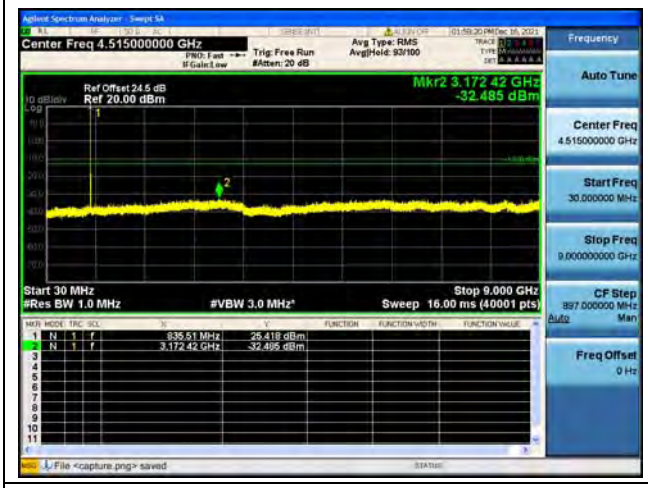
Band5 / 3MHz / Mid CH / QPSK

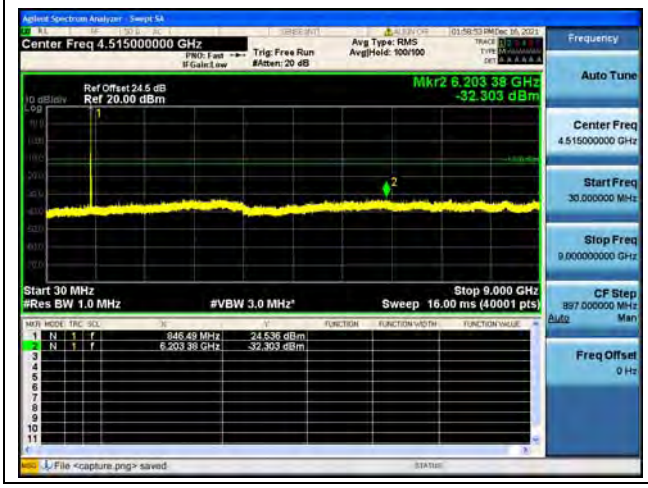
Band5 / 3MHz / Mid CH / 16QAM

Band5 / 3MHz / Mid CH / 64QAM



Band5 / 3MHz / High CH / QPSK

Band5 / 3MHz / High CH / 16QAM



Band5 / 3MHz / High CH / 64QAM

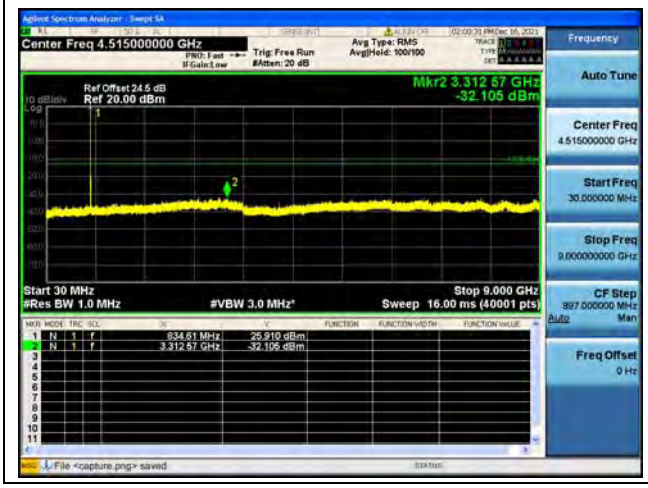
Band5 / 5MHz / Low CH / QPSK

Band5 / 5MHz / Low CH / 16QAM

Band5 / 5MHz / Low CH / 64QAM

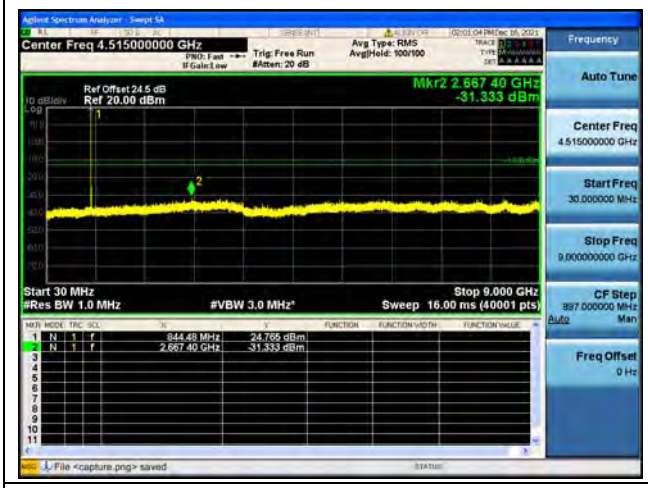
Band5 / 5MHz / Mid CH / QPSK

Band5 / 5MHz / Mid CH / 16QAM



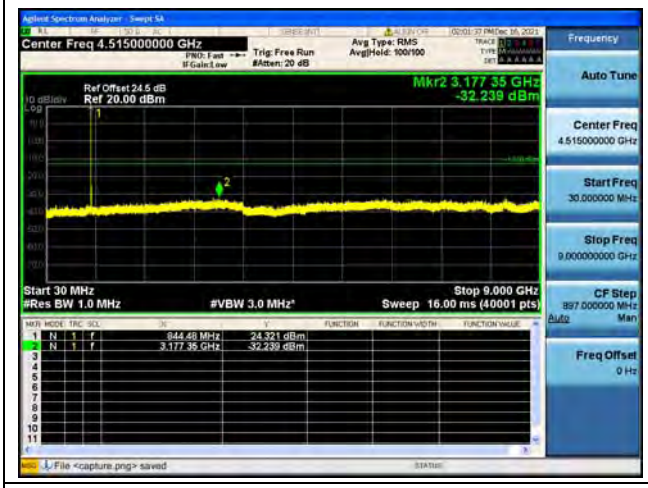
Band5 / 5MHz / Mid CH / 64QAM

Band5 / 5MHz / High CH / QPSK



Band5 / 5MHz / High CH / 16QAM

Band5 / 5MHz / High CH / 64QAM

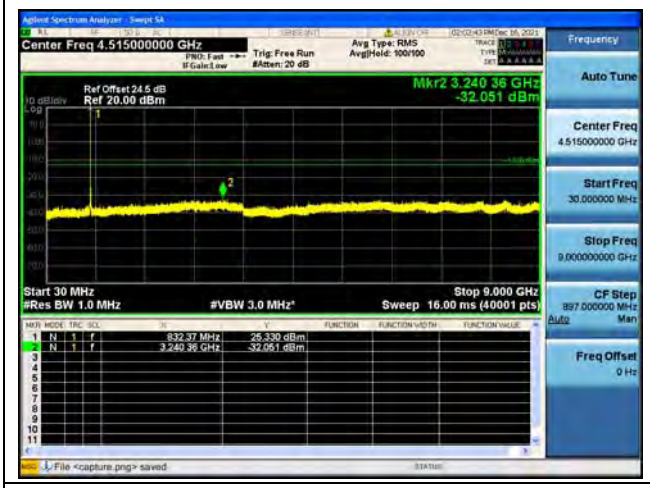


Band5 / 10MHz / Low CH / QPSK

Band5 / 10MHz / Low CH / 16QAM

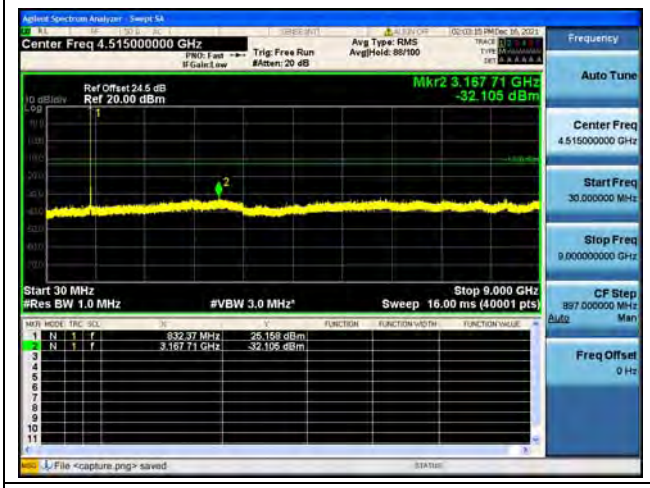
Band5 / 10MHz / Low CH / 64QAM

Band5 / 10MHz / Mid CH / QPSK



Band5 / 10MHz / Mid CH / 16QAM

Band5 / 10MHz / Mid CH / 64QAM

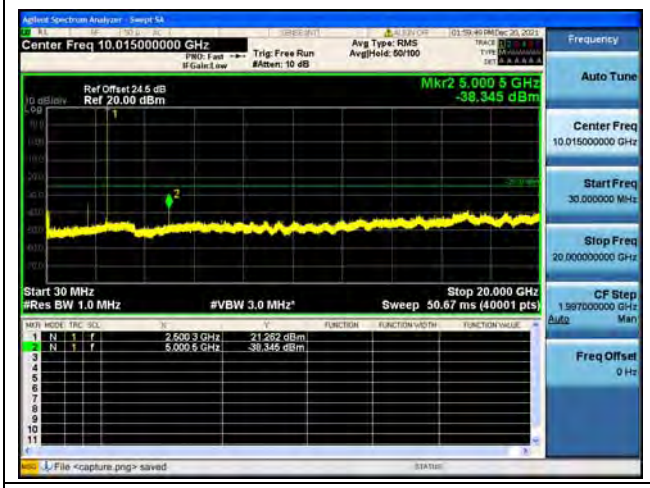


Band5 / 10MHz / High CH / QPSK

Band5 / 10MHz / High CH / 16QAM

Band5 / 10MHz / High CH / 64QAM

Band7 / 5MHz / Low CH / QPSK

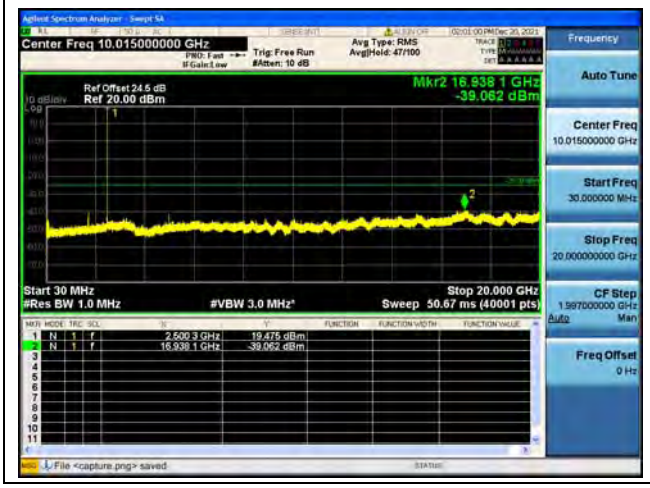


Band7 / 5MHz / Low CH / QPSK

Band7 / 5MHz / Low CH / 16QAM

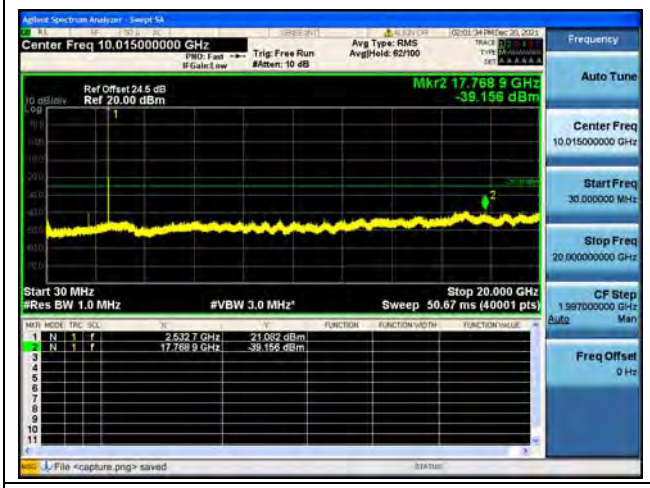
Band7 / 5MHz / Low CH / 16QAM

Band7 / 5MHz / Low CH / 64QAM



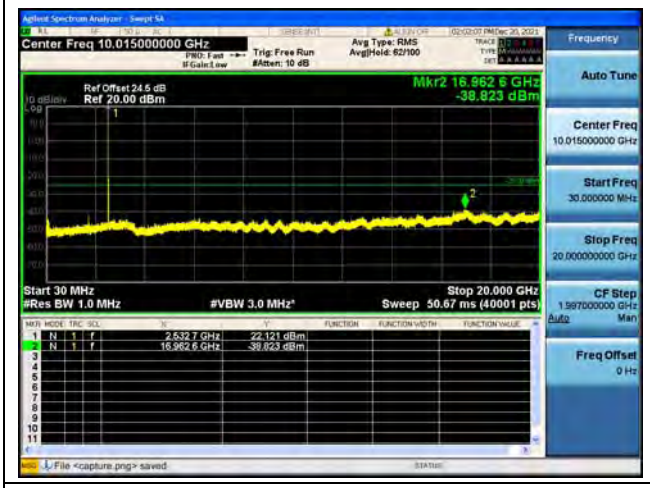
Band7 / 5MHz / Low CH / 64QAM

Band7 / 5MHz / Mid CH / QPSK



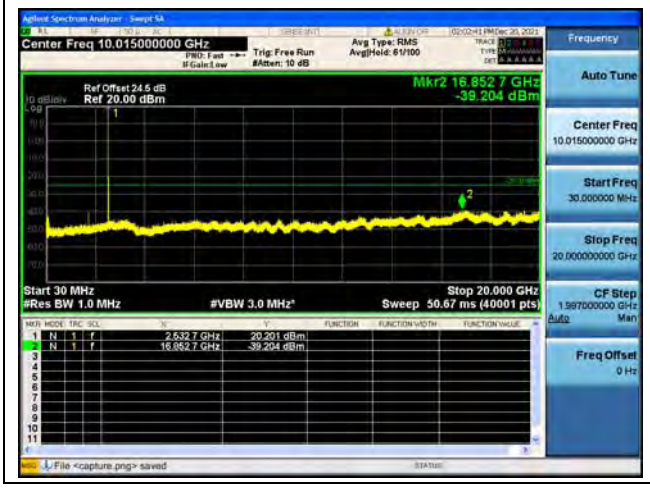
Band7 / 5MHz / Mid CH / QPSK

Band7 / 5MHz / Mid CH / 16QAM



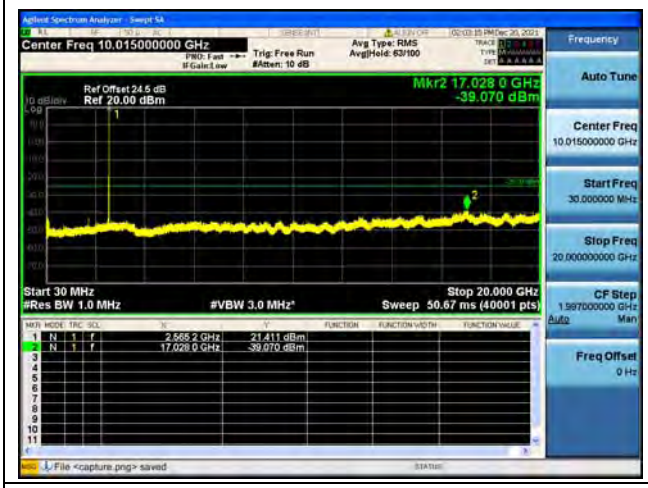
Band7 / 5MHz / Mid CH / 16QAM

Band7 / 5MHz / Mid CH / 64QAM



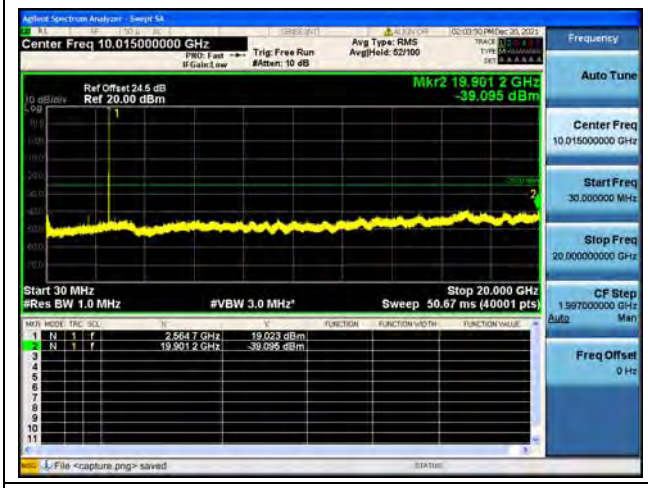
Band7 / 5MHz / Mid CH / 64QAM

Band7 / 5MHz / High CH / QPSK



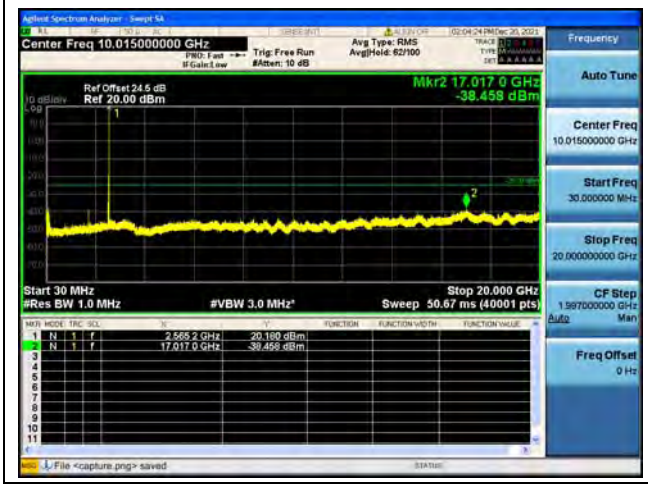
Band7 / 5MHz / High CH / QPSK

Band7 / 5MHz / High CH / 16QAM



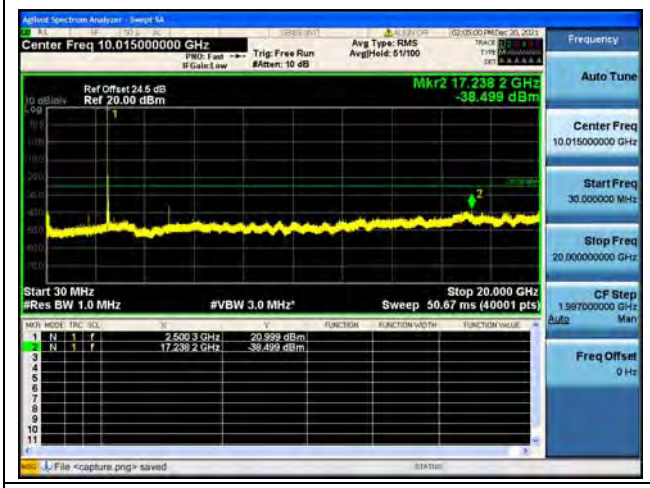
Band7 / 5MHz / High CH / 16QAM

Band7 / 5MHz / High CH / 64QAM



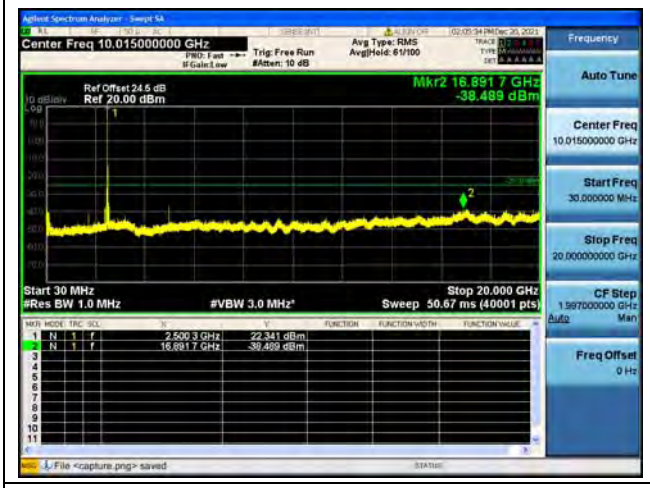
Band7 / 5MHz / High CH / 64QAM

Band7 / 10MHz / Low CH / QPSK



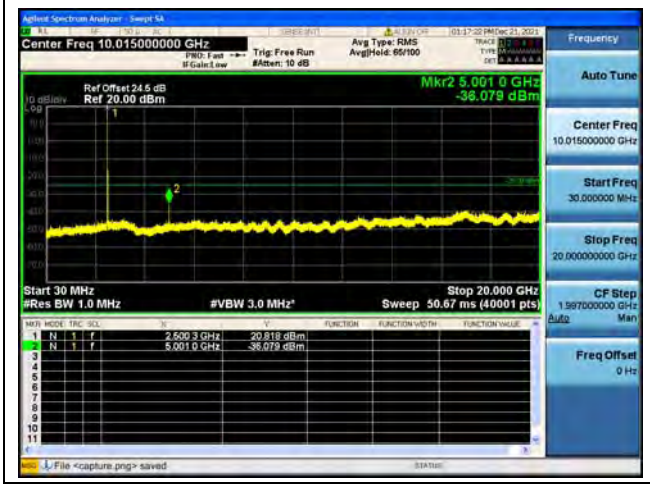
Band7 / 10MHz / Low CH / QPSK

Band7 / 10MHz / Low CH / 16QAM



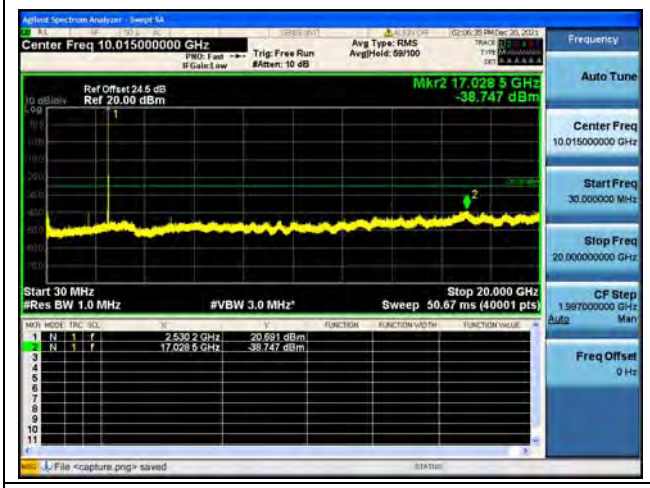
Band7 / 10MHz / Low CH / 16QAM

Band7 / 10MHz / Low CH / 64QAM



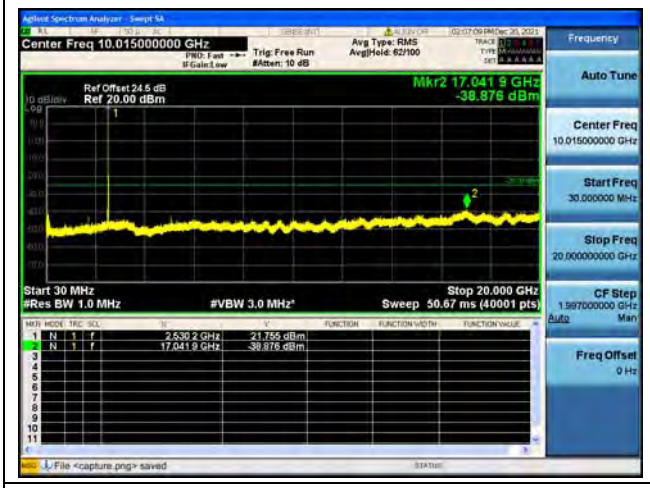
Band7 / 10MHz / Low CH / 64QAM

Band7 / 10MHz / Mid CH / QPSK



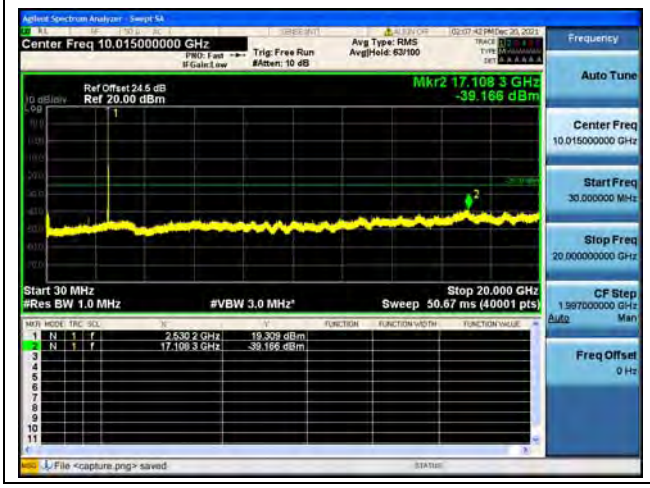
Band7 / 10MHz / Mid CH / QPSK

Band7 / 10MHz / Mid CH / 16QAM



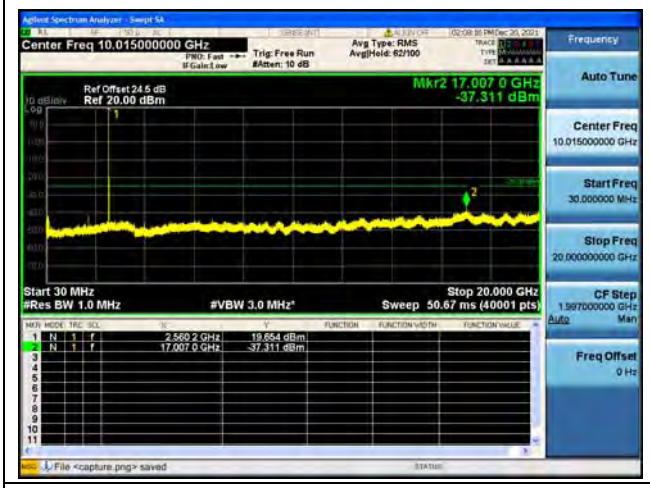
Band7 / 10MHz / Mid CH / 16QAM

Band7 / 10MHz / Mid CH / 64QAM



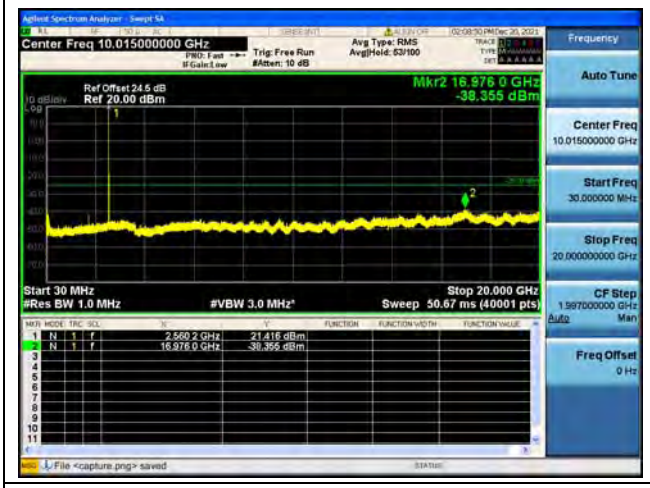
Band7 / 10MHz / Mid CH / 64QAM

Band7 / 10MHz / High CH / QPSK



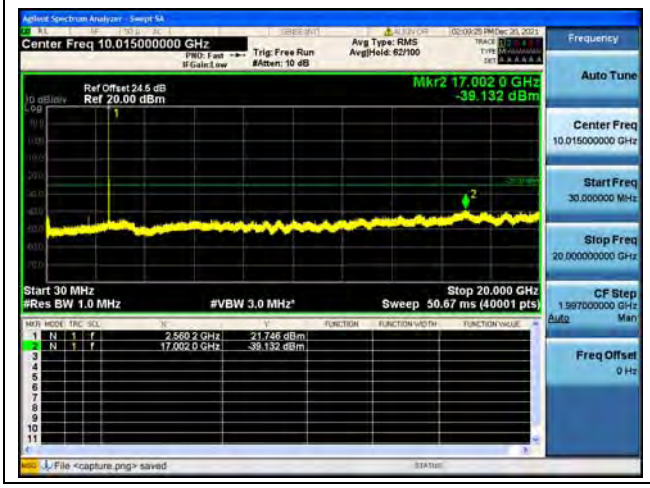
Band7 / 10MHz / High CH / QPSK

Band7 / 10MHz / High CH / 16QAM



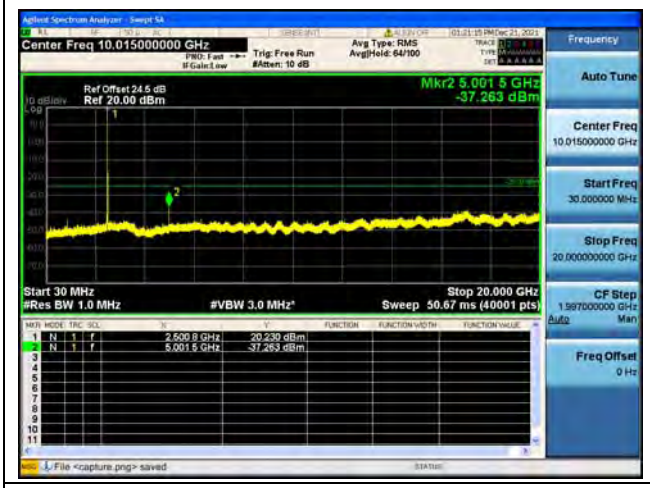
Band7 / 10MHz / High CH / 16QAM

Band7 / 10MHz / High CH / 64QAM



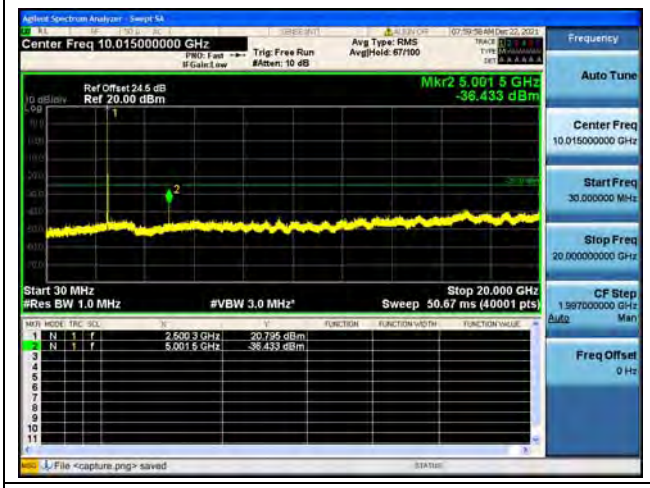
Band7 / 10MHz / High CH / 64QAM

Band7 / 15MHz / Low CH / QPSK



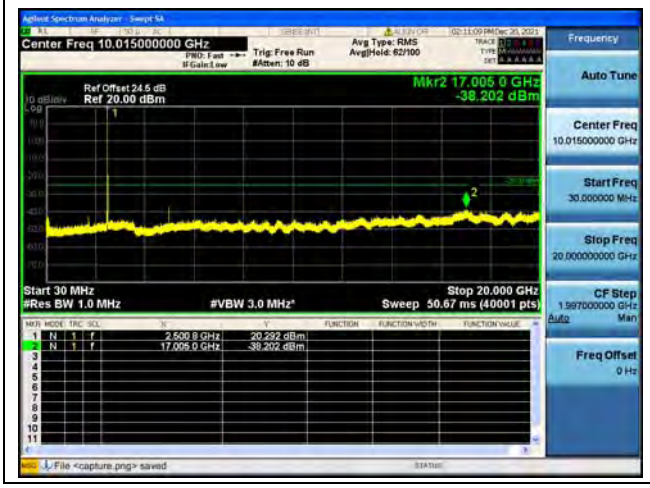
Band7 / 15MHz / Low CH / QPSK

Band7 / 15MHz / Low CH / 16QAM



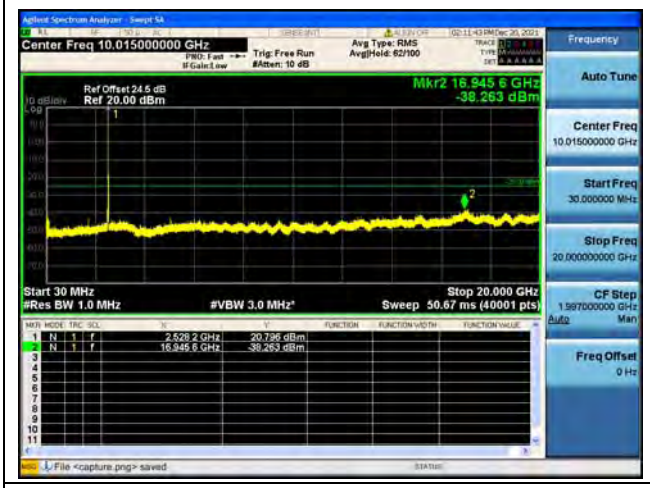
Band7 / 15MHz / Low CH / 16QAM

Band7 / 15MHz / Low CH / 64QAM



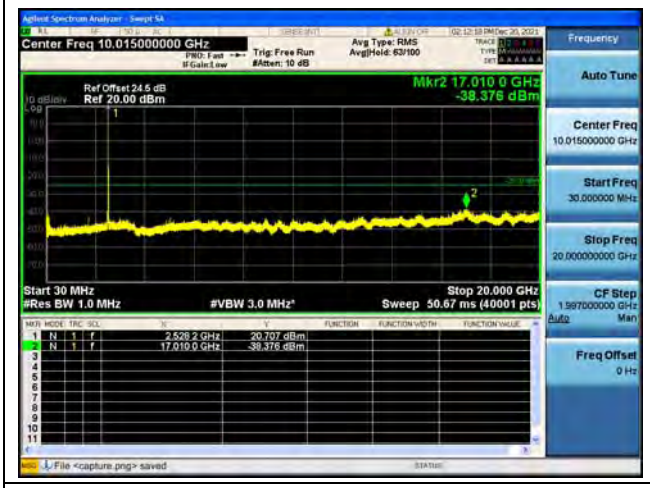
Band7 / 15MHz / Low CH / 64QAM

Band7 / 15MHz / Mid CH / QPSK



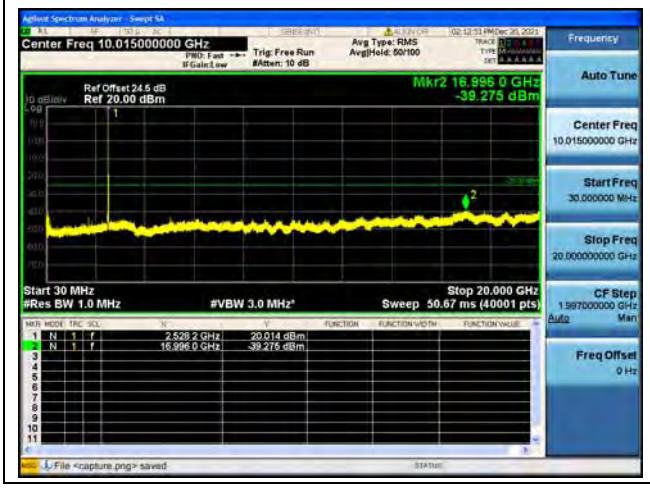
Band7 / 15MHz / Mid CH / QPSK

Band7 / 15MHz / Mid CH / 16QAM



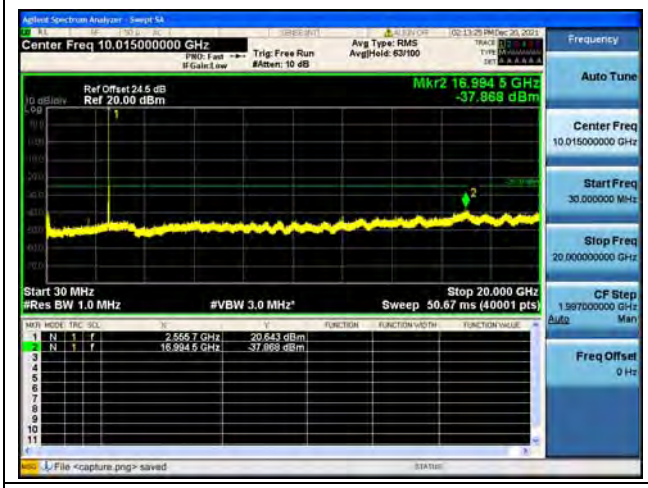
Band7 / 15MHz / Mid CH / 16QAM

Band7 / 15MHz / Mid CH / 64QAM



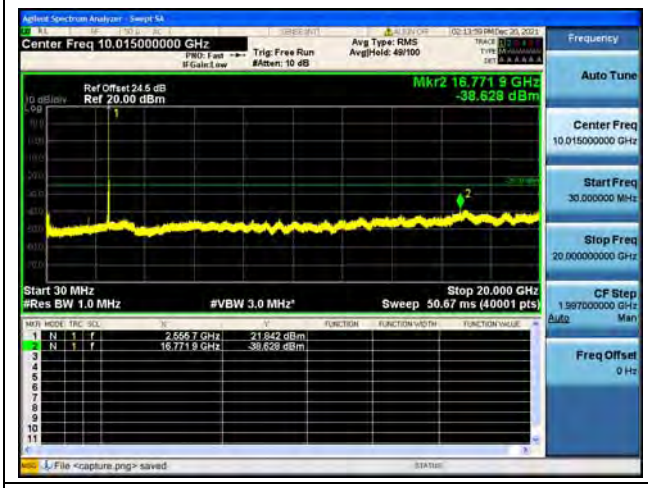
Band7 / 15MHz / Mid CH / 64QAM

Band7 / 15MHz / High CH / QPSK



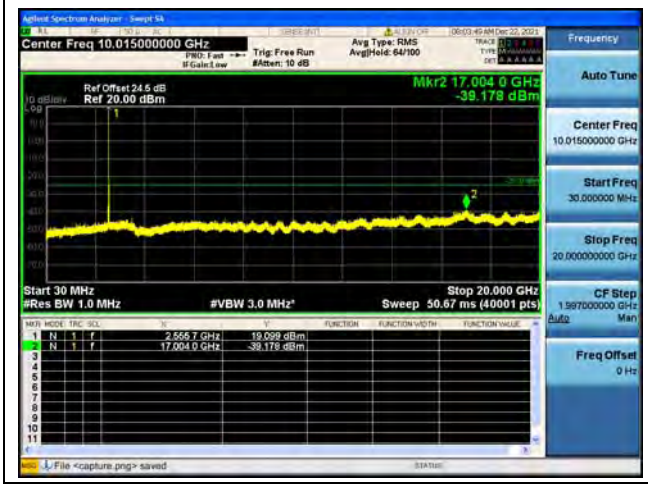
Band7 / 15MHz / High CH / QPSK

Band7 / 15MHz / High CH / 16QAM



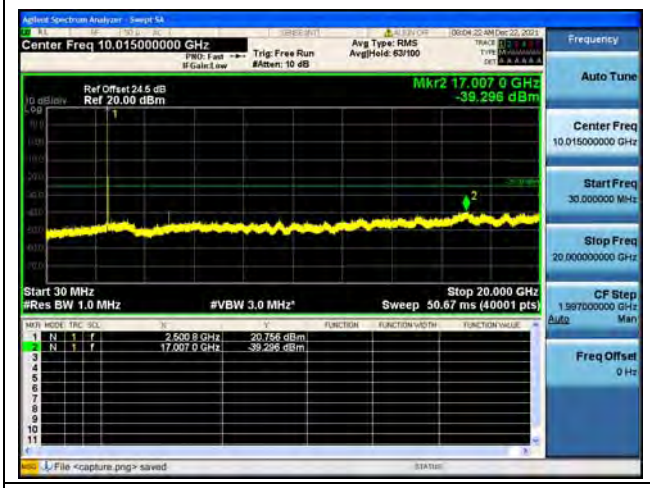
Band7 / 15MHz / High CH / 16QAM

Band7 / 15MHz / High CH / 64QAM



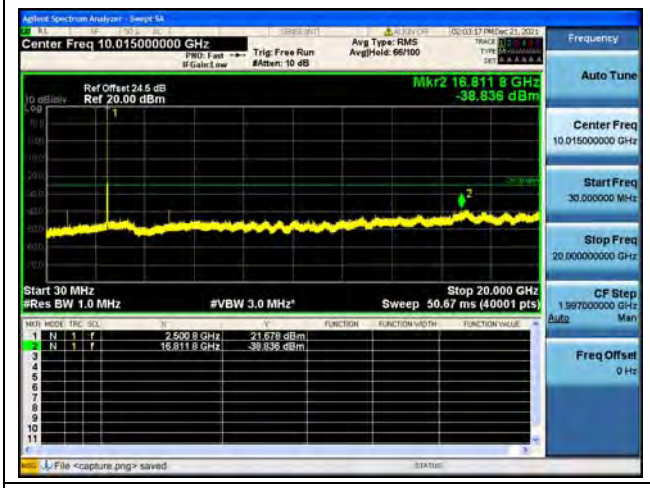
Band7 / 15MHz / High CH / 64QAM

Band7 / 20MHz / Low CH / QPSK



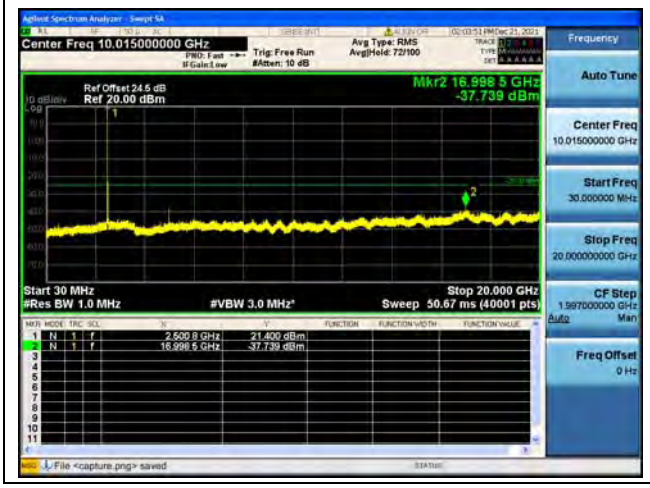
Band7 / 20MHz / Low CH / QPSK

Band7 / 20MHz / Low CH / 16QAM



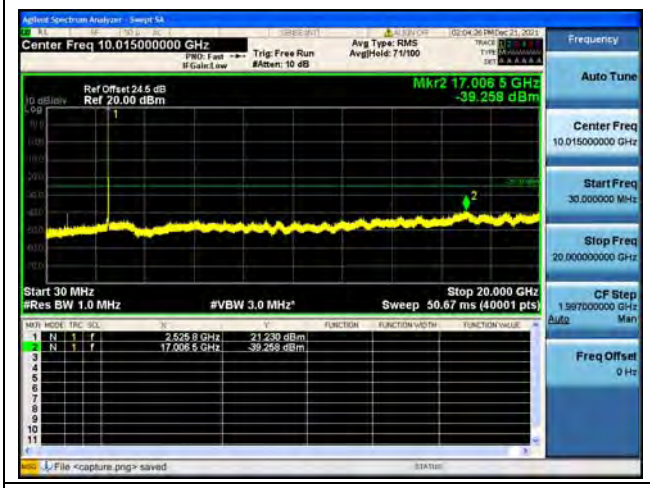
Band7 / 20MHz / Low CH / 16QAM

Band7 / 20MHz / Low CH / 64QAM



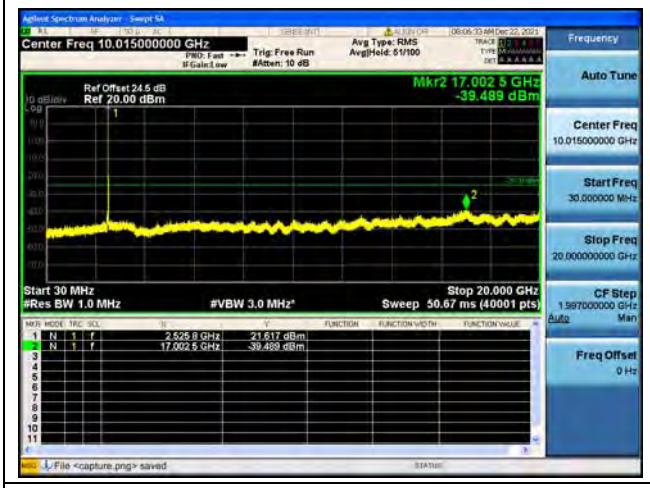
Band7 / 20MHz / Low CH / 64QAM

Band7 / 20MHz / Mid CH / QPSK



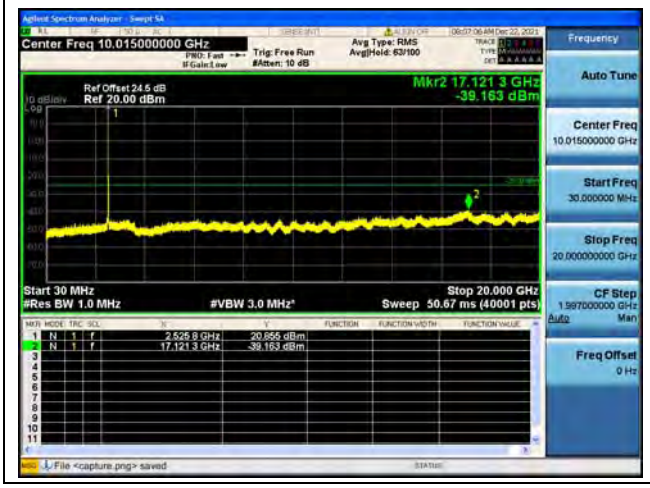
Band7 / 20MHz / Mid CH / QPSK

Band7 / 20MHz / Mid CH / 16QAM



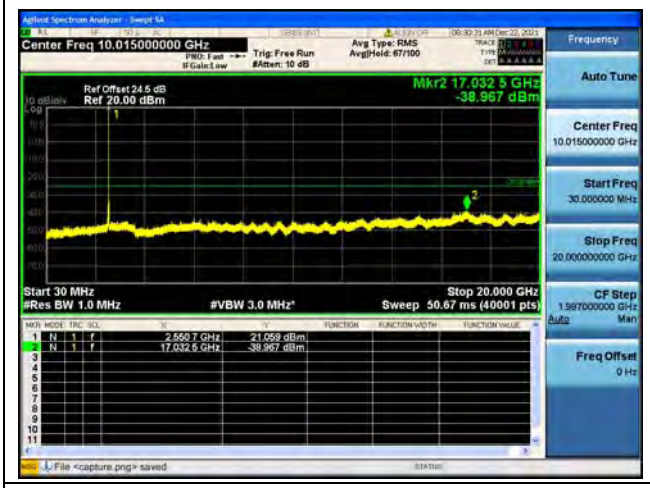
Band7 / 20MHz / Mid CH / 16QAM

Band7 / 20MHz / Mid CH / 64QAM



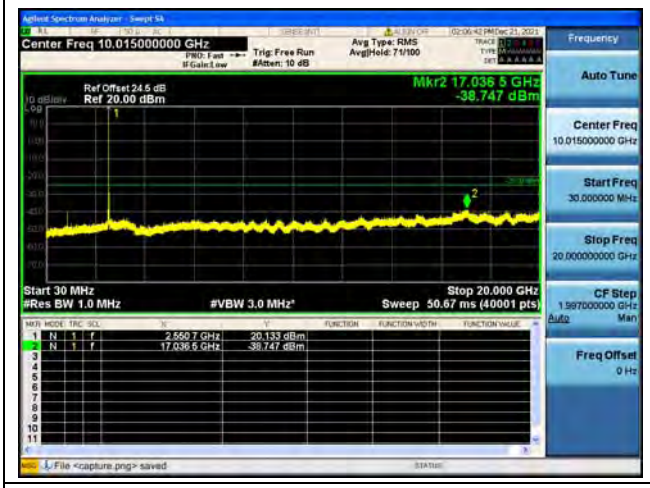
Band7 / 20MHz / Mid CH / 64QAM

Band7 / 20MHz / High CH / QPSK



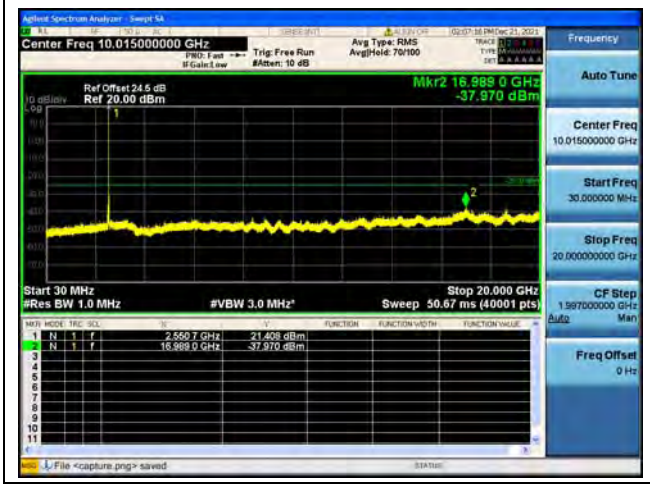
Band7 / 20MHz / High CH / QPSK

Band7 / 20MHz / High CH / 16QAM



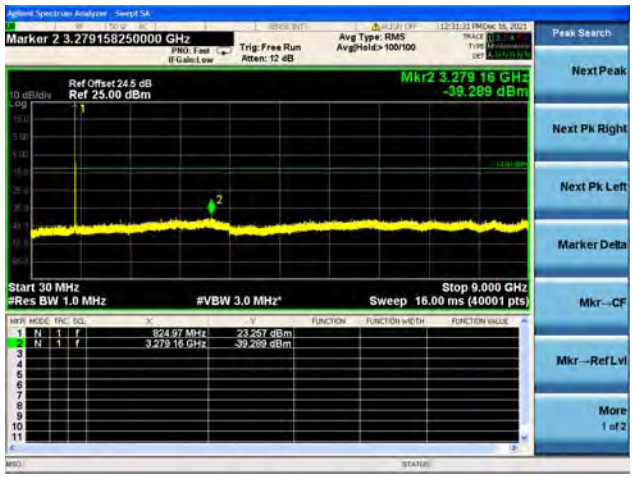
Band7 / 20MHz / High CH / 16QAM

Band7 / 20MHz / High CH / 64QAM

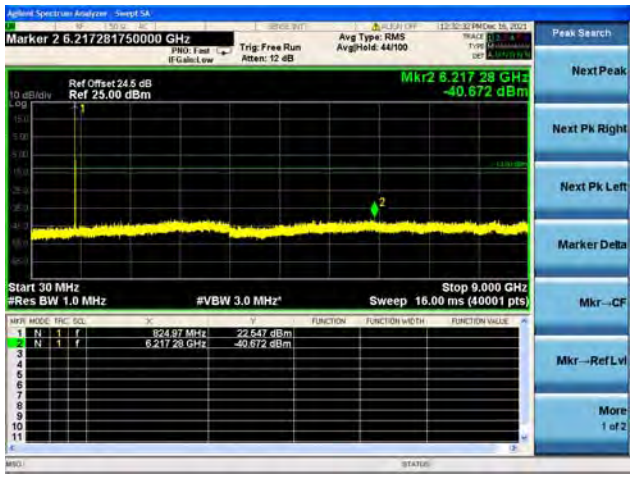


Band7 / 20MHz / High CH / 64QAM

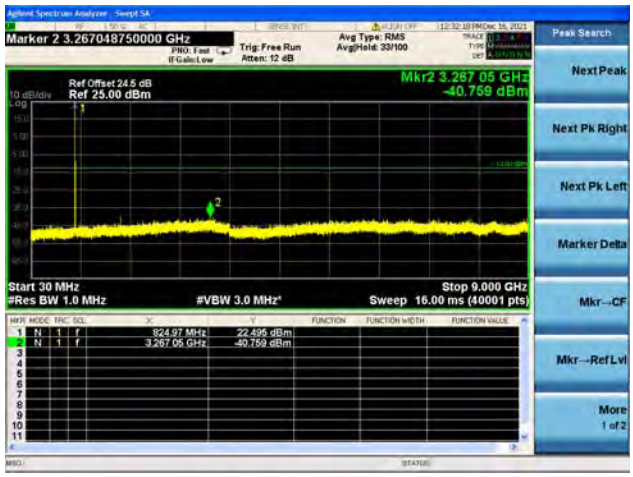
Band26 / 1.4MHz / Low CH / QPSK



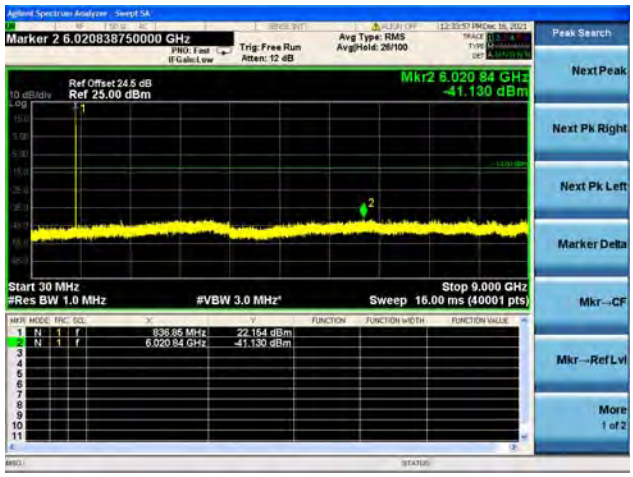
Band26 / 1.4MHz / Low CH / 16QAM



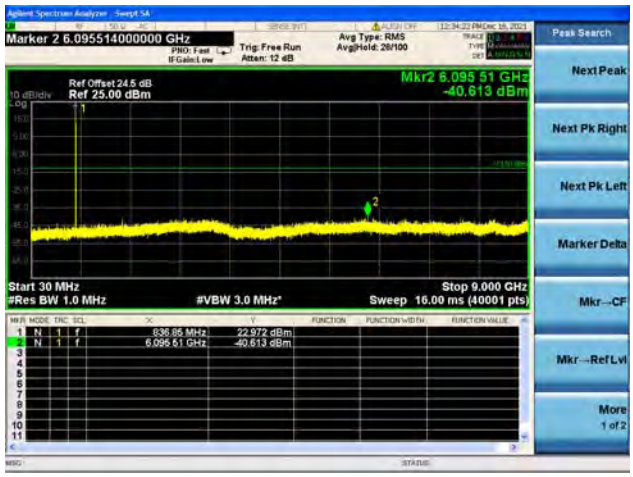
Band26 / 1.4MHz / Low CH / 64QAM



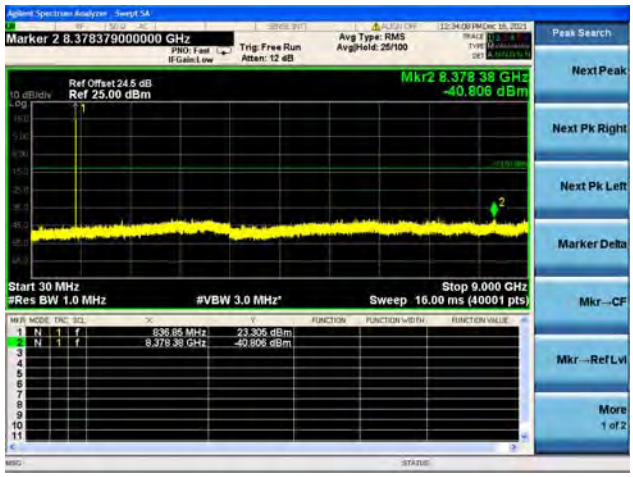
Band26 / 1.4MHz / Mid CH / QPSK



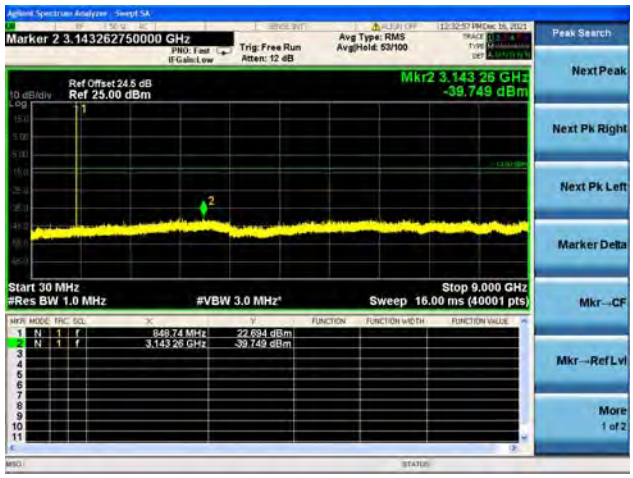
Band26 / 1.4MHz / Mid CH / 16QAM



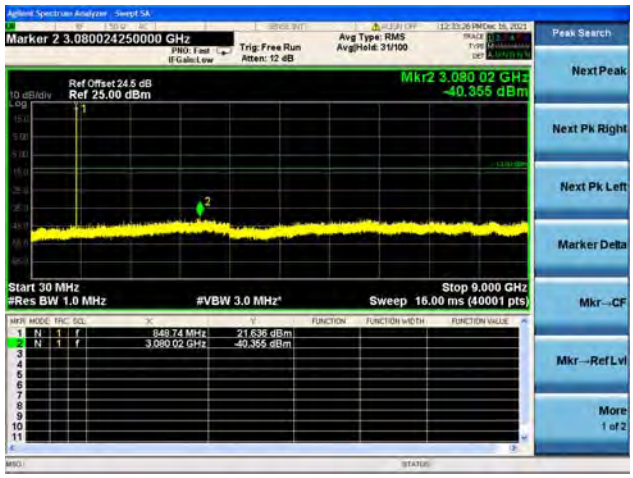
Band26 / 1.4MHz / Mid CH / 64QAM



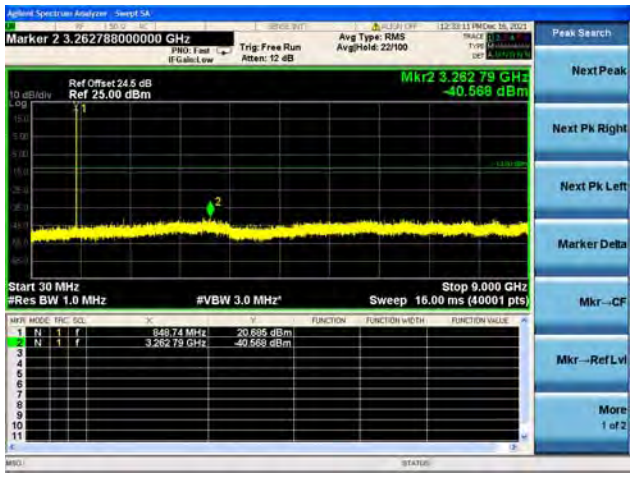
Band26 / 1.4MHz / High CH / QPSK



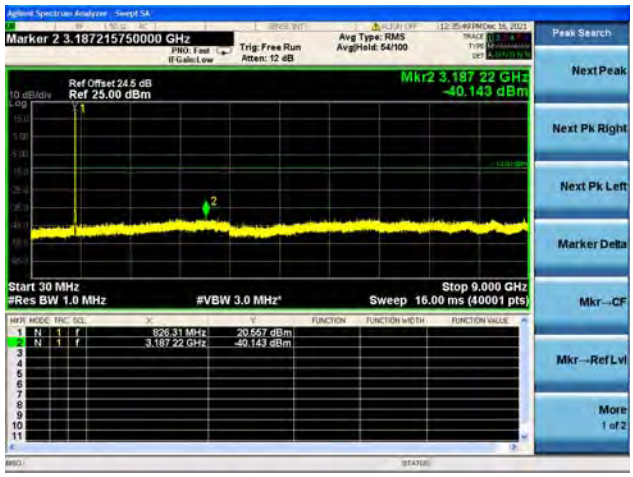
Band26 / 1.4MHz / High CH / 16QAM



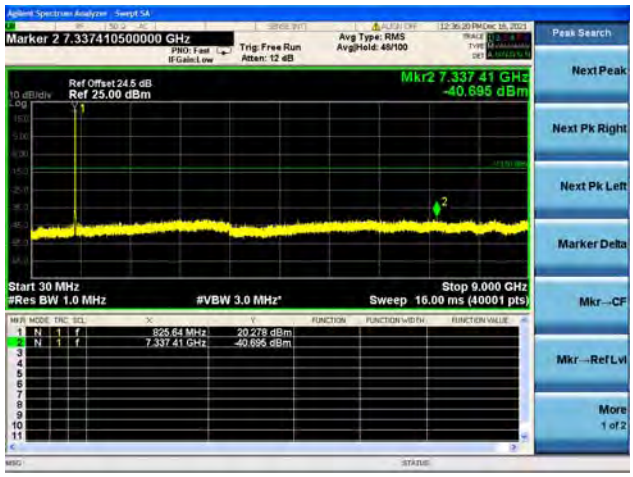
Band26 / 1.4MHz / High CH / 64QAM



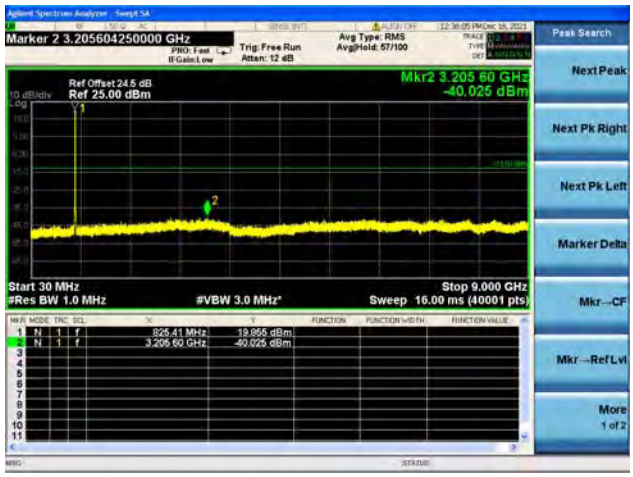
Band26 / 3MHz / Low CH / QPSK



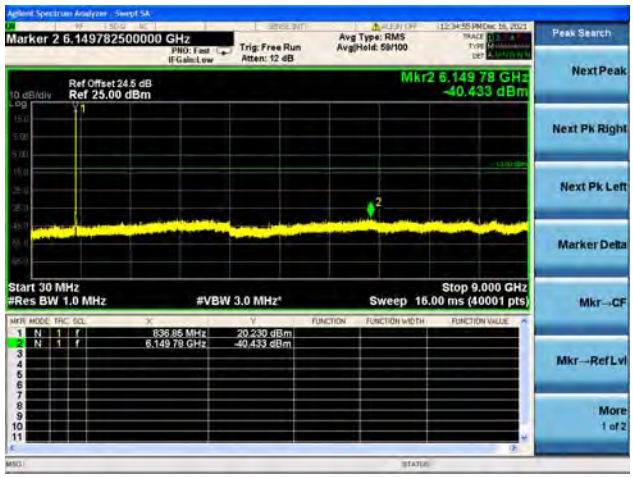
Band26 / 3MHz / Low CH / 16QAM



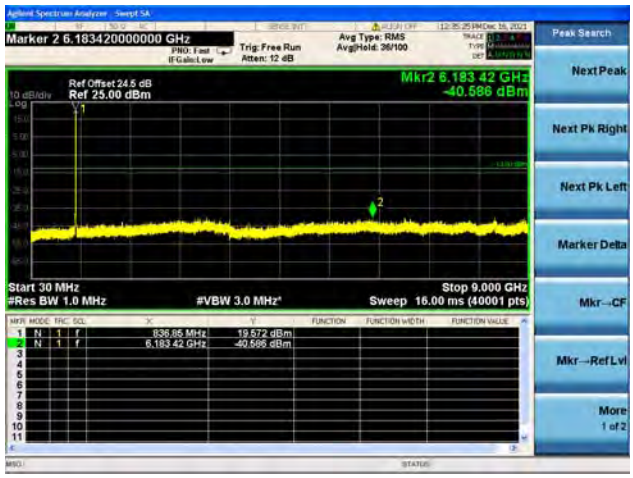
Band26 / 3MHz / Low CH / 64QAM



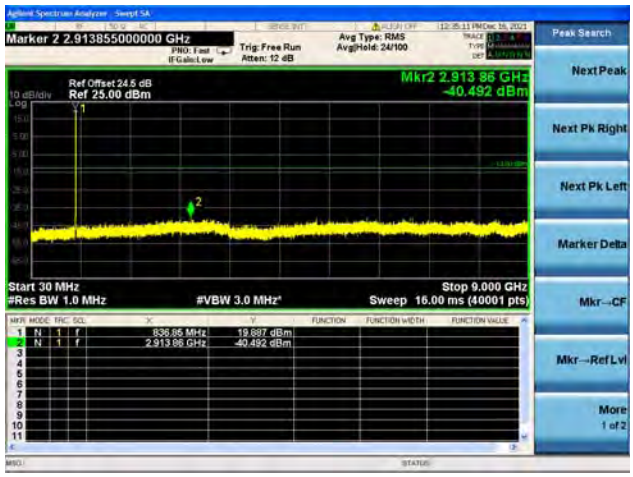
Band26 / 3MHz / Mid CH / QPSK



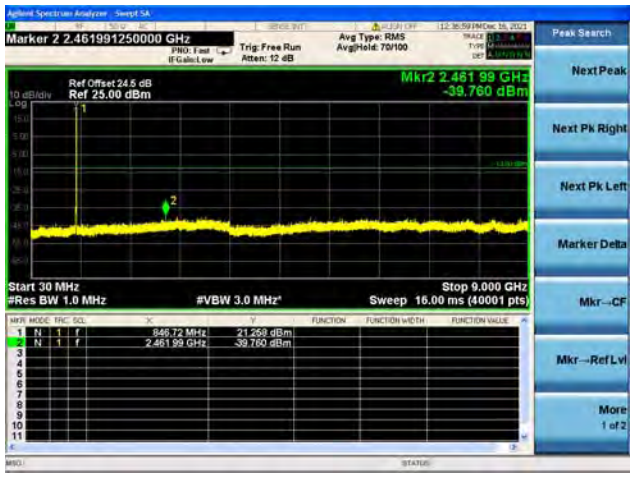
Band26 / 3MHz / Mid CH / 16QAM



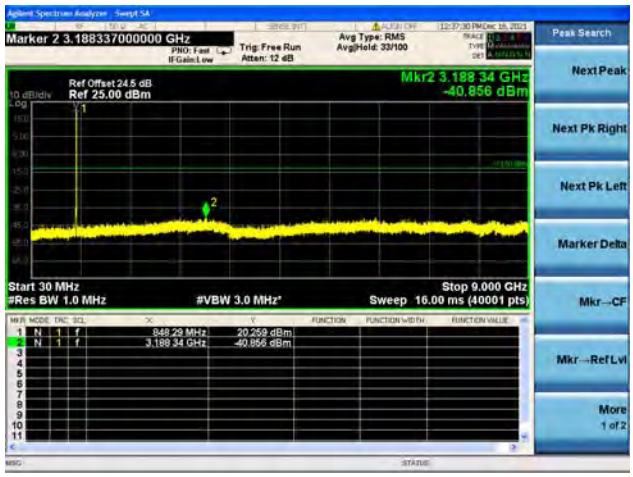
Band26 / 3MHz / Mid CH / 64QAM



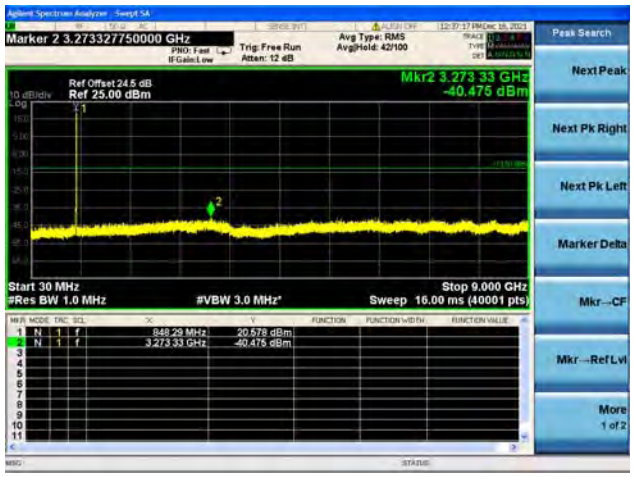
Band26 / 3MHz / High CH / QPSK



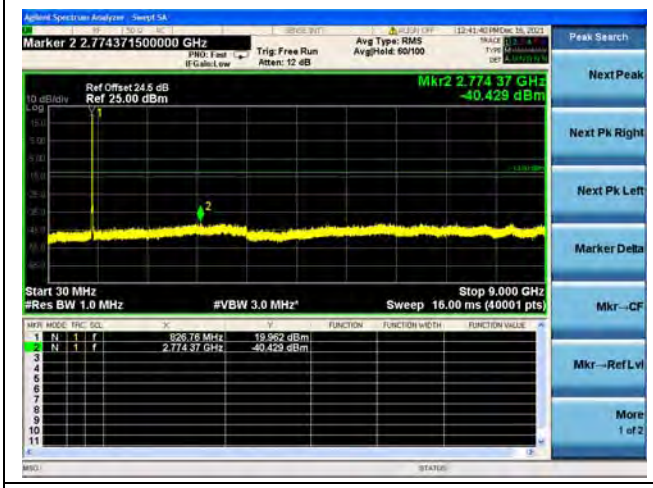
Band26 / 3MHz / High CH / 16QAM



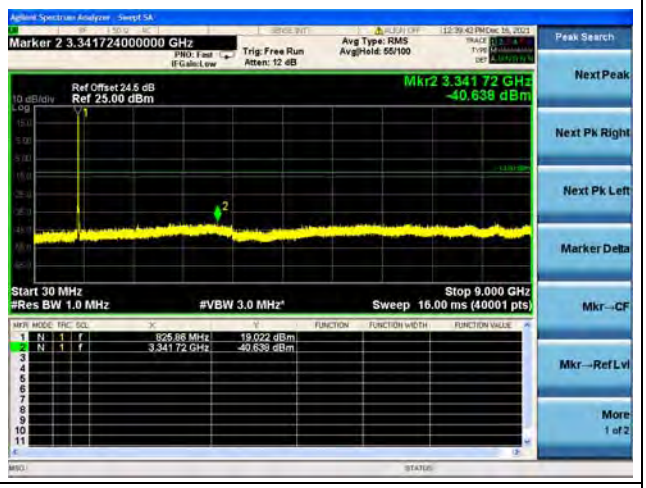
Band26 / 3MHz / High CH / 64QAM



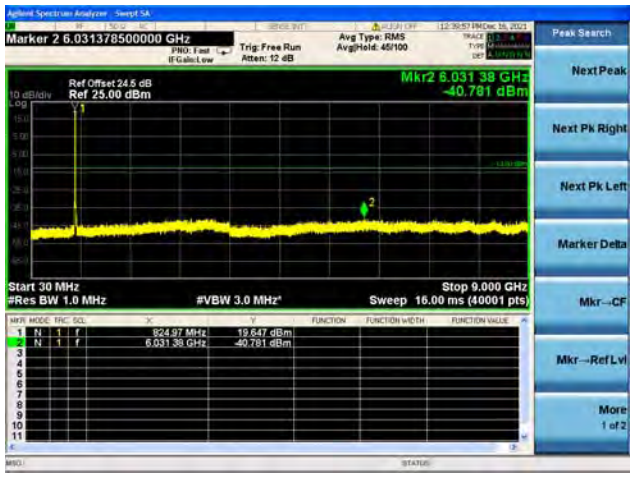
Band26 / 5MHz / Low CH / QPSK



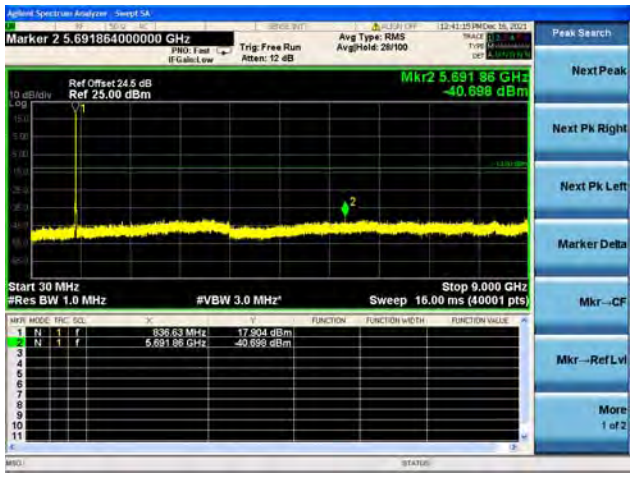
Band26 / 5MHz / Low CH / 16QAM



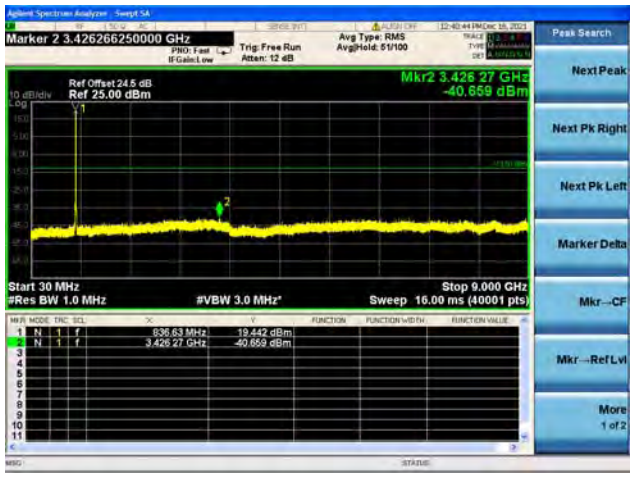
Band26 / 5MHz / Low CH / 64QAM



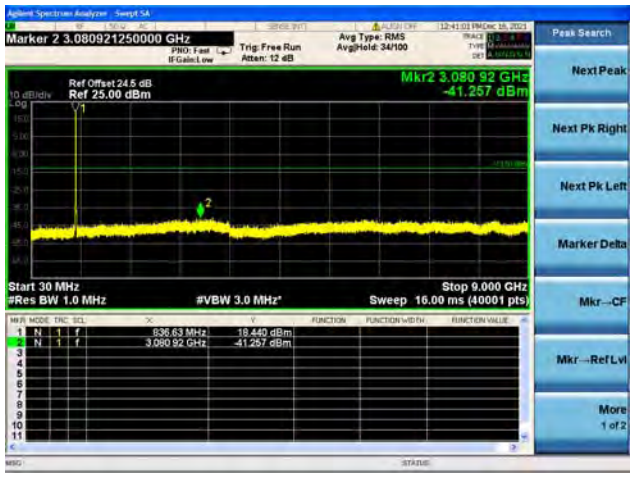
Band26 / 5MHz / Mid CH / QPSK



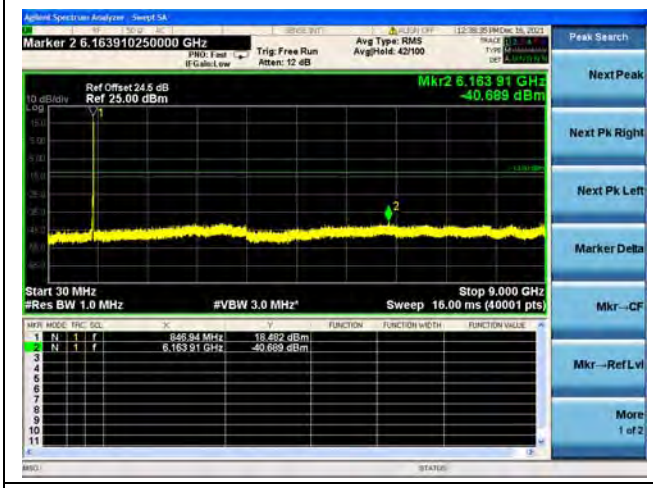
Band26 / 5MHz / Mid CH / 16QAM



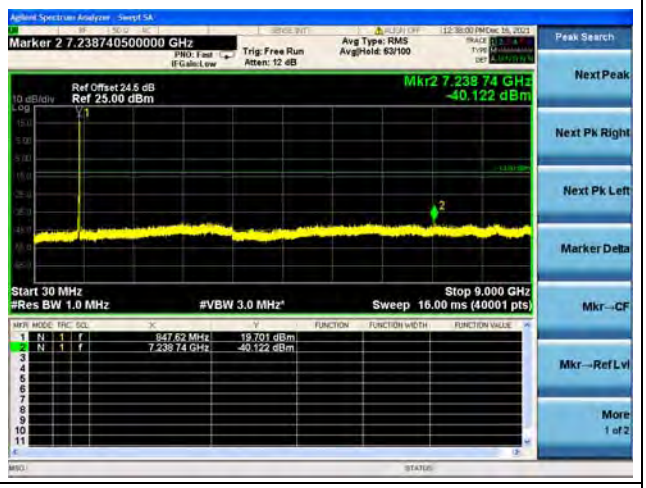
Band26 / 5MHz / Mid CH / 64QAM



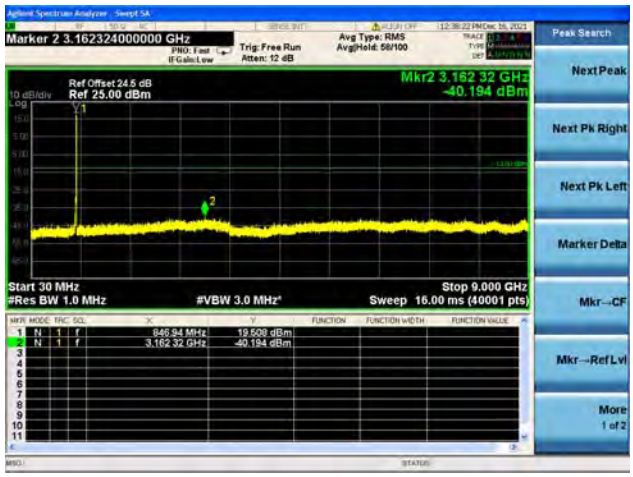
Band26 / 5MHz / High CH / QPSK



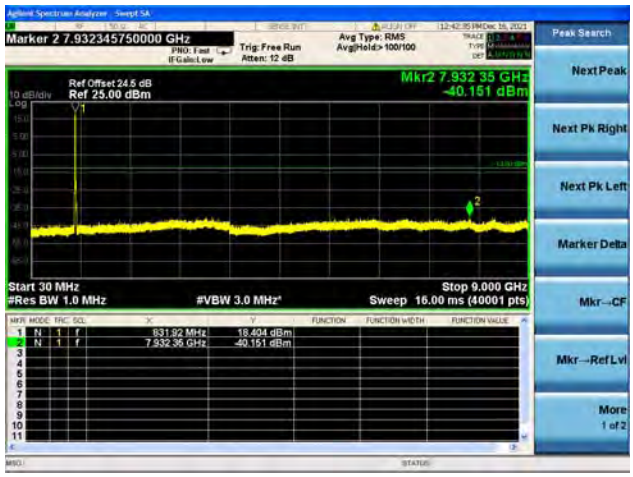
Band26 / 5MHz / High CH / 16QAM



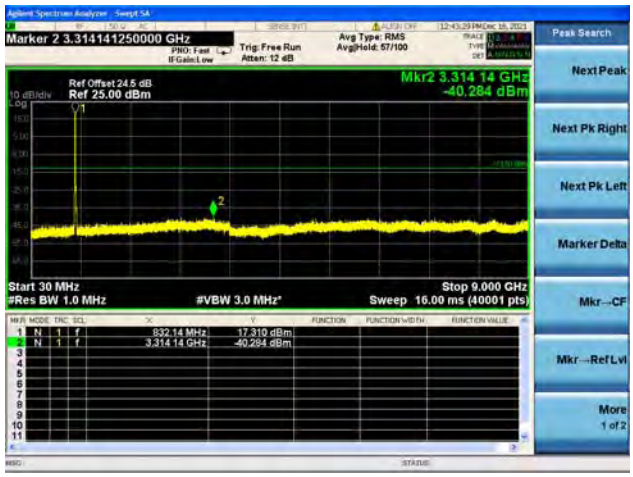
Band26 / 5MHz / High CH / 64QAM



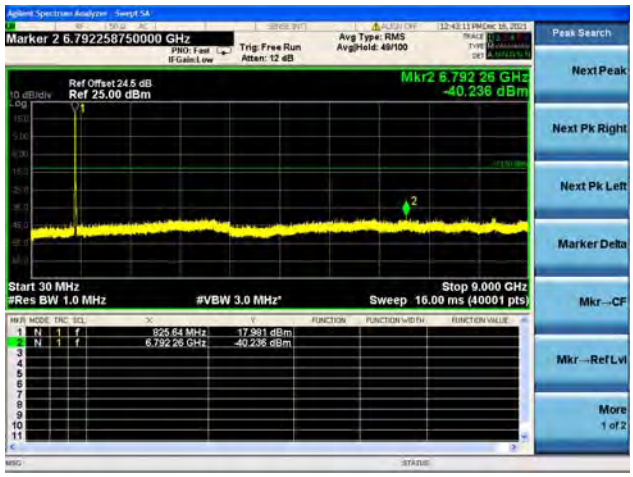
Band26 / 10MHz / Low CH / QPSK



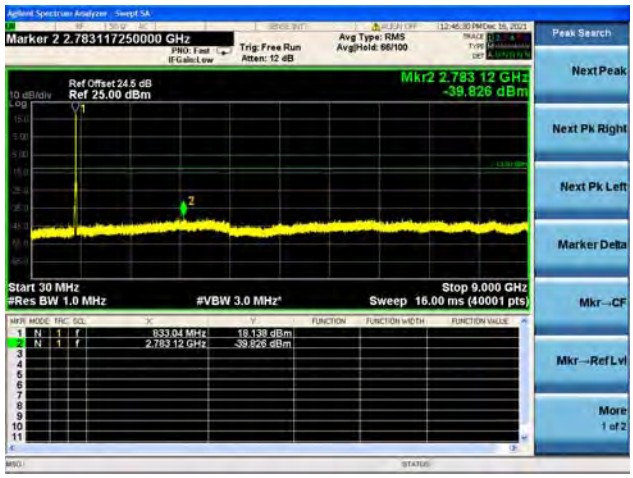
Band26 / 10MHz / Low CH / 16QAM



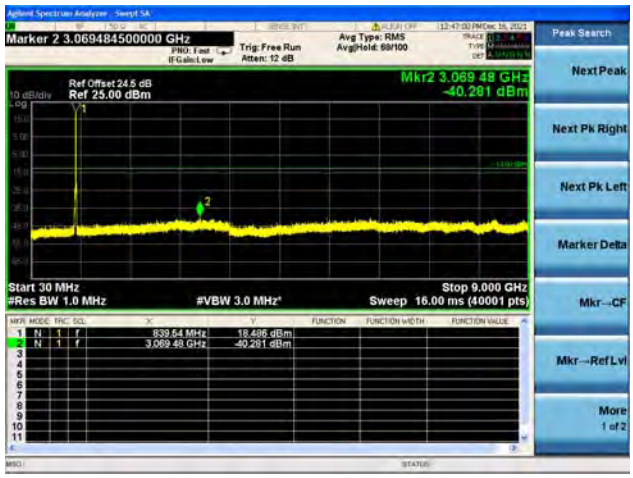
Band26 / 10MHz / Low CH / 64QAM



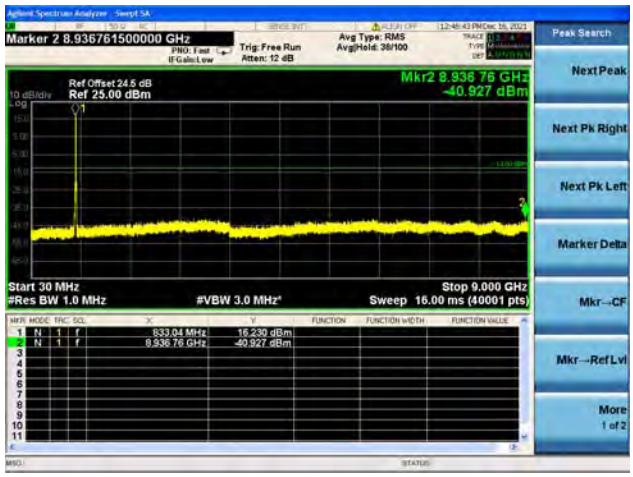
Band26 / 10MHz / Mid CH / QPSK



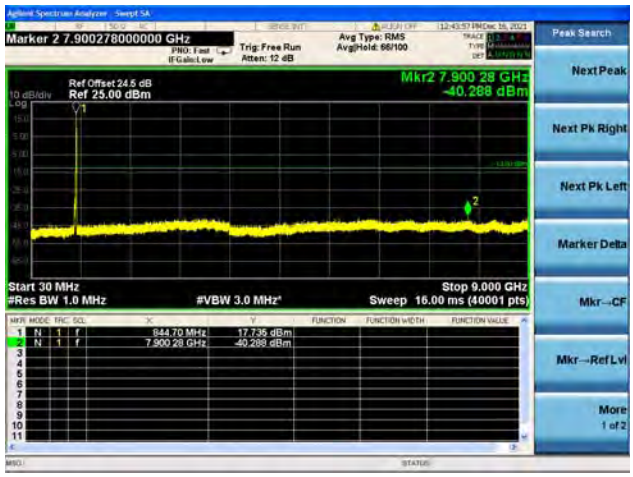
Band26 / 10MHz / Mid CH / 16QAM



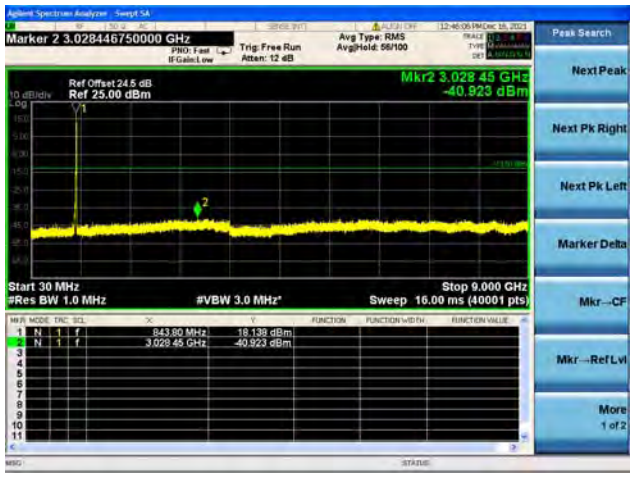
Band26 / 10MHz / Mid CH / 64QAM



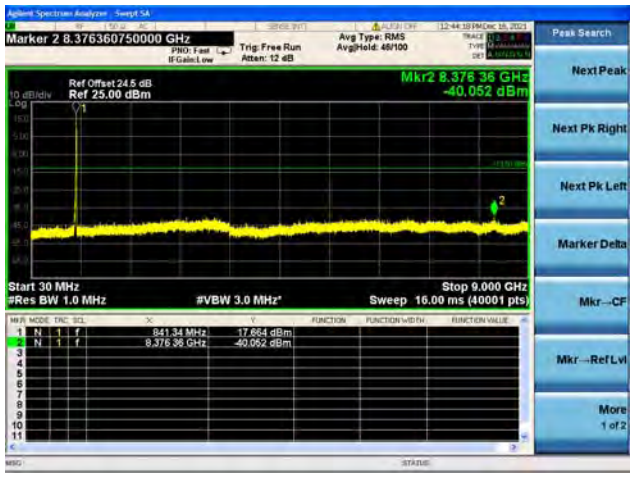
Band26 / 10MHz / High CH / QPSK



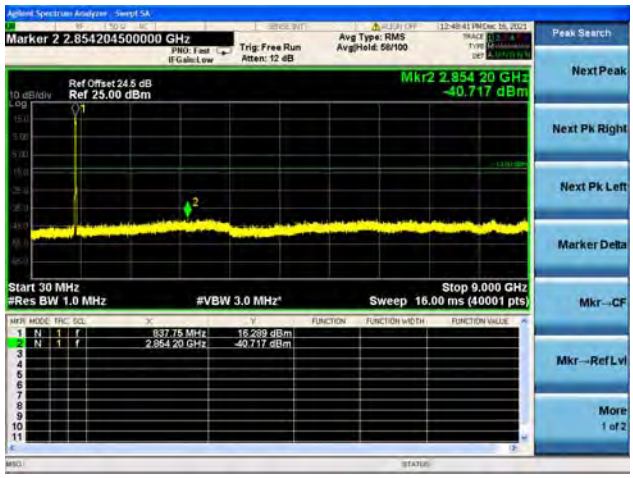
Band26 / 10MHz / High CH / 16QAM



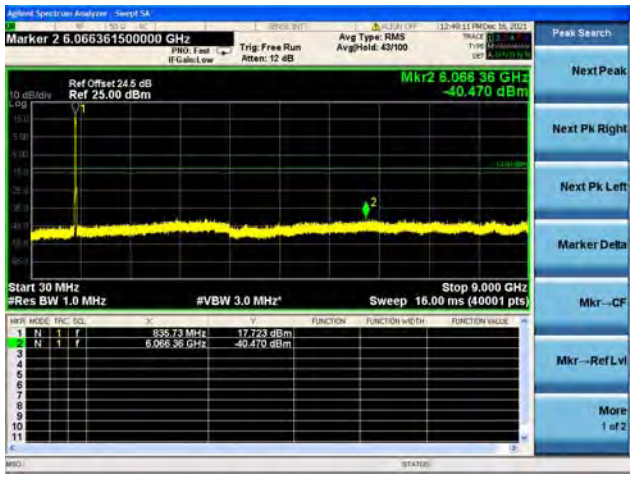
Band26 / 10MHz / High CH / 64QAM



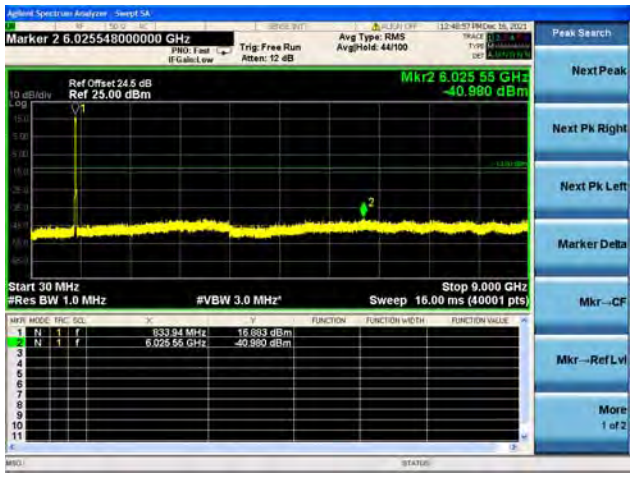
Band26 / 15MHz / Low CH / QPSK



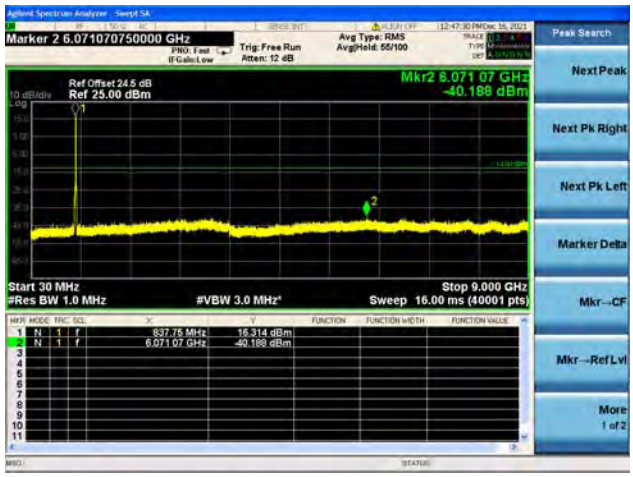
Band26 / 15MHz / Low CH / 16QAM



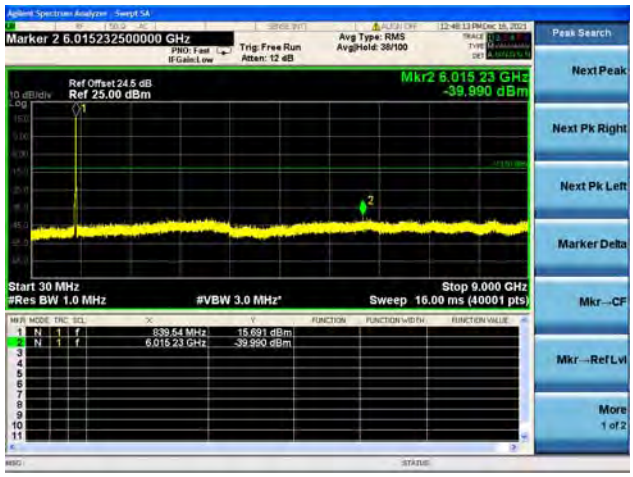
Band26 / 15MHz / Low CH / 64QAM



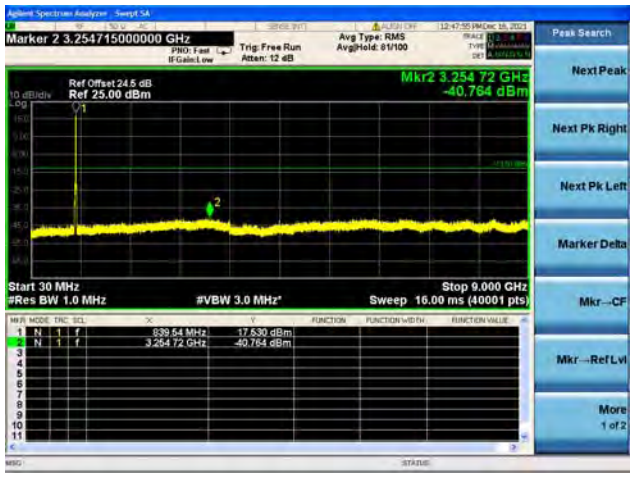
Band26 / 15MHz / Mid CH / QPSK



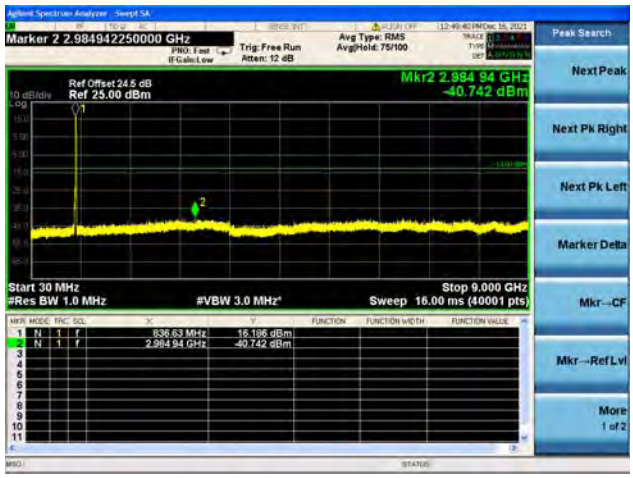
Band26 / 15MHz / Mid CH / 16QAM



Band26 / 15MHz / Mid CH / 64QAM

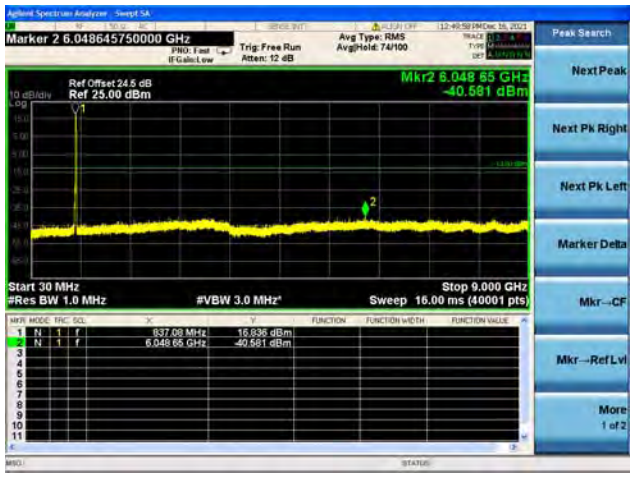


Band26 / 15MHz / High CH / QPSK

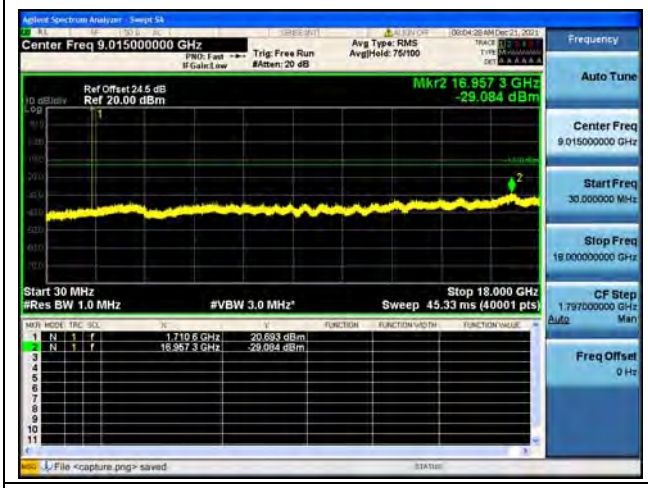


Band26 / 15MHz / High CH / 16QAM

Band26 / 15MHz / High CH / 64QAM



Band66 / 1.4MHz / Low CH / QPSK



Band66 / 1.4MHz / Low CH / 16QAM

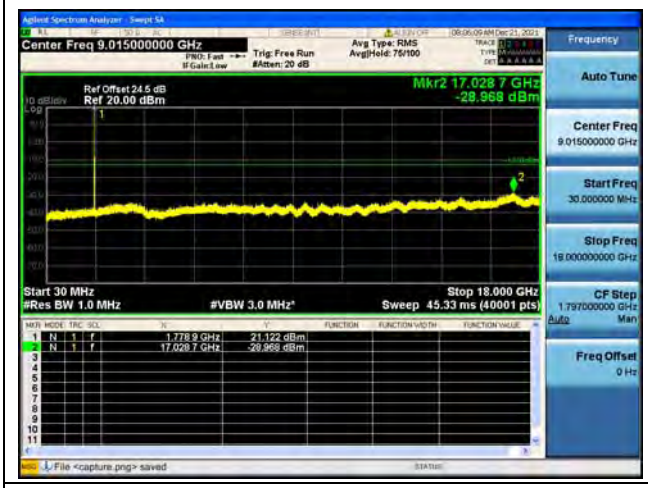
Band66 / 1.4MHz / Low CH / 64QAM

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

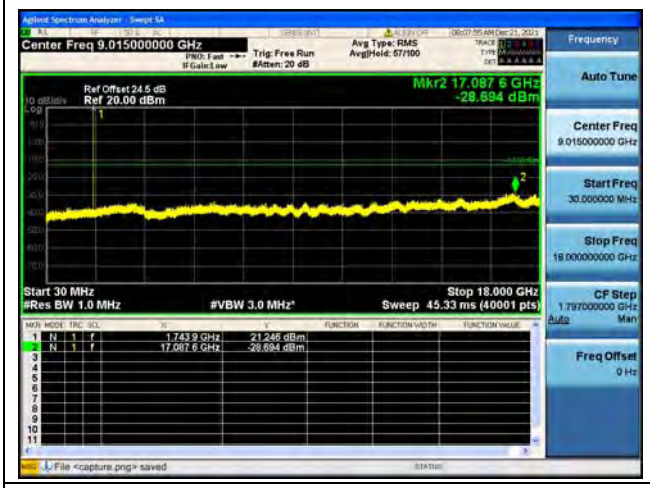
Band66 / 1.4MHz / High CH / 64QAM

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

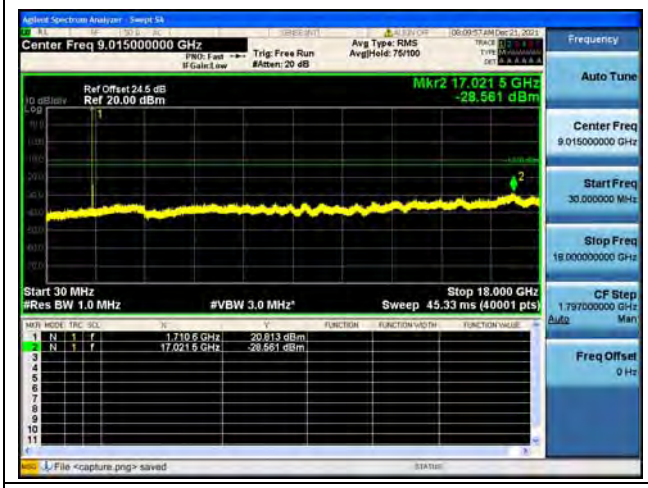
Band66 / 3MHz / Mid CH / 64QAM

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

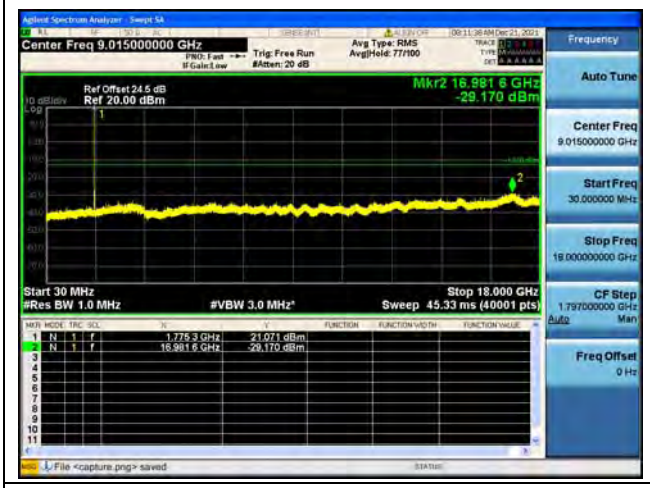
Band66 / 5MHz / Low CH / 64QAM

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

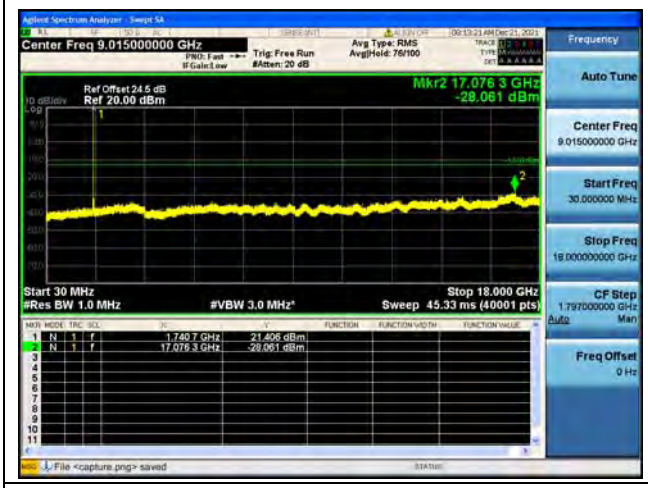
Band66 / 5MHz / High CH / 64QAM

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

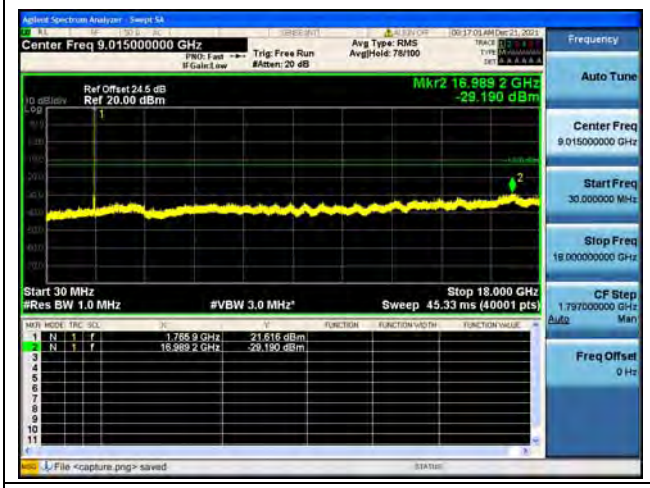
Band66 / 15MHz / Low CH / 64QAM

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

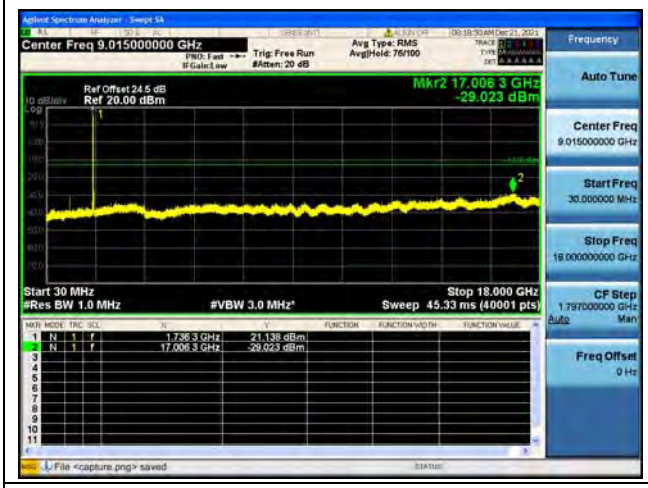
Band66 / 15MHz / High CH / 64QAM

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, 25

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, 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 7

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 12, 71

According to FCC section 27.53(g), 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 13

According to FCC section 27.53(c)(2), any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Band 30

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;

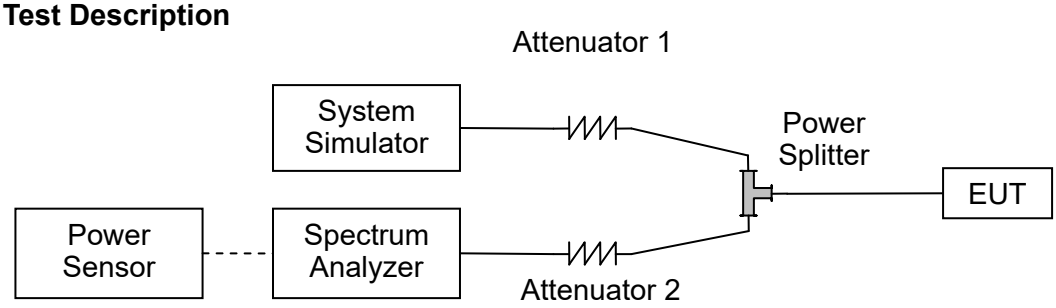
(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

Band 41

According to FCC section 27.53(l)(2), 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, based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center

frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

2.6.2. Test Description



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

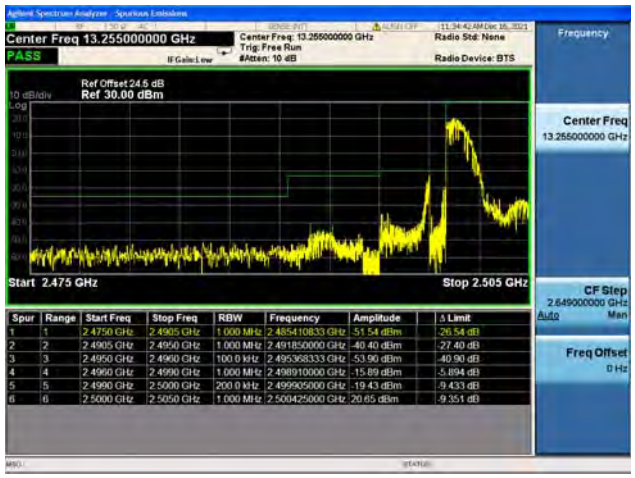
Band5 / 10MHz / Low CH / QPSK / 1 RB

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

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

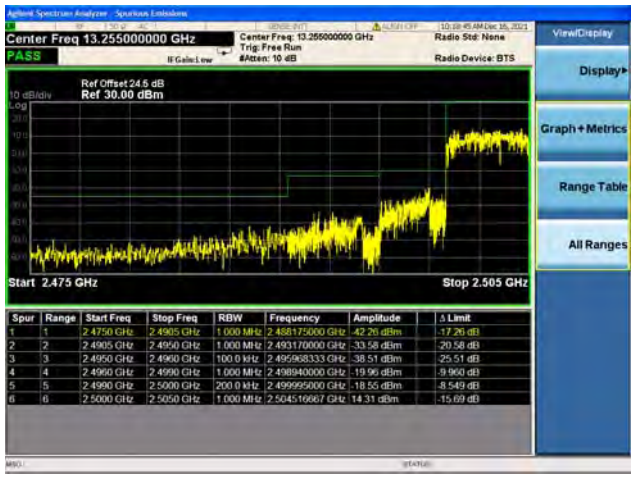
Band5 / 10MHz / High CH / QPSK / FULL RB

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



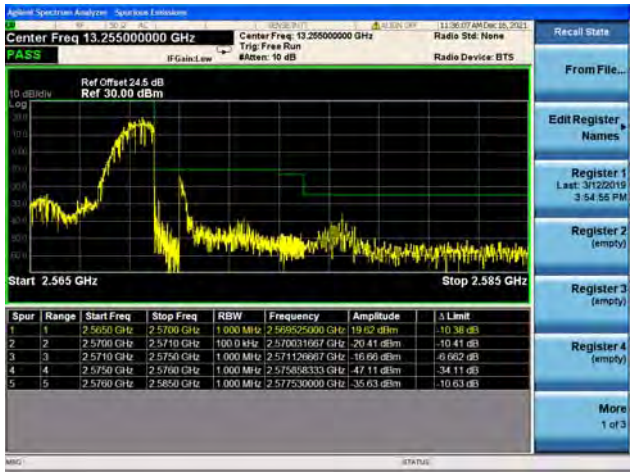
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.485410833 GHz	-51.54 dBm	-26.54 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.491850000 GHz	-40.40 dBm	-27.40 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495368333 GHz	-53.90 dBm	-40.90 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498910000 GHz	-15.89 dBm	-5.894 dB
5	5	2.4990 GHz	2.5000 GHz	200.0 kHz	2.499905000 GHz	-19.43 dBm	-9.433 dB
6	6	2.5000 GHz	2.5050 GHz	1.000 MHz	2.500425000 GHz	20.65 dBm	-9.351 dB

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



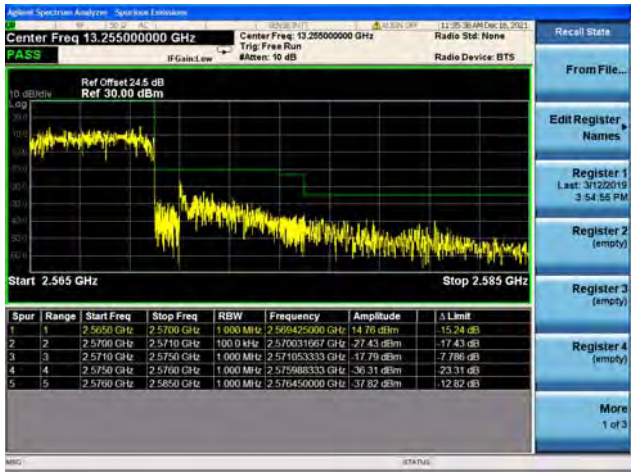
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.488175000 GHz	-42.26 dBm	-17.26 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493170000 GHz	-33.58 dBm	-20.58 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495968333 GHz	-38.51 dBm	-25.51 dB
4	4	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498940000 GHz	-19.96 dBm	-9.960 dB
5	5	2.4990 GHz	2.5000 GHz	200.0 kHz	2.499995000 GHz	-18.55 dBm	-8.549 dB
6	6	2.5000 GHz	2.5050 GHz	1.000 MHz	2.504516667 GHz	14.31 dBm	-15.69 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	2.569525000 GHz	19.62 dBm	-10.38 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570031667 GHz	-20.41 dBm	-10.41 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571126667 GHz	-16.66 dBm	-6.662 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575858333 GHz	-47.11 dBm	-34.11 dB
5	5	2.5760 GHz	2.5850 GHz	1.000 MHz	2.577530000 GHz	-35.63 dBm	-10.63 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	2.569425000 GHz	14.76 dBm	-15.24 dB
2	2	2.5700 GHz	2.5710 GHz	100.0 kHz	2.570031667 GHz	-27.43 dBm	-17.43 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571053333 GHz	-17.79 dBm	-7.786 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575988333 GHz	-36.31 dBm	-23.31 dB
5	5	2.5760 GHz	2.5850 GHz	1.000 MHz	2.576450000 GHz	-37.82 dBm	-12.82 dB