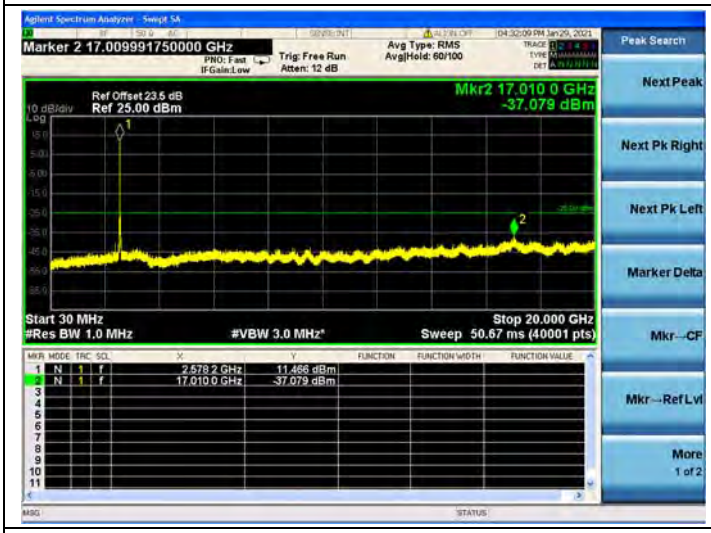
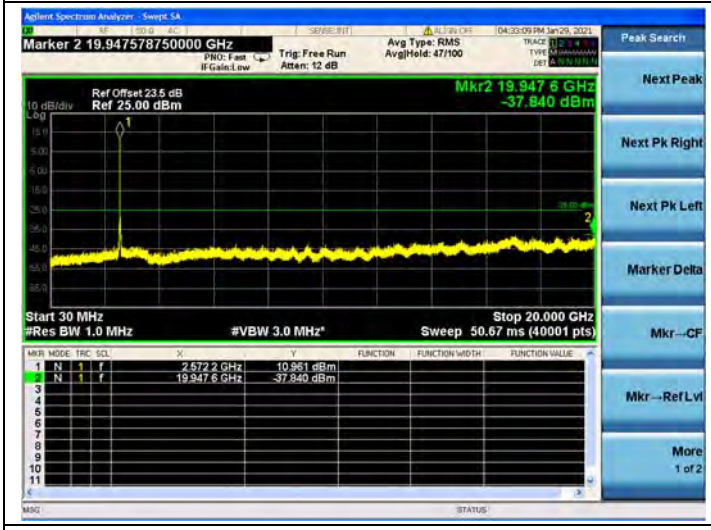
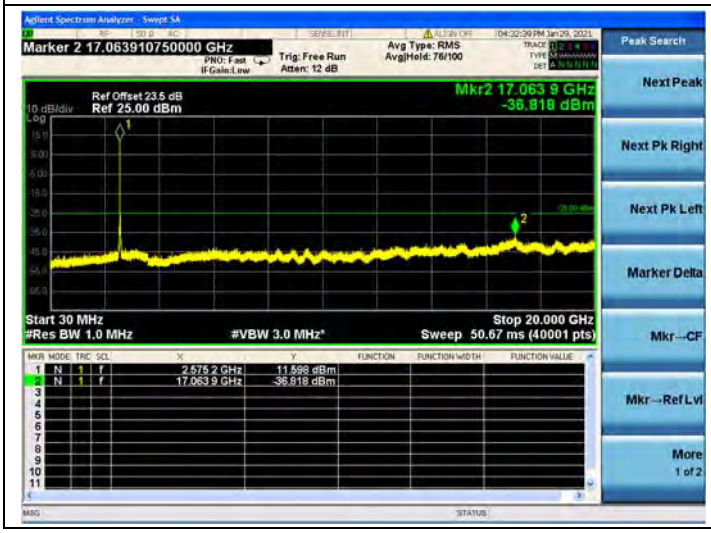
Band 38 / 15MHz / Low CH / QPSK



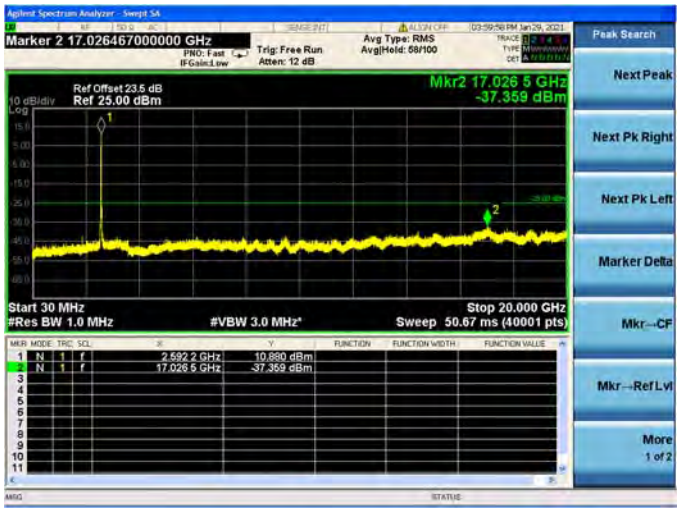
Band 38 / 15MHz / Low CH / 16QAM



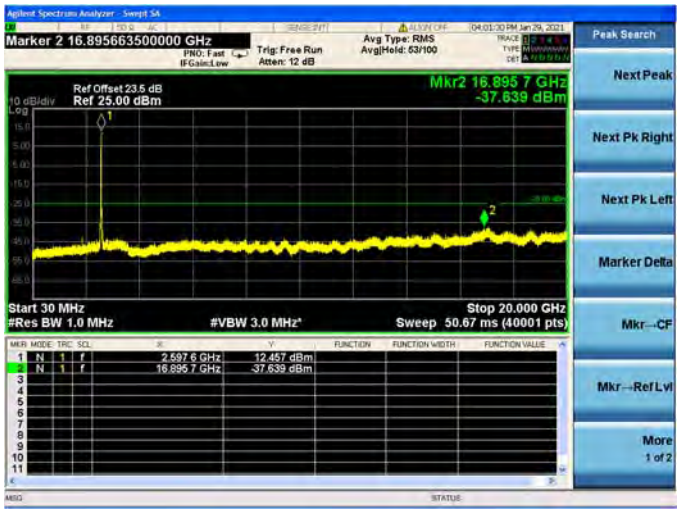
Band 38 / 15MHz / Low CH / 64QAM



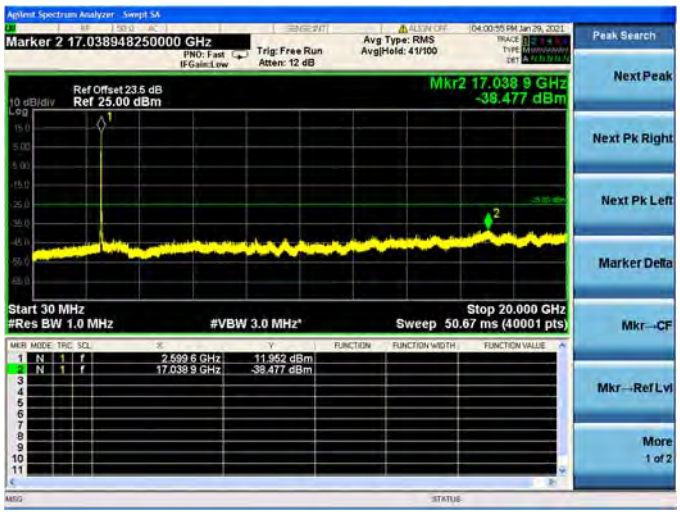
Band 38 / 15MHz / Mid CH / QPSK



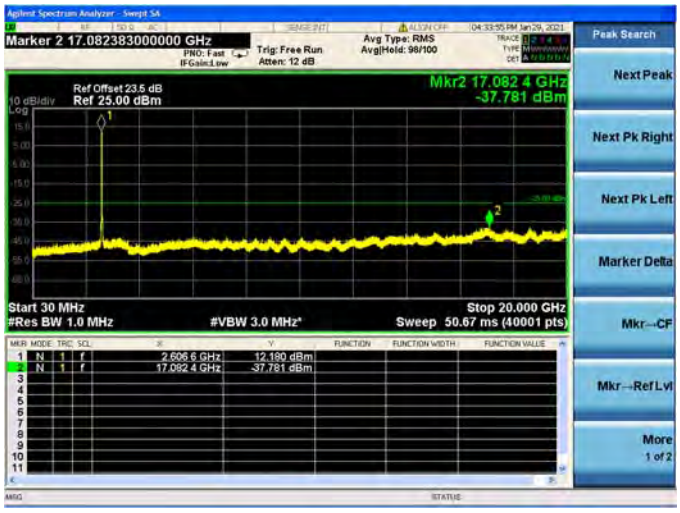
Band 38 / 15MHz / Mid CH / 16QAM



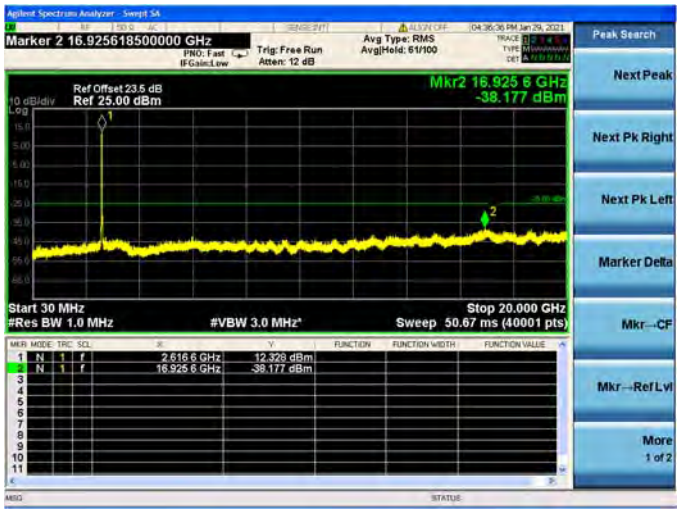
Band 38 / 15MHz / Mid CH / 64QAM



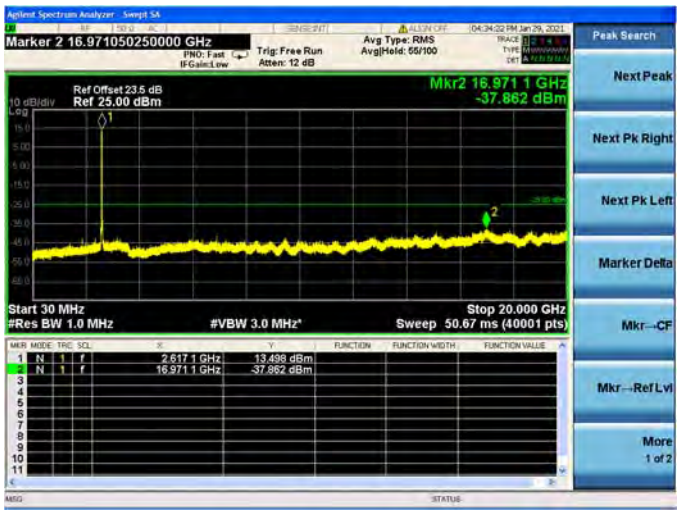
Band 38 / 15MHz / High CH / QPSK



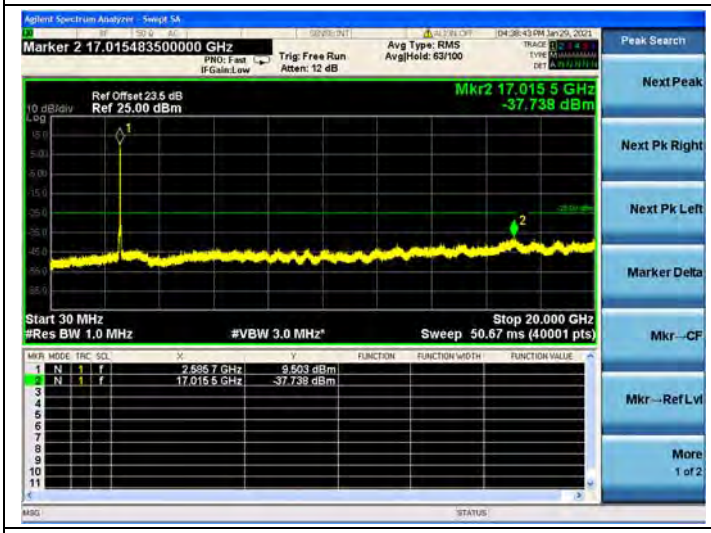
Band 38 / 15MHz / High CH / 16QAM



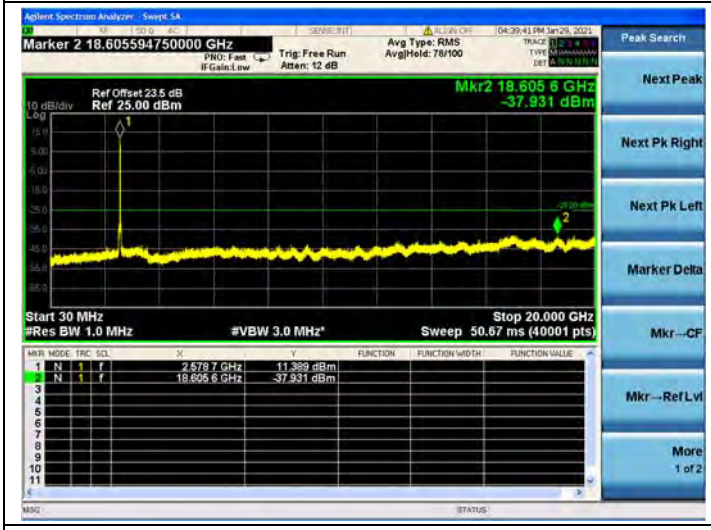
Band 38 / 15MHz / High CH / 64QAM



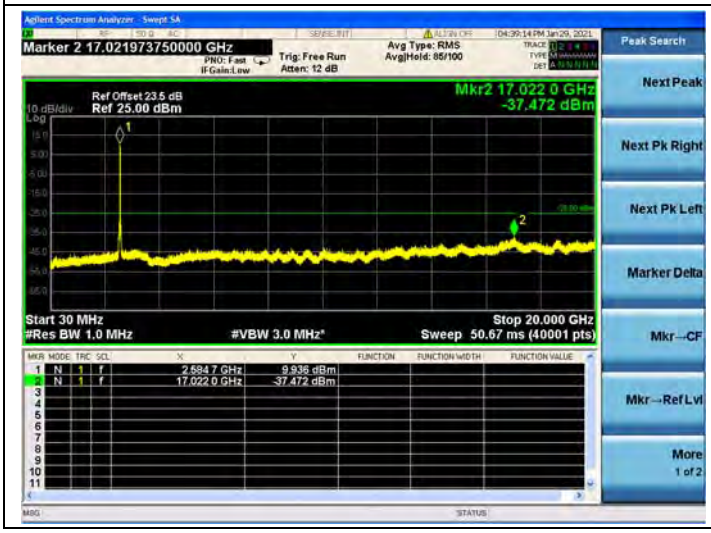
Band 38 / 20MHz / Low CH / QPSK



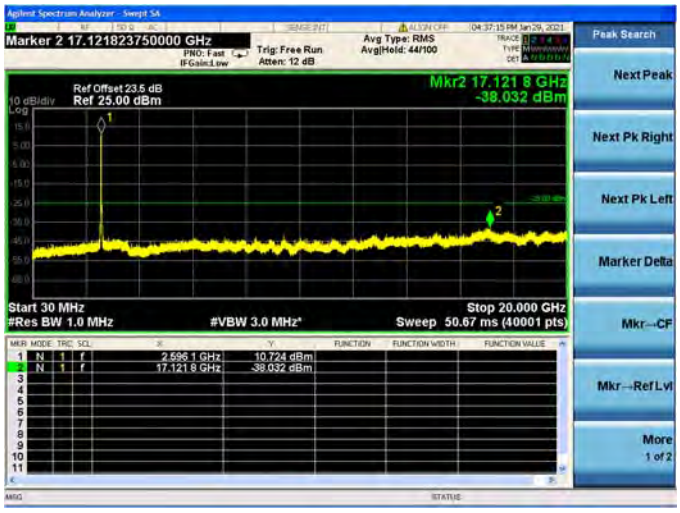
Band 38 / 20MHz / Low CH / 16QAM



Band 38 / 20MHz / Low CH / 64QAM

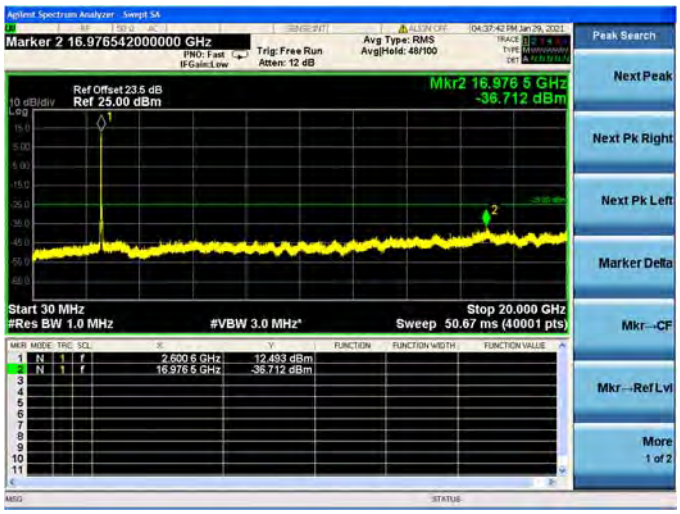


Band 38 / 20MHz / Mid CH / QPSK

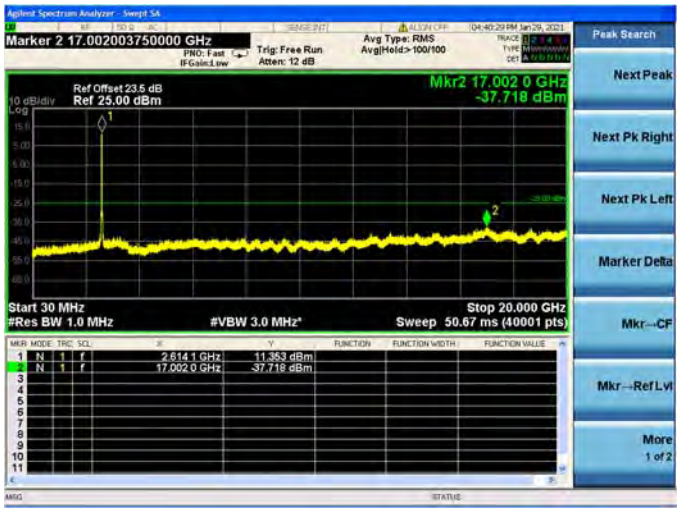


Band 38 / 20MHz / Mid CH / 16QAM

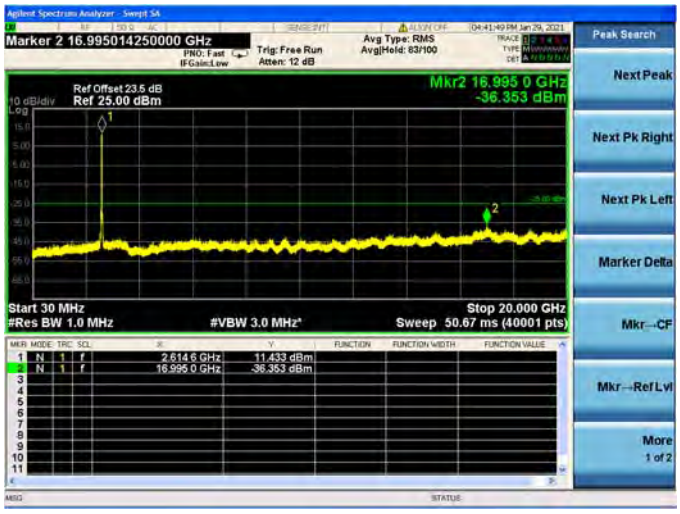
Band 38 / 20MHz / Mid CH / 64QAM



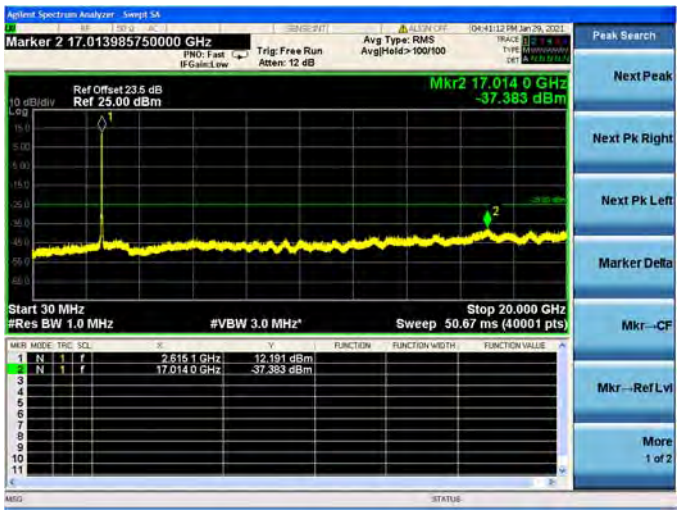
Band 38 / 20MHz / High CH / QPSK



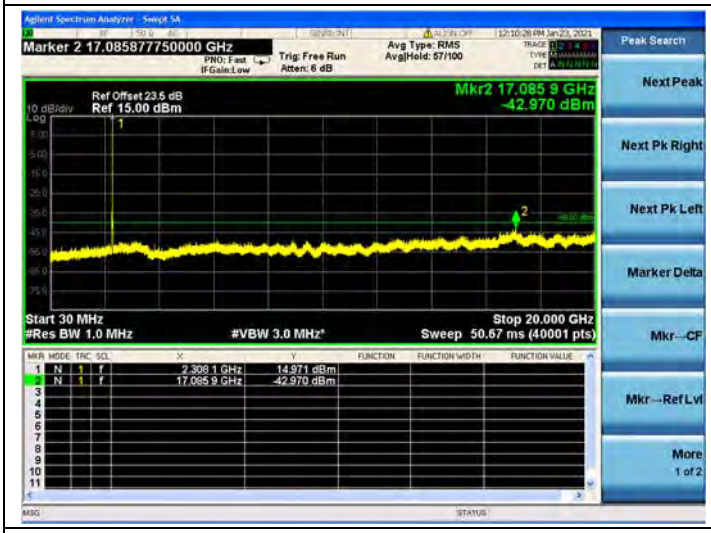
Band 38 / 20MHz / High CH / 16QAM



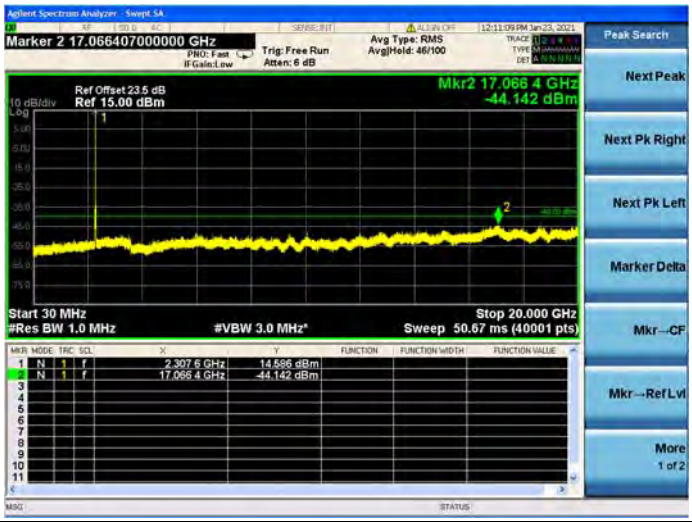
Band 38 / 20MHz / High CH / 64QAM

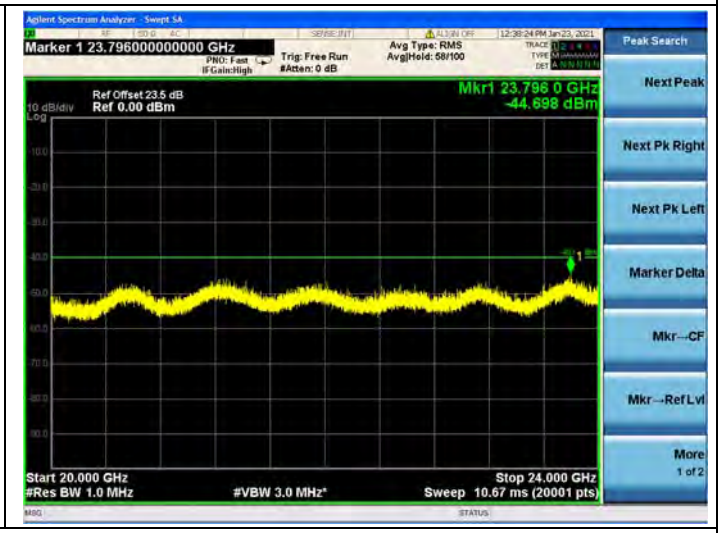


Band 40 / Block A / 5MHz / Low CH / QPSK

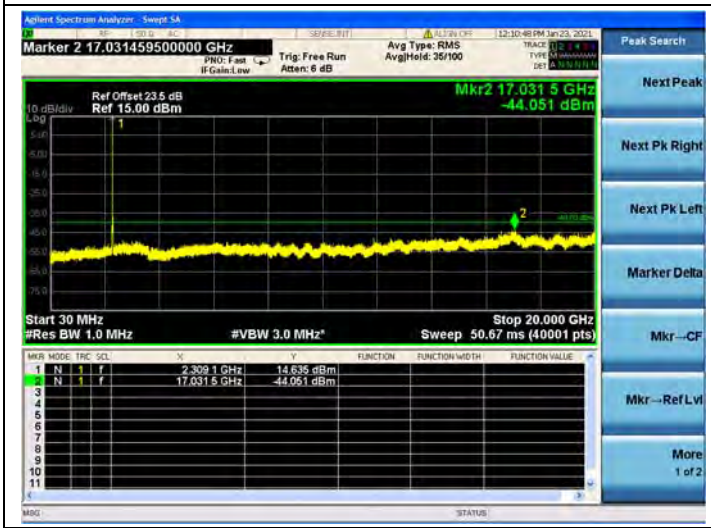


Band 40 / Block A / 5MHz / Low CH / 16QAM

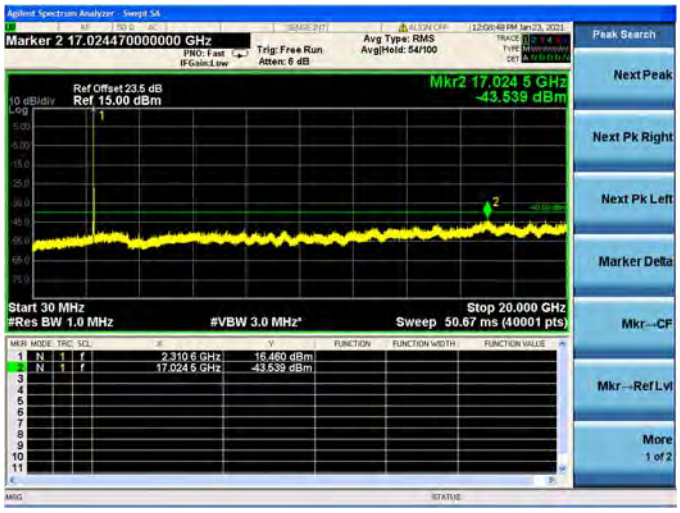




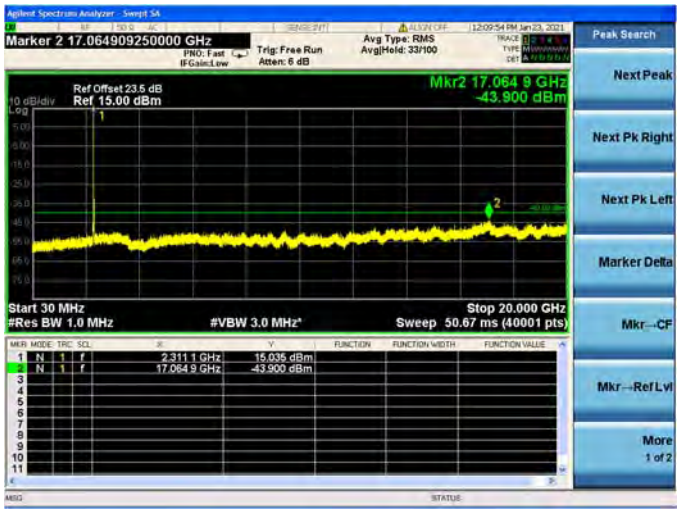
Band 40 / Block A / 5MHz / Low CH / 64QAM



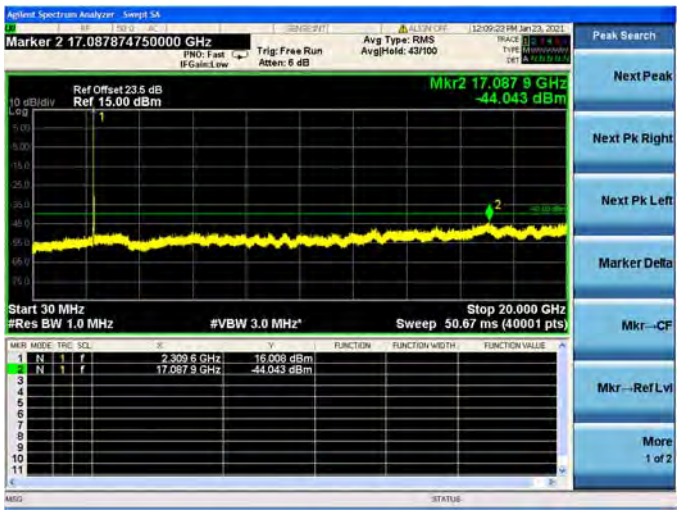
Band 40 / Block A / 5MHz / Mid CH / QPSK



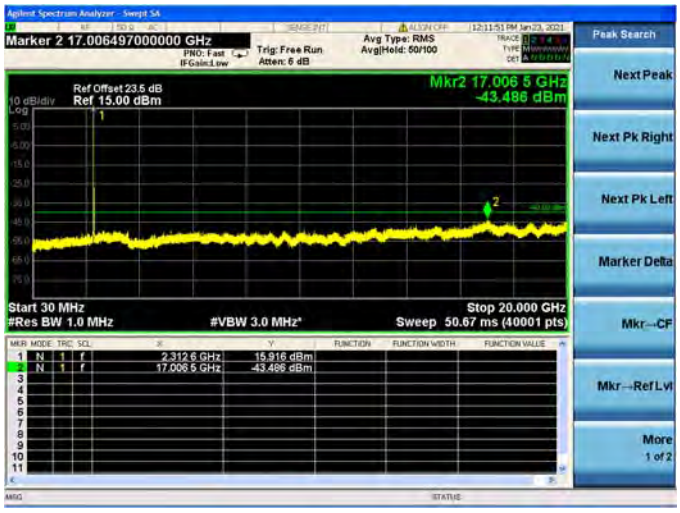
Band 40 / Block A / 5MHz / Mid CH / 16QAM



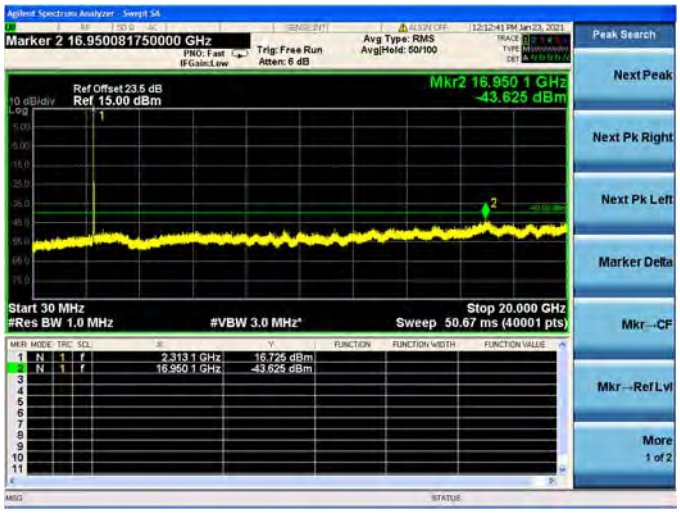
Band 40 / Block A / 5MHz / Mid CH / 64QAM

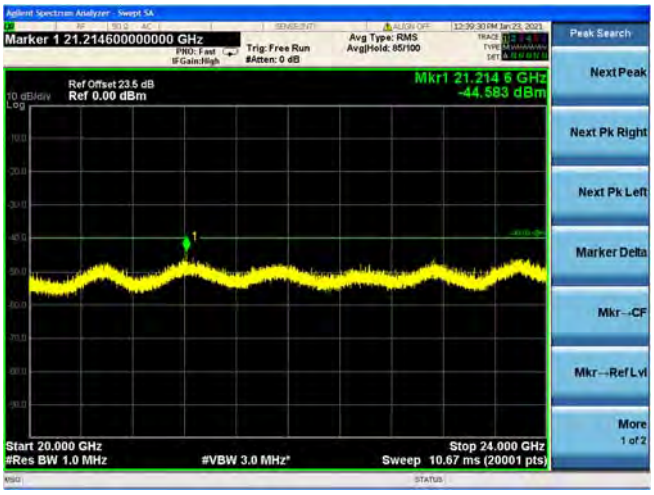


Band 40 / Block A / 5MHz / High CH / QPSK

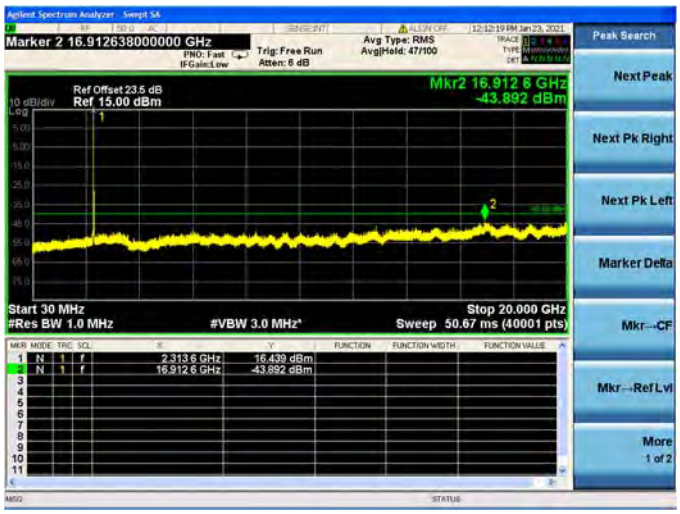


Band 40 / Block A / 5MHz / High CH / 16QAM

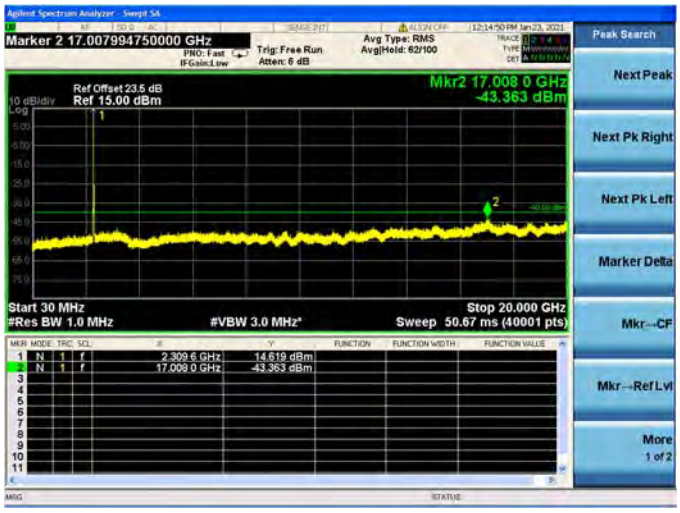




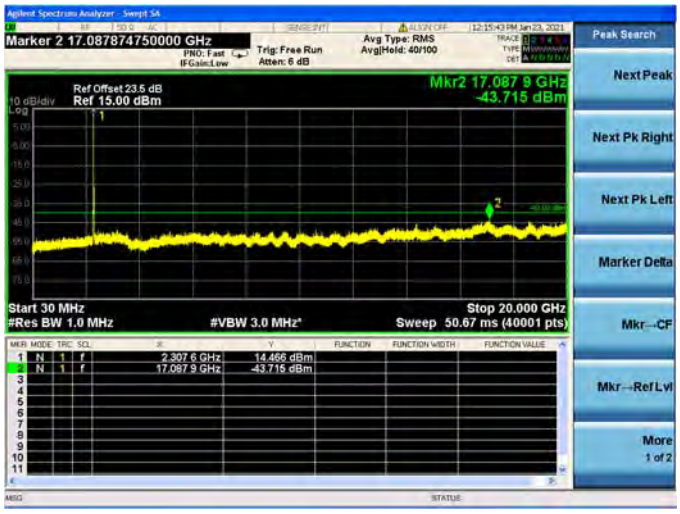
Band 40 / Block A / 5MHz / High CH / 64QAM



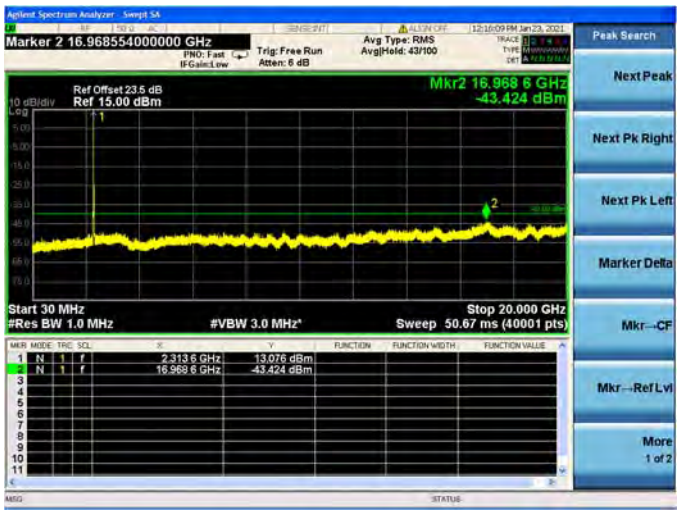
Band 40 / Block A / 10MHz / Mid CH / QPSK



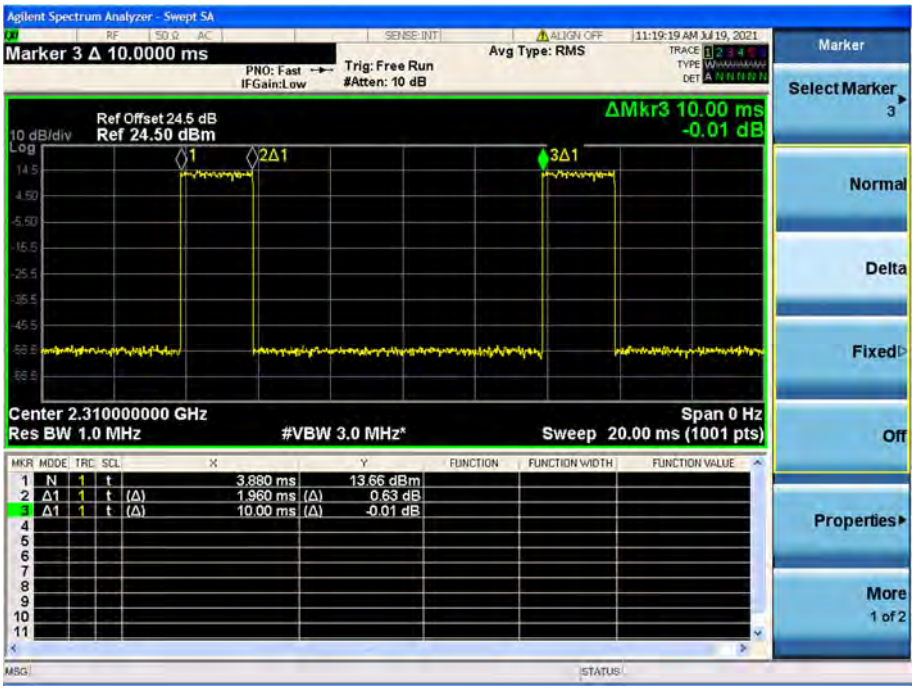
Band 40 / Block A / 10MHz / Mid CH / 16QAM



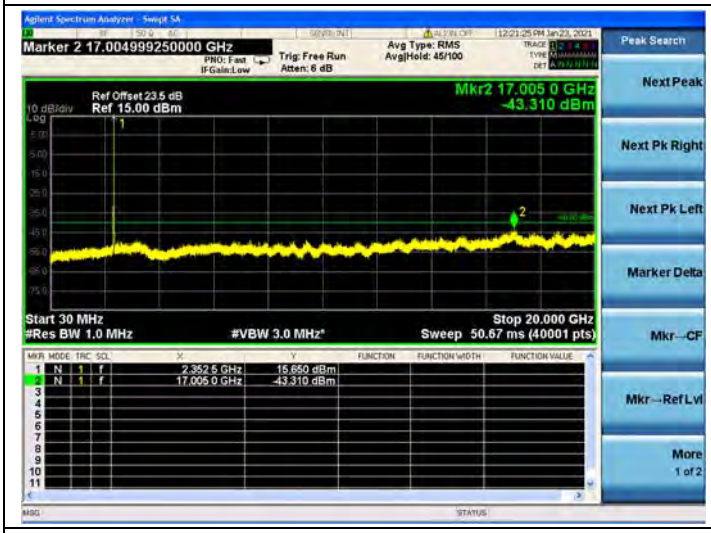
Band 40 / Block A / 10MHz / Mid CH / 64QAM



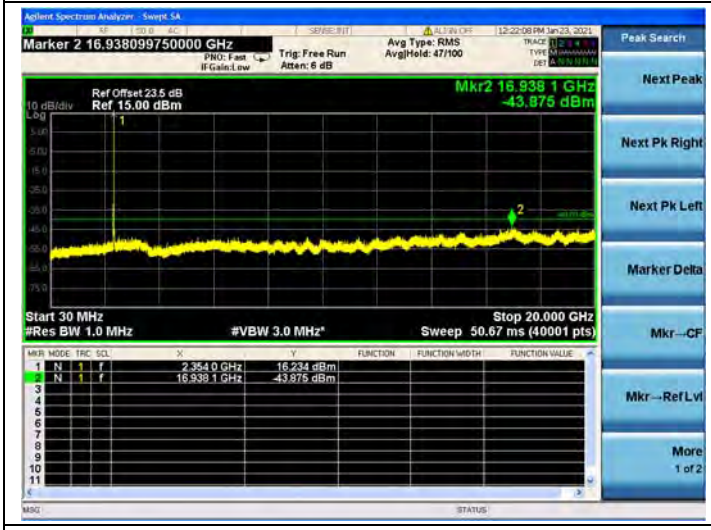
Band 40 / Block A / Duty Cycle (19.6%)



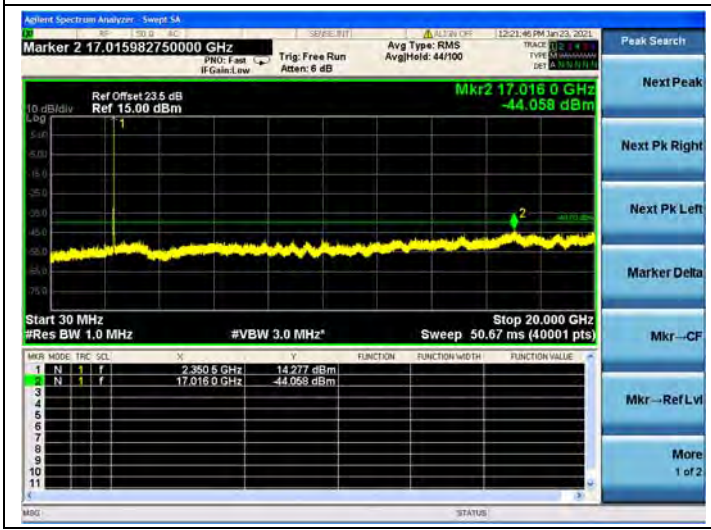
Band 40 / Block B / 5MHz / Low CH / QPSK



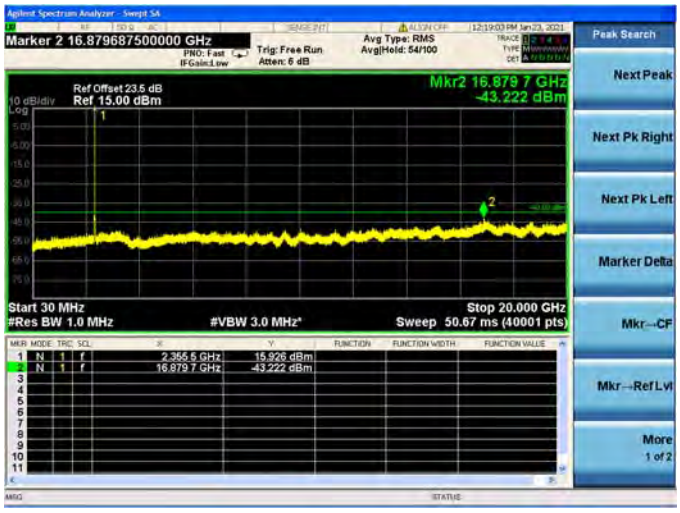
Band 40 / Block B / 5MHz / Low CH / 16QAM



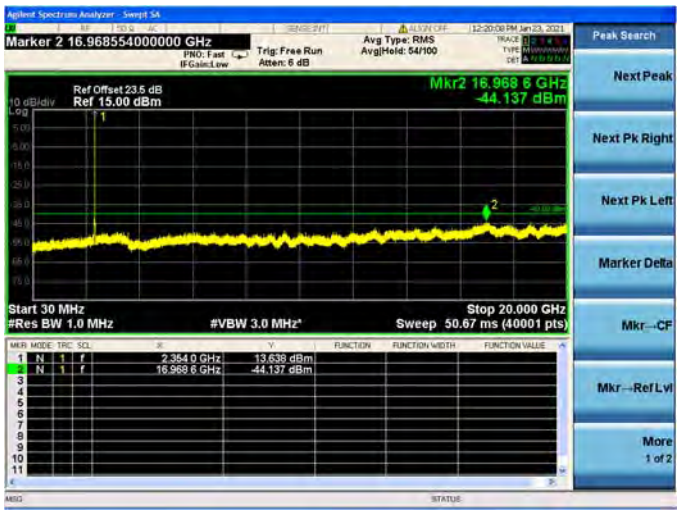
Band 40 / Block B / 5MHz / Low CH / 64QAM

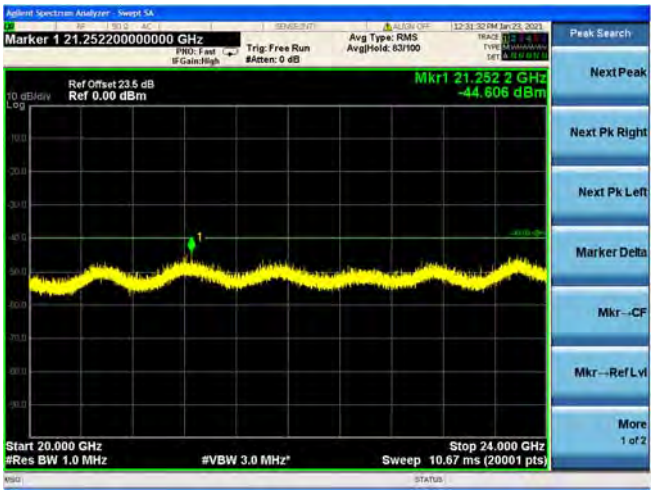


Band 40 / Block B / 5MHz / Mid CH / QPSK

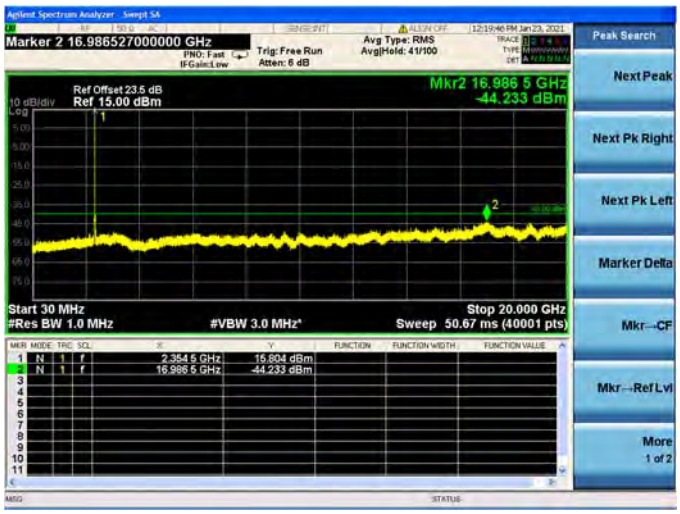


Band 40 / Block B / 5MHz / Mid CH / 16QAM

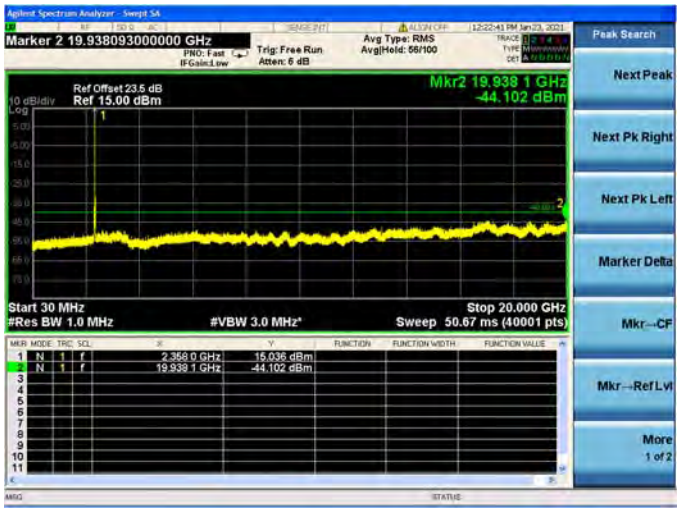




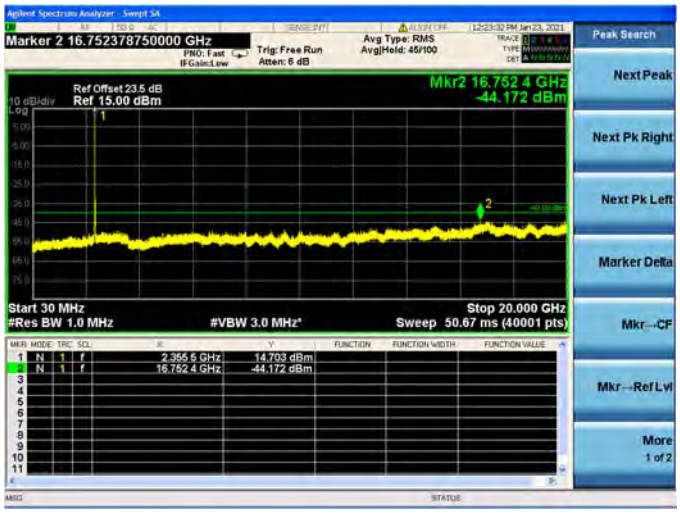
Band 40 / Block B / 5MHz / Mid CH / 64QAM



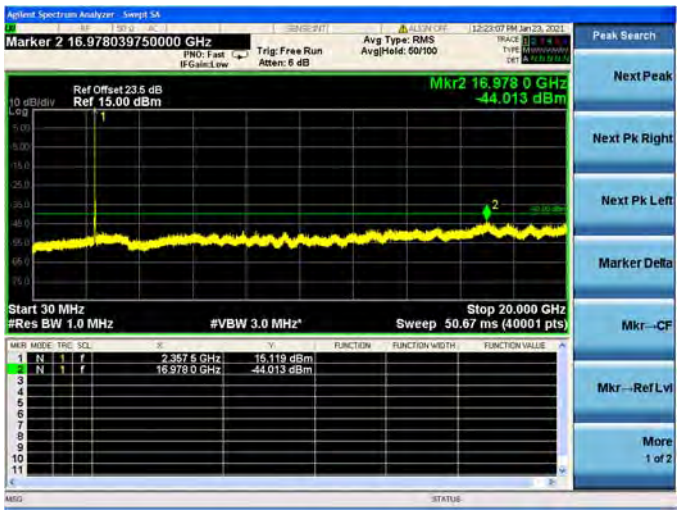
Band 40 / Block B / 5MHz / High CH / QPSK



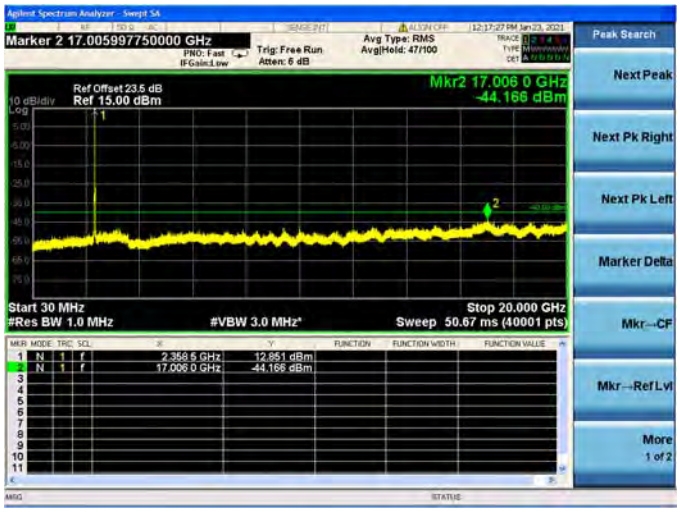
Band 40 / Block B / 5MHz / High CH / 16QAM



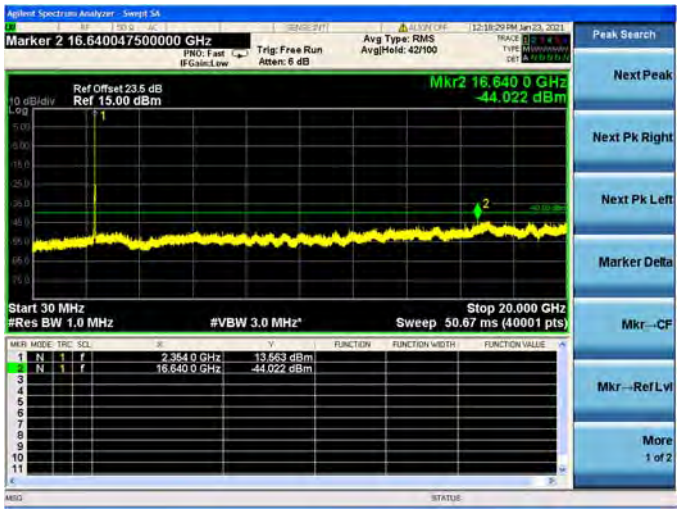
Band 40 / Block B / 5MHz / High CH / 64QAM



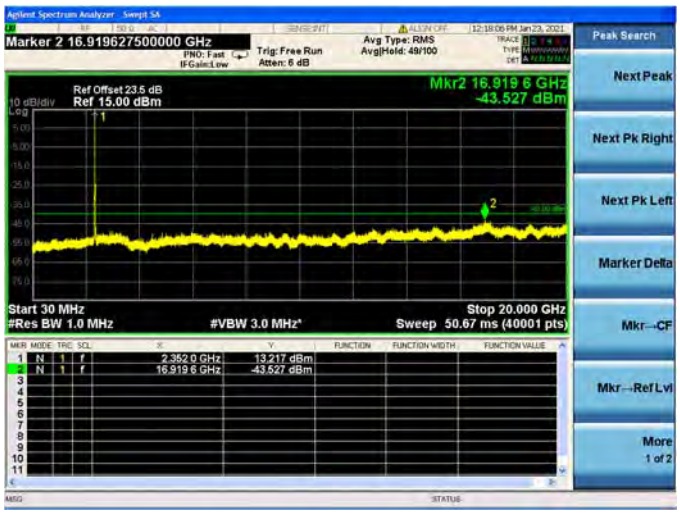
Band 40 / Block B / 10MHz / Mid CH / QPSK



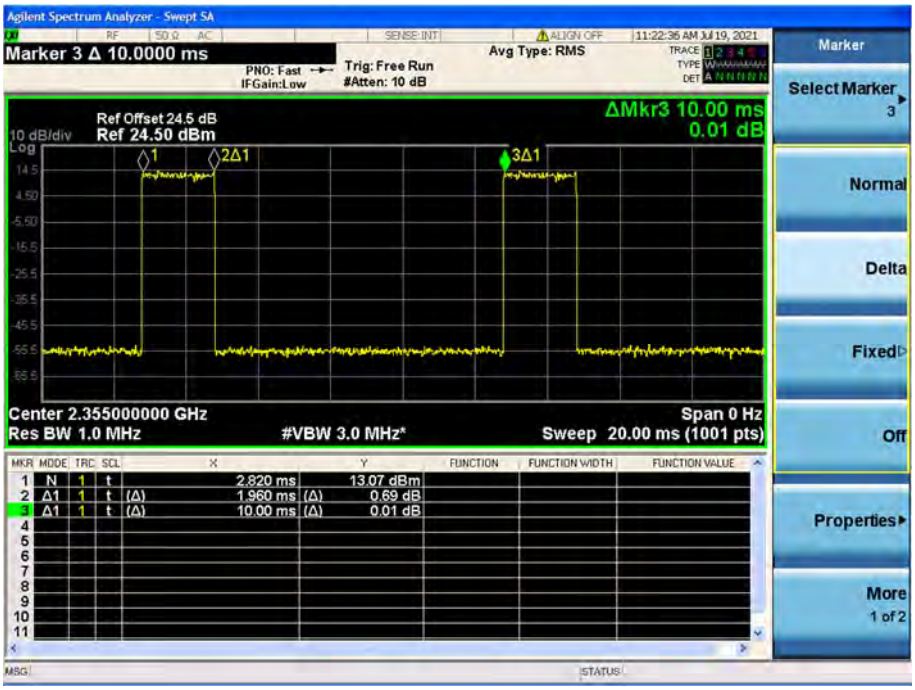
Band 40 / Block B / 10MHz / Mid CH / 16QAM



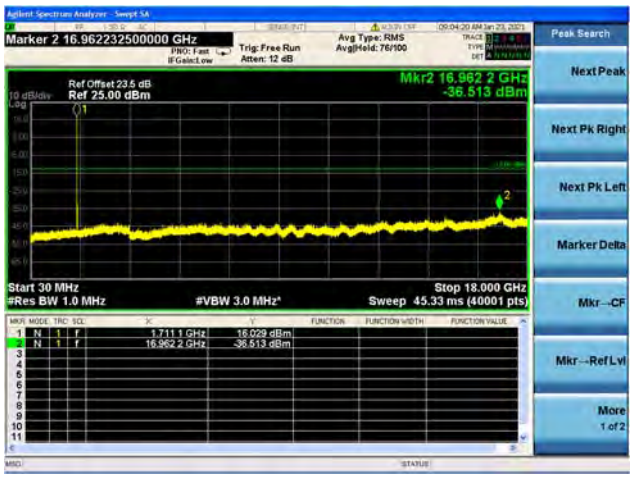
Band 40 / Block B / 10MHz / Mid CH / 64QAM



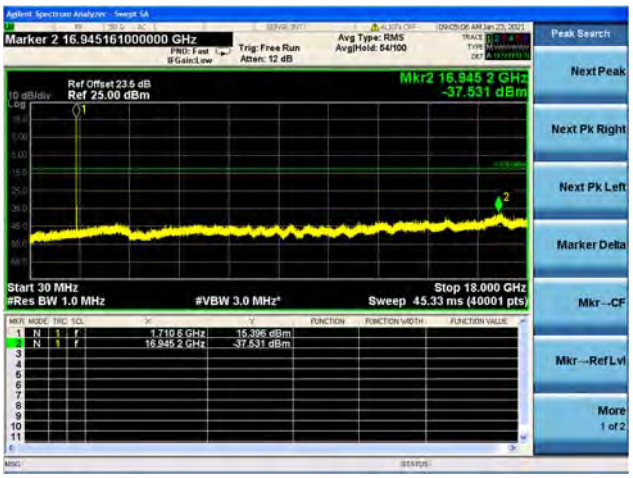
Band 40 / Block B / Duty Cycle (19.6%)



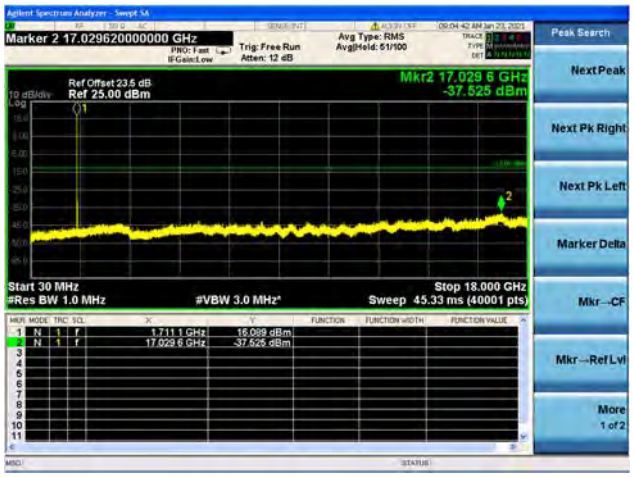
Band66 / 1.4MHz / Low CH / QPSK



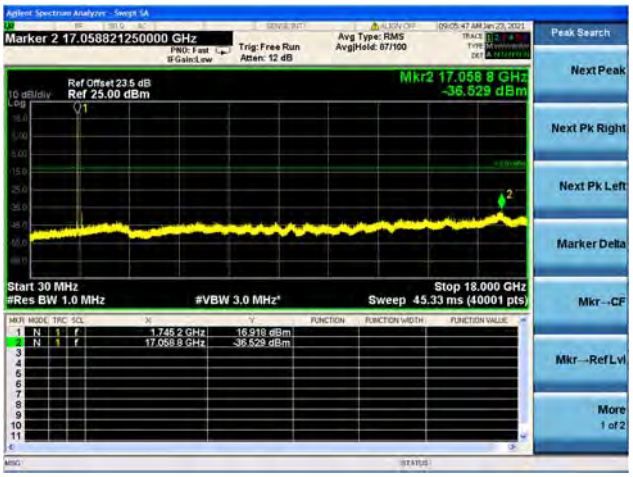
Band66 / 1.4MHz / Low CH / 16QAM



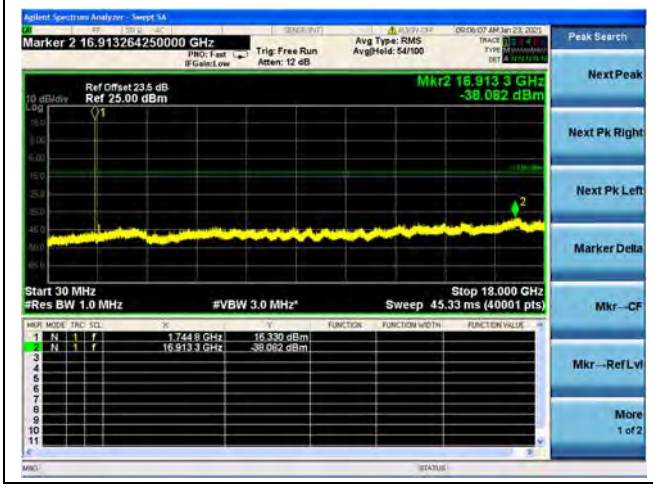
Band66 / 1.4MHz / Low CH / 64QAM



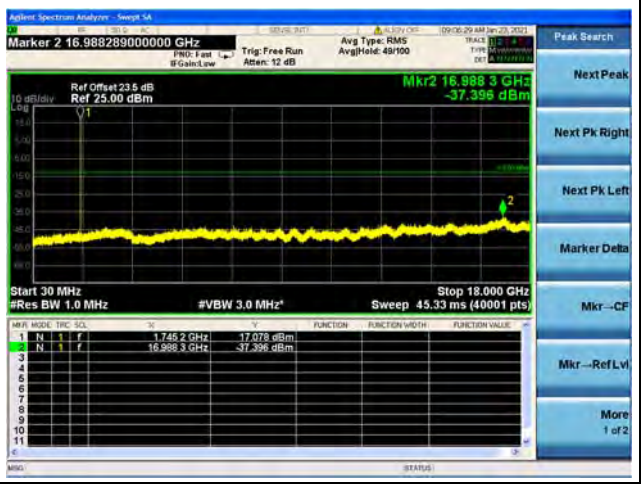
Band66 / 1.4MHz / Mid CH / QPSK



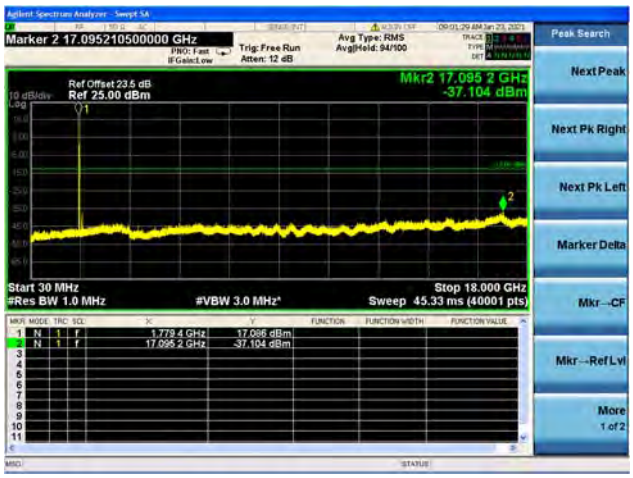
Band66 / 1.4MHz / Mid CH / 16QAM



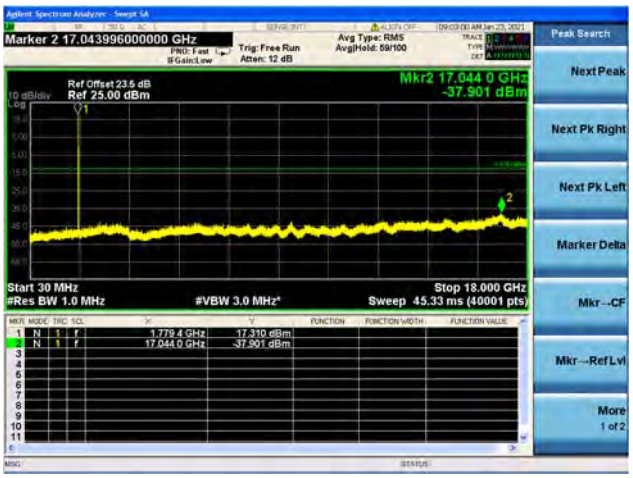
Band66 / 1.4MHz / Mid CH / 64QAM



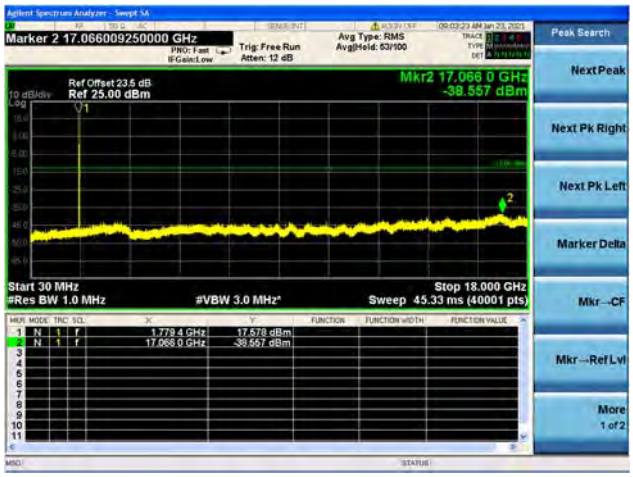
Band66 / 1.4MHz / High CH / QPSK



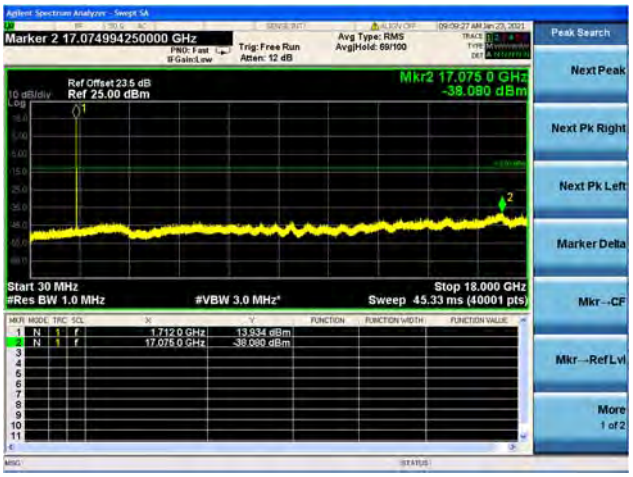
Band66 / 1.4MHz / High CH / 16QAM



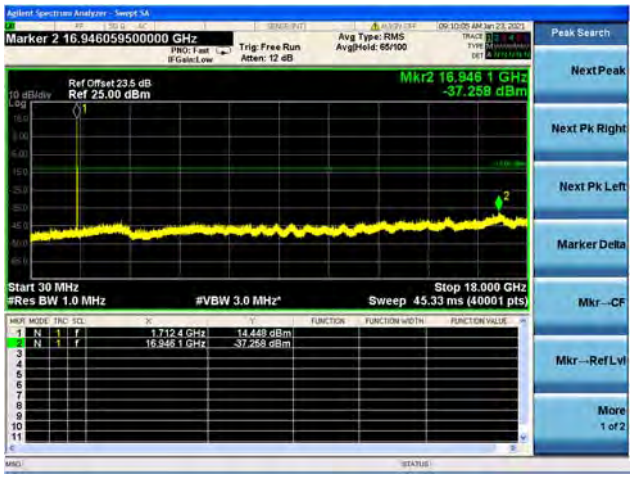
Band66 / 1.4MHz / High CH / 64QAM



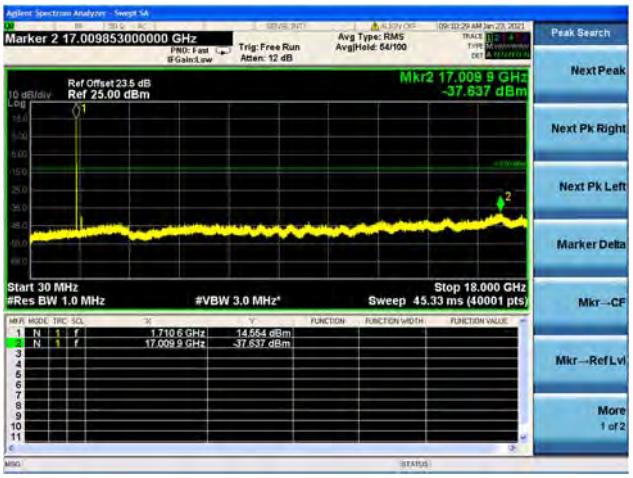
Band66 / 3MHz / Low CH / QPSK



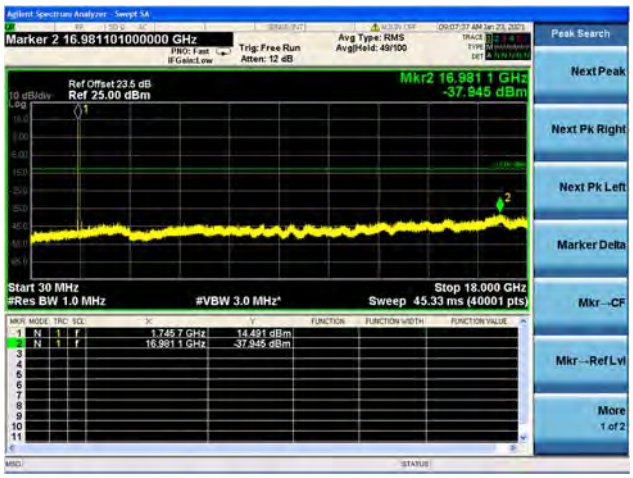
Band66 / 3MHz / Low CH / 16QAM



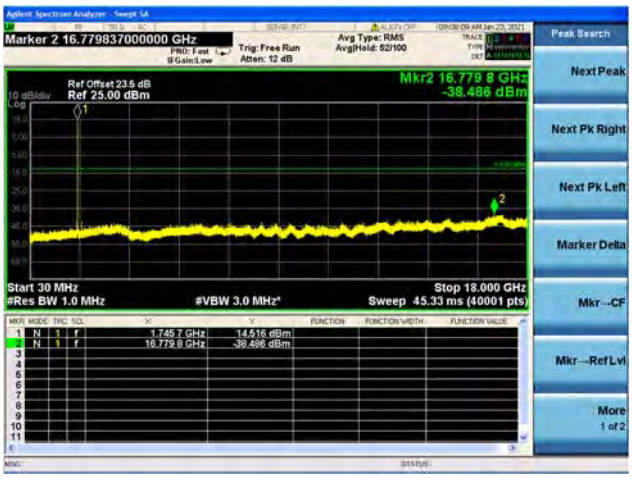
Band66 / 3MHz / Low CH / 64QAM



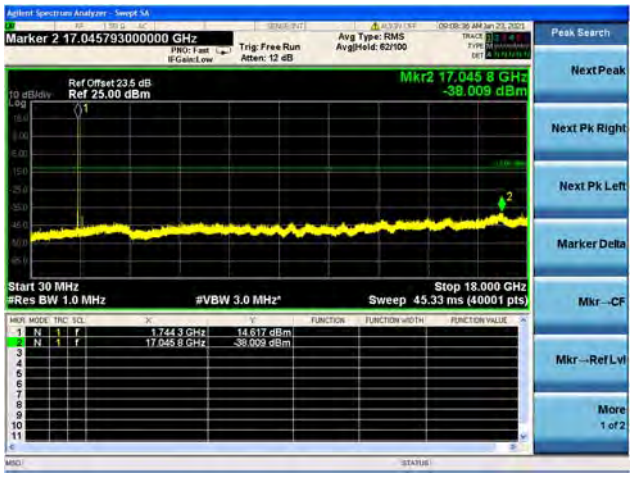
Band66 / 3MHz / Mid CH / QPSK



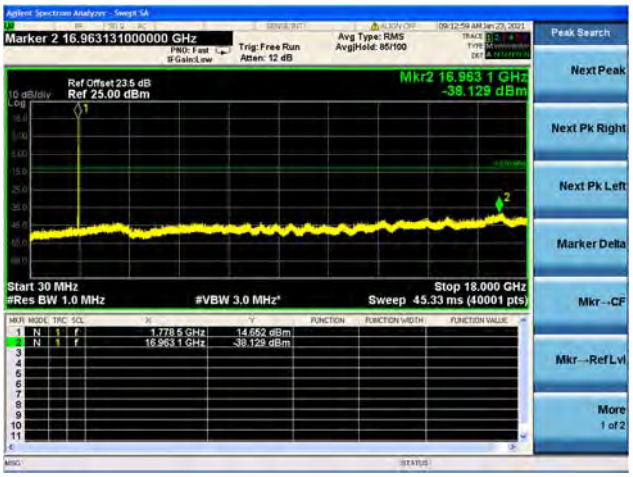
Band66 / 3MHz / Mid CH / 16QAM



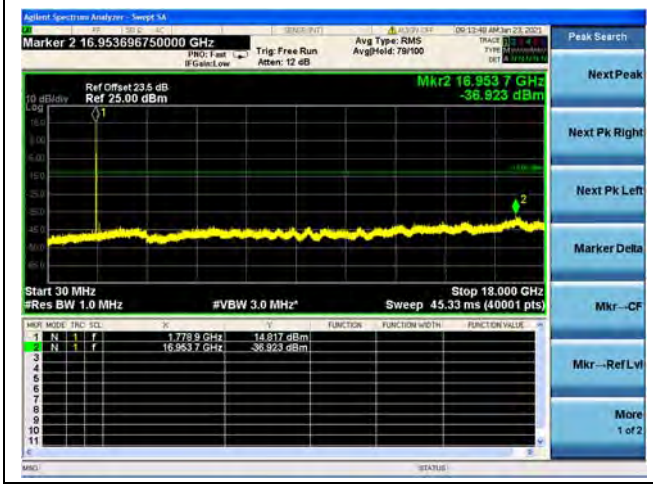
Band66 / 3MHz / Mid CH / 64QAM



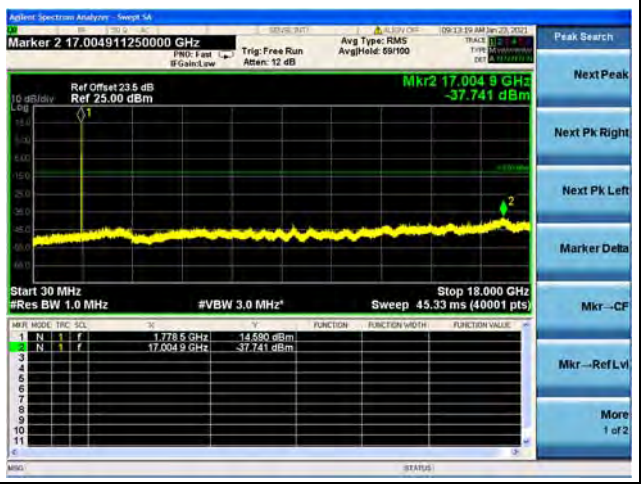
Band66 / 3MHz / High CH / QPSK



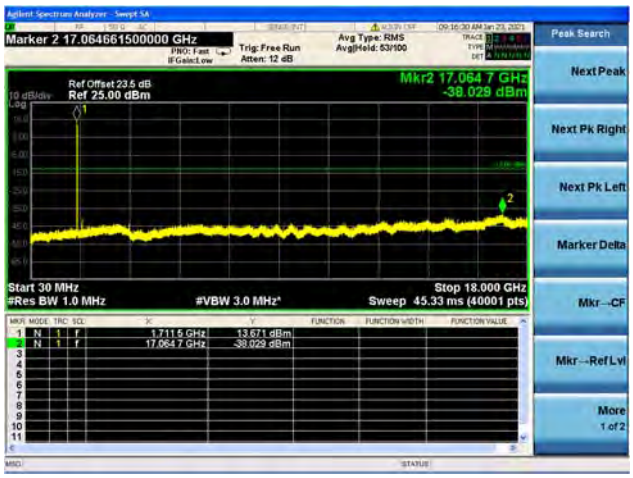
Band66 / 3MHz / High CH / 16QAM



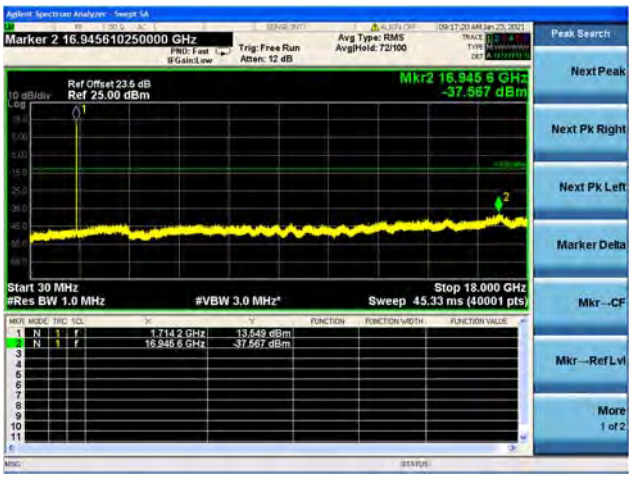
Band66 / 3MHz / High CH / 64QAM



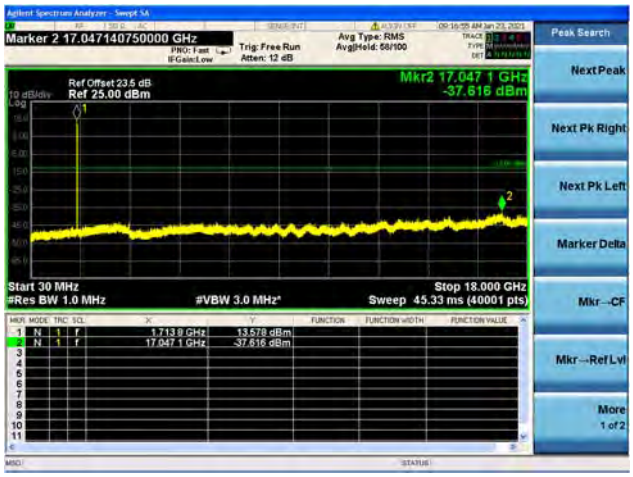
Band66 / 5MHz / Low CH / QPSK



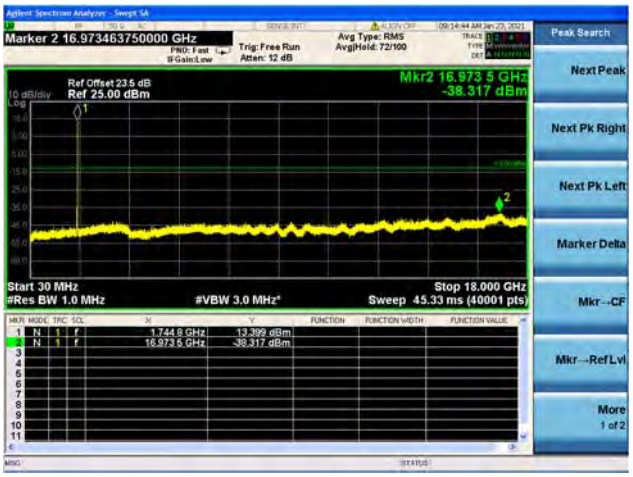
Band66 / 5MHz / Low CH / 16QAM



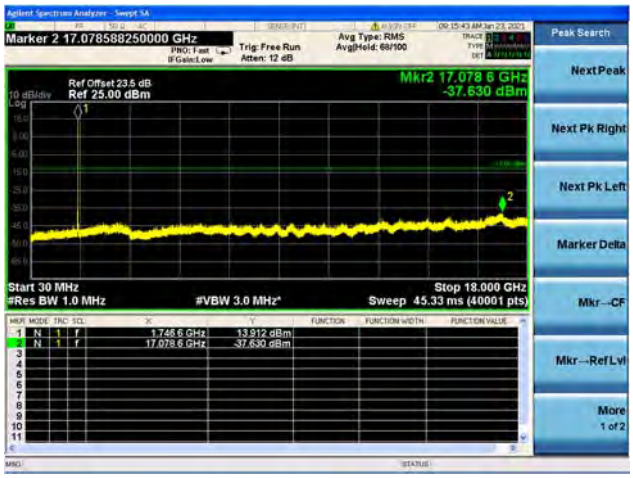
Band66 / 5MHz / Low CH / 64QAM



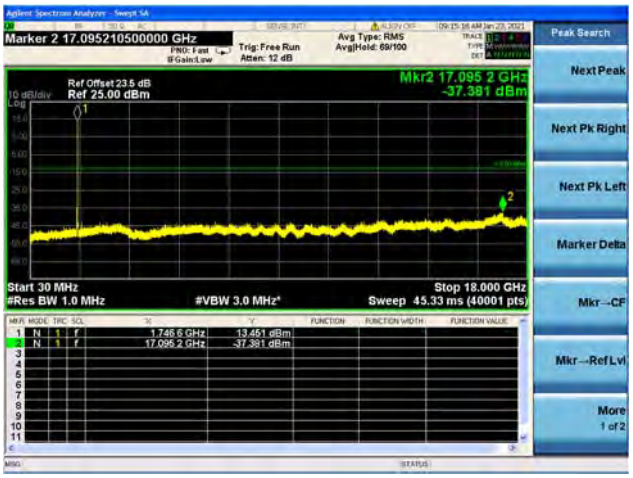
Band66 / 5MHz / Mid CH / QPSK



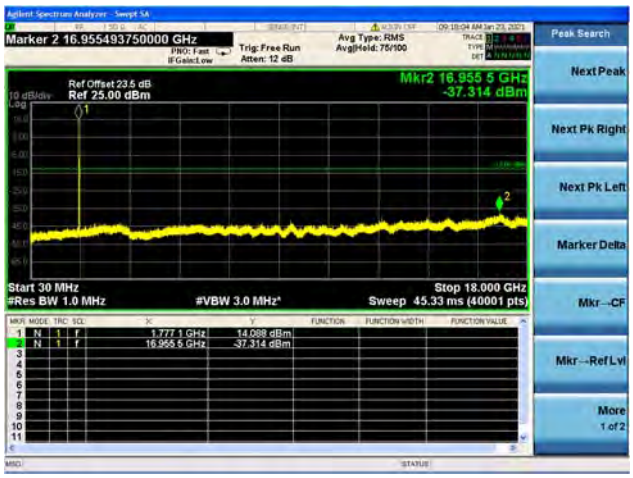
Band66 / 5MHz / Mid CH / 16QAM



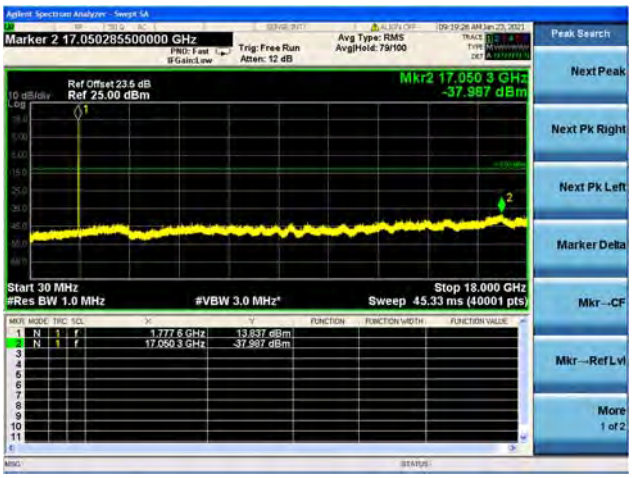
Band66 / 5MHz / Mid CH / 64QAM



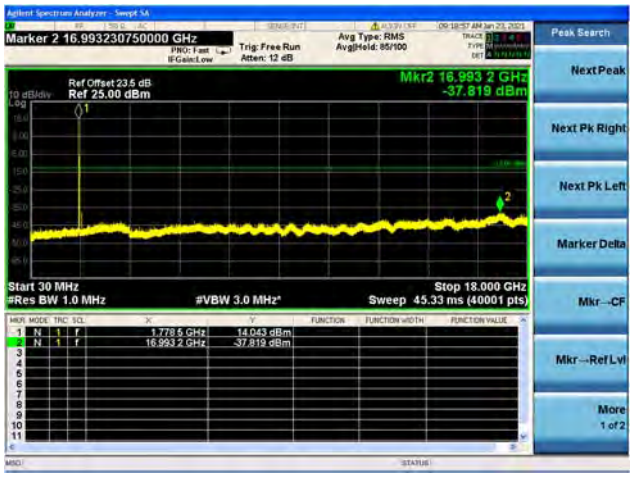
Band66 / 5MHz / High CH / QPSK



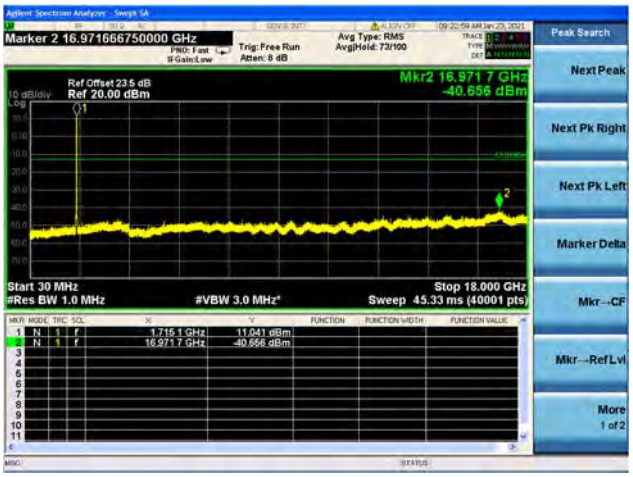
Band66 / 5MHz / High CH / 16QAM



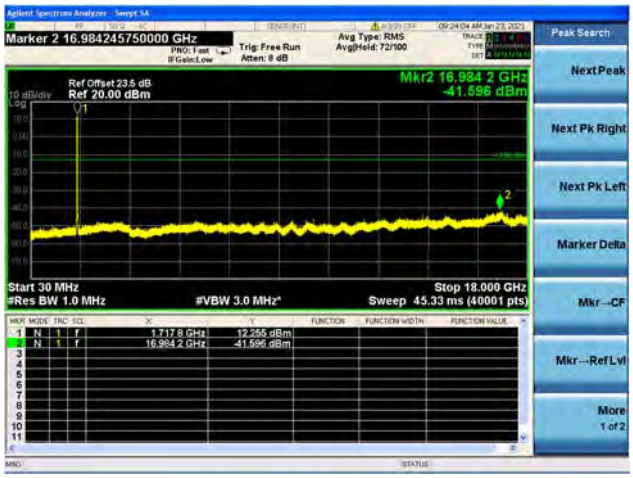
Band66 / 5MHz / High CH / 64QAM



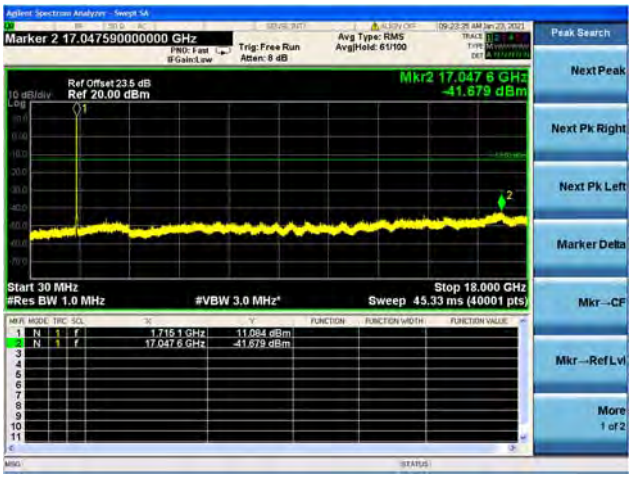
Band66 / 10MHz / Low CH / QPSK



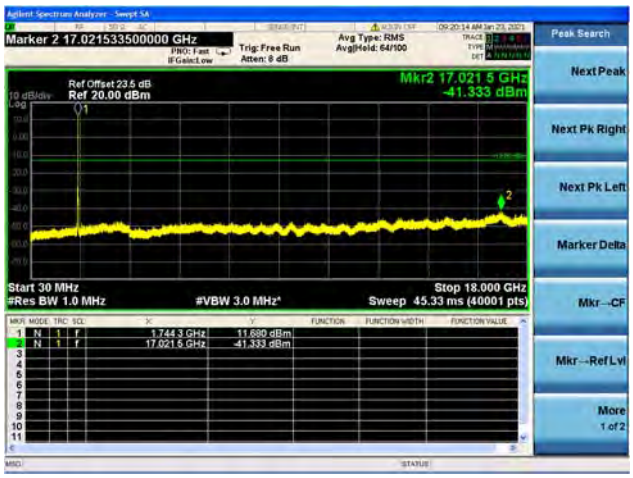
Band66 / 10MHz / Low CH / 16QAM



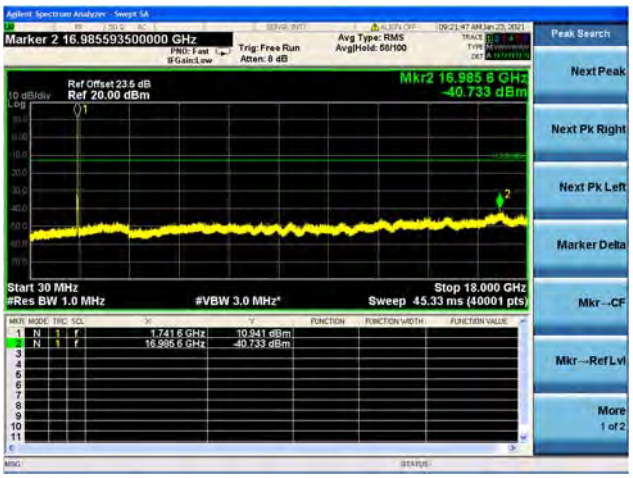
Band66 / 10MHz / Low CH / 64QAM



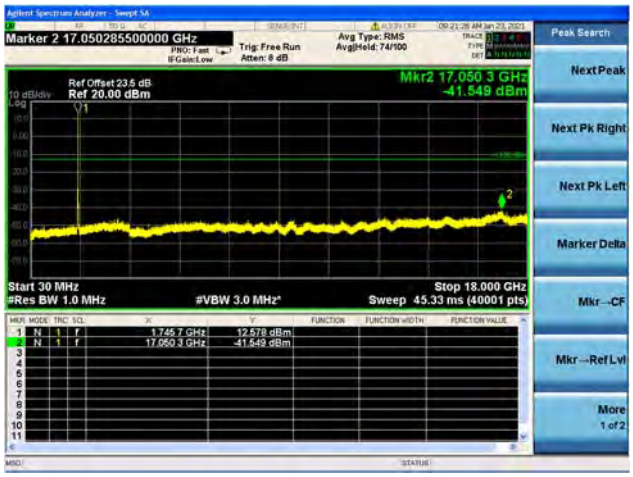
Band66 / 10MHz / Mid CH / QPSK



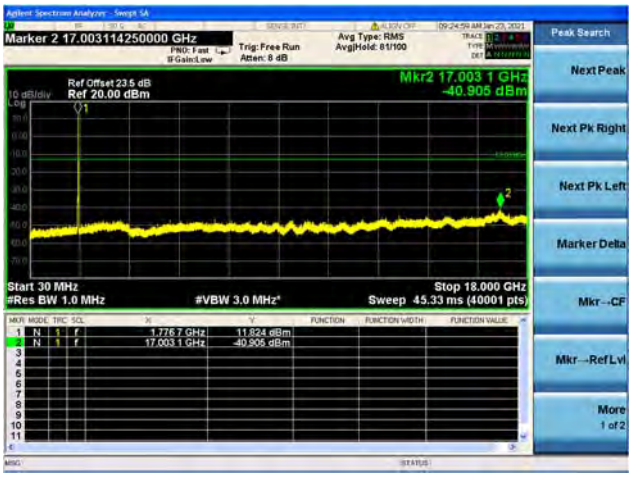
Band66 / 10MHz / Mid CH / 16QAM



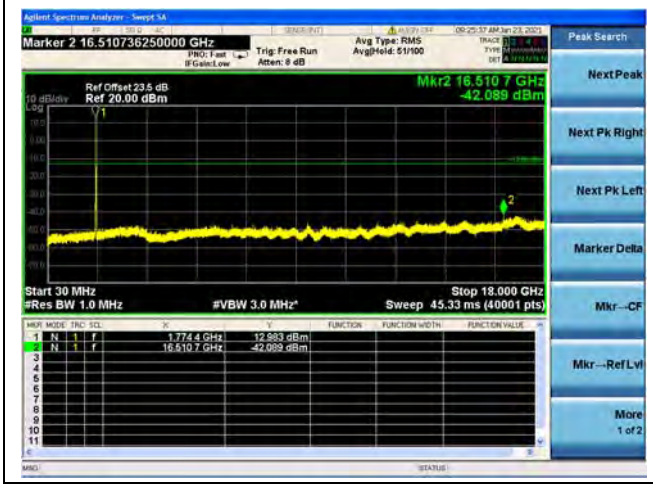
Band66 / 10MHz / Mid CH / 64QAM



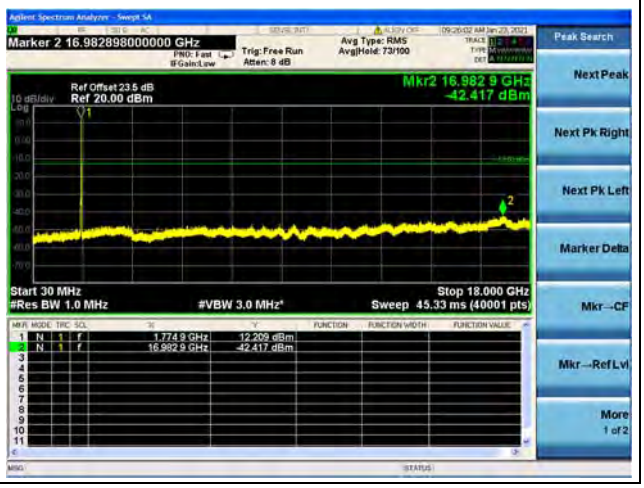
Band66 / 10MHz / High CH / QPSK



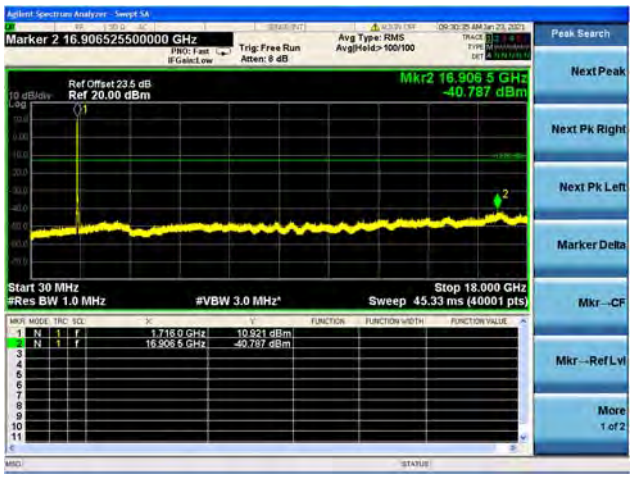
Band66 / 10MHz / High CH / 16QAM



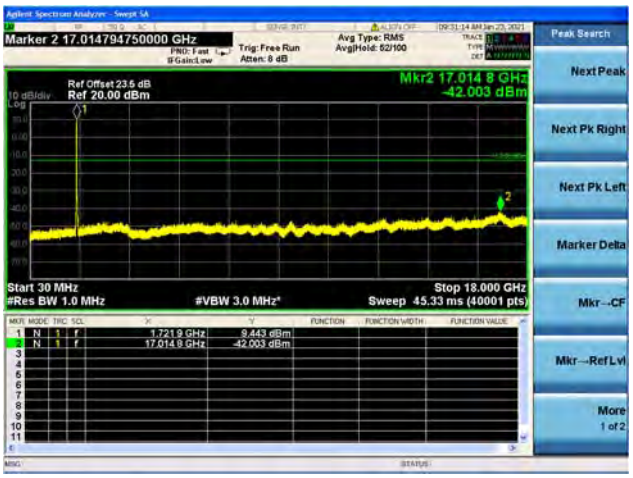
Band66 / 10MHz / High CH / 64QAM



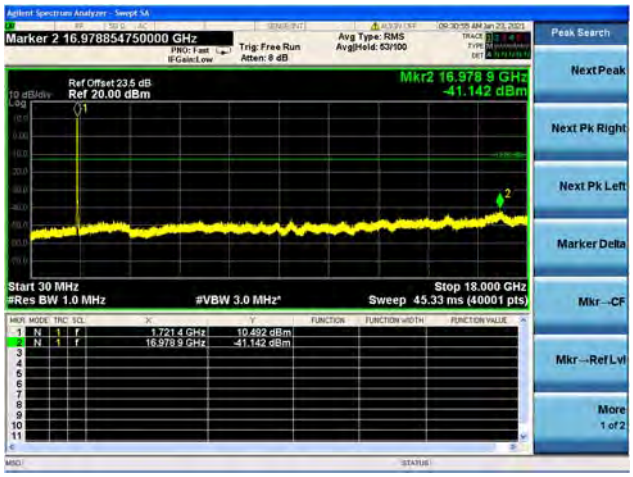
Band66 / 15MHz / Low CH / QPSK



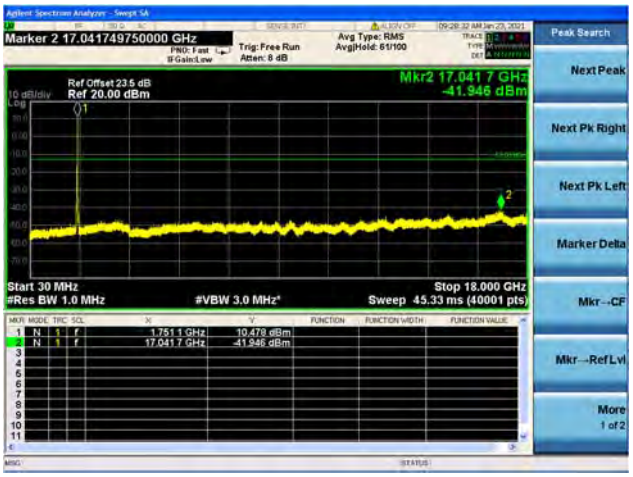
Band66 / 15MHz / Low CH / 16QAM



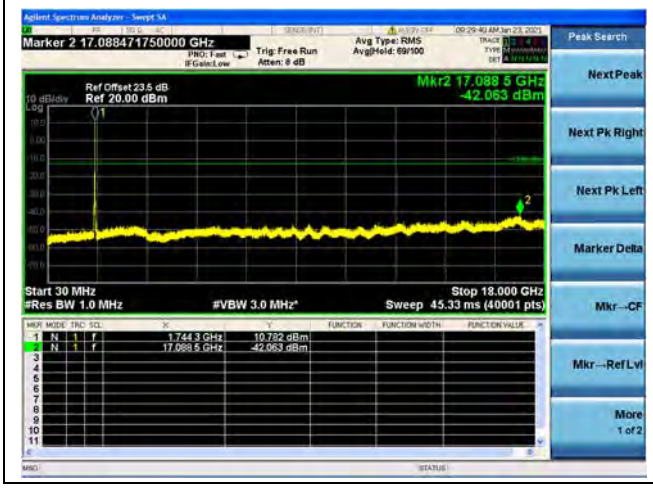
Band66 / 15MHz / Low CH / 64QAM



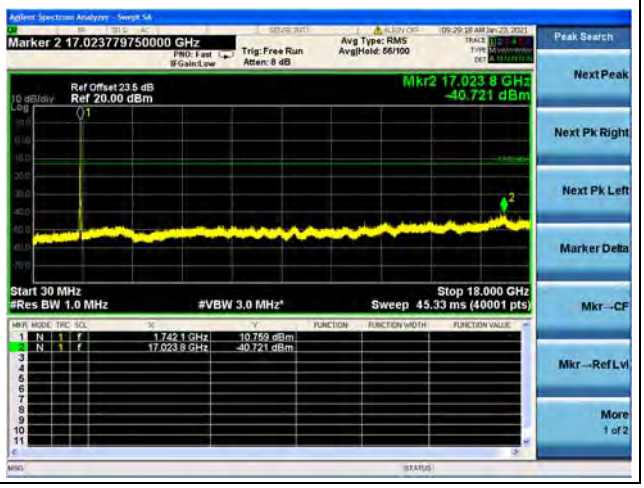
Band66 / 15MHz / Mid CH / QPSK



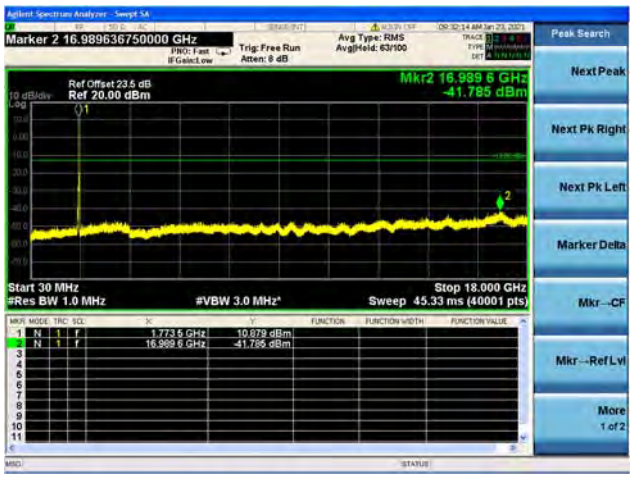
Band66 / 15MHz / Mid CH / 16QAM



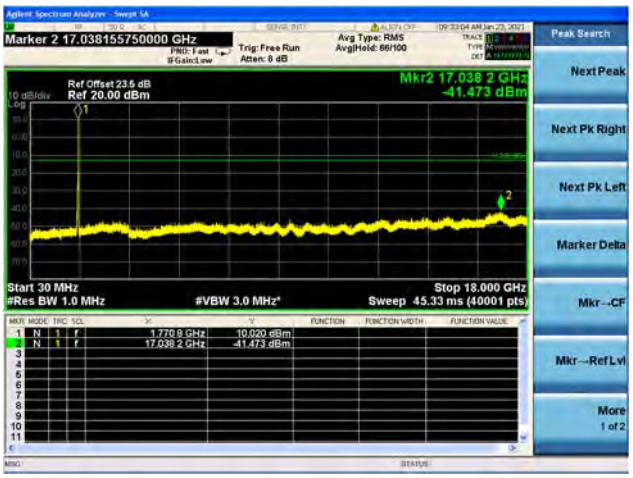
Band66 / 15MHz / Mid CH / 64QAM



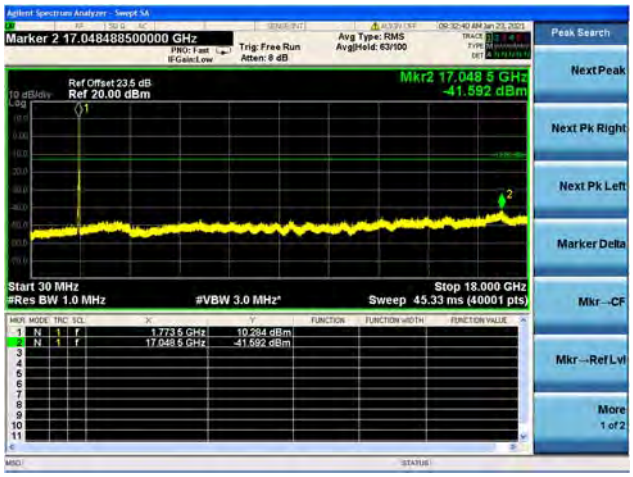
Band66 / 15MHz / High CH / QPSK



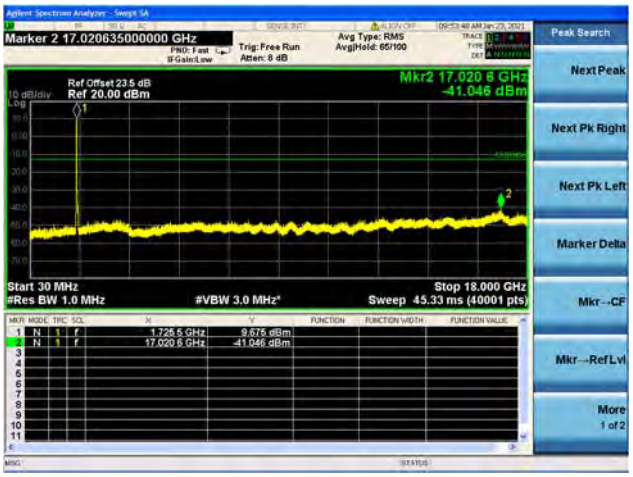
Band66 / 15MHz / High CH / 16QAM



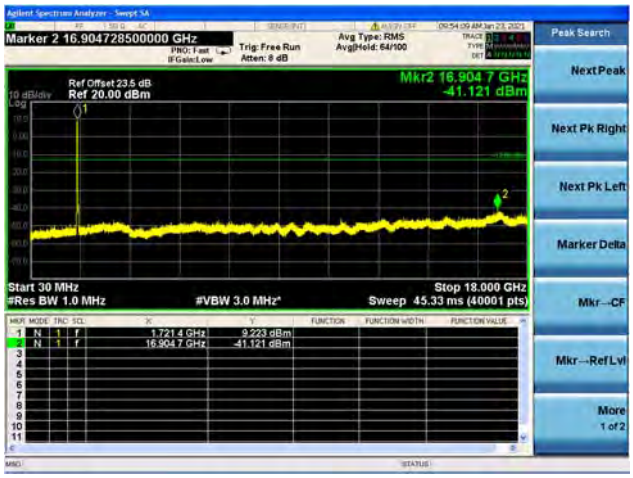
Band66 / 15MHz / High CH / 64QAM



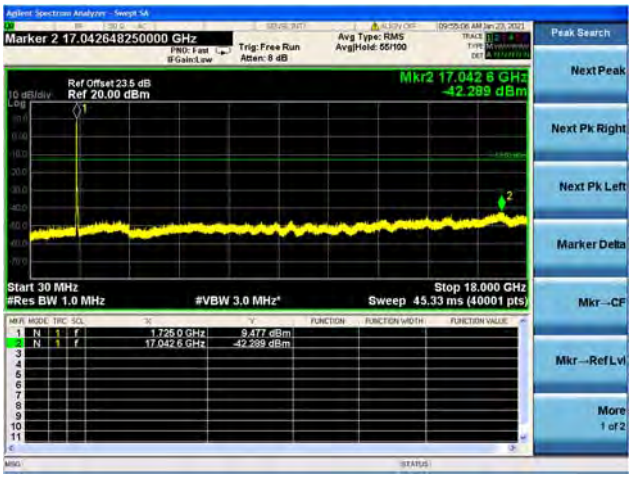
Band66 / 20MHz / Low CH / QPSK



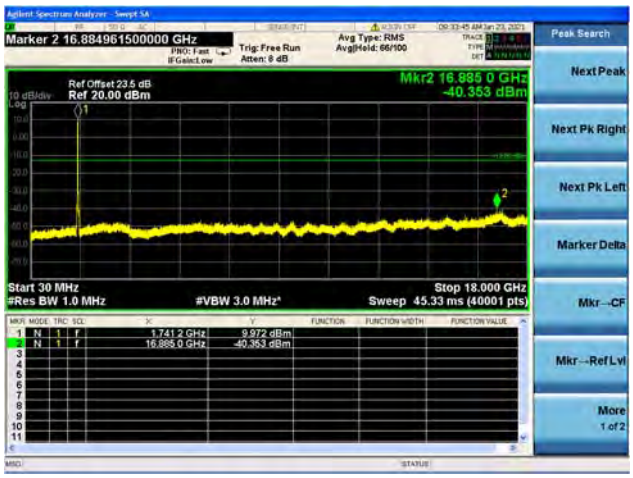
Band66 / 20MHz / Low CH / 16QAM



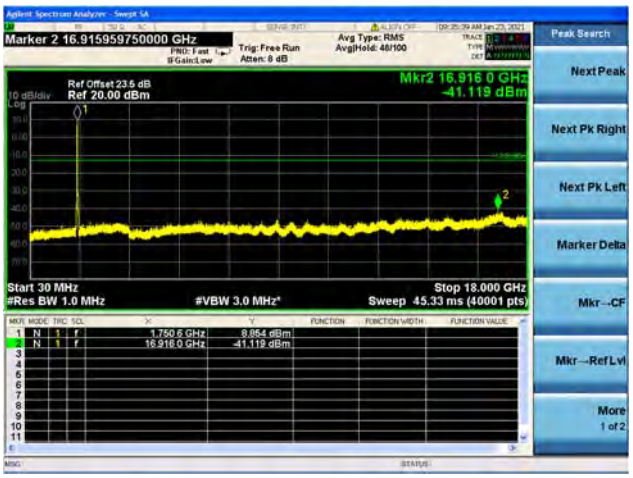
Band66 / 20MHz / Low CH / 64QAM



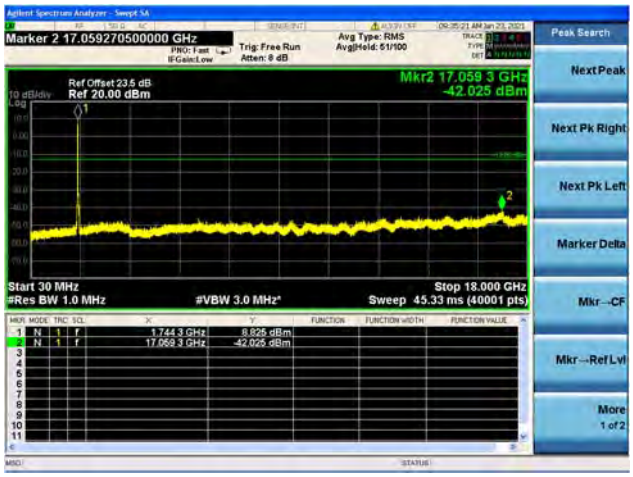
Band66 / 20MHz / Mid CH / QPSK



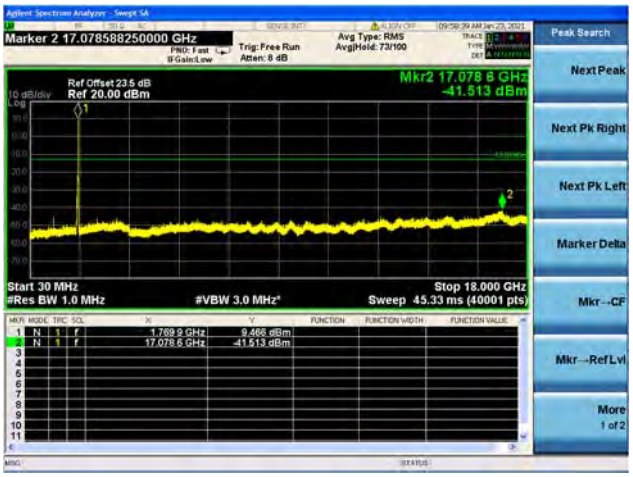
Band66 / 20MHz / Mid CH / 16QAM



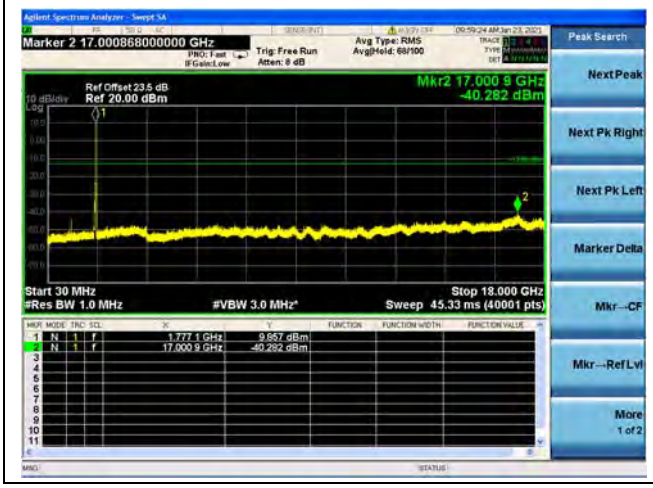
Band66 / 20MHz / Mid CH / 64QAM



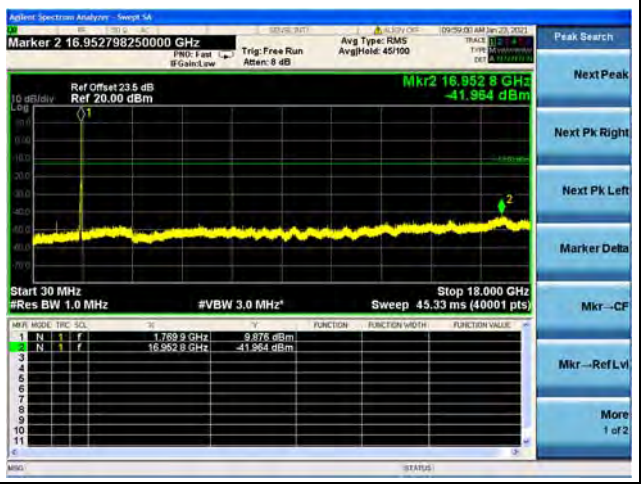
Band66 / 20MHz / High CH / QPSK



Band66 / 20MHz / High CH / 16QAM



Band66 / 20MHz / High CH / 64QAM



2.6. Band Edge

2.6.1. Requirement

Band 2

According to FCC section 24.238(a), for operations in the 1850–1910MHz bands, 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 in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band 4, 66

According to FCC section 27.53(h), for operations in the 1710–1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band 5, 18, 19, 26

According to FCC section 22.917(a), for operations in the 824–849MHz bands, 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 in a 100kHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band 12, 17

For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Band 7, 38

According to FCC section 27.53(m) (4), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Band 40

According to FCC section 27.53(a) (4), for mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

2.6.2. Test Description

Attenuator 1

The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.6.3. Test Procedure

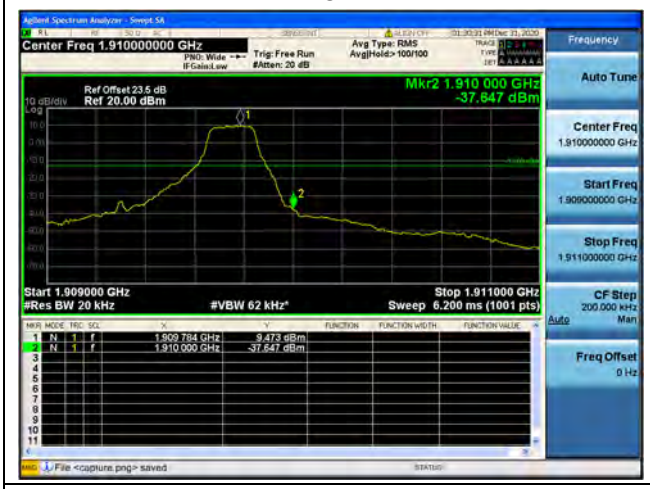
KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

2.6.4. Test Result

Band2 / 1.4MHz / Low CH / QPSK / 1 RB

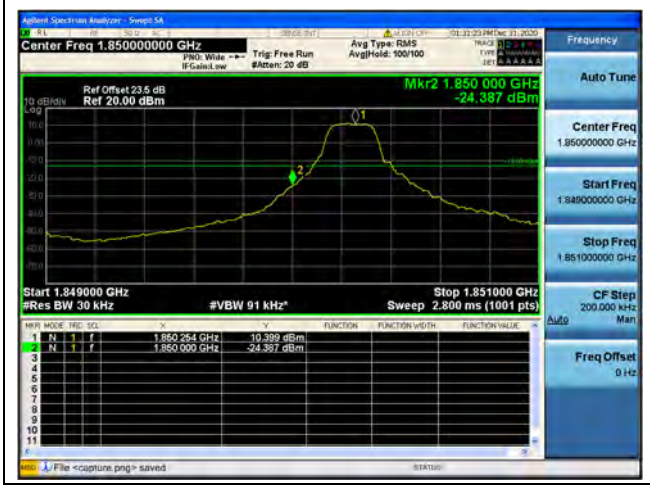
Band2 / 1.4MHz / Low CH / QPSK / FULL RB

Band2 / 1.4MHz / High CH / QPSK / 1 RB



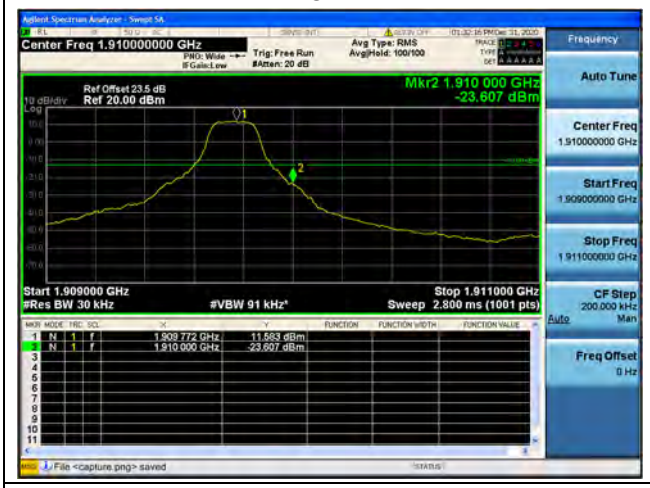
Band2 / 1.4MHz / High CH / QPSK / FULL RB

Band2 / 3MHz / Low CH / QPSK / 1 RB



Band2 / 3MHz / Low CH / QPSK / FULL RB

Band2 / 3MHz / High CH / QPSK / 1 RB

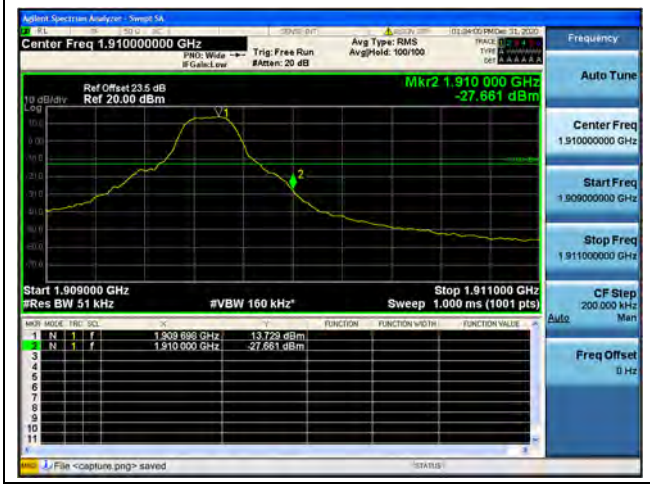


Band2 / 3MHz / High CH / QPSK / FULL RB

Band2 / 5MHz / Low CH / QPSK / 1 RB

Band2 / 5MHz / Low CH / QPSK / FULL RB

Band2 / 5MHz / High CH / QPSK / 1 RB



Band2 / 5MHz / High CH / QPSK / FULL RB

Band2 / 10MHz / Low CH / QPSK / 1 RB

Band2 / 10MHz / Low CH / QPSK / FULL RB

Band2 / 10MHz / High CH / QPSK / 1 RB

Band2 / 10MHz / High CH / QPSK / FULL RB

Band2 / 15MHz / Low CH / QPSK / 1 RB

Band2 / 15MHz / Low CH / QPSK / FULL RB

Band2 / 15MHz / High CH / QPSK / 1 RB

Band2 / 15MHz / High CH / QPSK / FULL RB

Band2 / 20MHz / Low CH / QPSK / 1 RB

Band2 / 20MHz / Low CH / QPSK / FULL RB

Band2 / 20MHz / High CH / QPSK / 1 RB

Band2 / 20MHz / High CH / QPSK / FULL RB

Band4 / 1.4MHz / Low CH / QPSK / 1 RB

Band4 / 1.4MHz / Low CH / QPSK / FULL RB

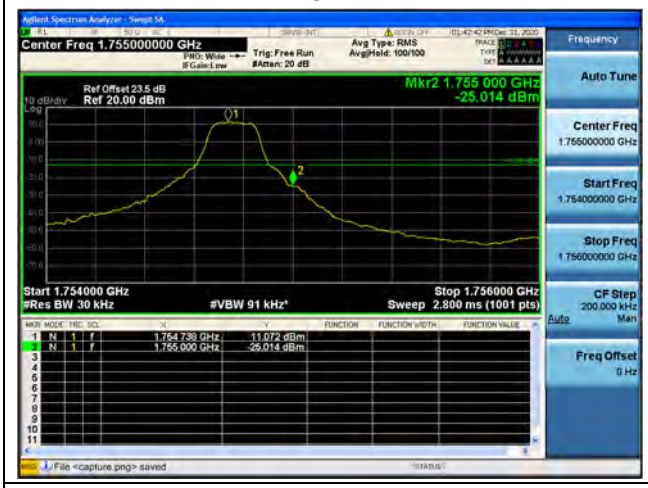
Band4 / 1.4MHz / High CH / QPSK / 1 RB

Band4 / 1.4MHz / High CH / QPSK / FULL RB

Band4 / 3MHz / Low CH / QPSK / 1 RB

Band4 / 3MHz / Low CH / QPSK / FULL RB

Band4 / 3MHz / High CH / QPSK / 1 RB

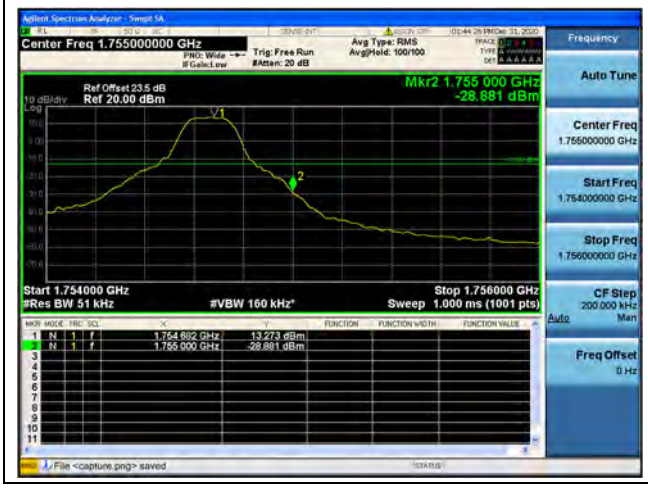


Band4 / 3MHz / High CH / QPSK / FULL RB

Band4 / 5MHz / Low CH / QPSK / 1 RB

Band4 / 5MHz / Low CH / QPSK / FULL RB

Band4 / 5MHz / High CH / QPSK / 1 RB



Band4 / 5MHz / High CH / QPSK / FULL RB

Band4 / 10MHz / Low CH / QPSK / 1 RB

Band4 / 10MHz / Low CH / QPSK / FULL RB

Band4 / 10MHz / High CH / QPSK / 1 RB

Band4 / 10MHz / High CH / QPSK / FULL RB

Band4 / 15MHz / Low CH / QPSK / 1 RB

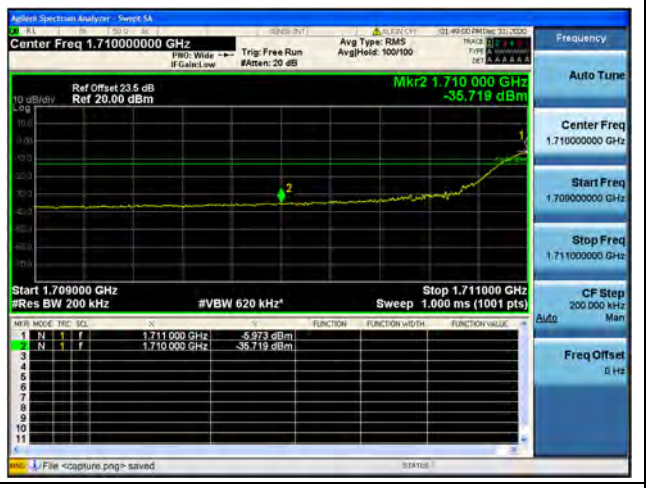
Band4 / 15MHz / Low CH / QPSK / FULL RB

Band4 / 15MHz / High CH / QPSK / 1 RB

Band4 / 15MHz / High CH / QPSK / FULL RB

Band4 / 20MHz / Low CH / QPSK / 1 RB

Band4 / 20MHz / Low CH / QPSK / FULL RB



Band4 / 20MHz / High CH / QPSK / 1 RB

Band4 / 20MHz / High CH / QPSK / FULL RB

Band5 / 1.4MHz / Low CH / QPSK / 1 RB

Band5 / 1.4MHz / Low CH / QPSK / FULL RB

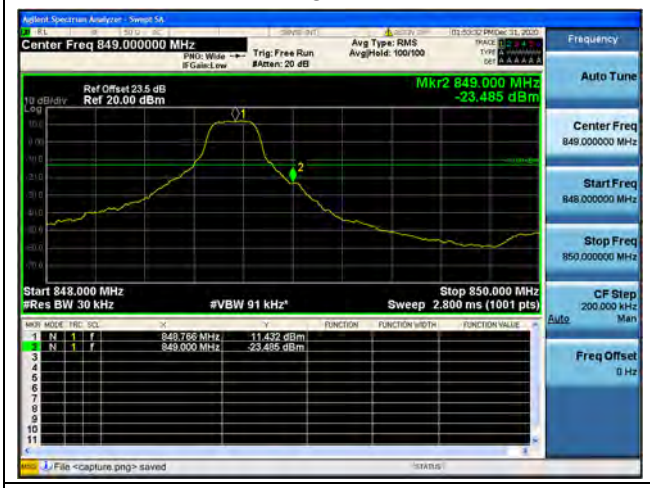
Band5 / 1.4MHz / High CH / QPSK / 1 RB

Band5 / 1.4MHz / High CH / QPSK / FULL RB

Band5 / 3MHz / Low CH / QPSK / 1 RB

Band5 / 3MHz / Low CH / QPSK / FULL RB

Band5 / 3MHz / High CH / QPSK / 1 RB



Band5 / 3MHz / High CH / QPSK / FULL RB

Band5 / 5MHz / Low CH / QPSK / 1 RB

Band5 / 5MHz / Low CH / QPSK / FULL RB

Band5 / 5MHz / High CH / QPSK / 1 RB

Band5 / 5MHz / High CH / QPSK / FULL RB

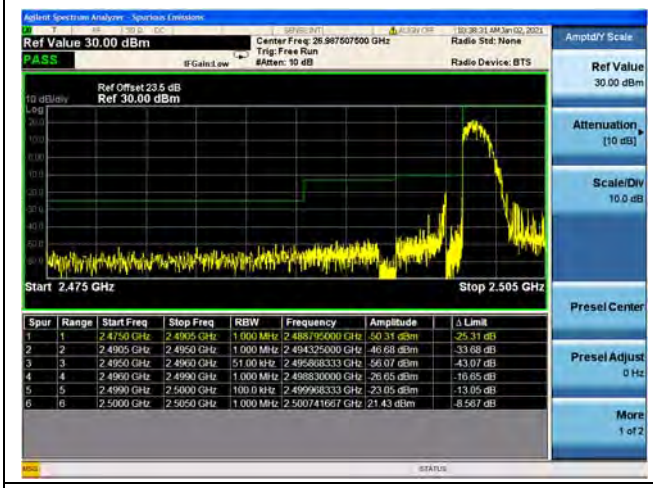
Band5 / 10MHz / Low CH / QPSK / 1 RB

Band5 / 10MHz / Low CH / QPSK / FULL RB

Band5 / 10MHz / High CH / QPSK / 1 RB

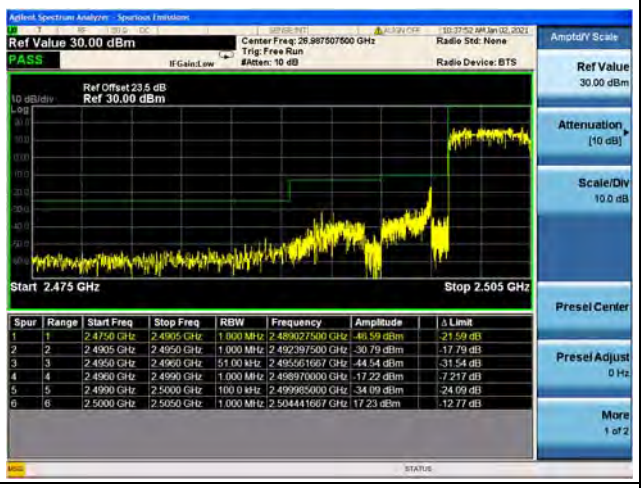
Band5 / 10MHz / High CH / QPSK / FULL RB

Band7 / 5MHz / Low CH / QPSK / 1 RB



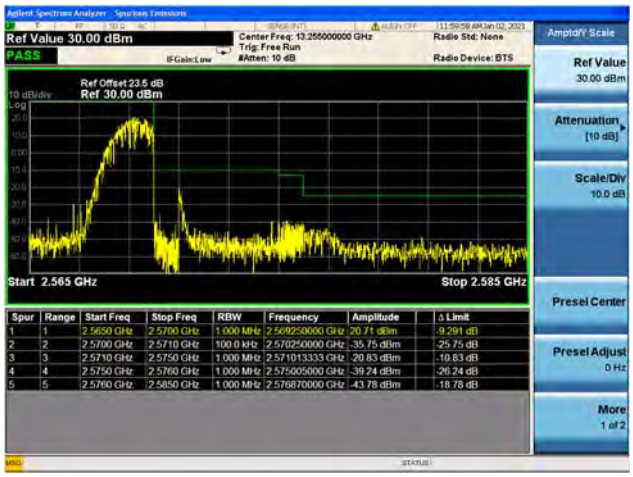
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.488795000 GHz	-50.31 dBm	-25.31 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494325000 GHz	-46.68 dBm	-33.68 dB
3	3	2.4950 GHz	2.4960 GHz	51.00 kHz	2.495868333 GHz	-56.07 dBm	-43.07 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498830000 GHz	-26.65 dBm	-16.65 dB
5	5	2.4990 GHz	2.5000 GHz	100.0 kHz	2.499998333 GHz	-23.05 dBm	-13.05 dB
6	6	2.5000 GHz	2.5050 GHz	1.000 MHz	2.500741667 GHz	21.43 dBm	-8.567 dB

Band7 / 5MHz / Low CH / QPSK / FULL RB



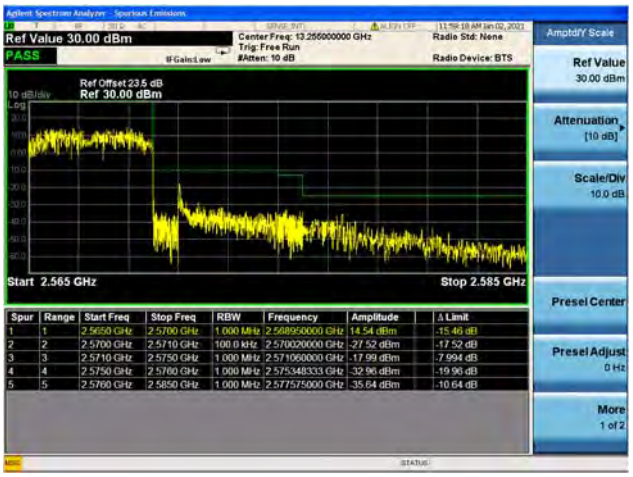
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489027500 GHz	-46.59 dBm	-21.59 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.492397500 GHz	-30.79 dBm	-17.79 dB
3	3	2.4950 GHz	2.4960 GHz	51.00 kHz	2.495561667 GHz	-44.54 dBm	-31.54 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498970000 GHz	-17.22 dBm	-7.217 dB
5	5	2.4990 GHz	2.5000 GHz	100.0 kHz	2.499985000 GHz	-34.09 dBm	-24.09 dB
6	6	2.5000 GHz	2.5050 GHz	1.000 MHz	2.504441667 GHz	17.23 dBm	-12.77 dB

Band7 / 5MHz / High CH / QPSK / 1 RB



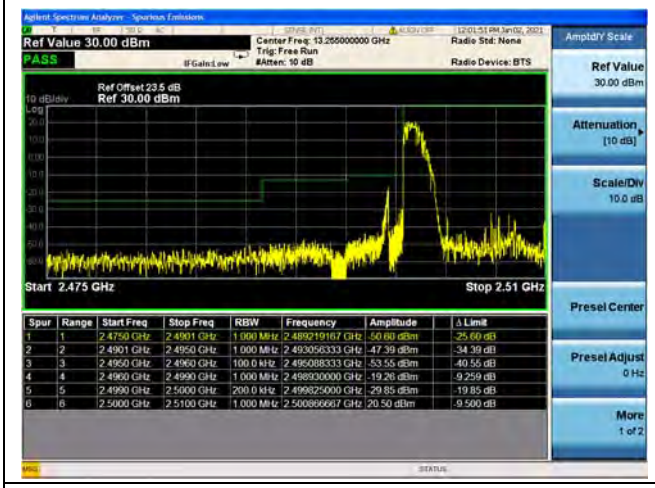
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5650 GHz	2.5700 GHz	1.000 MHz	2.569250000 GHz	-20.71 dBm	-9.291 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570250000 GHz	-35.75 dBm	-25.75 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571013333 GHz	-20.83 dBm	-10.83 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575005000 GHz	-39.24 dBm	-26.24 dB
5	5	2.5760 GHz	2.5850 GHz	1.000 MHz	2.576870000 GHz	-43.78 dBm	-18.78 dB

Band7 / 5MHz / High CH / QPSK / FULL RB



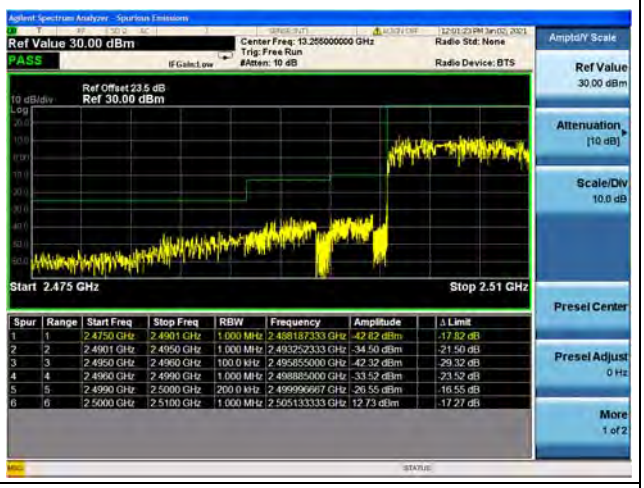
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5650 GHz	2.5700 GHz	1.000 MHz	2.568950000 GHz	14.54 dBm	-15.46 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570020000 GHz	-27.52 dBm	-17.52 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571060000 GHz	-17.99 dBm	-7.994 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575348333 GHz	-32.96 dBm	-19.96 dB
5	5	2.5760 GHz	2.5850 GHz	1.000 MHz	2.577575000 GHz	-35.64 dBm	-10.64 dB

Band7 / 10MHz / Low CH / QPSK / 1 RB



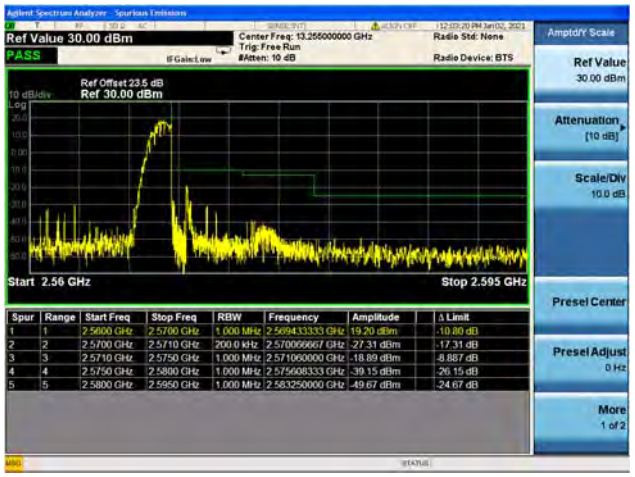
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4901 GHz	1.000 MHz	2.489219167 GHz	-50.60 dBm	-25.60 dB
2	2	2.4901 GHz	2.4950 GHz	1.000 MHz	2.493056333 GHz	-47.39 dBm	-34.39 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495088333 GHz	-53.55 dBm	-40.55 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498930000 GHz	-19.26 dBm	-9.259 dB
5	5	2.4990 GHz	2.5000 GHz	200.0 kHz	2.499825000 GHz	-29.85 dBm	-19.85 dB
6	6	2.5000 GHz	2.5100 GHz	1.000 MHz	2.500866667 GHz	20.50 dBm	-9.500 dB

Band7 / 10MHz / Low CH / QPSK / FULL RB



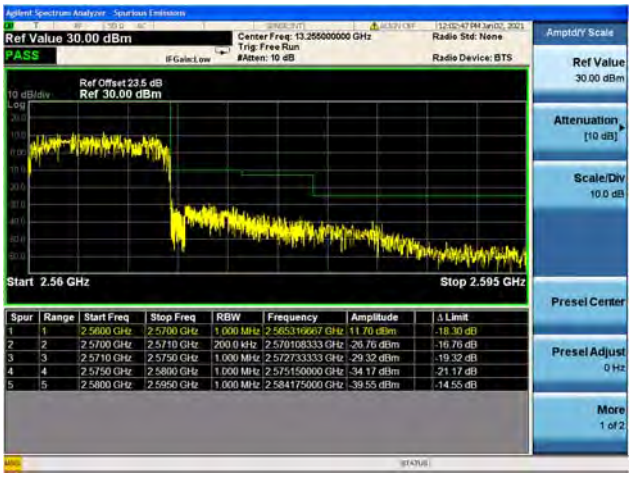
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4901 GHz	1.000 MHz	2.488187333 GHz	-42.82 dBm	-17.82 dB
2	2	2.4901 GHz	2.4950 GHz	1.000 MHz	2.493252333 GHz	-34.50 dBm	-21.50 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495855000 GHz	-42.32 dBm	-29.32 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498885000 GHz	-33.52 dBm	-23.52 dB
5	5	2.4990 GHz	2.5000 GHz	200.0 kHz	2.499999667 GHz	-26.55 dBm	-16.55 dB
6	6	2.5000 GHz	2.5100 GHz	1.000 MHz	2.505133333 GHz	12.73 dBm	-17.27 dB

Band7 / 10MHz / High CH / QPSK / 1 RB



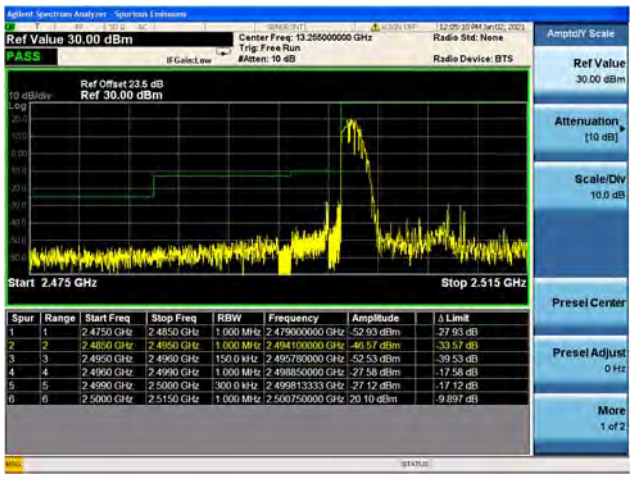
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	1.000 MHz	2.569433333 GHz	19.20 dBm	-10.80 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570066667 GHz	-27.31 dBm	-17.31 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571060000 GHz	-18.89 dBm	-8.887 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.575608333 GHz	-39.15 dBm	-26.15 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.583250000 GHz	-49.67 dBm	-24.67 dB

Band7 / 10MHz / High CH / QPSK / FULL RB

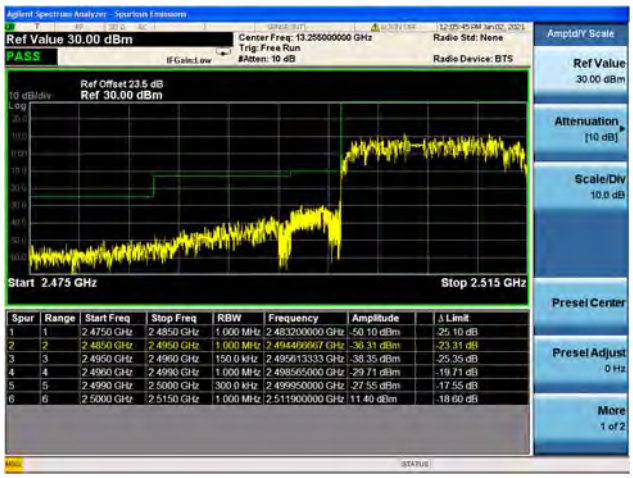


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	1.000 MHz	2.565316667 GHz	11.70 dBm	-18.30 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570108333 GHz	-26.76 dBm	-16.76 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.572733333 GHz	-29.32 dBm	-19.32 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.575150000 GHz	-34.17 dBm	-21.17 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.584175000 GHz	-39.55 dBm	-14.55 dB

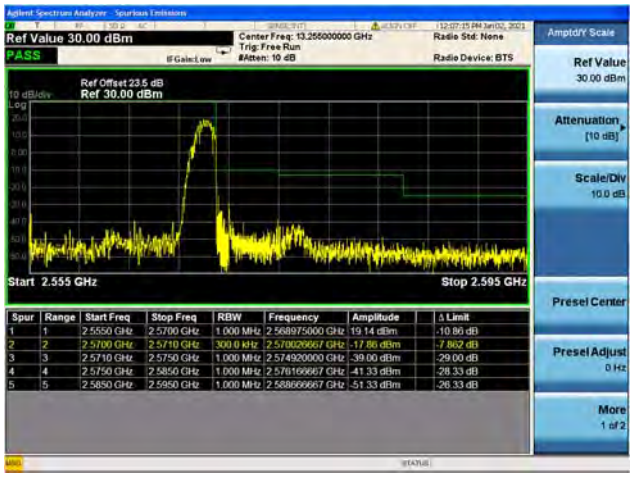
Band7 / 15MHz / Low CH / QPSK / 1 RB



Band7 / 15MHz / Low CH / QPSK / FULL RB

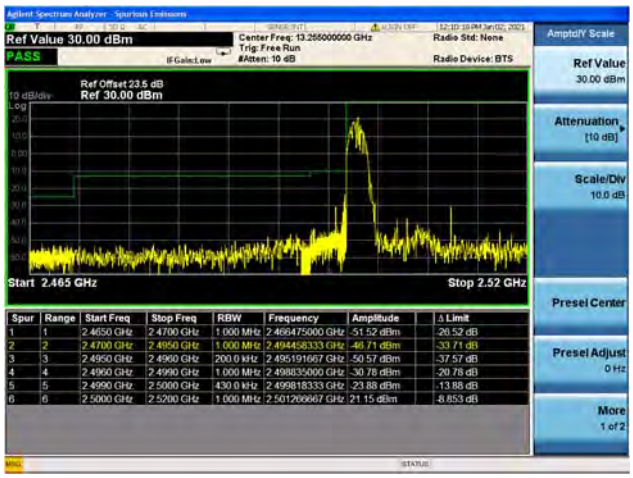


Band7 / 15MHz / High CH / QPSK / 1 RB

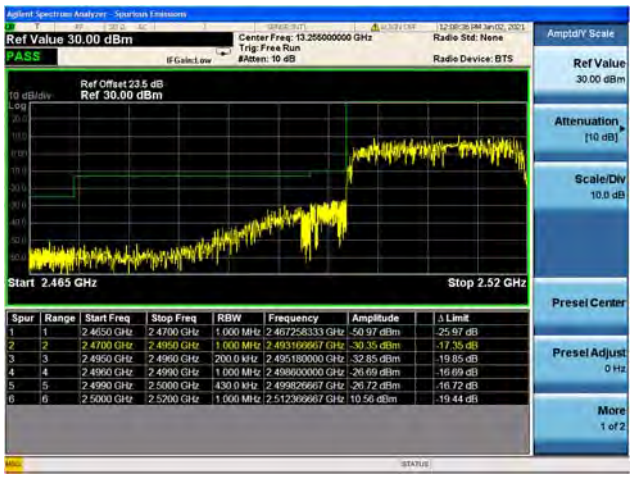


Band7 / 15MHz / High CH / QPSK / FULL RB

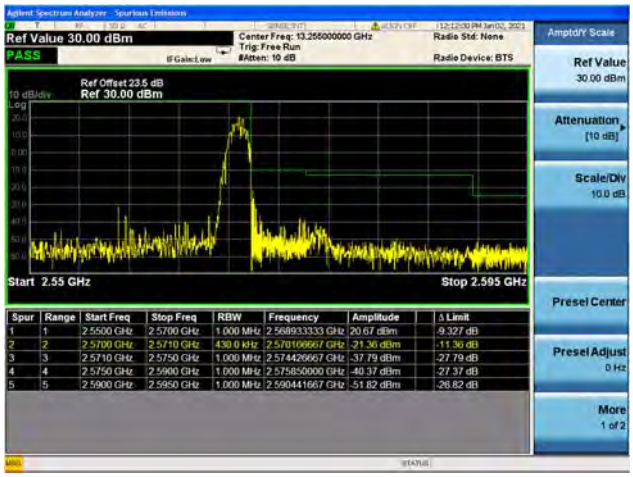
Band7 / 20MHz / Low CH / QPSK / 1 RB



Band7 / 20MHz / Low CH / QPSK / FULL RB



Band7 / 20MHz / High CH / QPSK / 1 RB



Band7 / 20MHz / High CH / QPSK / FULL RB