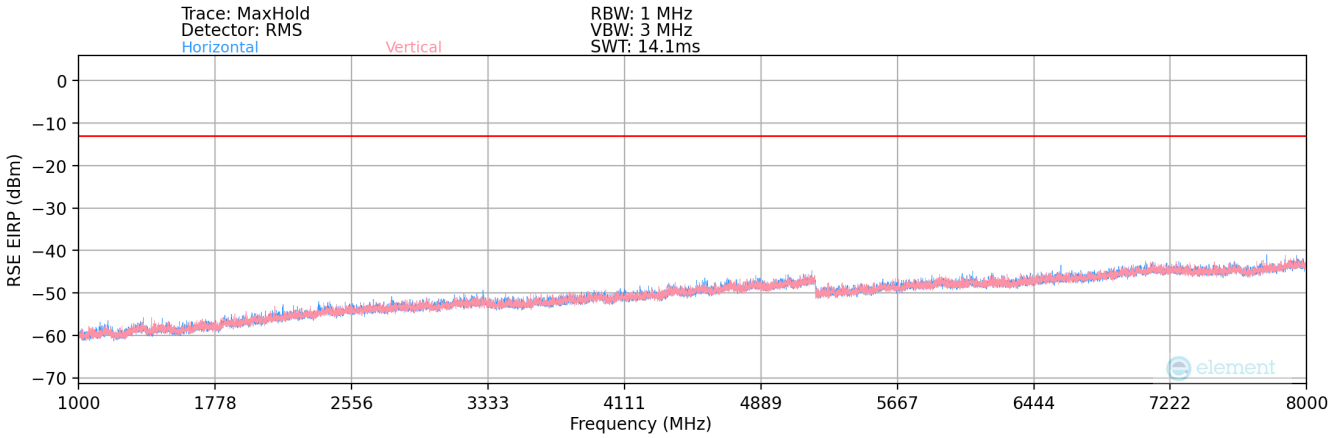
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1376.00 | V | 304 | 87 | -71.76 | -0.56 | 34.68 | -60.58 | -13.00 | -47.58 |
| 2064.00 | V | 283 | 36 | -78.02 | 1.76 | 30.74 | -64.51 | -13.00 | -51.51 |
| 2752.00 | V | - | - | -79.25 | 4.49 | 32.24 | -63.02 | -13.00 | -50.02 |
| 3440.00 | V | - | - | -79.75 | 6.90 | 34.15 | -61.11 | -13.00 | -48.11 |
| 4128.00 | V | - | - | -80.43 | 8.10 | 34.67 | -60.58 | -13.00 | -47.58 |

**Table 7-36. Radiated Spurious Data (LTE Band 71 – High Channel) – Ant1**

## LTE Band 12 – Ant1




**Plot 7-199. Radiated Spurious Plot (LTE Band 12) – Ant1**




**Plot 7-200. Radiated Spurious Plot (LTE Band 12) – Ant1**

| | |
|---|---|
| **Mode:** | 10 |
| **Channel:** | 707.5 |
| **Frequency (MHz):** | 1 / 25 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 598.00 | V | - | - | -86.16 | -4.60 | 16.24 | -81.17 | -13.00 | -68.17 |

**Table 7-37. Radiated Spurious Data (LTE Band 12 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 10 |
| Frequency (MHz): | 704 |
| RB / Offset: | 1 / 25 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1408.00 | V | 303 | 57 | -71.49 | -1.67 | 33.84 | -61.42 | -13.00 | -48.42 |
| 2112.00 | V | - | - | -78.94 | 2.81 | 30.87 | -64.39 | -13.00 | -51.39 |
| 2816.00 | V | - | - | -79.28 | 5.06 | 32.78 | -62.48 | -13.00 | -49.48 |
| 3520.00 | V | - | - | -80.07 | 6.82 | 33.75 | -61.50 | -13.00 | -48.50 |

**Table 7-38. Radiated Spurious Data (LTE Band 12 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 10 |
| Frequency (MHz): | 707.5 |
| RB / Offset: | 1 / 25 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1415.00 | V | 271 | 64 | -72.03 | -1.67 | 33.30 | -61.95 | -13.00 | -48.95 |
| 2122.50 | V | 153 | 99 | -77.98 | 2.79 | 31.81 | -63.45 | -13.00 | -50.45 |
| 2830.00 | V | - | - | -79.48 | 5.21 | 32.73 | -62.53 | -13.00 | -49.53 |
| 3537.50 | V | - | - | -79.83 | 6.77 | 33.94 | -61.31 | -13.00 | -48.31 |
| 4245.00 | V | - | - | -80.56 | 8.67 | 35.11 | -60.15 | -13.00 | -47.15 |

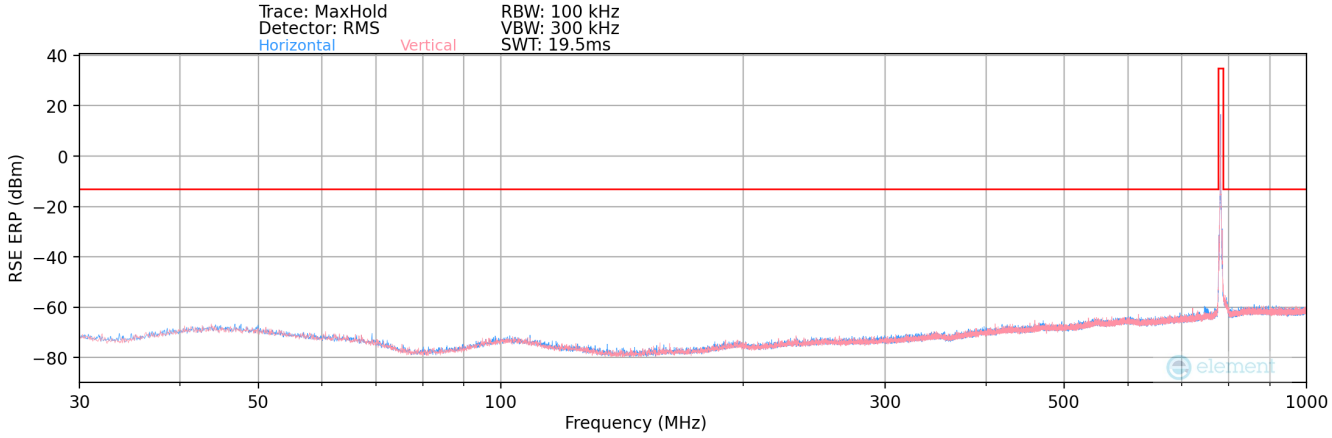
**Table 7-39. Radiated Spurious Data (LTE Band 12 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 10 |
| Frequency (MHz): | 711 |
| RB / Offset: | 1 / 25 |

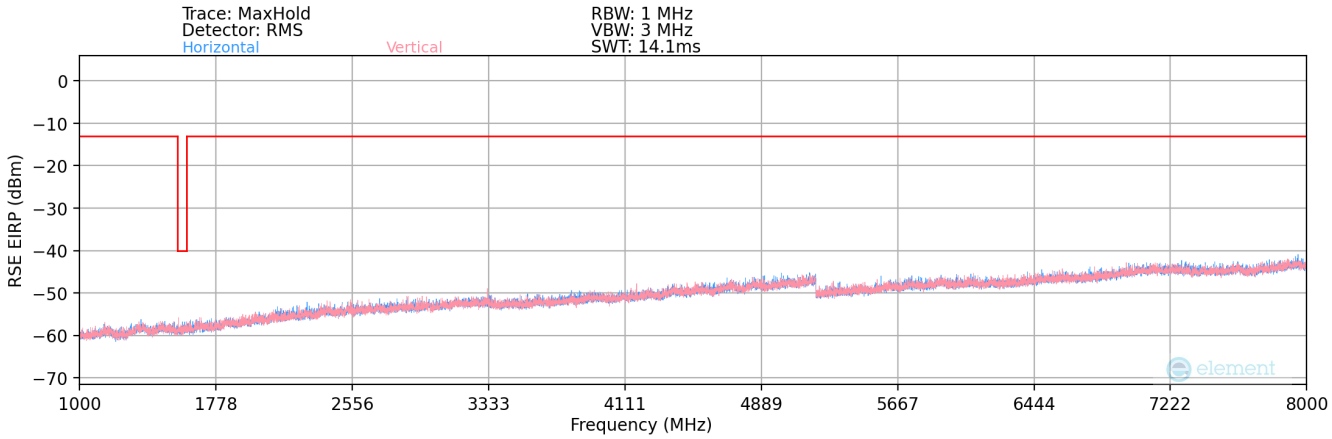
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1422.00 | V | 260 | 76 | -70.59 | -1.45 | 34.96 | -60.29 | -13.00 | -47.29 |
| 2133.00 | V | 194 | 58 | -77.35 | 2.68 | 32.33 | -62.93 | -13.00 | -49.93 |
| 2844.00 | V | - | - | -79.12 | 5.02 | 32.90 | -62.36 | -13.00 | -49.36 |
| 3555.00 | V | - | - | -79.87 | 6.78 | 33.91 | -61.35 | -13.00 | -48.35 |
| 4266.00 | V | - | - | -80.52 | 8.57 | 35.05 | -60.21 | -13.00 | -47.21 |

**Table 7-40. Radiated Spurious Data (LTE Band 12 – High Channel) – Ant1**

## LTE Band 13 – Ant1




**Plot 7-201. Radiated Spurious Plot (LTE Band 13) – Ant1**




**Plot 7-202. Radiated Spurious Plot (LTE Band 13) – Ant1**

| | |
|---|---|
| **Mode:** | 10 |
| **Channel:** | 782 |
| **Frequency (MHz):** | 1 / 25 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 233.00 | V | - | - | -83.08 | -12.51 | 11.41 | -86.00 | -13.00 | -73.00 |

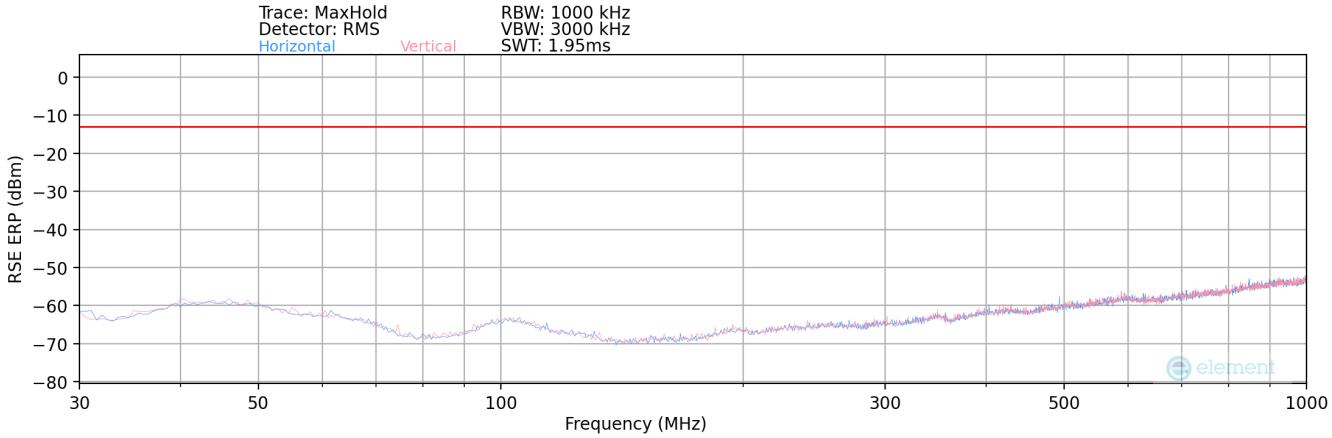
**Table 7-41. Radiated Spurious Data (LTE Band 13) – Ant1**

| | |
|---|---|
| **Bandwidth (MHz):** | 10 |
| **Frequency (MHz):** | 782 |
| **RB / Offset:** | 1 / 25 |

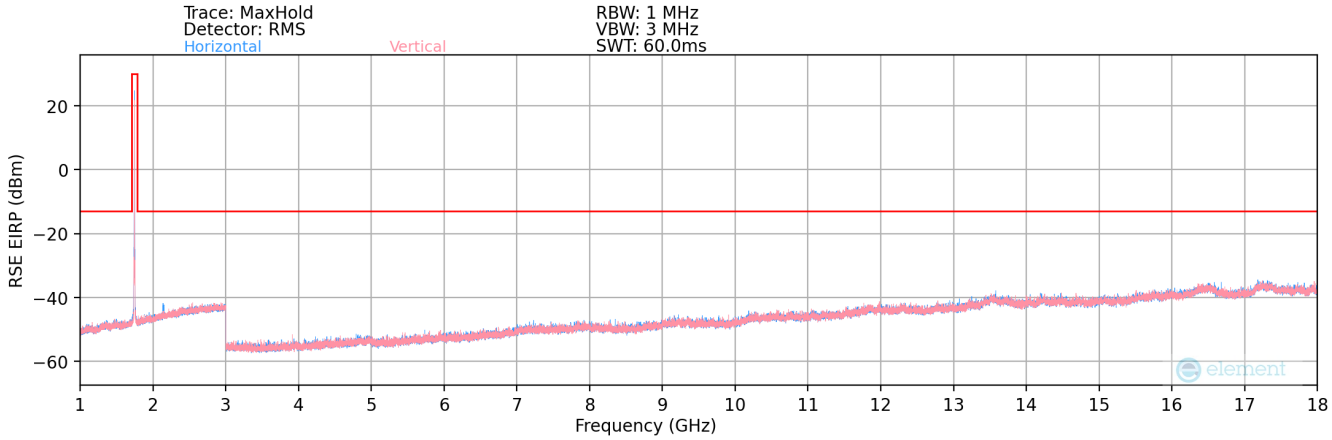
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1564.00 | V | 329 | 101 | -74.75 | -0.92 | 31.33 | -63.92 | -40.00 | -23.92 |
| 2346.00 | V | - | - | -78.83 | 3.24 | 31.41 | -63.84 | -13.00 | -50.84 |
| 3128.00 | V | - | - | -79.63 | 6.01 | 33.38 | -61.88 | -13.00 | -48.88 |
| 3910.00 | V | - | - | -80.25 | 8.28 | 35.03 | -60.23 | -13.00 | -47.23 |

**Table 7-42. Radiated Spurious Data (LTE Band 13 – Mid Channel) – Ant1**

## LTE Band 66/4 – Ant1




**Plot 7-203. Radiated Spurious Plot (LTE Band 66/4) – Ant1**




**Plot 7-204. Radiated Spurious Plot (LTE Band 66/4) – Ant1**

| | |
|---|---|
| **Mode:** | 20 |
| **Channel:** | 1745 |
| **Frequency (MHz):** | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 497.00 | H | - | - | -76.08 | -6.79 | 24.13 | -73.28 | -13.00 | -60.28 |

**Table 7-43. Radiated Spurious Data (LTE Band 66/4) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1720 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3440.00 | H | - | - | -79.72 | 7.22 | 34.50 | -60.75 | -13.00 | -47.75 |
| 5160.00 | H | - | - | -81.24 | 10.65 | 36.41 | -58.85 | -13.00 | -45.85 |
| 6880.00 | H | - | - | -81.80 | 13.86 | 39.06 | -56.19 | -13.00 | -43.19 |

**Table 7-44. Radiated Spurious Data (LTE Band 66/4 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1745 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3490.00 | H | - | - | -79.50 | 7.16 | 34.66 | -60.60 | -13.00 | -47.60 |
| 5235.00 | H | - | - | -81.21 | 10.29 | 36.08 | -59.18 | -13.00 | -46.18 |
| 6980.00 | H | - | - | -81.84 | 13.87 | 39.03 | -56.23 | -13.00 | -43.23 |

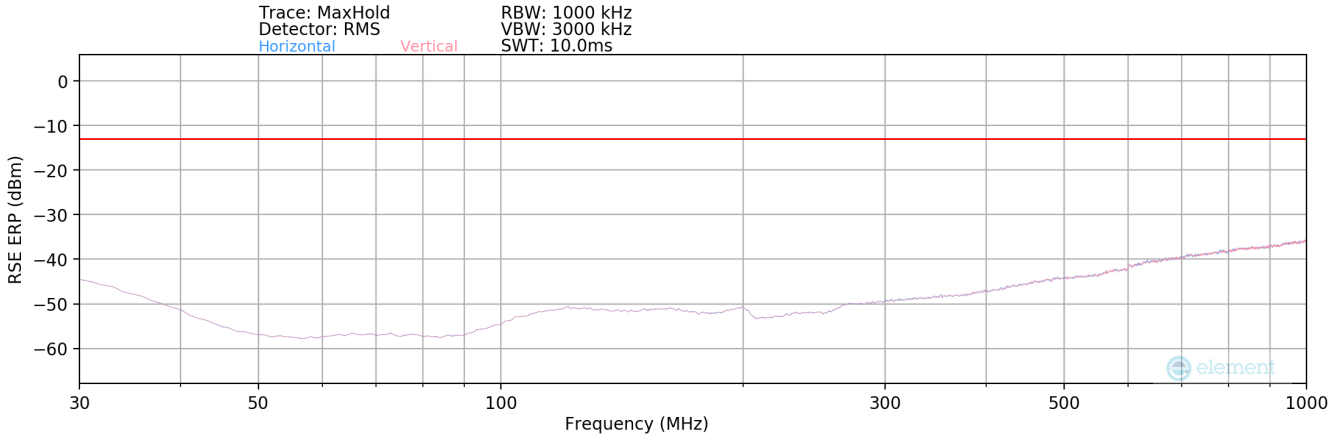
**Table 7-45. Radiated Spurious Data (LTE Band 66/4 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1770 |
| RB / Offset: | 1 / 50 |

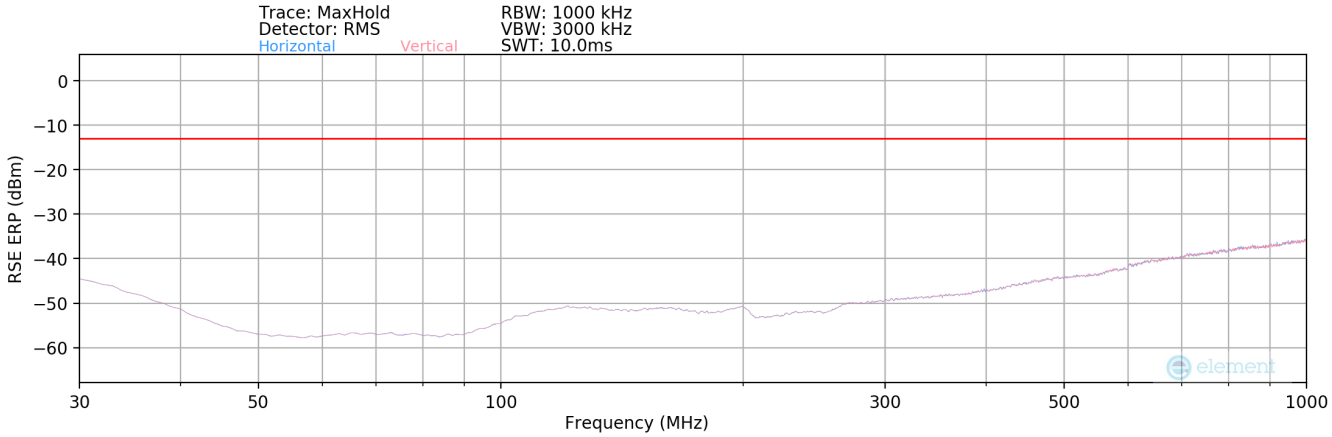
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3540.00 | H | - | - | -80.01 | 7.31 | 34.30 | -60.96 | -13.00 | -47.96 |
| 5310.00 | H | - | - | -81.43 | 10.65 | 36.22 | -59.03 | -13.00 | -46.03 |
| 7080.00 | H | - | - | -82.13 | 14.20 | 39.07 | -56.19 | -13.00 | -43.19 |

**Table 7-46. Radiated Spurious Data (LTE Band 66/4 – High Channel) – Ant1**

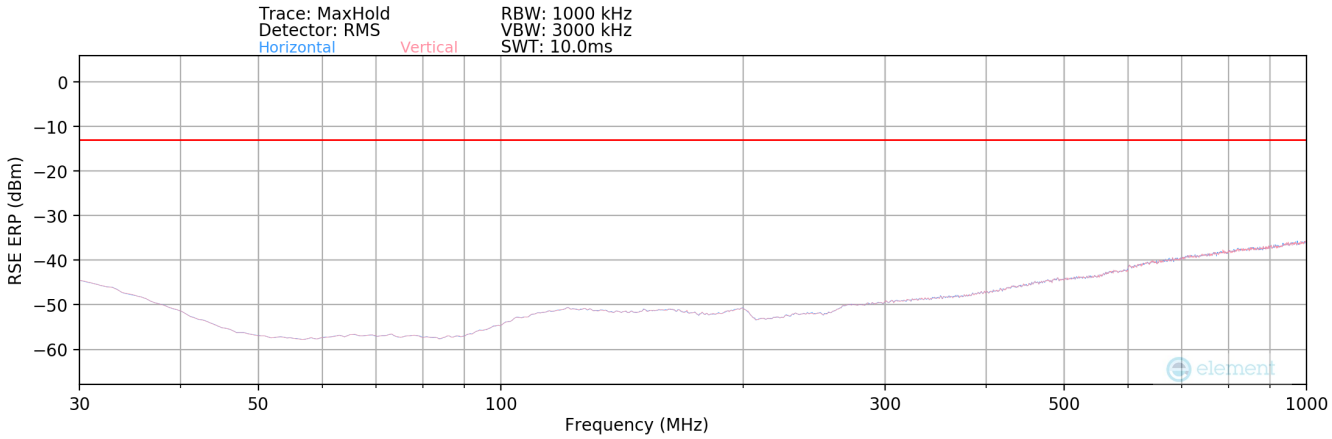
## Uplink CA LTE Band 66B/C – Ant1



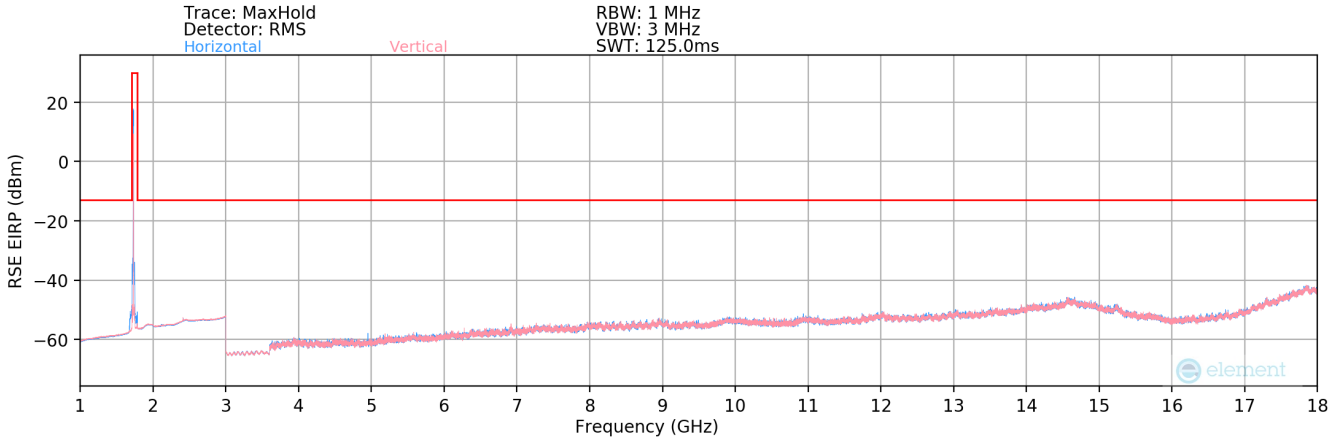

**Plot 7-205. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – Low Channel)**



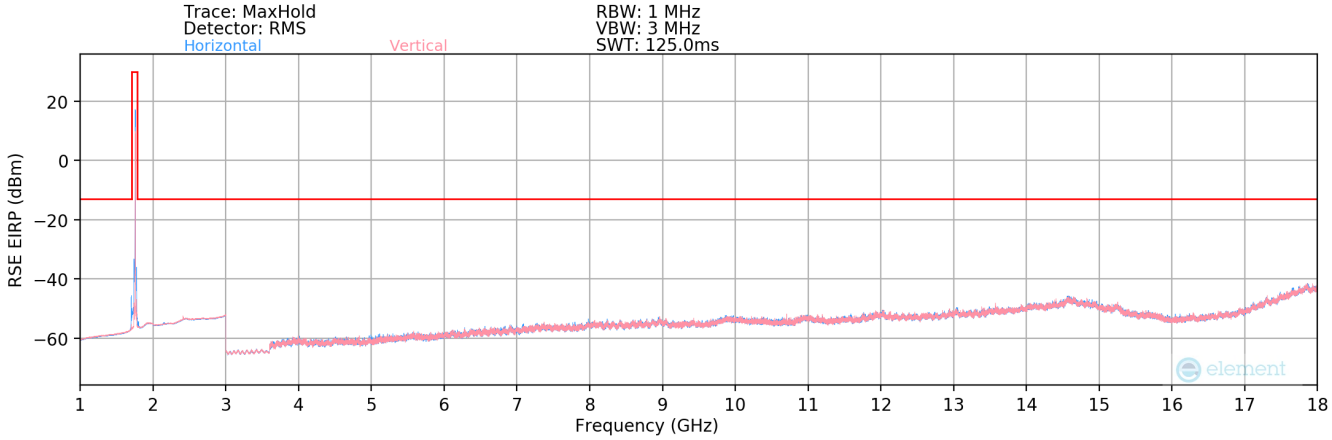

**Plot 7-206. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – Mid Channel)**



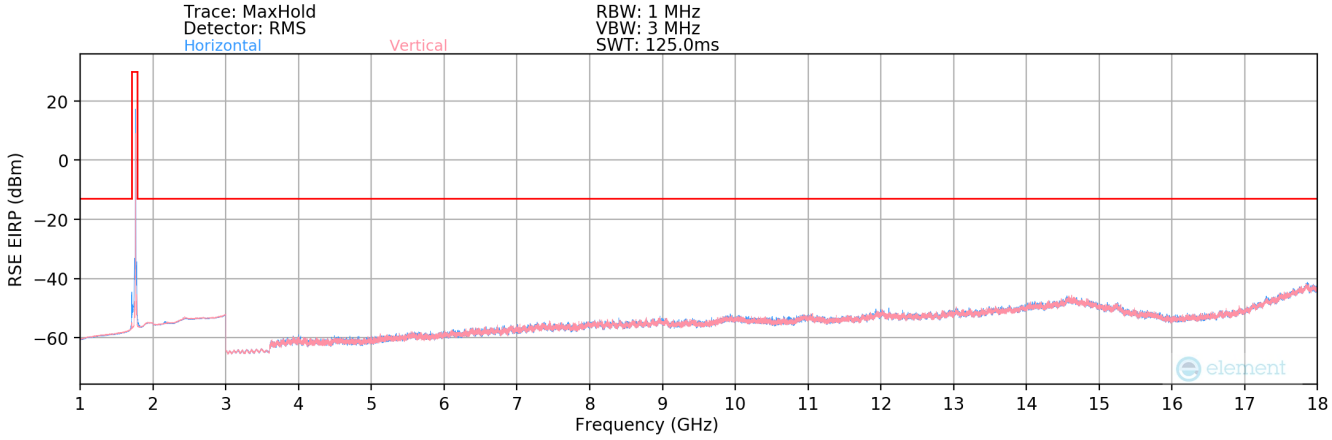

**Plot 7-207. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – High Channel)**




**Plot 7-208. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – Low Channel)**




**Plot 7-209. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – Mid Channel)**




**Plot 7-210. Radiated Spurious Plot (ULCA LTE Band 66 – Ant1 – High Channel)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 1770.0 |
| PCC RB / Offset: | 1 / 0 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 1750.2 |
| SCC RB / Offset: | 1 / 99 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 172.59 | V | - | - | -84.16 | 19.10 | 41.94 | -55.47 | -13.00 | -42.47 |
| 351.34 | V | - | - | -83.99 | 22.42 | 45.43 | -51.98 | -13.00 | -38.98 |
| 478.17 | V | - | - | -83.89 | 25.61 | 48.72 | -48.69 | -13.00 | -35.69 |

**7-47. Radiated Spurious Data (ULCA LTE66 – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 1720.0 |
| PCC RB / Offset: | 1 / 99 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 1739.8 |
| SCC RB / Offset: | 1 / 0 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3440.00 | V | - | - | -76.92 | 1.46 | 31.54 | -63.72 | -13.00 | -50.72 |
| 5160.00 | V | - | - | -78.44 | 3.95 | 32.51 | -62.75 | -13.00 | -49.75 |
| 6880.00 | V | 331 | 188 | -75.32 | 8.16 | 39.84 | -55.42 | -13.00 | -42.42 |
| 8600.00 | V | - | - | -79.47 | 10.16 | 37.69 | -57.57 | -13.00 | -44.57 |
| 10320.00 | V | - | - | -80.39 | 11.22 | 37.83 | -57.43 | -13.00 | -44.43 |
| 12040.00 | V | - | - | -80.14 | 13.90 | 40.76 | -54.50 | -13.00 | -41.50 |

**7-48. Radiated Spurious Data (ULCA LTE66 – Low Channel – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 1745.0 |
| PCC RB / Offset: | 1 / 99 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 1764.8 |
| SCC RB / Offset: | 1 / 0 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3490.00 | V | - | - | -76.86 | 1.25 | 31.39 | -63.86 | -13.00 | -50.86 |
| 5235.00 | V | - | - | -78.41 | 4.15 | 32.74 | -62.51 | -13.00 | -49.51 |
| 6980.00 | V | 300 | 216 | -75.97 | 7.18 | 38.21 | -57.05 | -13.00 | -44.05 |
| 8725.00 | V | - | - | -78.87 | 9.91 | 38.04 | -57.22 | -13.00 | -44.22 |
| 10470.00 | V | - | - | -80.56 | 12.08 | 38.52 | -56.73 | -13.00 | -43.73 |
| 12215.00 | V | - | - | -80.23 | 13.67 | 40.44 | -54.82 | -13.00 | -41.82 |

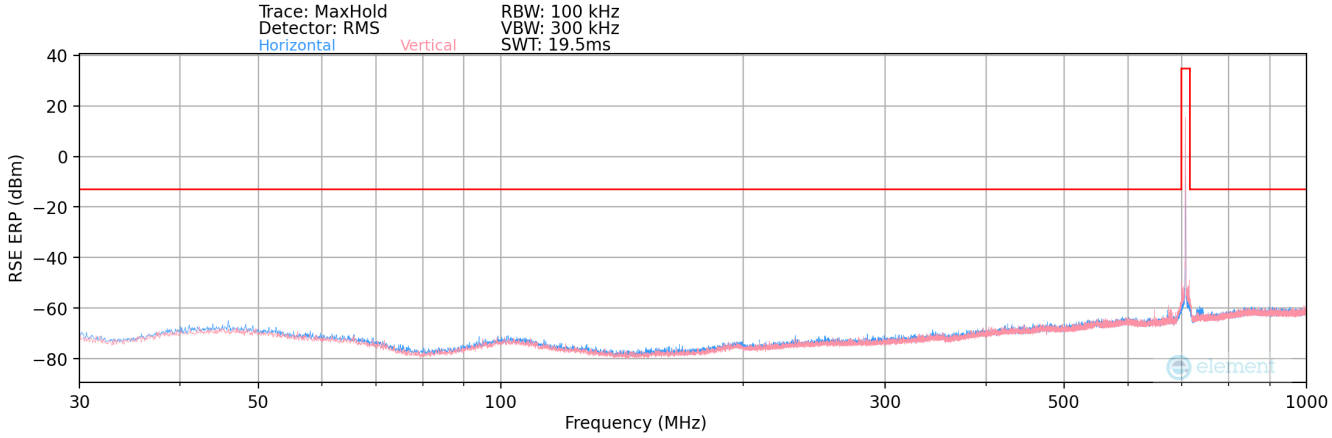
**Table 7-49. Radiated Spurious Data (ULCA LTE66 – Mid Channel – Ant1)**

| | |
|---|---|
| **PCC Bandwidth (MHz):** | 20 |
| **PCC Frequency (MHz):** | 1770.0 |
| **PCC RB / Offset:** | 1 / 0 |
| **SCC Bandwidth (MHz):** | 20 |
| **SCC Frequency (MHz):** | 1750.2 |
| **SCC RB / Offset:** | 1 / 99 |

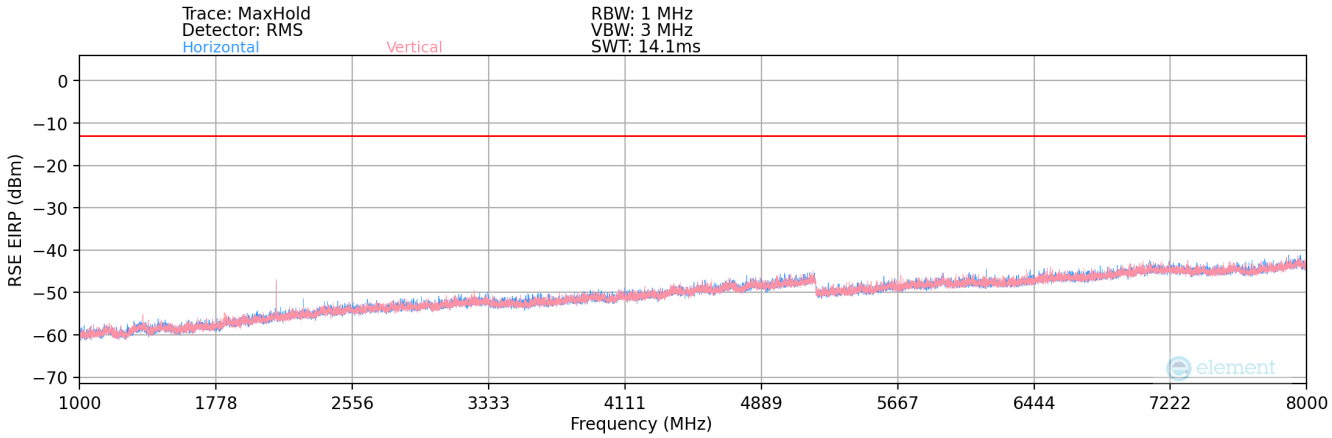
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3540.00 | V | - | - | -76.86 | 0.82 | 30.96 | -64.30 | -13.00 | -51.30 |
| 5310.00 | V | - | - | -78.47 | 3.85 | 32.38 | -62.88 | -13.00 | -49.88 |
| 7080.00 | V | 309 | 218 | -74.62 | 7.57 | 39.95 | -55.31 | -13.00 | -42.31 |
| 8850.00 | V | - | - | -78.85 | 9.90 | 38.05 | -57.20 | -13.00 | -44.20 |
| 10620.00 | V | - | - | -80.55 | 12.14 | 38.59 | -56.67 | -13.00 | -43.67 |
| 12390.00 | V | - | - | -80.21 | 13.63 | 40.42 | -54.84 | -13.00 | -41.84 |

**Table 7-50. Radiated Spurious Data (ULCA LTE66 – High Channel – Ant1)**

## NR Band n12 – Ant1




**Plot 7-211. Radiated Spurious Plot (NR Band n12) – Ant1**




**Plot 7-212. Radiated Spurious Plot (NR Band n12) – Ant1**

| | |
|---|---|
| **Mode:** | Stand Alone |
| **Bandwidth (MHz):** | 15 |
| **Frequency (MHz):** | 707.5 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 93.12 | V | - | - | -91.55 | -14.84 | 0.61 | -96.80 | -13.00 | -83.80 |
| 211.42 | V | - | - | -91.24 | -13.81 | 1.95 | -95.45 | -13.00 | -82.45 |
| 480.31 | V | - | - | -89.31 | -7.07 | 10.62 | -86.79 | -13.00 | -73.79 |

**Table 7-51. Radiated Spurious Data (NR Band n12) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 15 |
| Frequency (MHz): | 706.5 |
| RB / Offset: | 1 / 39 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1413.00 | V | 278 | 100 | -74.31 | -1.71 | 30.98 | -64.27 | -13.00 | -51.27 |
| 2119.50 | V | 353 | 95 | -66.37 | 2.82 | 43.45 | -51.81 | -13.00 | -38.81 |
| 2826.00 | V | - | - | -79.31 | 5.17 | 32.86 | -62.40 | -13.00 | -49.40 |
| 3532.50 | V | - | - | -79.87 | 6.78 | 33.91 | -61.34 | -13.00 | -48.34 |
| 4239.00 | V | - | - | -80.44 | 8.69 | 35.25 | -60.00 | -13.00 | -47.00 |

**Table 7-52. Radiated Spurious Data (NR Band n12 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 15 |
| Frequency (MHz): | 707.5 |
| RB / Offset: | 1 / 39 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1415.00 | V | 262 | 60 | -73.66 | -1.67 | 31.67 | -63.58 | -13.00 | -50.58 |
| 2122.50 | V | 346 | 59 | -65.55 | 2.79 | 44.24 | -51.02 | -13.00 | -38.02 |
| 2830.00 | V | - | - | -79.28 | 5.21 | 32.93 | -62.33 | -13.00 | -49.33 |
| 3537.50 | V | - | - | -79.90 | 6.77 | 33.87 | -61.38 | -13.00 | -48.38 |
| 4245.00 | V | - | - | -80.59 | 8.67 | 35.08 | -60.18 | -13.00 | -47.18 |

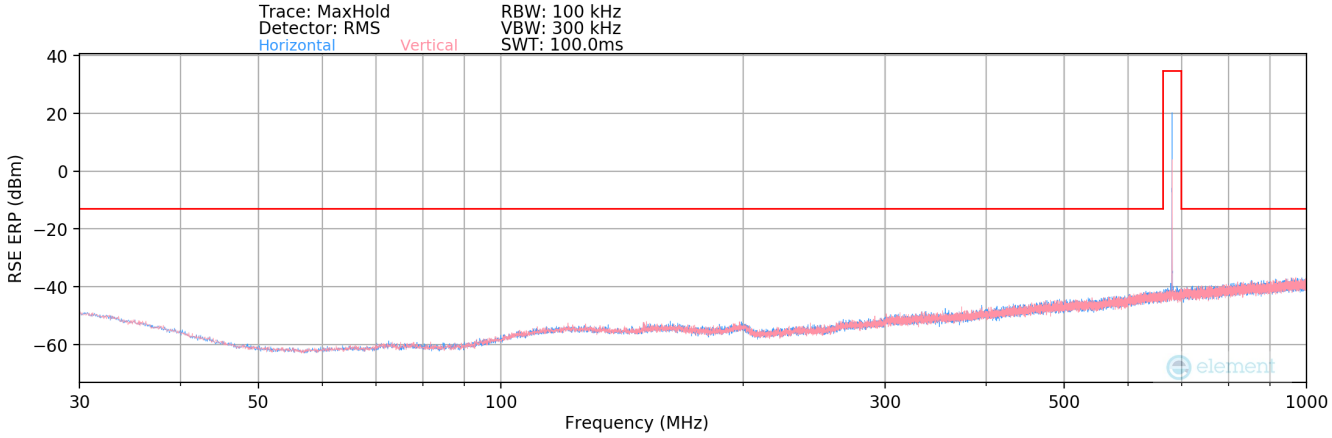
**Table 7-53. Radiated Spurious Data (NR Band n12 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 15 |
| Frequency (MHz): | 708.5 |
| RB / Offset: | 1 / 39 |

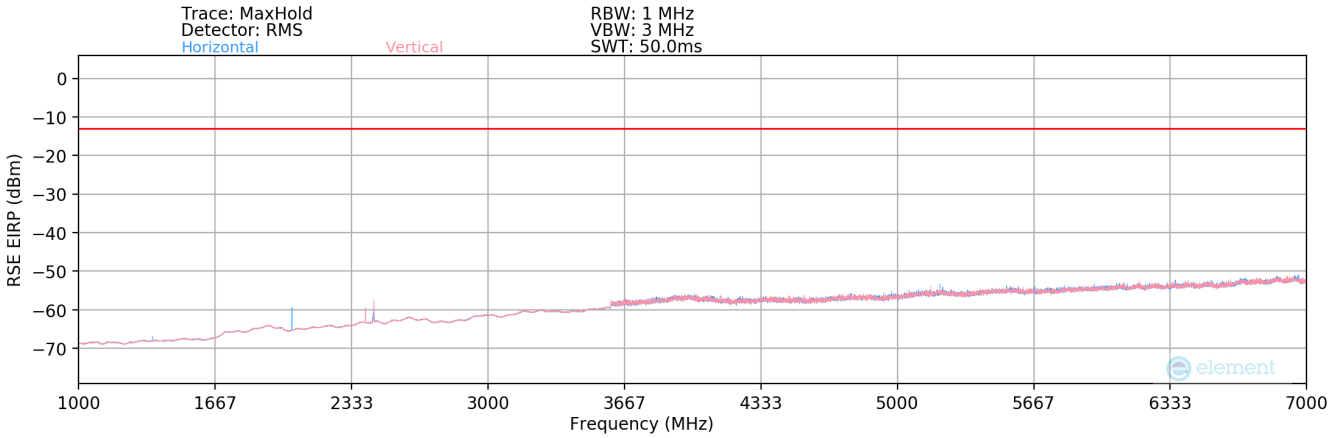
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1417.00 | V | 280 | 57 | -73.11 | -1.60 | 32.29 | -62.97 | -13.00 | -49.97 |
| 2125.50 | V | 315 | 43 | -67.74 | 2.76 | 42.02 | -53.24 | -13.00 | -40.24 |
| 2834.00 | V | - | - | -79.27 | 5.23 | 32.96 | -62.29 | -13.00 | -49.29 |
| 3542.50 | V | - | - | -79.76 | 6.76 | 34.00 | -61.25 | -13.00 | -48.25 |
| 4251.00 | V | - | - | -80.64 | 8.65 | 35.01 | -60.24 | -13.00 | -47.24 |

**Table 7-54. Radiated Spurious Data (NR Band n12 – High Channel) – Ant1**

## NR Band n71 – Ant1




**Plot 7-213. Radiated Spurious Plot (NR Band n71) – Ant1**




**Plot 7-214. Radiated Spurious Plot (NR Band n71) – Ant1**

| | |
|---|---|
| **Mode:** | Stand Alone |
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 688 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 77.00 | H | - | - | -89.56 | 14.76 | 32.20 | -65.21 | -13.00 | -52.21 |
| 301.68 | H | - | - | -89.33 | 21.26 | 38.93 | -58.48 | -13.00 | -45.48 |
| 492.86 | H | - | - | -89.71 | 25.59 | 42.88 | -54.53 | -13.00 | -41.53 |

**Table 7-55. Radiated Spurious Data (NR Band n71 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 673 |
| RB / Offset: | 1 / 53 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1346.00 | H | 182 | 120 | -72.41 | -7.38 | 27.21 | -68.05 | -13.00 | -55.05 |
| 2019.00 | H | 136 | 60 | -72.16 | -4.61 | 30.23 | -65.02 | -13.00 | -52.02 |
| 2692.00 | H | - | - | -76.55 | -1.75 | 28.70 | -66.56 | -13.00 | -53.56 |
| 3365.00 | H | - | - | -76.77 | 0.17 | 30.40 | -64.85 | -13.00 | -51.85 |

**Table 7-56. Radiated Spurious Data (NR Band n71 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 680.5 |
| RB / Offset: | 1 / 53 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1361.00 | H | 158 | 98 | -72.40 | -7.38 | 27.22 | -68.03 | -13.00 | -55.03 |
| 2041.50 | H | 200 | 68 | -66.03 | -4.41 | 36.56 | -58.70 | -13.00 | -45.70 |
| 2722.00 | H | - | - | -76.64 | -2.25 | 28.11 | -67.15 | -13.00 | -54.15 |
| 3402.50 | H | - | - | -76.63 | 0.13 | 30.50 | -64.76 | -13.00 | -51.76 |
| 4083.00 | H | - | - | -77.75 | 2.21 | 31.46 | -63.80 | -13.00 | -50.80 |

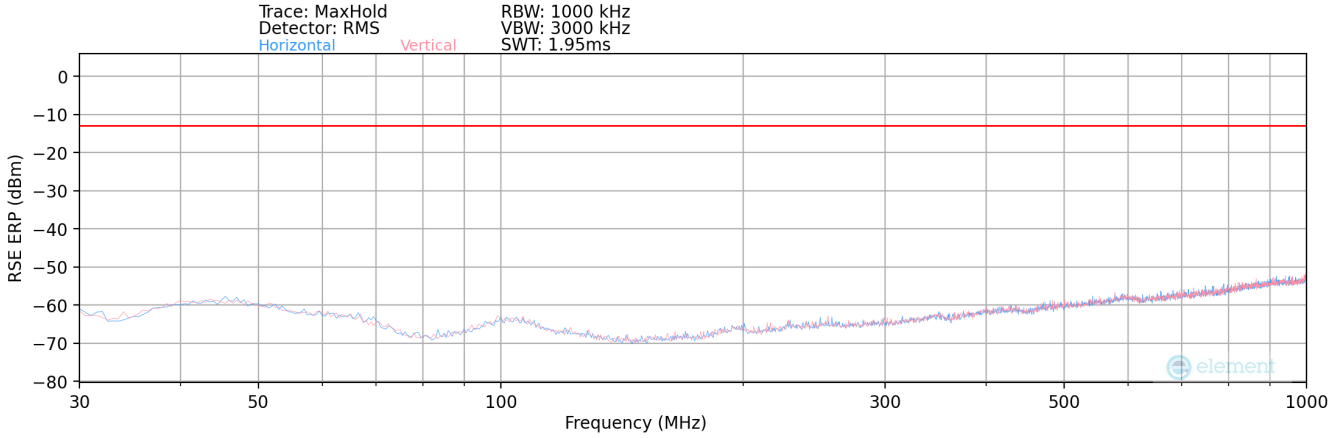
**Table 7-57. Radiated Spurious Data (NR Band n71 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 688 |
| RB / Offset: | 1 / 53 |

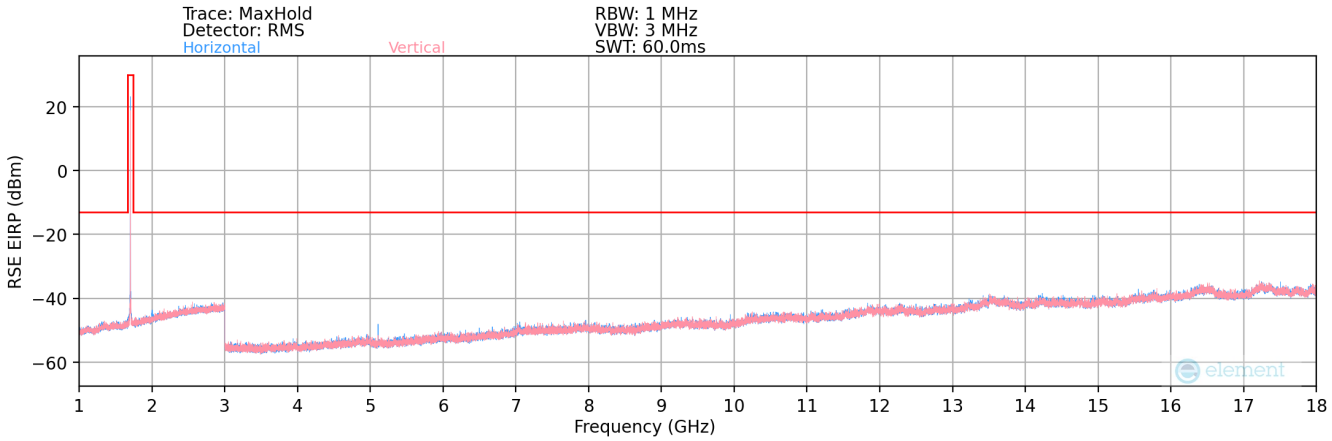
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 1376.00 | H | 159 | 106 | -71.66 | -7.38 | 27.96 | -67.30 | -13.00 | -54.30 |
| 2064.00 | H | 157 | 64 | -64.79 | -4.27 | 37.94 | -57.32 | -13.00 | -44.32 |
| 2752.00 | H | - | - | -76.61 | -2.41 | 27.98 | -67.27 | -13.00 | -54.27 |
| 3440.00 | H | - | - | -76.56 | 0.18 | 30.62 | -64.64 | -13.00 | -51.64 |
| 4128.00 | H | - | - | -77.48 | 1.86 | 31.38 | -63.87 | -13.00 | -50.87 |

**Table 7-58. Radiated Spurious Data (NR Band n71 – High Channel) – Ant1**

## NR Band n70 – Ant1




**Plot 7-215. Radiated Spurious Plot (NR Band n70) – Ant1**




**Plot 7-216. Radiated Spurious Plot (NR Band n70) – Ant1**

| | |
|---|---|
| **Bandwidth (MHz):** | 15 |
| **Frequency (MHz):** | 1702.5 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 84.05 | H | - | - | -82.05 | -17.59 | 7.36 | -90.05 | -13.00 | -77.05 |
| 315.74 | H | - | - | -81.51 | -10.76 | 14.73 | -82.68 | -13.00 | -69.68 |
| 481.73 | H | - | - | -79.44 | -7.05 | 20.51 | -76.90 | -13.00 | -63.90 |

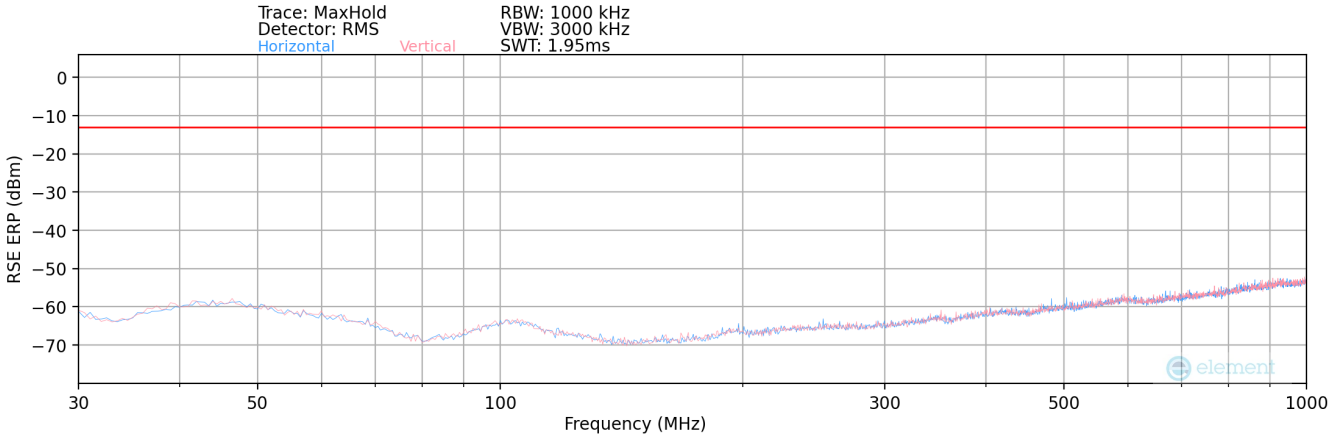
**Table 7-59. Radiated Spurious Data (NR Band n70) – Ant1**

| | |
|---|---|
| **Bandwidth (MHz):** | 15 |
| **Frequency (MHz):** | 1702.5 |
| **RB / Offset:** | 1 / 39 |

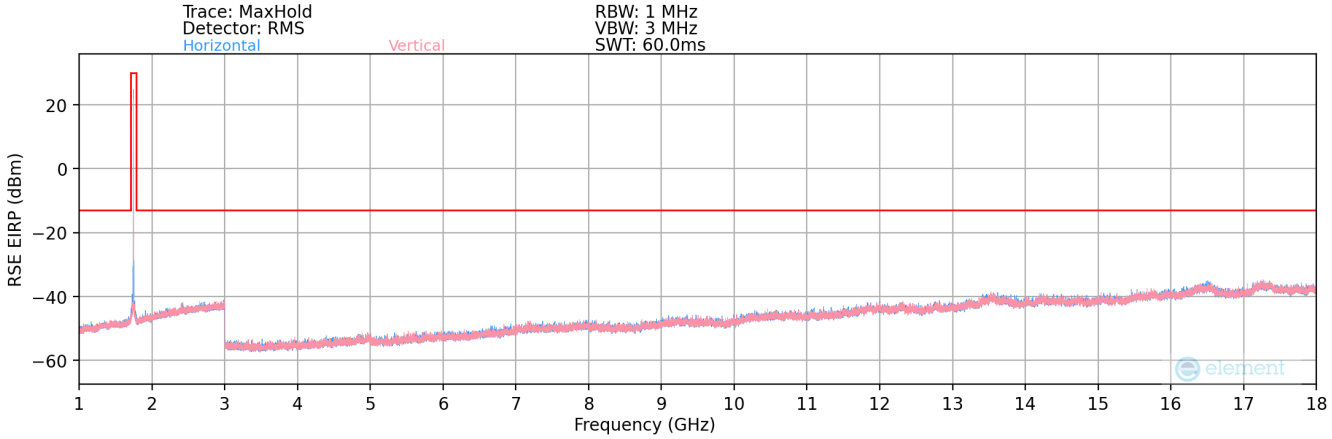
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3405.00 | H | 108 | 295 | -79.14 | 7.14 | 35.00 | -60.26 | -13.00 | -47.26 |
| 5107.50 | H | 112 | 158 | -76.53 | 10.35 | 40.82 | -54.44 | -13.00 | -41.44 |
| 6810.00 | H | - | - | -82.06 | 13.62 | 38.56 | -56.69 | -13.00 | -43.69 |
| 8512.50 | H | - | - | -83.03 | 16.10 | 40.07 | -55.19 | -13.00 | -42.19 |
| 10215.00 | H | - | - | -83.46 | 19.60 | 43.14 | -52.12 | -13.00 | -39.12 |

**Table 7-60. Radiated Spurious Data (NR Band n70 – Mid Channel) – Ant1**

## NR Band n66 – Ant1




**Plot 7-217. Radiated Spurious Plot (NR Band n66) – Ant1**




**Plot 7-218. Radiated Spurious Plot (NR Band n66) – Ant1**

| | |
|---|---|
| **Mode:** | Stand Alone |
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 1760 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 89.33 | H | - | - | -82.10 | -16.03 | 8.87 | -88.54 | -13.00 | -75.54 |
| 293.80 | H | - | - | -81.70 | -11.38 | 13.92 | -83.49 | -13.00 | -70.49 |
| 513.46 | H | - | - | -79.73 | -6.69 | 20.58 | -76.83 | -13.00 | -63.83 |

**Table 7-61. Radiated Spurious Data (NR Band n66) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 40 |
| Frequency (MHz): | 1730 |
| RB / Offset: | 1 / 108 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3460.00 | H | - | - | -79.60 | 7.09 | 34.49 | -60.77 | -13.00 | -47.77 |
| 5190.00 | H | 259 | 121 | -78.70 | 10.36 | 38.66 | -56.59 | -13.00 | -43.59 |
| 6920.00 | H | - | - | -81.88 | 13.69 | 38.81 | -56.45 | -13.00 | -43.45 |
| 8650.00 | H | - | - | -83.63 | 16.92 | 40.29 | -54.97 | -13.00 | -41.97 |
| 10380.00 | H | - | - | -82.91 | 19.71 | 43.80 | -51.46 | -13.00 | -38.46 |

**Table 7-62. Radiated Spurious Data (NR Band n66 – Low Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 40 |
| Frequency (MHz): | 1745 |
| RB / Offset: | 1 / 108 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3490.00 | H | - | - | -79.44 | 7.16 | 34.72 | -60.54 | -13.00 | -47.54 |
| 5235.00 | H | 238 | 126 | -78.35 | 10.29 | 38.94 | -56.32 | -13.00 | -43.32 |
| 6980.00 | H | - | - | -82.00 | 13.87 | 38.87 | -56.39 | -13.00 | -43.39 |
| 8725.00 | H | - | - | -82.93 | 16.38 | 40.45 | -54.81 | -13.00 | -41.81 |
| 10470.00 | H | - | - | -83.03 | 19.31 | 43.28 | -51.98 | -13.00 | -38.98 |

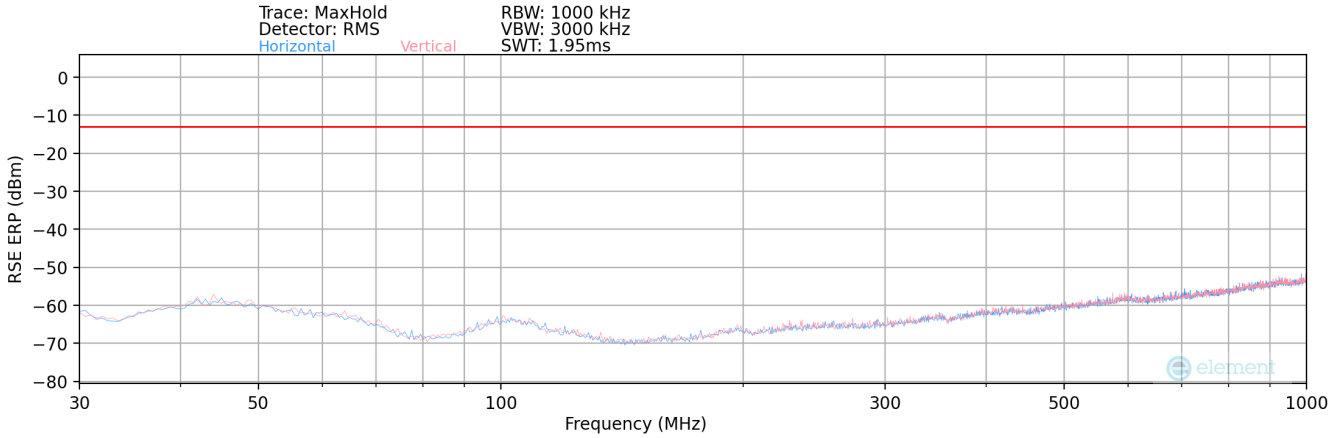
**Table 7-63. Radiated Spurious Data (NR Band n66 – Mid Channel) – Ant1**

| | |
|---|---|
| Bandwidth (MHz): | 40 |
| Frequency (MHz): | 1760 |
| RB / Offset: | 1 / 108 |

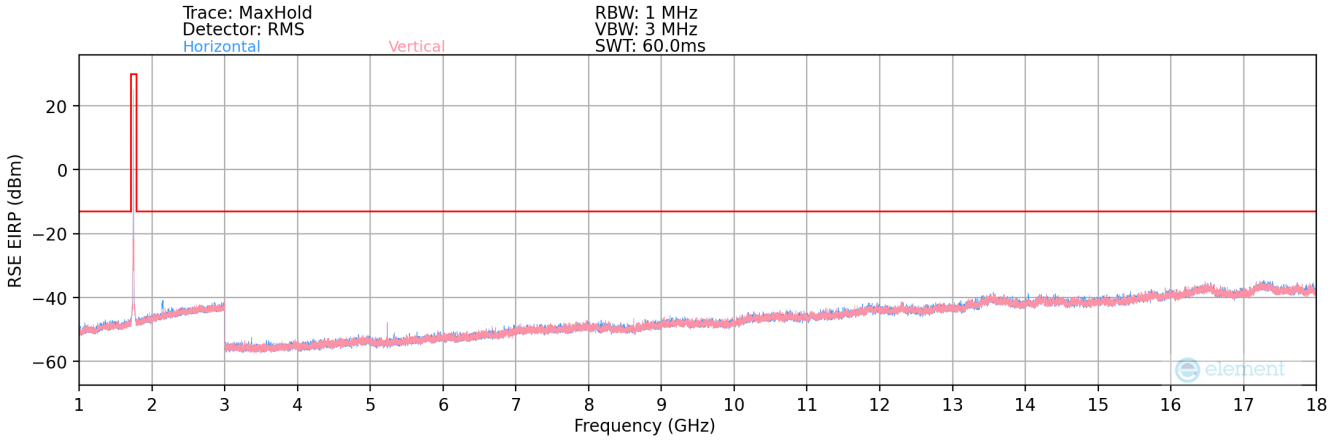
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3520.00 | H | - | - | -79.77 | 7.16 | 34.39 | -60.86 | -13.00 | -47.86 |
| 5280.00 | H | 234 | 124 | -77.57 | 10.33 | 39.76 | -55.50 | -13.00 | -42.50 |
| 7040.00 | H | - | - | -82.15 | 15.11 | 39.96 | -55.29 | -13.00 | -42.29 |
| 8800.00 | H | - | - | -82.84 | 16.90 | 41.06 | -54.20 | -13.00 | -41.20 |
| 10560.00 | H | - | - | -83.02 | 19.74 | 43.72 | -51.54 | -13.00 | -38.54 |

**Table 7-64. Radiated Spurious Data (NR Band n66 – High Channel) – Ant1**

## LTE Band 66/4 – Ant2




**Plot 7-219. Radiated Spurious Plot (LTE Band 66/4) – Ant2**




**Plot 7-220. Radiated Spurious Plot (LTE Band 66/4) – Ant2**

| | |
|---|---|
| **Mode:** | 20 |
| **Channel:** | 1745 |
| **Frequency (MHz):** | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 43.00 | V | - | - | -64.81 | -11.89 | 30.30 | -67.10 | -13.00 | -54.10 |

**Table 7-65. Radiated Spurious Data (LTE Band 66/4) – Ant2**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1720 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3440.00 | V | 165 | 11 | -78.67 | 7.22 | 35.55 | -59.70 | -13.00 | -46.70 |
| 5160.00 | V | 130 | 18 | -76.49 | 10.65 | 41.16 | -54.10 | -13.00 | -41.10 |
| 6880.00 | V | - | - | -81.91 | 13.86 | 38.95 | -56.30 | -13.00 | -43.30 |
| 8600.00 | V | - | - | -83.14 | 16.34 | 40.20 | -55.06 | -13.00 | -42.06 |
| 10320.00 | V | - | - | -82.81 | 19.23 | 43.42 | -51.84 | -13.00 | -38.84 |

**Table 7-66. Radiated Spurious Data (LTE Band 66/4 – Low Channel) – Ant2**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1745 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3490.00 | V | 201 | 226 | -78.13 | 7.16 | 36.03 | -59.23 | -13.00 | -46.23 |
| 5235.00 | V | 104 | 11 | -75.87 | 10.29 | 41.42 | -53.84 | -13.00 | -40.84 |
| 6980.00 | V | - | - | -82.01 | 13.87 | 38.86 | -56.40 | -13.00 | -43.40 |
| 8725.00 | V | - | - | -82.67 | 16.38 | 40.71 | -54.55 | -13.00 | -41.55 |
| 10470.00 | V | - | - | -83.18 | 19.31 | 43.13 | -52.13 | -13.00 | -39.13 |

**Table 7-67. Radiated Spurious Data (LTE Band 66/4 – Mid Channel) – Ant2**

| | |
|---|---|
| Bandwidth (MHz): | 20 |
| Frequency (MHz): | 1770 |
| RB / Offset: | 1 / 50 |

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBµV/m] | EIRP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 3540.00 | V | 192 | 217 | -76.97 | 7.31 | 37.34 | -57.92 | -13.00 | -44.92 |
| 5310.00 | V | 116 | 4 | -77.56 | 10.65 | 40.09 | -55.16 | -13.00 | -42.16 |
| 7080.00 | V | - | - | -81.89 | 14.20 | 39.31 | -55.95 | -13.00 | -42.95 |
| 8850.00 | V | - | - | -82.51 | 16.69 | 41.18 | -54.08 | -13.00 | -41.08 |
| 10620.00 | V | - | - | -82.97 | 19.71 | 43.74 | -51.52 | -13.00 | -38.52 |

**Table 7-68. Radiated Spurious Data (LTE Band 66/4 – High Channel) – Ant2**

## 7.9 Frequency Stability / Temperature Variation

**Test Overview and Limit**

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

***For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.***

**Test Procedure Used**

ANSI C63.26-2015 – Section 5.6

**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**

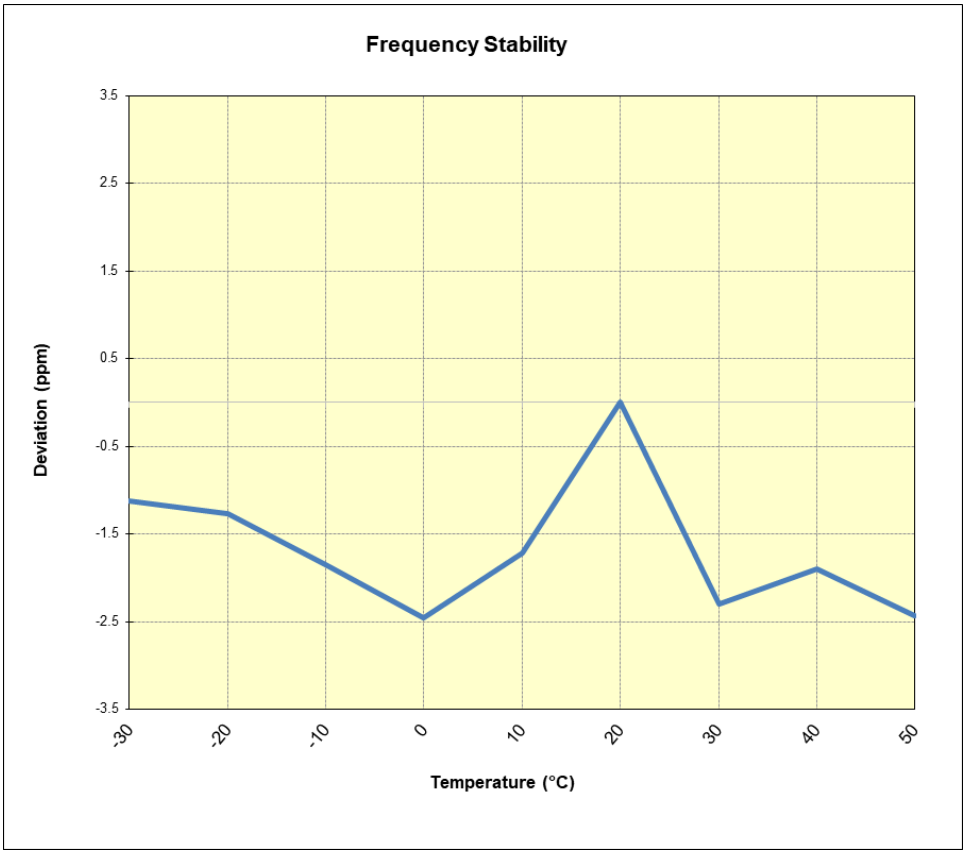
None

## LTE Band 71

| | |
|---|---|
| Operating Frequency (Hz): | 680,500,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 680,600,008 | -760 | -0.0001117 |
| | | - 20 | 680,599,906 | -862 | -0.0001267 |
| | | - 10 | 680,599,510 | -1,258 | -0.0001848 |
| | | 0 | 680,599,095 | -1,673 | -0.0002458 |
| | | + 10 | 680,599,600 | -1,168 | -0.0001716 |
| | | + 20 (Ref) | 680,600,768 | 0 | 0.0000000 |
| | | + 30 | 680,599,201 | -1,567 | -0.0002302 |
| | | + 40 | 680,599,479 | -1,289 | -0.0001894 |
| | | + 50 | 680,599,111 | -1,657 | -0.0002435 |
| Battery Endpoint | 3.174 | + 20 | 680,599,521 | -1,247 | -0.0001832 |

**Table 7-69. LTE Band 71 Frequency Stability Data**



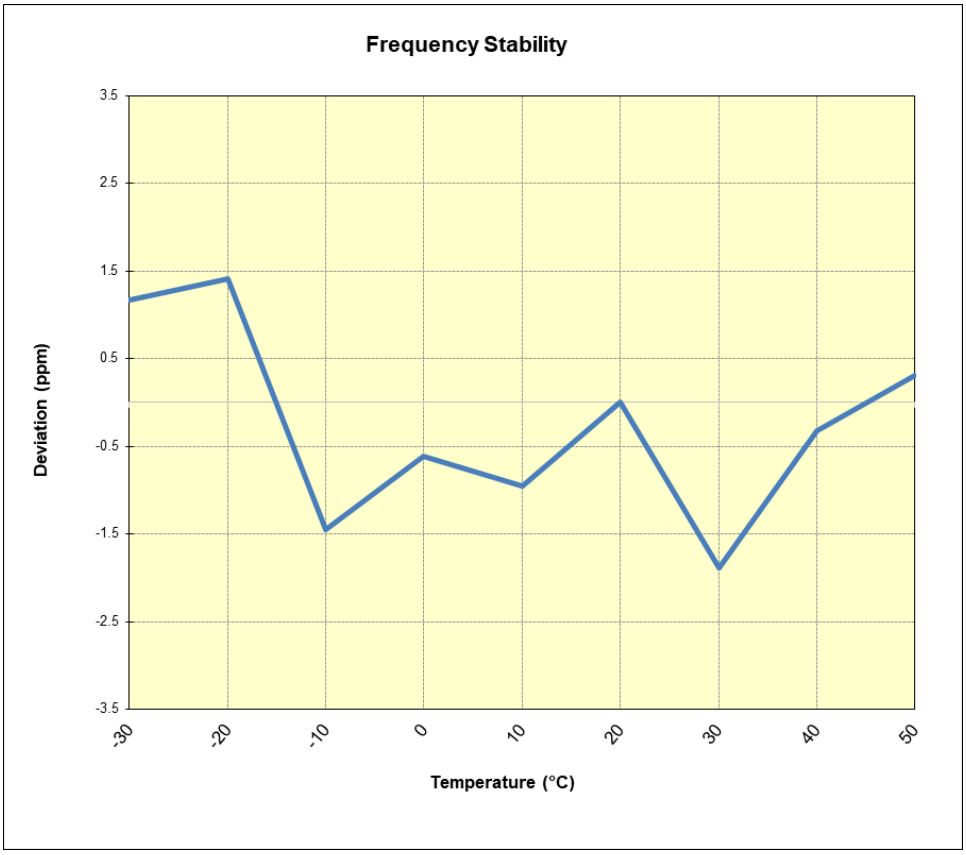

**Plot 7-221. LTE Band 71 Frequency Stability Chart**

## LTE Band 12

| | |
|---|---|
| Operating Frequency (Hz): | 707,500,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 707,599,174 | 826 | 0.0001167 |
| | | - 20 | 707,599,345 | 997 | 0.0001409 |
| | | - 10 | 707,597,326 | -1,022 | -0.0001444 |
| | | 0 | 707,597,913 | -435 | -0.0000615 |
| | | + 10 | 707,597,674 | -674 | -0.0000953 |
| | | + 20 (Ref) | 707,598,348 | 0 | 0.0000000 |
| | | + 30 | 707,597,014 | -1,334 | -0.0001885 |
| | | + 40 | 707,598,124 | -224 | -0.0000317 |
| | | + 50 | 707,598,569 | 221 | 0.0000312 |
| Battery Endpoint | 3.174 | + 20 | 707,599,577 | 1,229 | 0.0001737 |

**Table 7-70. LTE Band 12 Frequency Stability Data**



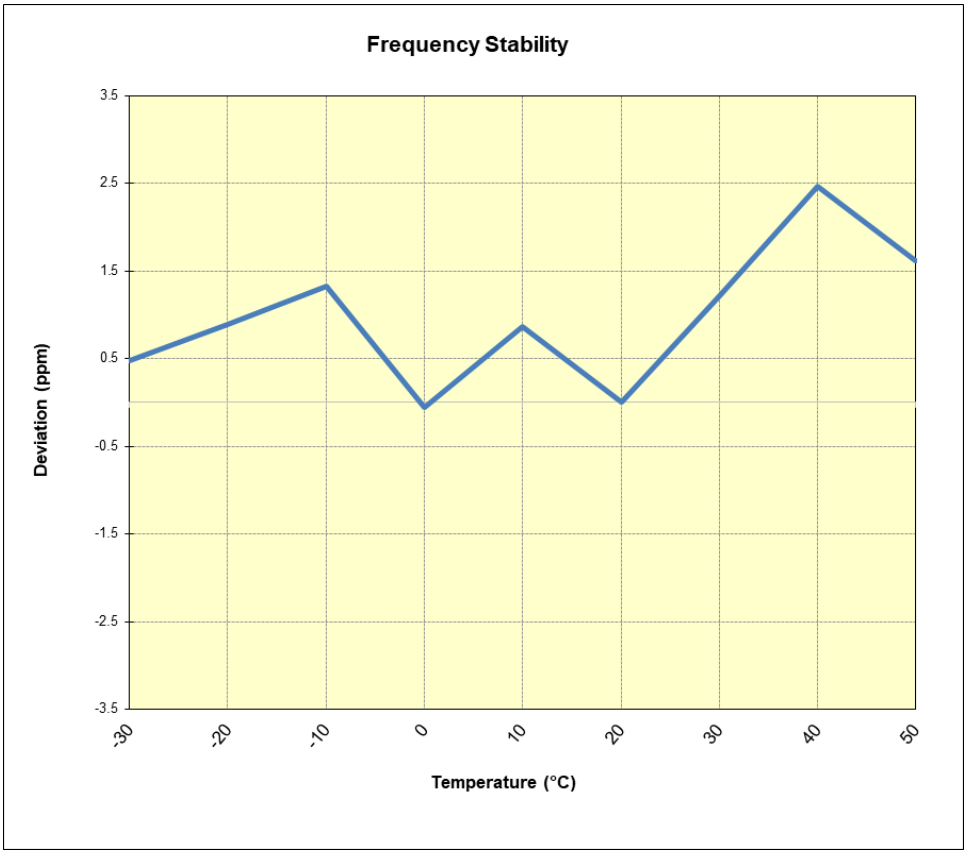

**Plot 7-222. LTE Band 12 Frequency Stability Chart**

## LTE Band 13

| | |
|---|---|
| Operating Frequency (Hz): | 782,000,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 782,090,556 | 373 | 0.0000477 |
| | | - 20 | 782,090,879 | 696 | 0.0000890 |
| | | - 10 | 782,091,222 | 1,039 | 0.0001328 |
| | | 0 | 782,090,140 | -43 | -0.0000055 |
| | | + 10 | 782,090,861 | 678 | 0.0000867 |
| | | + 20 (Ref) | 782,090,183 | 0 | 0.0000000 |
| | | + 30 | 782,091,131 | 948 | 0.0001212 |
| | | + 40 | 782,092,111 | 1,928 | 0.0002465 |
| | | + 50 | 782,091,452 | 1,269 | 0.0001623 |
| Battery Endpoint | 3.174 | + 20 | 782,092,044 | 1,861 | 0.0002380 |

**Table 7-71. LTE Band 13 Frequency Stability Data**



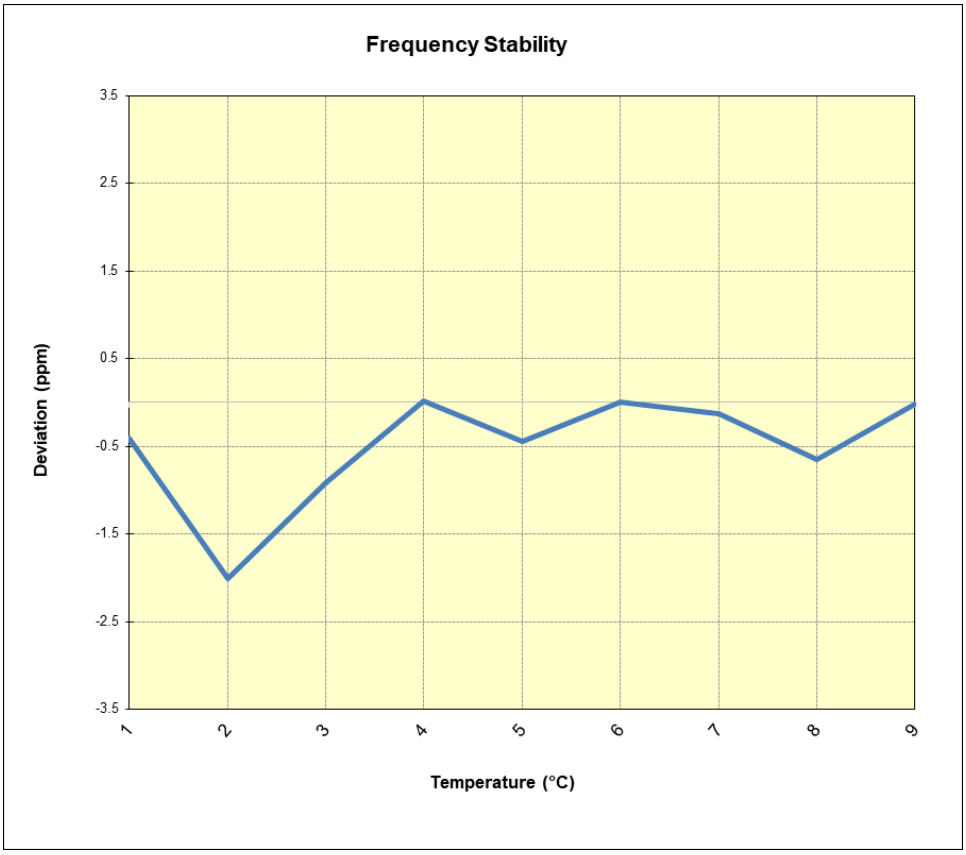

**Plot 7-223. LTE Band 13 Frequency Stability Chart**

## LTE Band 66/4

| | |
|---|---|
| Operating Frequency (Hz): | 1,745,000,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 1,745,098,543 | -709 | -0.0000406 |
| | | - 20 | 1,745,095,760 | -3,492 | -0.0002001 |
| | | - 10 | 1,745,097,644 | -1,608 | -0.0000921 |
| | | 0 | 1,745,099,291 | 39 | 0.0000022 |
| | | + 10 | 1,745,098,479 | -773 | -0.0000443 |
| | | + 20 (Ref) | 1,745,099,252 | 0 | 0.0000000 |
| | | + 30 | 1,745,099,023 | -229 | -0.0000131 |
| | | + 40 | 1,745,098,122 | -1,130 | -0.0000648 |
| | | + 50 | 1,745,099,222 | -30 | -0.0000017 |
| Battery Endpoint | 3.174 | + 20 | 1,745,098,246 | -1,006 | -0.0000576 |

**Table 7-72. LTE Band 66/4 Frequency Stability Data**



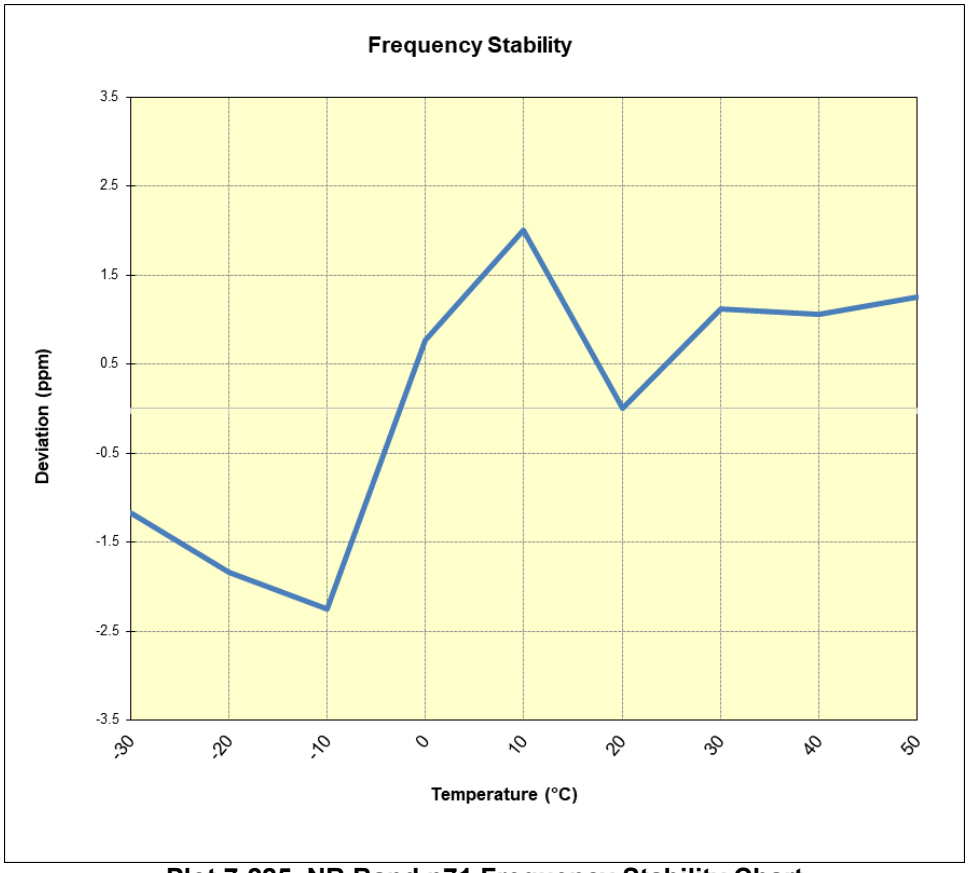

**Plot 7-224. LTE Band 66/4Frequency Stability Chart**

## NR Band n71

| | |
|---|---|
| Operating Frequency (Hz): | 680,500,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 680,599,893 | -800 | -0.0001175 |
| | | - 20 | 680,599,444 | -1,249 | -0.0001835 |
| | | - 10 | 680,599,159 | -1,534 | -0.0002254 |
| | | 0 | 680,601,214 | 521 | 0.0000766 |
| | | + 10 | 680,602,055 | 1,362 | 0.0002001 |
| | | + 20 (Ref) | 680,600,693 | 0 | 0.0000000 |
| | | + 30 | 680,601,457 | 764 | 0.0001123 |
| | | + 40 | 680,601,417 | 724 | 0.0001064 |
| | | + 50 | 680,601,546 | 853 | 0.0001253 |
| Battery Endpoint | 3.174 | + 20 | 680,601,244 | 551 | 0.0000810 |

**Table 7-73. NR Band n71 Frequency Stability Data**



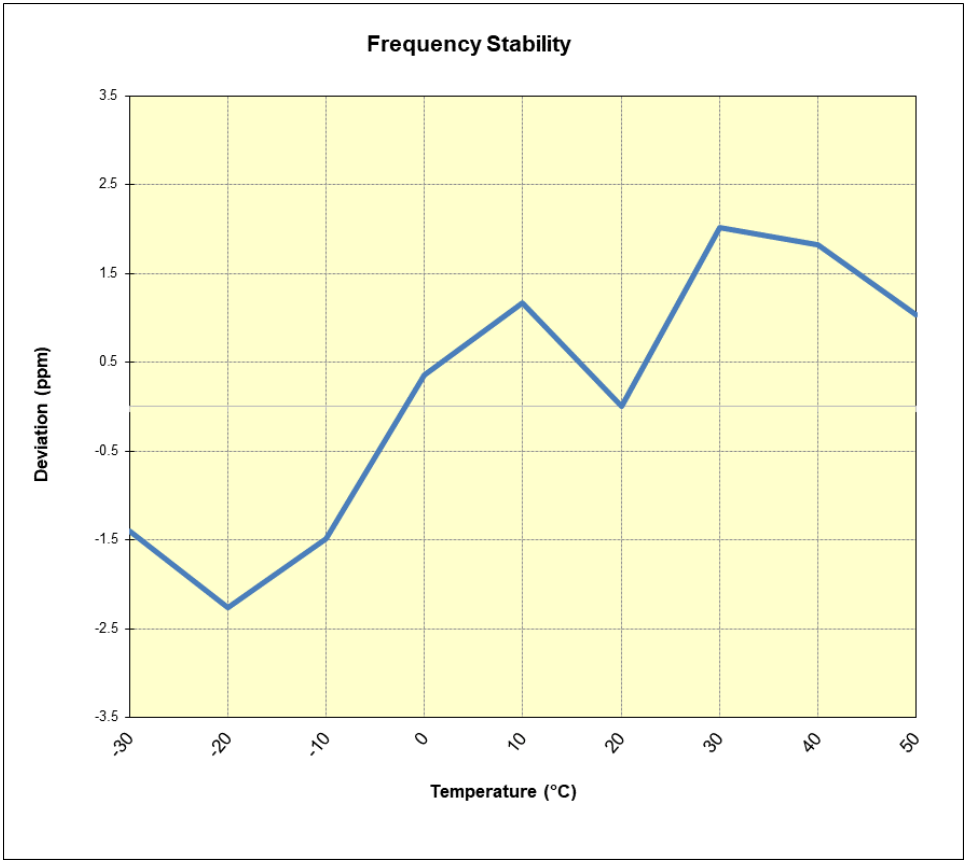

**Plot 7-225. NR Band n71 Frequency Stability Chart**

## NR Band n12

| | |
|---|---|
| Operating Frequency (Hz): | 707,500,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 707,599,726 | -995 | -0.0001406 |
| | | - 20 | 707,599,117 | -1,604 | -0.0002267 |
| | | - 10 | 707,599,671 | -1,050 | -0.0001484 |
| | | 0 | 707,600,974 | 253 | 0.0000358 |
| | | + 10 | 707,601,547 | 826 | 0.0001167 |
| | | + 20 (Ref) | 707,600,721 | 0 | 0.0000000 |
| | | + 30 | 707,602,147 | 1,426 | 0.0002015 |
| | | + 40 | 707,602,011 | 1,290 | 0.0001823 |
| | | + 50 | 707,601,452 | 731 | 0.0001033 |
| Battery Endpoint | 3.174 | + 20 | 707,601,522 | 801 | 0.0001132 |

**Table 7-74. NR Band n12 Frequency Stability Data**



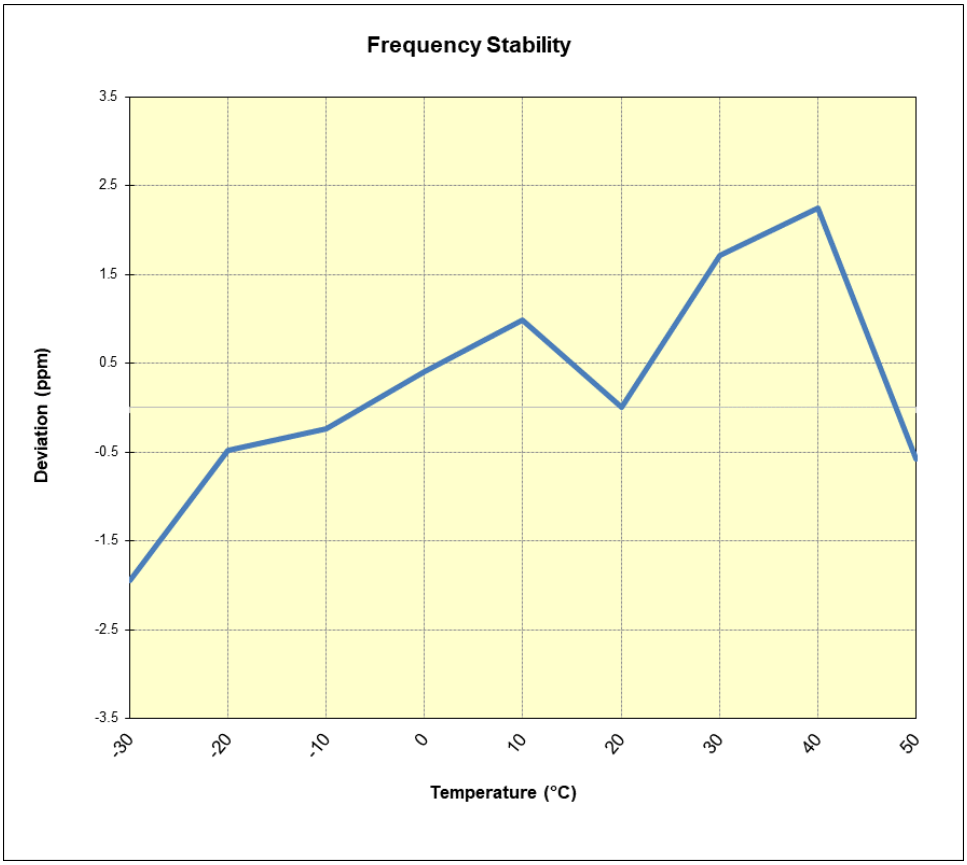

**Plot 7-226. NR Band n12 Frequency Stability Chart**

## NR Band n70

| | |
|---|---|
| Operating Frequency (Hz): | 1,702,500,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 1,702,630,106 | -3,319 | -0.0001949 |
| | | - 20 | 1,702,632,599 | -826 | -0.0000485 |
| | | - 10 | 1,702,633,014 | -411 | -0.0000241 |
| | | 0 | 1,702,634,121 | 696 | 0.0000409 |
| | | + 10 | 1,702,635,100 | 1,675 | 0.0000984 |
| | | + 20 (Ref) | 1,702,633,425 | 0 | 0.0000000 |
| | | + 30 | 1,702,636,333 | 2,908 | 0.0001708 |
| | | + 40 | 1,702,637,254 | 3,829 | 0.0002249 |
| | | + 50 | 1,702,632,444 | -981 | -0.0000576 |
| Battery Endpoint | 3.174 | + 20 | 1,702,633,222 | -203 | -0.0000119 |

**Table 7-75. NR Band n70 Frequency Stability Data**



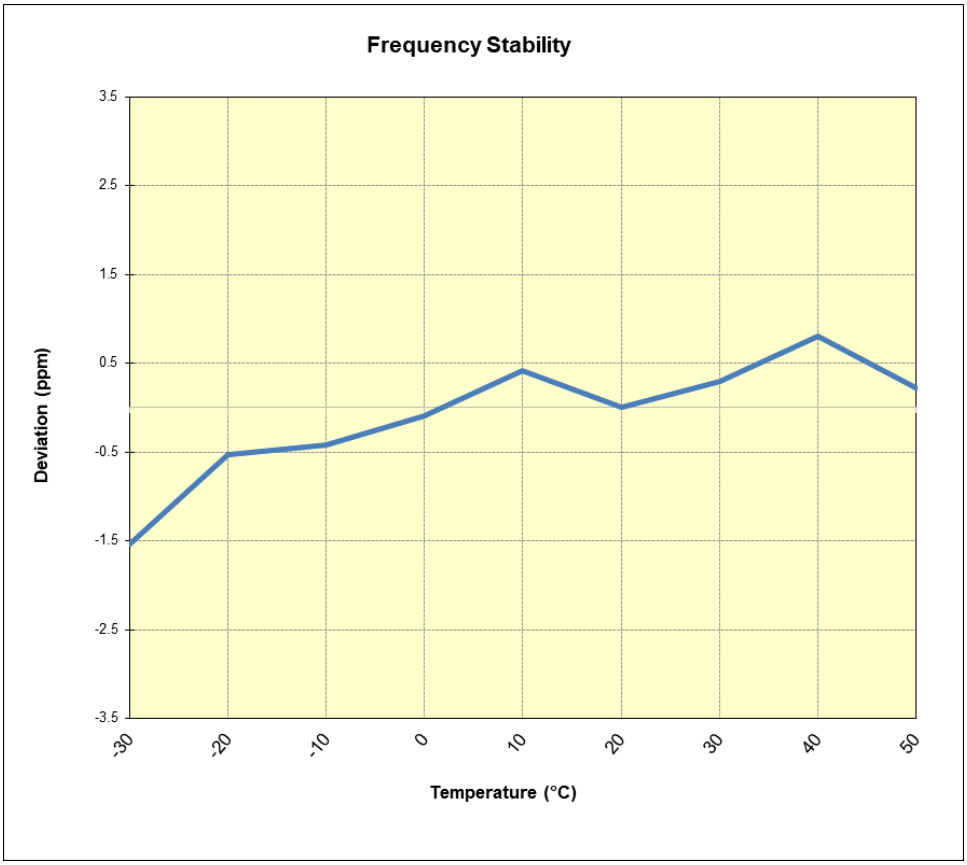

**Plot 7-227. NR Band n70 Frequency Stability Chart**

## NR Band n66

| | |
|---|---|
| Operating Frequency (Hz): | 1,745,000,000 |
| Ref. Voltage (VDC): | 3.863 |
| Deviation Limit: | ± 0.00025% or 2.5 ppm |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.863 | - 30 | 1,745,132,038 | -2,679 | -0.0001535 |
| | | - 20 | 1,745,133,789 | -928 | -0.0000532 |
| | | - 10 | 1,745,133,978 | -739 | -0.0000423 |
| | | 0 | 1,745,134,547 | -170 | -0.0000097 |
| | | + 10 | 1,745,135,441 | 724 | 0.0000415 |
| | | + 20 (Ref) | 1,745,134,717 | 0 | 0.0000000 |
| | | + 30 | 1,745,135,227 | 510 | 0.0000292 |
| | | + 40 | 1,745,136,122 | 1,405 | 0.0000805 |
| | | + 50 | 1,745,135,111 | 394 | 0.0000226 |
| Battery Endpoint | 3.174 | + 20 | 1,745,137,222 | 2,505 | 0.0001435 |

**Table 7-76. NR Band n66 Frequency Stability Data**




**Plot 7-228. NR Band n66 Frequency Stability Chart**

# 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Tablet FCC ID: A3LSMX828U** complies with all the requirements of Part 27 of the FCC rules.