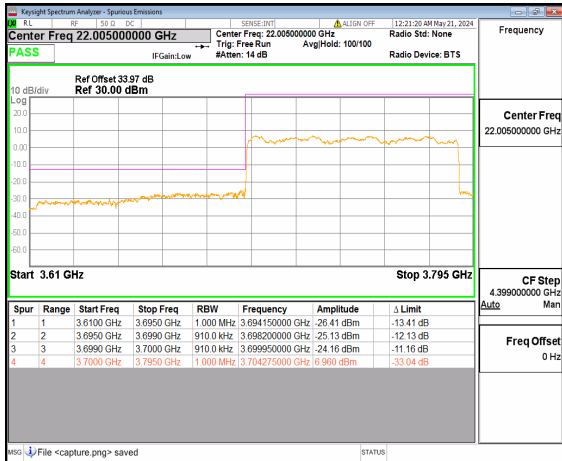
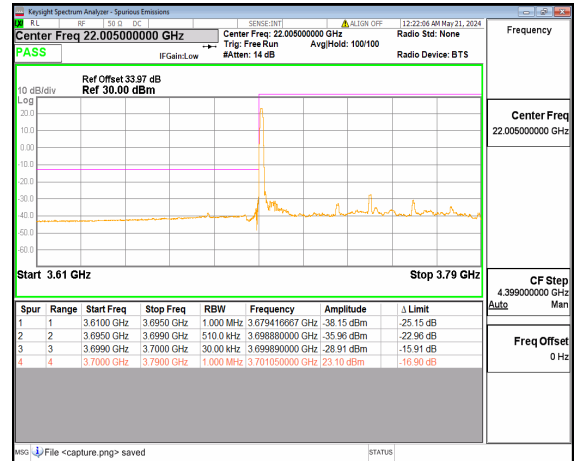
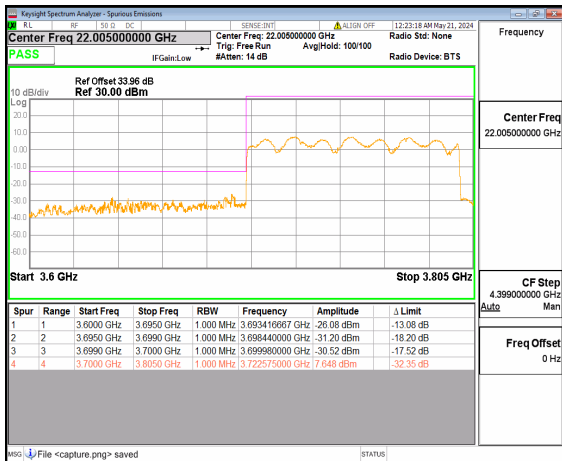
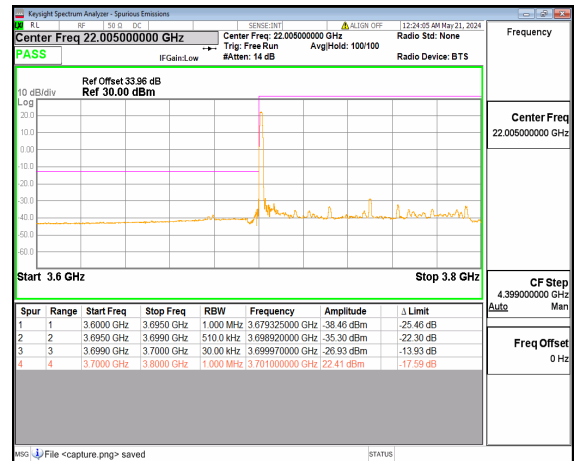
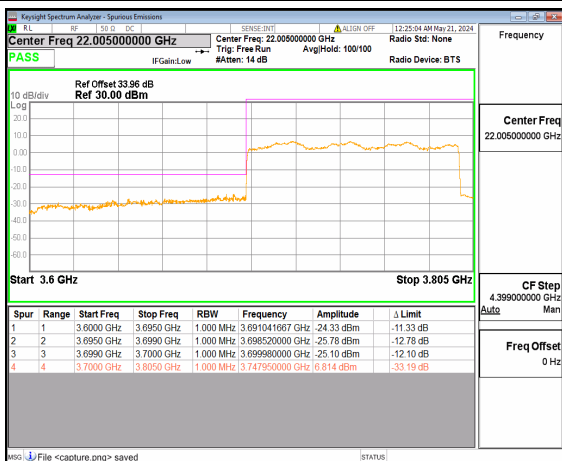
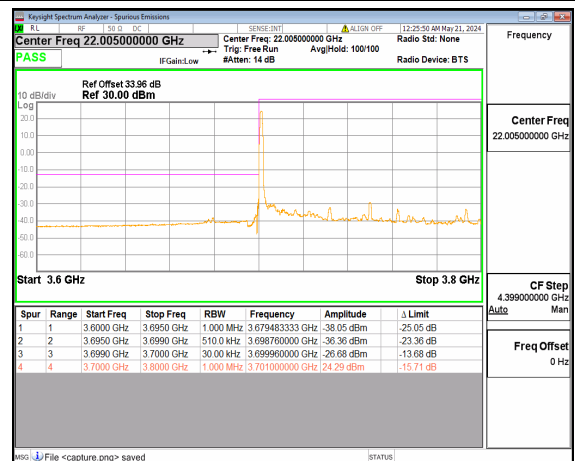


n77(3700-3980MHz) 90M DFT-s-OFDM QPSK  
Outer\_Full Lown77(3700-3980MHz) 90M DFT-s-OFDM QPSK  
Edge\_1RB\_Left Lown77(3700-3980MHz) 100M DFT-s-OFDM  
BPSK Outer\_Full Lown77(3700-3980MHz) 100M DFT-s-OFDM  
BPSK Edge\_1RB\_Left Lown77(3700-3980MHz) 100M DFT-s-OFDM  
QPSK Outer\_Full Lown77(3700-3980MHz) 100M DFT-s-OFDM  
QPSK Edge\_1RB\_Left Low

## 2.7. Radiated Spurious Emissions

### 2.7.1.Requirement

According to FCC section 2.1051, section 22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

According to FCC section 27.53(m)(4) for n41, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $55 + 10 \log(P)$  dB. This calculated to be -25dBm.

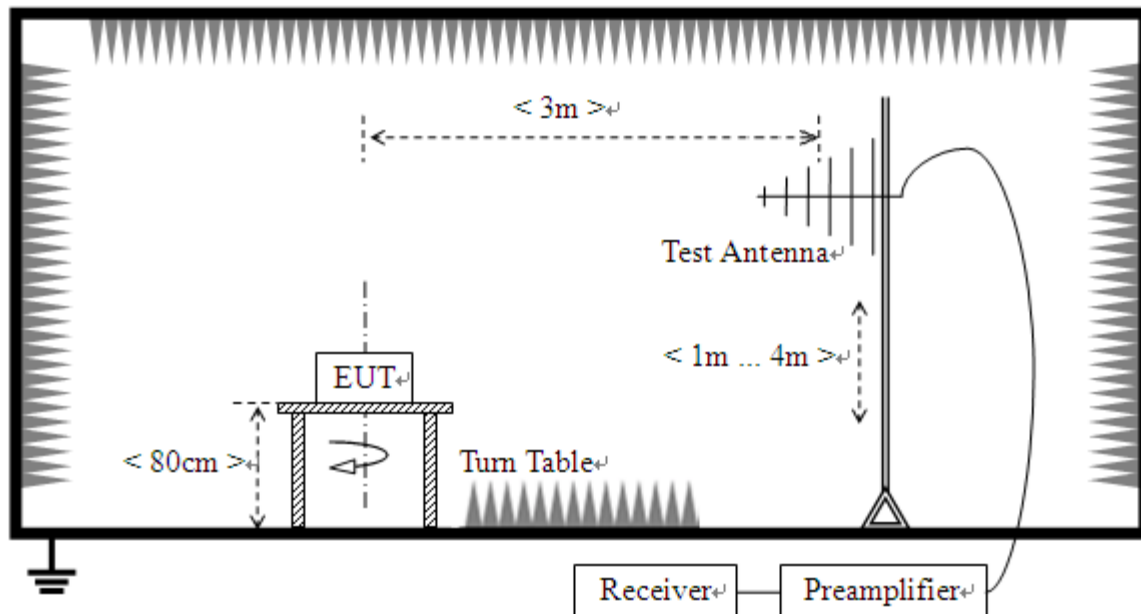
According to FCC section 96.41(e) for n48, the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

According to FCC section 27.53(h) for n66, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

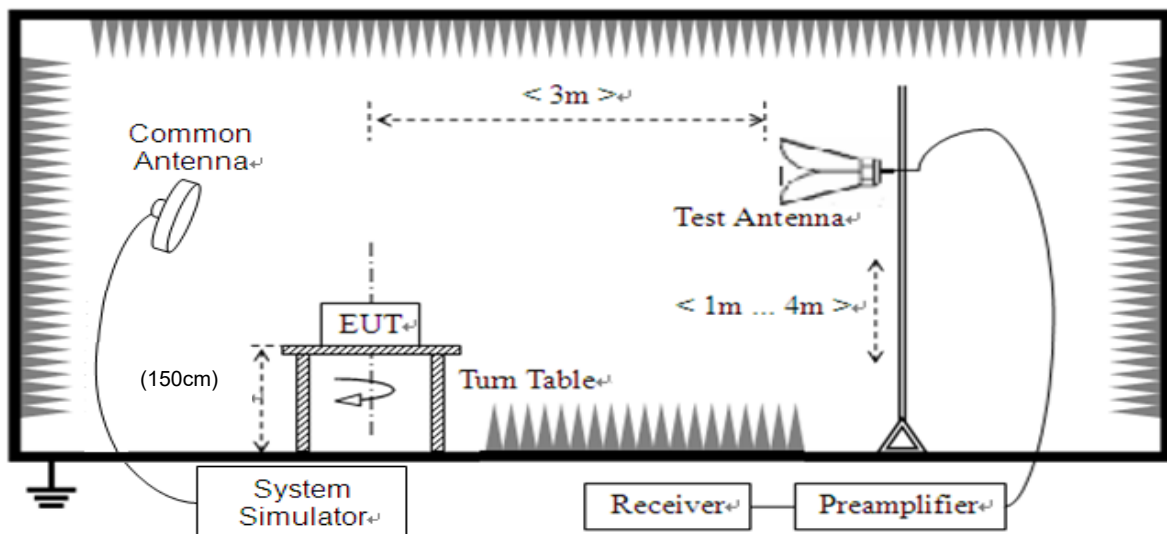
According to FCC section 27.53(l)(2) for n77, n78, for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

According to FCC section 27.53(n)(2) for n77, n78, for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

## 2.7.2. Test Description



(For the test frequency from 30MHz to 1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.



In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

**Note:** When doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

### 2.7.3. Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.

### 2.7.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. Test Antenna height is varied from 1m to 4m above the ground, and the Turn Table is actuated to turn from 0° to 360°, both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST\_TX}} - P_{\text{SUBST\_RX}} - L_{\text{SUBST\_CABLES}} + G_{\text{SUBST\_TX\_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where  $A_{\text{SUBST}}$  is the final substitution correction including receive antenna gain.

$P_{\text{SUBST\_TX}}$  is signal generator level,

$P_{\text{SUBST\_RX}}$  is receiver level,

$L_{\text{SUBST\_CABLES}}$  is cable losses including TX cable,

$G_{\text{SUBST\_TX\_ANT}}$  is substitution antenna gain.

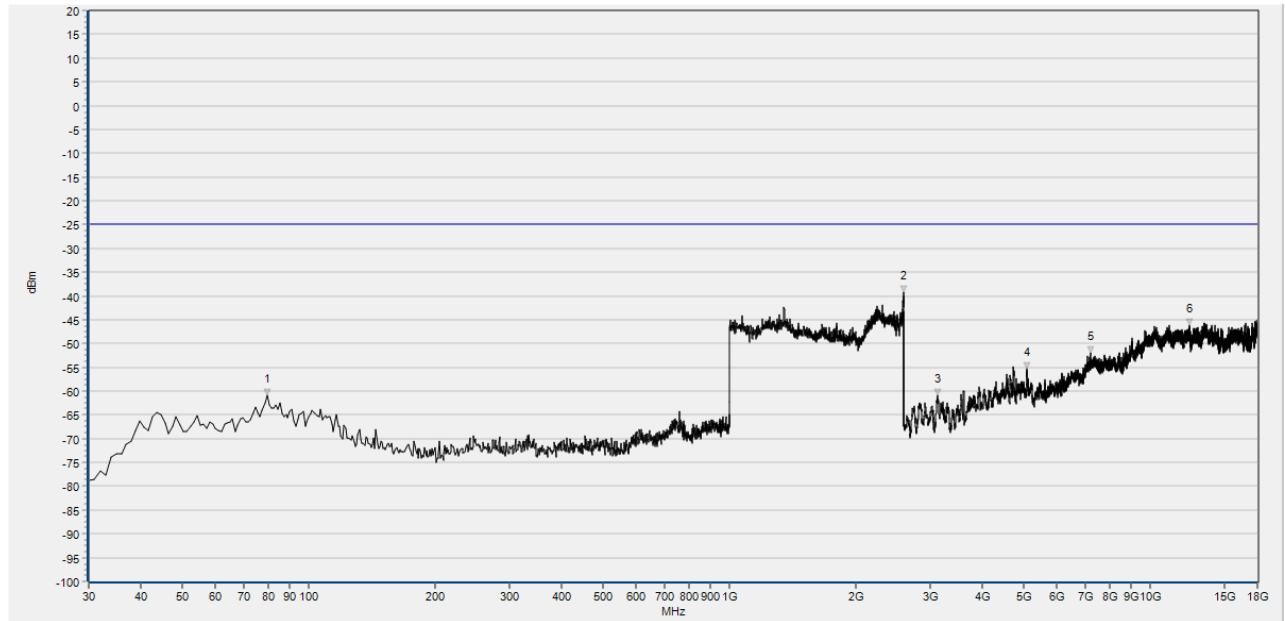
$A_{\text{TOT}}$  is total correction factor including cable loss and substitution correction

During the test, the data of  $A_{\text{TOT}}$  was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of  $A_{\text{TOT}}$ .

**Note1:** The power of the EUT transmitting frequency should be ignored.

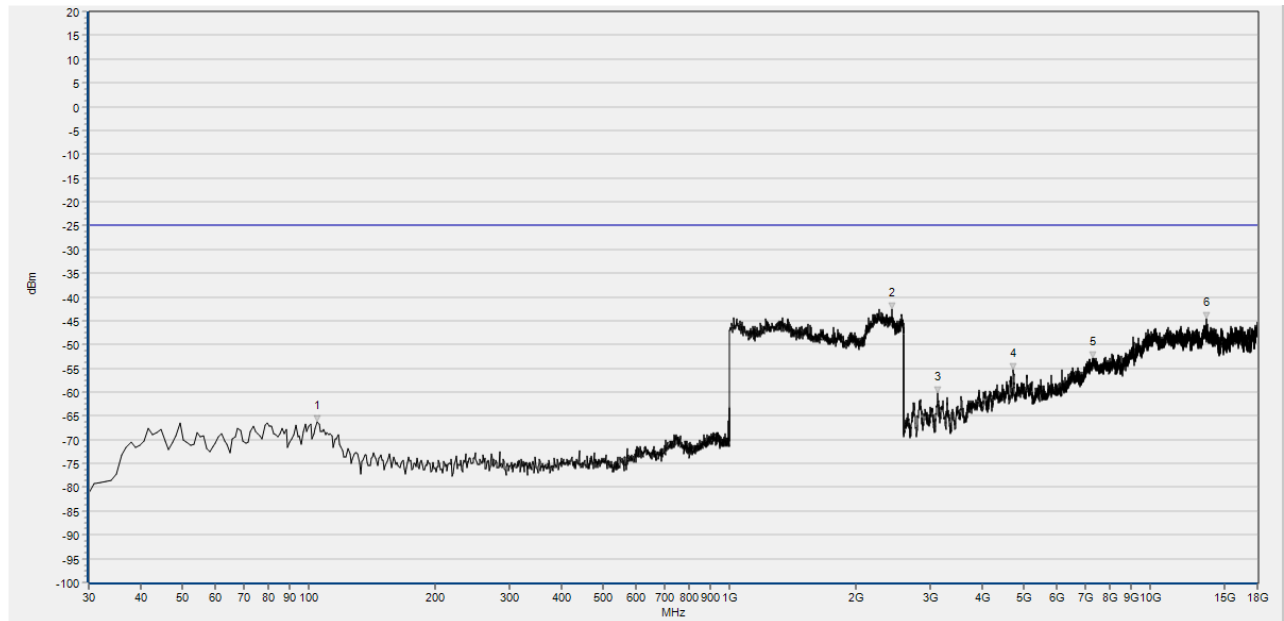
**Note2:** All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

**Note3:** All bandwidth and modulation were considered and evaluated respectively by performing full test for each band; only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.



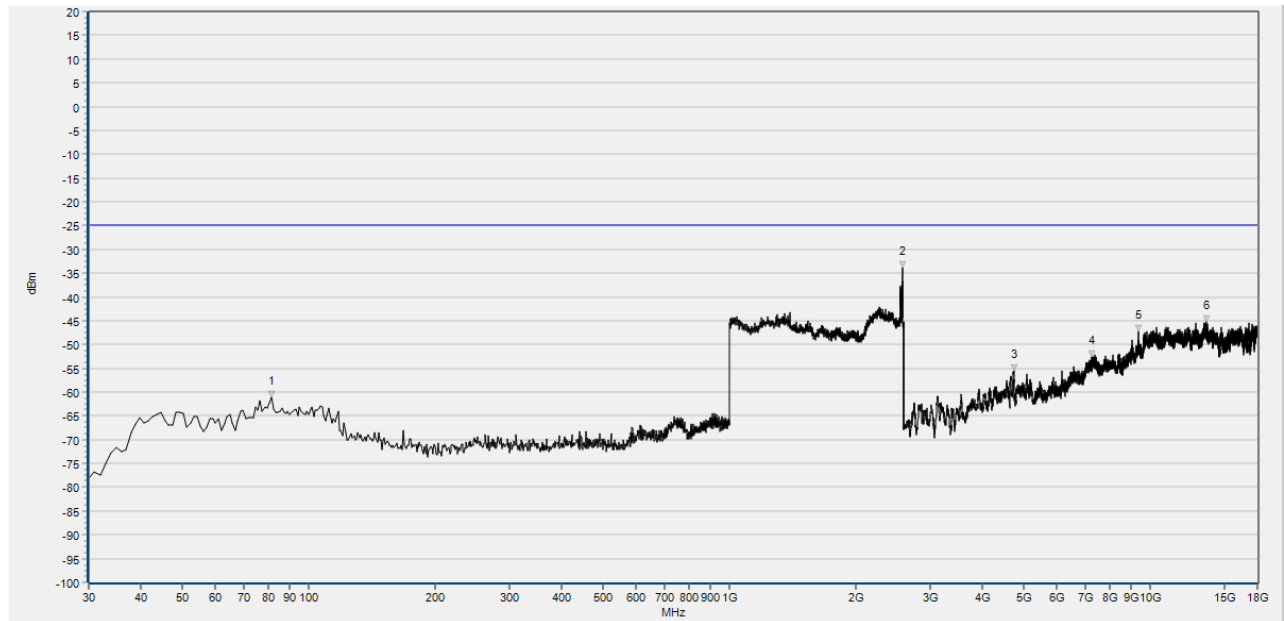
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.520    | -60.83 | -25.00   | 360.0  | H       | PASS    |
| 2   | 2593.594  | -39.28 | -25.00   | 360.0  | H       | NA      |
| 3   | 3117.544  | -60.99 | -25.00   | 152.2  | H       | PASS    |
| 4   | 5101.460  | -55.39 | -25.00   | 328.9  | H       | PASS    |
| 5   | 7205.521  | -51.91 | -25.00   | 272.3  | H       | PASS    |
| 6   | 12405.601 | -46.09 | -25.00   | 33.1   | H       | PASS    |

N41 504201 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



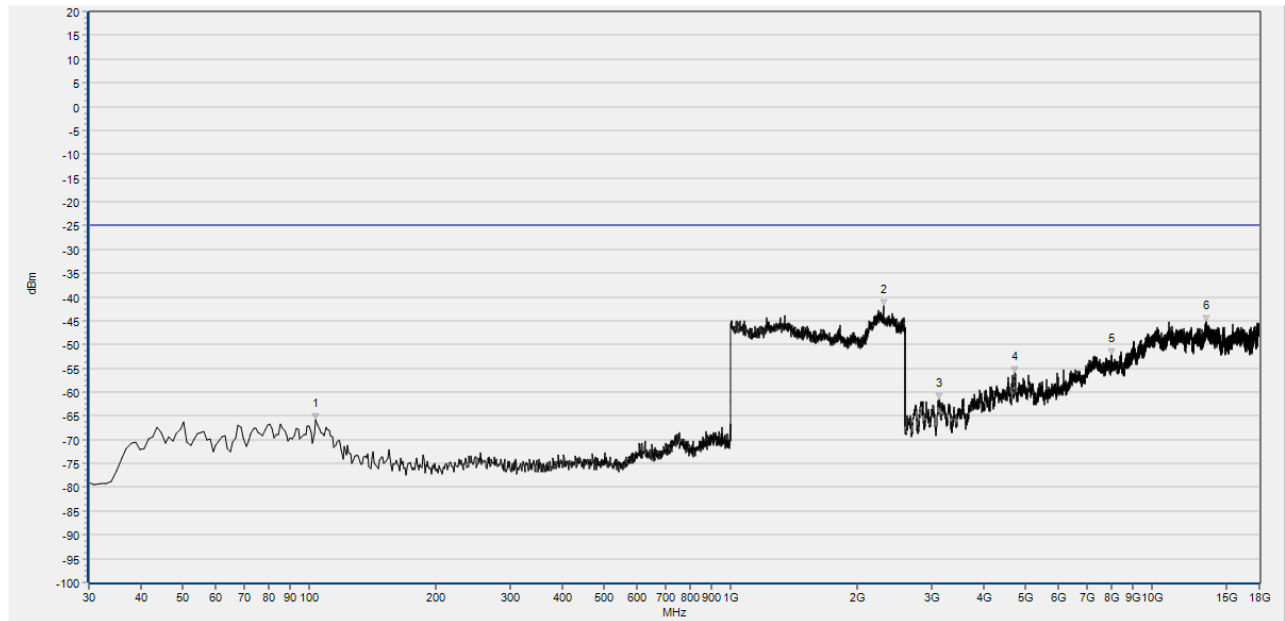
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 104.765   | -66.30 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2431.832  | -42.66 | -25.00   | 360.0  | V       | PASS    |
| 3   | 3129.866  | -60.26 | -25.00   | 266.6  | V       | PASS    |
| 4   | 4734.867  | -55.32 | -25.00   | 10.1   | V       | PASS    |
| 5   | 7310.262  | -52.88 | -25.00   | 134.6  | V       | PASS    |
| 6   | 13600.880 | -44.60 | -25.00   | 49.4   | V       | PASS    |

N41 504201 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



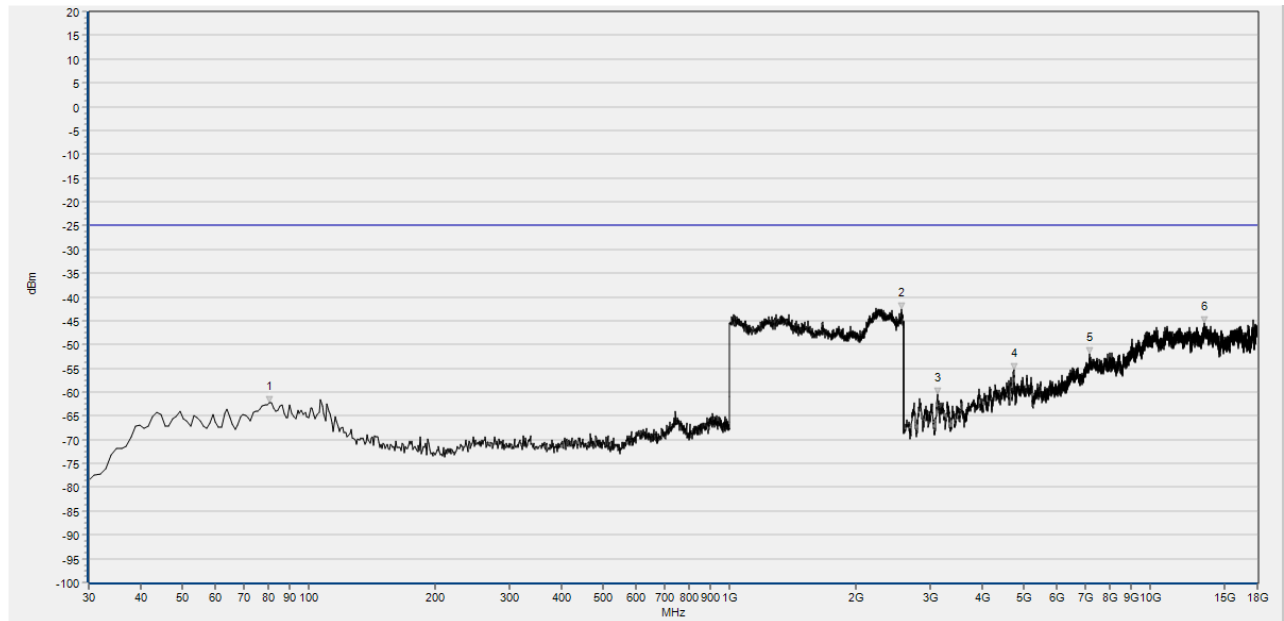
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.461    | -61.01 | -25.00   | 360.0  | H       | PASS    |
| 2   | 2574.374  | -33.86 | -25.00   | 42.4   | H       | NA      |
| 3   | 4741.028  | -55.63 | -25.00   | 194.4  | H       | PASS    |
| 4   | 7248.650  | -52.69 | -25.00   | 178.8  | H       | PASS    |
| 5   | 9374.275  | -47.35 | -25.00   | 39.5   | H       | PASS    |
| 6   | 13582.396 | -45.30 | -25.00   | 218.9  | H       | PASS    |

N41 518601 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



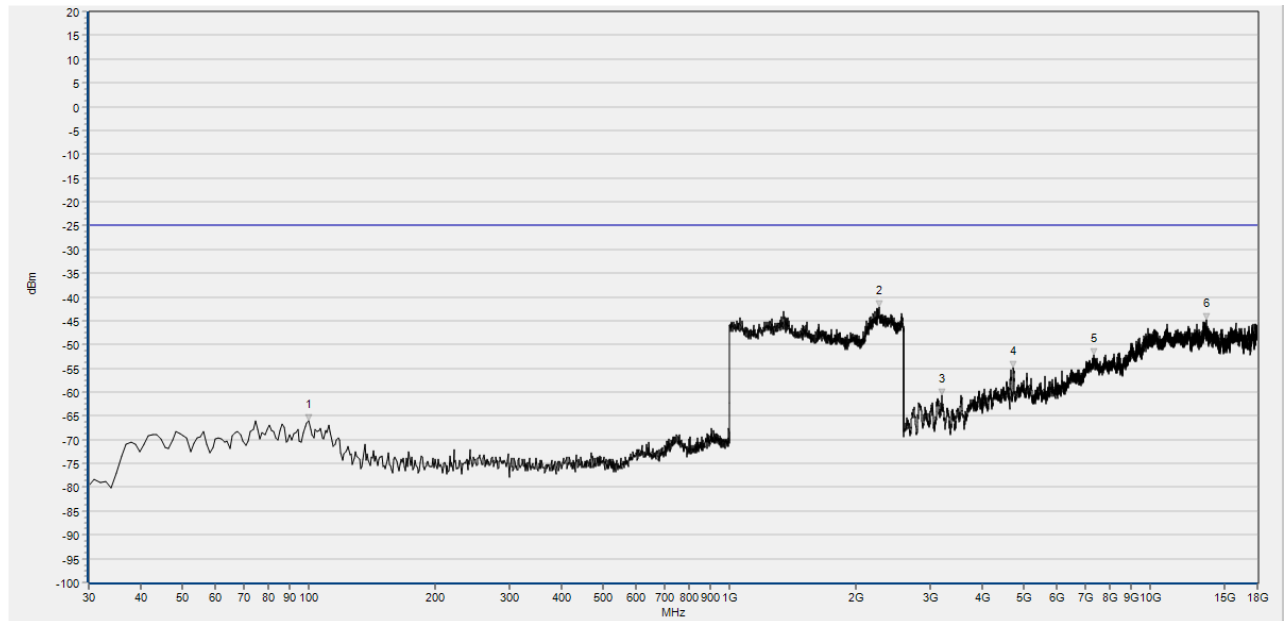
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 103.794   | -65.74 | -25.00   | 0.0    | V       | PASS    |
| 2   | 2305.305  | -41.87 | -25.00   | 0.0    | V       | PASS    |
| 3   | 3132.947  | -61.61 | -25.00   | 111.8  | V       | PASS    |
| 4   | 4737.948  | -56.04 | -25.00   | 111.8  | V       | PASS    |
| 5   | 8028.046  | -52.16 | -25.00   | 339.7  | V       | PASS    |
| 6   | 13434.527 | -45.22 | -25.00   | 150.9  | V       | PASS    |

N41 518601 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



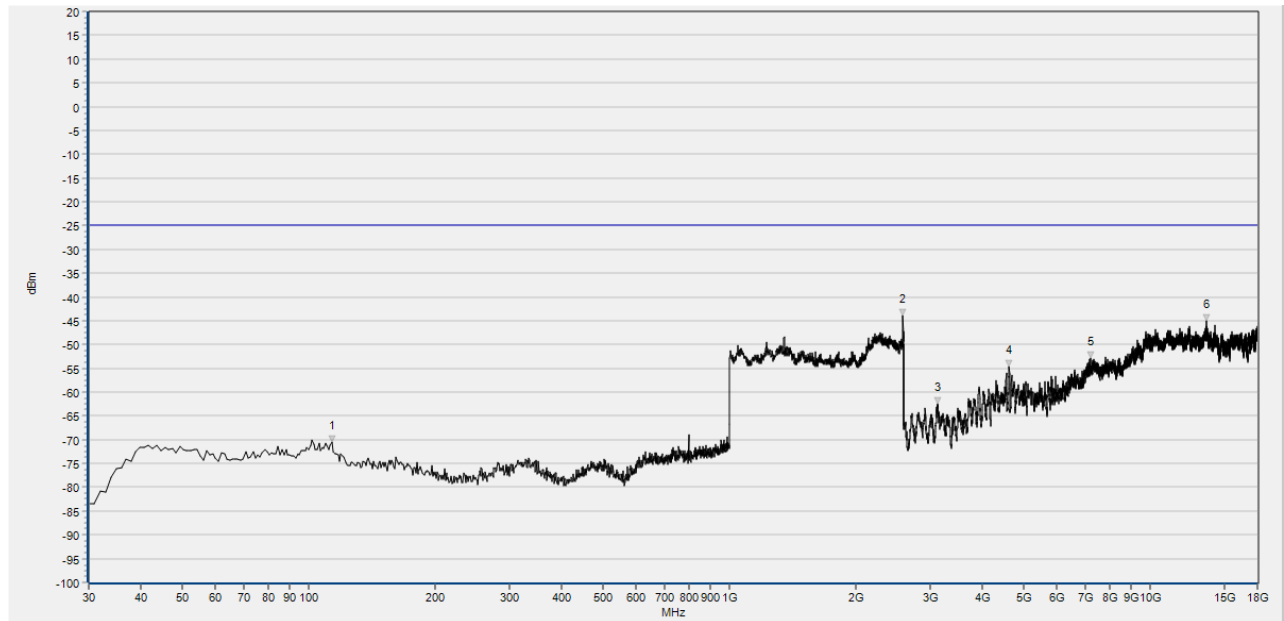
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -62.18 | -25.00   | 360.0  | H       | PASS    |
| 2   | 2566.366  | -42.68 | -25.00   | 271.7  | H       | PASS    |
| 3   | 3120.624  | -60.41 | -25.00   | 127.4  | H       | PASS    |
| 4   | 4741.028  | -55.36 | -25.00   | 15.8   | H       | PASS    |
| 5   | 7199.360  | -52.04 | -25.00   | 79.3   | H       | PASS    |
| 6   | 13468.414 | -45.45 | -25.00   | 343.1  | H       | PASS    |

N41 532998 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



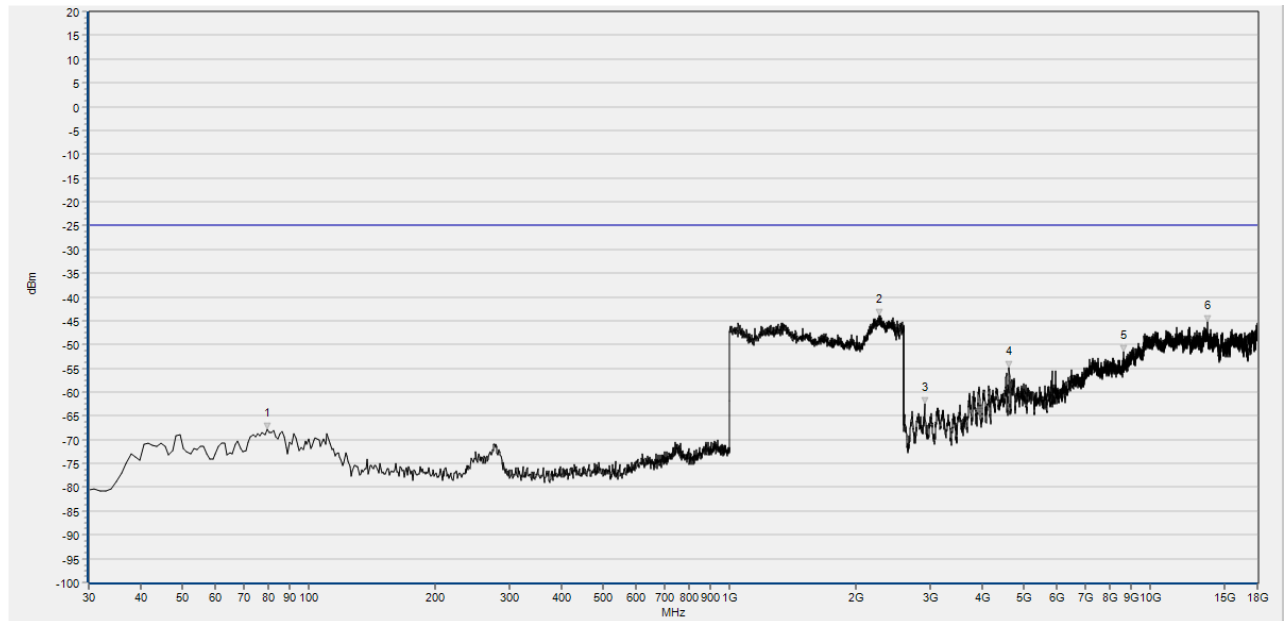
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 99.910    | -66.13 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2266.867  | -42.16 | -25.00   | 360.0  | V       | PASS    |
| 3   | 3194.559  | -60.60 | -25.00   | 28.8   | V       | PASS    |
| 4   | 4737.948  | -54.92 | -25.00   | 217.2  | V       | PASS    |
| 5   | 7341.068  | -52.26 | -25.00   | 169.7  | V       | PASS    |
| 6   | 13603.961 | -44.85 | -25.00   | 114.8  | V       | PASS    |

N41 532998 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



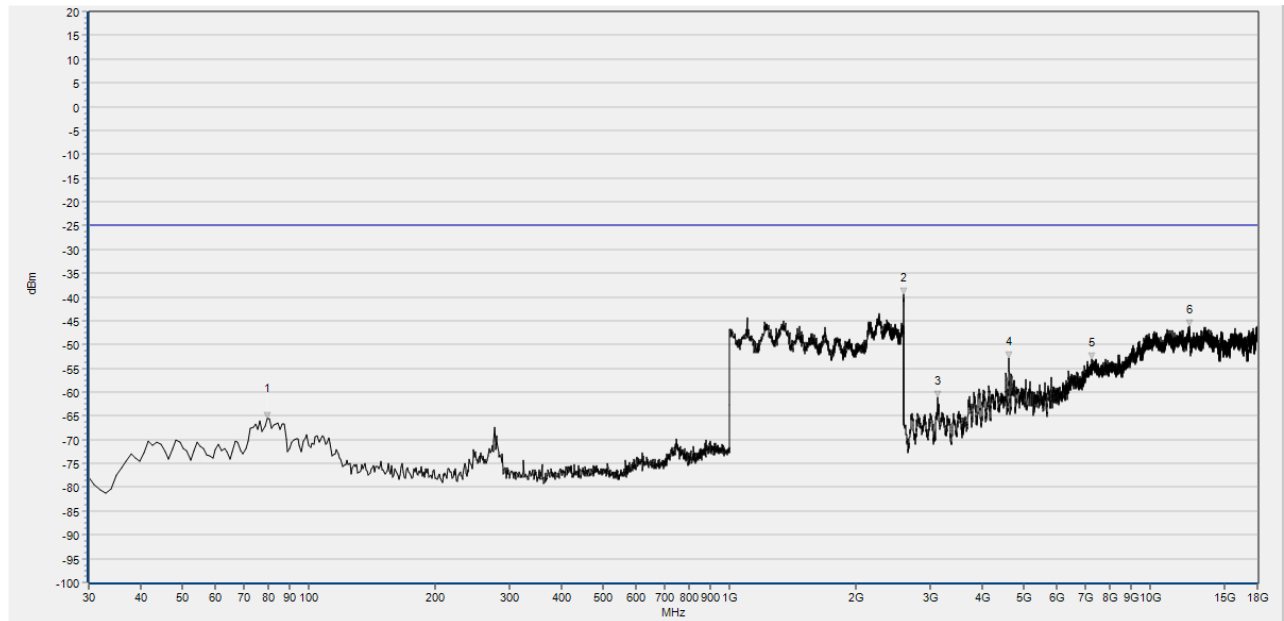
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 113.504   | -70.57 | -25.00   | 0.0    | H       | PASS    |
| 2   | 2587.187  | -44.02 | -25.00   | 229.3  | H       | NA      |
| 3   | 3129.866  | -62.44 | -25.00   | 314.8  | H       | PASS    |
| 4   | 4627.045  | -54.63 | -25.00   | 89.2   | H       | PASS    |
| 5   | 7239.408  | -52.90 | -25.00   | 291.3  | H       | PASS    |
| 6   | 13616.283 | -45.06 | -25.00   | 205.1  | H       | PASS    |

N41 509202 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



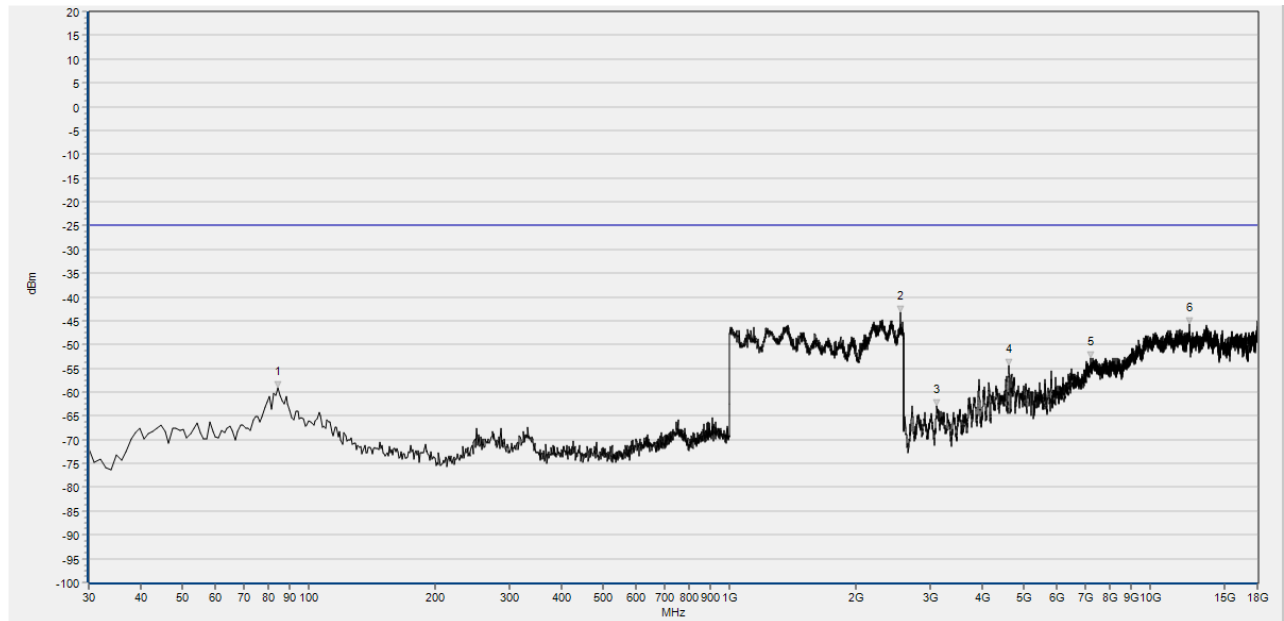
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.520    | -67.82 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2271.672  | -43.80 | -25.00   | 338.3  | V       | PASS    |
| 3   | 2908.062  | -62.39 | -25.00   | 333.7  | V       | PASS    |
| 4   | 4623.965  | -54.96 | -25.00   | 1.9    | V       | PASS    |
| 5   | 8665.733  | -51.55 | -25.00   | 193.6  | V       | PASS    |
| 6   | 13730.266 | -45.35 | -25.00   | 325.5  | V       | PASS    |

N41 509202 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



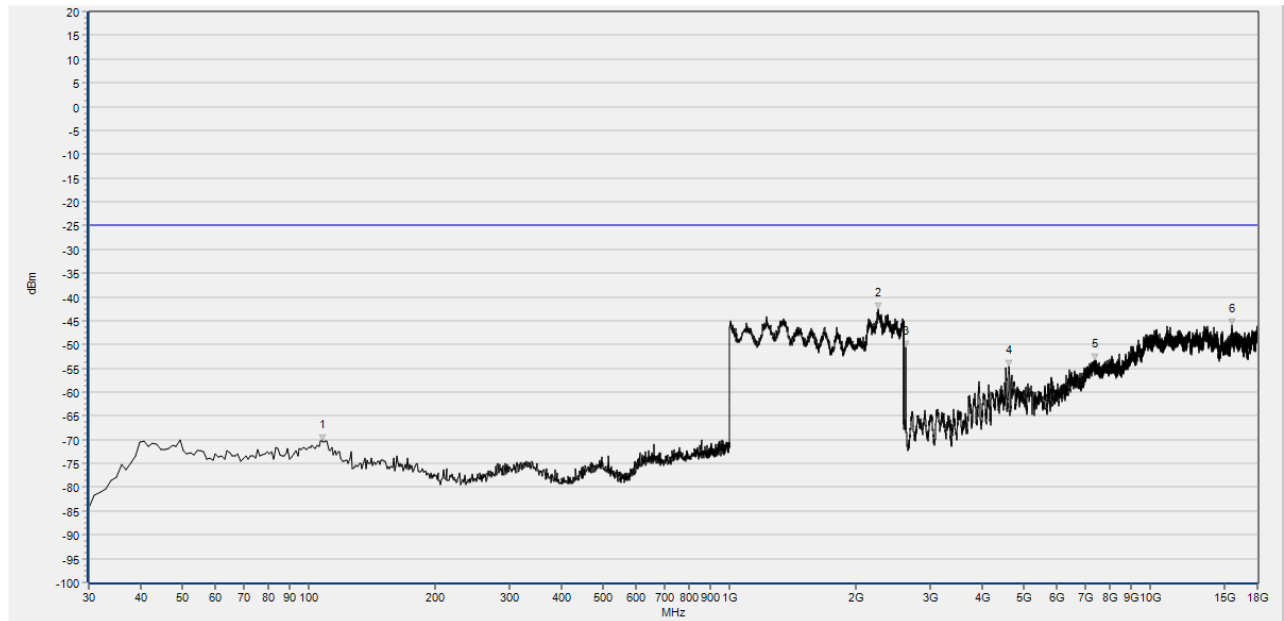
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.520    | -65.55 | -25.00   | 360.0  | H       | PASS    |
| 2   | 2598.398  | -39.44 | -25.00   | 360.0  | H       | NA      |
| 3   | 3120.624  | -61.01 | -25.00   | 72.8   | H       | PASS    |
| 4   | 4623.965  | -52.79 | -25.00   | 197.6  | H       | PASS    |
| 5   | 7248.650  | -53.17 | -25.00   | 135.1  | H       | PASS    |
| 6   | 12390.198 | -46.09 | -25.00   | 96.1   | H       | PASS    |

N41 518598 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



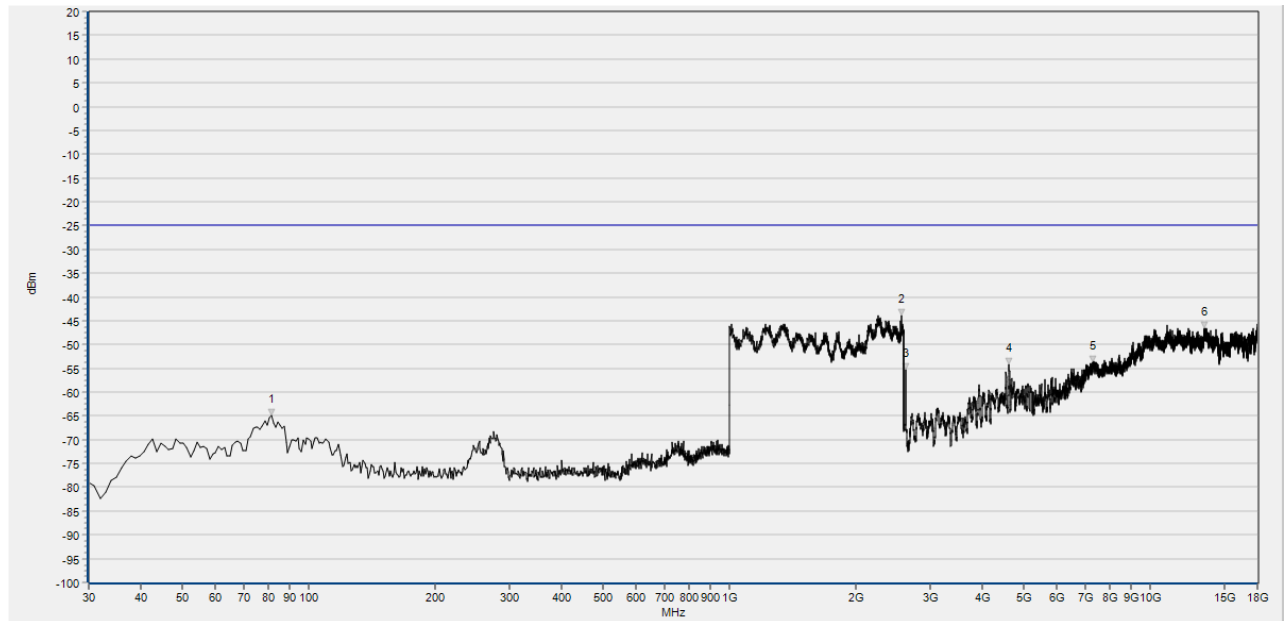
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 84.374    | -59.21 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2595.155  | -43.20 | -25.00   | 360.0  | V       | NA      |
| 3   | 3114.463  | -62.96 | -25.00   | 46.4   | V       | PASS    |
| 4   | 4623.965  | -54.36 | -25.00   | 358.1  | V       | PASS    |
| 5   | 7233.247  | -52.75 | -25.00   | 328.9  | V       | PASS    |
| 6   | 12380.956 | -45.71 | -25.00   | 31.1   | V       | PASS    |

N41 518598 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



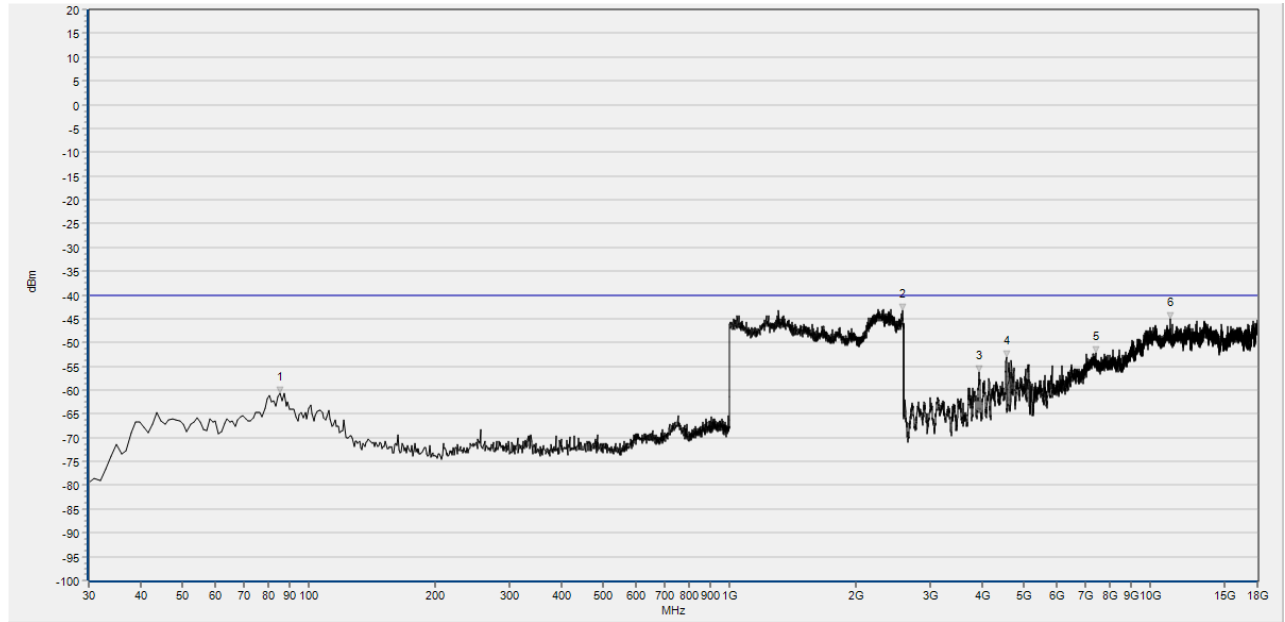
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 107.678   | -70.36 | -25.00   | 0.0    | H       | PASS    |
| 2   | 2263.664  | -42.65 | -25.00   | 236.7  | H       | PASS    |
| 3   | 2621.564  | -50.56 | -25.00   | 58.5   | H       | NA      |
| 4   | 4627.045  | -54.74 | -25.00   | 298.5  | H       | PASS    |
| 5   | 7405.761  | -53.23 | -25.00   | 275.0  | H       | PASS    |
| 6   | 15624.845 | -45.92 | -25.00   | 329.6  | H       | PASS    |

N41 528000 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



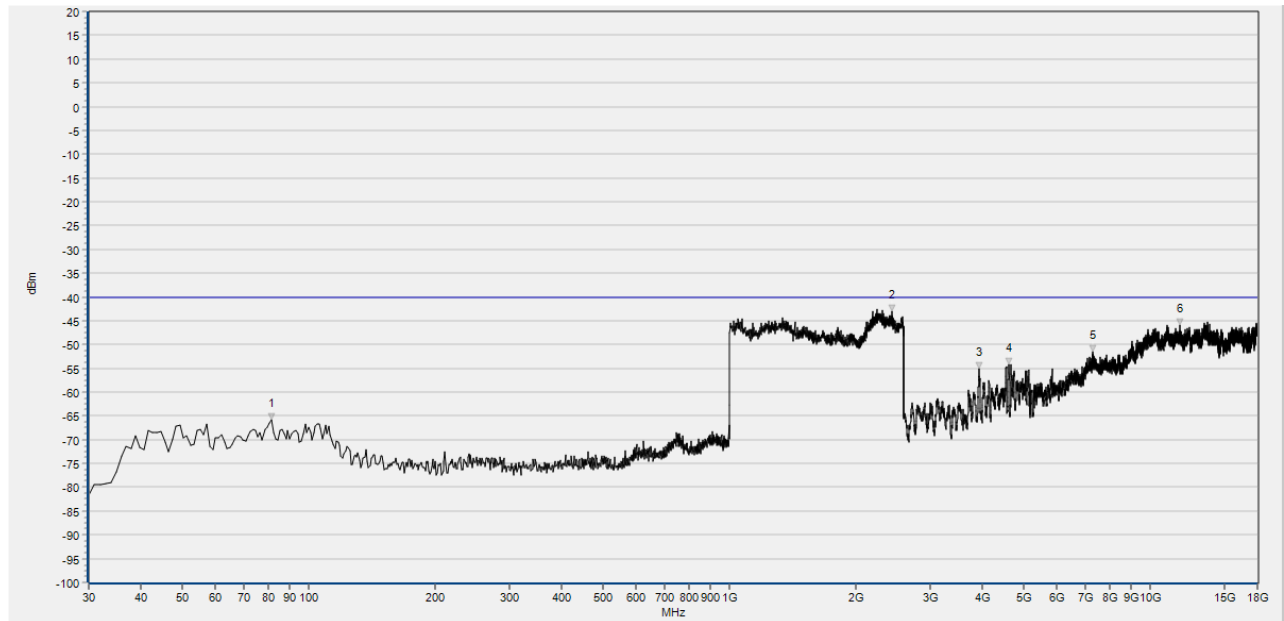
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.461    | -64.96 | -25.00   | 0.0    | V       | PASS    |
| 2   | 2566.366  | -43.99 | -25.00   | 0.0    | V       | PASS    |
| 3   | 2621.564  | -55.39 | -25.00   | 92.9   | V       | NA      |
| 4   | 4623.965  | -54.22 | -25.00   | 146.5  | V       | PASS    |
| 5   | 7307.181  | -53.83 | -25.00   | 254.5  | V       | PASS    |
| 6   | 13431.446 | -46.66 | -25.00   | 169.4  | V       | PASS    |

N41 528000 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



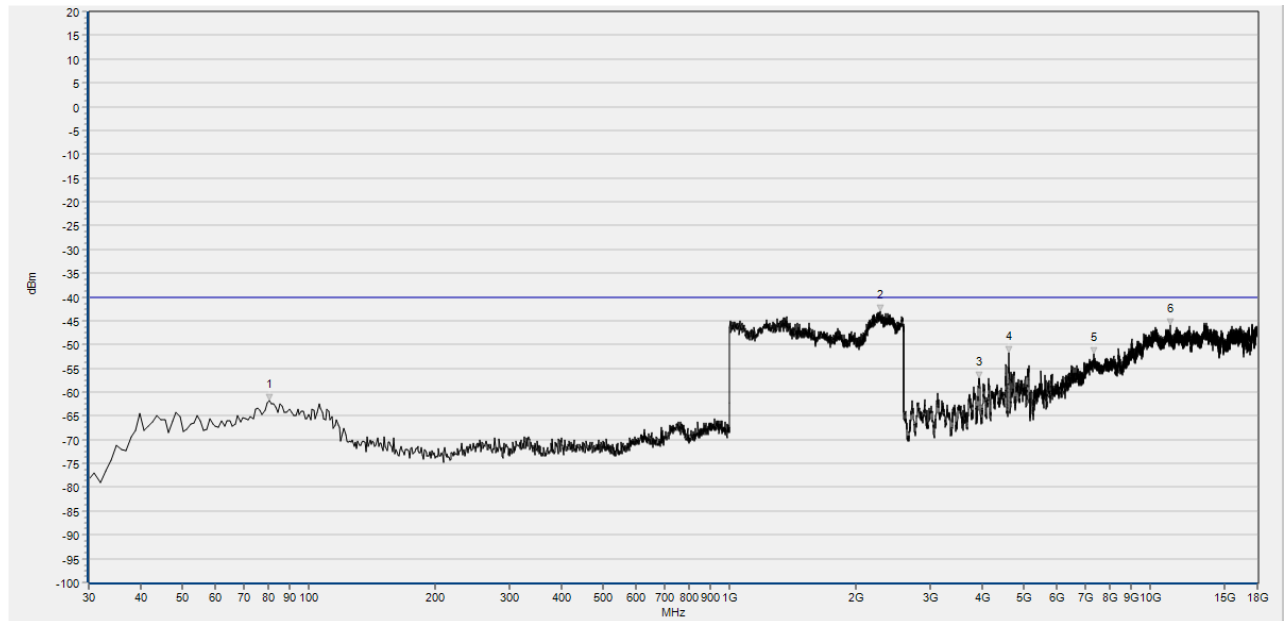
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 85.345    | -60.62 | -40.00   | 0.0    | H       | PASS    |
| 2   | 2577.578  | -43.23 | -40.00   | 0.0    | H       | PASS    |
| 3   | 3924.665  | -56.22 | -40.00   | 1.9    | H       | PASS    |
| 4   | 4550.030  | -53.05 | -40.00   | 30.3   | H       | PASS    |
| 5   | 7418.084  | -52.10 | -40.00   | 84.4   | H       | PASS    |
| 6   | 11167.193 | -44.95 | -40.00   | 232.9  | H       | PASS    |

N48 638334 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



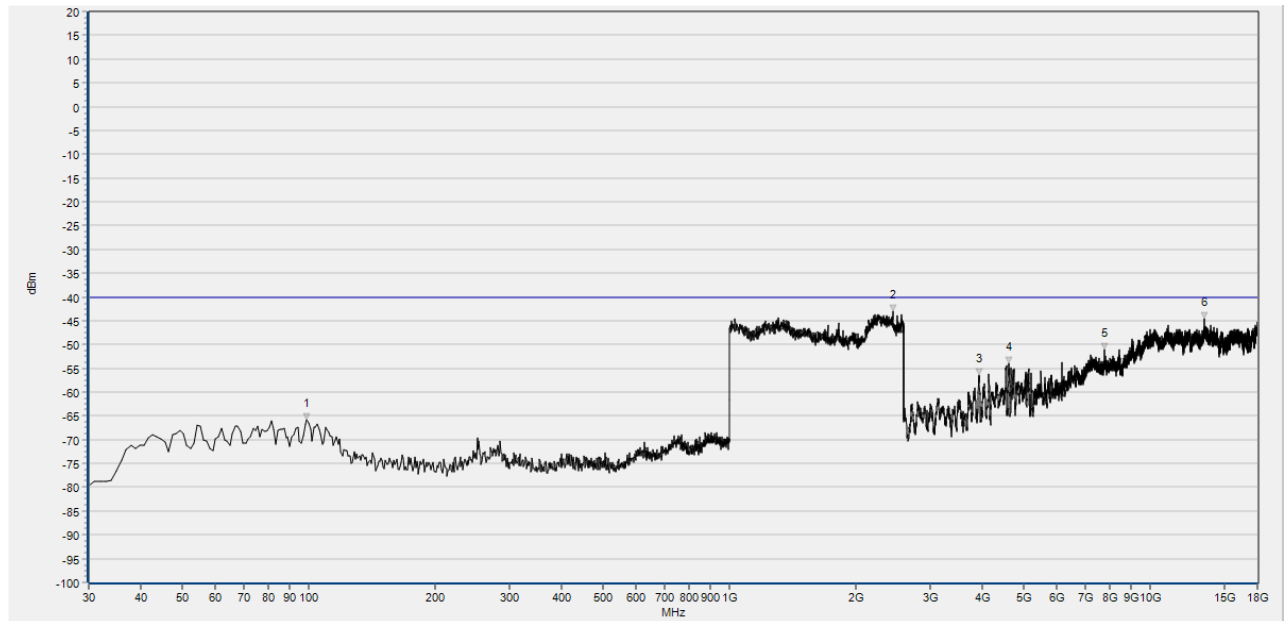
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.461    | -65.77 | -40.00   | 360.0  | V       | PASS    |
| 2   | 2431.832  | -43.12 | -40.00   | 360.0  | V       | PASS    |
| 3   | 3927.746  | -55.00 | -40.00   | 78.3   | V       | PASS    |
| 4   | 4620.884  | -54.27 | -40.00   | 140.6  | V       | PASS    |
| 5   | 7325.665  | -51.61 | -40.00   | 24.0   | V       | PASS    |
| 6   | 11774.075 | -45.92 | -40.00   | 31.6   | V       | PASS    |

N48 638334 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



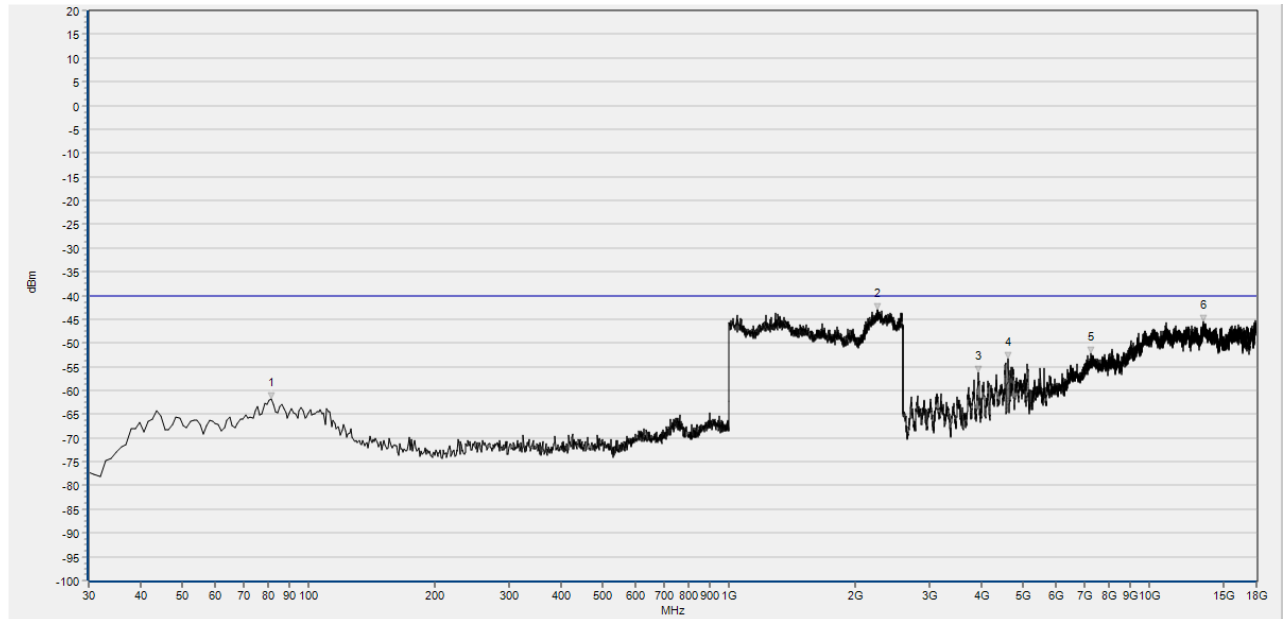
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -61.84 | -40.00   | 360.0  | H       | PASS    |
| 2   | 2282.883  | -43.11 | -40.00   | 360.0  | H       | PASS    |
| 3   | 3921.584  | -57.14 | -40.00   | 8.1    | H       | PASS    |
| 4   | 4620.884  | -51.83 | -40.00   | 282.5  | H       | PASS    |
| 5   | 7344.149  | -51.97 | -40.00   | 196.0  | H       | PASS    |
| 6   | 11148.710 | -46.02 | -40.00   | 180.4  | H       | PASS    |

N48 641666 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



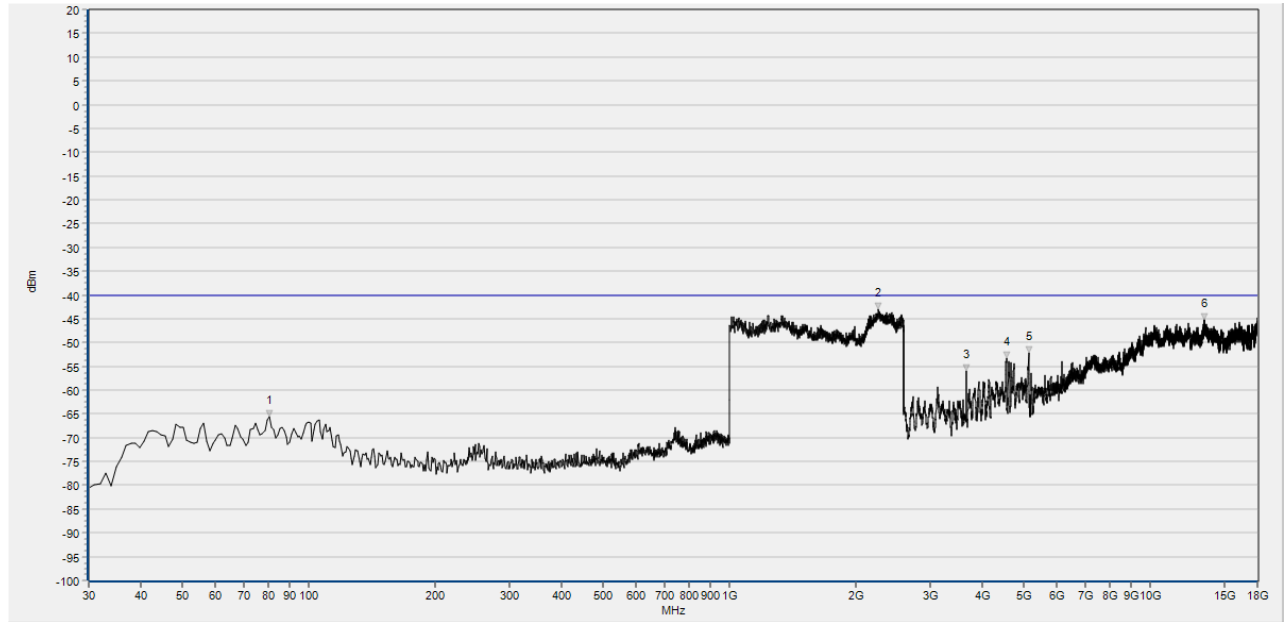
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 98.939    | -65.88 | -40.00   | 176.7  | V       | PASS    |
| 2   | 2446.246  | -43.05 | -40.00   | 279.2  | V       | PASS    |
| 3   | 3930.826  | -56.39 | -40.00   | 120.3  | V       | PASS    |
| 4   | 4623.965  | -53.88 | -40.00   | 0.4    | V       | PASS    |
| 5   | 7796.999  | -51.12 | -40.00   | 120.3  | V       | PASS    |
| 6   | 13474.575 | -44.63 | -40.00   | 3.6    | V       | PASS    |

N48 641666 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



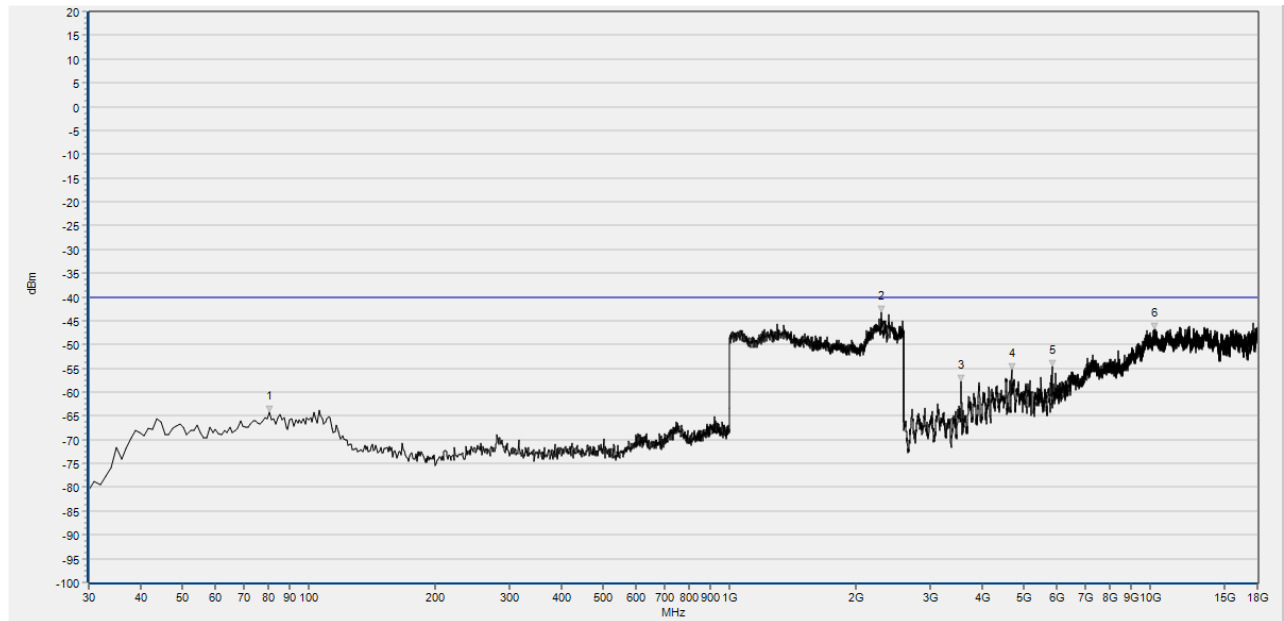
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.461    | -61.88 | -40.00   | 360.0  | H       | PASS    |
| 2   | 2255.656  | -43.05 | -40.00   | 360.0  | H       | PASS    |
| 3   | 3924.665  | -56.27 | -40.00   | 109.7  | H       | PASS    |
| 4   | 4620.884  | -53.34 | -40.00   | 329.4  | H       | PASS    |
| 5   | 7273.295  | -52.27 | -40.00   | 23.4   | H       | PASS    |
| 6   | 13422.204 | -45.51 | -40.00   | 212.0  | H       | PASS    |

N48 645000 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



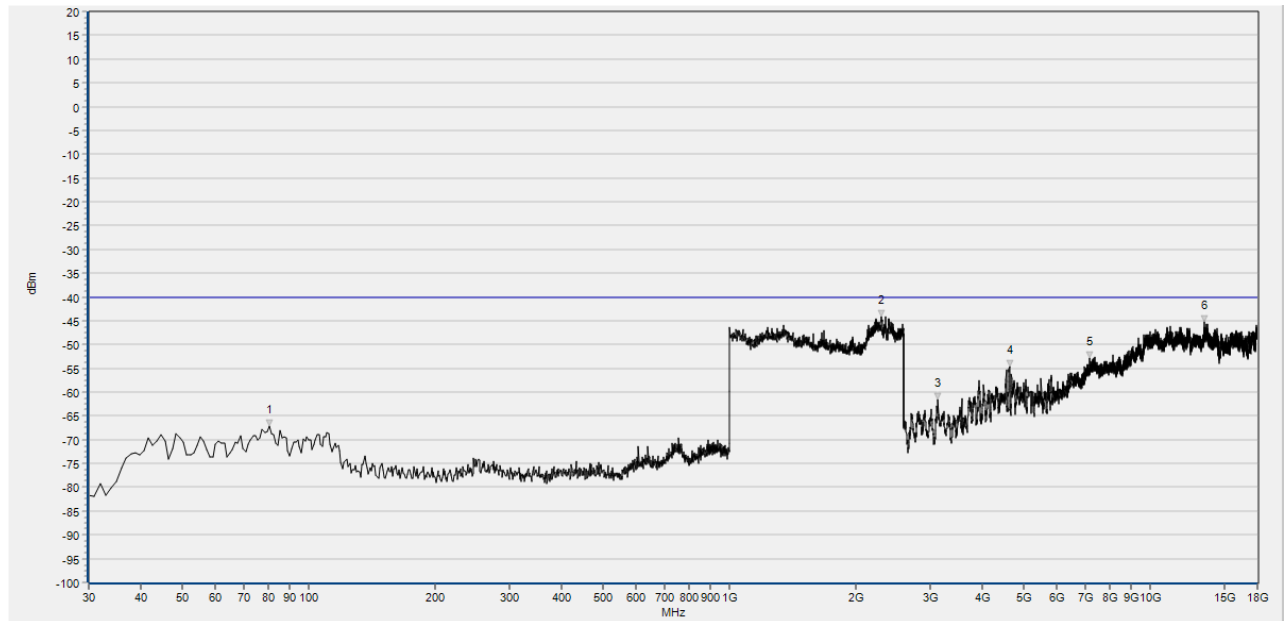
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -65.62 | -40.00   | 0.0    | V       | PASS    |
| 2   | 2263.664  | -43.13 | -40.00   | 0.0    | V       | PASS    |
| 3   | 3653.571  | -56.00 | -40.00   | 79.0   | V       | NA      |
| 4   | 4553.111  | -53.35 | -40.00   | 126.2  | V       | PASS    |
| 5   | 5141.508  | -52.20 | -40.00   | 305.1  | V       | PASS    |
| 6   | 13449.930 | -45.30 | -40.00   | 165.2  | V       | PASS    |

N48 645000 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



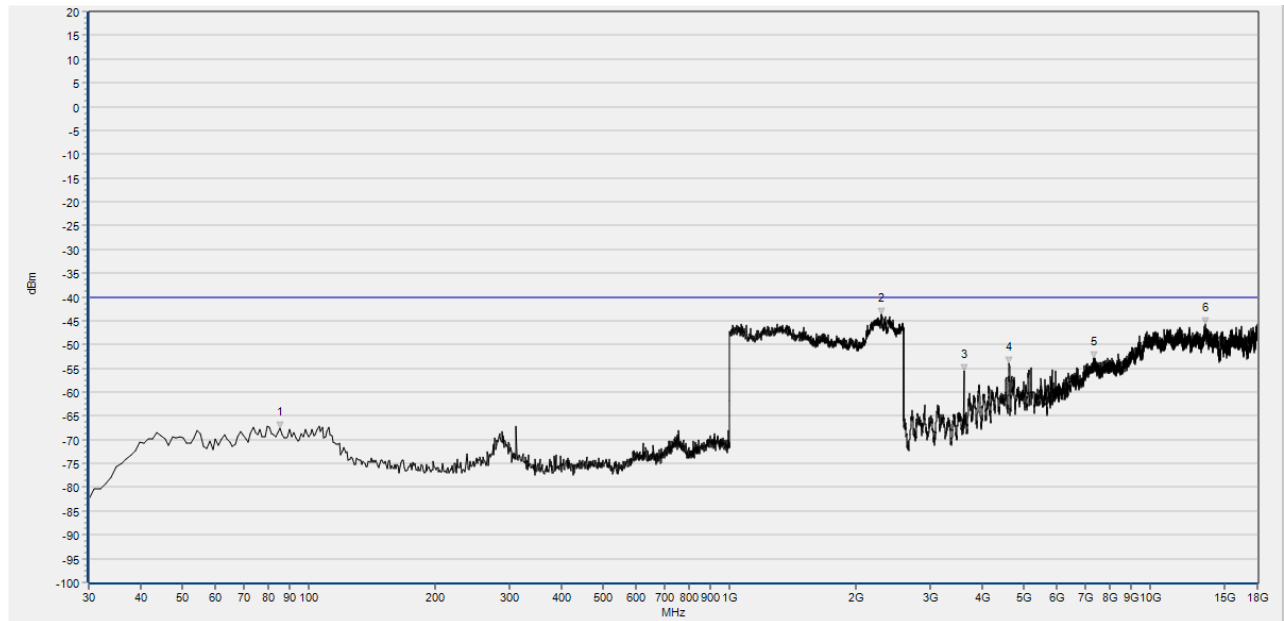
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -64.29 | -40.00   | 360.0  | H       | PASS    |
| 2   | 2302.102  | -43.22 | -40.00   | 360.0  | H       | PASS    |
| 3   | 3554.991  | -57.73 | -40.00   | 312.8  | H       | NA      |
| 4   | 4685.577  | -55.24 | -40.00   | 27.4   | H       | PASS    |
| 5   | 5843.889  | -54.68 | -40.00   | 53.1   | H       | PASS    |
| 6   | 10252.250 | -46.92 | -40.00   | 164.8  | H       | PASS    |

N48 638000 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



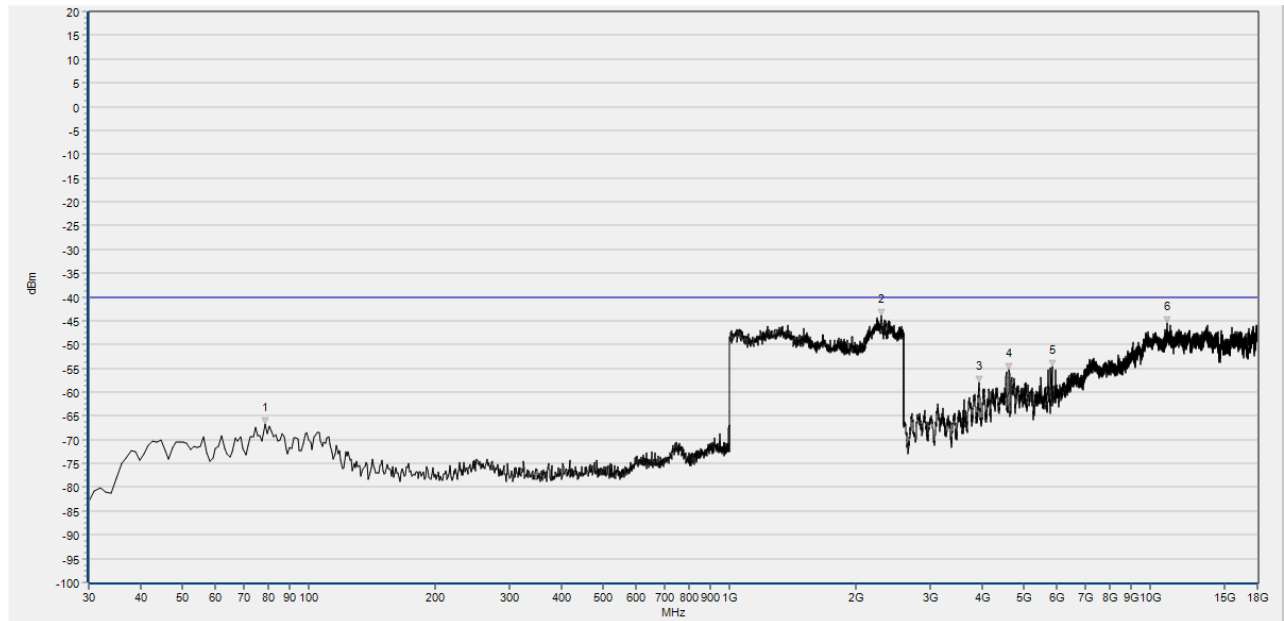
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -67.21 | -40.00   | 0.0    | V       | PASS    |
| 2   | 2302.102  | -44.22 | -40.00   | 0.0    | V       | PASS    |
| 3   | 3132.947  | -61.46 | -40.00   | 251.7  | V       | PASS    |
| 4   | 4630.126  | -54.59 | -40.00   | 125.7  | V       | PASS    |
| 5   | 7183.957  | -52.86 | -40.00   | 321.1  | V       | PASS    |
| 6   | 13486.897 | -45.35 | -40.00   | 180.3  | V       | PASS    |

N48 638000 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



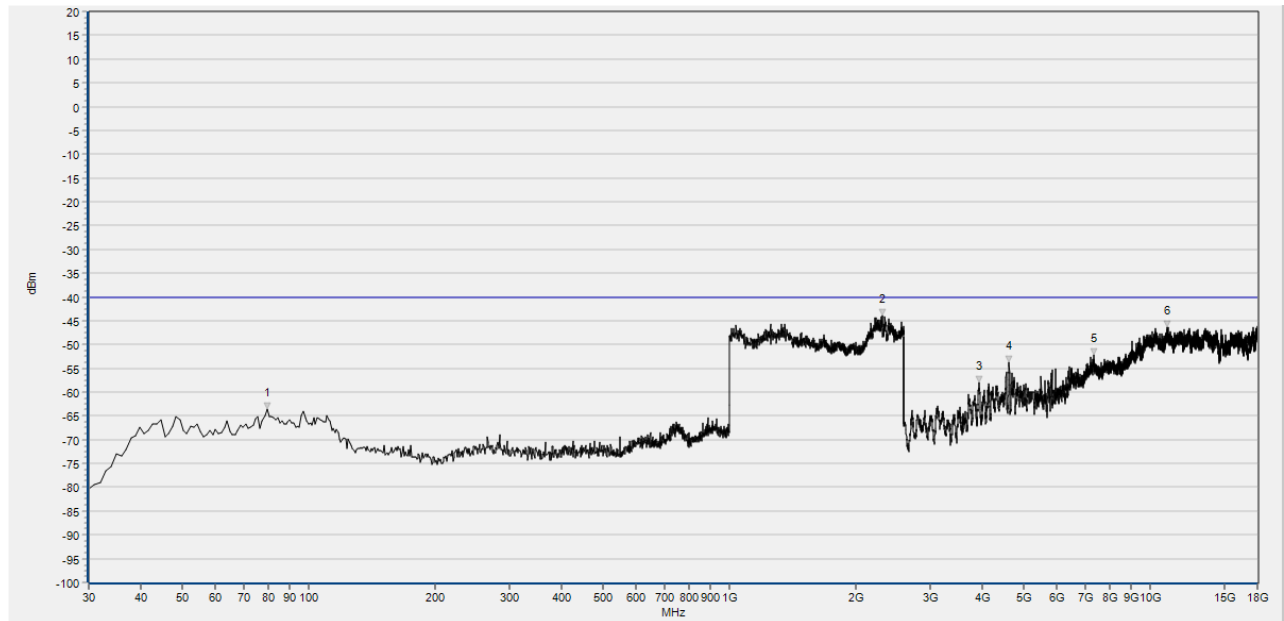
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 85.345    | -67.50 | -40.00   | 360.0  | H       | PASS    |
| 2   | 2298.899  | -43.60 | -40.00   | 359.0  | H       | PASS    |
| 3   | 3607.361  | -55.57 | -40.00   | 72.6   | H       | NA      |
| 4   | 4627.045  | -54.02 | -40.00   | 173.9  | H       | PASS    |
| 5   | 7347.229  | -52.80 | -40.00   | 212.4  | H       | PASS    |
| 6   | 13511.542 | -45.68 | -40.00   | 23.2   | H       | PASS    |

N48 641666 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



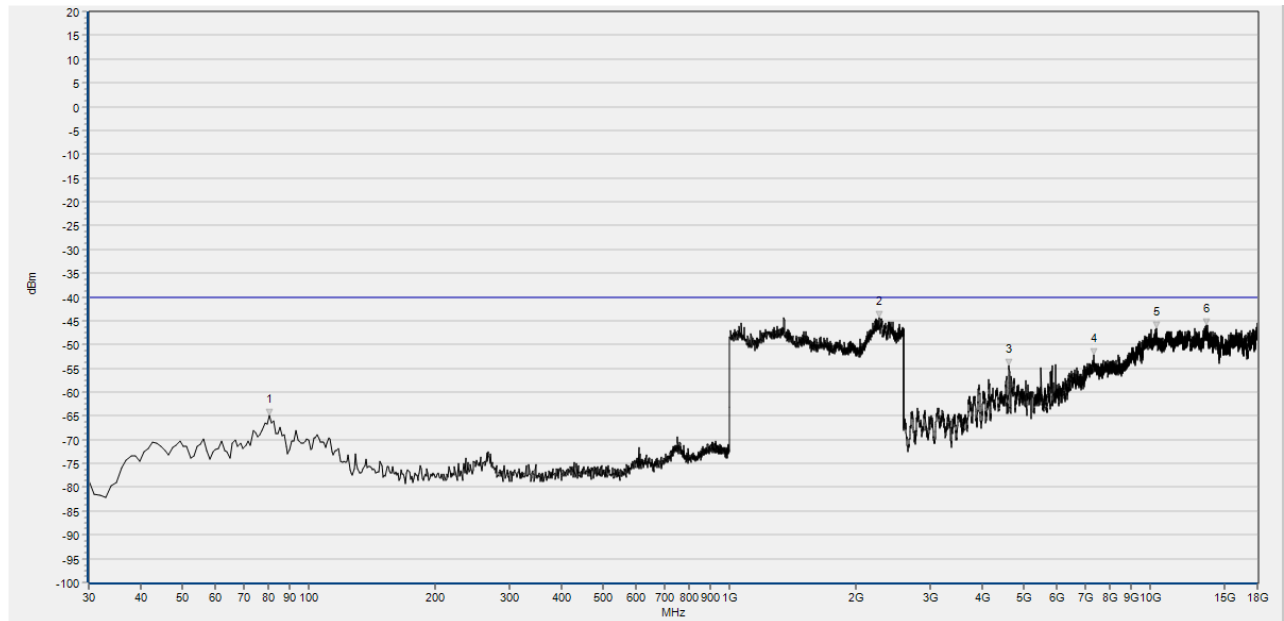
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 78.549    | -66.79 | -40.00   | 360.0  | V       | PASS    |
| 2   | 2295.696  | -43.89 | -40.00   | 360.0  | V       | PASS    |
| 3   | 3918.504  | -58.02 | -40.00   | 23.7   | V       | PASS    |
| 4   | 4627.045  | -55.40 | -40.00   | 251.3  | V       | PASS    |
| 5   | 5843.889  | -54.68 | -40.00   | 135.2  | V       | PASS    |
| 6   | 10982.356 | -45.52 | -40.00   | 333.9  | V       | PASS    |

N48 641666 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



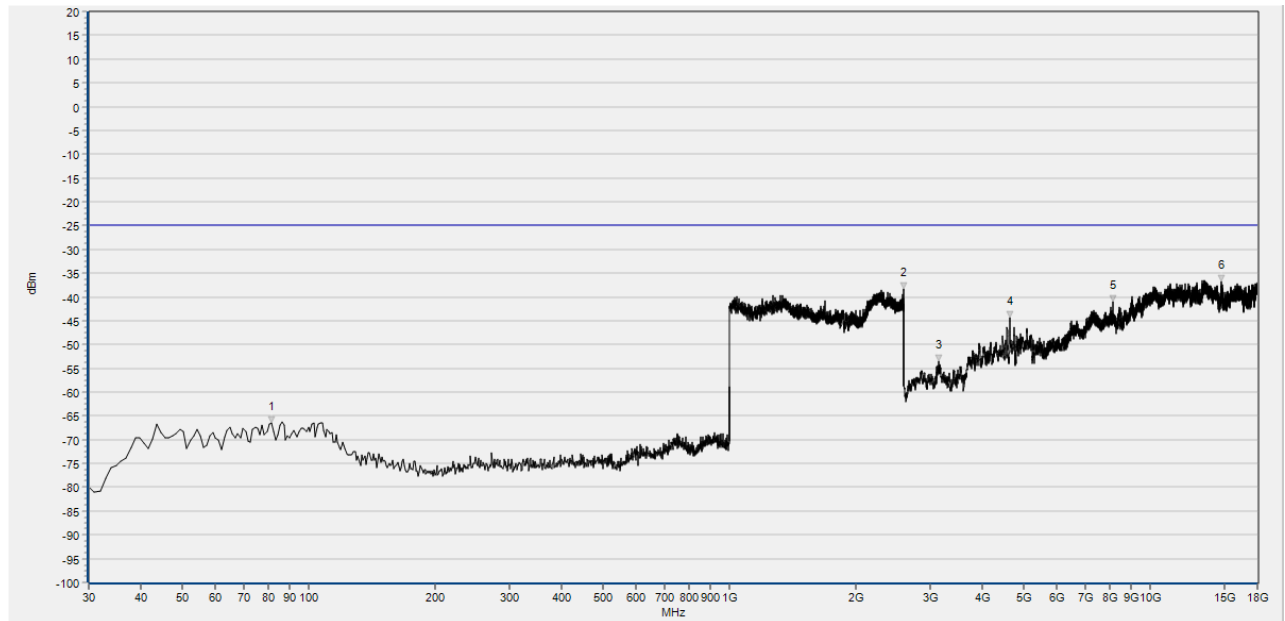
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.520    | -63.63 | -40.00   | 360.0  | H       | PASS    |
| 2   | 2308.509  | -43.94 | -40.00   | 360.0  | H       | PASS    |
| 3   | 3927.746  | -58.03 | -40.00   | 250.3  | H       | PASS    |
| 4   | 4623.965  | -53.78 | -40.00   | 313.1  | H       | PASS    |
| 5   | 7347.229  | -52.29 | -40.00   | 21.7   | H       | PASS    |
| 6   | 10994.679 | -46.48 | -40.00   | 258.2  | H       | PASS    |

N48 645332 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



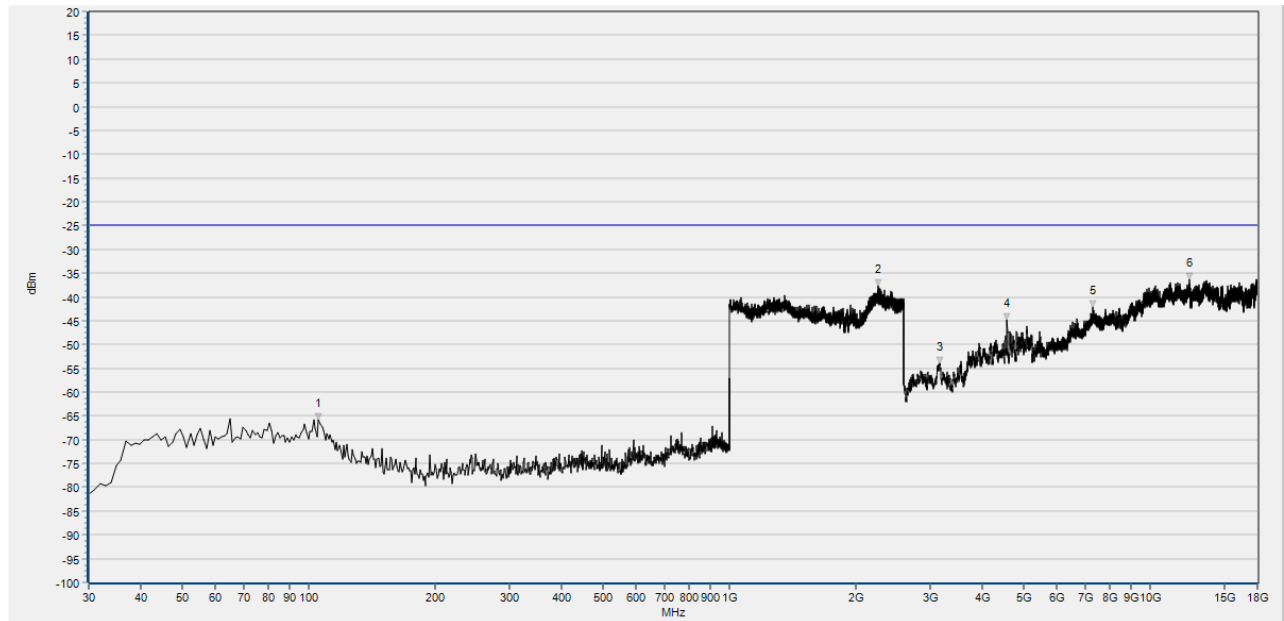
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 80.490    | -65.00 | -40.00   | 0.0    | V       | PASS    |
| 2   | 2268.468  | -44.32 | -40.00   | 0.0    | V       | PASS    |
| 3   | 4620.884  | -54.44 | -40.00   | 332.3  | V       | PASS    |
| 4   | 7334.907  | -52.19 | -40.00   | 174.9  | V       | PASS    |
| 5   | 10360.072 | -46.70 | -40.00   | 277.2  | V       | PASS    |
| 6   | 13579.316 | -45.97 | -40.00   | 23.4   | V       | PASS    |

N48 645332 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



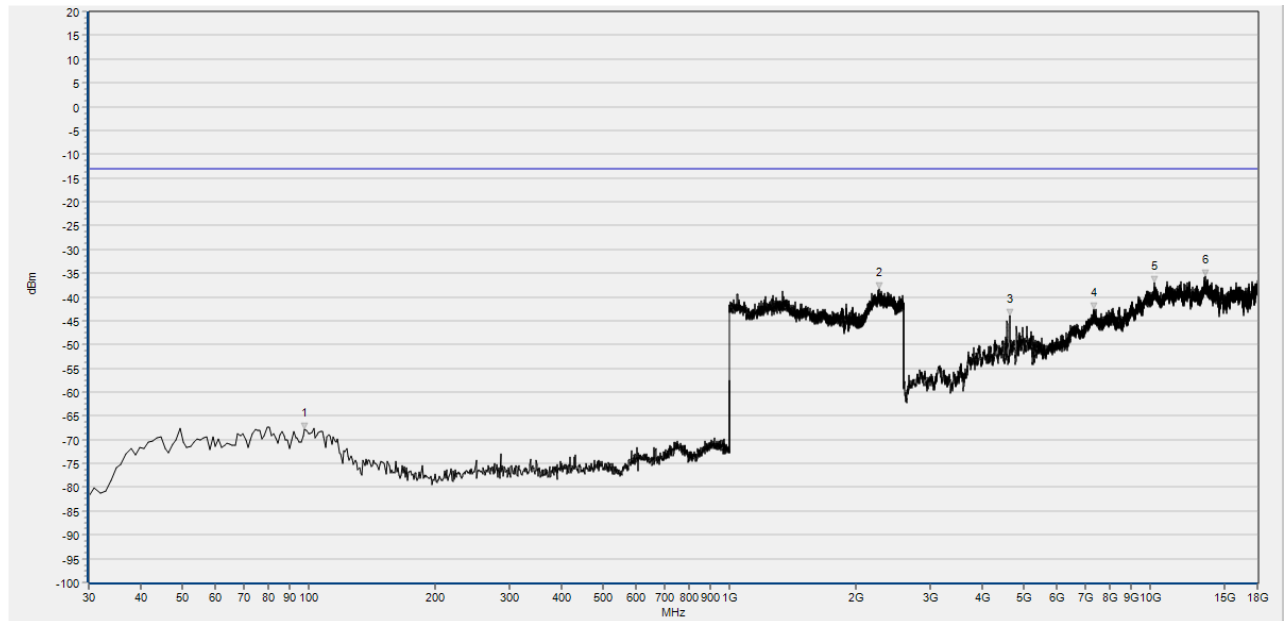
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -66.49 | -25.00   | 0.0    | H       | PASS    |
| 2   | 2591.036  | -38.42 | -25.00   | 0.0    | H       | PASS    |
| 3   | 3143.299  | -53.54 | -25.00   | 100.5  | H       | PASS    |
| 4   | 4647.172  | -44.41 | -25.00   | 328.3  | H       | PASS    |
| 5   | 8150.609  | -41.04 | -25.00   | 226.0  | H       | PASS    |
| 6   | 14771.013 | -36.81 | -25.00   | 205.5  | H       | PASS    |

N77 633334(3450-3550) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



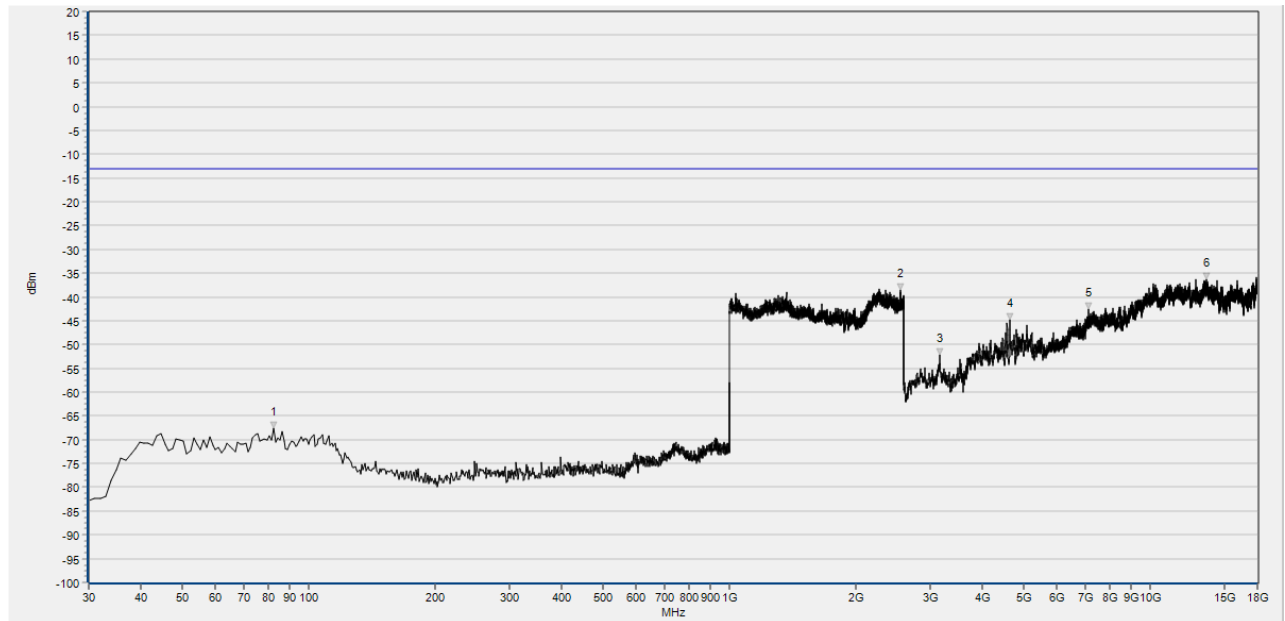
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 105.660   | -65.86 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2260.664  | -37.65 | -25.00   | 360.0  | V       | PASS    |
| 3   | 3157.301  | -54.01 | -25.00   | 270.3  | V       | PASS    |
| 4   | 4574.359  | -44.72 | -25.00   | 159.9  | V       | PASS    |
| 5   | 7321.658  | -42.21 | -25.00   | 27.4   | V       | PASS    |
| 6   | 12387.780 | -36.40 | -25.00   | 44.9   | V       | PASS    |

N77 633334(3450-3550) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



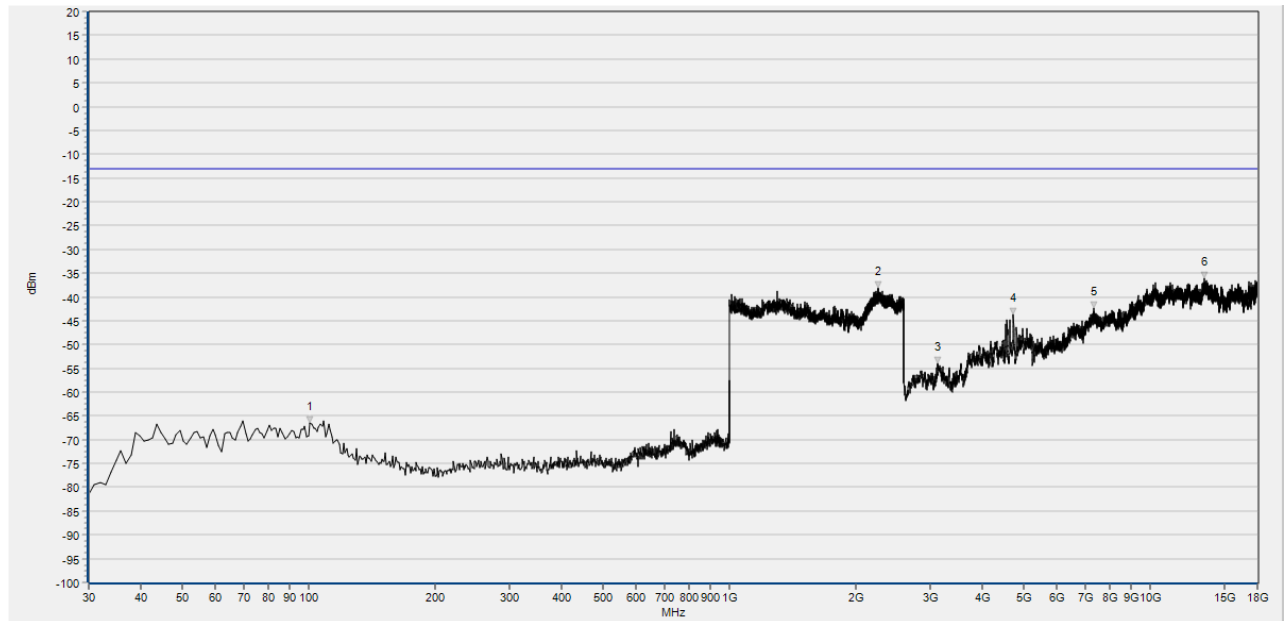
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 97.900    | -67.87 | -13.00   | 360.0  | H       | PASS    |
| 2   | 2264.506  | -38.43 | -13.00   | 360.0  | H       | PASS    |
| 3   | 4647.172  | -43.84 | -13.00   | 103.0  | H       | PASS    |
| 4   | 7363.666  | -42.68 | -13.00   | 250.1  | H       | PASS    |
| 5   | 10217.385 | -36.95 | -13.00   | 280.7  | H       | PASS    |
| 6   | 13516.385 | -35.60 | -13.00   | 20.7   | H       | PASS    |

N77 650000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



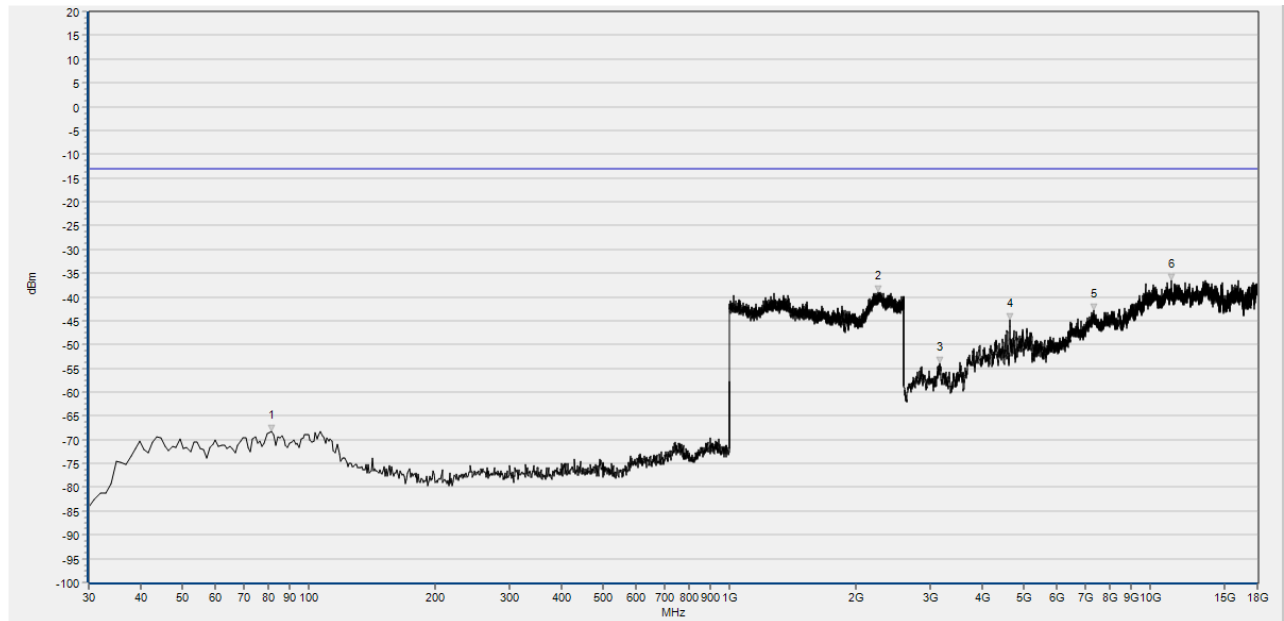
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 82.380    | -67.69 | -13.00   | 0.0    | V       | PASS    |
| 2   | 2548.780  | -38.61 | -13.00   | 0.0    | V       | PASS    |
| 3   | 3165.703  | -52.24 | -13.00   | 73.8   | V       | PASS    |
| 4   | 4644.372  | -44.73 | -13.00   | 359.5  | V       | PASS    |
| 5   | 7128.423  | -42.57 | -13.00   | 118.3  | V       | PASS    |
| 6   | 13586.398 | -36.37 | -13.00   | 109.1  | V       | PASS    |

N77 650000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



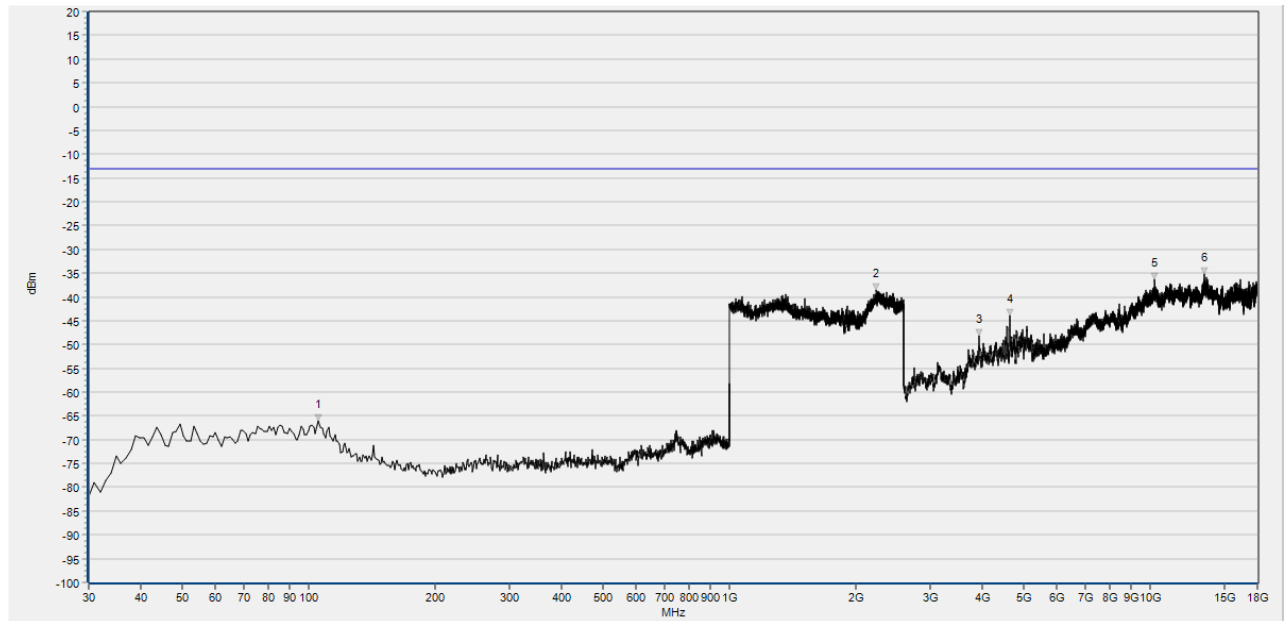
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 100.810   | -66.47 | -13.00   | 0.0    | H       | PASS    |
| 2   | 2260.664  | -38.07 | -13.00   | 0.0    | H       | PASS    |
| 3   | 3129.296  | -53.98 | -13.00   | 124.2  | H       | PASS    |
| 4   | 4733.988  | -43.59 | -13.00   | 98.5   | H       | PASS    |
| 5   | 7344.063  | -42.30 | -13.00   | 124.2  | H       | PASS    |
| 6   | 13477.178 | -36.12 | -13.00   | 168.2  | H       | PASS    |

N77 656000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



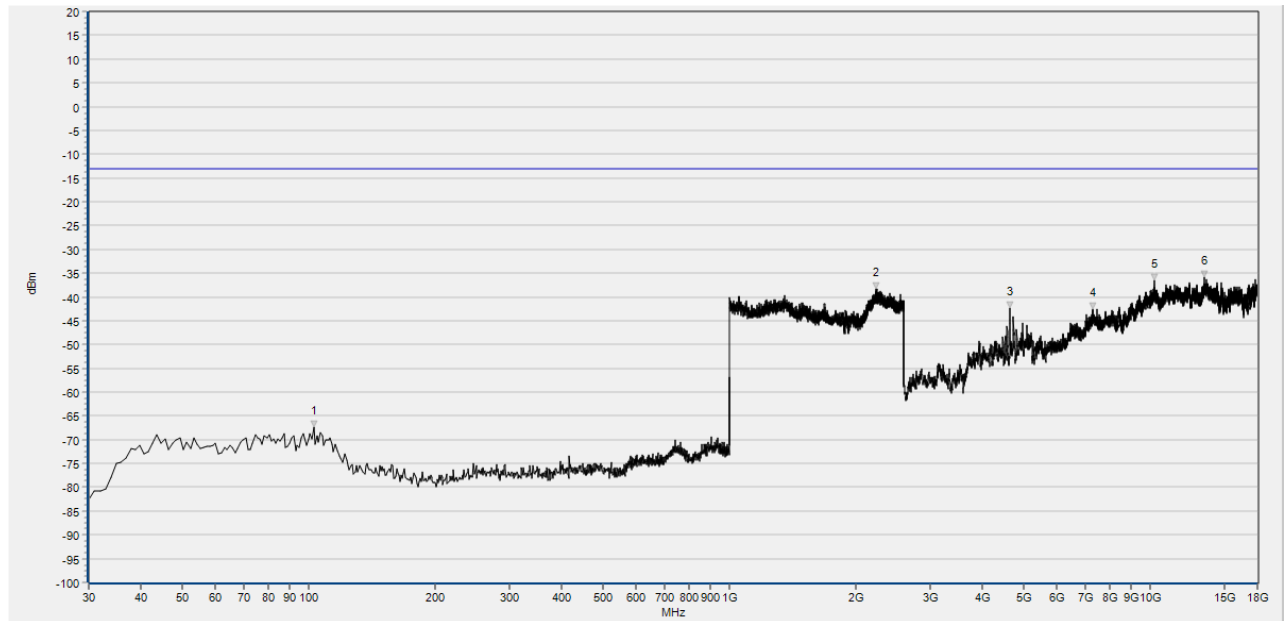
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -68.37 | -13.00   | 360.0  | V       | PASS    |
| 2   | 2257.463  | -39.05 | -13.00   | 360.0  | V       | PASS    |
| 3   | 3168.503  | -53.99 | -13.00   | 3.3    | V       | PASS    |
| 4   | 4644.372  | -44.73 | -13.00   | 94.4   | V       | PASS    |
| 5   | 7330.060  | -42.70 | -13.00   | 57.0   | V       | PASS    |
| 6   | 11211.566 | -36.46 | -13.00   | 231.8  | V       | PASS    |

N77 656000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



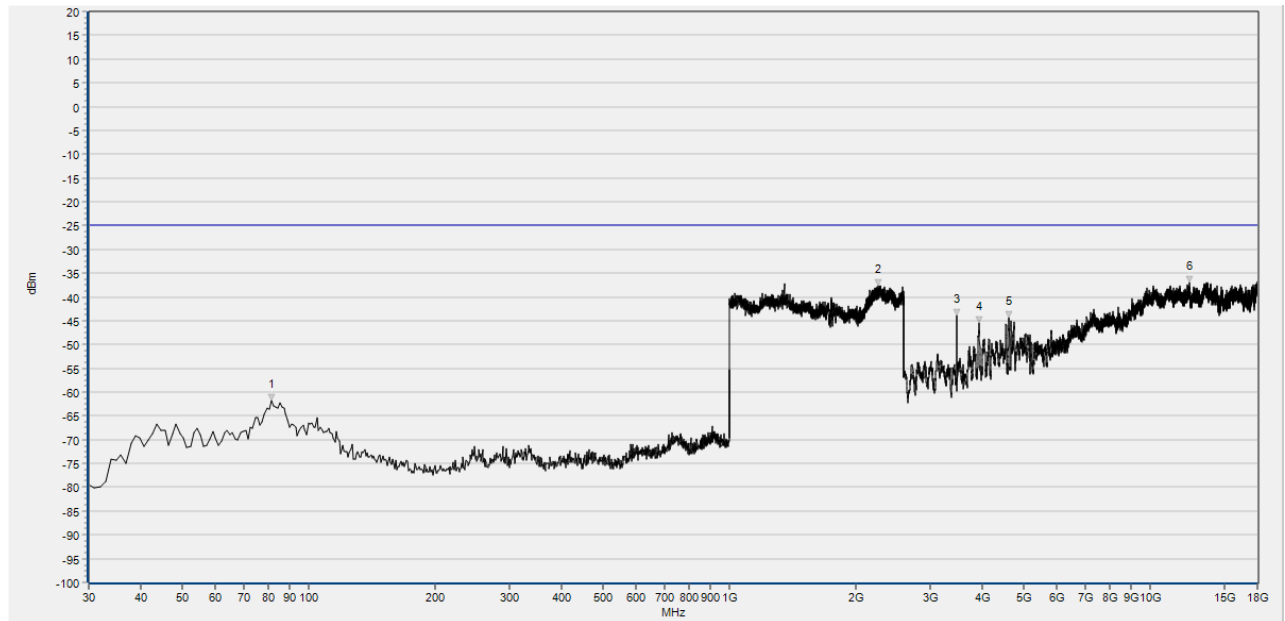
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 105.660   | -65.98 | -13.00   | 360.0  | H       | PASS    |
| 2   | 2237.615  | -38.65 | -13.00   | 360.0  | H       | PASS    |
| 3   | 3919.040  | -48.12 | -13.00   | 260.9  | H       | PASS    |
| 4   | 4647.172  | -44.01 | -13.00   | 109.2  | H       | PASS    |
| 5   | 10267.794 | -36.31 | -13.00   | 44.9   | H       | PASS    |
| 6   | 13468.776 | -35.23 | -13.00   | 298.0  | H       | PASS    |

N77 662000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



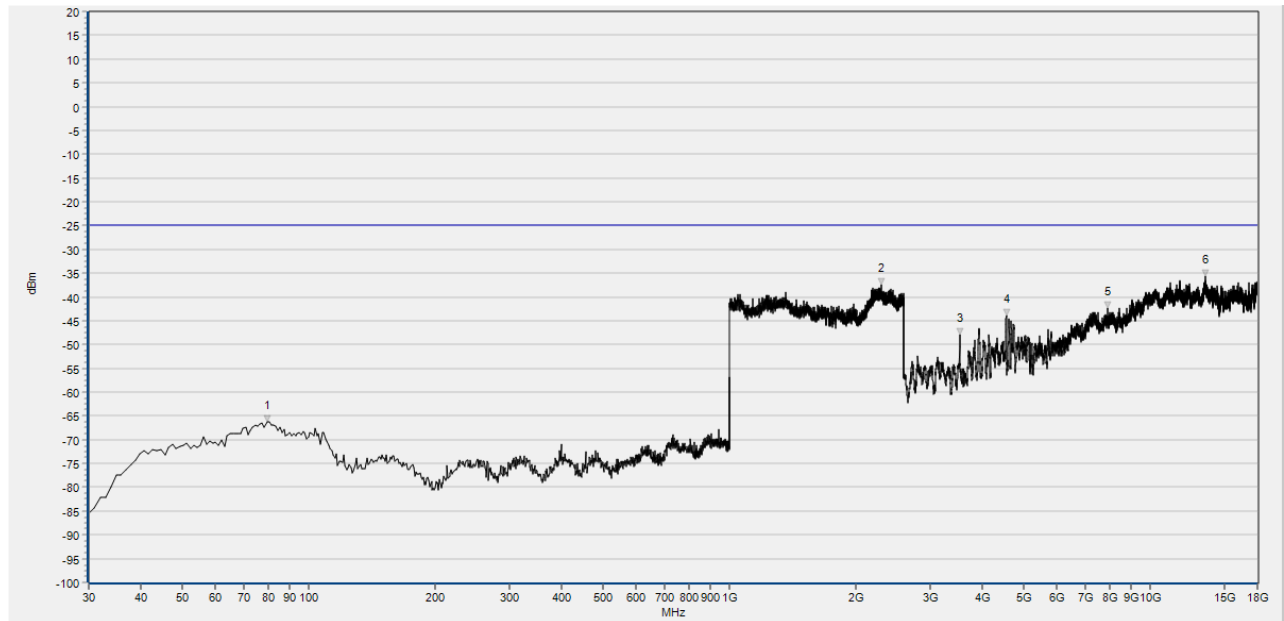
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 102.750   | -67.27 | -13.00   | 0.0    | V       | PASS    |
| 2   | 2234.414  | -38.34 | -13.00   | 0.0    | V       | PASS    |
| 3   | 4644.372  | -42.38 | -13.00   | 2.1    | V       | PASS    |
| 4   | 7302.055  | -42.62 | -13.00   | 175.1  | V       | PASS    |
| 5   | 10214.584 | -36.60 | -13.00   | 108.1  | V       | PASS    |
| 6   | 13471.577 | -35.85 | -13.00   | 238.3  | V       | PASS    |

N77 662000(3700-3980) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



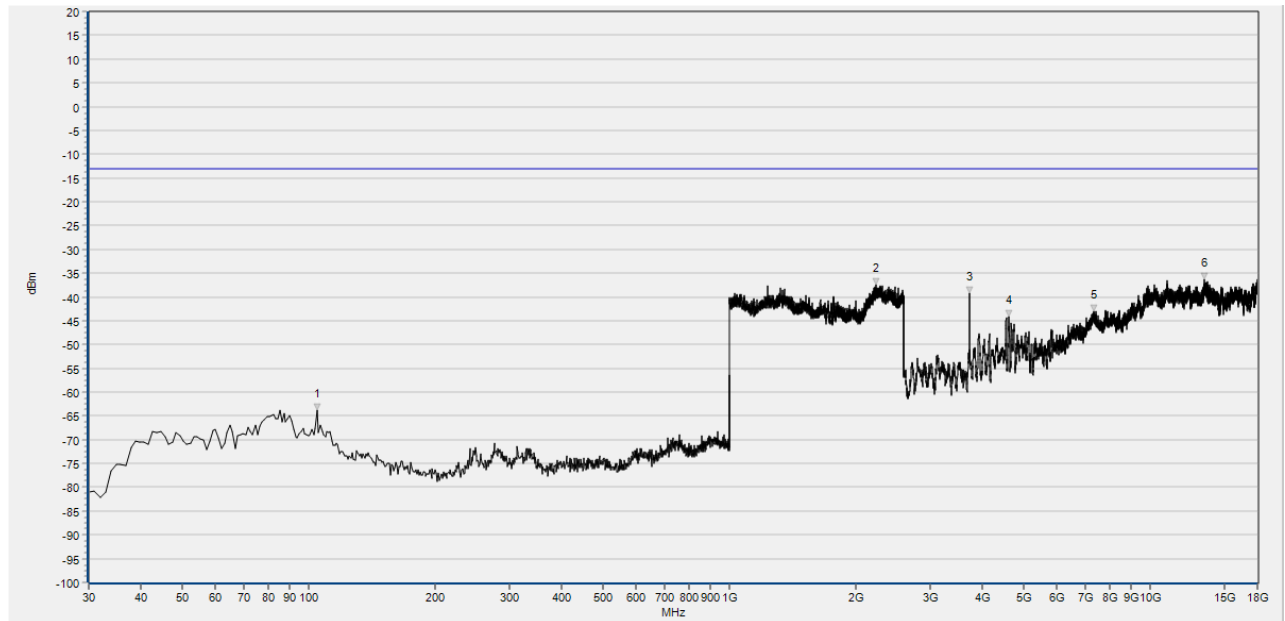
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -61.82 | -25.00   | 0.0    | H       | PASS    |
| 2   | 2254.262  | -37.63 | -25.00   | 0.0    | H       | PASS    |
| 3   | 3476.559  | -43.97 | -25.00   | 47.2   | H       | NA      |
| 4   | 3927.441  | -45.59 | -25.00   | 178.4  | H       | PASS    |
| 5   | 4624.768  | -44.47 | -25.00   | 169.2  | H       | PASS    |
| 6   | 12412.984 | -37.07 | -25.00   | 303.1  | H       | PASS    |

N78 636666(3450-3550) 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



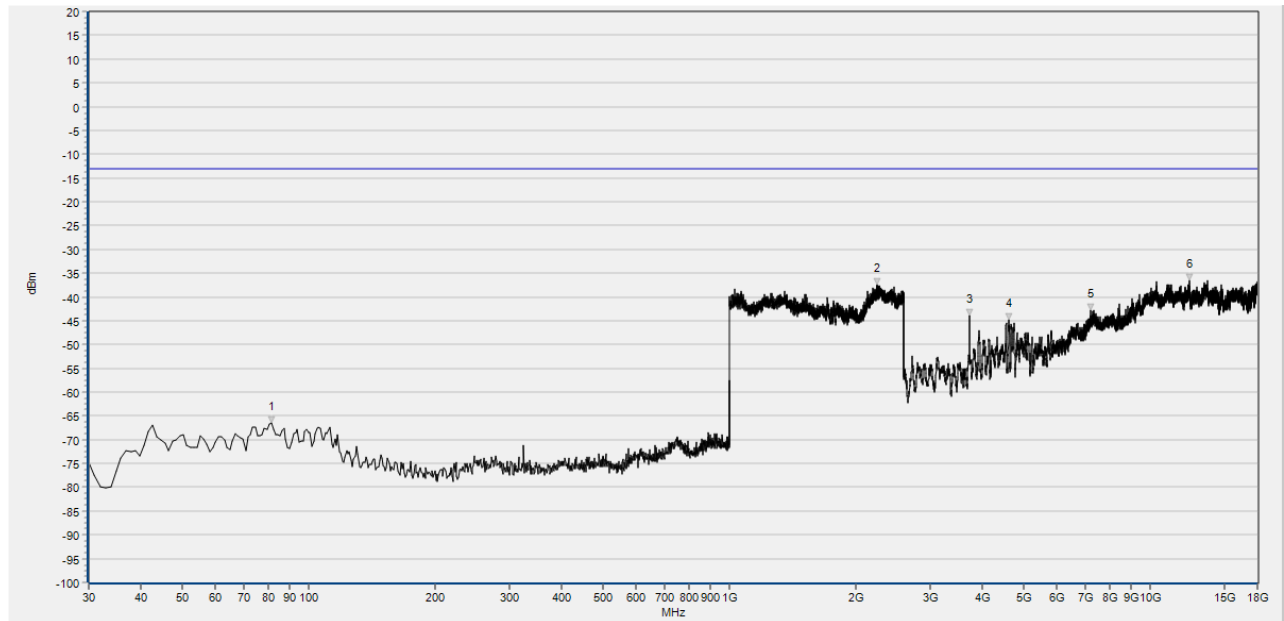
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.470    | -66.28 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2292.677  | -37.54 | -25.00   | 360.0  | V       | PASS    |
| 3   | 3526.969  | -48.01 | -25.00   | 85.0   | V       | NA      |
| 4   | 4551.955  | -43.85 | -25.00   | 259.0  | V       | PASS    |
| 5   | 7920.967  | -42.38 | -25.00   | 320.2  | V       | PASS    |
| 6   | 13563.993 | -35.72 | -25.00   | 180.6  | V       | PASS    |

N78 636666(3450-3550) 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



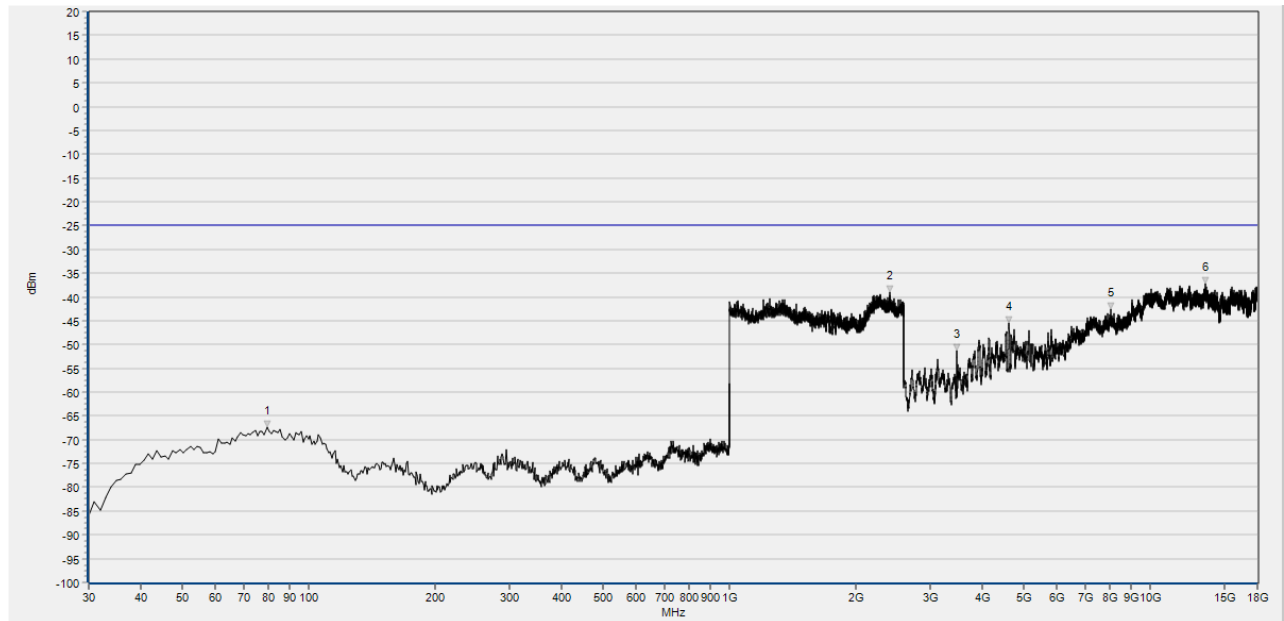
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 104.690   | -63.69 | -13.00   | 360.0  | H       | PASS    |
| 2   | 2229.932  | -37.41 | -13.00   | 360.0  | H       | PASS    |
| 3   | 3725.805  | -39.27 | -13.00   | 215.7  | H       | NA      |
| 4   | 4621.968  | -44.11 | -13.00   | 119.3  | H       | PASS    |
| 5   | 7335.661  | -43.02 | -13.00   | 154.9  | H       | PASS    |
| 6   | 13451.973 | -36.21 | -13.00   | 321.0  | H       | PASS    |

N78 651666(3700-3800) 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G H



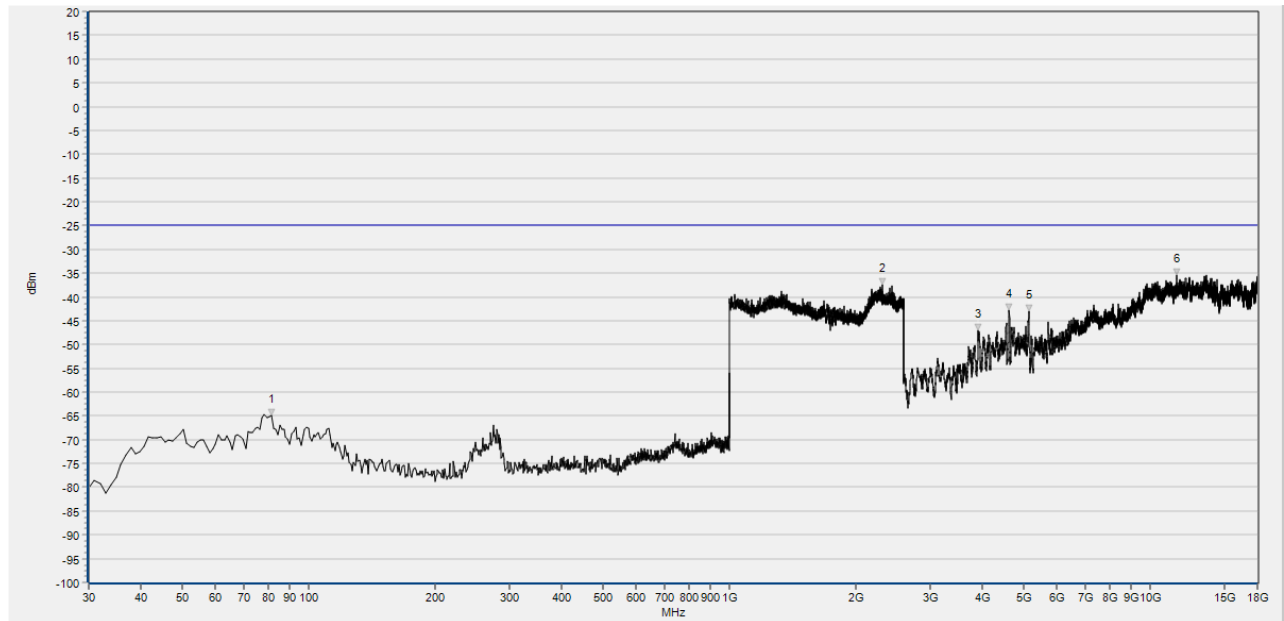
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -66.55 | -13.00   | 0.0    | V       | PASS    |
| 2   | 2242.737  | -37.46 | -13.00   | 0.0    | V       | PASS    |
| 3   | 3725.805  | -43.85 | -13.00   | 107.7  | V       | NA      |
| 4   | 4621.968  | -44.75 | -13.00   | 135.9  | V       | PASS    |
| 5   | 7218.040  | -42.74 | -13.00   | 179.6  | V       | PASS    |
| 6   | 12384.979 | -36.57 | -13.00   | 18.5   | V       | PASS    |

N78 651666(3700-3800) 50MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 15kHz 30M-18G V



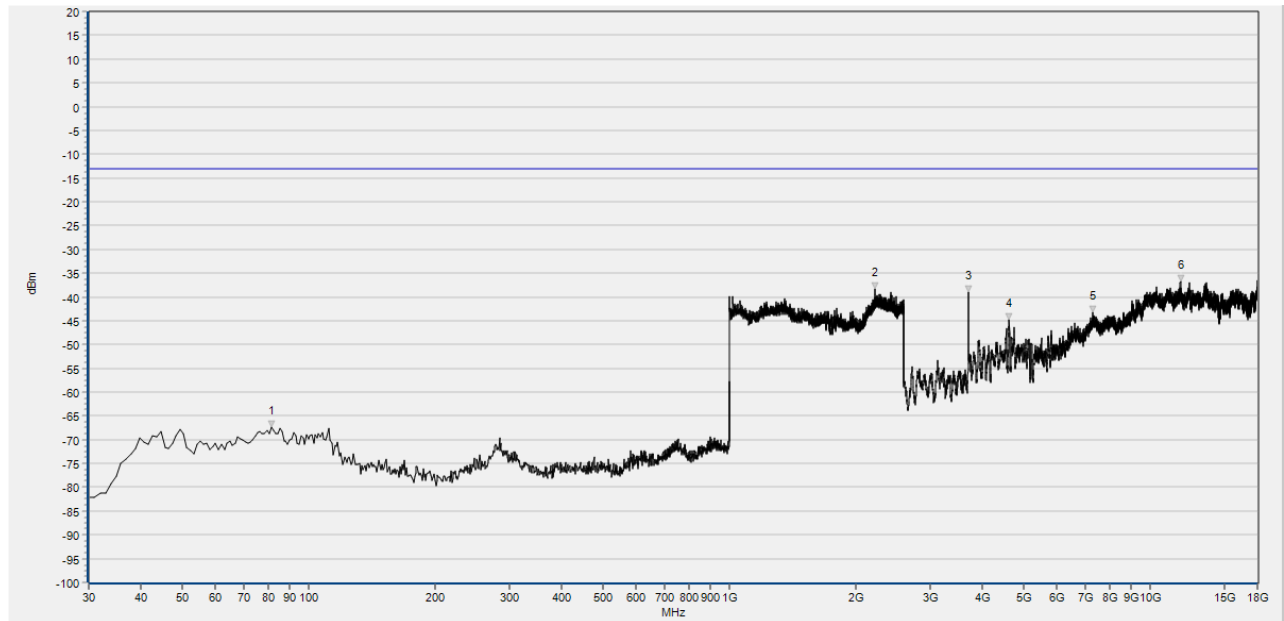
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 79.470    | -67.39 | -25.00   | 0.0    | H       | PASS    |
| 2   | 2407.923  | -39.07 | -25.00   | 0.0    | H       | PASS    |
| 3   | 3465.357  | -51.38 | -25.00   | 334.7  | H       | PASS    |
| 4   | 4624.768  | -45.41 | -25.00   | 64.7   | H       | PASS    |
| 5   | 8086.197  | -42.67 | -25.00   | 334.7  | H       | PASS    |
| 6   | 13547.190 | -37.28 | -25.00   | 315.4  | H       | PASS    |

N78 633334(3450-3550) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



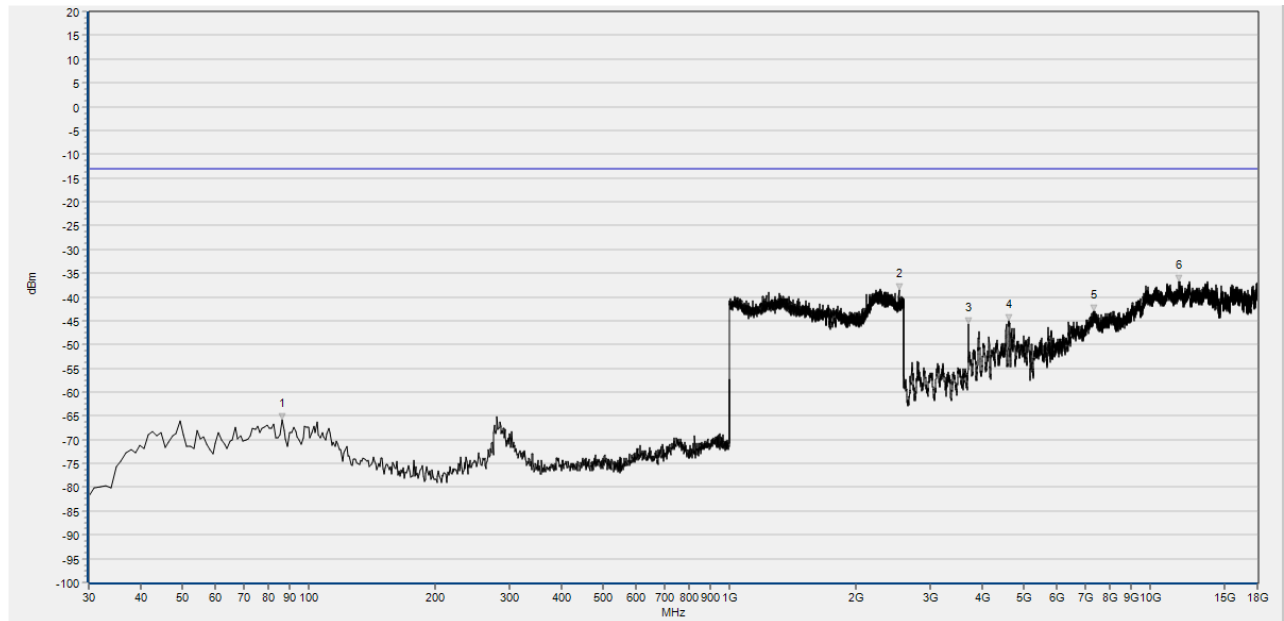
| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -64.97 | -25.00   | 360.0  | V       | PASS    |
| 2   | 2313.806  | -37.51 | -25.00   | 360.0  | V       | PASS    |
| 3   | 3907.838  | -47.08 | -25.00   | 190.5  | V       | PASS    |
| 4   | 4627.569  | -42.70 | -25.00   | 91.4   | V       | PASS    |
| 5   | 5145.663  | -42.94 | -25.00   | 118.9  | V       | PASS    |
| 6   | 11550.427 | -35.45 | -25.00   | 198.9  | V       | PASS    |

N78 633334(3450-3550) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V



| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 81.410    | -67.48 | -13.00   | 360.0  | H       | PASS    |
| 2   | 2222.889  | -38.38 | -13.00   | 360.0  | H       | PASS    |
| 3   | 3700.600  | -39.06 | -13.00   | 237.0  | H       | NA      |
| 4   | 4627.569  | -44.78 | -13.00   | 267.6  | H       | PASS    |
| 5   | 7313.257  | -43.27 | -13.00   | 175.2  | H       | PASS    |
| 6   | 11808.074 | -36.70 | -13.00   | 139.8  | H       | PASS    |

N78 650000(3700-3800) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G H



| Num | Freq(MHz) | PK     | limit PK | Degree | Antenna | Verdict |
|-----|-----------|--------|----------|--------|---------|---------|
| 1   | 86.260    | -65.72 | -13.00   | 0.0    | V       | PASS    |
| 2   | 2528.932  | -38.65 | -13.00   | 0.0    | V       | PASS    |
| 3   | 3700.600  | -45.80 | -13.00   | 105.2  | V       | NA      |
| 4   | 4619.167  | -44.99 | -13.00   | 9.1    | V       | PASS    |
| 5   | 7330.060  | -43.07 | -13.00   | 105.2  | V       | PASS    |
| 6   | 11684.852 | -36.77 | -13.00   | 26.6   | V       | PASS    |

N78 650000(3700-3800) 100MHz DFT-S-OFDM QPSK RB Size-1 RB Offset-1 SCS 30kHz 30M-18G V

## 2.8. End User Device Additional Requirements (CBSD Protocol)

### 2.8.1.Requirement

According to FCC section Part 96.47,

- (a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.
- (b) Any device operated at higher power than specified for End User Devices in Part 96.41 will be classified as, and subject to, the operational requirements of a CBSD.

### 2.8.2.Test Description

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (Kingsignal LBS7320 FCC ID: P27-SCE5164-B48) as a companion device to show compliance with Part 96.47. End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

### 2.8.3.Test Procedure

KDB 940660 D01 Part 96 CBRS Eqpt v02.

### 2.8.4.Test Result

The EUT was connected via an RF cable to a certified CBSD and spectrum analyzer  
Test Graph 1:

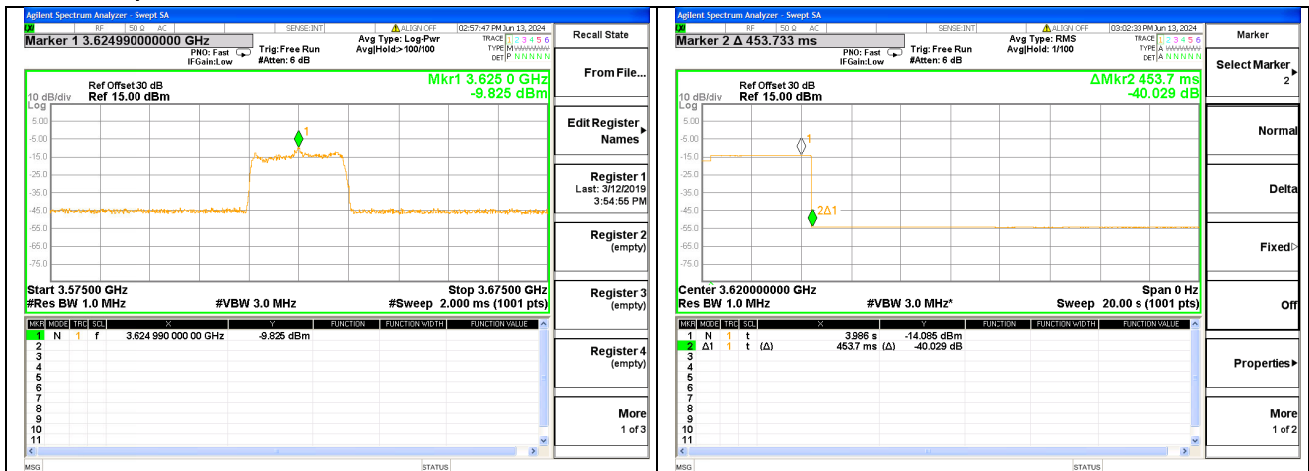
- a. Setup frequency with 3624.99MHz
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s.

Test Graph 2:

- a. Setup frequency with 3690.00MHz
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s



## Test Graph 1

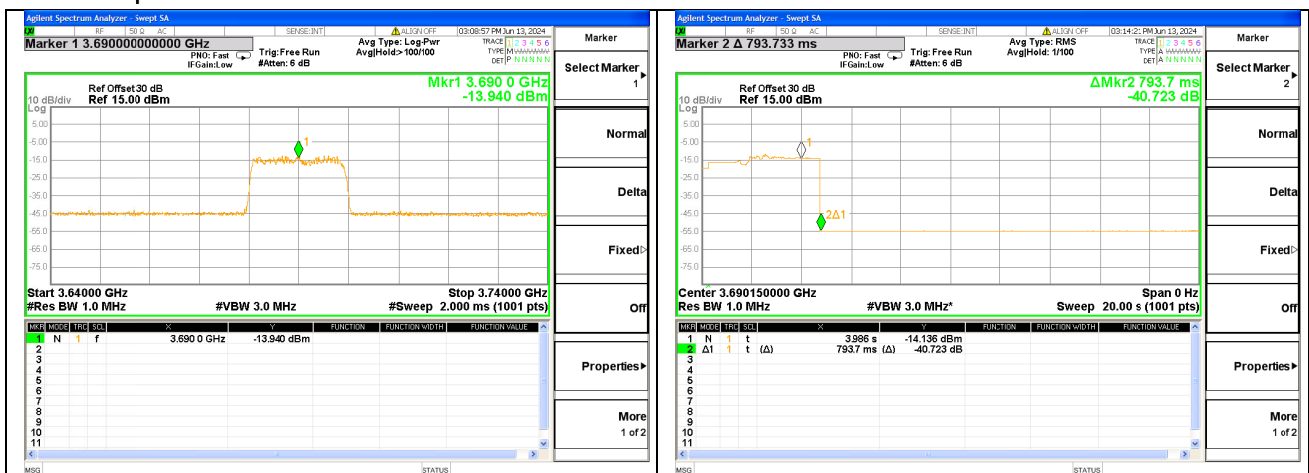


Note:

Marker 1: CBSD sends instructions to discontinue NR operations.

Marker 2: EUT discontinues operation

## Test Graph 2



Note:

Marker 1: CBSD sends instructions to discontinue NR operations.

Marker 2: EUT discontinues operation



## Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

| Test items                          | Uncertainty   |
|-------------------------------------|---------------|
| Output Power                        | $\pm 2.22$ dB |
| Bandwidth                           | $\pm 5\%$     |
| Conducted Spurious Emission         | $\pm 2.77$ dB |
| Band Edge                           | $\pm 2.77$ dB |
| Equivalent Isotropic Radiated Power | $\pm 2.22$ dB |
| Radiated Spurious Emissions         | $\pm 6$ dB    |

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

|                      |                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Company Name:</b> | Shenzhen Morlab Communications Technology Co., Ltd.                                                                              |
| <b>Address:</b>      | FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |
| <b>Telephone:</b>    | +86 755 36698555                                                                                                                 |
| <b>Facsimile:</b>    | +86 755 36698525                                                                                                                 |

### 2. Identification of the Responsible Testing Location

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Name:</b>    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                              |
| <b>Address:</b> | FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



#### 4. Test Equipment Utilized

##### 4.1 Conducted Test Equipment

| Equipment Name                   | Serial No.         | Type                  | Manufacturer | Cal. Date  | Cal. Due   |
|----------------------------------|--------------------|-----------------------|--------------|------------|------------|
| Power Splitter                   | NW521              | 1506A                 | Weinschel    | N/A        | N/A        |
| Attenuator 1                     | (N/A.)             | 10dB                  | Resnet       | N/A        | N/A        |
| Attenuator 2                     | (N/A.)             | 3dB                   | Resnet       | N/A        | N/A        |
| EXA Signal Analyzer              | MY54170556         | N9030A                | Keysight     | 2023.10.07 | 2024.10.06 |
| System Simulator                 | 6262012906         | MT8000A               | Anritsu      | 2023.06.27 | 2024.06.26 |
| System Simulator                 | 6261830572         | MT8821C               | Anritsu      | 2023.06.27 | 2024.06.26 |
| System Simulator                 | MY58300665         | E7515B                | Anritsu      | 2023.10.07 | 2024.10.06 |
| RF cable (30MHz-26GHz)           | CB01               | RF01                  | Morlab       | N/A        | N/A        |
| Coaxial cable                    | CB02               | RF02                  | Morlab       | N/A        | N/A        |
| SMA connector                    | CN01               | RF03                  | HUBER-SUHNER | N/A        | N/A        |
| Temperature Chamber              | S02217710100089001 | KMT-36LF1A0           | KOMEG        | 2023.09.19 | 2024.09.18 |
| Computer                         | T430i              | Think Pad             | Lenovo       | N/A        | N/A        |
| Test system                      | N/A                | WCS FCC V22.02.041801 | CeSheng      | N/A        | N/A        |
| Minitype 5GC                     | 2302M1205          | MINIPC-M1             | CWWK         | N/A        | N/A        |
| n48 Integrated microbase station | 2209DR6000177      | SCE5164-B48           | SERCOM       | N/A        | N/A        |

**4.2 Radiated Test Equipment**

| Equipment Name               | Serial No.  | Type            | Manufacturer | Cal. Date  | Cal. Due   |
|------------------------------|-------------|-----------------|--------------|------------|------------|
| Bi-Log Antenna               | 9163-274    | VULB 9163       | SCHWARZBECK  | 2023.06.27 | 2024.06.26 |
| Horn Antenna                 | 9120D-963   | BBHA 9120D      | SCHWARZBECK  | 2023.06.27 | 2024.06.26 |
| Receiver                     | MY54130016  | N9038A          | Agilent      | 2023.06.21 | 2024.06.20 |
| Preamplifier<br>(2GHz-18GHz) | 61171/61172 | S020180L3203    | LUCIX CORP.  | 2023.06.27 | 2024.06.26 |
| Preamplifier<br>(10MHz-6GHz) | 46732       | S10M100L3802    | LUCIX CORP.  | 2023.06.27 | 2024.06.26 |
| System Simulator             | 152038      | CMW500          | R&S          | 2023.09.19 | 2024.09.18 |
| System Simulator             | 6262148249  | MT8000A         | anritsu      | 2023.06.27 | 2024.06.26 |
| RF Coaxial Cable (DC-18GHz)  | MRE001      | PE330           | Pasternack   | 2023.06.27 | 2024.06.26 |
| RF Coaxial Cable (DC-18GHz)  | MRE002      | CLU18           | Pasternack   | 2023.06.27 | 2024.06.26 |
| RF Coaxial Cable (DC-18GHz)  | MRE003      | CLU18           | Pasternack   | 2023.06.27 | 2024.06.26 |
| RF Coaxial Cable (DC-40GHz)  | 22290045    | QA360-40-KK-0.5 | Qualwave     | 2023.07.04 | 2024.07.03 |
| RF Coaxial Cable (DC-40GHz)  | 22290046    | QA360-40-KKF-2  | Qualwave     | 2023.07.04 | 2024.07.03 |
| RF Coaxial Cable (DC-18GHz)  | 22120181    | QA500-18-NN-5   | Qualwave     | 2023.07.04 | 2024.07.03 |

\_\_\_\_\_ END OF REPORT \_\_\_\_\_