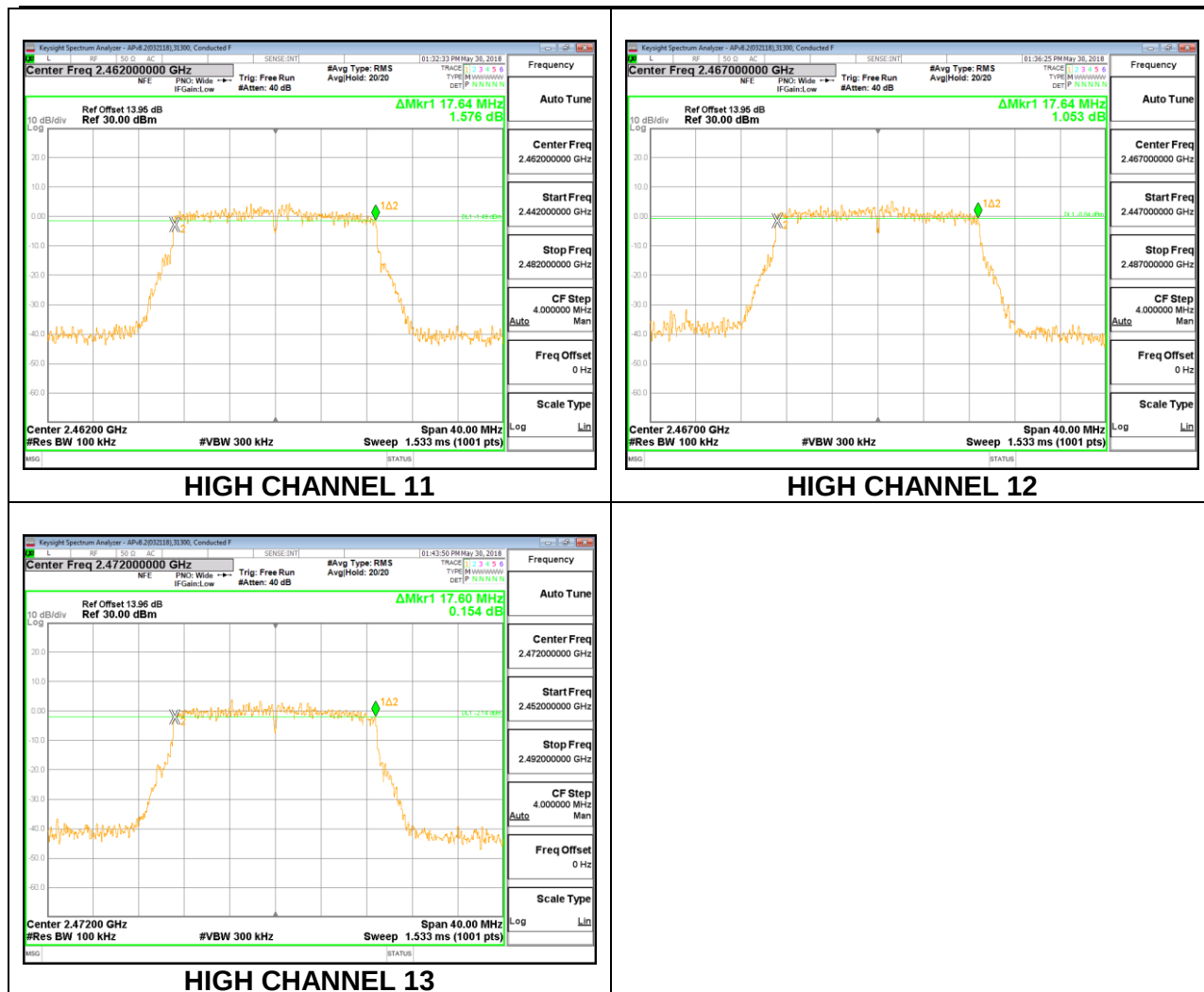


8.3.2. 802.11n HT20 MODE

1TX Antenna 2 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.3200	0.5
Low 2	2417	17.6800	0.5
Low 3	2422	17.5600	0.5
Mid 6	2437	17.6800	0.5
High 9	2452	17.6800	0.5
High 10	2457	17.6000	0.5
High 11	2462	17.6400	0.5
High 12	2467	17.6400	0.5
High 13	2472	17.6000	0.5

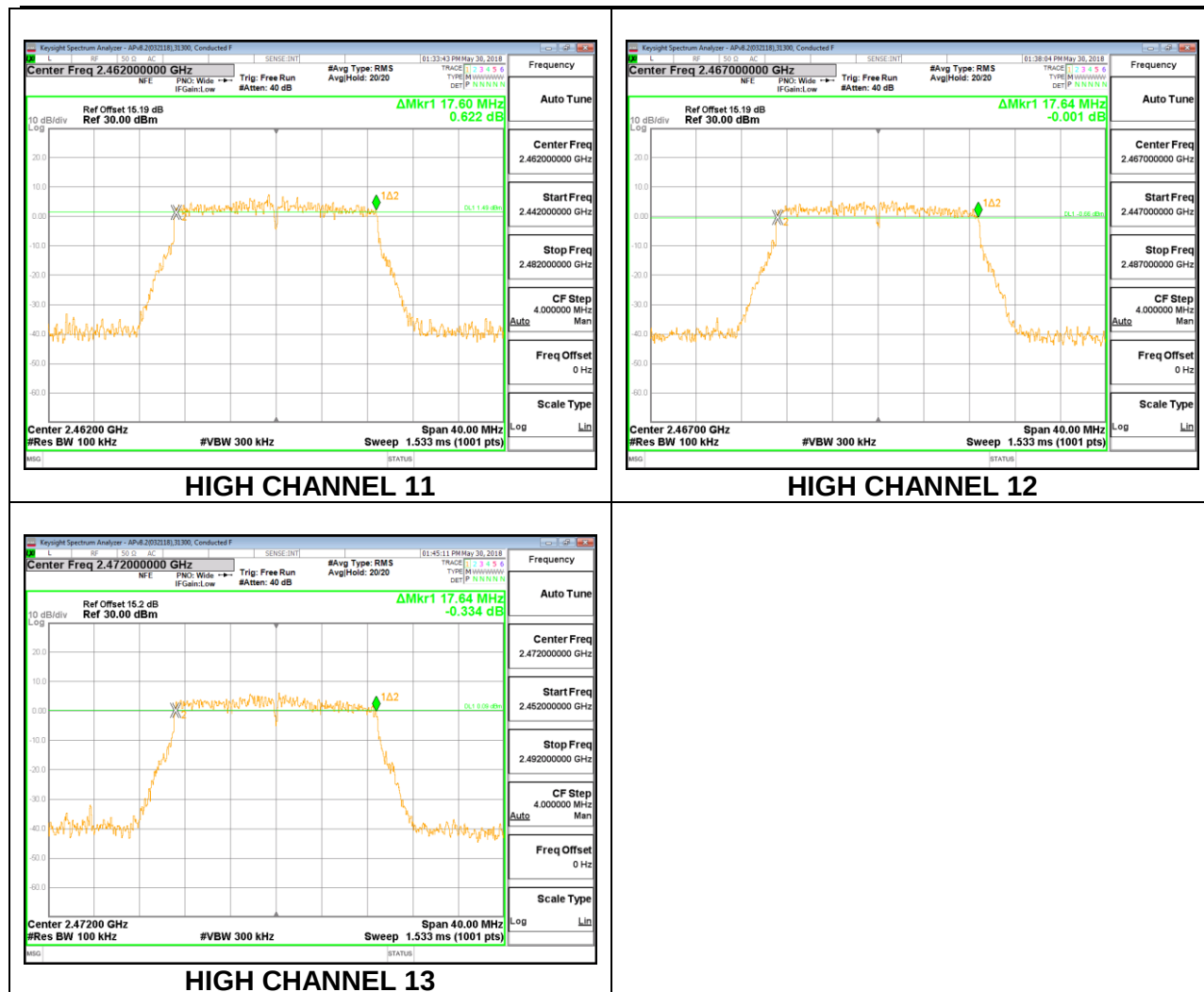




1TX Antenna 5 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.6400	0.5
Low 2	2417	17.6000	0.5
Low 3	2422	17.6800	0.5
Mid 6	2437	17.7200	0.5
High 9	2452	17.6800	0.5
High 10	2457	17.6800	0.5
High 11	2462	17.6000	0.5
High 12	2467	17.6400	0.5
High 13	2472	17.6400	0.5

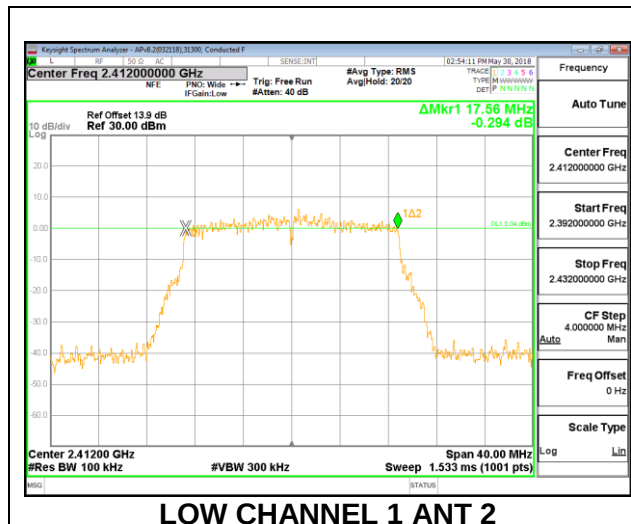




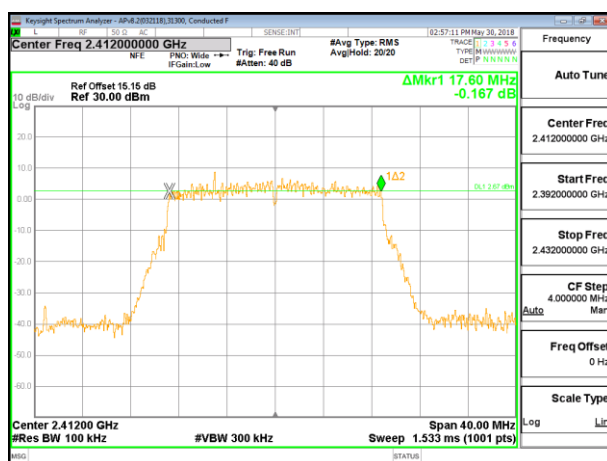
8.3.3. 2TX Antenna 2 + Antenna 5 CDD MODE

Channel	Frequency (MHz)	6 dB BW Ant 2 (MHz)	6 dB BW Ant 5 (MHz)	Minimum Limit (MHz)
Low 1	2412	17.5600	17.6000	0.5
Low 2	2417	17.6800	17.6000	0.5
Low 3	2422	17.6800	17.6000	0.5
Low 4	2427	17.6000	17.6800	0.5
Mid 6	2437	17.6000	17.6800	0.5
High 8	2447	17.6000	17.6400	0.5
High 9	2452	17.6000	17.6000	0.5
High 10	2457	17.6400	17.6400	0.5
High 11	2462	17.6000	17.6400	0.5
High 12	2467	17.6400	17.6400	0.5
High 13	2472	17.6000	17.6400	0.5

LOW CHANNEL 1

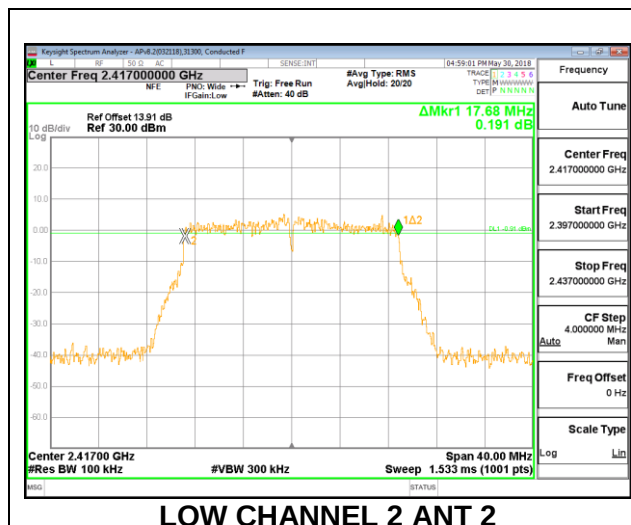


LOW CHANNEL 1 ANT 2

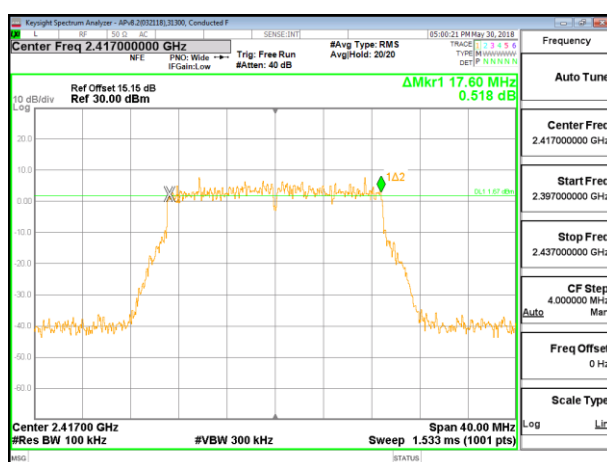


LOW CHANNEL 1 ANT 5

LOW CHANNEL 2

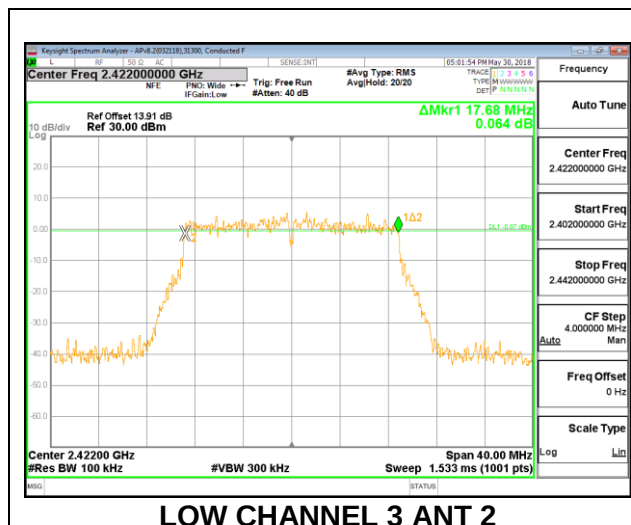


LOW CHANNEL 2 ANT 2

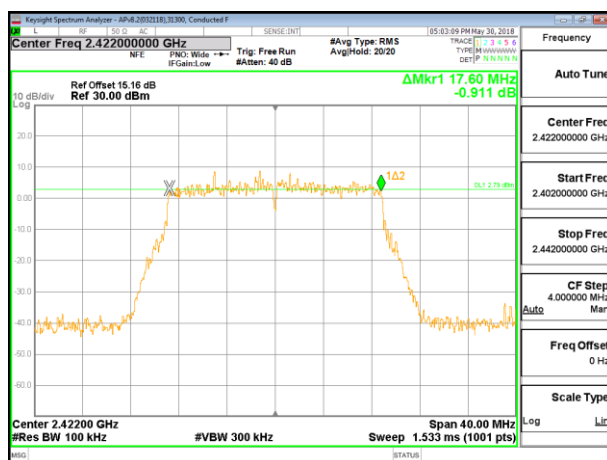


LOW CHANNEL 2 ANT 5

LOW CHANNEL 3

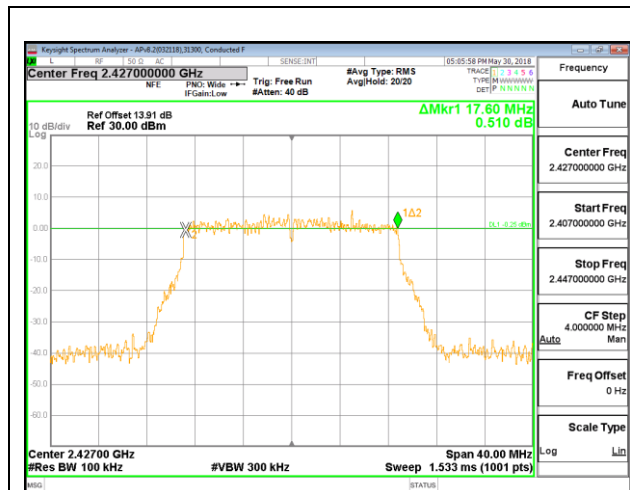


LOW CHANNEL 3 ANT 2

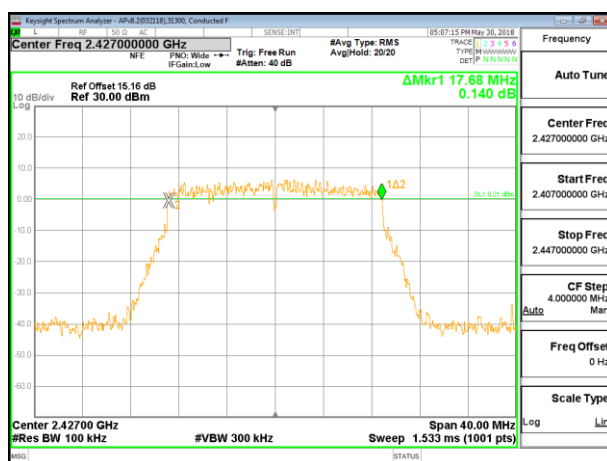


LOW CHANNEL 3 ANT 5

LOW CHANNEL 4

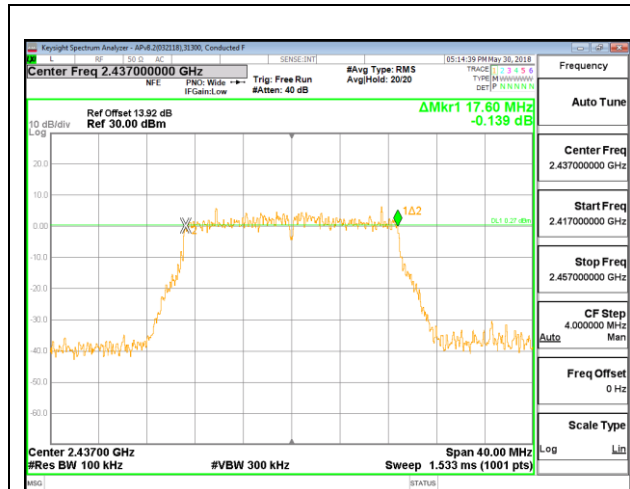


LOW CHANNEL 4 ANT 2

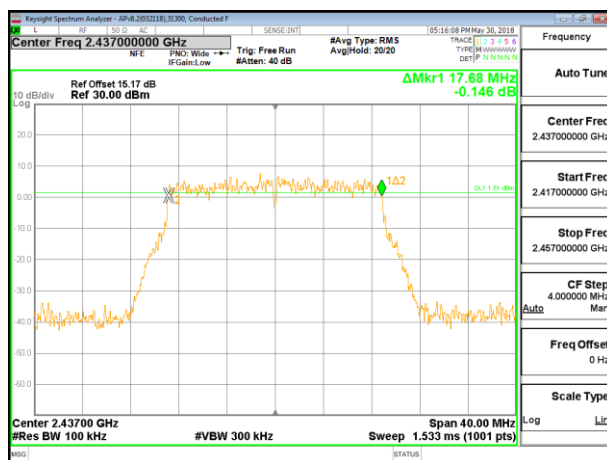


LOW CHANNEL 4 ANT 5

MID CHANNEL 6

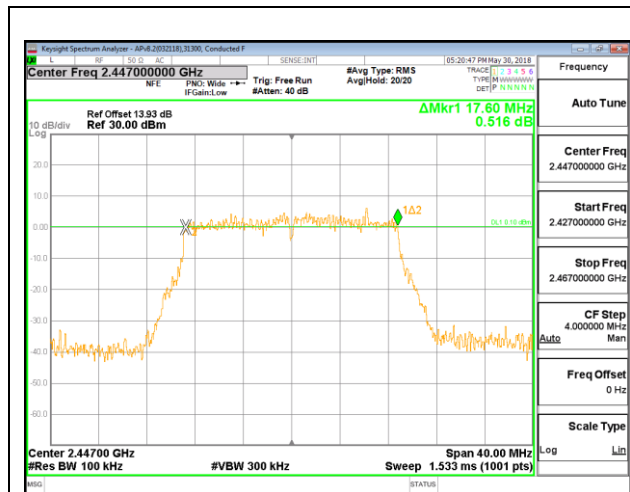


MID CHANNEL 6 ANT 2

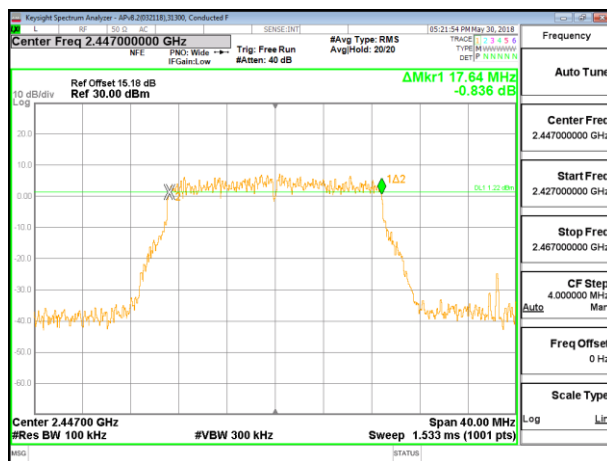


MID CHANNEL 6 ANT 5

HIGH CHANNEL 8

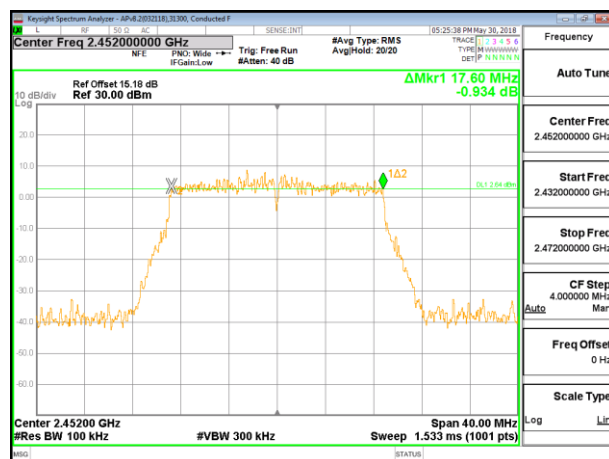
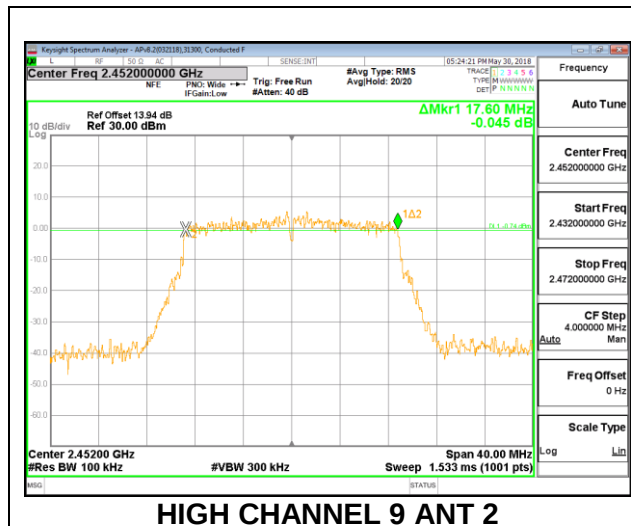


HIGH CHANNEL 8 ANT 2

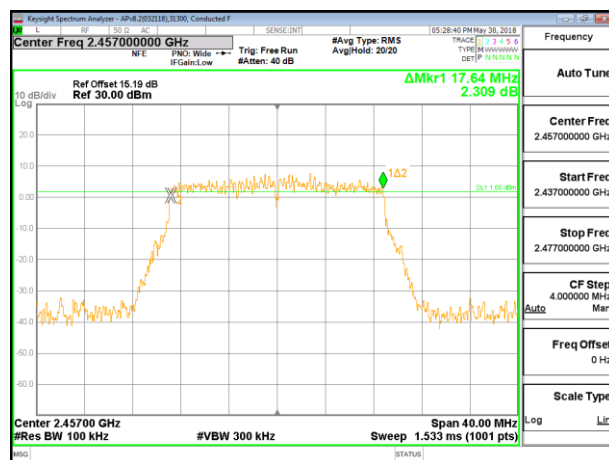
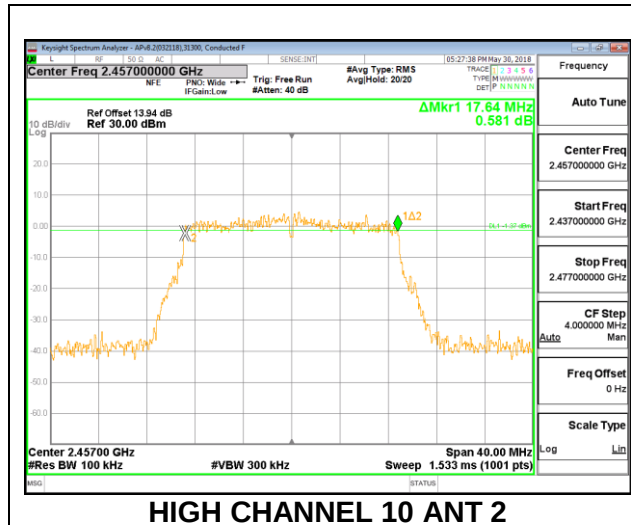


HIGH CHANNEL 8 ANT 5

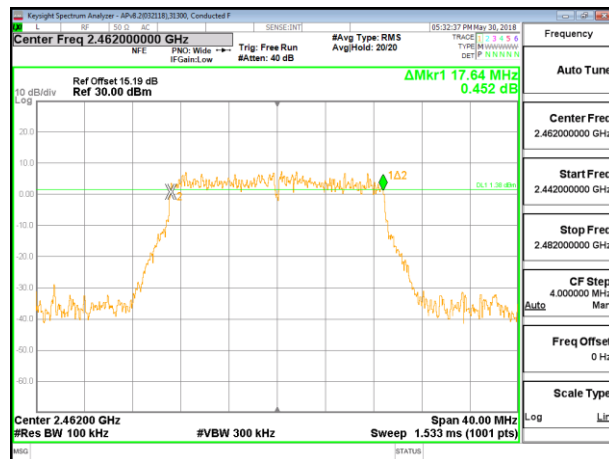
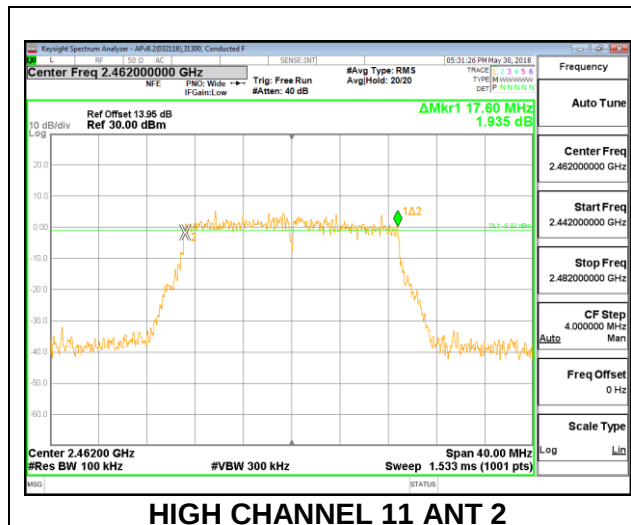
HIGH CHANNEL 9



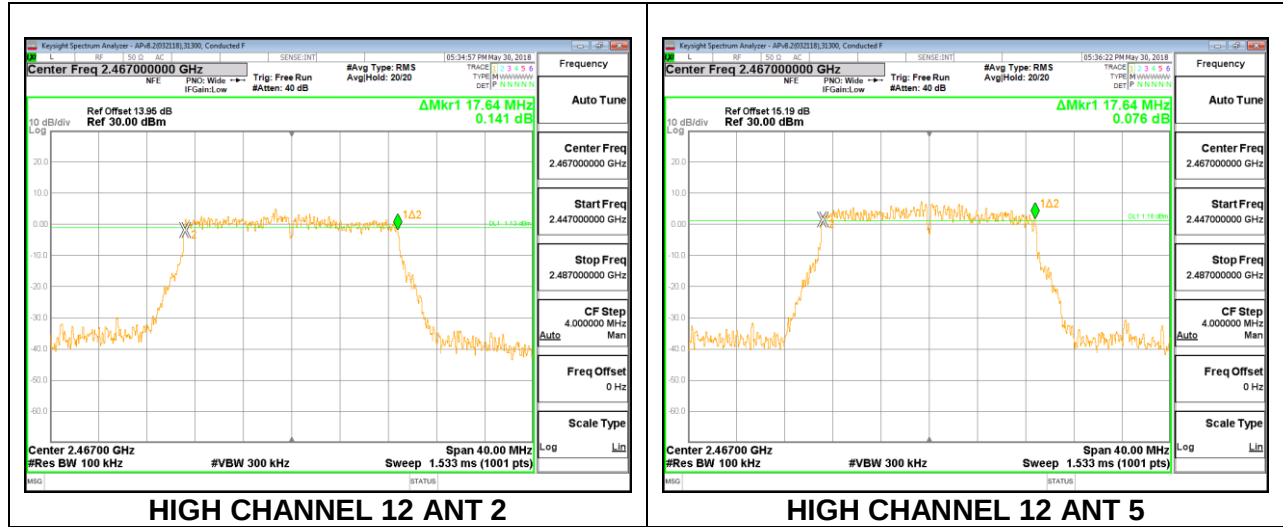
HIGH CHANNEL 10



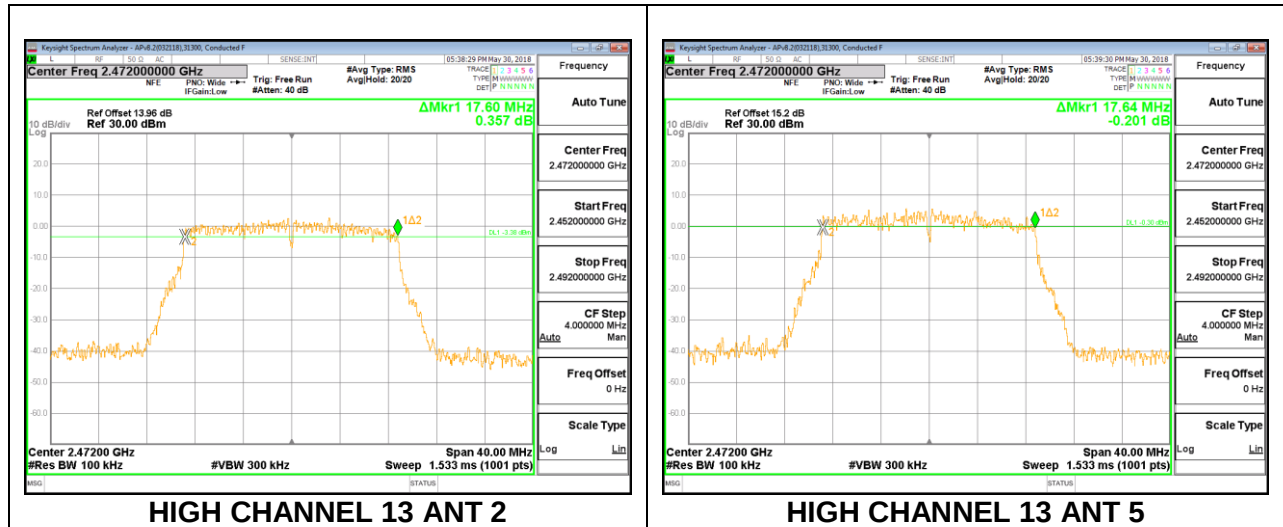
HIGH CHANNEL 11



HIGH CHANNEL 12



HIGH CHANNEL 13



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 of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated average reading of power.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the 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)	Antenna 2 Gain (dBi)	Antenna 5 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.80	-4.90	-3.72	-0.78

RESULTS

ID:	30554	Date:	7/27/2018
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8.4.1. 802.11b MODE

1TX Antenna 2 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-2.80	30.00	30	36	30.00
Low 2	2417	-2.80	30.00	30	36	30.00
Mid 6	2437	-2.80	30.00	30	36	30.00
High 11	2462	-2.80	30.00	30	36	30.00
High 12	2467	-2.80	30.00	30	36	30.00
High 13	2472	-2.80	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)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	20.42	20.42	30.00	-9.58
Low 2	2417	21.69	21.69	30.00	-8.31
Mid 6	2437	21.71	21.71	30.00	-8.29
High 11	2462	21.65	21.65	30.00	-8.35
High 12	2467	20.40	20.40	30.00	-9.60
High 13	2472	18.88	18.88	30.00	-11.12

1TX Antenna 5 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-4.90	30.00	30	36	30.00
Low 2	2417	-4.90	30.00	30	36	30.00
Mid 6	2437	-4.90	30.00	30	36	30.00
High 11	2462	-4.90	30.00	30	36	30.00
High 12	2467	-4.90	30.00	30	36	30.00
High 13	2472	-4.90	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)	Ant 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	20.41	20.41	30.00	-9.59
Low 2	2417	21.87	21.87	30.00	-8.13
Mid 6	2437	21.92	21.92	30.00	-8.08
High 11	2462	21.85	21.85	30.00	-8.15
High 12	2467	20.36	20.36	30.00	-9.64
High 13	2472	18.84	18.84	30.00	-11.16

8.4.2. 802.11n HT20 MODE

1TX Antenna 2 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-2.80	30.00	30	36	30.00
Low 2	2417	-2.80	30.00	30	36	30.00
Low 3	2422	-2.80	30.00	30	36	30.00
Mid 6	2437	-2.80	30.00	30	36	30.00
High 9	2452	-2.80	30.00	30	36	30.00
High 10	2457	-2.80	30.00	30	36	30.00
High 11	2462	-2.80	30.00	30	36	30.00
High 12	2467	-2.80	30.00	30	36	30.00
High 13	2472	-2.80	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)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.38	17.38	30.00	-12.62
Low 2	2417	19.42	19.42	30.00	-10.58
Low 3	2422	21.36	21.36	30.00	-8.64
Mid 6	2437	21.43	21.43	30.00	-8.57
High 9	2452	21.40	21.40	30.00	-8.60
High 10	2457	19.41	19.41	30.00	-10.59
High 11	2462	17.33	17.33	30.00	-12.67
High 12	2467	15.39	15.39	30.00	-14.61
High 13	2472	7.86	7.86	30.00	-22.14

1TX Antenna 5 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-4.90	30.00	30	36	30.00
Low 2	2417	-4.90	30.00	30	36	30.00
Low 3	2422	-4.90	30.00	30	36	30.00
Mid 6	2437	-4.90	30.00	30	36	30.00
High 9	2452	-4.90	30.00	30	36	30.00
High 10	2457	-4.90	30.00	30	36	30.00
High 11	2462	-4.90	30.00	30	36	30.00
High 12	2467	-4.90	30.00	30	36	30.00
High 13	2472	-4.90	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)	Ant 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.44	17.44	30.00	-12.56
Low 2	2417	19.34	19.34	30.00	-10.66
Low 3	2422	21.42	21.42	30.00	-8.58
Mid 6	2437	21.46	21.46	30.00	-8.54
High 9	2452	21.37	21.37	30.00	-8.63
High 10	2457	19.39	19.39	30.00	-10.61
High 11	2462	17.35	17.35	30.00	-12.65
High 12	2467	15.29	15.29	30.00	-14.71
High 13	2472	7.83	7.83	30.00	-22.17

8.4.3. 2TX Antenna 2 + Antenna 5 CDD MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.72	30.00	36	30.00
Low 2	2417	-3.72	30.00	36	30.00
Low 3	2422	-3.72	30.00	36	30.00
Low 4	2427	-3.72	30.00	36	30.00
Mid 6	2437	-3.72	30.00	36	30.00
High 8	2447	-3.72	30.00	36	30.00
High 9	2452	-3.72	30.00	36	30.00
High 10	2457	-3.72	30.00	36	30.00
High 11	2462	-3.72	30.00	36	30.00
High 12	2467	-3.72	30.00	36	30.00
High 13	2472	-3.72	30.00	36	30.00

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

Channel	Frequency (MHz)	ANT 2 Meas Power (dBm)	ANT 5 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.32	16.40	19.37	30.00	-10.63
Low 2	2417	18.27	18.34	21.32	30.00	-8.68
Low 3	2422	19.88	19.91	22.91	30.00	-7.09
Low 4	2427	21.35	21.44	24.41	30.00	-5.59
Mid 6	2437	21.41	21.45	24.44	30.00	-5.56
High 8	2447	21.37	21.30	24.35	30.00	-5.65
High 9	2452	19.85	19.81	22.84	30.00	-7.16
High 10	2457	18.33	18.41	21.38	30.00	-8.62
High 11	2462	16.32	16.45	19.40	30.00	-10.60
High 12	2467	14.30	14.38	17.35	30.00	-12.65
High 13	2472	6.96	6.89	9.94	30.00	-20.06

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

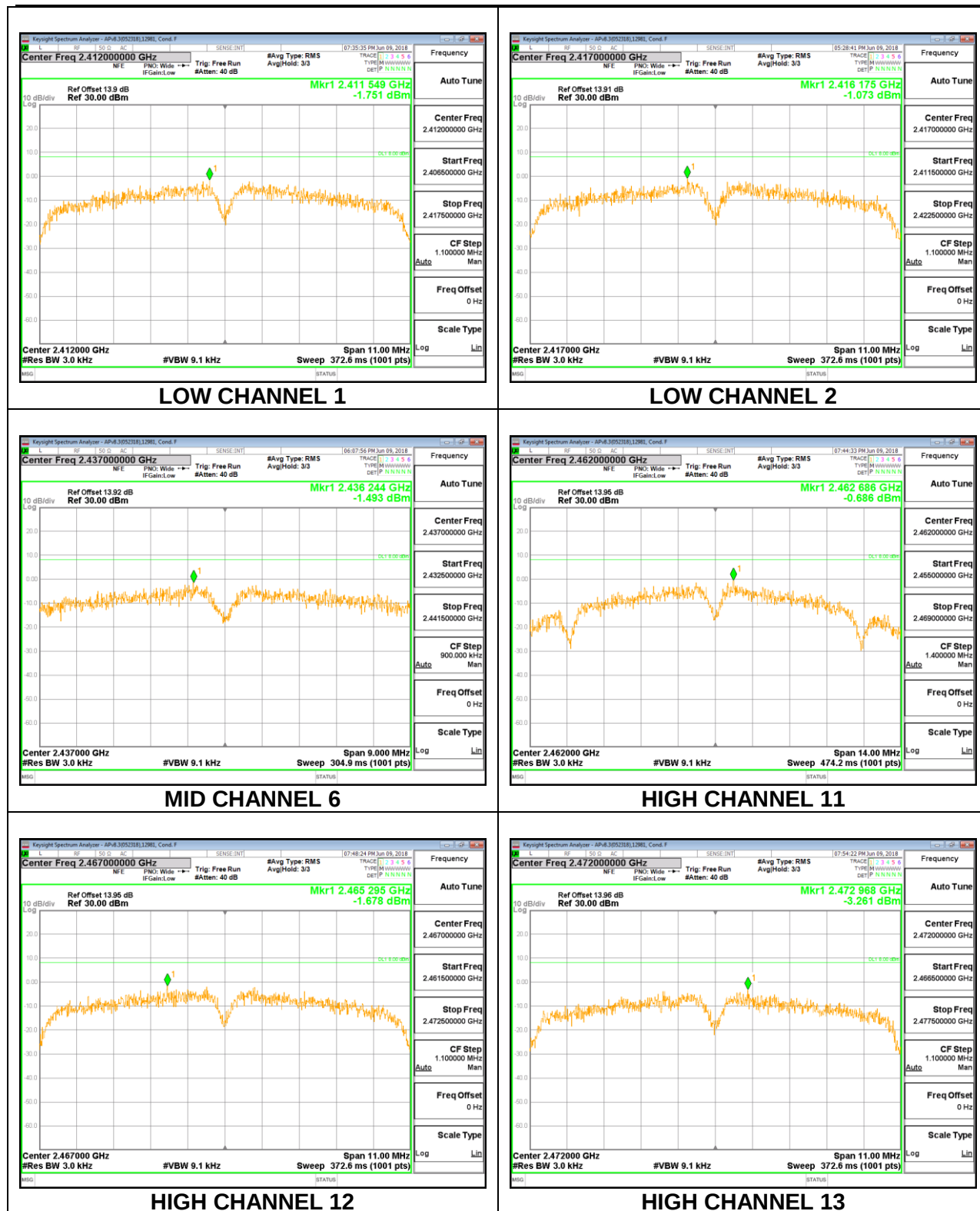
8.5.1. 802.11b MODE

1TX Antenna 2 MODE

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

Channel	Frequency (MHz)	Ant 2 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-1.75	-1.75	8.0	-9.8
Low 2	2417	-1.07	-1.07	8.0	-9.1
Mid 6	2437	-1.49	-1.49	8.0	-9.5
High 11	2462	-0.69	-0.69	8.0	-8.7
High 12	2467	-1.68	-1.68	8.0	-9.7
High 13	2472	-3.26	-3.26	8.0	-11.3

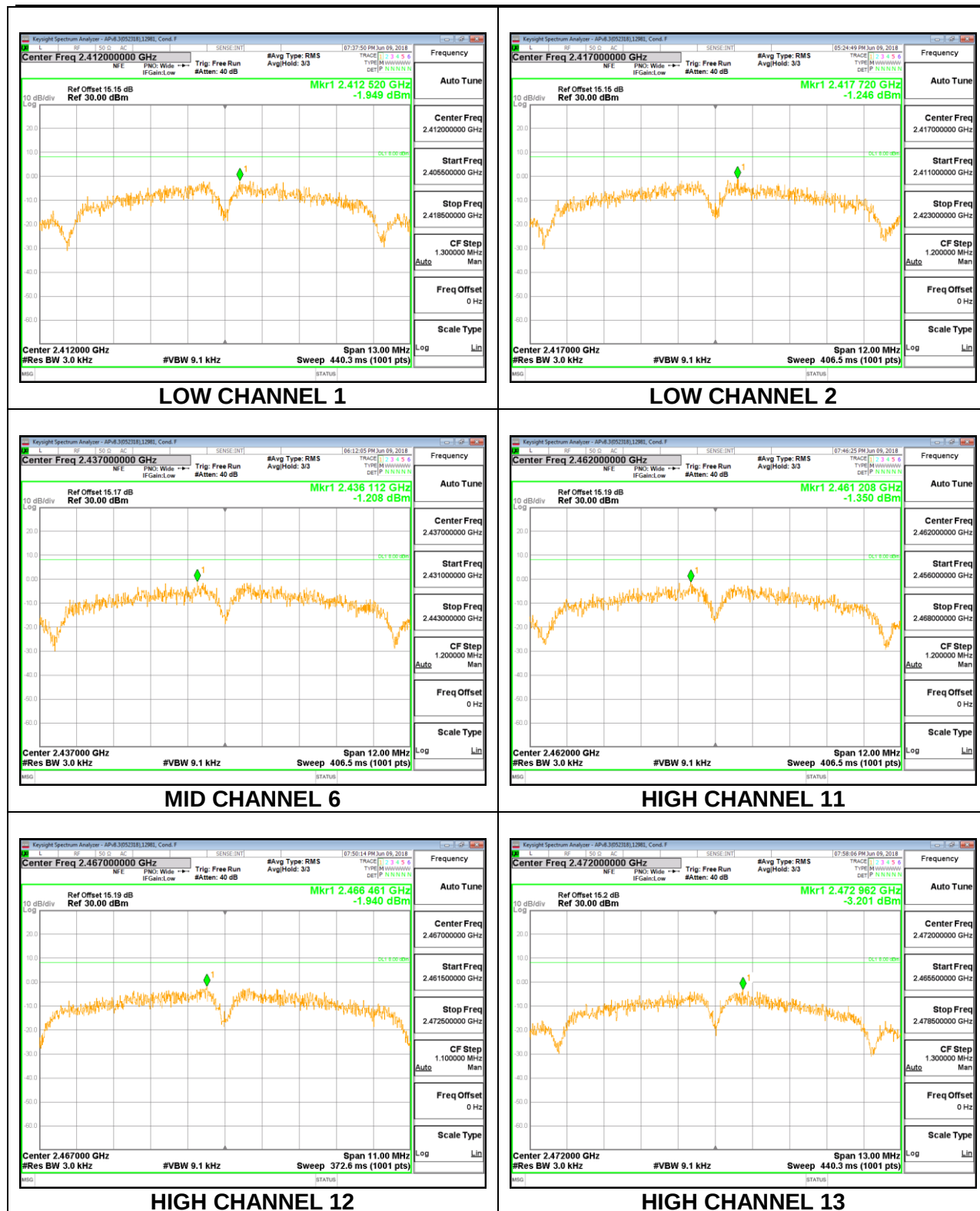


1TX Antenna 5 MODE

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

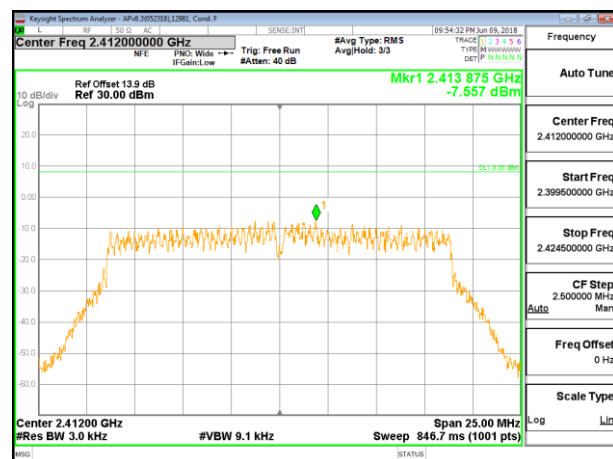
Channel	Frequency (MHz)	Ant 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-1.95	-1.95	8.0	-10.0
Low 2	2417	-1.25	-1.25	8.0	-9.3
Mid 6	2437	-1.21	-1.21	8.0	-9.2
High 11	2462	-1.35	-1.35	8.0	-9.4
High 12	2467	-1.94	-1.94	8.0	-9.9
High 13	2472	-3.20	-3.20	8.0	-11.2



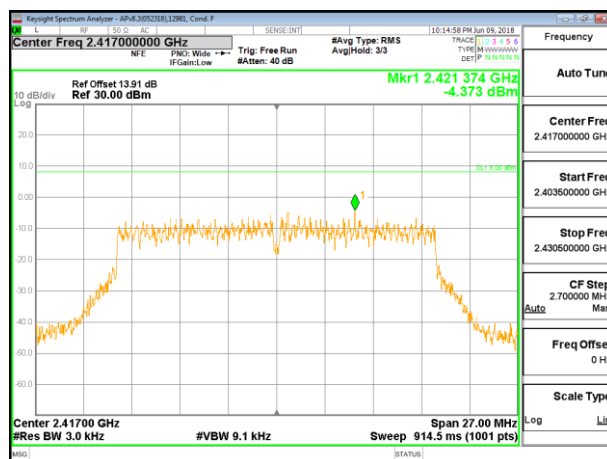
8.5.2. 802.11n HT20 MODE

1TX Antenna 2 MODE

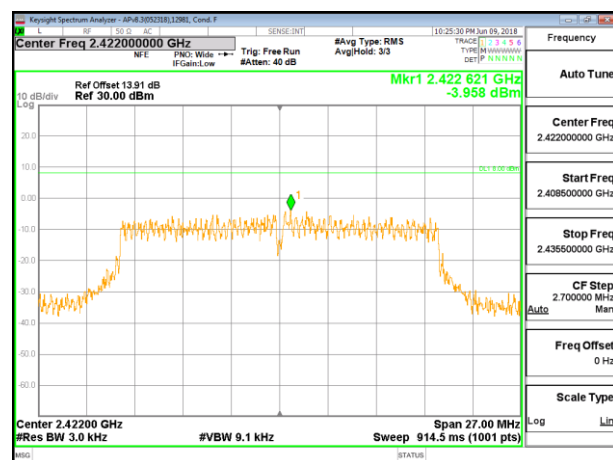
Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
PSD Results					
Channel	Frequency (MHz)	Ant 2 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.56	-7.56	8.0	-15.6
Low 2	2417	-4.37	-4.37	8.0	-12.4
Low 3	2422	-3.96	-3.96	8.0	-12.0
Mid 6	2437	-4.40	-4.40	8.0	-12.4
High 9	2452	-4.39	-4.39	8.0	-12.4
High 10	2457	-5.67	-5.67	8.0	-13.7
High 11	2462	-6.74	-6.74	8.0	-14.7
High 12	2467	-9.36	-9.36	8.0	-17.4
High 13	2472	-17.28	-17.28	8.0	-25.3



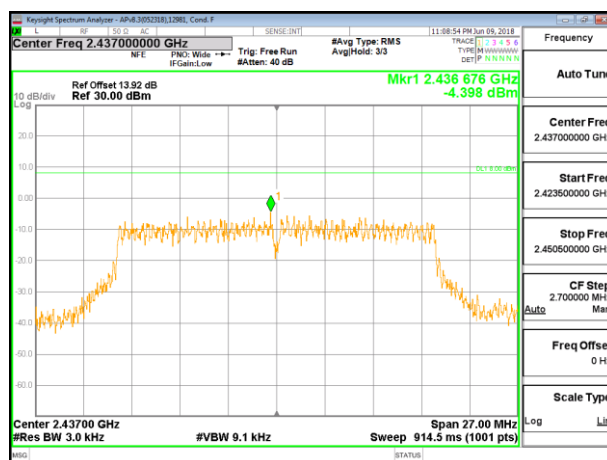
LOW CHANNEL 1



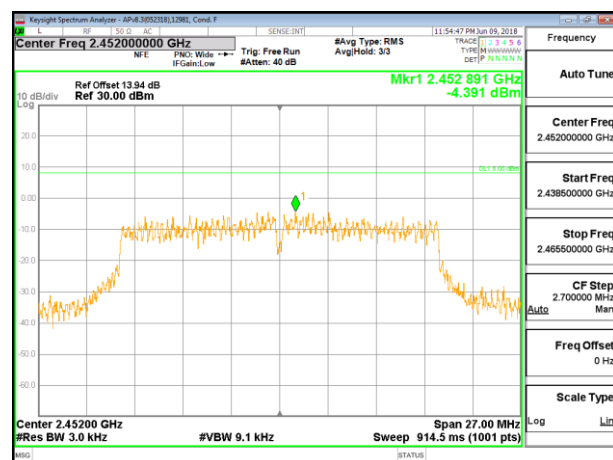
LOW CHANNEL 2



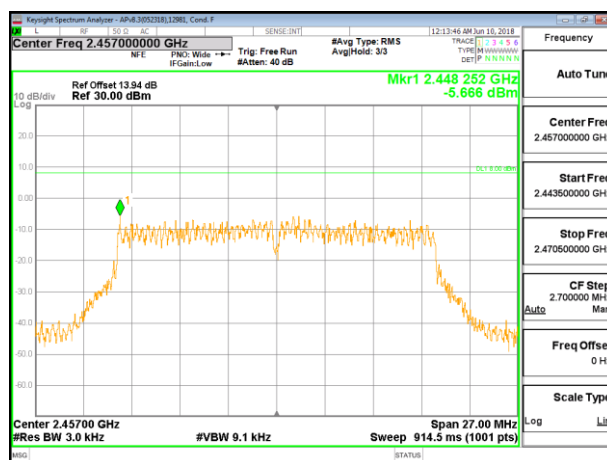
LOW CHANNEL 3



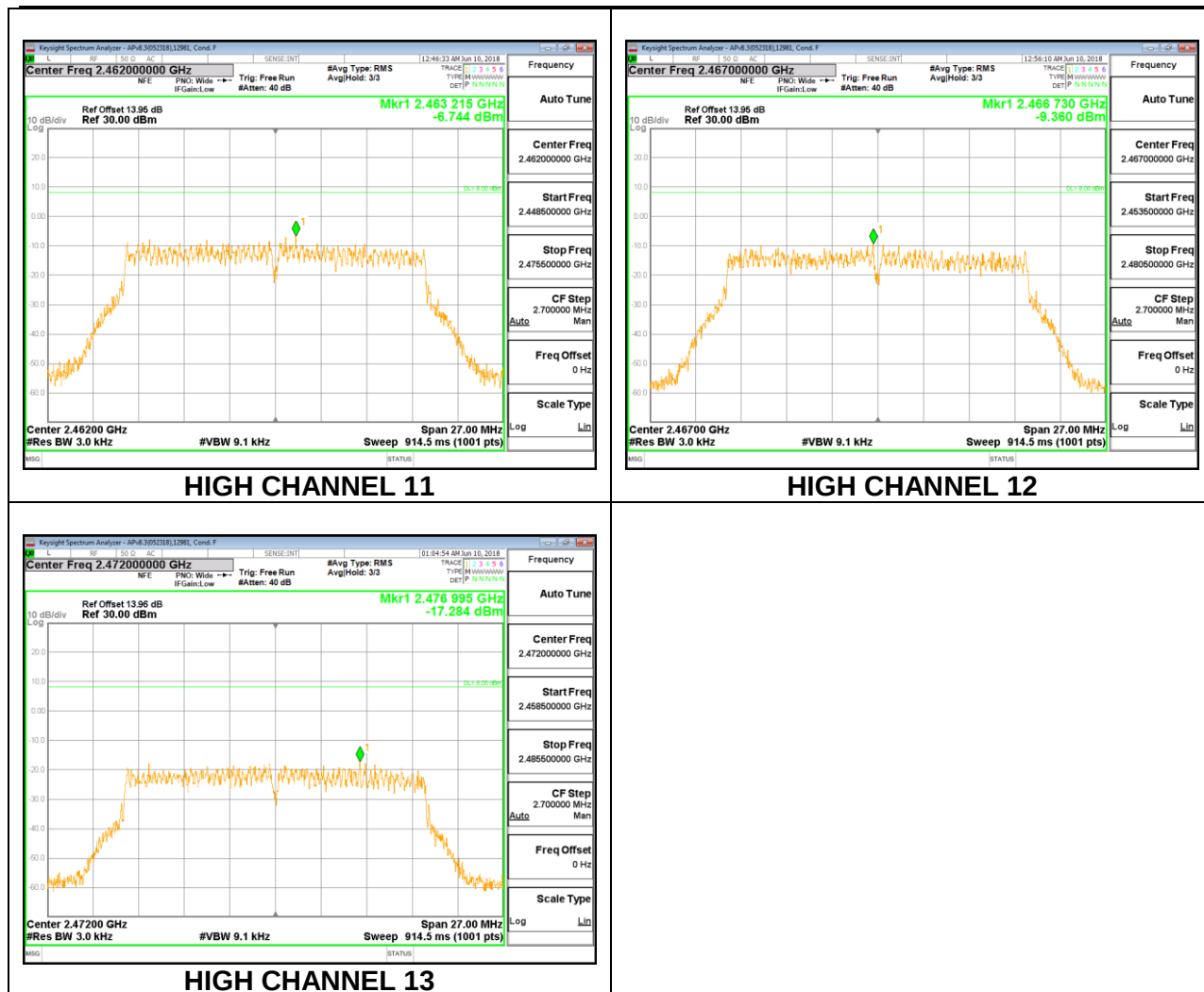
MID CHANNEL 6



HIGH CHANNEL 9



HIGH CHANNEL 10

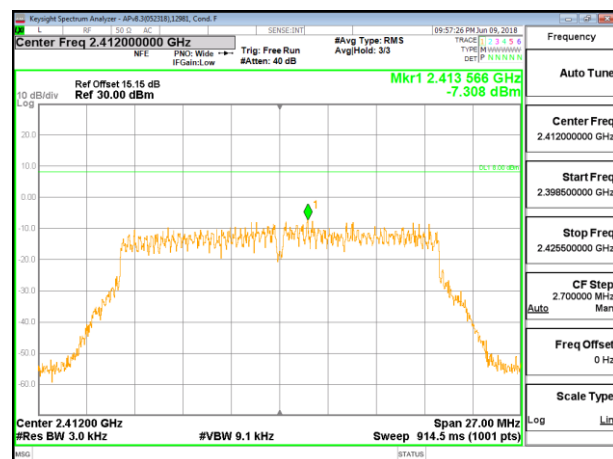


1TX Antenna 5 MODE

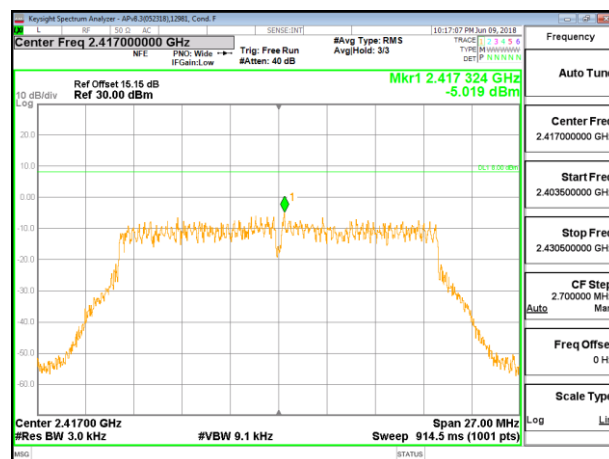
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

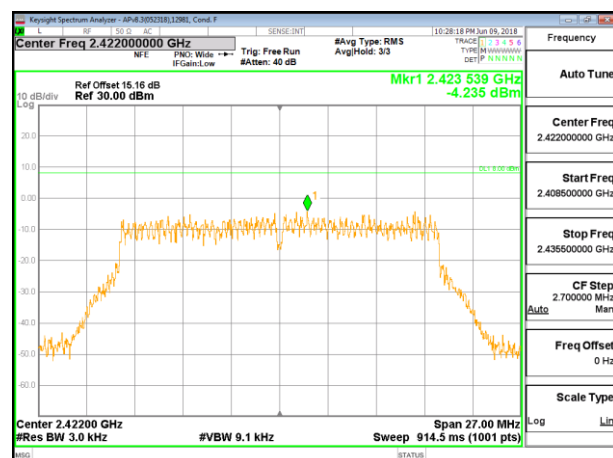
Channel	Frequency (MHz)	Ant 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.31	-7.31	8.0	-15.3
Low 2	2417	-5.02	-5.02	8.0	-13.0
Low 3	2422	-4.24	-4.24	8.0	-12.2
Mid 6	2437	-4.13	-4.13	8.0	-12.1
High 9	2452	-4.32	-4.32	8.0	-12.3
High 10	2457	-5.82	-5.82	8.0	-13.8
High 11	2462	-6.89	-6.89	8.0	-14.9
High 12	2467	-9.01	-9.01	8.0	-17.0
High 13	2472	-16.56	-16.56	8.0	-24.6



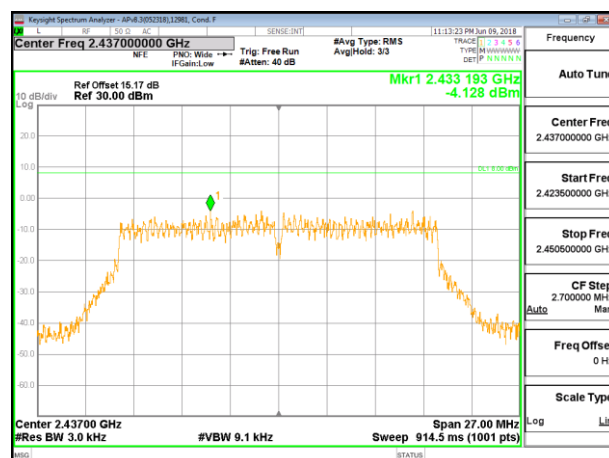
LOW CHANNEL 1



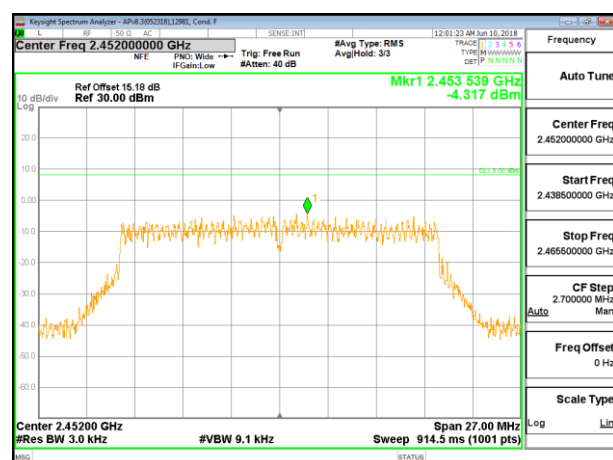
LOW CHANNEL 2



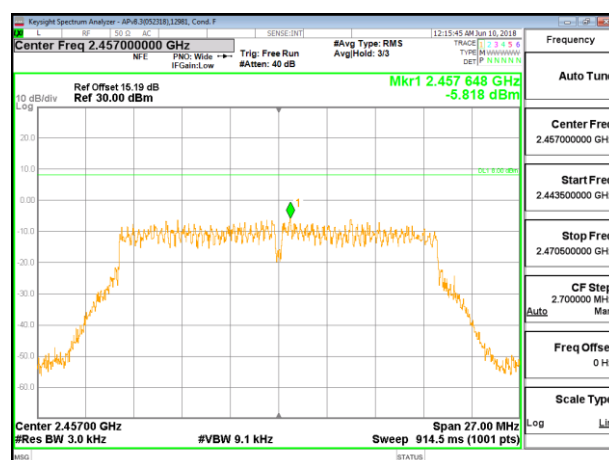
LOW CHANNEL 3



MID CHANNEL 6



HIGH CHANNEL 9



HIGH CHANNEL 10

