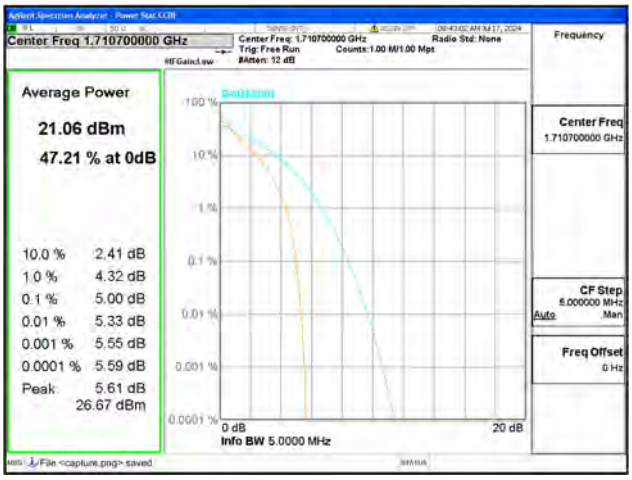
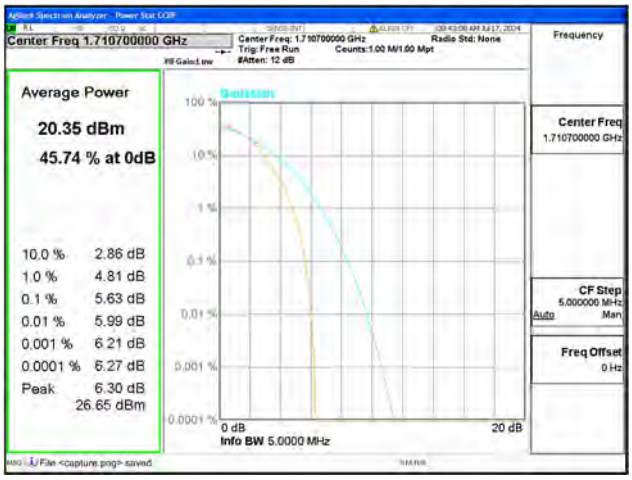
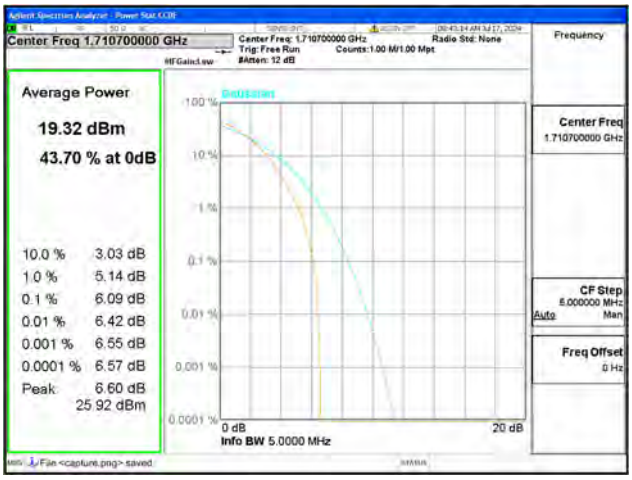


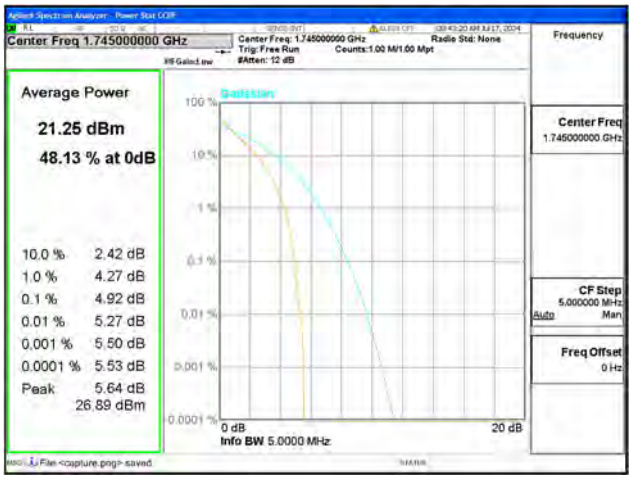
B66 / 1.4MHz / Low CH / QPSK



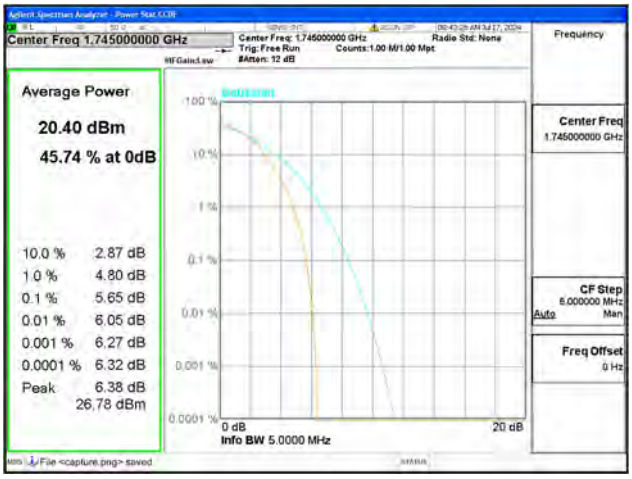
B66 / 1.4MHz / Low CH / 16QAM



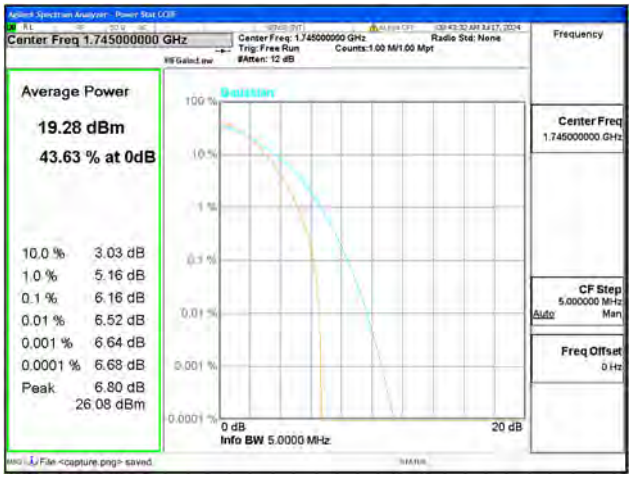
B66 / 1.4MHz / Low CH / 64QAM



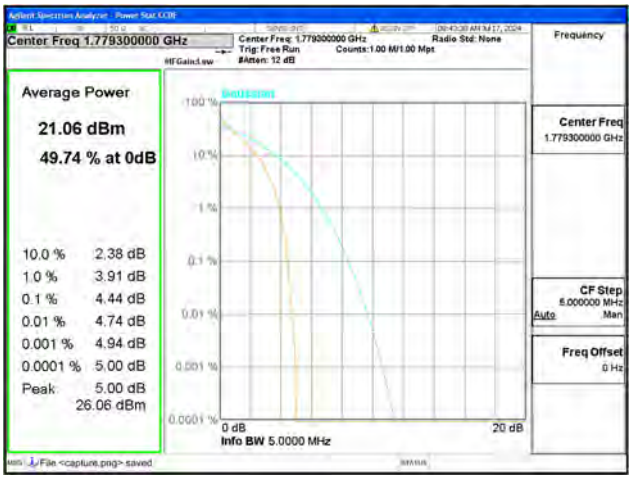
B66 / 1.4MHz / Mid CH / QPSK



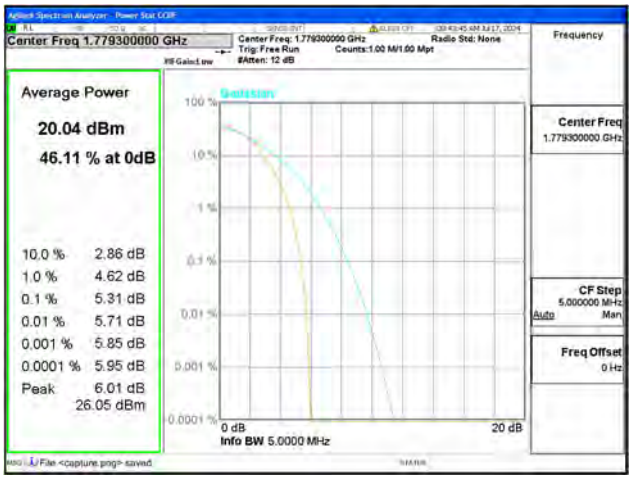
B66 / 1.4MHz / Mid CH / 16QAM



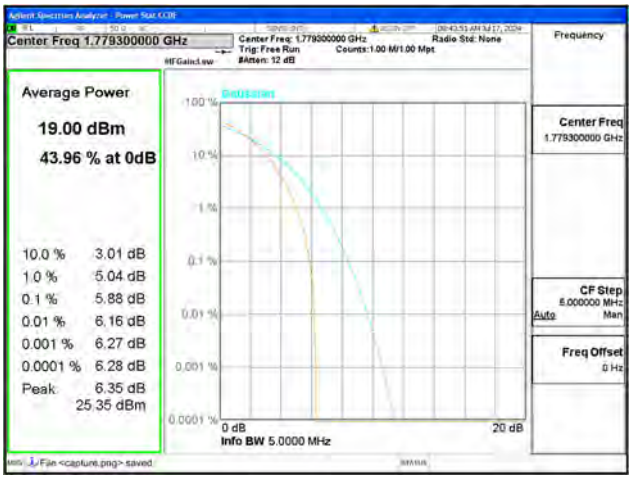
B66 / 1.4MHz / Mid CH / 64QAM



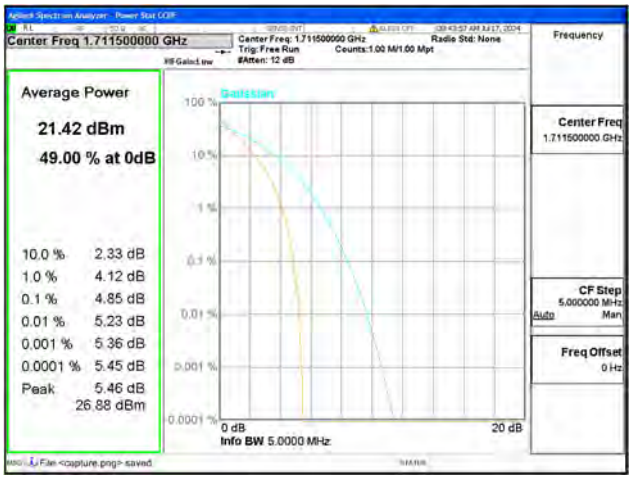
B66 / 1.4MHz / High CH / QPSK



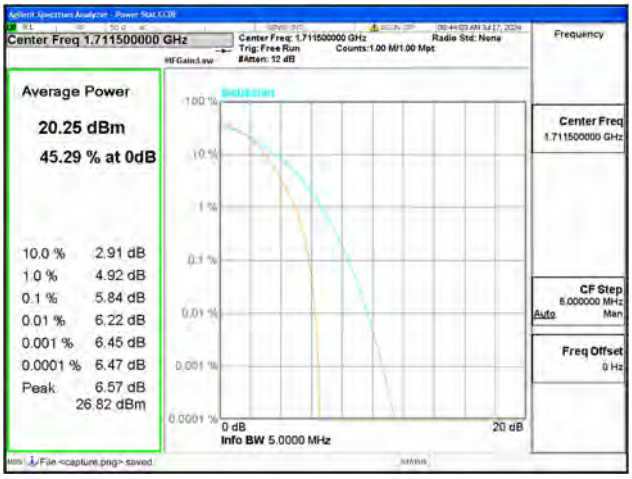
B66 / 1.4MHz / High CH / 16QAM



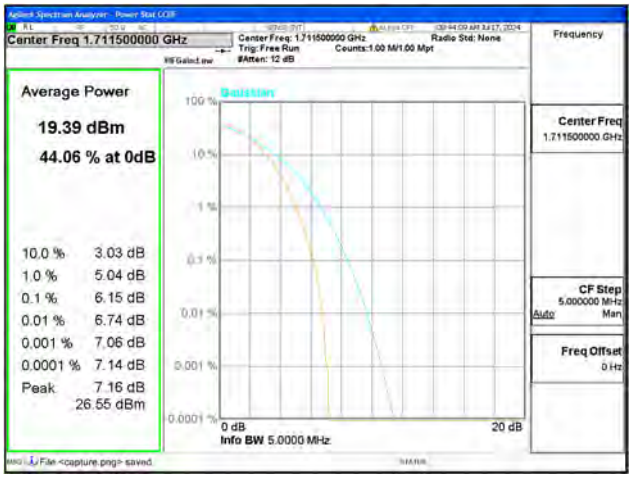
B66 / 1.4MHz / High CH / 64QAM



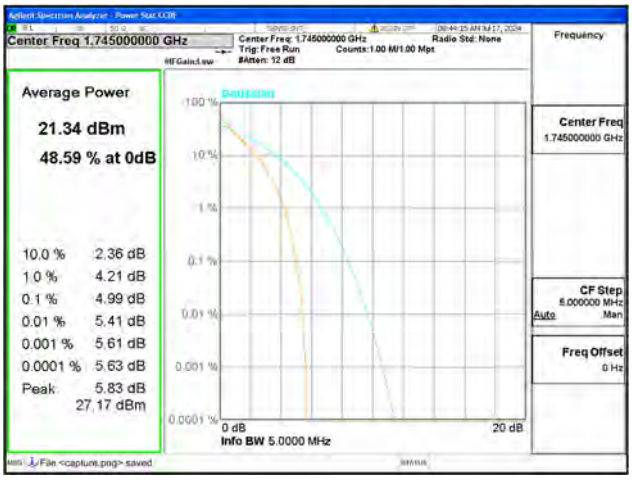
B66 / 3MHz / Low CH / QPSK



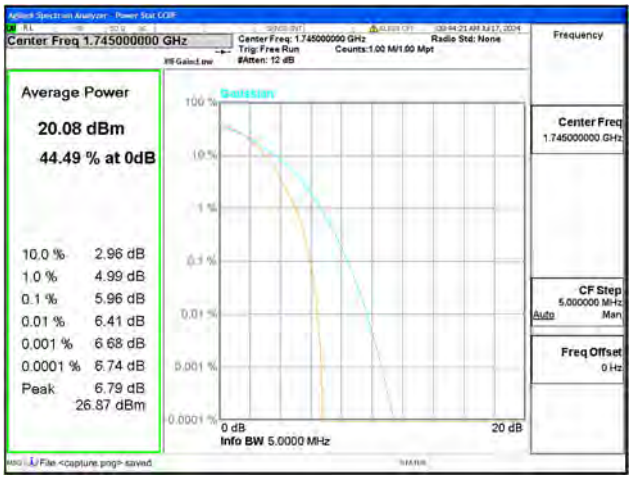
B66 / 3MHz / Low CH / 16QAM



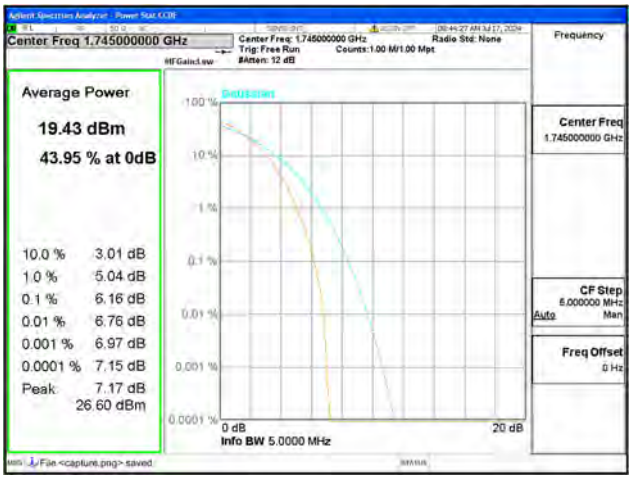
B66 / 3MHz / Low CH / 64QAM



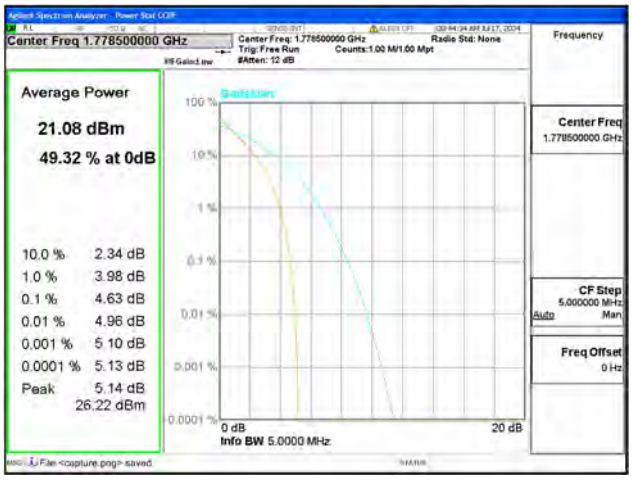
B66 / 3MHz / Mid CH / QPSK



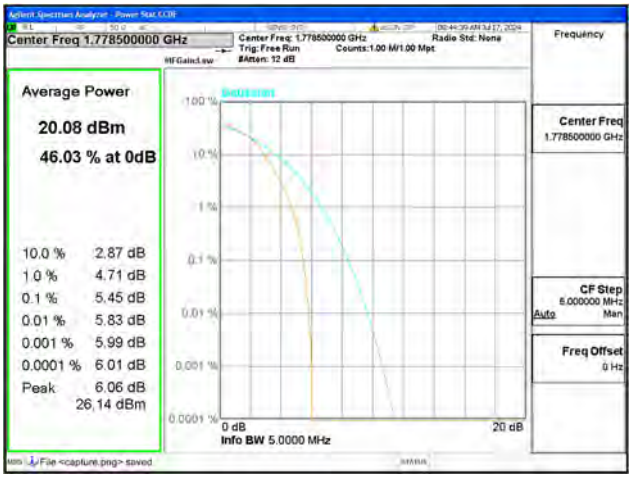
B66 / 3MHz / Mid CH / 16QAM



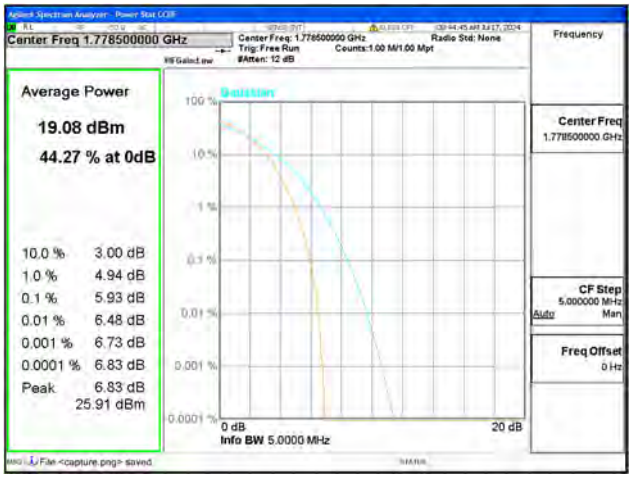
B66 / 3MHz / Mid CH / 64QAM



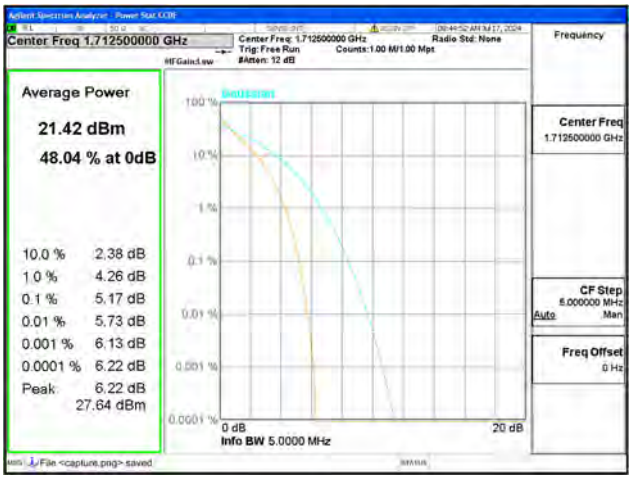
B66 / 3MHz / High CH / QPSK



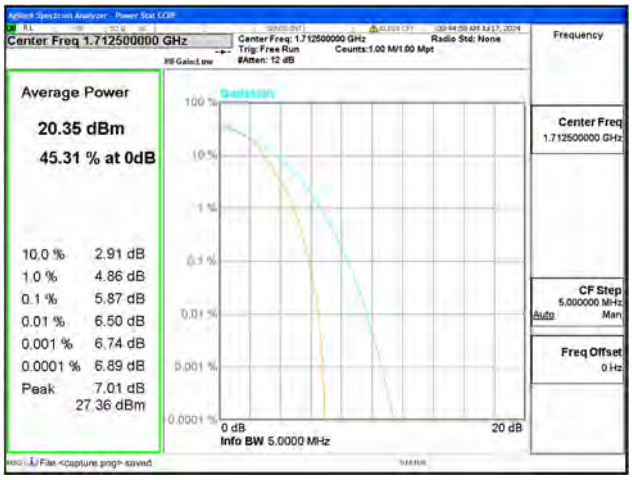
B66 / 3MHz / High CH / 16QAM



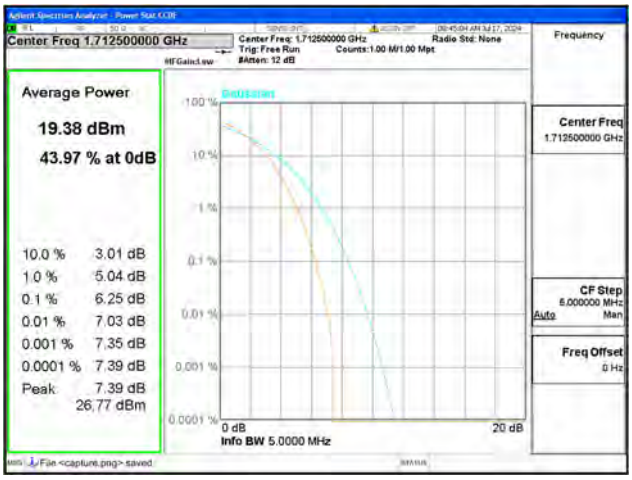
B66 / 3MHz / High CH / 64QAM



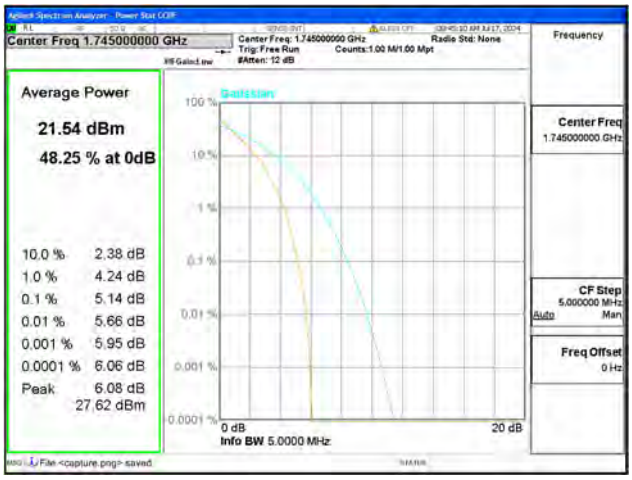
B66 / 5MHz / Low CH / QPSK



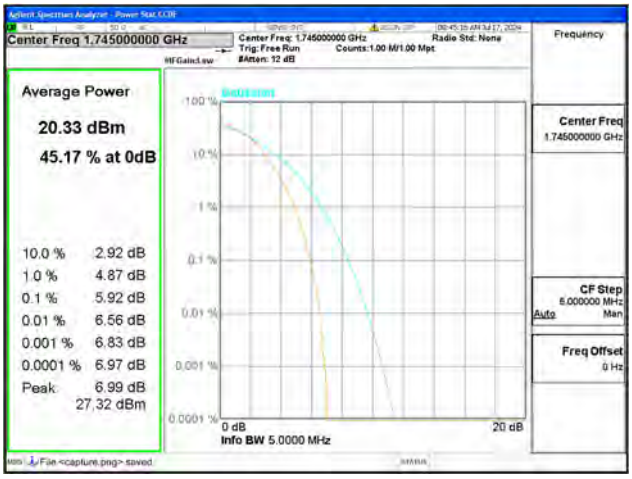
B66 / 5MHz / Low CH / 16QAM



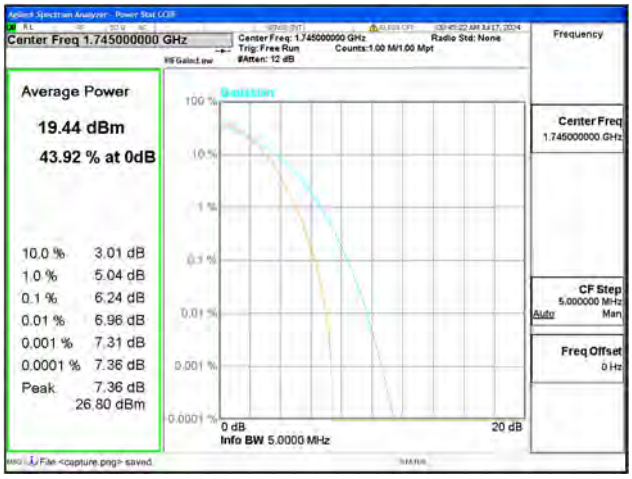
B66 / 5MHz / Low CH / 64QAM



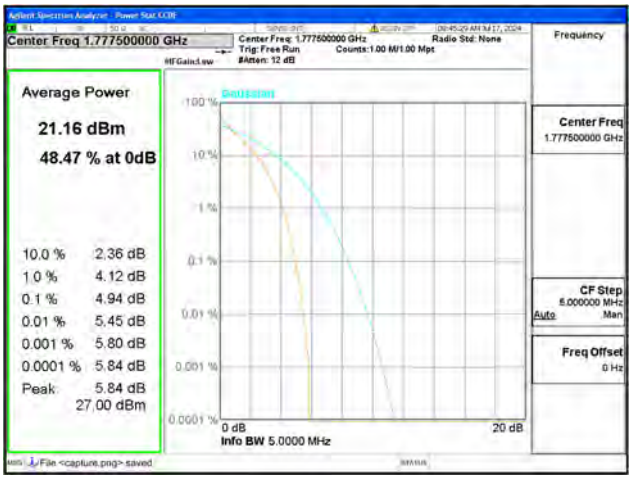
B66 / 5MHz / Mid CH / QPSK



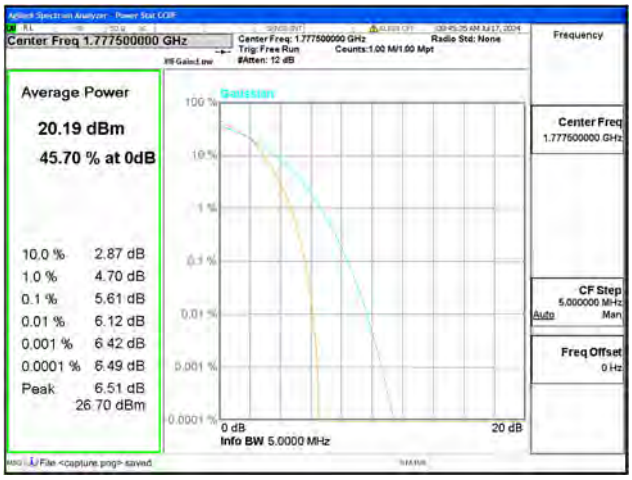
B66 / 5MHz / Mid CH / 16QAM



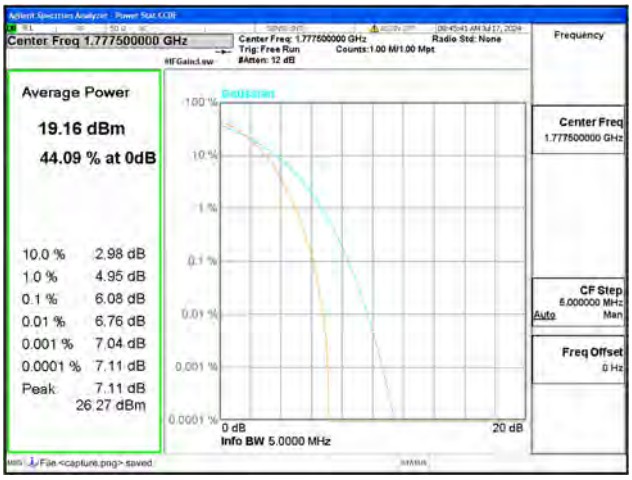
B66 / 5MHz / Mid CH / 64QAM



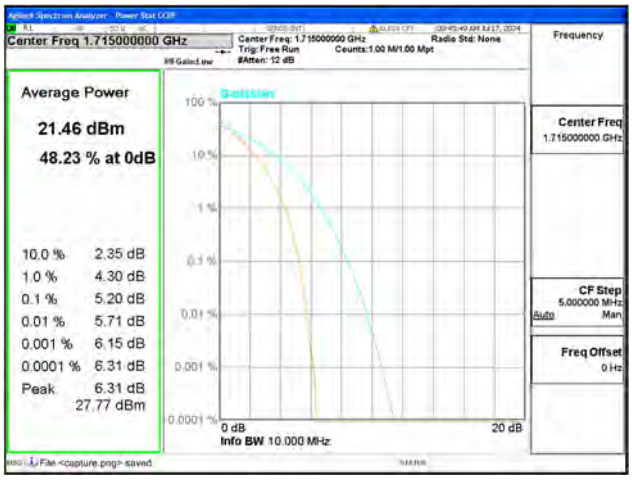
B66 / 5MHz / High CH / QPSK



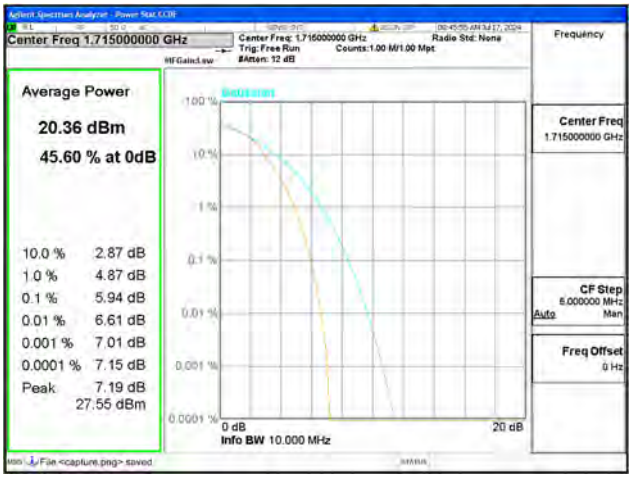
B66 / 5MHz / High CH / 16QAM



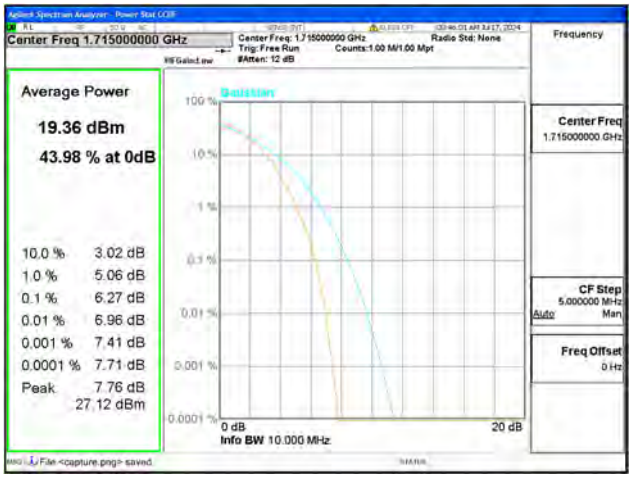
B66 / 5MHz / High CH / 64QAM



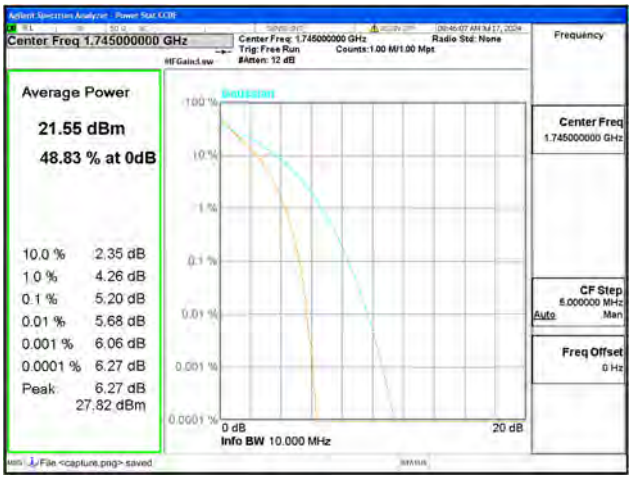
B66 / 10MHz / Low CH / QPSK



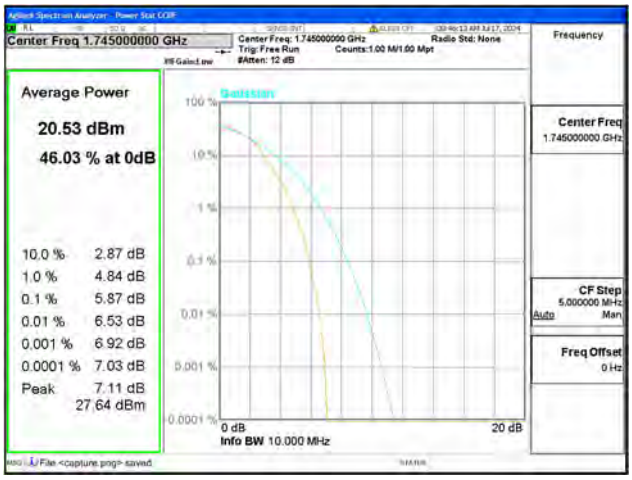
B66 / 10MHz / Low CH / 16QAM



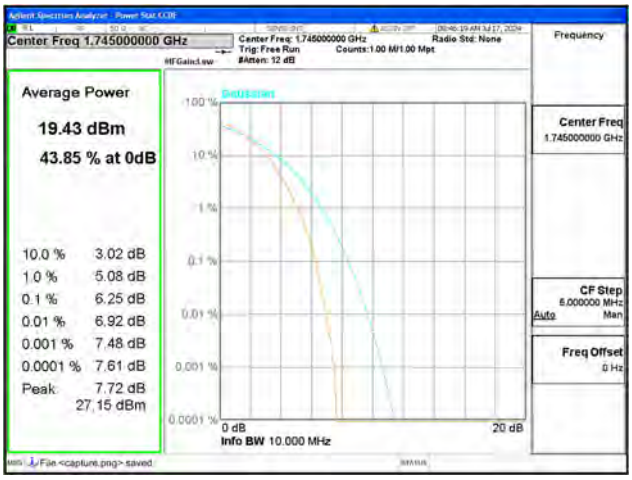
B66 / 10MHz / Low CH / 64QAM



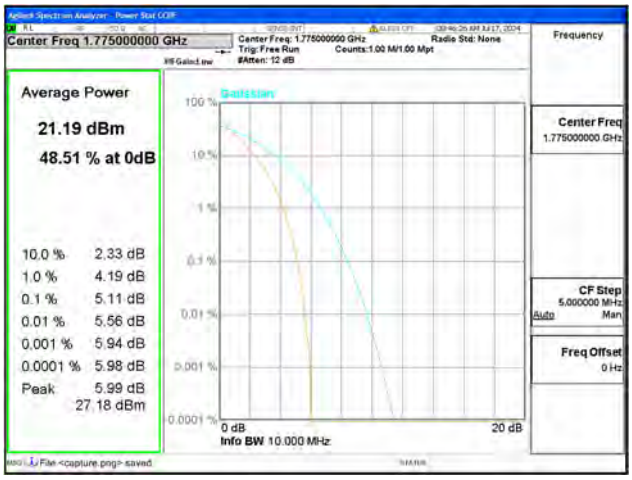
B66 / 10MHz / Mid CH / QPSK



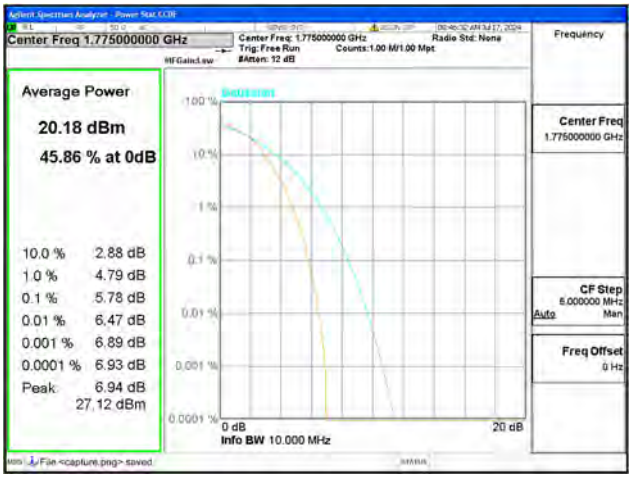
B66 / 10MHz / Mid CH / 16QAM



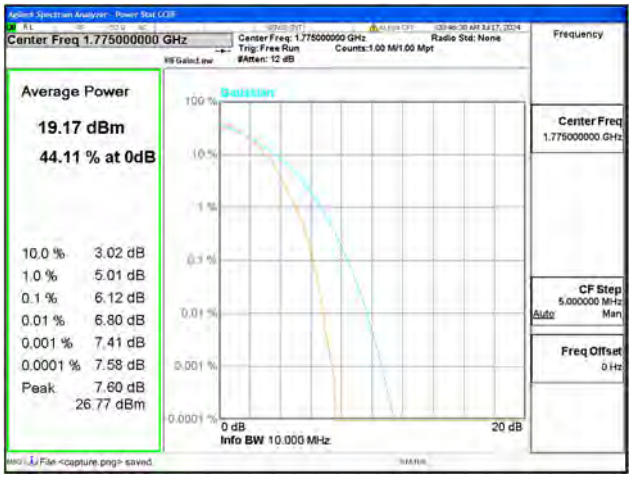
B66 / 10MHz / Mid CH / 64QAM



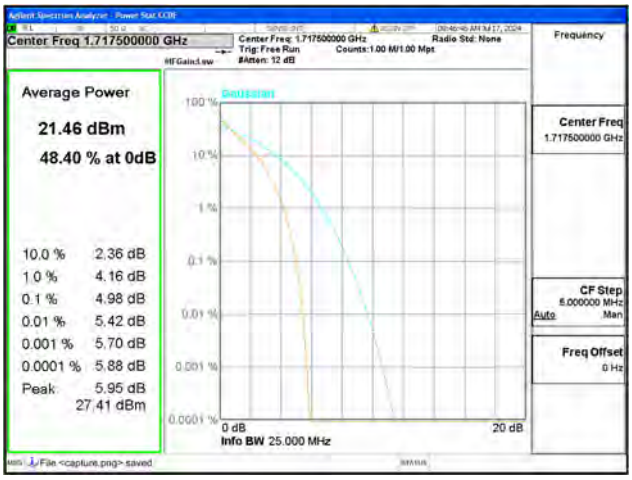
B66 / 10MHz / High CH / QPSK



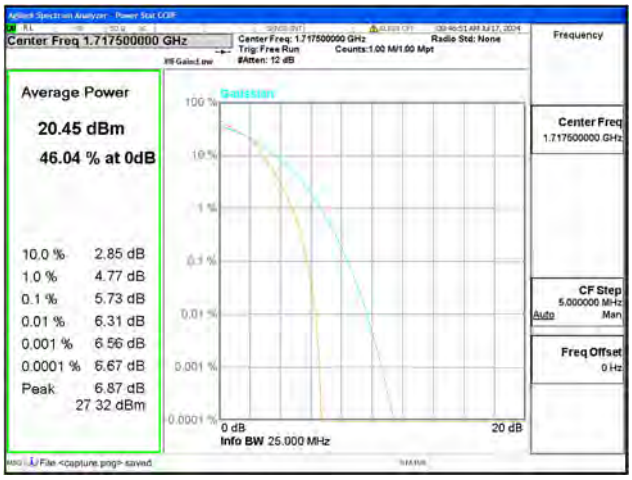
B66 / 10MHz / High CH / 16QAM



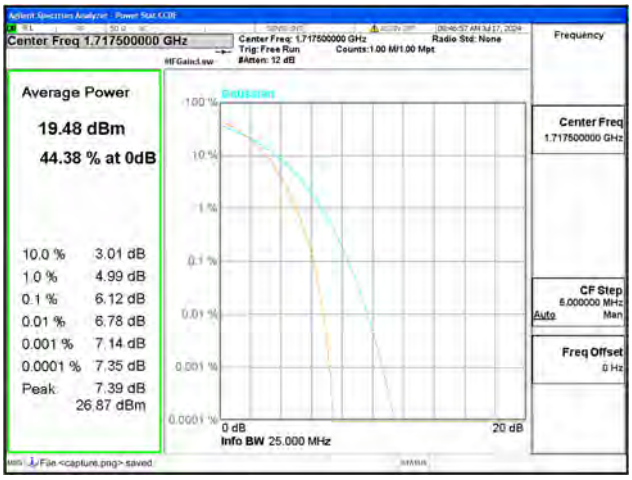
B66 / 10MHz / High CH / 64QAM



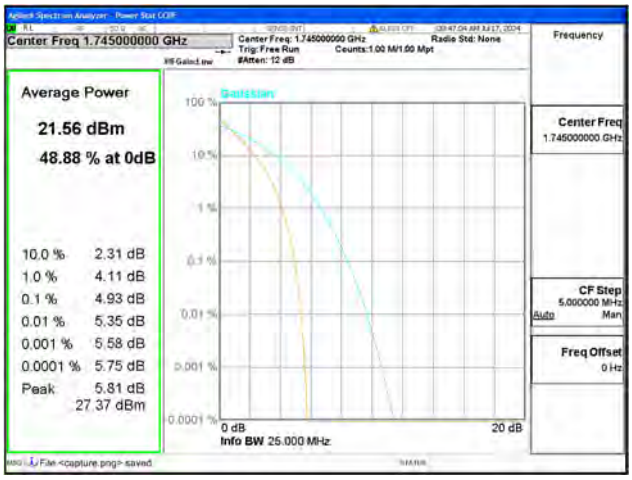
B66 / 15MHz / Low CH / QPSK



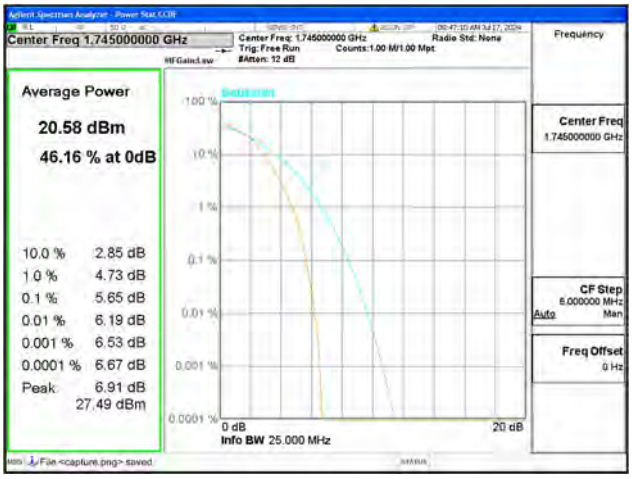
B66 / 15MHz / Low CH / 16QAM



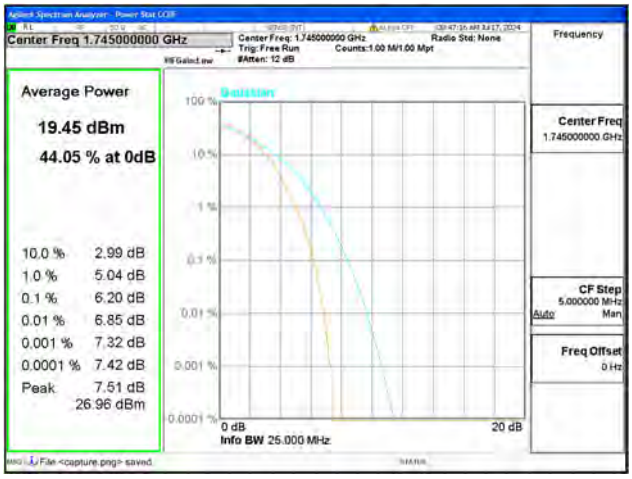
B66 / 15MHz / Low CH / 64QAM



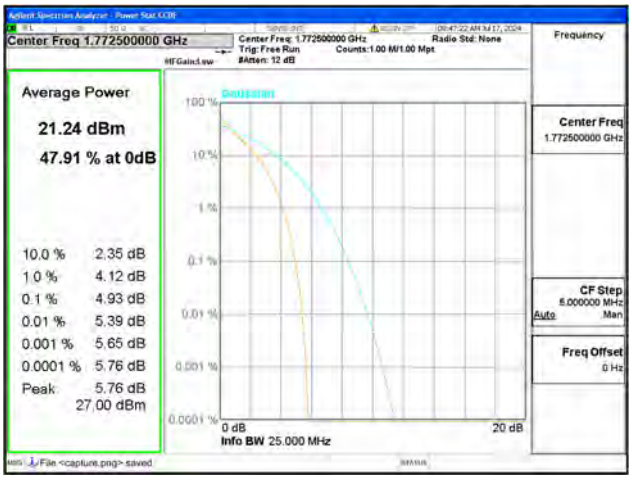
B66 / 15MHz / Mid CH / QPSK



B66 / 15MHz / Mid CH / 16QAM

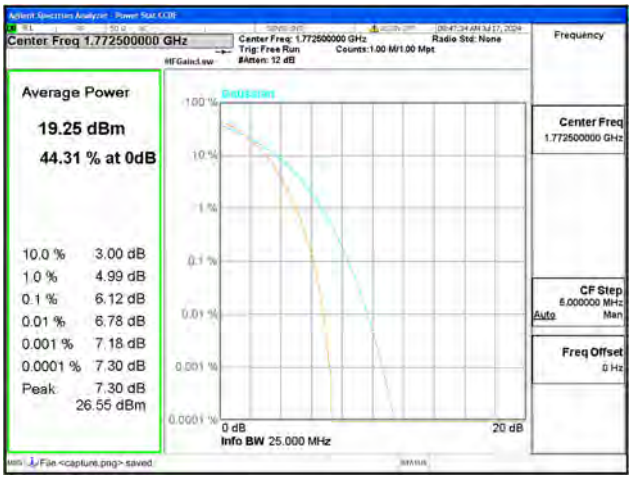


B66 / 15MHz / Mid CH / 64QAM

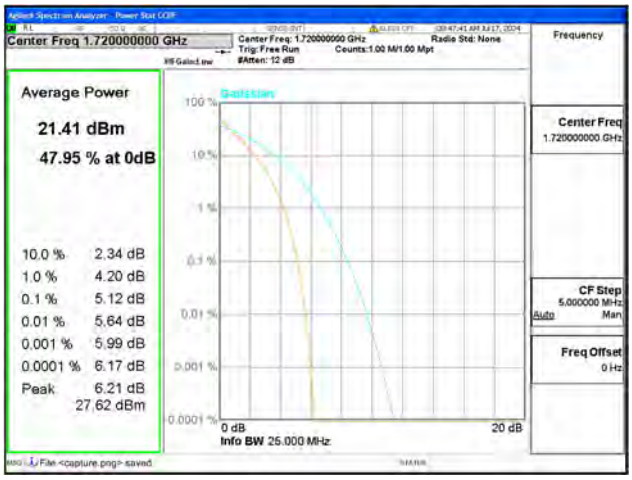


B66 / 15MHz / High CH / QPSK

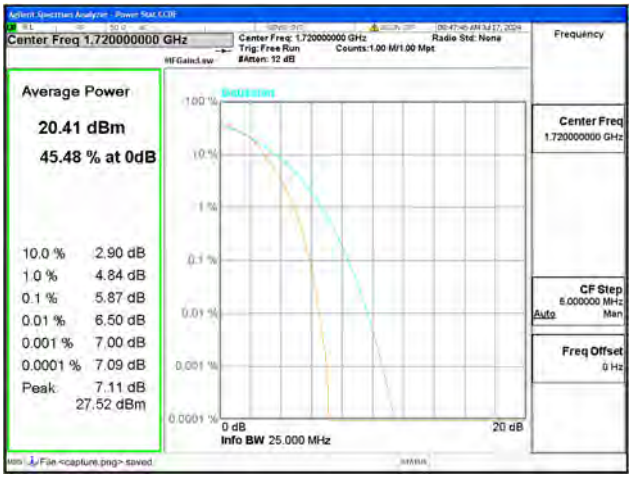
B66 / 15MHz / High CH / 16QAM



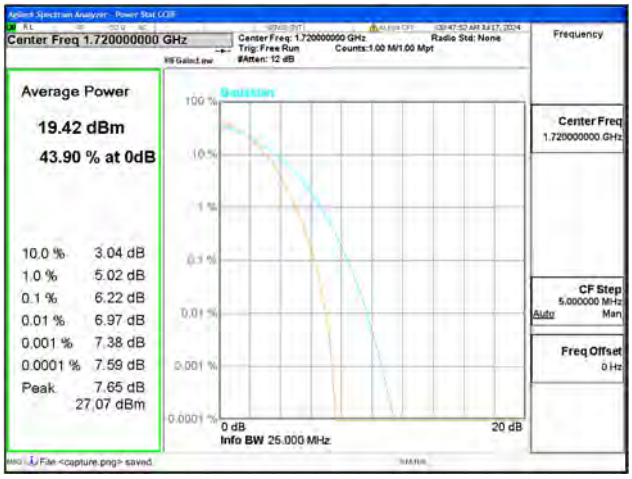
B66 / 15MHz / High CH / 64QAM



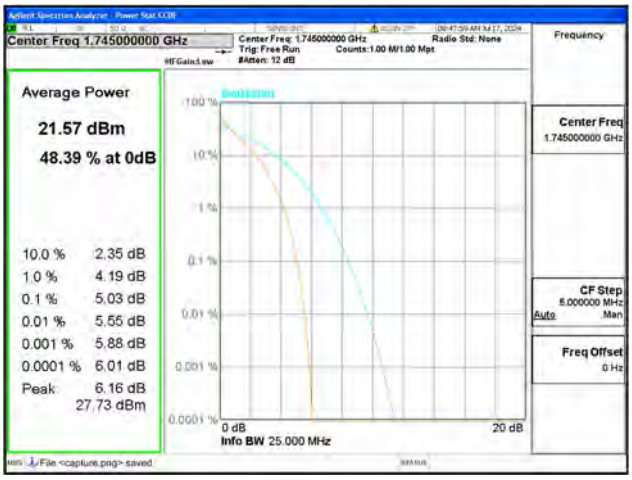
B66 / 20MHz / Low CH / QPSK



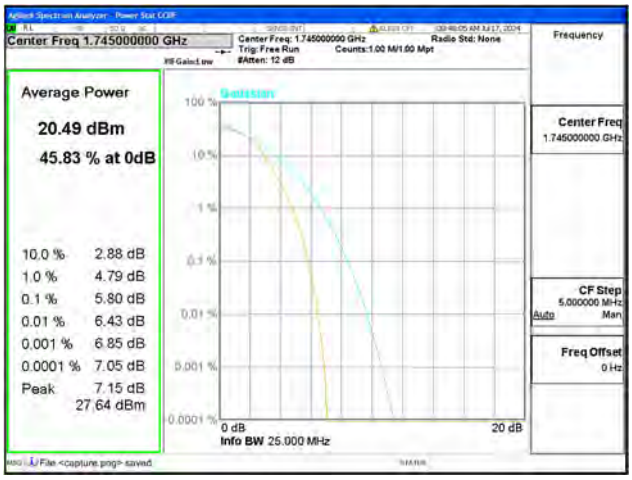
B66 / 20MHz / Low CH / 16QAM



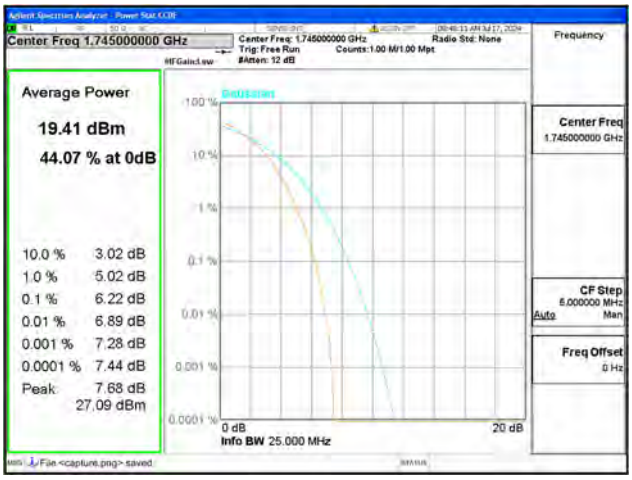
B66 / 20MHz / Low CH / 64QAM



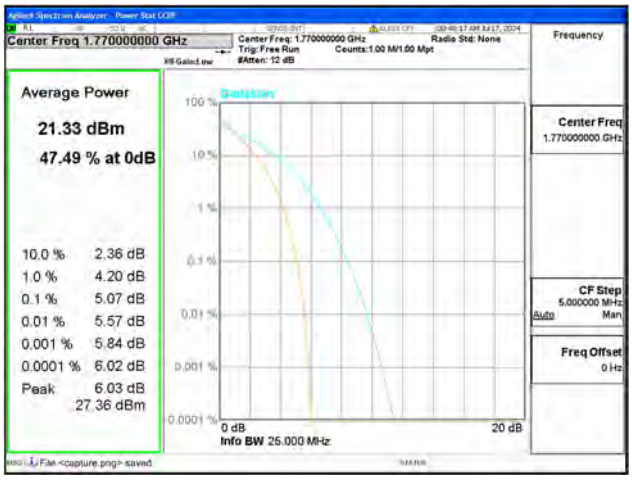
B66 / 20MHz / Mid CH / QPSK



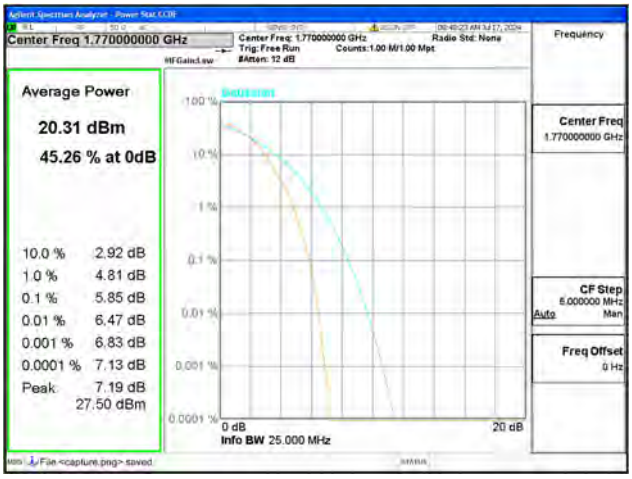
B66 / 20MHz / Mid CH / 16QAM



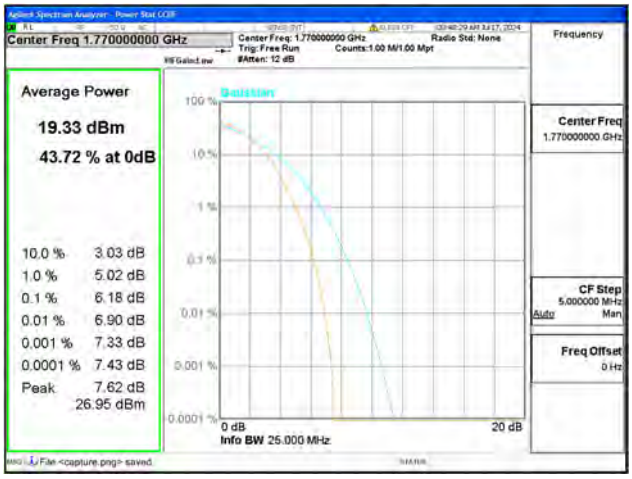
B66 / 20MHz / Mid CH / 64QAM



B66 / 20MHz / High CH / QPSK



B66 / 20MHz / High CH / 16QAM



B66 / 20MHz / High CH / 64QAM

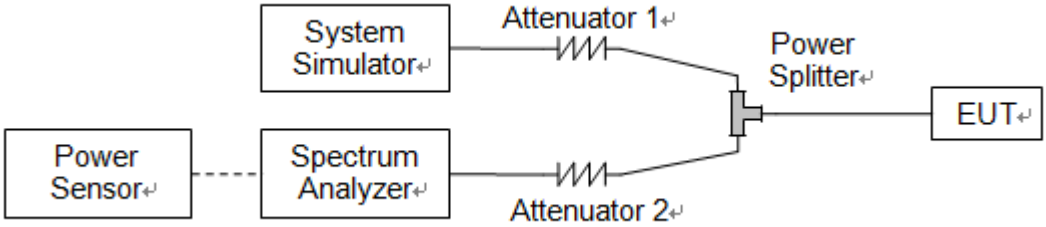
2.5. Conducted Spurious Emissions

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 7/38/41:
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.

2.5.2. Test Description

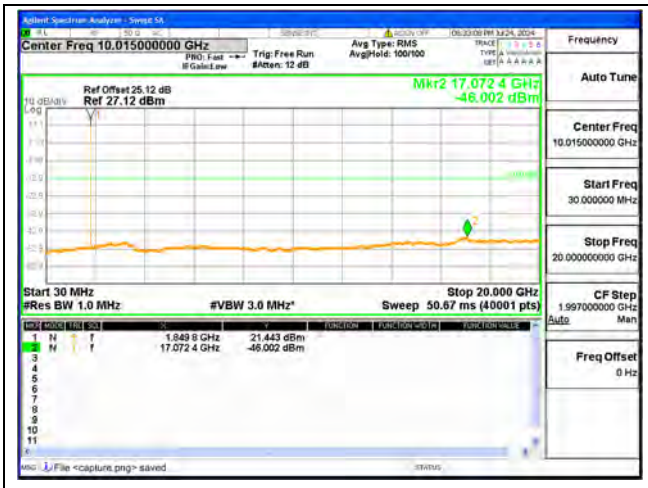


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.5.3. Test Procedure

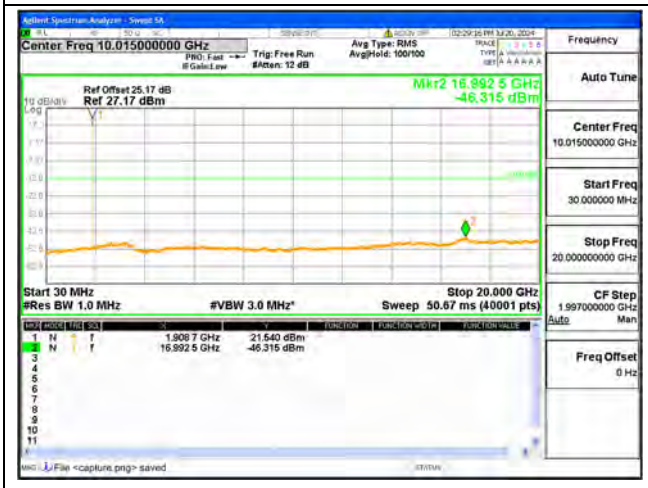
KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

2.5.4. Test Result



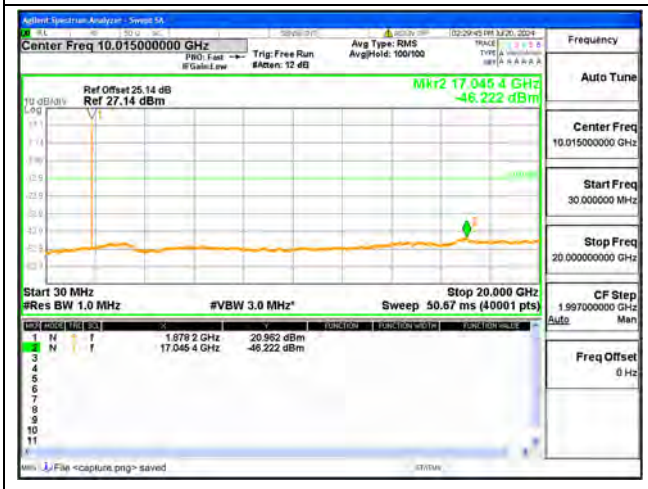
B2 / 1.4MHz / Low CH / QPSK

B2 / 1.4MHz / Mid CH / QPSK



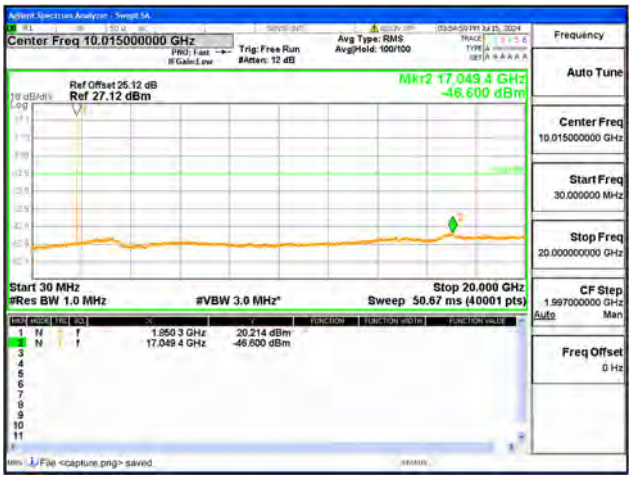
B2 / 1.4MHz / High CH / QPSK

B2 / 3MHz / Low CH / QPSK



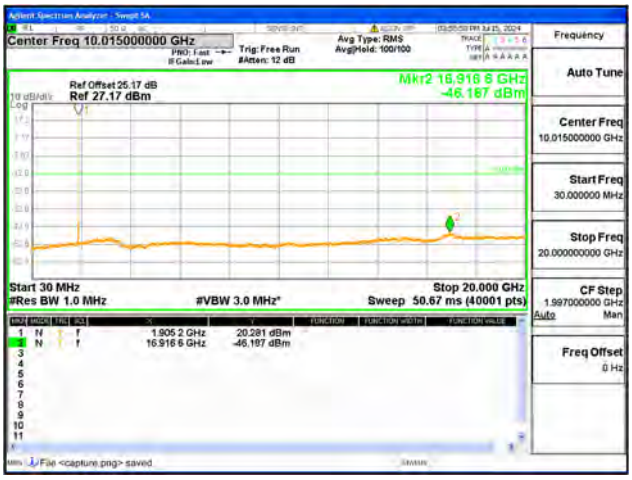
B2 / 3MHz / Mid CH / QPSK

B2 / 3MHz / High CH / QPSK



B2 / 5MHz / Low CH / QPSK

B2 / 5MHz / Mid CH / QPSK

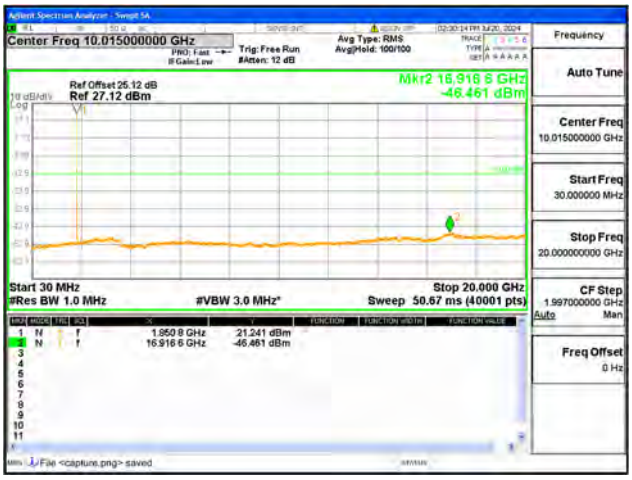


B2 / 5MHz / High CH / QPSK

B2 / 10MHz / Low CH / QPSK

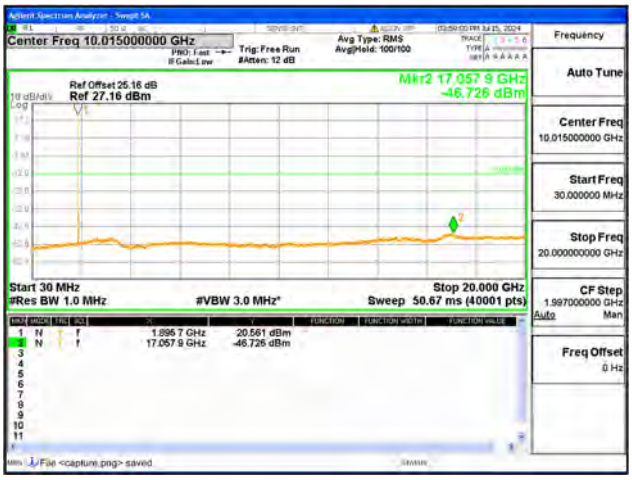
B2 / 10MHz / Mid CH / QPSK

B2 / 10MHz / High CH / QPSK



B2 / 15MHz / Low CH / QPSK

B2 / 15MHz / Mid CH / QPSK



B2 / 15MHz / High CH / QPSK

B2 / 20MHz / Low CH / QPSK

B2 / 20MHz / Mid CH / QPSK

B2 / 20MHz / High CH / QPSK

B4 / 1.4MHz / Low CH / QPSK

B4 / 1.4MHz / Mid CH / QPSK

B4 / 1.4MHz / High CH / QPSK

B4 / 3MHz / Low CH / QPSK

B4 / 3MHz / Mid CH / QPSK

B4 / 3MHz / High CH / QPSK

B4 / 5MHz / Low CH / QPSK

B4 / 5MHz / Mid CH / QPSK

B4 / 5MHz / High CH / QPSK

B4 / 10MHz / Low CH / QPSK

B4 / 10MHz / Mid CH / QPSK

B4 / 10MHz / High CH / QPSK

B4 / 15MHz / Low CH / QPSK

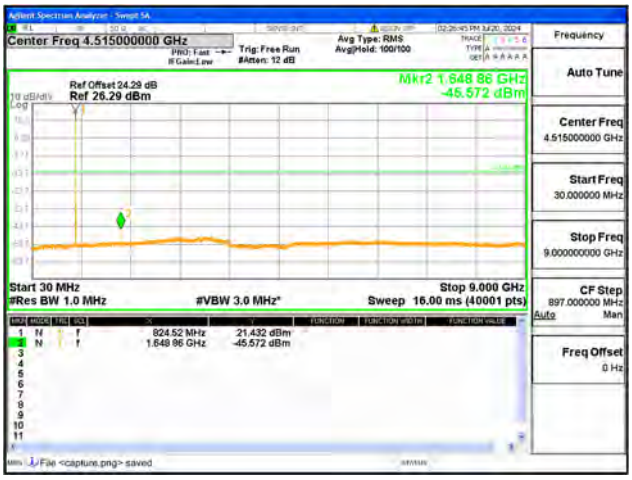
B4 / 15MHz / Mid CH / QPSK

B4 / 15MHz / High CH / QPSK

B4 / 20MHz / Low CH / QPSK

B4 / 20MHz / Mid CH / QPSK

B4 / 20MHz / High CH / QPSK



B5 / 1.4MHz / Low CH / QPSK

B5 / 1.4MHz / Mid CH / QPSK

B5 / 1.4MHz / High CH / QPSK

B5 / 3MHz / Low CH / QPSK

B5 / 3MHz / Mid CH / QPSK

B5 / 3MHz / High CH / QPSK

B5 / 5MHz / Low CH / QPSK

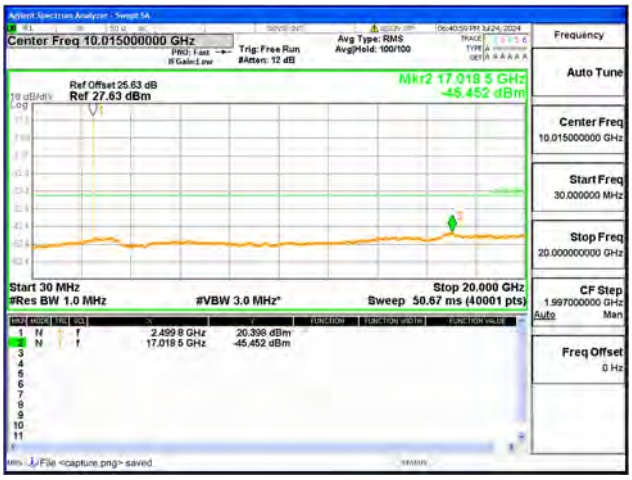
B5 / 5MHz / Mid CH / QPSK

B5 / 5MHz / High CH / QPSK

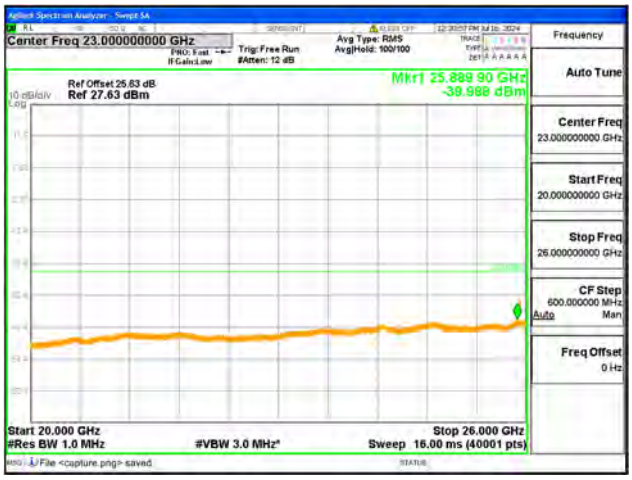
B5 / 10MHz / Low CH / QPSK

B5 / 10MHz / Mid CH / QPSK

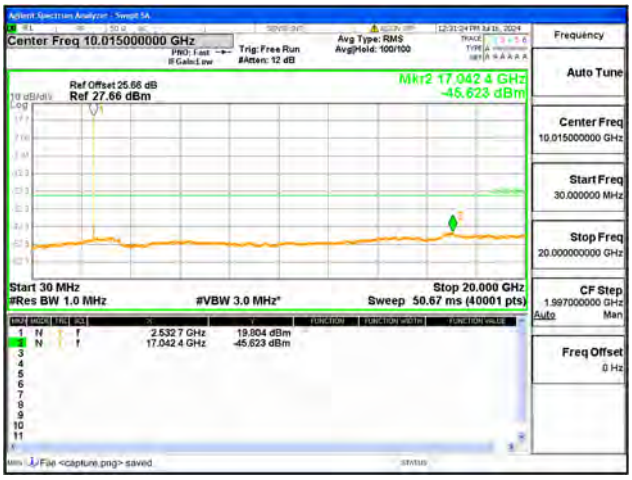
B5 / 10MHz / High CH / QPSK



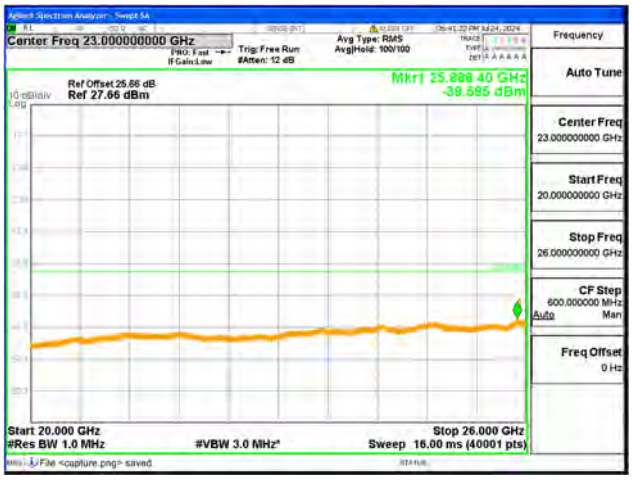
B7-30M-20G / 5MHz / Low CH / QPSK



B7-20G-26G / 5MHz / Low CH / QPSK

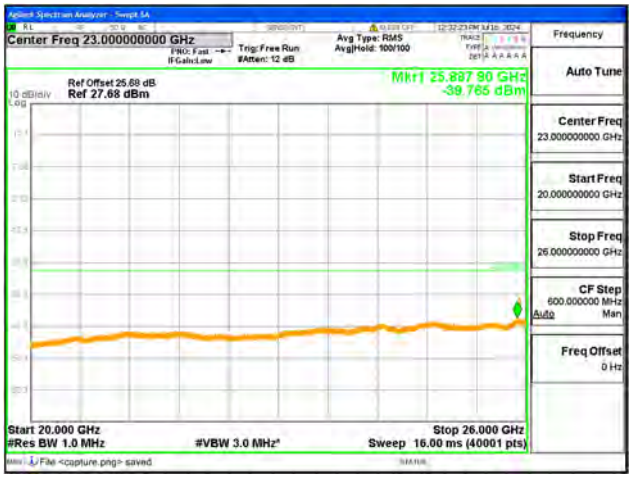


B7-30M-20G / 5MHz / Mid CH / QPSK

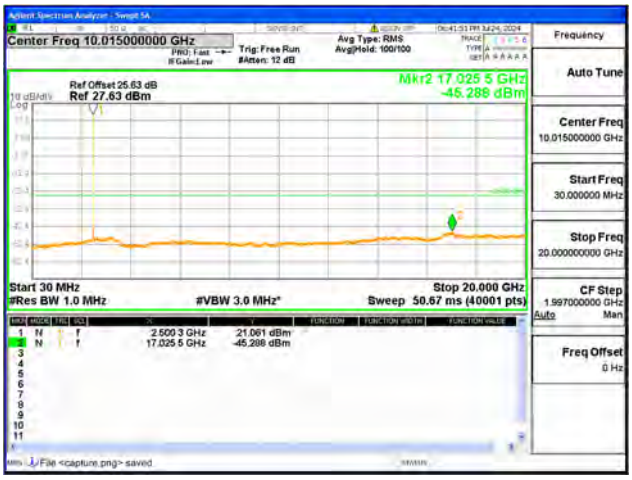


B7-20G-26G / 5MHz / Mid CH / QPSK

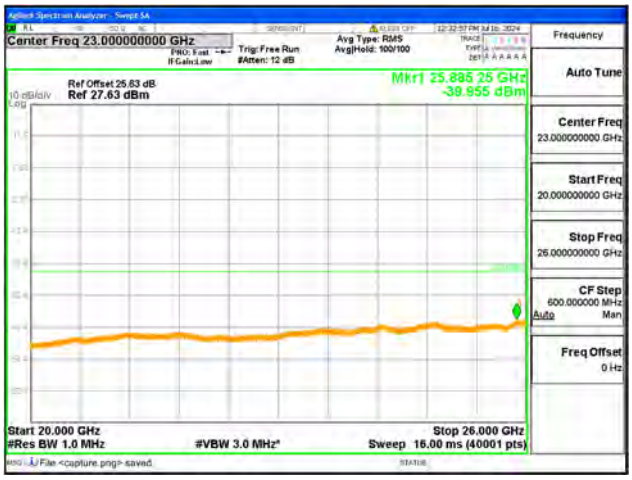
B7-30M-20G / 5MHz / High CH / QPSK



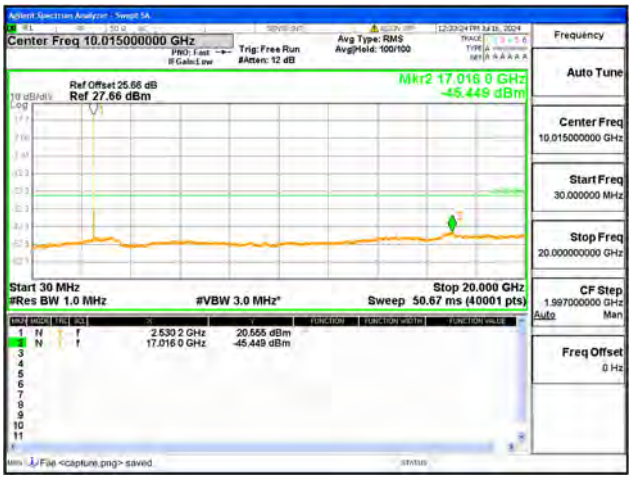
B7-20G-26G / 5MHz / High CH / QPSK



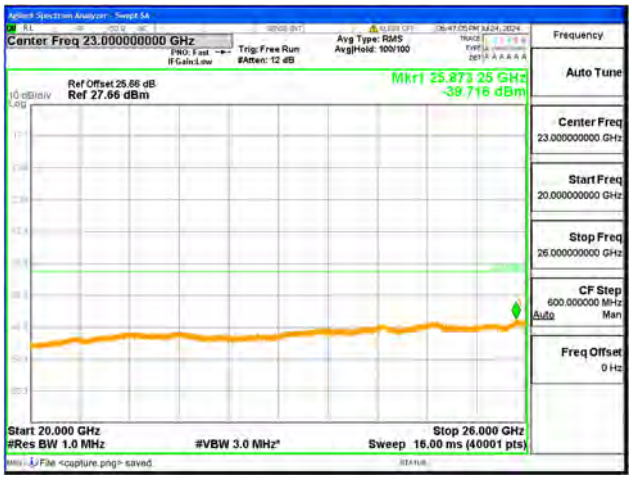
B7-30M-20G / 10MHz / Low CH / QPSK



B7-20G-26G / 10MHz / Low CH / QPSK

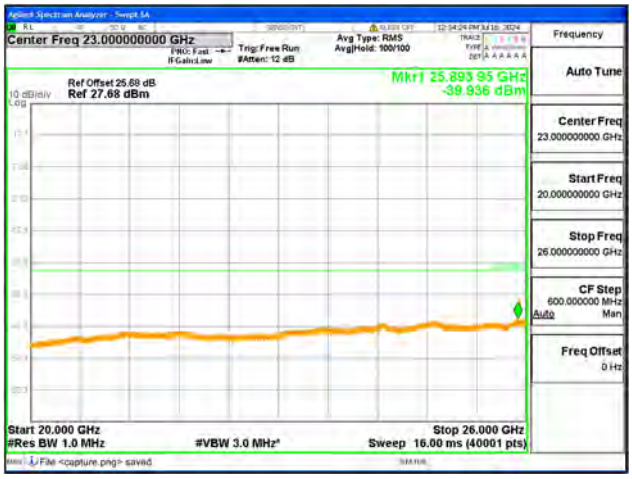


B7-30M-20G / 10MHz / Mid CH / QPSK

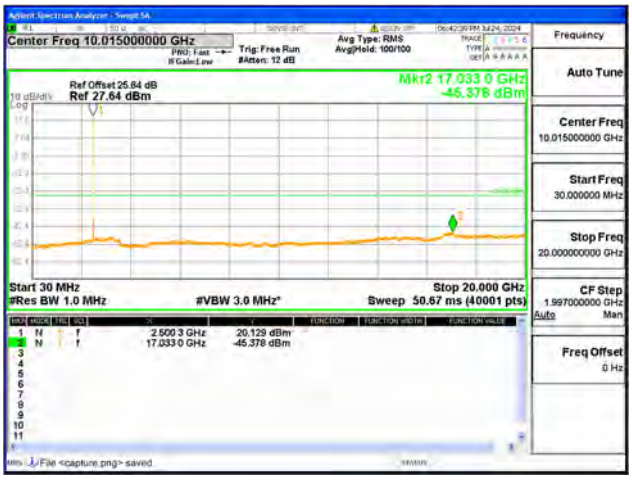


B7-20G-26G / 10MHz / Mid CH / QPSK

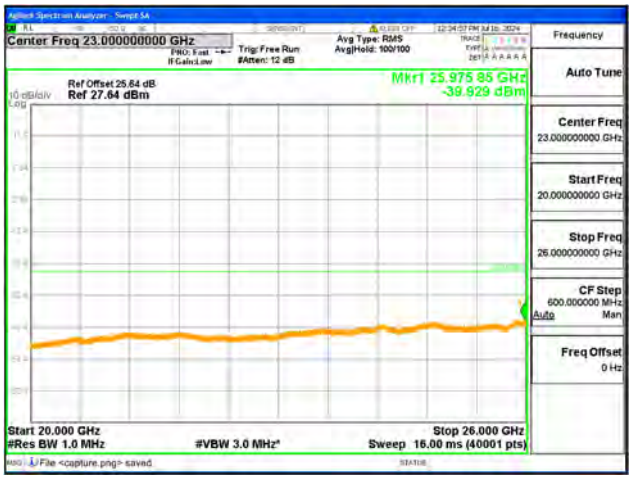
B7-30M-20G / 10MHz / High CH / QPSK



B7-20G-26G / 10MHz / High CH / QPSK

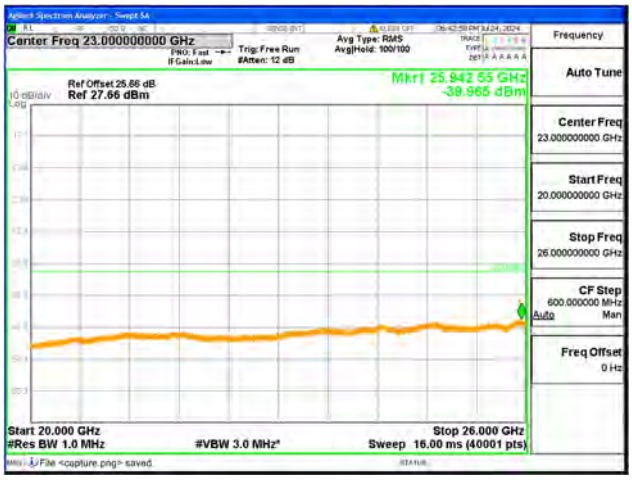


B7-30M-20G / 15MHz / Low CH / QPSK



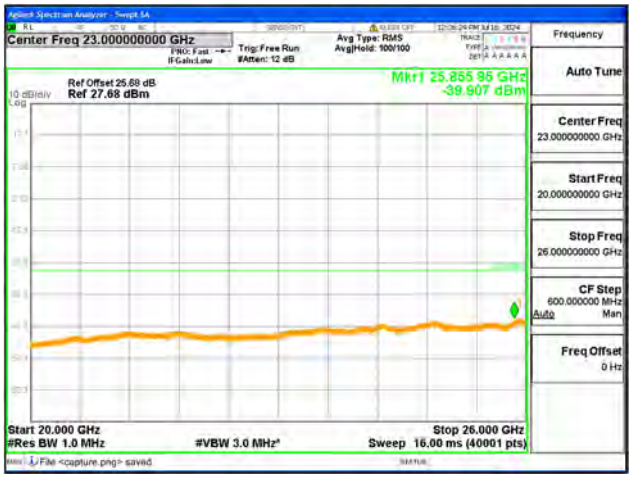
B7-20G-26G / 15MHz / Low CH / QPSK

B7-30M-20G / 15MHz / Mid CH / QPSK

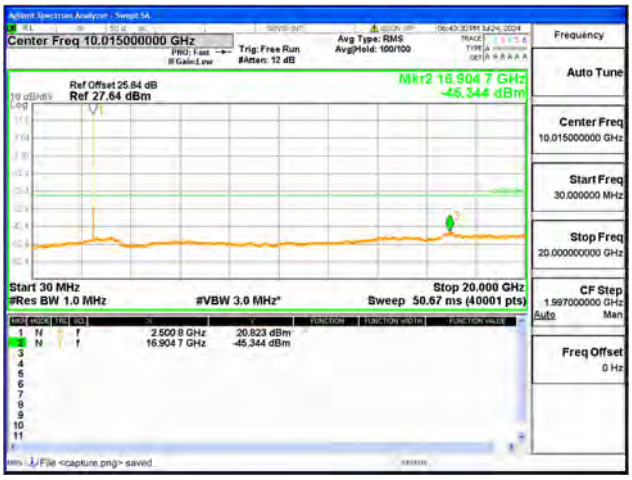


B7-20G-26G / 15MHz / Mid CH / QPSK

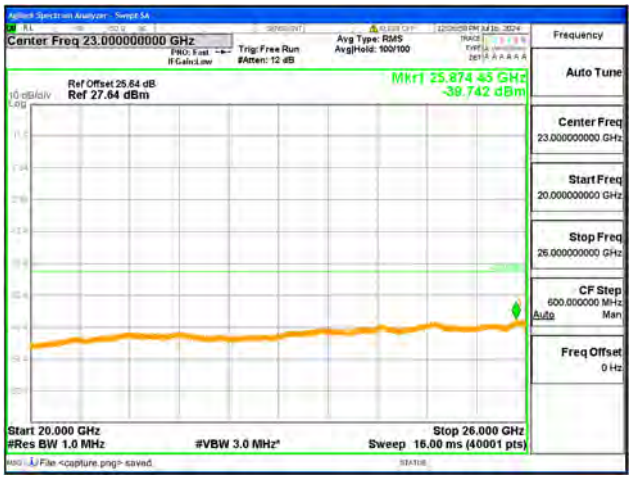
B7-30M-20G / 15MHz / High CH / QPSK



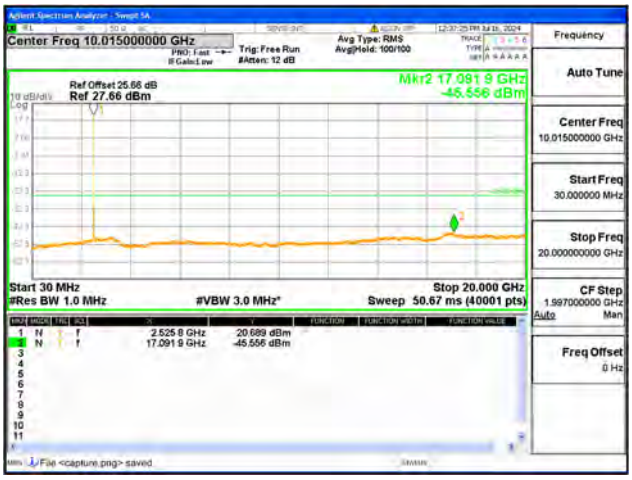
B7-20G-26G / 15MHz / High CH / QPSK



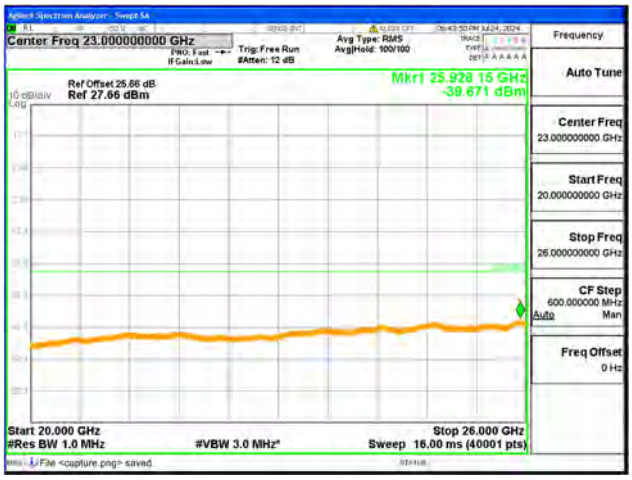
B7-30M-20G / 20MHz / Low CH / QPSK



B7-20G-26G / 20MHz / Low CH / QPSK



B7-30M-20G / 20MHz / Mid CH / QPSK



B7-20G-26G / 20MHz / Mid CH / QPSK

B7-30M-20G / 20MHz / High CH / QPSK

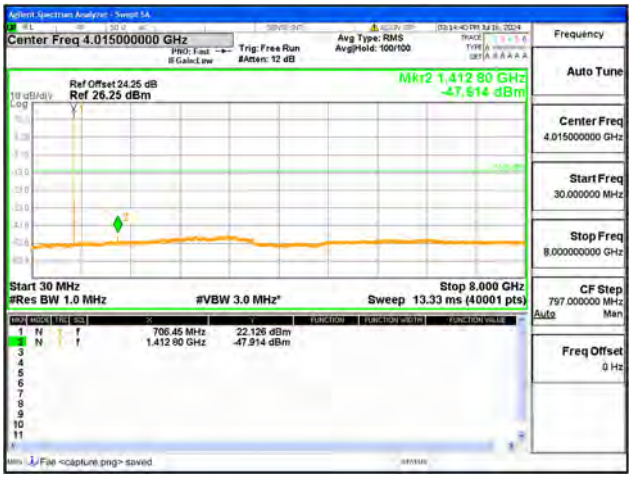
B7-20G-26G / 20MHz / High CH / QPSK

B12 / 1.4MHz / Low CH / QPSK

B12 / 1.4MHz / Mid CH / QPSK

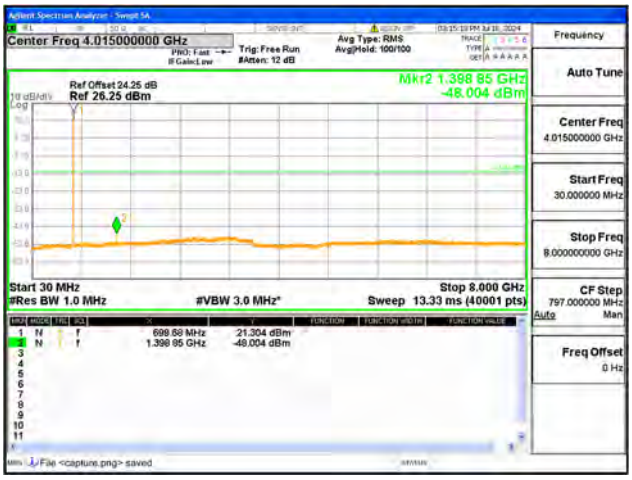
B12 / 1.4MHz / High CH / QPSK

B12 / 3MHz / Low CH / QPSK



B12 / 3MHz / Mid CH / QPSK

B12 / 3MHz / High CH / QPSK

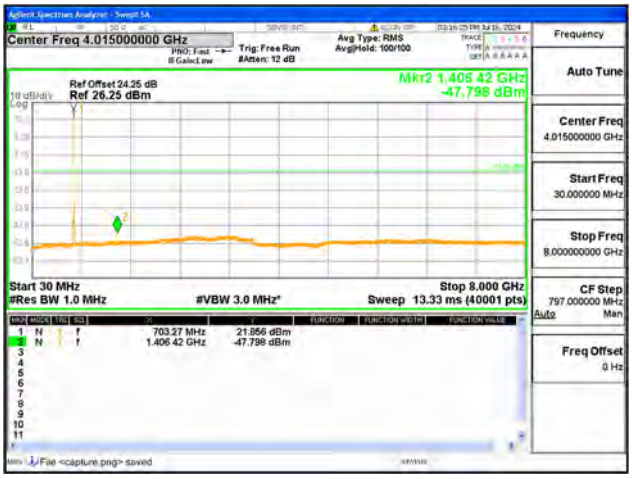


B12 / 5MHz / Low CH / QPSK

B12 / 5MHz / Mid CH / QPSK

B12 / 5MHz / High CH / QPSK

B12 / 10MHz / Low CH / QPSK



B12 / 10MHz / Mid CH / QPSK

B12 / 10MHz / High CH / QPSK

B13 / 5MHz / Low CH / QPSK

B13 / 5MHz / Mid CH / QPSK

B13 / 5MHz / High CH / QPSK

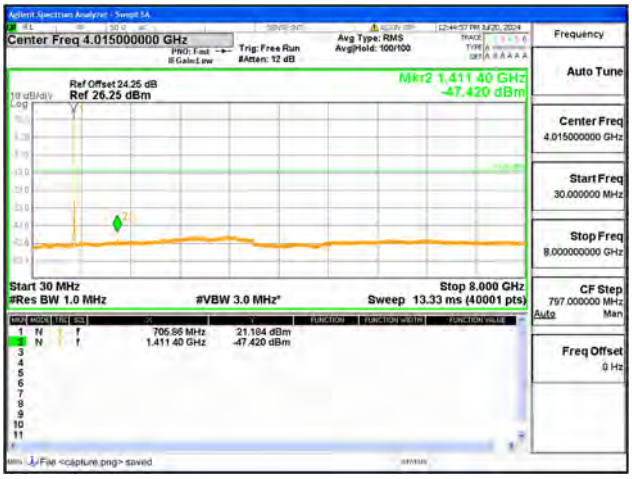
B13 / 10MHz / Mid CH / QPSK

B17 / 5MHz / Low CH / QPSK

B17 / 5MHz / Mid CH / QPSK

B17 / 5MHz / High CH / QPSK

B17 / 10MHz / Low CH / QPSK



B17 / 10MHz / Mid CH / QPSK

B17 / 10MHz / High CH / QPSK

B25 / 1.4MHz / Low CH / QPSK

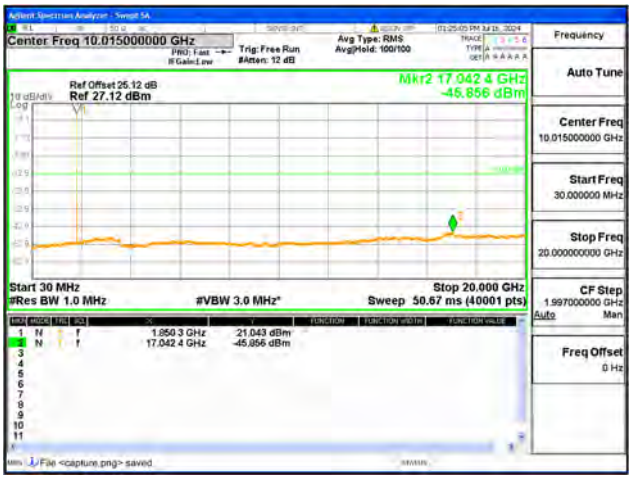
B25 / 1.4MHz / Mid CH / QPSK

B25 / 1.4MHz / High CH / QPSK

B25 / 3MHz / Low CH / QPSK

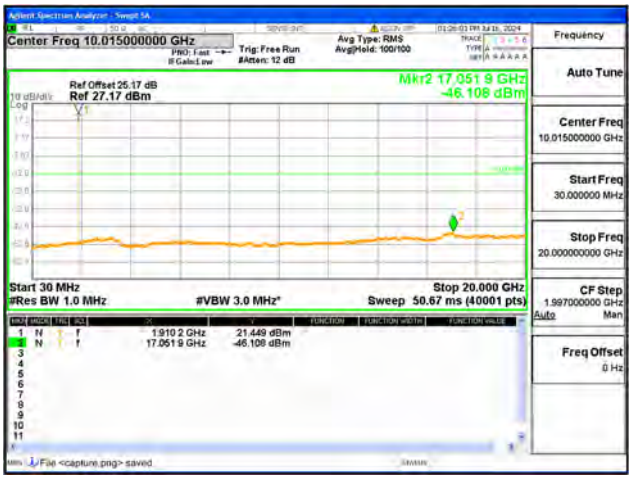
B25 / 3MHz / Mid CH / QPSK

B25 / 3MHz / High CH / QPSK



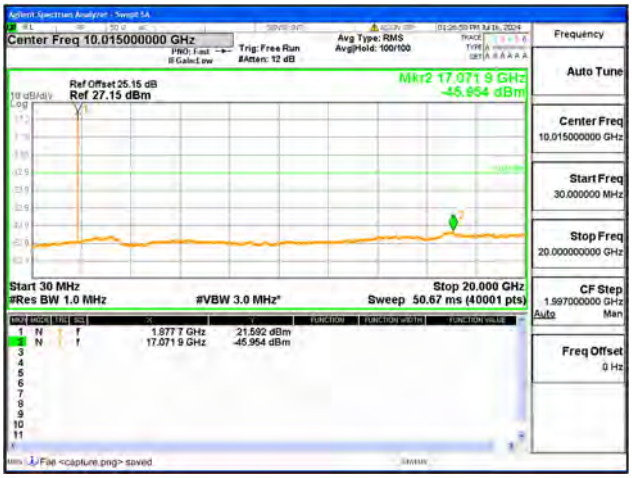
B25 / 5MHz / Low CH / QPSK

B25 / 5MHz / Mid CH / QPSK



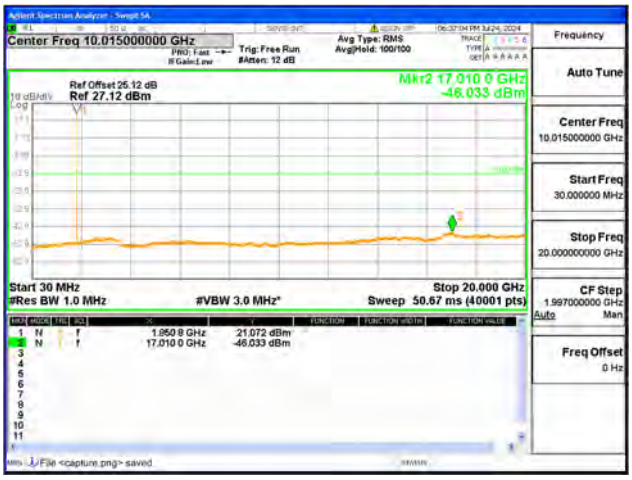
B25 / 5MHz / High CH / QPSK

B25 / 10MHz / Low CH / QPSK

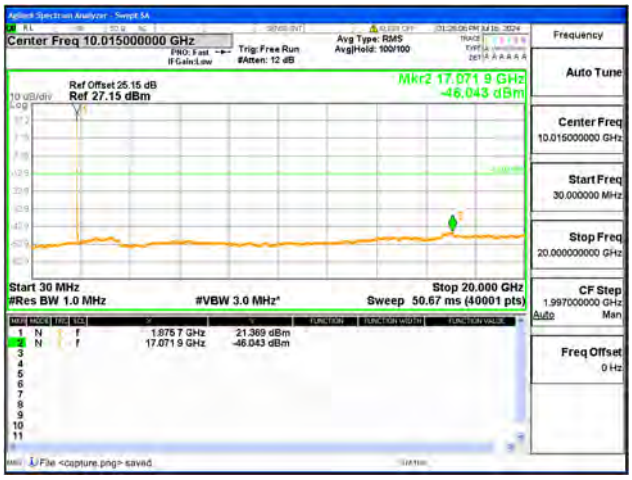


B25 / 10MHz / Mid CH / QPSK

B25 / 10MHz / High CH / QPSK



B25 / 15MHz / Low CH / QPSK



B25 / 15MHz / Mid CH / QPSK

B25 / 15MHz / High CH / QPSK

B25 / 20MHz / Low CH / QPSK

B25 / 20MHz / Mid CH / QPSK

B25 / 20MHz / High CH / QPSK

B26 / 1.4MHz / Low CH / QPSK

B26 / 1.4MHz / Mid CH / QPSK

B26 / 1.4MHz / High CH / QPSK

B26 / 3MHz / Low CH / QPSK

B26 / 3MHz / Mid CH / QPSK

B26 / 3MHz / High CH / QPSK

B26 / 5MHz / Low CH / QPSK

B26 / 5MHz / Mid CH / QPSK

B26 / 5MHz / High CH / QPSK

B26 / 10MHz / Low CH / QPSK

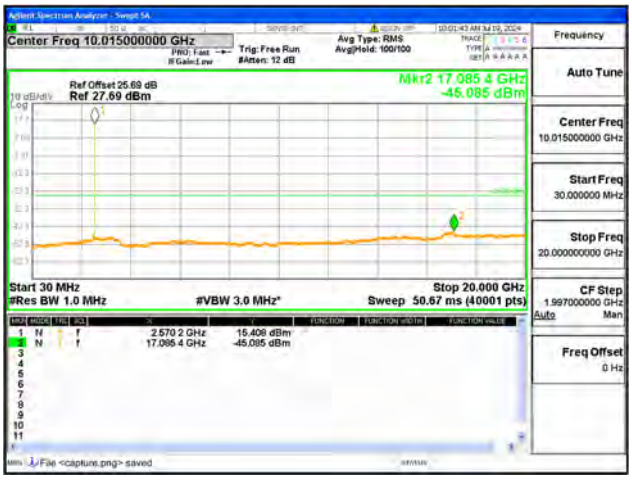
B26 / 10MHz / Mid CH / QPSK

B26 / 10MHz / High CH / QPSK

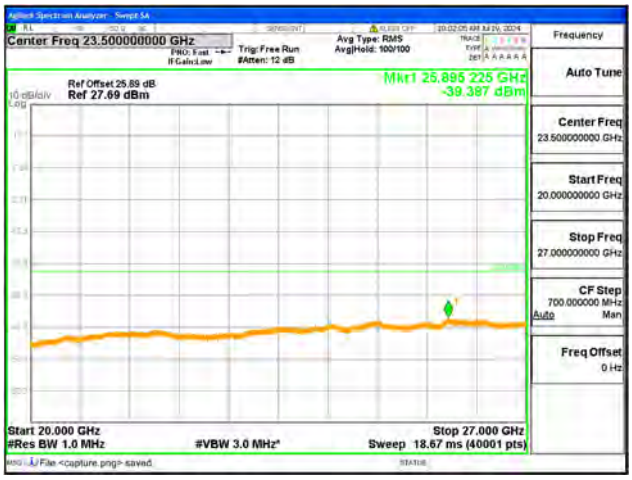
B26 / 15MHz / Low CH / QPSK

B26 / 15MHz / Mid CH / QPSK

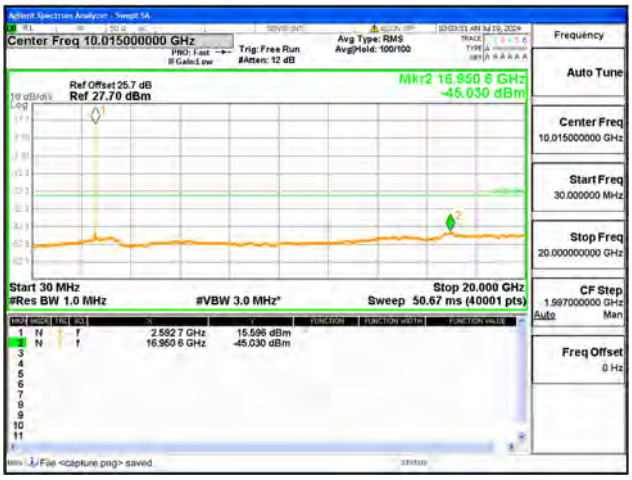
B26 / 15MHz / High CH / QPSK



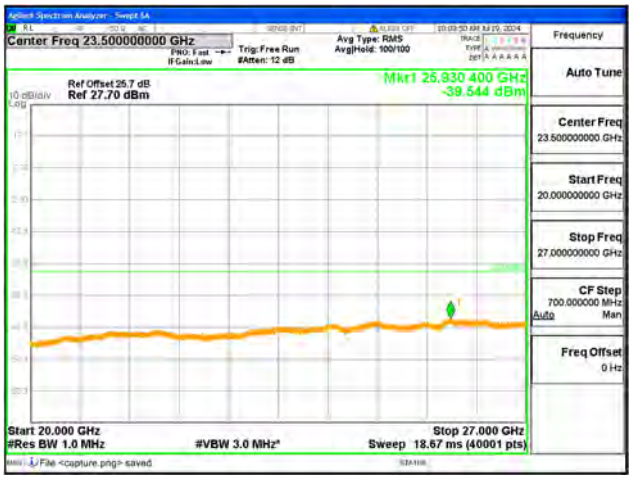
B38-30M-20G / 5MHz / Low CH / QPSK



B38-20G-27G / 5MHz / Low CH / QPSK

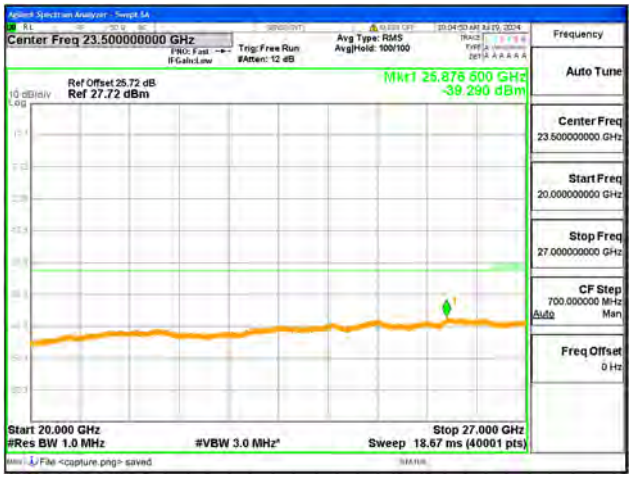


B38-30M-20G / 5MHz / Mid CH / QPSK

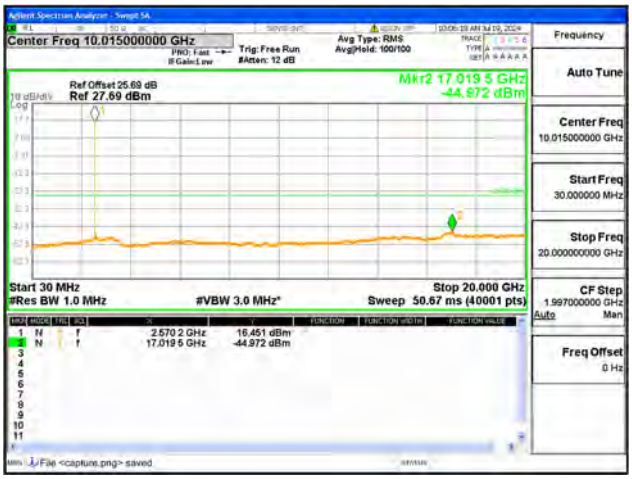


B38-20G-27G / 5MHz / Mid CH / QPSK

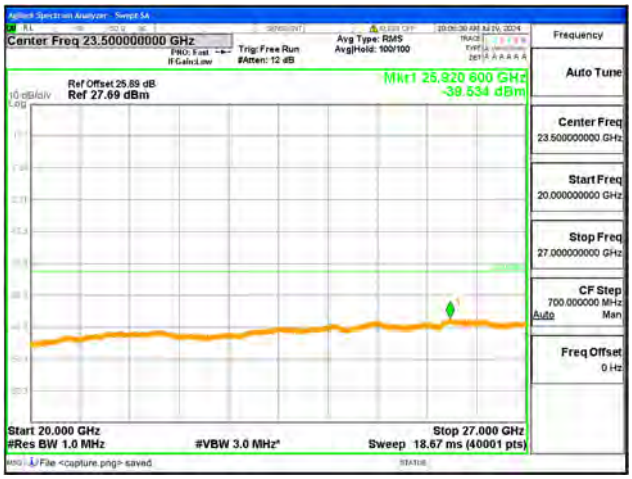
B38-30M-20G / 5MHz / High CH / QPSK



B38-20G-27G / 5MHz / High CH / QPSK



B38-30M-20G / 10MHz / Low CH / QPSK

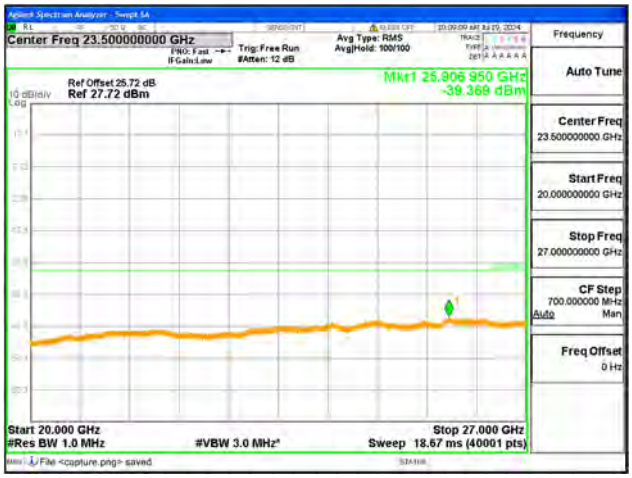


B38-20G-27G / 10MHz / Low CH / QPSK

B38-30M-20G / 10MHz / Mid CH / QPSK

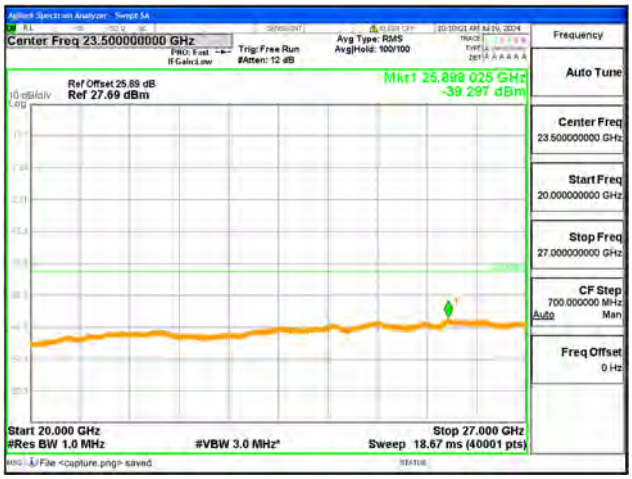
B38-20G-27G / 10MHz / Mid CH / QPSK

B38-30M-20G / 10MHz / High CH / QPSK

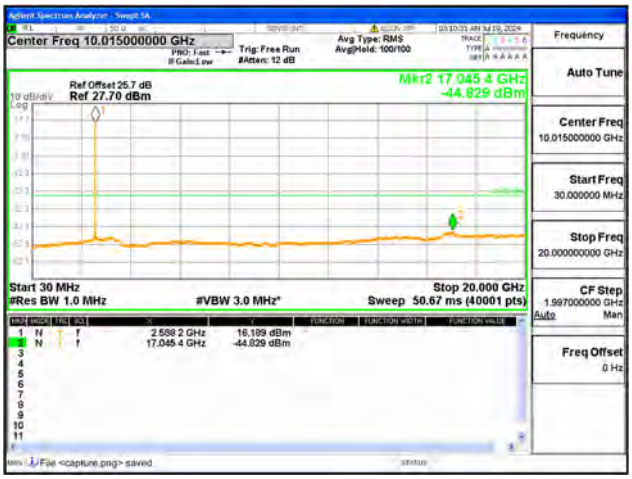


B38-20G-27G / 10MHz / High CH / QPSK

B38-30M-20G / 15MHz / Low CH / QPSK



B38-20G-27G / 15MHz / Low CH / QPSK

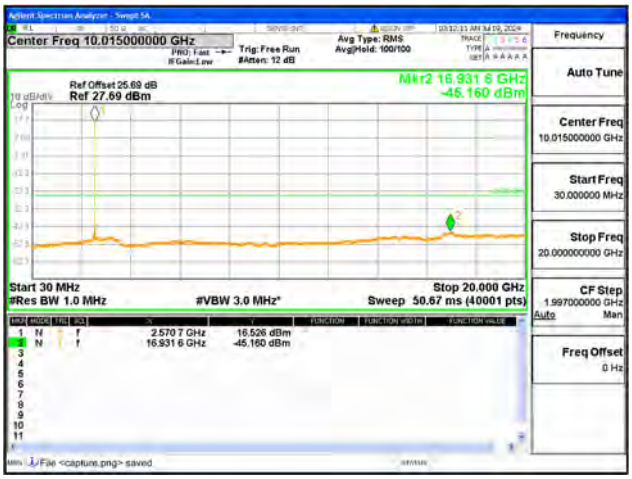


B38-30M-20G / 15MHz / Mid CH / QPSK

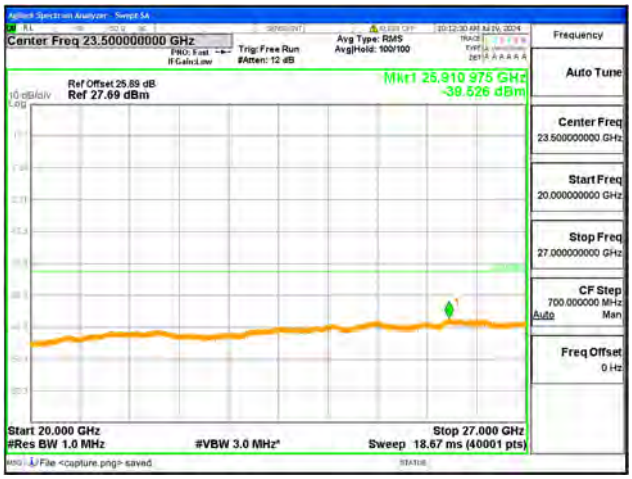
B38-20G-27G / 15MHz / Mid CH / QPSK

B38-30M-20G / 15MHz / High CH / QPSK

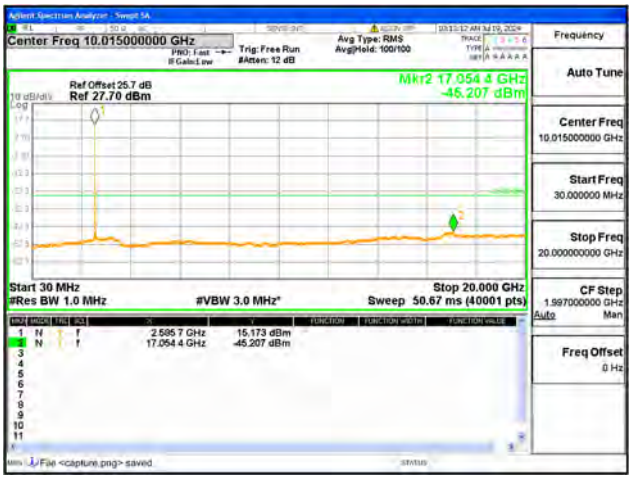
B38-20G-27G / 15MHz / High CH / QPSK



B38-30M-20G / 20MHz / Low CH / QPSK



B38-20G-27G / 20MHz / Low CH / QPSK

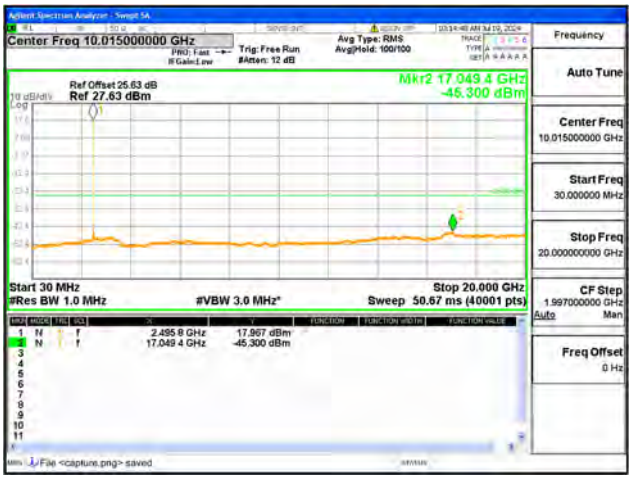


B38-30M-20G / 20MHz / Mid CH / QPSK

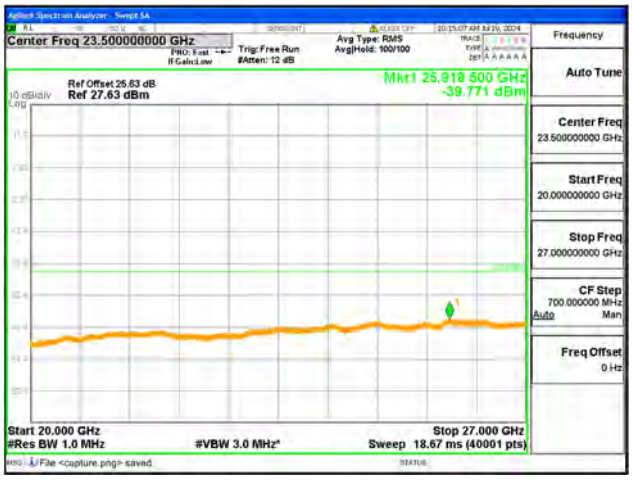
B38-20G-27G / 20MHz / Mid CH / QPSK

B38-30M-20G / 20MHz / High CH / QPSK

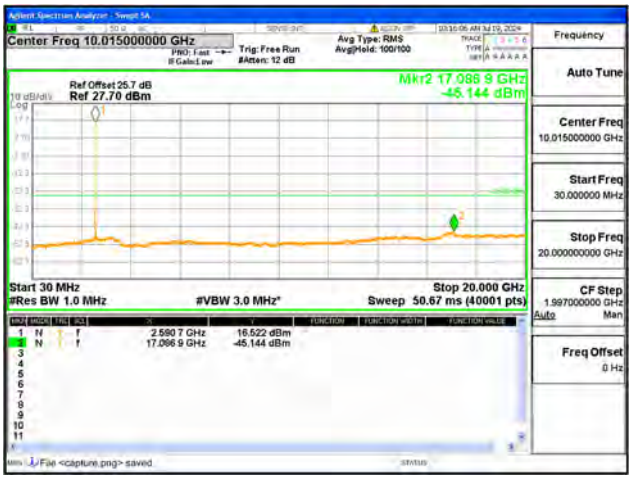
B38-20G-27G / 20MHz / High CH / QPSK



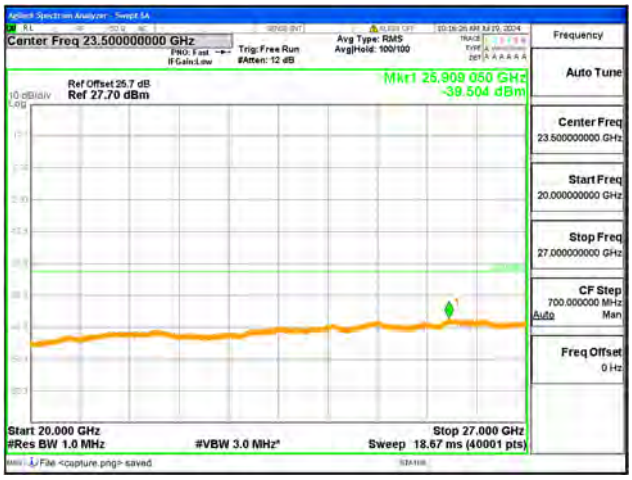
B41-30M-20G / 5MHz / Low CH / QPSK



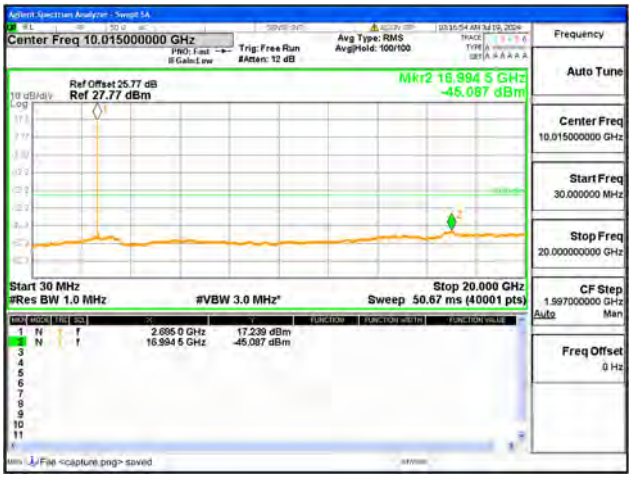
B41-20G-27G / 5MHz / Low CH / QPSK



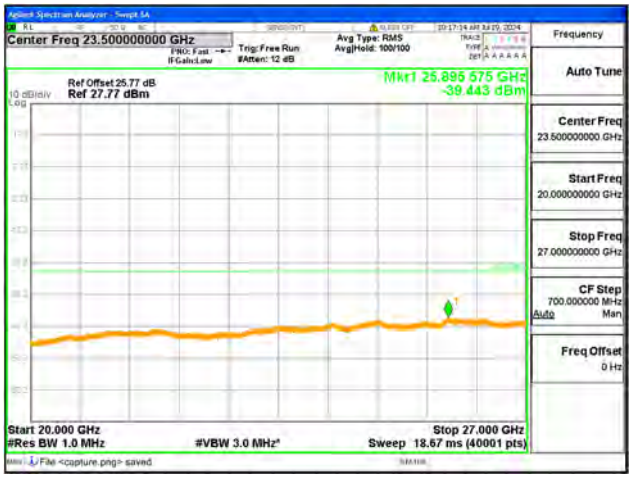
B41-30M-20G / 5MHz / Mid CH / QPSK



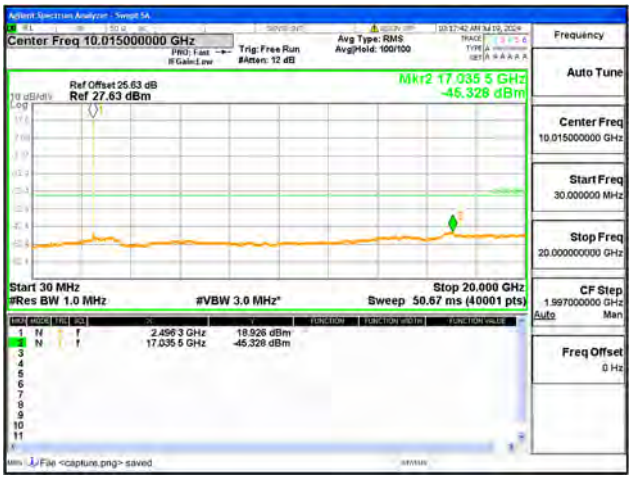
B41-20G-27G / 5MHz / Mid CH / QPSK



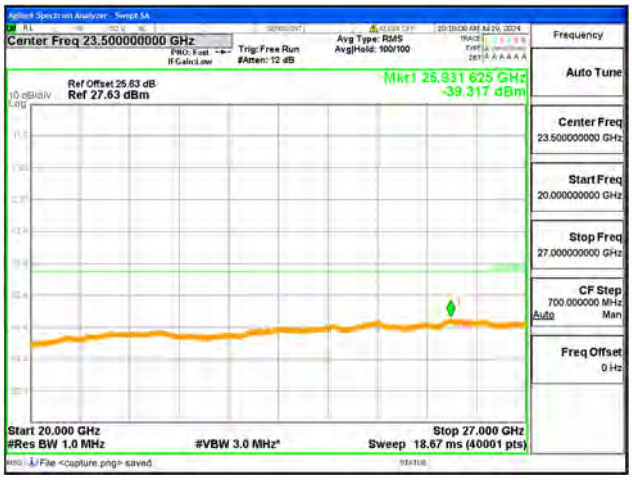
B41-30M-20G / 5MHz / High CH / QPSK



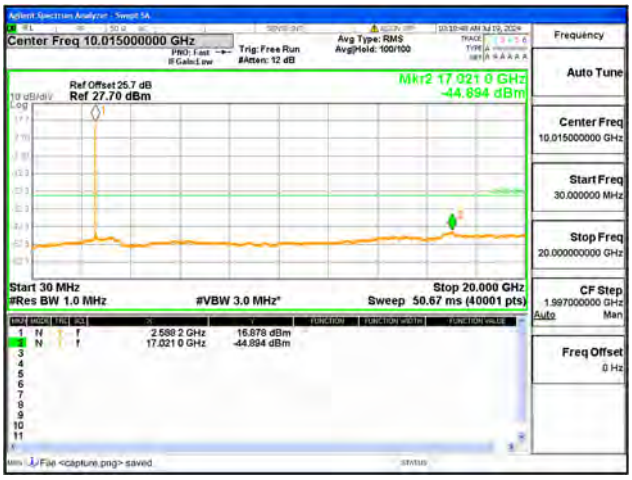
B41-20G-27G / 5MHz / High CH / QPSK



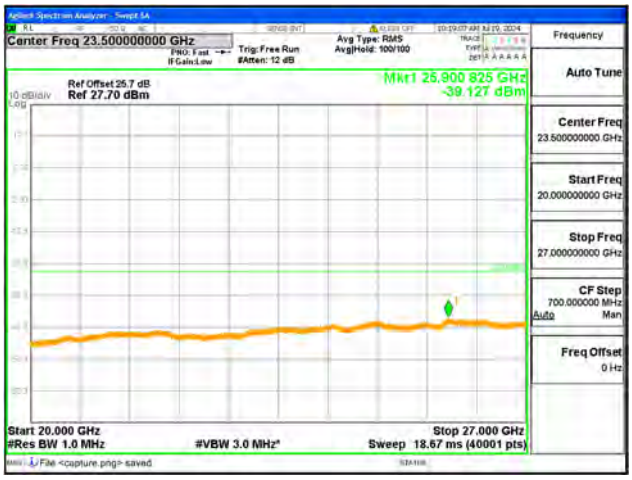
B41-30M-20G / 10MHz / Low CH / QPSK



B41-20G-27G / 10MHz / Low CH / QPSK

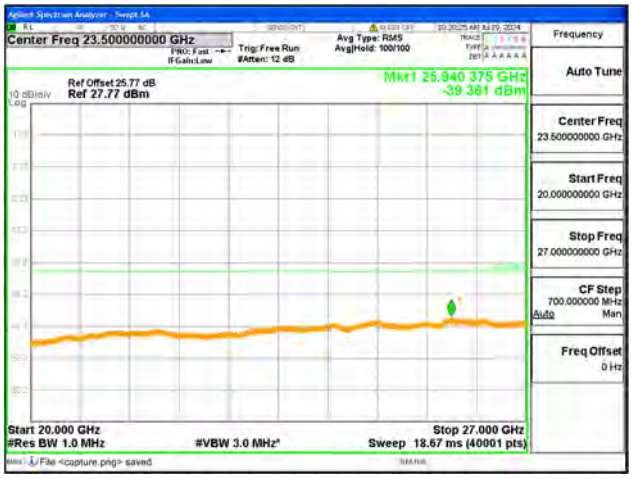


B41-30M-20G / 10MHz / Mid CH / QPSK

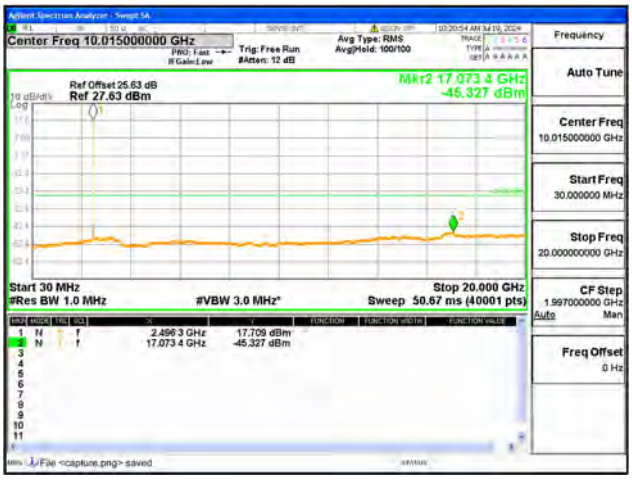


B41-20G-27G / 10MHz / Mid CH / QPSK

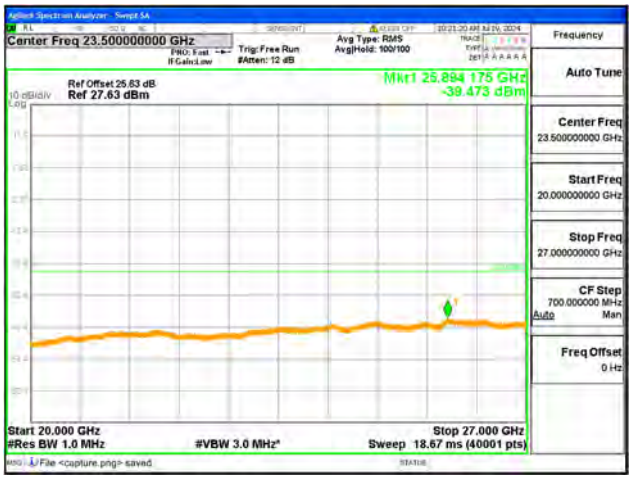
B41-30M-20G / 10MHz / High CH / QPSK



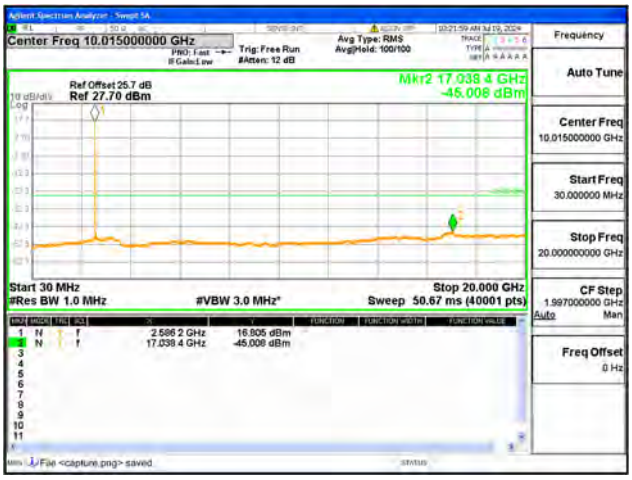
B41-20G-27G / 10MHz / High CH / QPSK



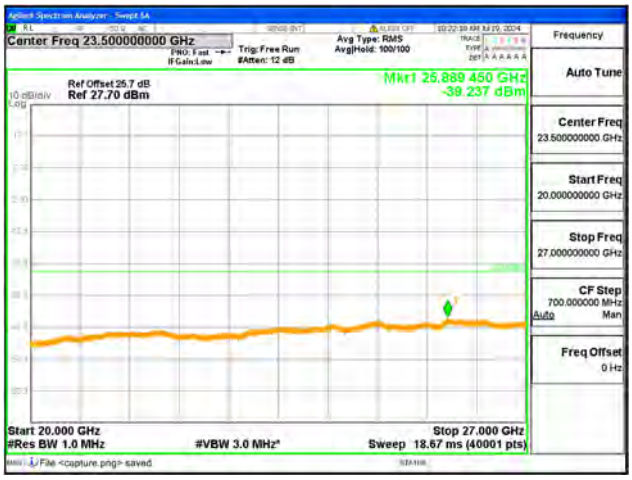
B41-30M-20G / 15MHz / Low CH / QPSK



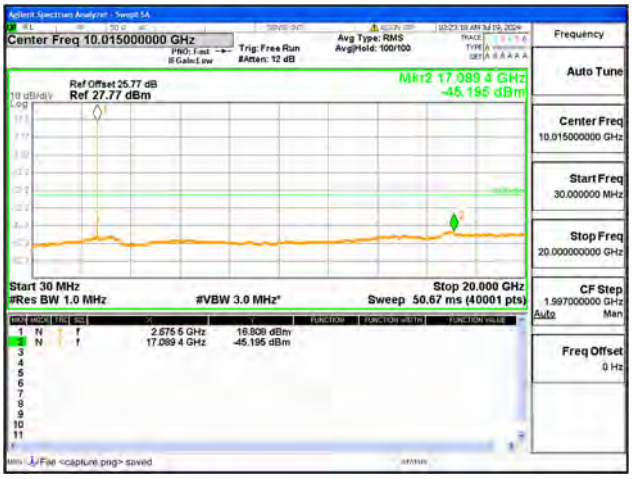
B41-20G-27G / 15MHz / Low CH / QPSK



B41-30M-20G / 15MHz / Mid CH / QPSK

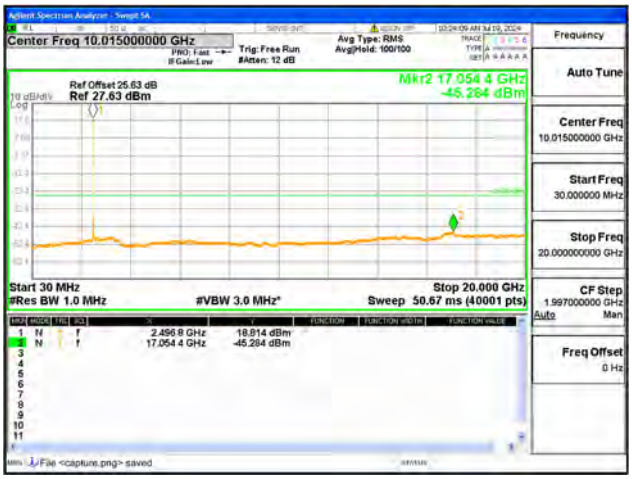


B41-20G-27G / 15MHz / Mid CH / QPSK

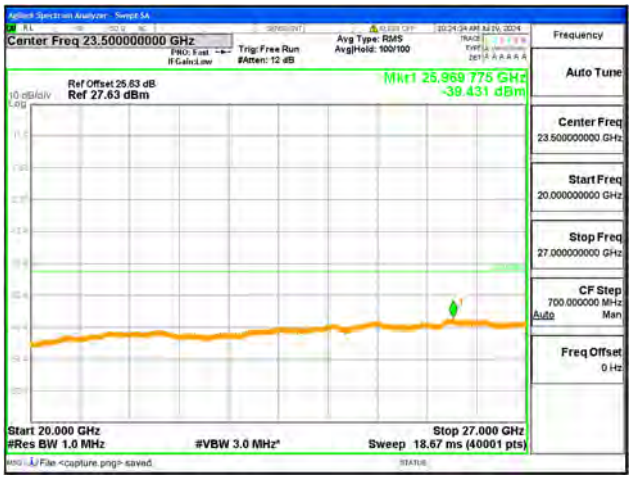


B41-30M-20G / 15MHz / High CH / QPSK

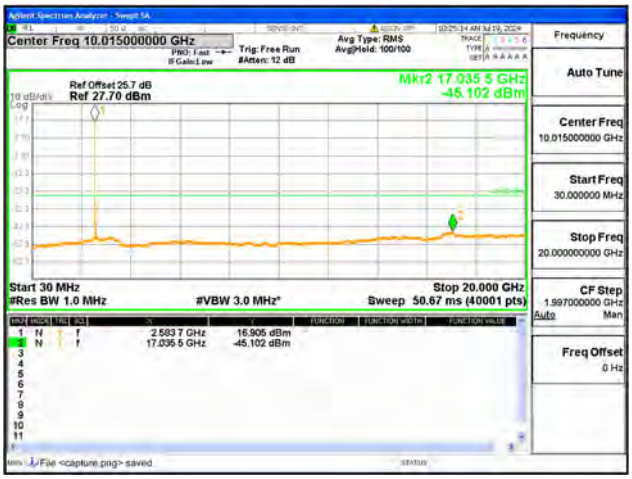
B41-20G-27G / 15MHz / High CH / QPSK



B41-30M-20G / 20MHz / Low CH / QPSK



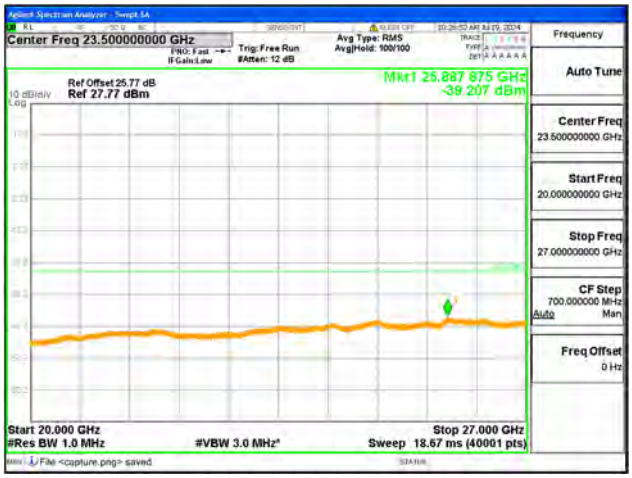
B41-20G-27G / 20MHz / Low CH / QPSK



B41-30M-20G / 20MHz / Mid CH / QPSK

B41-20G-27G / 20MHz / Mid CH / QPSK

B41-30M-20G / 20MHz / High CH / QPSK



B41-20G-27G / 20MHz / High CH / QPSK

B66 / 1.4MHz / Low CH / QPSK

B66 / 1.4MHz / Mid CH / QPSK

B66 / 1.4MHz / High CH / QPSK

B66 / 3MHz / Low CH / QPSK

B66 / 3MHz / Mid CH / QPSK

B66 / 3MHz / High CH / QPSK

B66 / 5MHz / Low CH / QPSK

B66 / 5MHz / Mid CH / QPSK

B66 / 5MHz / High CH / QPSK

B66 / 10MHz / Low CH / QPSK

B66 / 10MHz / Mid CH / QPSK

B66 / 10MHz / High CH / QPSK

B66 / 15MHz / Low CH / QPSK

B66 / 15MHz / Mid CH / QPSK

B66 / 15MHz / High CH / QPSK

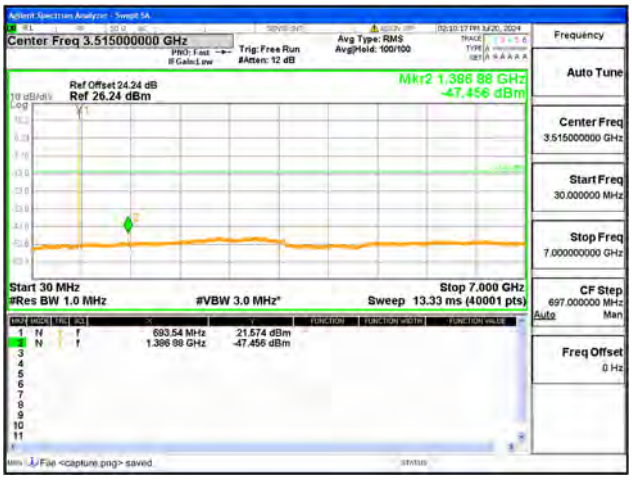
B66 / 20MHz / Low CH / QPSK

B66 / 20MHz / Mid CH / QPSK

B66 / 20MHz / High CH / QPSK

B71 / 5MHz / Low CH / QPSK

B71 / 5MHz / Mid CH / QPSK



B71 / 5MHz / High CH / QPSK

B71 / 10MHz / Low CH / QPSK

B71 / 10MHz / Mid CH / QPSK

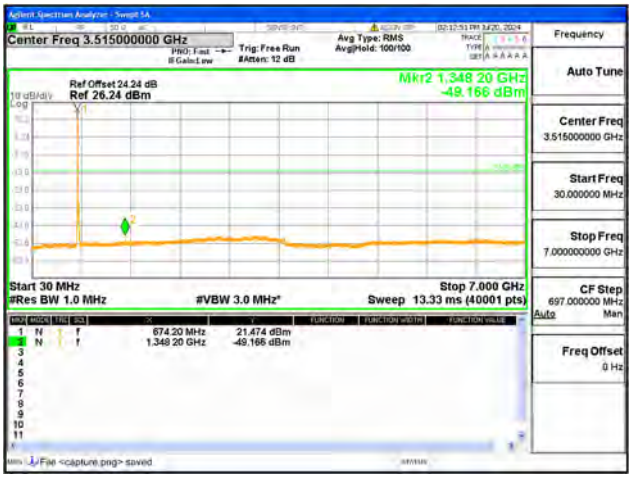
B71 / 10MHz / High CH / QPSK

B71 / 15MHz / Low CH / QPSK

B71 / 15MHz / Mid CH / QPSK

B71 / 15MHz / High CH / QPSK

B71 / 20MHz / Low CH / QPSK



B71 / 20MHz / Mid CH / QPSK

B71 / 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, 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 7,38,41

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.

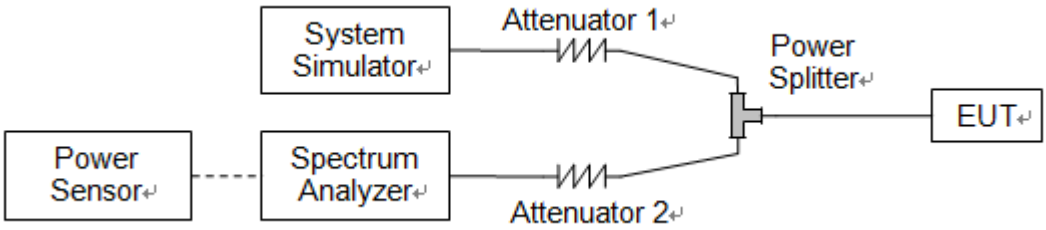
Band 12, 17, 71

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.

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.

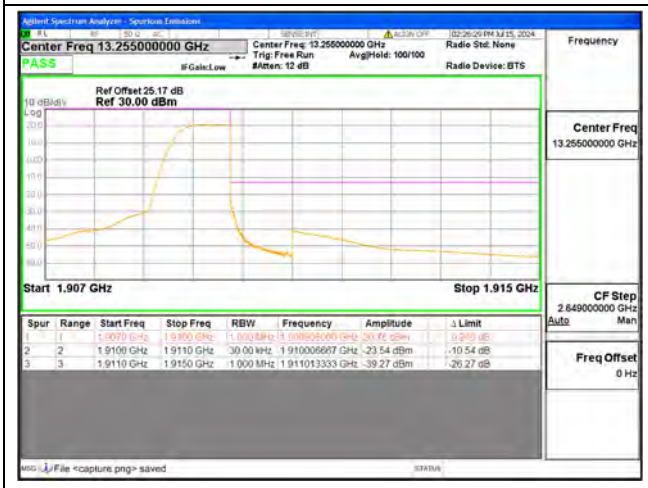
2.6.3. Test Procedure

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

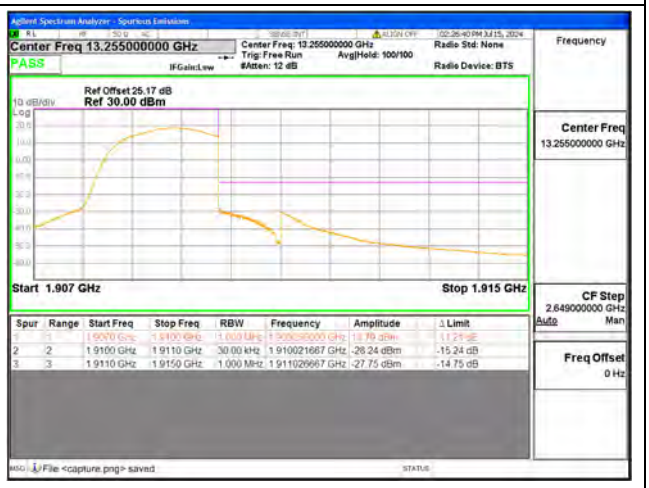
2.6.4. Test Result

B2 / 1.4MHz / Low CH / QPSK / 1 RB

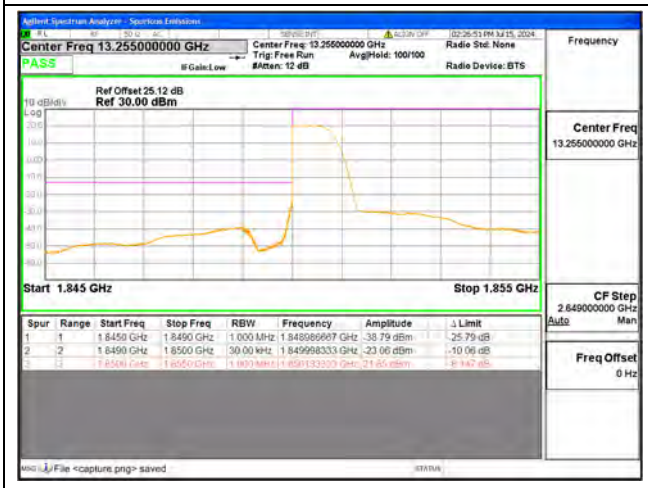
B2 / 1.4MHz / Low CH / QPSK / FULL RB



B2 / 1.4MHz / High CH / QPSK / 1 RB

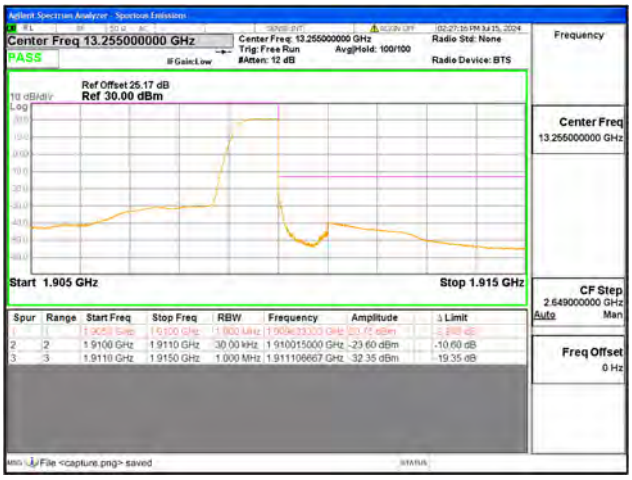


B2 / 1.4MHz / High CH / QPSK / FULL RB

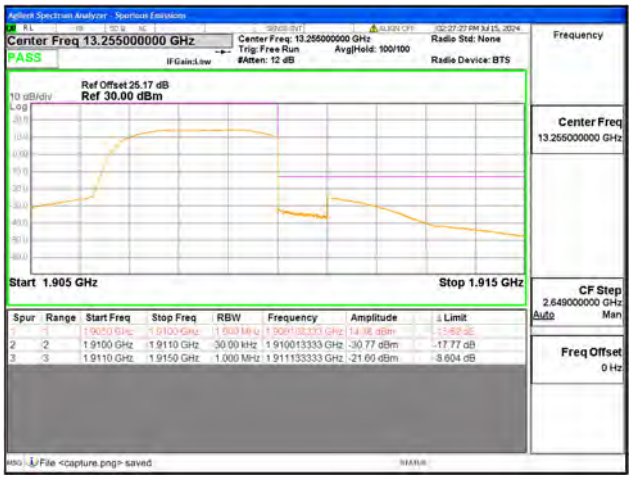


B2 / 3MHz / Low CH / QPSK / 1 RB

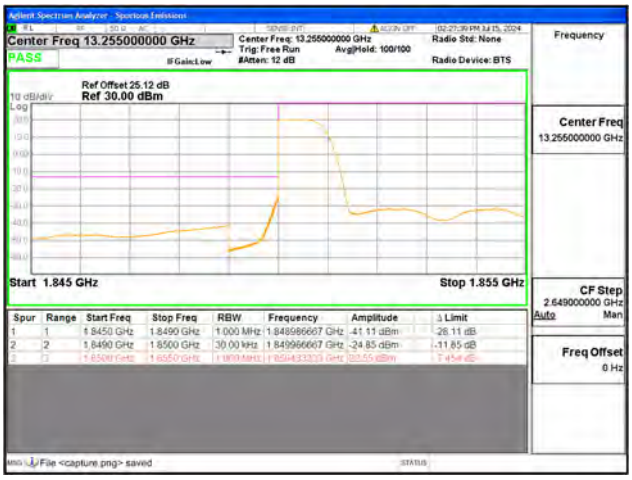
B2 / 3MHz / Low CH / QPSK / FULL RB



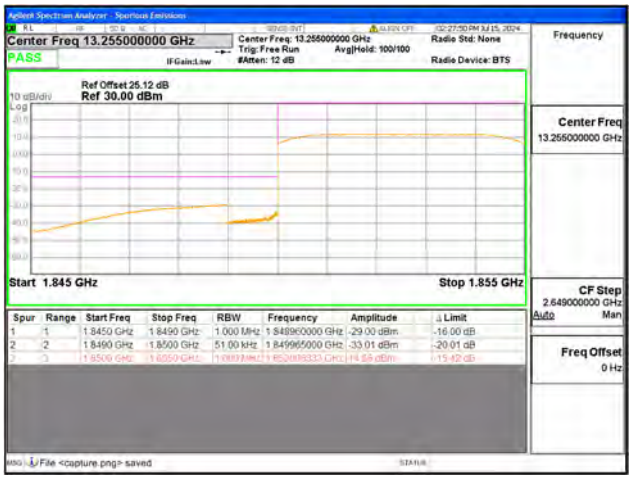
B2 / 3MHz / High CH / QPSK / 1 RB



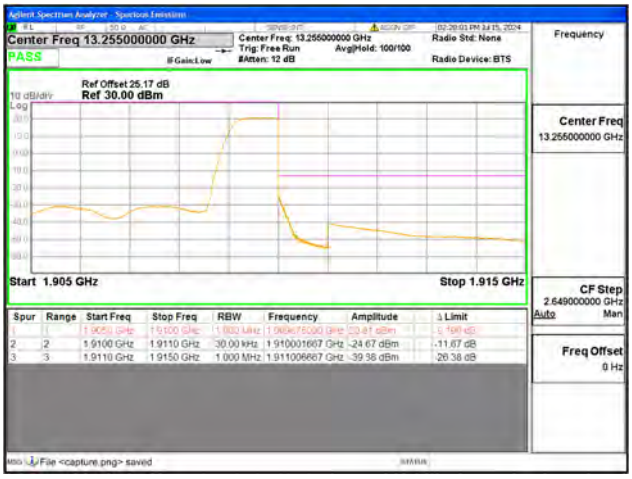
B2 / 3MHz / High CH / QPSK / FULL RB



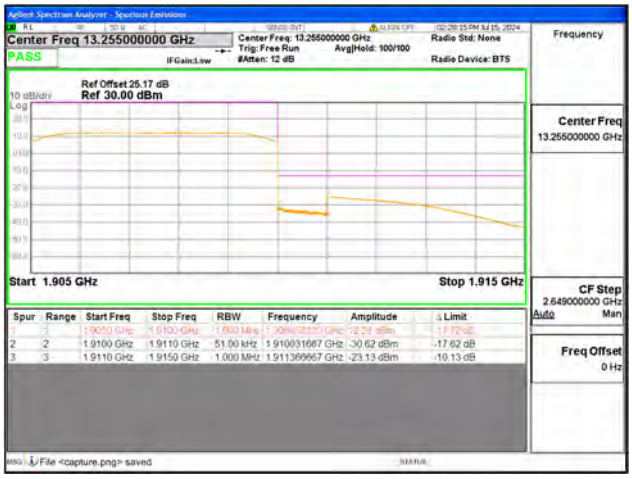
B2 / 5MHz / Low CH / QPSK / 1 RB



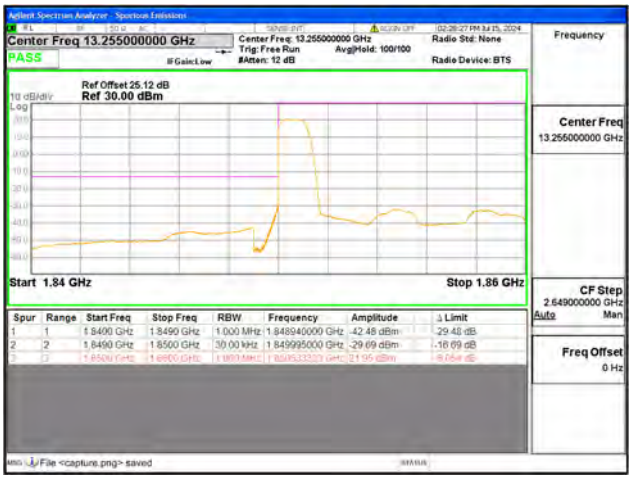
B2 / 5MHz / Low CH / QPSK / FULL RB



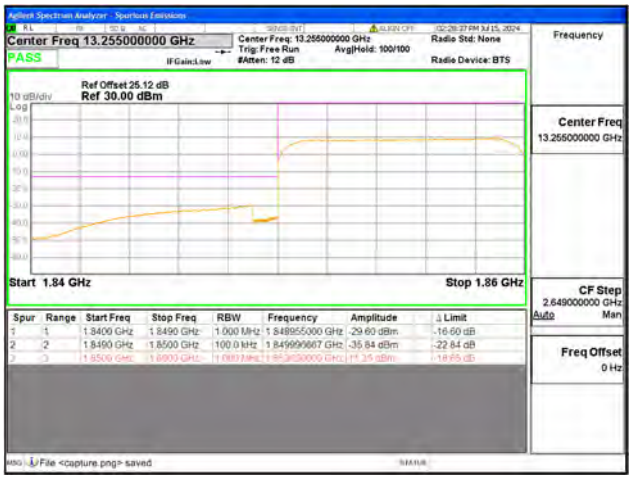
B2 / 5MHz / High CH / QPSK / 1 RB



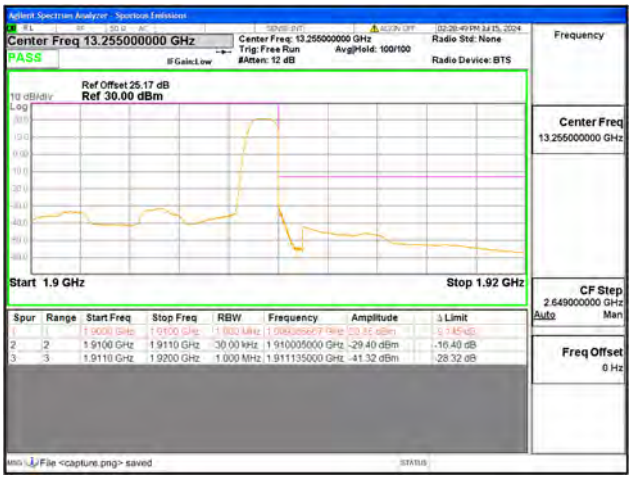
B2 / 5MHz / High CH / QPSK / FULL RB



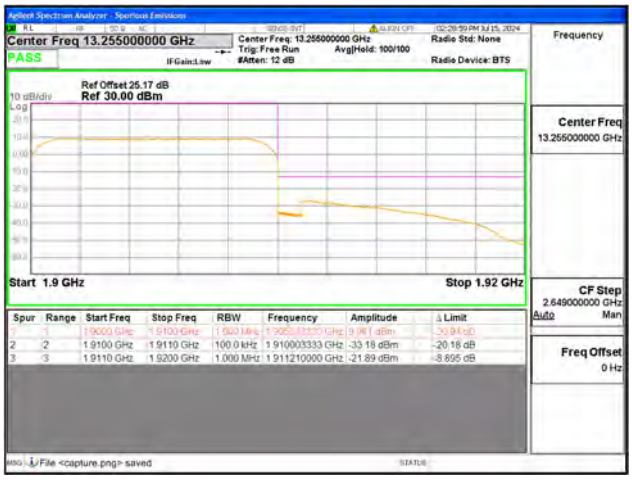
B2 / 10MHz / Low CH / QPSK / 1 RB



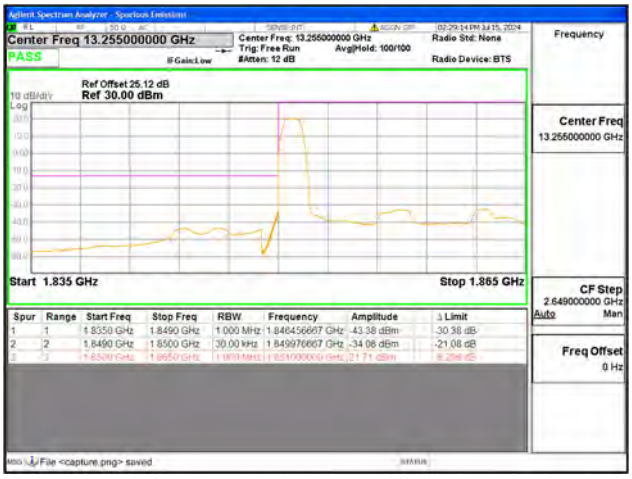
B2 / 10MHz / Low CH / QPSK / FULL RB



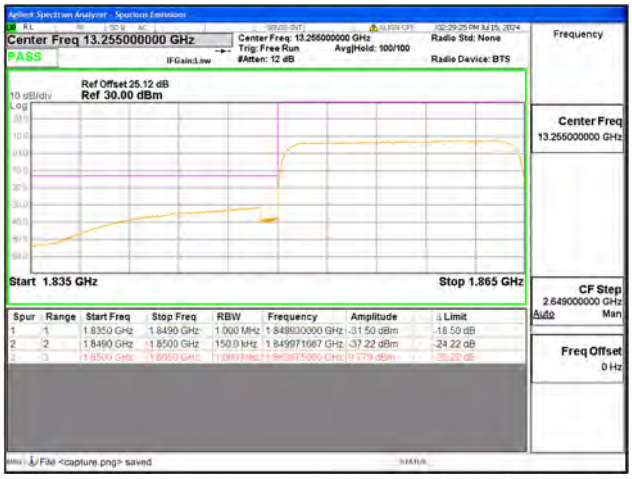
B2 / 10MHz / High CH / QPSK / 1 RB



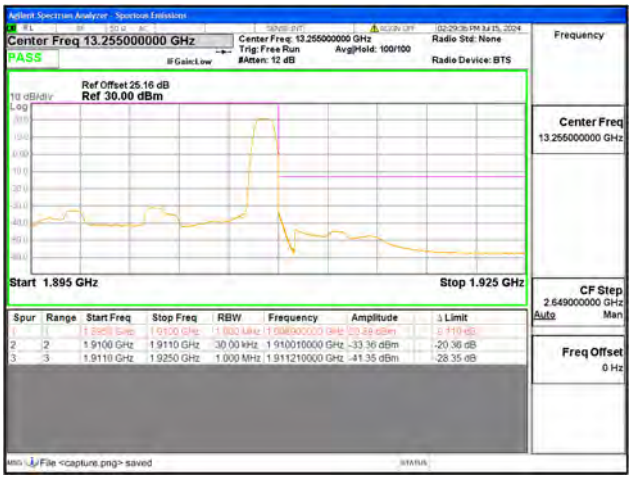
B2 / 10MHz / High CH / QPSK / FULL RB



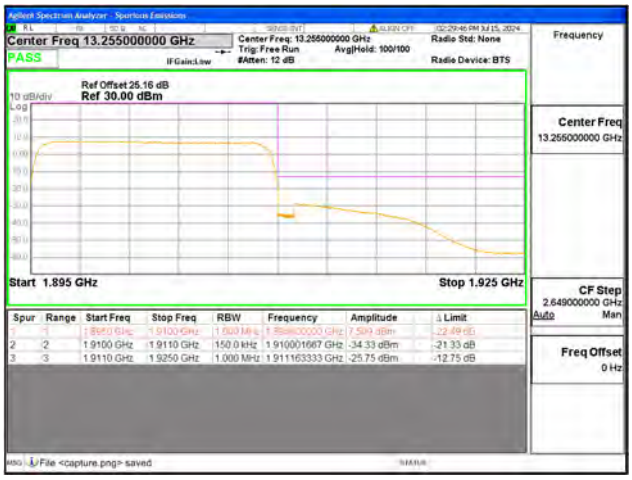
B2 / 15MHz / Low CH / QPSK / 1 RB



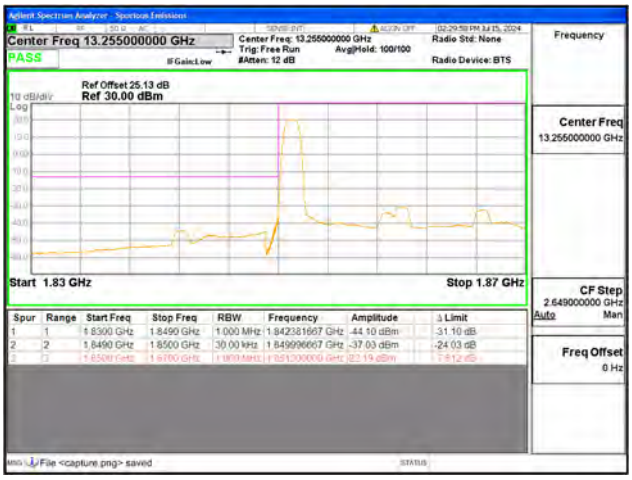
B2 / 15MHz / Low CH / QPSK / FULL RB



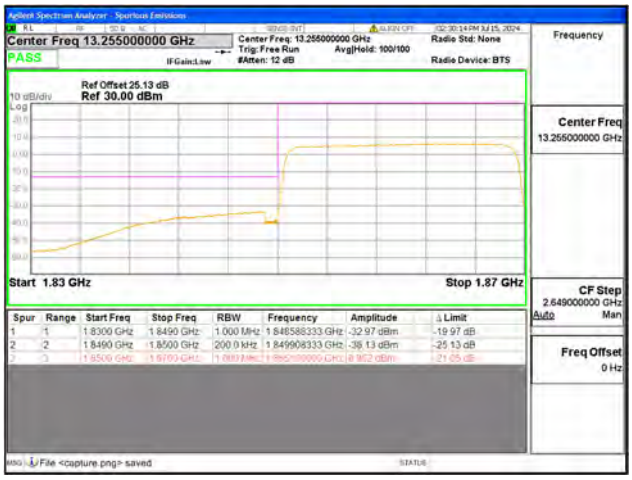
B2 / 15MHz / High CH / QPSK / 1 RB



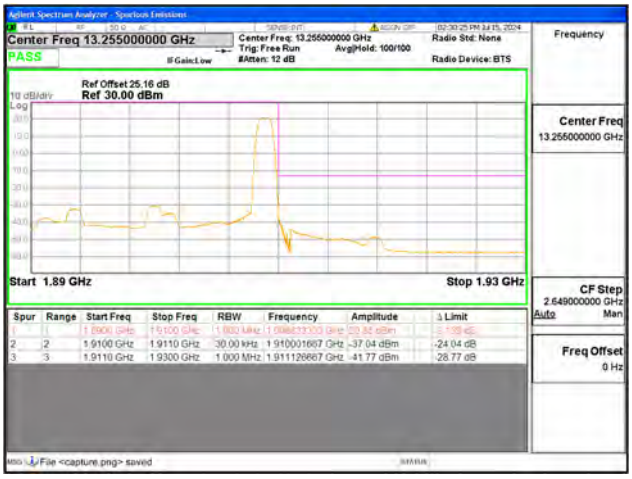
B2 / 15MHz / High CH / QPSK / FULL RB



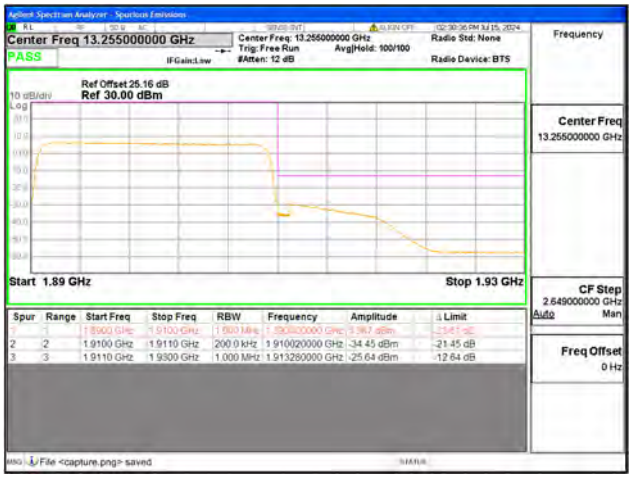
B2 / 20MHz / Low CH / QPSK / 1 RB



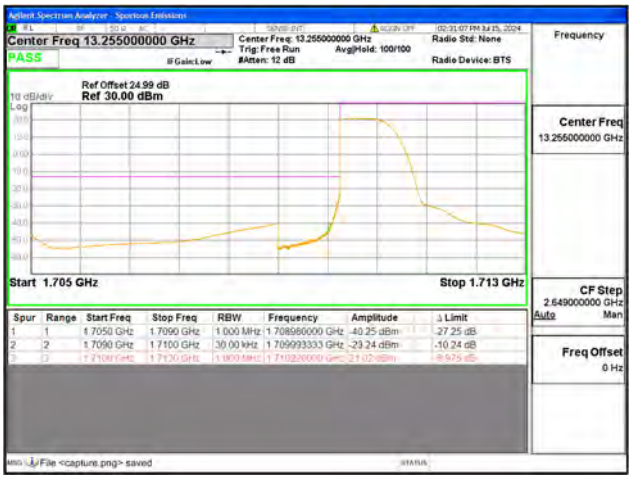
B2 / 20MHz / Low CH / QPSK / FULL RB



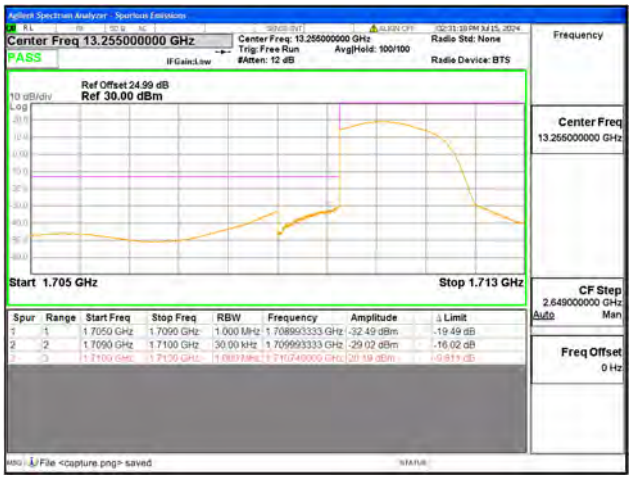
B2 / 20MHz / High CH / QPSK / 1 RB



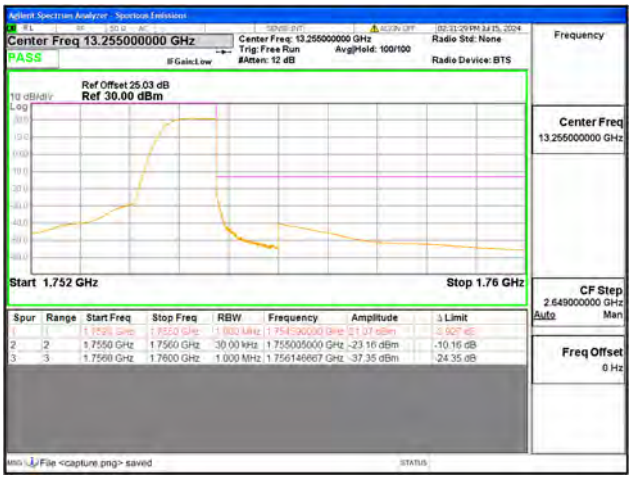
B2 / 20MHz / High CH / QPSK / FULL RB



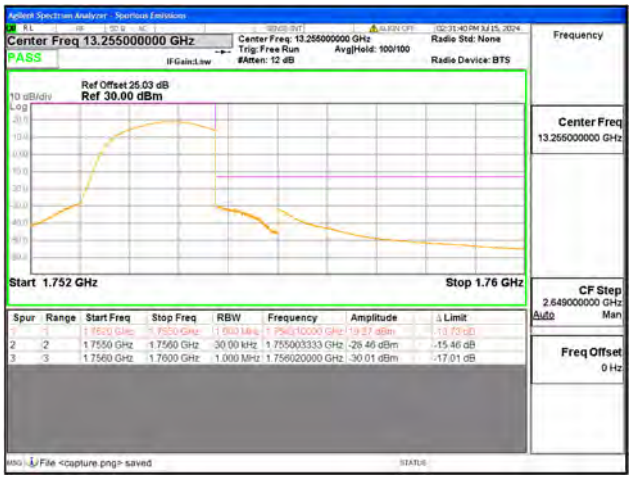
B4 / 1.4MHz / Low CH / QPSK / 1 RB



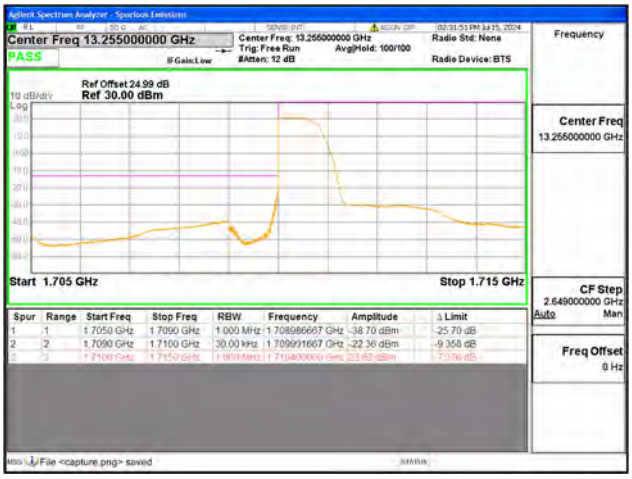
B4 / 1.4MHz / Low CH / QPSK / FULL RB



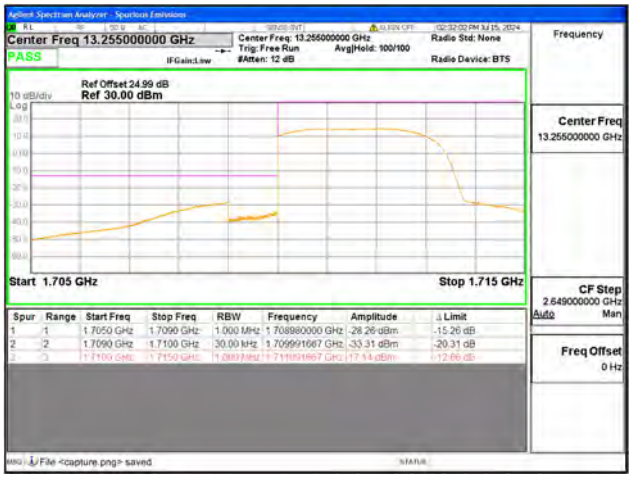
B4 / 1.4MHz / High CH / QPSK / 1 RB



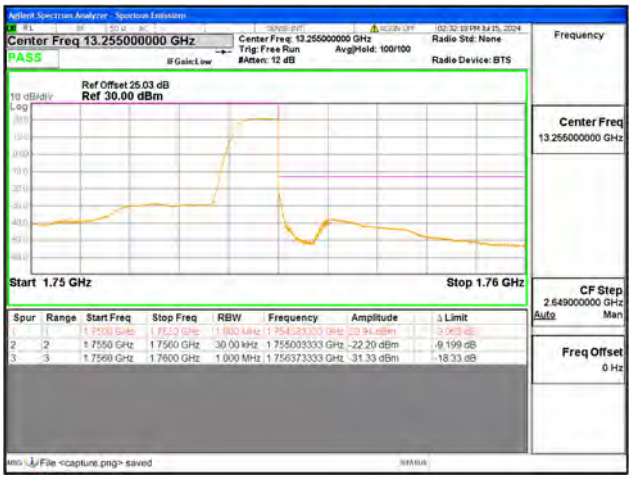
B4 / 1.4MHz / High CH / QPSK / FULL RB



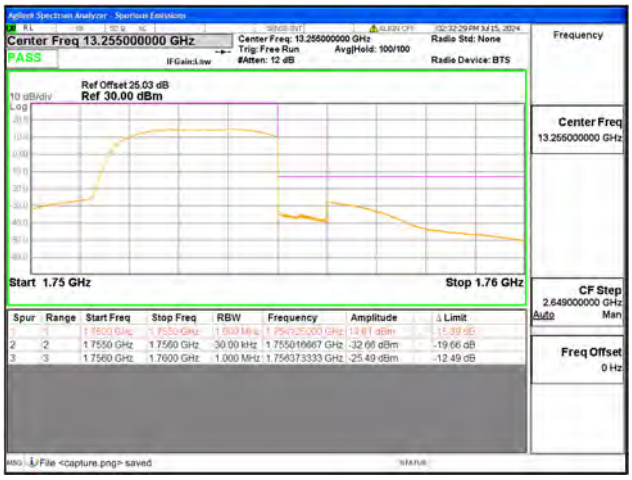
B4 / 3MHz / Low CH / QPSK / 1 RB



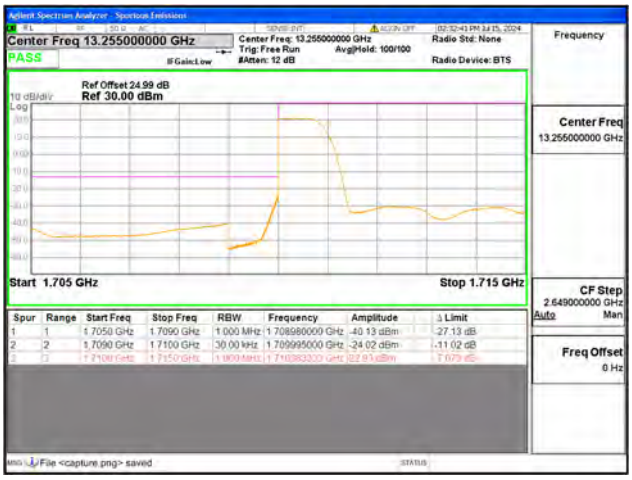
B4 / 3MHz / Low CH / QPSK / FULL RB



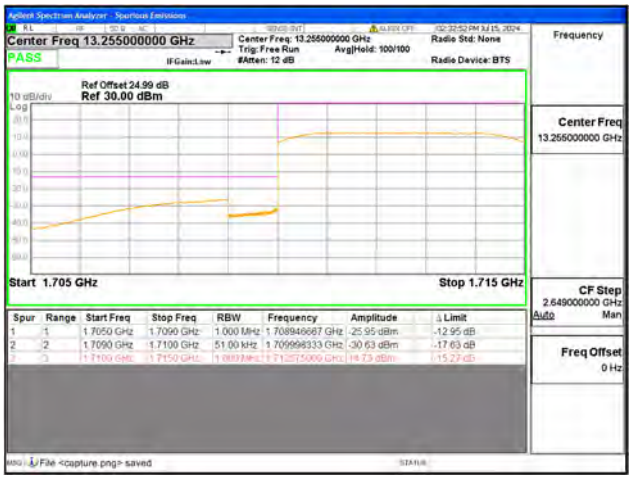
B4 / 3MHz / High CH / QPSK / 1 RB



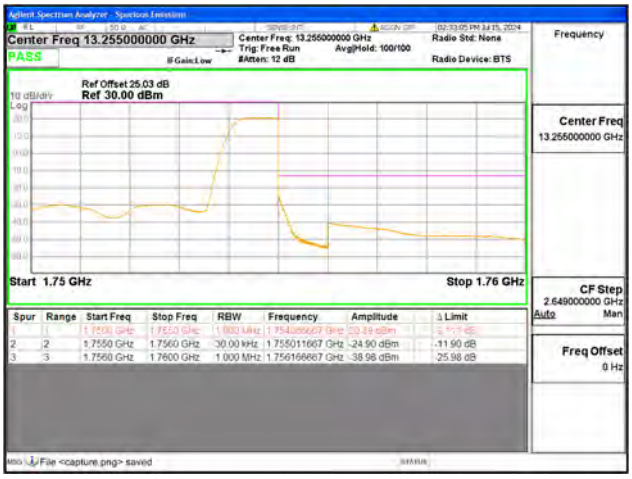
B4 / 3MHz / High CH / QPSK / FULL RB



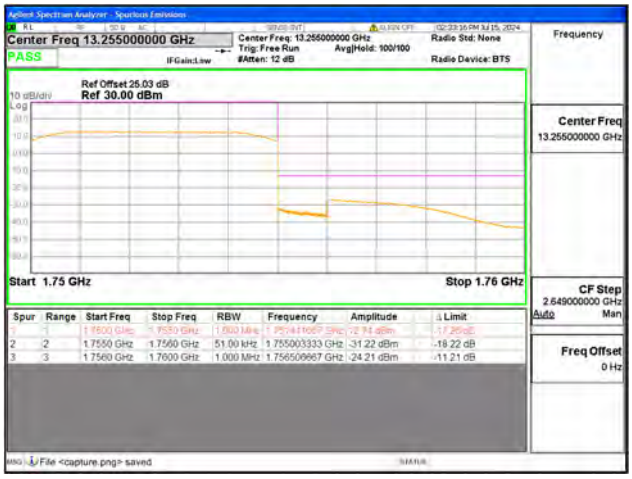
B4 / 5MHz / Low CH / QPSK / 1 RB



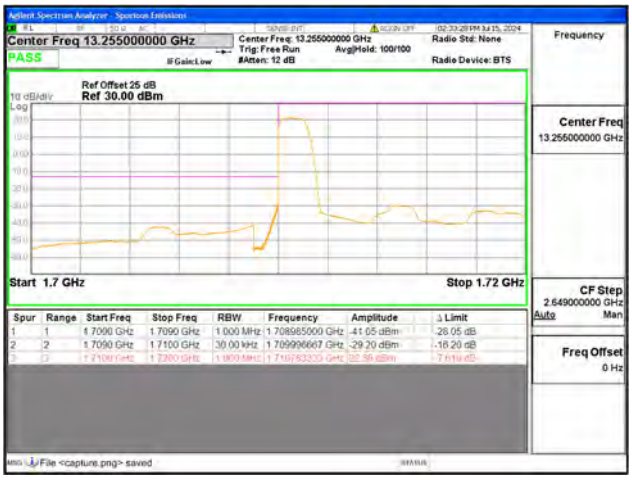
B4 / 5MHz / Low CH / QPSK / FULL RB



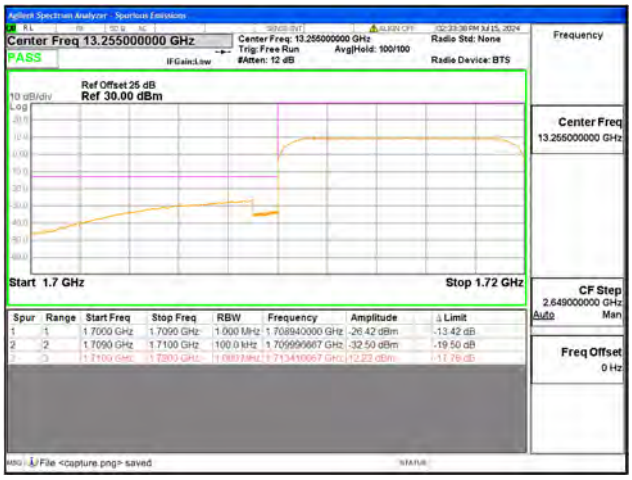
B4 / 5MHz / High CH / QPSK / 1 RB



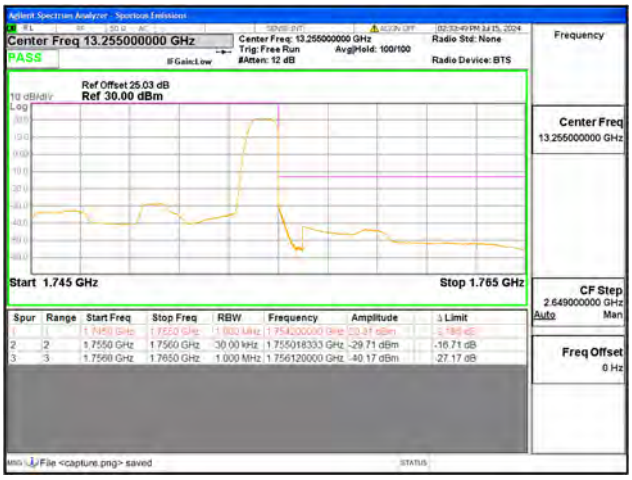
B4 / 5MHz / High CH / QPSK / FULL RB



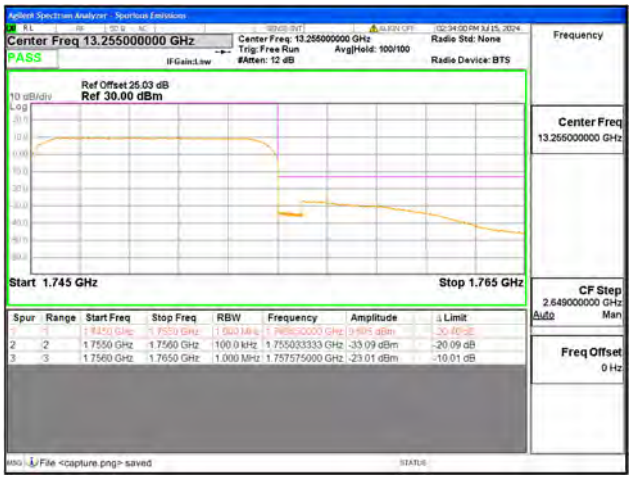
B4 / 10MHz / Low CH / QPSK / 1 RB



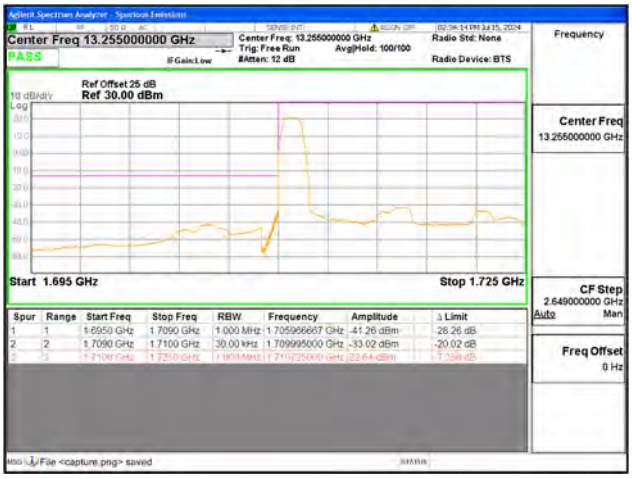
B4 / 10MHz / Low CH / QPSK / FULL RB



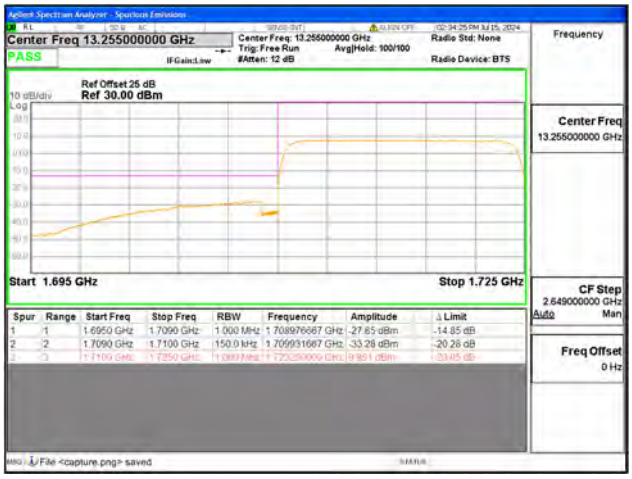
B4 / 10MHz / High CH / QPSK / 1 RB



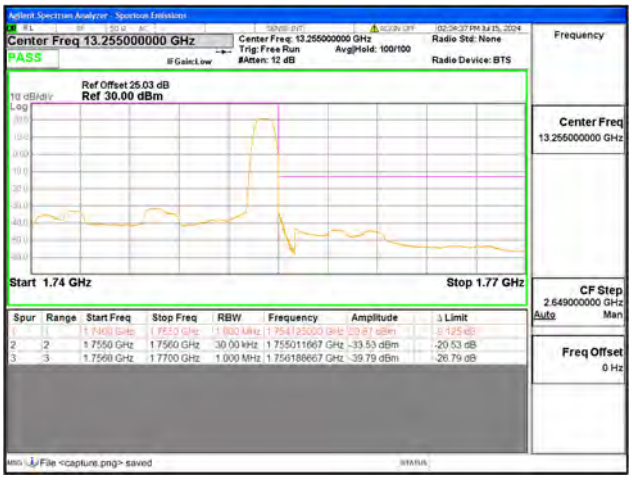
B4 / 10MHz / High CH / QPSK / FULL RB



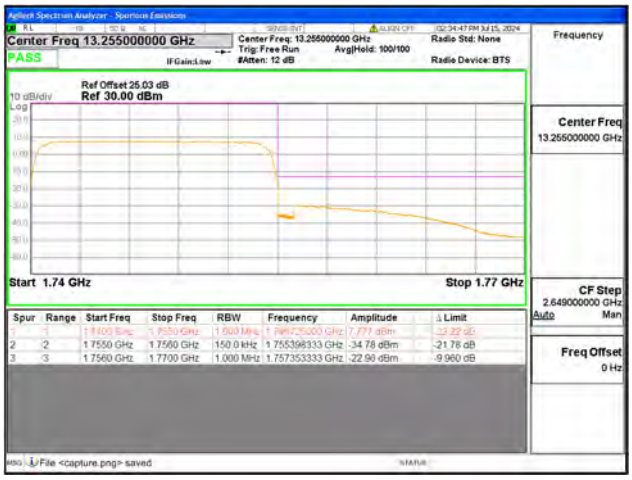
B4 / 15MHz / Low CH / QPSK / 1 RB



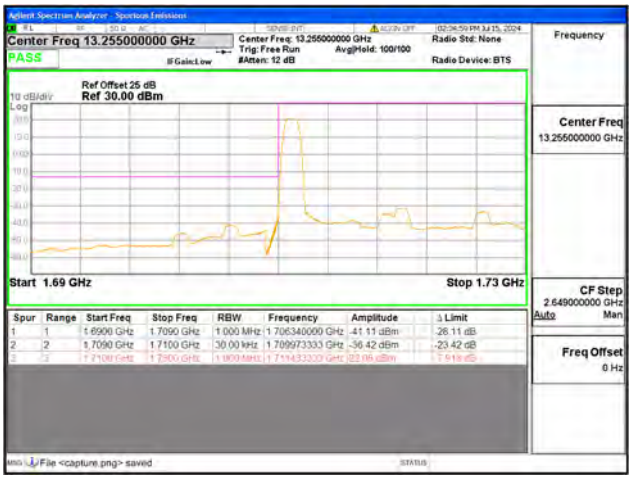
B4 / 15MHz / Low CH / QPSK / FULL RB



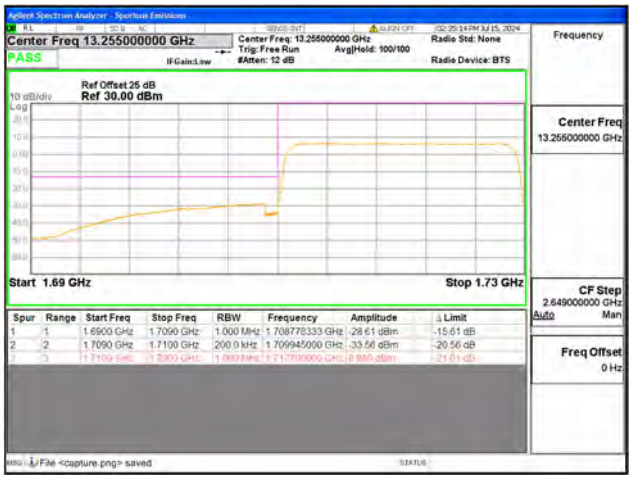
B4 / 15MHz / High CH / QPSK / 1 RB



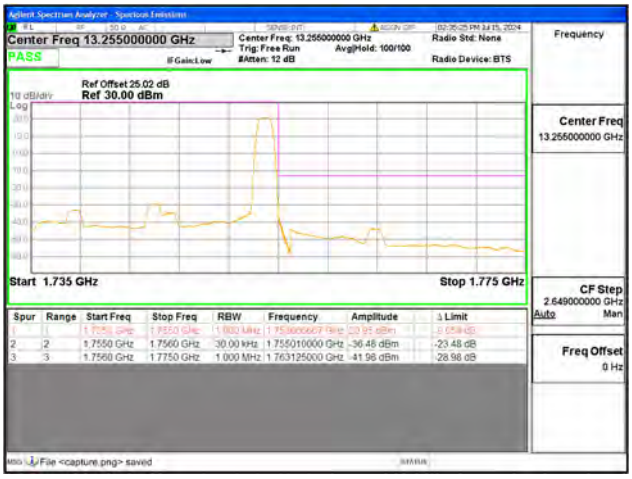
B4 / 15MHz / High CH / QPSK / FULL RB



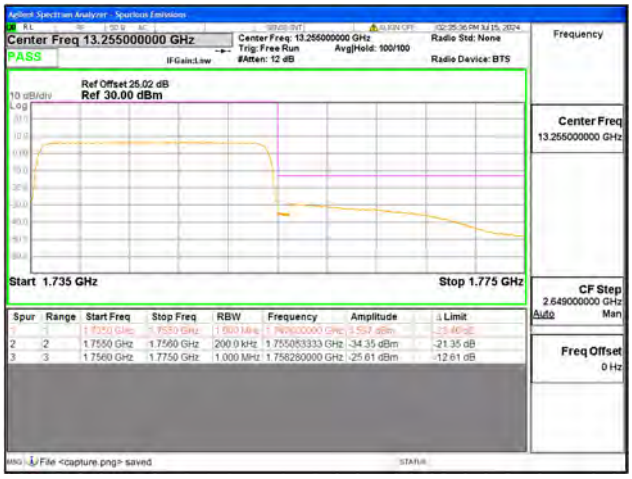
B4 / 20MHz / Low CH / QPSK / 1 RB



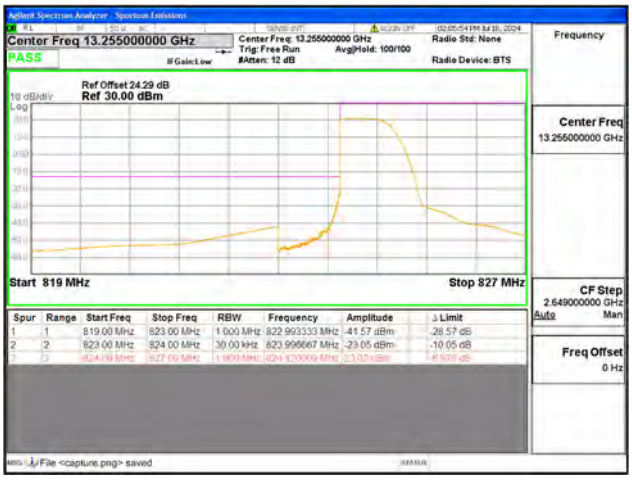
B4 / 20MHz / Low CH / QPSK / FULL RB



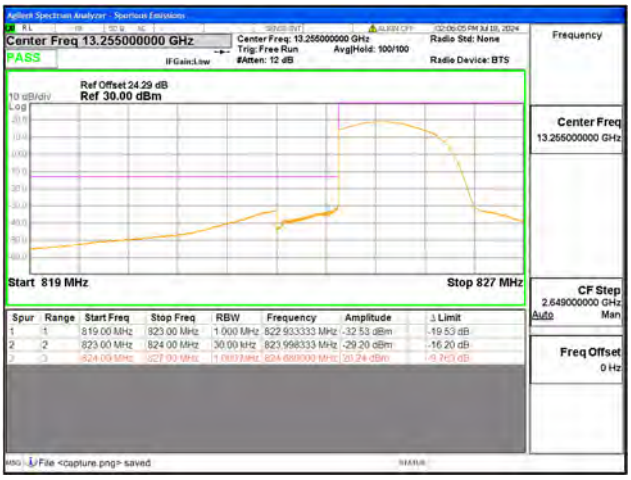
B4 / 20MHz / High CH / QPSK / 1 RB



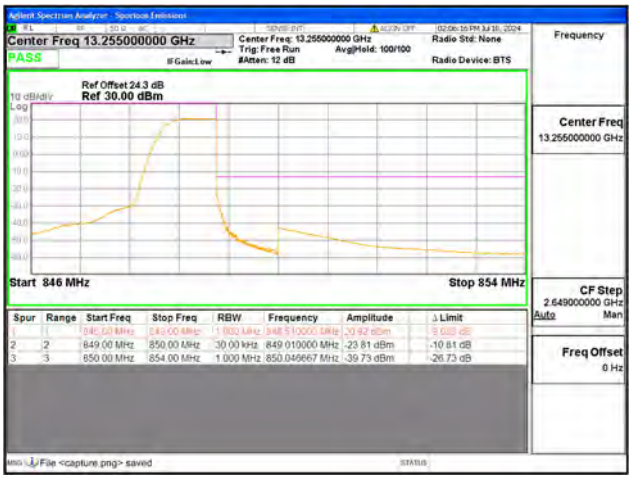
B4 / 20MHz / High CH / QPSK / FULL RB



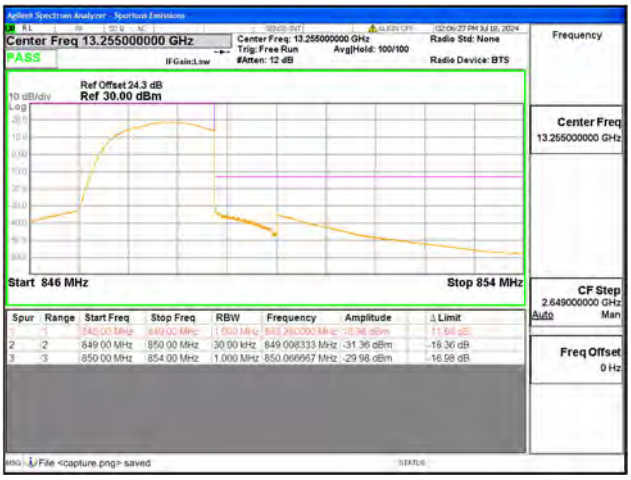
B5 / 1.4MHz / Low CH / QPSK / 1 RB



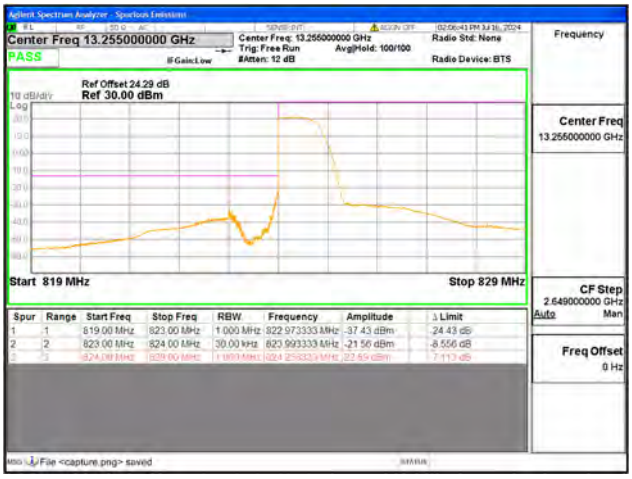
B5 / 1.4MHz / Low CH / QPSK / FULL RB



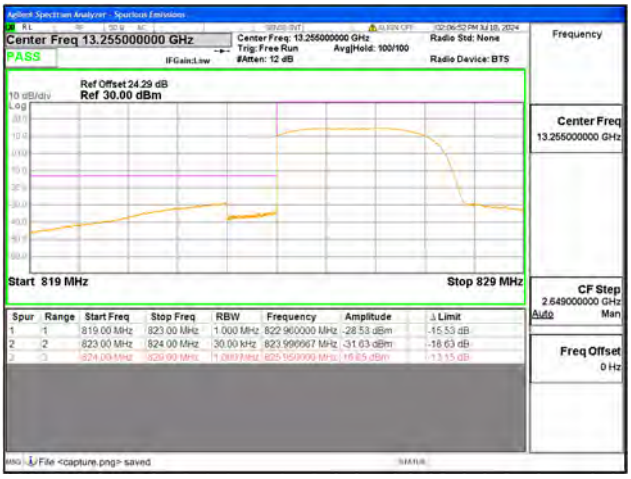
B5 / 1.4MHz / High CH / QPSK / 1 RB



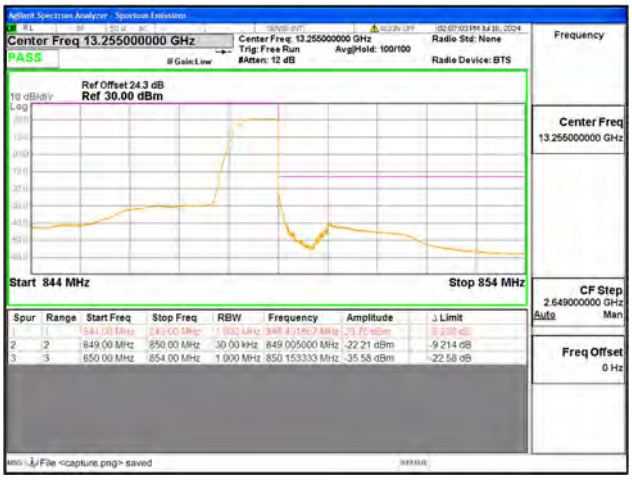
B5 / 1.4MHz / High CH / QPSK / FULL RB



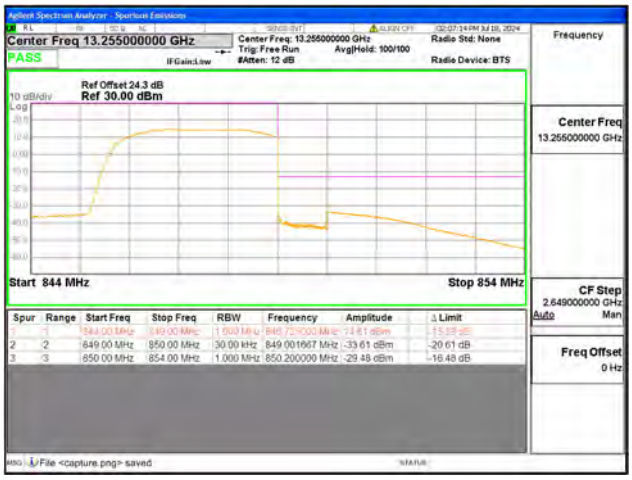
B5 / 3MHz / Low CH / QPSK / 1 RB



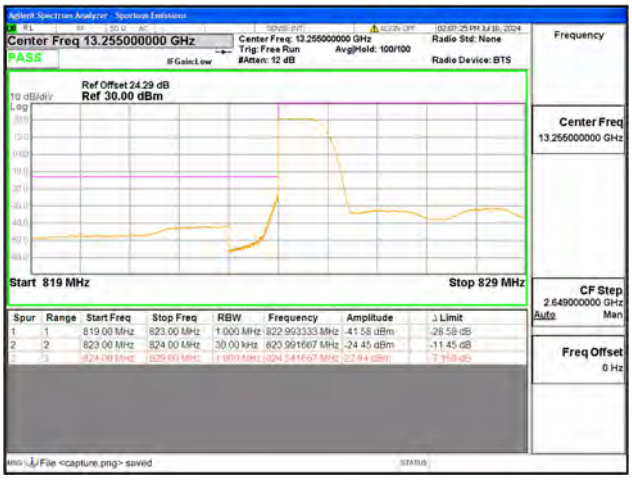
B5 / 3MHz / Low CH / QPSK / FULL RB



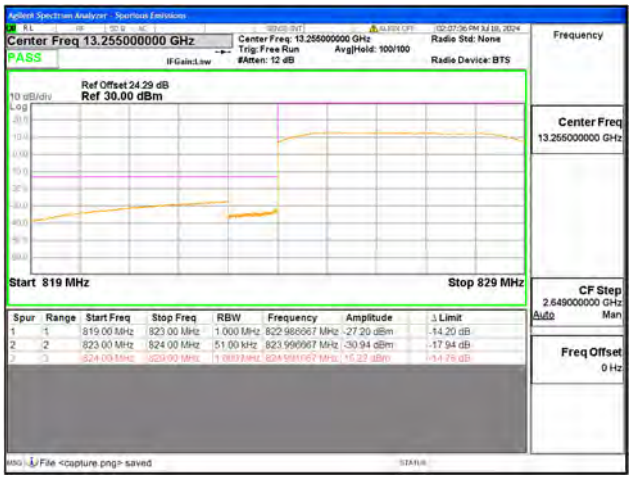
B5 / 3MHz / High CH / QPSK / 1 RB



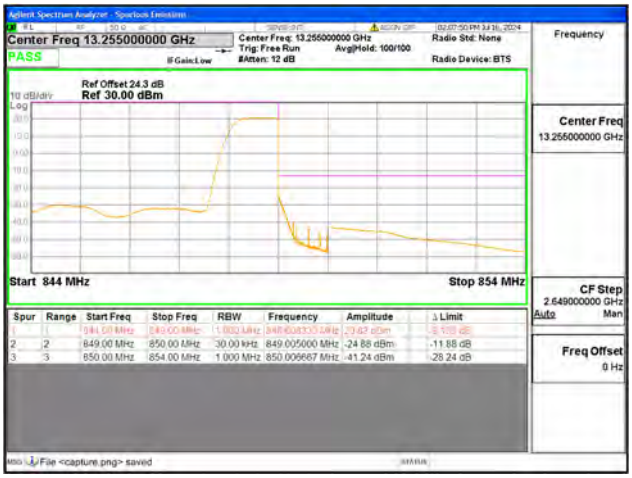
B5 / 3MHz / High CH / QPSK / FULL RB



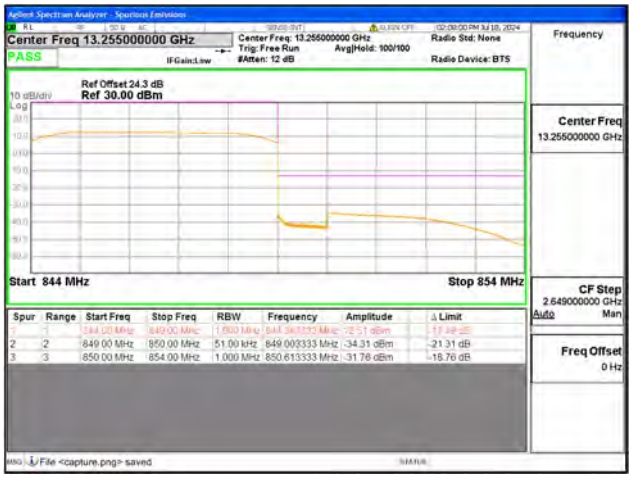
B5 / 5MHz / Low CH / QPSK / 1 RB



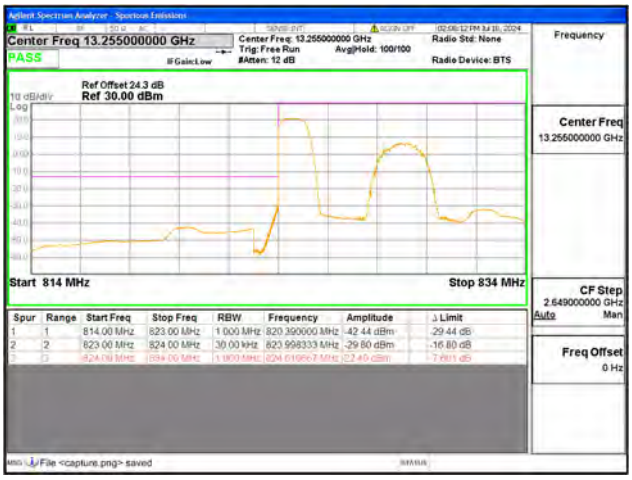
B5 / 5MHz / Low CH / QPSK / FULL RB



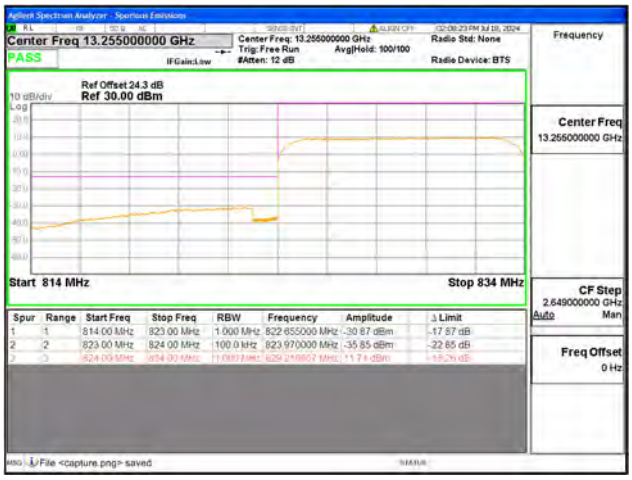
B5 / 5MHz / High CH / QPSK / 1 RB



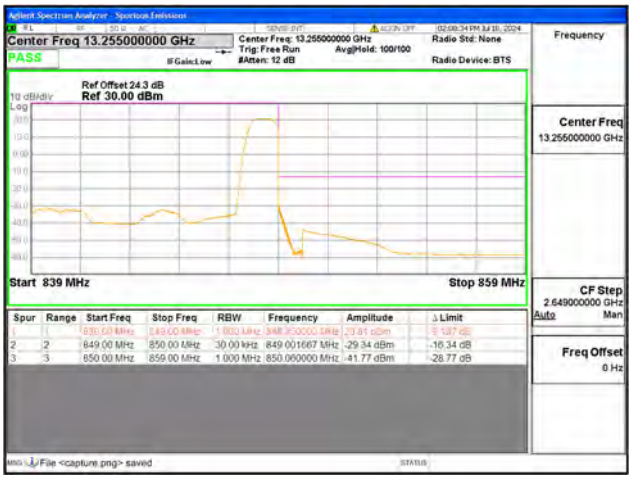
B5 / 5MHz / High CH / QPSK / FULL RB



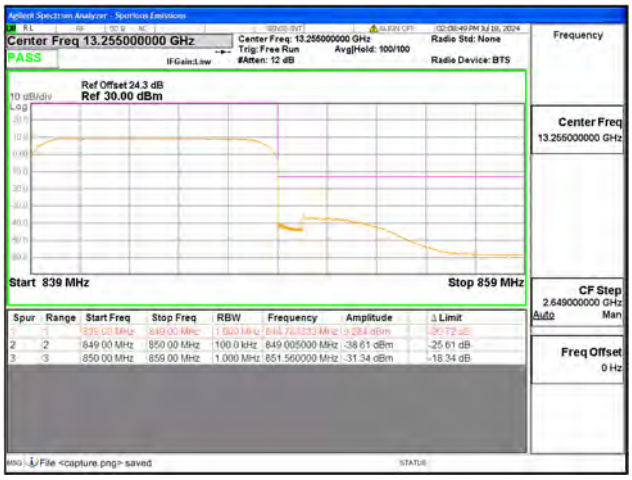
B5 / 10MHz / Low CH / QPSK / 1 RB



B5 / 10MHz / Low CH / QPSK / FULL RB



B5 / 10MHz / High CH / QPSK / 1 RB



B5 / 10MHz / High CH / QPSK / FULL RB