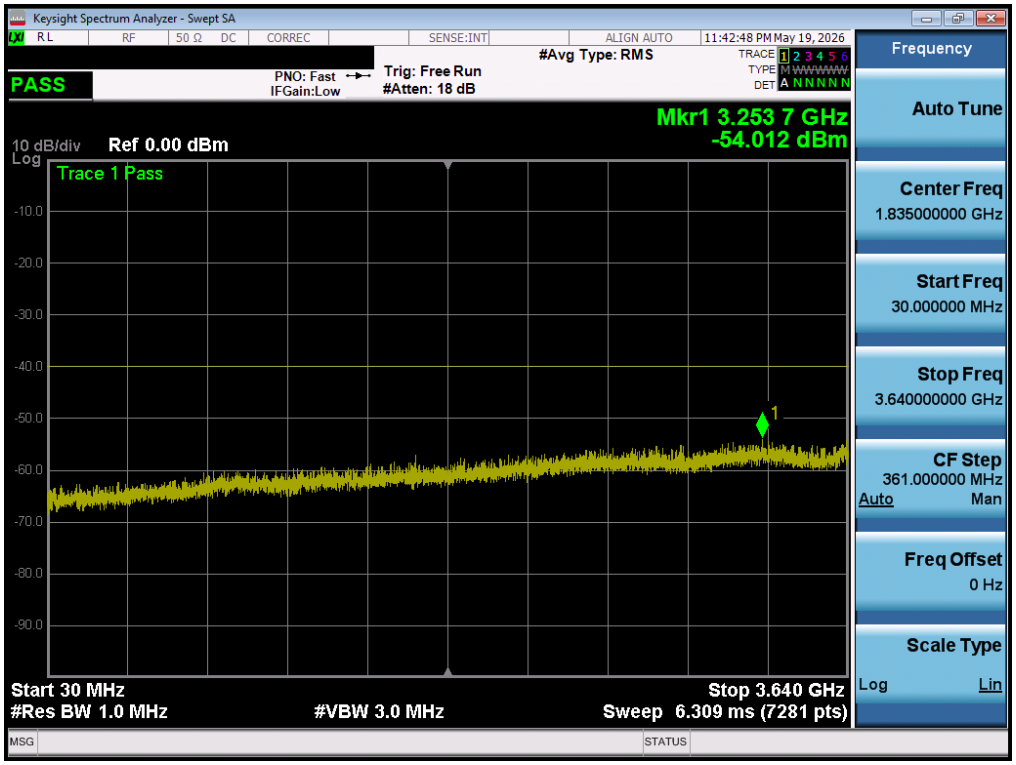
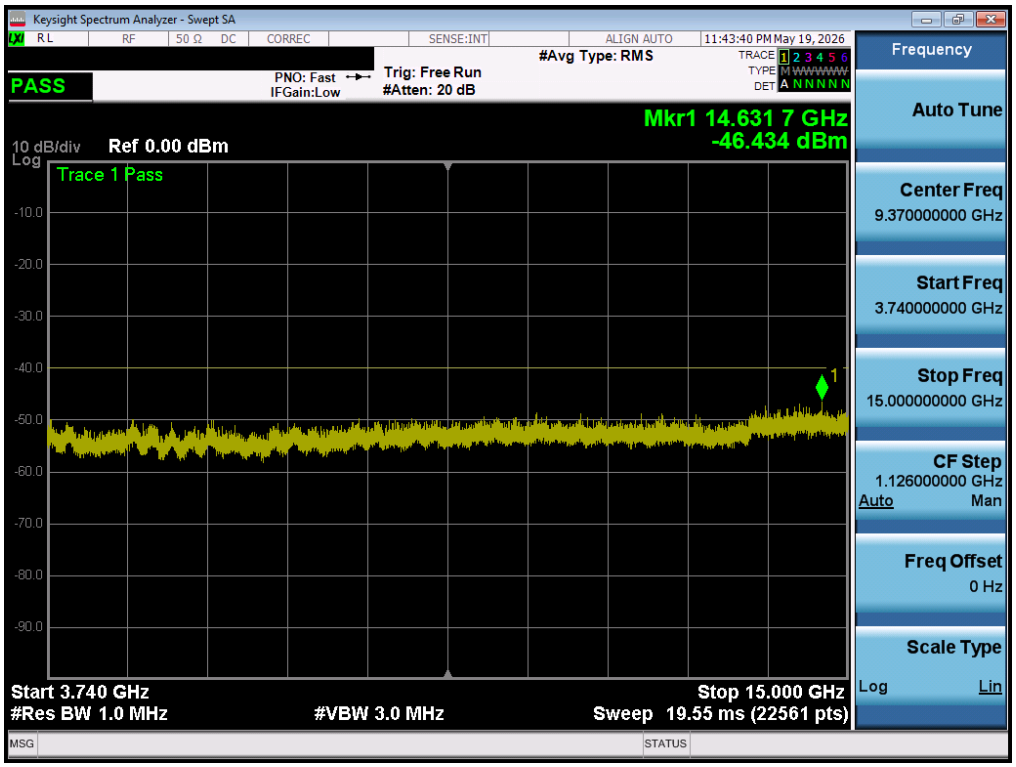
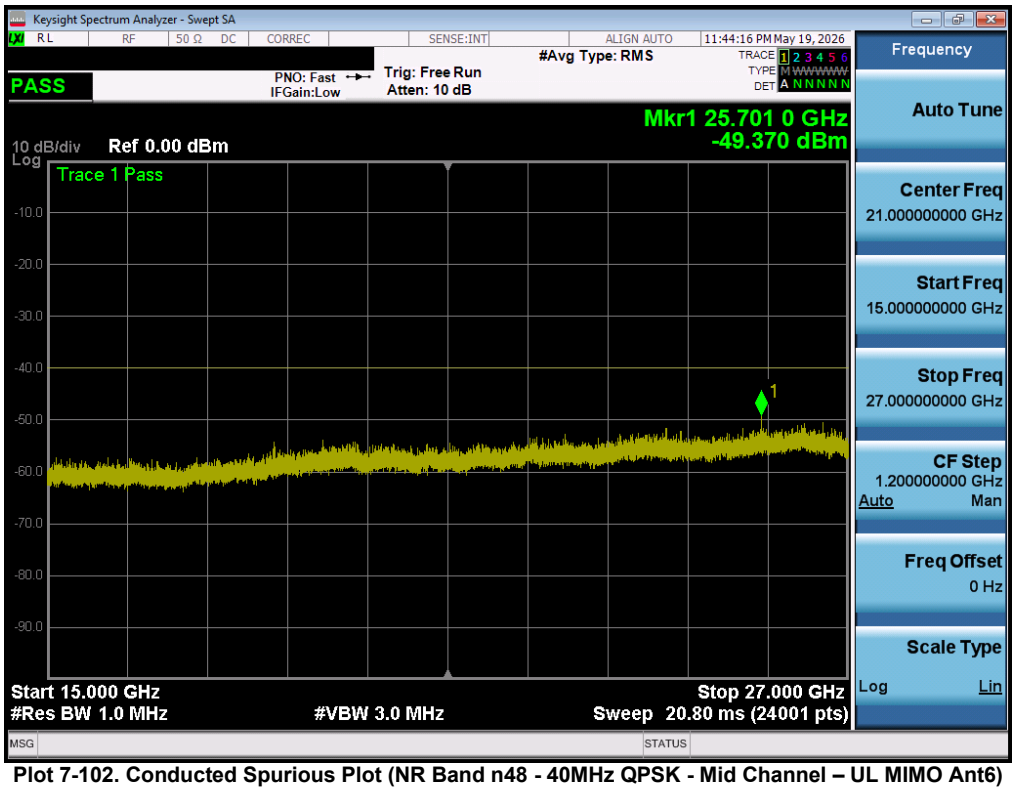
## NR Band n48 – UL MIMO Ant6



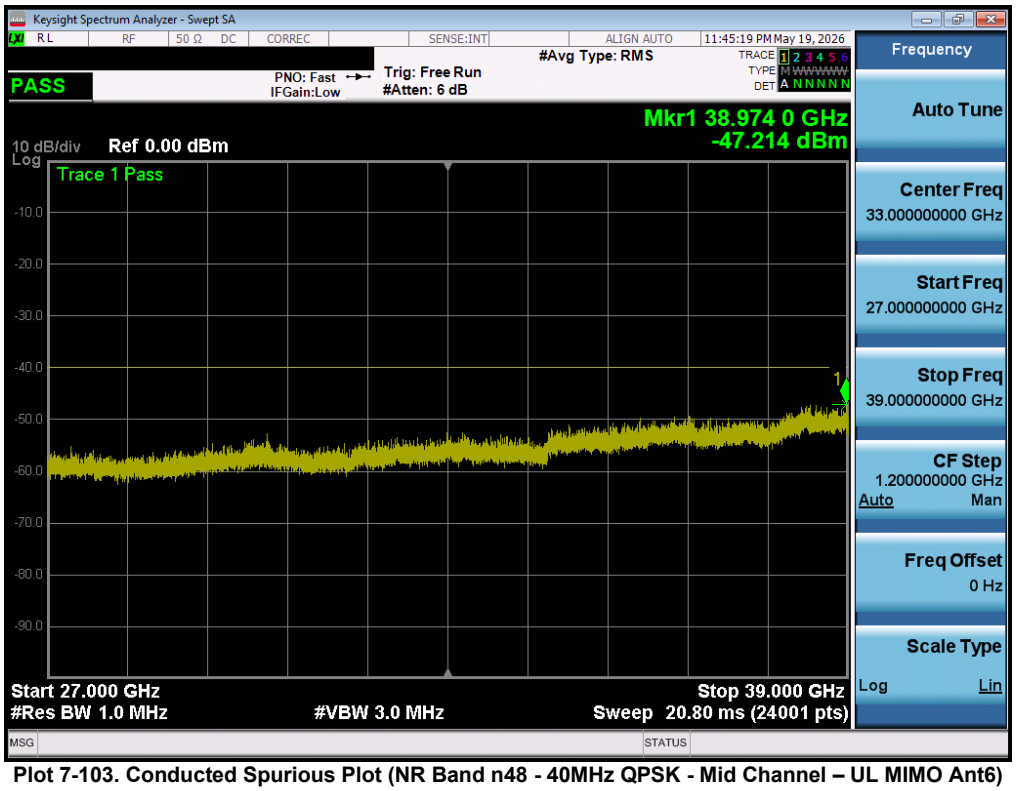

**Plot 7-100. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant6)**




**Plot 7-101. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant6)**




**Plot 7-102. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant6)**




**Plot 7-103. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant6)**

## 7.5 Band Edge Emissions at Antenna Terminal

**Test Overview**

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates 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.

***For an End User Device, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0 to B MHz (where B is the bandwidth in MHz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B MHz below the lower CBSD-assigned channel edge. At all frequencies greater than B MHz above the upper CBSD assigned channel edge and less than B MHz below the lower CBSD-assigned channel edge, the conducted power of any end user device emission shall not exceed −25 dBm/MHz. The conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.***

**Test Procedure Used**

ANSI C63.26-2015 – Section 5.7.3

**Test Settings**

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW ≥ 1% of the emission bandwidth
4. VBW ≥ 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

**Test Setup**

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

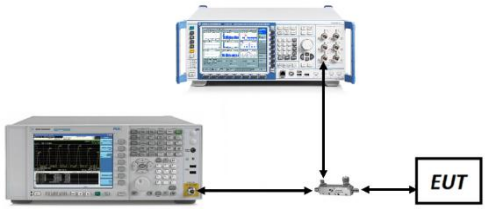



**Figure 7-5. Test Instrument & Measurement Setup**

## Test Notes

1. Per 96.41(e)(3)(i), compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The fundamental emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

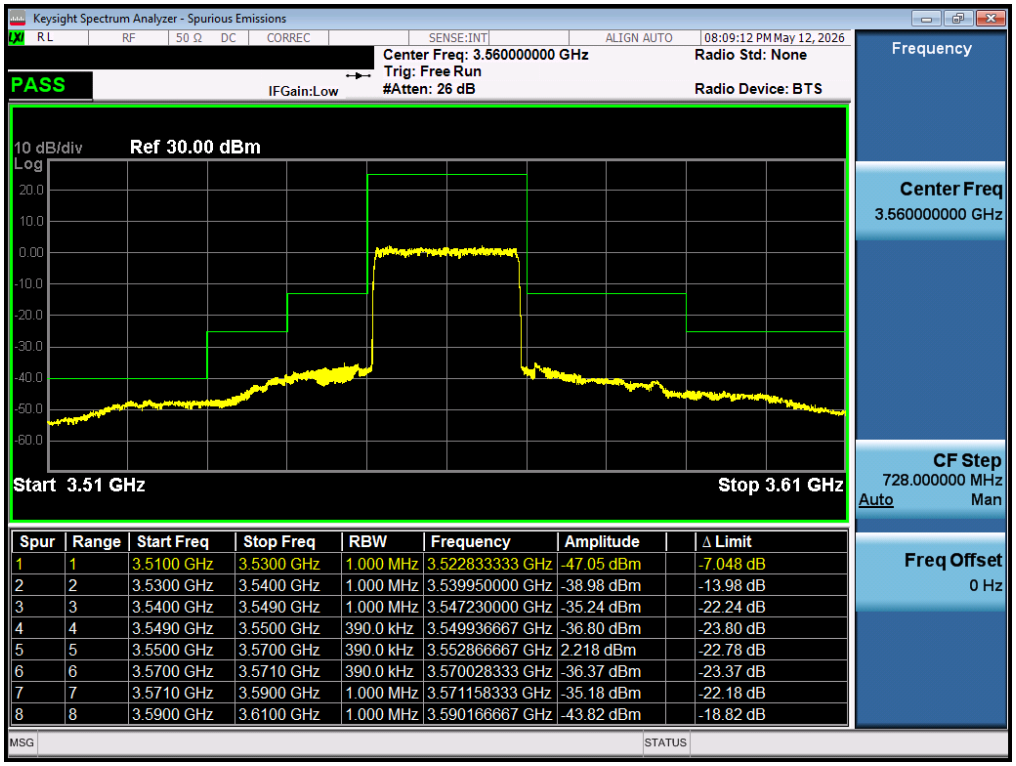
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

3. Per ANSI C63.26-2015, MIMO compliance was addressed by adding 10log(2) = 3dB to the output of each antenna. A visual inspection of the plots for each antenna shows that the emissions are still compliant even after adding 3dB.

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| LTE-B48 | 20MHz | Low | Band Edge | -47.05 | -40 | -7.05 |
| | | Mid | Band Edge | -44.34 | -25 | -19.34 |
| | | High | Band Edge | -45.19 | -40 | -5.19 |
| | 15MHz | Low | Band Edge | -46.49 | -40 | -6.49 |
| | | Mid | Band Edge | -39.96 | -25 | -14.96 |
| | | High | Band Edge | -45.42 | -40 | -5.42 |
| | 10MHz | Low | Band Edge | -53.09 | -40 | -13.09 |
| | | Mid | Band Edge | -43.60 | -25 | -18.60 |
| | | High | Band Edge | -50.41 | -40 | -10.41 |
| | 5MHz | Low | Band Edge | -55.20 | -40 | -15.20 |
| | | Mid | Band Edge | -26.05 | -13 | -13.05 |
| | | High | Band Edge | -22.81 | -13 | -9.81 |
| ULCA LTE-B48 | 20+20MHz | Low | Band Edge | -45.45 | -40 | -5.45 |
| | | Mid | Band Edge | -43.11 | -25 | -18.11 |
| | | High | Band Edge | -41.91 | -40 | -1.91 |
| NR-n48 | 40MHz | Low | Band Edge | -46.33 | -40 | -6.33 |
| | | Mid | Band Edge | -41.98 | -25 | -16.98 |
| | | High | Band Edge | -42.60 | -40 | -2.60 |
| | 30MHz | Low | Band Edge | -47.90 | -40 | -7.90 |
| | | Mid | Band Edge | -45.13 | -25 | -20.13 |
| | | High | Band Edge | -45.15 | -40 | -5.15 |
| | 20MHz | Low | Band Edge | -48.54 | -40 | -8.54 |
| | | Mid | Band Edge | -43.41 | -25 | -18.41 |
| | | High | Band Edge | -44.36 | -40 | -4.36 |
| | 15MHz | Low | Band Edge | -51.55 | -40 | -11.55 |
| | | Mid | Band Edge | -46.10 | -25 | -21.10 |
| | | High | Band Edge | -46.38 | -40 | -6.38 |
| | 10MHz | Low | Band Edge | -51.65 | -40 | -11.65 |
| | | Mid | Band Edge | -42.67 | -25 | -17.67 |
| | | High | Band Edge | -48.94 | -40 | -8.94 |

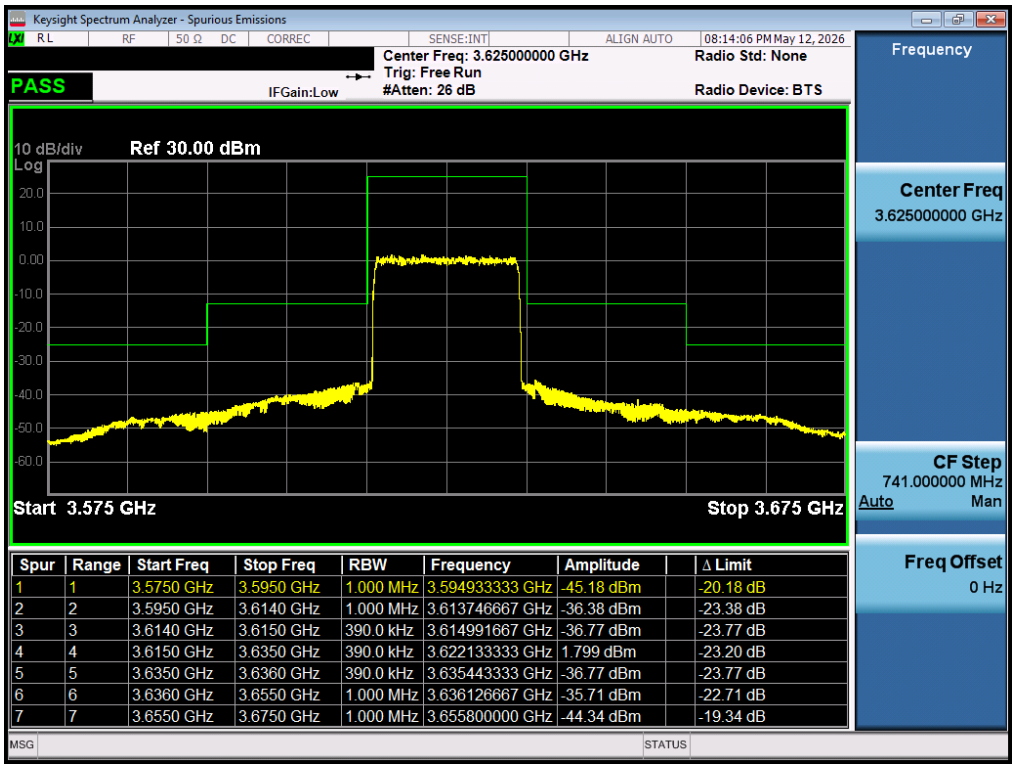
**Table 7-24. Conducted Band Edge Test Results – Ant1**

## LTE Band 48 – Ant1



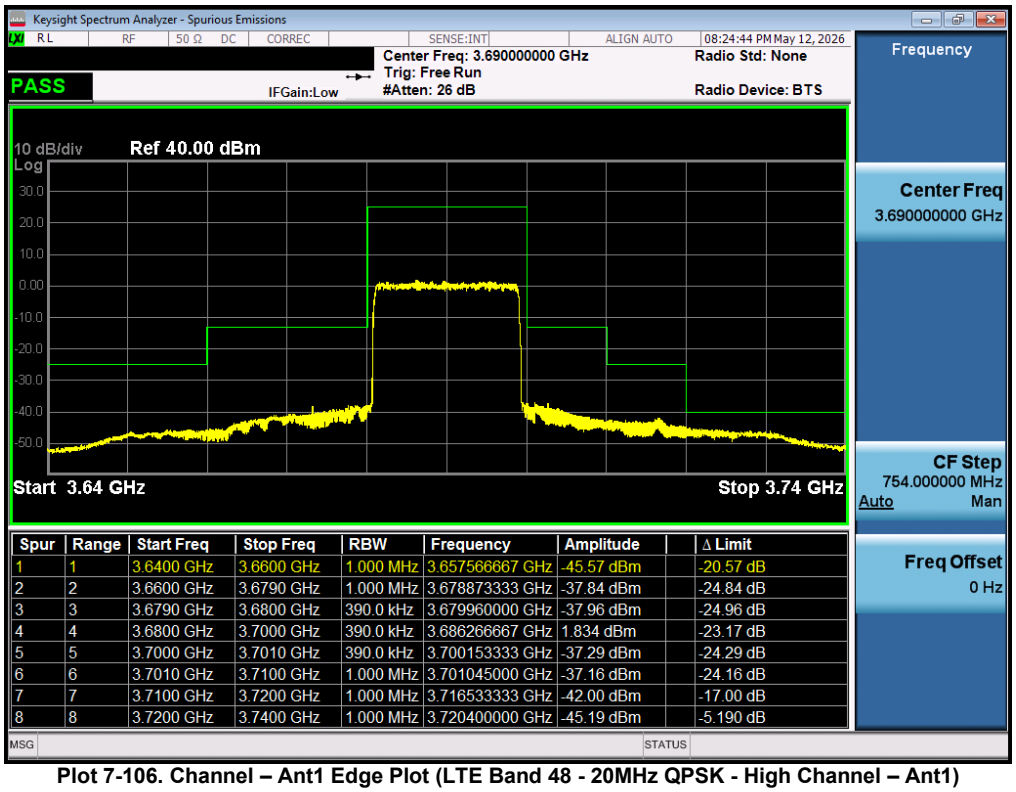

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.522833333 GHz | -47.05 dBm | -7.048 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.539950000 GHz | -38.98 dBm | -13.98 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.547230000 GHz | -35.24 dBm | -22.24 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 390.0 kHz | 3.549936667 GHz | -36.80 dBm | -23.80 dB |
| 5 | 5 | 3.5500 GHz | 3.5700 GHz | 390.0 kHz | 3.552866667 GHz | 2.218 dBm | -22.78 dB |
| 6 | 6 | 3.5700 GHz | 3.5710 GHz | 390.0 kHz | 3.570028333 GHz | -36.37 dBm | -23.37 dB |
| 7 | 7 | 3.5710 GHz | 3.5900 GHz | 1.000 MHz | 3.571158333 GHz | -35.18 dBm | -22.18 dB |
| 8 | 8 | 3.5900 GHz | 3.6100 GHz | 1.000 MHz | 3.590166667 GHz | -43.82 dBm | -18.82 dB |

**Plot 7-104. Channel – Ant1Edge Plot (LTE Band 48 - 20MHz QPSK - Low Channel – Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5750 GHz | 3.5950 GHz | 1.000 MHz | 3.594933333 GHz | -45.18 dBm | -20.18 dB |
| 2 | 2 | 3.5950 GHz | 3.6140 GHz | 1.000 MHz | 3.613746667 GHz | -36.38 dBm | -23.38 dB |
| 3 | 3 | 3.6140 GHz | 3.6150 GHz | 390.0 kHz | 3.614991667 GHz | -36.77 dBm | -23.77 dB |
| 4 | 4 | 3.6150 GHz | 3.6350 GHz | 390.0 kHz | 3.622133333 GHz | 1.799 dBm | -23.20 dB |
| 5 | 5 | 3.6350 GHz | 3.6360 GHz | 390.0 kHz | 3.635443333 GHz | -36.77 dBm | -23.77 dB |
| 6 | 6 | 3.6360 GHz | 3.6550 GHz | 1.000 MHz | 3.636126667 GHz | -35.71 dBm | -22.71 dB |
| 7 | 7 | 3.6550 GHz | 3.6750 GHz | 1.000 MHz | 3.655800000 GHz | -44.34 dBm | -19.34 dB |

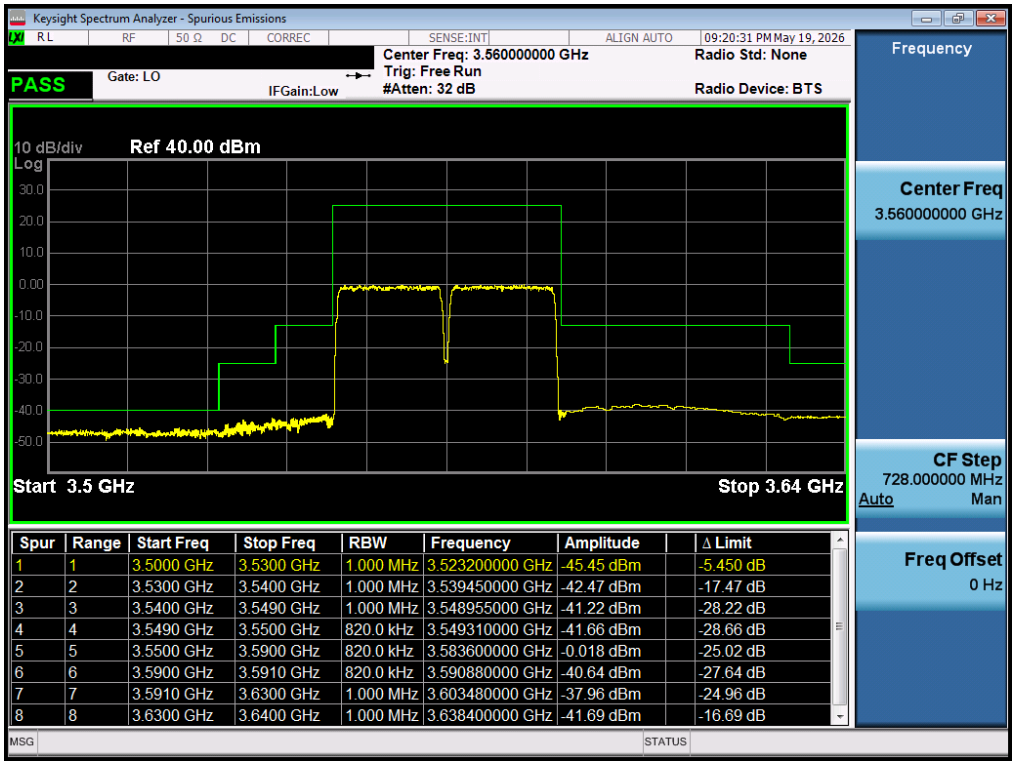
**Plot 7-105. Channel – Ant1 Edge Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.6400 GHz | 3.6600 GHz | 1.000 MHz | 3.657566667 GHz | -45.57 dBm | -20.57 dB |
| 2 | 2 | 3.6600 GHz | 3.6790 GHz | 1.000 MHz | 3.678873333 GHz | -37.84 dBm | -24.84 dB |
| 3 | 3 | 3.6790 GHz | 3.6800 GHz | 390.0 kHz | 3.679960000 GHz | -37.96 dBm | -24.96 dB |
| 4 | 4 | 3.6800 GHz | 3.7000 GHz | 390.0 kHz | 3.686266667 GHz | 1.834 dBm | -23.17 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 390.0 kHz | 3.700153333 GHz | -37.29 dBm | -24.29 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701045000 GHz | -37.16 dBm | -24.16 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.716533333 GHz | -42.00 dBm | -17.00 dB |
| 8 | 8 | 3.7200 GHz | 3.7400 GHz | 1.000 MHz | 3.720400000 GHz | -45.19 dBm | -5.190 dB |

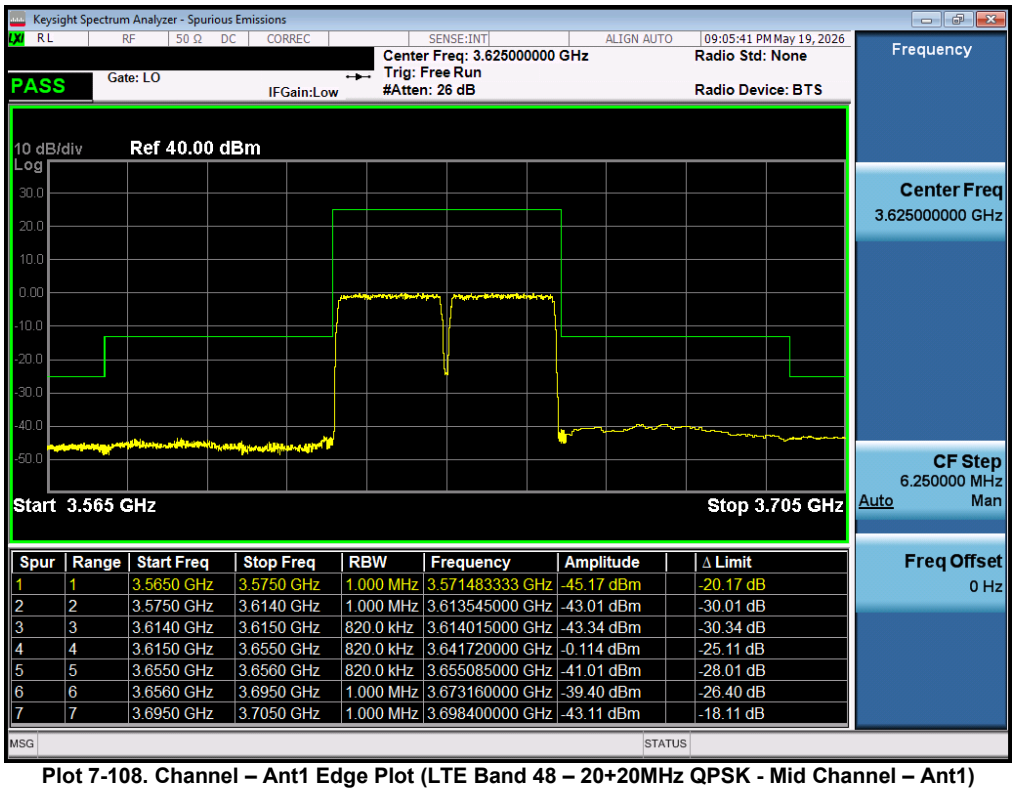
**Plot 7-106. Channel – Ant1 Edge Plot (LTE Band 48 - 20MHz QPSK - High Channel – Ant1)**

## ULCA LB48 – Ant1



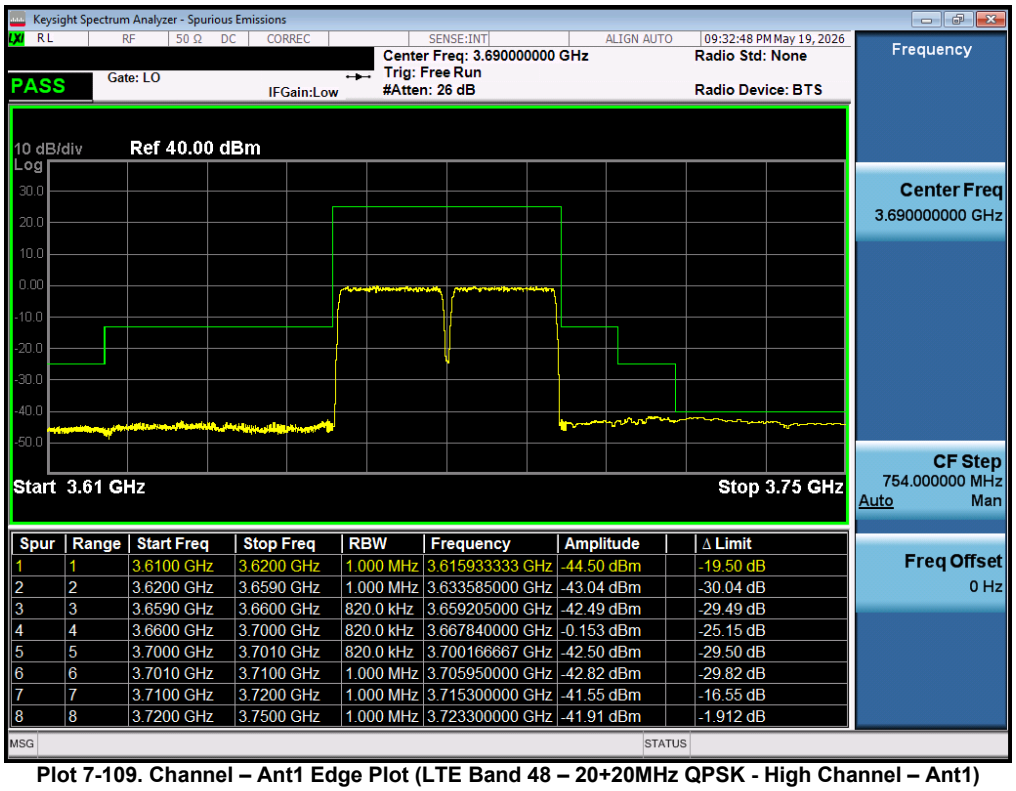

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5000 GHz | 3.5300 GHz | 1.000 MHz | 3.523200000 GHz | -45.45 dBm | -5.450 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.539450000 GHz | -42.47 dBm | -17.47 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.548955000 GHz | -41.22 dBm | -28.22 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 820.0 kHz | 3.549310000 GHz | -41.66 dBm | -28.66 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 820.0 kHz | 3.583600000 GHz | -0.018 dBm | -25.02 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 820.0 kHz | 3.590880000 GHz | -40.64 dBm | -27.64 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.603480000 GHz | -37.96 dBm | -24.96 dB |
| 8 | 8 | 3.6300 GHz | 3.6400 GHz | 1.000 MHz | 3.638400000 GHz | -41.69 dBm | -16.69 dB |

**Plot 7-107. Channel – Ant1 Edge Plot (LTE Band 48 – 20+20MHz QPSK - Low Channel – Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5650 GHz | 3.5750 GHz | 1.000 MHz | 3.571483333 GHz | -45.17 dBm | -20.17 dB |
| 2 | 2 | 3.5750 GHz | 3.6140 GHz | 1.000 MHz | 3.613545000 GHz | -43.01 dBm | -30.01 dB |
| 3 | 3 | 3.6140 GHz | 3.6150 GHz | 820.0 kHz | 3.614015000 GHz | -43.34 dBm | -30.34 dB |
| 4 | 4 | 3.6150 GHz | 3.6550 GHz | 820.0 kHz | 3.641720000 GHz | -0.114 dBm | -25.11 dB |
| 5 | 5 | 3.6550 GHz | 3.6560 GHz | 820.0 kHz | 3.655085000 GHz | -41.01 dBm | -28.01 dB |
| 6 | 6 | 3.6560 GHz | 3.6950 GHz | 1.000 MHz | 3.673160000 GHz | -39.40 dBm | -26.40 dB |
| 7 | 7 | 3.6950 GHz | 3.7050 GHz | 1.000 MHz | 3.698400000 GHz | -43.11 dBm | -18.11 dB |

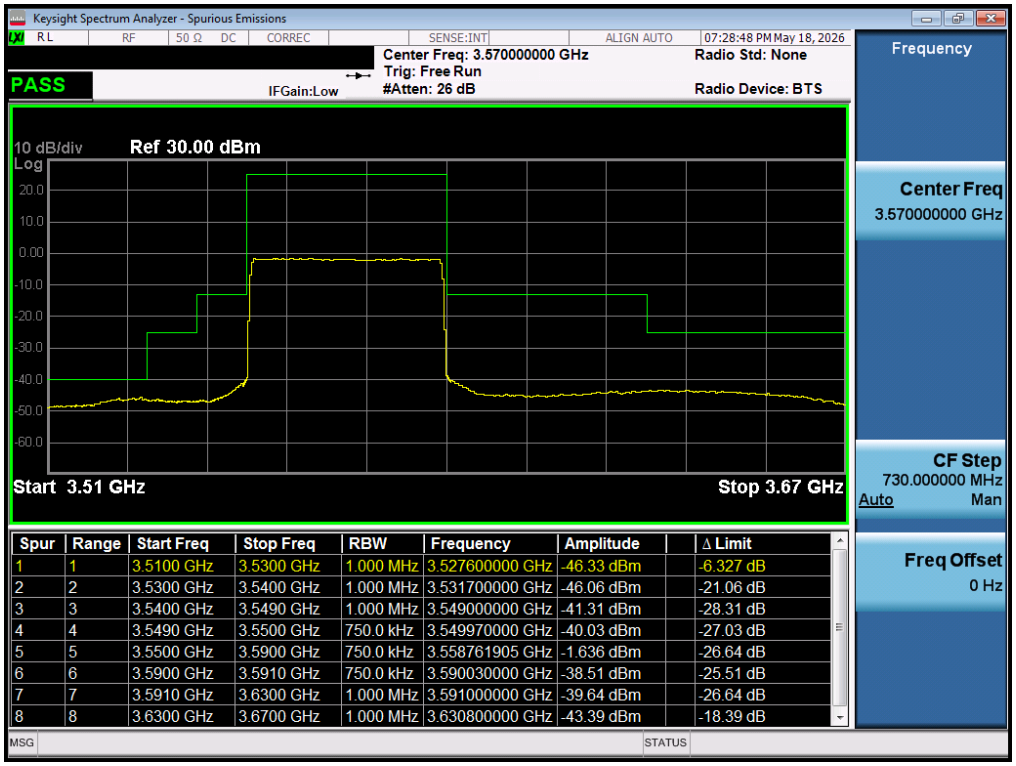
**Plot 7-108. Channel – Ant1 Edge Plot (LTE Band 48 – 20+20MHz QPSK - Mid Channel – Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.6100 GHz | 3.6200 GHz | 1.000 MHz | 3.615933333 GHz | -44.50 dBm | -19.50 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.633585000 GHz | -43.04 dBm | -30.04 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 820.0 kHz | 3.659205000 GHz | -42.49 dBm | -29.49 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 820.0 kHz | 3.667840000 GHz | -0.153 dBm | -25.15 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 820.0 kHz | 3.700166667 GHz | -42.50 dBm | -29.50 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.705950000 GHz | -42.82 dBm | -29.82 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.715300000 GHz | -41.55 dBm | -16.55 dB |
| 8 | 8 | 3.7200 GHz | 3.7500 GHz | 1.000 MHz | 3.723300000 GHz | -41.91 dBm | -1.912 dB |

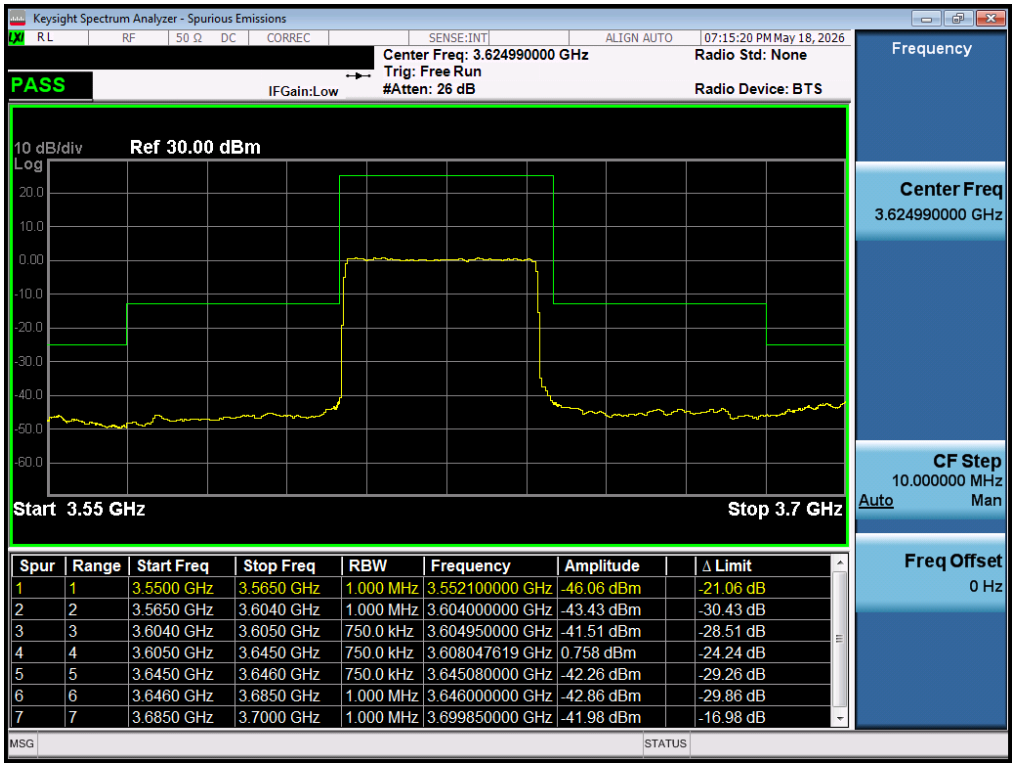
**Plot 7-109. Channel – Ant1 Edge Plot (LTE Band 48 – 20+20MHz QPSK - High Channel – Ant1)**

## NR Band n48 – Ant1



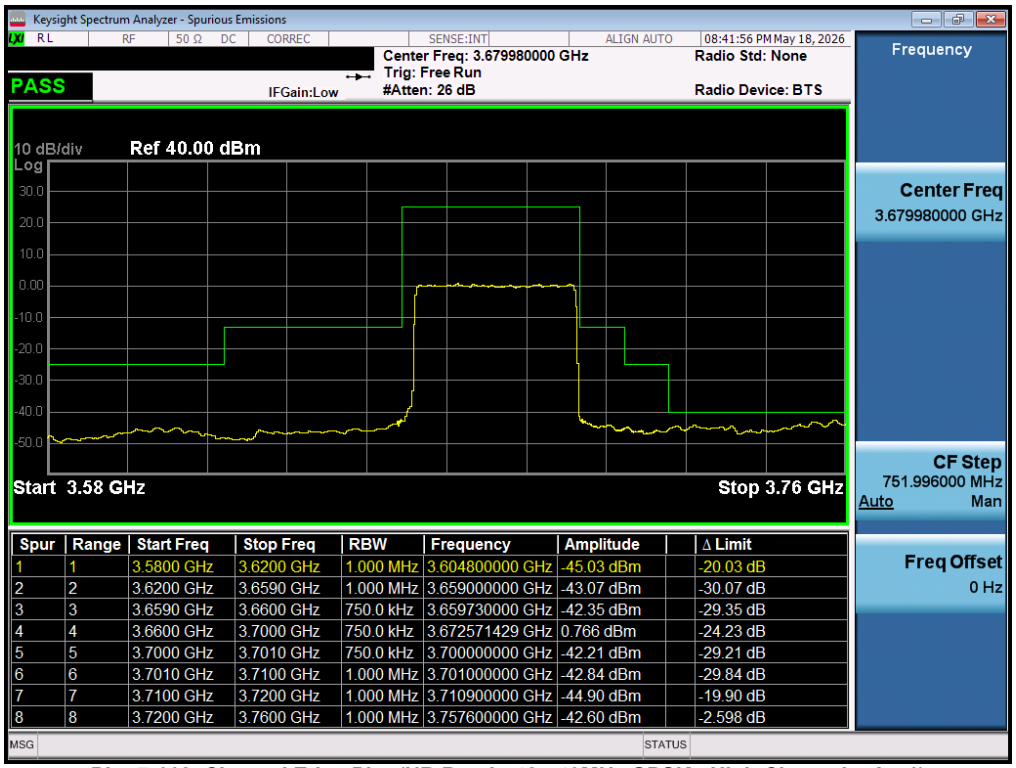

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.527600000 GHz | -46.33 dBm | -6.327 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.531700000 GHz | -46.06 dBm | -21.06 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -41.31 dBm | -28.31 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549970000 GHz | -40.03 dBm | -27.03 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.558761905 GHz | -1.636 dBm | -26.64 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590030000 GHz | -38.51 dBm | -25.51 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.591000000 GHz | -39.64 dBm | -26.64 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.630800000 GHz | -43.39 dBm | -18.39 dB |

**Plot 7-110. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.552100000 GHz | -46.06 dBm | -21.06 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -43.43 dBm | -30.43 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.604950000 GHz | -41.51 dBm | -28.51 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.608047619 GHz | 0.758 dBm | -24.24 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645080000 GHz | -42.26 dBm | -29.26 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -42.86 dBm | -29.86 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.699850000 GHz | -41.98 dBm | -16.98 dB |

**Plot 7-111. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – Ant1)**



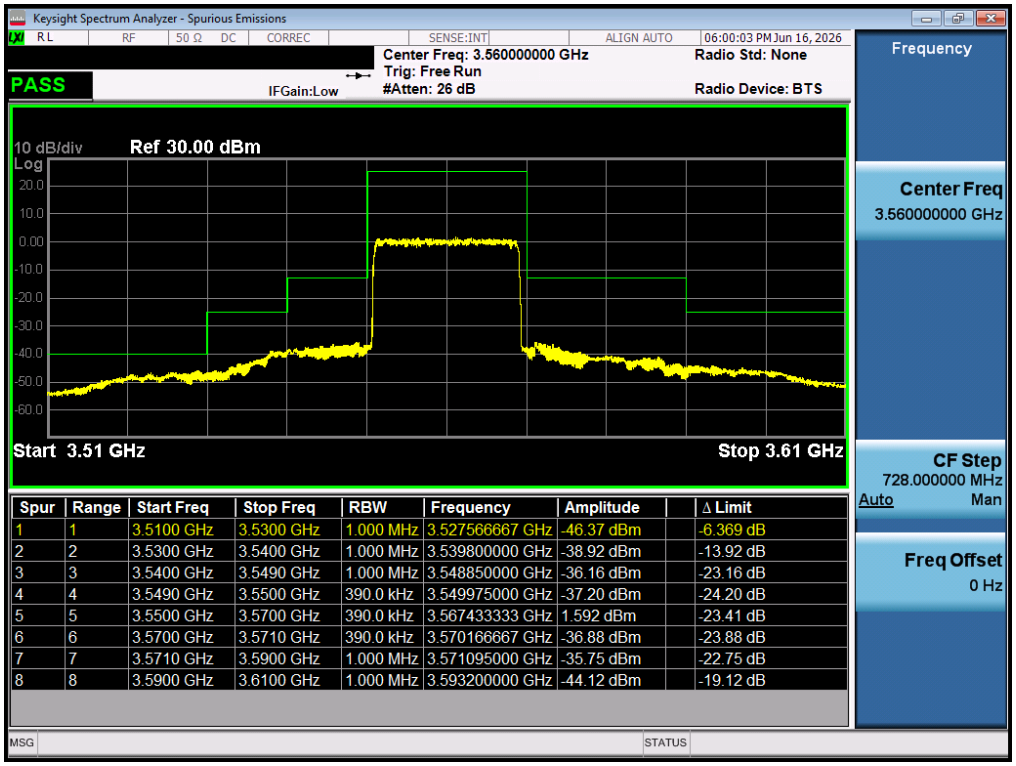

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.604800000 GHz | -45.03 dBm | -20.03 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.659000000 GHz | -43.07 dBm | -30.07 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.659730000 GHz | -42.35 dBm | -29.35 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.672571429 GHz | 0.766 dBm | -24.23 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700000000 GHz | -42.21 dBm | -29.21 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701000000 GHz | -42.84 dBm | -29.84 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.710900000 GHz | -44.90 dBm | -19.90 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.757600000 GHz | -42.60 dBm | -2.598 dB |

**Plot 7-112. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel – Ant1)**

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| LTE-B48 | 20MHz | Low | Band Edge | -46.37 | -40 | -6.37 |
| | | Mid | Band Edge | -44.76 | -25 | -19.76 |
| | | High | Band Edge | -44.90 | -40 | -4.90 |
| | 15MHz | Low | Band Edge | -47.59 | -40 | -7.59 |
| | | Mid | Band Edge | -40.60 | -25 | -15.60 |
| | | High | Band Edge | -45.95 | -40 | -5.95 |
| | 10MHz | Low | Band Edge | -52.49 | -40 | -12.49 |
| | | Mid | Band Edge | -43.43 | -25 | -18.43 |
| | | High | Band Edge | -50.67 | -40 | -10.67 |
| | 5MHz | Low | Band Edge | -23.48 | -13 | -10.48 |
| | | Mid | Band Edge | -42.40 | -25 | -17.40 |
| | | High | Band Edge | -23.62 | -13 | -10.62 |
| NR-n48 | 40MHz | Low | Band Edge | -47.42 | -40 | -7.42 |
| | | Mid | Band Edge | -43.01 | -25 | -18.01 |
| | | High | Band Edge | -43.90 | -40 | -3.90 |
| | 30MHz | Low | Band Edge | -47.39 | -40 | -7.39 |
| | | Mid | Band Edge | -44.85 | -25 | -19.85 |
| | | High | Band Edge | -46.61 | -40 | -6.61 |
| | 20MHz | Low | Band Edge | -48.69 | -40 | -8.69 |
| | | Mid | Band Edge | -44.98 | -25 | -19.98 |
| | | High | Band Edge | -45.18 | -40 | -5.18 |
| | 15MHz | Low | Band Edge | -49.40 | -40 | -9.40 |
| | | Mid | Band Edge | -47.40 | -25 | -22.40 |
| | | High | Band Edge | -47.71 | -40 | -7.71 |
| | 10MHz | Low | Band Edge | -53.51 | -40 | -13.51 |
| | | Mid | Band Edge | -46.16 | -25 | -21.16 |
| | | High | Band Edge | -49.94 | -40 | -9.94 |

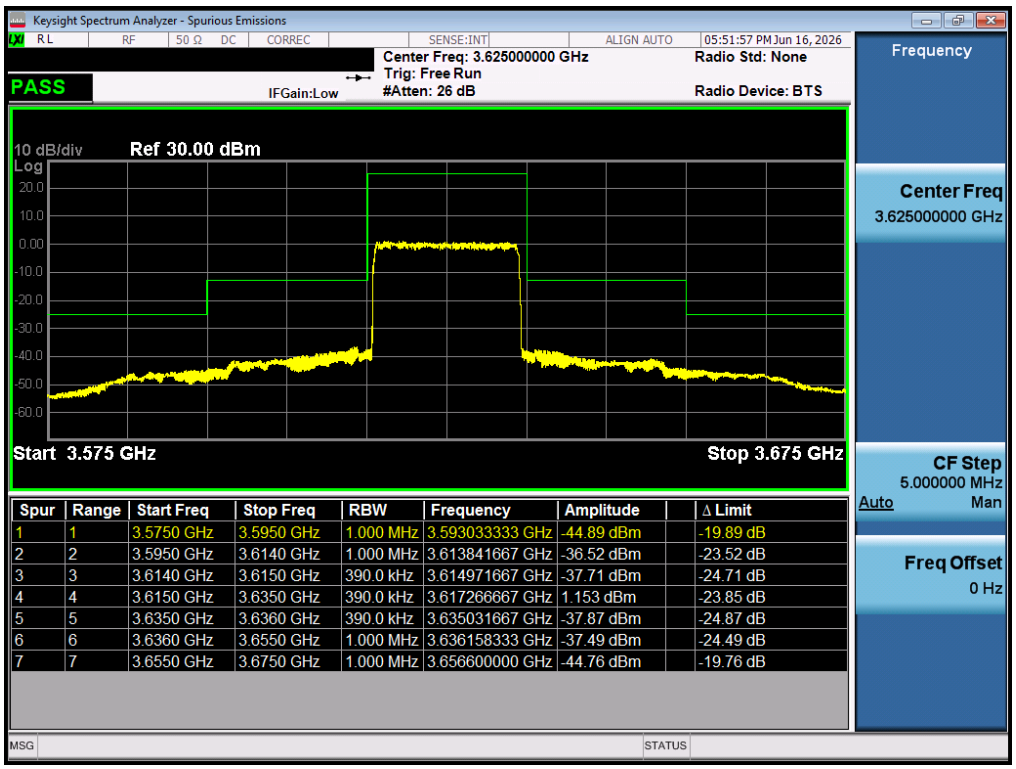
**Table 7-25. Conducted Band Edge Test Results – Ant6**

## LTE Band 48 – Ant6



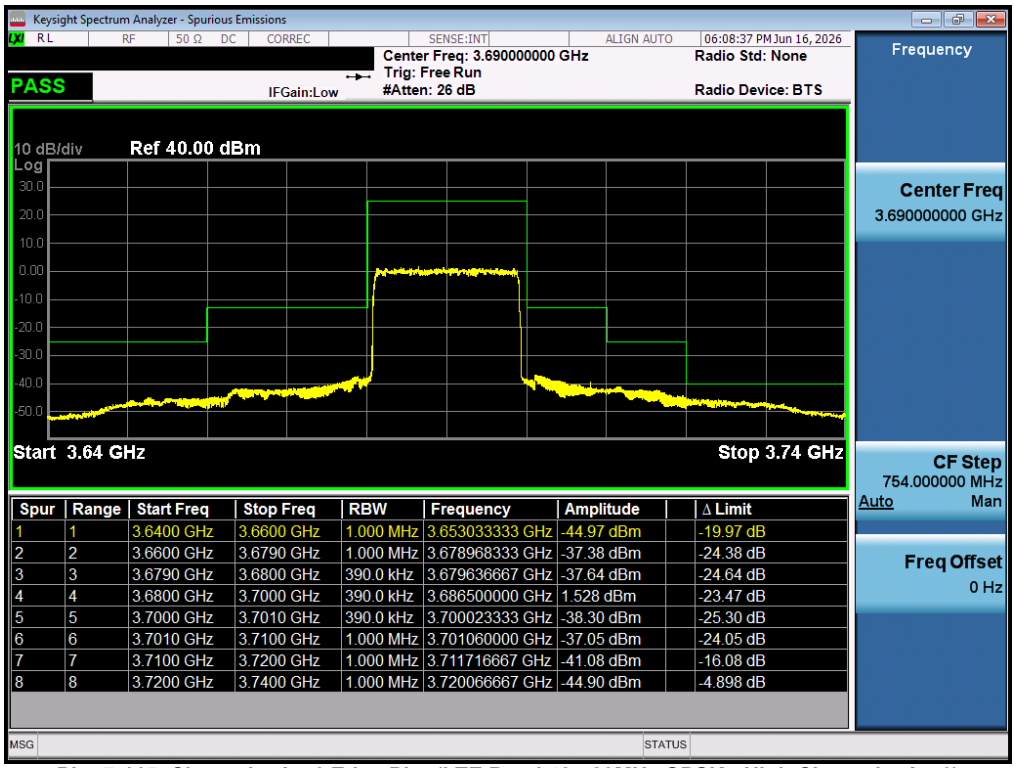

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.527566667 GHz | -46.37 dBm | -6.369 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.539800000 GHz | -38.92 dBm | -13.92 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.548850000 GHz | -36.16 dBm | -23.16 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 390.0 kHz | 3.549975000 GHz | -37.20 dBm | -24.20 dB |
| 5 | 5 | 3.5500 GHz | 3.5700 GHz | 390.0 kHz | 3.567433333 GHz | 1.592 dBm | -23.41 dB |
| 6 | 6 | 3.5700 GHz | 3.5710 GHz | 390.0 kHz | 3.570166667 GHz | -36.88 dBm | -23.88 dB |
| 7 | 7 | 3.5710 GHz | 3.5900 GHz | 1.000 MHz | 3.571095000 GHz | -35.75 dBm | -22.75 dB |
| 8 | 8 | 3.5900 GHz | 3.6100 GHz | 1.000 MHz | 3.593200000 GHz | -44.12 dBm | -19.12 dB |

**Plot 7-113. Channel – Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - Low Channel – Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5750 GHz | 3.5950 GHz | 1.000 MHz | 3.593033333 GHz | -44.89 dBm | -19.89 dB |
| 2 | 2 | 3.5950 GHz | 3.6140 GHz | 1.000 MHz | 3.613841667 GHz | -36.52 dBm | -23.52 dB |
| 3 | 3 | 3.6140 GHz | 3.6150 GHz | 390.0 kHz | 3.614971667 GHz | -37.71 dBm | -24.71 dB |
| 4 | 4 | 3.6150 GHz | 3.6350 GHz | 390.0 kHz | 3.617266667 GHz | 1.153 dBm | -23.85 dB |
| 5 | 5 | 3.6350 GHz | 3.6360 GHz | 390.0 kHz | 3.635031667 GHz | -37.87 dBm | -24.87 dB |
| 6 | 6 | 3.6360 GHz | 3.6550 GHz | 1.000 MHz | 3.636158333 GHz | -37.49 dBm | -24.49 dB |
| 7 | 7 | 3.6550 GHz | 3.6750 GHz | 1.000 MHz | 3.656600000 GHz | -44.76 dBm | -19.76 dB |

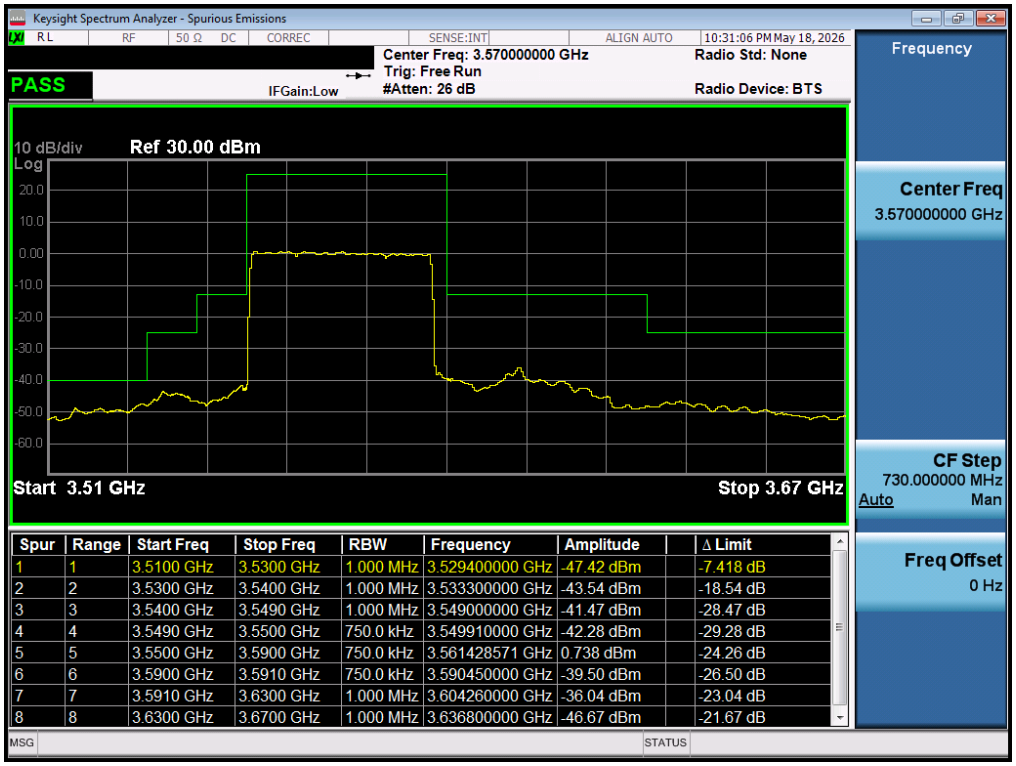
**Plot 7-114. Channel – Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - Mid Channel – Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.6400 GHz | 3.6600 GHz | 1.000 MHz | 3.653033333 GHz | -44.97 dBm | -19.97 dB |
| 2 | 2 | 3.6600 GHz | 3.6790 GHz | 1.000 MHz | 3.678968333 GHz | -37.38 dBm | -24.38 dB |
| 3 | 3 | 3.6790 GHz | 3.6800 GHz | 390.0 kHz | 3.679636667 GHz | -37.64 dBm | -24.64 dB |
| 4 | 4 | 3.6800 GHz | 3.7000 GHz | 390.0 kHz | 3.686500000 GHz | 1.528 dBm | -23.47 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 390.0 kHz | 3.700023333 GHz | -38.30 dBm | -25.30 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701060000 GHz | -37.05 dBm | -24.05 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.711716667 GHz | -41.08 dBm | -16.08 dB |
| 8 | 8 | 3.7200 GHz | 3.7400 GHz | 1.000 MHz | 3.720066667 GHz | -44.90 dBm | -4.898 dB |

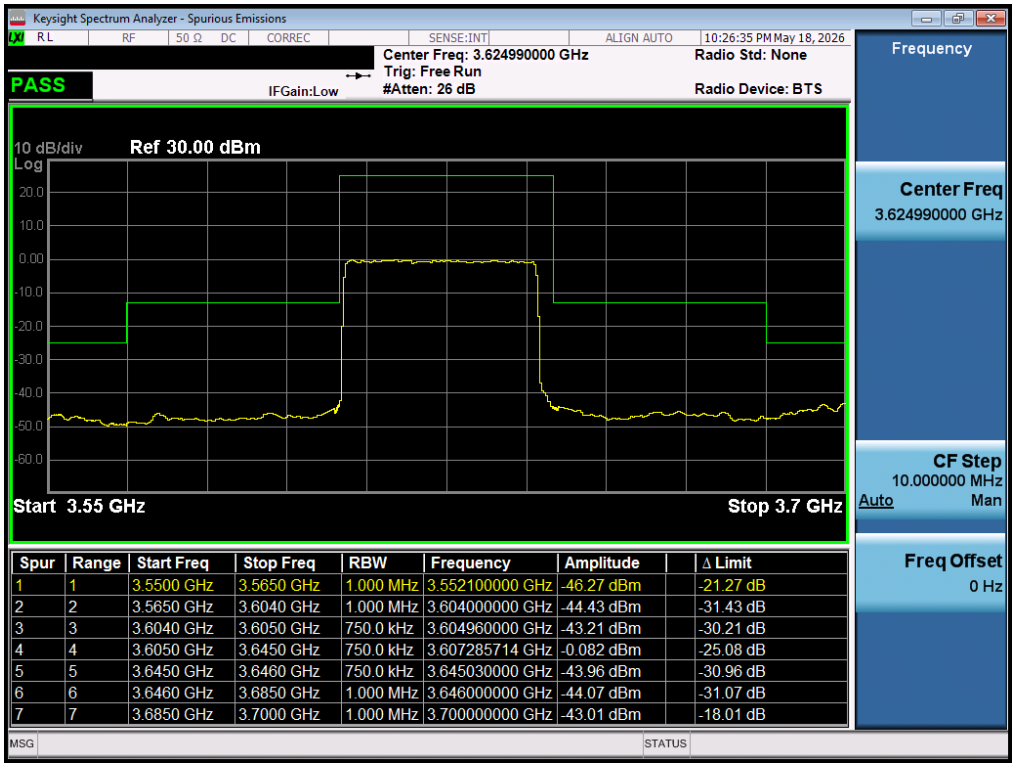
**Plot 7-115. Channel – Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - High Channel – Ant6)**

## NR Band n48 – Ant6



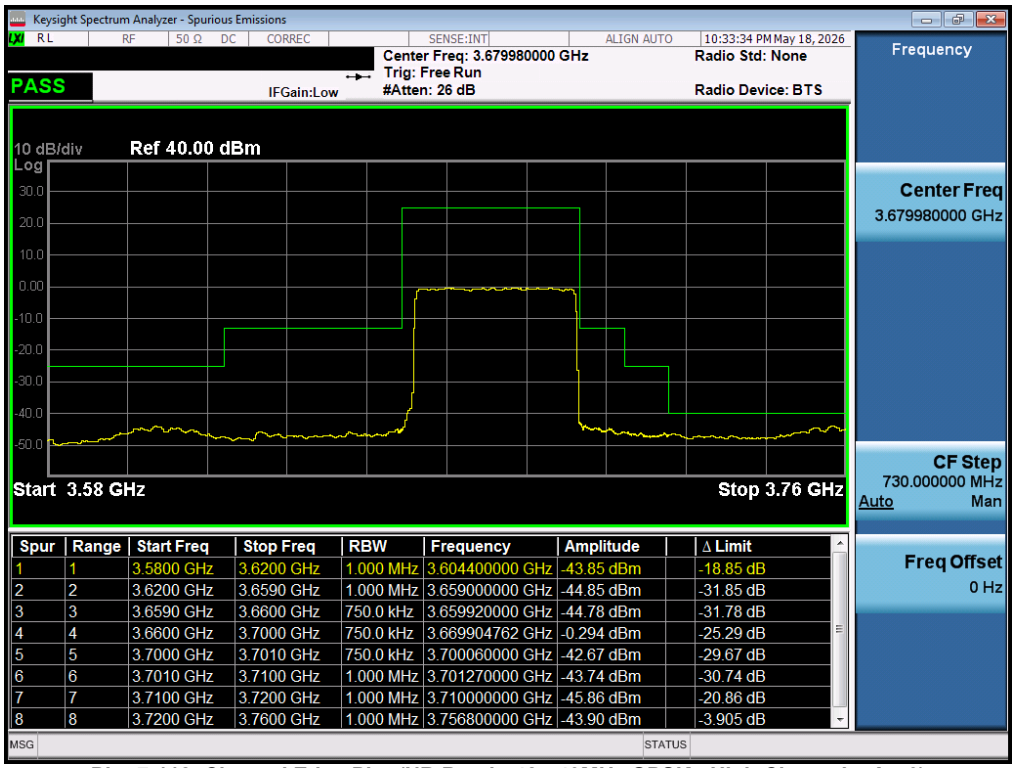

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.529400000 GHz | -47.42 dBm | -7.418 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.533300000 GHz | -43.54 dBm | -18.54 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -41.47 dBm | -28.47 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549910000 GHz | -42.28 dBm | -29.28 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.561428571 GHz | 0.738 dBm | -24.26 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590450000 GHz | -39.50 dBm | -26.50 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.604260000 GHz | -36.04 dBm | -23.04 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.636800000 GHz | -46.67 dBm | -21.67 dB |

**Plot 7-116. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.552100000 GHz | -46.27 dBm | -21.27 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -44.43 dBm | -31.43 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.604960000 GHz | -43.21 dBm | -30.21 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.607285714 GHz | -0.082 dBm | -25.08 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645030000 GHz | -43.96 dBm | -30.96 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -44.07 dBm | -31.07 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.700000000 GHz | -43.01 dBm | -18.01 dB |

**Plot 7-117. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.604400000 GHz | -43.85 dBm | -18.85 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.659000000 GHz | -44.85 dBm | -31.85 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.659920000 GHz | -44.78 dBm | -31.78 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.669904762 GHz | -0.294 dBm | -25.29 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700060000 GHz | -42.67 dBm | -29.67 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701270000 GHz | -43.74 dBm | -30.74 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.710000000 GHz | -45.86 dBm | -20.86 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.756800000 GHz | -43.90 dBm | -3.905 dB |

**Plot 7-118. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel – Ant6)**

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| NR-n48 | 40MHz | Low | Band Edge | -45.70 | -40 | -5.70 |
| | | Mid | Band Edge | -43.85 | -25 | -18.85 |
| | | High | Band Edge | -45.20 | -40 | -5.20 |

**Table 7-26. Conducted Band Edge Test Results – SRS Ant7**

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| NR-n48 | 40MHz | Low | Band Edge | -45.97 | -40 | -5.97 |
| | | Mid | Band Edge | -41.19 | -25 | -16.19 |
| | | High | Band Edge | -41.94 | -40 | -1.94 |

**Table 7-27. Conducted Band Edge Test Results – SRS Ant8**

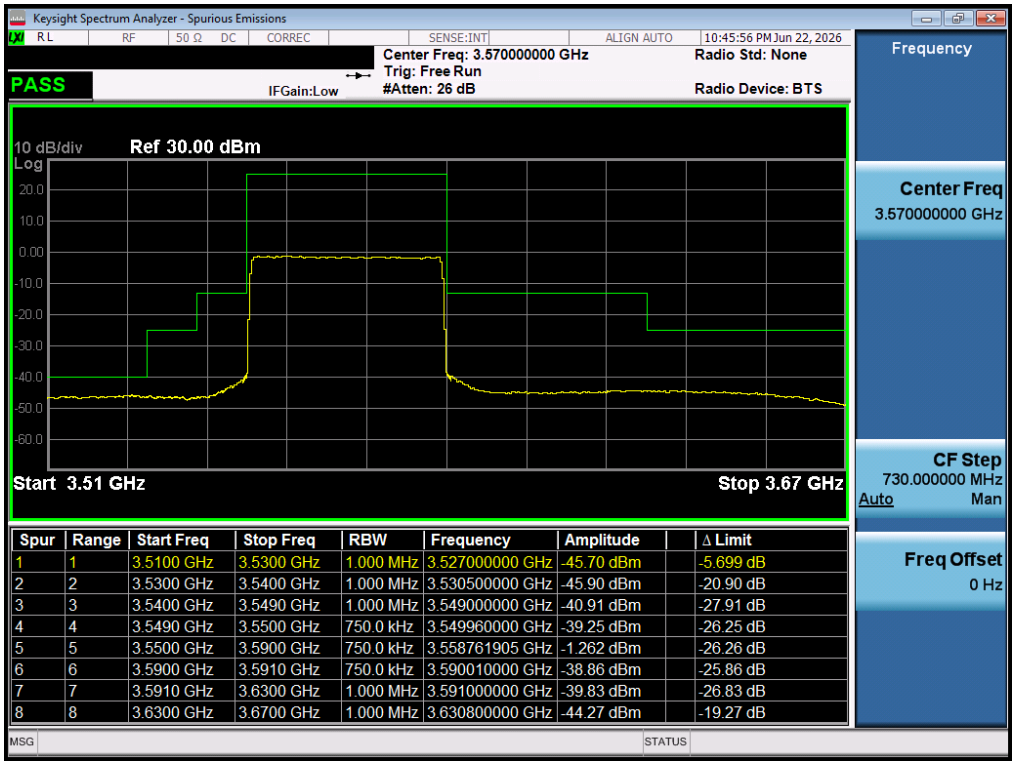
| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| NR-n48 | 40MHz | Low | Band Edge | -47.44 | -40 | -7.44 |
| | | Mid | Band Edge | -47.95 | -25 | -22.95 |
| | | High | Band Edge | -44.66 | -40 | -4.66 |

**Table 7-28. Conducted Band Edge Test Results – UL MIMO Ant1**

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|
| NR-n48 | 40MHz | Low | Band Edge | -51.88 | -40 | -11.88 |
| | | Mid | Band Edge | -48.36 | -25 | -23.36 |
| | | High | Band Edge | -48.63 | -40 | -8.63 |

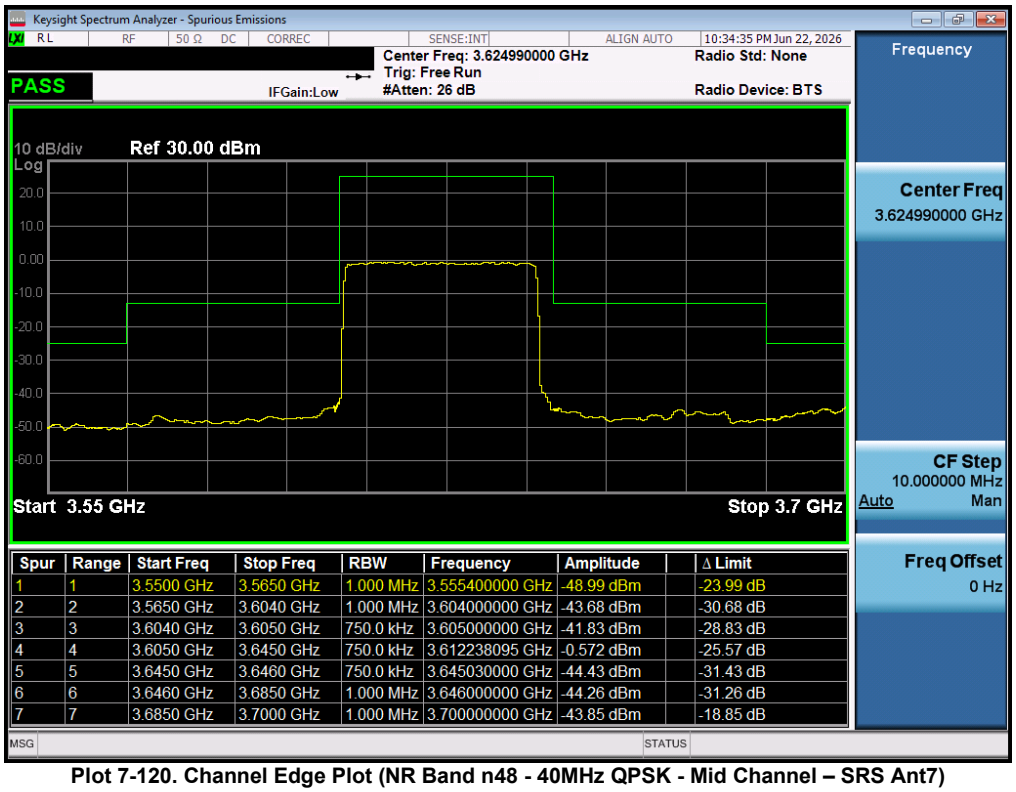
**Table 7-29. Conducted Band Edge Test Results – UL MIMO Ant6**

## NR Band n48 – SRS Ant7



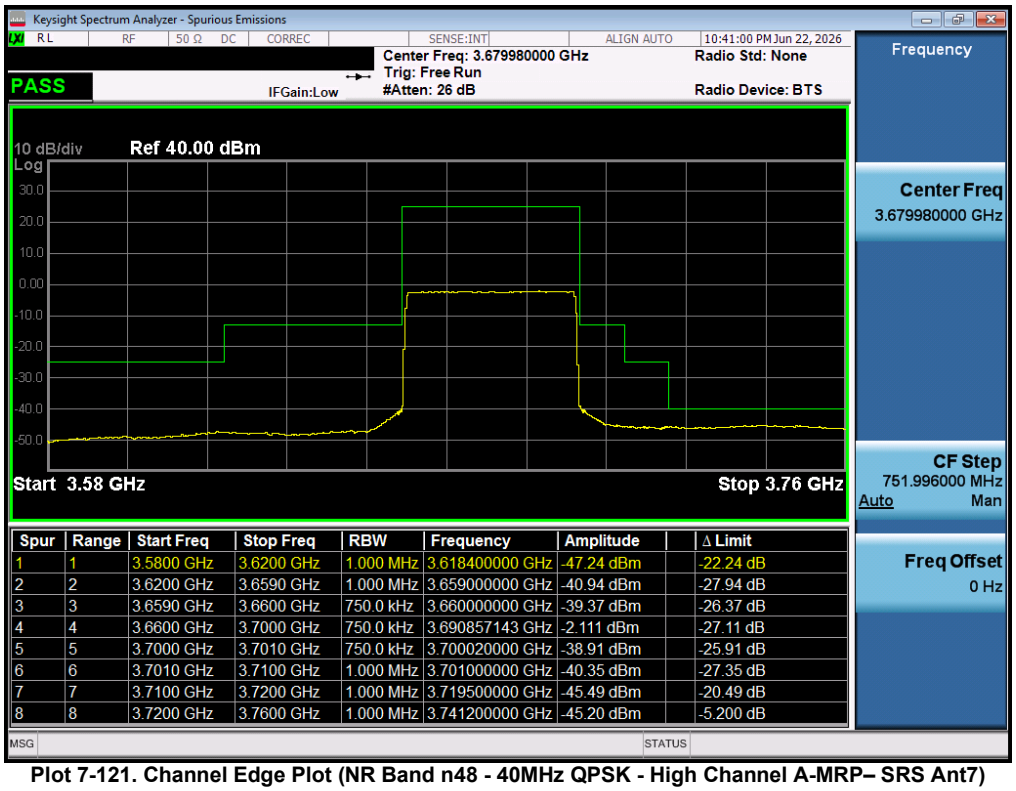

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.527000000 GHz | -45.70 dBm | -5.699 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.530500000 GHz | -45.90 dBm | -20.90 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -40.91 dBm | -27.91 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549960000 GHz | -39.25 dBm | -26.25 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.558761905 GHz | -1.262 dBm | -26.26 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590010000 GHz | -38.86 dBm | -25.86 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.591000000 GHz | -39.83 dBm | -26.83 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.630800000 GHz | -44.27 dBm | -19.27 dB |

**Plot 7-119. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – SRS Ant7)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.555400000 GHz | -48.99 dBm | -23.99 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -43.68 dBm | -30.68 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.605000000 GHz | -41.83 dBm | -28.83 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.612238095 GHz | -0.572 dBm | -25.57 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645030000 GHz | -44.43 dBm | -31.43 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -44.26 dBm | -31.26 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.700000000 GHz | -43.85 dBm | -18.85 dB |

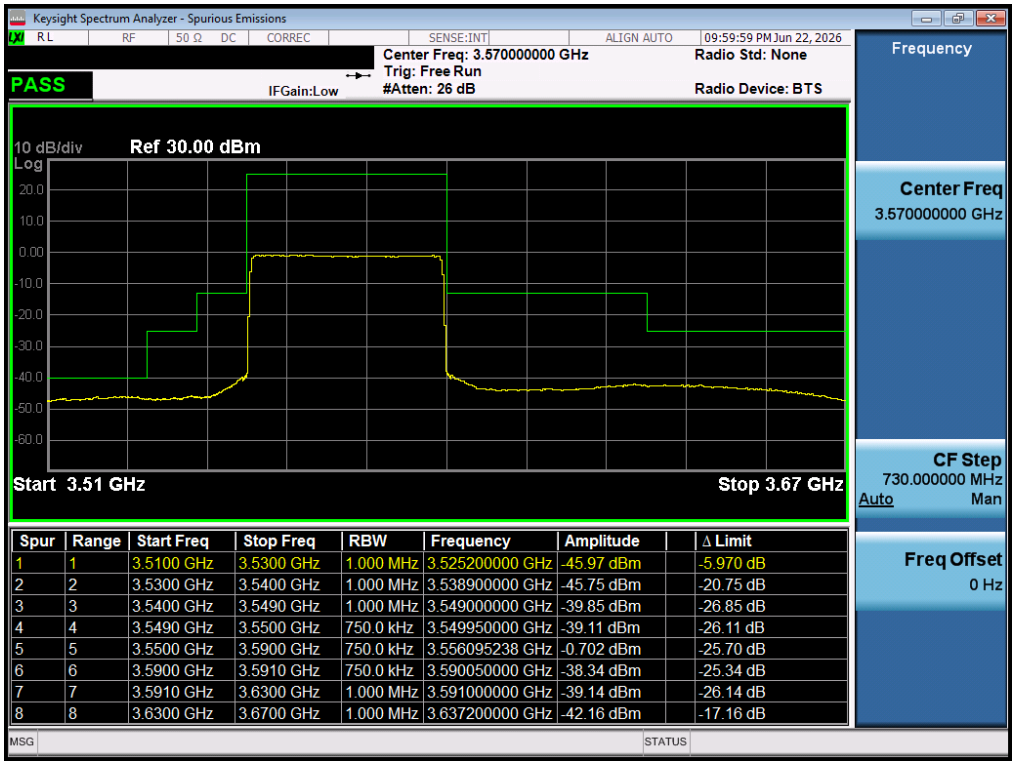
**Plot 7-120. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – SRS Ant7)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.618400000 GHz | -47.24 dBm | -22.24 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.659000000 GHz | -40.94 dBm | -27.94 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.660000000 GHz | -39.37 dBm | -26.37 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.690857143 GHz | -2.111 dBm | -27.11 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700020000 GHz | -38.91 dBm | -25.91 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701000000 GHz | -40.35 dBm | -27.35 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.719500000 GHz | -45.49 dBm | -20.49 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.741200000 GHz | -45.20 dBm | -5.200 dB |

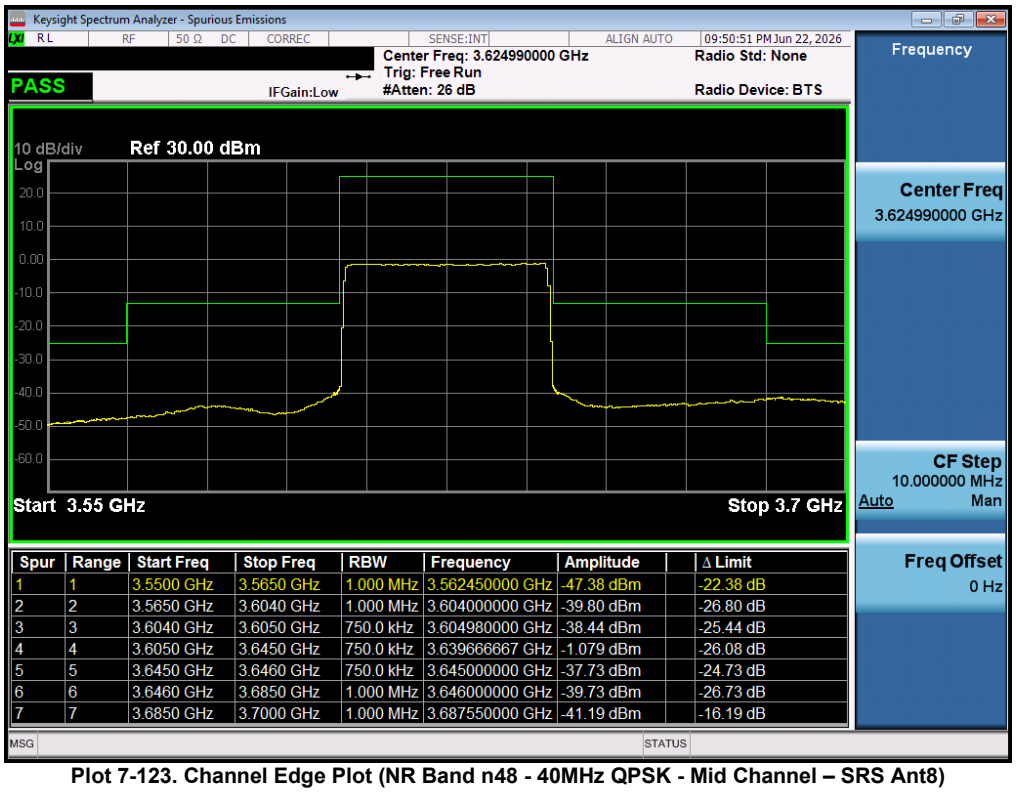
**Plot 7-121. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel A-MRP– SRS Ant7)**

## NR Band n48 – SRS Ant8



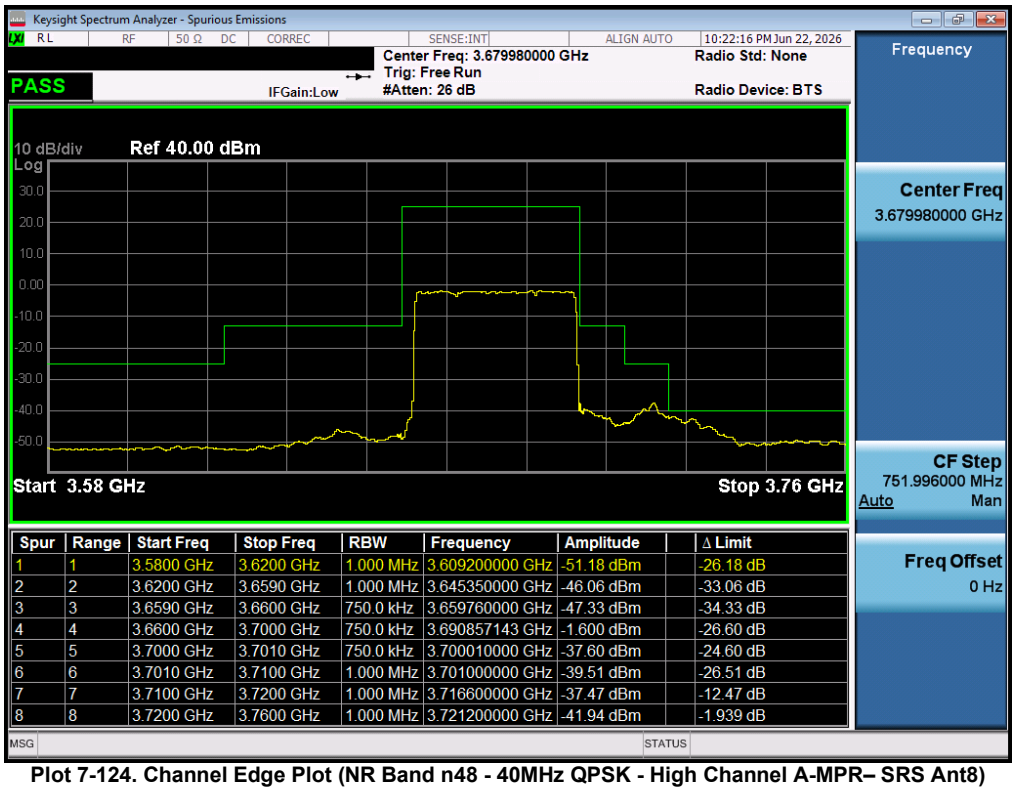

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.525200000 GHz | -45.97 dBm | -5.970 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.538900000 GHz | -45.75 dBm | -20.75 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -39.85 dBm | -26.85 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549950000 GHz | -39.11 dBm | -26.11 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.556095238 GHz | -0.702 dBm | -25.70 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590050000 GHz | -38.34 dBm | -25.34 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.591000000 GHz | -39.14 dBm | -26.14 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.637200000 GHz | -42.16 dBm | -17.16 dB |

**Plot 7-122. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – SRS Ant8)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.562450000 GHz | -47.38 dBm | -22.38 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -39.80 dBm | -26.80 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.604980000 GHz | -38.44 dBm | -25.44 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.639666667 GHz | -1.079 dBm | -26.08 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645000000 GHz | -37.73 dBm | -24.73 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -39.73 dBm | -26.73 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.687550000 GHz | -41.19 dBm | -16.19 dB |

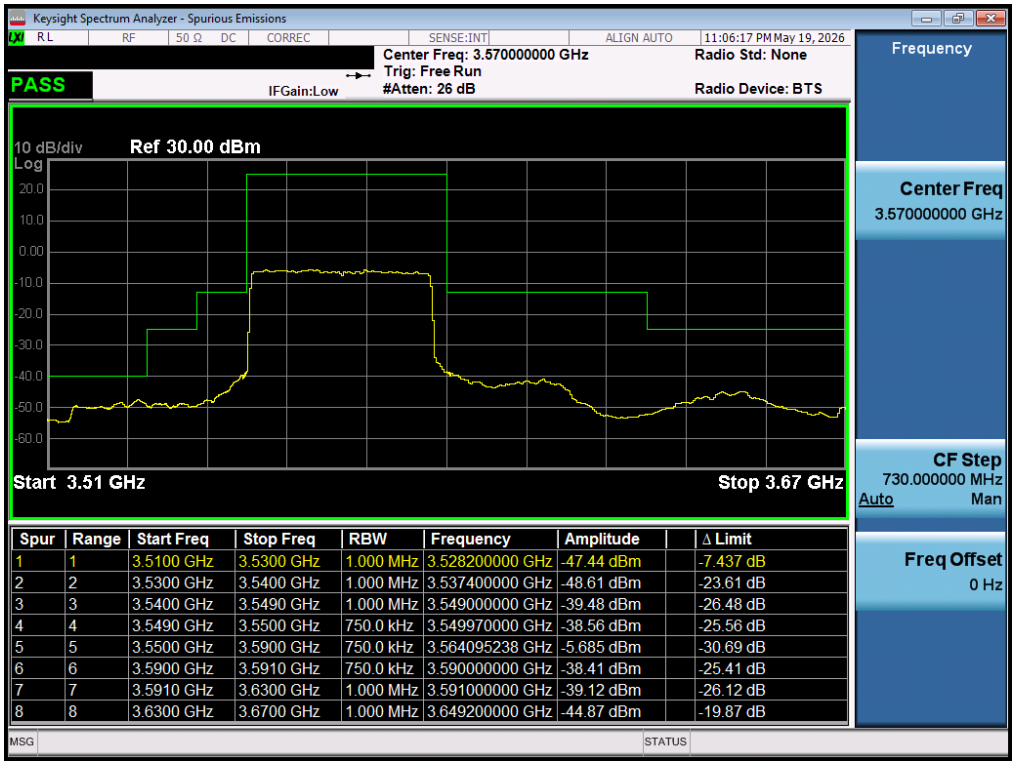
**Plot 7-123. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – SRS Ant8)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.609200000 GHz | -51.18 dBm | -26.18 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.645350000 GHz | -46.06 dBm | -33.06 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.659760000 GHz | -47.33 dBm | -34.33 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.690857143 GHz | -1.600 dBm | -26.60 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700010000 GHz | -37.60 dBm | -24.60 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701000000 GHz | -39.51 dBm | -26.51 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.716600000 GHz | -37.47 dBm | -12.47 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.721200000 GHz | -41.94 dBm | -1.939 dB |

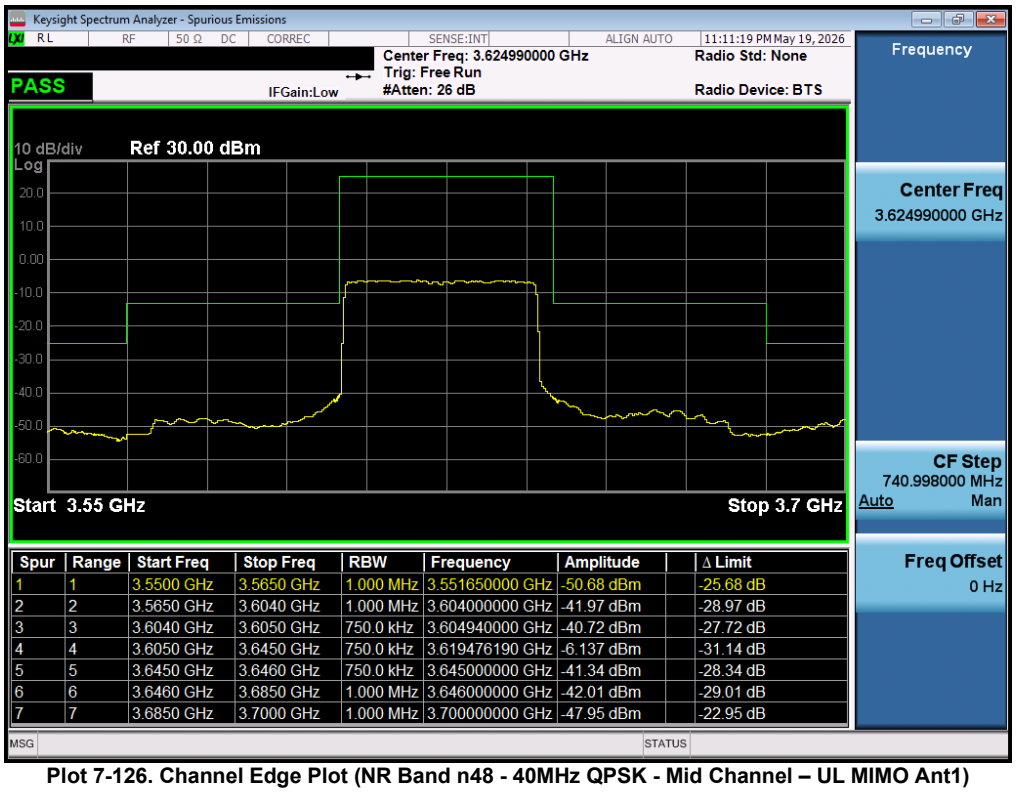
**Plot 7-124. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel A-MPR– SRS Ant8)**

## NR Band n48 – UL MIMO Ant1



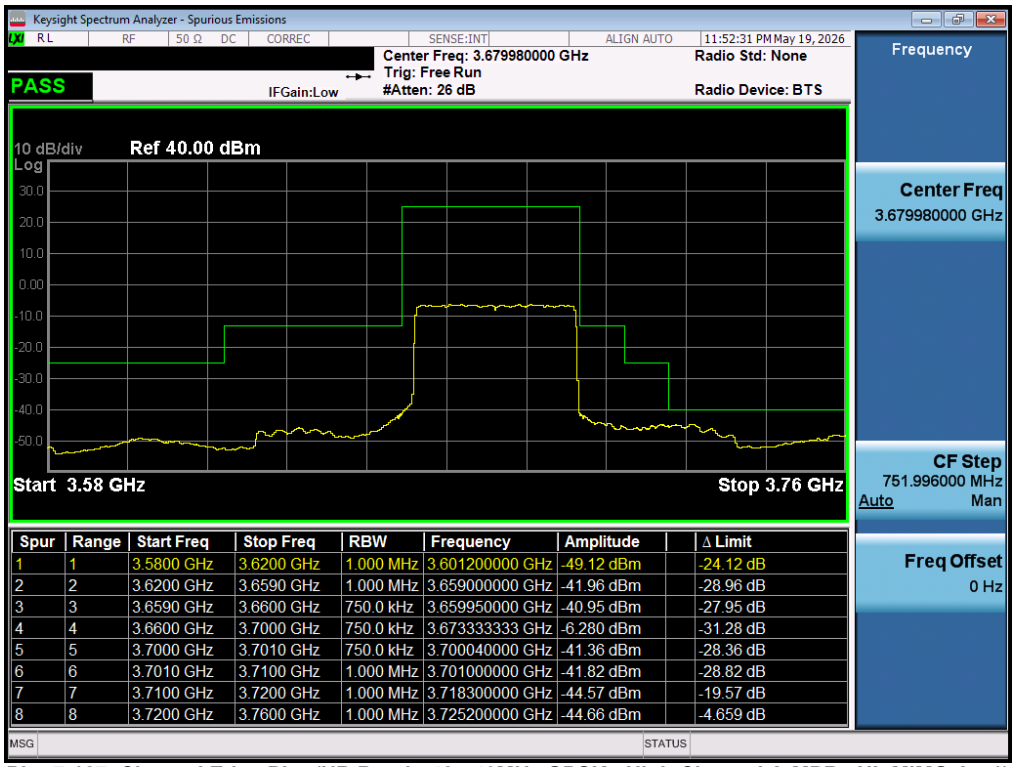

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.528200000 GHz | -47.44 dBm | -7.437 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.537400000 GHz | -48.61 dBm | -23.61 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -39.48 dBm | -26.48 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549970000 GHz | -38.56 dBm | -25.56 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.564095238 GHz | -5.685 dBm | -30.69 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590000000 GHz | -38.41 dBm | -25.41 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.591000000 GHz | -39.12 dBm | -26.12 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.649200000 GHz | -44.87 dBm | -19.87 dB |

**Plot 7-125. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.551650000 GHz | -50.68 dBm | -25.68 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -41.97 dBm | -28.97 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.604940000 GHz | -40.72 dBm | -27.72 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.619476190 GHz | -6.137 dBm | -31.14 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645000000 GHz | -41.34 dBm | -28.34 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -42.01 dBm | -29.01 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.700000000 GHz | -47.95 dBm | -22.95 dB |

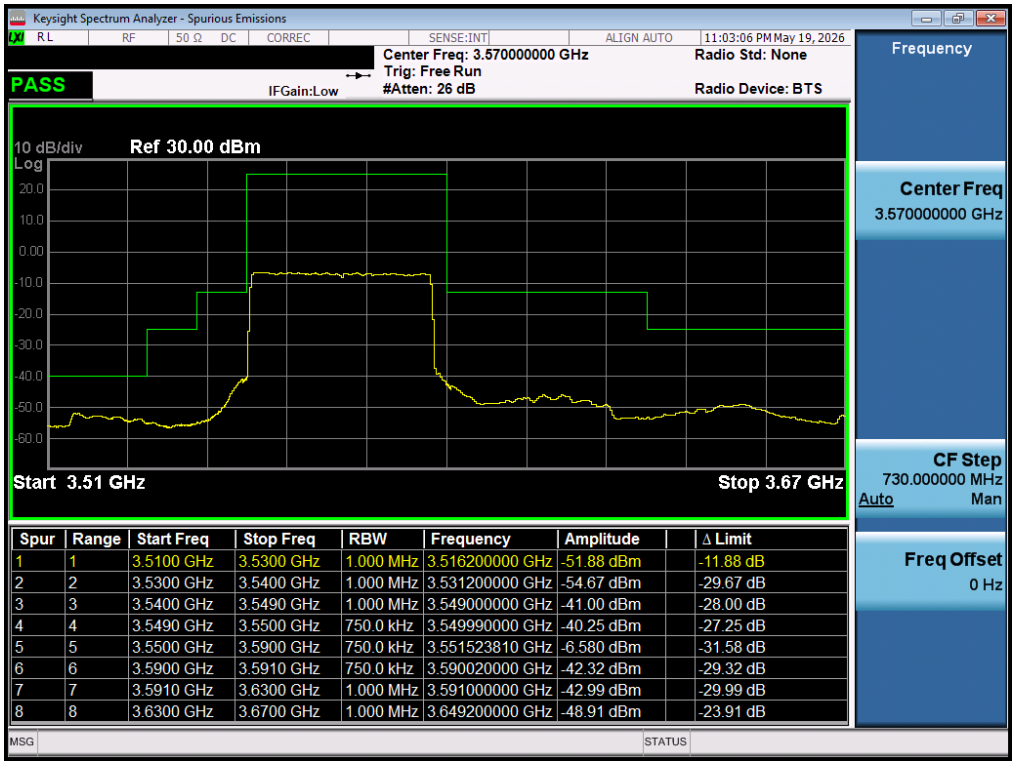
**Plot 7-126. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant1)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.601200000 GHz | -49.12 dBm | -24.12 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.659000000 GHz | -41.96 dBm | -28.96 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.659950000 GHz | -40.95 dBm | -27.95 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.673333333 GHz | -6.280 dBm | -31.28 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700040000 GHz | -41.36 dBm | -28.36 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701000000 GHz | -41.82 dBm | -28.82 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.718300000 GHz | -44.57 dBm | -19.57 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.725200000 GHz | -44.66 dBm | -4.659 dB |

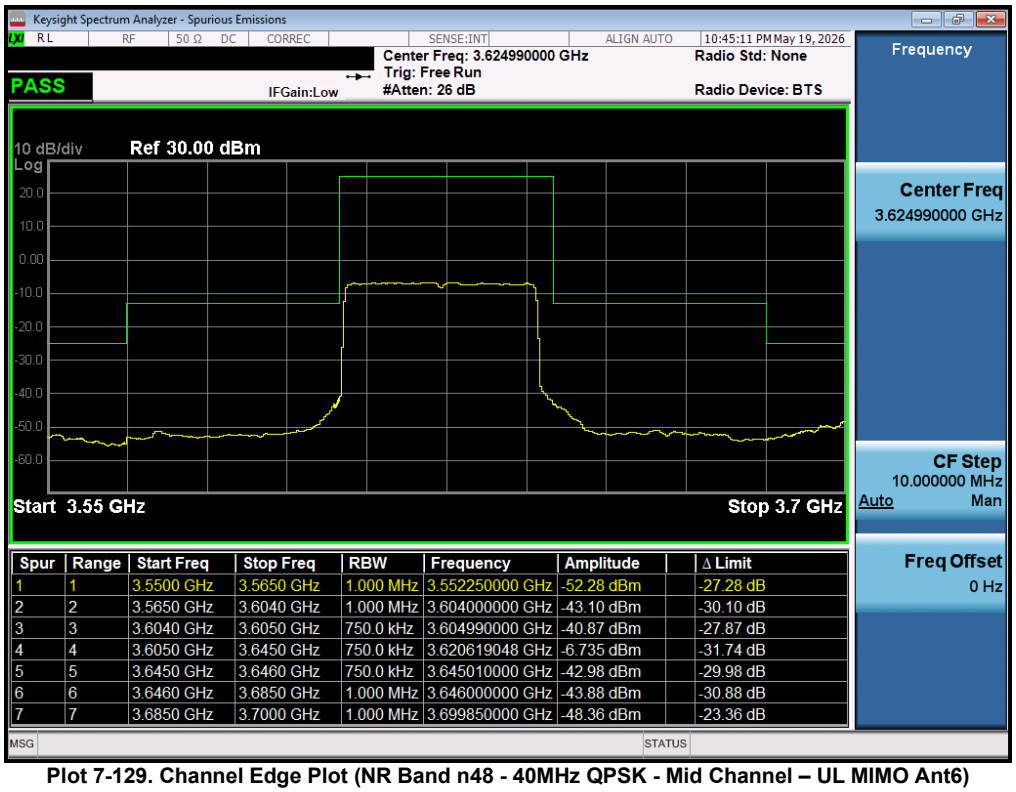
**Plot 7-127. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel A-MPR– UL MIMO Ant1)**

## NR Band n48 – UL MIMO Ant6



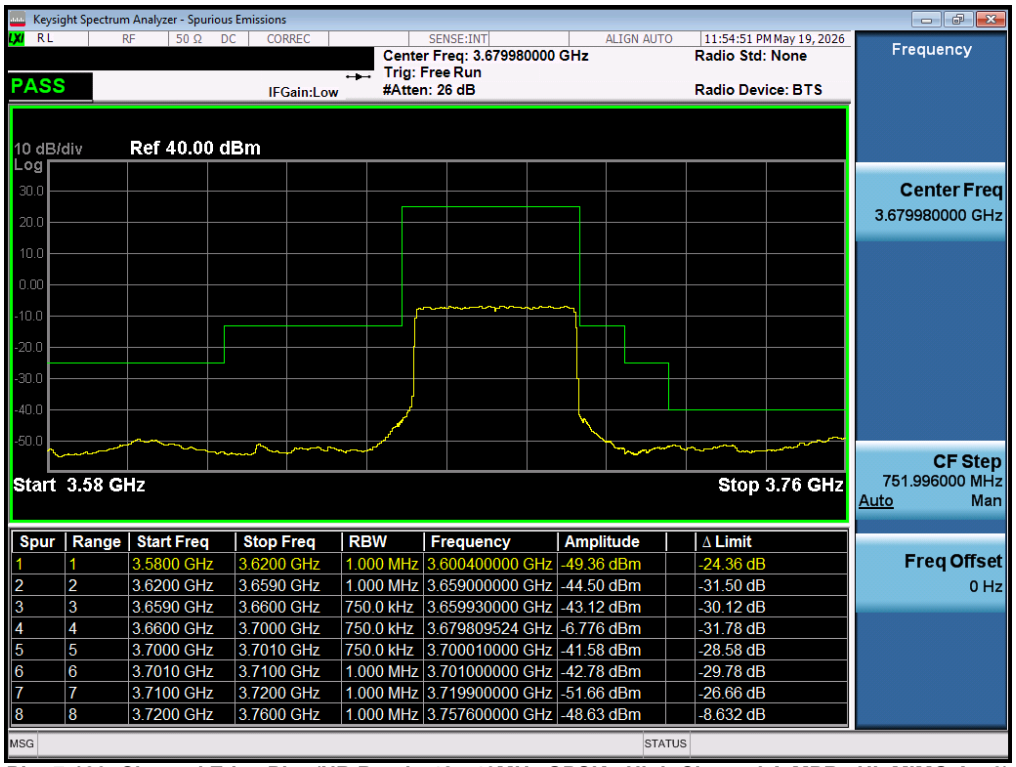

| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5100 GHz | 3.5300 GHz | 1.000 MHz | 3.516200000 GHz | -51.88 dBm | -11.88 dB |
| 2 | 2 | 3.5300 GHz | 3.5400 GHz | 1.000 MHz | 3.531200000 GHz | -54.67 dBm | -29.67 dB |
| 3 | 3 | 3.5400 GHz | 3.5490 GHz | 1.000 MHz | 3.549000000 GHz | -41.00 dBm | -28.00 dB |
| 4 | 4 | 3.5490 GHz | 3.5500 GHz | 750.0 kHz | 3.549990000 GHz | -40.25 dBm | -27.25 dB |
| 5 | 5 | 3.5500 GHz | 3.5900 GHz | 750.0 kHz | 3.551523810 GHz | -6.580 dBm | -31.58 dB |
| 6 | 6 | 3.5900 GHz | 3.5910 GHz | 750.0 kHz | 3.590020000 GHz | -42.32 dBm | -29.32 dB |
| 7 | 7 | 3.5910 GHz | 3.6300 GHz | 1.000 MHz | 3.591000000 GHz | -42.99 dBm | -29.99 dB |
| 8 | 8 | 3.6300 GHz | 3.6700 GHz | 1.000 MHz | 3.649200000 GHz | -48.91 dBm | -23.91 dB |

**Plot 7-128. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5500 GHz | 3.5650 GHz | 1.000 MHz | 3.552250000 GHz | -52.28 dBm | -27.28 dB |
| 2 | 2 | 3.5650 GHz | 3.6040 GHz | 1.000 MHz | 3.604000000 GHz | -43.10 dBm | -30.10 dB |
| 3 | 3 | 3.6040 GHz | 3.6050 GHz | 750.0 kHz | 3.604990000 GHz | -40.87 dBm | -27.87 dB |
| 4 | 4 | 3.6050 GHz | 3.6450 GHz | 750.0 kHz | 3.620619048 GHz | -6.735 dBm | -31.74 dB |
| 5 | 5 | 3.6450 GHz | 3.6460 GHz | 750.0 kHz | 3.645010000 GHz | -42.98 dBm | -29.98 dB |
| 6 | 6 | 3.6460 GHz | 3.6850 GHz | 1.000 MHz | 3.646000000 GHz | -43.88 dBm | -30.88 dB |
| 7 | 7 | 3.6850 GHz | 3.7000 GHz | 1.000 MHz | 3.699850000 GHz | -48.36 dBm | -23.36 dB |

**Plot 7-129. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – UL MIMO Ant6)**




| Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.5800 GHz | 3.6200 GHz | 1.000 MHz | 3.600400000 GHz | -49.36 dBm | -24.36 dB |
| 2 | 2 | 3.6200 GHz | 3.6590 GHz | 1.000 MHz | 3.659000000 GHz | -44.50 dBm | -31.50 dB |
| 3 | 3 | 3.6590 GHz | 3.6600 GHz | 750.0 kHz | 3.659930000 GHz | -43.12 dBm | -30.12 dB |
| 4 | 4 | 3.6600 GHz | 3.7000 GHz | 750.0 kHz | 3.679809524 GHz | -6.776 dBm | -31.78 dB |
| 5 | 5 | 3.7000 GHz | 3.7010 GHz | 750.0 kHz | 3.700010000 GHz | -41.58 dBm | -28.58 dB |
| 6 | 6 | 3.7010 GHz | 3.7100 GHz | 1.000 MHz | 3.701000000 GHz | -42.78 dBm | -29.78 dB |
| 7 | 7 | 3.7100 GHz | 3.7200 GHz | 1.000 MHz | 3.719900000 GHz | -51.66 dBm | -26.66 dB |
| 8 | 8 | 3.7200 GHz | 3.7600 GHz | 1.000 MHz | 3.757600000 GHz | -48.63 dBm | -8.632 dB |

**Plot 7-130. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel A-MPR– UL MIMO Ant6)**

## 7.6 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 = Max Hold (In cases where the level is within 2dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
7. The trace was allowed to stabilize

## Test Setup

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

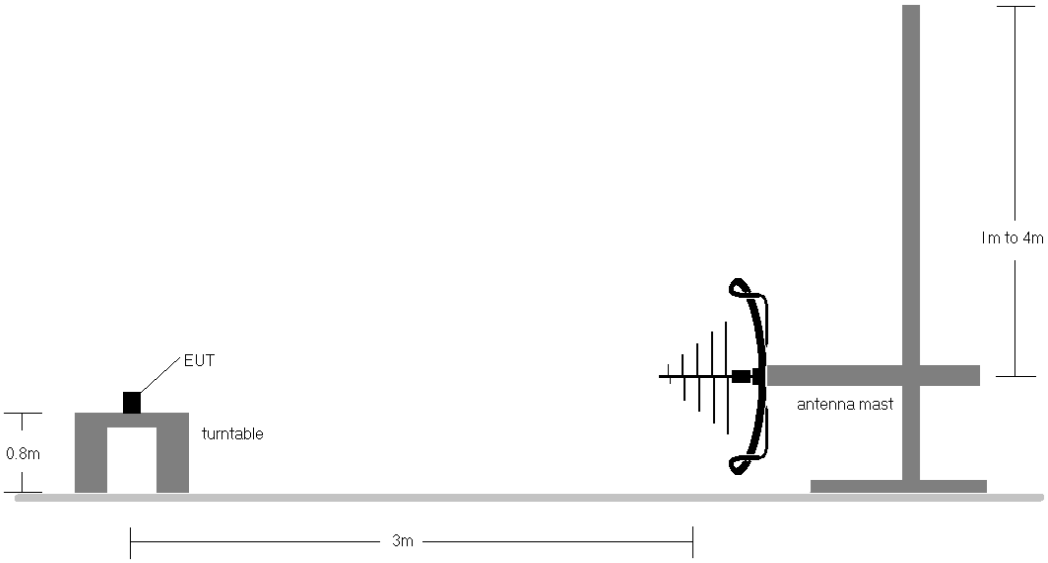



**Figure 7-6. Test Instrument & Measurement Setup < 1GHz**

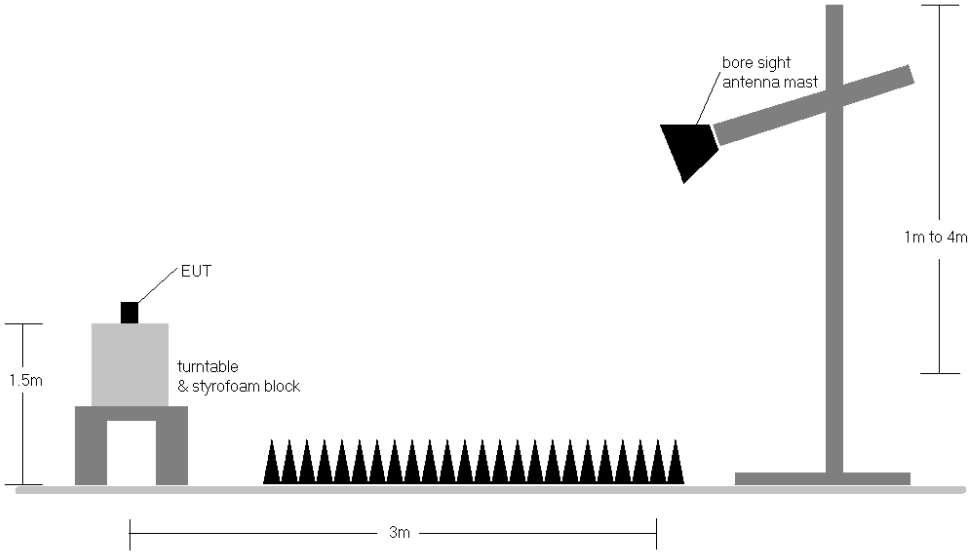



**Figure 7-7. Test Instrument & Measurement Setup >1 GHz**

## 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) 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.

8) 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.

## LTE Band 48 – Ant1

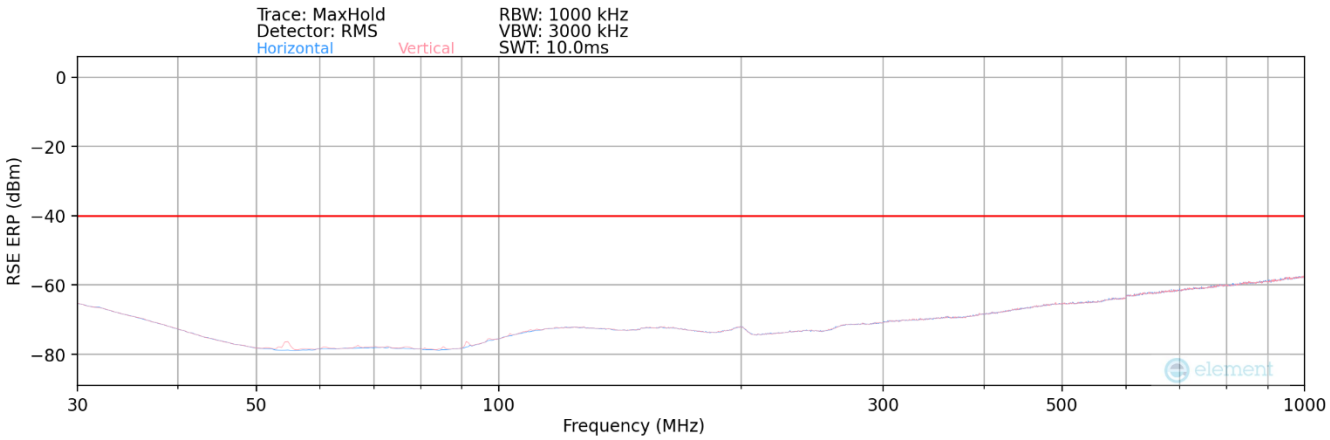



**Table 7-30. Radiated Spurious Plot Below 1GHz (LTE Band 48 – Ant1)**

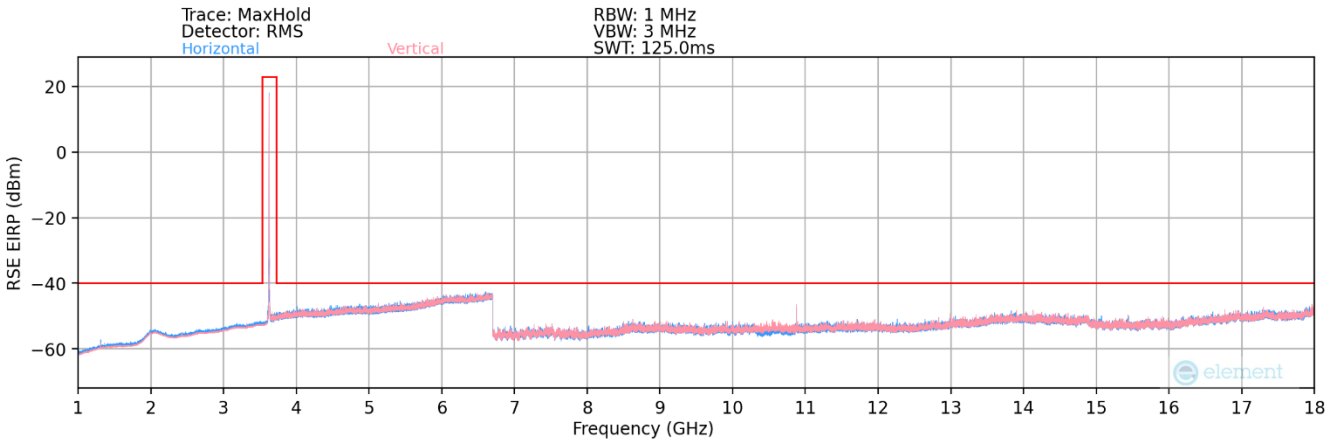



**Table 7-31. Radiated Spurious Plot 1-18GHz (LTE Band 48 – Ant1)**

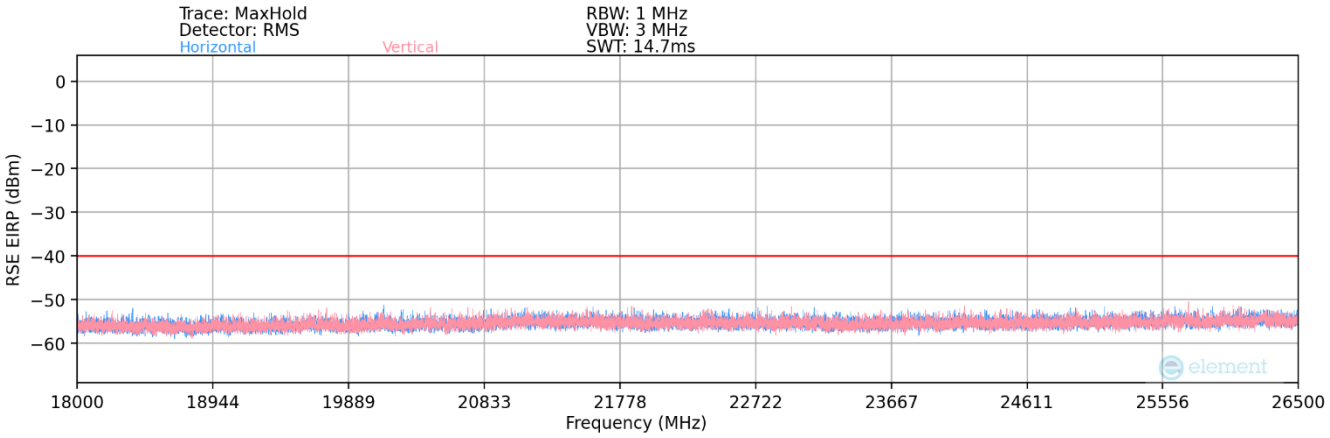



**Table 7-32. Radiated Spurious Plot 18-26.5GHz (LTE Band 48 – Ant1)**

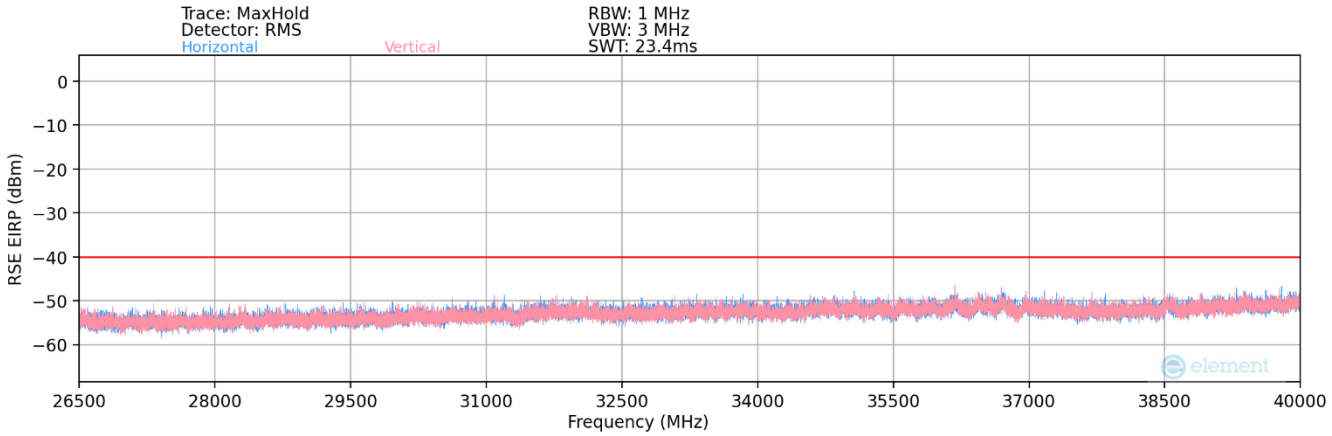



**Table 7-33. Radiated Spurious Plot 26.5-40GHz (LTE Band 48 – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.68 | V | 162 | 224 | -93.95 | 14.00 | 27.06 | -70.35 | -40.00 | -30.35 |
| 85.29 | V | - | - | -94.35 | 14.01 | 26.66 | -70.75 | -40.00 | -30.75 |

**Table 7-34. Radiated Spurious Data (LTE Band 48 – Mid Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3560.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.48 | -7.07 | 23.45 | -71.81 | -40.00 | -31.81 |
| 7120.00 | H | 152 | 109 | -73.49 | 9.10 | 42.61 | -52.65 | -40.00 | -12.65 |
| 10680.00 | H | 142 | 173 | -71.36 | 12.36 | 48.00 | -47.26 | -40.00 | -7.26 |
| 14240.00 | H | - | - | -81.16 | 15.11 | 40.95 | -54.31 | -40.00 | -14.31 |
| 17800.00 | H | 152 | 224 | -80.34 | 16.69 | 43.35 | -61.45 | -40.00 | -21.45 |
| 21360.00 | H | - | - | -62.14 | 3.72 | 48.58 | -56.22 | -40.00 | -16.22 |
| 24920.00 | H | - | - | -61.80 | 3.64 | 48.84 | -55.96 | -40.00 | -15.96 |
| 28480.00 | H | - | - | -62.32 | 4.58 | 49.26 | -55.54 | -40.00 | -15.54 |

**Table 7-35. Radiated Spurious Data (LTE Band 48 – Low Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.53 | -7.07 | 23.40 | -71.86 | -40.00 | -31.86 |
| 7250.00 | H | 127 | 280 | -78.54 | 8.96 | 37.42 | -57.83 | -40.00 | -17.83 |
| 10875.00 | H | 167 | 138 | -71.33 | 12.03 | 47.70 | -47.56 | -40.00 | -7.56 |
| 14500.00 | H | - | - | -81.12 | 14.95 | 40.83 | -63.97 | -40.00 | -23.97 |
| 18125.00 | H | - | - | -60.49 | 1.01 | 47.52 | -57.28 | -40.00 | -17.28 |
| 21750.00 | H | 150 | 214 | -61.67 | 3.59 | 48.92 | -55.88 | -40.00 | -15.88 |
| 25375.00 | H | 150 | 49 | -61.82 | 3.86 | 49.04 | -55.76 | -40.00 | -15.76 |
| 29000.00 | H | - | - | -62.92 | 5.05 | 49.13 | -55.67 | -40.00 | -15.67 |
| 32625.00 | H | - | - | -62.31 | 6.62 | 51.31 | -53.49 | -40.00 | -13.49 |
| 36250.00 | H | - | - | -63.06 | 7.95 | 51.89 | -52.91 | -40.00 | -12.91 |

**Table 7-36. Radiated Spurious Data (LTE Band 48 – Mid Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3690.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.55 | -7.07 | 23.38 | -71.88 | -40.00 | -31.88 |
| 7380.00 | H | 239 | 107 | -70.86 | 9.69 | 45.83 | -49.43 | -40.00 | -9.43 |
| 11070.00 | H | 179 | 202 | -73.02 | 12.07 | 46.05 | -49.21 | -40.00 | -9.21 |
| 14760.00 | H | - | - | -81.51 | 14.90 | 40.39 | -64.41 | -40.00 | -24.41 |
| 18450.00 | H | - | - | -60.60 | 1.32 | 47.72 | -57.08 | -40.00 | -17.08 |
| 22140.00 | H | 150 | 230 | -61.98 | 3.51 | 48.53 | -56.27 | -40.00 | -16.27 |
| 25830.00 | H | - | - | -61.88 | 3.73 | 48.85 | -55.95 | -40.00 | -15.95 |
| 29520.00 | H | - | - | -62.80 | 5.42 | 49.62 | -55.18 | -40.00 | -15.18 |
| 33210.00 | H | - | - | -62.42 | 7.41 | 51.99 | -52.81 | -40.00 | -12.81 |

**Table 7-37. Radiated Spurious Data (LTE Band 48 – High Channel – Ant1)**

## ULCA LB48 – Ant1

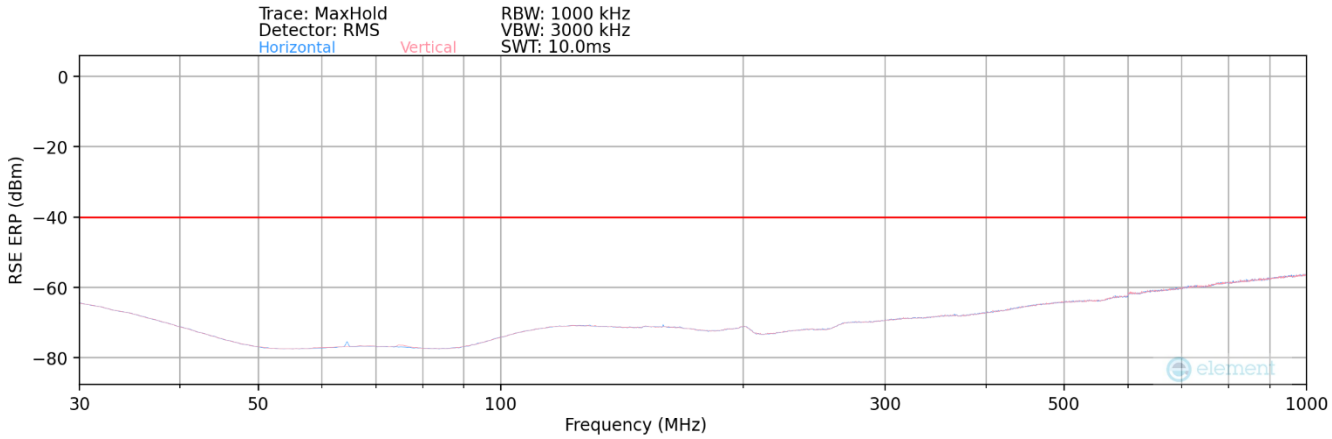



**Table 7-38. Radiated Spurious Plot Below 1GHz (ULCA LB48 – Ant1)**

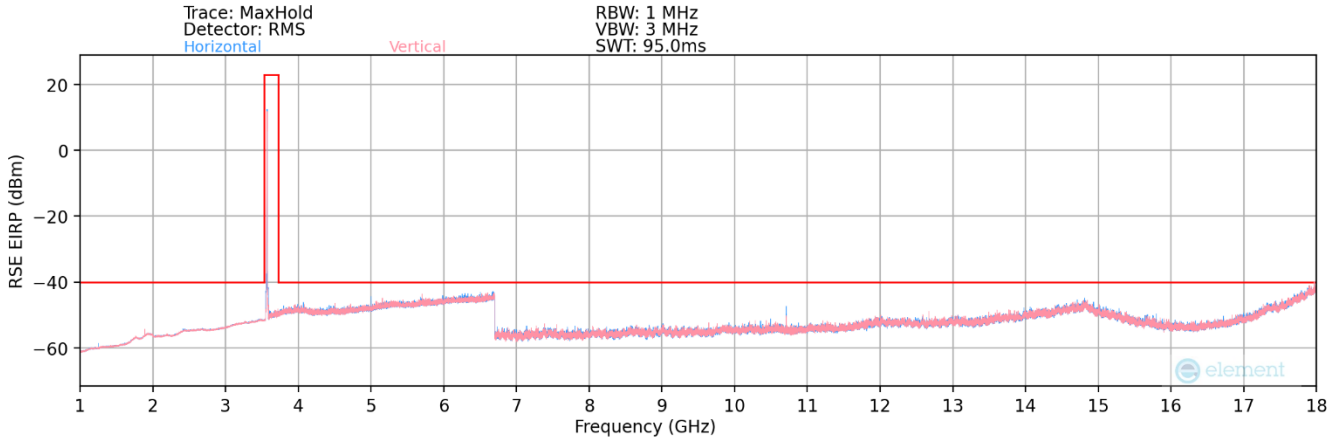



**Table 7-39. Radiated Spurious Plot 1-18GHz (ULCA LB48 – Low Channel – Ant1)**

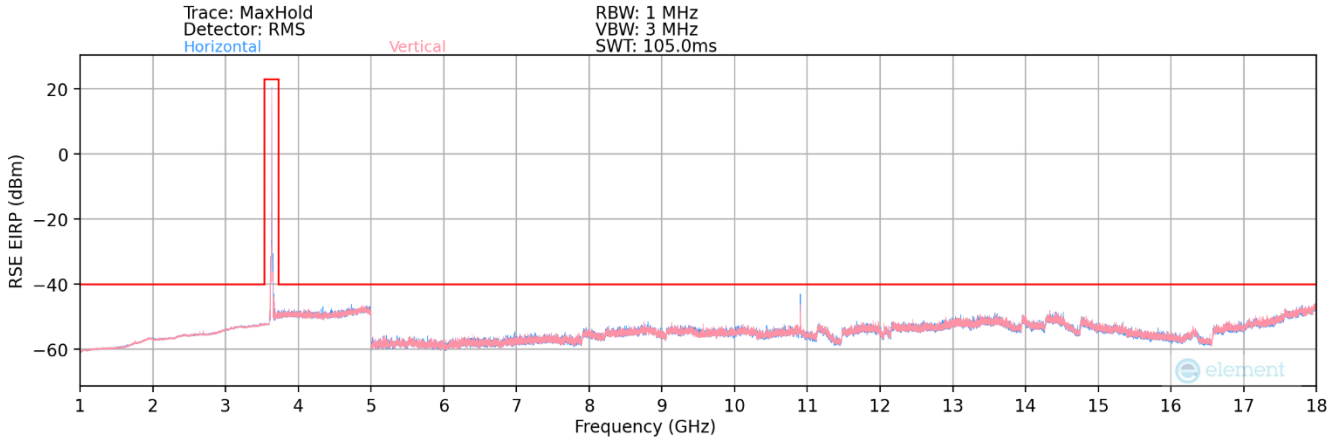



**Table 7-40. Radiated Spurious Plot 1-18GHz (ULCA LB48 – Mid Channel – Ant1)**

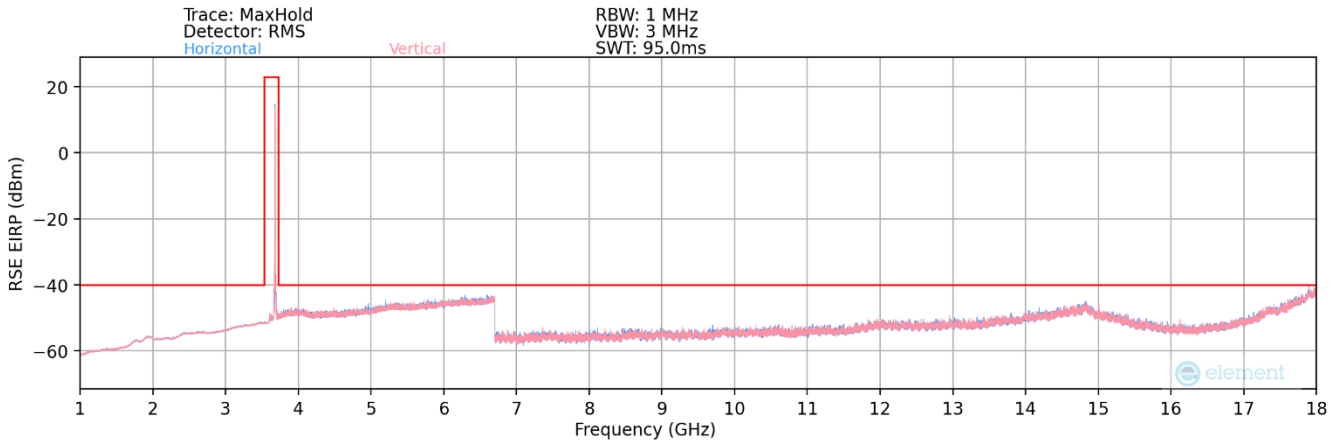



**Table 7-41. Radiated Spurious Plot 1-18GHz (ULCA LB48 – High Channel – Ant1)**

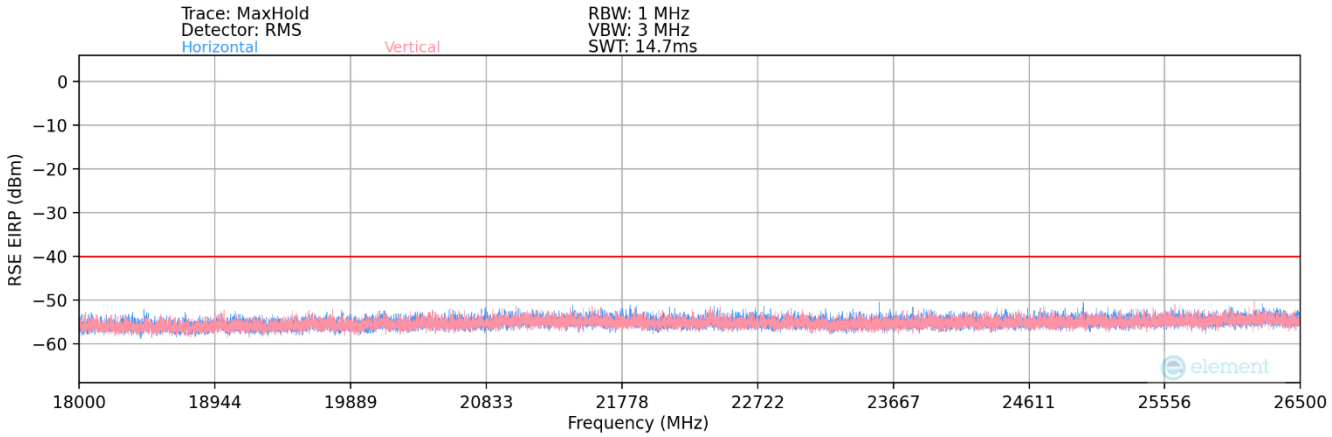



**Table 7-42. Radiated Spurious Plot 18-26.5GHz (ULCA LB48 – Ant1)**

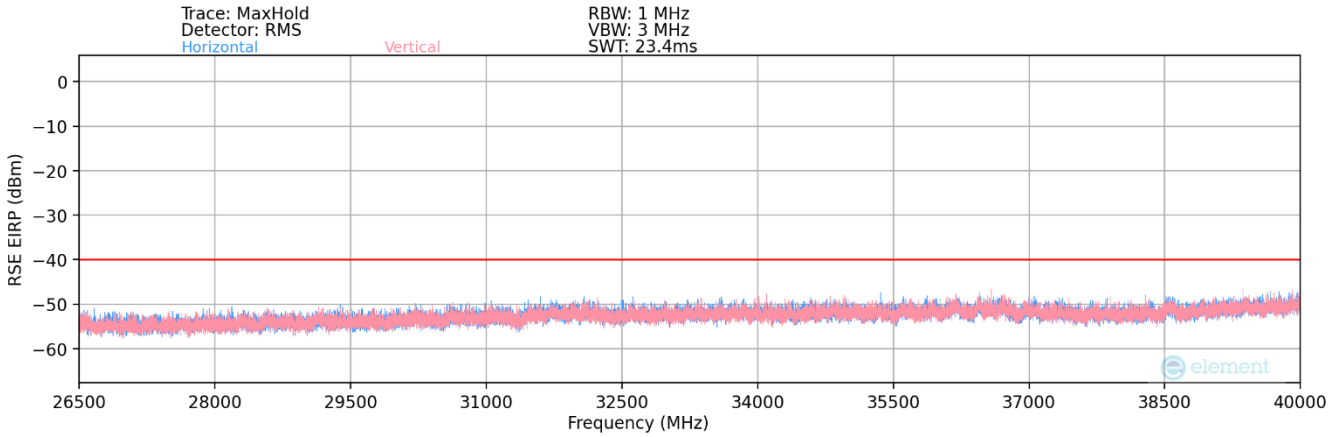



**Table 7-43. Radiated Spurious Plot 26.5-40GHz (ULCA LB48 – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 3625.0 |
| PCC RB / Offset: | 1/99 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 3644.8 |
| SCC RB / Offset: | 1/0 |
| Modulation Signal: | QPSK |
| Detector / Trace Mode: | RMS / MaxHold |
| 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] |
|---|---|---|---|---|---|---|---|---|---|
| 64.00 | H | - | - | -94.49 | 14.45 | 26.96 | -70.45 | -40.00 | -30.45 |

**Table 7-44. Radiated Spurious Data (ULCA LB48 – Mid Channel – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 3560.0 |
| PCC RB / Offset: | 1/ 99 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 3579.8 |
| SCC RB / Offset: | 1/ 0 |
| Modulation Signal: | QPSK |
| Detector / Trace Mode: | RMS / MaxHold |
| 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7139.80 | H | 113 | 148 | -71.65 | 3.71 | 39.06 | -56.20 | -40.00 | -16.20 |
| 10709.70 | H | 122 | 214 | -66.78 | 8.48 | 48.70 | -46.56 | -40.00 | -6.56 |
| 14279.60 | H | - | - | -76.27 | 12.90 | 43.63 | -51.63 | -40.00 | -11.63 |
| 17849.50 | H | - | - | -77.05 | 17.13 | 47.08 | -48.18 | -40.00 | -8.18 |
| 21419.40 | H | - | - | -61.90 | 3.78 | 48.88 | -55.92 | -40.00 | -15.92 |

**Table 7-45. Radiated Spurious Data (ULCA LB48 – Low Channel – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 3625.0 |
| PCC RB / Offset: | 1/ 99 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 3644.8 |
| SCC RB / Offset: | 1/ 0 |
| Modulation Signal: | QPSK |
| Detector / Trace Mode: | RMS / MaxHold |
| 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7269.80 | H | - | - | -73.40 | 3.73 | 37.33 | -57.93 | -40.00 | -17.93 |
| 10904.70 | H | 139 | 141 | -67.81 | 8.68 | 47.87 | -47.39 | -40.00 | -7.39 |
| 14539.60 | H | - | - | -75.63 | 12.96 | 44.33 | -50.93 | -40.00 | -10.93 |
| 18174.50 | H | - | - | -60.76 | 1.17 | 47.41 | -57.39 | -40.00 | -17.39 |
| 21809.40 | H | - | - | -62.02 | 3.66 | 48.64 | -56.16 | -40.00 | -16.16 |

**Table 7-46. Radiated Spurious Data (ULCA LB48 – Mid Channel – Ant1)**

| | |
|---|---|
| PCC Bandwidth (MHz): | 20 |
| PCC Frequency (MHz): | 3690.0 |
| PCC RB / Offset: | 1/ 0 |
| SCC Bandwidth (MHz): | 20 |
| SCC Frequency (MHz): | 3670.2 |
| SCC RB / Offset: | 1/ 99 |
| Modulation Signal: | QPSK |
| Detector / Trace Mode: | RMS / MaxHold |
| 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7360.20 | H | - | - | -73.84 | 4.23 | 37.39 | -57.86 | -40.00 | -17.86 |
| 11040.30 | H | 136 | 233 | -72.53 | 9.14 | 43.61 | -51.64 | -40.00 | -11.64 |
| 14720.40 | H | - | - | -75.98 | 12.34 | 43.36 | -51.90 | -40.00 | -11.90 |
| 18400.50 | H | - | - | -60.71 | 1.13 | 47.42 | -57.38 | -40.00 | -17.38 |
| 22080.60 | H | - | - | -62.06 | 3.66 | 48.60 | -56.20 | -40.00 | -16.20 |

**Table 7-47. Radiated Spurious Data (ULCA LB48 – High Channel – Ant1)**

## NR Band n48 – Ant1

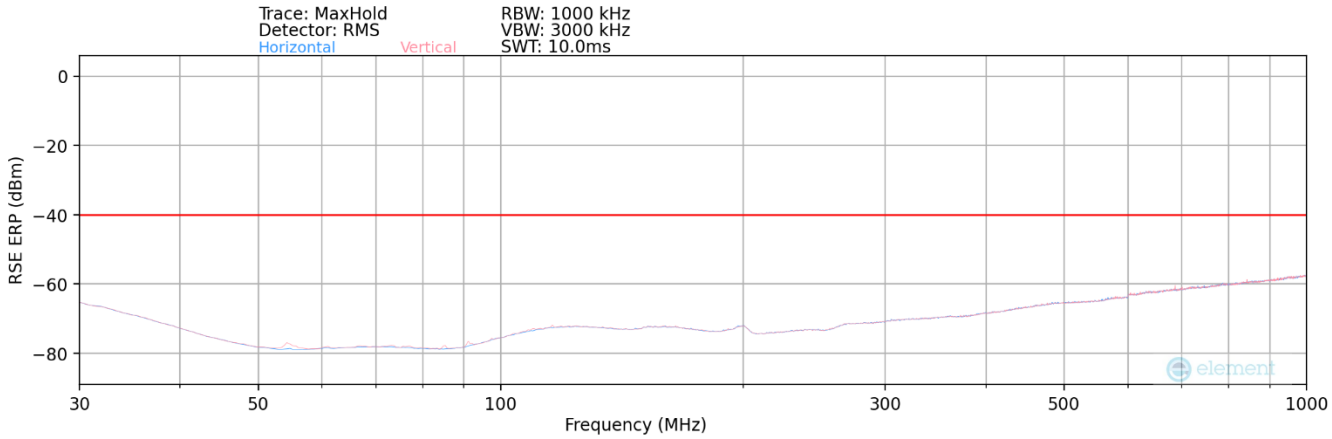



**Table 7-48. Radiated Spurious Plot Below 1GHz (NR Band n48 – Ant1)**

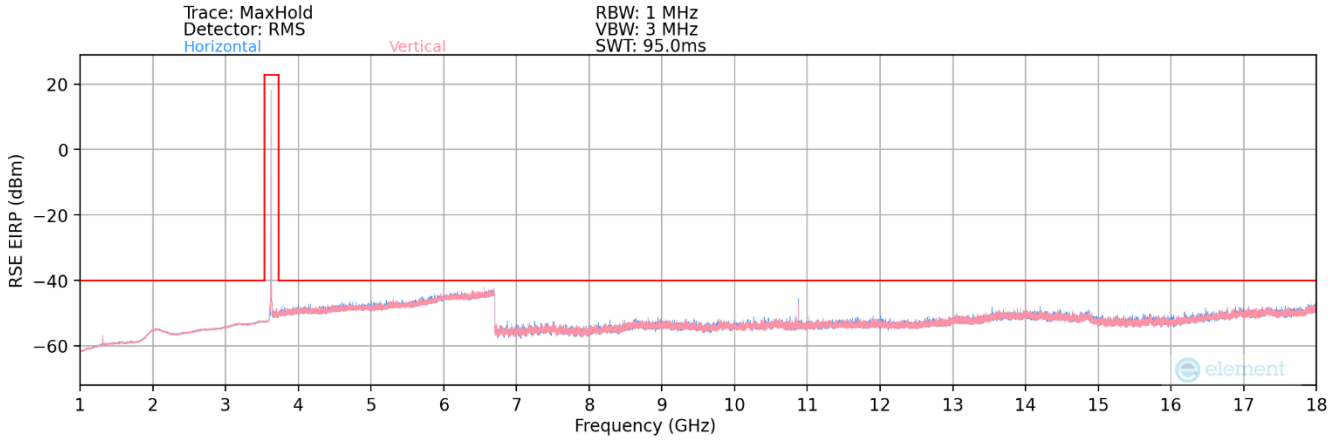



**Table 7-49. Radiated Spurious Plot 1-18GHz (NR Band n48 – Ant1)**

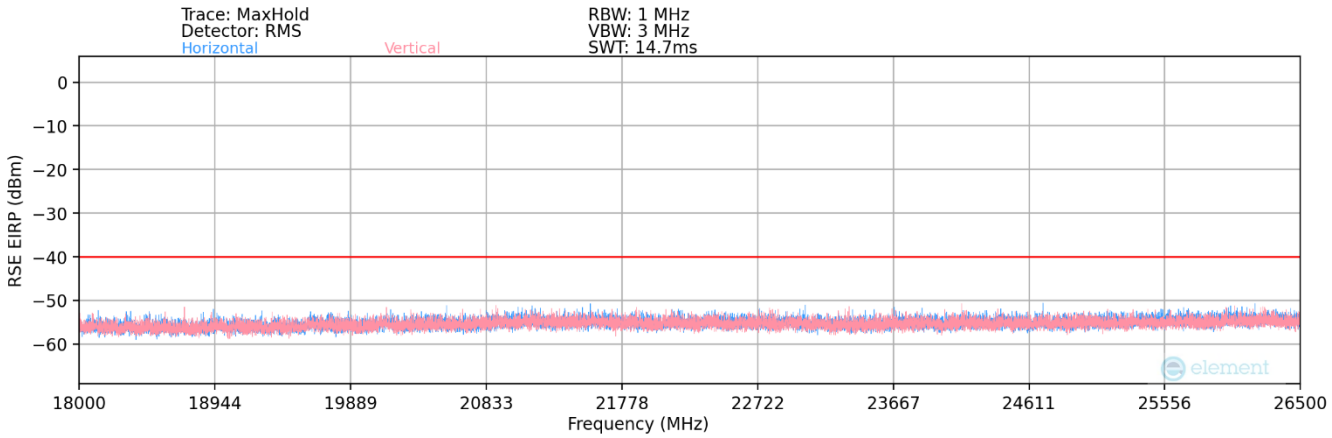



**Table 7-50. Radiated Spurious Plot 18-26.5GHz (NR Band n48 – Ant1)**

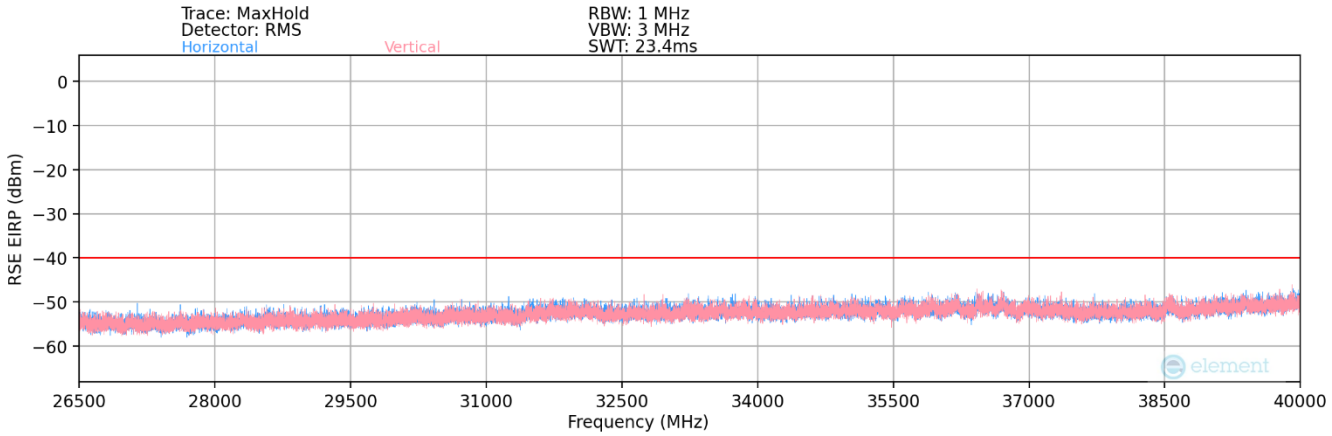



**Table 7-51. Radiated Spurious Plot 26.5-40GHz (NR Band n48 – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.87 | V | 143 | 197 | -94.95 | 14.00 | 26.05 | -71.36 | -40.00 | -31.36 |
| 85.29 | V | - | - | -94.21 | 14.01 | 26.80 | -70.61 | -40.00 | -30.61 |

**Table 7-52. Radiated Spurious Data (NR Band n48 – Mid Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3570.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.59 | -7.07 | 23.34 | -71.92 | -40.00 | -31.92 |
| 7140.00 | H | 265 | 309 | -78.91 | 9.41 | 37.50 | -57.75 | -40.00 | -17.75 |
| 10710.00 | H | 214 | 188 | -71.23 | 12.37 | 48.14 | -47.12 | -40.00 | -7.12 |
| 14280.00 | H | - | - | -81.55 | 15.34 | 40.79 | -54.46 | -40.00 | -14.46 |
| 17850.00 | H | - | - | -81.61 | 17.07 | 42.46 | -62.34 | -40.00 | -22.34 |
| 21420.00 | H | - | - | -61.73 | 3.78 | 49.05 | -55.75 | -40.00 | -15.75 |

**Table 7-53. Radiated Spurious Data (NR Band n48 – Low Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.57 | -7.07 | 23.36 | -71.90 | -40.00 | -31.90 |
| 7250.00 | H | - | - | -79.11 | 8.96 | 36.85 | -58.40 | -40.00 | -18.40 |
| 10875.00 | H | 153 | 181 | -71.29 | 12.03 | 47.74 | -47.52 | -40.00 | -7.52 |
| 14500.00 | H | - | - | -81.21 | 14.95 | 40.74 | -64.06 | -40.00 | -24.06 |
| 18125.00 | H | - | - | -60.58 | 1.01 | 47.43 | -57.37 | -40.00 | -17.37 |
| 21750.00 | H | - | - | -62.10 | 3.59 | 48.49 | -56.31 | -40.00 | -16.31 |

**Table 7-54. Radiated Spurious Data (NR Band n48 – Mid Channel – Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3680.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 1310.00 | H | - | - | -76.51 | -7.07 | 23.42 | -71.84 | -40.00 | -31.84 |
| 7360.00 | H | 139 | 112 | -72.05 | 9.41 | 44.36 | -50.90 | -40.00 | -10.90 |
| 11040.00 | H | 225 | 108 | -73.70 | 11.81 | 45.11 | -50.14 | -40.00 | -10.14 |
| 14720.00 | H | - | - | -81.85 | 14.71 | 39.86 | -64.94 | -40.00 | -24.94 |
| 18400.00 | H | - | - | -60.93 | 1.13 | 47.20 | -57.60 | -40.00 | -17.60 |
| 22080.00 | H | - | - | -62.27 | 3.66 | 48.39 | -56.41 | -40.00 | -16.41 |

**Table 7-55. Radiated Spurious Data (NR Band n48 – High Channel – Ant1)**

## LTE Band 48 – Ant6

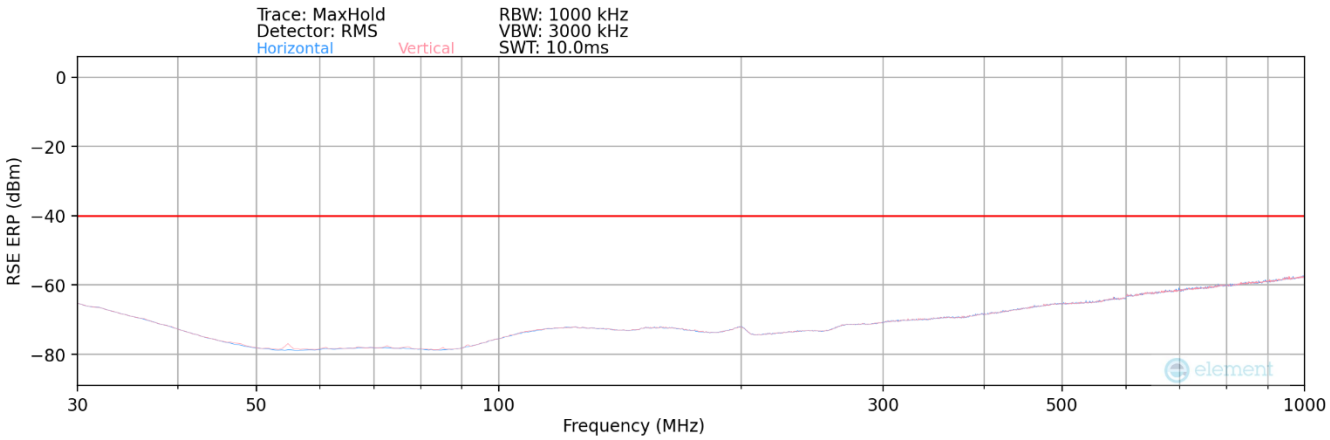



**Table 7-56. Radiated Spurious Plot Below 1GHz (LTE Band 48 – Ant6)**

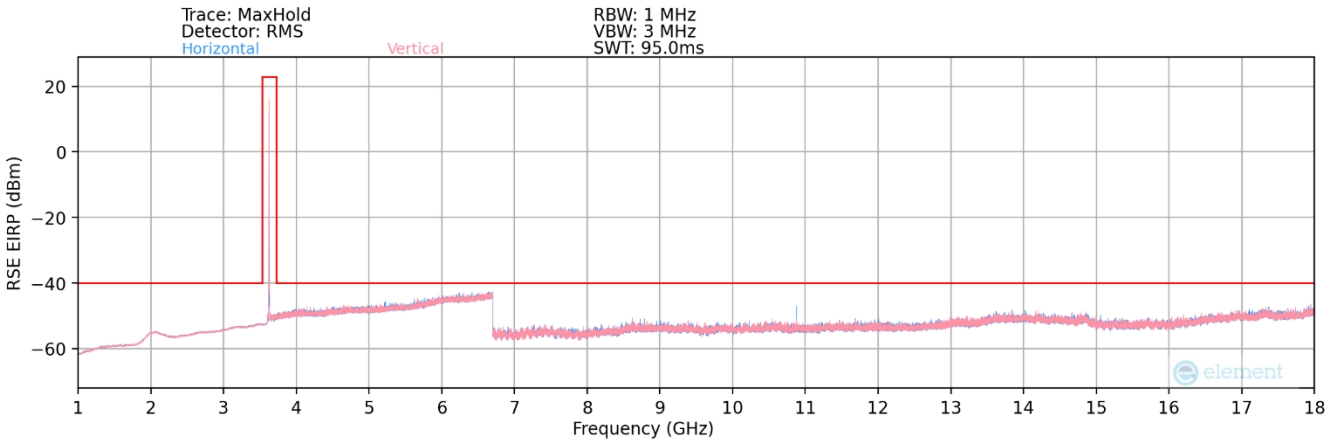



**Table 7-57. Radiated Spurious Plot 1-18GHz (LTE Band 48 – Ant6)**

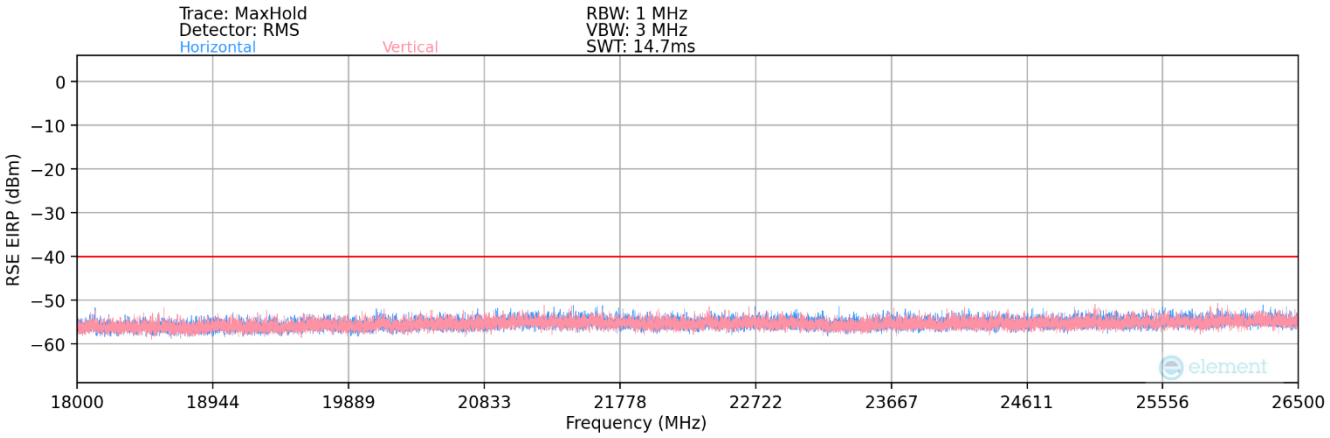



**Table 7-58. Radiated Spurious Plot 18-26.5GHz (LTE Band 48 – Ant6)**

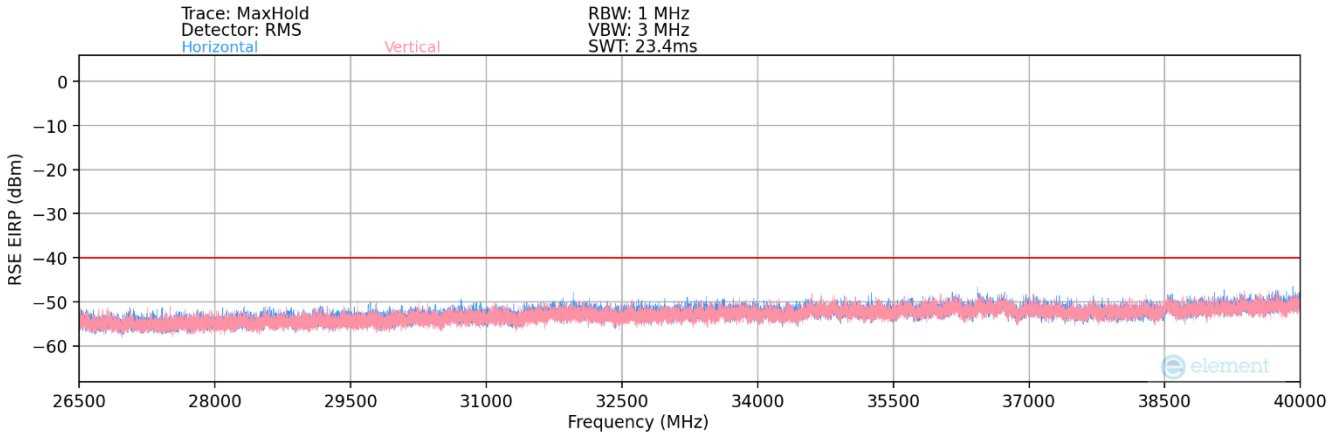



**Table 7-59. Radiated Spurious Plot 26.5-40GHz (LTE Band 48 – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.73 | V | 377 | 176 | -95.98 | 14.00 | 25.03 | -72.38 | -40.00 | -32.38 |
| 100.33 | H | - | - | -95.90 | 17.33 | 28.43 | -68.98 | -40.00 | -28.98 |

**Table 7-60. Radiated Spurious Data (LTE Band 48 – Mid Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3560.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7120.00 | H | 133 | 285 | -76.06 | 9.10 | 40.04 | -55.22 | -40.00 | -15.22 |
| 10680.00 | H | 349 | 179 | -77.22 | 12.36 | 42.14 | -53.12 | -40.00 | -13.12 |
| 14240.00 | H | 129 | 191 | -79.35 | 15.11 | 42.76 | -52.50 | -40.00 | -12.50 |
| 17800.00 | H | - | - | -81.26 | 16.69 | 42.43 | -52.82 | -40.00 | -12.82 |
| 21360.00 | H | 150 | 214 | -61.58 | 3.72 | 49.14 | -55.66 | -40.00 | -15.66 |
| 24920.00 | H | - | - | -61.50 | 3.64 | 49.14 | -55.66 | -40.00 | -15.66 |
| 28480.00 | H | - | - | -62.35 | 4.58 | 49.23 | -55.57 | -40.00 | -15.57 |
| 32040.00 | H | - | - | -63.13 | 7.43 | 51.30 | -53.50 | -40.00 | -13.50 |

**Table 7-61. Radiated Spurious Data (LTE Band 48 – Low Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7250.00 | H | 123 | 252 | -77.43 | 8.96 | 38.53 | -56.72 | -40.00 | -16.72 |
| 10875.00 | H | 164 | 204 | -75.36 | 12.03 | 43.67 | -51.59 | -40.00 | -11.59 |
| 14500.00 | H | 124 | 176 | -79.65 | 14.95 | 42.30 | -52.95 | -40.00 | -12.95 |
| 18125.00 | H | 150 | 174 | -57.07 | 1.01 | 50.94 | -53.86 | -40.00 | -13.86 |
| 21750.00 | H | - | - | -61.90 | 3.59 | 48.69 | -56.11 | -40.00 | -16.11 |
| 25375.00 | H | 150 | 190 | -61.27 | 3.86 | 49.59 | -55.21 | -40.00 | -15.21 |
| 29000.00 | H | - | - | -63.01 | 5.05 | 49.04 | -55.76 | -40.00 | -15.76 |
| 32625.00 | H | - | - | -62.41 | 6.62 | 51.21 | -53.59 | -40.00 | -13.59 |
| 36250.00 | H | - | - | -62.81 | 7.95 | 52.14 | -52.66 | -40.00 | -12.66 |

**Table 7-62. Radiated Spurious Data (LTE Band 48 – Mid Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 20 |
| **Frequency (MHz):** | 3690.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7380.00 | H | - | - | -79.95 | 9.69 | 36.74 | -58.52 | -40.00 | -18.52 |
| 11070.00 | H | 160 | 174 | -74.78 | 12.07 | 44.29 | -50.97 | -40.00 | -10.97 |
| 14760.00 | H | - | - | -81.60 | 14.90 | 40.30 | -54.96 | -40.00 | -14.96 |
| 18450.00 | H | 150 | 189 | -59.05 | 1.32 | 49.27 | -55.53 | -40.00 | -15.53 |
| 22140.00 | H | - | - | -62.09 | 3.51 | 48.42 | -56.38 | -40.00 | -16.38 |
| 25830.00 | H | 150 | 220 | -61.29 | 3.73 | 49.44 | -55.36 | -40.00 | -15.36 |
| 29520.00 | H | - | - | -62.89 | 5.42 | 49.53 | -55.27 | -40.00 | -15.27 |
| 33210.00 | H | - | - | -62.02 | 7.41 | 52.39 | -52.41 | -40.00 | -12.41 |
| 36900.00 | H | - | - | -62.25 | 7.20 | 51.95 | -52.85 | -40.00 | -12.85 |

**Table 7-63. Radiated Spurious Data (LTE Band 48 – High Channel – Ant6)**

## NR Band n48 – Ant6

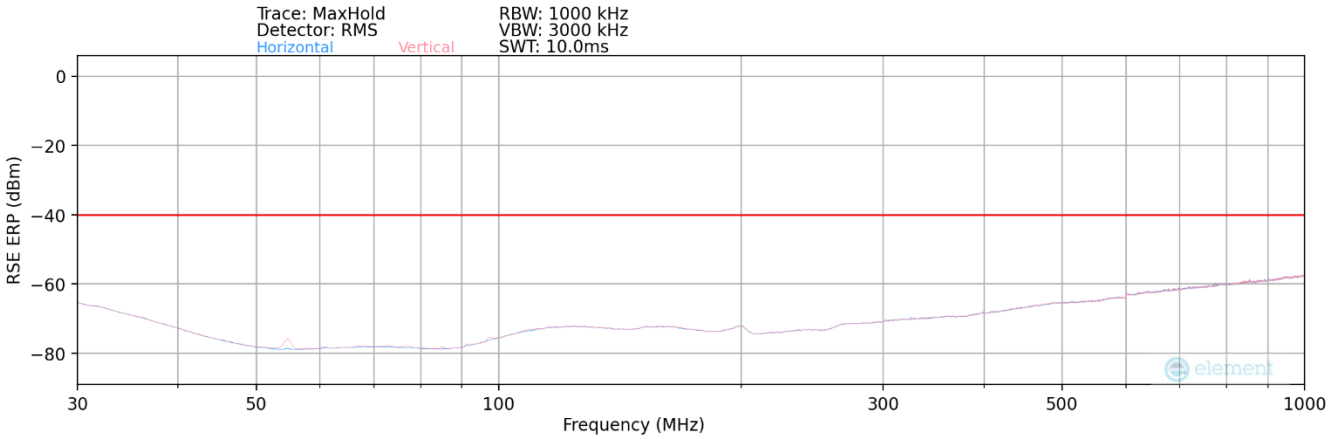



**Table 7-64. Radiated Spurious Plot Below 1GHz (NR Band n48 – Ant6)**

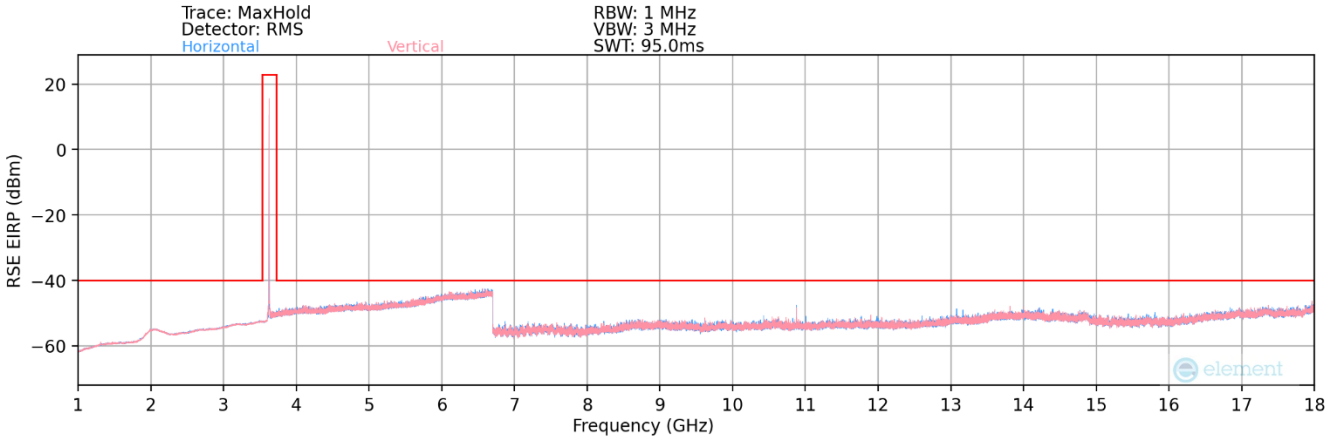



**Table 7-65. Radiated Spurious Plot 1-18GHz (NR Band n48 – Ant6)**

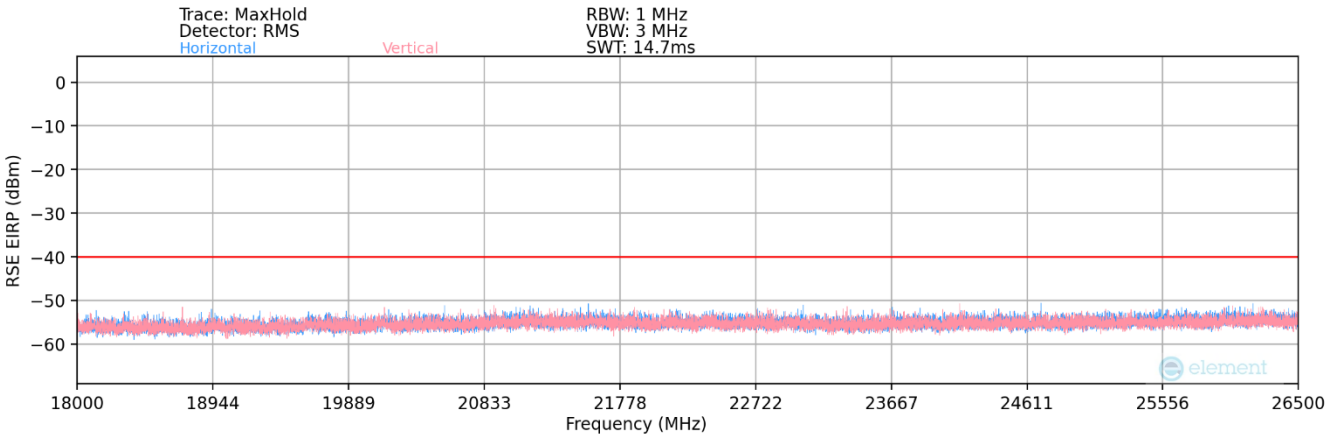



**Table 7-66. Radiated Spurious Plot 18-26.5GHz (NR Band n48 – Ant6)**

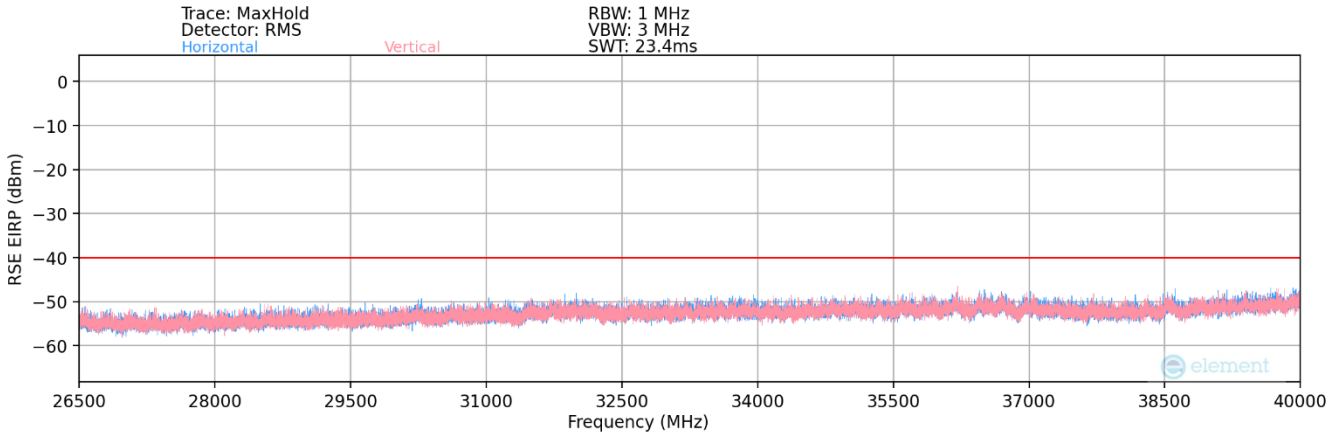



**Table 7-67. Radiated Spurious Plot 26.5-40GHz (NR Band n48 – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.73 | V | 120 | 219 | -95.45 | 14.00 | 25.56 | -71.85 | -40.00 | -31.85 |
| 84.81 | V | - | - | -96.72 | 13.97 | 24.25 | -73.16 | -40.00 | -33.16 |

**Table 7-68. Radiated Spurious Data (NR Band n48 – Mid Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3570.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7140.00 | H | 129 | 283 | -76.66 | 9.41 | 39.75 | -55.50 | -40.00 | -15.50 |
| 10710.00 | H | 132 | 228 | -75.16 | 12.37 | 44.21 | -51.05 | -40.00 | -11.05 |
| 14280.00 | H | 147 | 175 | -80.68 | 15.34 | 41.66 | -53.59 | -40.00 | -13.59 |
| 17850.00 | H | - | - | -81.49 | 17.07 | 42.58 | -52.68 | -40.00 | -12.68 |
| 21420.00 | H | - | - | -61.69 | 3.78 | 49.09 | -55.71 | -40.00 | -15.71 |
| 24990.00 | H | - | - | -61.62 | 3.73 | 49.11 | -55.69 | -40.00 | -15.69 |

**Table 7-69. Radiated Spurious Data (NR Band n48 – Low Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7250.00 | H | 115 | 254 | -77.18 | 8.96 | 38.78 | -56.47 | -40.00 | -16.47 |
| 10875.00 | H | 158 | 205 | -74.13 | 12.03 | 44.90 | -50.36 | -40.00 | -10.36 |
| 14500.00 | H | 161 | 172 | -79.78 | 14.95 | 42.17 | -53.08 | -40.00 | -13.08 |
| 18125.00 | H | 150 | 173 | -57.05 | 1.01 | 50.96 | -53.84 | -40.00 | -13.84 |
| 21750.00 | H | - | - | -61.98 | 3.59 | 48.61 | -56.19 | -40.00 | -16.19 |
| 25375.00 | H | - | - | -61.85 | 3.86 | 49.01 | -55.79 | -40.00 | -15.79 |
| 29000.00 | H | - | - | -62.87 | 5.05 | 49.18 | -55.62 | -40.00 | -15.62 |

**Table 7-70. Radiated Spurious Data (NR Band n48 – Mid Channel – Ant6)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3680.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7360.00 | H | - | - | -79.38 | 9.41 | 37.03 | -58.23 | -40.00 | -18.23 |
| 11040.00 | H | 148 | 231 | -75.15 | 11.81 | 43.66 | -51.59 | -40.00 | -11.59 |
| 14720.00 | H | - | - | -81.84 | 14.71 | 39.87 | -55.38 | -40.00 | -15.38 |
| 18400.00 | H | 150 | 156 | -60.53 | 1.13 | 47.60 | -57.20 | -40.00 | -17.20 |
| 22080.00 | H | - | - | -62.17 | 3.66 | 48.49 | -56.31 | -40.00 | -16.31 |
| 25760.00 | H | - | - | -61.70 | 3.80 | 49.10 | -55.70 | -40.00 | -15.70 |
| 29440.00 | H | - | - | -62.68 | 5.34 | 49.66 | -55.14 | -40.00 | -15.14 |

**Table 7-71. Radiated Spurious Data (NR Band n48 – High Channel – Ant6)**

## NR Band n48 – SRS Ant7

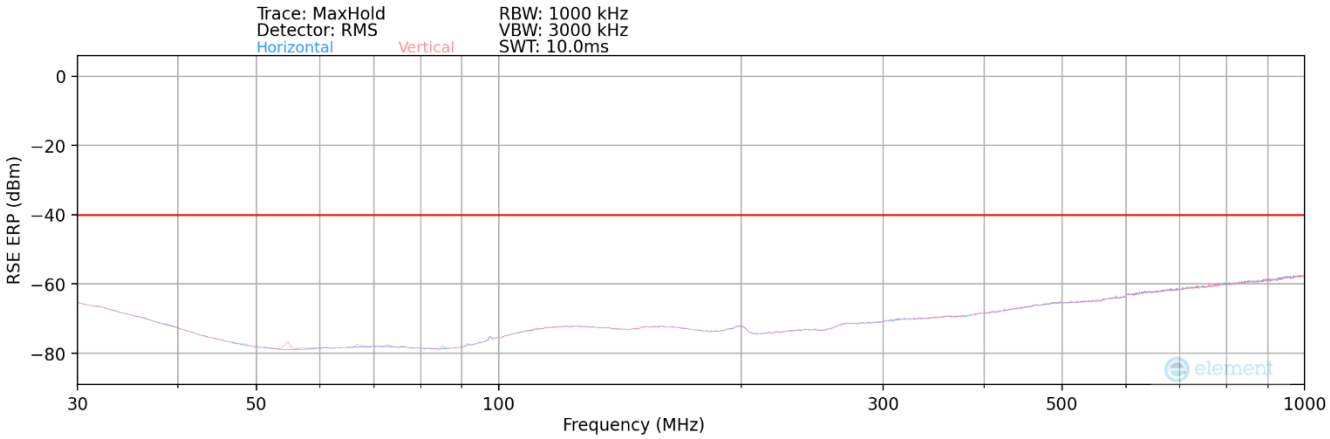



**Table 7-72. Radiated Spurious Plot Below 1GHz (NR Band n48 – SRS Ant7)**

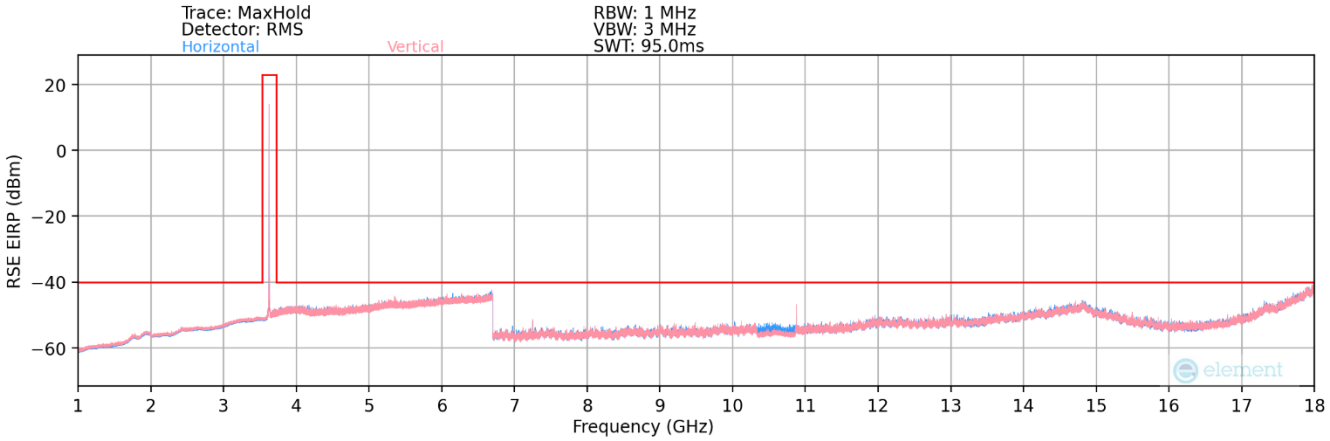



**Table 7-73. Radiated Spurious Plot 1-18GHz (NR Band n48 – SRS Ant7)**

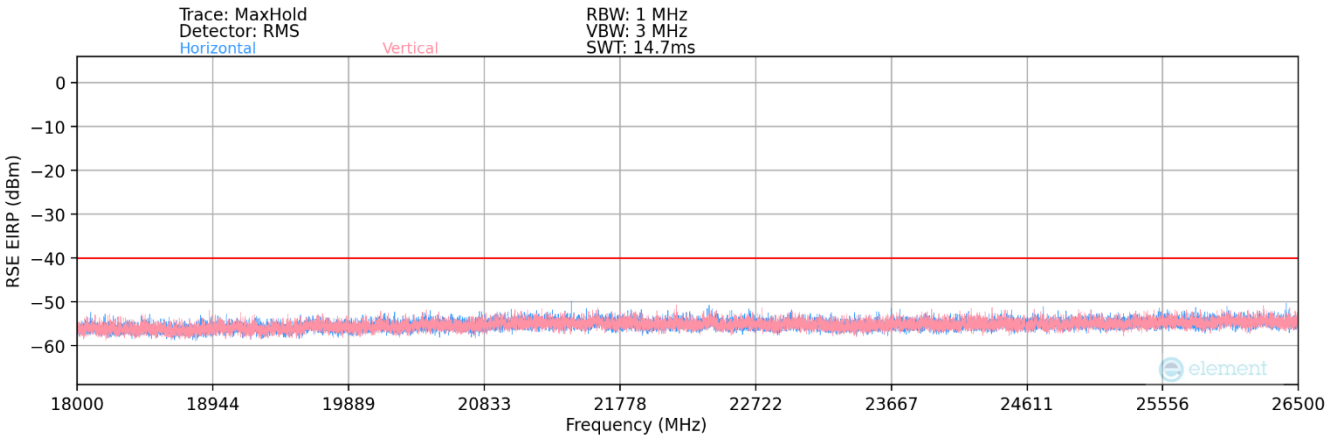



**Table 7-74. Radiated Spurious Plot 18-26.5GHz (NR Band n48 – SRS Ant7)**

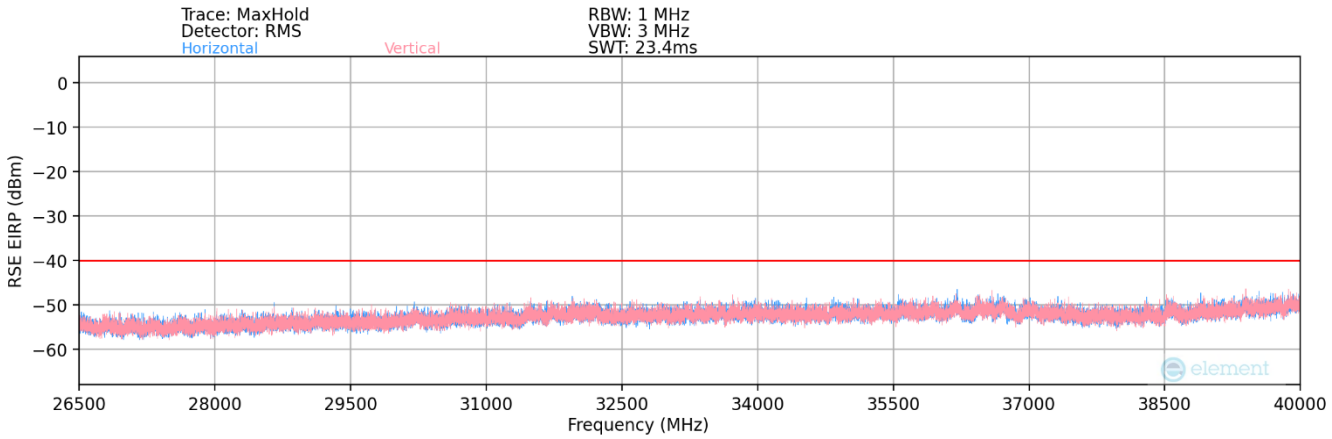



**Table 7-75. Radiated Spurious Plot 26.5-40GHz (NR Band n48 – SRS Ant7)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.73 | V | - | - | -96.20 | 14.00 | 24.80 | -72.60 | -40.00 | -32.60 |

**Table 7-76. Radiated Spurious Data (NR Band n48 – Mid Channel – SRS Ant7)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3570.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7140.00 | V | 134 | 204 | -74.48 | 8.52 | 41.04 | -54.22 | -40.00 | -14.22 |
| 10710.00 | V | 171 | 218 | -71.58 | 11.56 | 46.98 | -48.28 | -40.00 | -8.28 |
| 14280.00 | V | - | - | -80.36 | 16.86 | 43.50 | -51.75 | -40.00 | -11.75 |
| 17850.00 | V | - | - | -80.75 | 22.72 | 48.97 | -46.29 | -40.00 | -6.29 |
| 21420.00 | V | - | - | -62.11 | 3.78 | 48.67 | -56.13 | -40.00 | -16.13 |

**Table 7-77. Radiated Spurious Data (NR Band n48 – Low Channel – SRS Ant7)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7250.00 | V | 322 | 94 | -72.90 | 8.21 | 42.31 | -52.95 | -40.00 | -12.95 |
| 10875.00 | V | 378 | 222 | -69.34 | 11.38 | 49.04 | -46.22 | -40.00 | -6.22 |
| 14500.00 | V | - | - | -80.23 | 17.55 | 44.32 | -50.94 | -40.00 | -10.94 |
| 18125.00 | V | - | - | -60.46 | 1.01 | 47.56 | -57.24 | -40.00 | -17.24 |
| 21750.00 | V | - | - | -61.61 | 3.59 | 48.98 | -55.82 | -40.00 | -15.82 |

**Table 7-78. Radiated Spurious Data (NR Band n48 – Mid Channel – SRS Ant7)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3680.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7360.00 | V | 163 | 201 | -73.18 | 8.66 | 42.48 | -52.77 | -40.00 | -12.77 |
| 11040.00 | V | 374 | 142 | -75.18 | 11.52 | 43.34 | -51.92 | -40.00 | -11.92 |
| 14720.00 | V | - | - | -80.37 | 18.40 | 45.03 | -50.23 | -40.00 | -10.23 |
| 18400.00 | V | - | - | -60.98 | 1.13 | 47.15 | -57.65 | -40.00 | -17.65 |
| 22080.00 | V | - | - | -62.05 | 3.66 | 48.61 | -56.19 | -40.00 | -16.19 |

**Table 7-79. Radiated Spurious Data (NR Band n48 – High Channel – SRS Ant7)**

## NR Band n48 – SRS Ant8

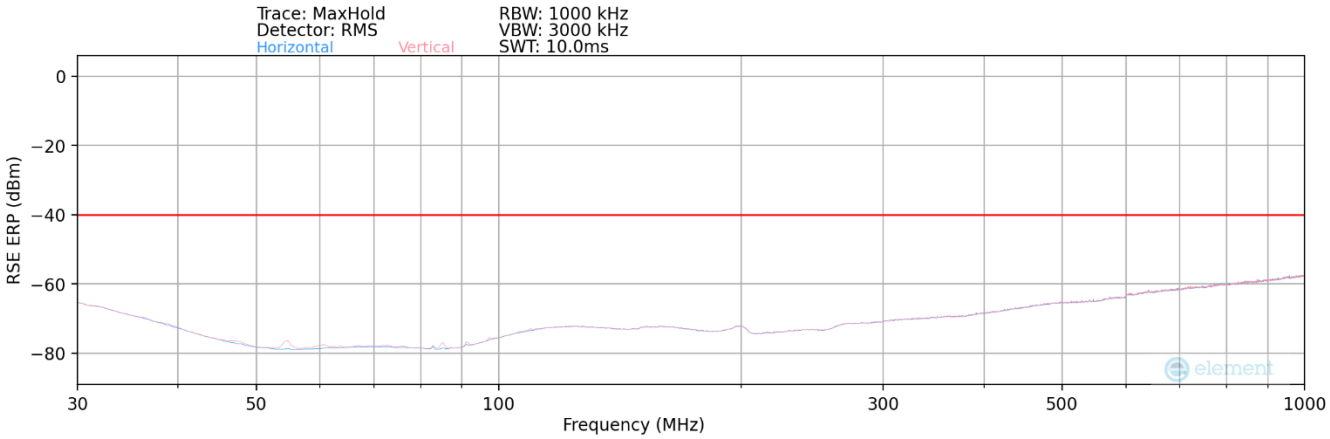



**Table 7-80. Radiated Spurious Plot Below 1GHz (NR Band n48 – SRS Ant8)**

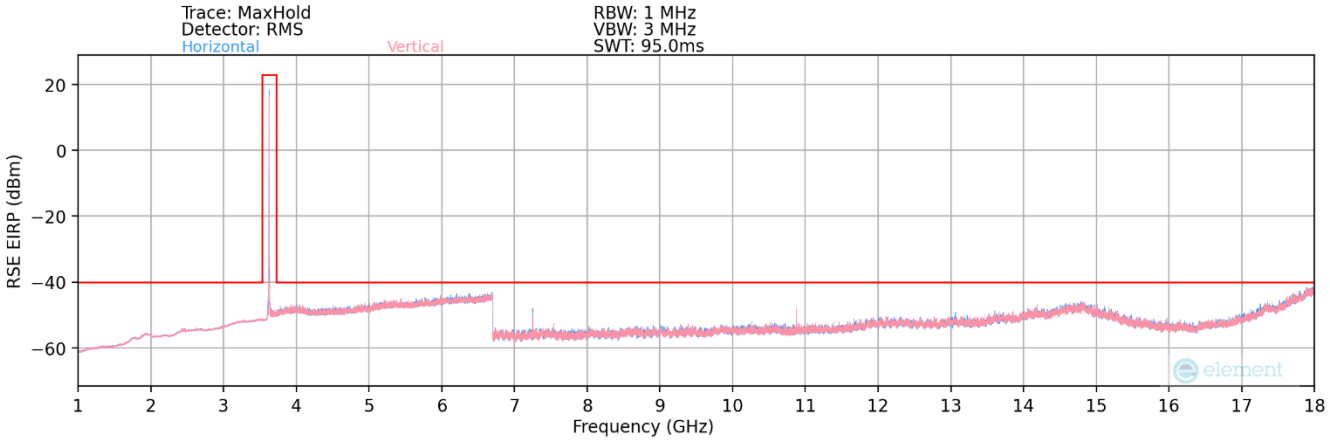



**Table 7-81. Radiated Spurious Plot 1-18GHz (NR Band n48 – SRS Ant8)**

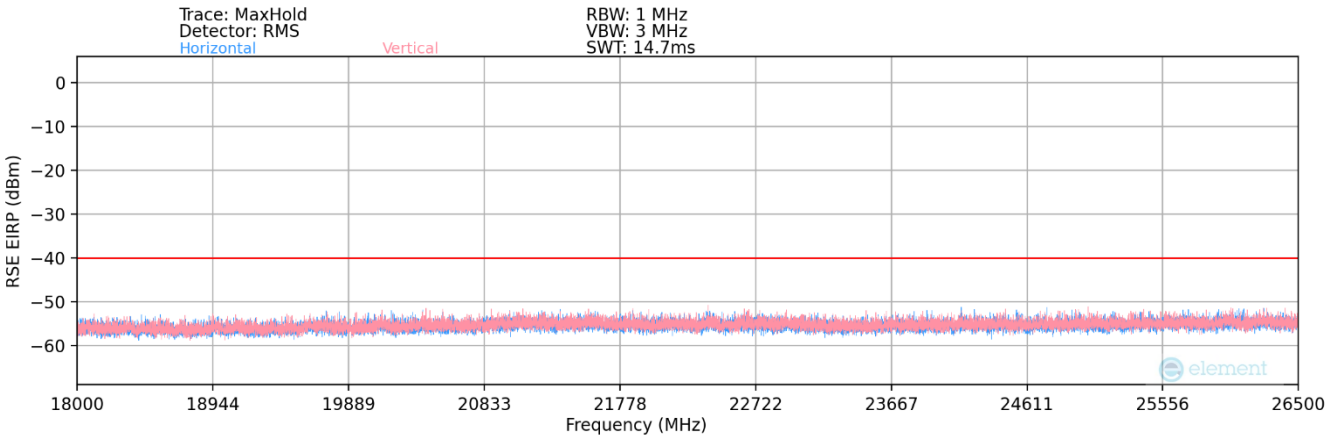



**Table 7-82. Radiated Spurious Plot 18-26.5GHz (NR Band n48 – SRS Ant8)**

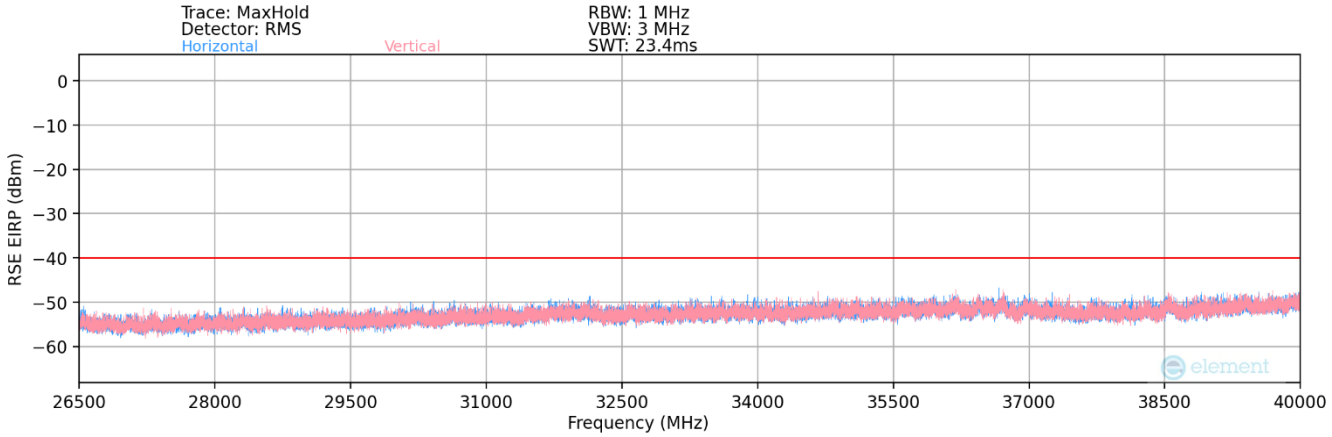



**Table 7-83. Radiated Spurious Plot 26.5-40GHz (NR Band n48 – SRS Ant8)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.73 | V | - | - | -96.96 | 14.00 | 24.04 | -73.36 | -40.00 | -33.36 |

**Table 7-84. Radiated Spurious Data (NR Band n48 – Mid Channel – SRS Ant8)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3570.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7140.00 | H | 156 | 116 | -67.92 | 8.52 | 47.60 | -47.66 | -40.00 | -7.66 |
| 10710.00 | V | 251 | 243 | -67.41 | 11.56 | 51.15 | -44.11 | -40.00 | -4.11 |
| 14280.00 | H | - | - | -80.61 | 16.86 | 43.25 | -52.00 | -40.00 | -12.00 |
| 17850.00 | H | - | - | -80.72 | 22.72 | 49.00 | -46.26 | -40.00 | -6.26 |
| 21420.00 | H | - | - | -62.01 | 3.78 | 48.77 | -56.03 | -40.00 | -16.03 |

**Table 7-85. Radiated Spurious Data (NR Band n48 – Low Channel – SRS Ant8)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7250.00 | H | 162 | 109 | -65.75 | 8.21 | 49.46 | -45.80 | -40.00 | -5.80 |
| 10875.00 | V | 258 | 32 | -71.22 | 11.38 | 47.16 | -48.10 | -40.00 | -8.10 |
| 14500.00 | H | - | - | -79.78 | 17.55 | 44.77 | -50.49 | -40.00 | -10.49 |
| 18125.00 | H | - | - | -60.71 | 1.01 | 47.31 | -57.49 | -40.00 | -17.49 |
| 21750.00 | H | 150 | 142 | -61.24 | 3.59 | 49.35 | -55.45 | -40.00 | -15.45 |
| 25375.00 | H | - | - | -61.72 | 3.86 | 49.14 | -55.66 | -40.00 | -15.66 |
| 29000.00 | H | - | - | -62.95 | 5.05 | 49.10 | -55.70 | -40.00 | -15.70 |
| 32625.00 | H | - | - | -62.56 | 6.62 | 51.06 | -53.74 | -40.00 | -13.74 |

**Table 7-86. Radiated Spurious Data (NR Band n48 – Mid Channel – SRS Ant8)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3680.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7360.00 | H | 168 | 121 | -74.93 | 8.66 | 40.73 | -54.52 | -40.00 | -14.52 |
| 11040.00 | V | 281 | 34 | -71.48 | 11.52 | 47.04 | -48.22 | -40.00 | -8.22 |
| 14720.00 | H | - | - | -80.29 | 18.40 | 45.11 | -50.15 | -40.00 | -10.15 |
| 18400.00 | H | 150 | 154 | -60.48 | 1.13 | 47.65 | -57.15 | -40.00 | -17.15 |
| 22080.00 | H | - | - | -62.19 | 3.66 | 48.47 | -56.33 | -40.00 | -16.33 |
| 25760.00 | H | - | - | -61.77 | 3.80 | 49.03 | -55.77 | -40.00 | -15.77 |
| 29440.00 | H | - | - | -62.76 | 5.34 | 49.58 | -55.22 | -40.00 | -15.22 |

**Table 7-87. Radiated Spurious Data (NR Band n48 – High Channel – SRS Ant8)**

## NR Band n48 – UL MIMO Ant6 + Ant1

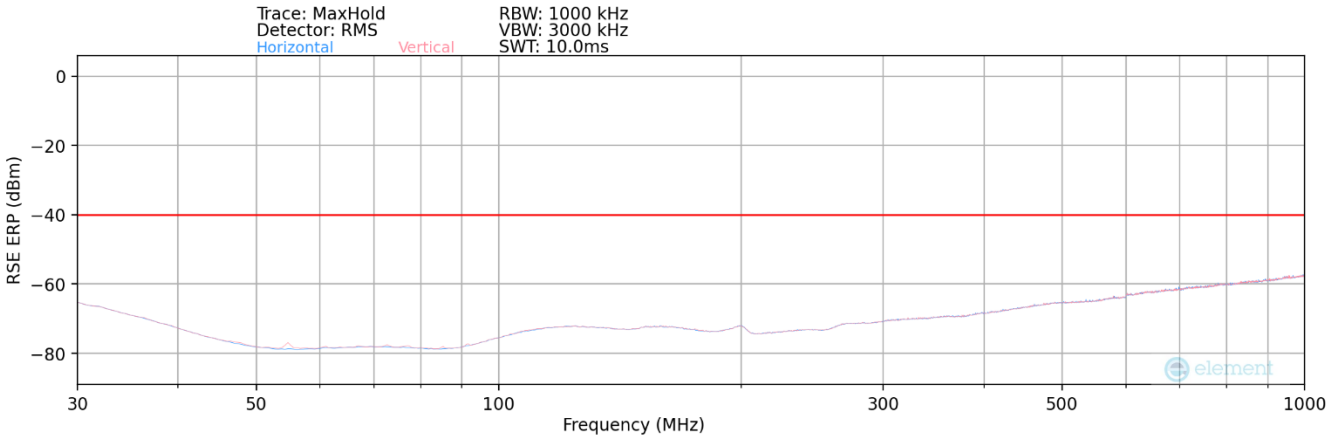



**Table 7-88. Radiated Spurious Plot Below 1GHz (NR Band n48 – UL MIMO Ant6 + Ant1)**

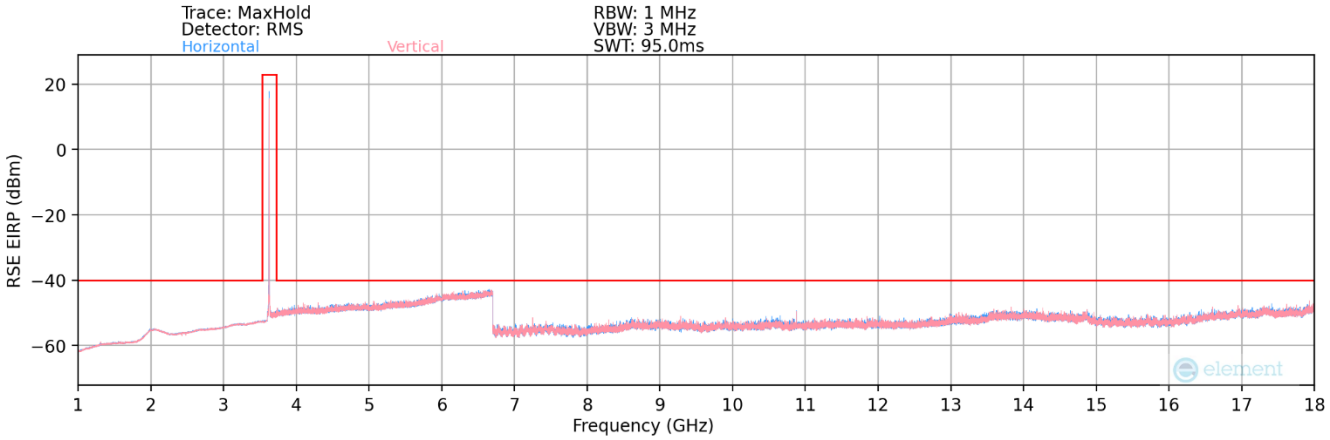



**Table 7-89. Radiated Spurious Plot 1-18GHz (NR Band n48 – UL MIMO Ant6 + Ant1)**

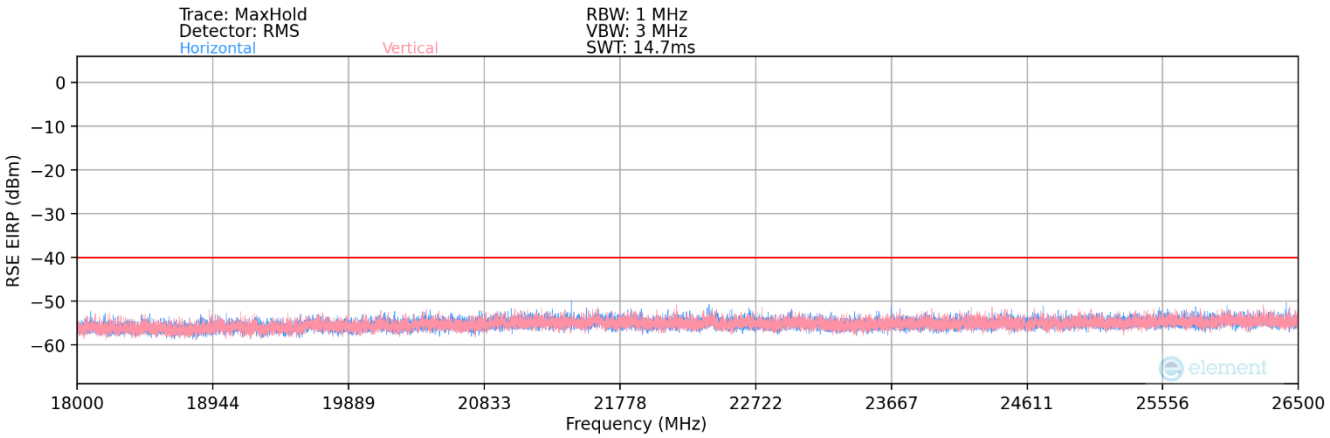



**Table 7-90. Radiated Spurious Plot 18-26.5GHz (NR Band n48 – UL MIMO Ant6 + Ant1)**

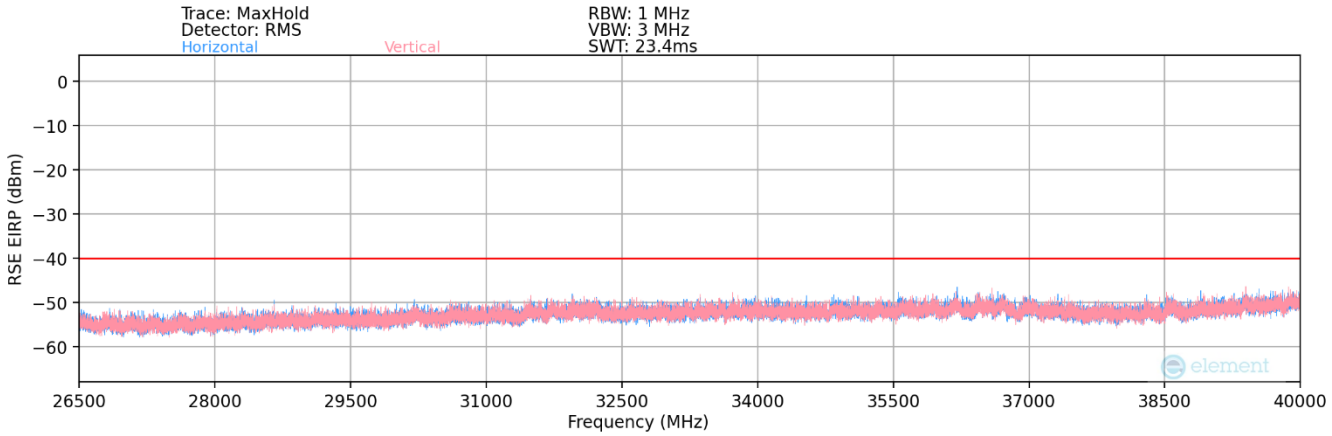



**Table 7-91. Radiated Spurious Plot 26.5-40GHz (NR Band n48 – UL MIMO Ant6 + Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] | ERP Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| 54.73 | V | - | - | -96.75 | 14.00 | 24.25 | -73.15 | -40.00 | -33.15 |

**Table 7-92. Radiated Spurious Data (NR Band n48 – Mid Channel – UL MIMO Ant6 + Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3570.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7140.00 | H | 113 | 157 | -74.93 | 9.41 | 41.48 | -53.77 | -40.00 | -13.77 |
| 10710.00 | H | 166 | 126 | -70.17 | 12.37 | 49.20 | -46.06 | -40.00 | -6.06 |
| 14280.00 | H | - | - | -81.18 | 15.34 | 41.16 | -54.09 | -40.00 | -14.09 |
| 17850.00 | H | - | - | -81.01 | 17.07 | 43.06 | -61.74 | -40.00 | -21.74 |
| 21420.00 | H | - | - | -61.87 | 3.78 | 48.91 | -55.89 | -40.00 | -15.89 |

**Table 7-93. Radiated Spurious Data (NR Band n48 – Low Channel – UL MIMO Ant6 + Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3625.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7250.00 | H | 269 | 286 | -76.45 | 8.96 | 39.51 | -55.74 | -40.00 | -15.74 |
| 10875.00 | H | 159 | 247 | -73.13 | 12.03 | 45.90 | -49.36 | -40.00 | -9.36 |
| 14500.00 | H | - | - | -80.77 | 14.95 | 41.18 | -63.62 | -40.00 | -23.62 |
| 18125.00 | H | 150 | 173 | -60.18 | 1.01 | 47.83 | -56.97 | -40.00 | -16.97 |
| 21750.00 | H | - | - | -62.08 | 3.59 | 48.51 | -56.29 | -40.00 | -16.29 |
| 25375.00 | H | - | - | -61.80 | 3.86 | 49.06 | -55.74 | -40.00 | -15.74 |
| 29000.00 | H | - | - | -63.03 | 5.05 | 49.02 | -55.78 | -40.00 | -15.78 |

**Table 7-94. Radiated Spurious Data (NR Band n48 – Mid Channel – UL MIMO Ant6 + Ant1)**

| | |
|---|---|
| **Bandwidth (MHz):** | 40 |
| **Frequency (MHz):** | 3680.0 |
| **Modulation Signal:** | QPSK |
| **RB Config (Size / 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] |
|---|---|---|---|---|---|---|---|---|---|
| 7360.00 | H | 176 | 105 | -72.58 | 9.41 | 43.83 | -51.43 | -40.00 | -11.43 |
| 11040.00 | H | 200 | 120 | -75.25 | 11.81 | 43.56 | -51.69 | -40.00 | -11.69 |
| 14720.00 | H | - | - | -80.66 | 14.71 | 41.05 | -63.75 | -40.00 | -23.75 |
| 18400.00 | H | - | - | -61.01 | 1.13 | 47.12 | -57.68 | -40.00 | -17.68 |
| 22080.00 | H | - | - | -62.15 | 3.66 | 48.51 | -56.29 | -40.00 | -16.29 |

**Table 7-95. Radiated Spurious Data (NR Band n48 – High Channel – UL MIMO Ant6 + Ant1)**

## 7.7 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 96, 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

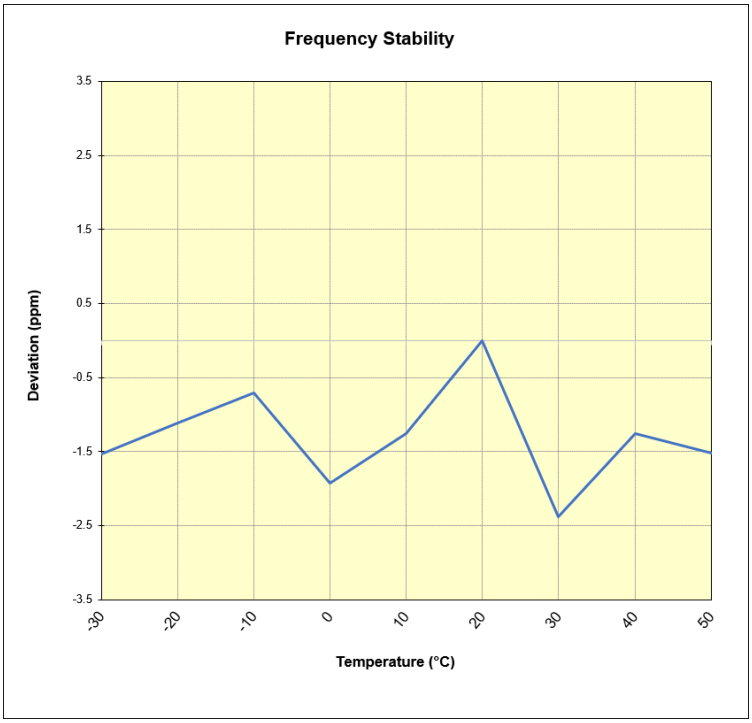
## Frequency Stability / Temperature Variation

# LTE Band 48

| | |
|---|---|
| Operating Frequency (Hz): | 3,625,000,000 |
| Ref. Voltage (VDC): | 7.6 |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 7.6 | - 30 | 3,625,113,237 | -5,530 | -0.0001525 |
| | | - 20 | 3,625,114,726 | -4,041 | -0.0001115 |
| | | - 10 | 3,625,116,220 | -2,547 | -0.0000703 |
| | | 0 | 3,625,111,764 | -7,003 | -0.0001932 |
| | | + 10 | 3,625,114,214 | -4,553 | -0.0001256 |
| | | + 20 (Ref) | 3,625,118,767 | 0 | 0.0000000 |
| | | + 30 | 3,625,110,127 | -8,640 | -0.0002383 |
| | | + 40 | 3,625,114,202 | -4,565 | -0.0001259 |
| | | + 50 | 3,625,113,268 | -5,499 | -0.0001517 |
| Battery Endpoint | 4.6 | + 20 | 3,625,122,332 | 3,565 | 0.0000983 |

**Table 7-96. LTE Band 48 Frequency Stability Data**




**Plot 7-131. LTE Band 48 Frequency Stability Chart**

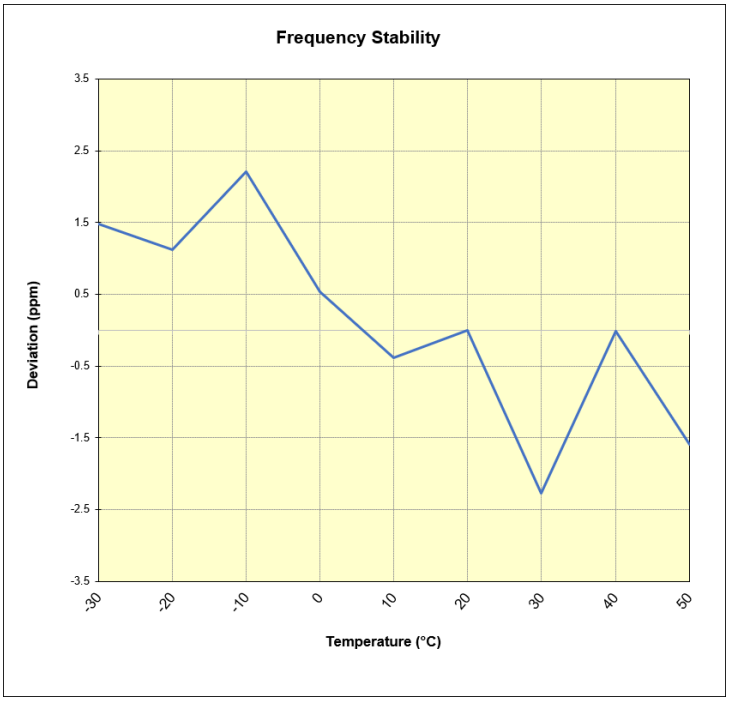
## Frequency Stability / Temperature Variation

# NR Band n48

| | |
|---|---|
| Operating Frequency (Hz): | 3,625,000,000 |
| Ref. Voltage (VDC): | 7.6 |

| Voltage (%) | Power (VDC) | Temp (°C) | Frequency (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 7.6 | - 30 | 3,625,186,358 | 5,350 | 0.0001476 |
| | | - 20 | 3,625,185,054 | 4,046 | 0.0001116 |
| | | - 10 | 3,625,189,010 | 8,002 | 0.0002207 |
| | | 0 | 3,625,182,944 | 1,936 | 0.0000534 |
| | | + 10 | 3,625,179,617 | -1,391 | -0.0000384 |
| | | + 20 (Ref) | 3,625,181,008 | 0 | 0.0000000 |
| | | + 30 | 3,625,172,754 | -8,254 | -0.0002277 |
| | | + 40 | 3,625,180,941 | -67 | -0.0000018 |
| | | + 50 | 3,625,175,250 | -5,758 | -0.0001588 |
| Battery Endpoint | 4.6 | + 20 | 3,625,185,206 | 4,198 | 0.0001158 |

**Table 7-97. NR Band n48 Frequency Stability Data**




**Plot 7-132. NR Band n48 Frequency Stability Chart**

# 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Microsoft Corporation (WiFi module FCC ID: C3K00002102A and cellular module FCC ID: C3K2114) integrated into the host laptop (Model: 2150)** complies with all of the End User Device requirements of Part 96 of the FCC Rules for LTE and NR operation only.