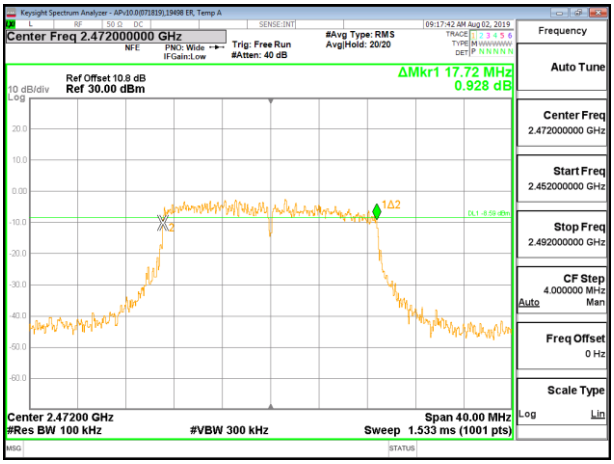
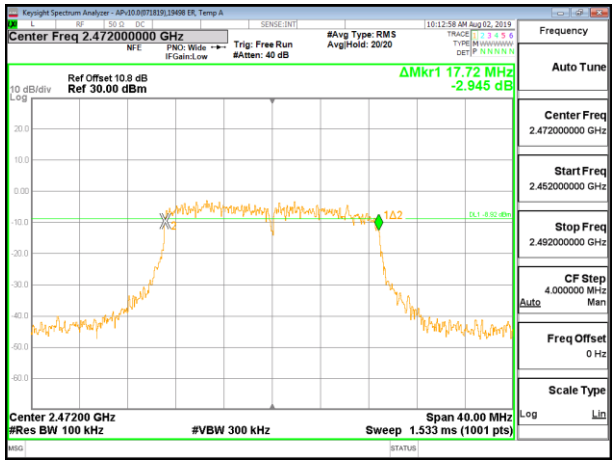
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 0



HIGH CHANNEL 13 CHAIN 1

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8.3.4. 802.11n HT40 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 3	2422	35.20	35.92	0.5
Mid 6	2437	35.84	36.48	0.5
High 9	2452	33.92	35.12	0.5
High 10	2457	35.60	35.92	0.5
High 11	2462	35.92	35.60	0.5

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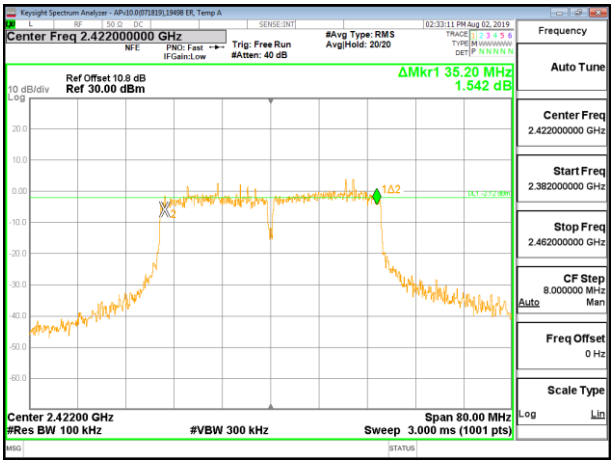
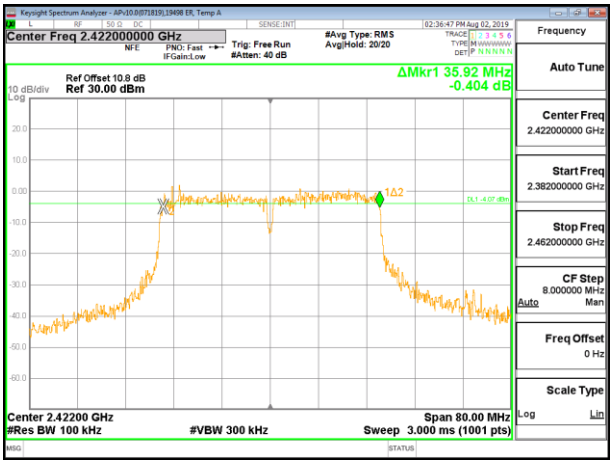
LOW CHANNEL 3

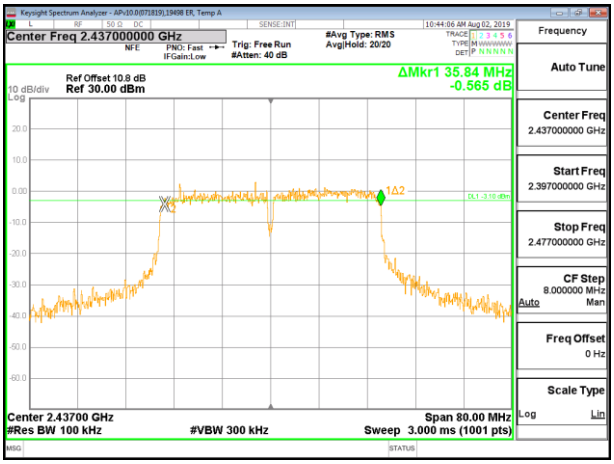


LOW CHANNEL 3 CHAIN 0

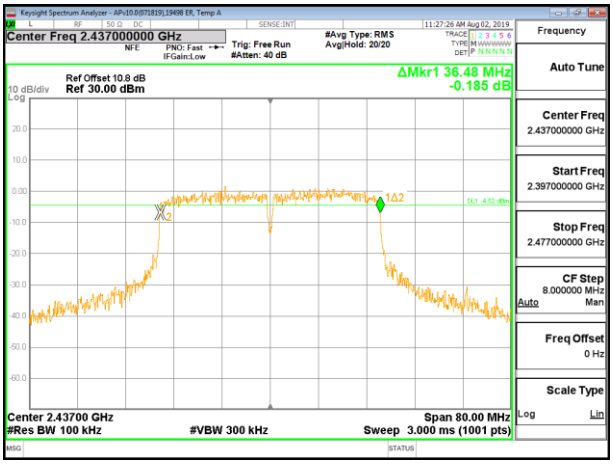


LOW CHANNEL 3 CHAIN 1

MID CHANNEL 6



MID CHANNEL 6 CHAIN 0



MID CHANNEL 6 CHAIN 1

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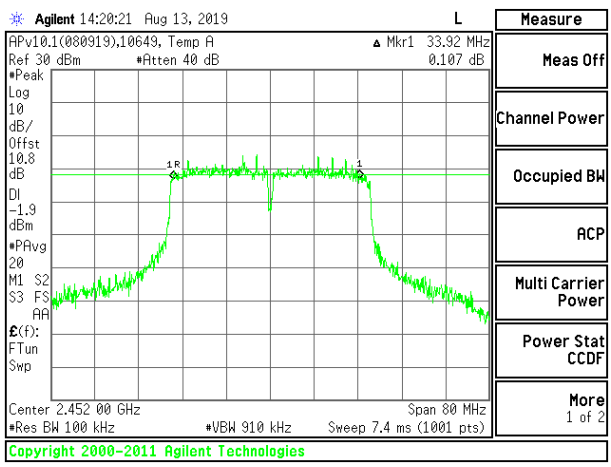
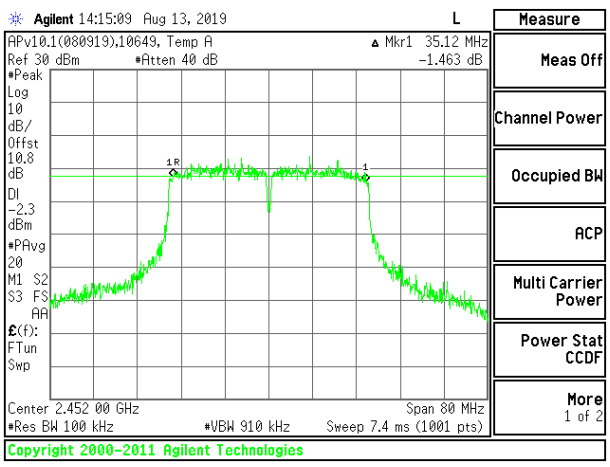
HIGH CHANNEL 9

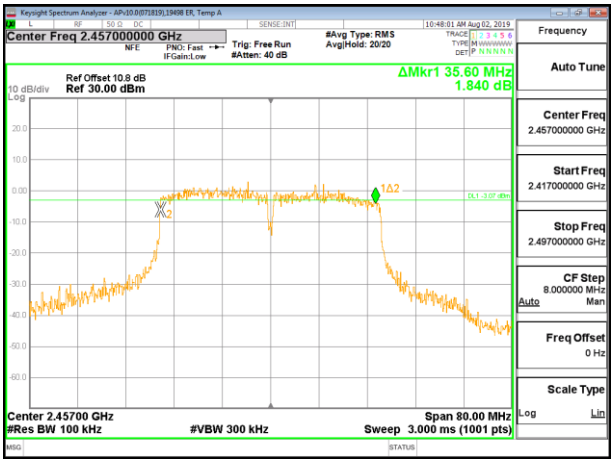


HIGH CHANNEL 9 CHAIN 0

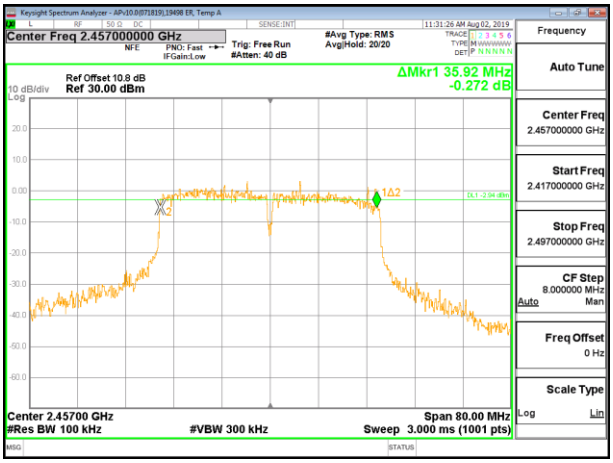


HIGH CHANNEL 9 CHAIN 1

HIGH CHANNEL 10



HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1

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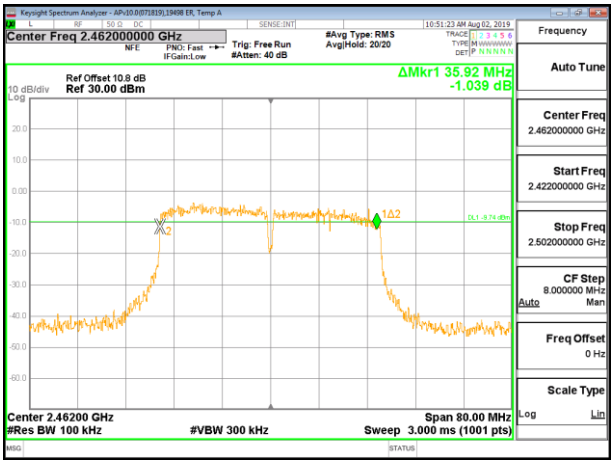
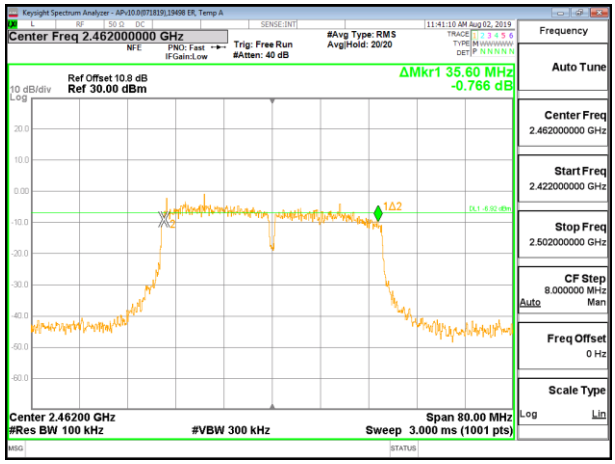
HIGH CHANNEL 11



HIGH CHANNEL 11 CHAIN 0



HIGH CHANNEL 11 CHAIN 1

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8.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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.

TEST PROCEDURE

The transmitter output is connected to a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a gated average reading of power.

DIRECTIONAL ANTENNA GAIN

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.20	2.20	0.53	3.29

Tested By:	19498 ER
Date:	8/2/2019

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RESULTS

8.4.1. 802.11b MODE

2TX Chain 0 + Chain 1 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	0.53	30.00	36	30.00
Low 2	2417	0.53	30.00	36	30.00
Mid 6	2437	0.53	30.00	36	30.00
High 10	2457	0.53	30.00	36	30.00
High 11	2462	0.53	30.00	36	30.00
High 12	2467	0.53	30.00	36	30.00
High 13	2472	0.53	30.00	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	15.92	16.32	19.13	30.00	-10.87
Low 2	2417	18.06	18.20	21.14	30.00	-8.86
Mid 6	2437	18.05	18.46	21.27	30.00	-8.73
High 10	2457	18.14	18.35	21.26	30.00	-8.74
High 11	2462	16.12	16.33	19.24	30.00	-10.76
High 12	2467	13.89	14.31	17.12	30.00	-12.88
High 13	2472	12.98	13.39	16.20	30.00	-13.80

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8.4.2. 802.11g MODE

2TX Chain 0 + Chain 1 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	0.53	30.00	36	30.00
Low 2	2417	0.53	30.00	36	30.00
Mid 6	2437	0.53	30.00	36	30.00
High 10	2457	0.53	30.00	36	30.00
High 11	2462	0.53	30.00	36	30.00
High 12	2467	0.53	30.00	36	30.00
High 13	2472	0.53	30.00	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.25	16.35	19.31	30.00	-10.69
Low 2	2417	18.05	18.33	21.20	30.00	-8.80
Mid 6	2437	18.29	18.33	21.32	30.00	-8.68
High 10	2457	18.05	18.16	21.12	30.00	-8.88
High 11	2462	16.25	16.39	19.33	30.00	-10.67
High 12	2467	14.17	14.47	17.33	30.00	-12.67
High 13	2472	12.99	13.37	16.19	30.00	-13.81

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8.4.3. 802.11n HT20 MODE

2TX Chain 0 + Chain 1 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	0.53	30.00	36	30.00
Low 2	2417	0.53	30.00	36	30.00
Mid 6	2437	0.53	30.00	36	30.00
High 10	2457	0.53	30.00	36	30.00
High 11	2462	0.53	30.00	36	30.00
High 12	2467	0.53	30.00	36	30.00
High 13	2472	0.53	30.00	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.37	16.47	19.43	30.00	-10.57
Low 2	2417	17.18	17.06	20.13	30.00	-9.87
Mid 6	2437	18.17	18.33	21.26	30.00	-8.74
High 10	2457	18.02	18.26	21.15	30.00	-8.85
High 11	2462	16.37	16.48	19.44	30.00	-10.56
High 12	2467	14.18	14.39	17.30	30.00	-12.70
High 13	2472	11.46	11.28	14.38	30.00	-15.62

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8.4.4. 802.11n HT40 MODE

2TX Chain 0 + Chain 1 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 3	2422	0.53	30.00	36	30.00
Mid 6	2437	0.53	30.00	36	30.00
High 9	2452	0.53	30.00	36	30.00
High 10	2457	0.53	30.00	36	30.00
High 11	2462	0.53	30.00	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 3	2422	17.87	17.68	20.79	30.00	-9.21
Mid 6	2437	18.27	18.31	21.30	30.00	-8.70
High 9	2452	17.74	17.65	20.71	30.00	-9.29
High 10	2457	17.69	17.61	20.66	30.00	-9.34
High 11	2462	13.35	13.08	16.23	30.00	-13.77

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8.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

8.5.1. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

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/ 3kHz)	Margin (dB)
Low 1	2412	-6.01	-5.95	-2.97	8.0	-11.0
Low 2	2417	-4.38	-4.36	-1.36	8.0	-9.4
Mid 6	2437	-4.08	-4.09	-1.07	8.0	-9.1
High 10	2457	-4.20	-4.04	-1.11	8.0	-9.1
High 11	2462	-5.94	-5.91	-2.91	8.0	-10.9
High 12	2467	-7.87	-7.79	-4.82	8.0	-12.8
High 13	2472	-8.80	-8.89	-5.83	8.0	-13.8

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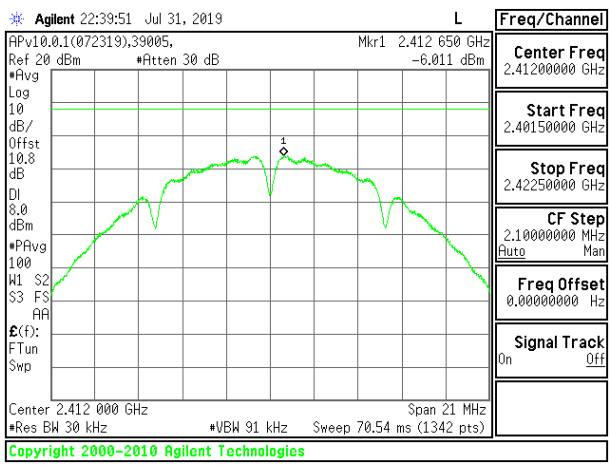
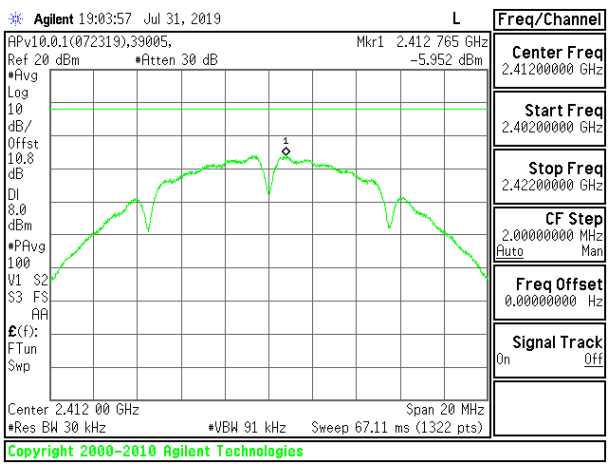
LOW CHANNEL 1

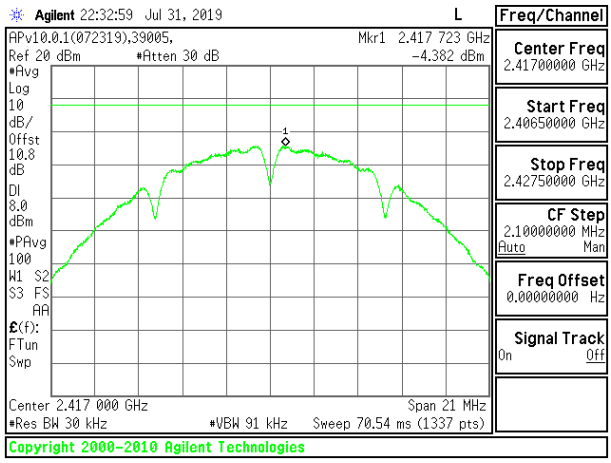


LOW CHANNEL 1 CHAIN 0

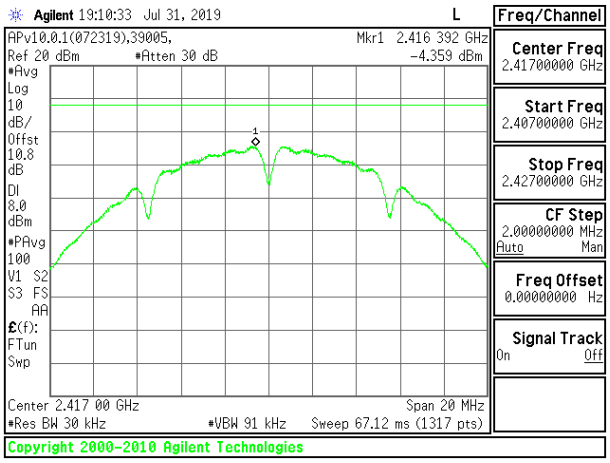


LOW CHANNEL 1 CHAIN 1

LOW CHANNEL 2



LOW CHANNEL 2 CHAIN 0



LOW CHANNEL 2 CHAIN 1

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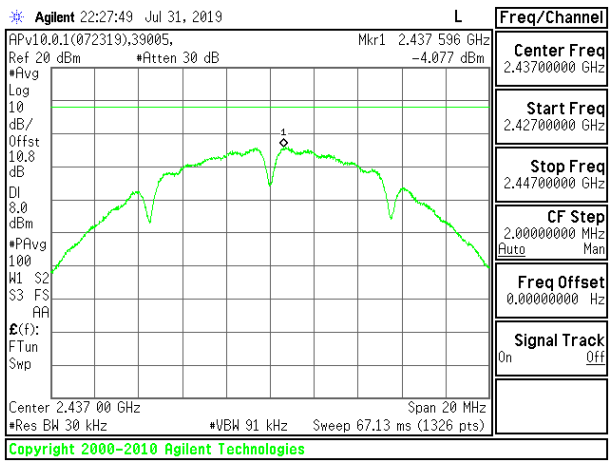
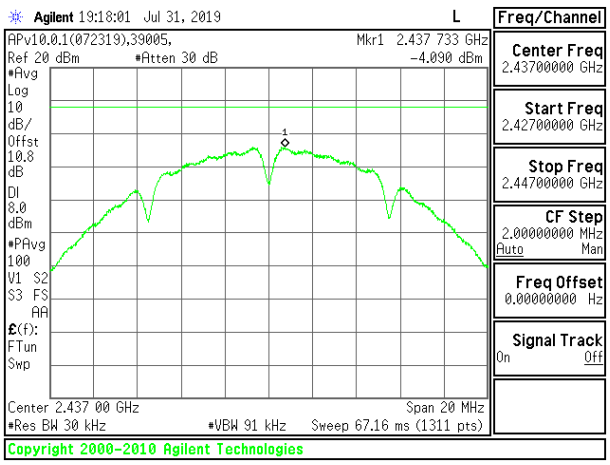
MID CHANNEL 6

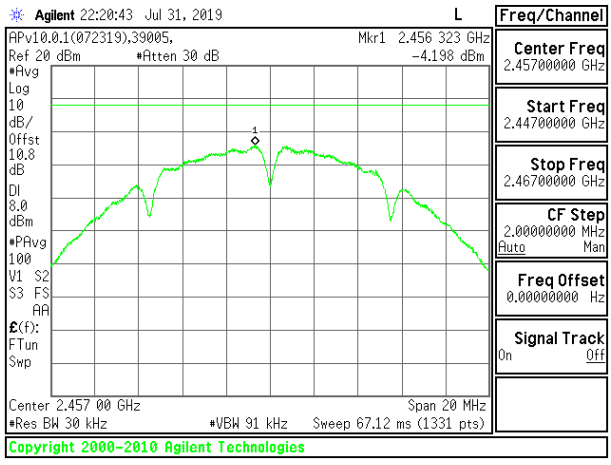


MID CHANNEL 6 CHAIN 0

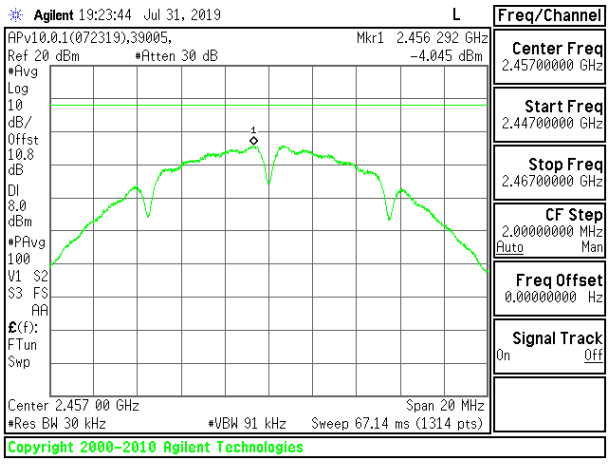


MID CHANNEL 6 CHAIN 1

HIGH CHANNEL 10



HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1

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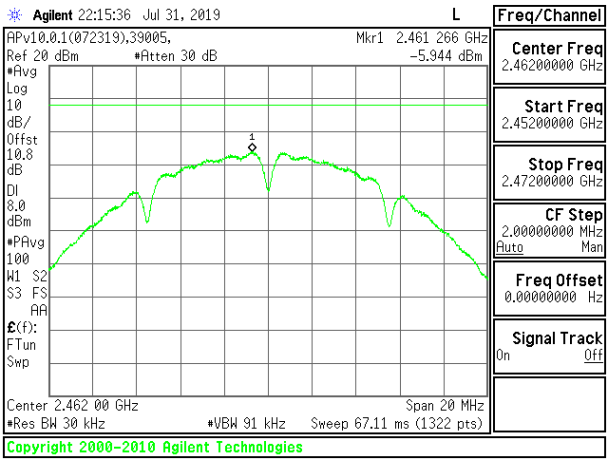
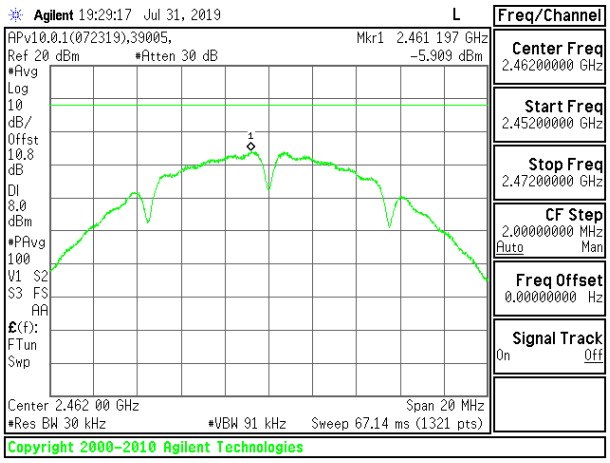
HIGH CHANNEL 11

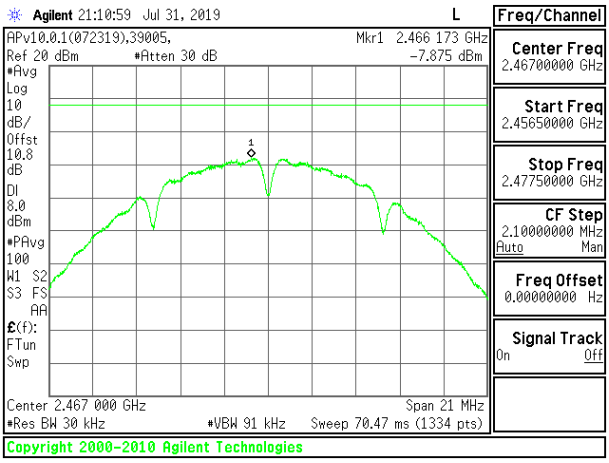


HIGH CHANNEL 11 CHAIN 0

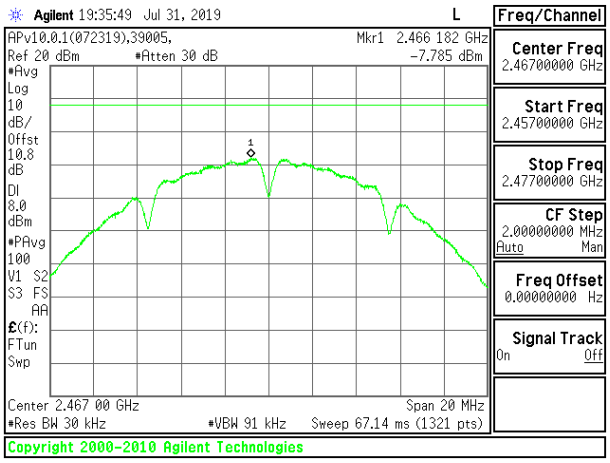


HIGH CHANNEL 11 CHAIN 1

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 0



HIGH CHANNEL 12 CHAIN 1

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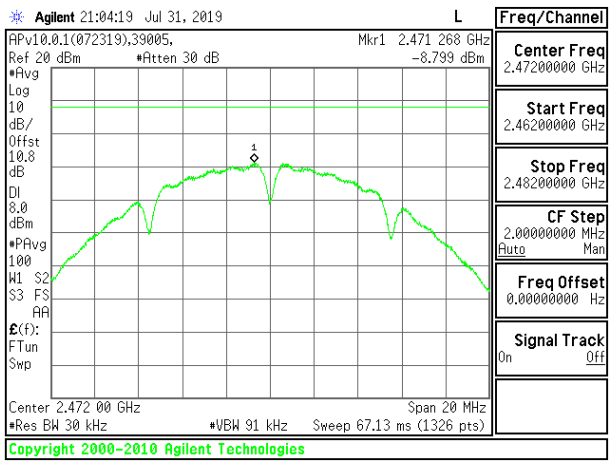
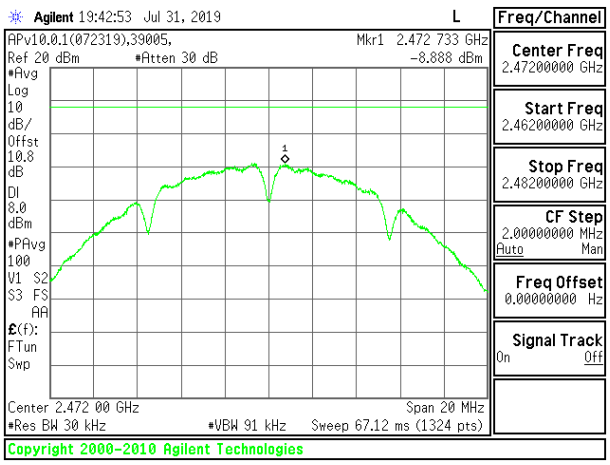
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 0



HIGH CHANNEL 13 CHAIN 1

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8.5.2. 802.11g MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Duty Cycle CF (dB)	0.22	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/ 3kHz)	Margin (dB)
Low 1	2412	-8.48	-8.46	-5.24	8.0	-13.2
Low 2	2417	-6.92	-6.61	-3.53	8.0	-11.5
Mid 6	2437	-6.30	-6.32	-3.08	8.0	-11.1
High 10	2457	-6.80	-6.49	-3.41	8.0	-11.4
High 11	2462	-8.25	-8.12	-4.95	8.0	-13.0
High 12	2467	-10.49	-10.85	-7.44	8.0	-15.4
High 13	2472	-11.99	-11.97	-8.75	8.0	-16.7

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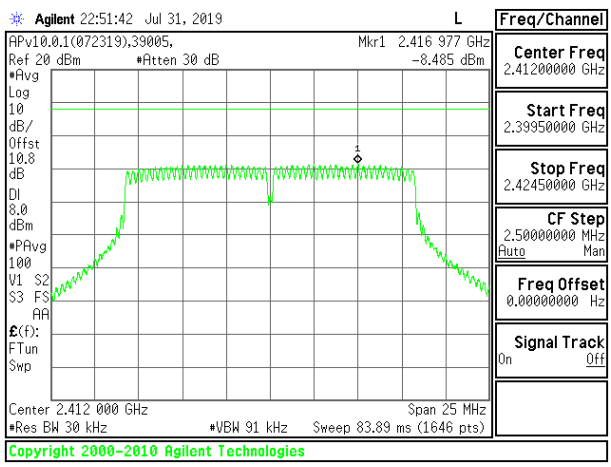
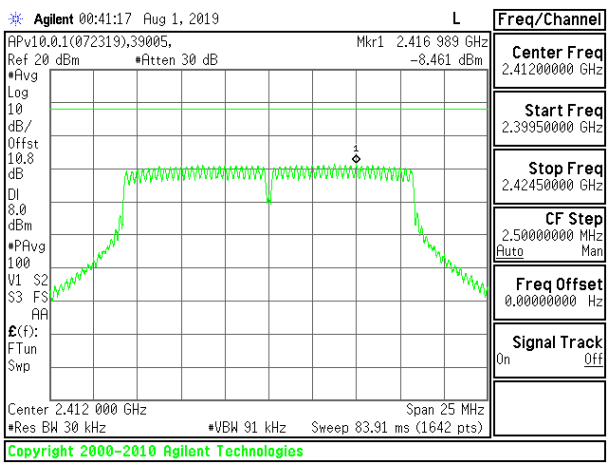
LOW CHANNEL 1

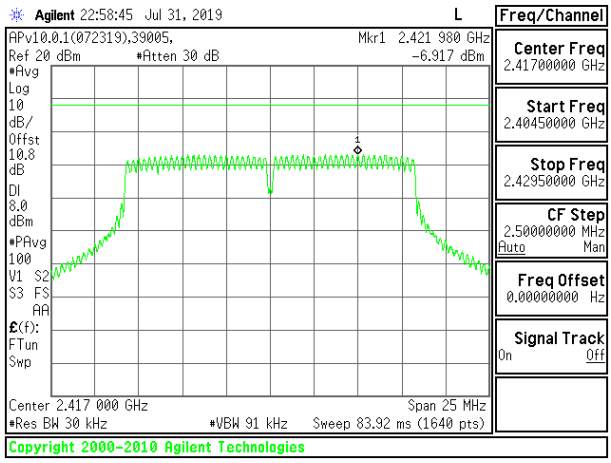


LOW CHANNEL 1 CHAIN 0



LOW CHANNEL 1 CHAIN 1

LOW CHANNEL 2



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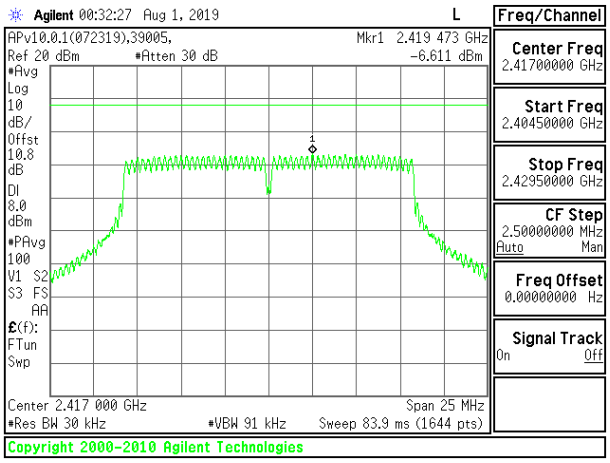

LOW CHANNEL 2 CHAIN 1

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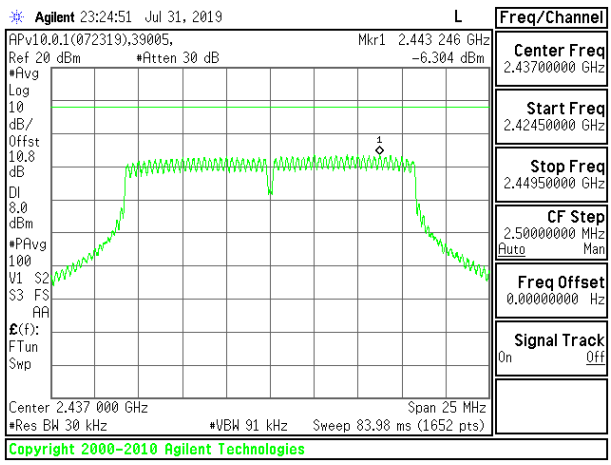
MID CHANNEL 6



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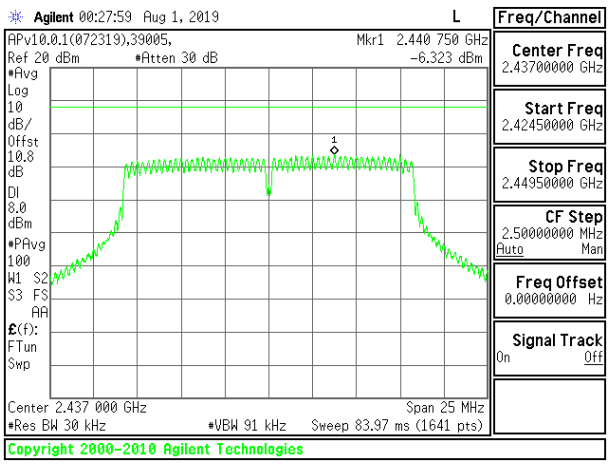
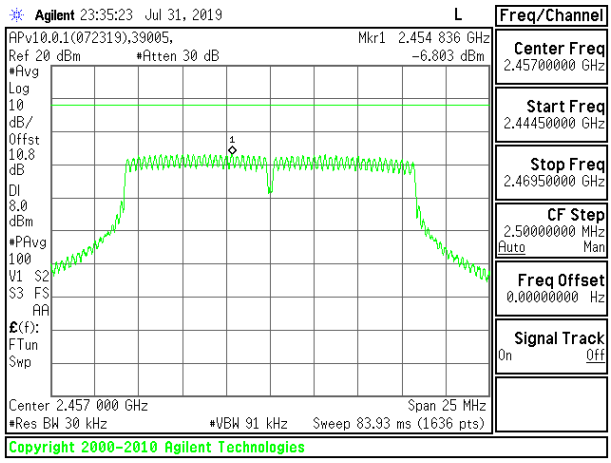


MID CHANNEL 6 CHAIN 1

HIGH CHANNEL 10



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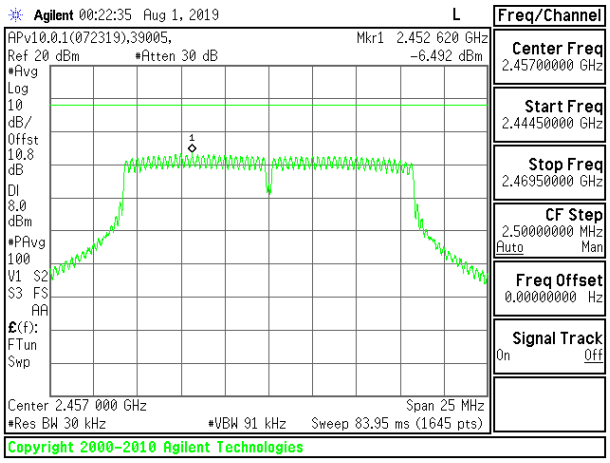

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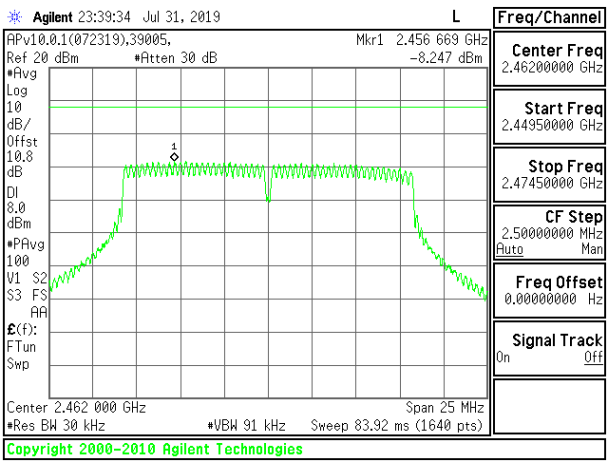
HIGH CHANNEL 11



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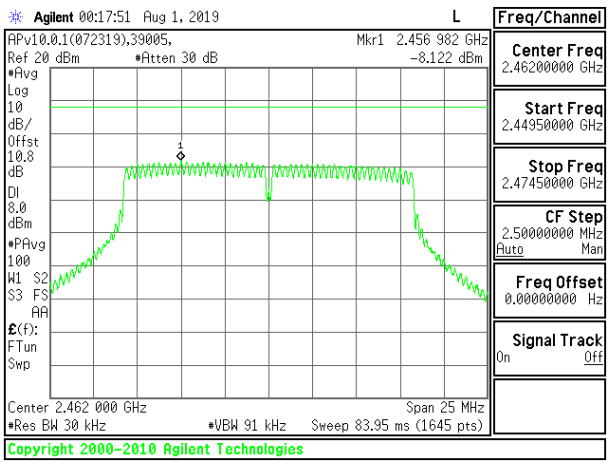
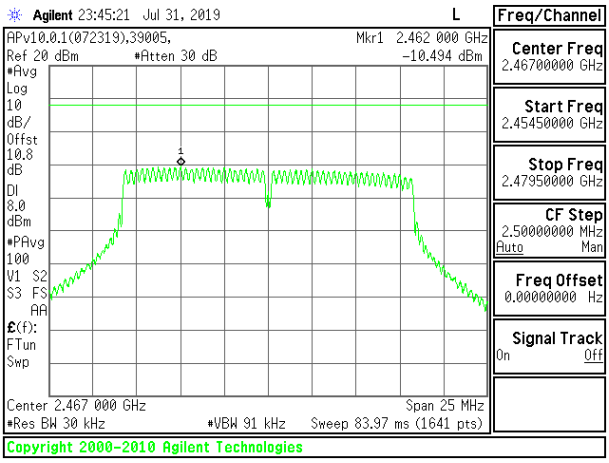


HIGH CHANNEL 11 CHAIN 1

HIGH CHANNEL 12



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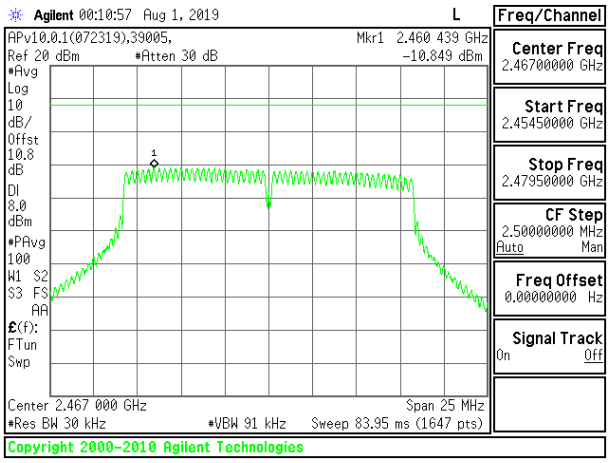

HIGH CHANNEL 12 CHAIN 1

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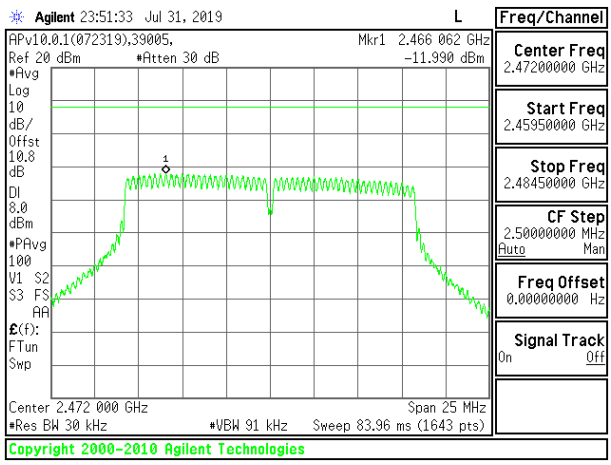
HIGH CHANNEL 13



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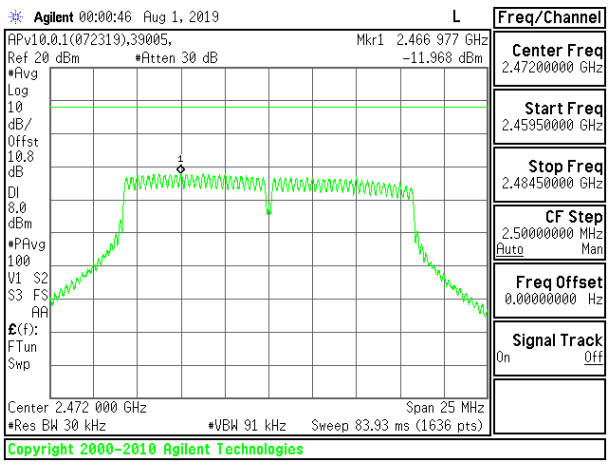

HIGH CHANNEL 13 CHAIN 1

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8.5.3. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Duty Cycle CF (dB)	0.24	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/ 3kHz)	Margin (dB)
Low 1	2412	-9.06	-9.02	-5.79	8.0	-13.8
Low 2	2417	-7.90	-8.07	-4.73	8.0	-12.7
Mid 6	2437	-7.87	-7.61	-4.49	8.0	-12.5
High 10	2457	-7.64	-7.65	-4.39	8.0	-12.4
High 11	2462	-9.25	-9.20	-5.97	8.0	-14.0
High 12	2467	-11.16	-11.36	-8.01	8.0	-16.0
High 13	2472	-12.89	-13.27	-9.83	8.0	-17.8

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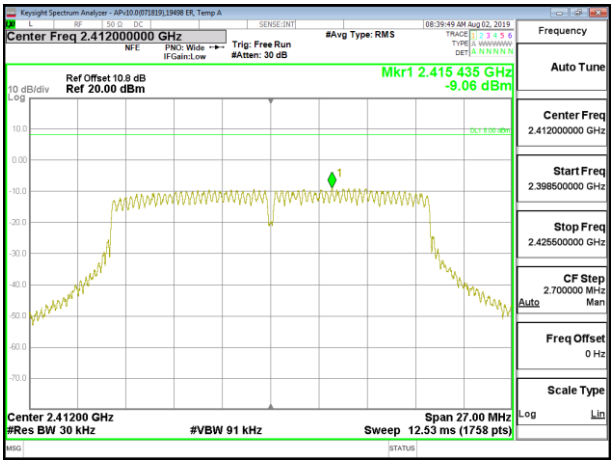
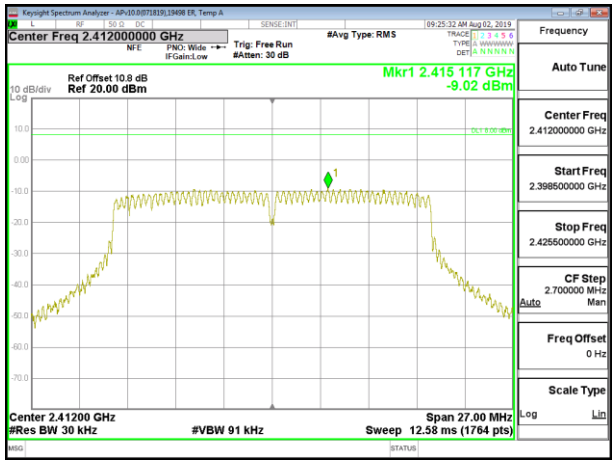
LOW CHANNEL 1

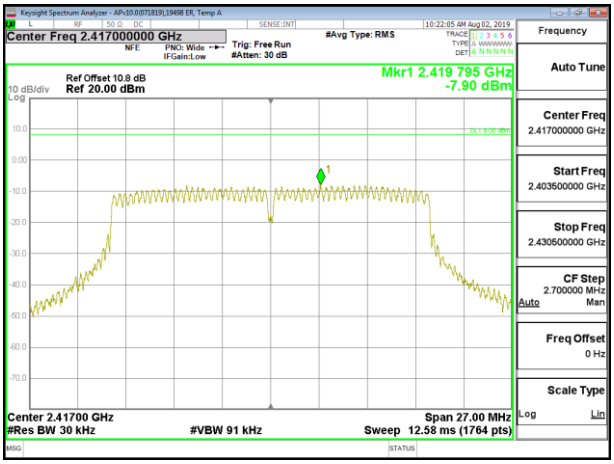


LOW CHANNEL 1 CHAIN 0



LOW CHANNEL 1 CHAIN 1

LOW CHANNEL 2



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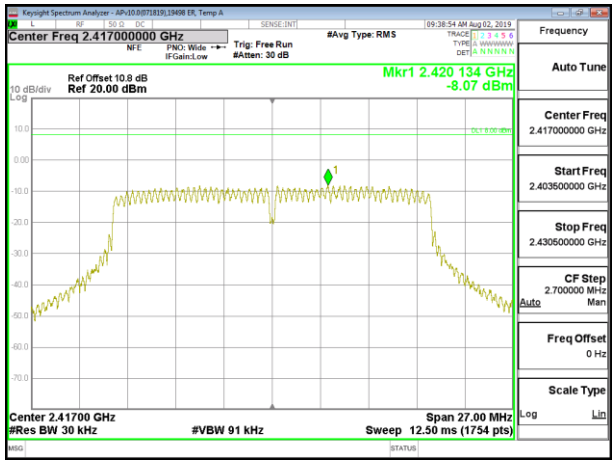

LOW CHANNEL 2 CHAIN 1

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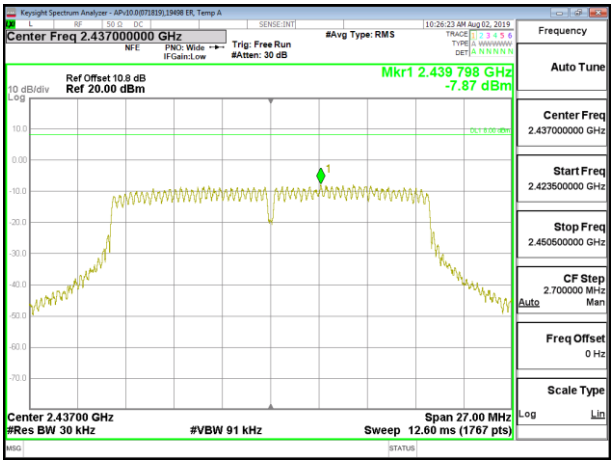
MID CHANNEL 6



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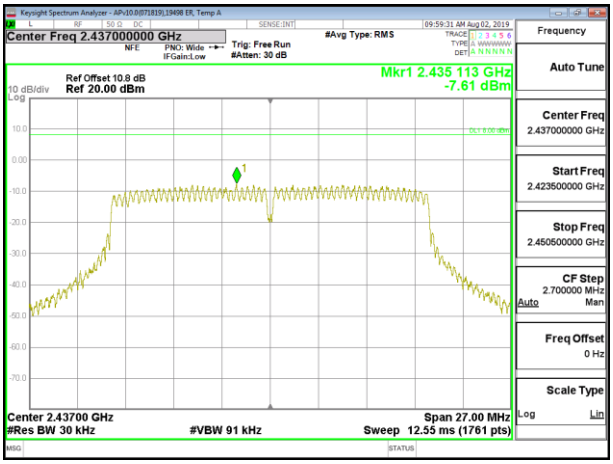
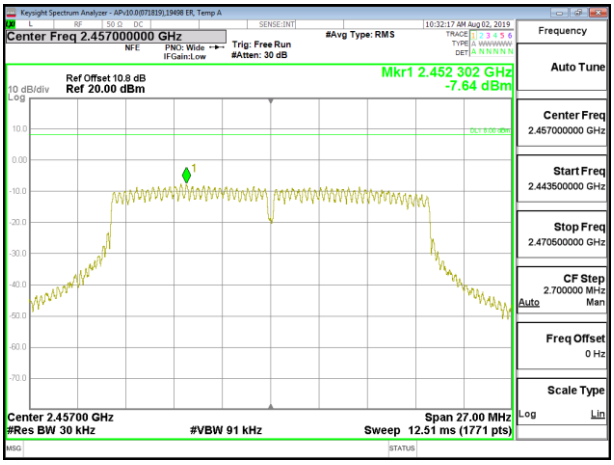


MID CHANNEL 6 CHAIN 1

HIGH CHANNEL 10



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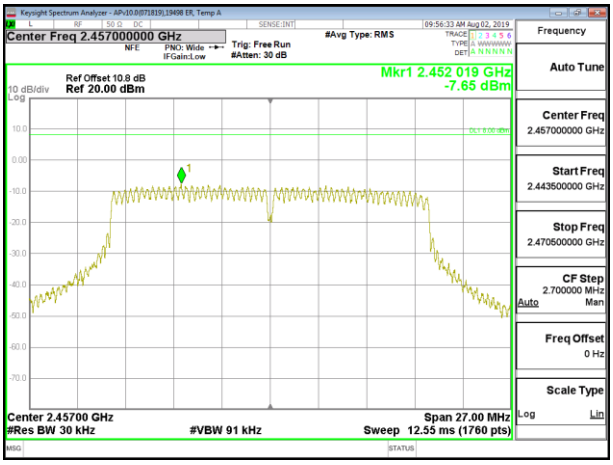

HIGH CHANNEL 10 CHAIN 1

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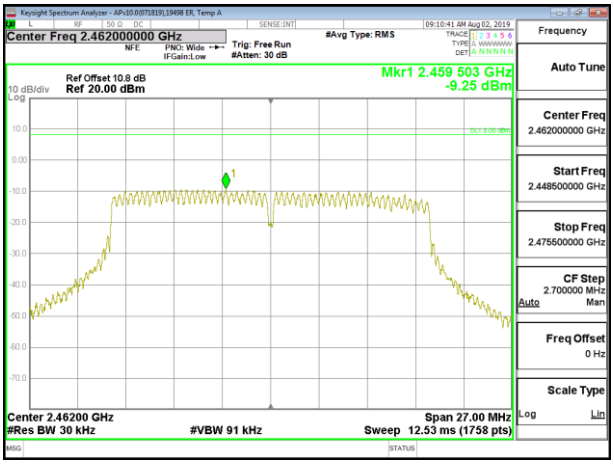
HIGH CHANNEL 11



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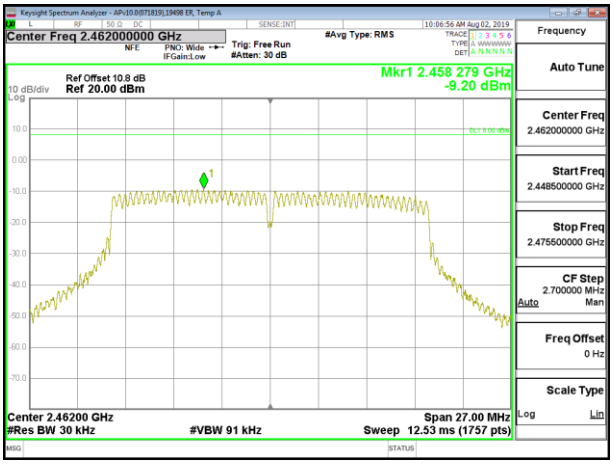
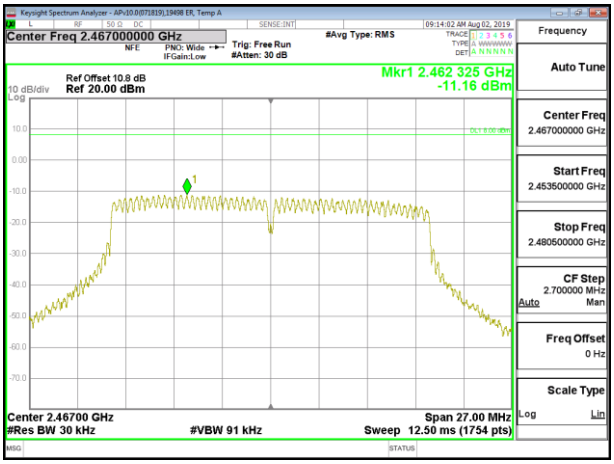
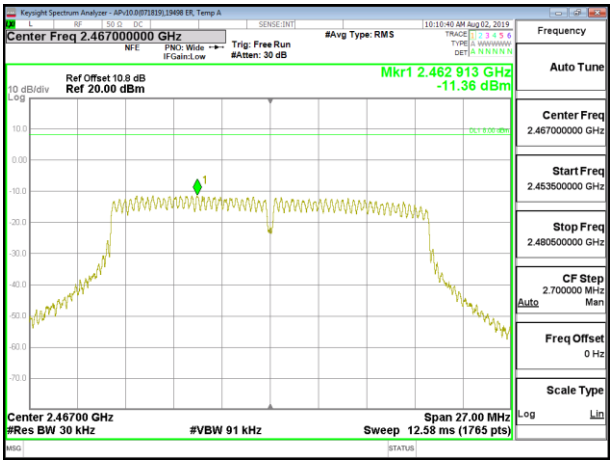


HIGH CHANNEL 11 CHAIN 1

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 0



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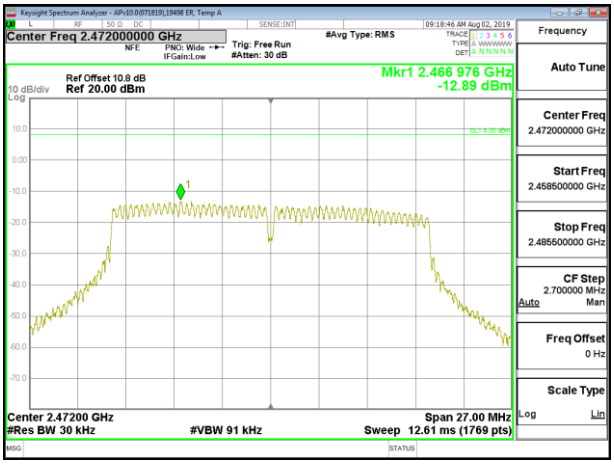
HIGH CHANNEL 13



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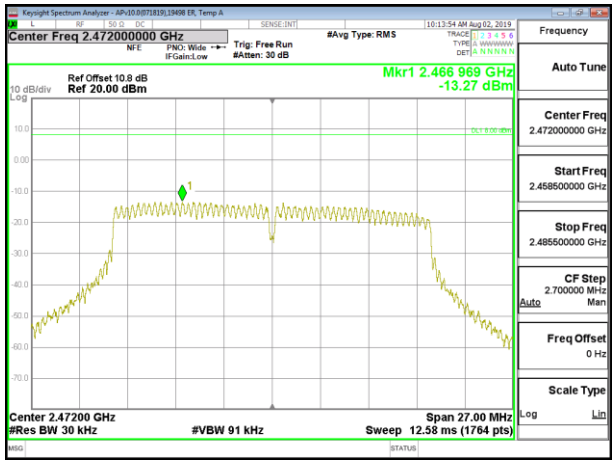

HIGH CHANNEL 13 CHAIN 1

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