

8.4.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

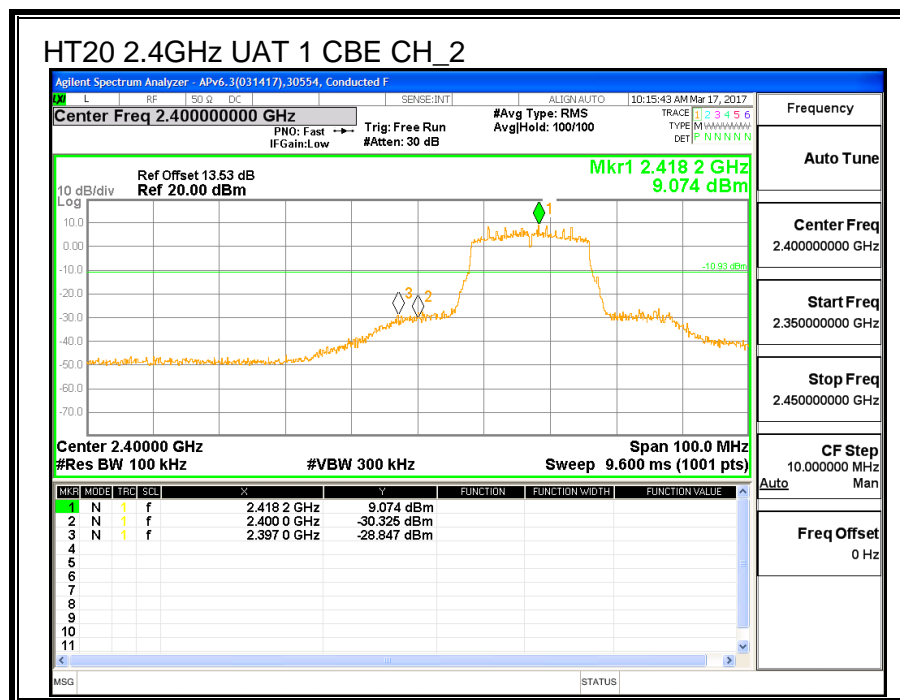
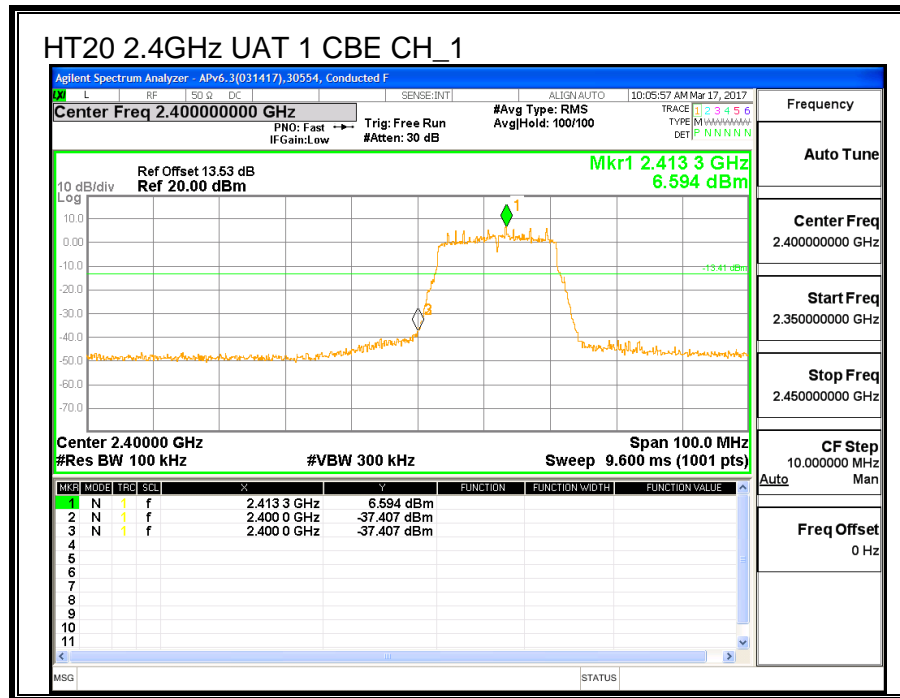
LIMITS

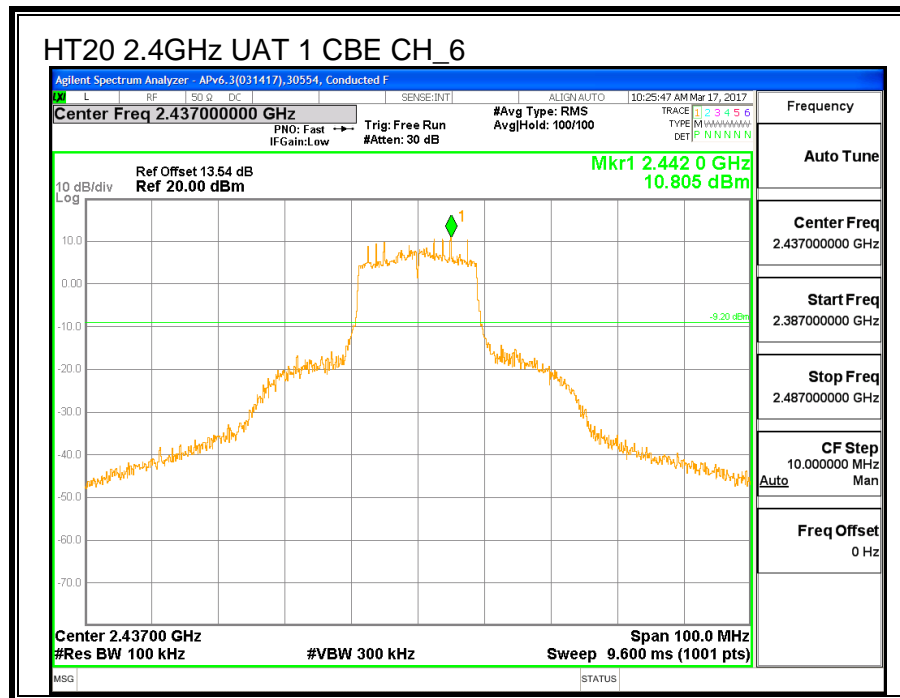
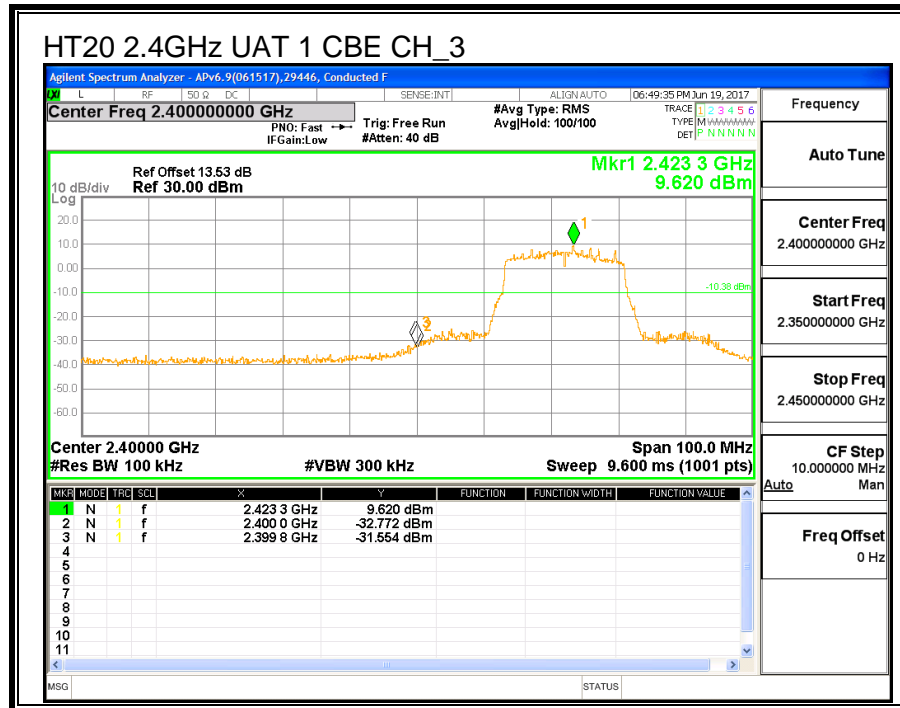
FCC §15.247 (d)

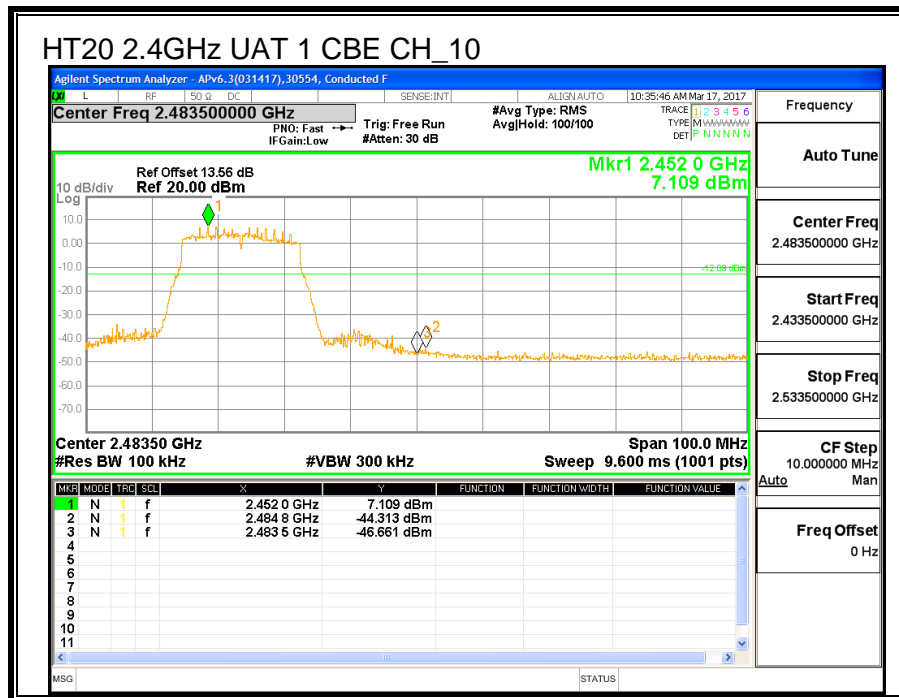
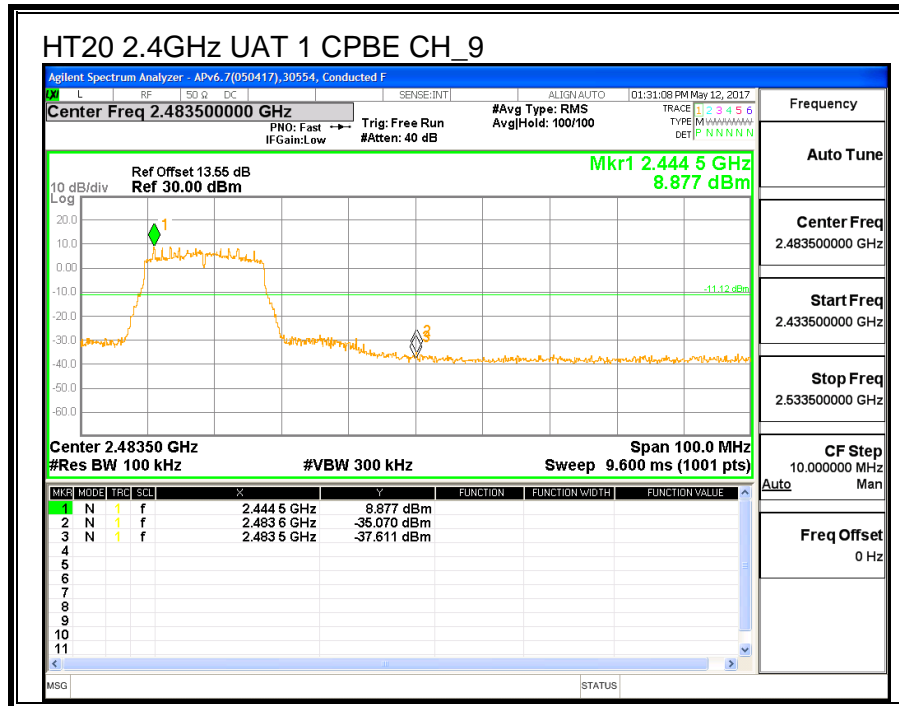
IC RSS-247 (5.5)

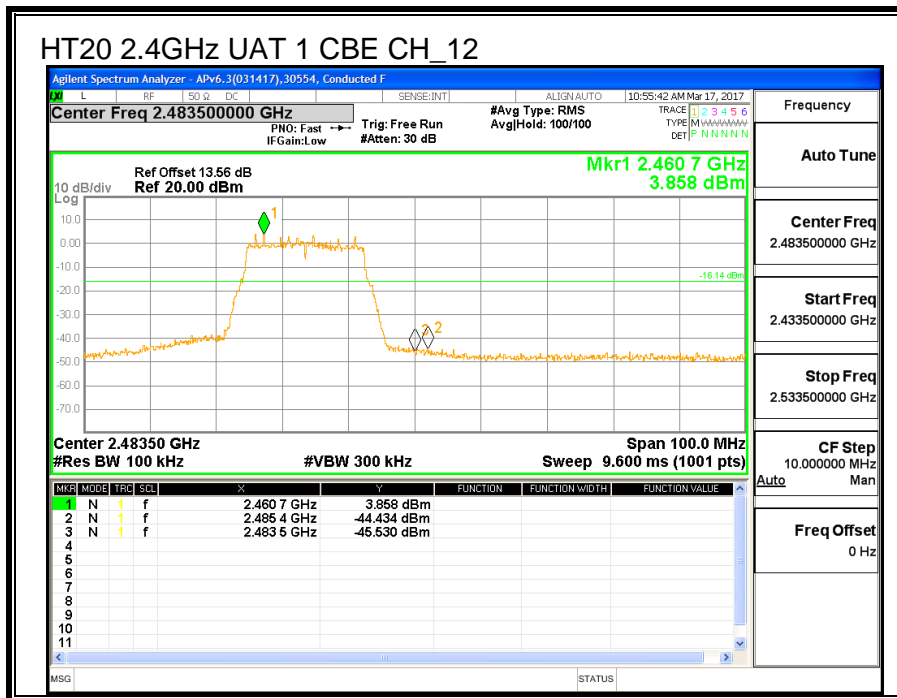
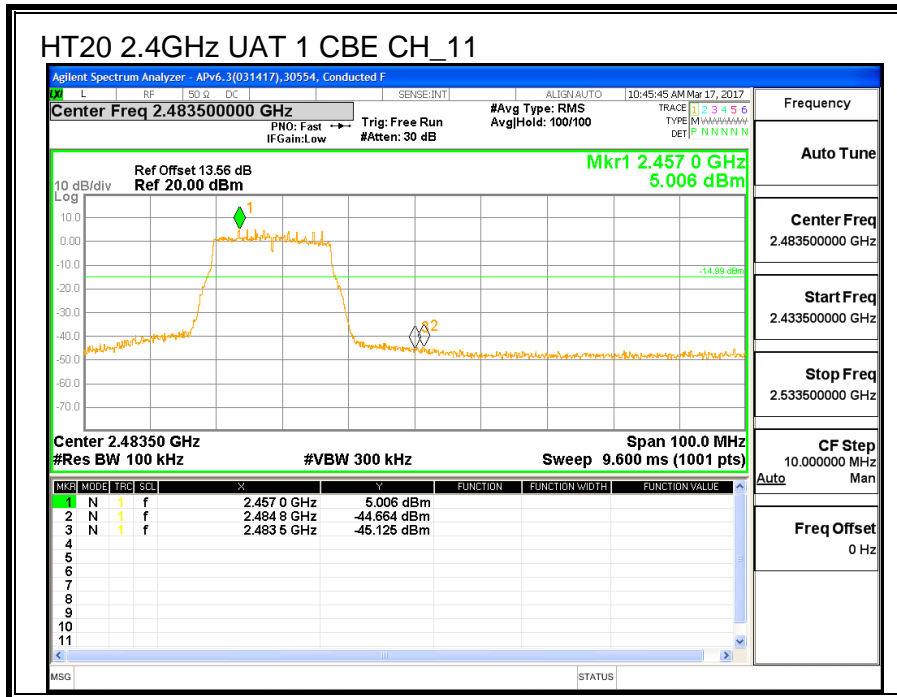
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

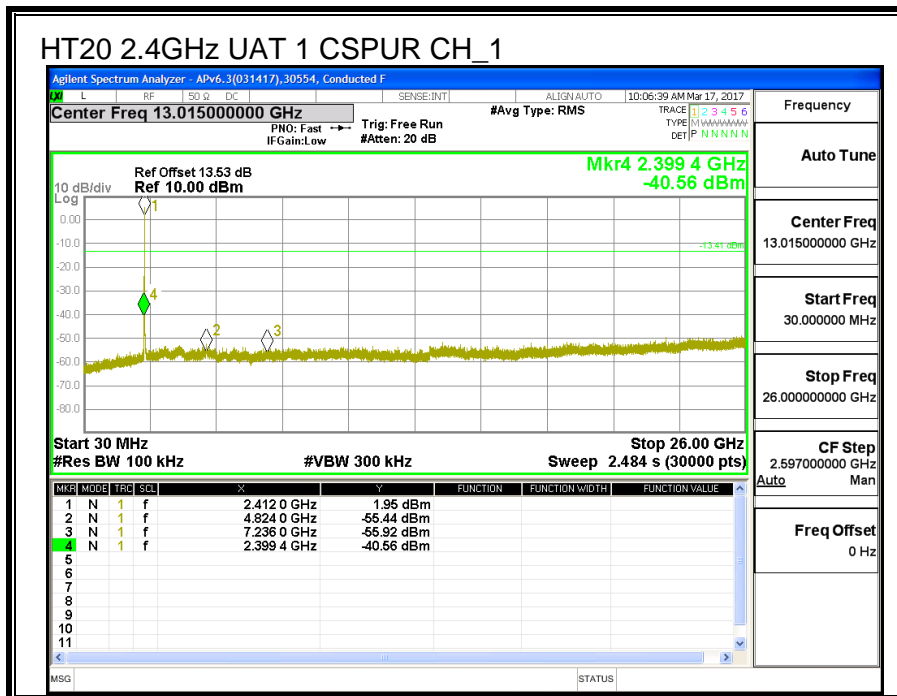
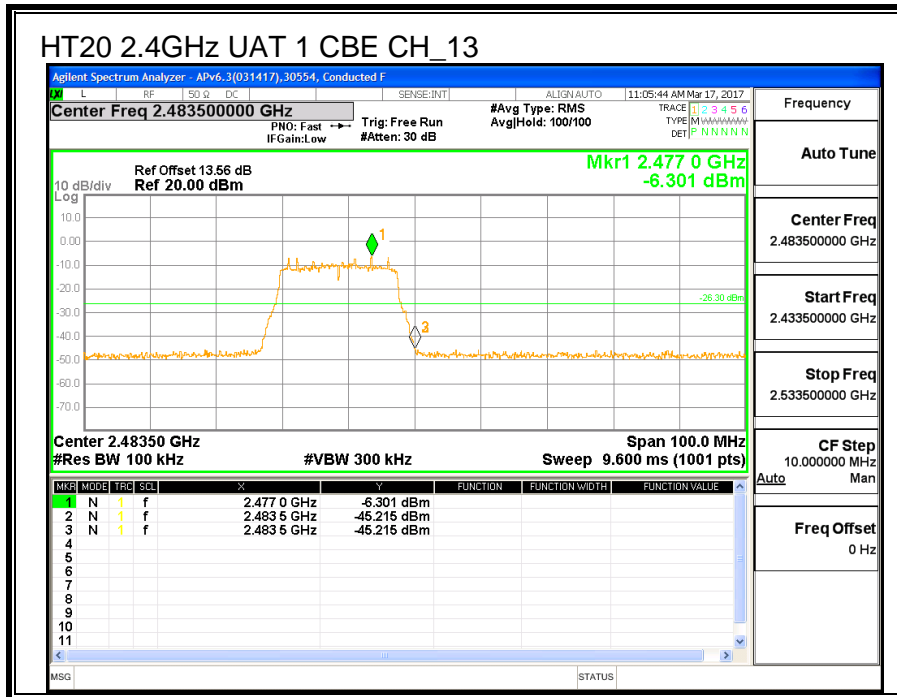
CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

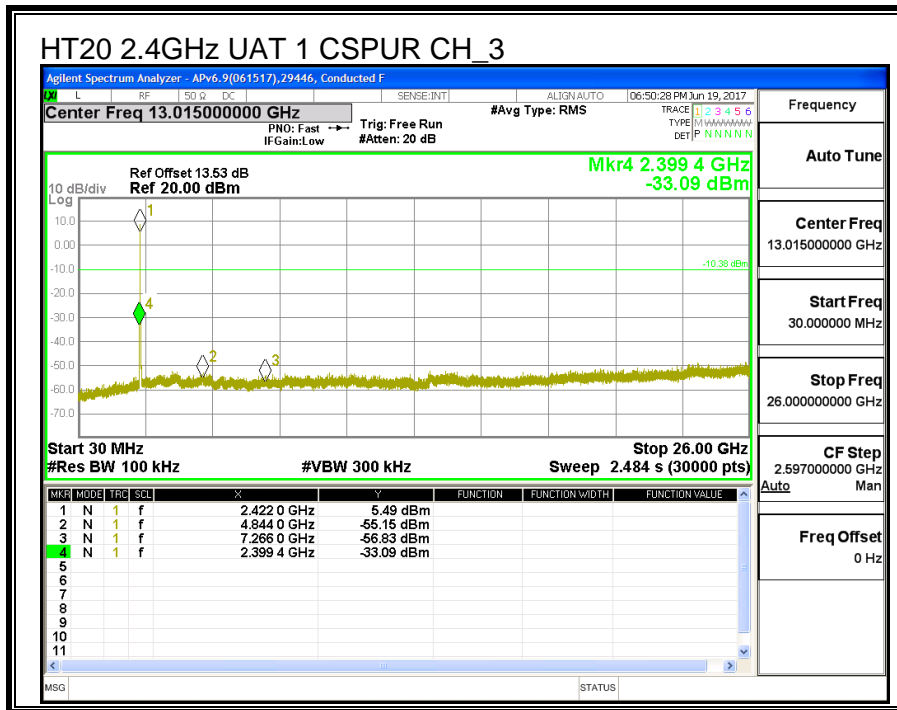
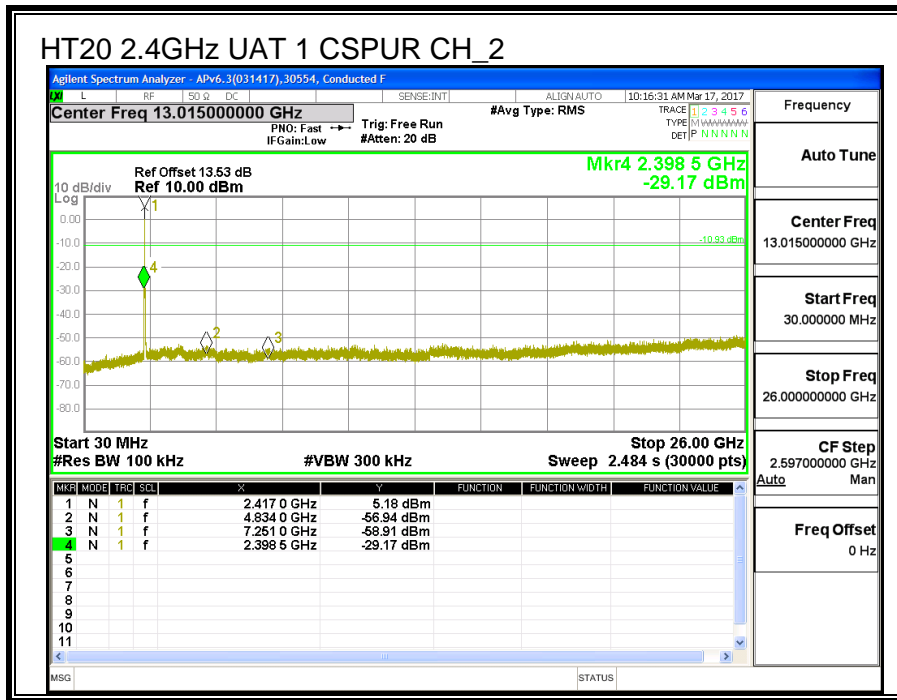


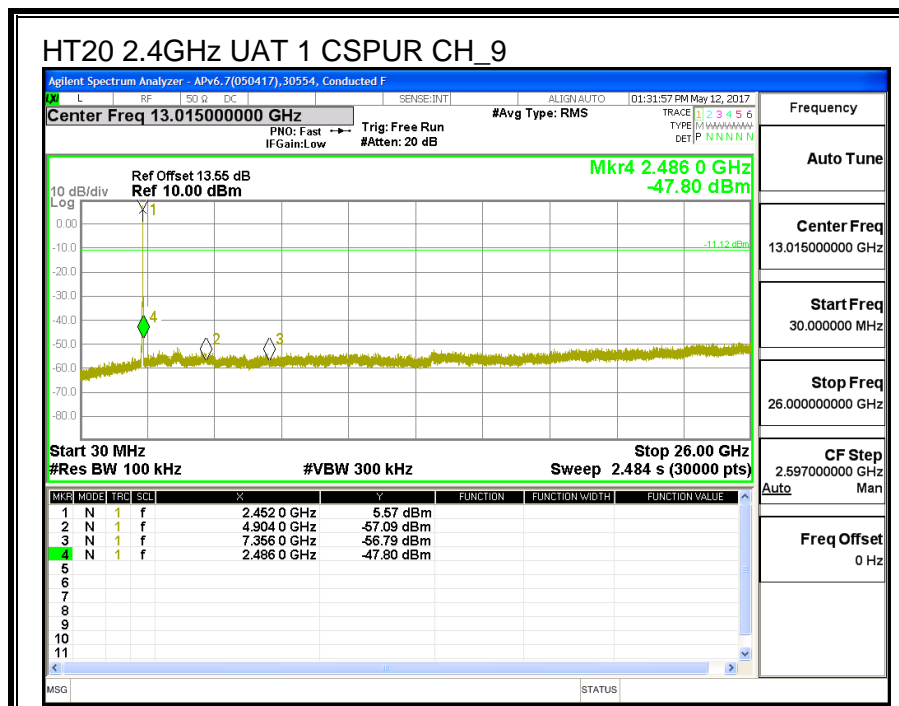
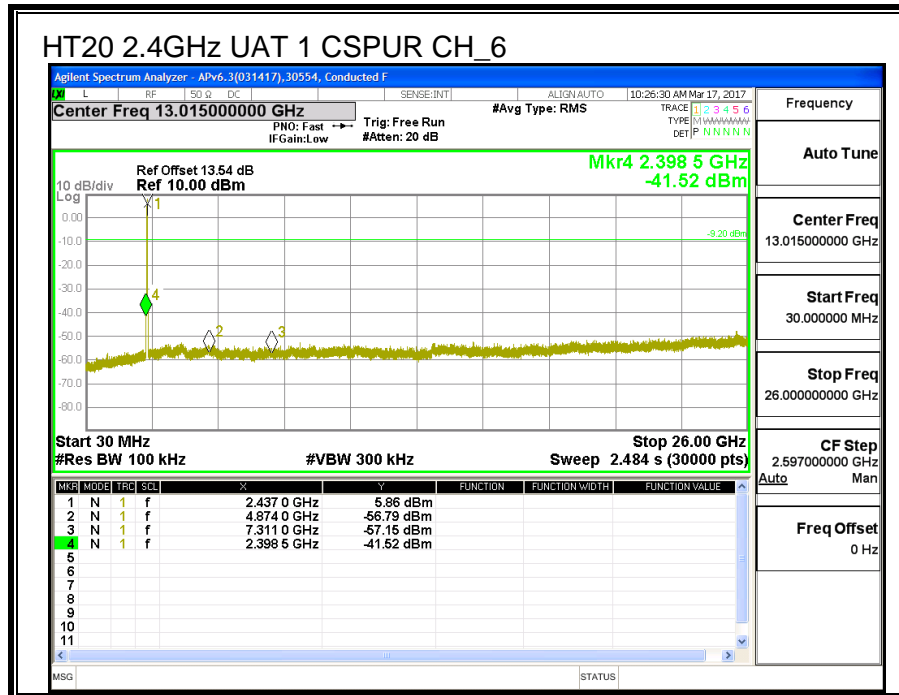


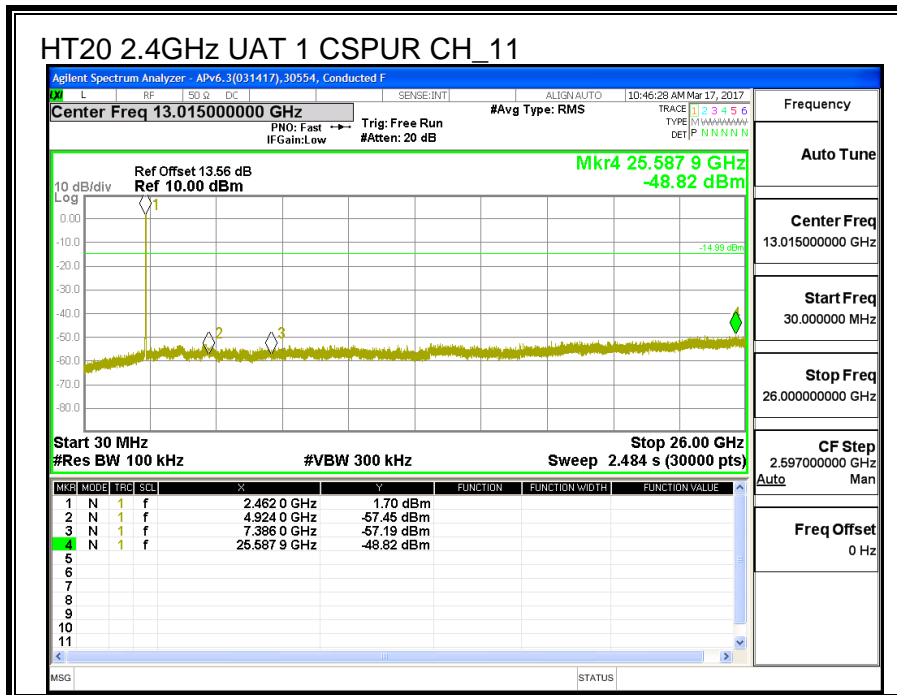
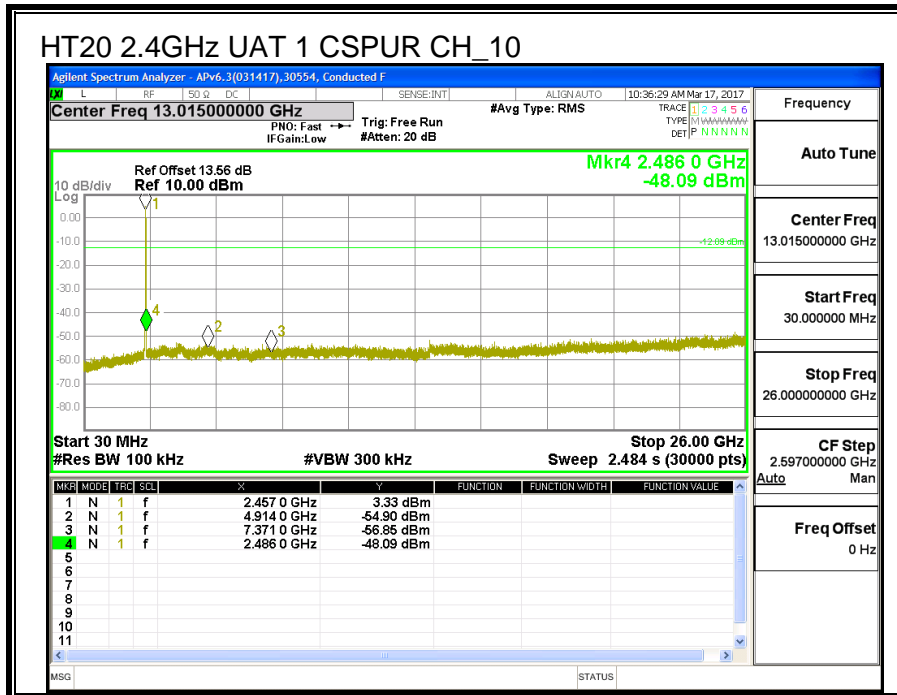


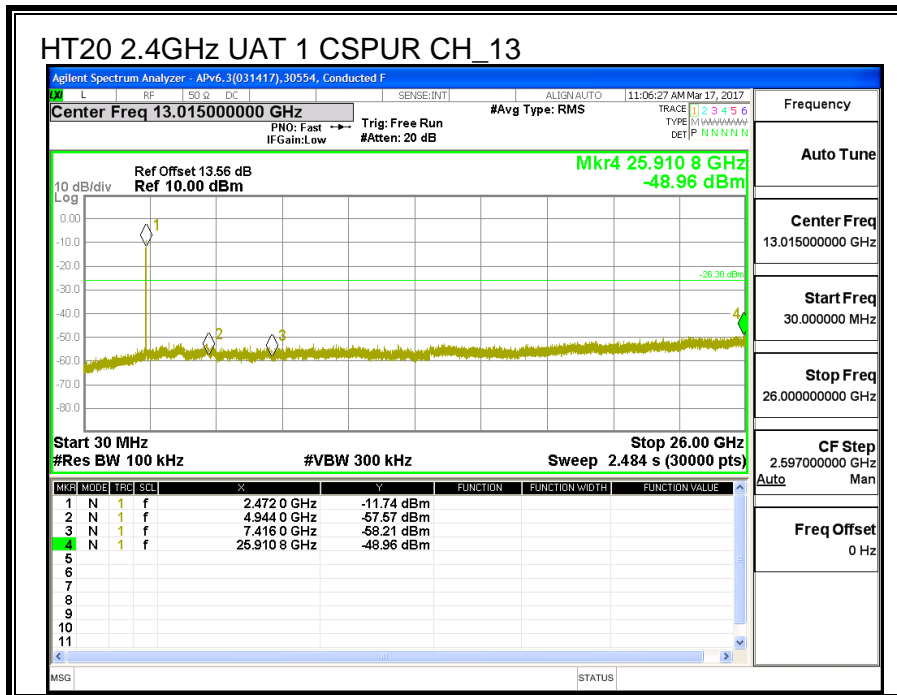
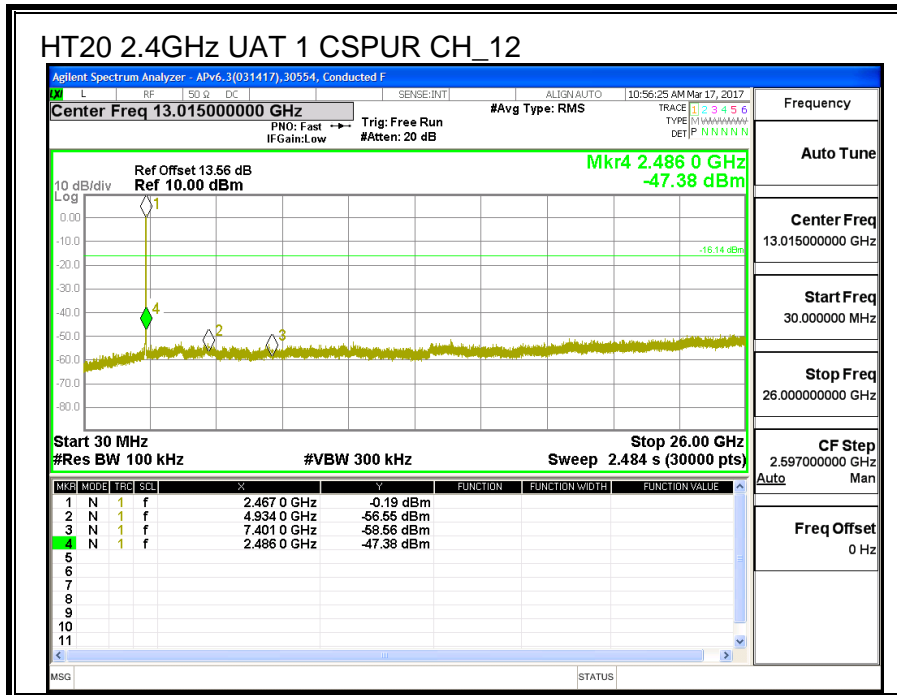












8.5. 11n HT20 LAT 3 SISO MODE IN THE 2.4GHz BAND

8.5.1. 6 dB BANDWIDTH

LIMITS

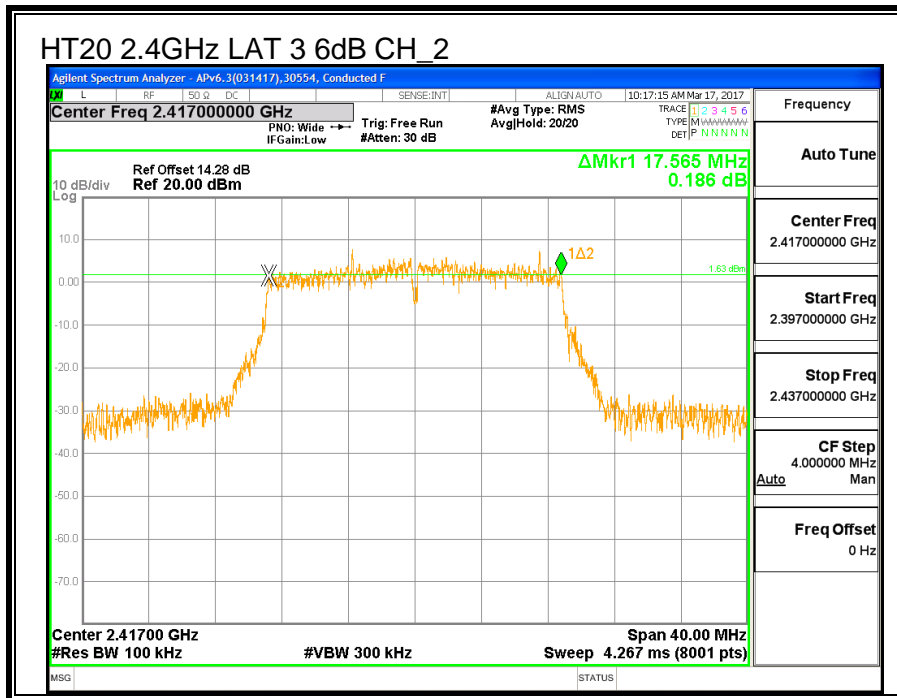
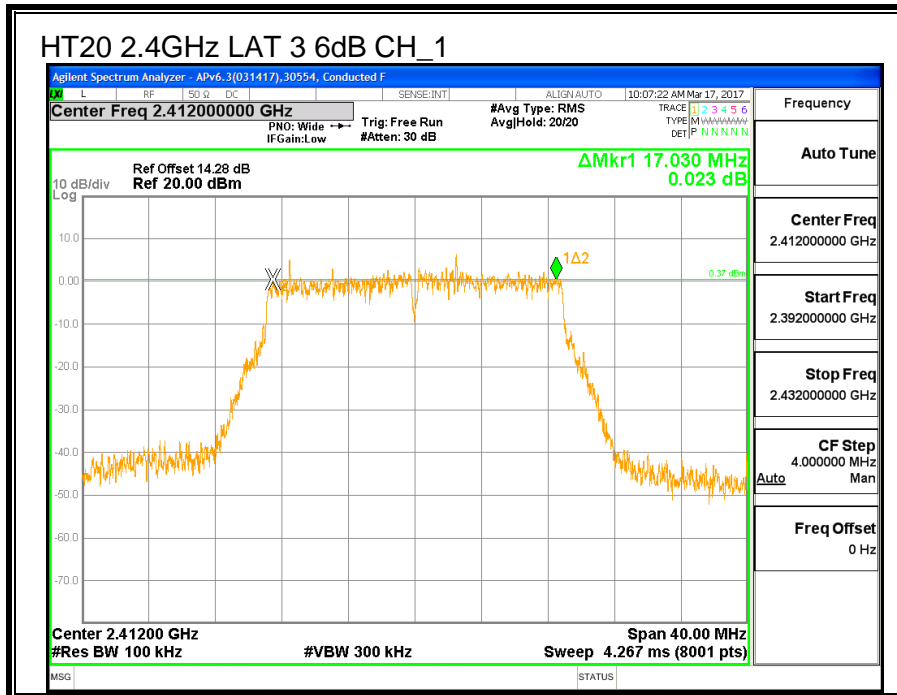
FCC §15.247 (a) (2)

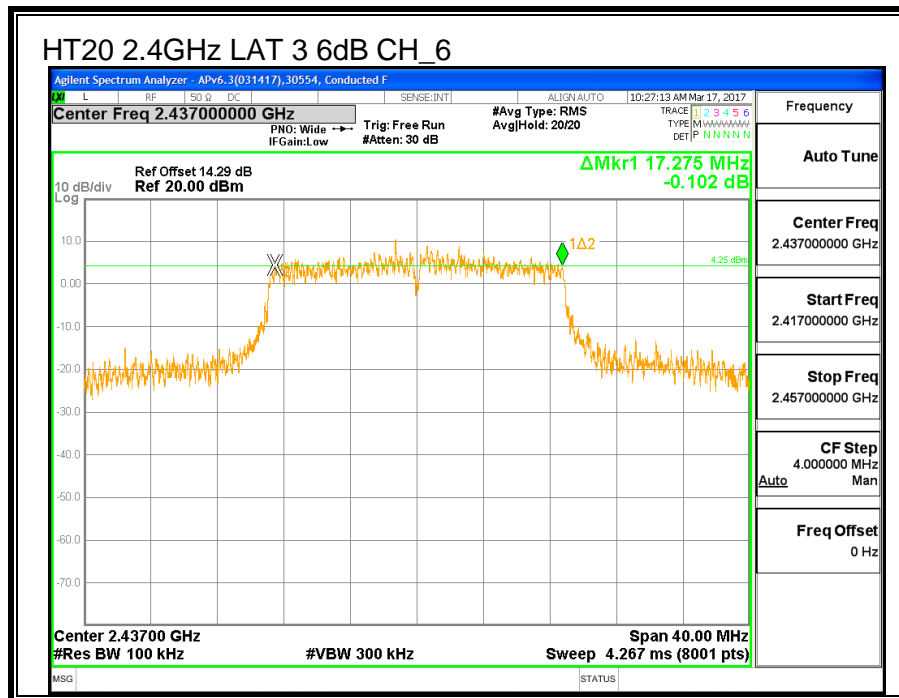
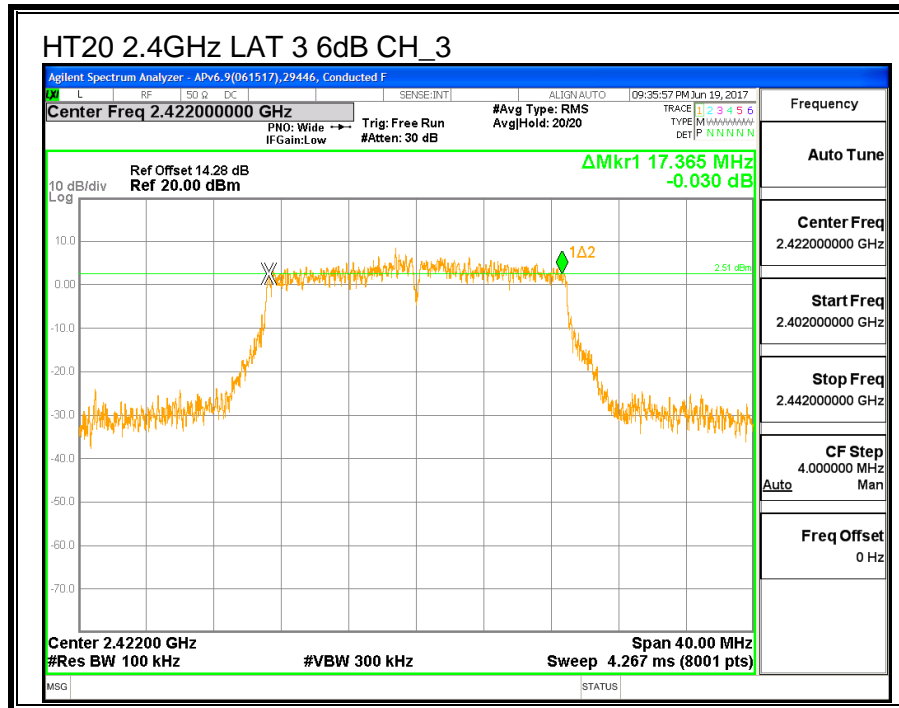
IC RSS-247 (5.2) (a)

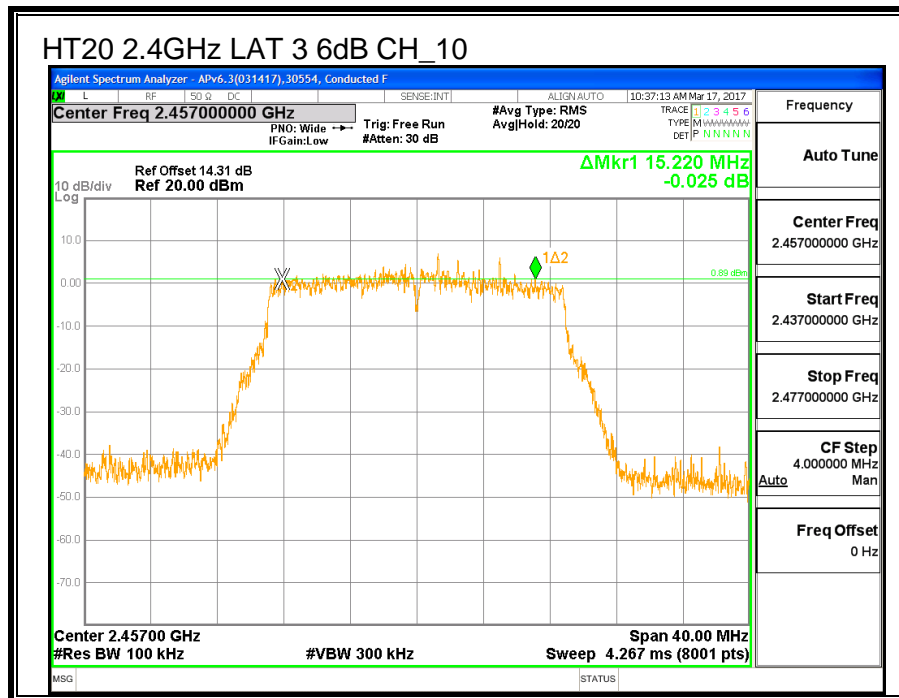
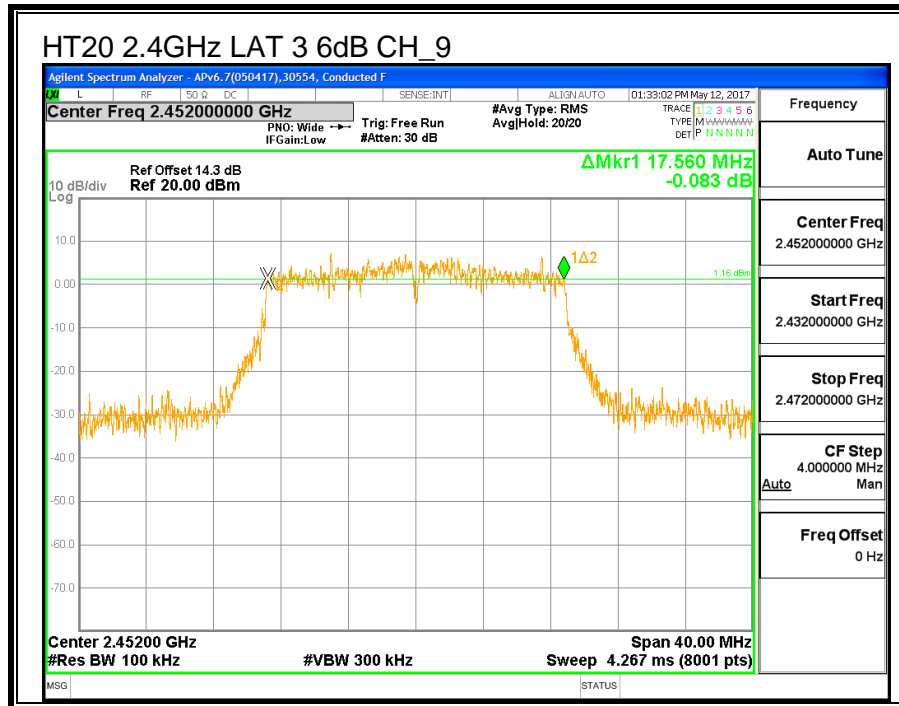
The minimum 6 dB bandwidth shall be at least 500 kHz.

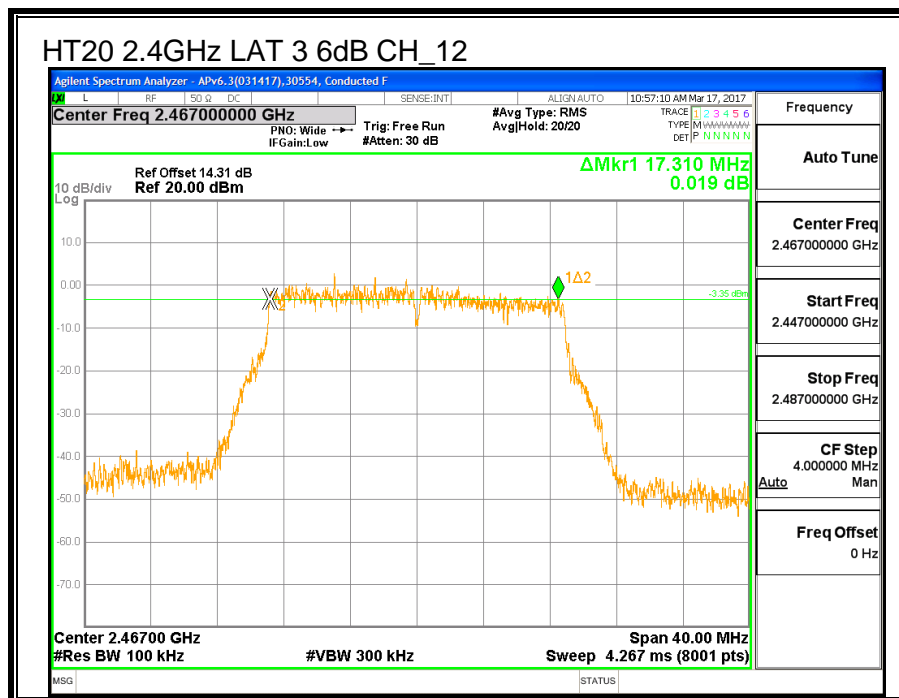
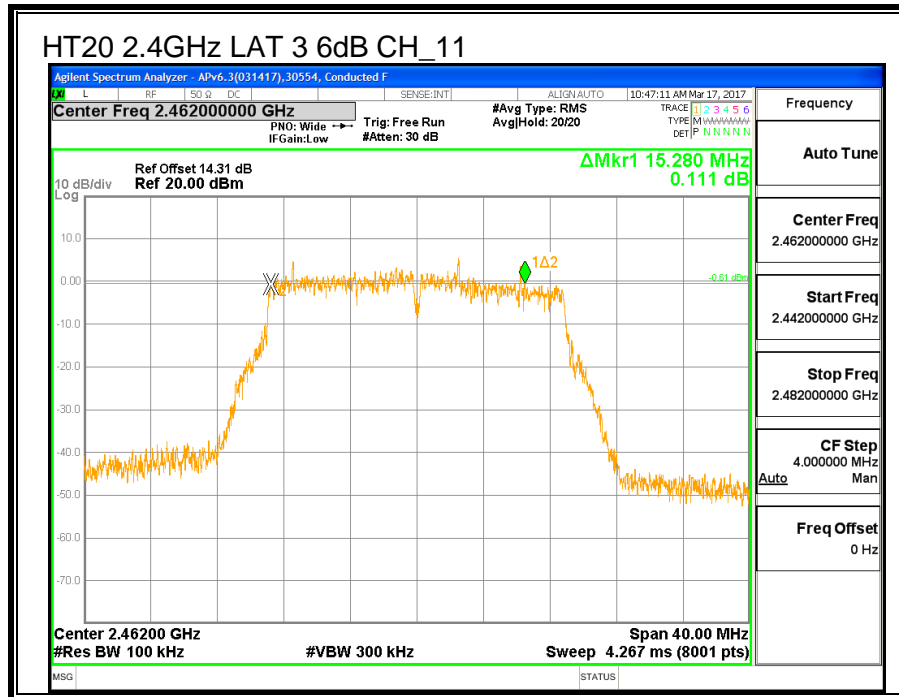
RESULTS

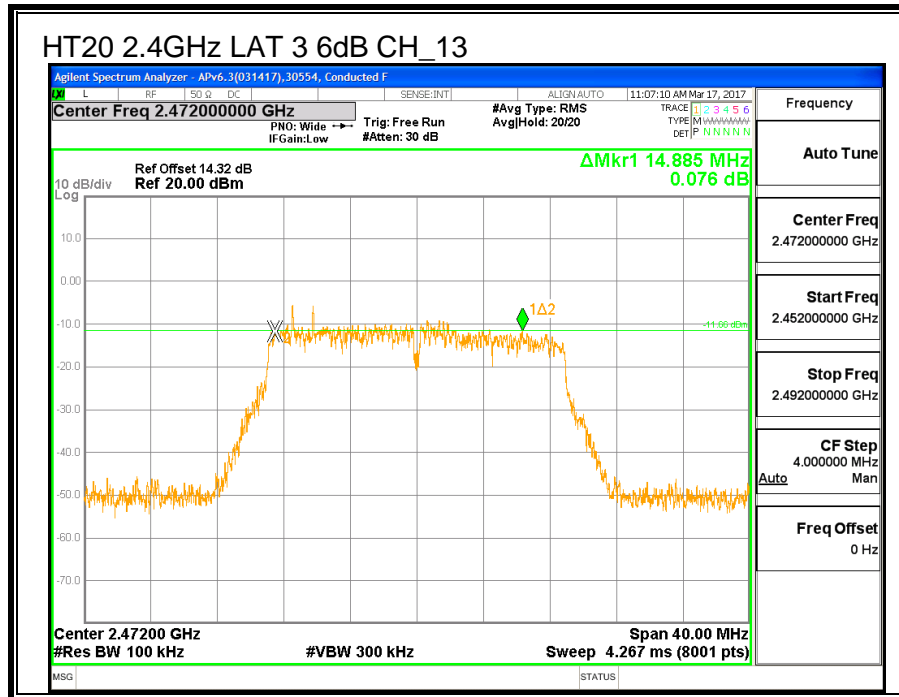
Channel	Frequency	6 dB BW LAT 3 (MHz)	Minimum Limit (MHz)
Low_1	2412	17.030	0.5
Low_2	2417	17.565	0.5
Low_3	2422	17.365	0.5
Middle_6	2437	17.275	0.5
High_9	2452	17.560	0.5
High_10	2457	15.220	0.5
High_11	2462	15.280	0.5
High_12	2467	17.310	0.5
High_13	2472	14.885	0.5











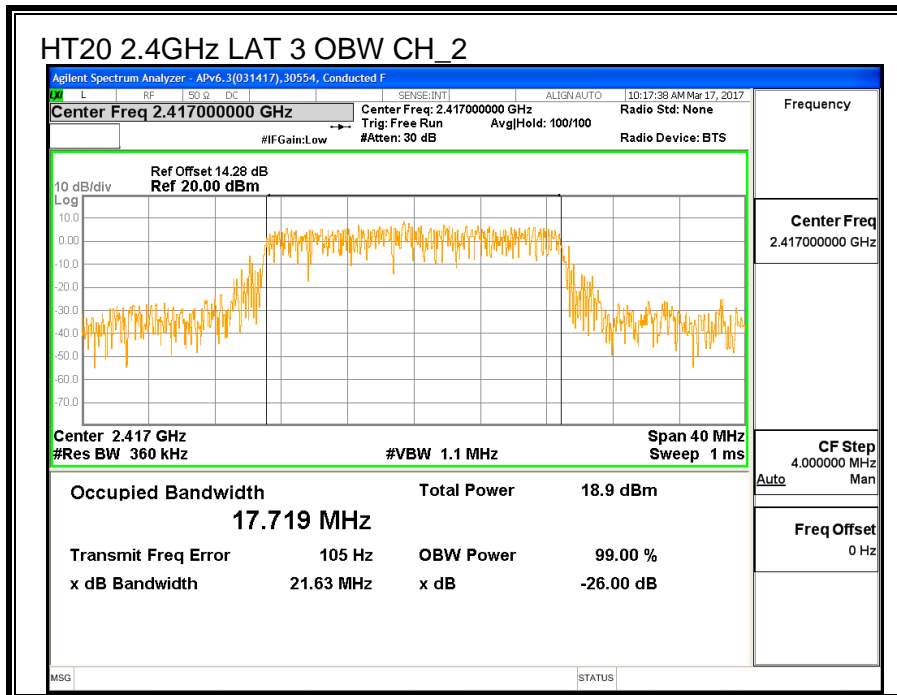
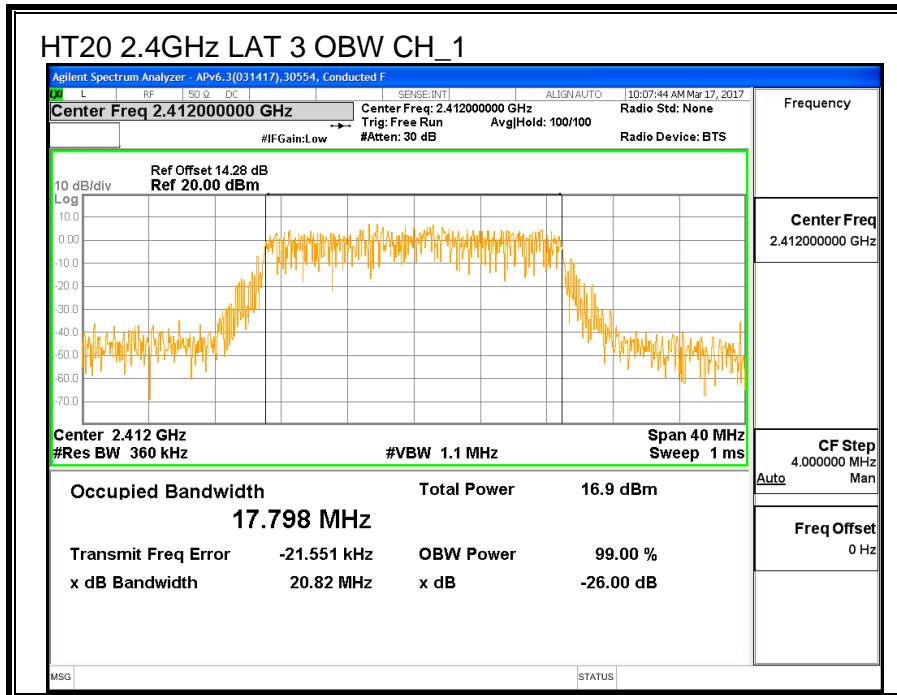
8.5.2. 99% BANDWIDTH

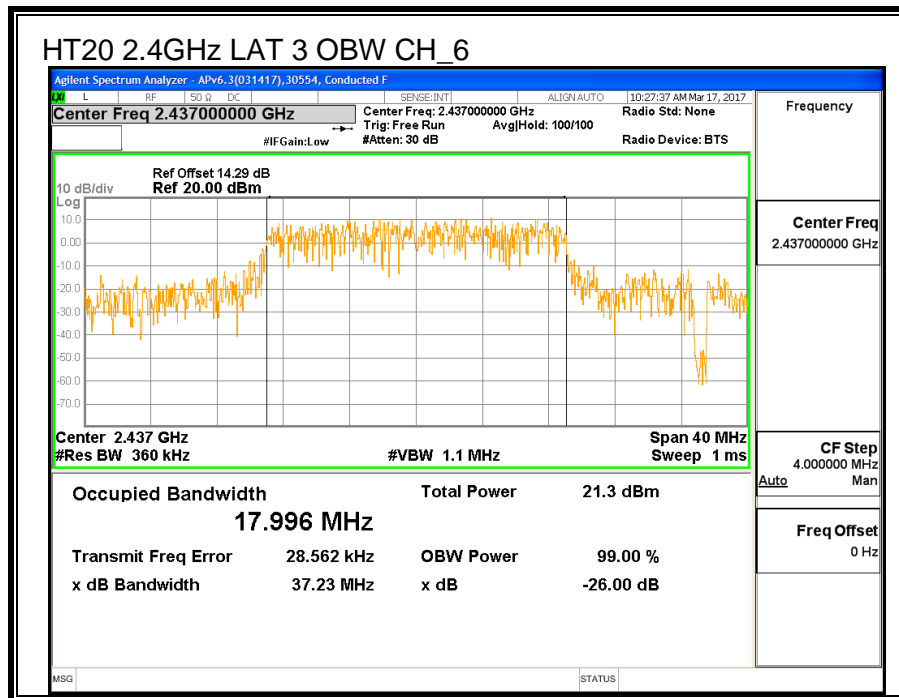
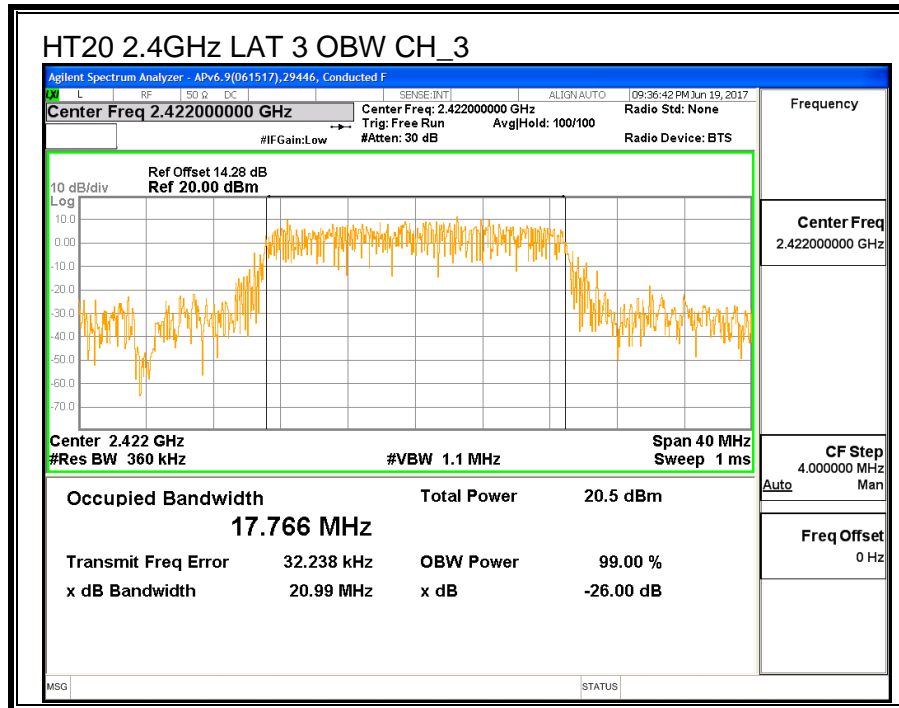
LIMITS

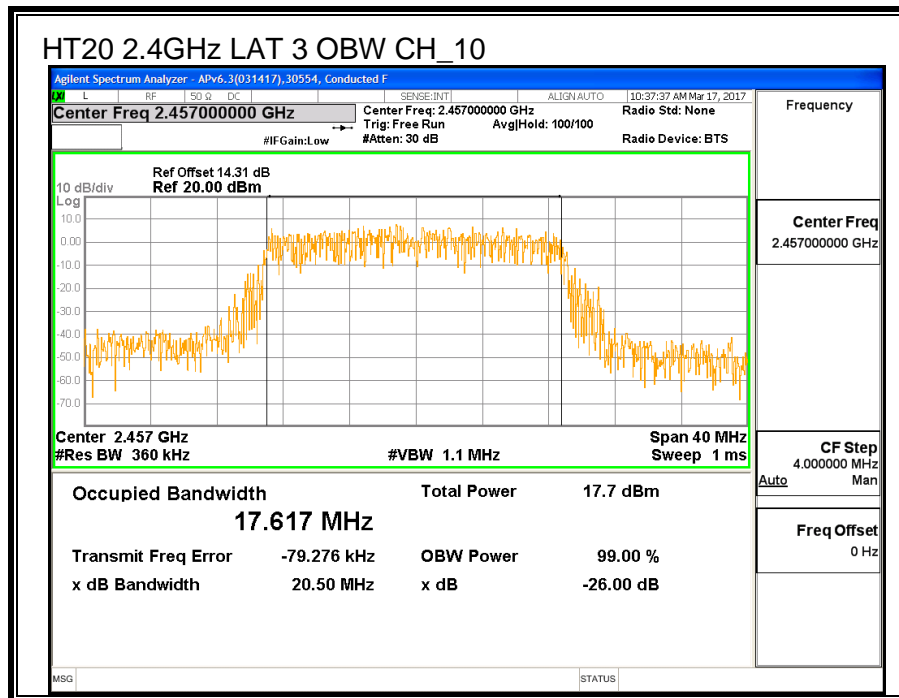
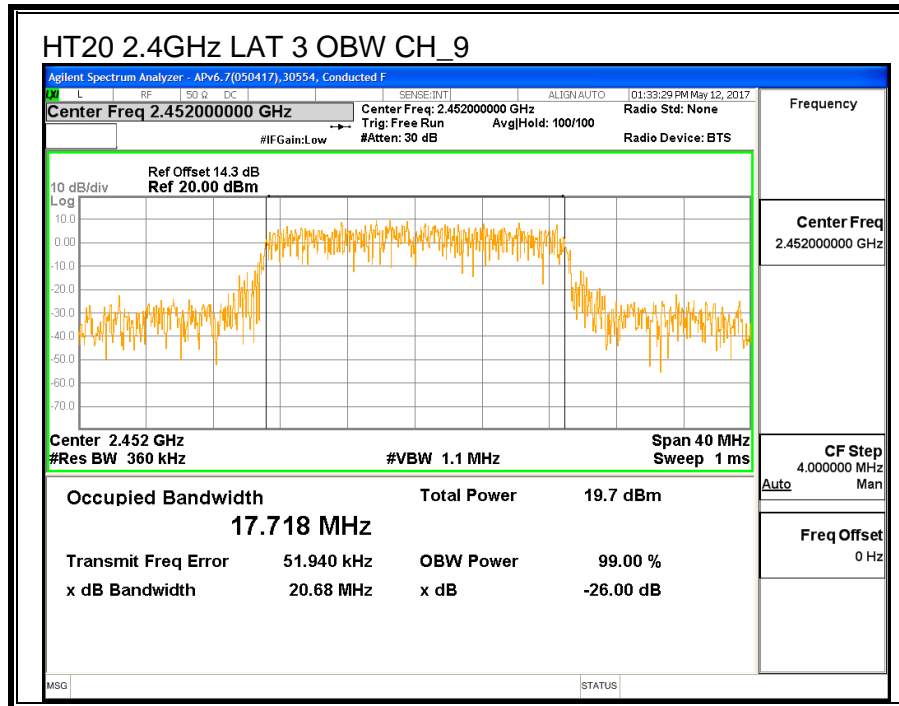
None; for reporting purposes only.

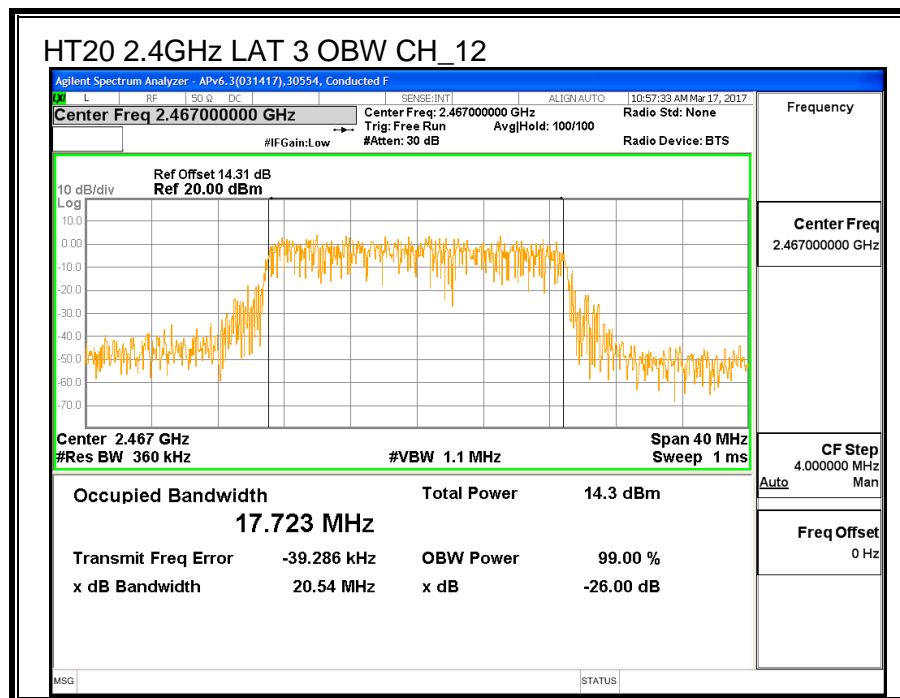
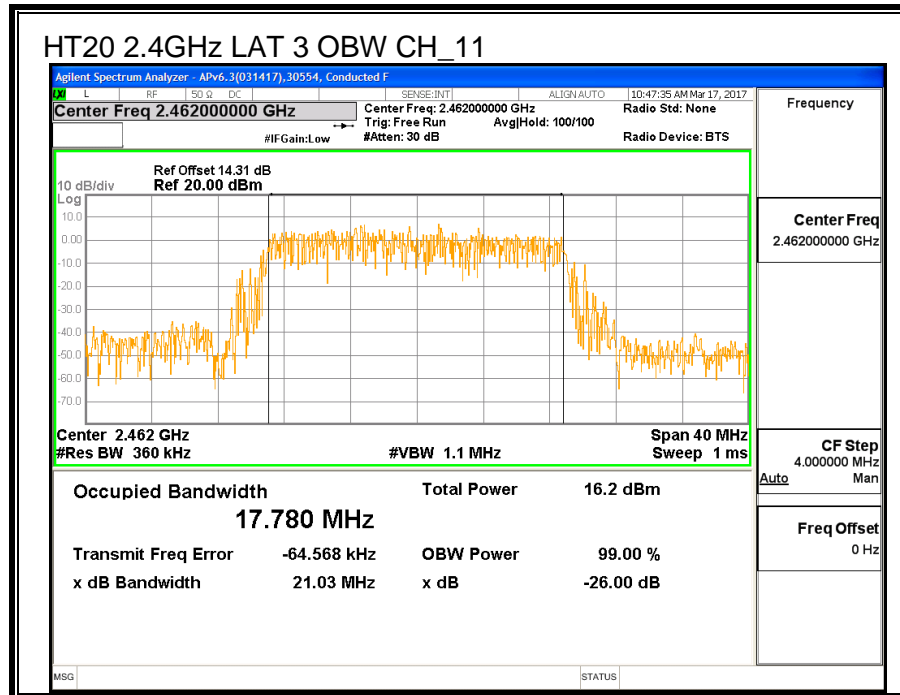
RESULTS

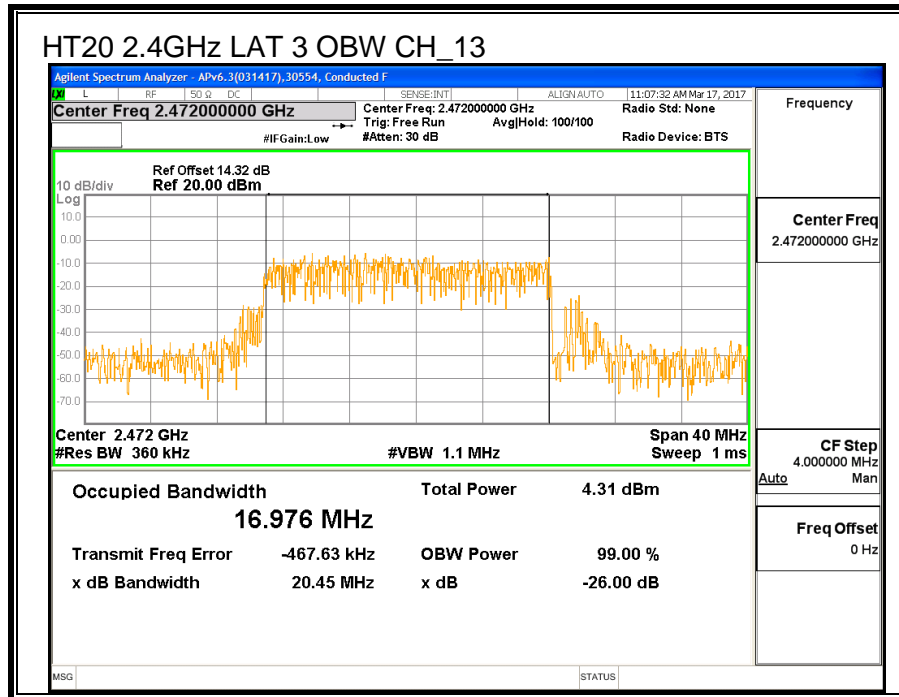
Channel	Frequency (MHz)	99% Bandwidth LAT 3 (MHz)
Low_1	2412	17.798
Low_2	2417	17.719
Low_3	2422	17.766
Middle_6	2437	17.996
Middle_9	2452	17.718
High_10	2457	17.617
High_11	2462	17.780
High_12	2467	17.723
High_13	2472	16.976











8.5.3. AVERAGE POWER

ID:	39472	Date:	6/11/17
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LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power LAT 3 (MHz)
Low_1	2412	15.94
Low_2	2417	18.41
Low_3	2422	19.92
Middle_6	2437	20.76
High_9	2452	19.95
High_10	2457	17.40
High_11	2462	15.83
High_12	2467	13.45
High_13	2472	3.89

8.5.4. OUTPUT POWER

ID:	39472	Date:	6/11/17
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LIMITS

FCC §15.247

IC RSS-247 (5.4) (d)

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.

RESULTS

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	-2.24	30.00	30	36	30.00
Low_2	2417	-2.24	30.00	30	36	30.00
Low_3	2422	-2.24	30.00	30	36	30.00
Mid	2437	-2.24	30.00	30	36	30.00
High_9	2452	-2.24	30.00	30	36	30.00
High_10	2457	-2.24	30.00	30	36	30.00
High_11	2462	-2.24	30.00	30	36	30.00
High_12	2467	-2.24	30.00	30	36	30.00
High_13	2472	-2.24	30.00	30	36	30.00

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

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low_1	2412	23.70	23.70	30.00	-6.30
Low_2	2417	25.22	25.22	30.00	-4.78
Low_3	2422	25.24	25.24	30.00	-4.76
Mid	2437	27.49	27.49	30.00	-2.51
High_9	2452	26.60	26.60	30.00	-3.40
High_10	2457	24.05	24.05	30.00	-5.95
High_11	2462	22.69	22.69	30.00	-7.31
High_12	2467	21.09	21.09	30.00	-8.91
High_13	2472	10.40	10.40	30.00	-19.60

8.5.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (b)

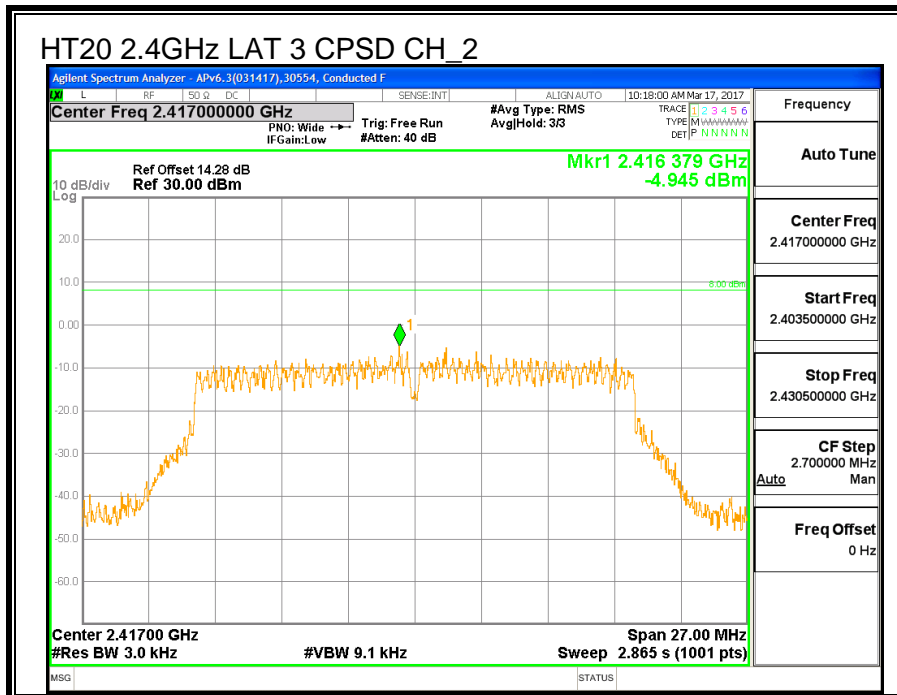
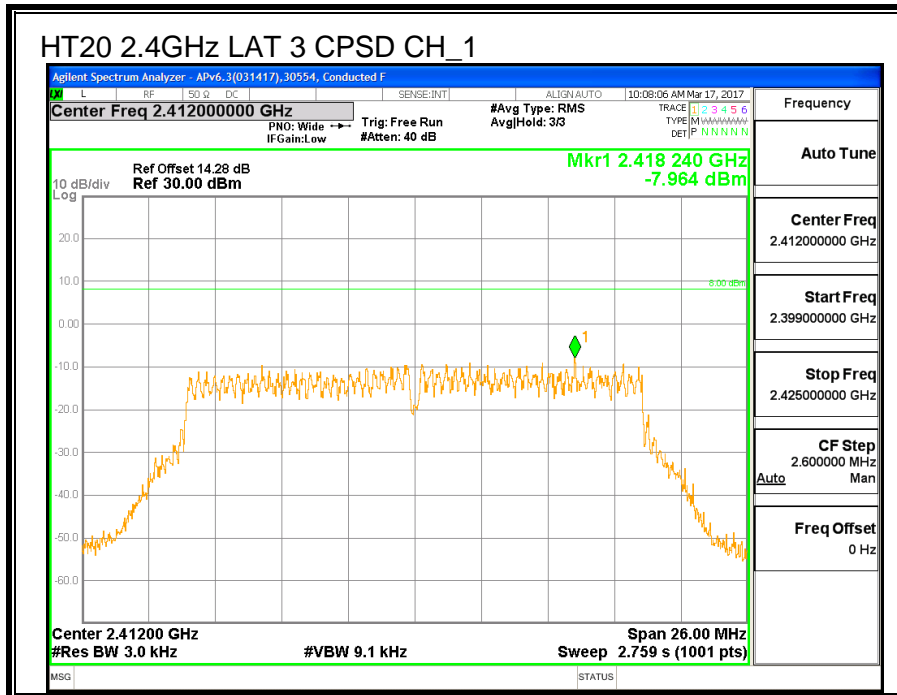
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

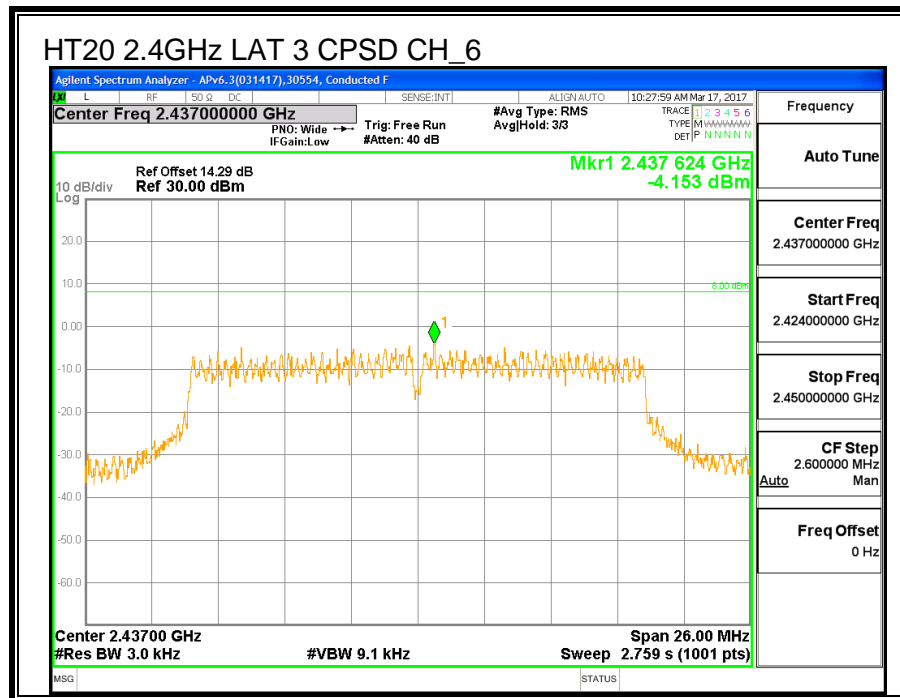
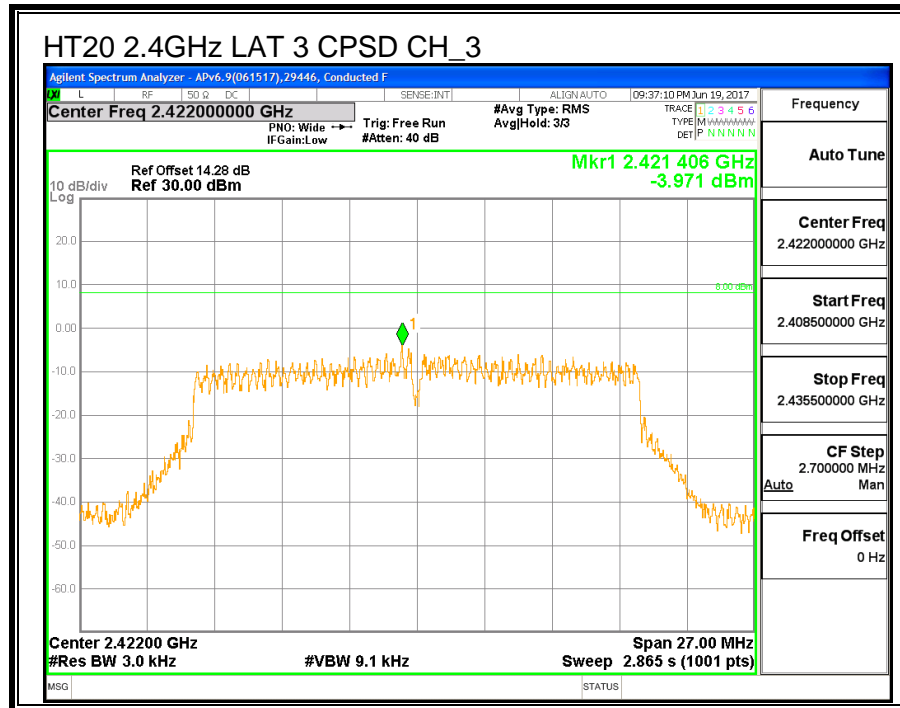
RESULTS

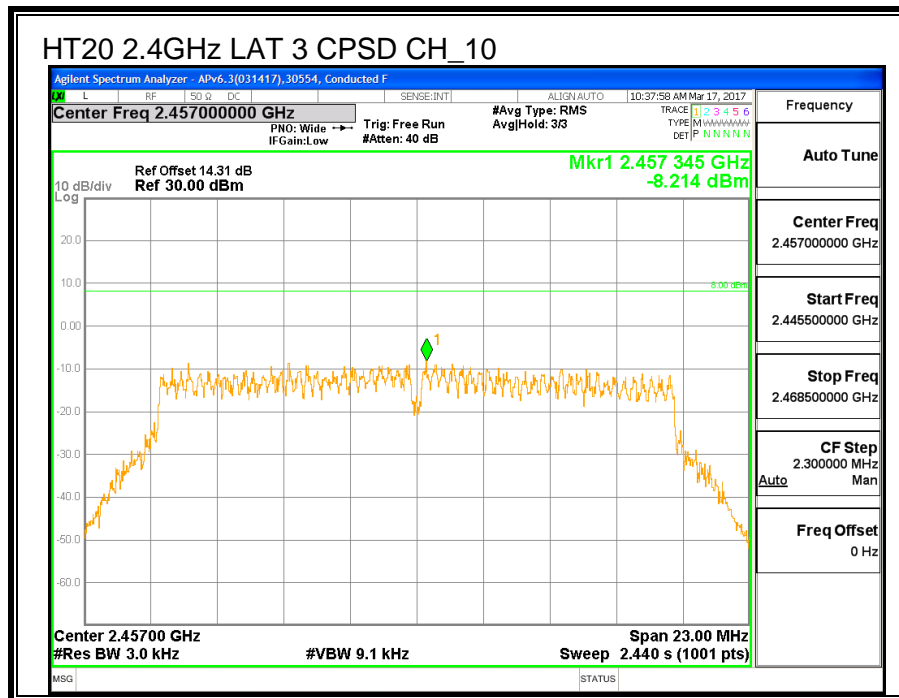
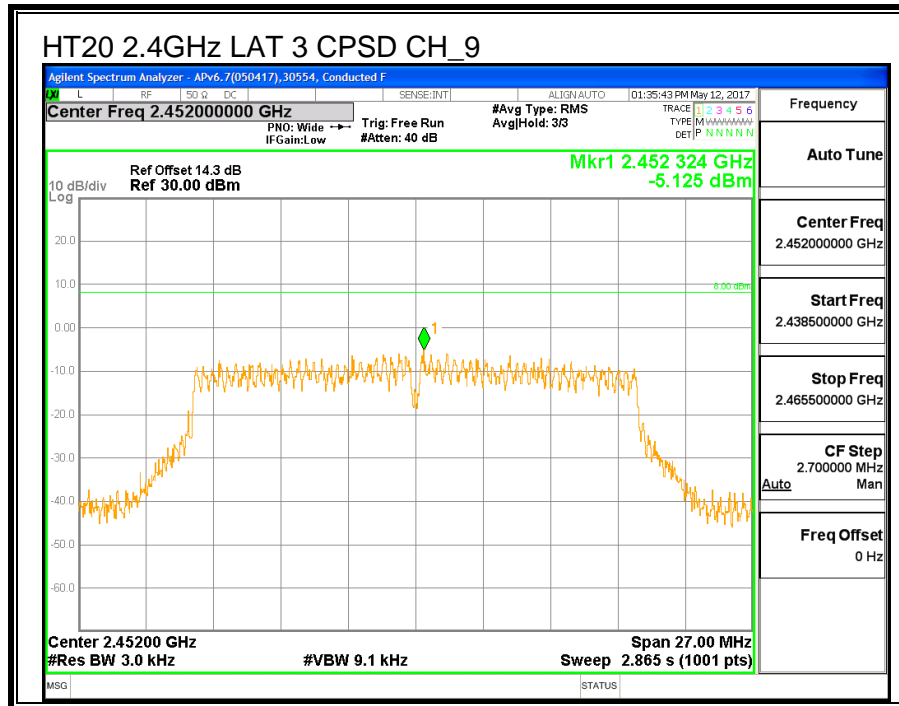
Duty Cycle CF (dB)	0	Included in Calculatio ns of Corr'd PSD
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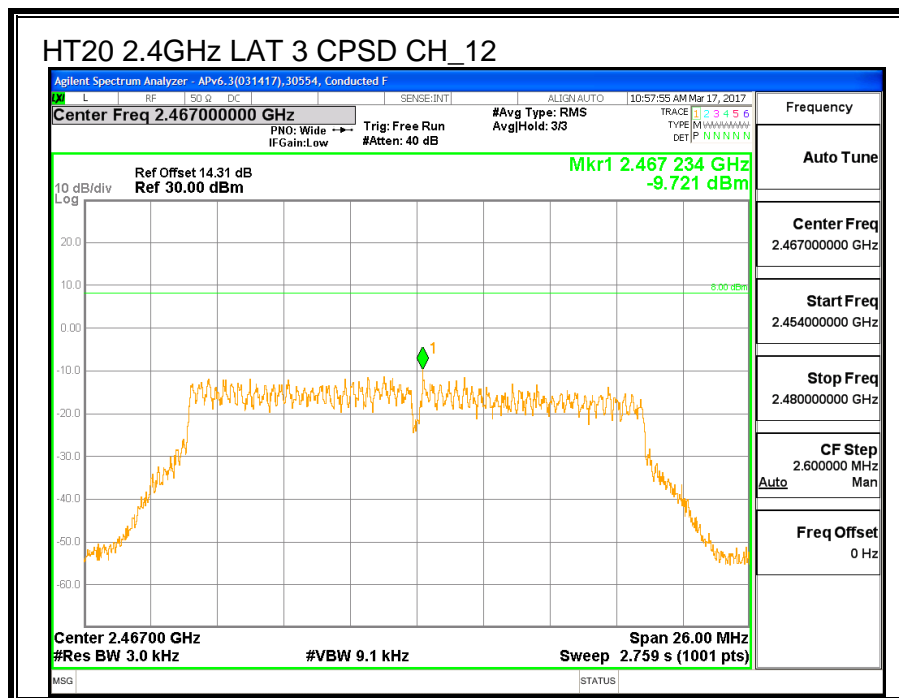
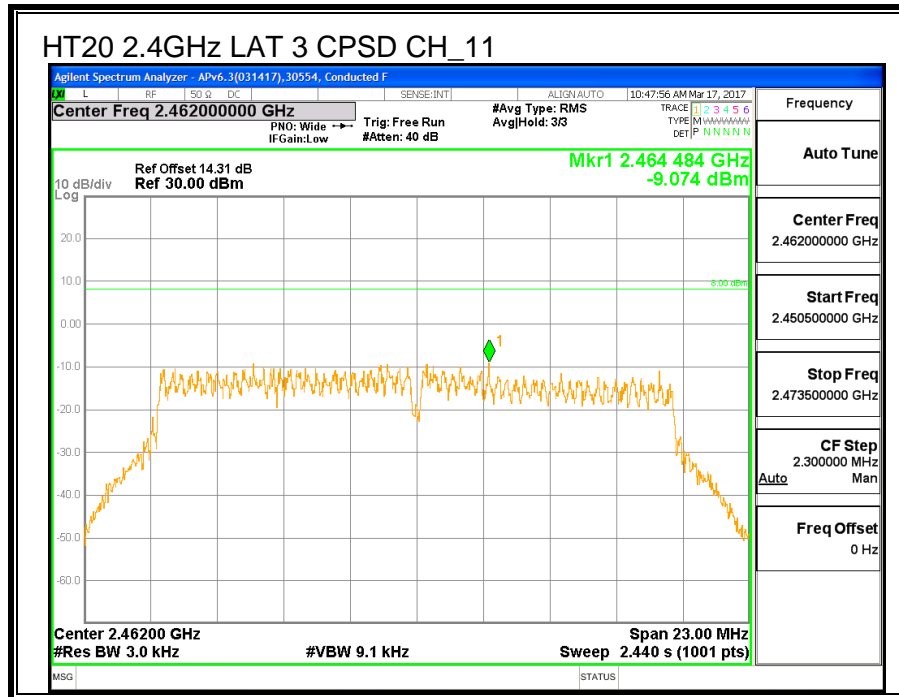
Results

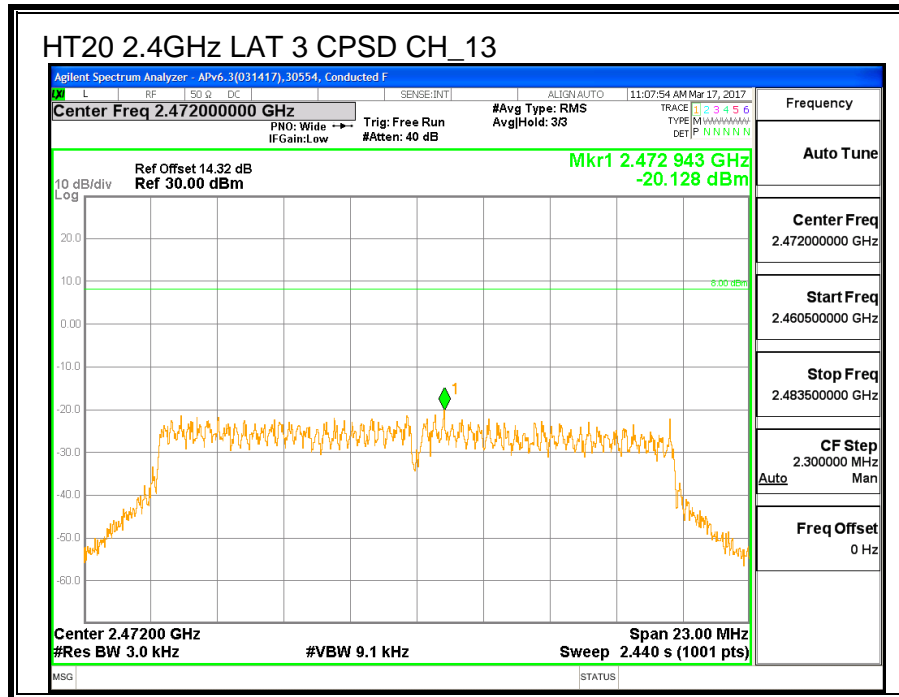
Channel	Frequency (MHz)	Meas LAT 3 (MHz)	Total Corr'd Power (dBm)	Limit (dBm)	Margin (dB)
Low_1	2412	-7.964	-7.964	8	-15.964
Low_2	2417	-4.945	-4.945	8	-12.945
Low_3	2422	-3.971	-3.971	8	-11.971
Middle_6	2437	-4.153	-4.153	8	-12.153
High_9	2452	-5.125	-5.125	8	-13.125
High_10	2457	-8.214	-8.214	8	-16.214
High_11	2462	-9.074	-9.074	8	-17.074
High_12	2467	-9.721	-9.721	8	-17.721
High_13	2472	-20.128	-20.128	8	-28.128











8.5.6. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

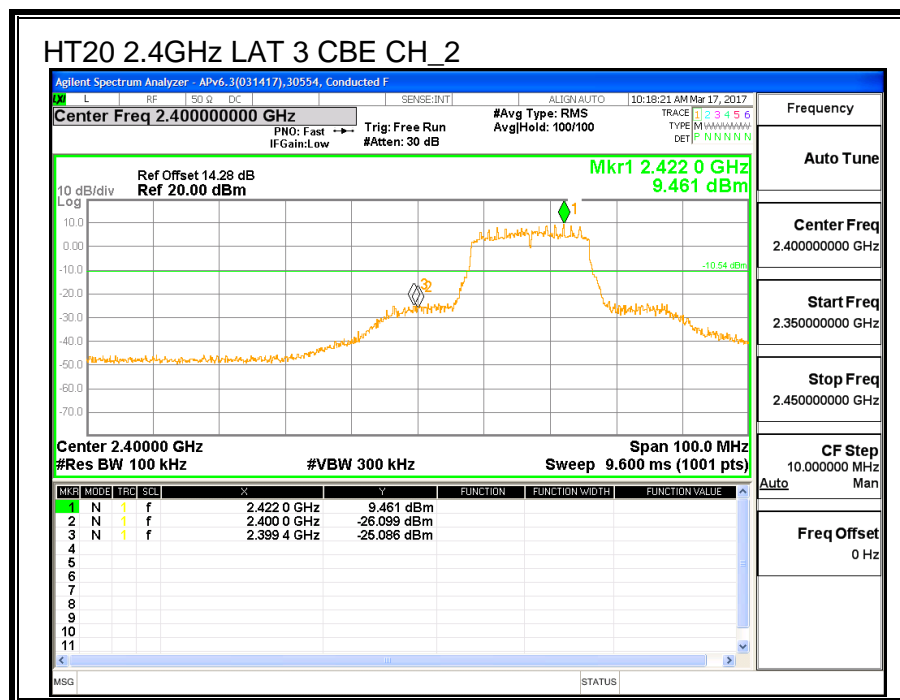
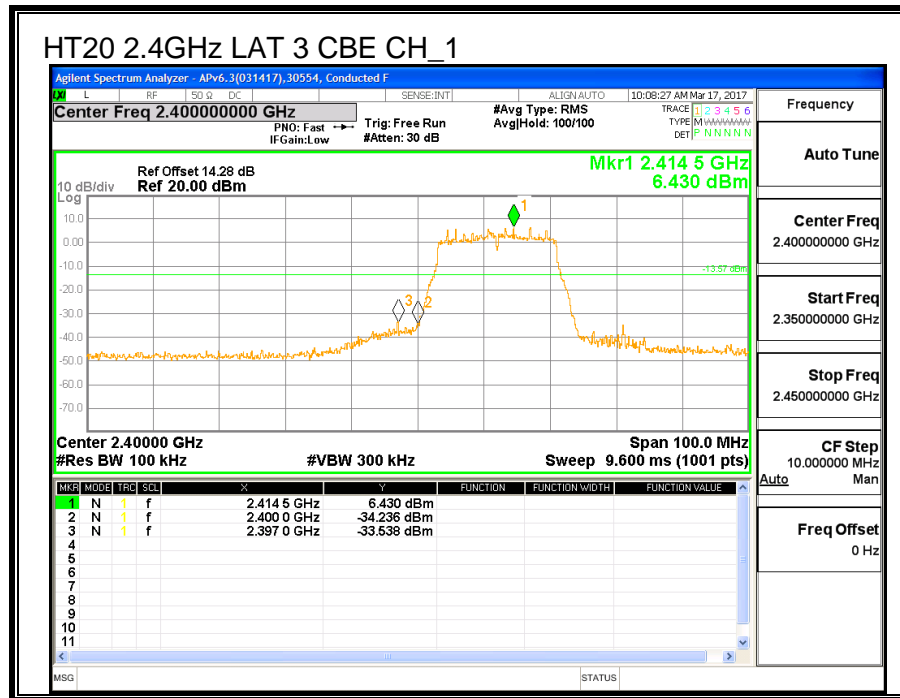
LIMITS

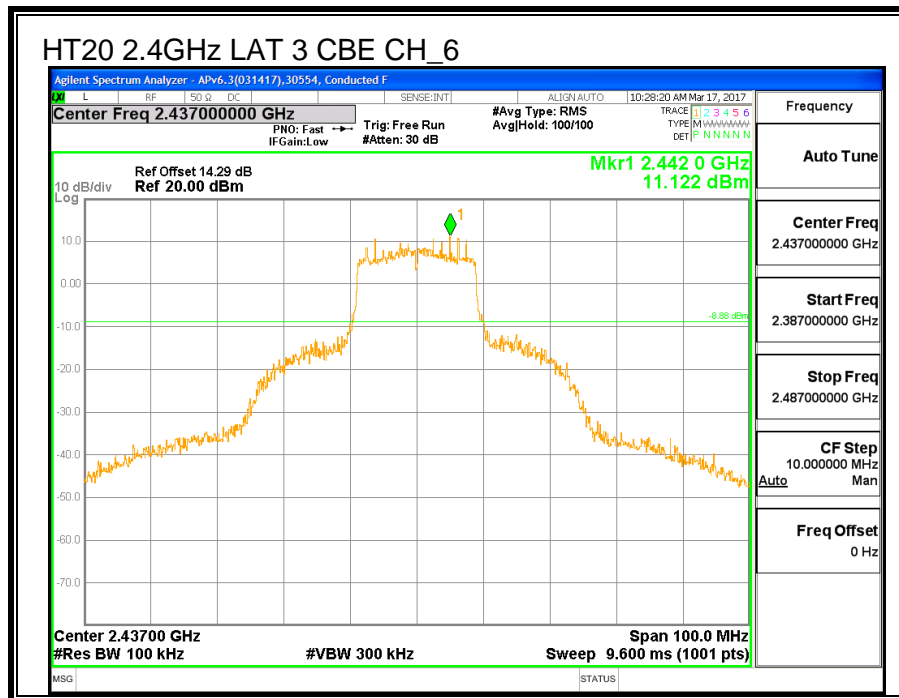
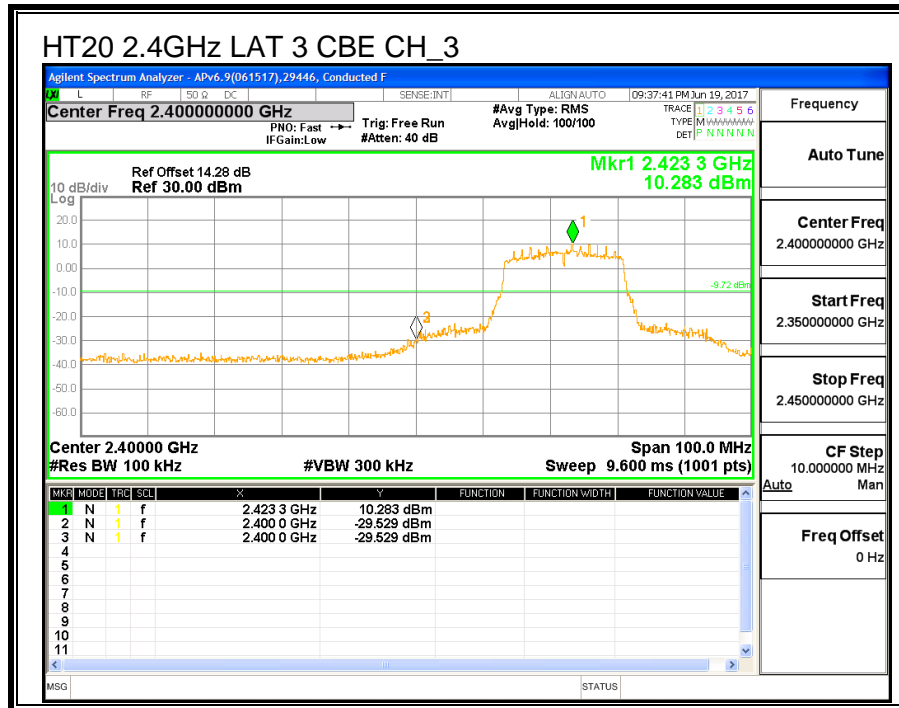
FCC §15.247 (d)

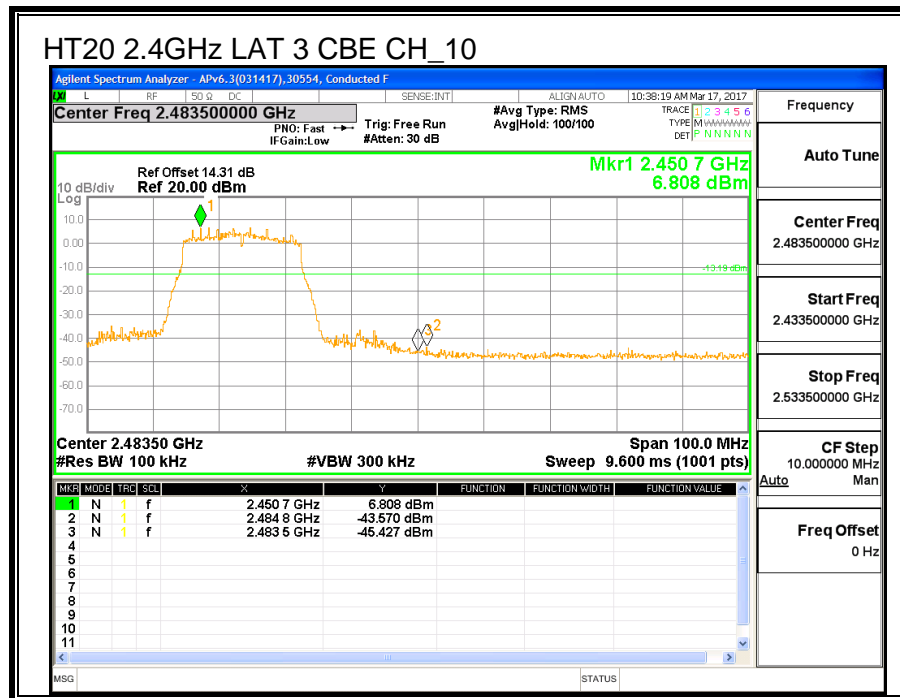
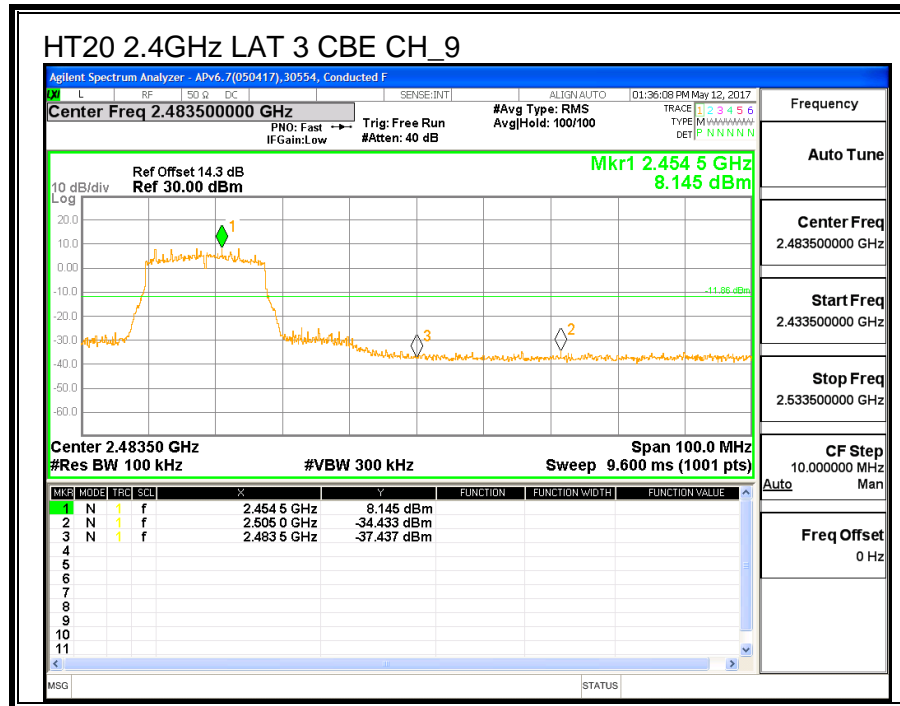
IC RSS-247 (5.5)

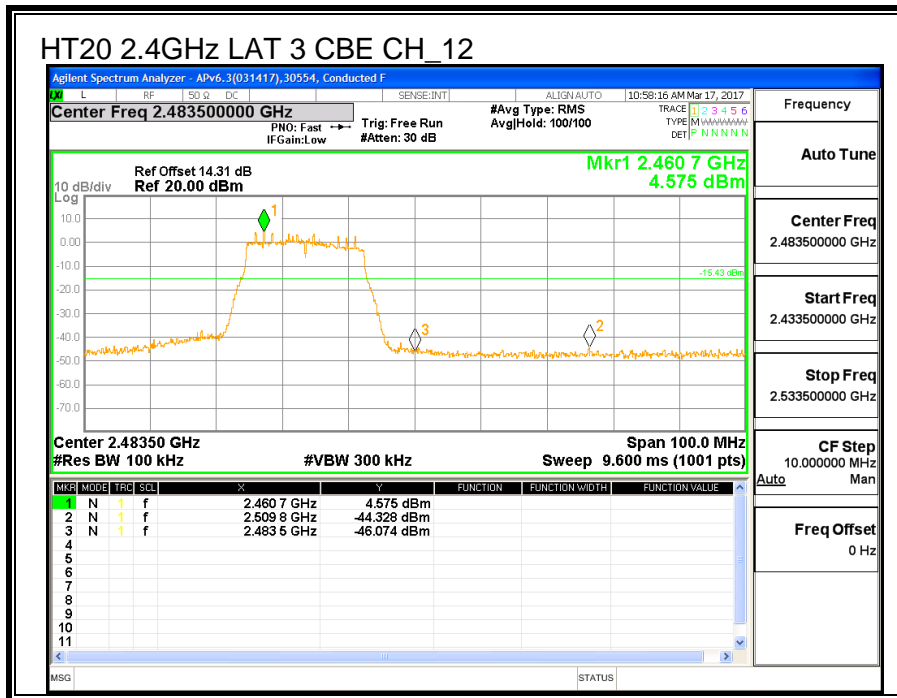
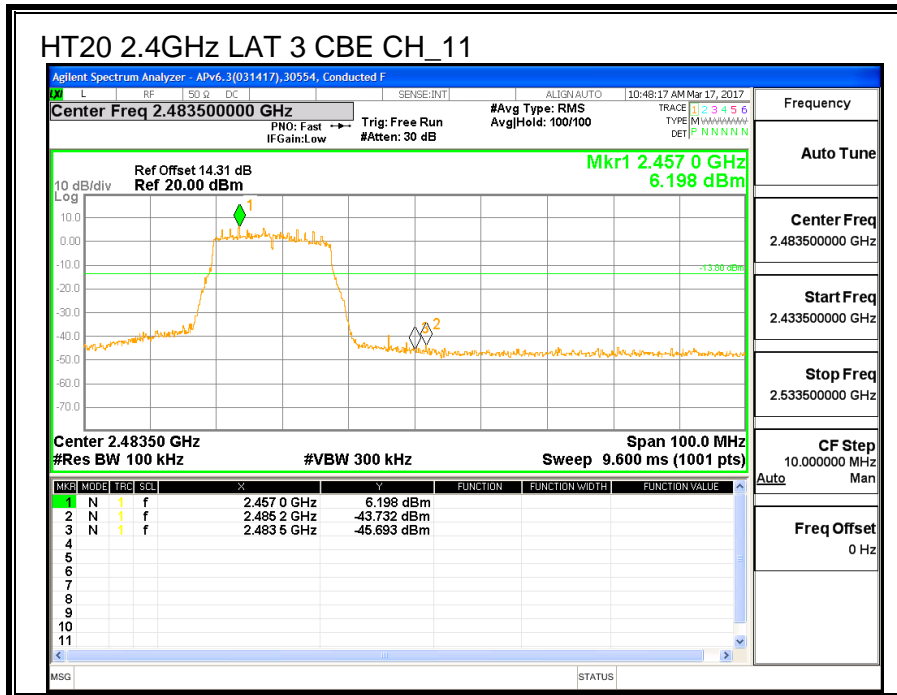
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

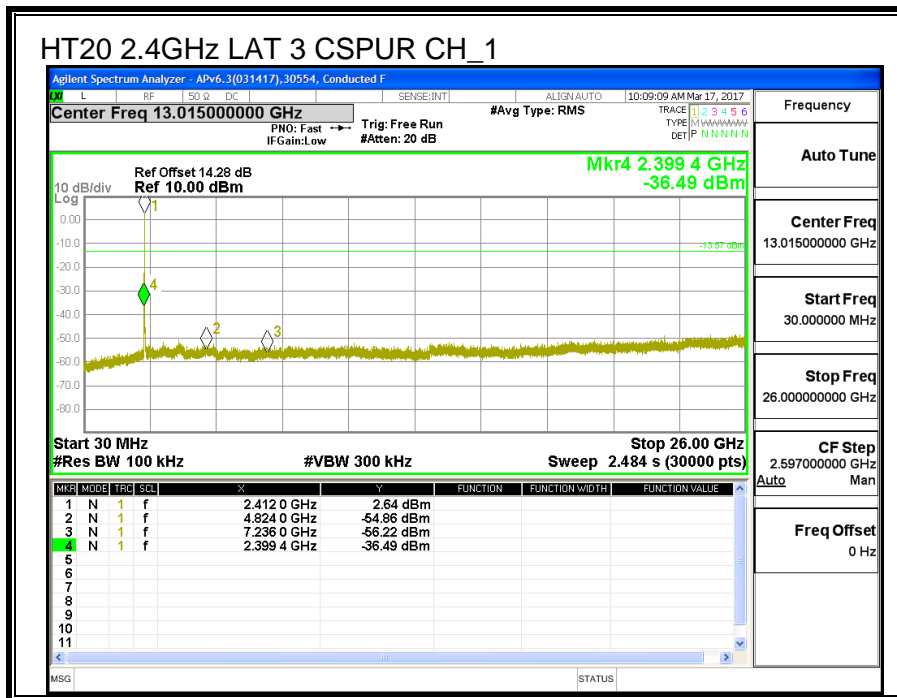
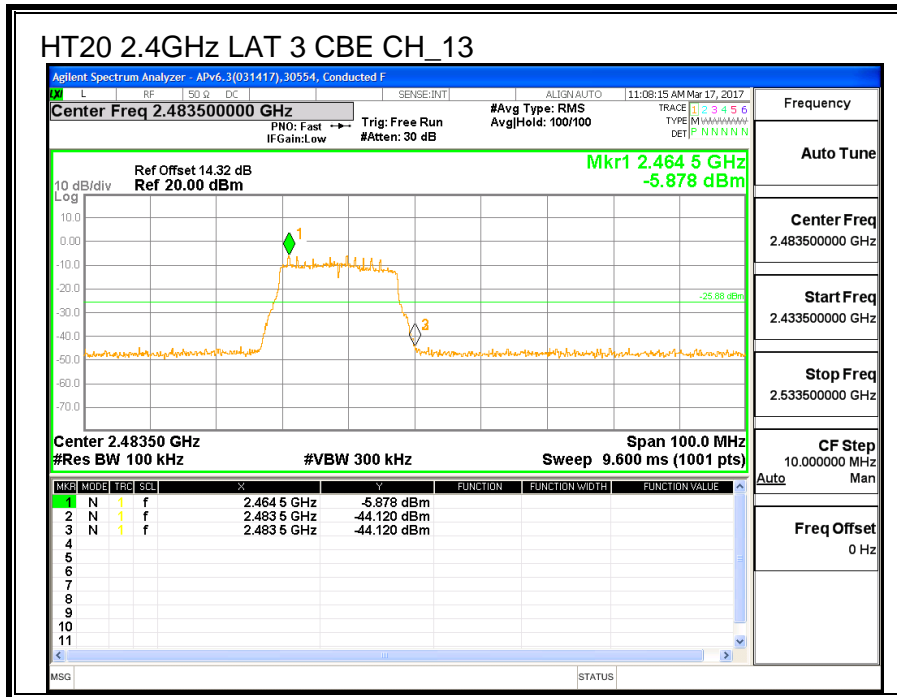
CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

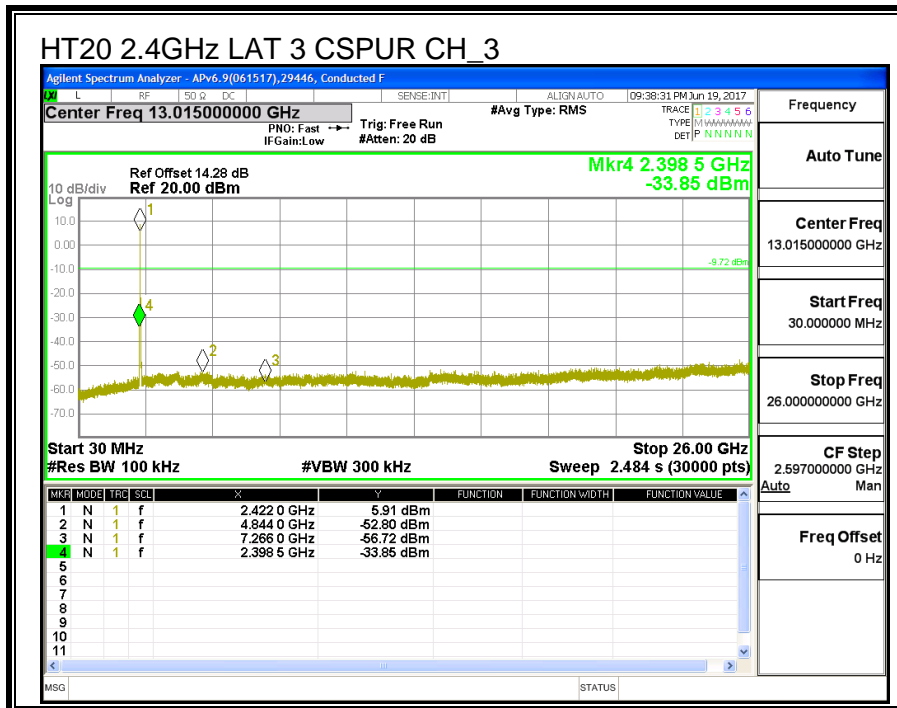
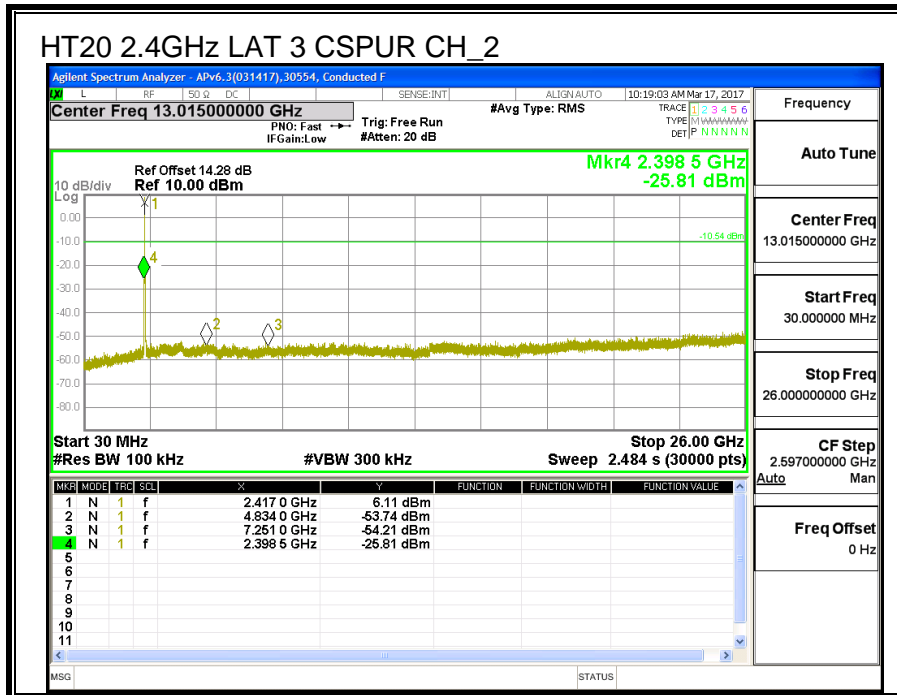


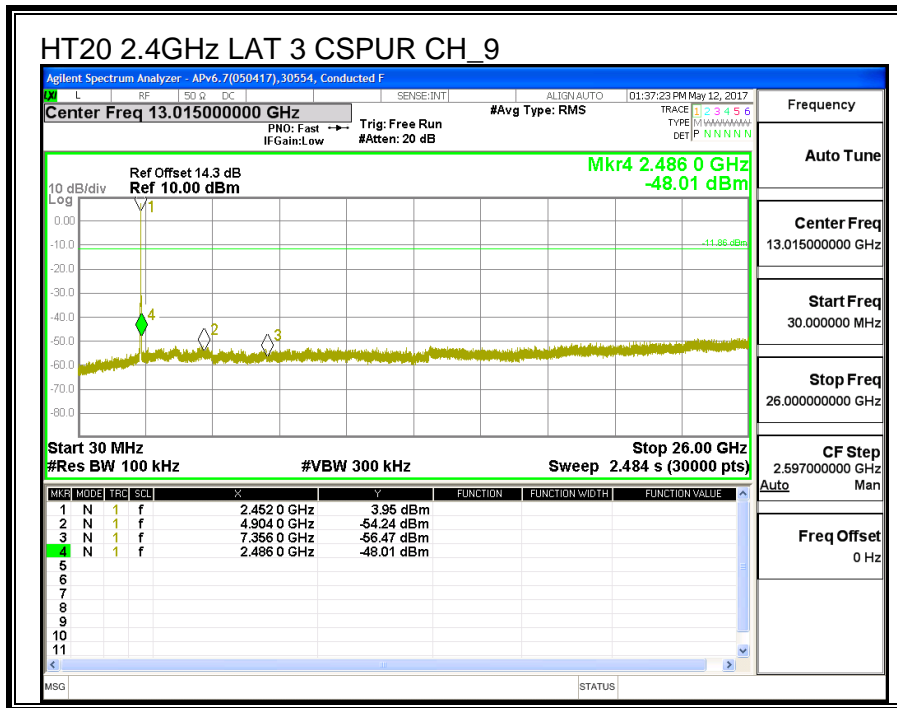
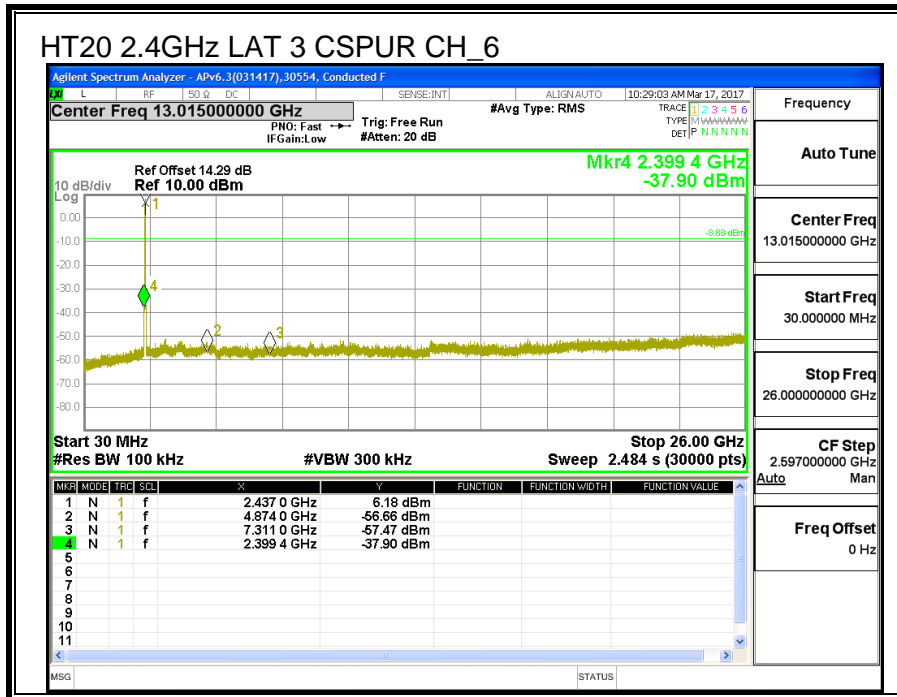


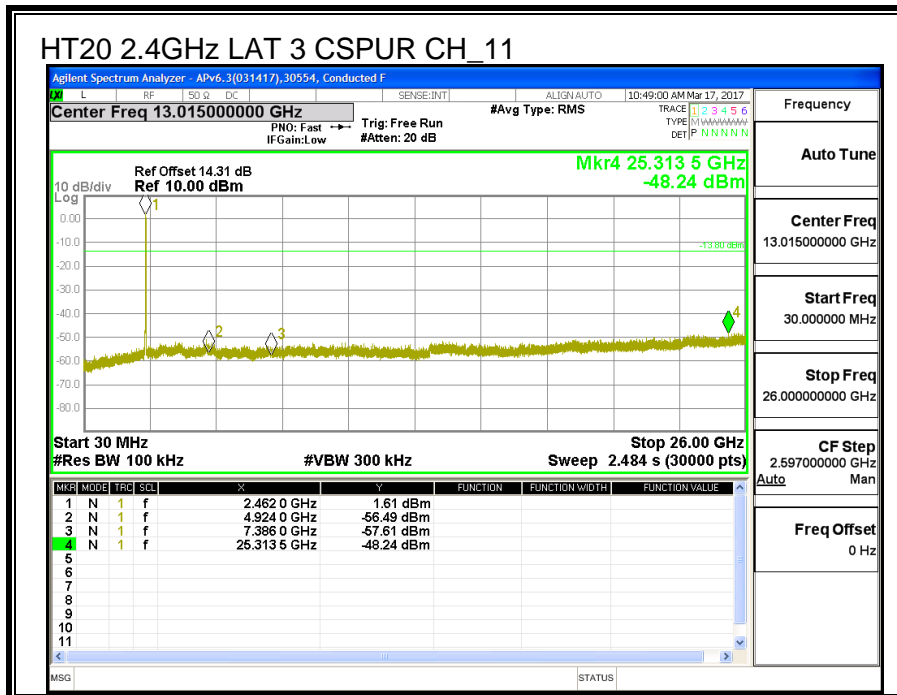
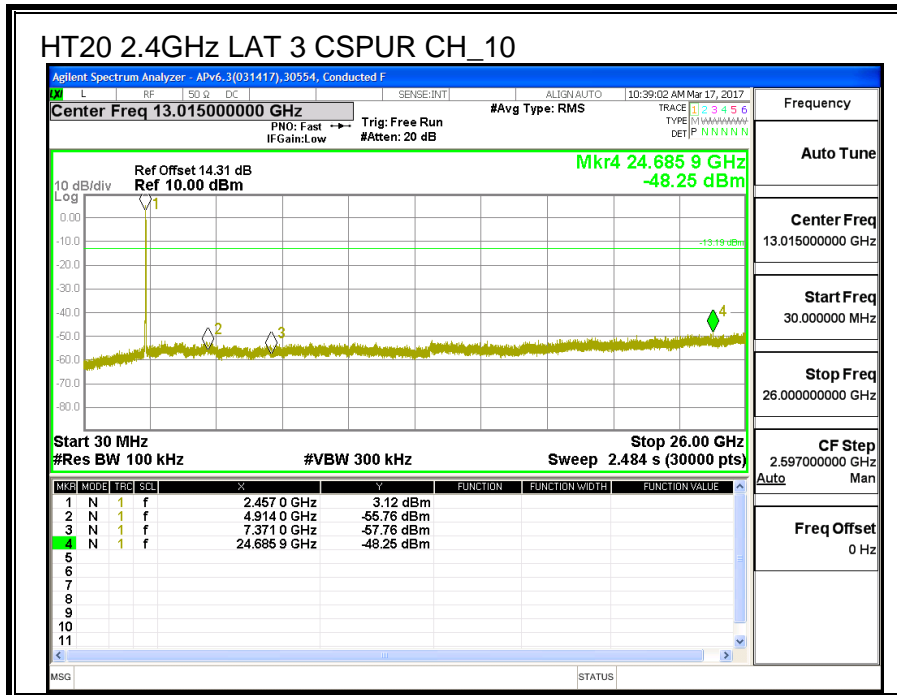


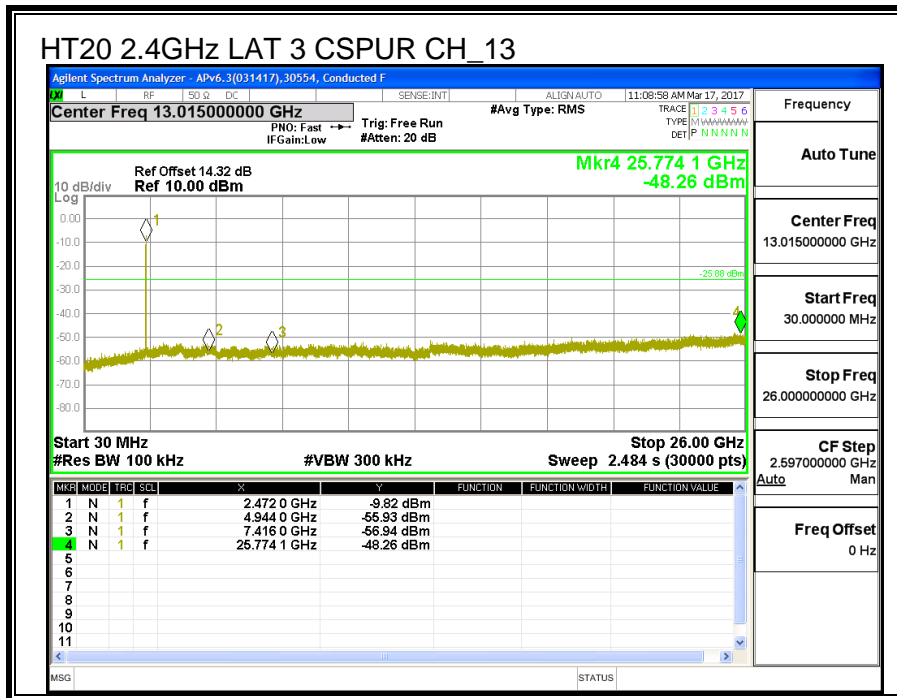
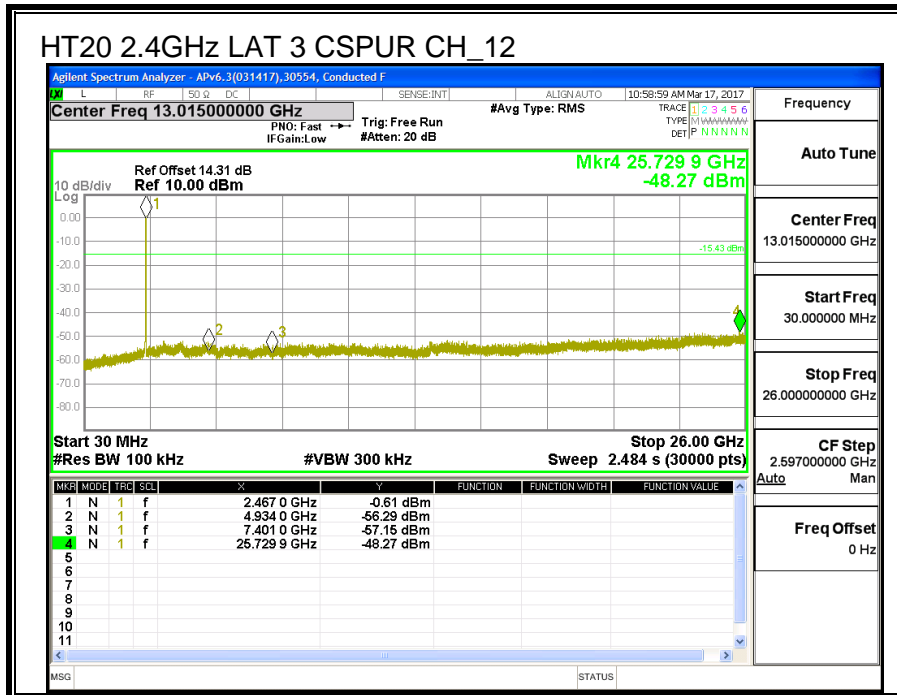












8.6. 11n HT20 2TX CDD MIMO MODE IN THE 2.4GHz BAND (NEED CHANNEL 3 DATA)

8.6.1. 6 dB BANDWIDTH

LIMITS

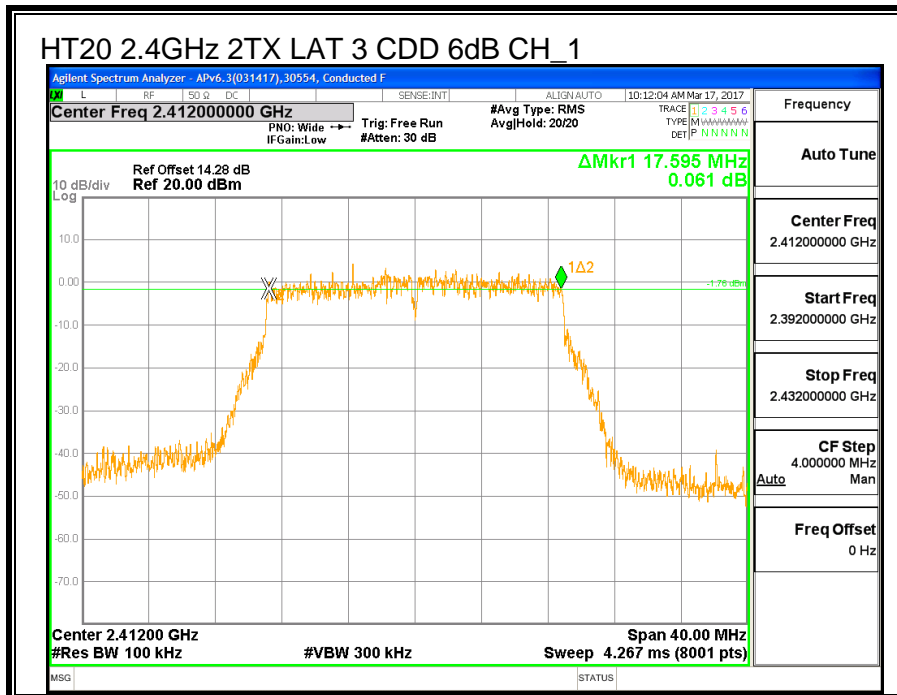
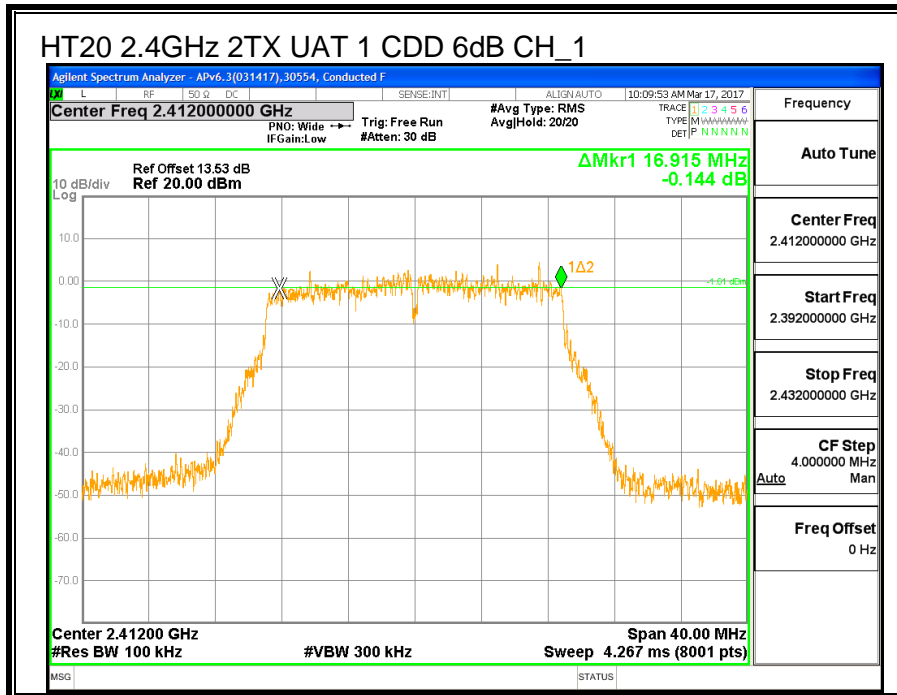
FCC §15.247 (a) (2)

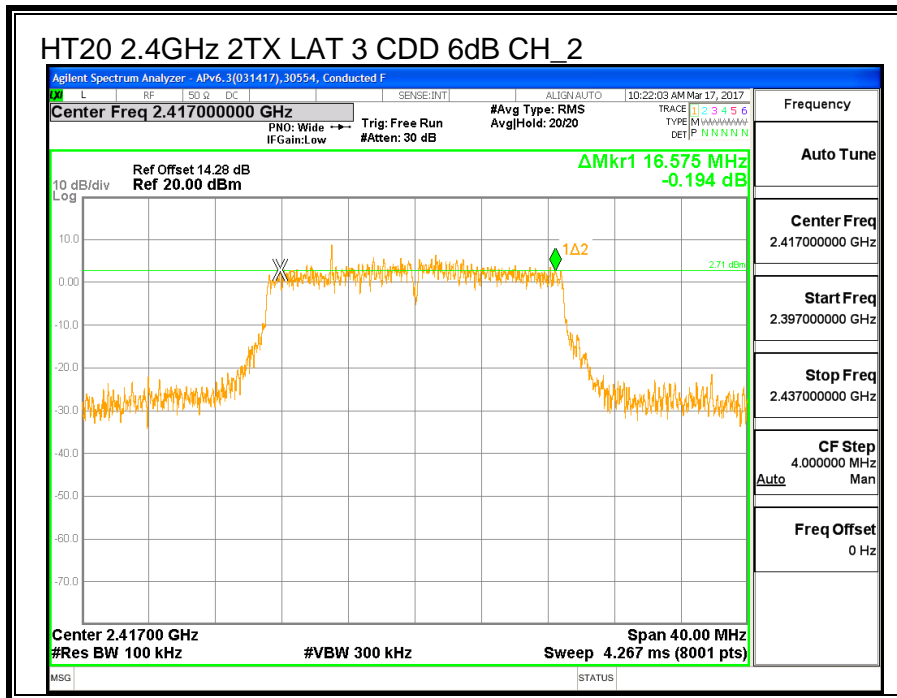
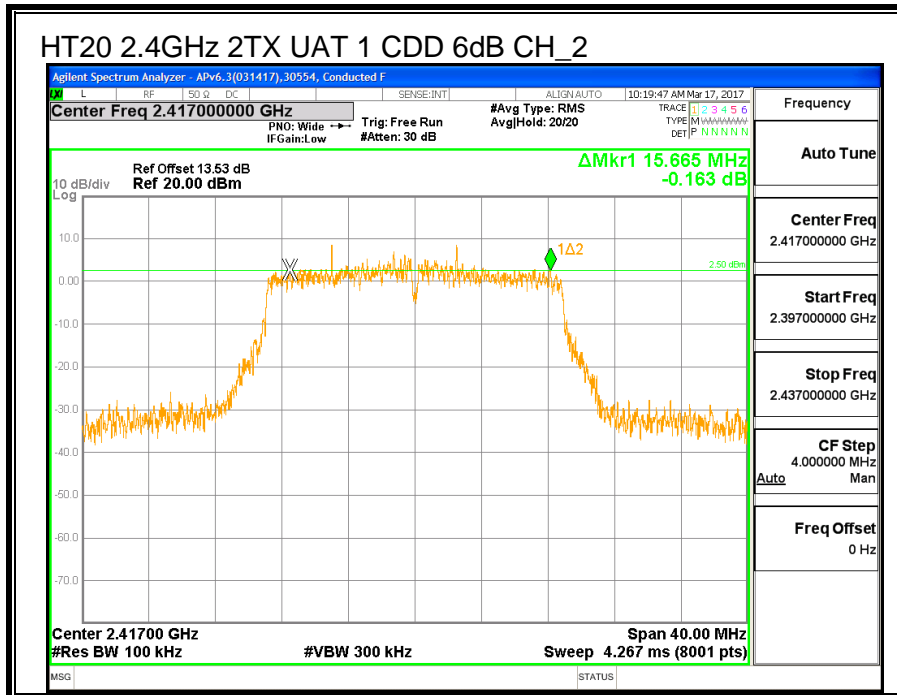
IC RSS-247 (5.2) (a)

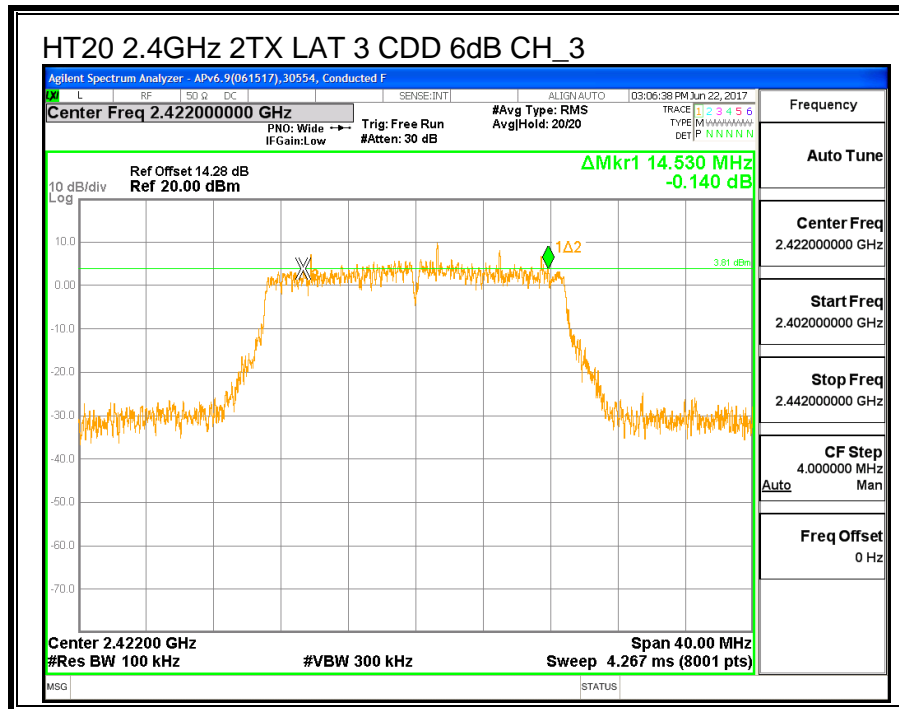
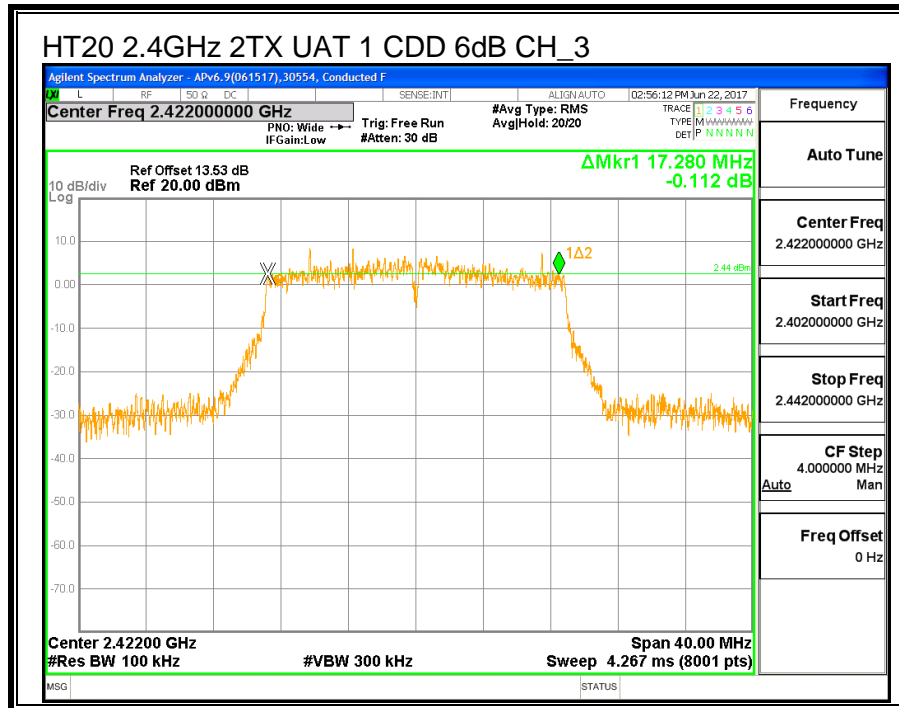
The minimum 6 dB bandwidth shall be at least 500 kHz.

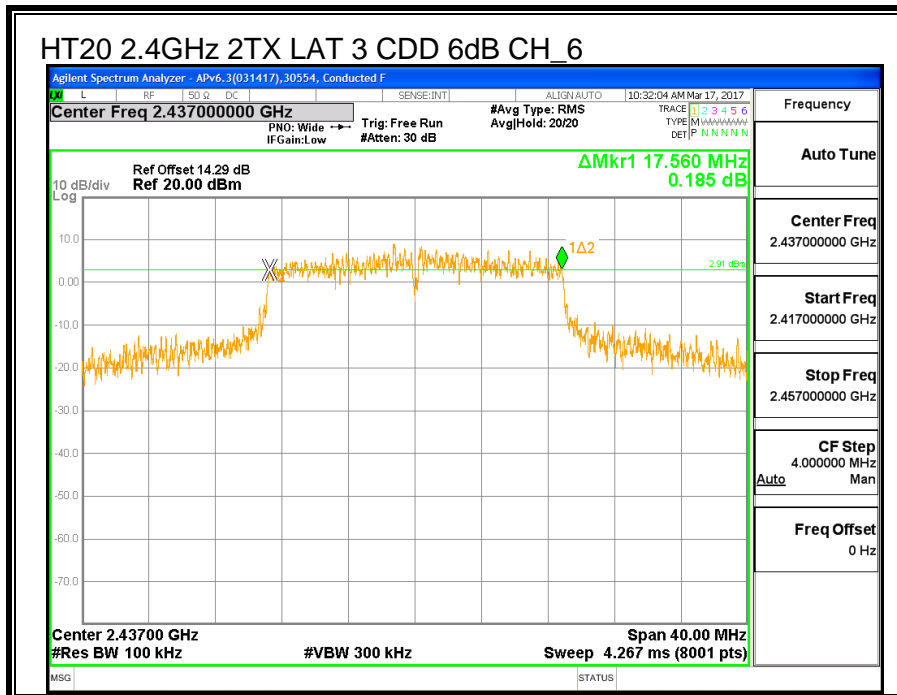
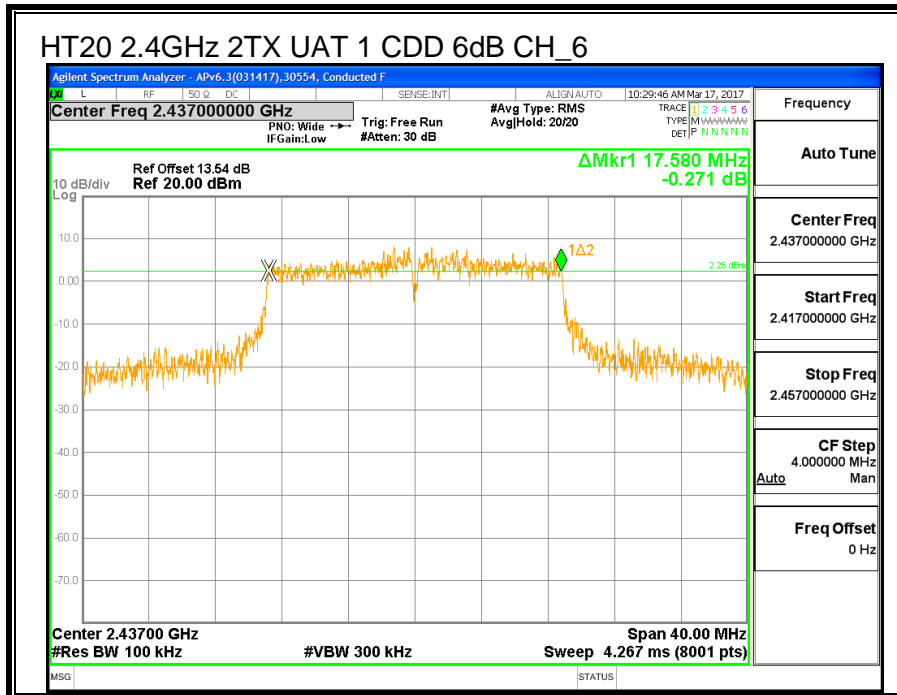
RESULTS

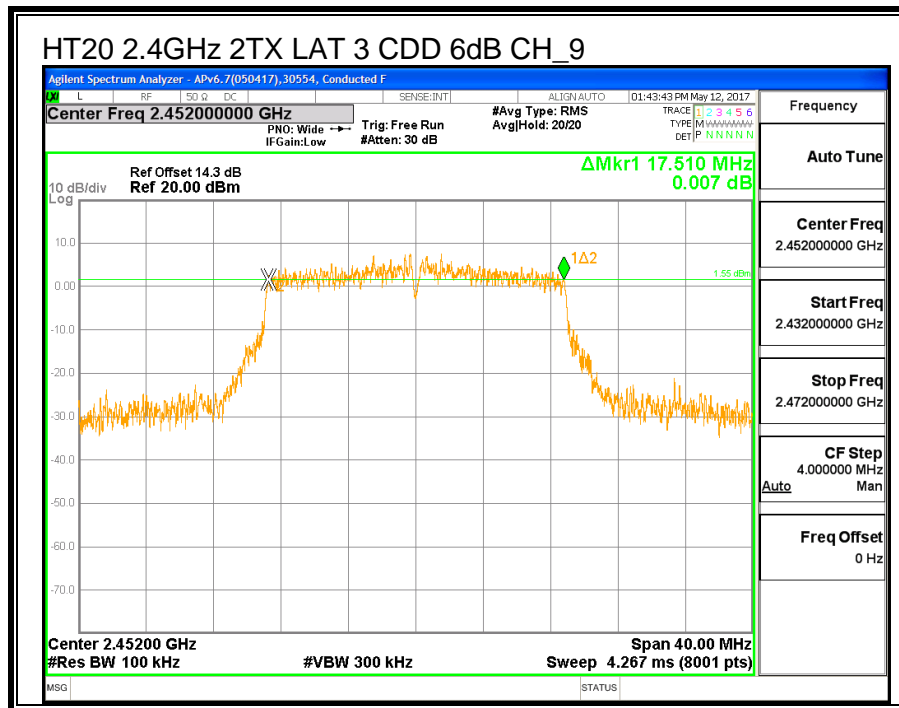
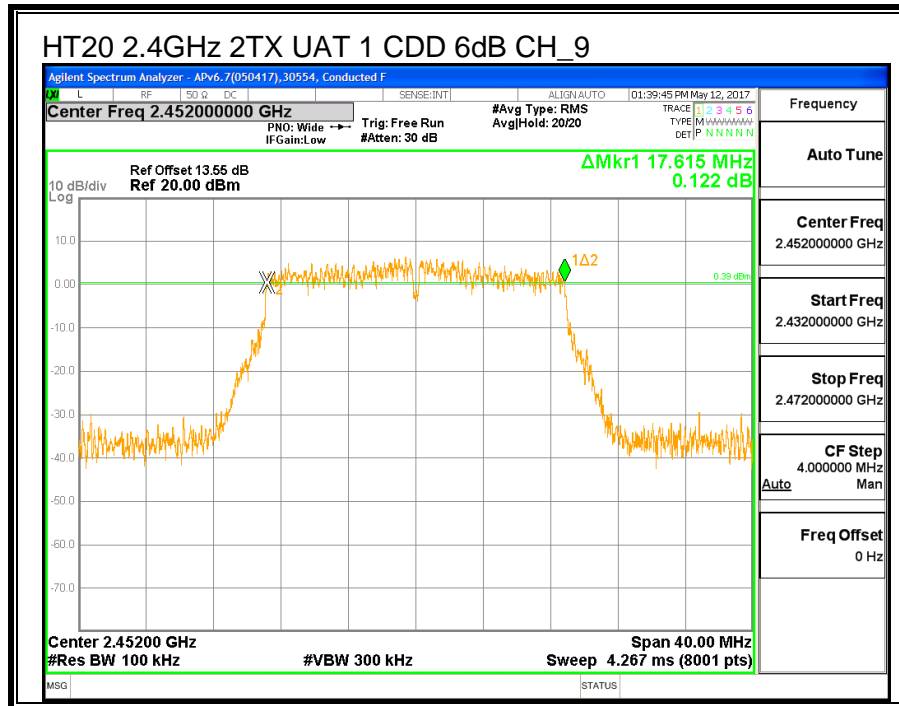
Channel	Frequency	6 dB BW UAT 1 (MHz)	6 dB BW LAT 3 (MHz)	Minimum Limit (MHz)
Low_1	2412	16.915	17.595	0.5
Low_2	2417	15.665	16.575	0.5
Low_3	2422	17.280	14.530	0.5
Middle_6	2437	17.580	17.560	0.5
High_9	2452	17.615	17.510	0.5
High_10	2457	17.615	16.540	0.5
High_11	2462	17.735	17.595	0.5
High_12	2467	17.735	17.550	0.5
High_13	2472	16.545	16.285	0.5

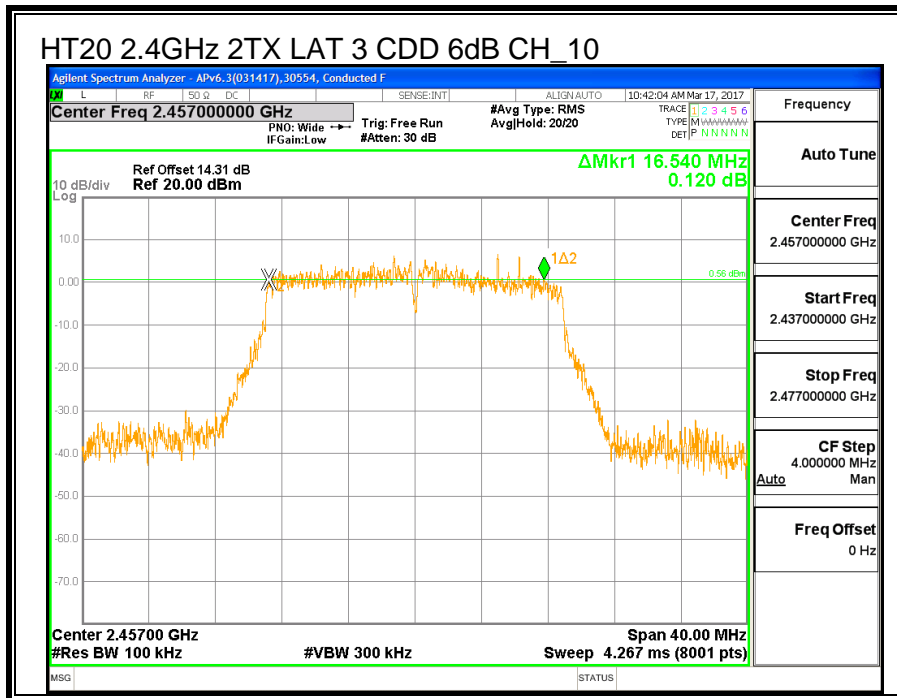
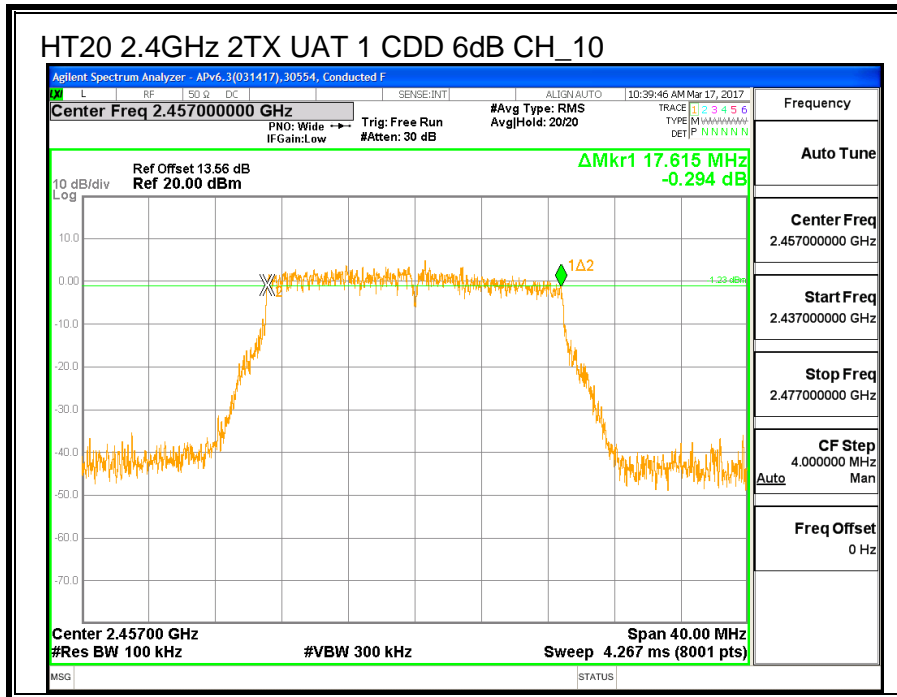


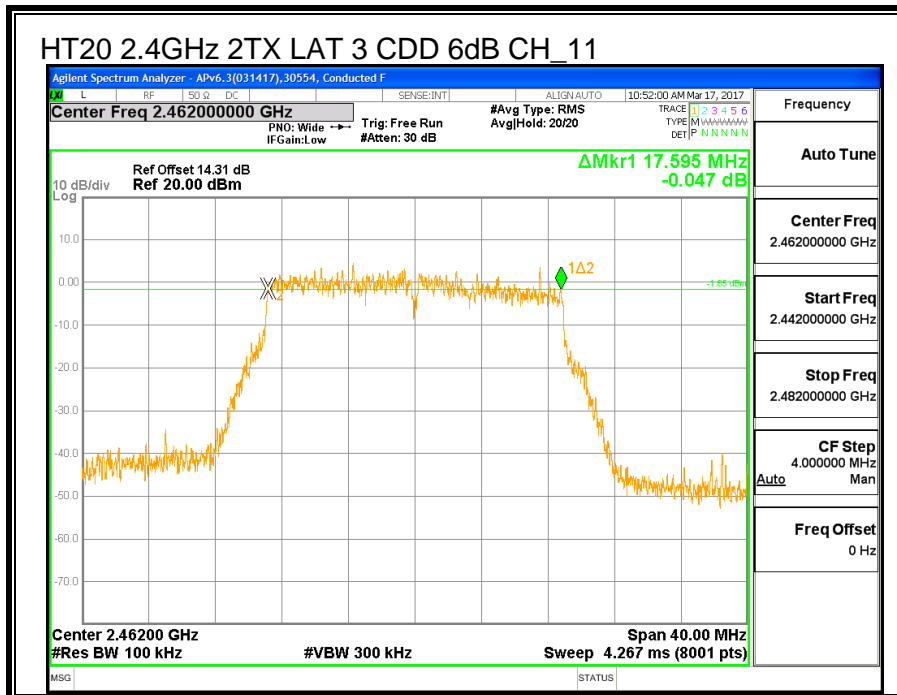
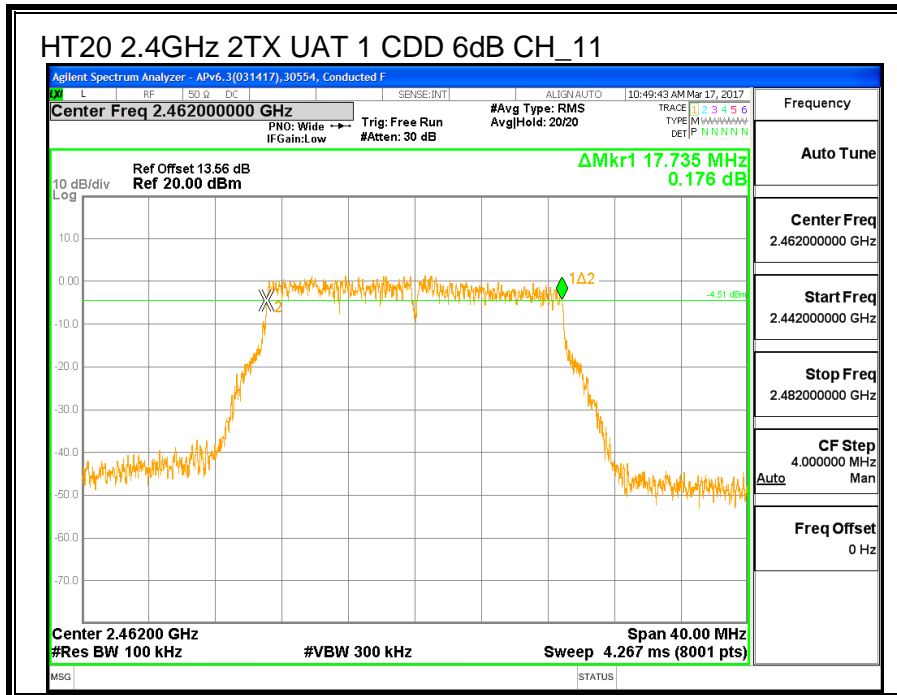


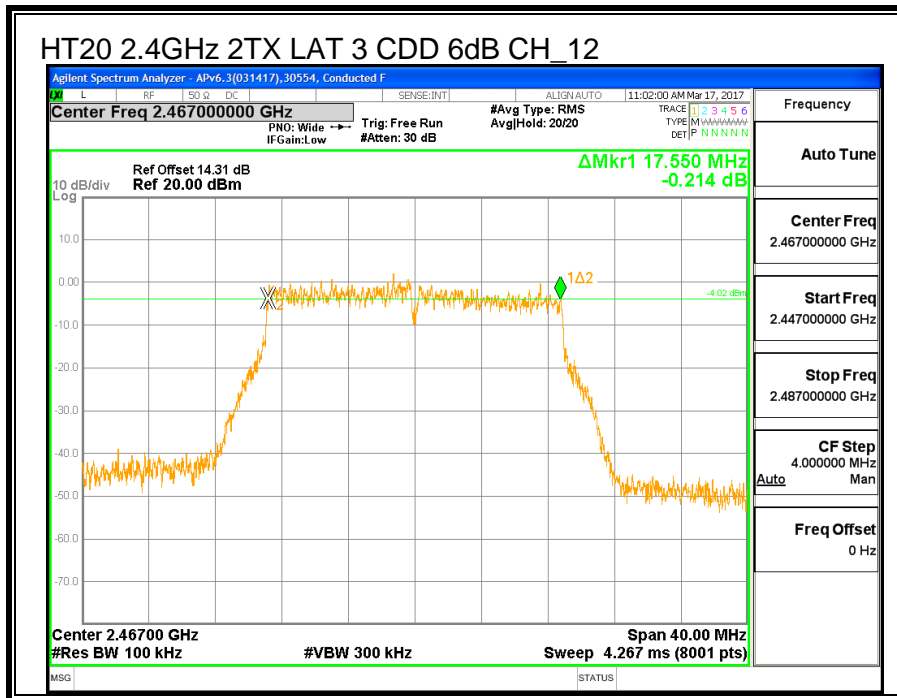
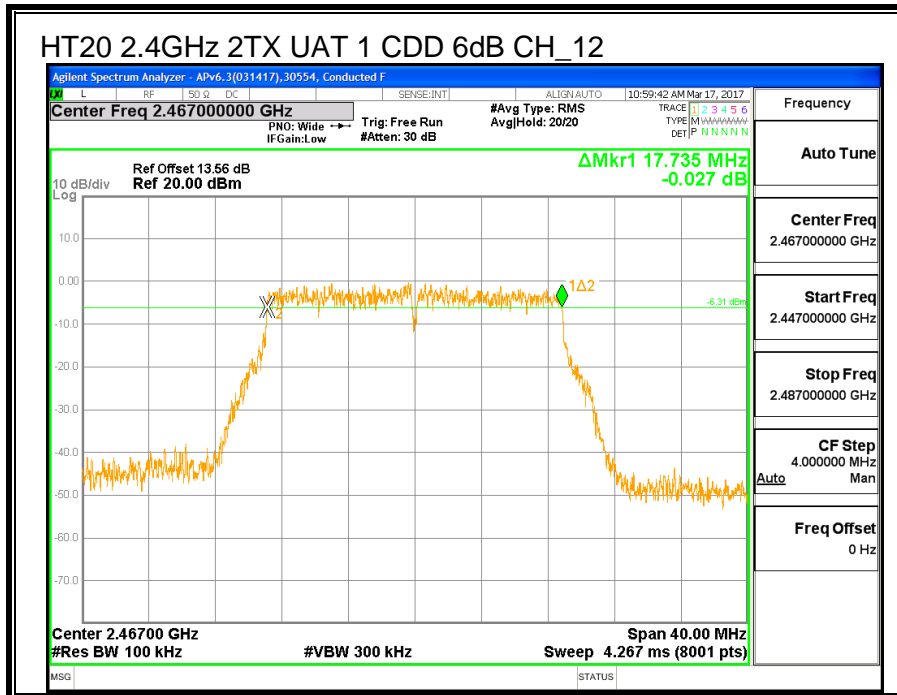


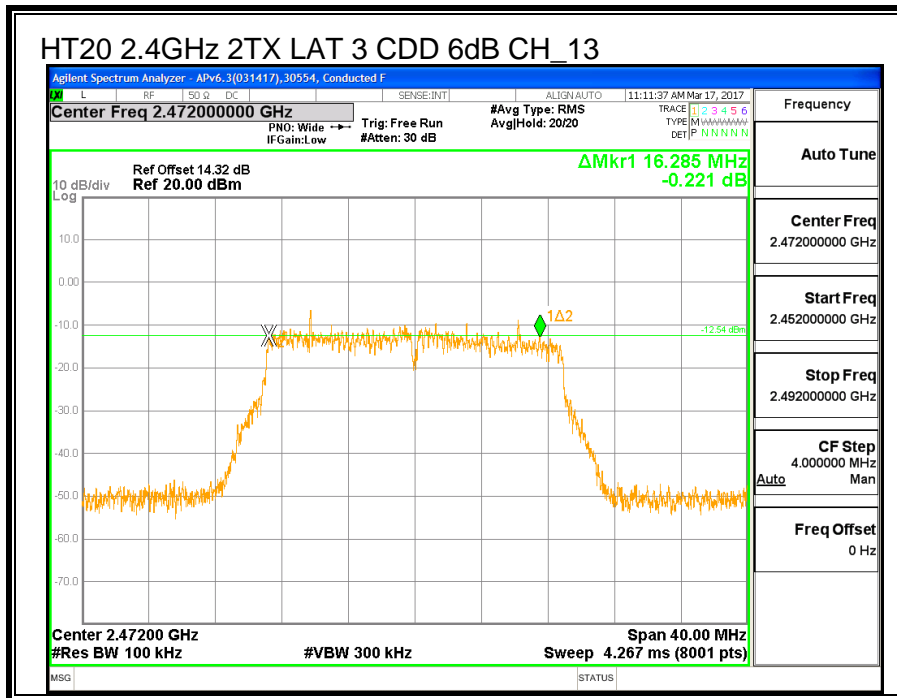
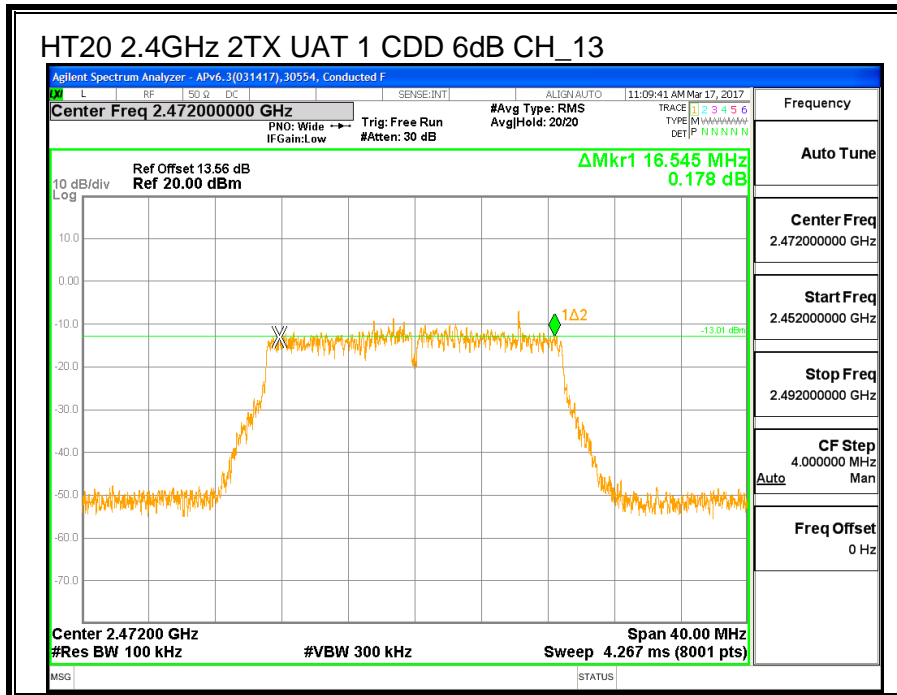












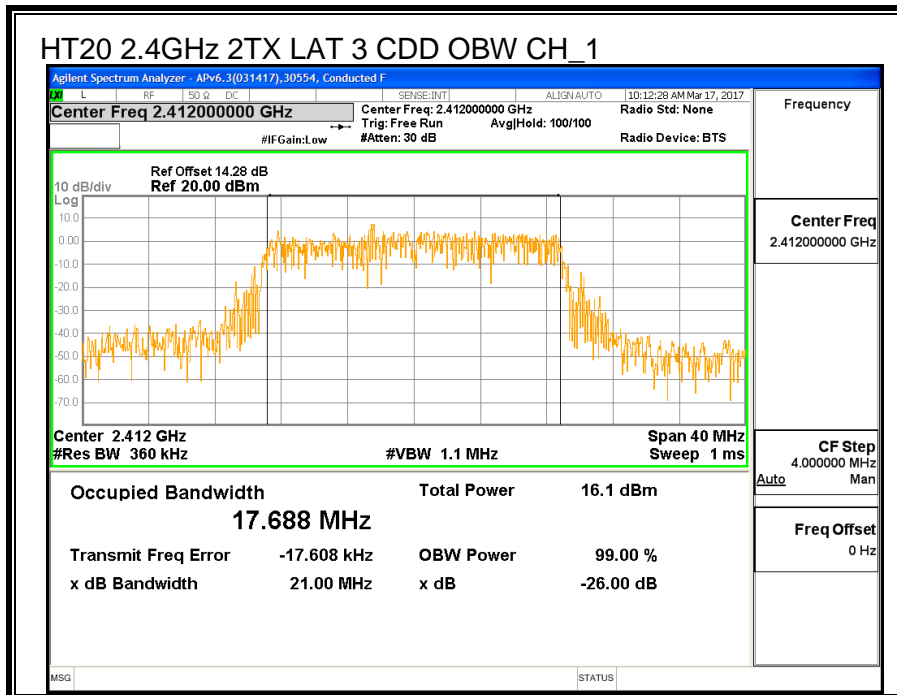
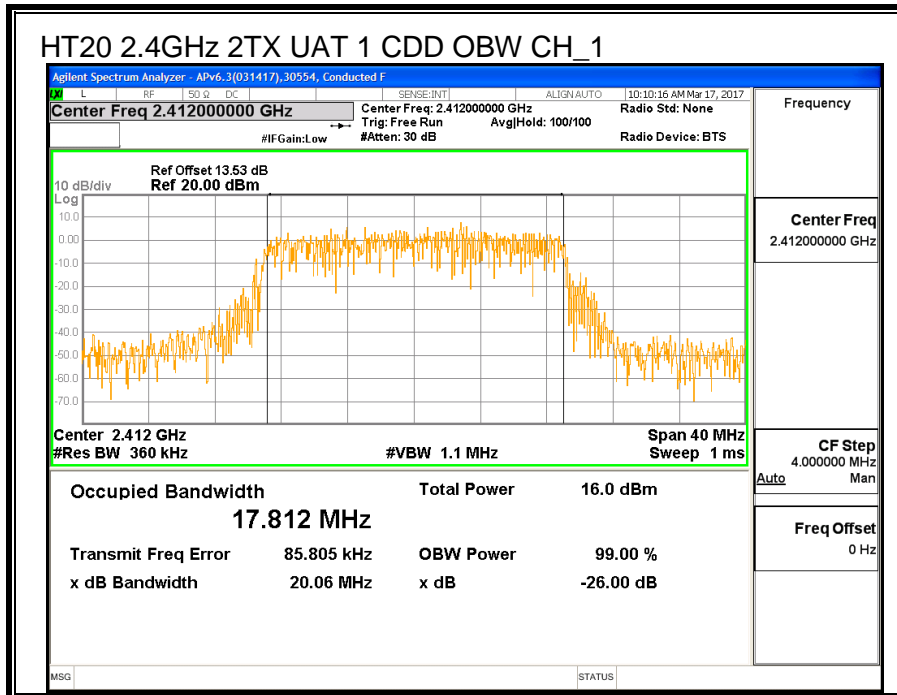
8.6.2. 99% BANDWIDTH

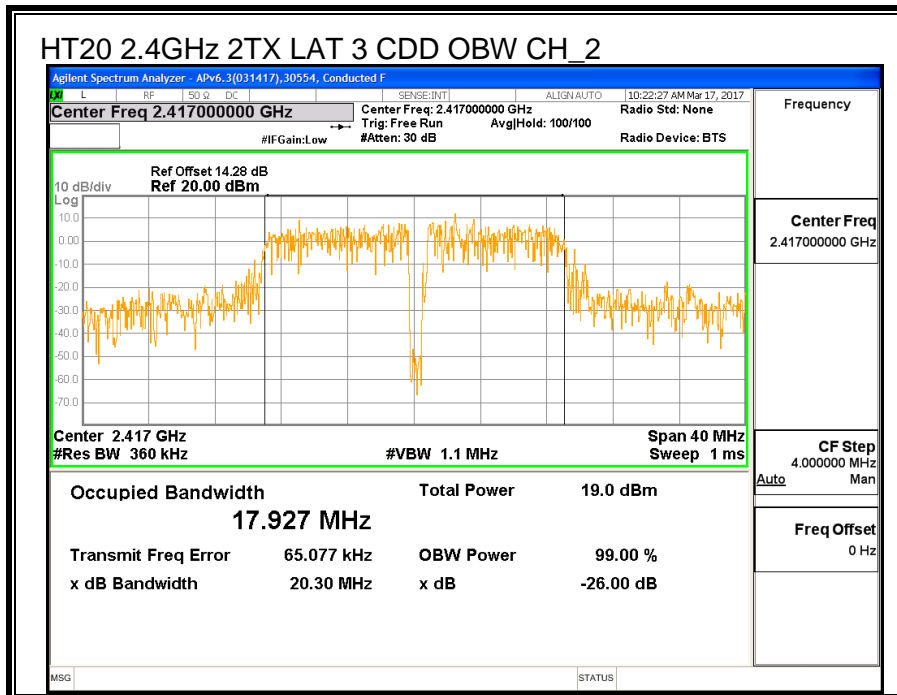
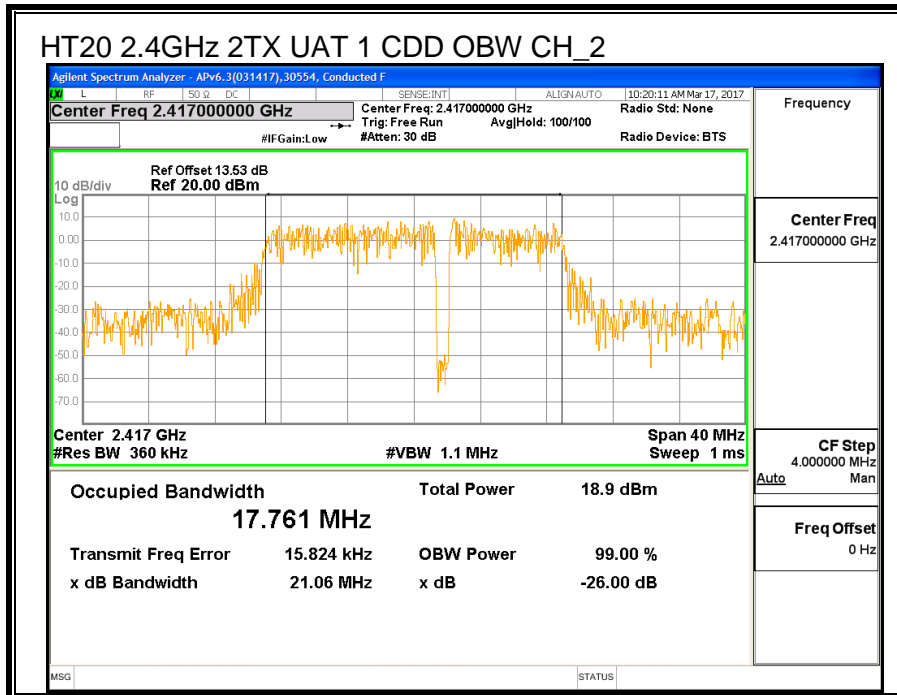
LIMITS

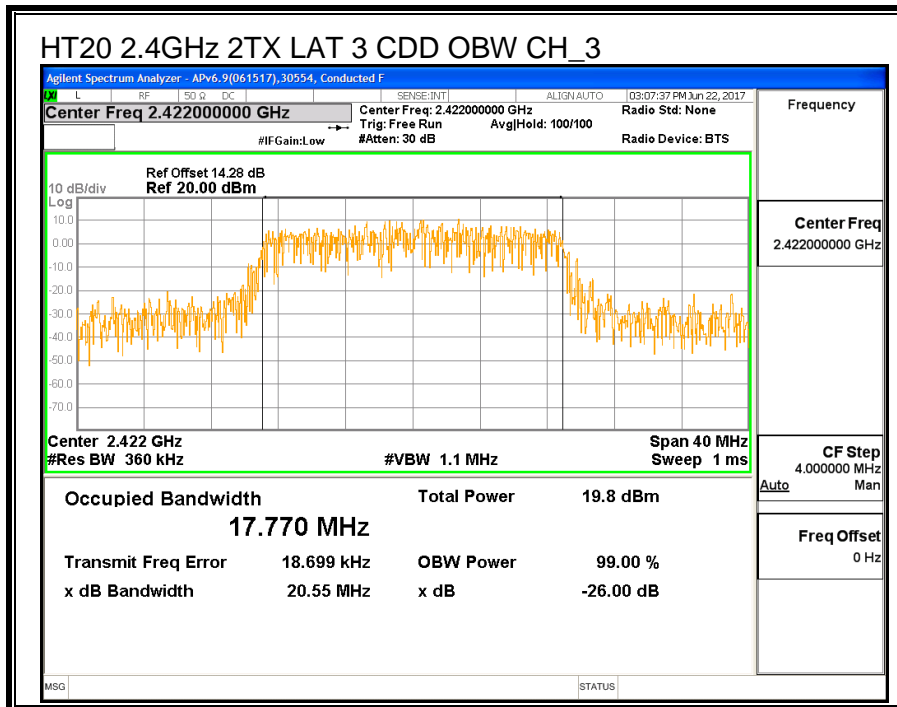
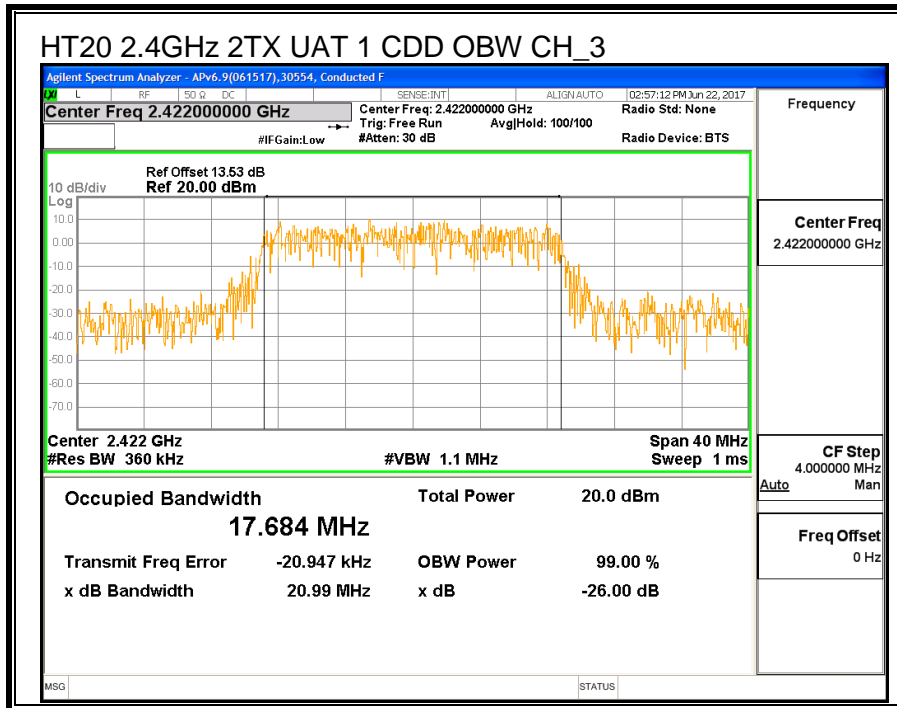
None; for reporting purposes only.

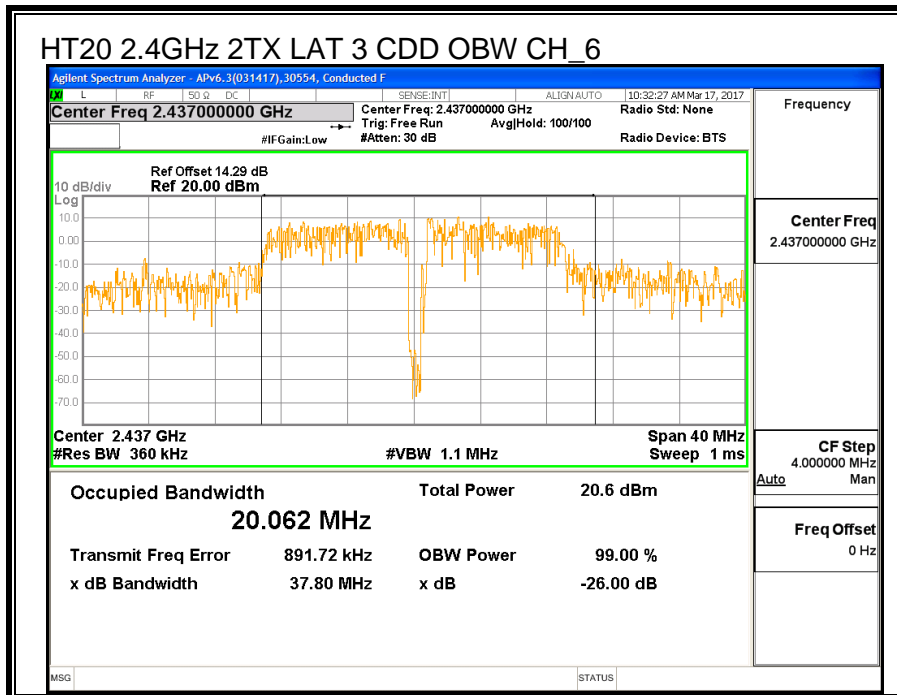
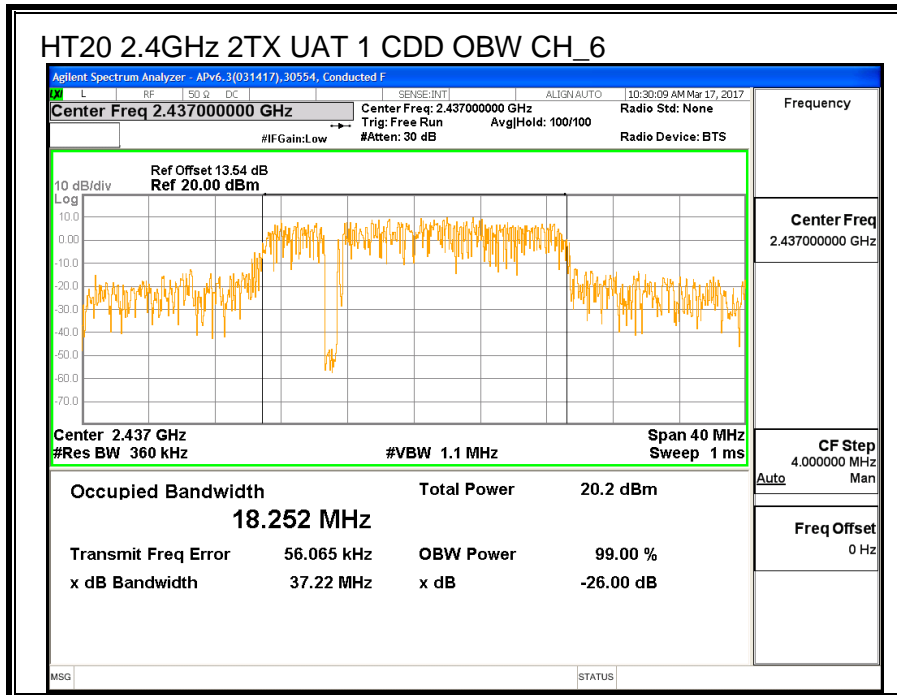
RESULTS

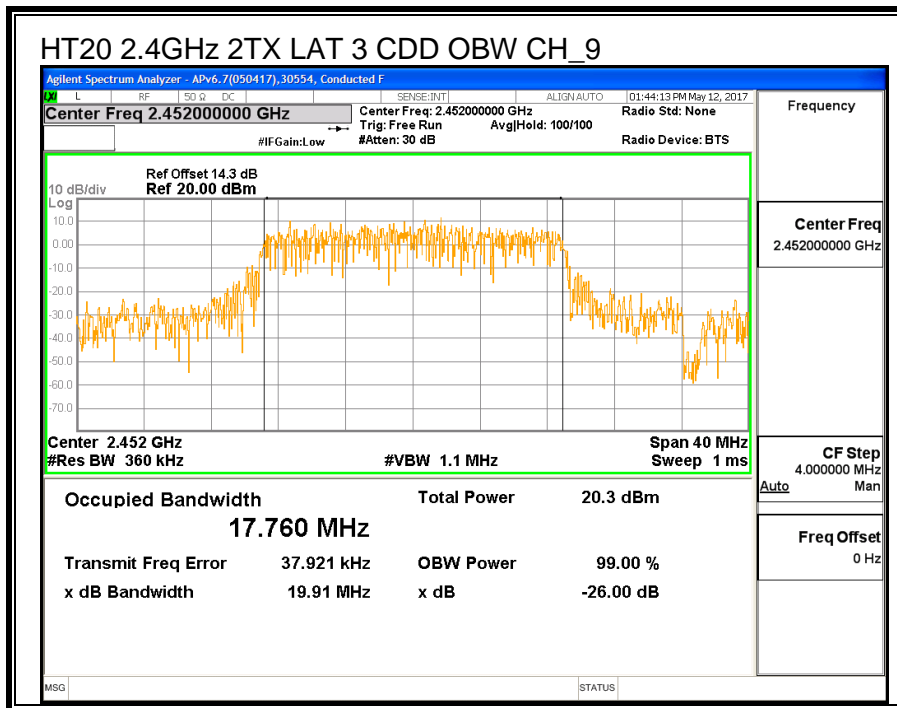
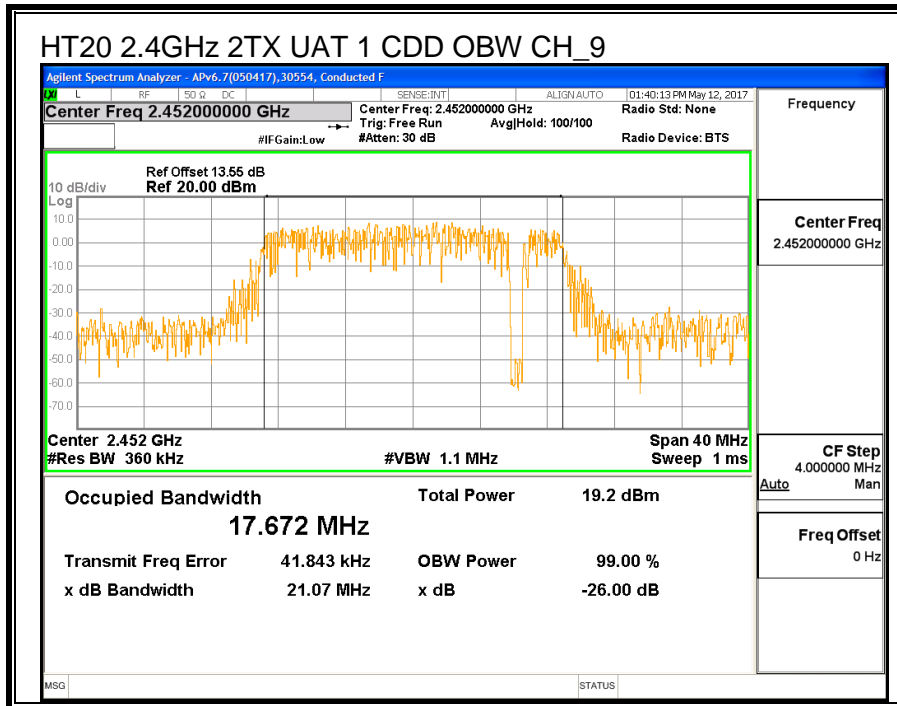
Channel	Frequency (MHz)	99% Bandwidth UAT 1 (MHz)	99% Bandwidth LAT 3 (MHz)
Low_1	2412	17.812	17.688
Low_2	2417	17.761	17.927
Low_3	2422	17.684	17.770
Middle_6	2437	18.252	20.062
High_9	2452	17.672	17.760
High_10	2457	17.719	17.776
High_11	2462	17.753	16.877
High_12	2467	17.865	17.741
High_13	2472	17.918	17.753

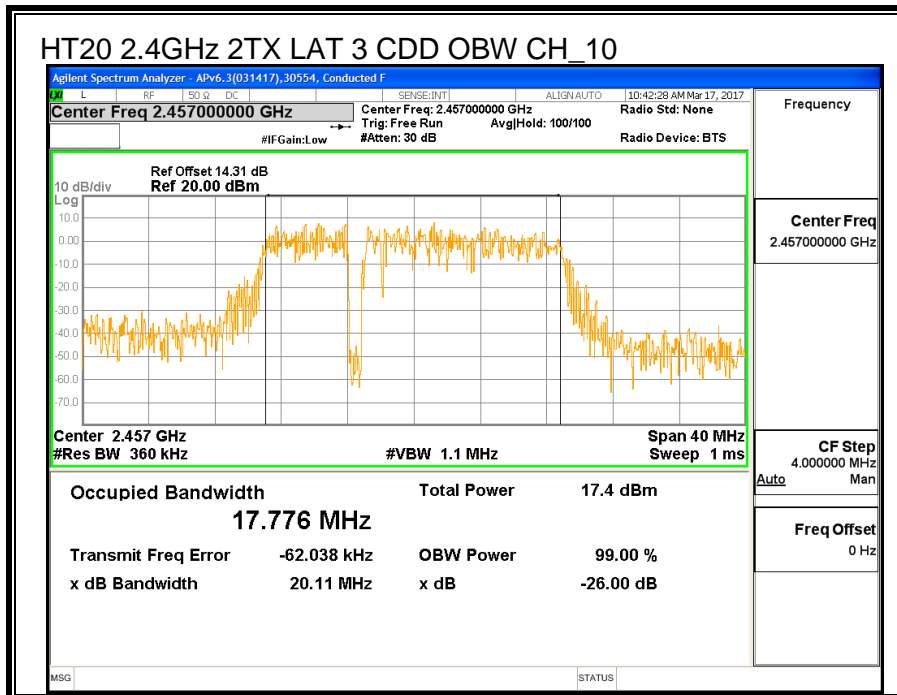
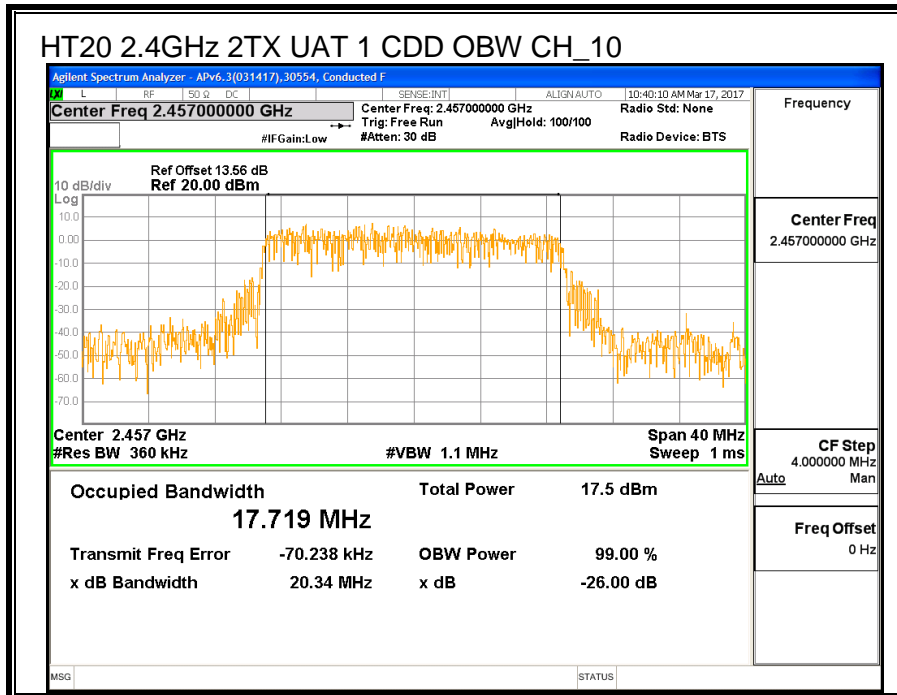


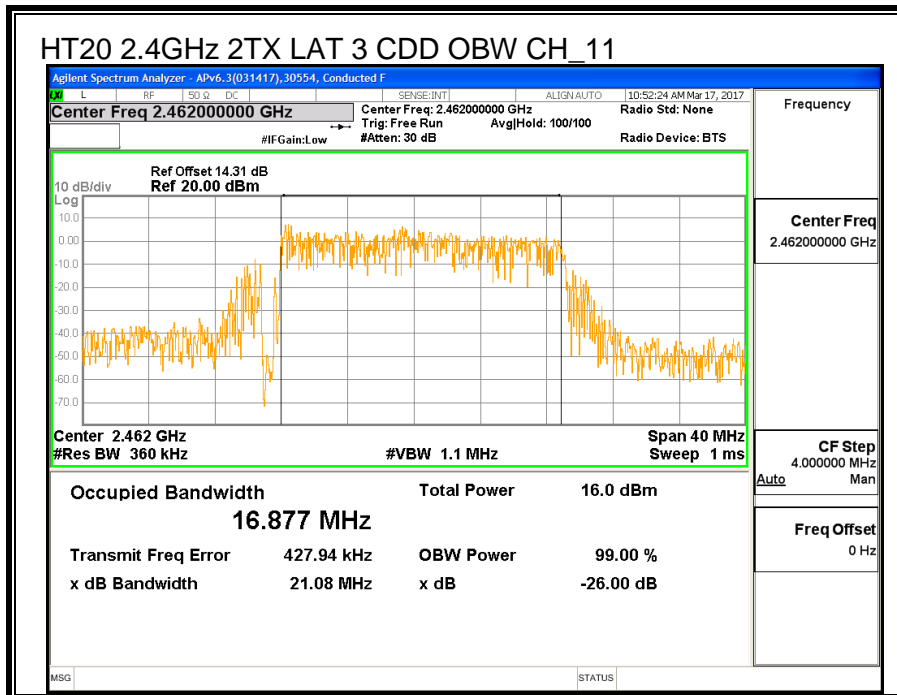
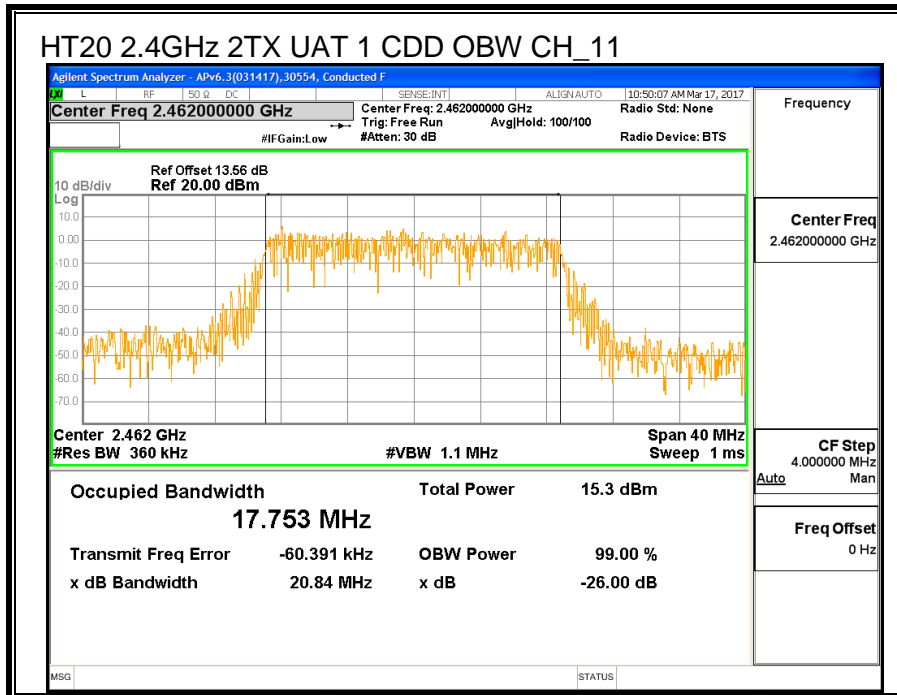


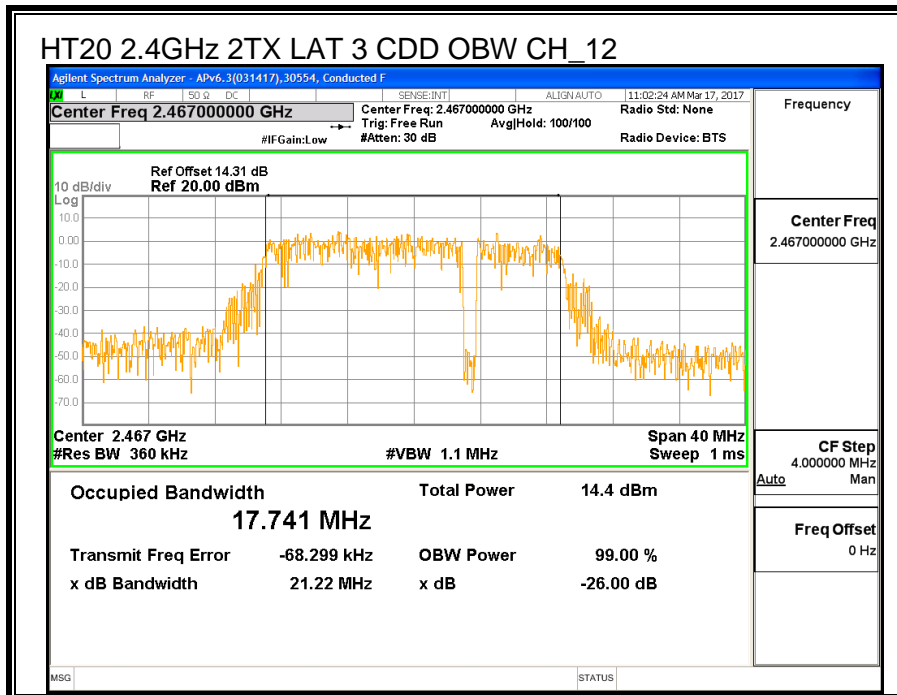
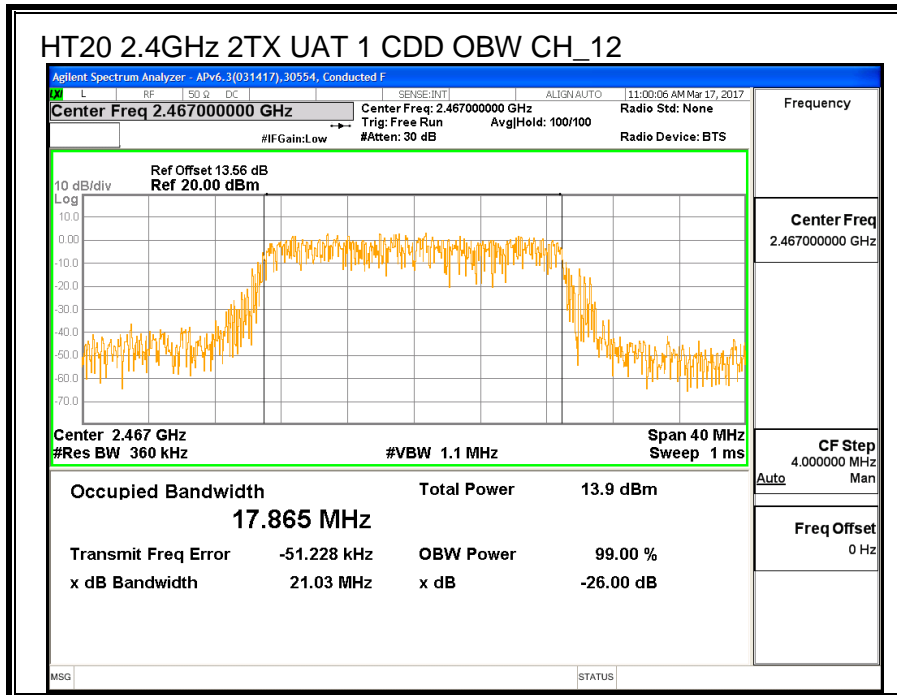


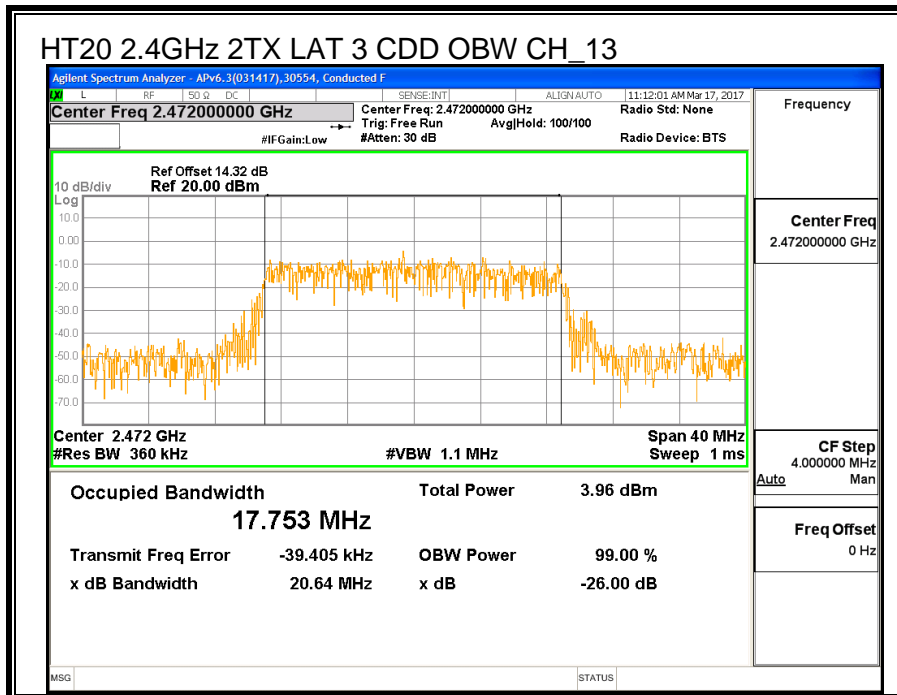
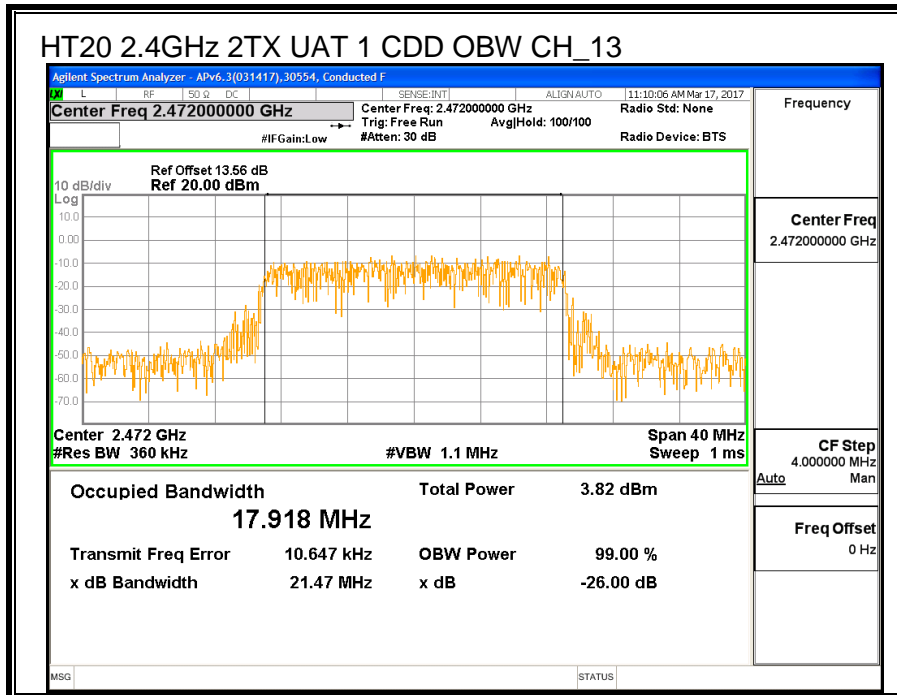












8.6.3. AVERAGE POWER

ID:	39472	Date:	6/11/17
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LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power UAT 1 (MHz)	Power LAT 3 (MHz)
Low_1	2412	14.82	14.94
Low_2	2417	17.72	17.99
Low_3	2422	19.40	19.48
Middle_6	2437	20.85	20.93
High_9	2452	19.34	19.42
High_10	2457	16.41	16.49
High_11	2462	14.32	14.40
High_12	2467	12.79	12.95
High_13	2472	3.86	3.91

8.6.4. OUTPUT POWER

ID:	39472	Date:	6/11/17
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LIMITS

FCC §15.247

IC RSS-247 (5.4) (d)

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

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

UAT 1	LAT 3	Uncorrelated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
1.01	-2.24	-0.32

RESULTS

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	-0.32	30.00	30	36	30.00
Low_2	2417	-0.32	30.00	30	36	30.00
Low_3	2422	-0.32	30.00	30	36	30.00
Mid	2437	-0.32	30.00	30	36	30.00
High_9	2452	-0.32	30.00	30	36	30.00
High_10	2457	-0.32	30.00	30	36	30.00
High_11	2462	-0.32	30.00	30	36	30.00
High_12	2467	-0.32	30.00	30	36	30.00
High_13	2472	-0.32	30.00	30	36	30.00

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

Channel	Frequency (MHz)	UAT 1 Meas Power (dBm)	LAT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low_1	2412	21.91	22.21	25.07	30.00	-4.93
Low_2	2417	23.46	24.17	26.84	30.00	-3.16
Low_3	2422	24.15	24.62	27.40	30.00	-2.60
Mid	2437	25.71	25.97	28.85	30.00	-1.15
High_9	2452	24.09	24.54	27.33	30.00	-2.67
High_10	2457	23.35	23.43	26.40	30.00	-3.60
High_11	2462	21.00	22.67	24.93	30.00	-5.07
High_12	2467	20.15	20.17	23.17	30.00	-6.83
High_13	2472	10.95	10.54	13.76	30.00	-16.24

8.6.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-247 (5.2) (b)

For digitally modulated systems, the power spectral density conducted from 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.

DIRECTIONAL ANTENNA GAIN

For PSD used correlated gain: The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

UAT 1 Antenna Gain (dBi)	LAT 3 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
1.01	-2.24	2.55

RESULTS

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

Channel	Frequency (MHz)	UAT 1 Meas (dBm)	LAT 3 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low_1	2412	-8.860	-7.884	-5.334	8.0	-13.334
Low_2	2417	-6.870	-6.308	-3.570	8.0	-11.570
Low_3	2422	-4.975	-4.102	-1.506	8.0	-9.506
Mid_6	2437	-4.152	-4.622	-1.370	8.0	-9.370
High_9	2452	-4.901	-5.293	-2.082	8.0	-10.082
High_10	2457	-8.191	-6.572	-4.296	8.0	-12.296
High_11	2462	-9.682	-9.714	-6.688	8.0	-14.688
High_12	2467	-12.031	-11.382	-8.684	8.0	-16.684
High_13	2472	-21.108	-21.065	-18.076	8.0	-26.076

