8.6.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 (5.4) (4)

For systems using digital modulation in the 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

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RESULTS

ID:	39919	Date:	7/10/16

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low_1	2412	-1.35	30.00	30	36	30.00
Low_2	2417	-1.35	30.00	30	36	30.00
Mid_6	2437	-1.35	30.00	30	36	30.00
High_10	2457	-1.35	30.00	30	36	30.00
High_11	2462	-1.35	30.00	30	36	30.00
High_12	2467	-1.35	30.00	30	36	30.00
High_13	2472	-1.35	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low_1	2412	21.68	21.68	30.00	-8.32
Low_2	2417	23.08	23.08	30.00	-6.92
Mid_6	2437	24.46	24.46	30.00	-5.54
High_10	2457	21.59	21.59	30.00	-8.41
High_11	2462	20.17	20.17	30.00	-9.83
High_12	2467	18.08	18.08	30.00	-11.92
High_13	2472	8.11	8.11	30.00	-21.89

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8.6.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (2)

For digitally modulated systems, the power spectral density conducted form the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

RESULTS

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low_1	2412	-11.02	-11.02	8.0	-19.0
Low_2	2417	-8.68	-8.68	8.0	-16.7
Mid_6	2437	-7.21	-7.21	8.0	-15.2
High_10	2457	-9.82	-9.82	8.0	-17.8
High_11	2462	-12.06	-12.06	8.0	-20.1
High_12	2467	-14.55	-14.55	8.0	-22.6
High_13	2472	-22.68	-22.68	8.0	-30.7

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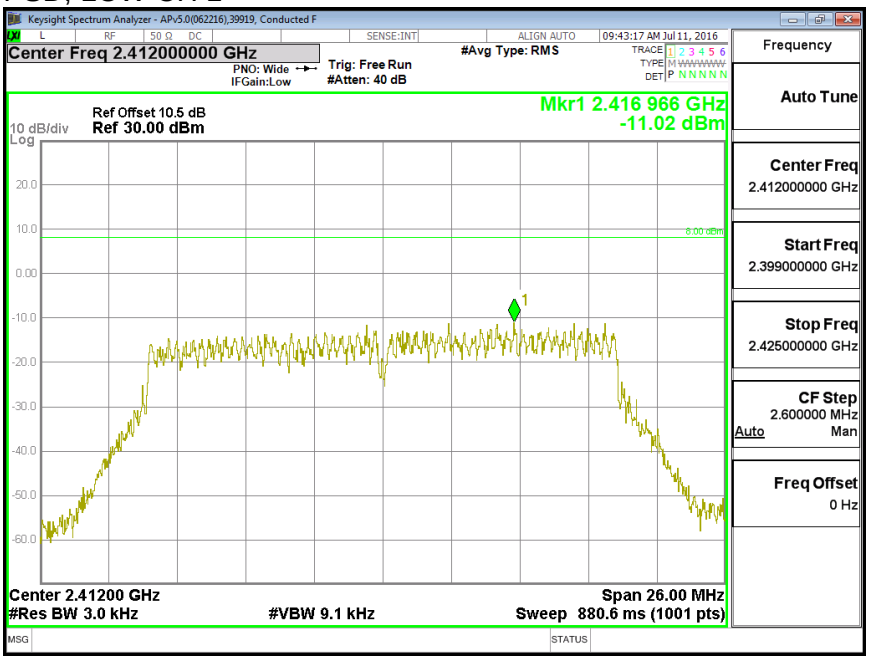
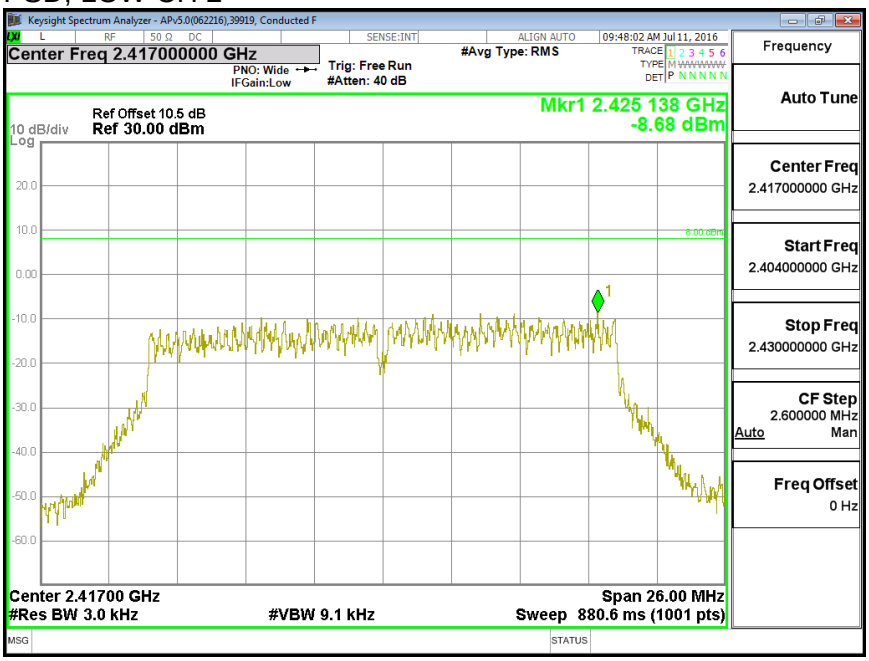
PSD

PSD, LOW CH 1



PSD, LOW CH 2



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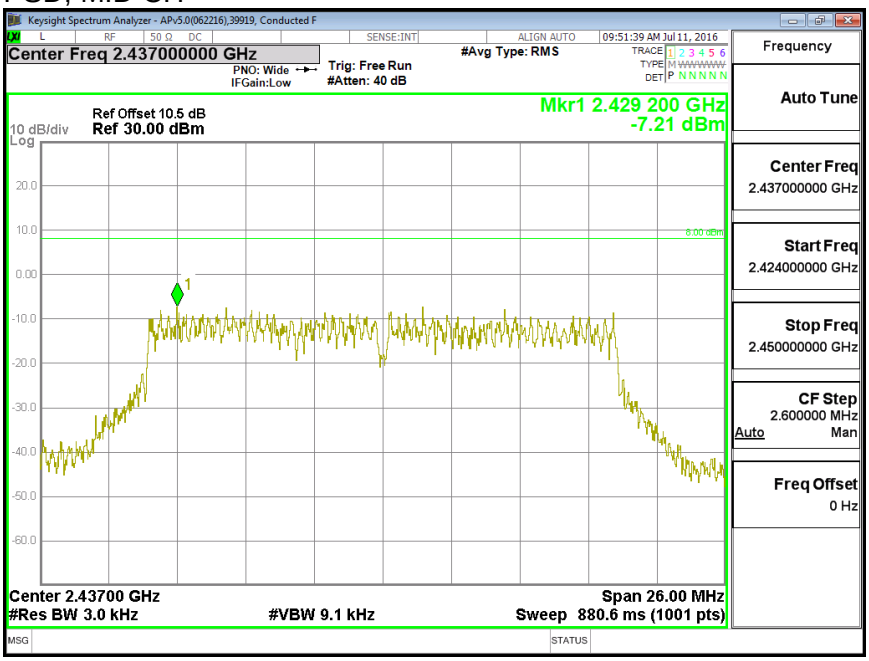
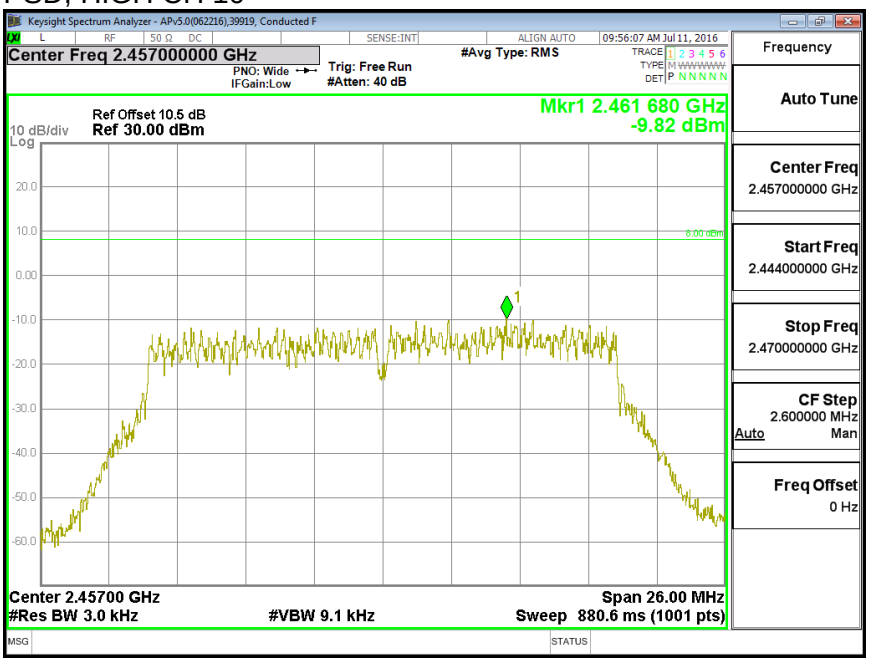
PSD, MID CH



PSD, HIGH CH 10



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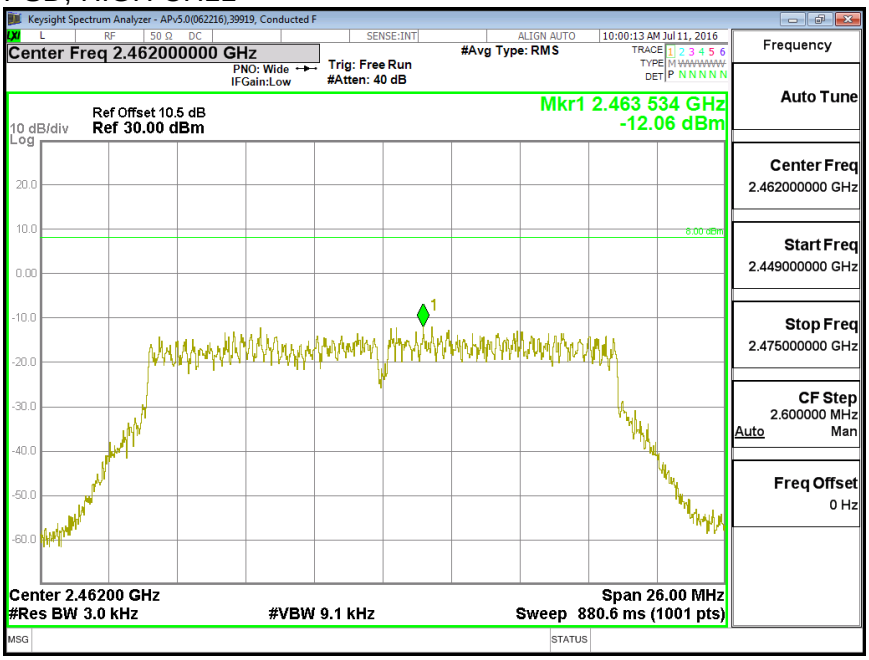
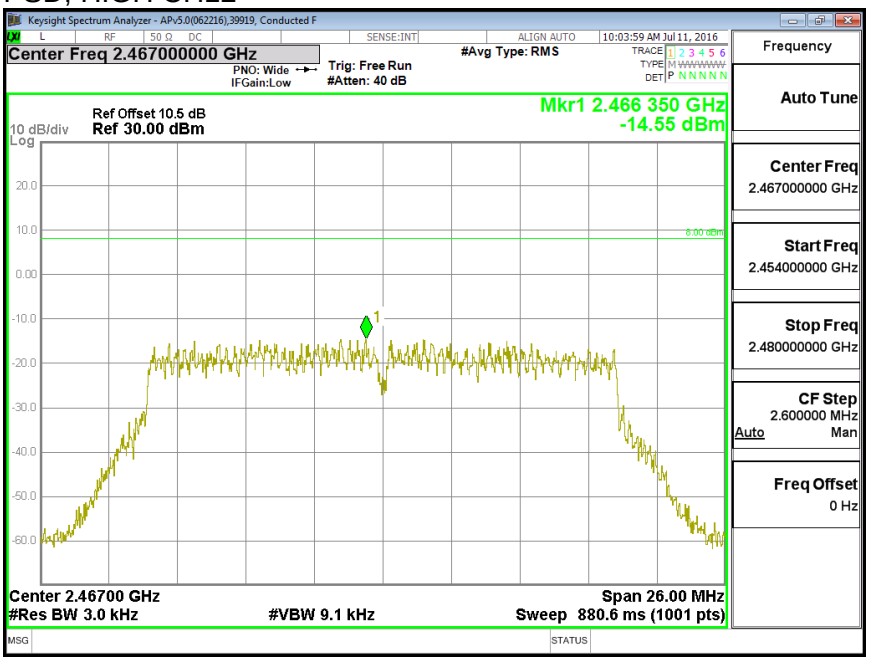
PSD, HIGH CH11



PSD, HIGH CH12



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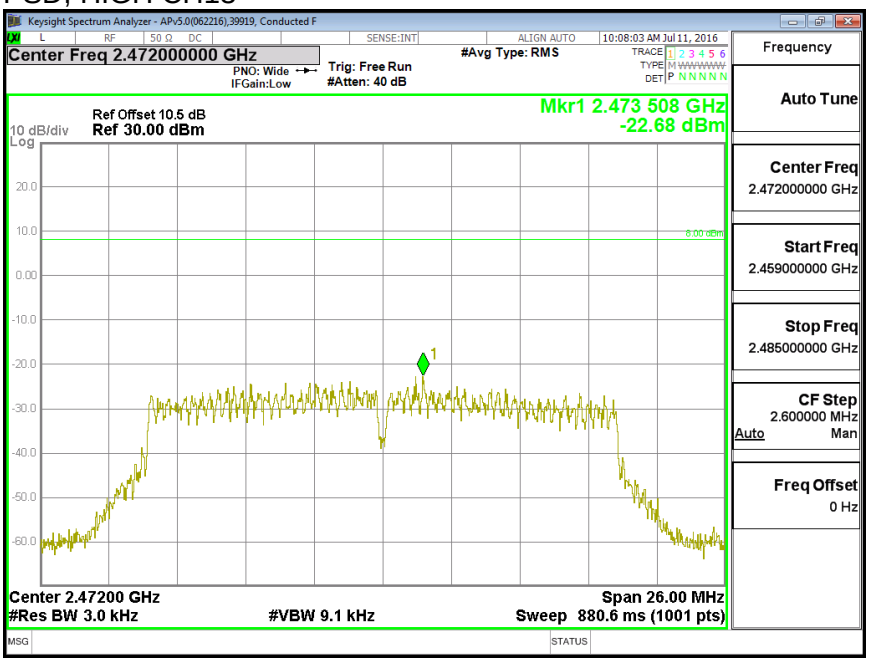
PSD, HIGH CH13



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8.6.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 (5.5)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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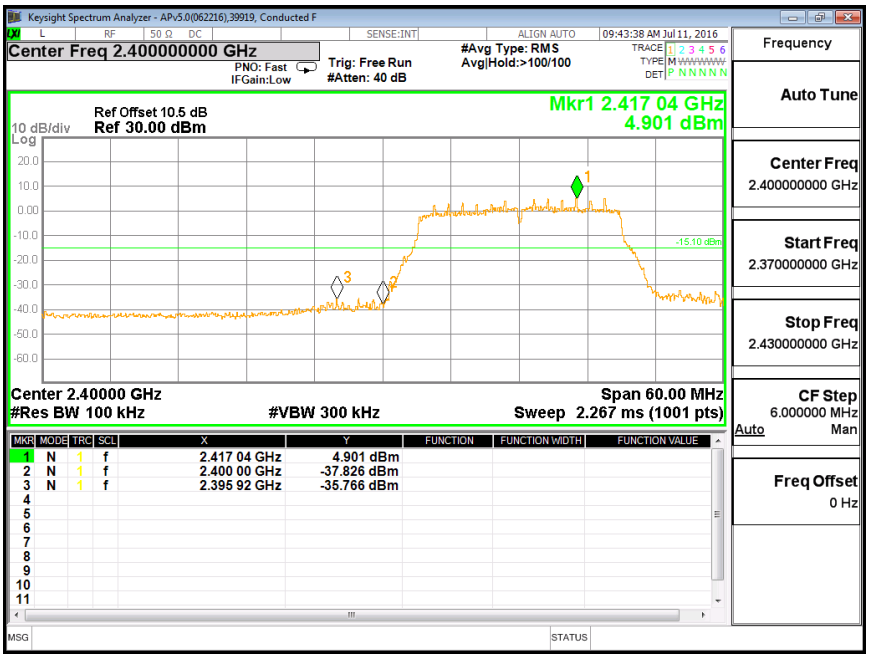
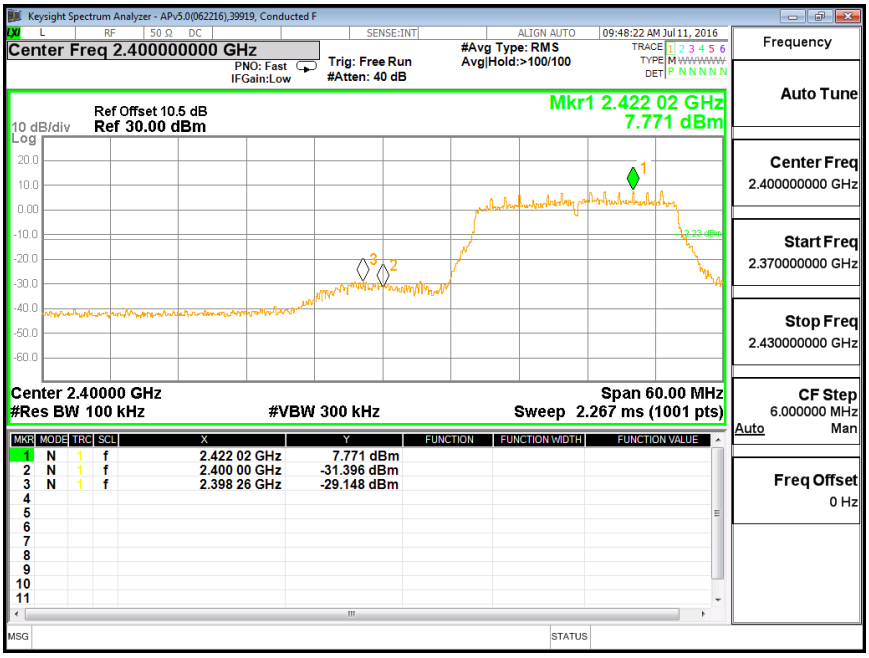
RESULTS

LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH 1



AUTHORIZED BAND EDGE LOW CH 2



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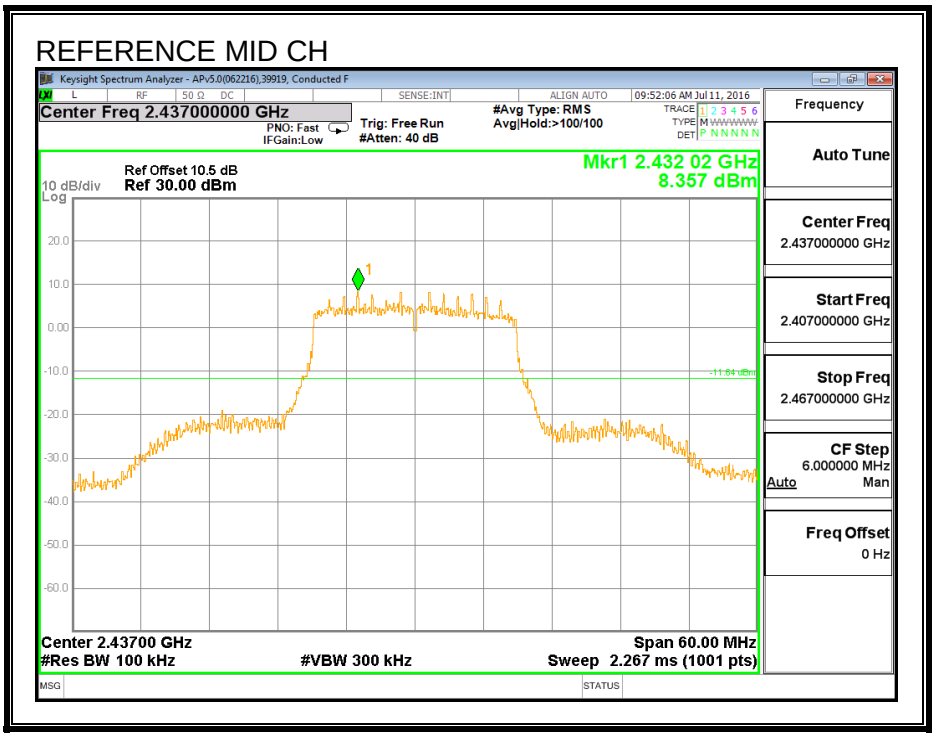
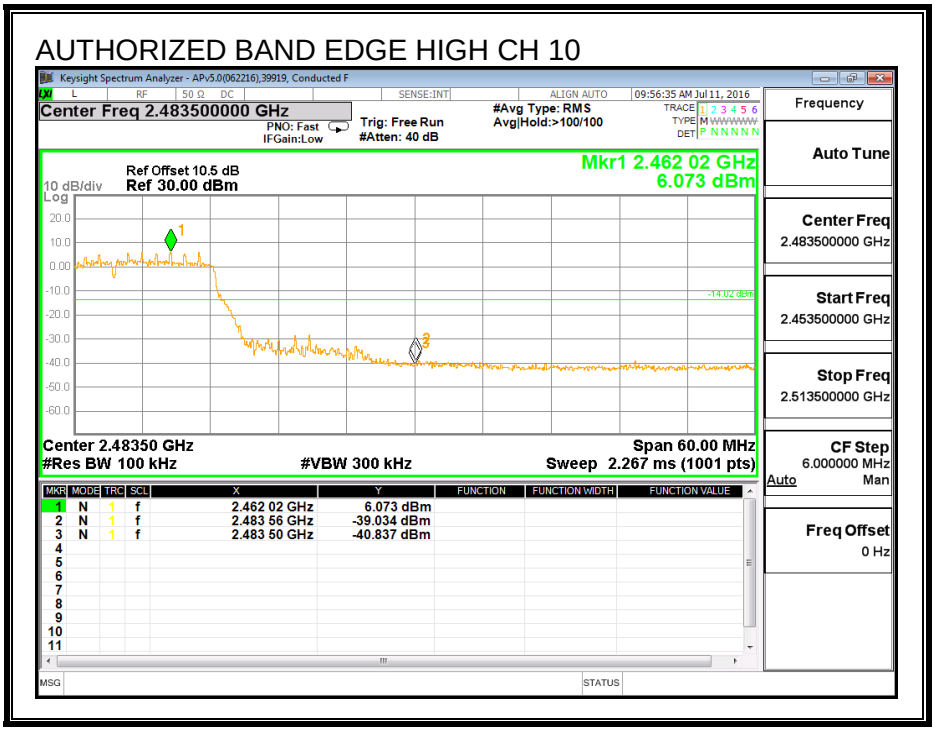
MID CHANNEL REFERENCE



HIGH CHANNEL BANDEDGE



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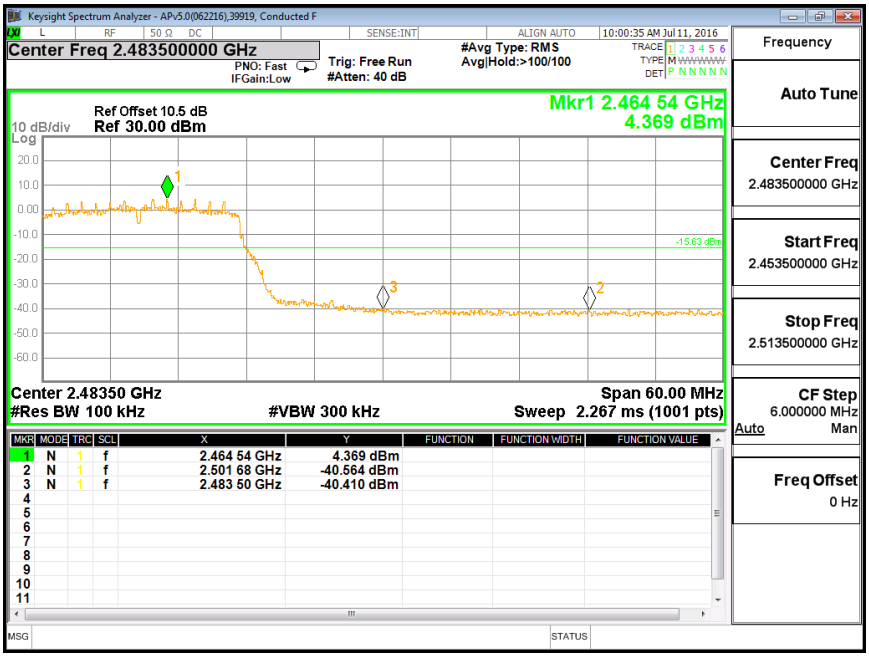
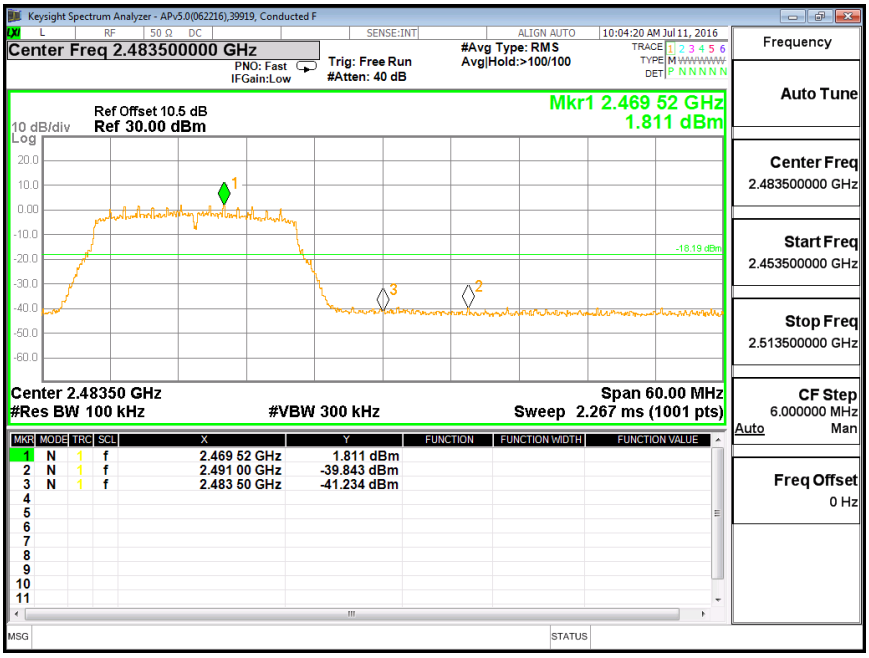
AUTHORIZED BAND EDGE HIGH CH 11



AUTHORIZED BAND EDGE HIGH CH 12



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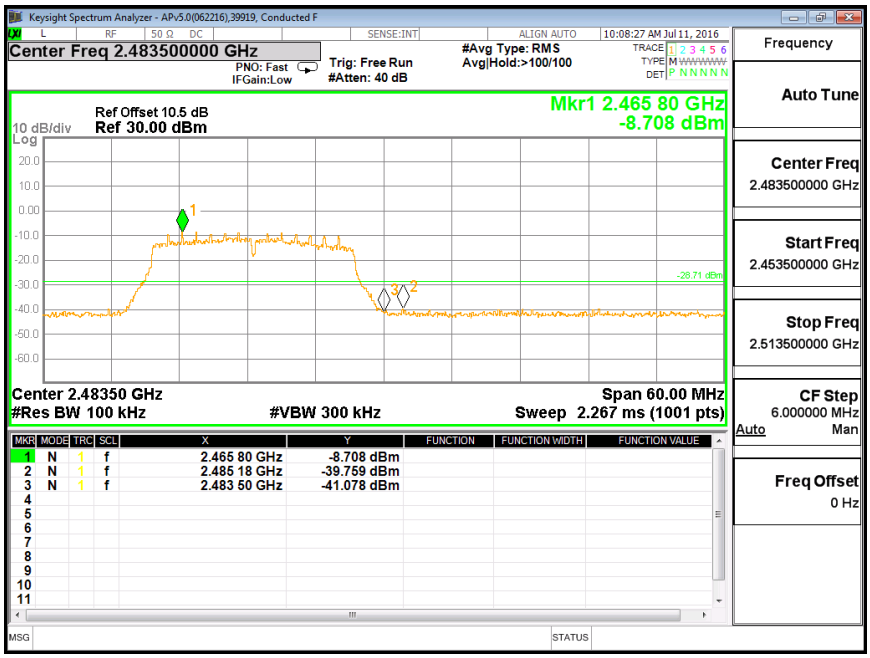
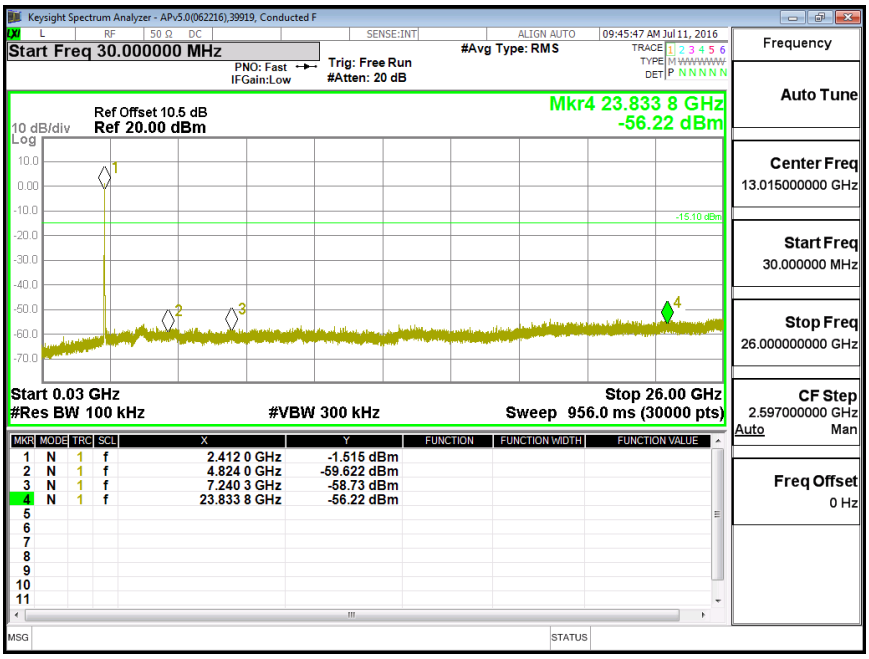
AUTHORIZED BAND EDGE HIGH CH13



OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH 1



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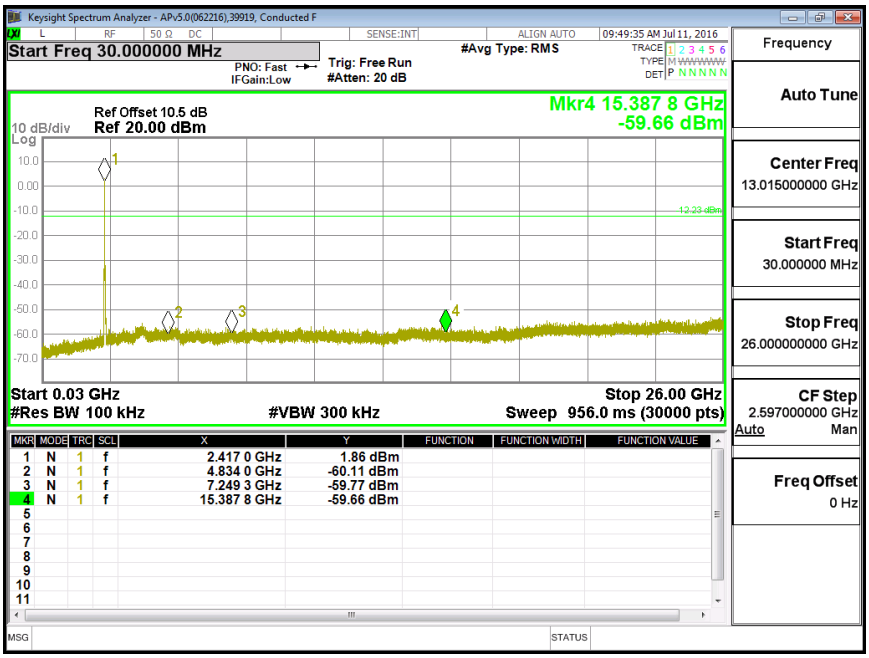
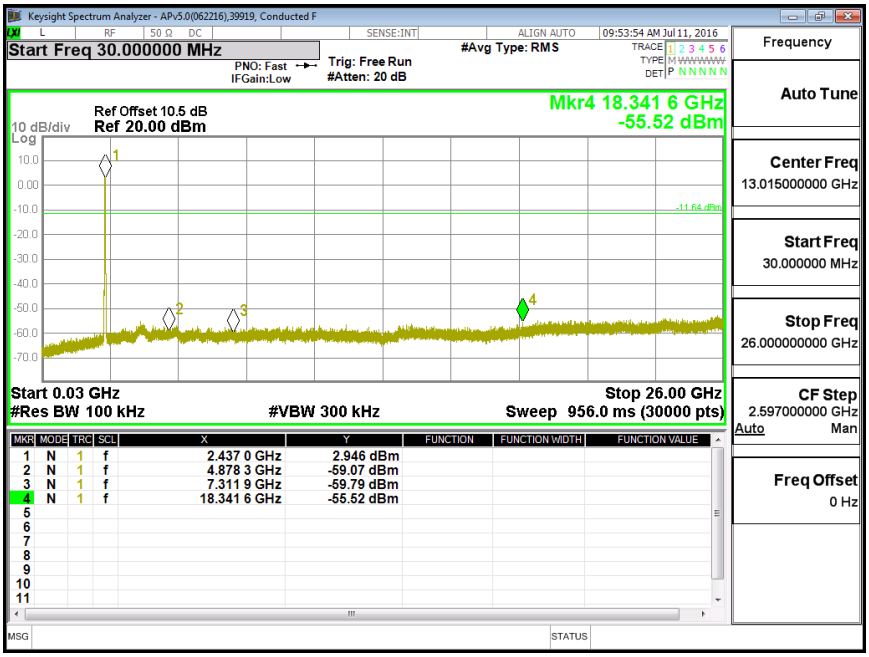
OUT OF BAND LOW CH 2



OUT OF BAND MID CH



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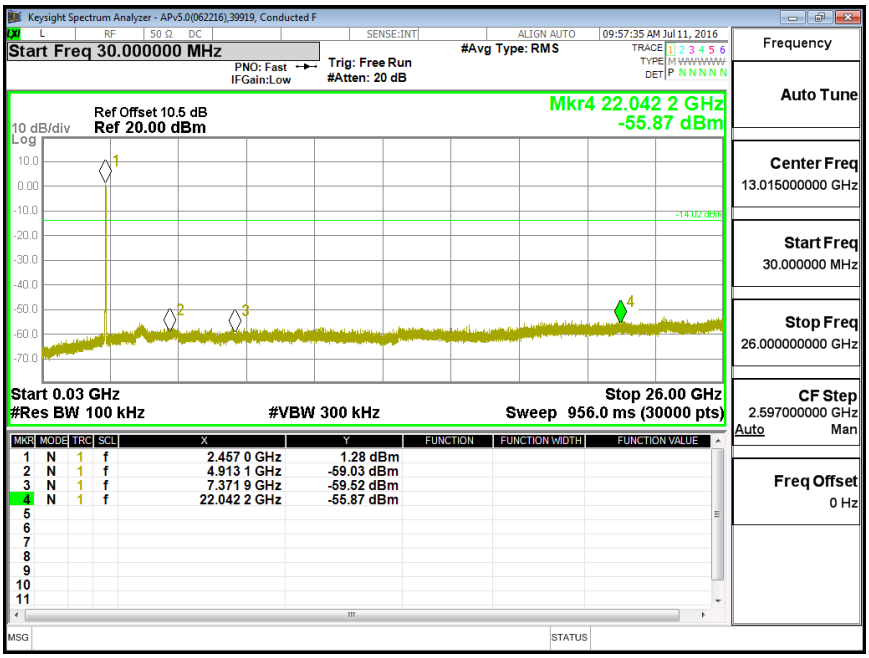
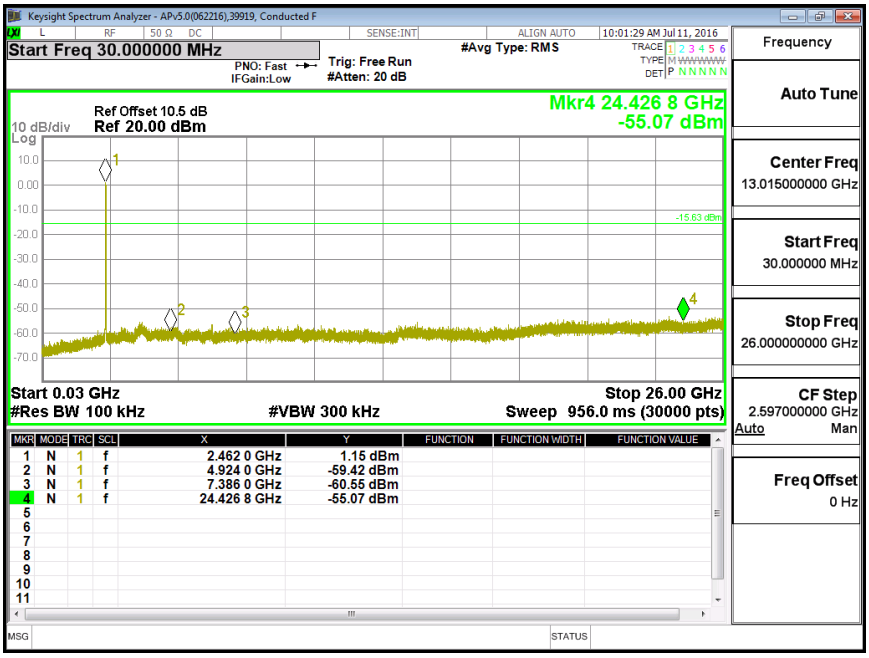
OUT OF BAND HIGH CH 10



OUT OF BAND HIGH CH 11



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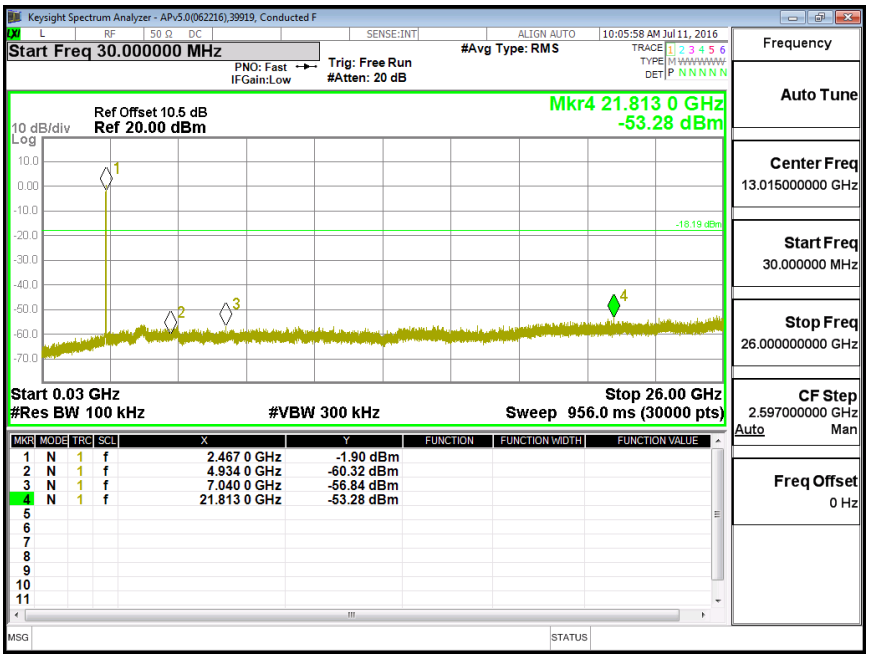
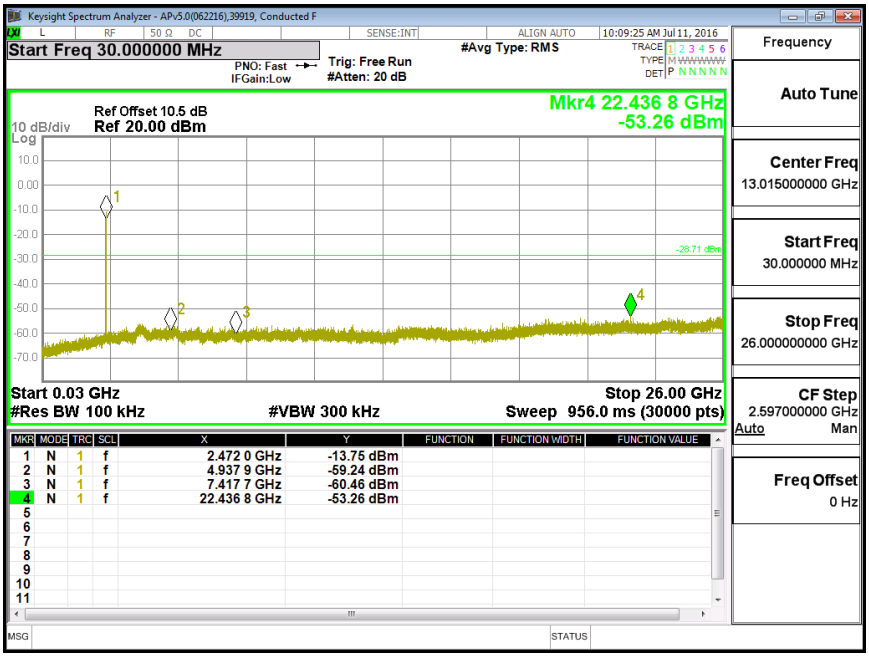
OUT OF BAND HIGH CH 12



OUT OF BAND HIGH CH 13



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8.7. 802.11n HT20 2Tx CDD MODE IN THE 2.4 GHz BAND

8.7.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-247 (5.2) (1)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low_1	2412	16.55	17.55	0.5
Low_2	2417	16.90	16.53	0.5
Mid_6	2437	17.66	16.08	0.5
High_10	2457	15.94	16.30	0.5
High_11	2462	15.04	16.33	0.5
High_12	2467	16.38	16.38	0.5
High_13	2472	16.33	16.33	0.5

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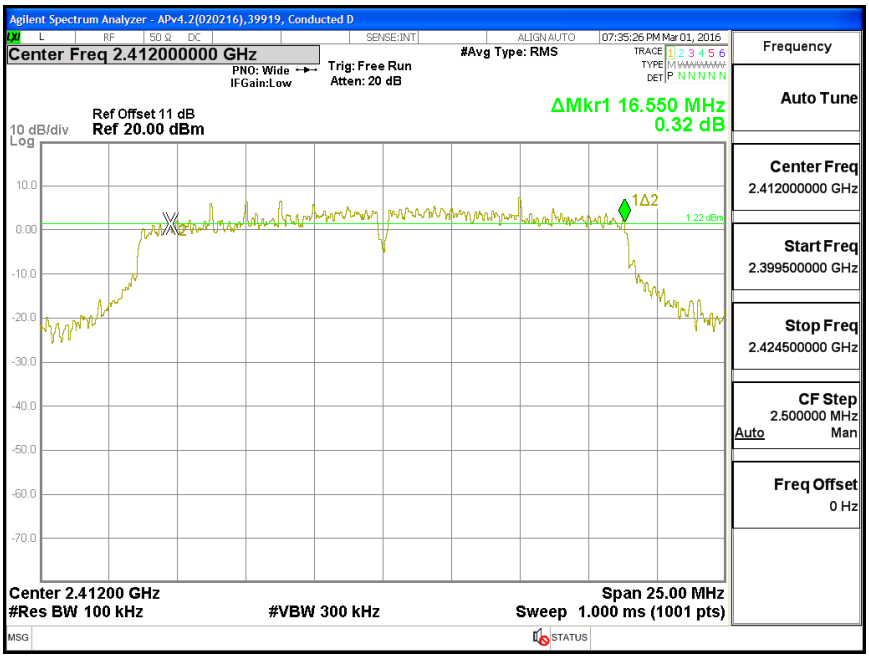
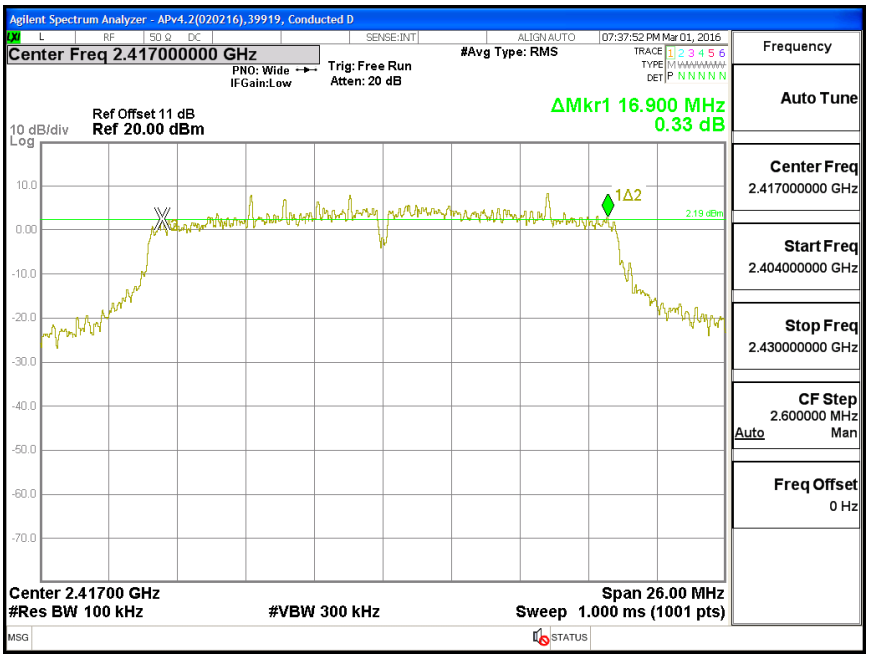
6 dB BANDWIDTH, Chain 0

6 dB BANDWIDTH LOW CH 1



6 dB BANDWIDTH LOW CH 2



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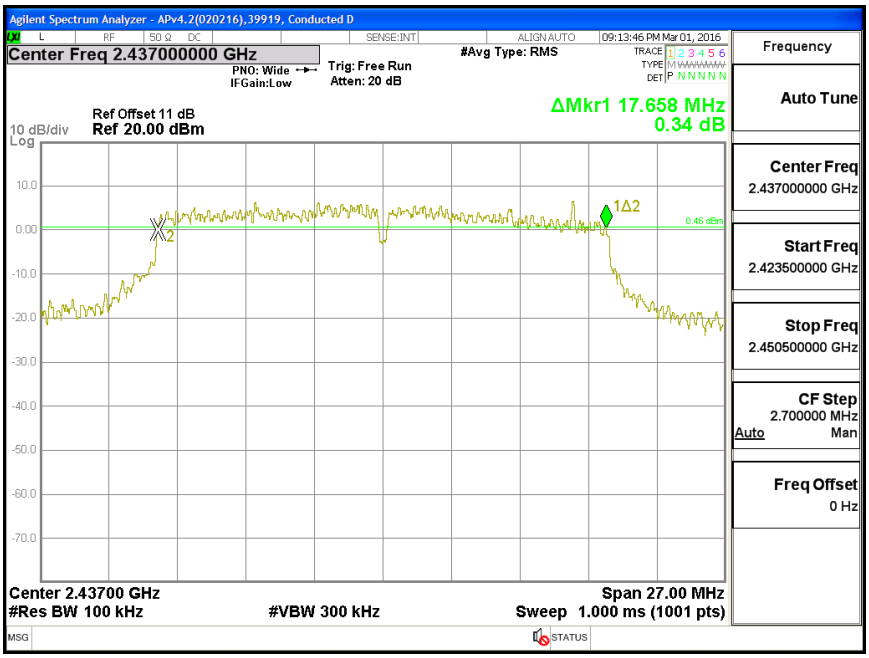
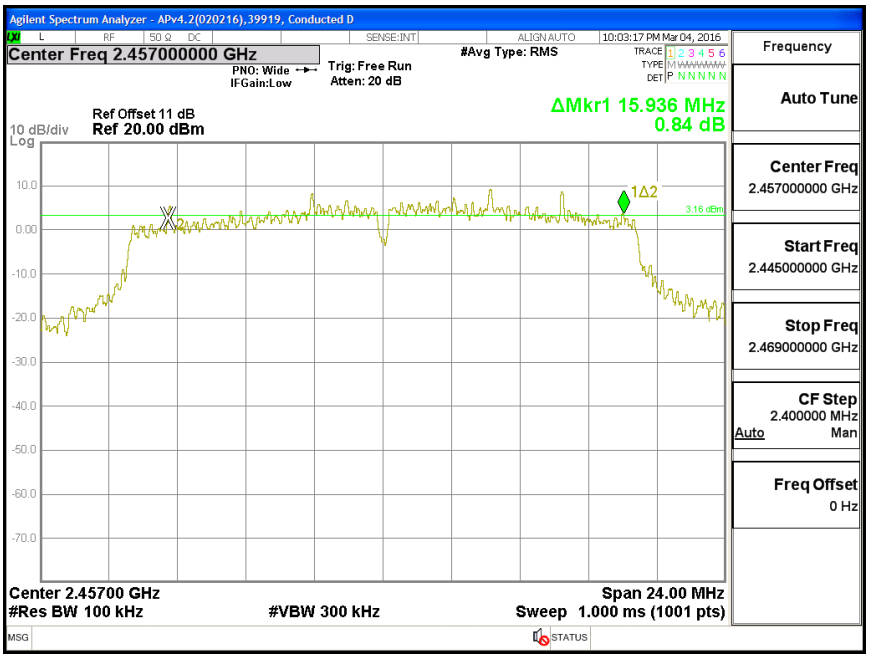
6 dB BANDWIDTH MID CH



6 dB BANDWIDTH HIGH CH 10



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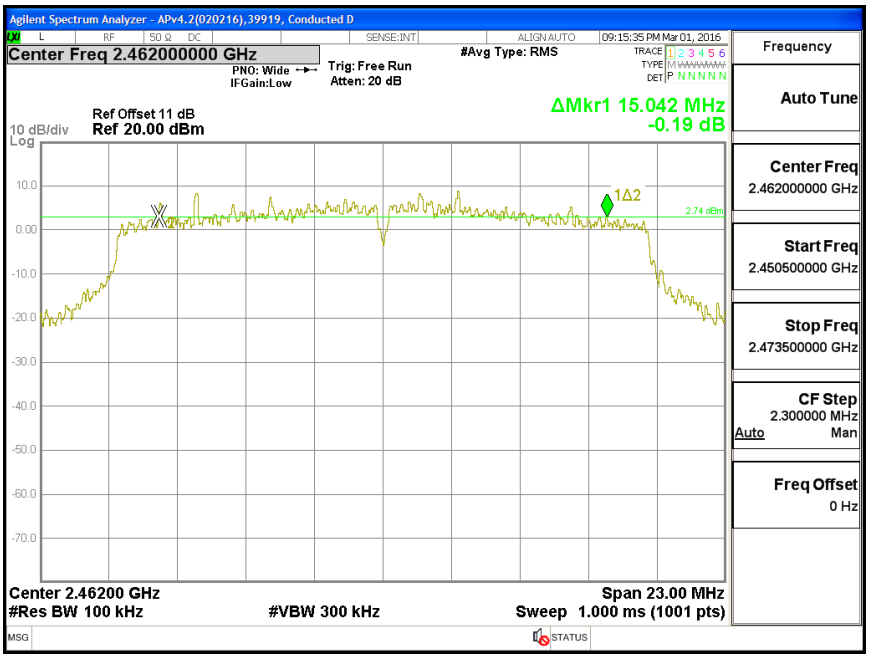
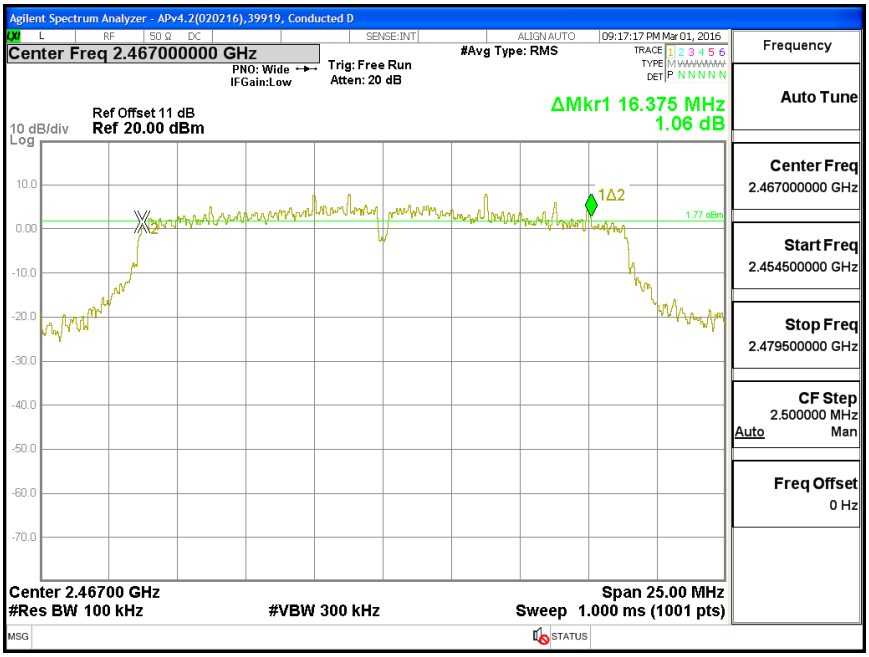
6 dB BANDWIDTH HIGH CH 11



6 dB BANDWIDTH HIGH CH 12



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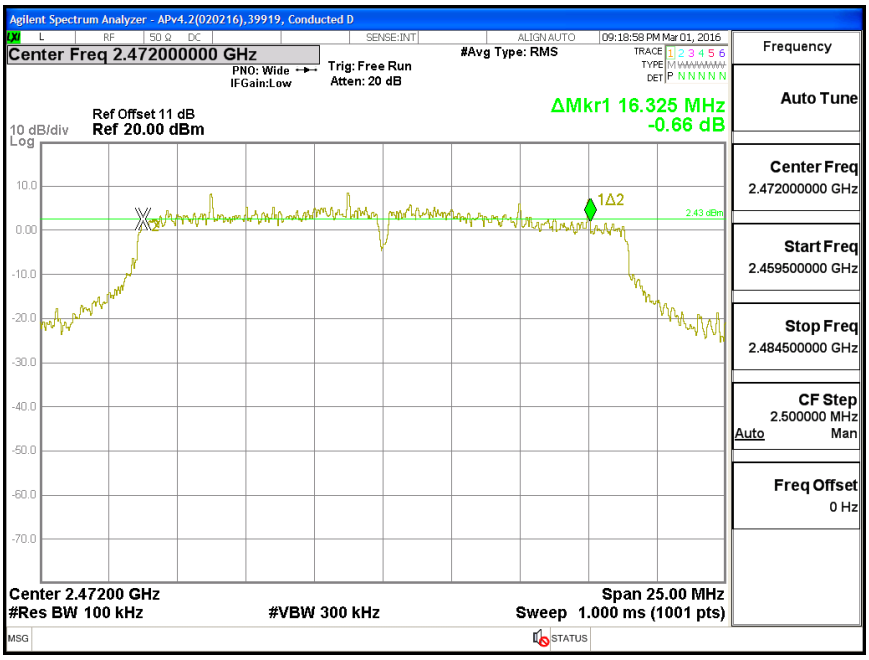
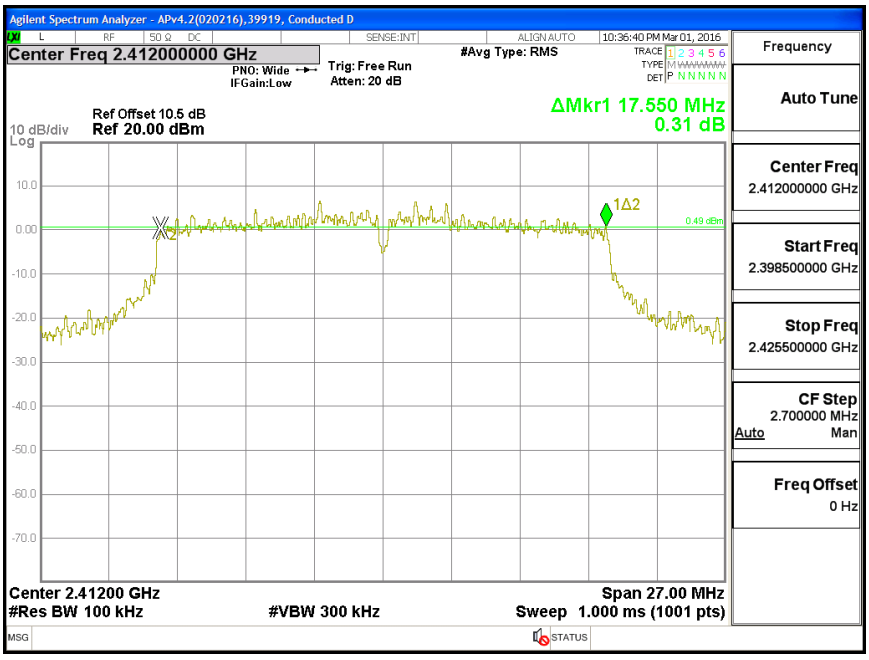
6 dB BANDWIDTH HIGH CH 13



6 dB BANDWIDTH, Chain 1

6 dB BANDWIDTH LOW CH 1



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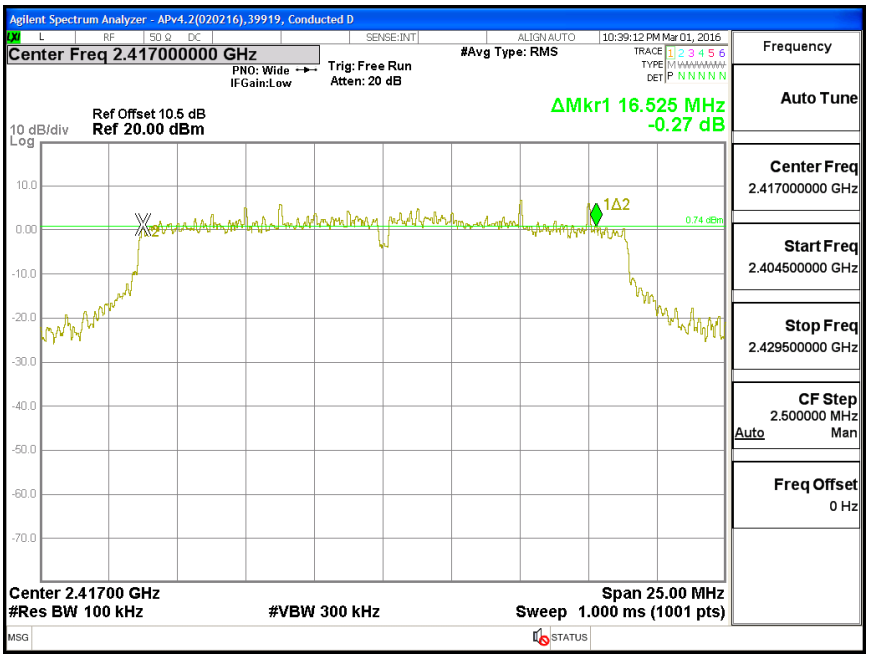
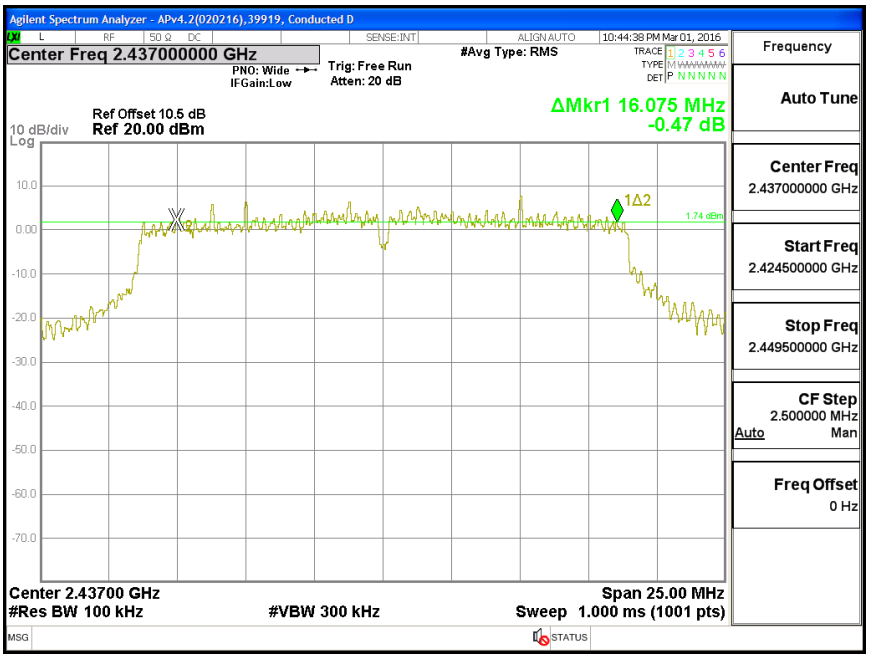
6 dB BANDWIDTH LOW CH 2



6 dB BANDWIDTH MID CH



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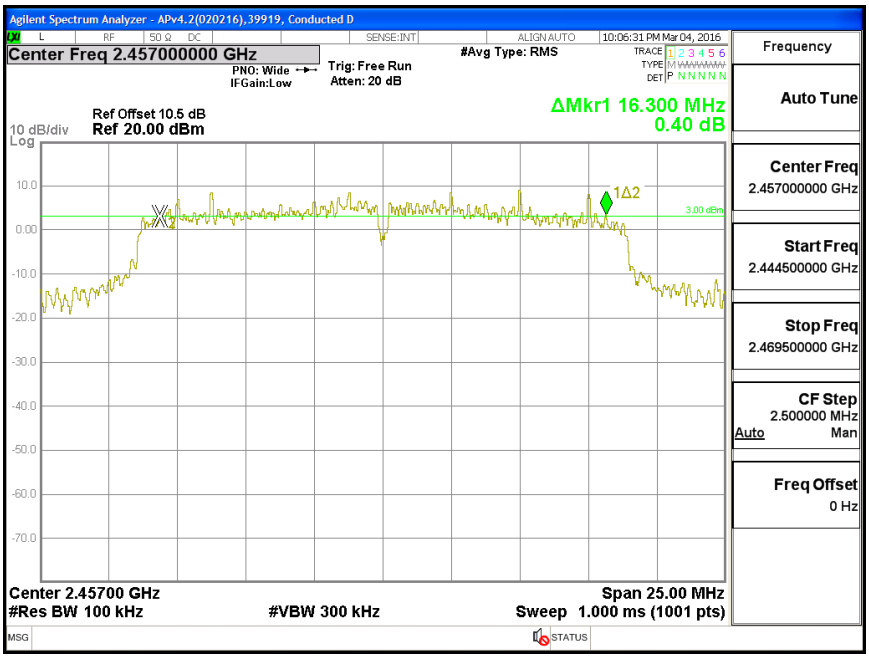
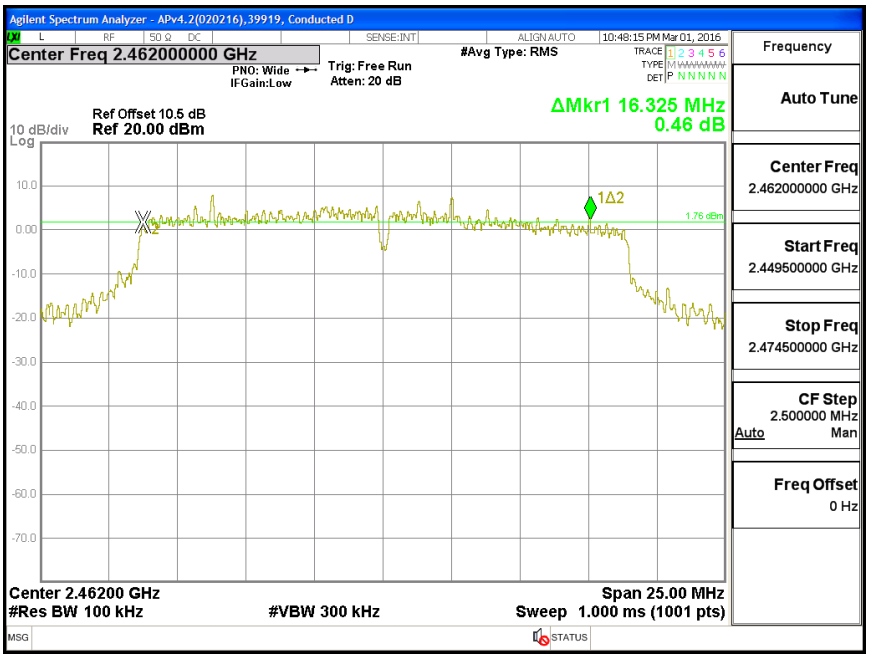
6 dB BANDWIDTH HIGH CH 10



6 dB BANDWIDTH HIGH CH 11



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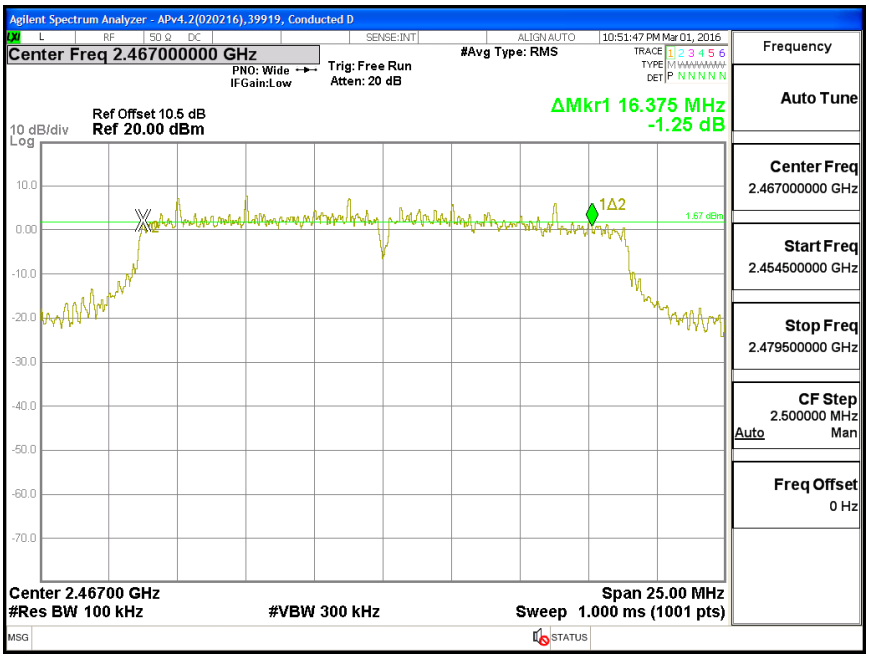
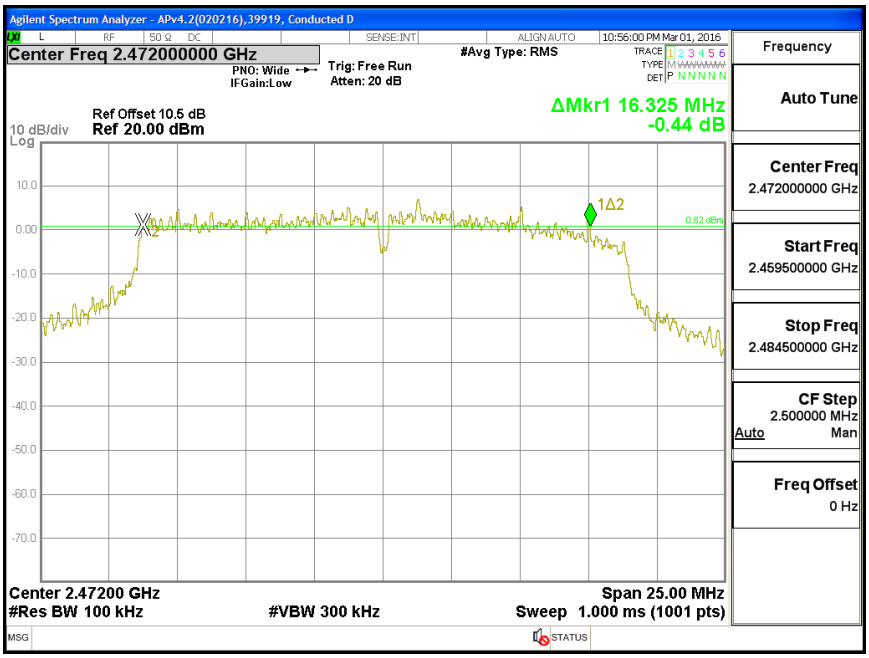
6 dB BANDWIDTH HIGH CH 12



6 dB BANDWIDTH HIGH CH 13



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8.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low_1	2412	17.789	17.762
Low_2	2417	17.795	17.775
Mid_6	2437	18.023	17.905
High_10	2457	17.638	18.159
High_11	2462	17.806	17.926
High_12	2467	17.818	17.758
High_13	2472	17.802	17.551

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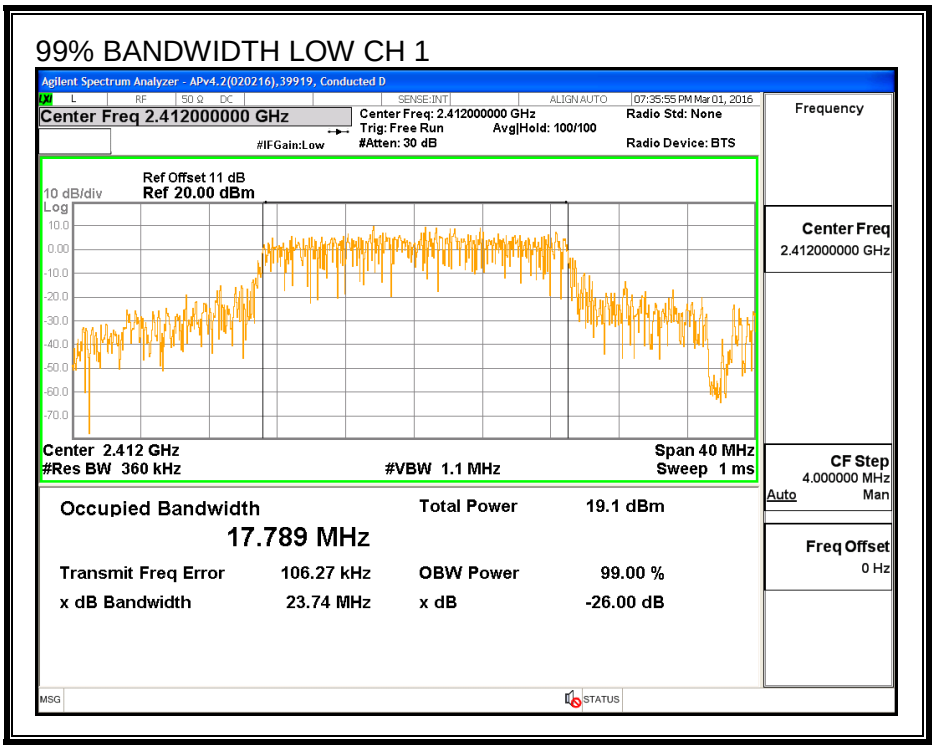
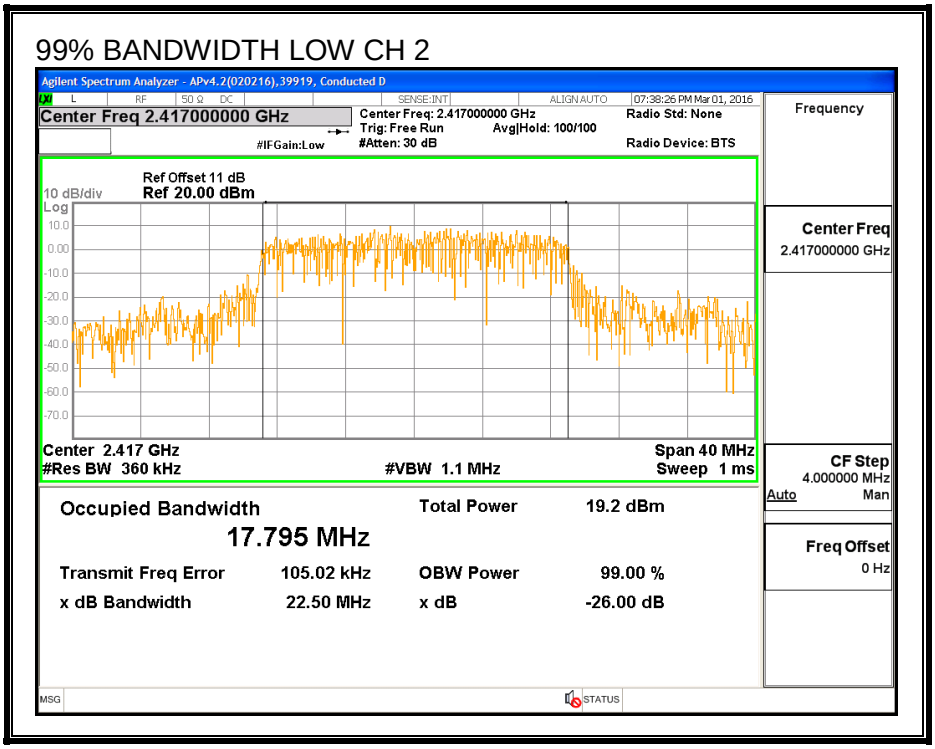
99% BANDWIDTH, Chain 0





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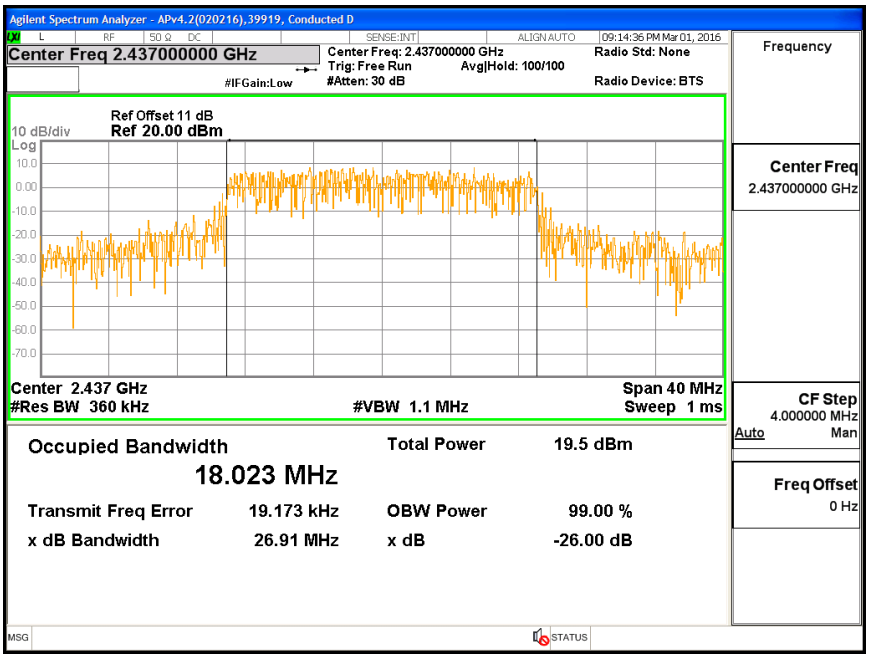
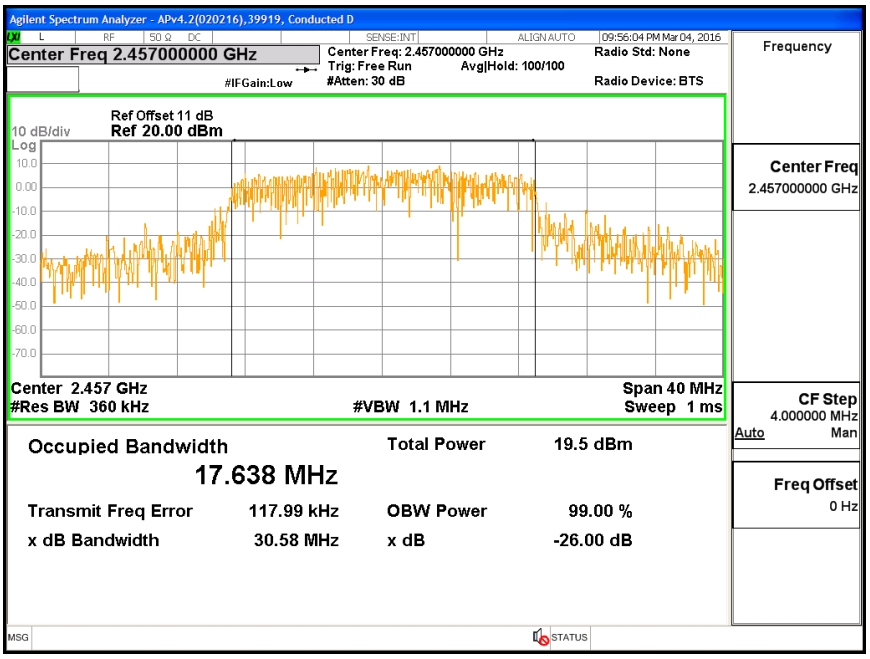
99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH 10



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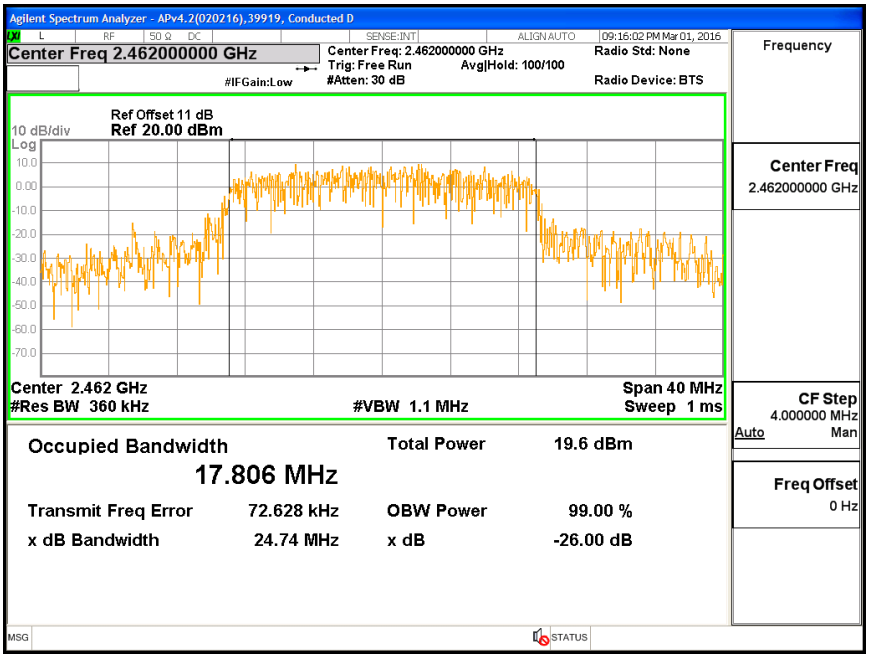
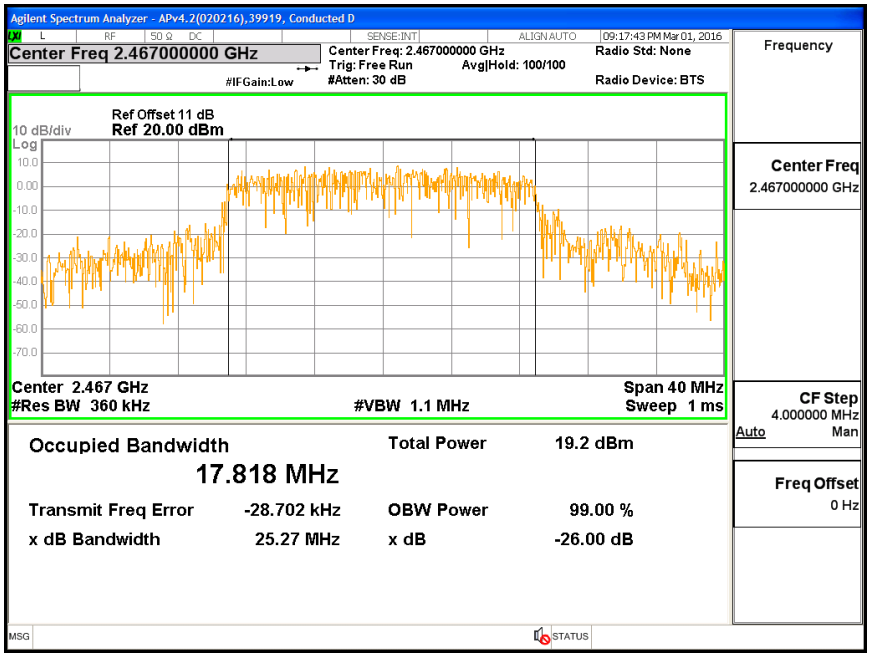
99% BANDWIDTH HIGH CH 11



99% BANDWIDTH HIGH CH 12



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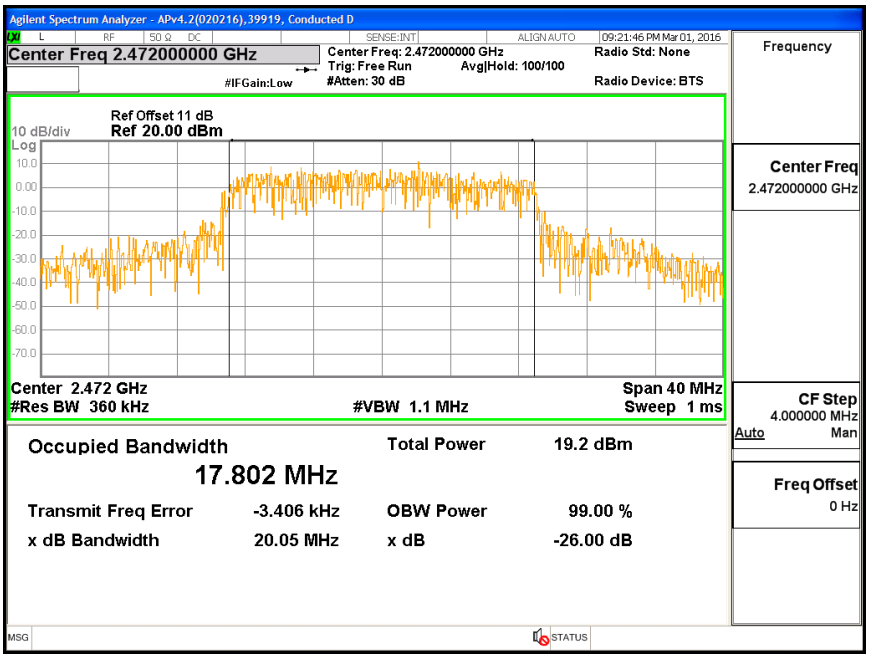
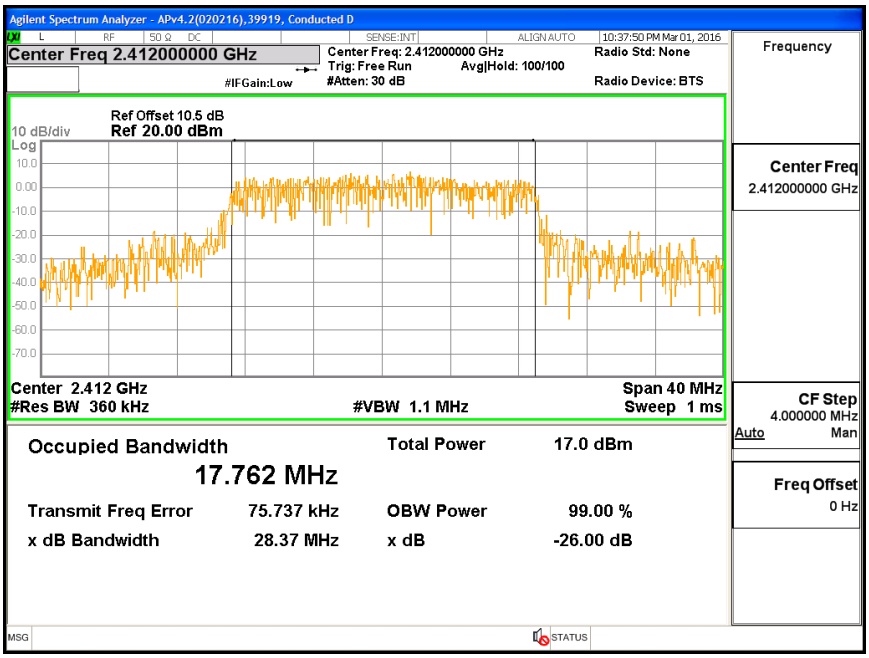
99% BANDWIDTH HIGH CH 13



99% BANDWIDTH, Chain 1

99% BANDWIDTH LOW CH 1



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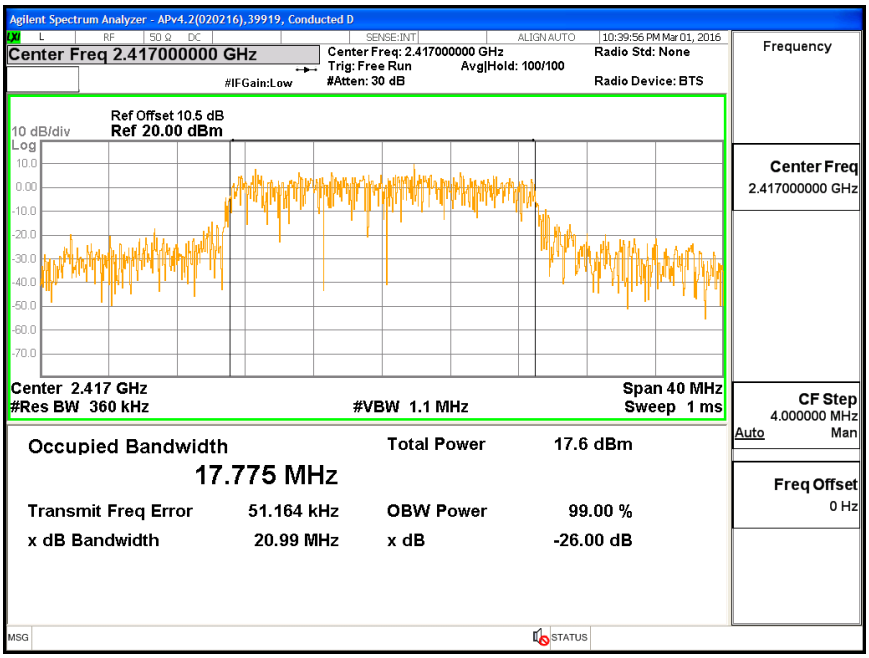
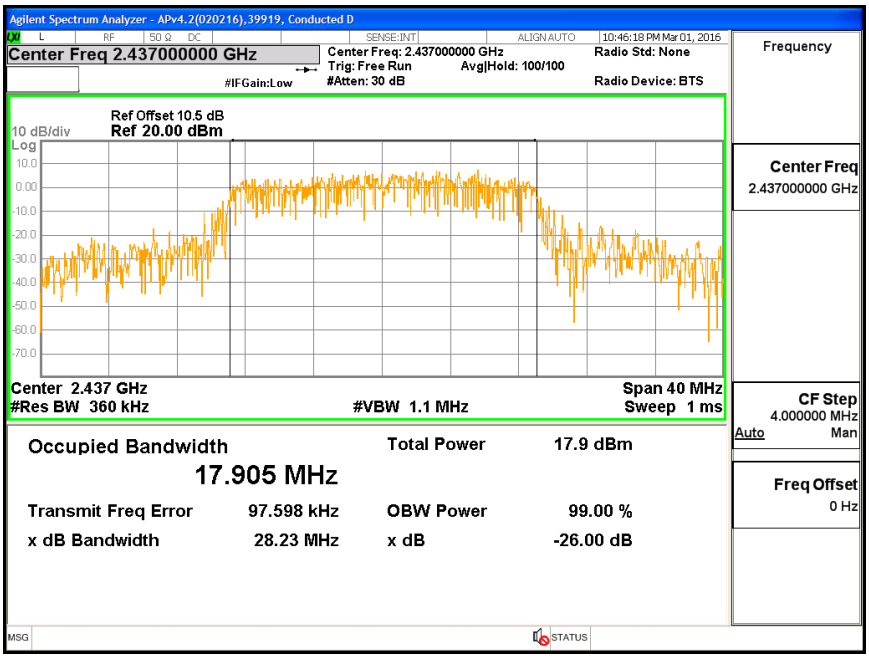
99% BANDWIDTH LOW CH 2



99% BANDWIDTH MID CH



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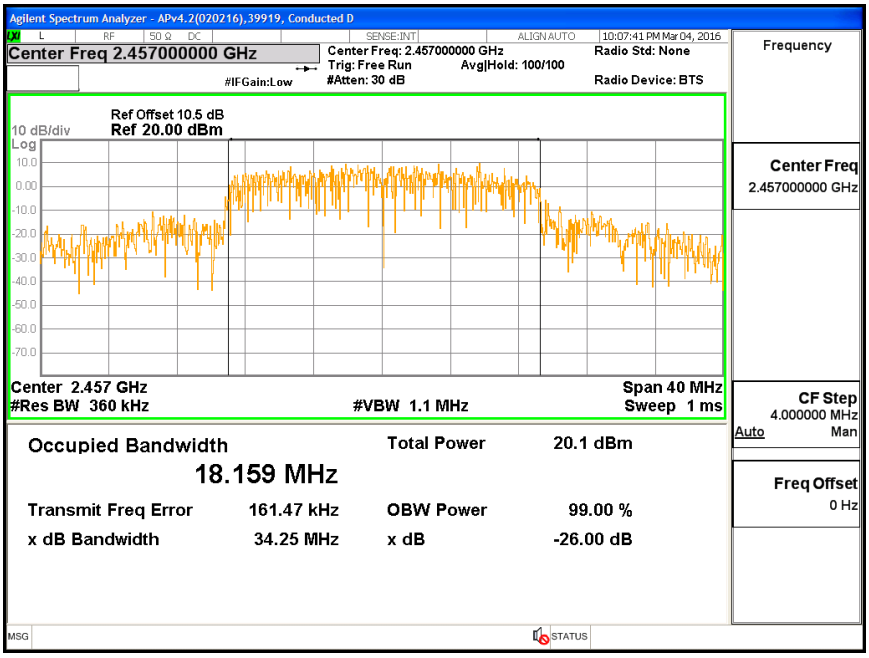
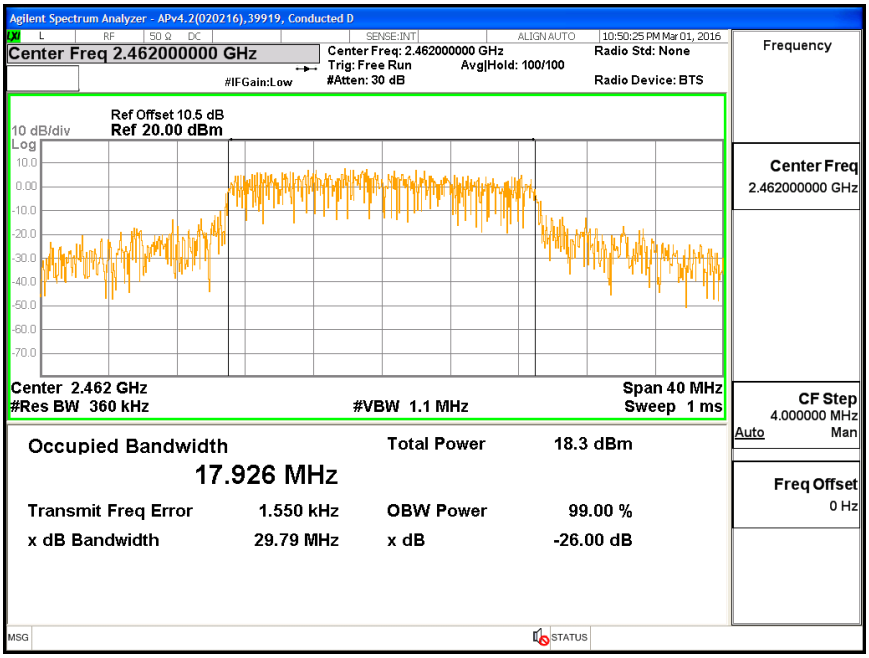
99% BANDWIDTH HIGH CH 10



99% BANDWIDTH HIGH CH 11



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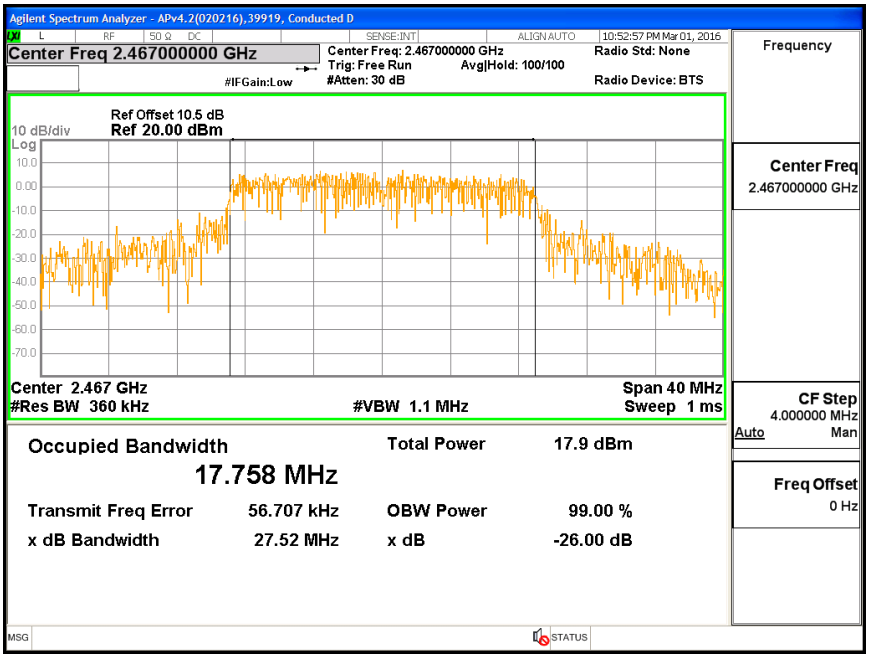
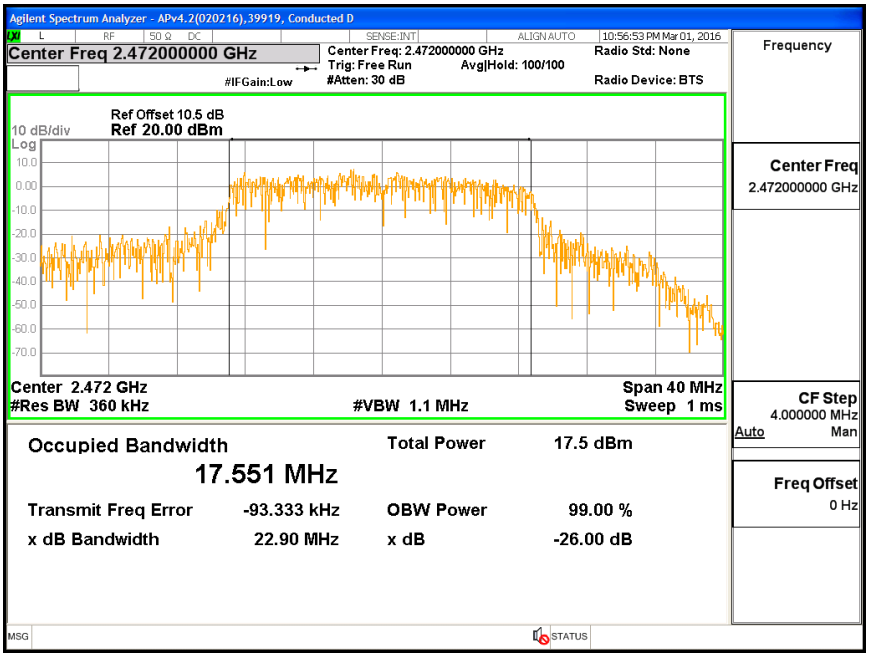


99% BANDWIDTH HIGH CH 13



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8.7.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

ID:	39919	Date:	7/11/16

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low_1	2412	14.40	14.38	17.40
Low_2	2417	17.41	17.39	20.41
Mid_6	2437	18.99	18.89	21.95
High_10	2457	15.95	15.90	18.94
High_11	2462	14.00	13.99	17.01
High_12	2467	11.97	11.93	14.96
High_13	2472	2.49	2.44	5.48

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8.7.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 (5.4) (4)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-1.85	-1.35	-1.59

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RESULTS

ID:	39919	Date:	7/11/16

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low_1	2412	-1.59	30.00	30	36	30.00
Low_2	2417	-1.59	30.00	30	36	30.00
Mid_6	2437	-1.59	30.00	30	36	30.00
High_10	2457	-1.59	30.00	30	36	30.00
High_11	2462	-1.59	30.00	30	36	30.00
High_12	2467	-1.59	30.00	30	36	30.00
High_13	2472	-1.59	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low_1	2412	20.99	20.96	23.99	30.00	-6.01
Low_2	2417	23.97	23.91	26.95	30.00	-3.05
Mid_6	2437	25.91	25.77	28.85	30.00	-1.15
High_10	2457	22.71	22.65	25.69	30.00	-4.31
High_11	2462	20.79	20.77	23.79	30.00	-6.21
High_12	2467	17.72	17.65	20.70	30.00	-9.30
High_13	2472	8.18	8.09	11.15	30.00	-18.85

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8.7.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (2)

For digitally modulated systems, the power spectral density conducted form the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

RESULTS

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low_1	2412	-11.90	-11.95	-8.91	8.0	-16.9
Low_2	2417	-8.76	-9.08	-5.91	8.0	-13.9
Mid_6	2437	-7.15	-7.88	-4.49	8.0	-12.5
High_10	2457	-10.52	-10.92	-7.71	8.0	-15.7
High_11	2462	-12.44	-12.44	-9.43	8.0	-17.4
High_12	2467	-14.92	-14.96	-11.93	8.0	-19.9
High_13	2472	-22.99	-23.37	-20.17	8.0	-28.2

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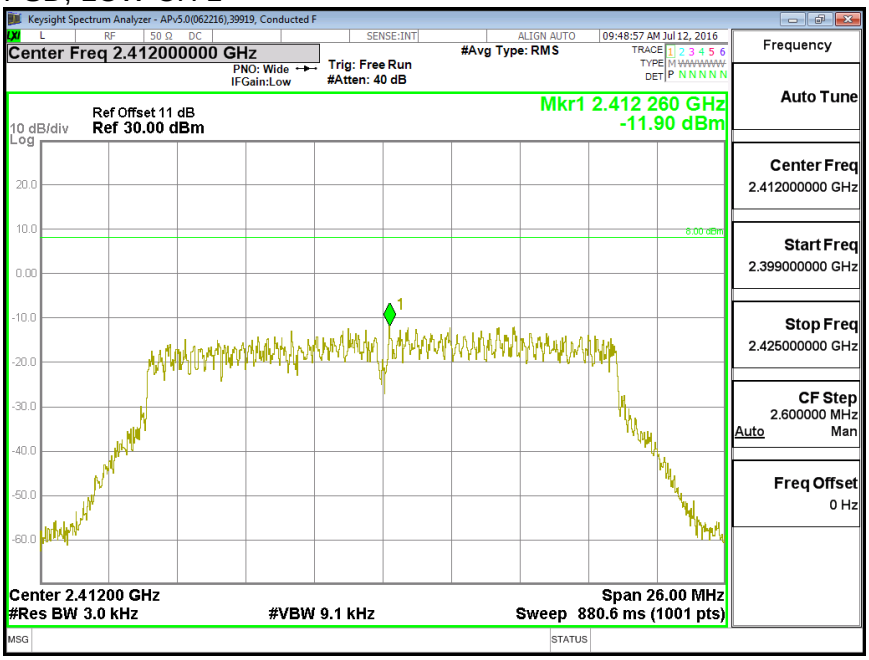
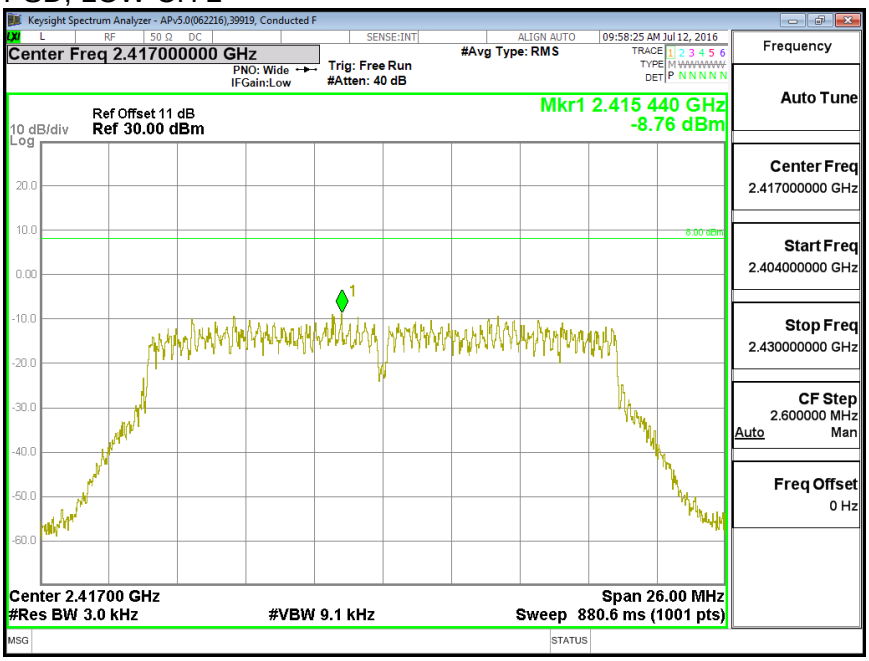
PSD, Chain 0

PSD, LOW CH 1



PSD, LOW CH 2



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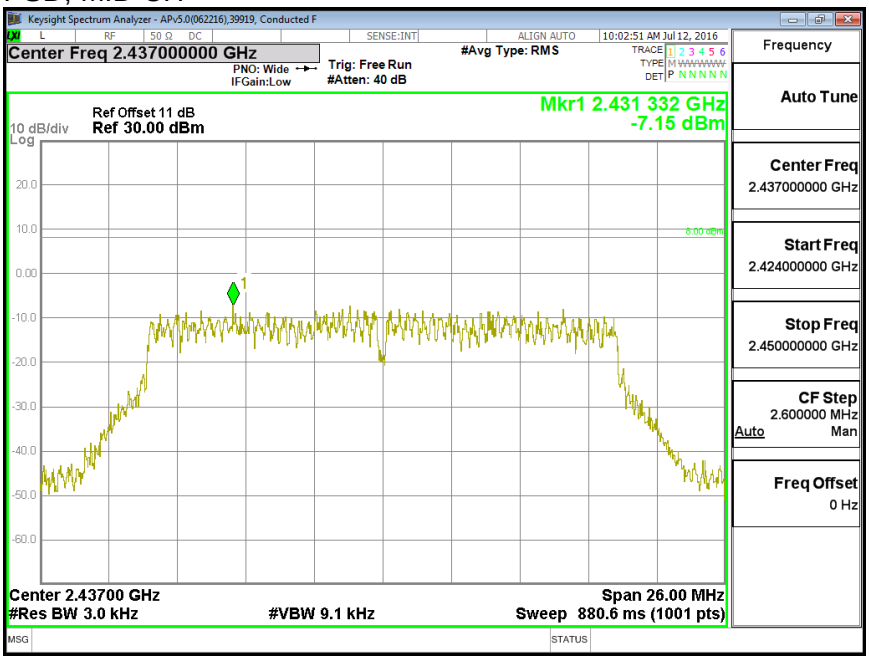
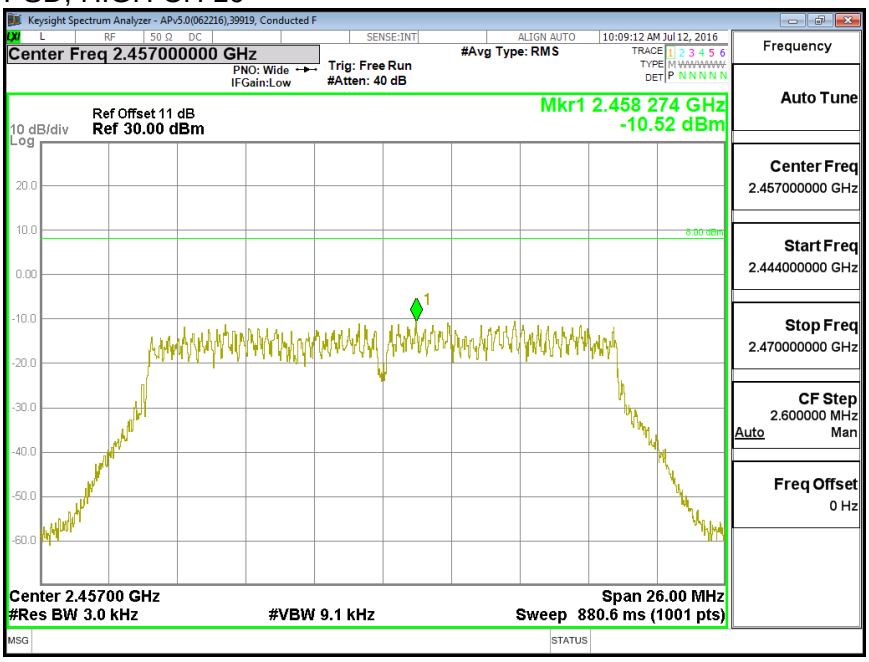
PSD, MID CH



PSD, HIGH CH 10



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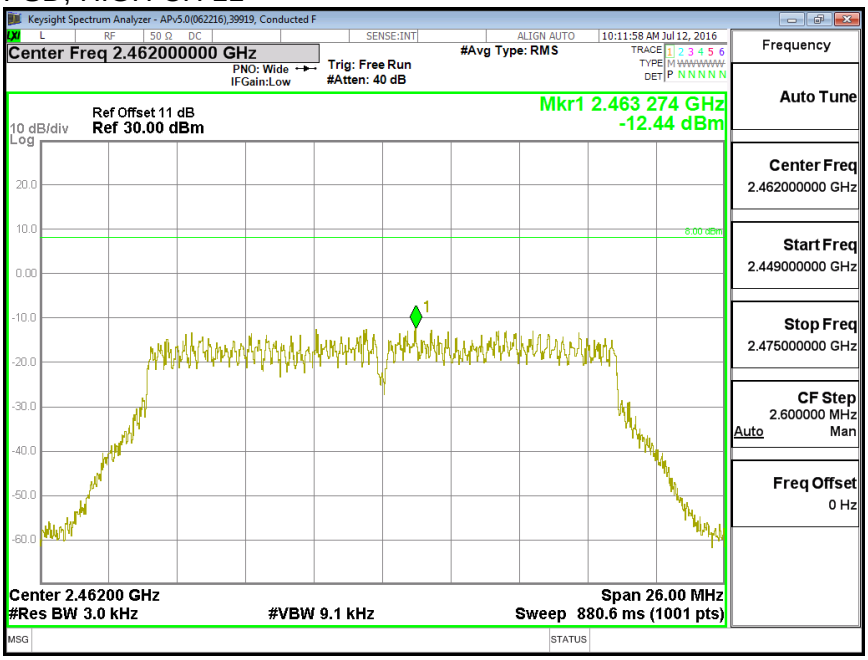
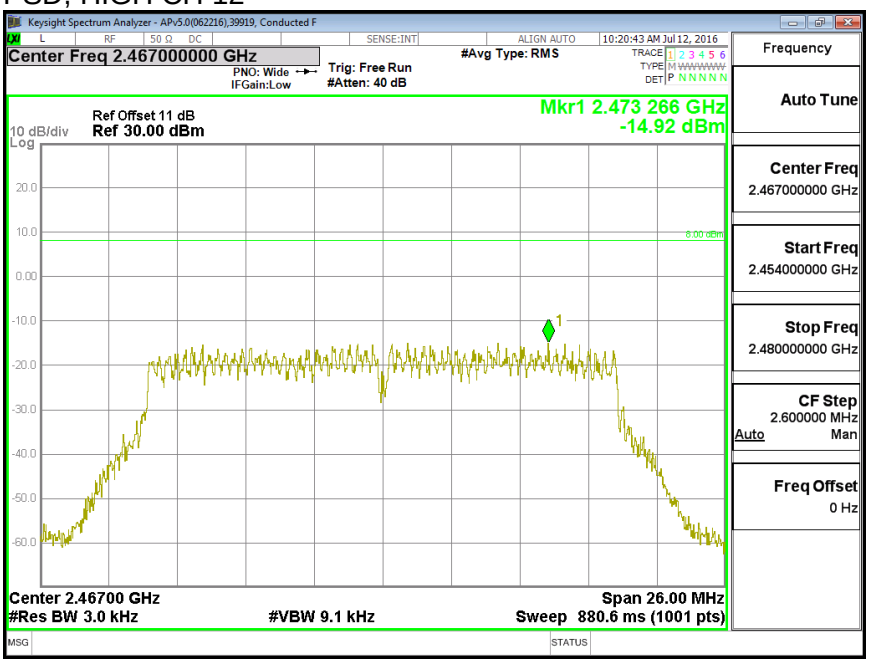
PSD, HIGH CH 11



PSD, HIGH CH 12



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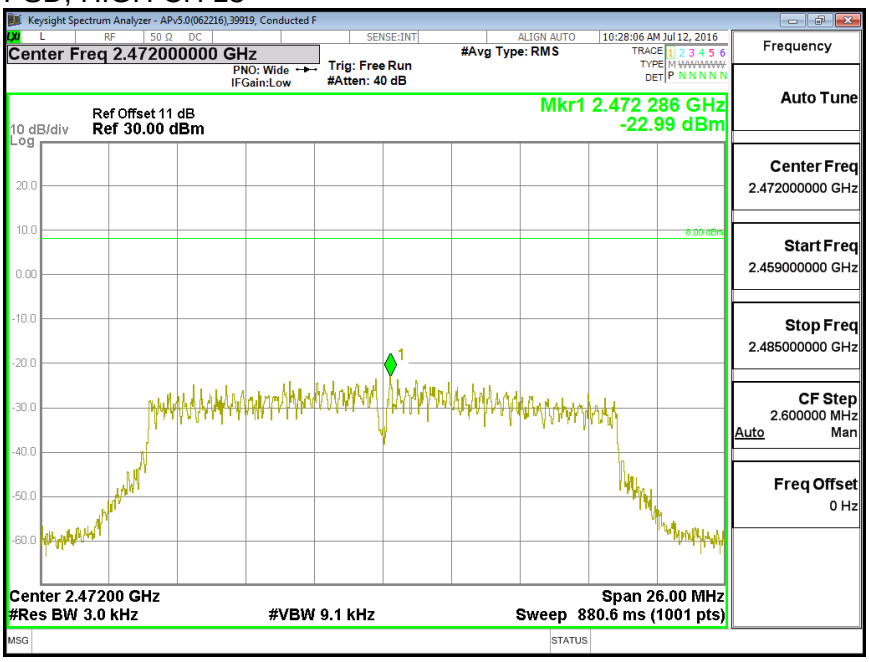
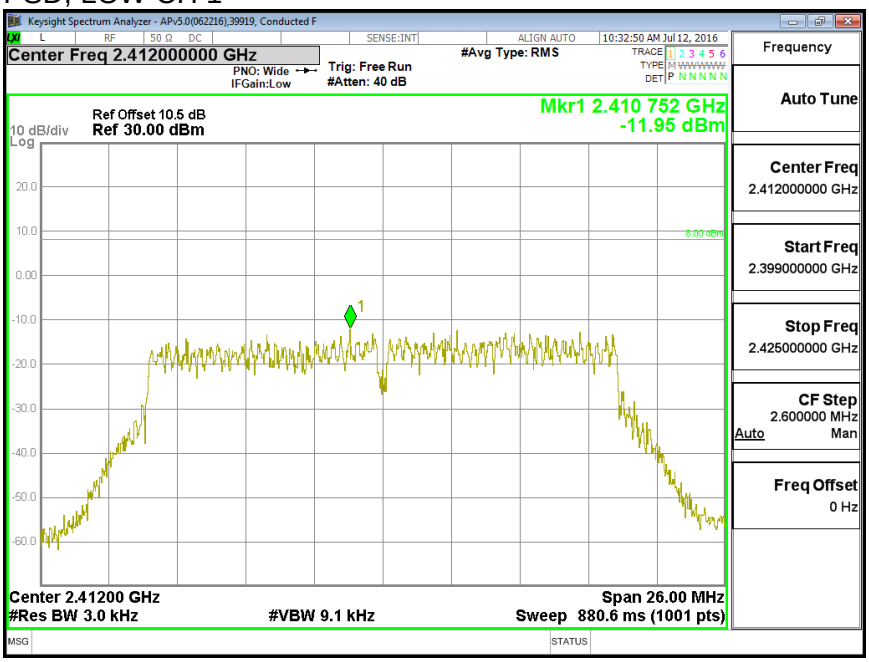
PSD, HIGH CH 13



PSD, Chain 1

PSD, LOW CH 1



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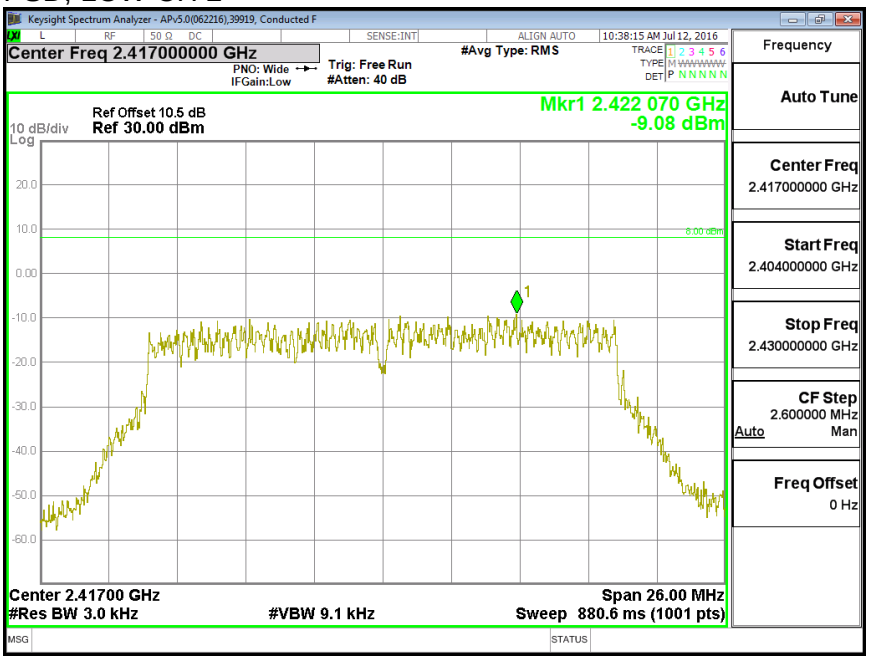
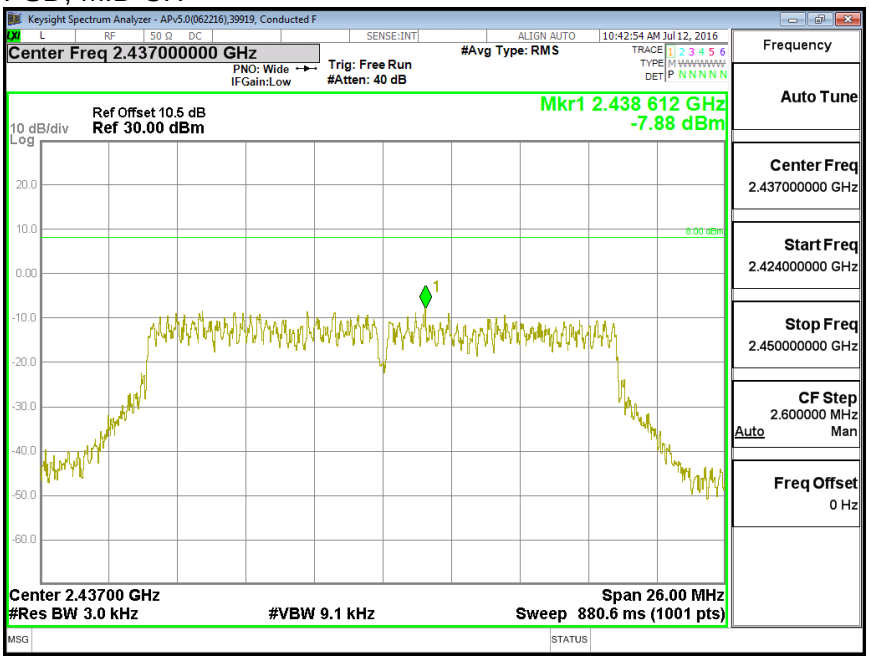
PSD, LOW CH 2



PSD, MID CH



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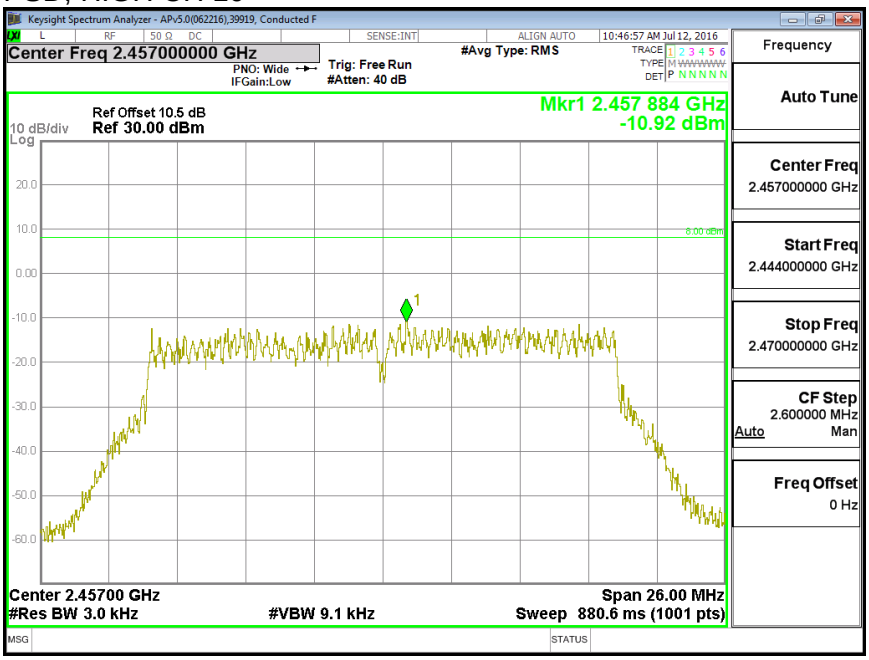
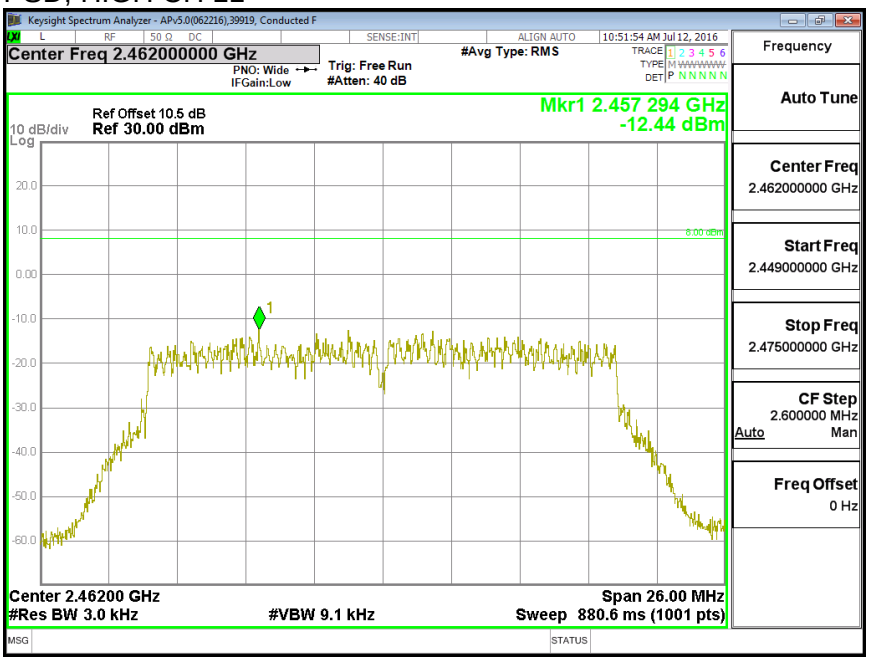
PSD, HIGH CH 10



PSD, HIGH CH 11



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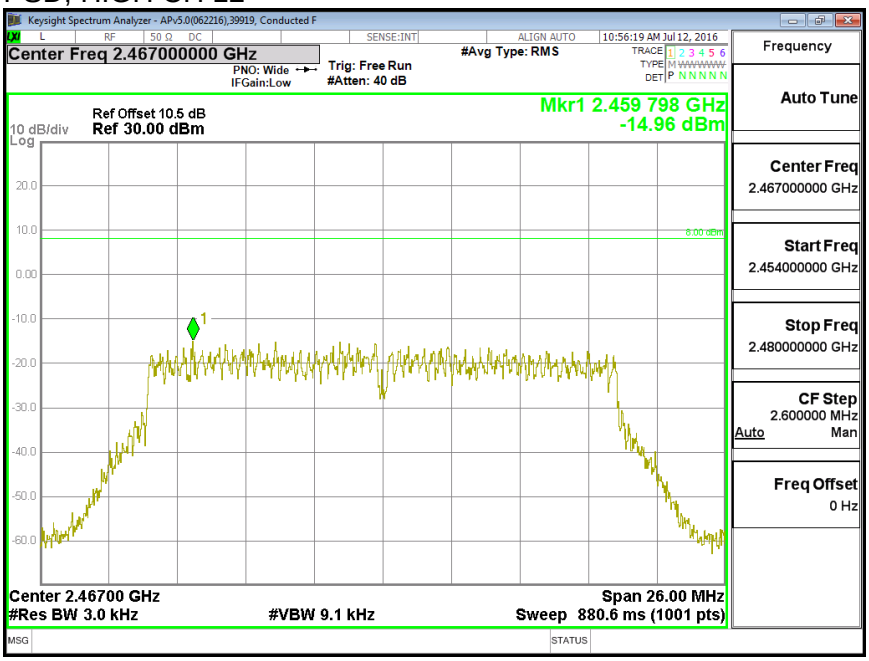

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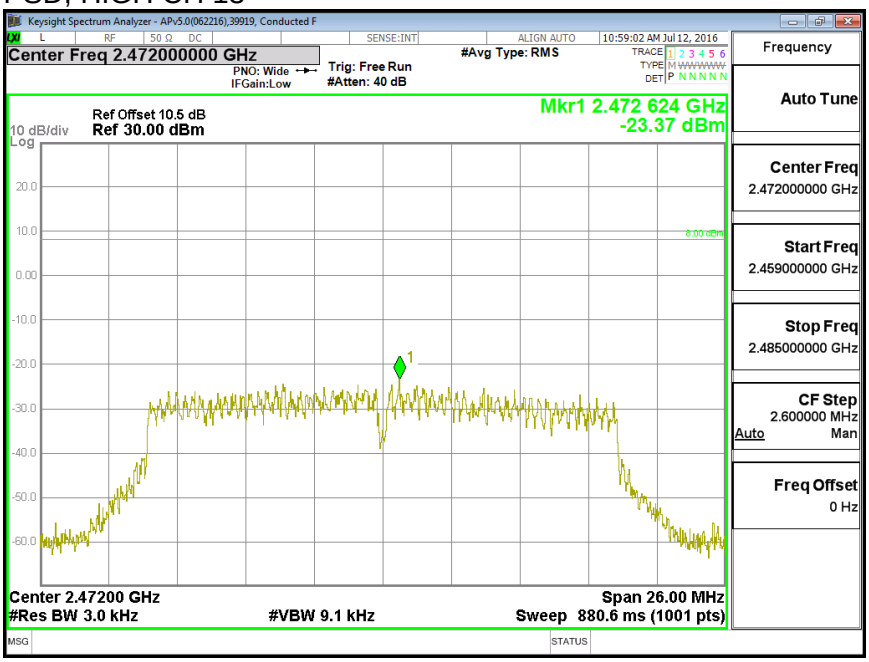

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8.7.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 (5.5)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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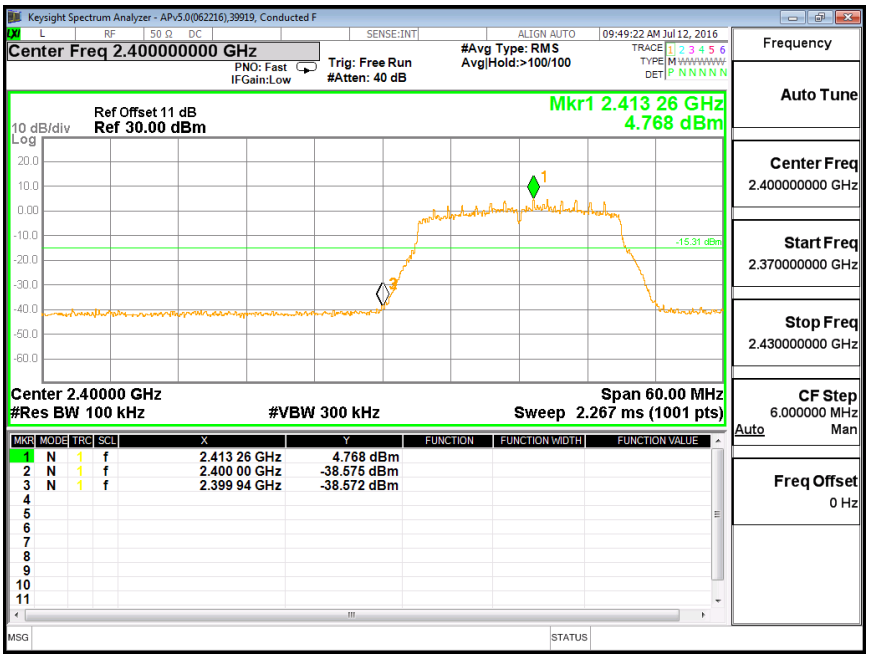
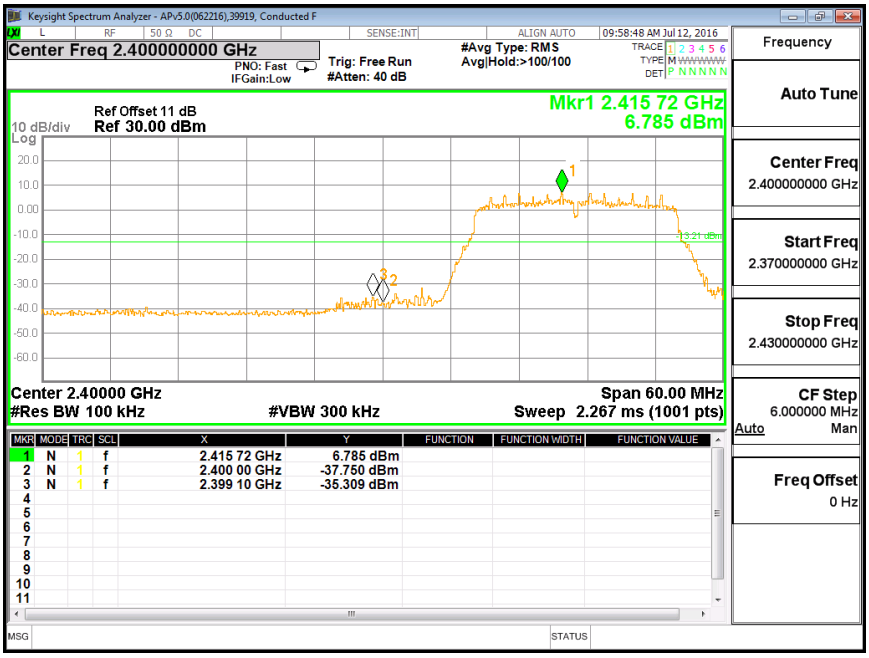
RESULTS

LOW CHANNEL BANDEDGE, Chain 0

AUTHORIZED BAND EDGE LOW CH 1



AUTHORIZED BAND EDGE LOW CH 2



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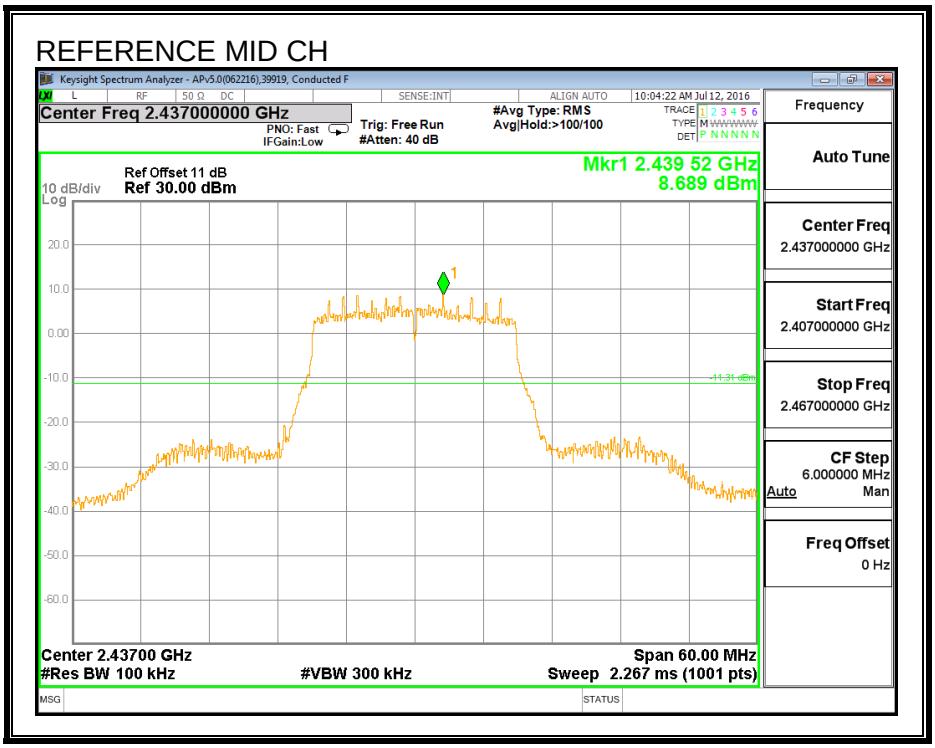
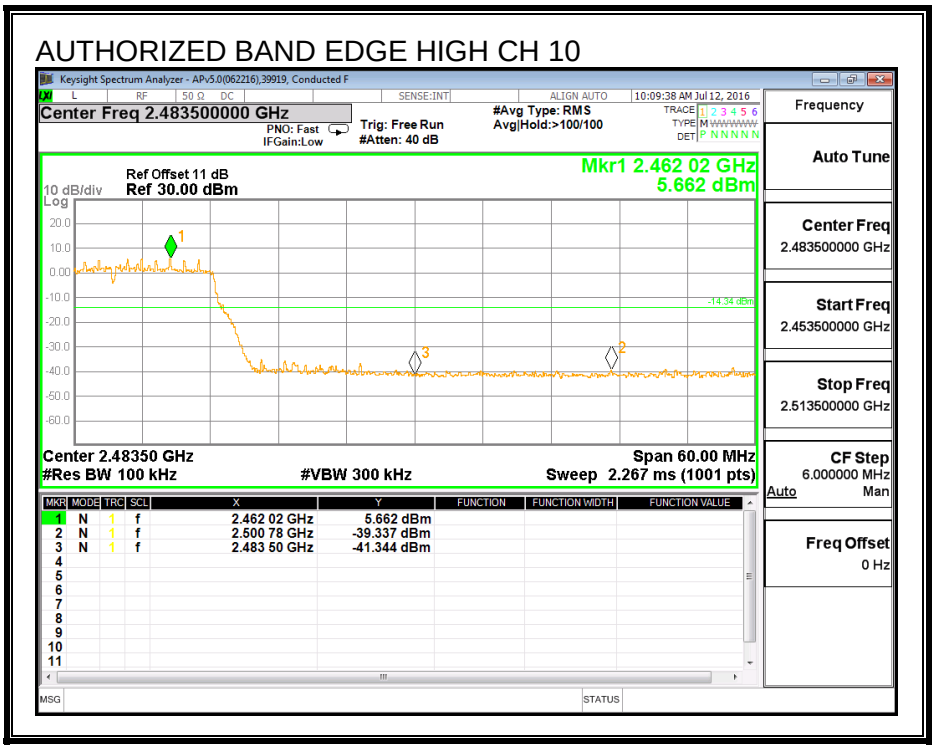
MID CHANNEL REFERENCE, Chain 0



HIGH CHANNEL BANDEDGE, Chain 0



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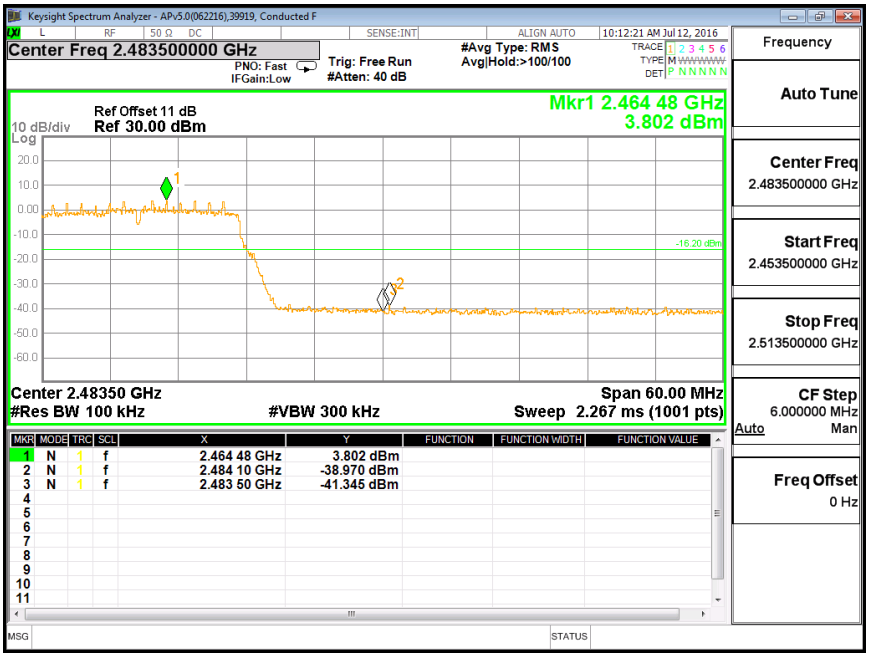
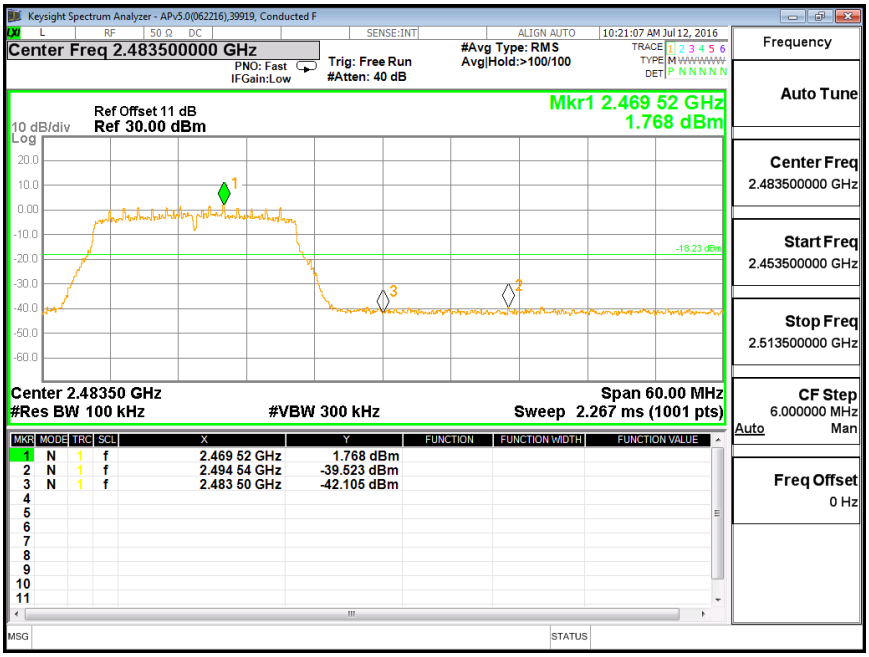
AUTHORIZED BAND EDGE HIGH CH 11



AUTHORIZED BAND EDGE HIGH CH 12



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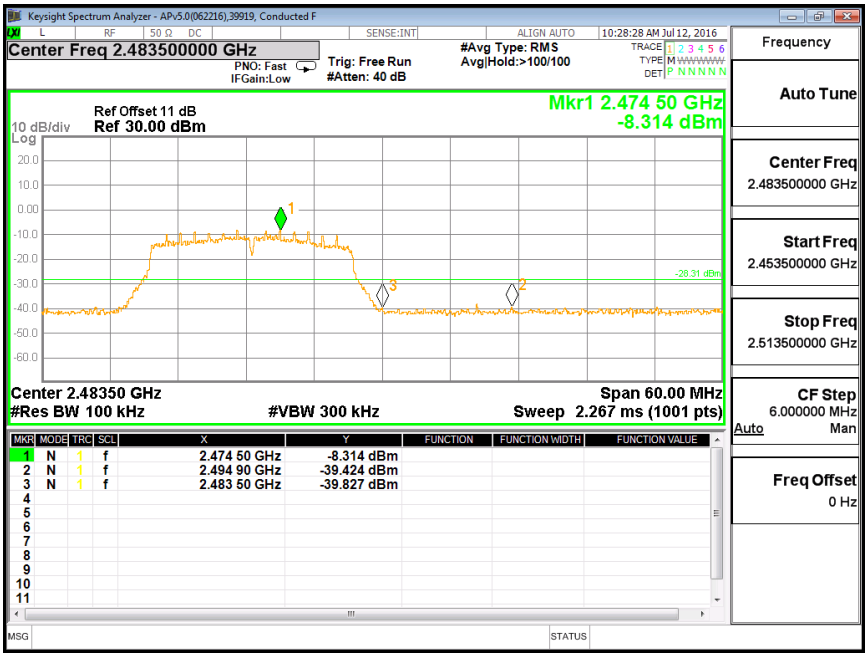
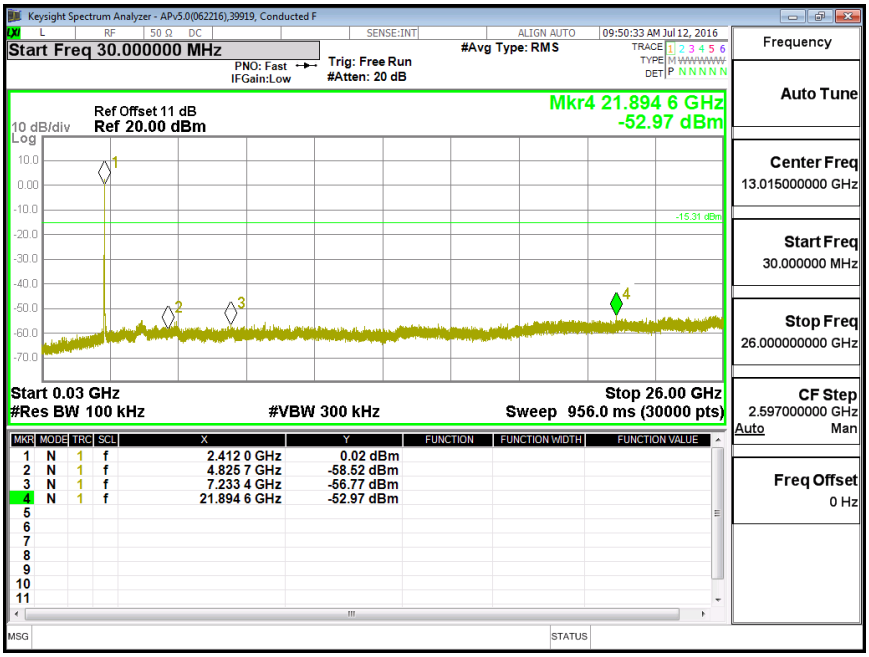
AUTHORIZED BAND EDGE HIGH CH 13



OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND LOW CH 1



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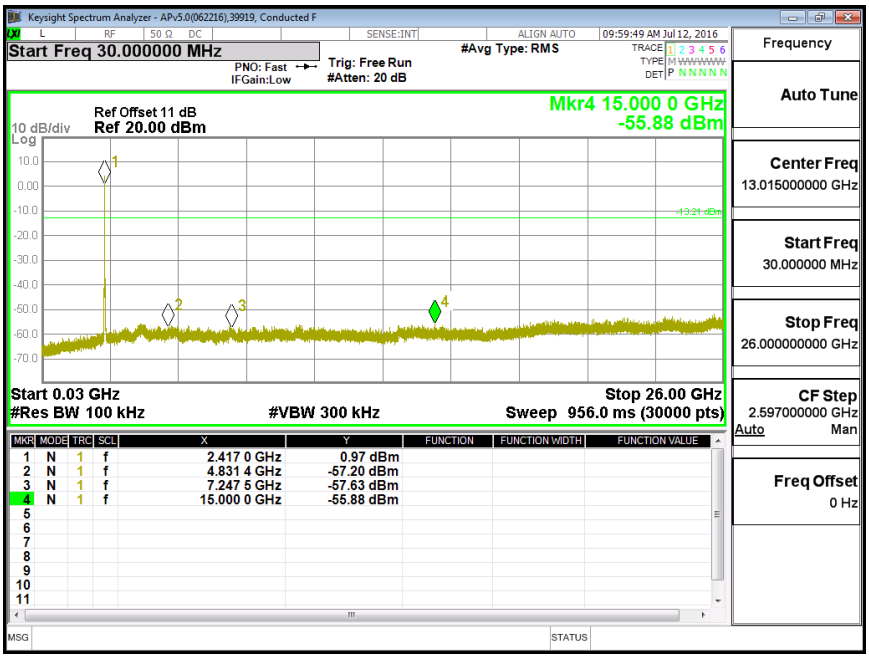
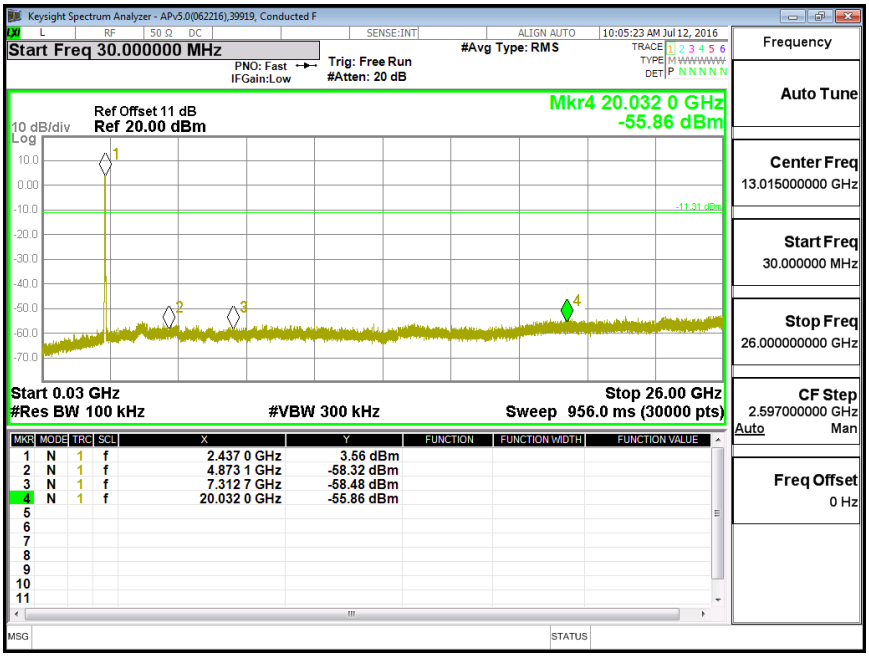
OUT OF BAND LOW CH 2



OUT OF BAND MID CH



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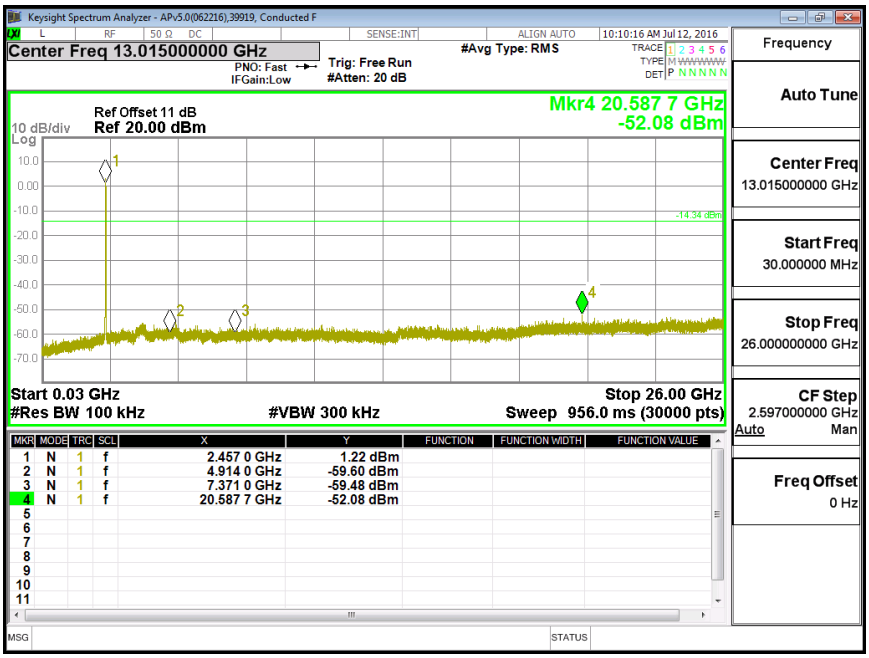
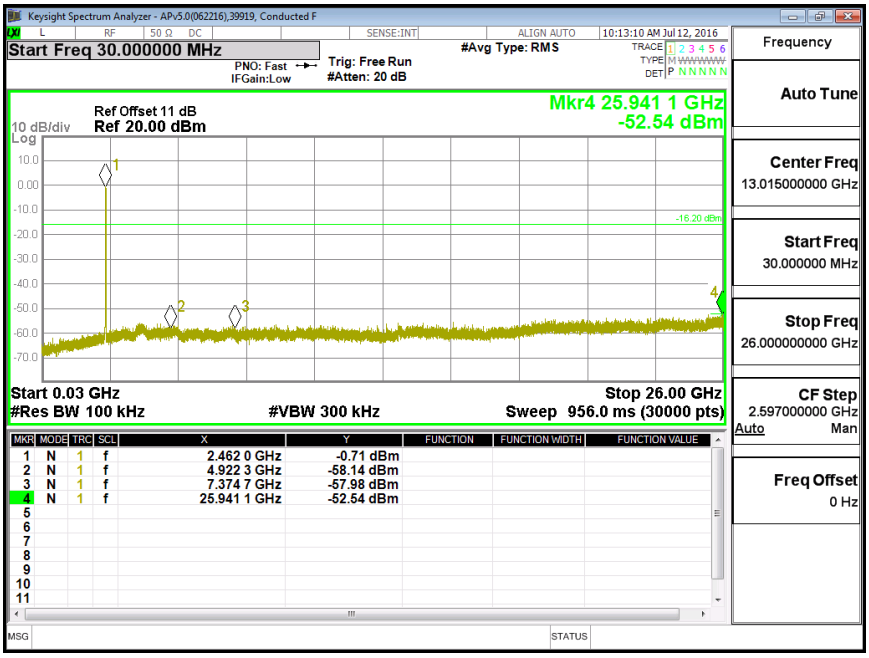
OUT OF BAND HIGH CH 10



OUT OF BAND HIGH CH 11



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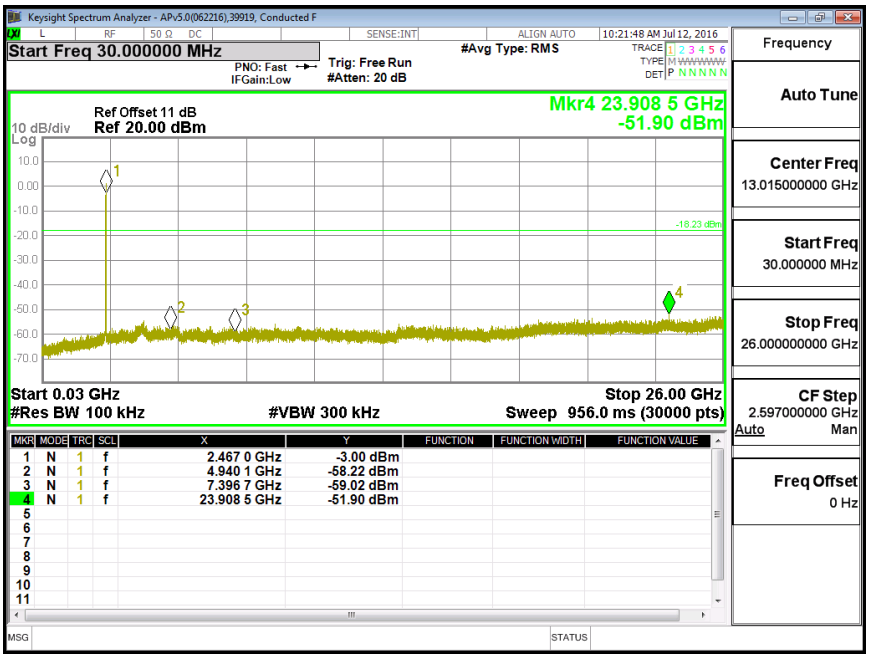
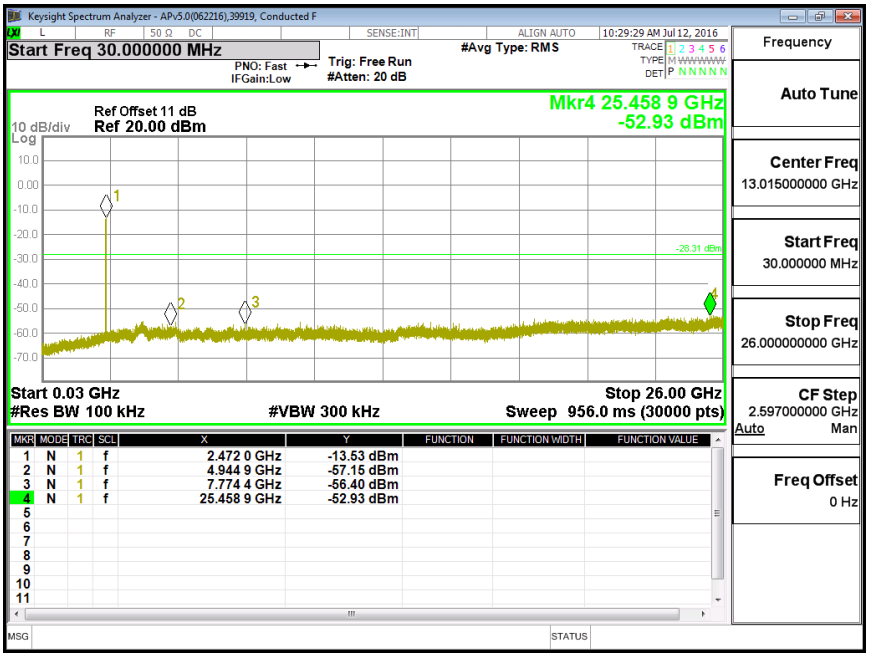
OUT OF BAND HIGH CH 12



OUT OF BAND HIGH CH 13



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