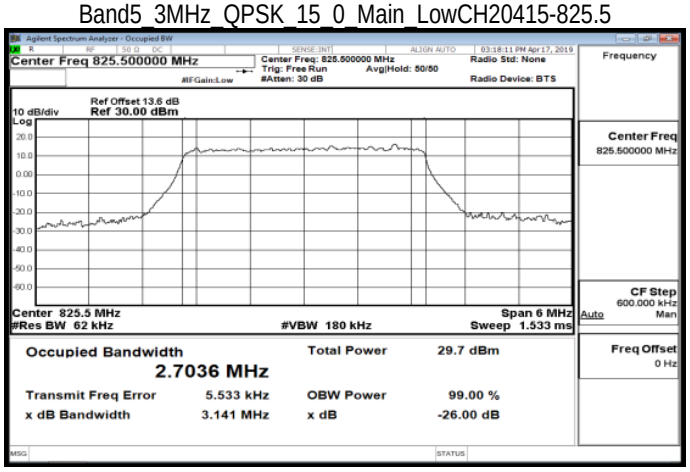
Band5_3MHz_QPSK_15_0_Main_LowCH20415-825.5



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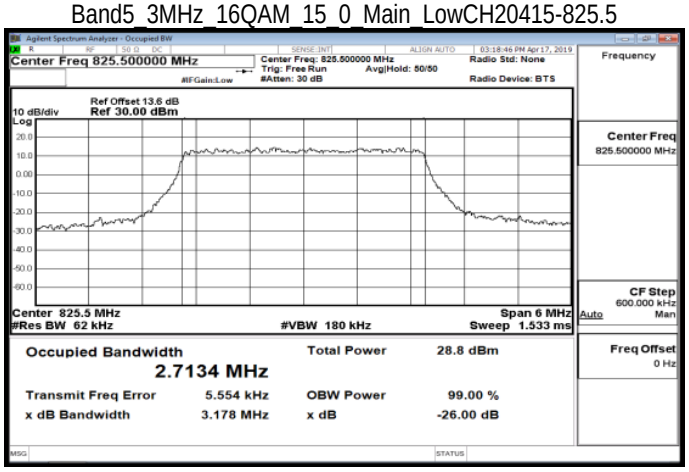
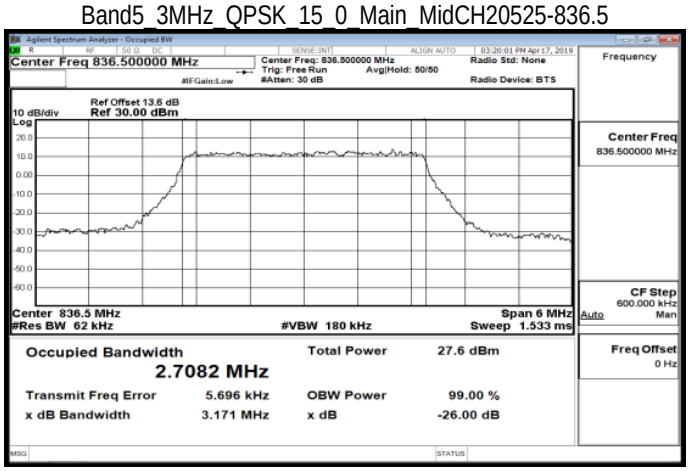


Band5_3MHz_QPSK_15_0_Main_MidCH20525-836.5



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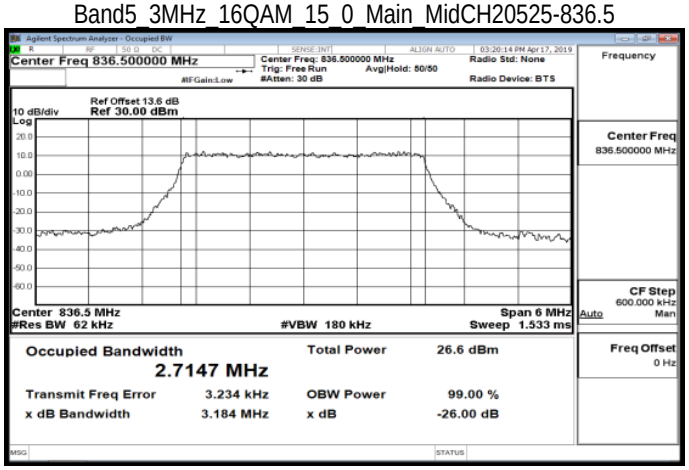

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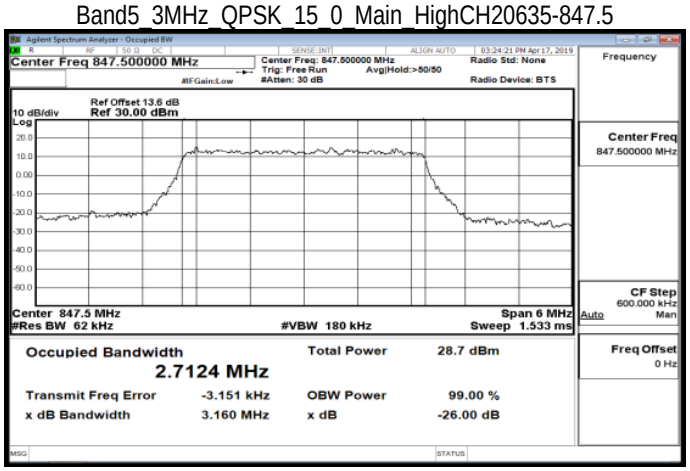

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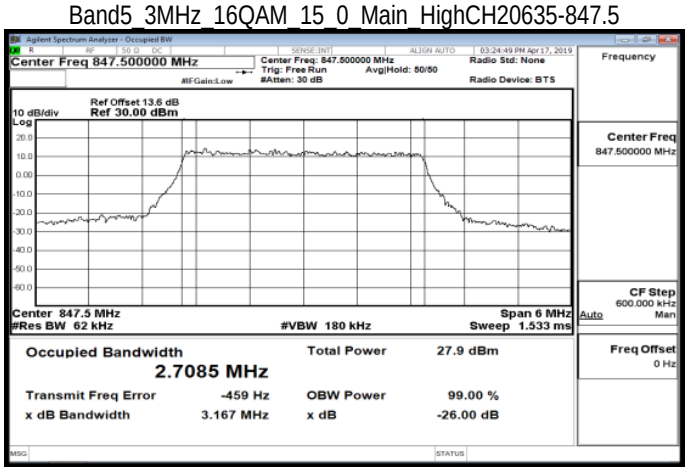
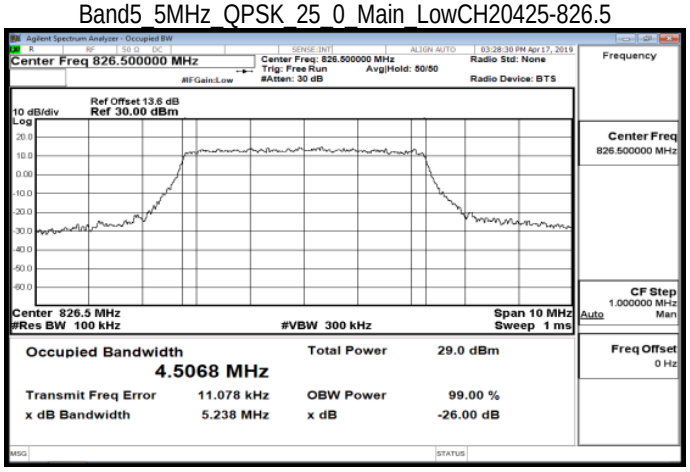


Band5_5MHz_QPSK_25_0_Main_LowCH20425-826.5



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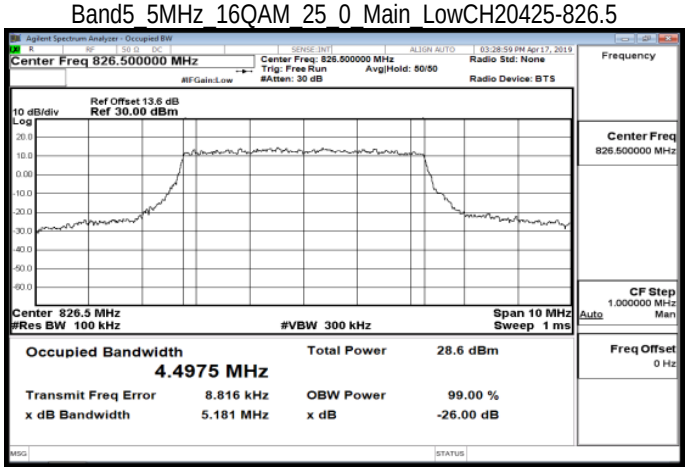

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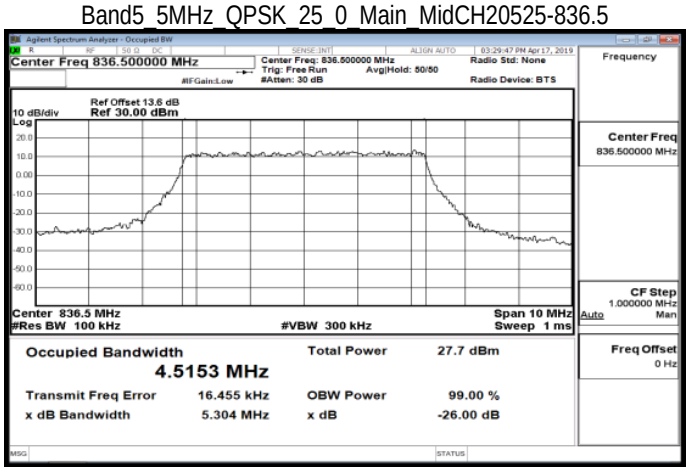

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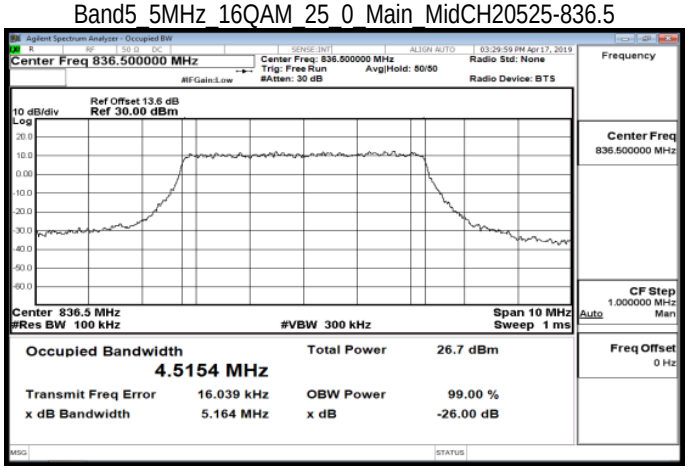

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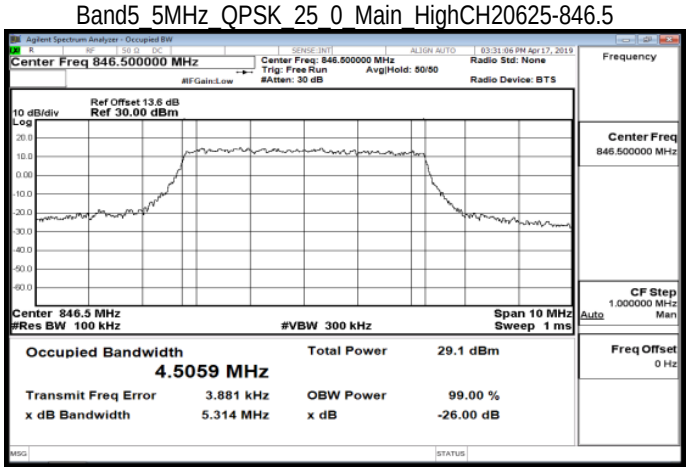

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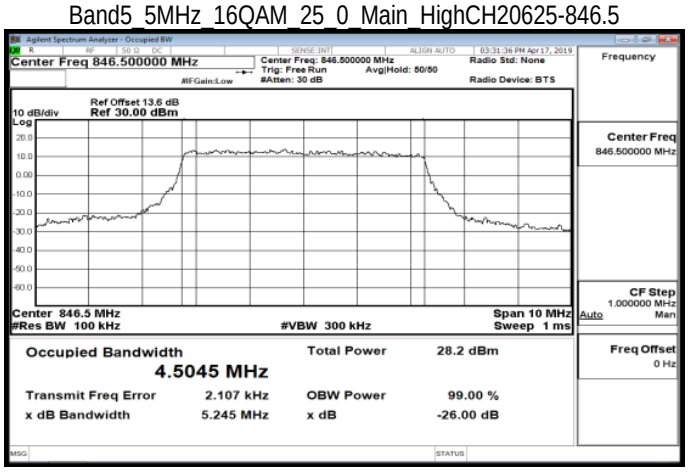
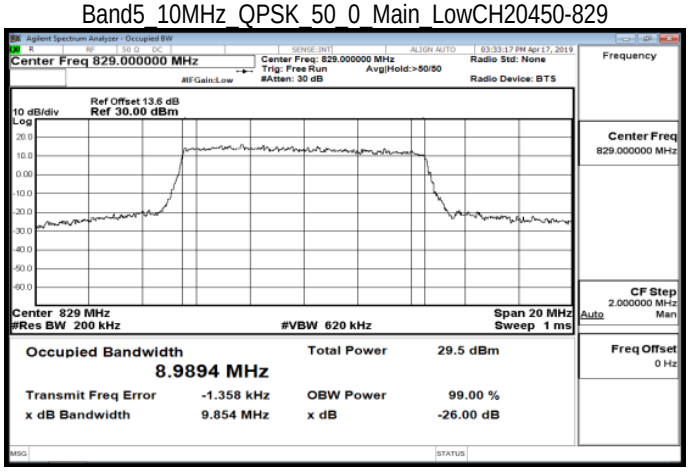
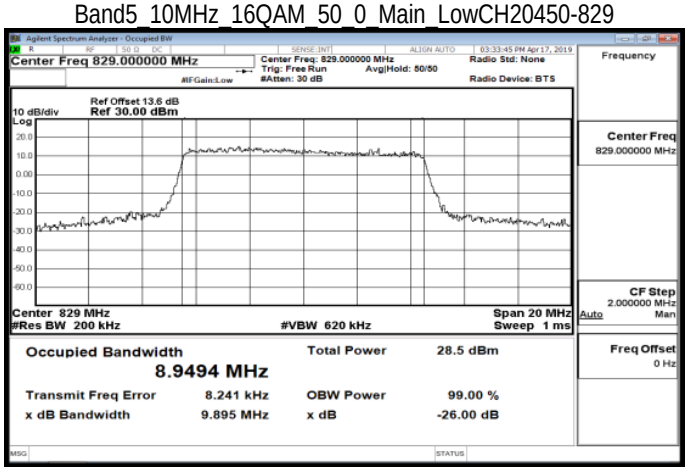


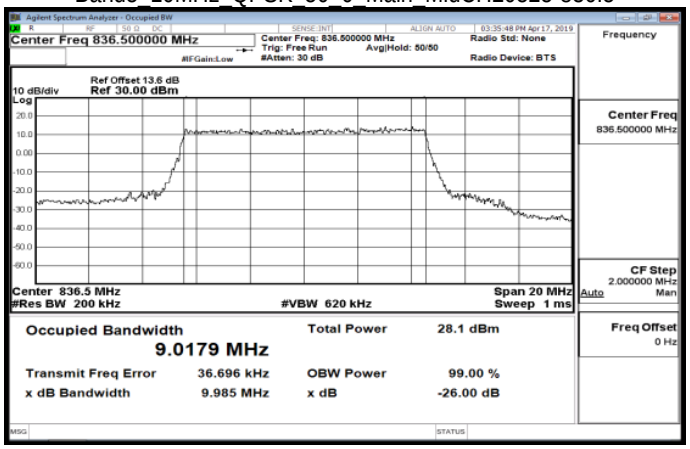
Band5_10MHz_QPSK_50_0_Main_LowCH20450-829



Band5_10MHz_16QAM_50_0_Main_LowCH20450-829



Band5_10MHz_QPSK_50_0_Main_MidCH20525-836.5



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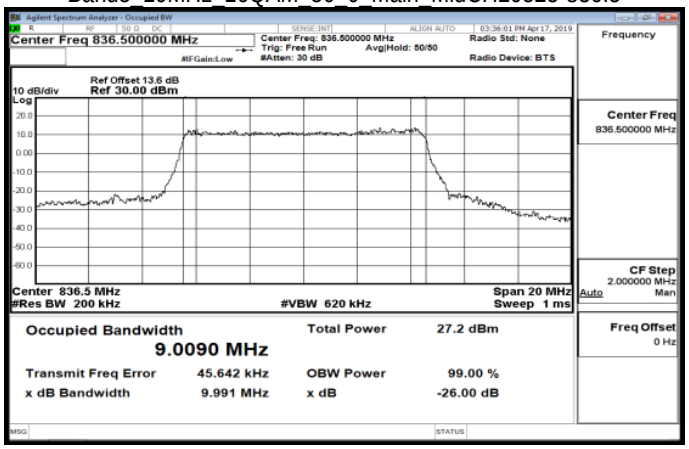

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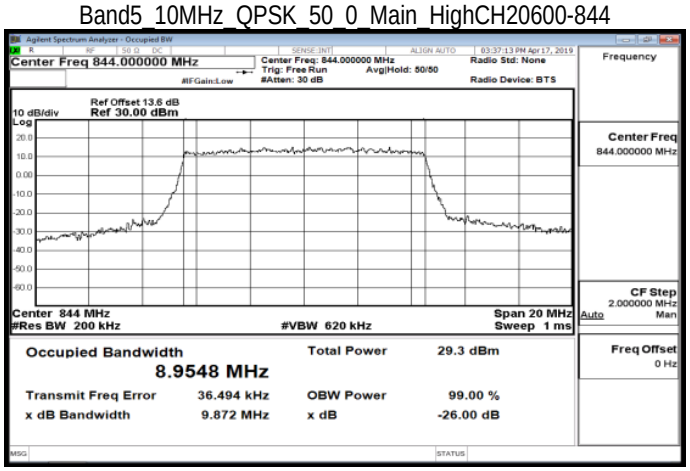

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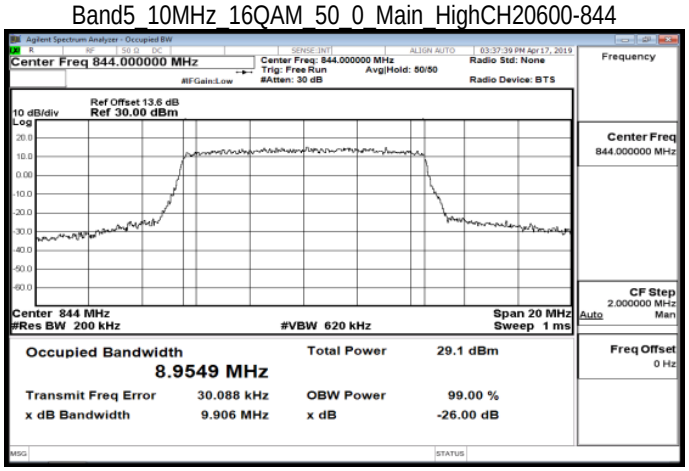
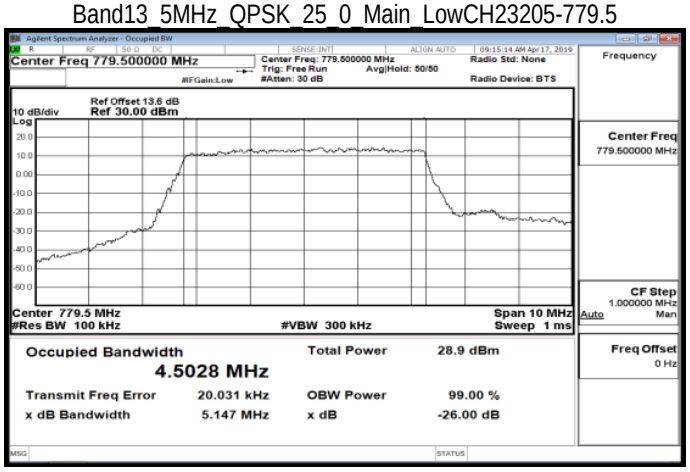


Band13_5MHz_QPSK_25_0_Main_LowCH23205-779.5



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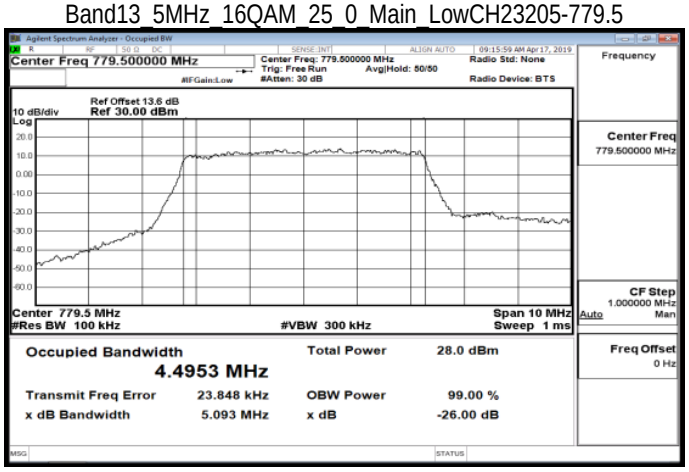
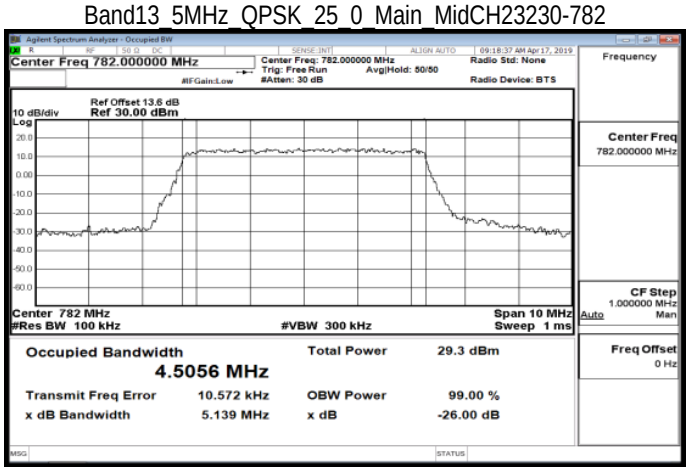


Band13_5MHz_QPSK_25_0_Main_MidCH23230-782



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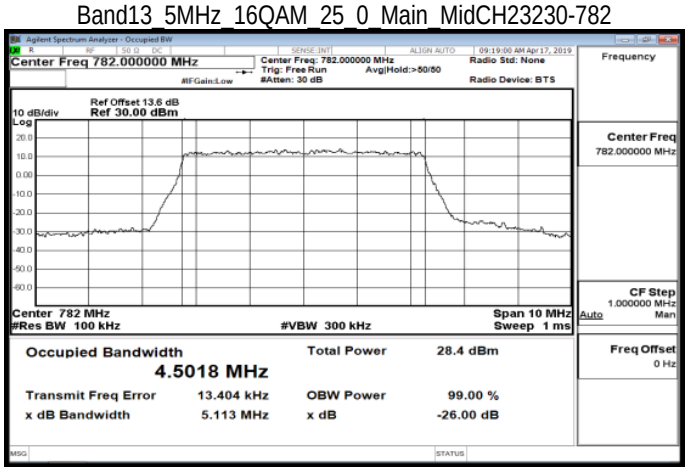
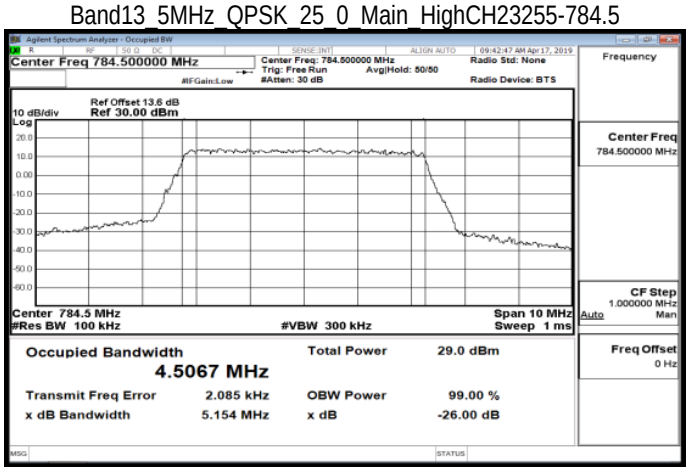


Band13_5MHz_QPSK_25_0_Main_HighCH23255-784.5



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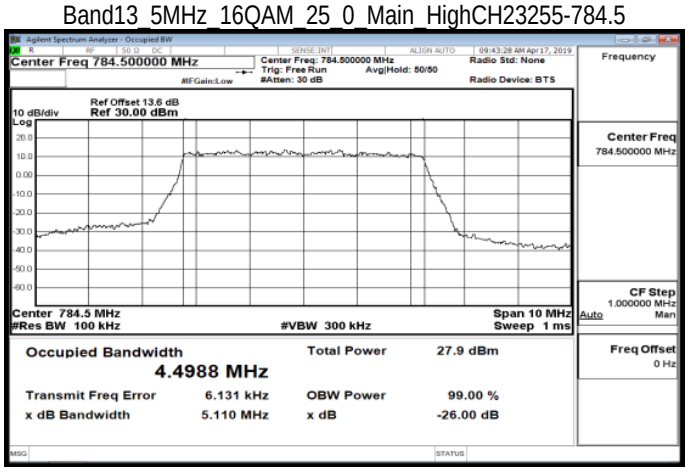
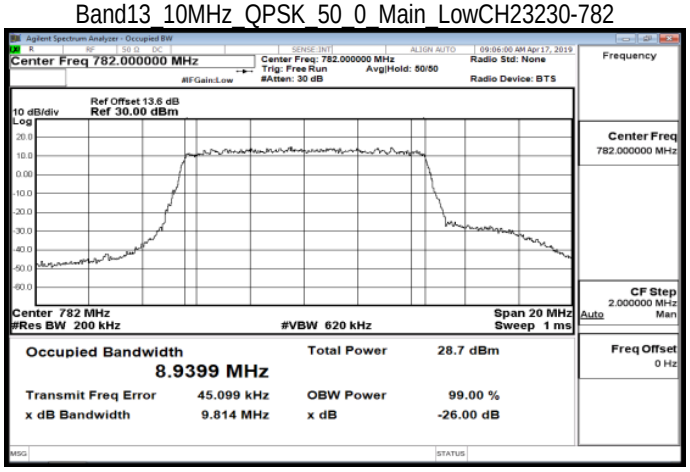
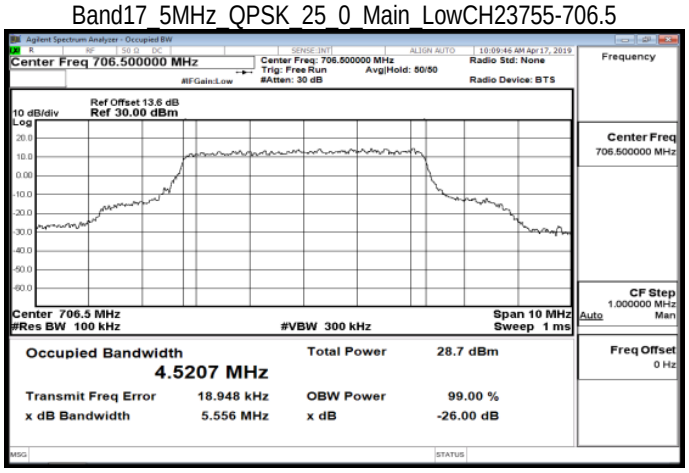


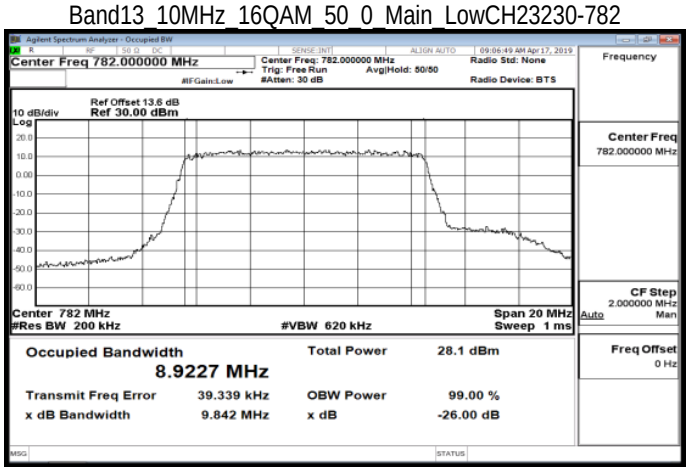
Band13_10MHz_QPSK_50_0_Main_LowCH23230-782



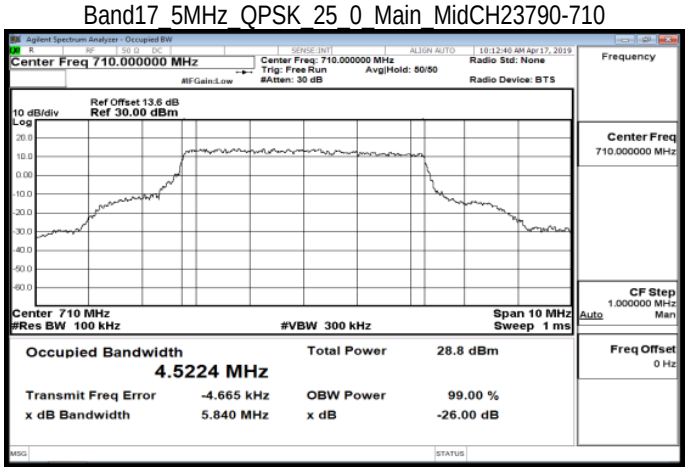
Band17_5MHz_QPSK_25_0_Main_LowCH23755-706.5



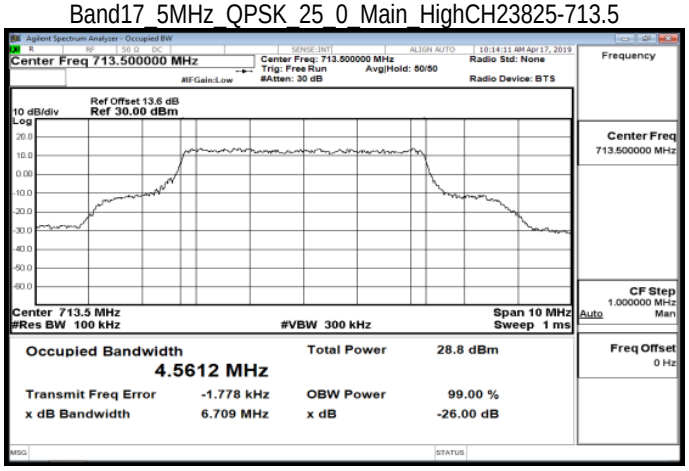
Band13_10MHz_16QAM_50_0_Main_LowCH23230-782



Band17_5MHz_QPSK_25_0_Main_MidCH23790-710



Band17_5MHz_QPSK_25_0_Main_HighCH23825-713.5



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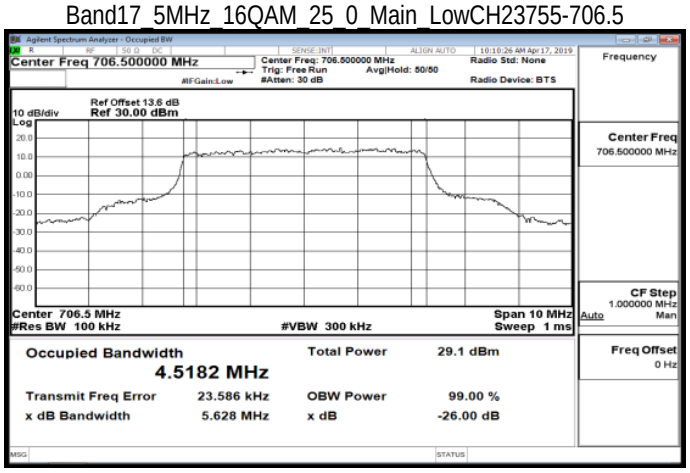

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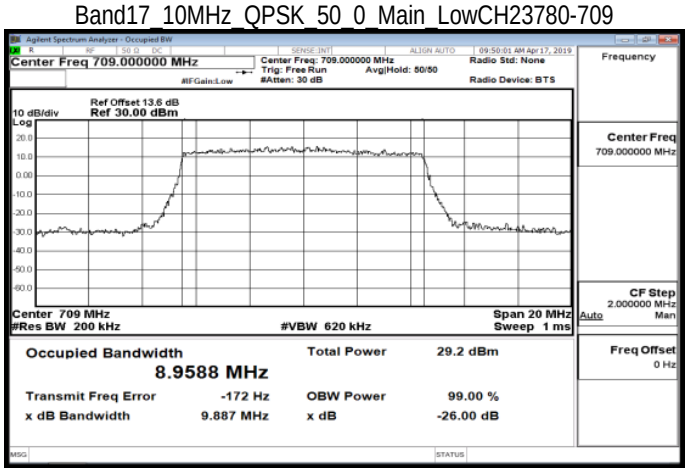
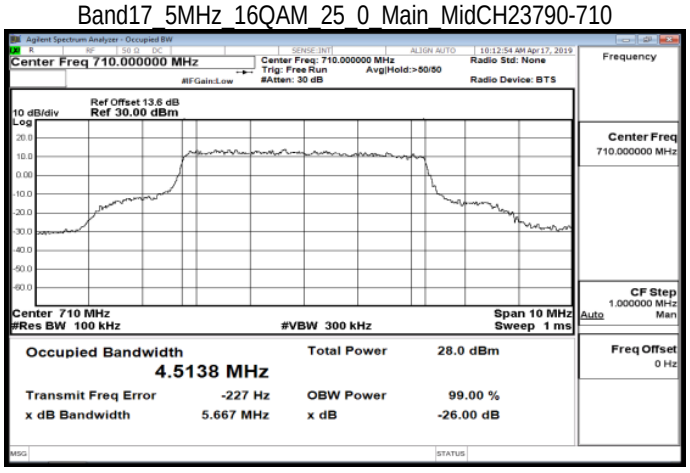


Band17_5MHz_16QAM_25_0_Main_MidCH23790-710



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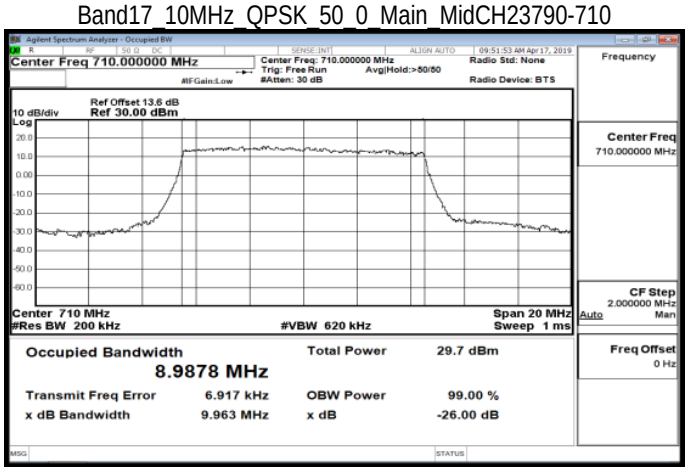
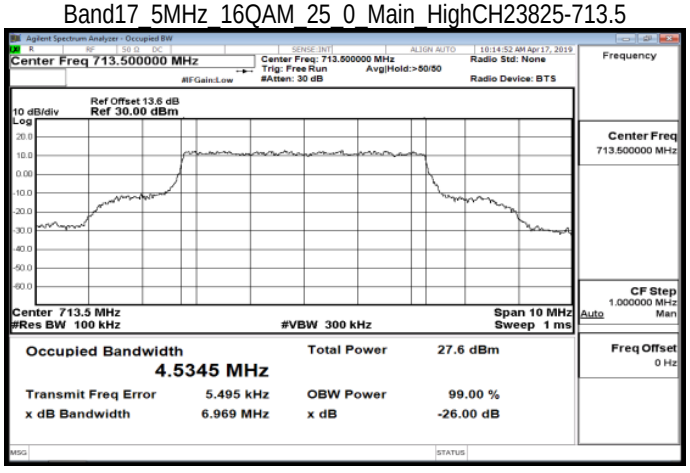


Band17_5MHz_16QAM_25_0_Main_HighCH23825-713.5



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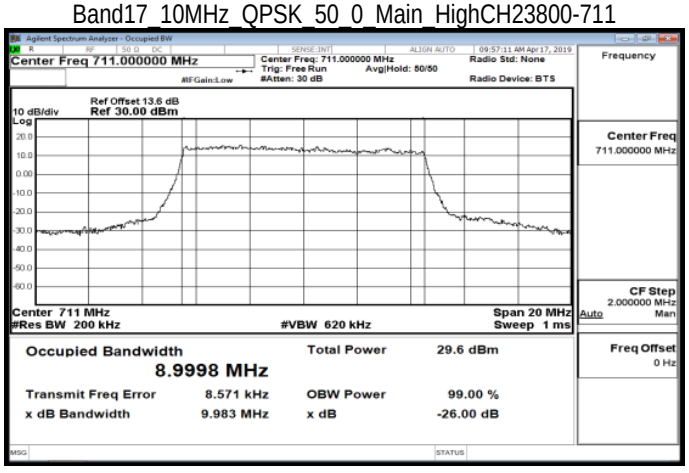
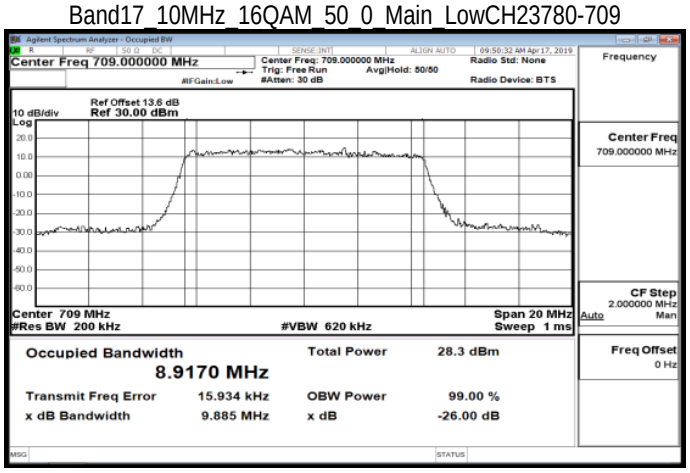
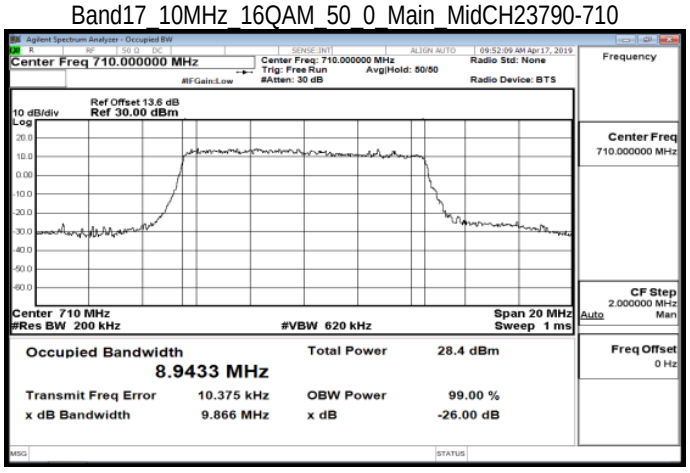


Band17_10MHz_16QAM_50_0_Main_LowCH23780-709



Band17_10MHz_16QAM_50_0_Main_MidCH23790-710



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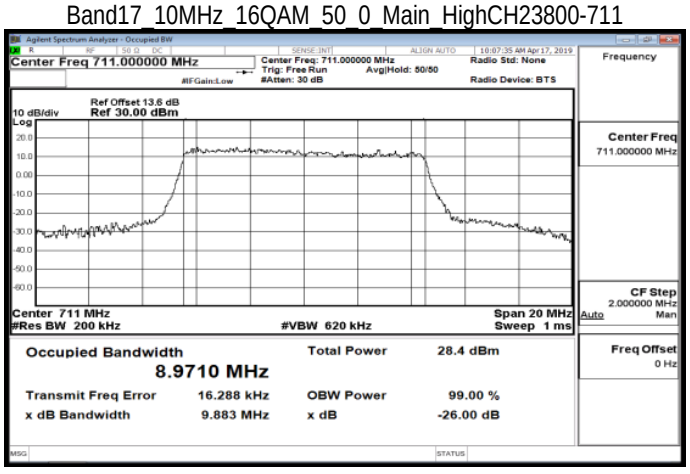


8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1. Standard Applicable

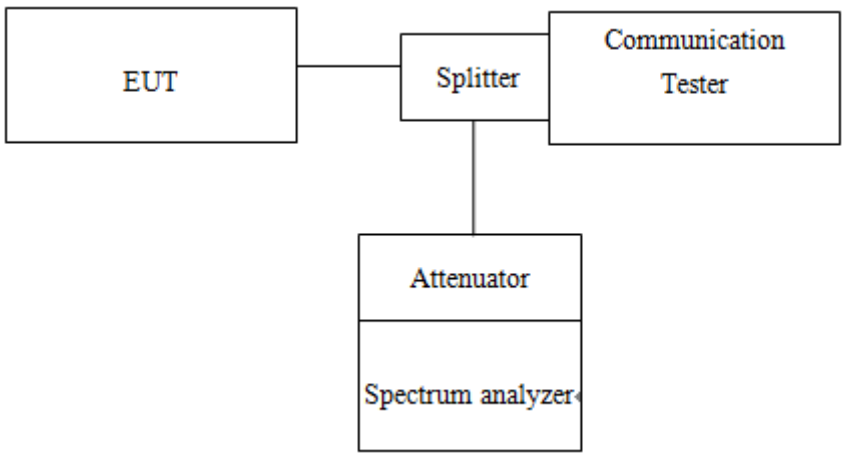
FCC §22.917(a), §24.238(a), Out of band emissions.The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §27.53(g) (h)
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.
The power of any emission outside a licensee's frequency block shall be
attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

FCC §27.53(h) (3)
Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee’s frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC §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. Measurement procedure. Compliance with these rules is based on the use of measurement nstrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

8.2. Test SET-UP



8.3. Measurement Procedure

Conducted Emission

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

1. To connect Antenna Port of EUT to Spectrum.
2. Set RBW = 1MHz & VBW = 1MHz on Spectrum.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

Band Edge

1. To connect Antenna Port of EUT to Spectrum.
2. The band edge of low and high channels for the highest RF powers was measured. Setting RBW ≥ 1% EBW.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

8.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	11/21/2018	11/20/2019
Radio Communication Analyer	Anritsu	MT8820C	6201465317	01/16/2019	01/15/2020
DC Block	PASTERNACK	PE8210	RF256	02/26/2019	02/25/2020
Splitter	Woken	DOM35LW1A2	RF83	02/26/2019	02/25/2020
Attenuator	Marvelous	MVE2213-10	RF80	02/26/2019	02/25/2020

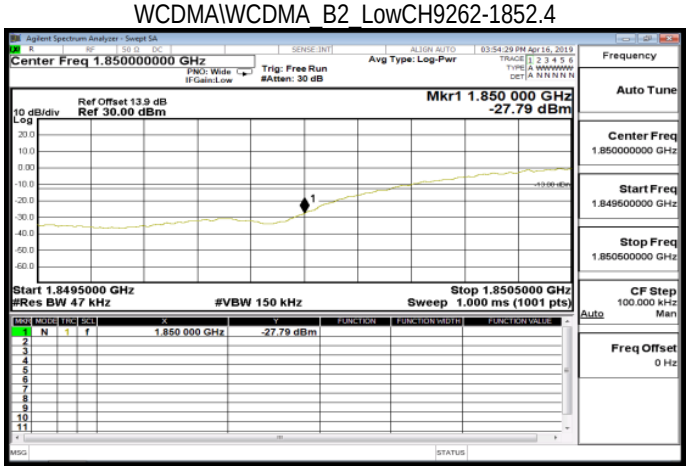
8.5. Measurement Result:

Refer to next pages.

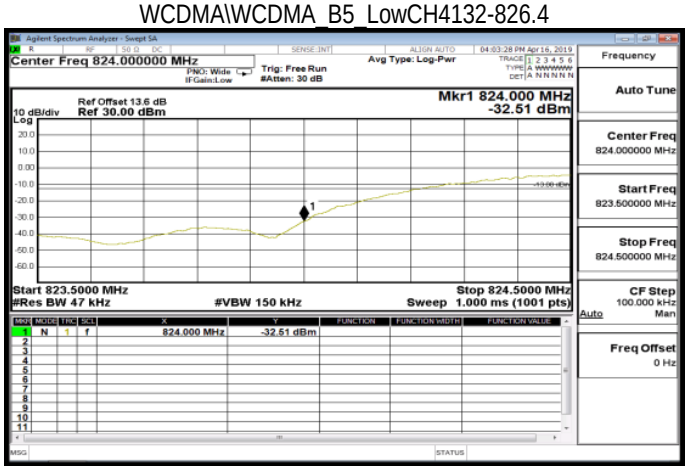
NOTE: The occurrence of the spike on the conducted emission is the signal of the fundamental emission.

Band Edge

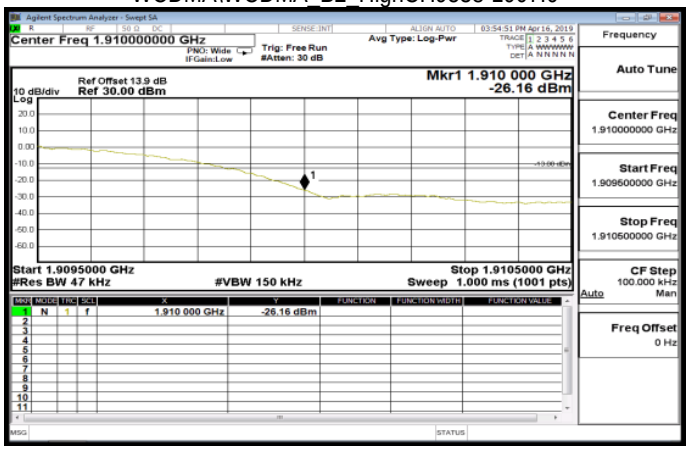
WCDMA\WCDMA_B2_LowCH9262-1852.4



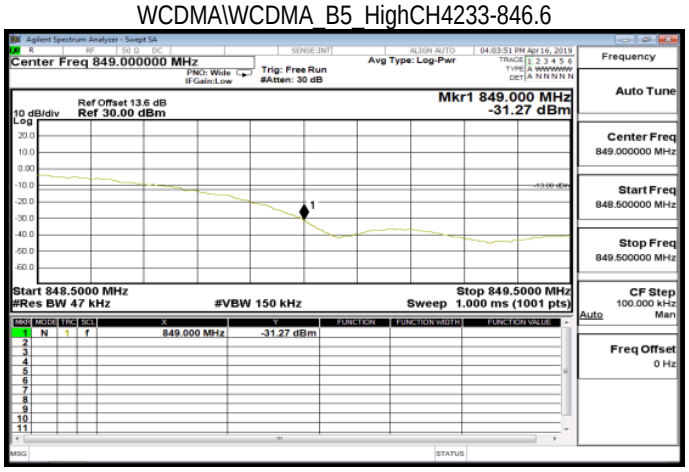
WCDMA\WCDMA_B5_LowCH4132-826.4



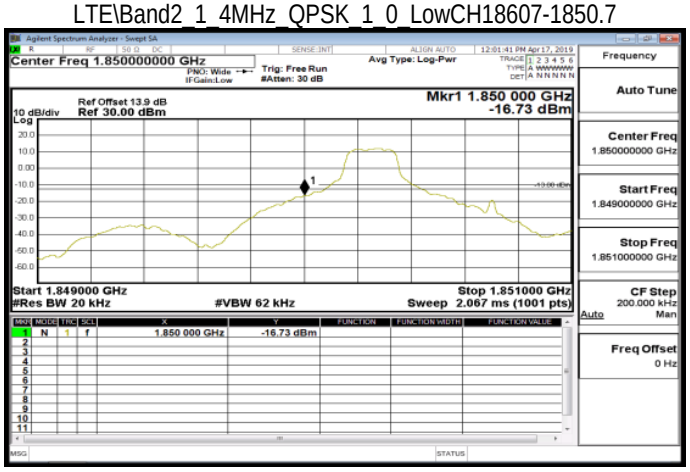
WCDMA\WCDMA_B2_HighCH9538-1907.6



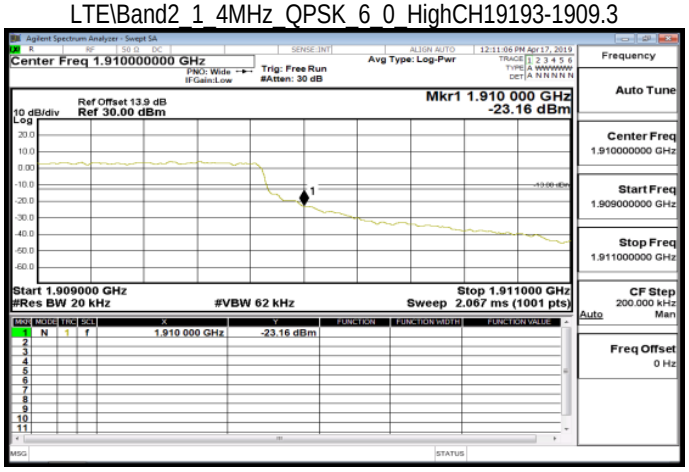
WCDMA\WCDMA_B5_HighCH4233-846.6



LTE\Band2_1_4MHz_QPSK_1_0_LowCH18607-1850.7



LTE\Band2_1_4MHz_QPSK_6_0_HighCH19193-1909.3



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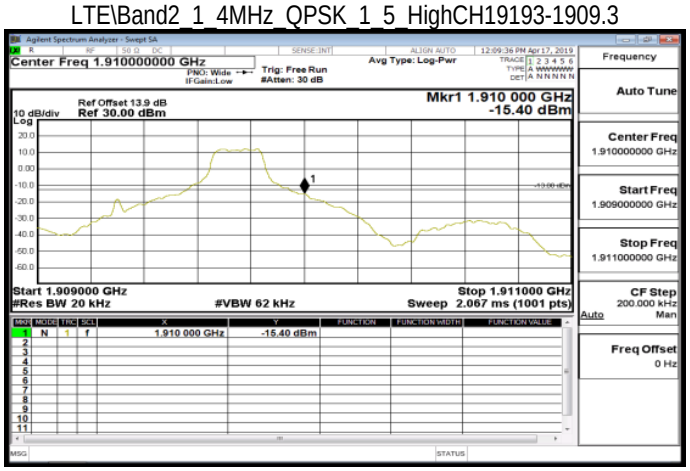

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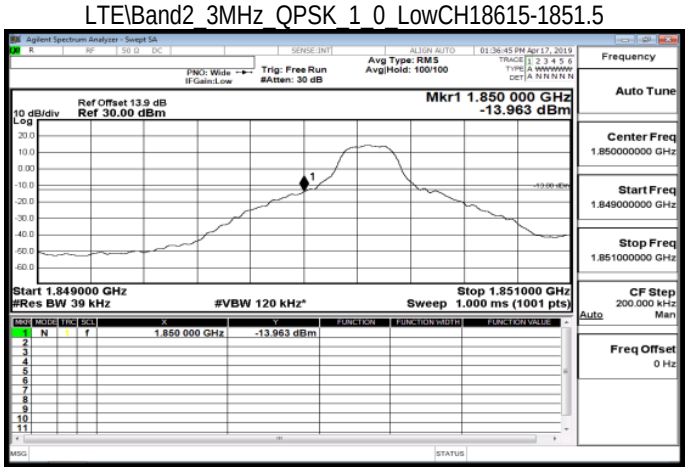

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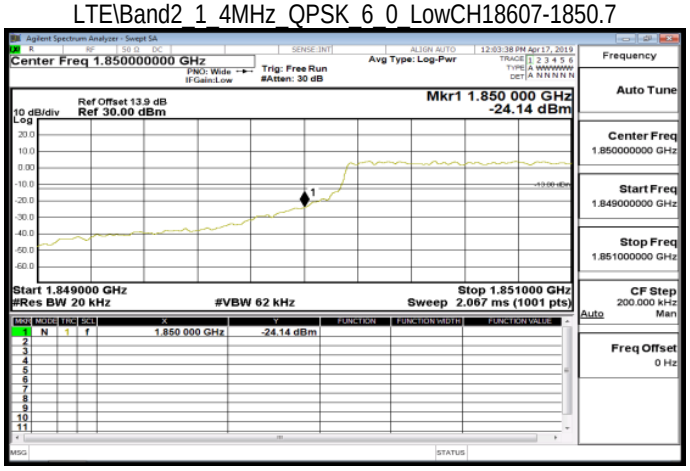

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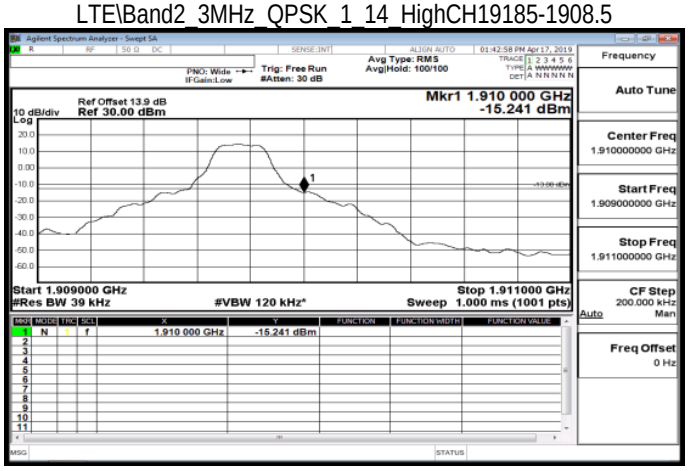

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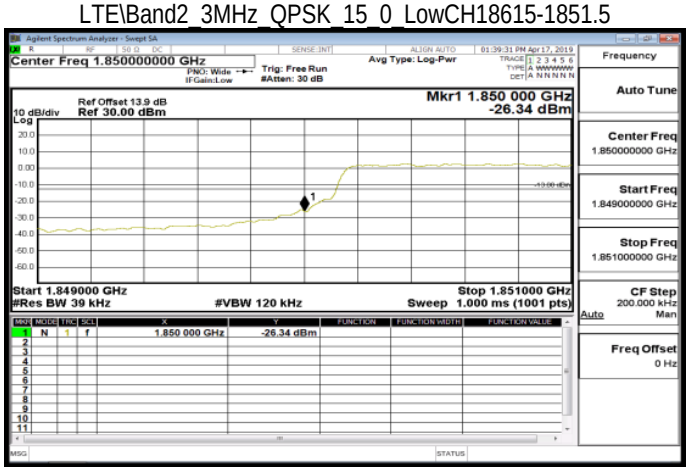

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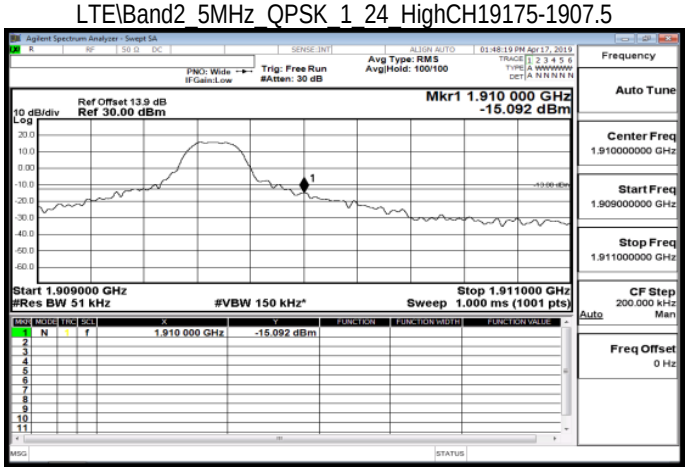

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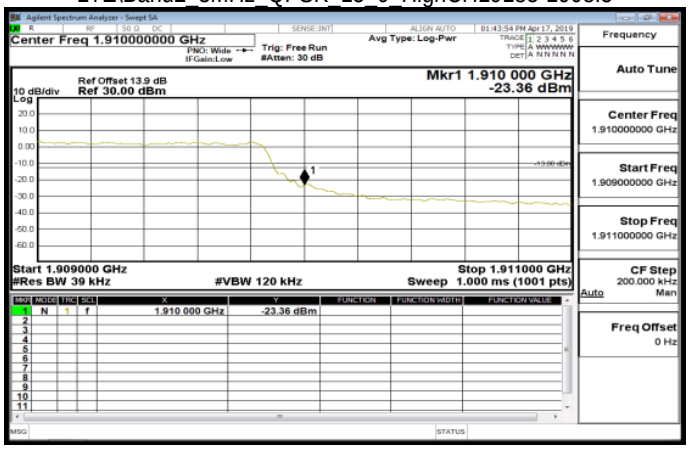

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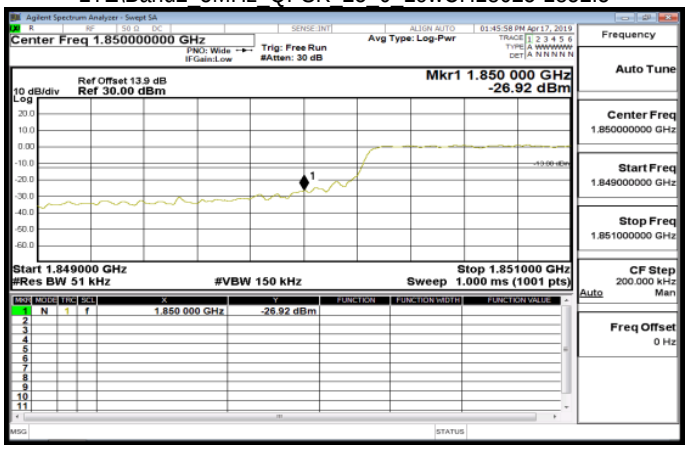

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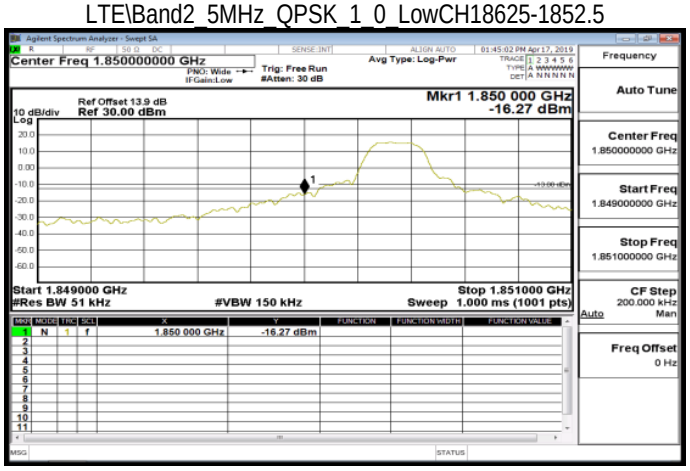

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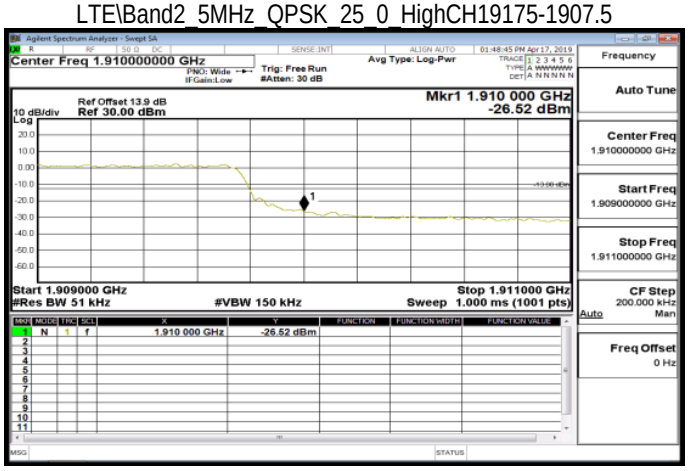

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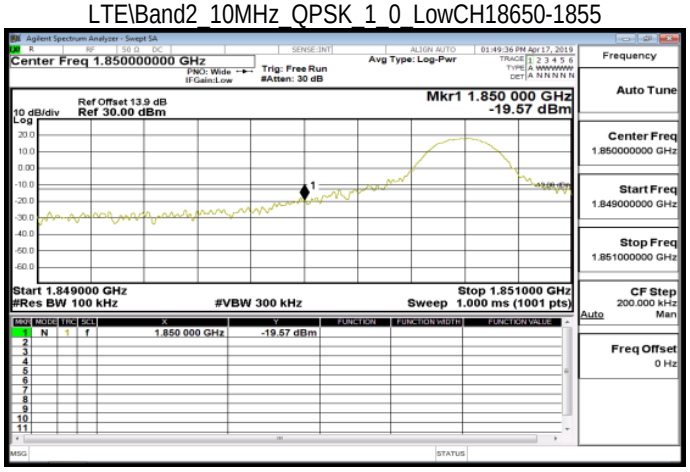

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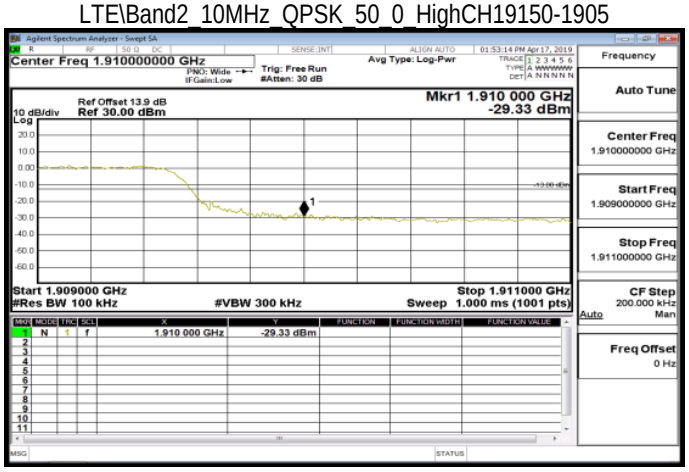

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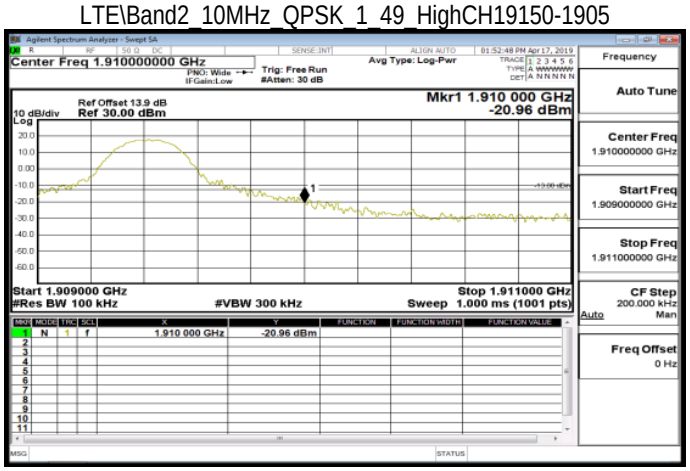

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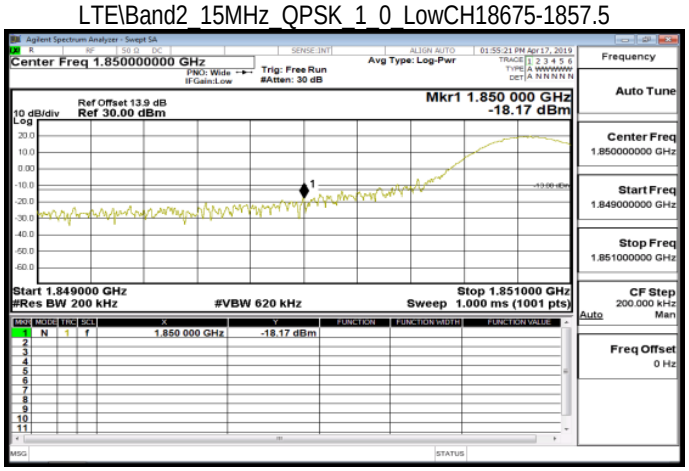

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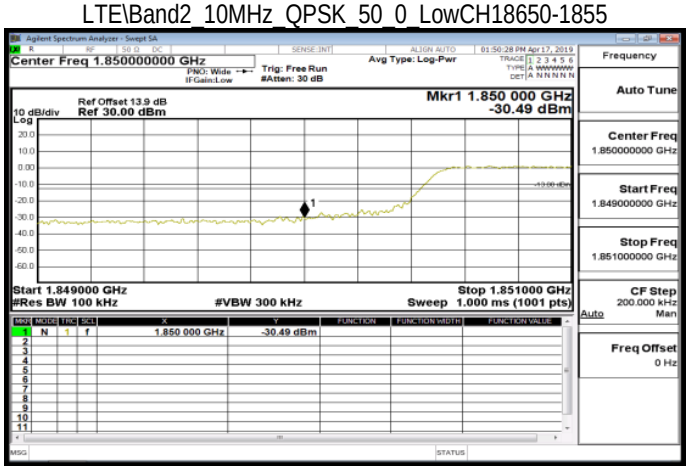

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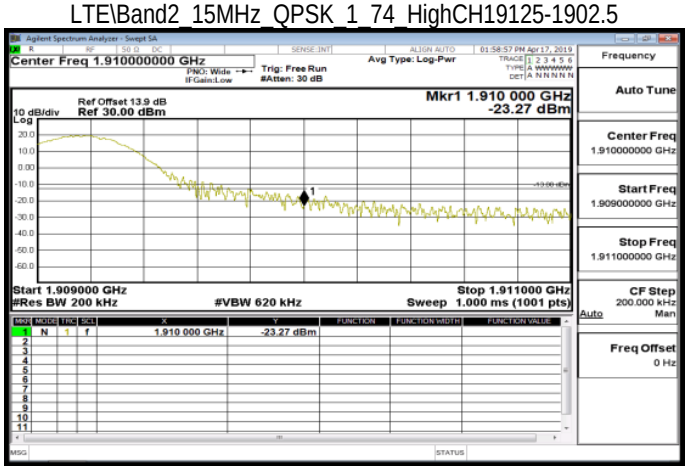

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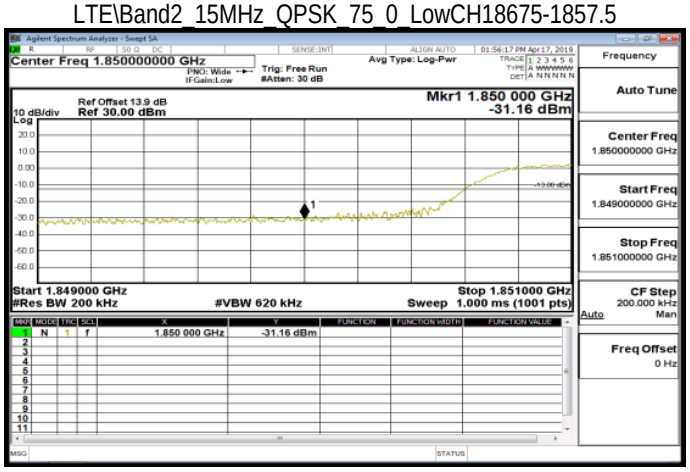

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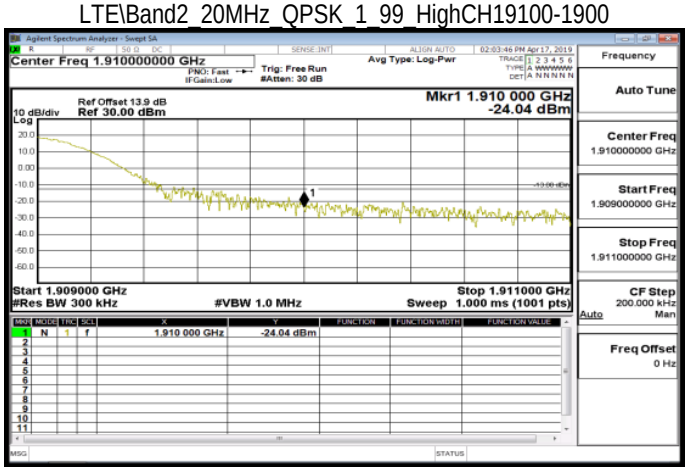

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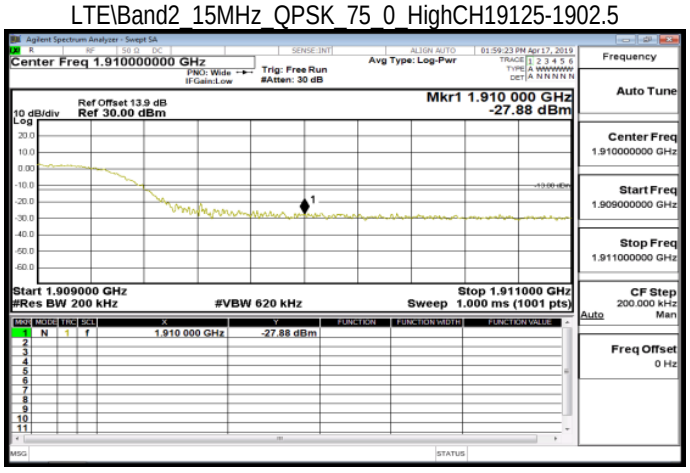

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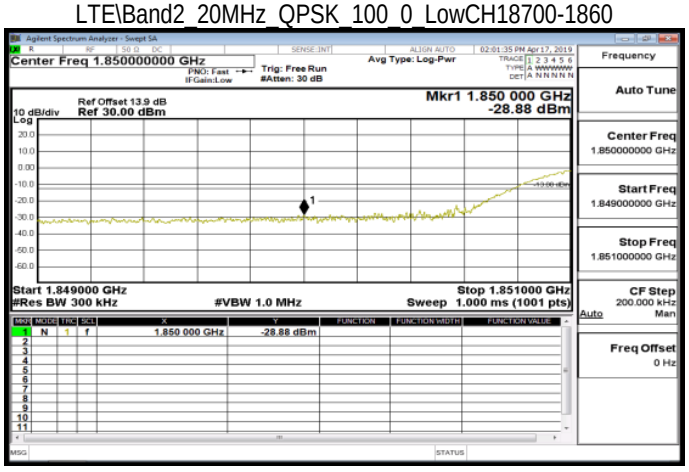

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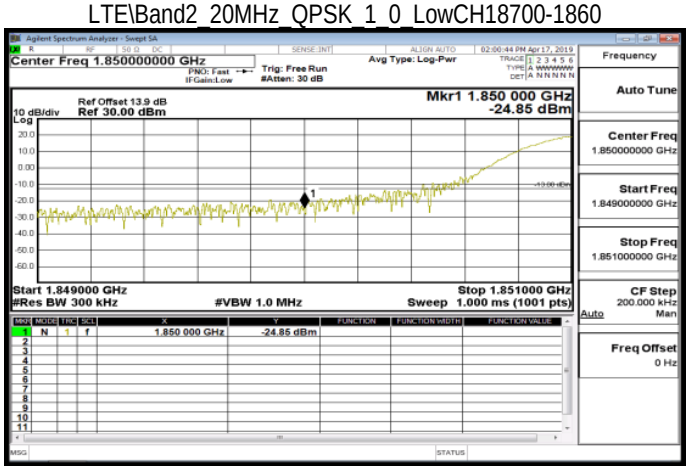

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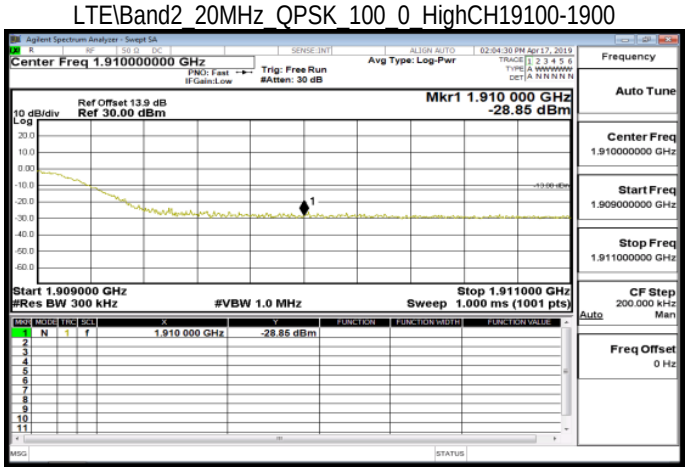

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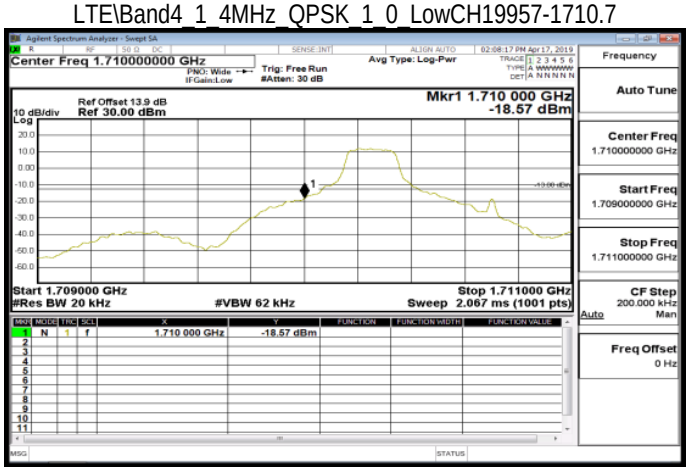

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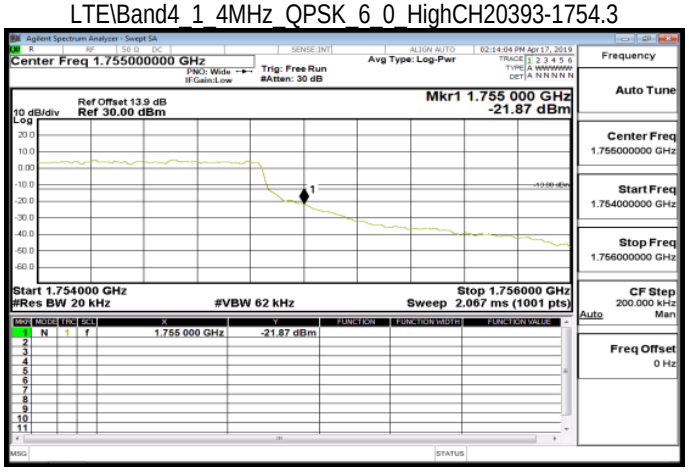

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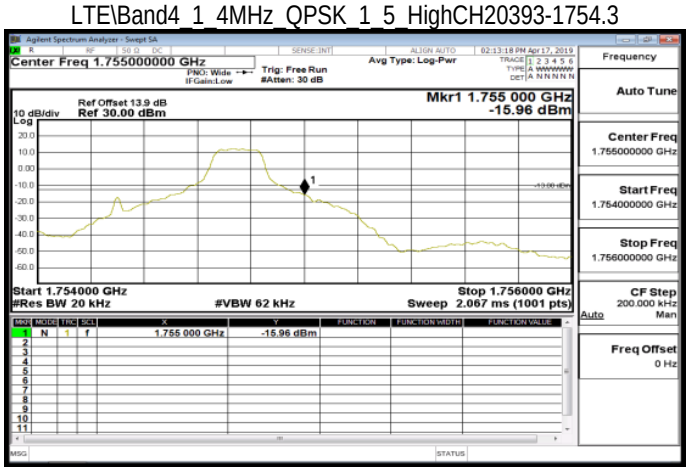

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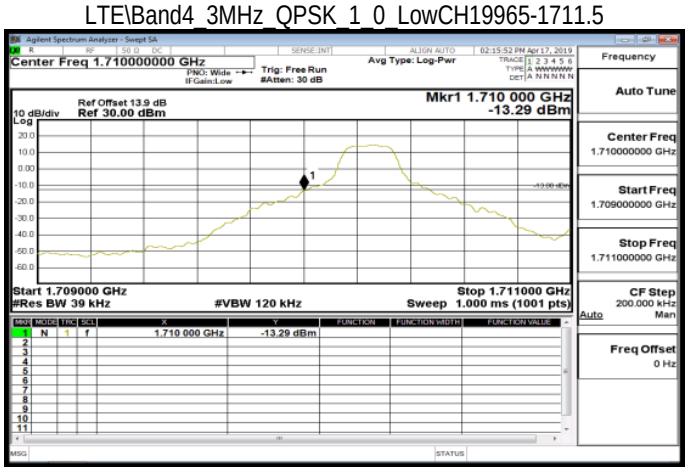

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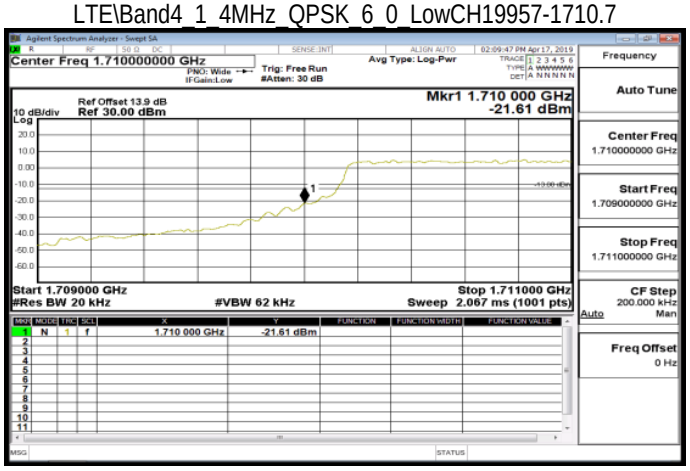

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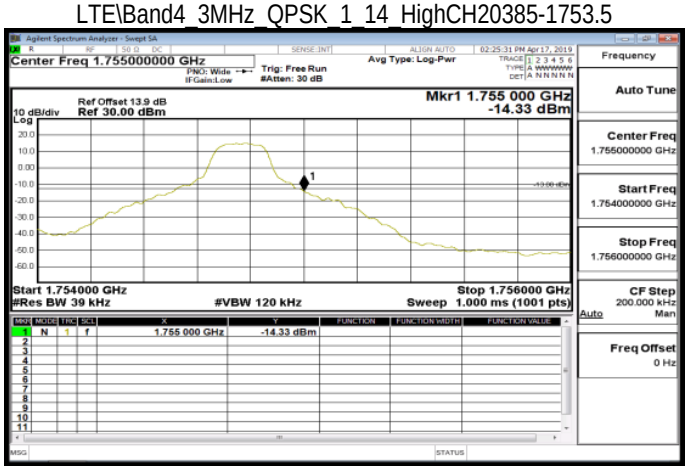

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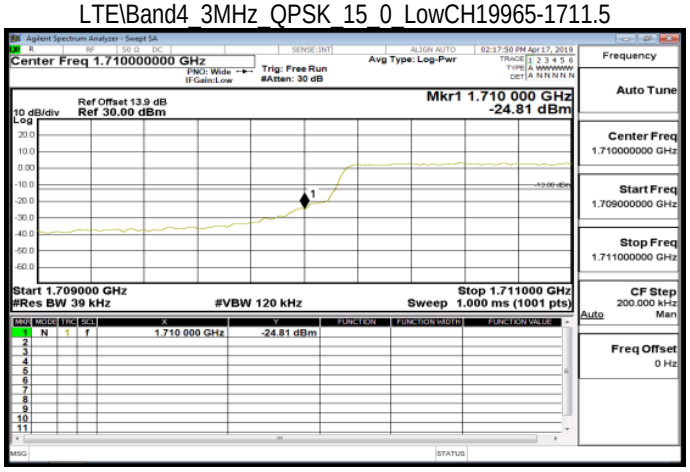

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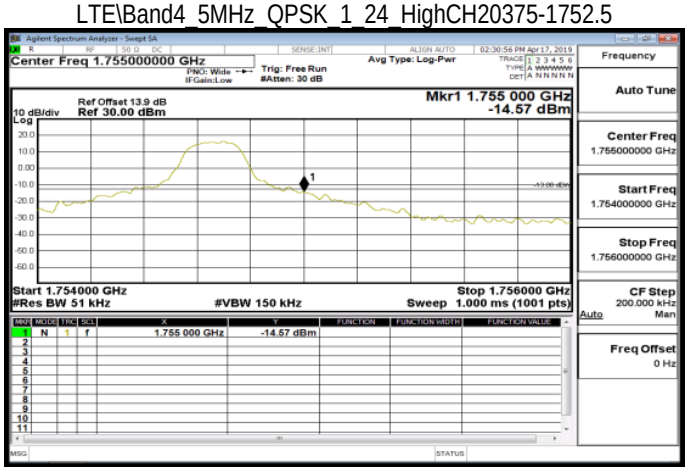

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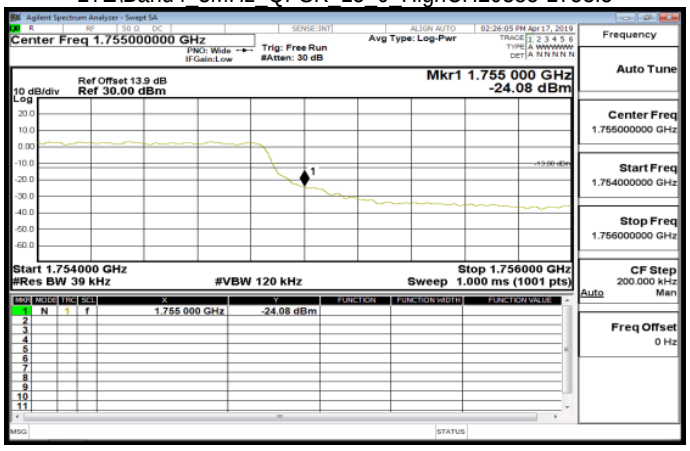

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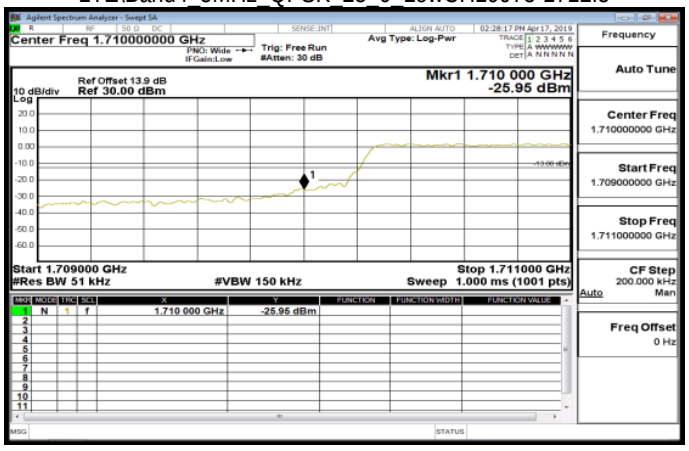

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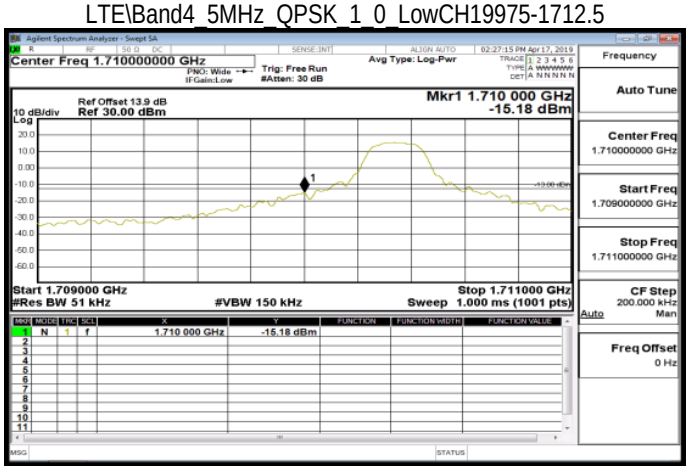

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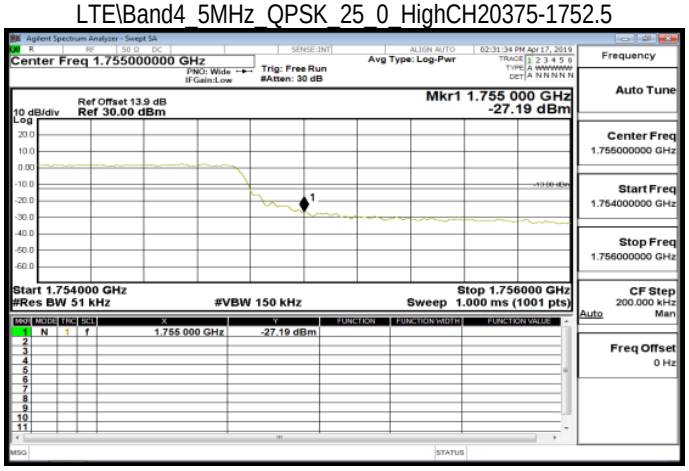

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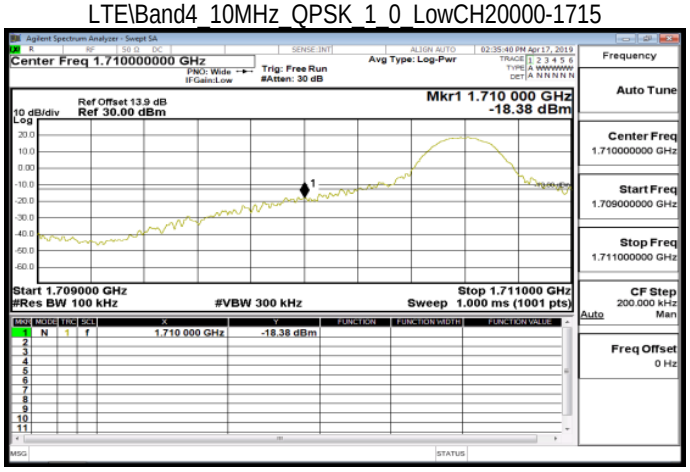

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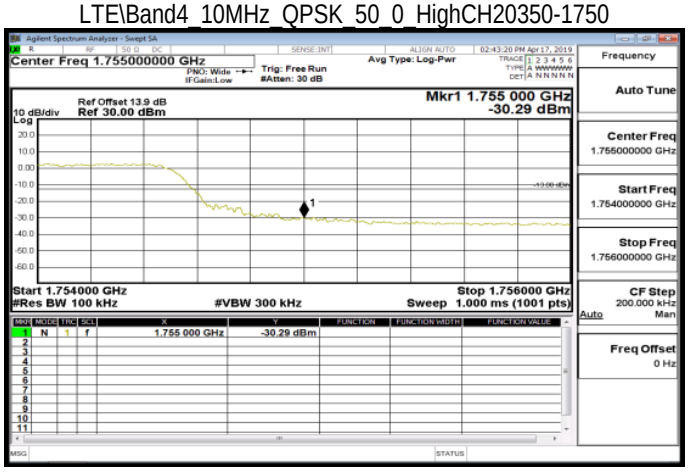

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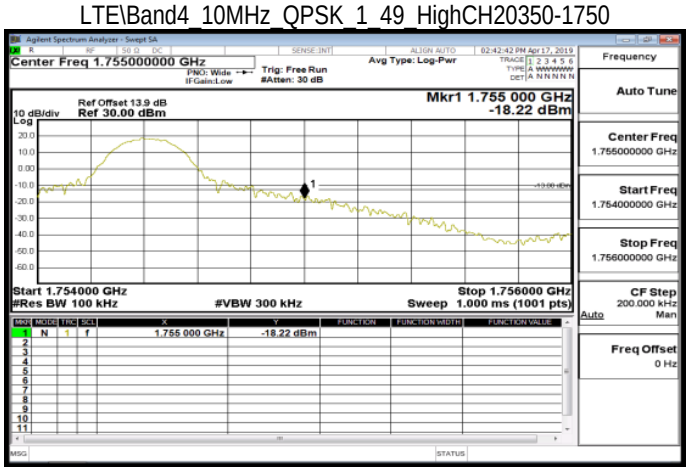

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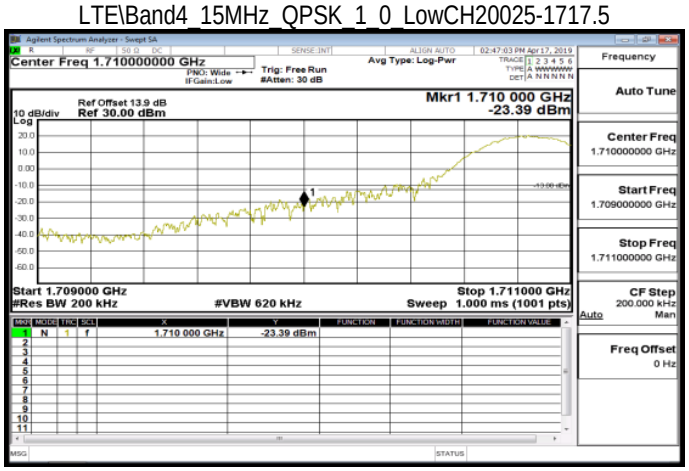

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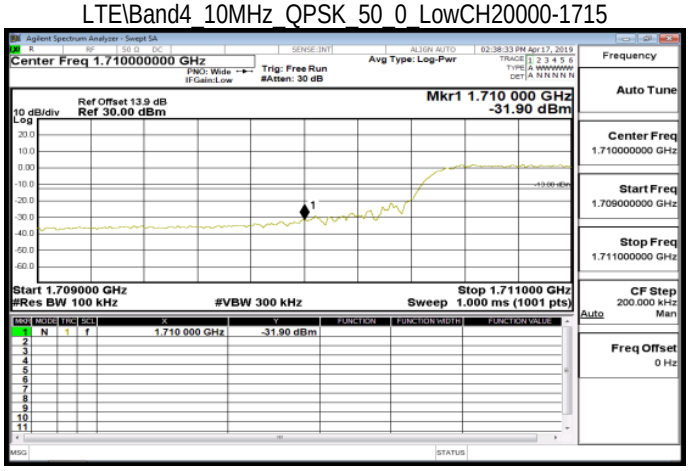

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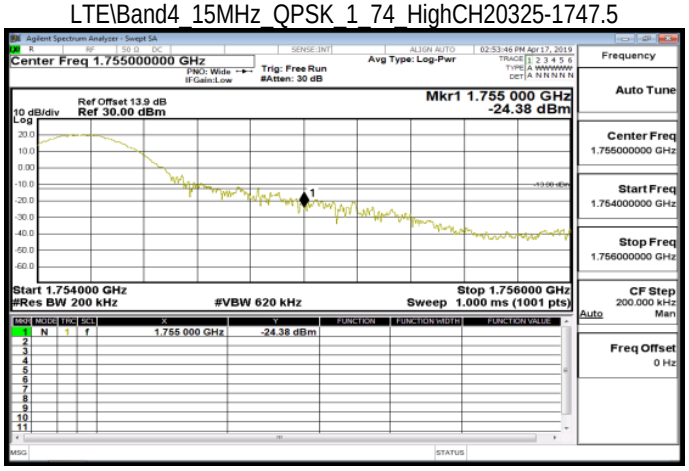

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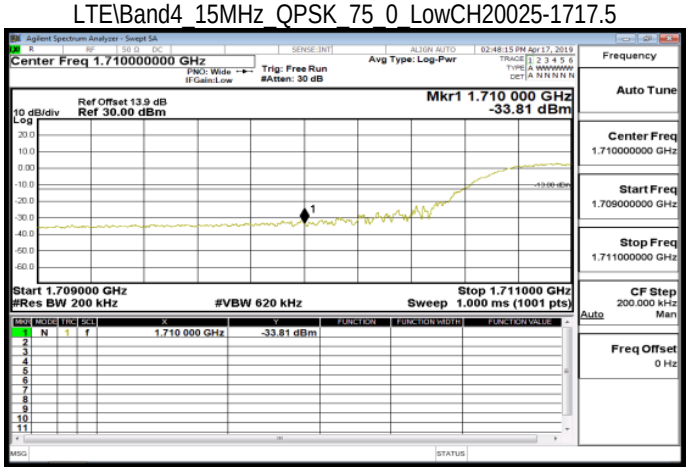
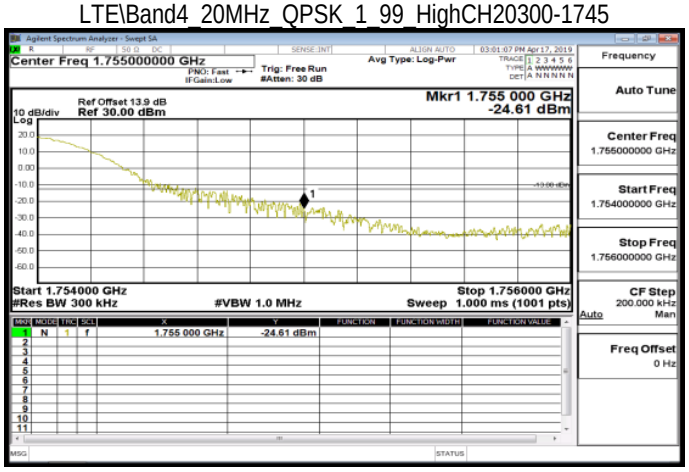


LTE\Band4_20MHz_QPSK_1_99_HighCH20300-1745



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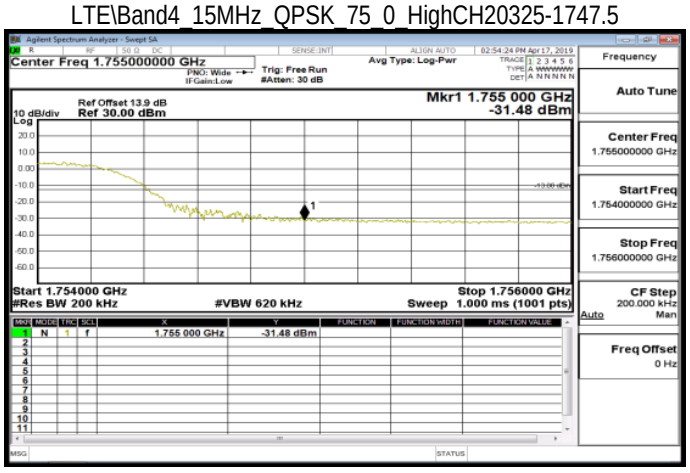

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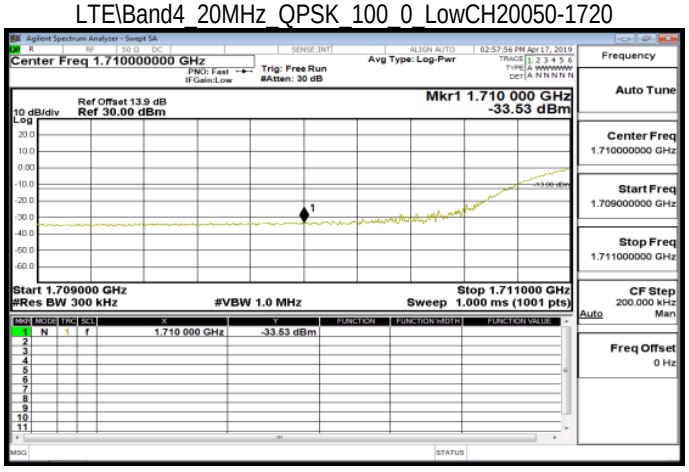
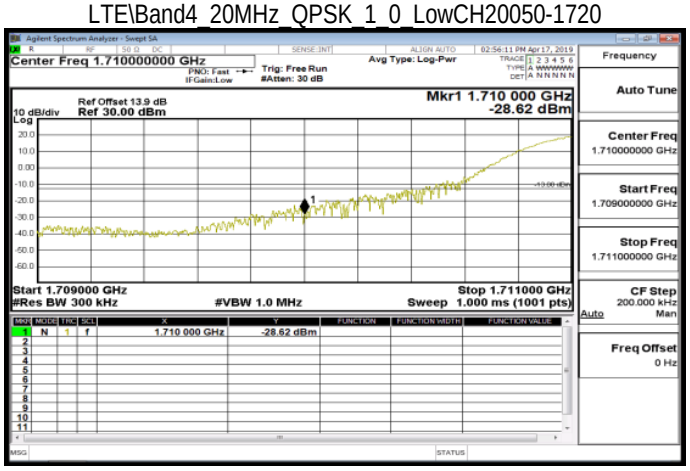
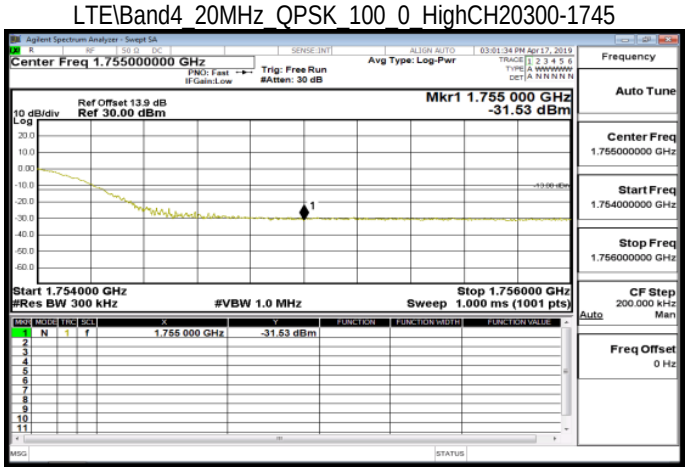


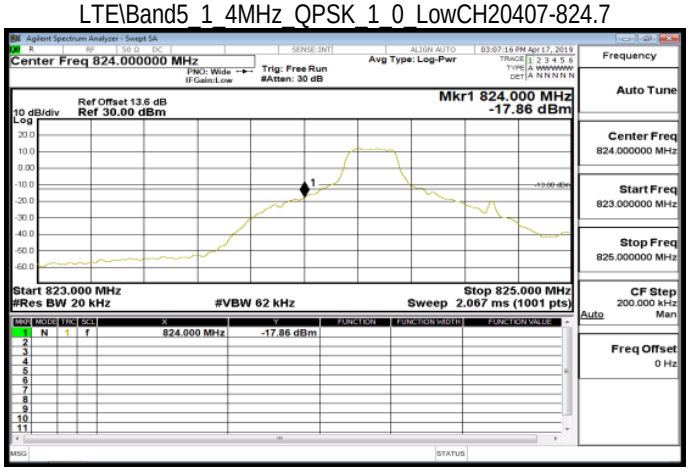
LTE\Band4_20MHz_QPSK_1_0_LowCH20050-1720



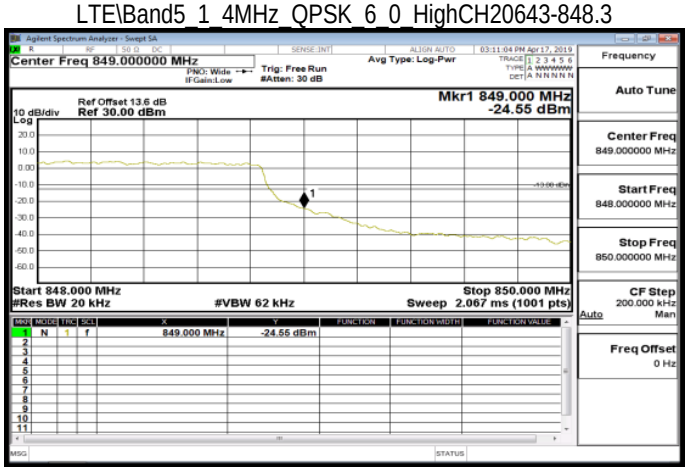
LTE\Band4_20MHz_QPSK_100_0_HighCH20300-1745



LTE\Band5_1_4MHz_QPSK_1_0_LowCH20407-824.7



LTE\Band5_1_4MHz_QPSK_6_0_HighCH20643-848.3



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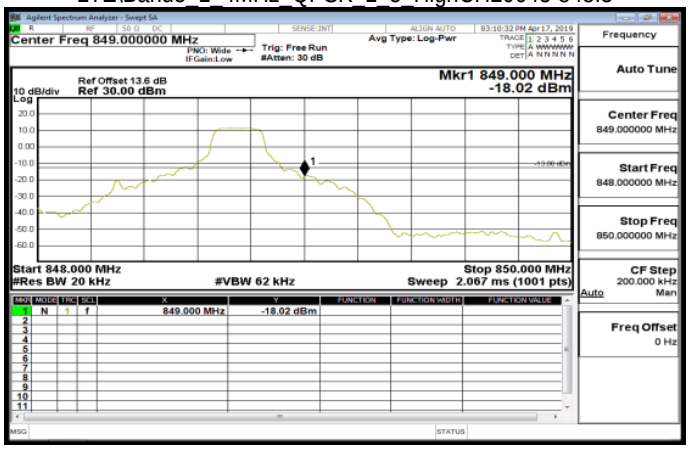

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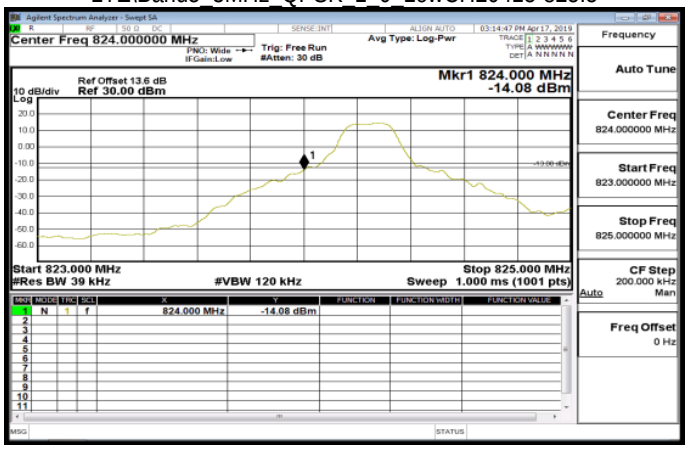
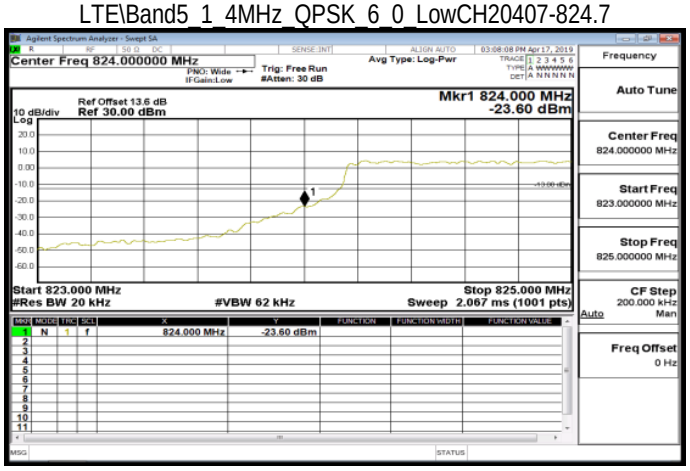


LTE\Band5_1_4MHz_QPSK_6_0_LowCH20407-824.7



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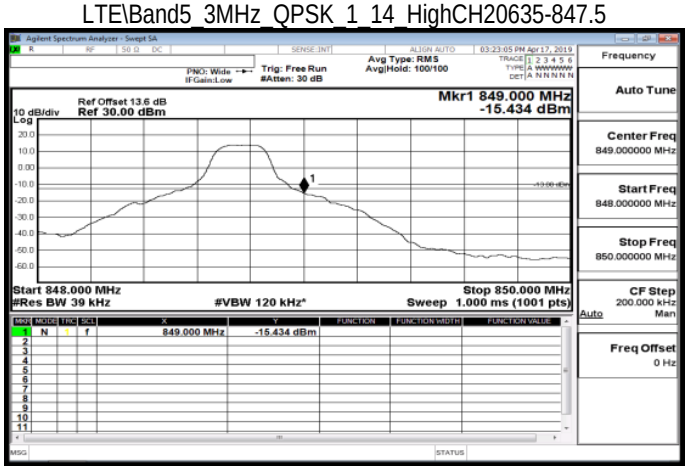

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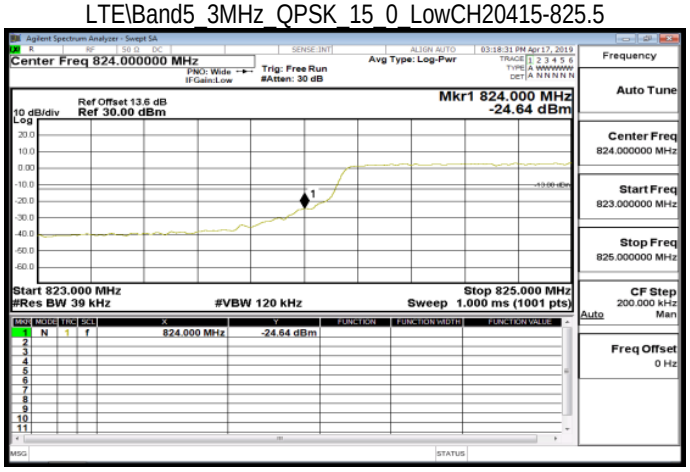

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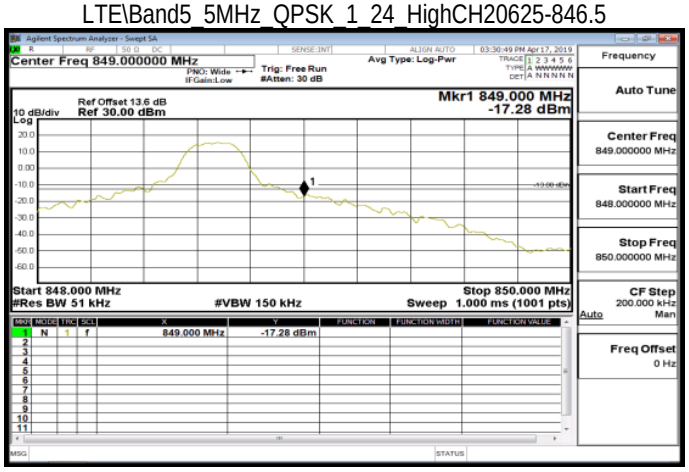

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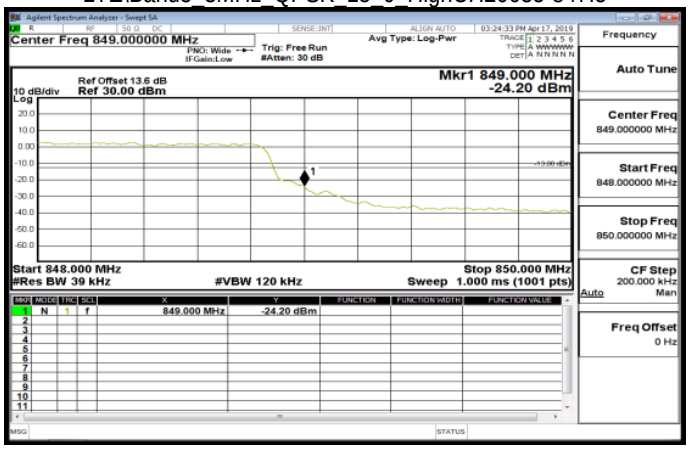

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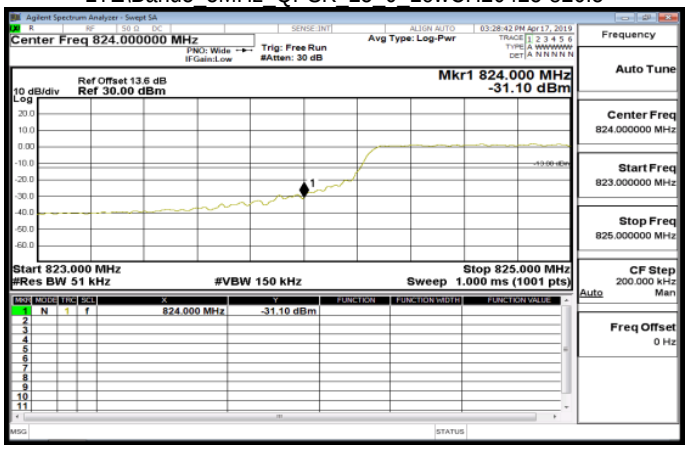

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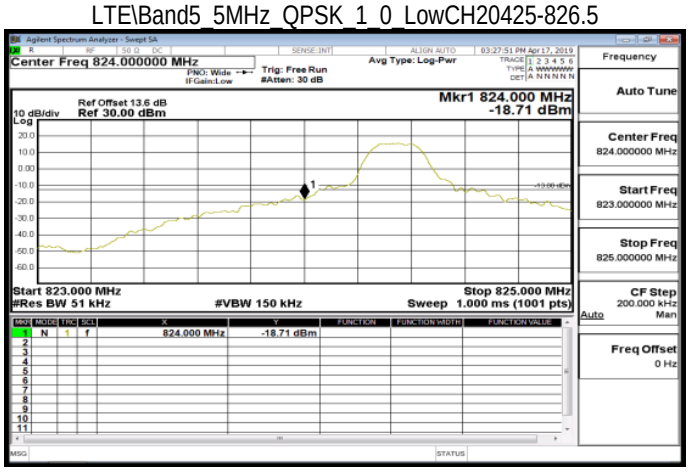

LTE\Band5_5MHz_QPSK_25_0_HighCH20625-846.5