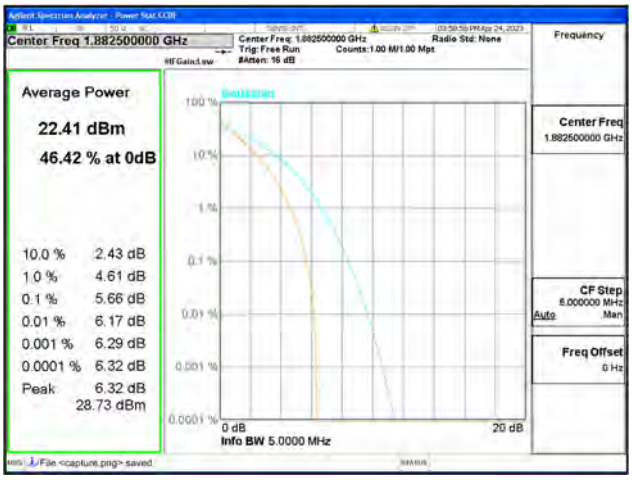
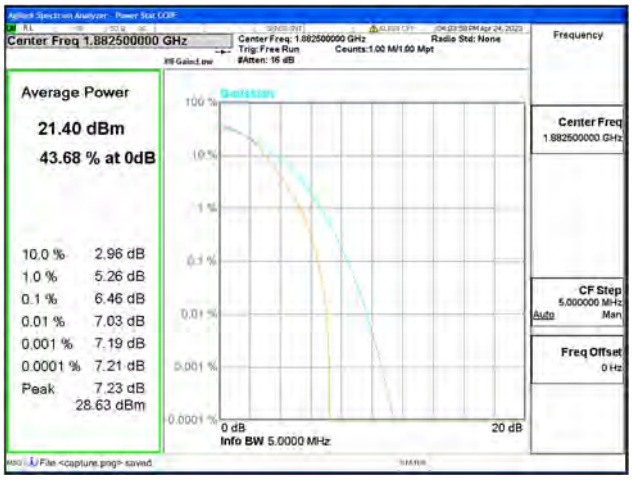
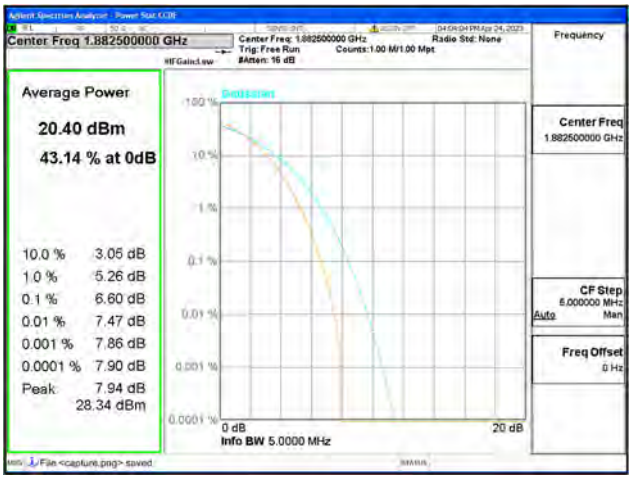


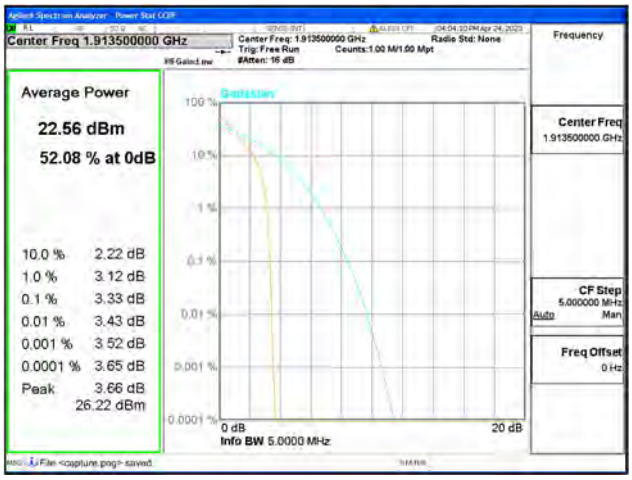
Band25 / 3MHz / Mid CH / QPSK



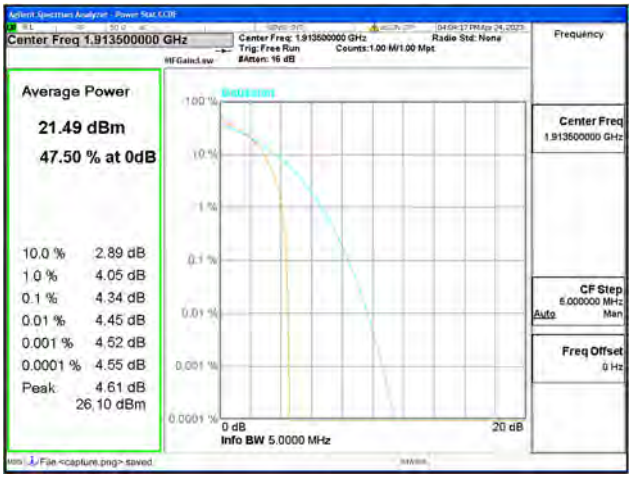
Band25 / 3MHz / Mid CH / 16QAM



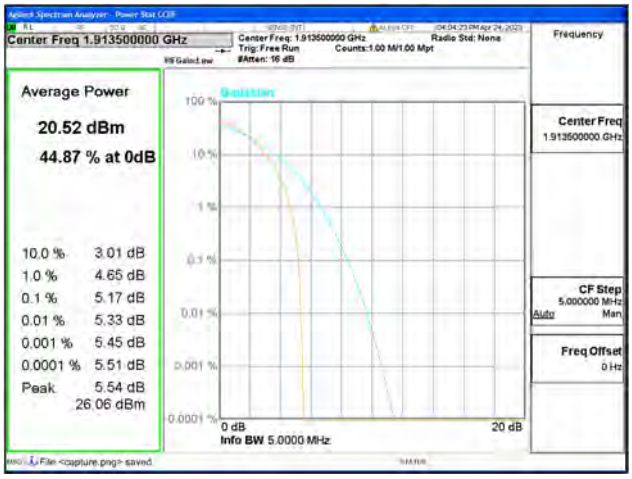
Band25 / 3MHz / Mid CH / 64QAM



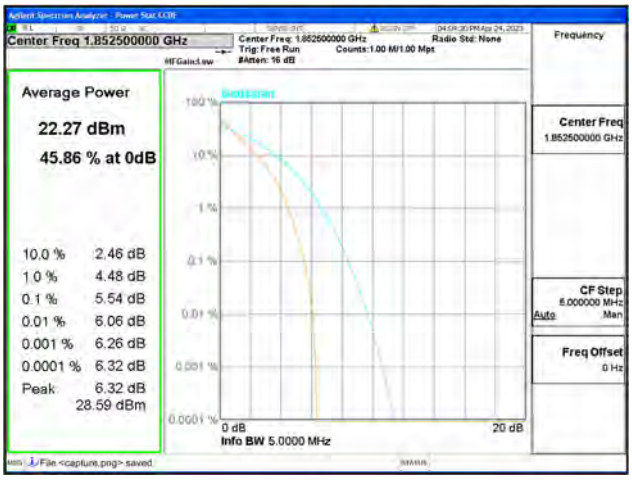
Band25 / 3MHz / High CH / QPSK



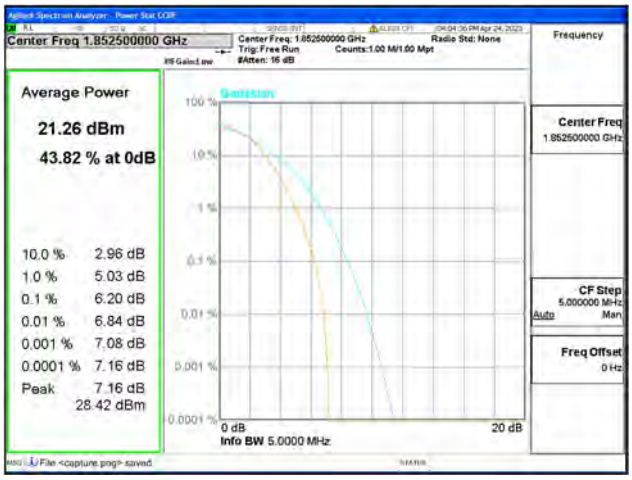
Band25 / 3MHz / High CH / 16QAM



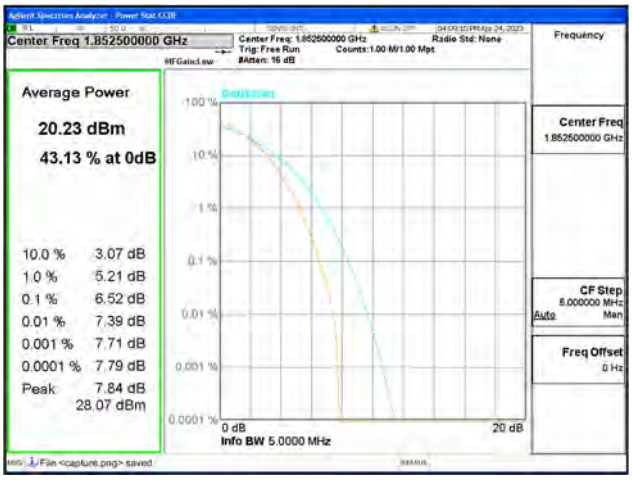
Band25 / 3MHz / High CH / 64QAM



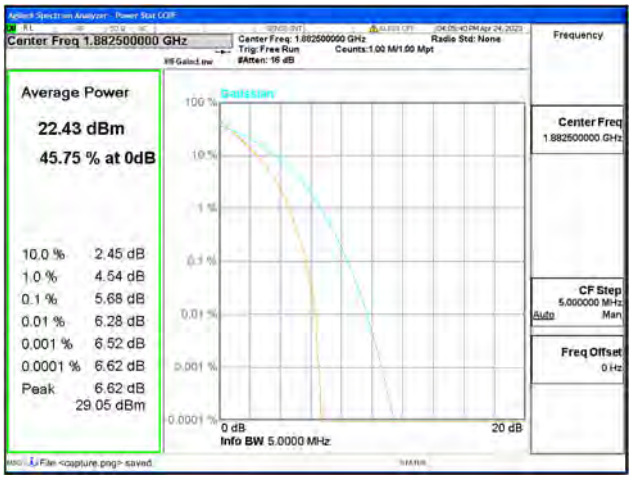
Band25 / 5MHz / Low CH / QPSK



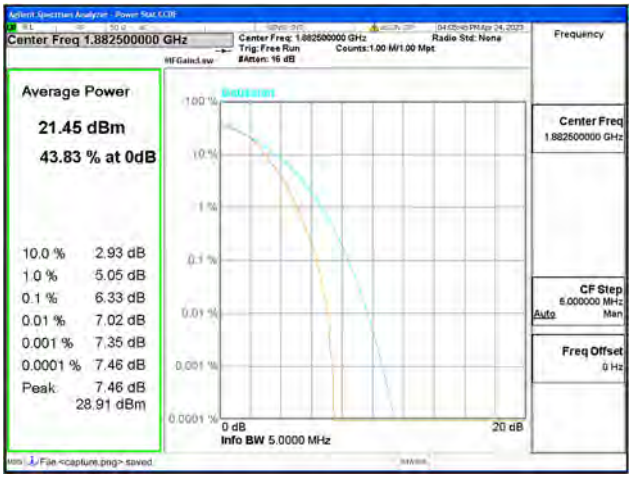
Band25 / 5MHz / Low CH / 16QAM



Band25 / 5MHz / Low CH / 64QAM

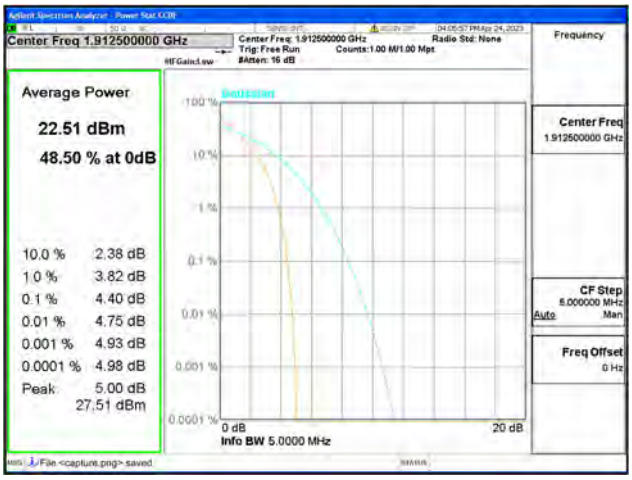


Band25 / 5MHz / Mid CH / QPSK



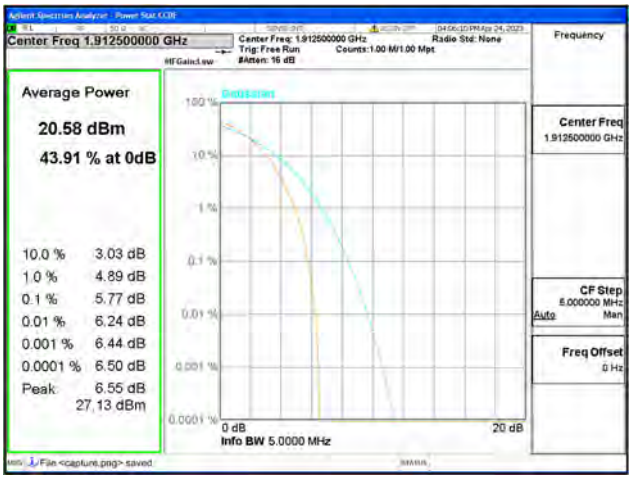
Band25 / 5MHz / Mid CH / 16QAM

Band25 / 5MHz / Mid CH / 64QAM

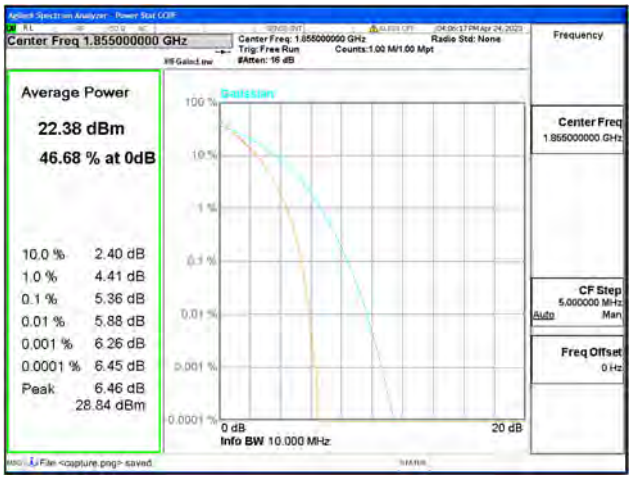


Band25 / 5MHz / High CH / QPSK

Band25 / 5MHz / High CH / 16QAM

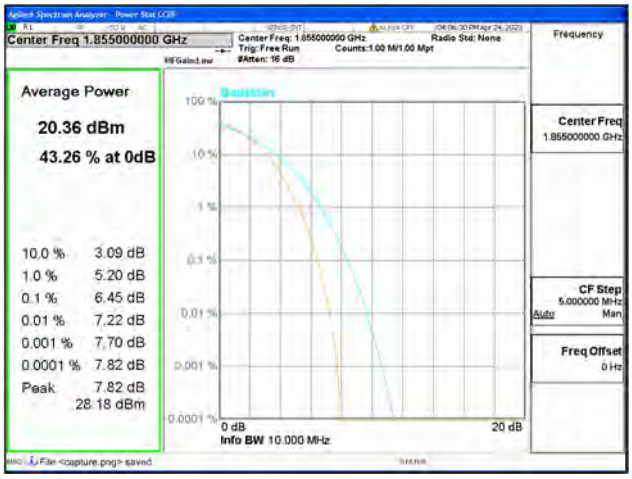


Band25 / 5MHz / High CH / 64QAM

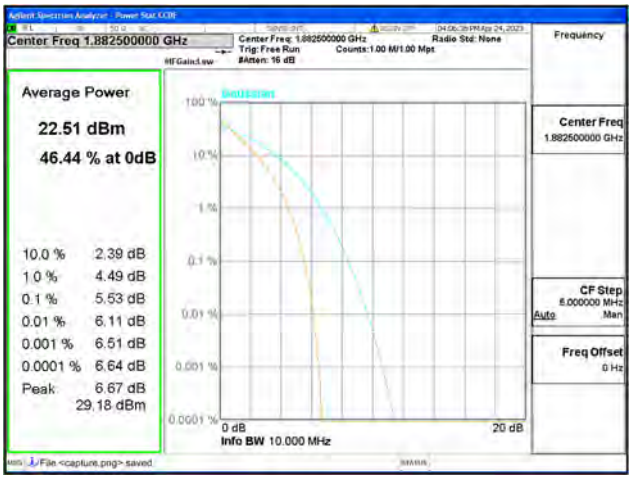


Band25 / 10MHz / Low CH / QPSK

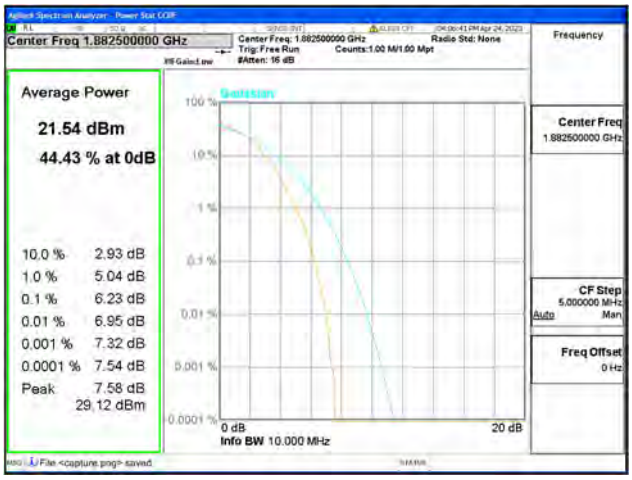
Band25 / 10MHz / Low CH / 16QAM



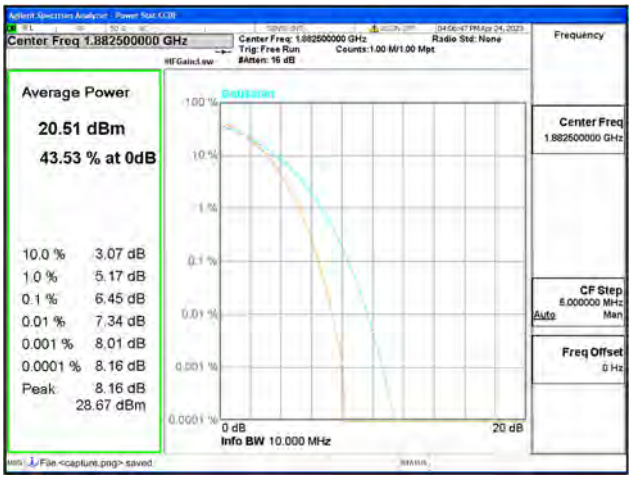
Band25 / 10MHz / Low CH / 64QAM



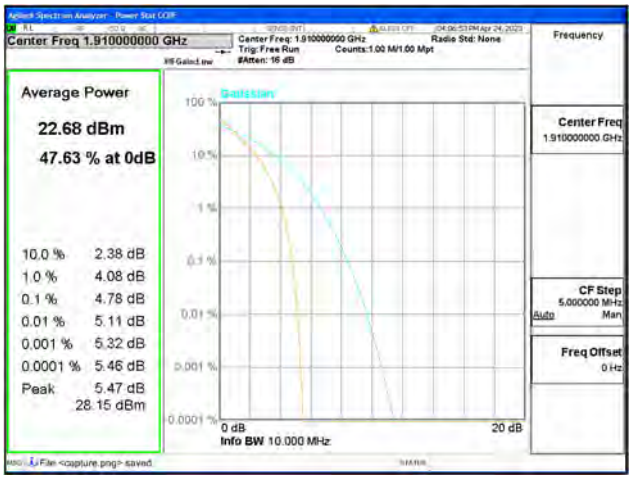
Band25 / 10MHz / Mid CH / QPSK



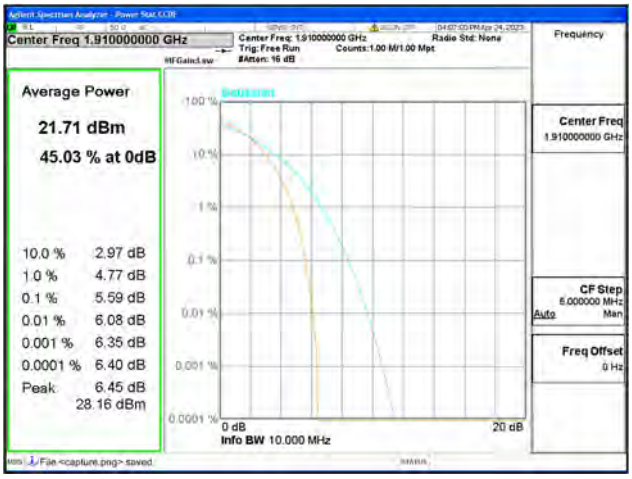
Band25 / 10MHz / Mid CH / 16QAM



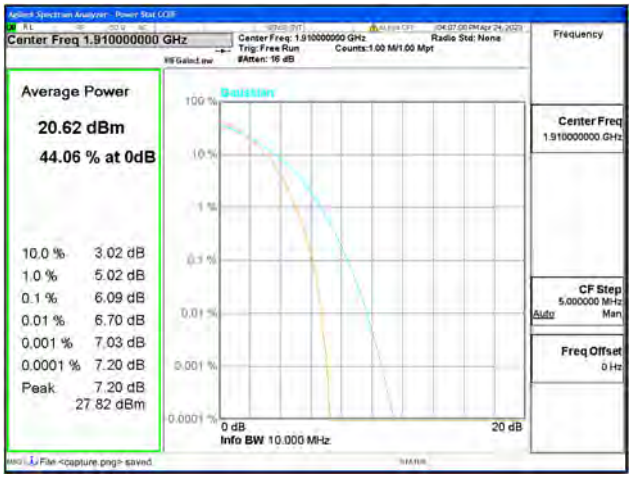
Band25 / 10MHz / Mid CH / 64QAM



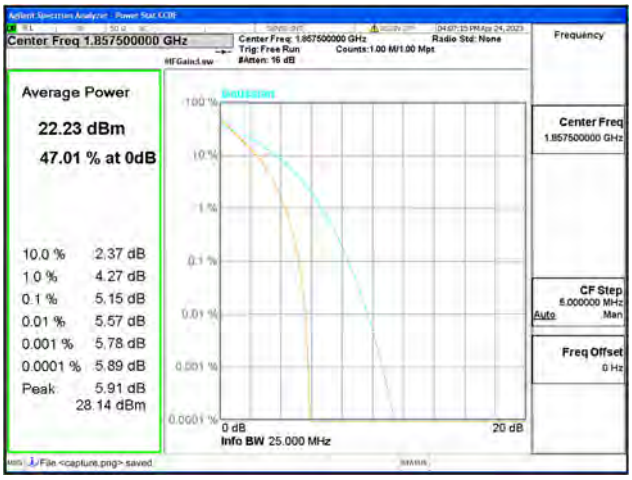
Band25 / 10MHz / High CH / QPSK



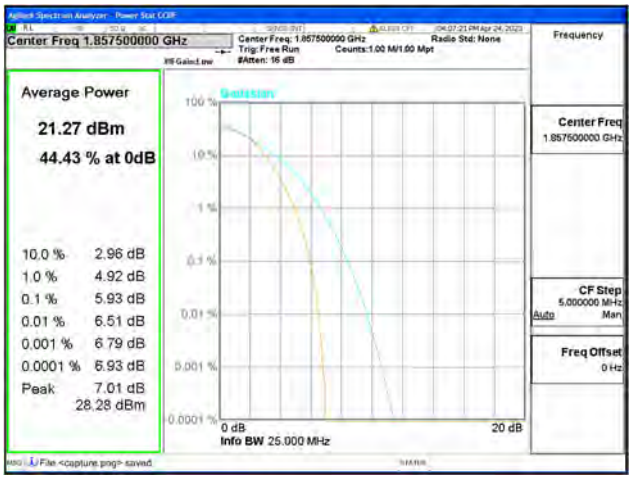
Band25 / 10MHz / High CH / 16QAM



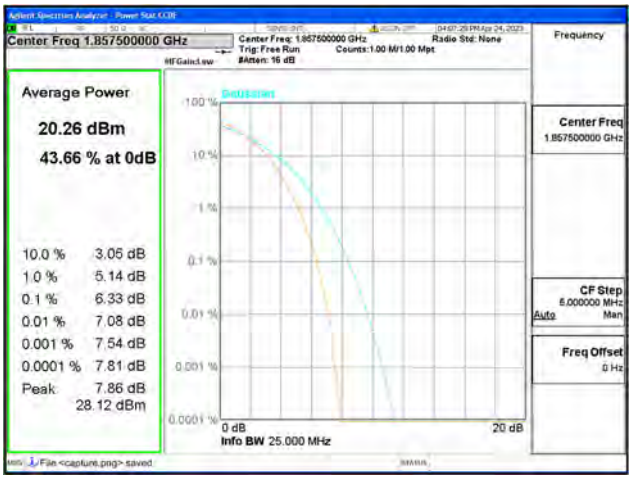
Band25 / 10MHz / High CH / 64QAM



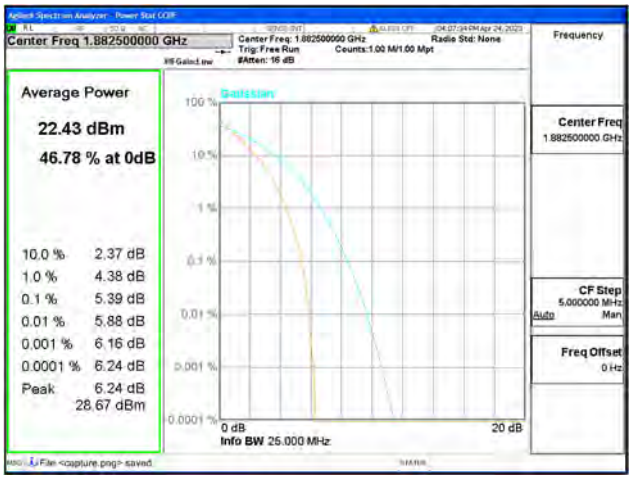
Band25 / 15MHz / Low CH / QPSK



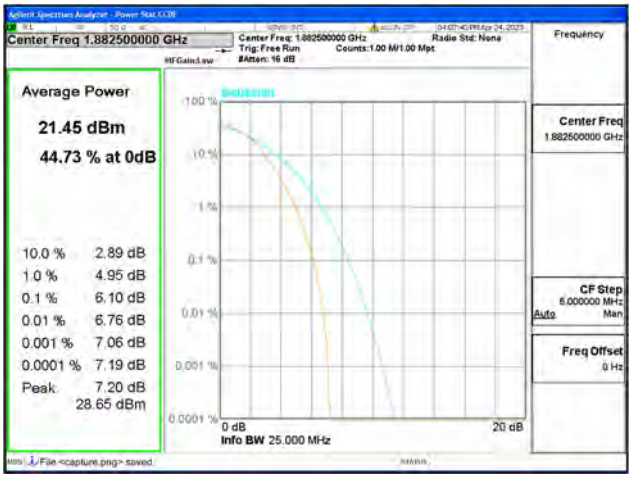
Band25 / 15MHz / Low CH / 16QAM



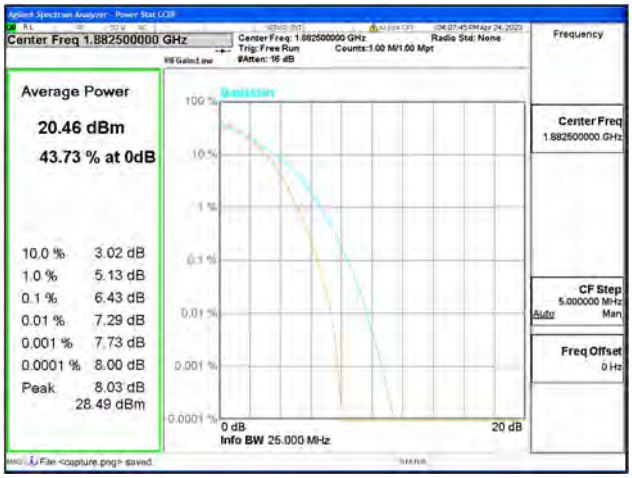
Band25 / 15MHz / Low CH / 64QAM



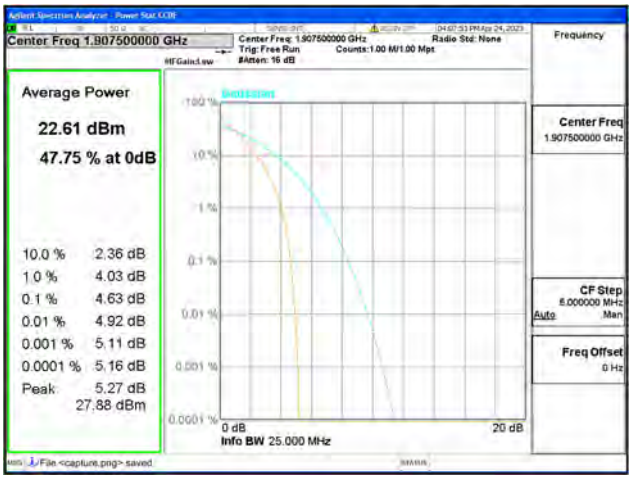
Band25 / 15MHz / Mid CH / QPSK



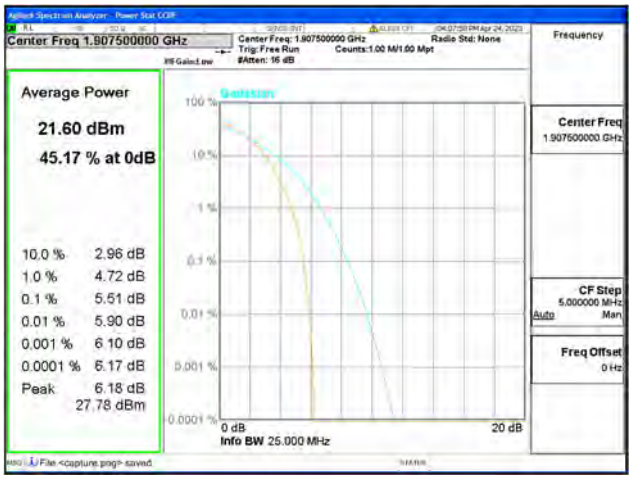
Band25 / 15MHz / Mid CH / 16QAM



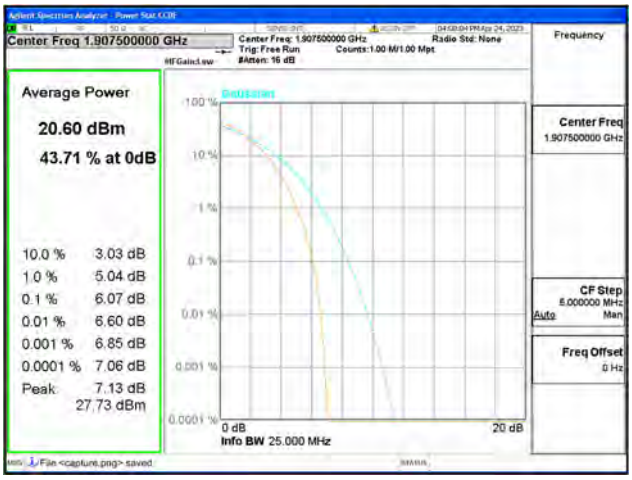
Band25 / 15MHz / Mid CH / 64QAM



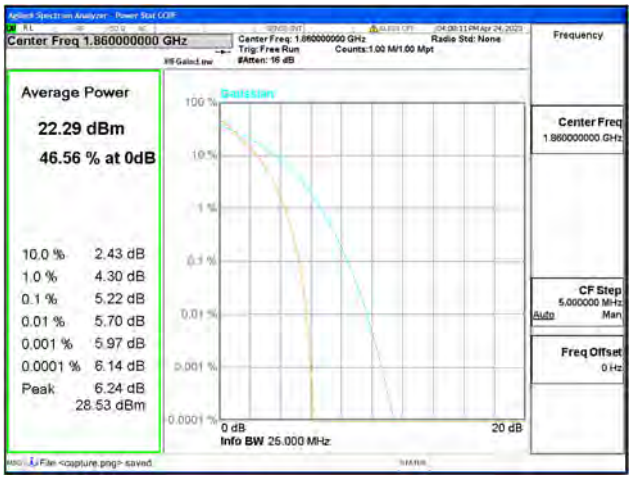
Band25 / 15MHz / High CH / QPSK



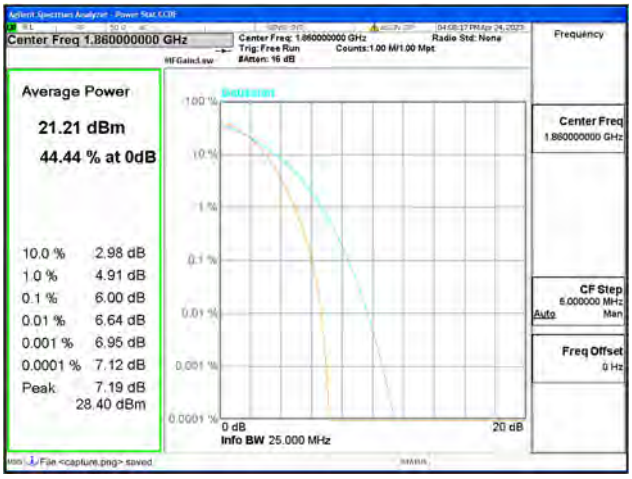
Band25 / 15MHz / High CH / 16QAM



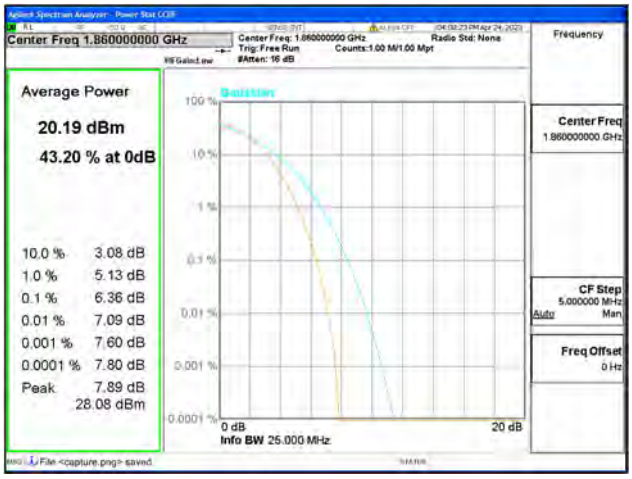
Band25 / 15MHz / High CH / 64QAM



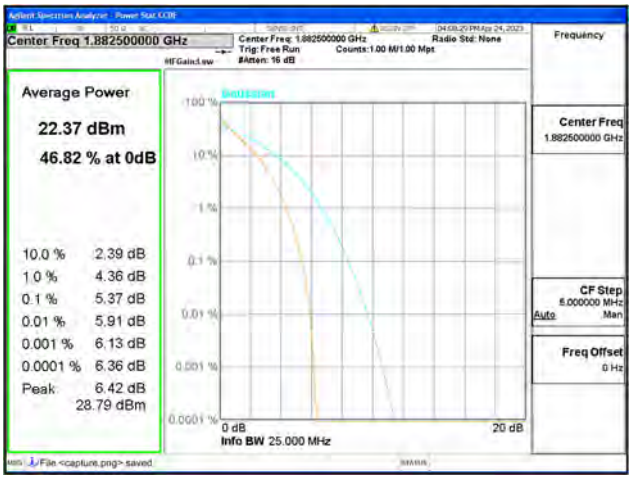
Band25 / 20MHz / Low CH / QPSK



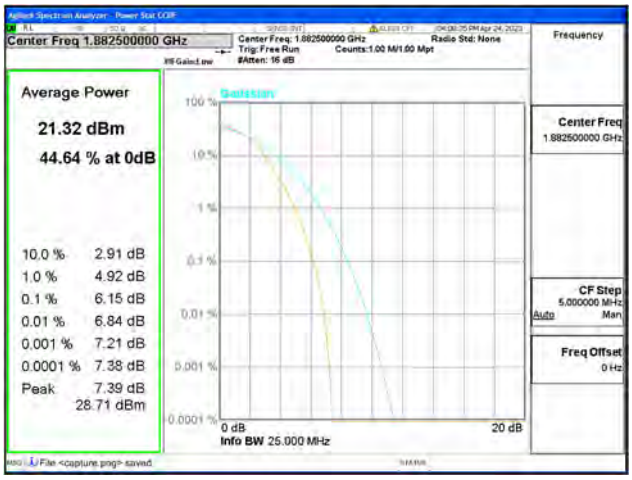
Band25 / 20MHz / Low CH / 16QAM



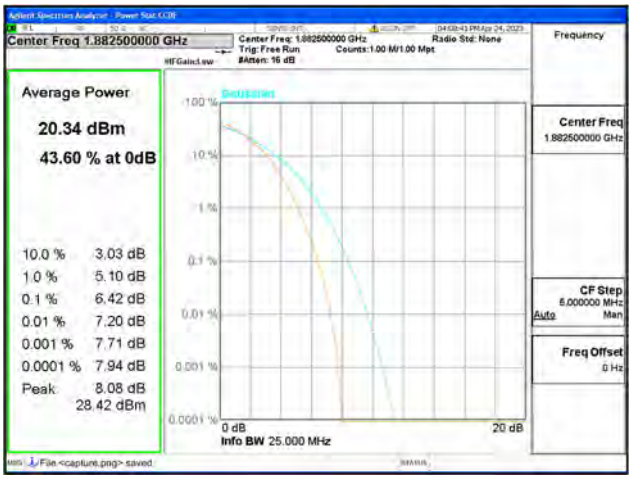
Band25 / 20MHz / Low CH / 64QAM



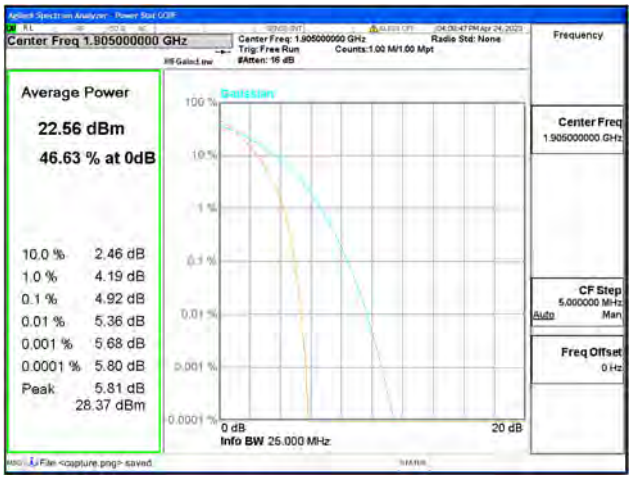
Band25 / 20MHz / Mid CH / QPSK



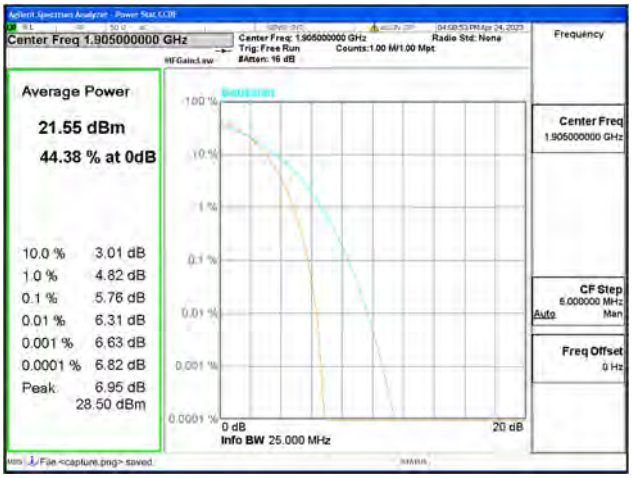
Band25 / 20MHz / Mid CH / 16QAM



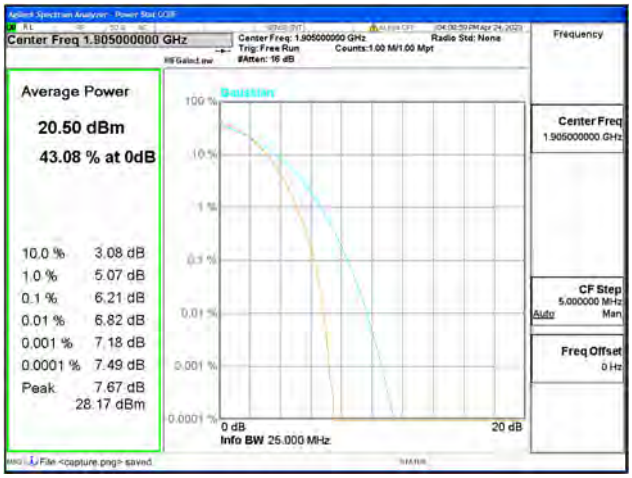
Band25 / 20MHz / Mid CH / 64QAM



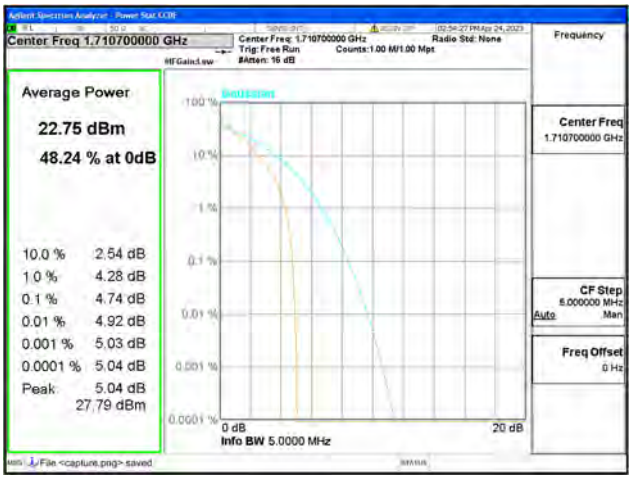
Band25 / 20MHz / High CH / QPSK



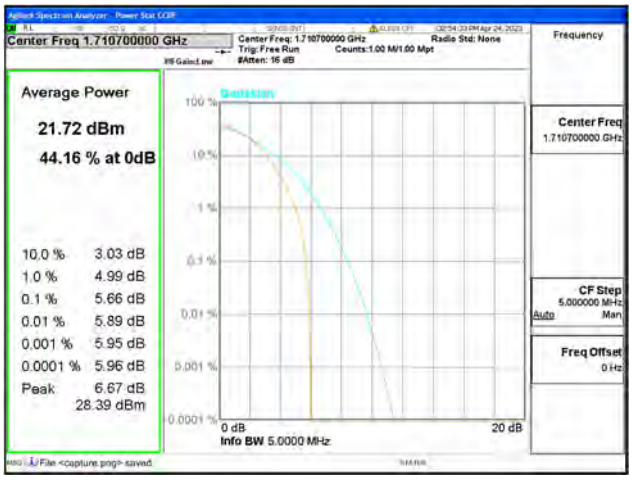
Band25 / 20MHz / High CH / 16QAM



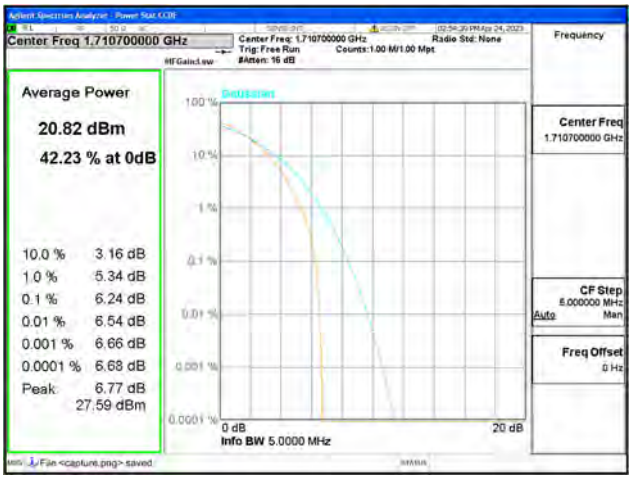
Band25 / 20MHz / High CH / 64QAM



Band66 / 1.4MHz / Low CH / QPSK

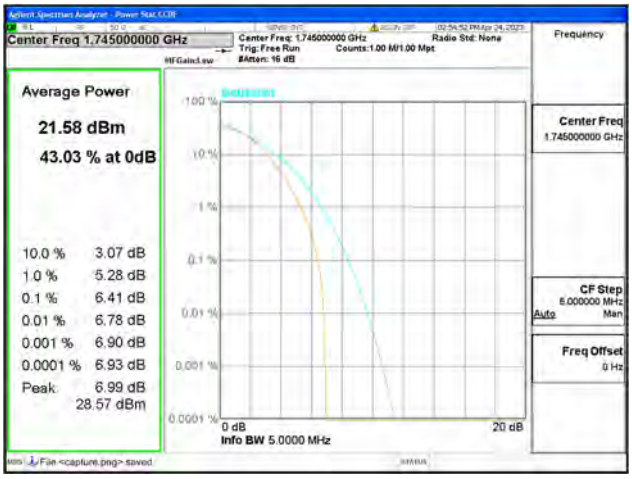


Band66 / 1.4MHz / Low CH / 16QAM

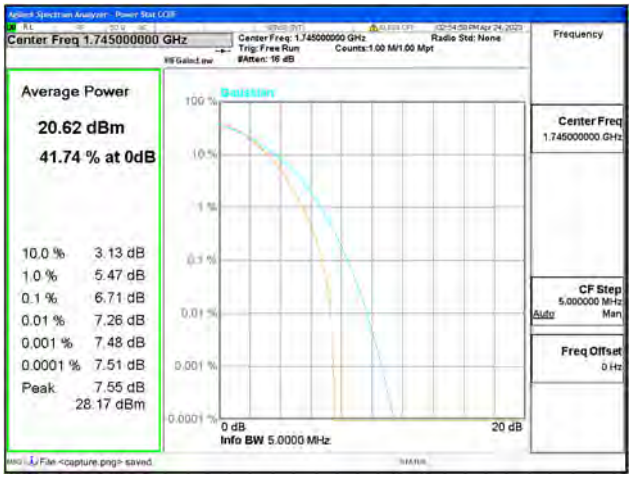


Band66 / 1.4MHz / Low CH / 64QAM

Band66 / 1.4MHz / Mid CH / QPSK

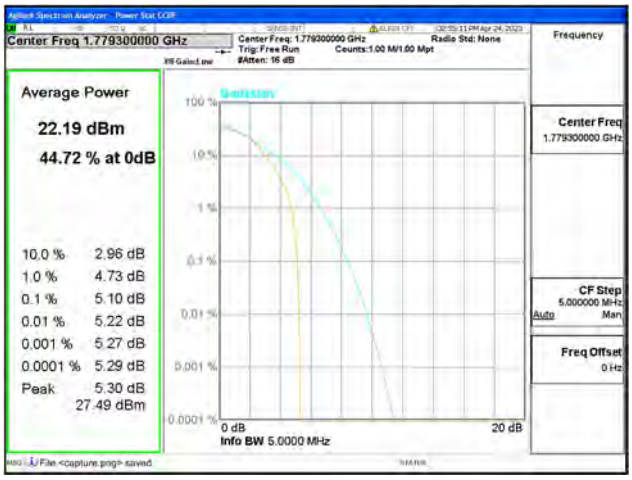


Band66 / 1.4MHz / Mid CH / 16QAM

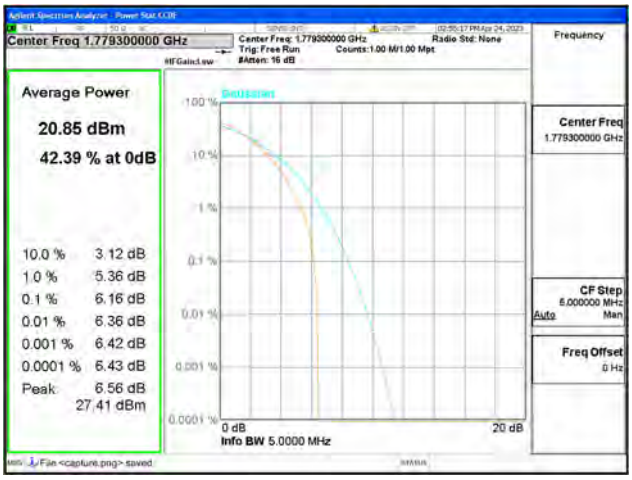


Band66 / 1.4MHz / Mid CH / 64QAM

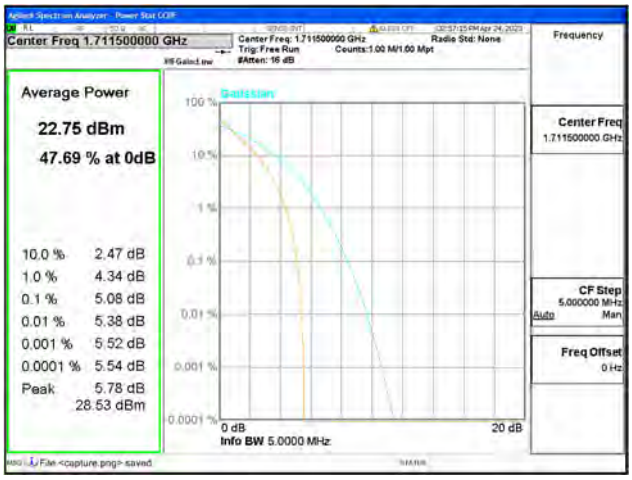
Band66 / 1.4MHz / High CH / QPSK



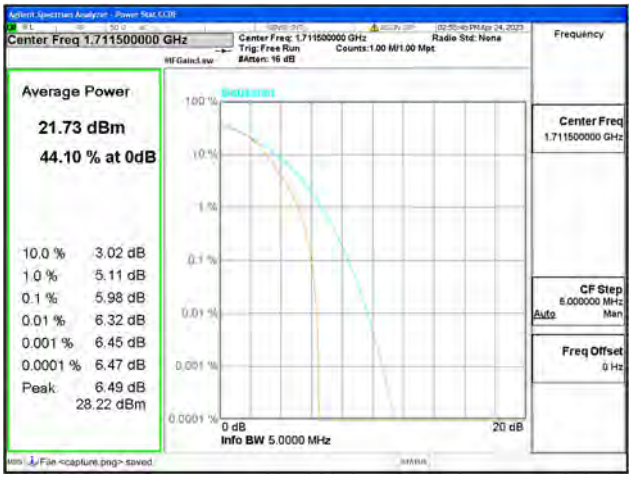
Band66 / 1.4MHz / High CH / 16QAM



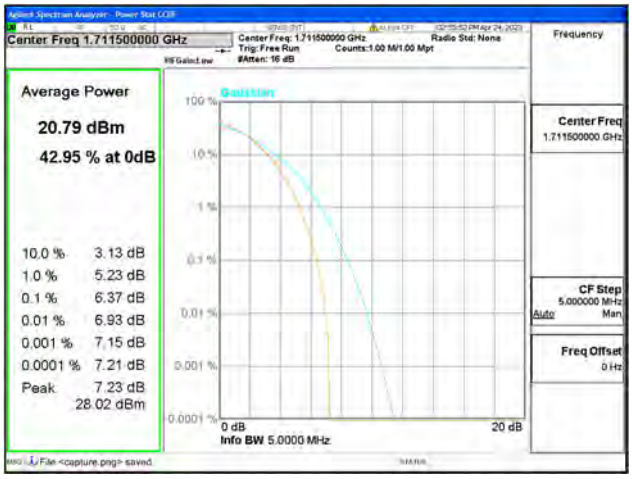
Band66 / 1.4MHz / High CH / 64QAM



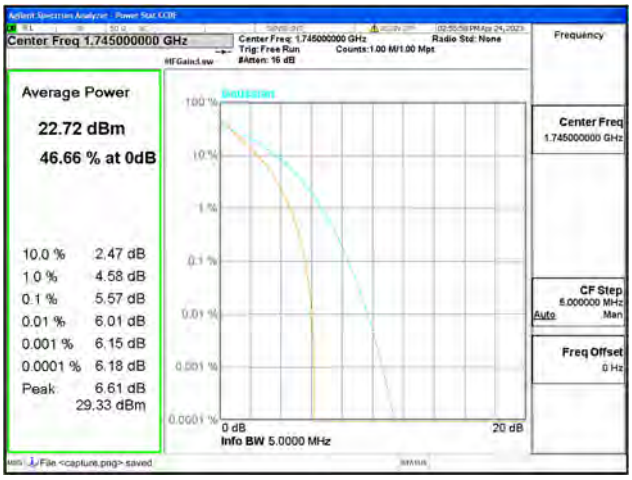
Band66 / 3MHz / Low CH / QPSK



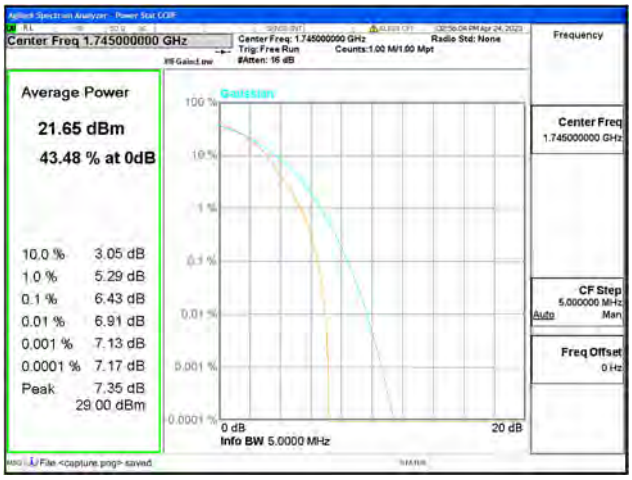
Band66 / 3MHz / Low CH / 16QAM



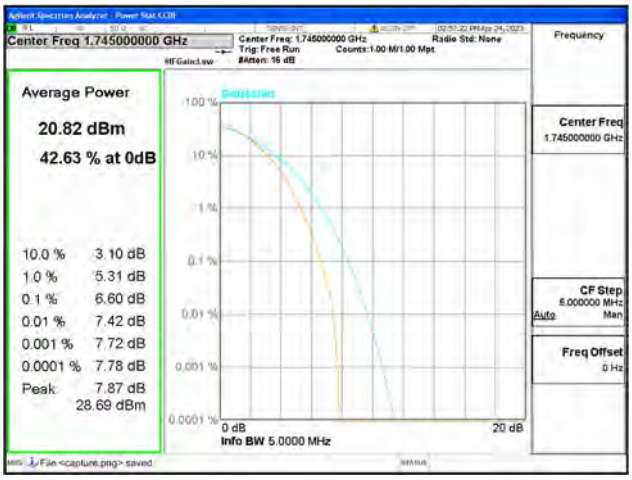
Band66 / 3MHz / Low CH / 64QAM



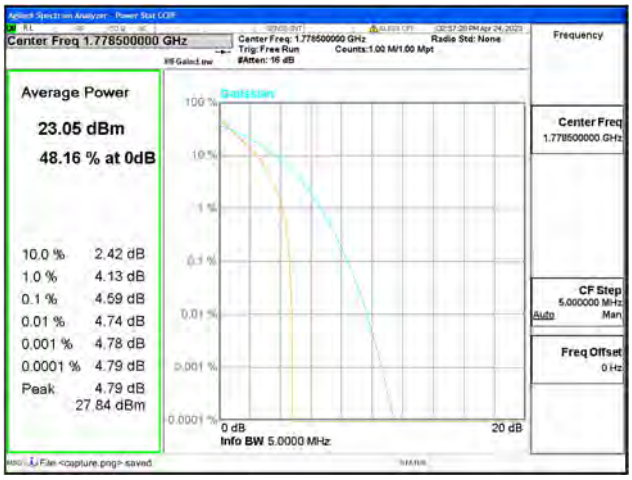
Band66 / 3MHz / Mid CH / QPSK



Band66 / 3MHz / Mid CH / 16QAM

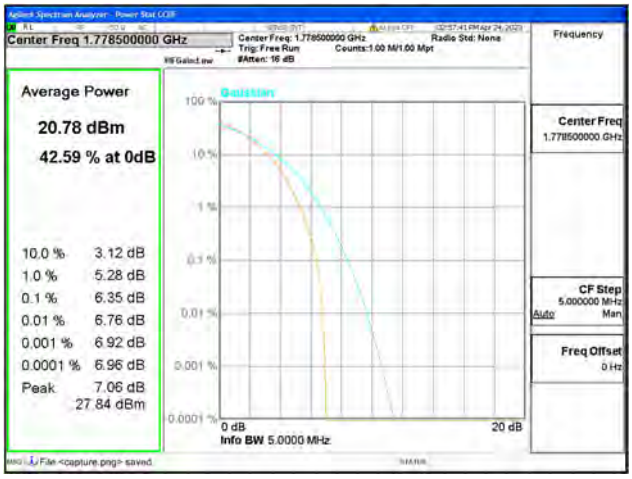


Band66 / 3MHz / Mid CH / 64QAM

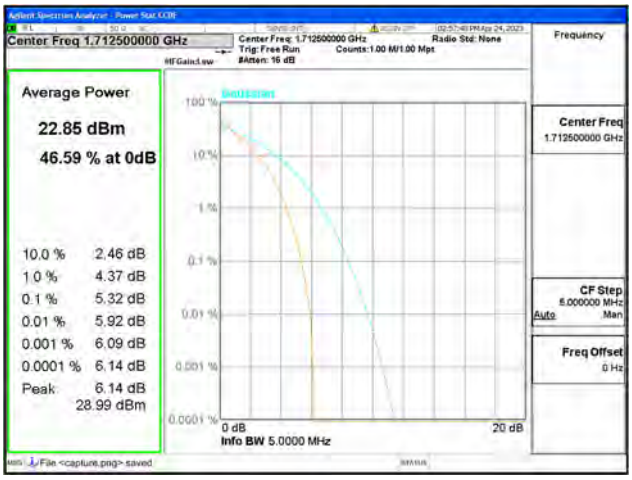


Band66 / 3MHz / High CH / QPSK

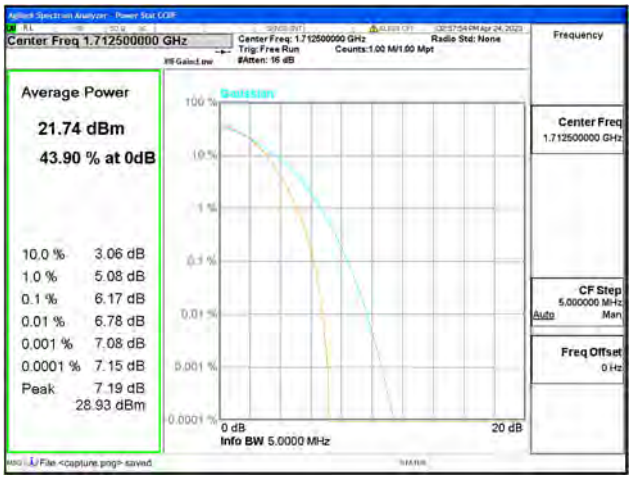
Band66 / 3MHz / High CH / 16QAM



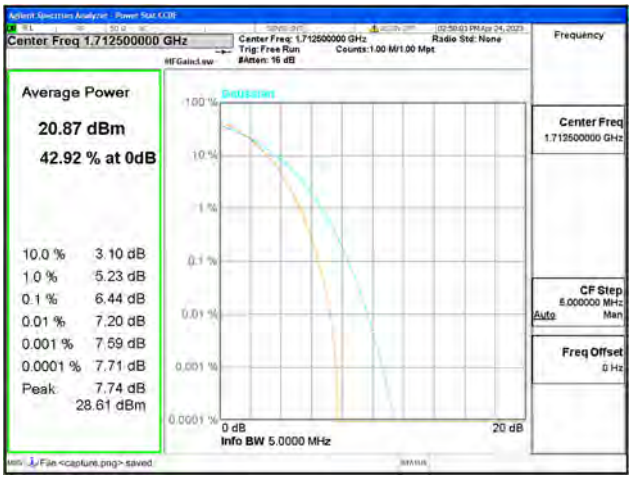
Band66 / 3MHz / High CH / 64QAM



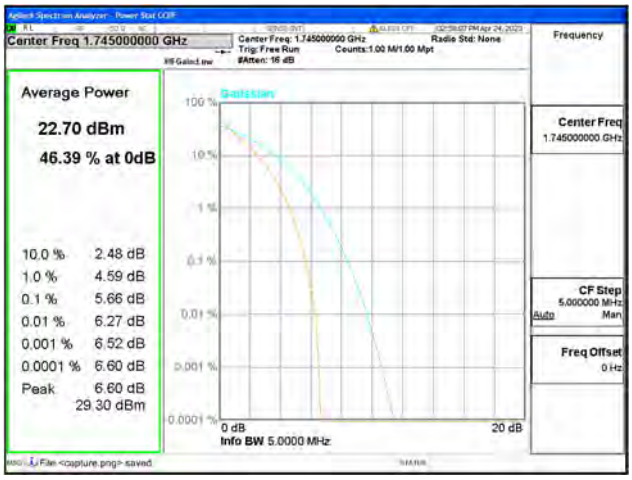
Band66 / 5MHz / Low CH / QPSK



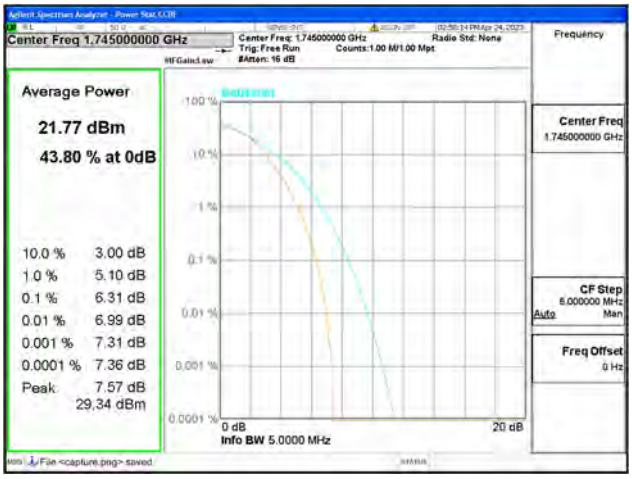
Band66 / 5MHz / Low CH / 16QAM



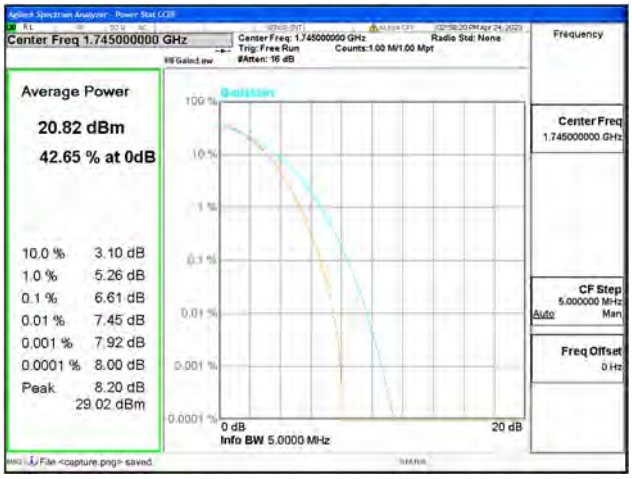
Band66 / 5MHz / Low CH / 64QAM



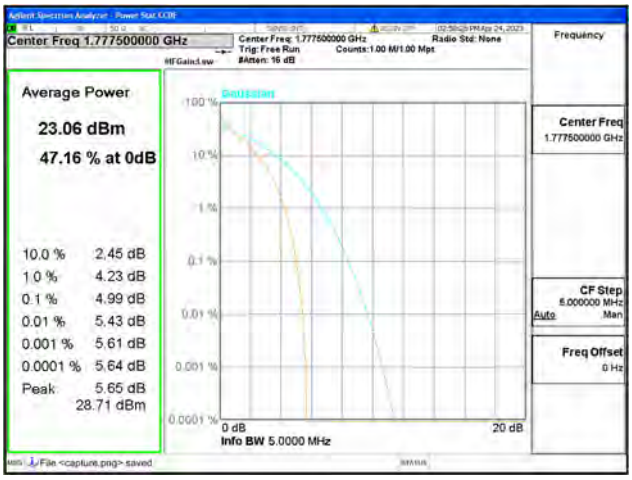
Band66 / 5MHz / Mid CH / QPSK



Band66 / 5MHz / Mid CH / 16QAM

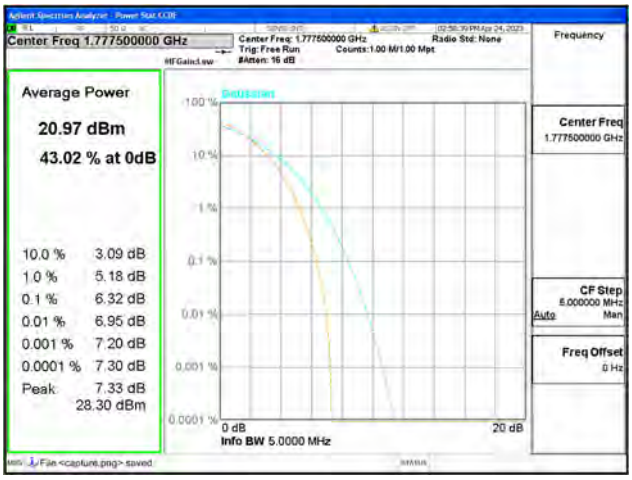


Band66 / 5MHz / Mid CH / 64QAM

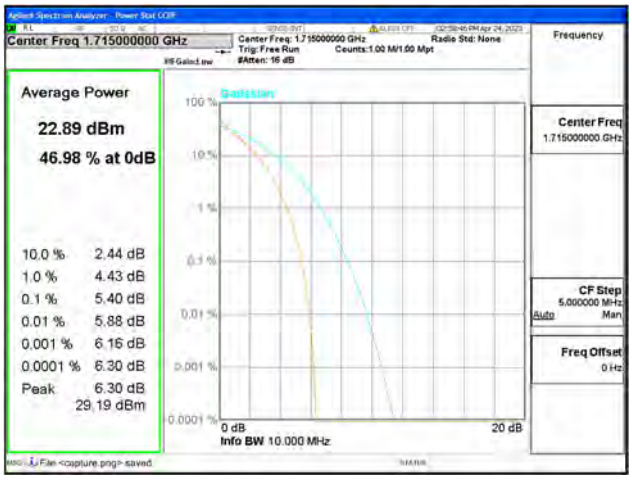


Band66 / 5MHz / High CH / QPSK

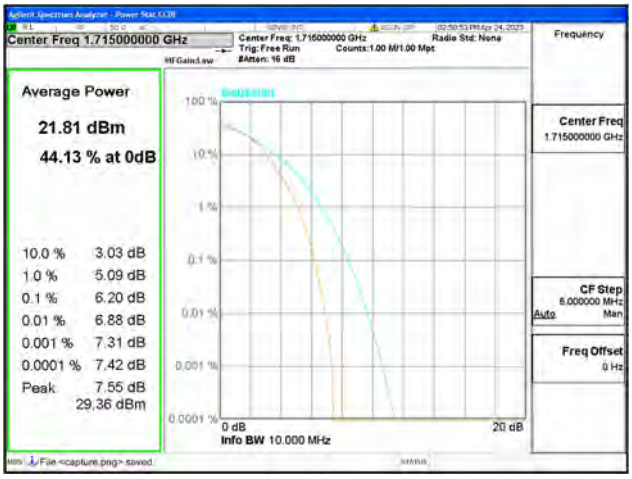
Band66 / 5MHz / High CH / 16QAM



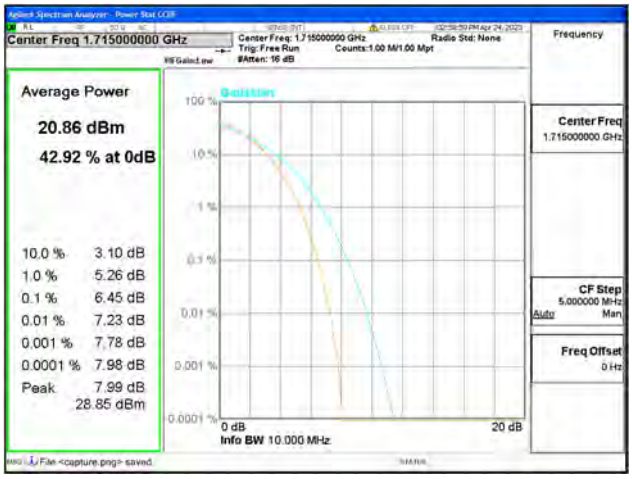
Band66 / 5MHz / High CH / 64QAM



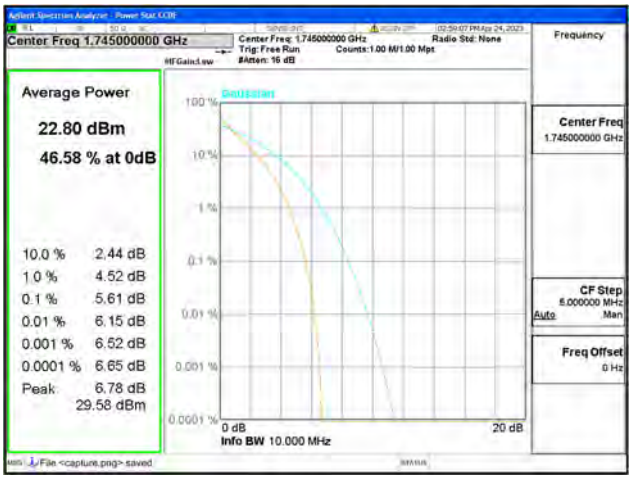
Band66 / 10MHz / Low CH / QPSK



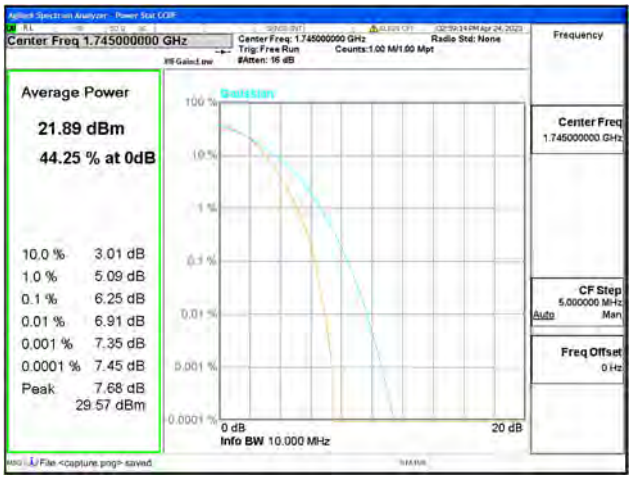
Band66 / 10MHz / Low CH / 16QAM



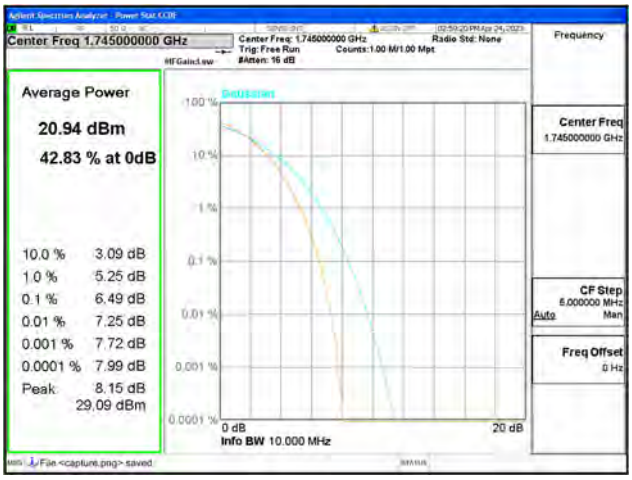
Band66 / 10MHz / Low CH / 64QAM



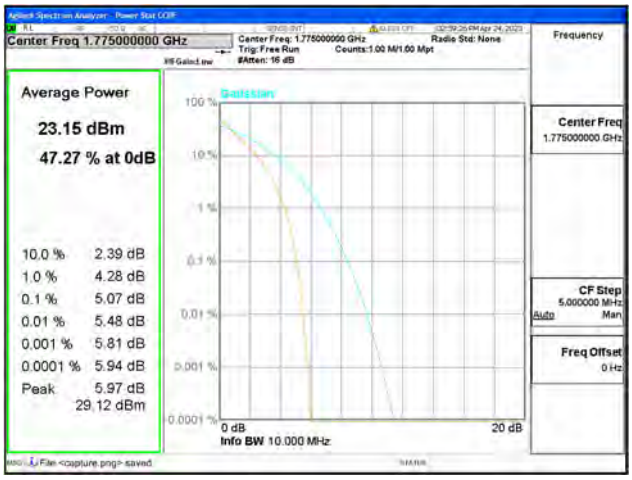
Band66 / 10MHz / Mid CH / QPSK



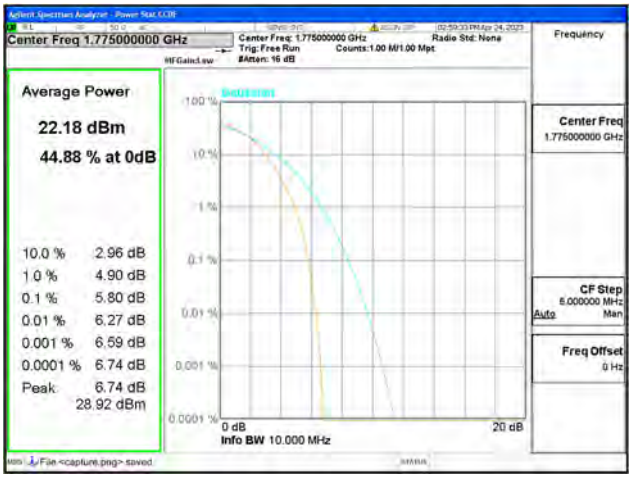
Band66 / 10MHz / Mid CH / 16QAM



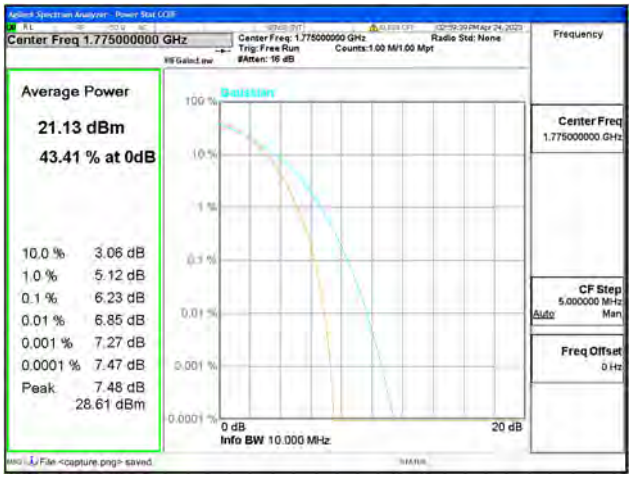
Band66 / 10MHz / Mid CH / 64QAM



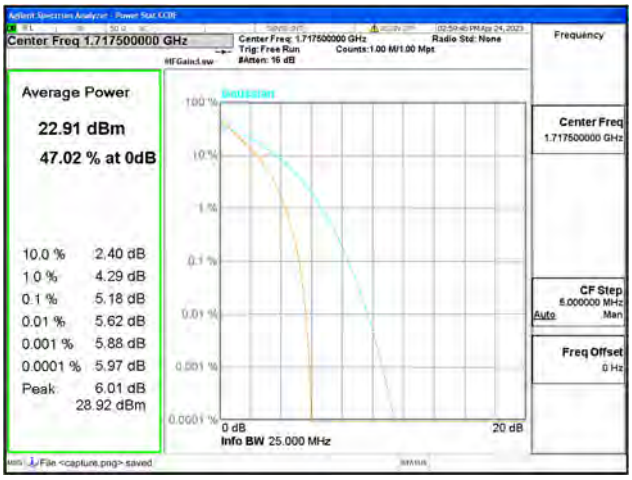
Band66 / 10MHz / High CH / QPSK



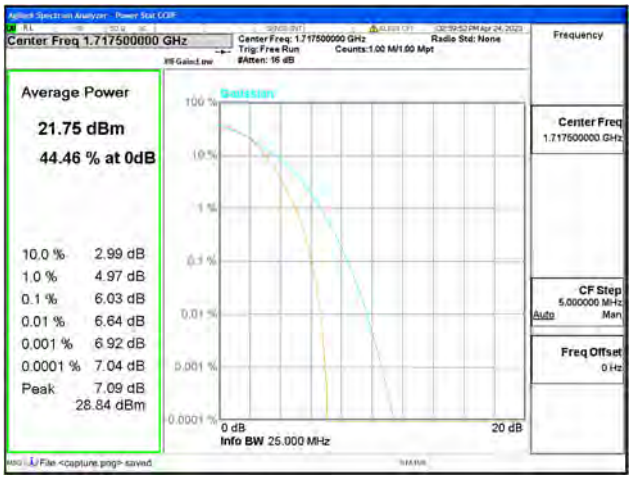
Band66 / 10MHz / High CH / 16QAM



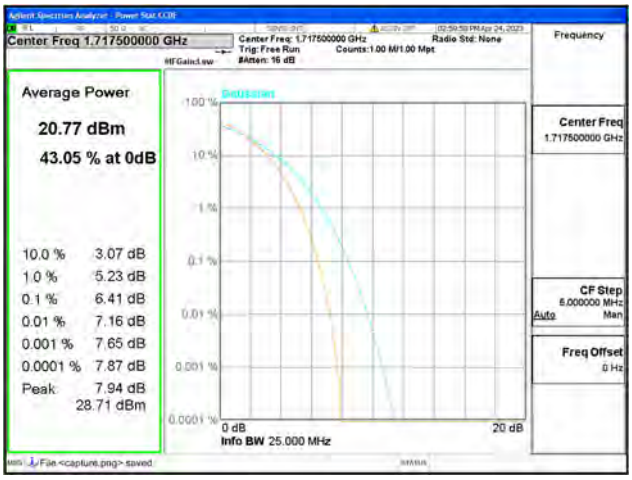
Band66 / 10MHz / High CH / 64QAM



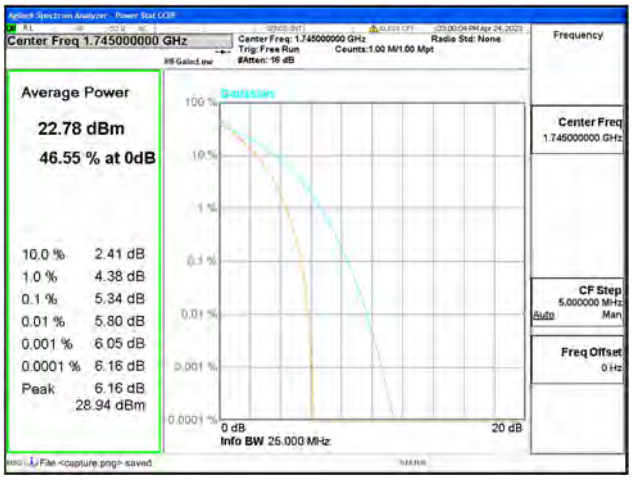
Band66 / 15MHz / Low CH / QPSK



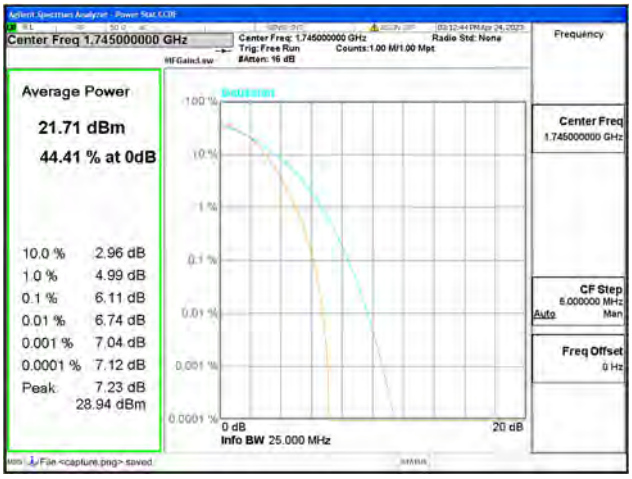
Band66 / 15MHz / Low CH / 16QAM



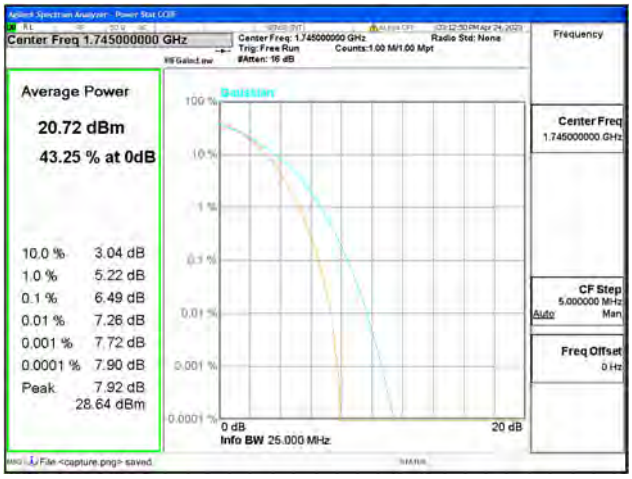
Band66 / 15MHz / Low CH / 64QAM



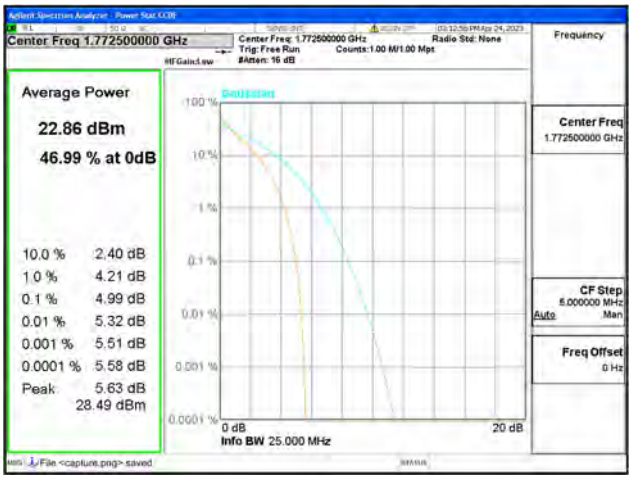
Band66 / 15MHz / Mid CH / QPSK



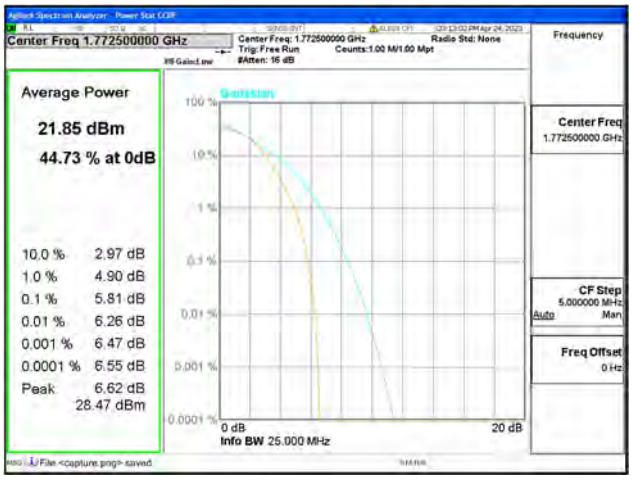
Band66 / 15MHz / Mid CH / 16QAM



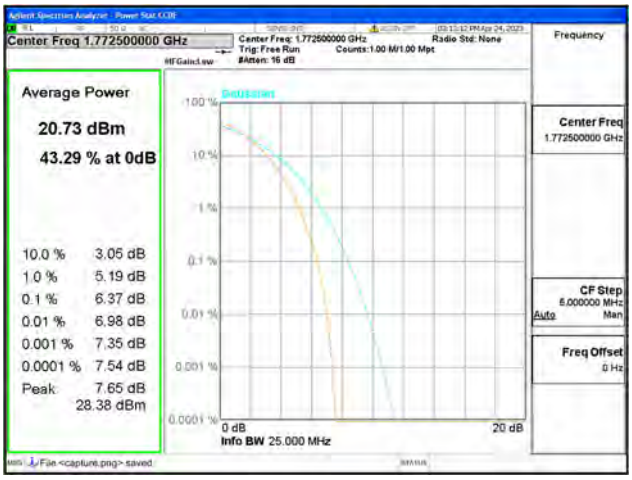
Band66 / 15MHz / Mid CH / 64QAM



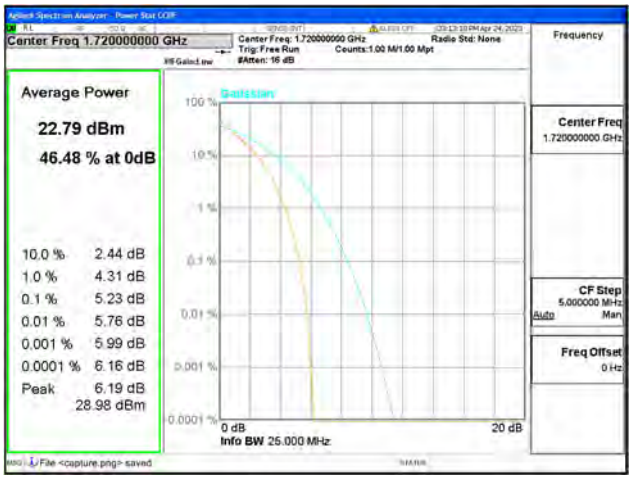
Band66 / 15MHz / High CH / QPSK



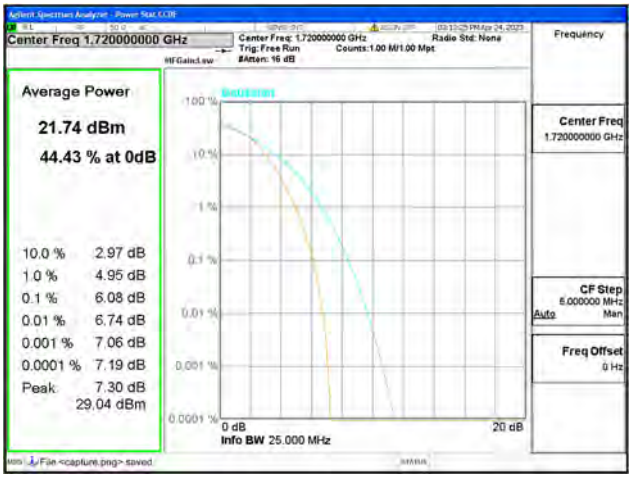
Band66 / 15MHz / High CH / 16QAM



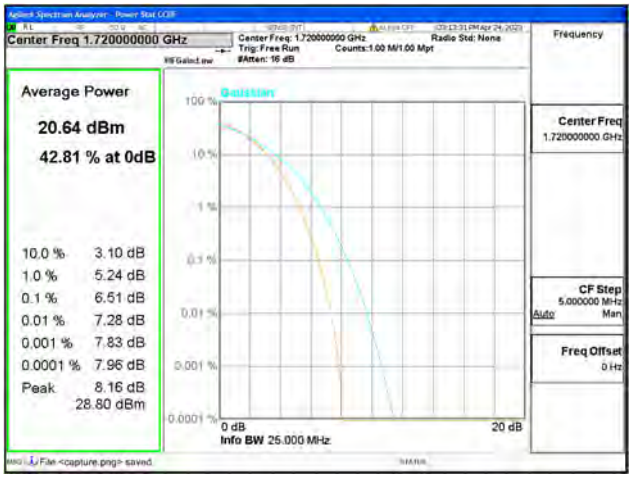
Band66 / 15MHz / High CH / 64QAM



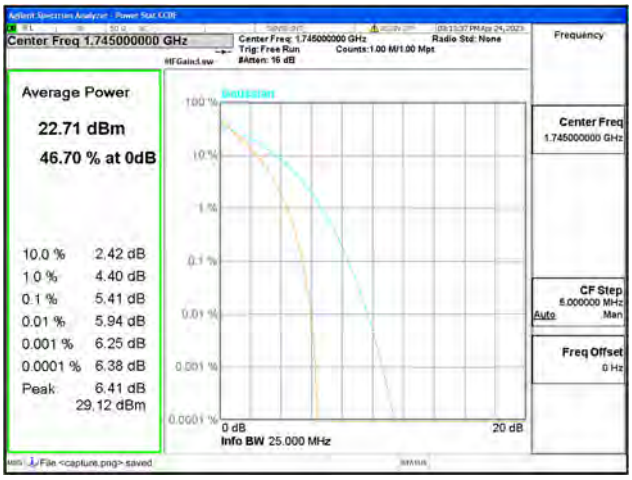
Band66 / 20MHz / Low CH / QPSK



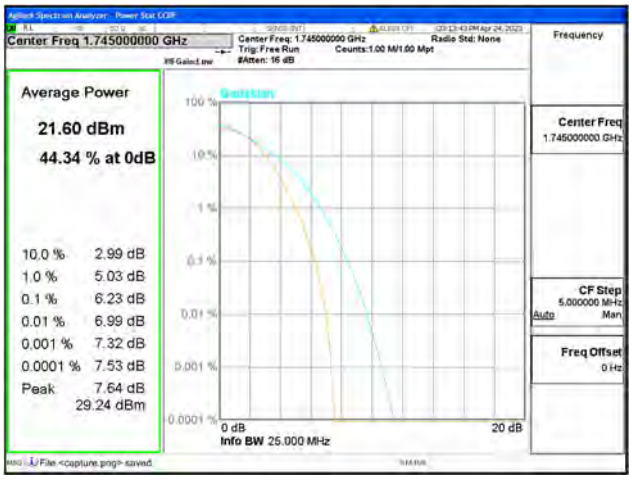
Band66 / 20MHz / Low CH / 16QAM



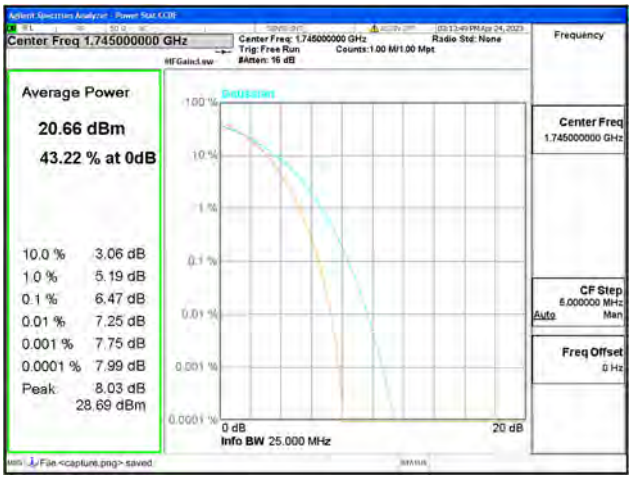
Band66 / 20MHz / Low CH / 64QAM



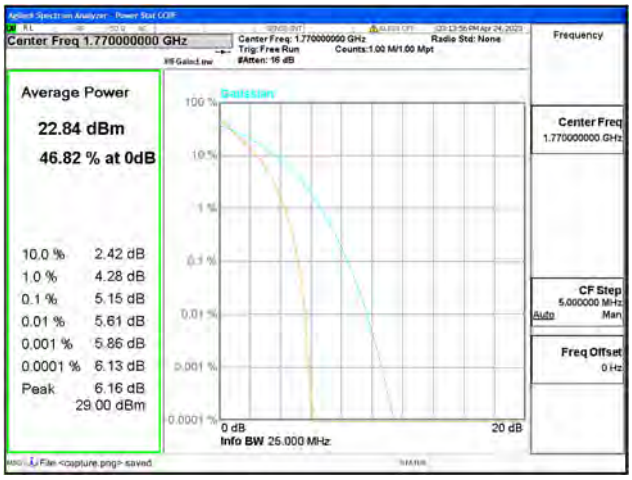
Band66 / 20MHz / Mid CH / QPSK



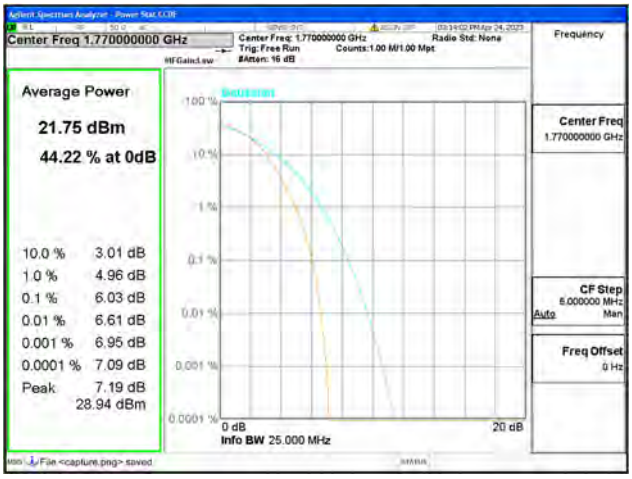
Band66 / 20MHz / Mid CH / 16QAM



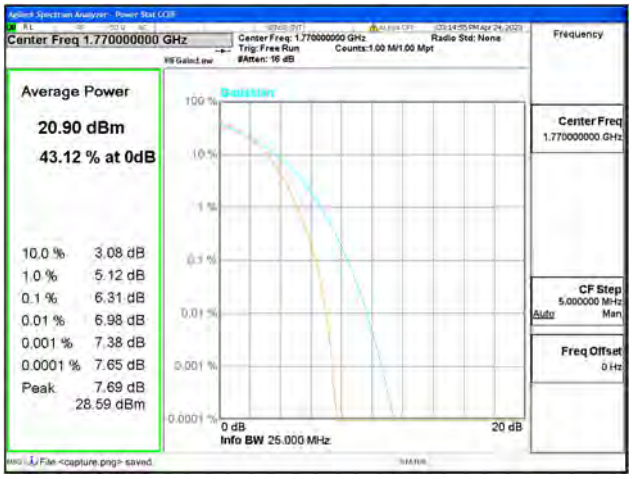
Band66 / 20MHz / Mid CH / 64QAM



Band66 / 20MHz / High CH / QPSK



Band66 / 20MHz / High CH / 16QAM



Band66 / 20MHz / High CH / 64QAM

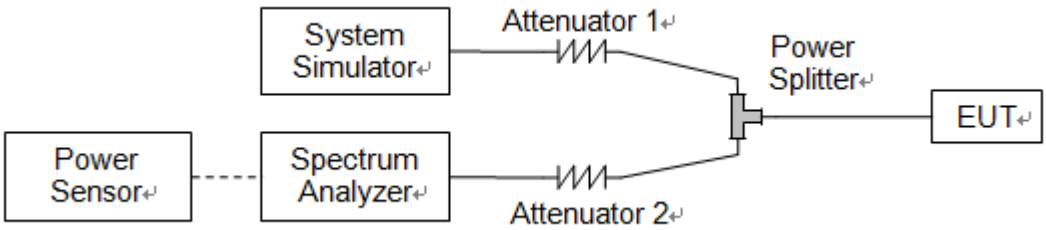
2.5. Conducted Spurious Emissions

2.5.1. Requirement

According to FCC section 2.1051, 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.

Additional requirement for LTE Band 7/41:
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.
Additional requirement for LTE Band 30:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

2.5.2. Test Description

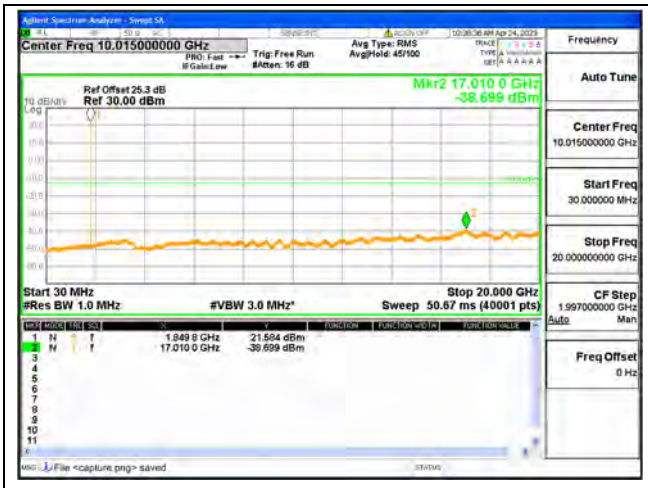


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

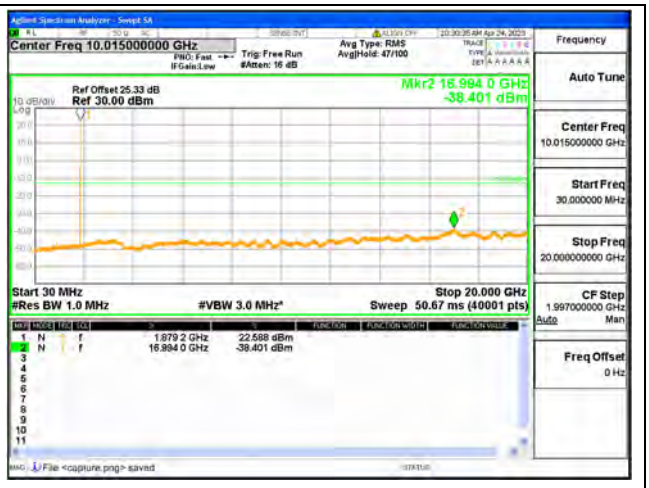
2.5.3. Test Procedure

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

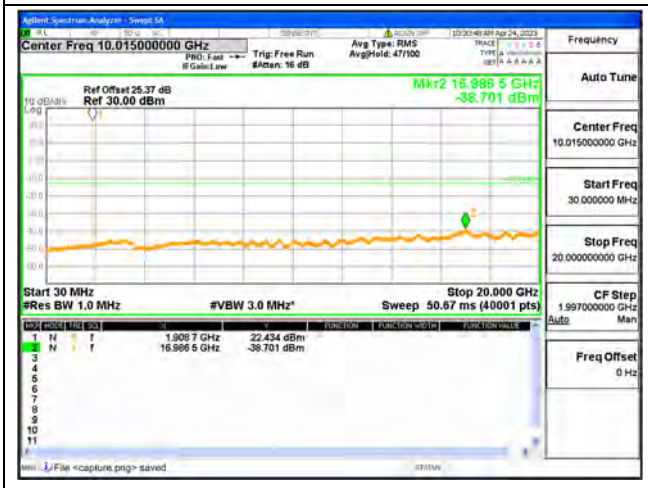
2.5.4. Test Result



Band2 / 1.4MHz / Low CH / QPSK

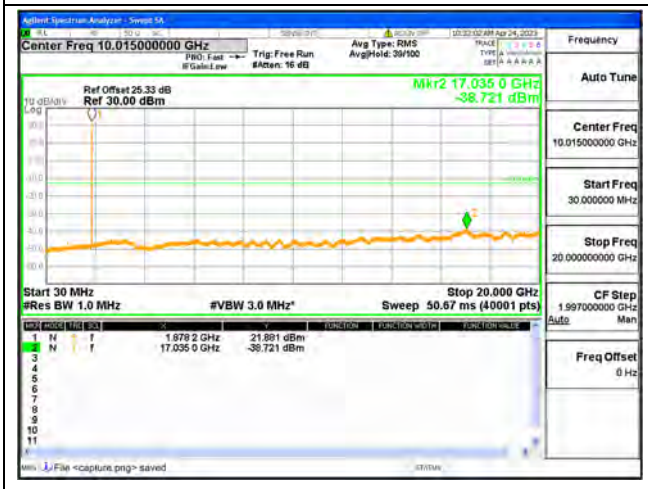


Band2 / 1.4MHz / Mid CH / QPSK



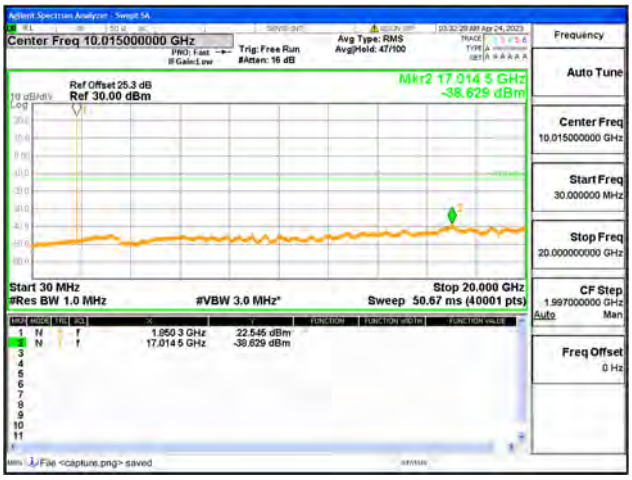
Band2 / 1.4MHz / High CH / QPSK

Band2 / 3MHz / Low CH / QPSK

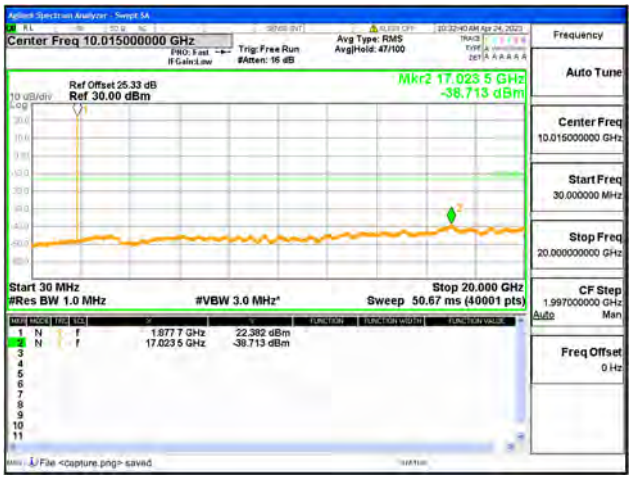


Band2 / 3MHz / Mid CH / QPSK

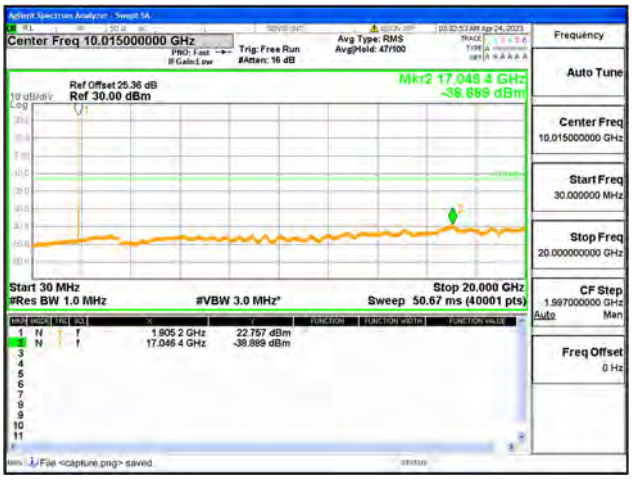
Band2 / 3MHz / High CH / QPSK



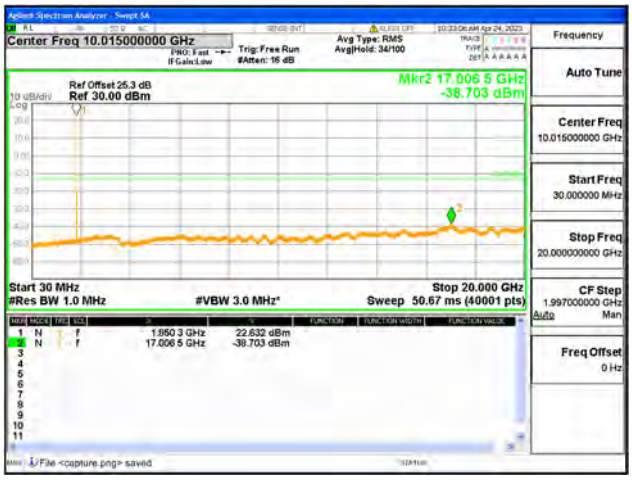
Band2 / 5MHz / Low CH / QPSK



Band2 / 5MHz / Mid CH / QPSK



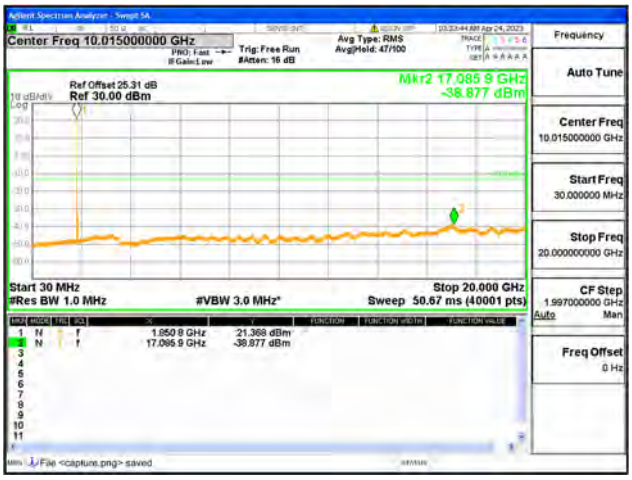
Band2 / 5MHz / High CH / QPSK



Band2 / 10MHz / Low CH / QPSK

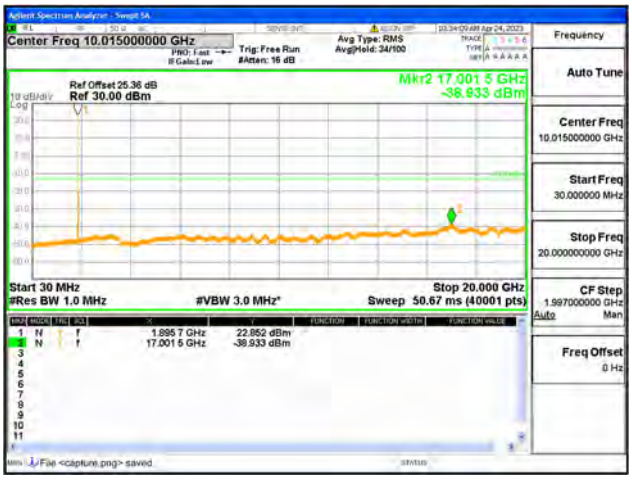
Band2 / 10MHz / Mid CH / QPSK

Band2 / 10MHz / High CH / QPSK



Band2 / 15MHz / Low CH / QPSK

Band2 / 15MHz / Mid CH / QPSK



Band2 / 15MHz / High CH / QPSK

Band2 / 20MHz / Low CH / QPSK

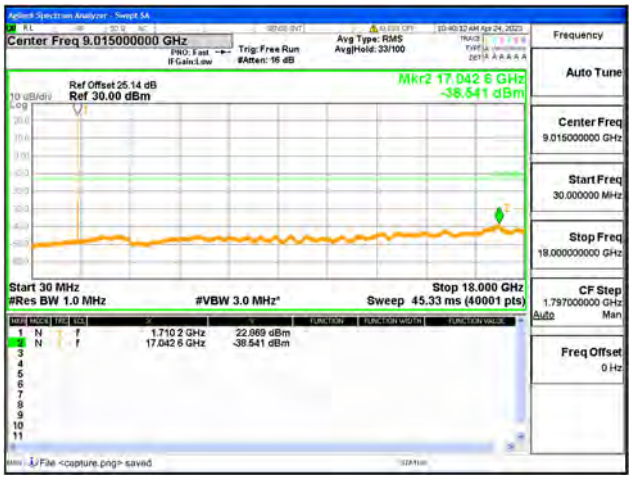
Band2 / 20MHz / Mid CH / QPSK

Band2 / 20MHz / High CH / QPSK

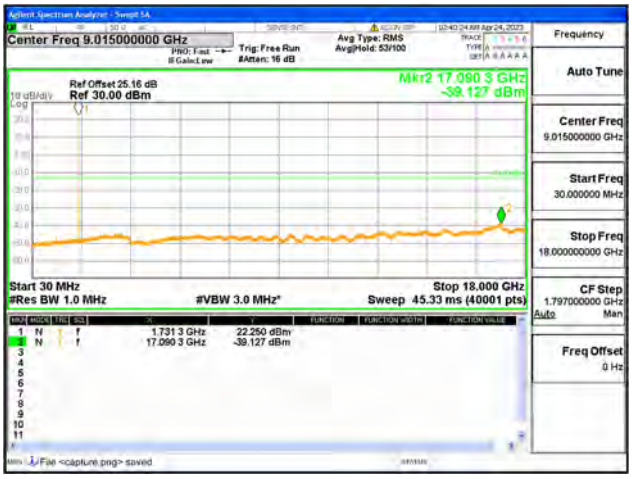
Band4 / 1.4MHz / Low CH / QPSK

Band4 / 1.4MHz / Mid CH / QPSK

Band4 / 1.4MHz / High CH / QPSK



Band4 / 3MHz / Low CH / QPSK

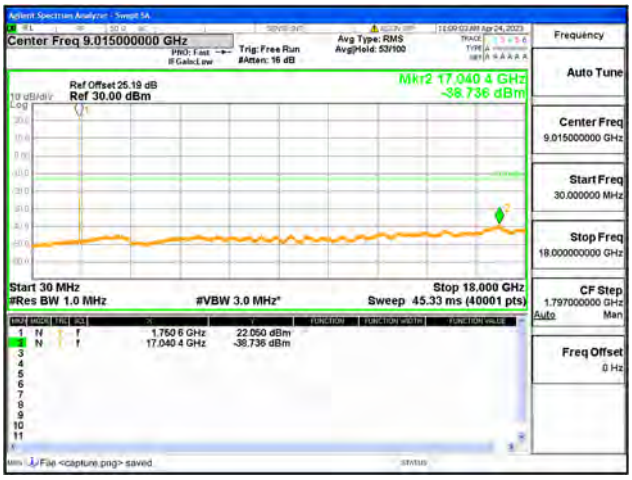


Band4 / 3MHz / Mid CH / QPSK

Band4 / 3MHz / High CH / QPSK

Band4 / 5MHz / Low CH / QPSK

Band4 / 5MHz / Mid CH / QPSK



Band4 / 5MHz / High CH / QPSK

Band4 / 10MHz / Low CH / QPSK

Band4 / 10MHz / Mid CH / QPSK

Band4 / 10MHz / High CH / QPSK

Band4 / 15MHz / Low CH / QPSK

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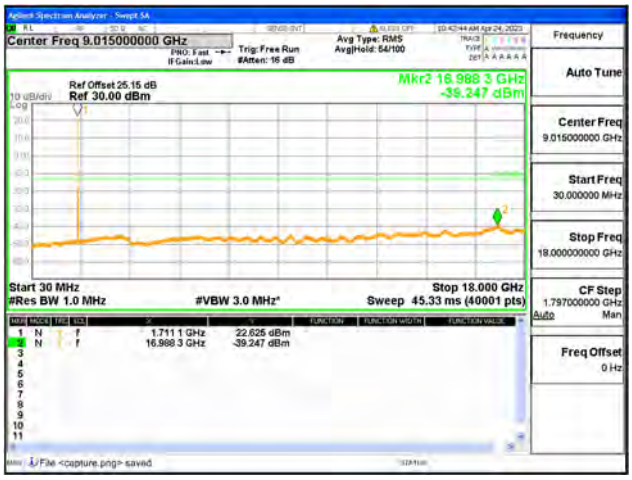
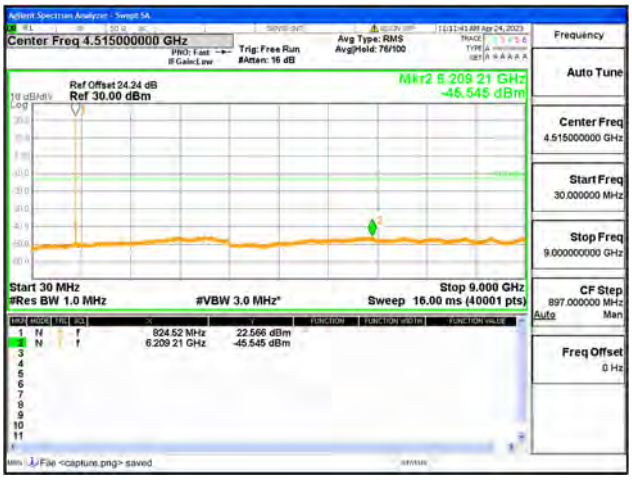
Band4 / 15MHz / High CH / QPSK



Band4 / 20MHz / Low CH / QPSK

Band4 / 20MHz / Mid CH / QPSK

Band4 / 20MHz / High CH / QPSK

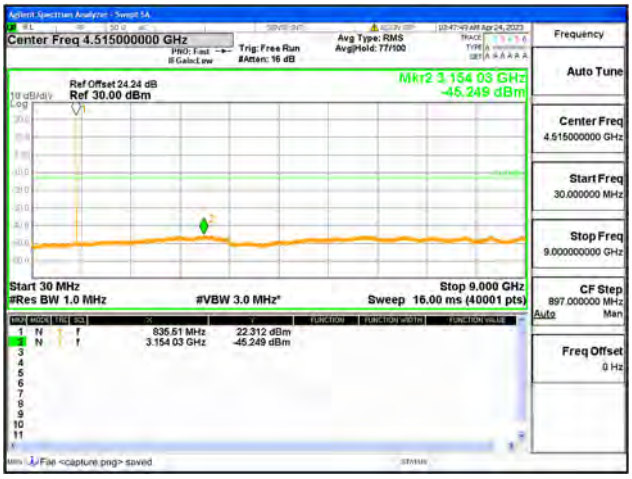


Band5 / 1.4MHz / Low CH / QPSK

Band5 / 1.4MHz / Mid CH / QPSK

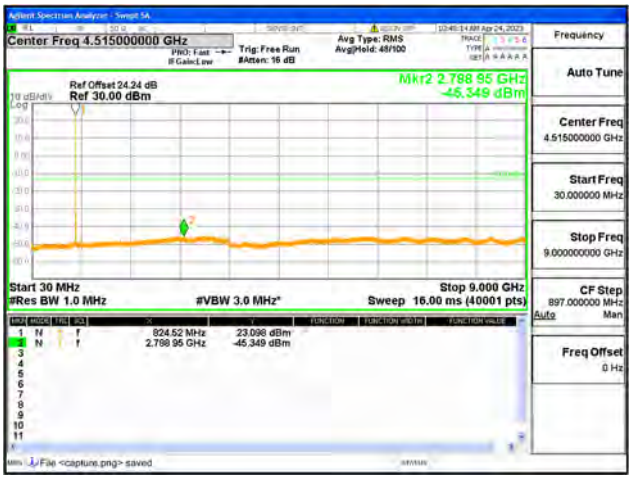
Band5 / 1.4MHz / High CH / QPSK

Band5 / 3MHz / Low CH / QPSK



Band5 / 3MHz / Mid CH / QPSK

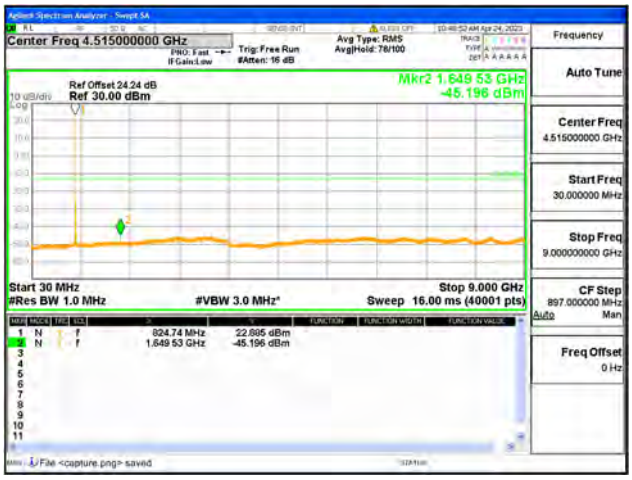
Band5 / 3MHz / High CH / QPSK



Band5 / 5MHz / Low CH / QPSK

Band5 / 5MHz / Mid CH / QPSK

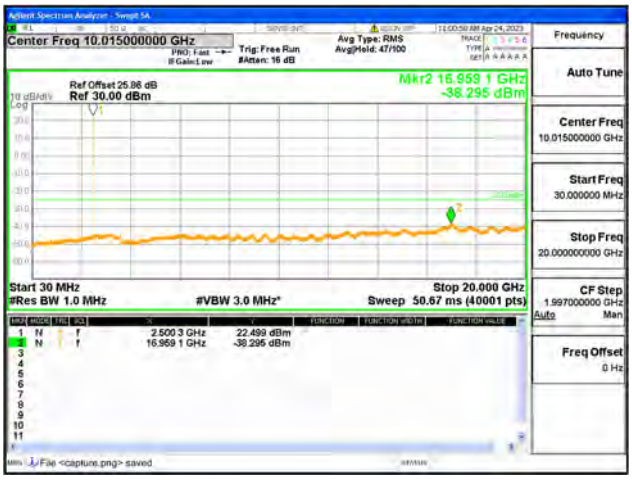
Band5 / 5MHz / High CH / QPSK



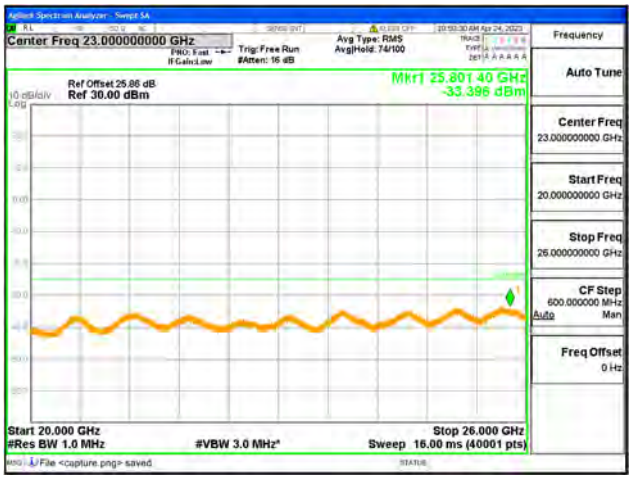
Band5 / 10MHz / Low CH / QPSK

Band5 / 10MHz / Mid CH / QPSK

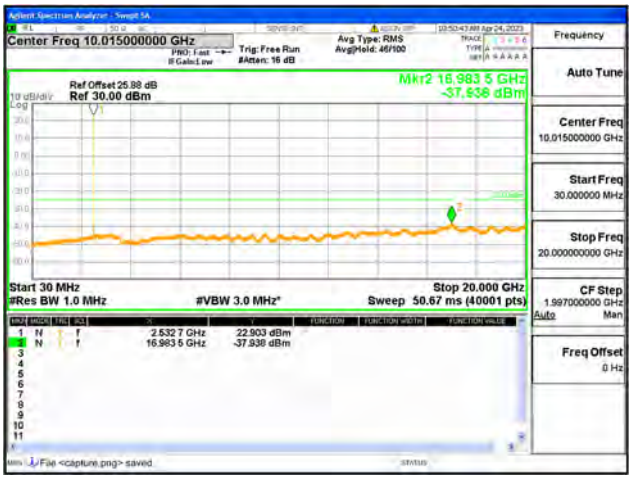
Band5 / 10MHz / High CH / QPSK



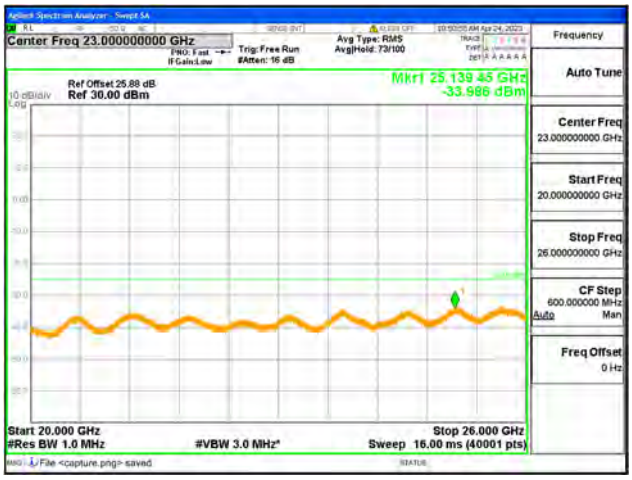
Band7-30M-20G / 5MHz / Low CH / QPSK



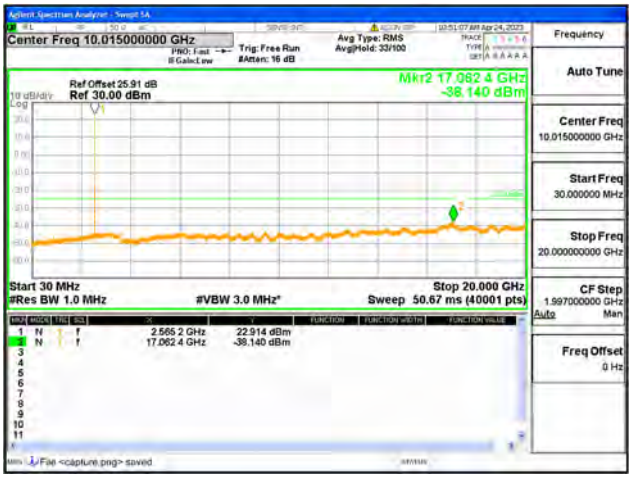
Band7-20G-26G / 5MHz / Low CH / QPSK



Band7-30M-20G / 5MHz / Mid CH / QPSK

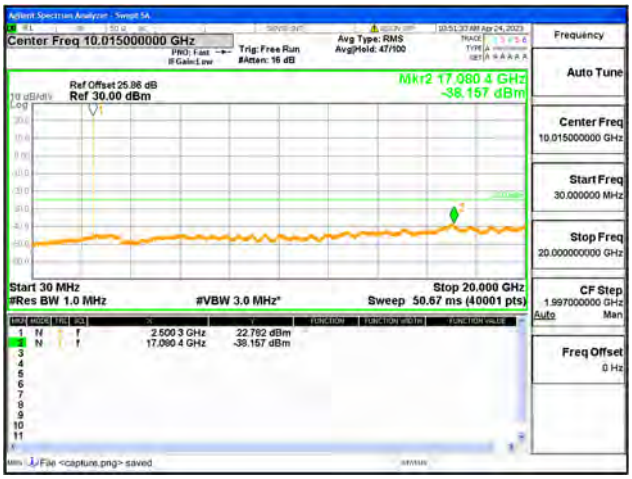


Band7-20G-26G / 5MHz / Mid CH / QPSK



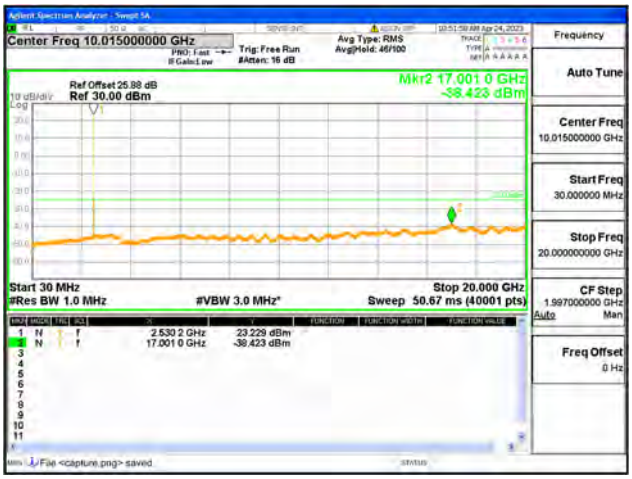
Band7-30M-20G / 5MHz / High CH / QPSK

Band7-20G-26G / 5MHz / High CH / QPSK

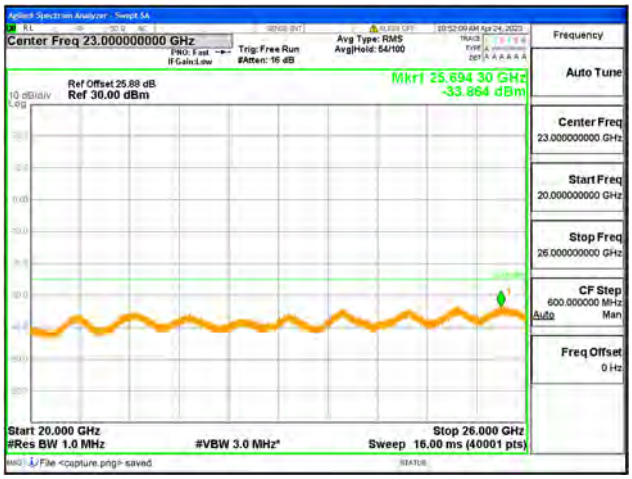


Band7-30M-20G / 10MHz / Low CH / QPSK

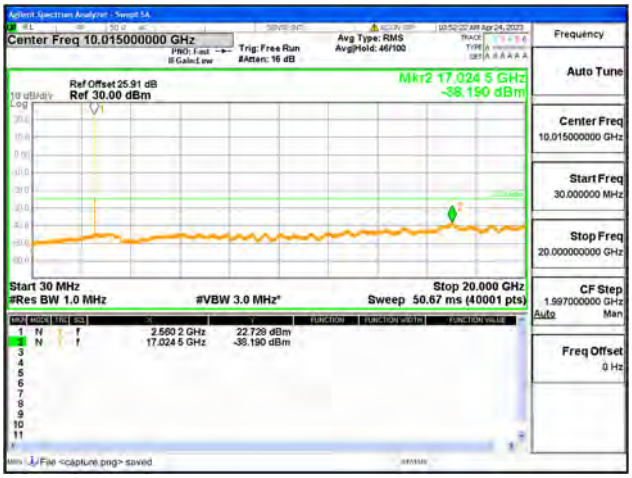
Band7-20G-26G / 10MHz / Low CH / QPSK



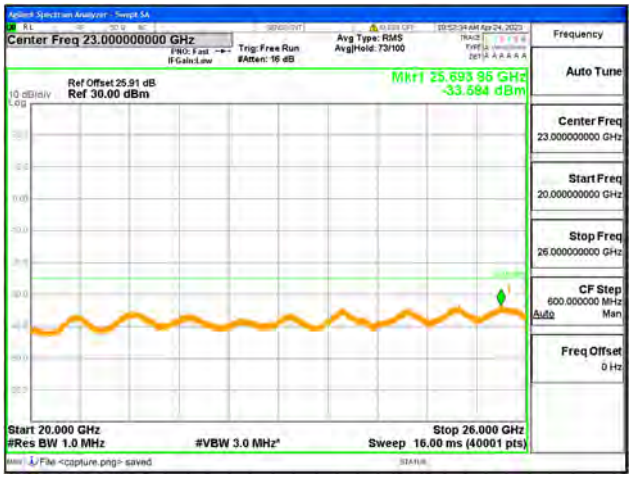
Band7-30M-20G / 10MHz / Mid CH / QPSK



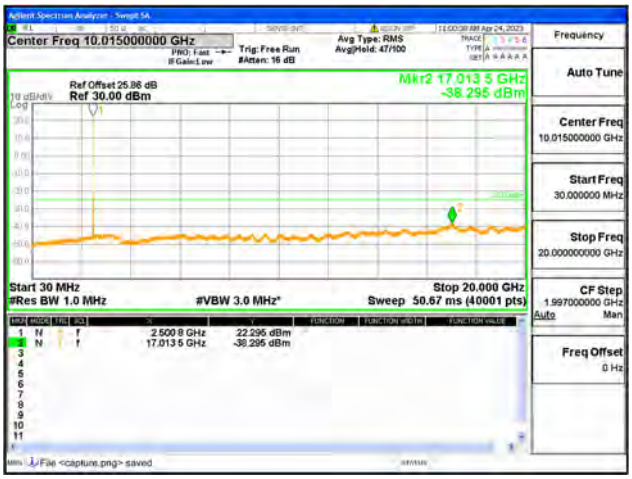
Band7-20G-26G / 10MHz / Mid CH / QPSK



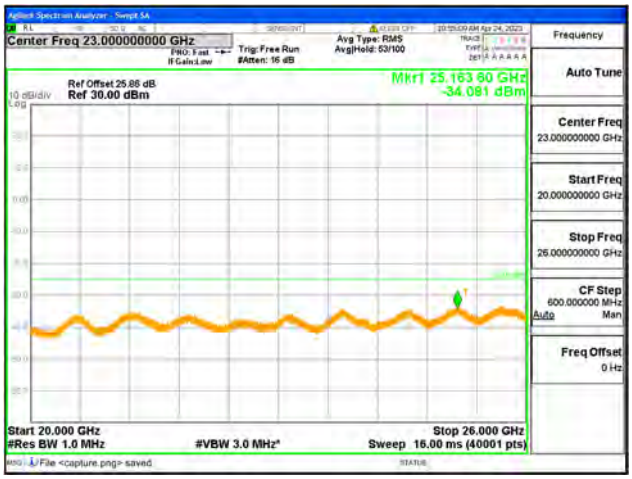
Band7-30M-20G / 10MHz / High CH / QPSK



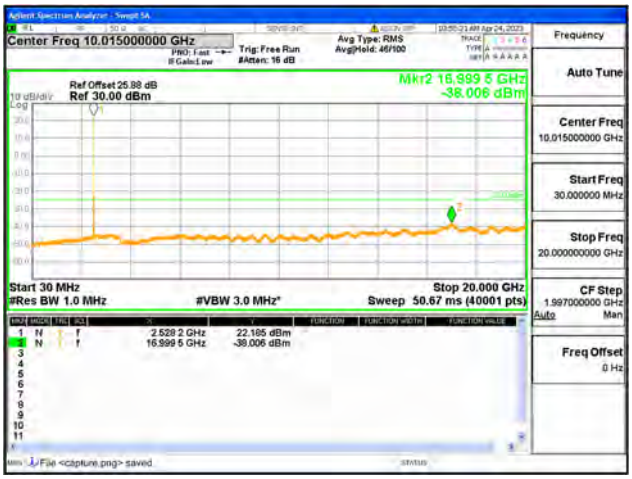
Band7-20G-26G / 10MHz / High CH / QPSK



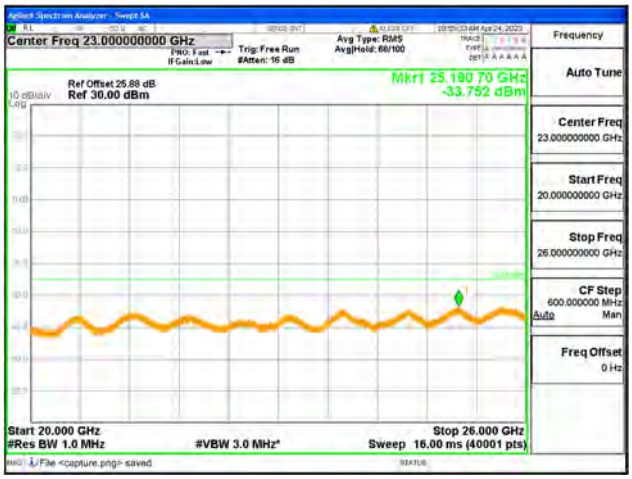
Band7-30M-20G / 15MHz / Low CH / QPSK



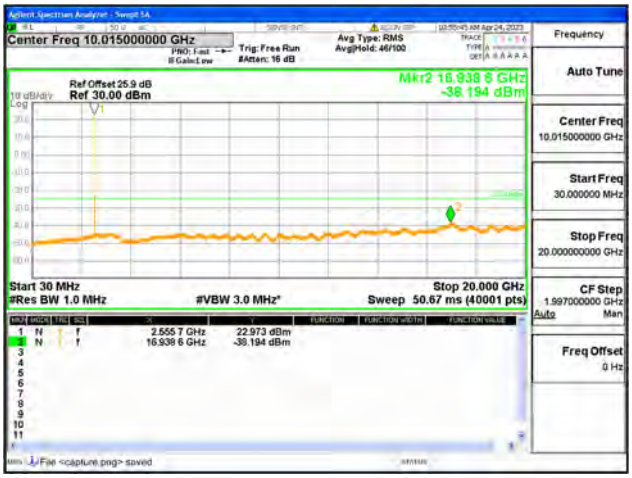
Band7-20G-26G / 15MHz / Low CH / QPSK



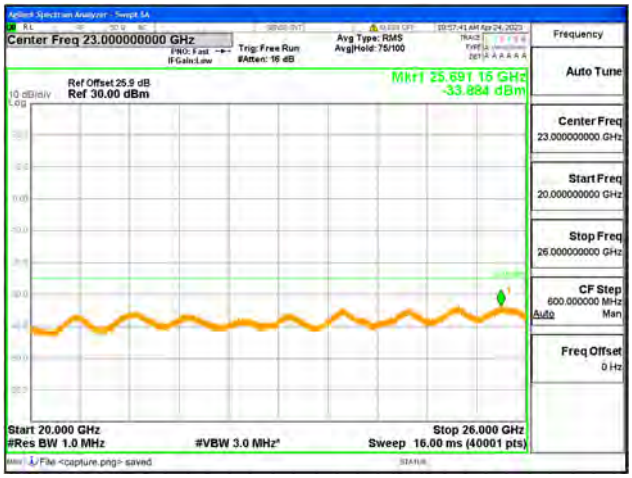
Band7-30M-20G / 15MHz / Mid CH / QPSK



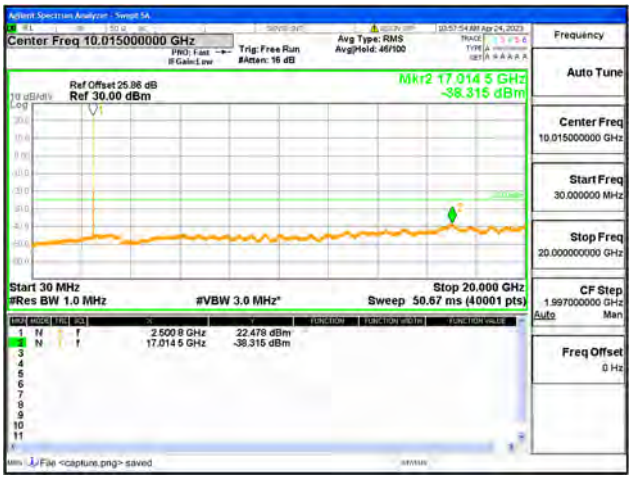
Band7-20G-26G / 15MHz / Mid CH / QPSK



Band7-30M-20G / 15MHz / High CH / QPSK

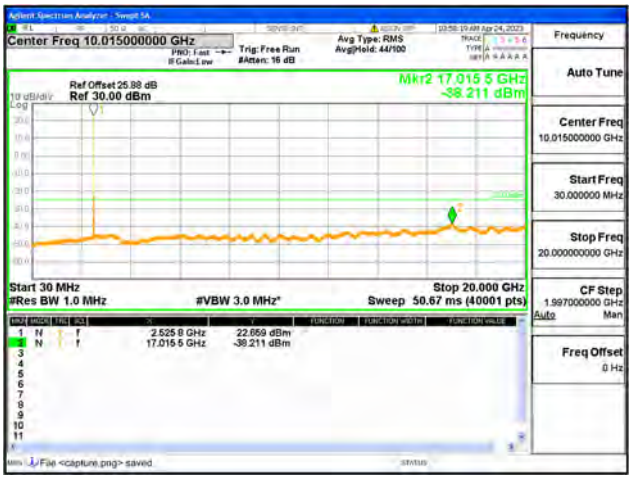


Band7-20G-26G / 15MHz / High CH / QPSK



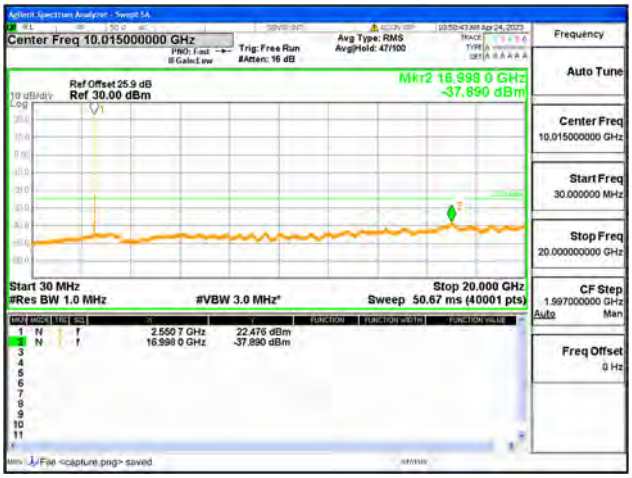
Band7-30M-20G / 20MHz / Low CH / QPSK

Band7-20G-26G / 20MHz / Low CH / QPSK

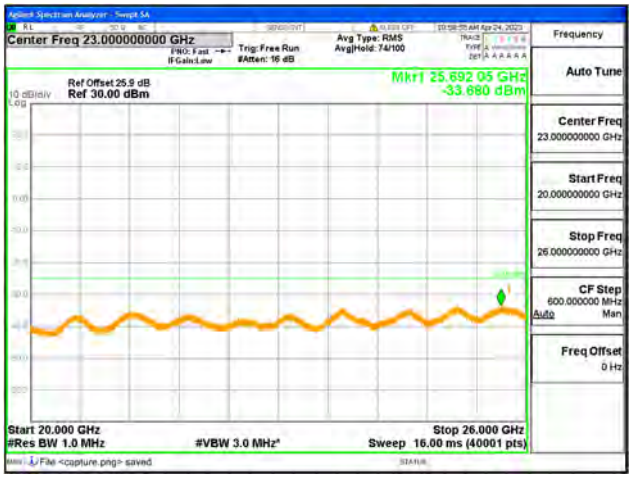


Band7-30M-20G / 20MHz / Mid CH / QPSK

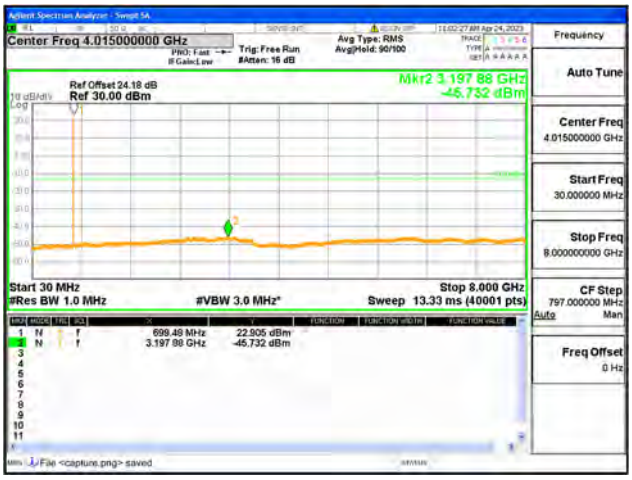
Band7-20G-26G / 20MHz / Mid CH / QPSK



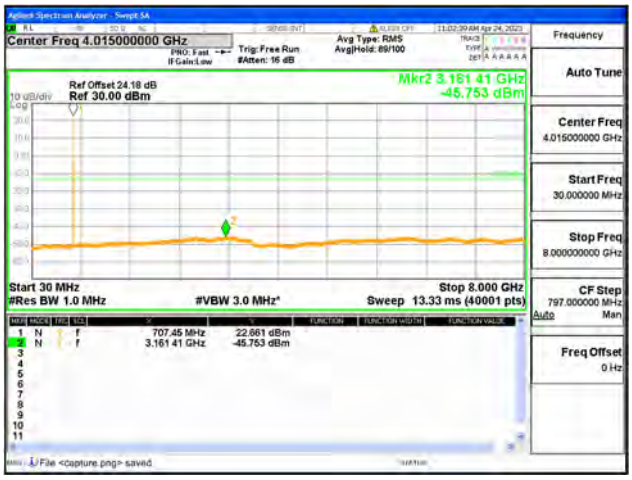
Band7-30M-20G / 20MHz / High CH / QPSK



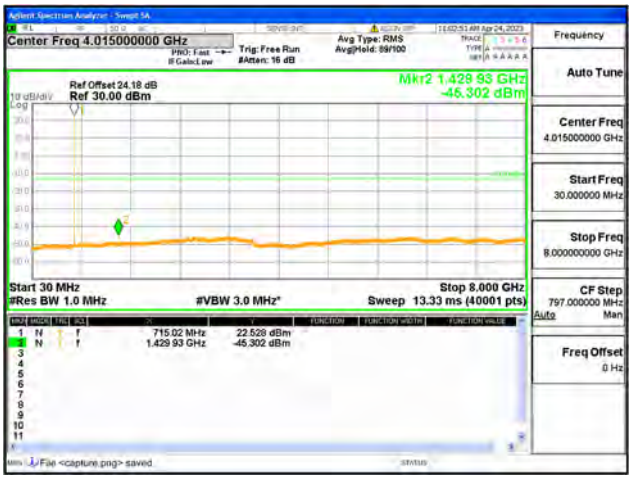
Band7-20G-26G / 20MHz / High CH / QPSK



Band12 / 1.4MHz / Low CH / QPSK



Band12 / 1.4MHz / Mid CH / QPSK

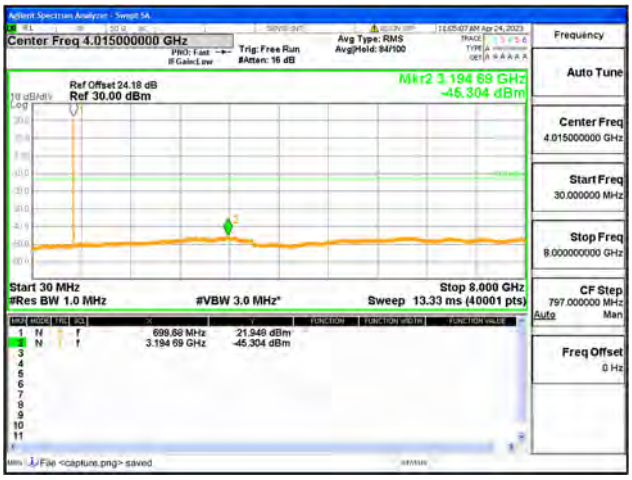


Band12 / 1.4MHz / High CH / QPSK

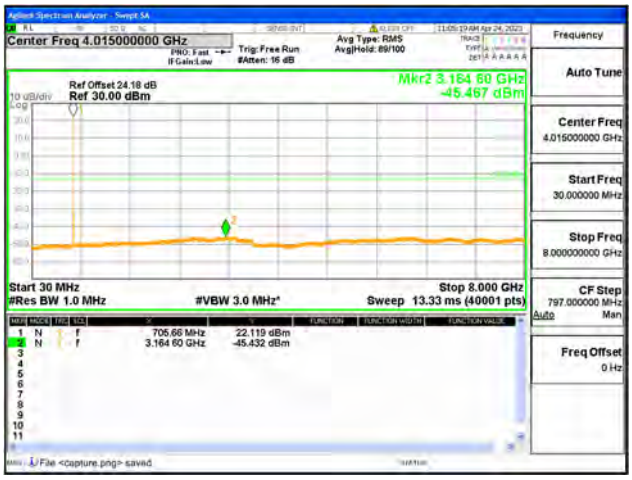
Band12 / 3MHz / Low CH / QPSK

Band12 / 3MHz / Mid CH / QPSK

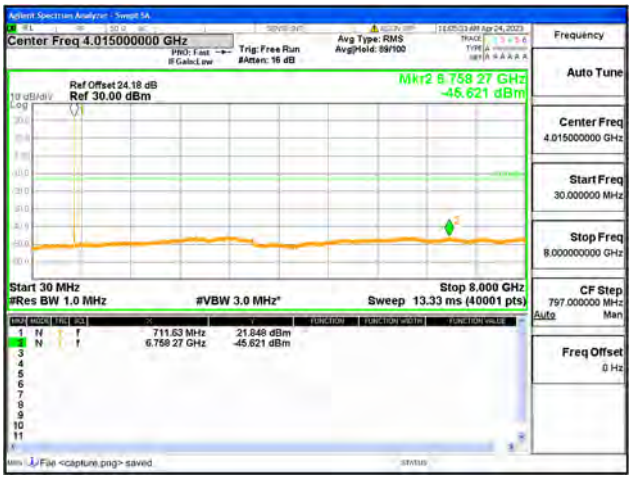
Band12 / 3MHz / High CH / QPSK



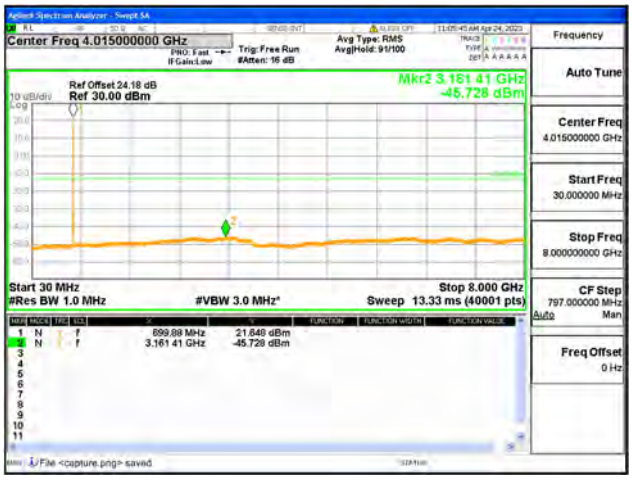
Band12 / 5MHz / Low CH / QPSK



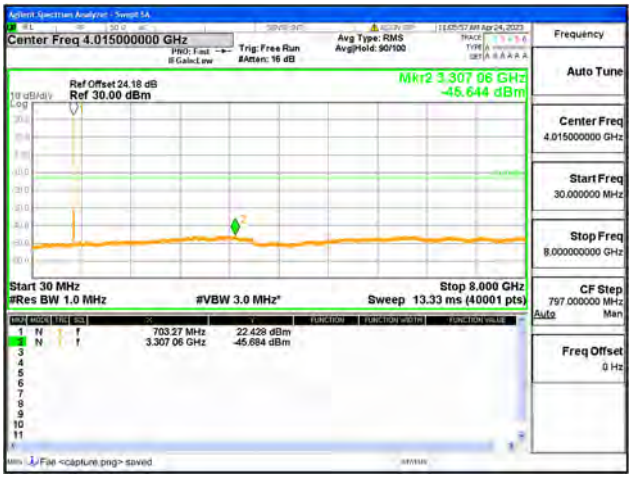
Band12 / 5MHz / Mid CH / QPSK



Band12 / 5MHz / High CH / QPSK

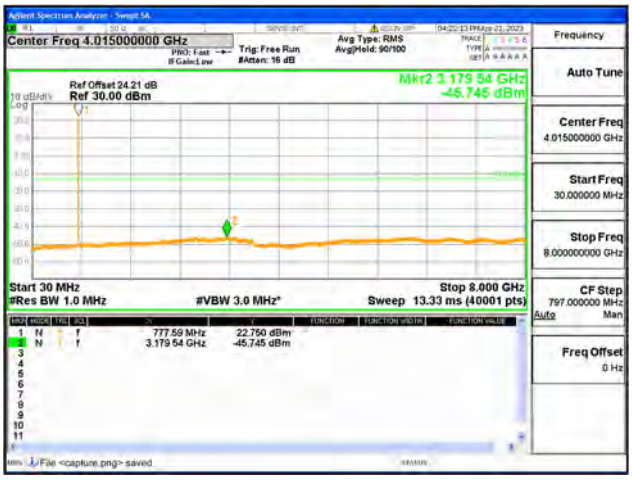


Band12 / 10MHz / Low CH / QPSK

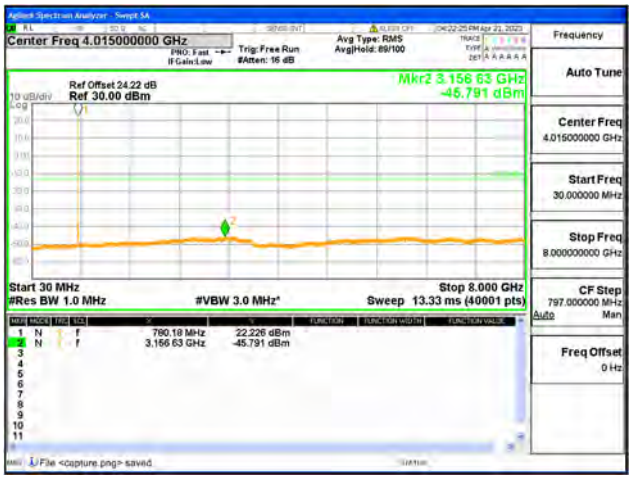


Band12 / 10MHz / Mid CH / QPSK

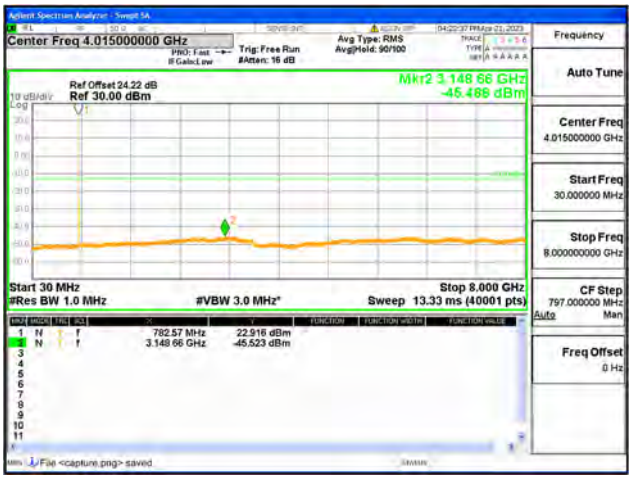
Band12 / 10MHz / High CH / QPSK



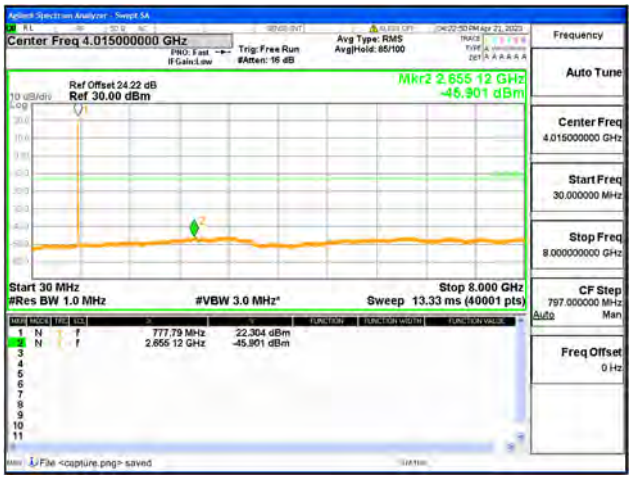
Band13 / 5MHz / Low CH / QPSK



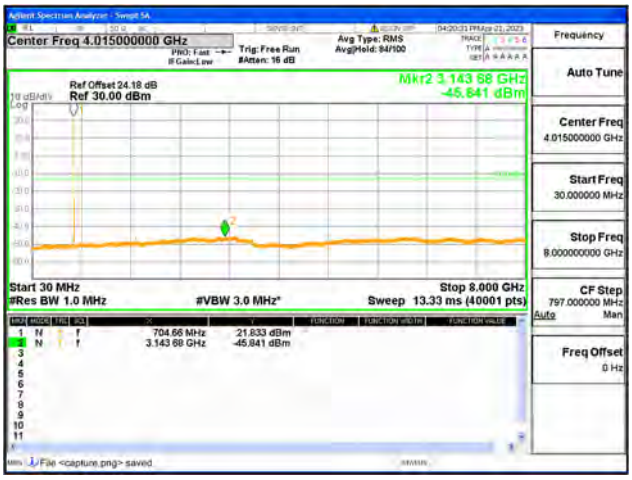
Band13 / 5MHz / Mid CH / QPSK



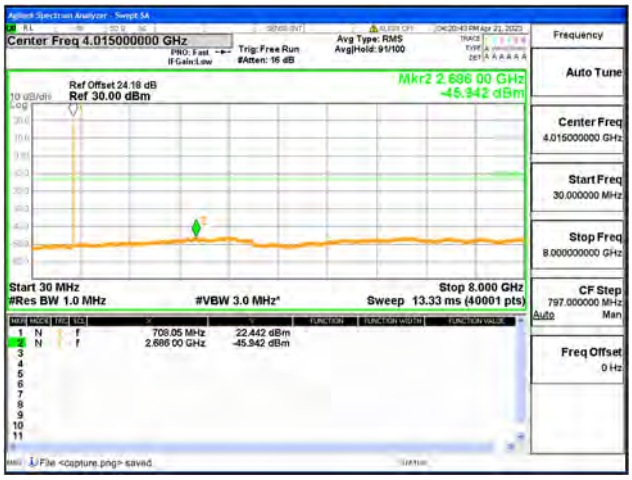
Band13 / 5MHz / High CH / QPSK



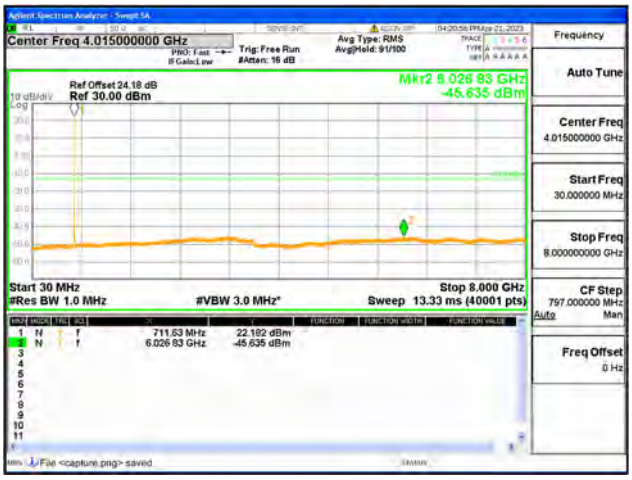
Band13 / 10MHz / Mid CH / QPSK



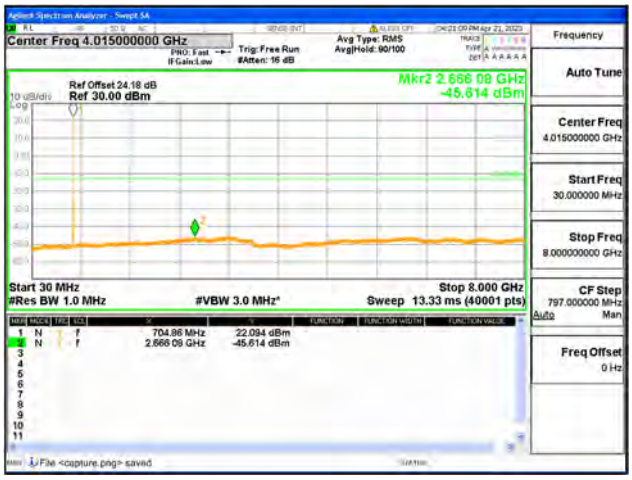
Band17 / 5MHz / Low CH / QPSK



Band17 / 5MHz / Mid CH / QPSK



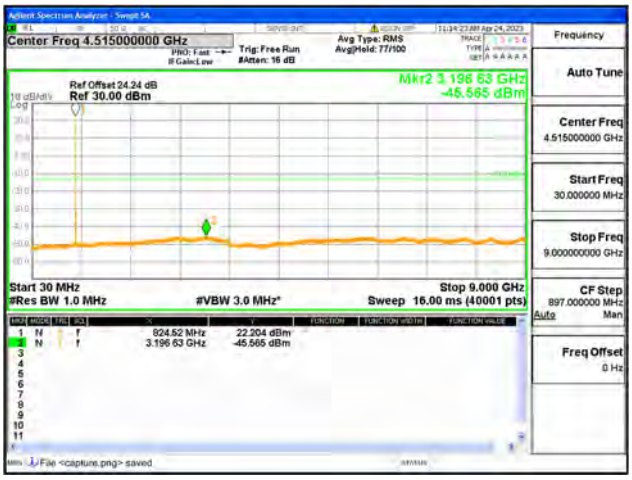
Band17 / 5MHz / High CH / QPSK



Band17 / 10MHz / Low CH / QPSK

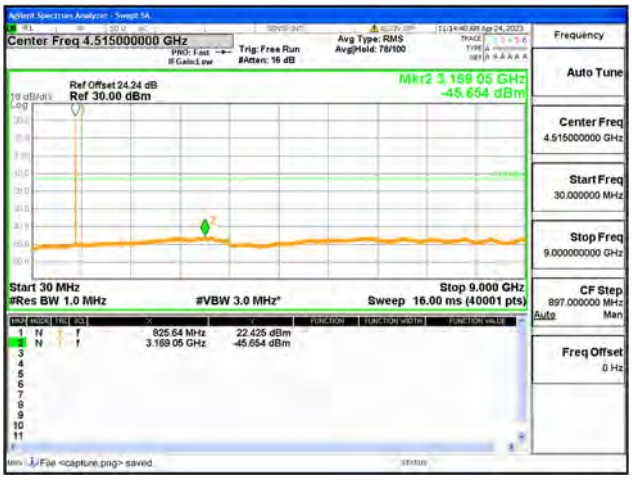
Band17 / 10MHz / Mid CH / QPSK

Band17 / 10MHz / High CH / QPSK

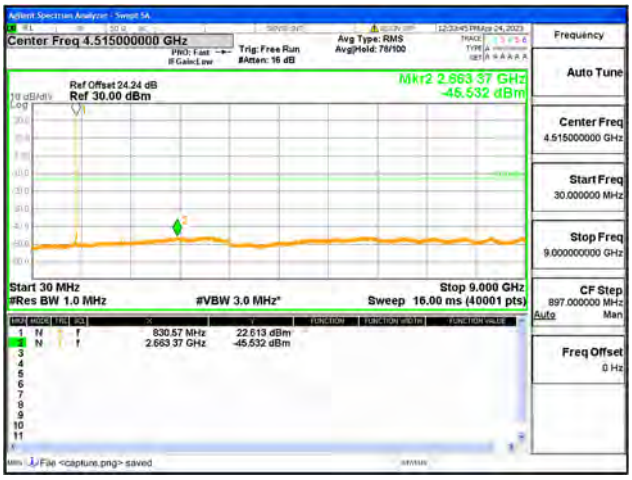


Band18 part22 / 5MHz / Low CH / QPSK

Band18 part22 / 5MHz / Mid CH / QPSK



Band18 part22 / 5MHz / High CH / QPSK



Band19 / 5MHz / Low CH / QPSK

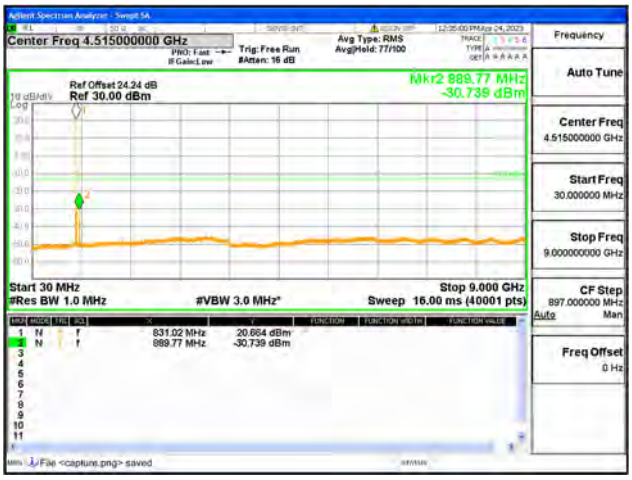
Band19 / 5MHz / Mid CH / QPSK

Band19 / 5MHz / High CH / QPSK

Band19 / 10MHz / Low CH / QPSK

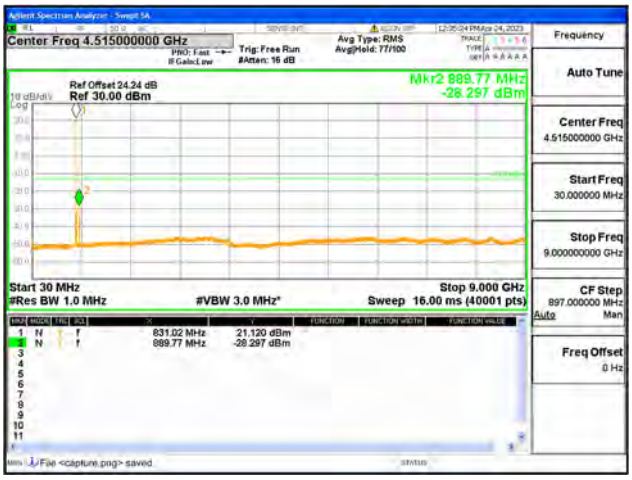
Band19 / 10MHz / Mid CH / QPSK

Band19 / 10MHz / High CH / QPSK

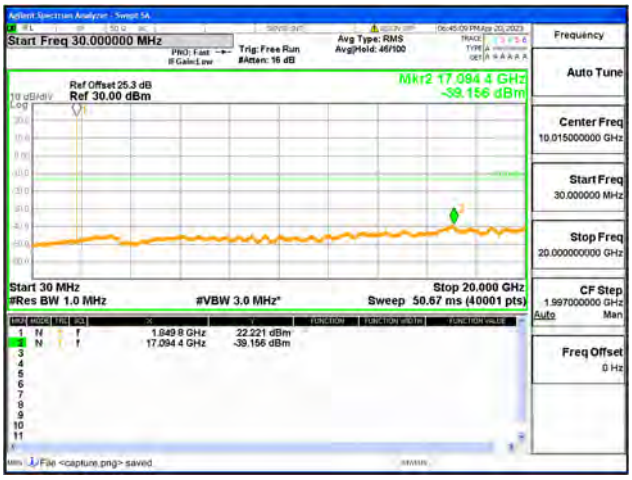


Band19 / 15MHz / Low CH / QPSK

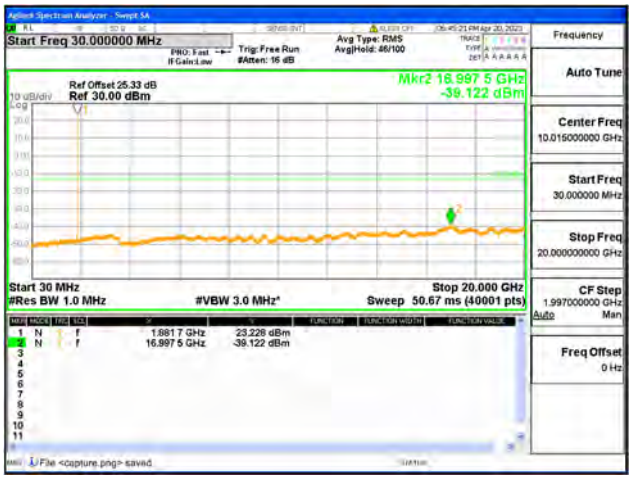
Band19 / 15MHz / Mid CH / QPSK



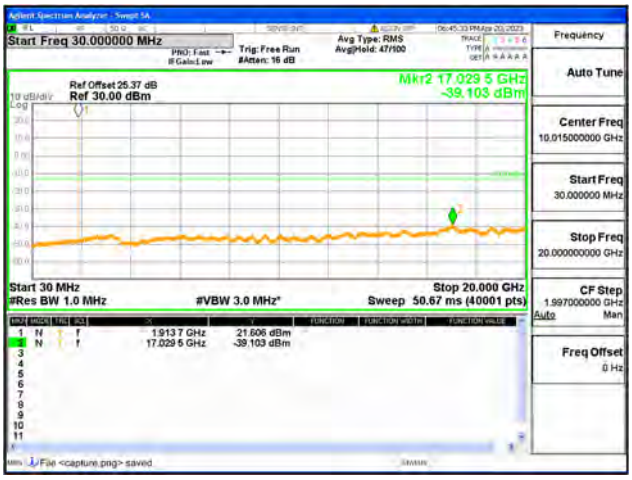
Band19 / 15MHz / High CH / QPSK



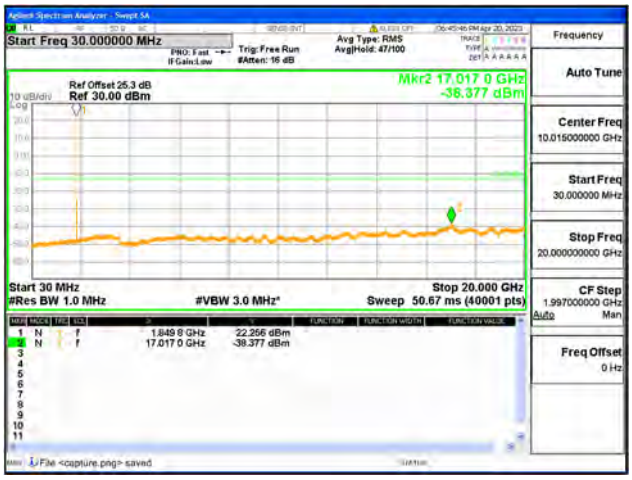
Band25 / 1.4MHz / Low CH / QPSK



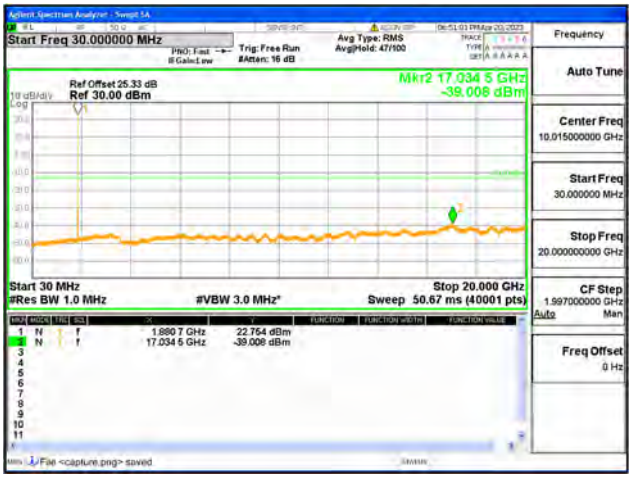
Band25 / 1.4MHz / Mid CH / QPSK



Band25 / 1.4MHz / High CH / QPSK

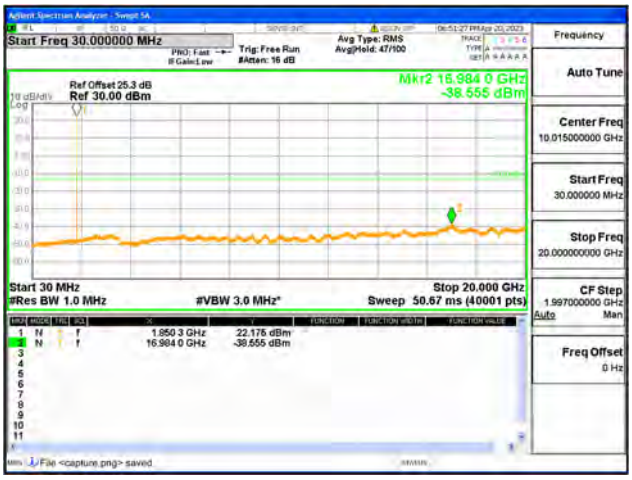


Band25 / 3MHz / Low CH / QPSK



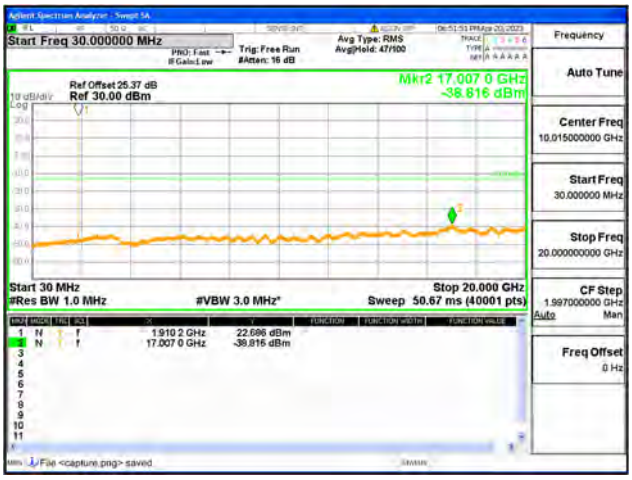
Band25 / 3MHz / Mid CH / QPSK

Band25 / 3MHz / High CH / QPSK



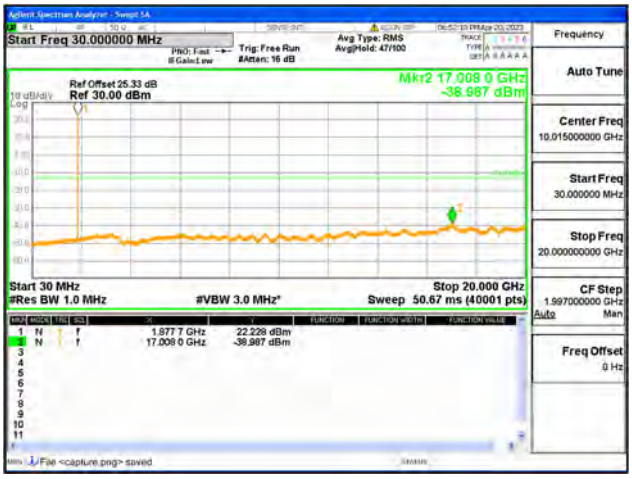
Band25 / 5MHz / Low CH / QPSK

Band25 / 5MHz / Mid CH / QPSK



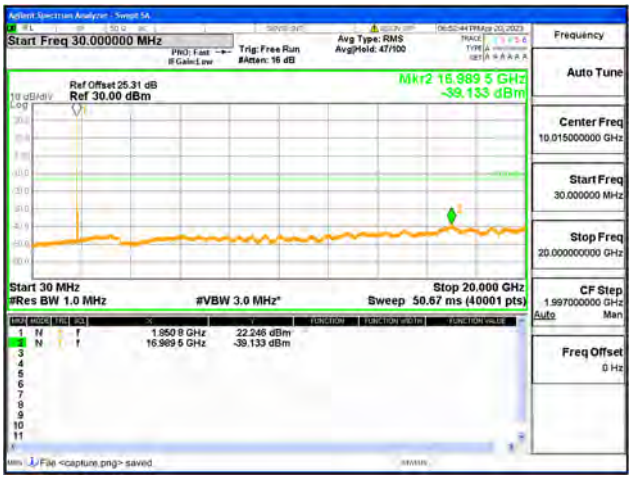
Band25 / 5MHz / High CH / QPSK

Band25 / 10MHz / Low CH / QPSK



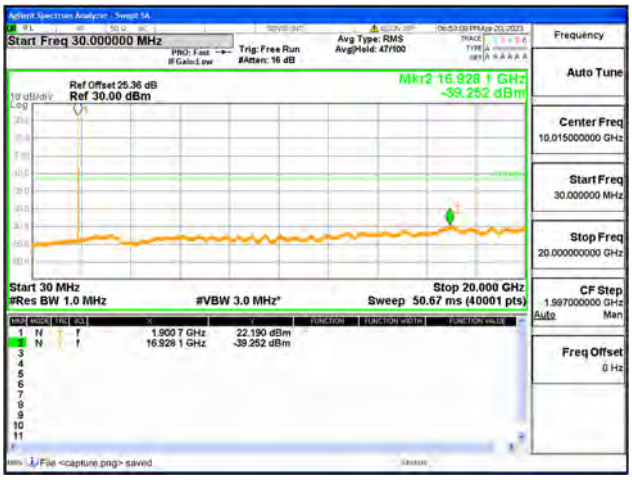
Band25 / 10MHz / Mid CH / QPSK

Band25 / 10MHz / High CH / QPSK



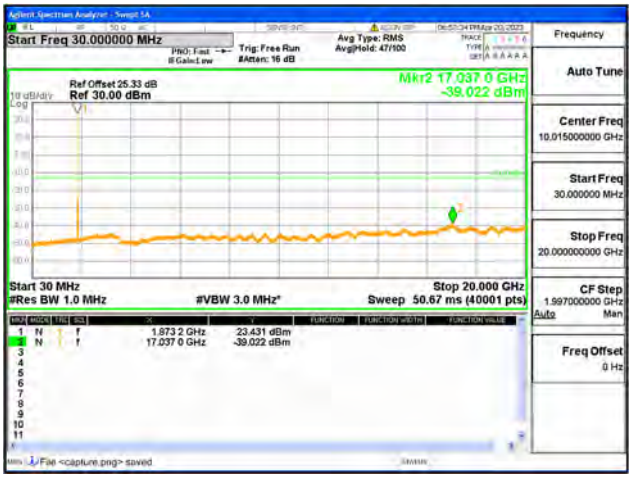
Band25 / 15MHz / Low CH / QPSK

Band25 / 15MHz / Mid CH / QPSK



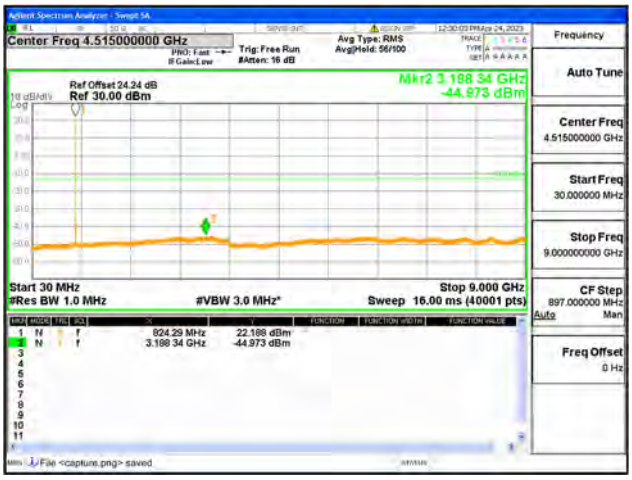
Band25 / 15MHz / High CH / QPSK

Band25 / 20MHz / Low CH / QPSK



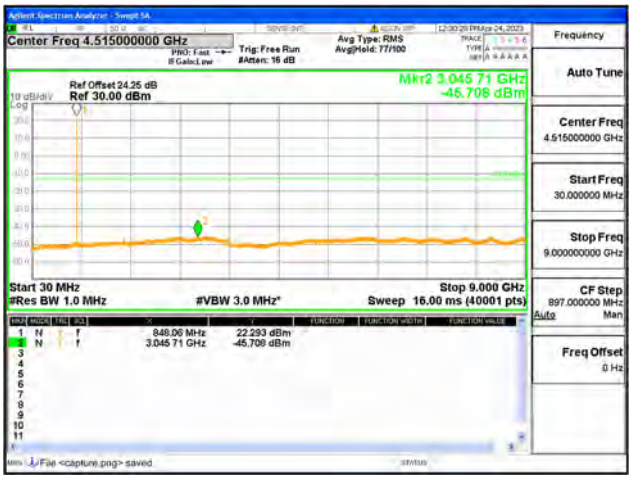
Band25 / 20MHz / Mid CH / QPSK

Band25 / 20MHz / High CH / QPSK



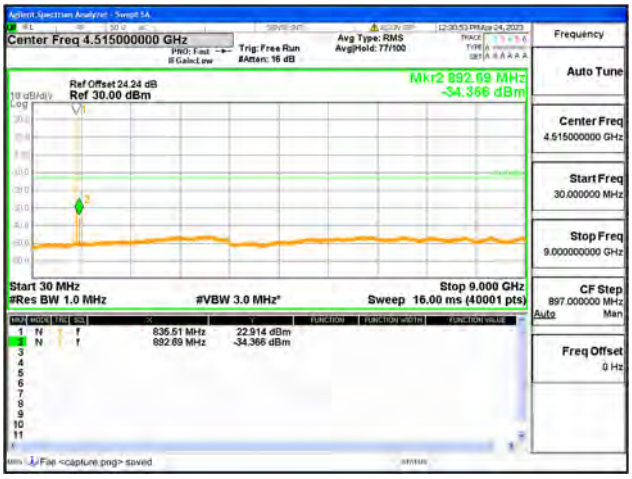
Band26 Part22 / 1.4MHz / Low CH / QPSK

Band26 Part22 / 1.4MHz / Mid CH / QPSK



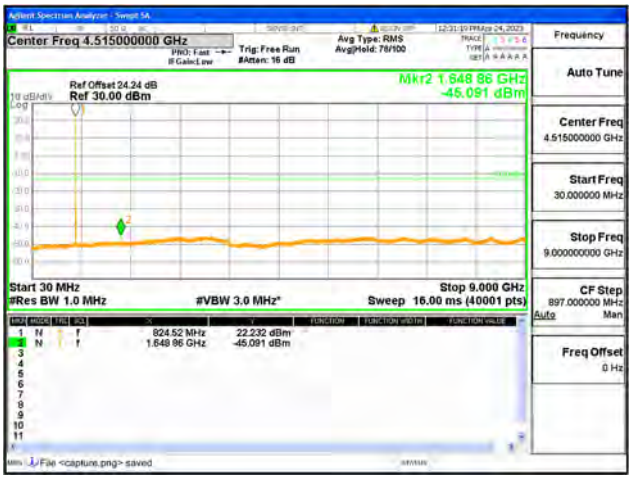
Band26 Part22 / 1.4MHz / High CH / QPSK

Band26 Part22 / 3MHz / Low CH / QPSK



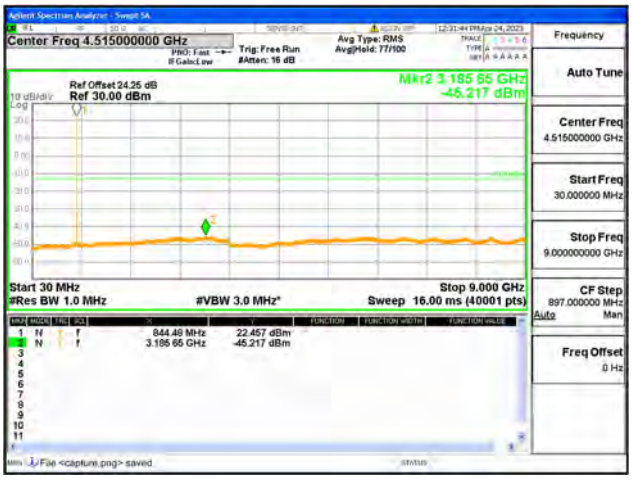
Band26 Part22 / 3MHz / Mid CH / QPSK

Band26 Part22 / 3MHz / High CH / QPSK



Band26 Part22 / 5MHz / Low CH / QPSK

Band26 Part22 / 5MHz / Mid CH / QPSK

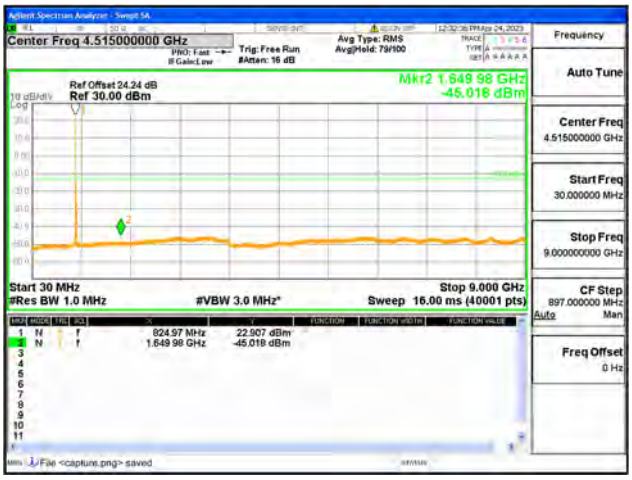


Band26 Part22 / 5MHz / High CH / QPSK

Band26 Part22 / 10MHz / Low CH / QPSK

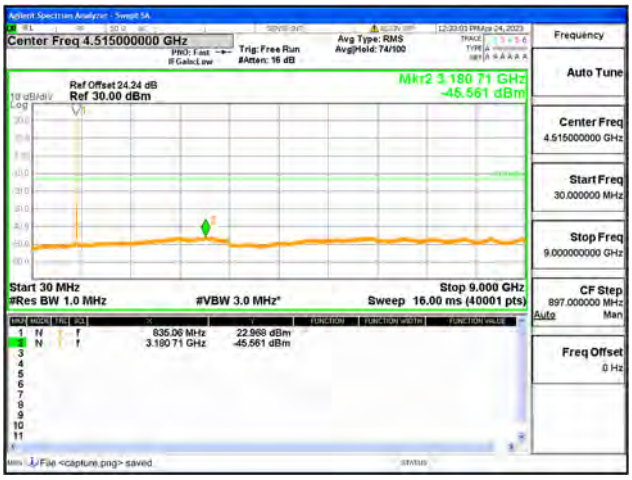
Band26 Part22 / 10MHz / Mid CH / QPSK

Band26 Part22 / 10MHz / High CH / QPSK

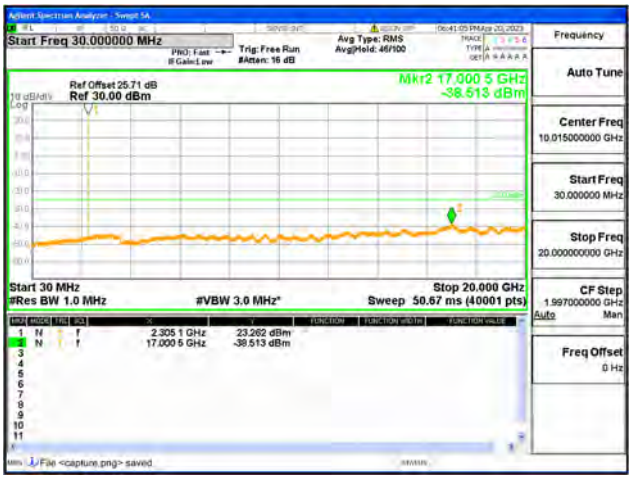


Band26 Part22 / 15MHz / Low CH / QPSK

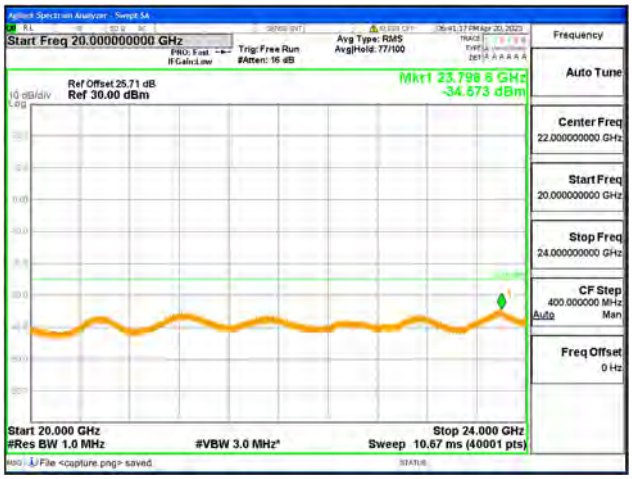
Band26 Part22 / 15MHz / Mid CH / QPSK



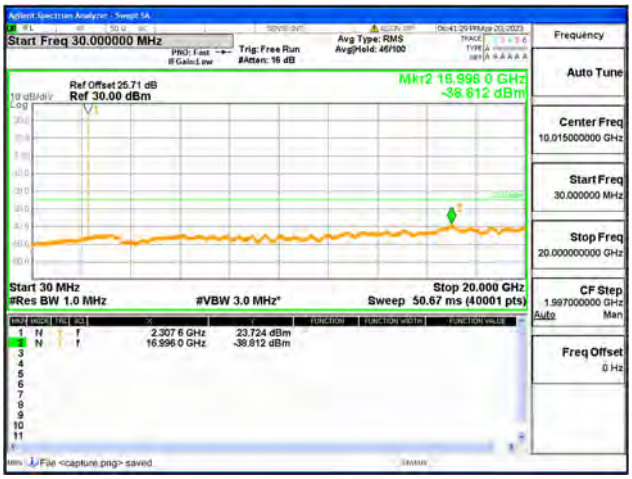
Band26 Part22 / 15MHz / High CH / QPSK



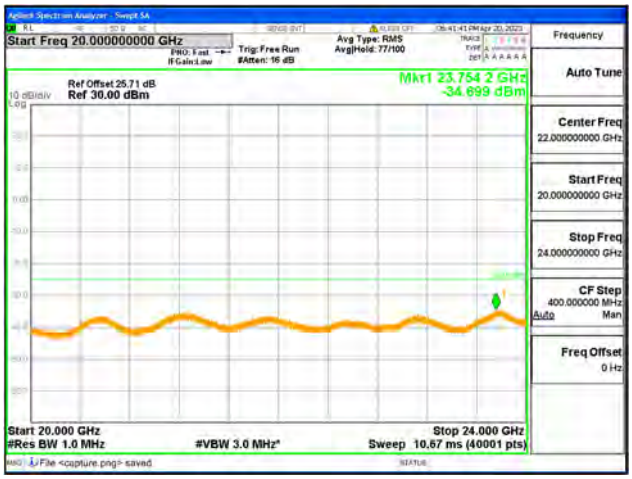
Band30-30M-20G / 5MHz / Low CH / QPSK



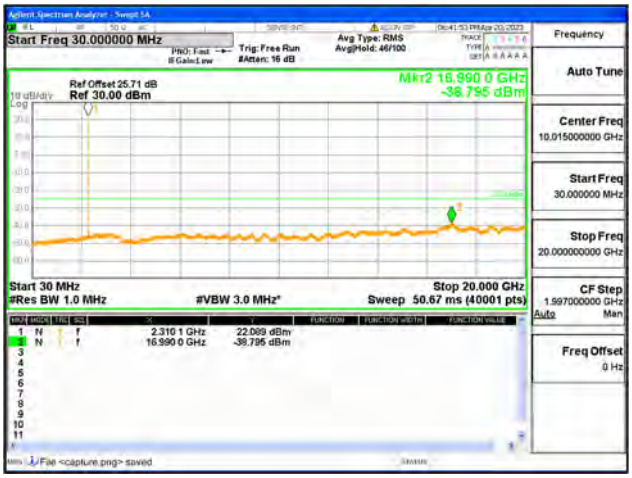
Band30-20G-24G / 5MHz / Low CH / QPSK



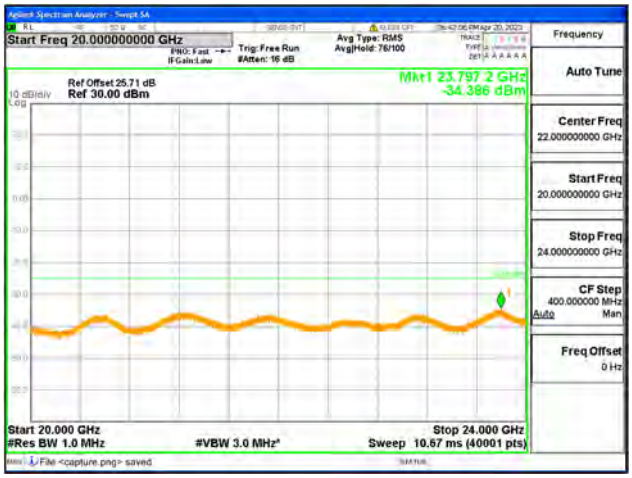
Band30-30M-20G / 5MHz / Mid CH / QPSK



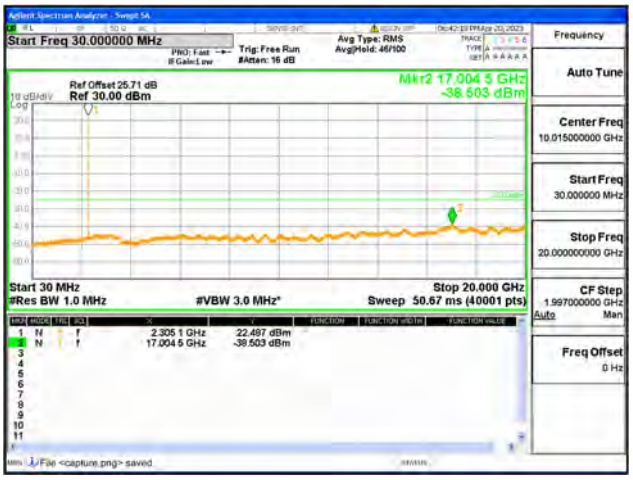
Band30-20G-24G / 5MHz / Mid CH / QPSK



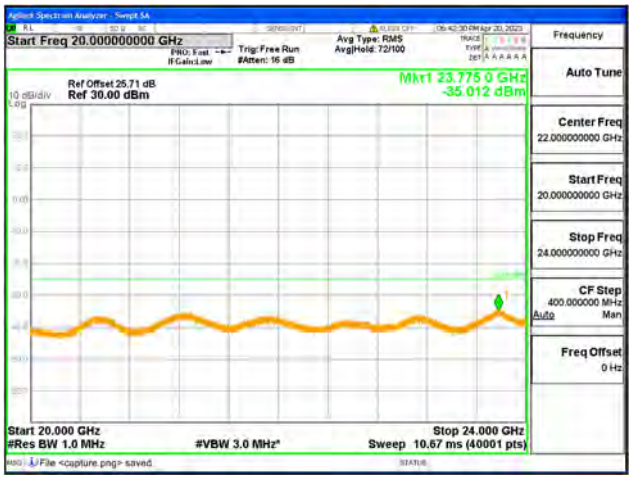
Band30-30M-20G / 5MHz / High CH / QPSK



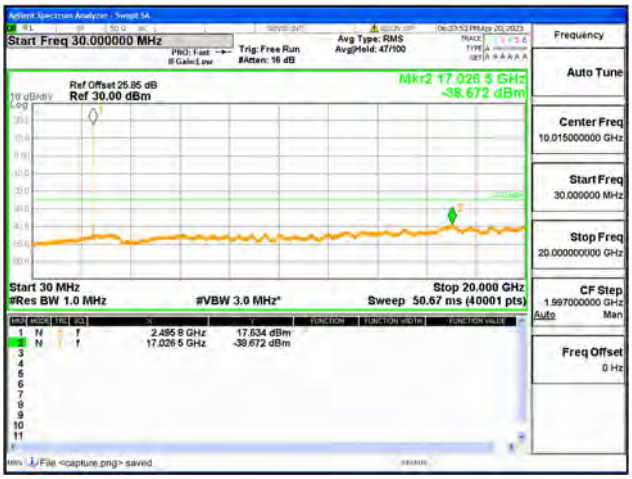
Band30-20G-24G / 5MHz / High CH / QPSK



Band30-30M-20G / 10MHz / Mid CH / QPSK

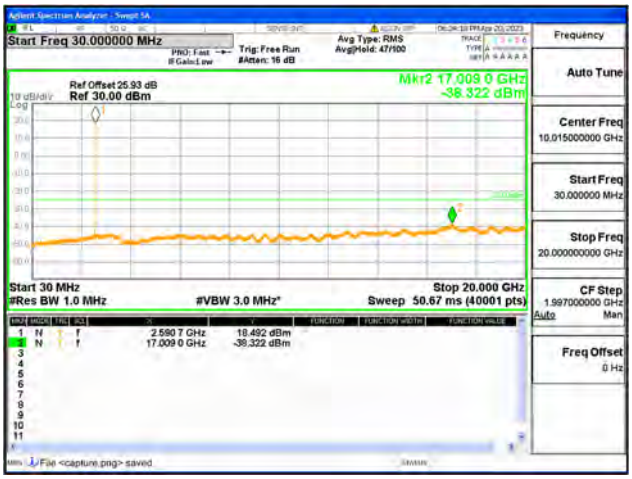


Band30-20G-24G / 10MHz / Mid CH / QPSK

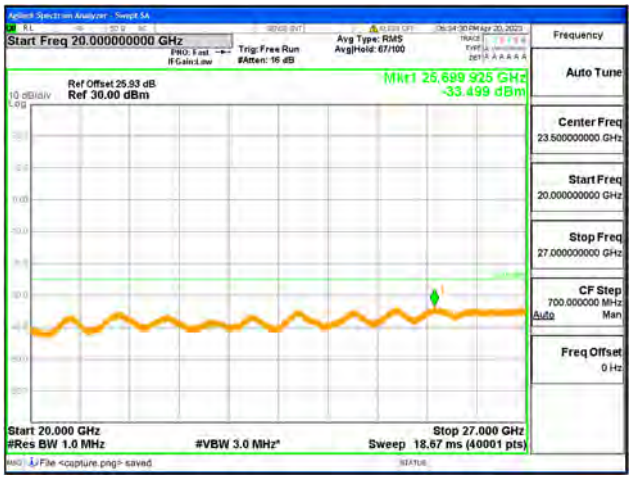


Band41-30M-20G / 5MHz / Low CH / QPSK

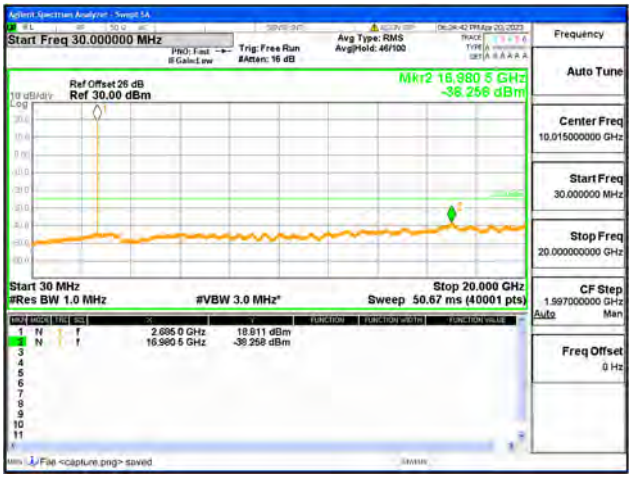
Band41-20G-27G / 5MHz / Low CH / QPSK



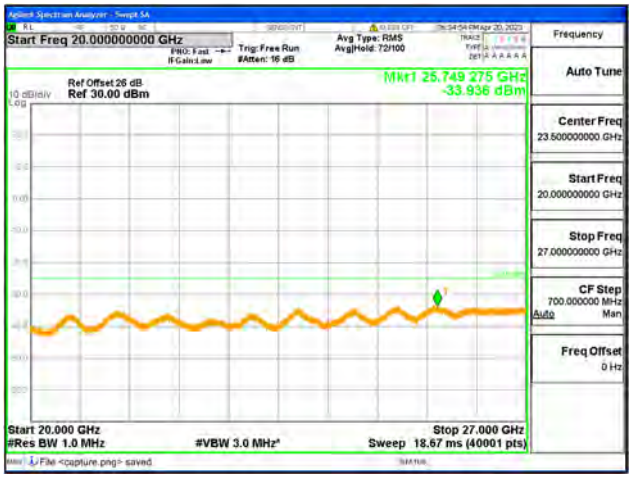
Band41-30M-20G / 5MHz / Mid CH / QPSK



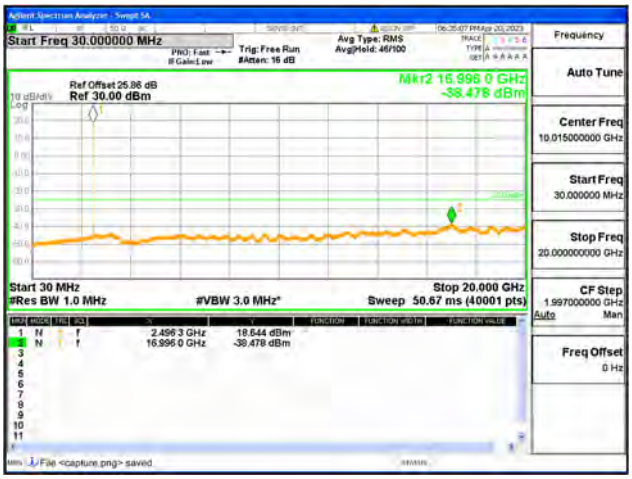
Band41-20G-27G / 5MHz / Mid CH / QPSK



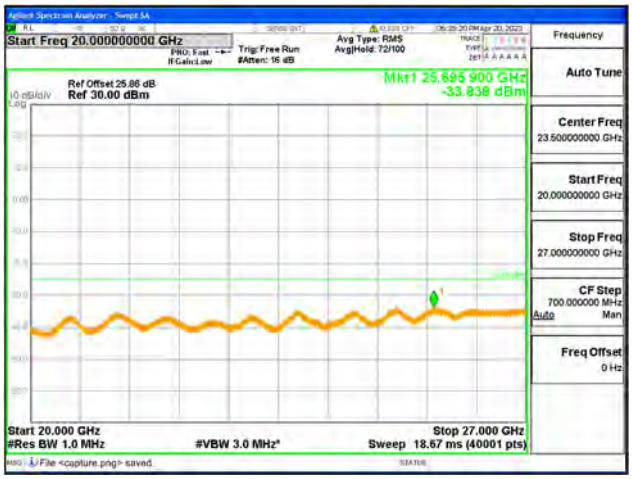
Band41-30M-20G / 5MHz / High CH / QPSK



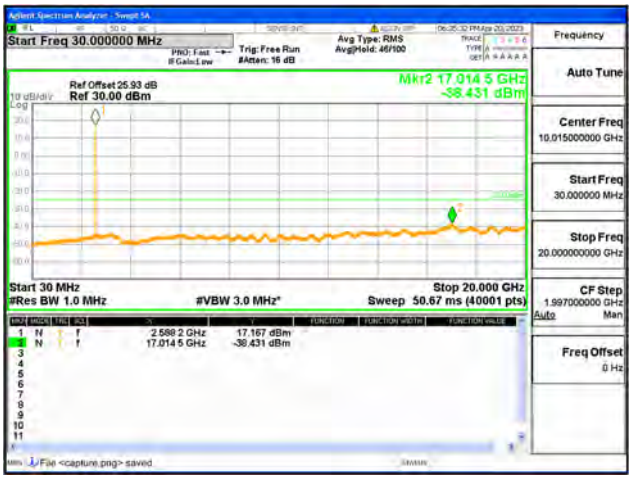
Band41-20G-27G / 5MHz / High CH / QPSK



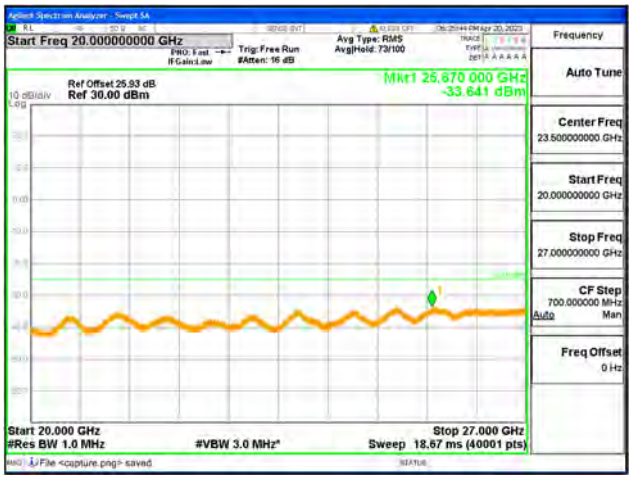
Band41-30M-20G / 10MHz / Low CH / QPSK



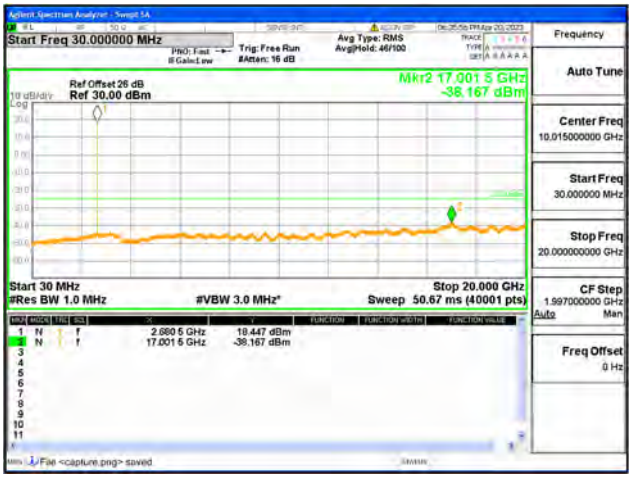
Band41-20G-27G / 10MHz / Low CH / QPSK



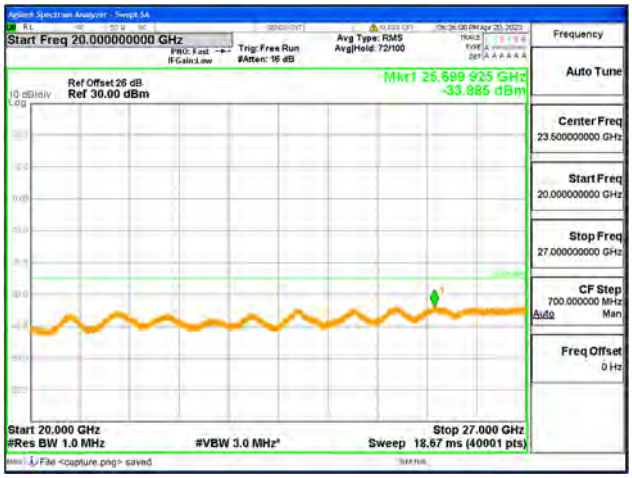
Band41-30M-20G / 10MHz / Mid CH / QPSK



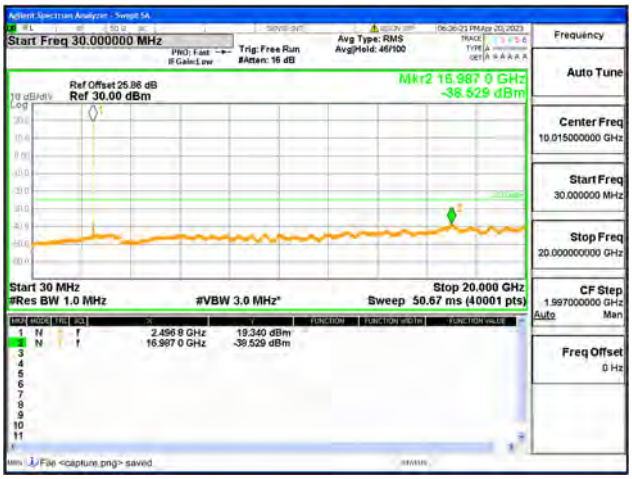
Band41-20G-27G / 10MHz / Mid CH / QPSK



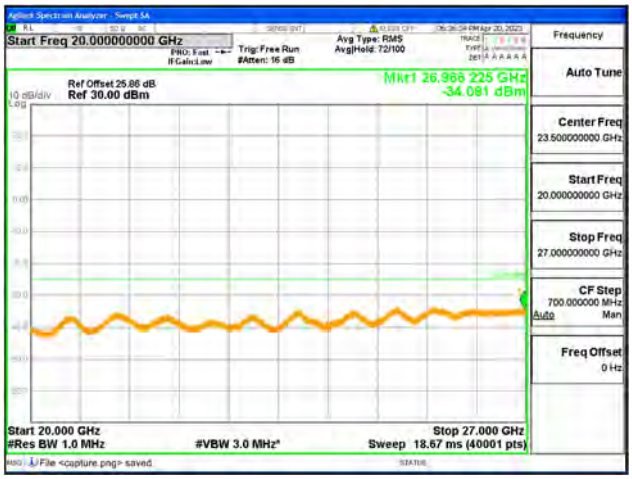
Band41-30M-20G / 10MHz / High CH / QPSK



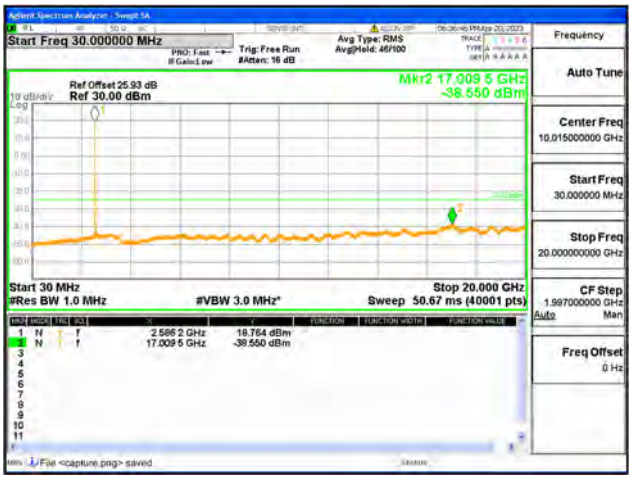
Band41-20G-27G / 10MHz / High CH / QPSK



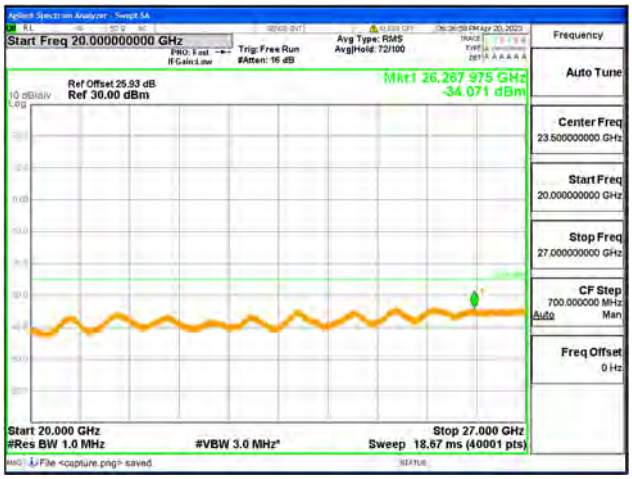
Band41-30M-20G / 15MHz / Low CH / QPSK



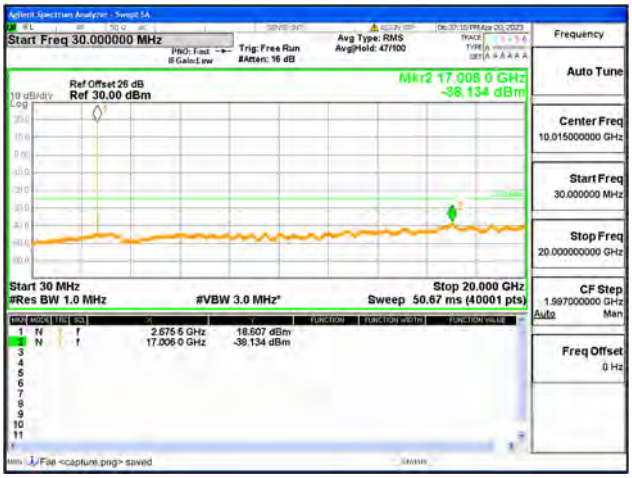
Band41-20G-27G / 15MHz / Low CH / QPSK



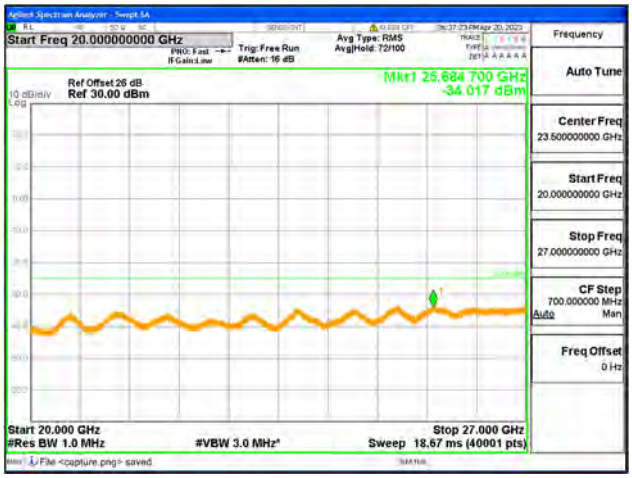
Band41-30M-20G / 15MHz / Mid CH / QPSK



Band41-20G-27G / 15MHz / Mid CH / QPSK

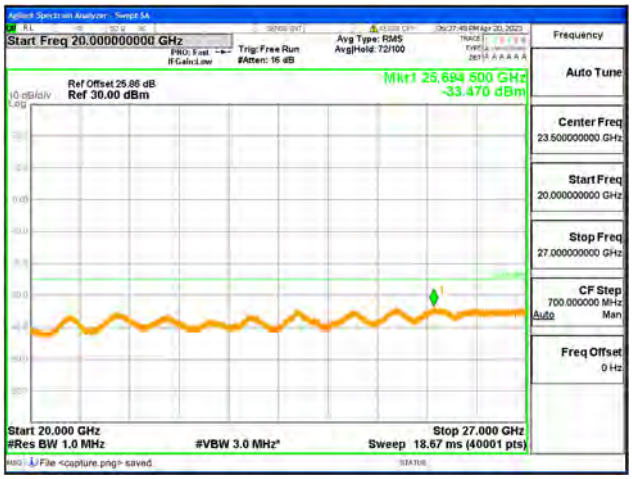


Band41-30M-20G / 15MHz / High CH / QPSK

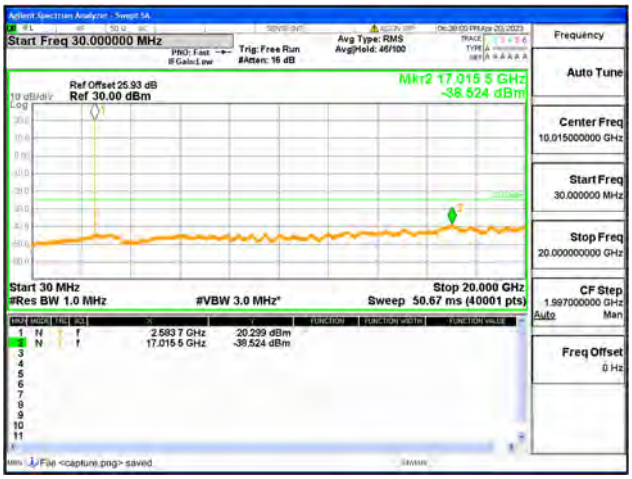


Band41-20G-27G / 15MHz / High CH / QPSK

Band41-30M-20G / 20MHz / Low CH / QPSK

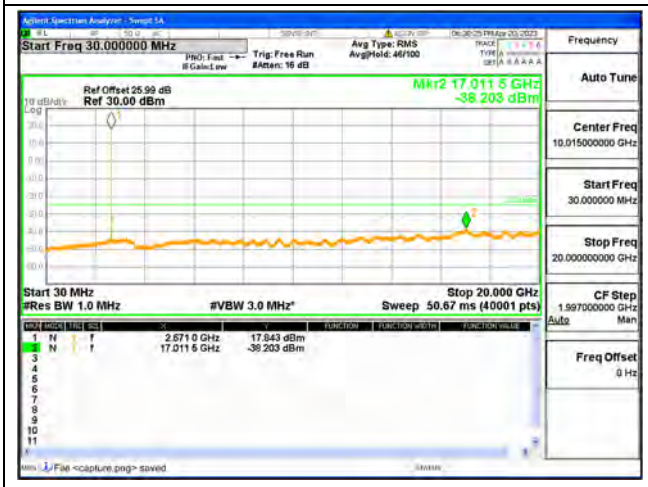


Band41-20G-27G / 20MHz / Low CH / QPSK

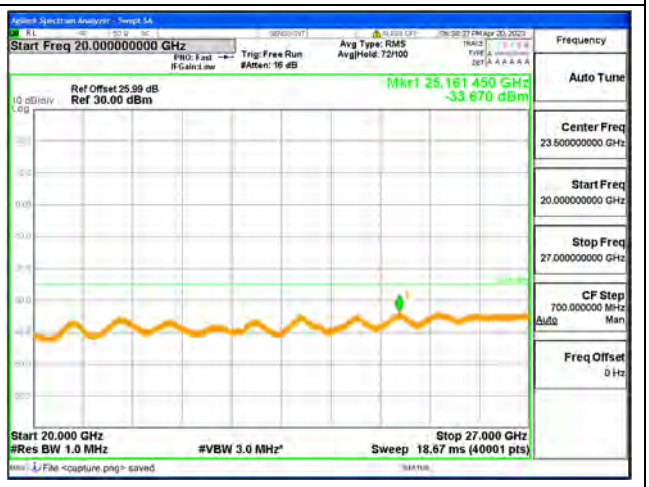


Band41-30M-20G / 20MHz / Mid CH / QPSK

Band41-20G-27G / 20MHz / Mid CH / QPSK



Band41-30M-20G / 20MHz / High CH / QPSK



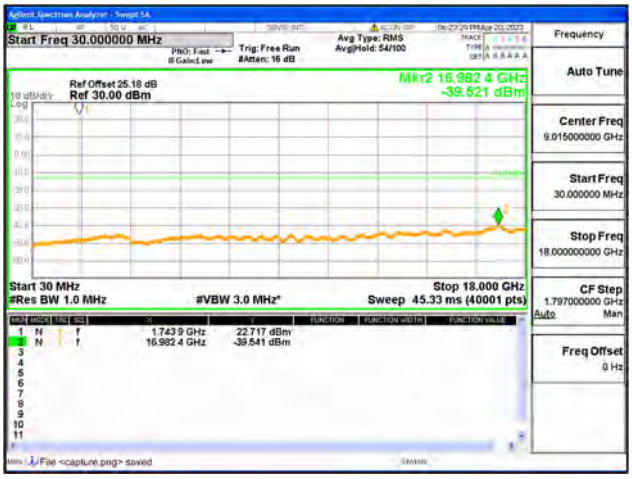
Band41-20G-27G / 20MHz / High CH / QPSK

Band66 / 1.4MHz / Low CH / QPSK

Band66 / 1.4MHz / Mid CH / QPSK

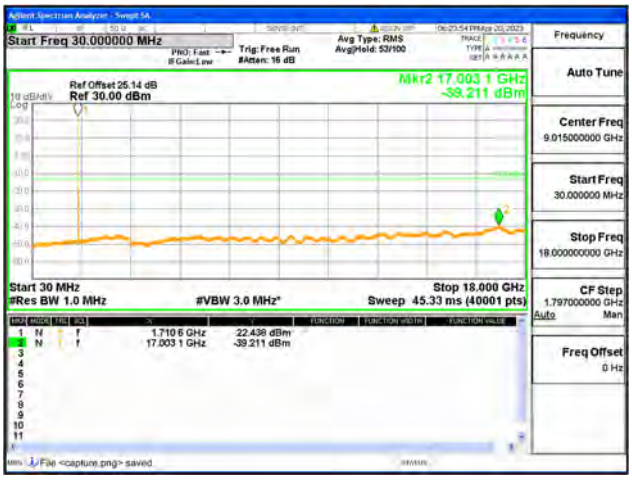
Band66 / 1.4MHz / High CH / QPSK

Band66 / 3MHz / Low CH / QPSK



Band66 / 3MHz / Mid CH / QPSK

Band66 / 3MHz / High CH / QPSK



Band66 / 5MHz / Low CH / QPSK

Band66 / 5MHz / Mid CH / QPSK

Band66 / 5MHz / High CH / QPSK

Band66 / 10MHz / Low CH / QPSK

Band66 / 10MHz / Mid CH / QPSK

Band66 / 10MHz / High CH / QPSK

Band66 / 15MHz / Low CH / QPSK

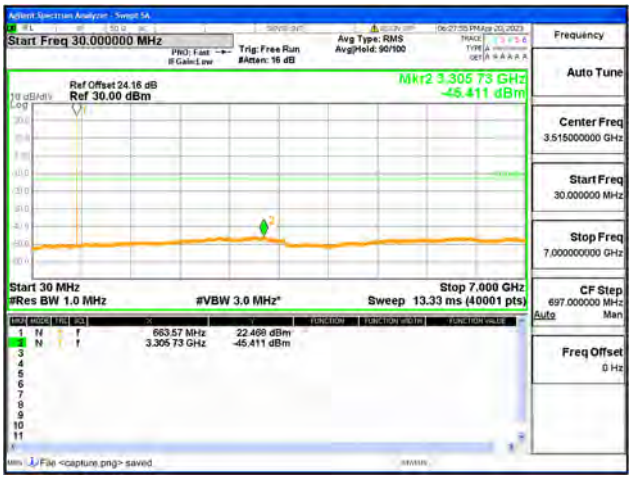
Band66 / 15MHz / Mid CH / QPSK

Band66 / 15MHz / High CH / QPSK

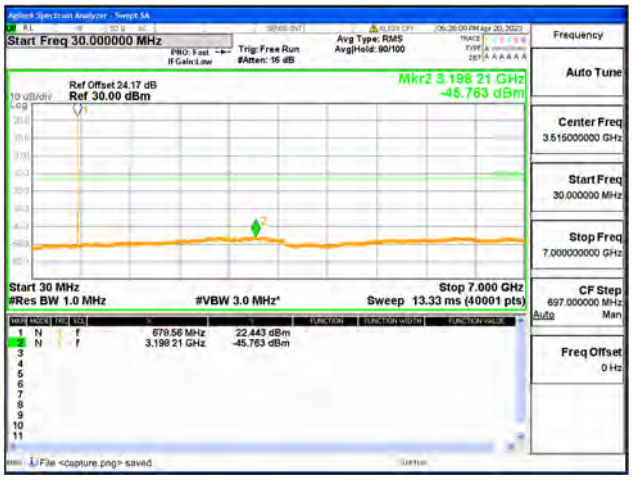
Band66 / 20MHz / Low CH / QPSK

Band66 / 20MHz / Mid CH / QPSK

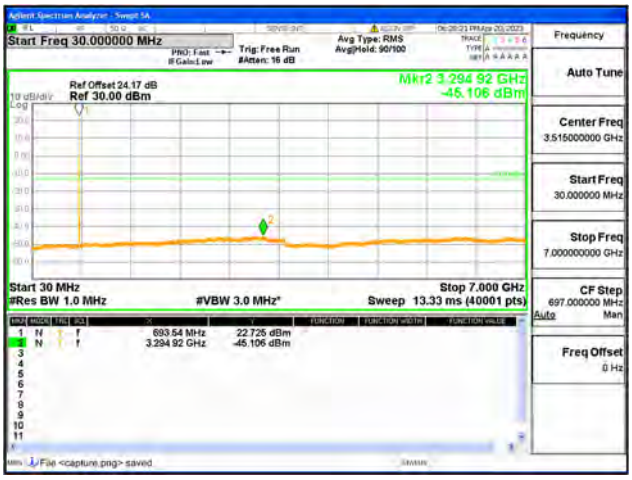
Band66 / 20MHz / High CH / QPSK



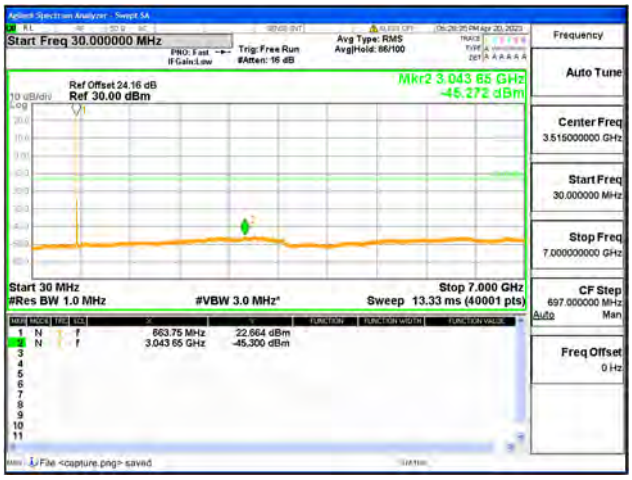
Band71 / 5MHz / Low CH / QPSK



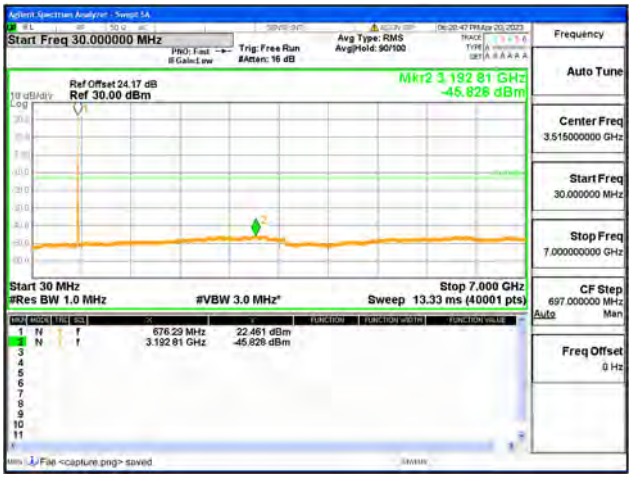
Band71 / 5MHz / Mid CH / QPSK



Band71 / 5MHz / High CH / QPSK

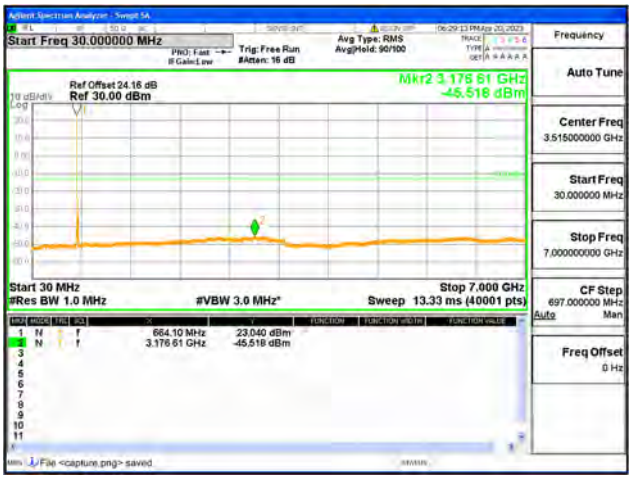


Band71 / 10MHz / Low CH / QPSK

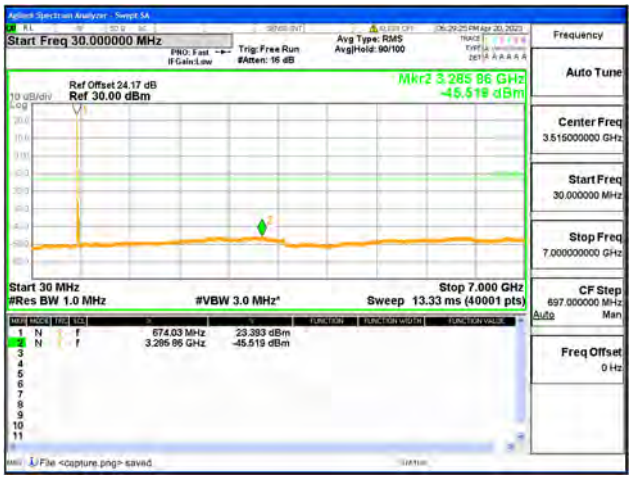


Band71 / 10MHz / Mid CH / QPSK

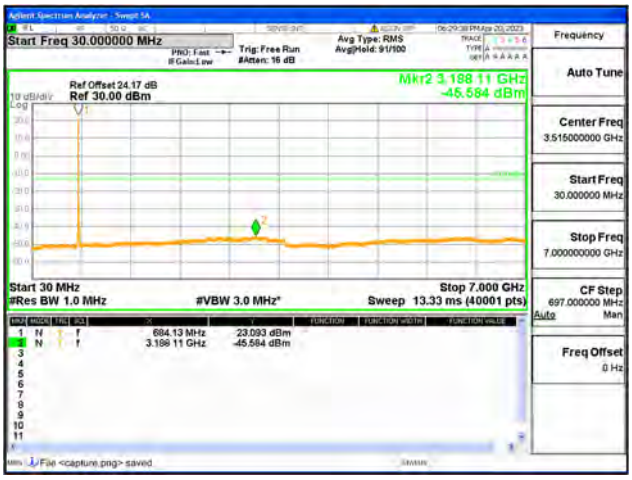
Band71 / 10MHz / High CH / QPSK



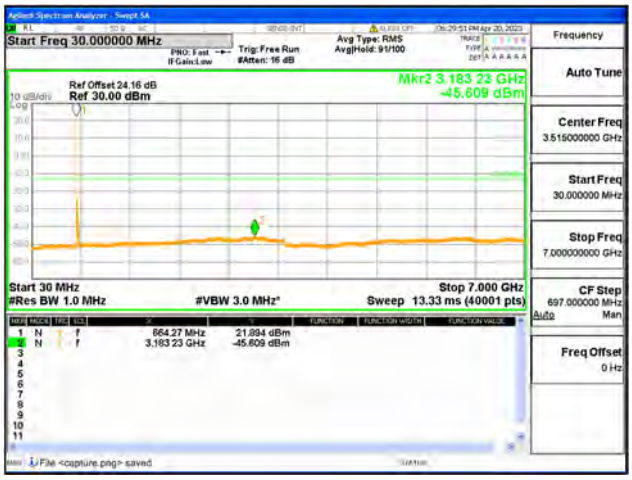
Band71 / 15MHz / Low CH / QPSK



Band71 / 15MHz / Mid CH / QPSK

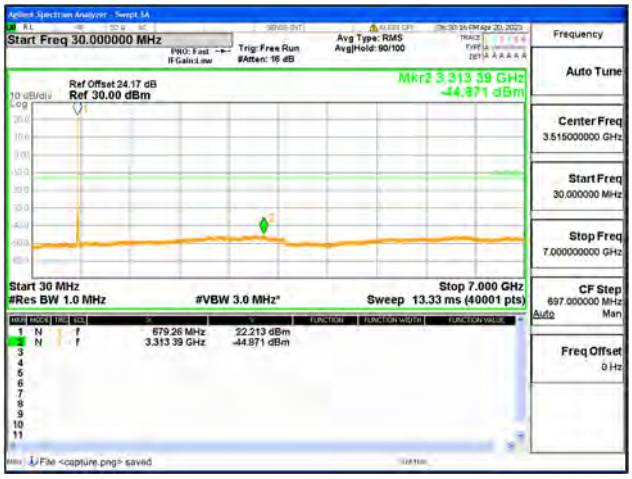


Band71 / 15MHz / High CH / QPSK



Band71 / 20MHz / Low CH / QPSK

Band71 / 20MHz / Mid CH / QPSK



Band71 / 20MHz / High CH / QPSK

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, 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 7,41

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, 17, 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

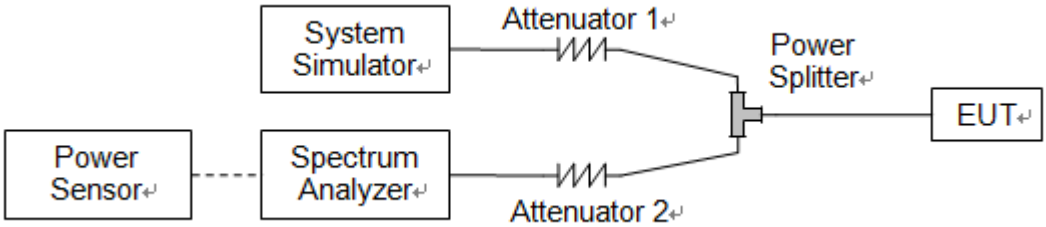
According to FCC section 27.53(a) (4), for mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(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.

2.6.2. Test Description

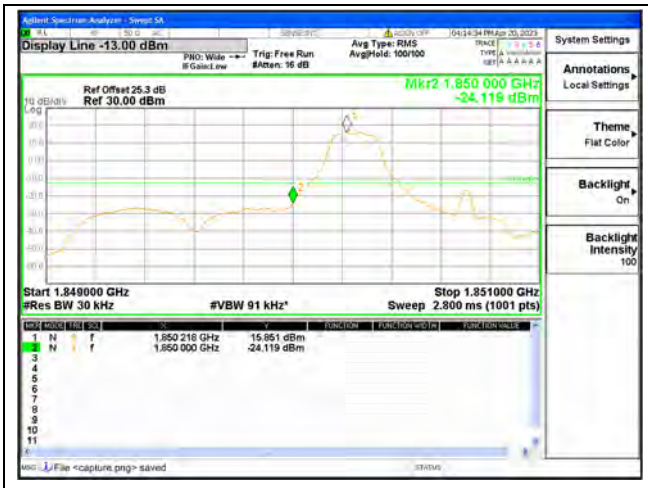


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.6.3. Test Procedure

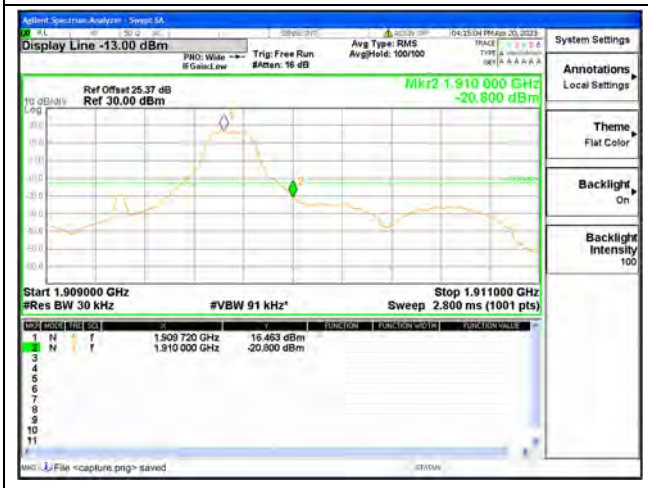
KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

2.6.4. Test Result



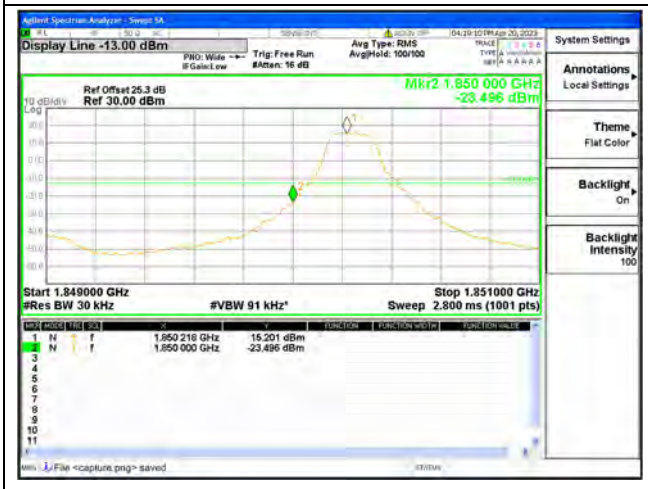
Band2 / 1.4MHz / Low CH / QPSK / 1 RB

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

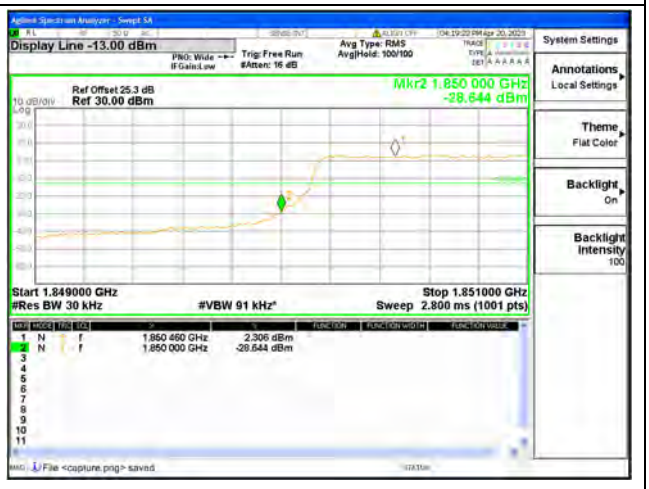


Band2 / 1.4MHz / High CH / QPSK / 1 RB

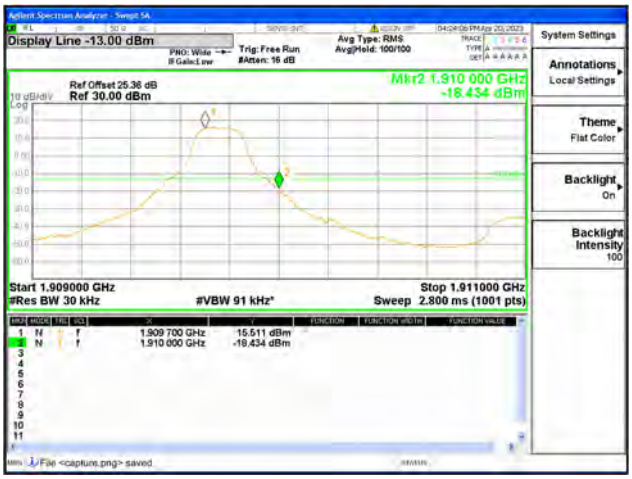
Band2 / 1.4MHz / High CH / QPSK / FULL RB



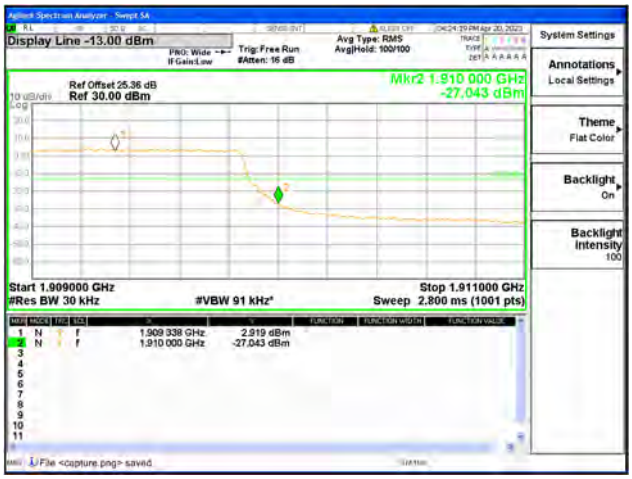
Band2 / 3MHz / Low CH / QPSK / 1 RB



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

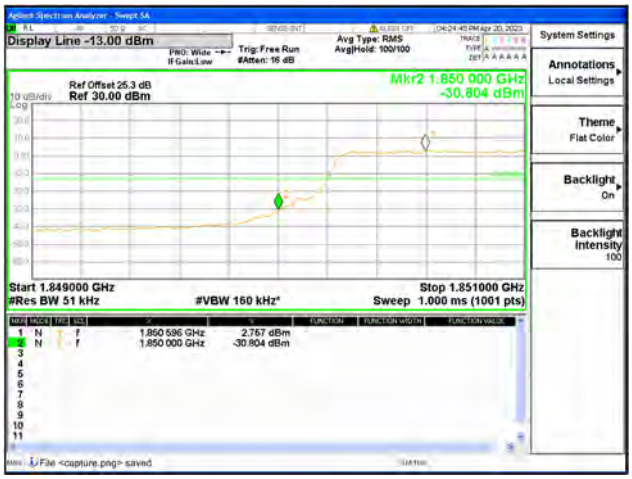


Band2 / 3MHz / High CH / QPSK / 1 RB



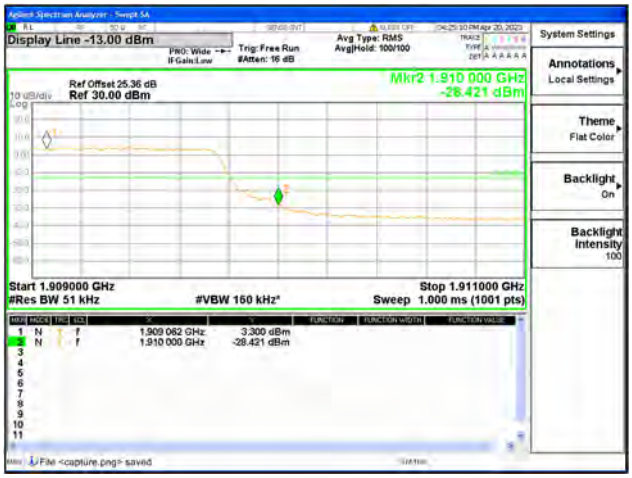
Band2 / 3MHz / High CH / QPSK / FULL RB

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



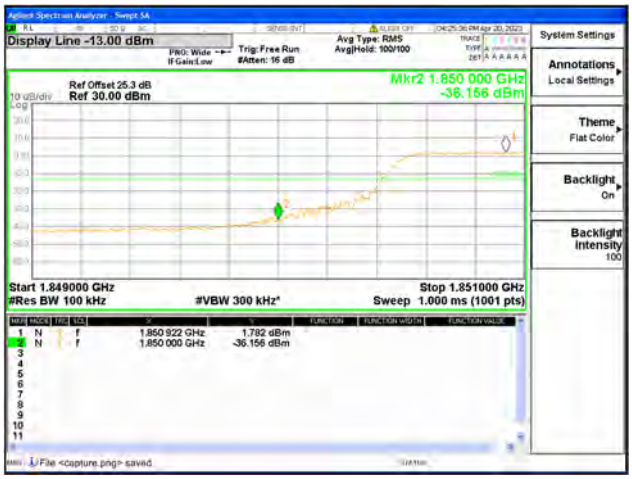
Band2 / 5MHz / Low CH / QPSK / FULL RB

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



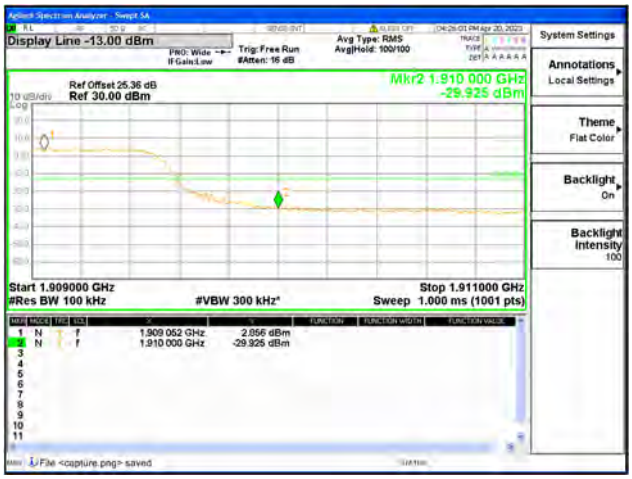
Band2 / 5MHz / High CH / QPSK / FULL RB

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

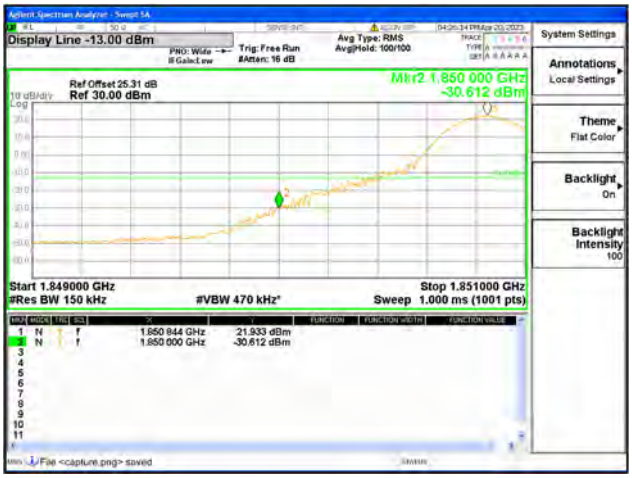


Band2 / 10MHz / Low CH / QPSK / FULL RB

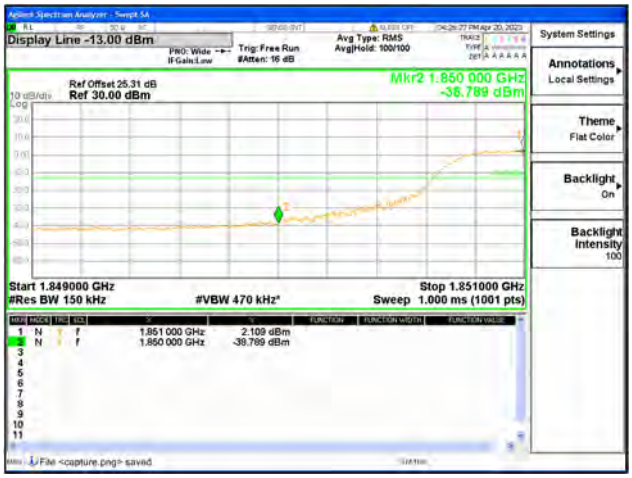
Band2 / 10MHz / High CH / QPSK / 1 RB



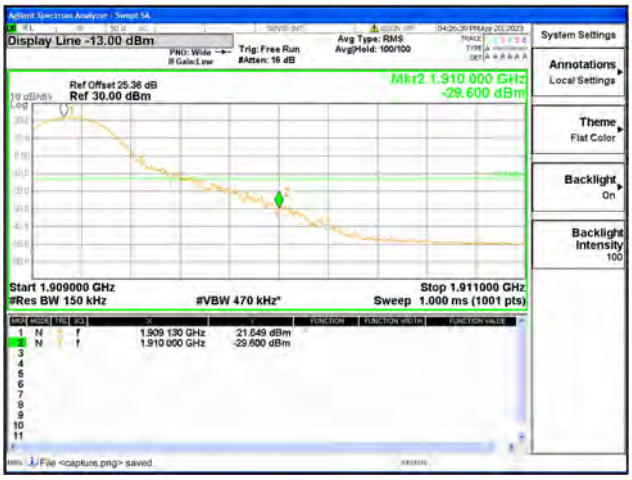
Band2 / 10MHz / High CH / QPSK / FULL RB



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



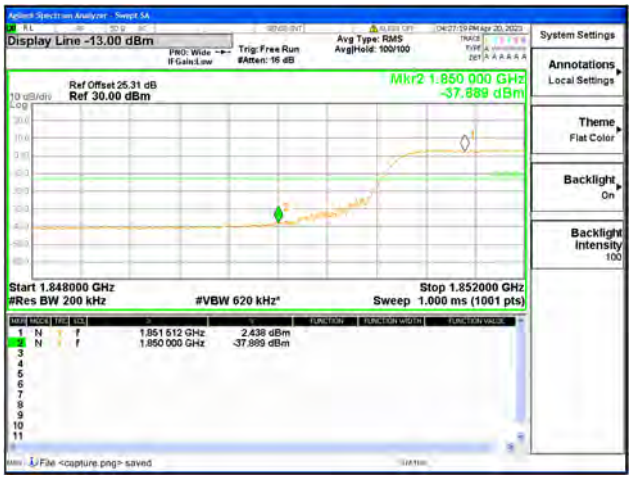
Band2 / 15MHz / Low CH / QPSK / FULL RB



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

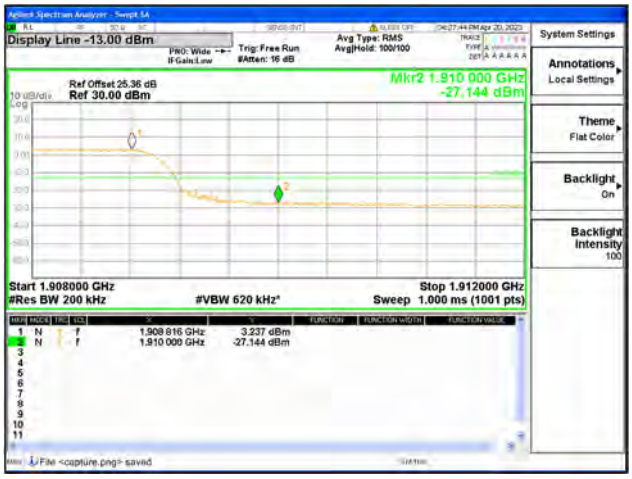
Band2 / 15MHz / High CH / QPSK / FULL RB

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