

RSS-247

Band 5.15-5.25 GHz

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Band 5.25-5.35 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Bands 5.47-5.6 GHz and 5.65-5.725 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5.725-5.85 GHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and for straddles channels KDB 789033 D02 v02r01, Section E.2.b (Method SA-1) was used.

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F

DIRECTIONAL ANTENNA GAIN

For 1 TX:

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

RESULTS

8.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	15.589	5.00
Mid	5200	16.558	5.00
High	5240	16.527	5.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED eirp PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5180	24.00	21.93	16.93	16.93	11.00	10.00	5.00
Mid	5200	24.00	22.19	17.19	17.19	11.00	10.00	5.00
High	5240	24.00	22.18	17.18	17.18	11.00	10.00	5.00

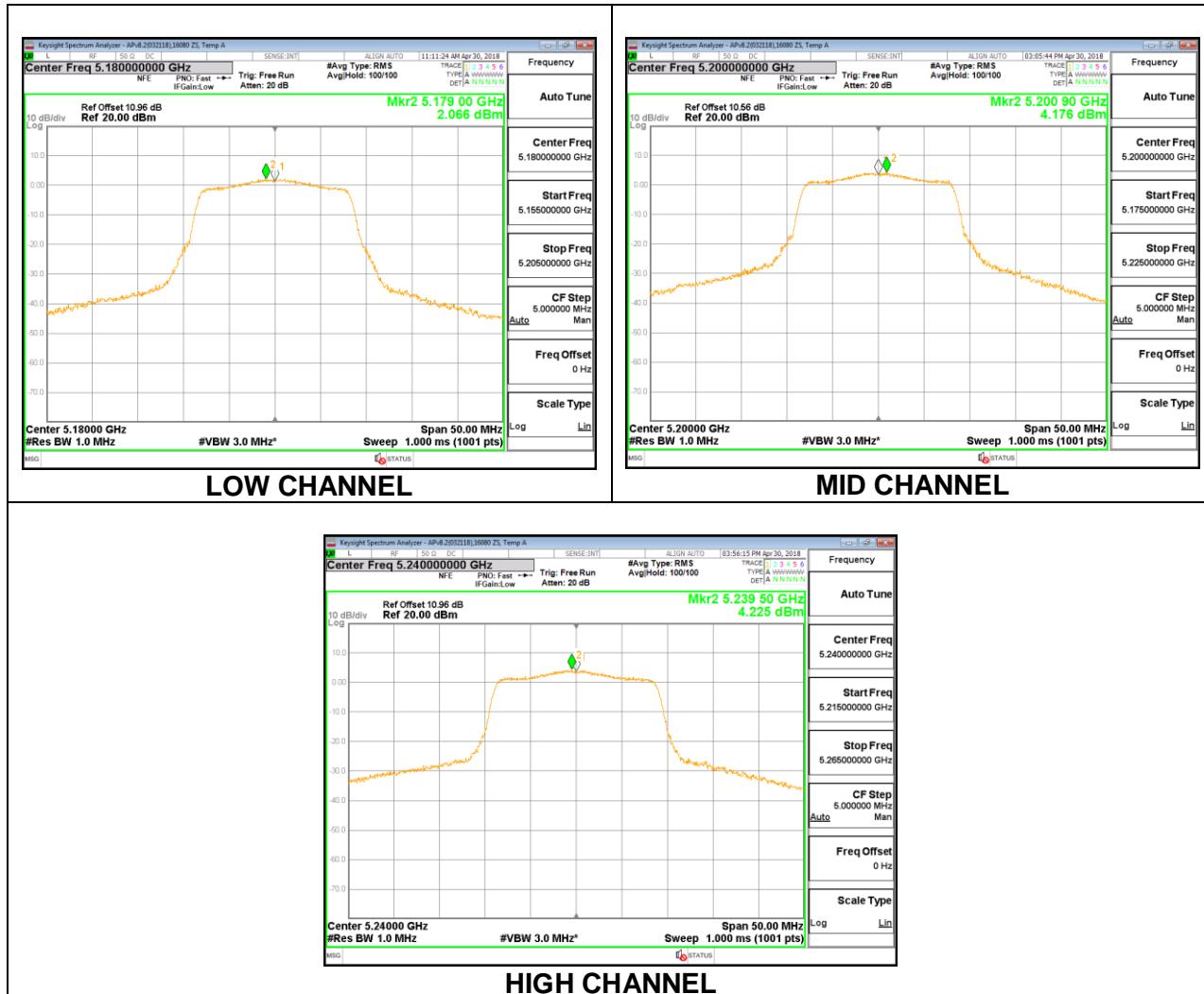
Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.280	12.28	16.93	-4.65
Mid	5200	14.910	14.91	17.19	-2.28
High	5240	15.010	15.01	17.18	-2.17

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5180	2.066	2.37	5.00	-2.63
Mid	5200	4.176	4.48	5.00	-0.52
High	5240	4.225	4.53	5.00	-0.48



8.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	17.732	5.00
Mid	5200	17.681	5.00
High	5240	17.754	5.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED eirp PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5180	24.00	22.49	17.49	17.49	11.00	10.00	5.00
Mid	5200	24.00	22.48	17.48	17.48	11.00	10.00	5.00
High	5240	24.00	22.49	17.49	17.49	11.00	10.00	5.00

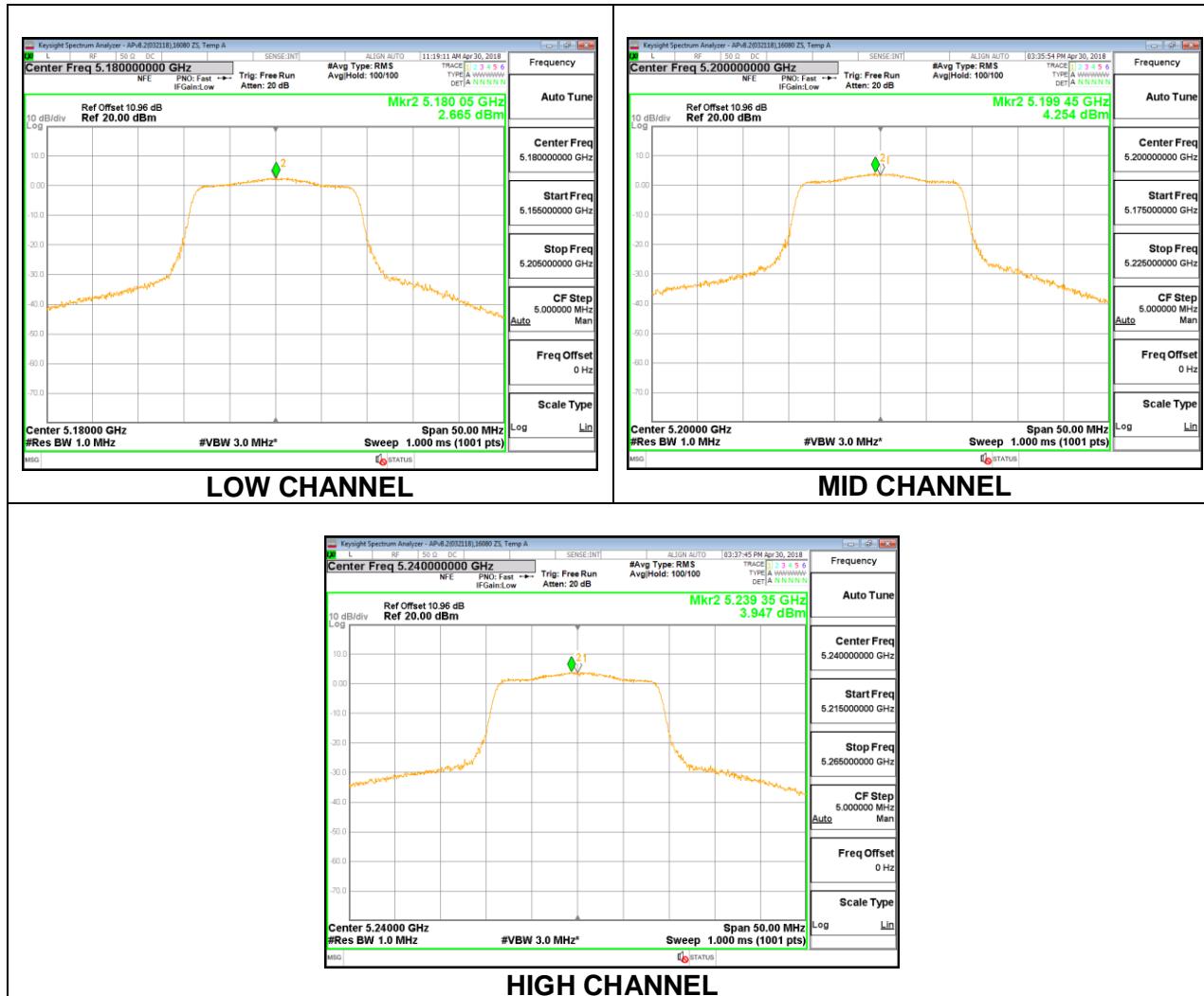
Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.300	13.30	17.49	-4.19
Mid	5200	14.540	14.54	17.48	-2.94
High	5240	14.360	14.36	17.49	-3.13

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	2.665	2.99	5.00	-2.02
Mid	5200	4.254	4.57	5.00	-0.43
High	5240	3.947	4.27	5.00	-0.73



8.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	36.208	5.00
High	5230	36.299	5.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED eirp PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5190	24.00	23.00	18.00	18.00	11.00	10.00	5.00
High	5230	24.00	23.00	18.00	18.00	11.00	10.00	5.00

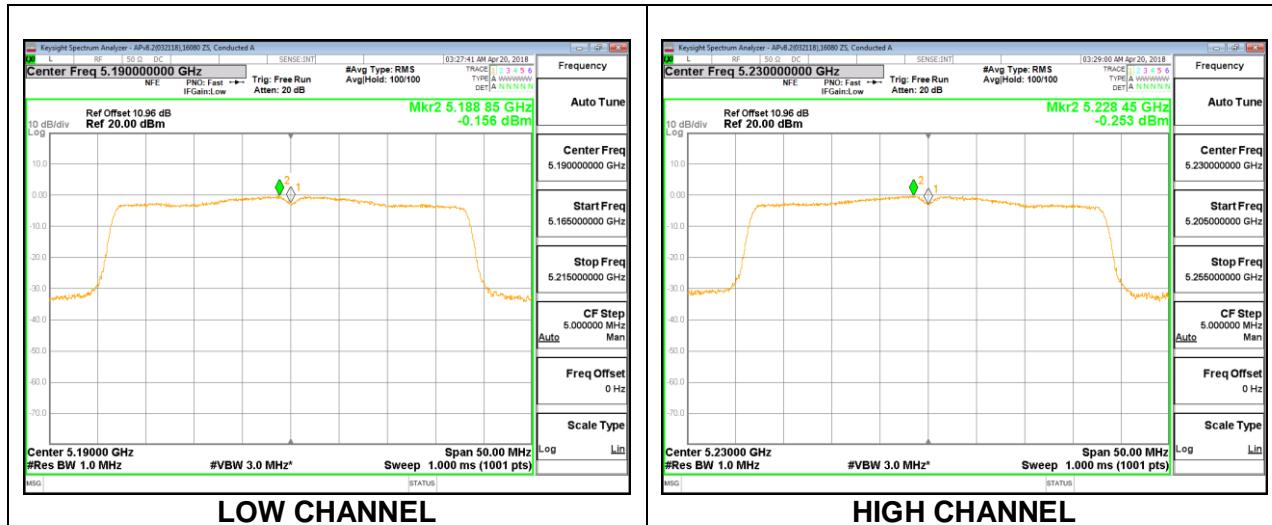
Duty Cycle CF (dB)	0.62	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	12.820	12.82	18.00	-5.18
High	5230	12.980	12.98	18.00	-5.02

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5190	-0.156	0.46	5.00	-4.54
High	5230	-0.253	0.37	5.00	-4.63



8.5.4. 802.11a MODE IN THE 5.3 GHz BAND

(FCC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	21.75	5.00	24.00	11.00
Mid	5300	21.70	5.00	24.00	11.00
High	5320	21.75	5.00	24.00	11.00

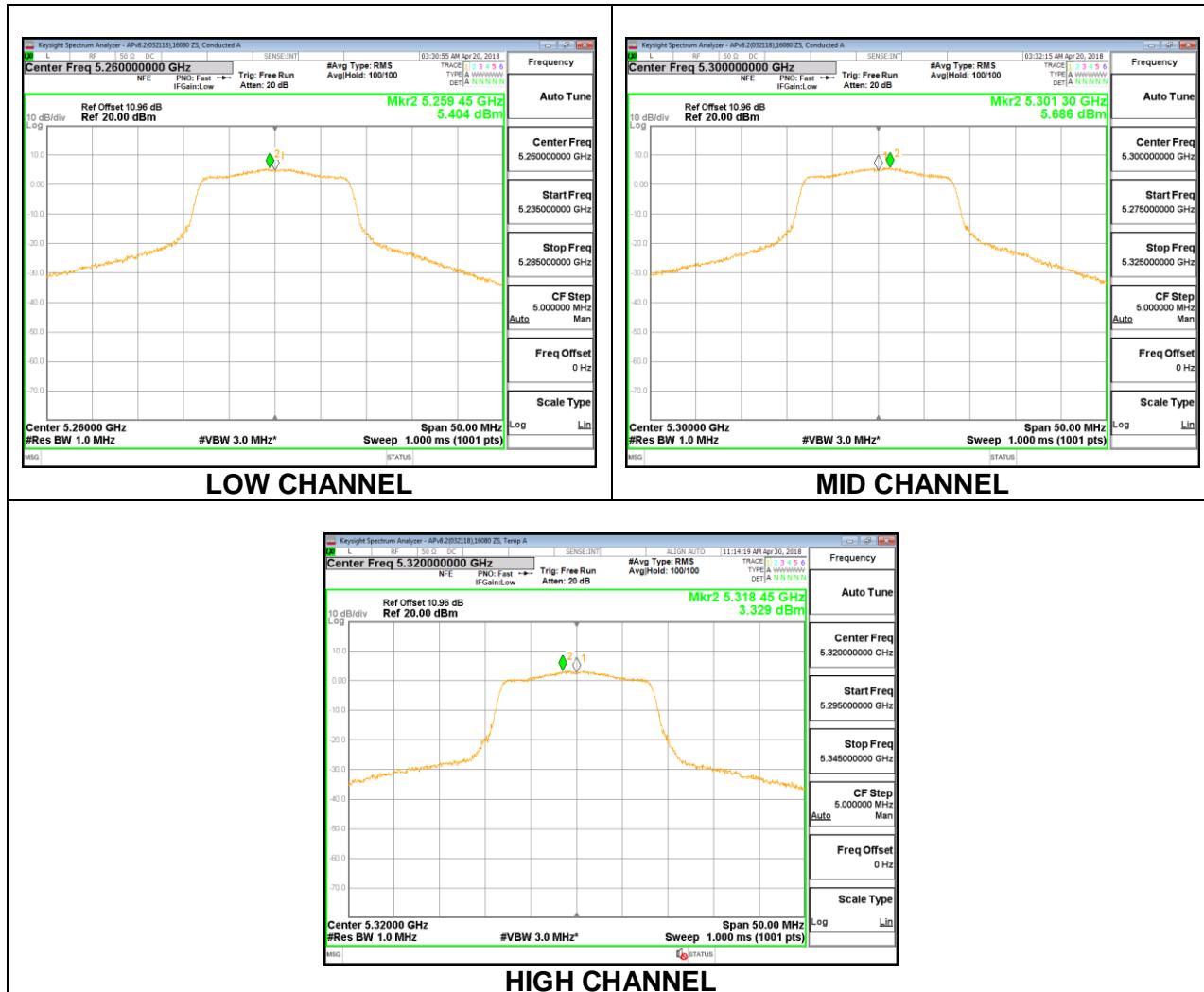
Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.82	15.82	24.00	-8.18
Mid	5300	15.72	15.72	24.00	-8.28
High	5320	14.24	14.24	24.00	-9.76

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	5.404	5.70	11.00	-5.30
Mid	5300	5.686	5.99	11.00	-5.01
High	5320	3.329	3.63	11.00	-7.37



(IC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	16.689	5.00	23.22	11.00
Mid	5300	16.712	5.00	23.23	11.00
High	5320	16.681	5.00	23.22	11.00

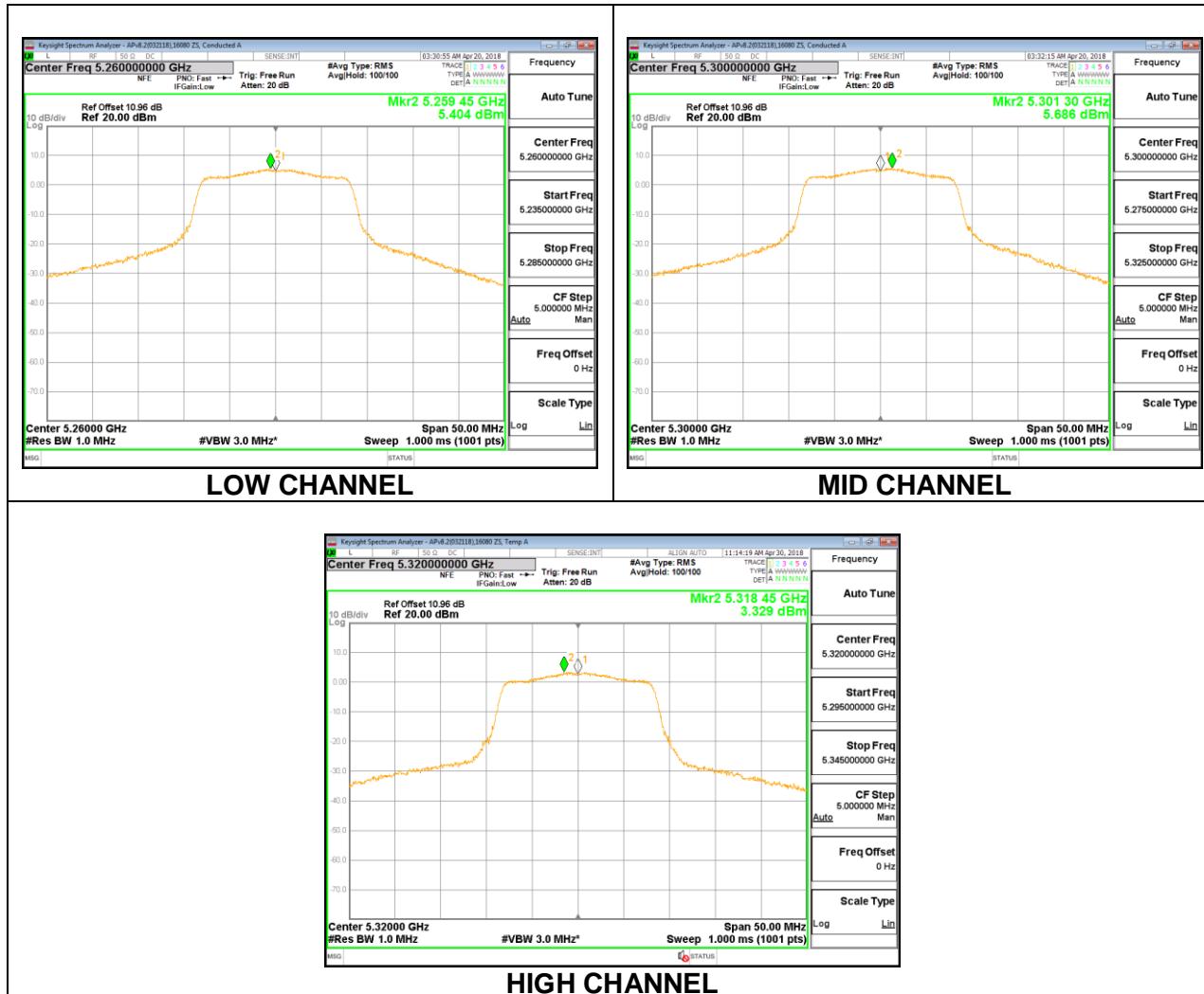
Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.82	15.82	23.22	-7.40
Mid	5300	15.72	15.72	23.23	-7.51
High	5320	14.24	14.24	23.22	-8.98

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	5.404	5.70	11.00	-5.30
Mid	5300	5.686	5.99	11.00	-5.01
High	5320	3.329	3.63	11.00	-7.37



8.5.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

(FCC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	21.60	5.00	24.00	11.00
Mid	5300	21.45	5.00	24.00	11.00
High	5320	21.50	5.00	24.00	11.00

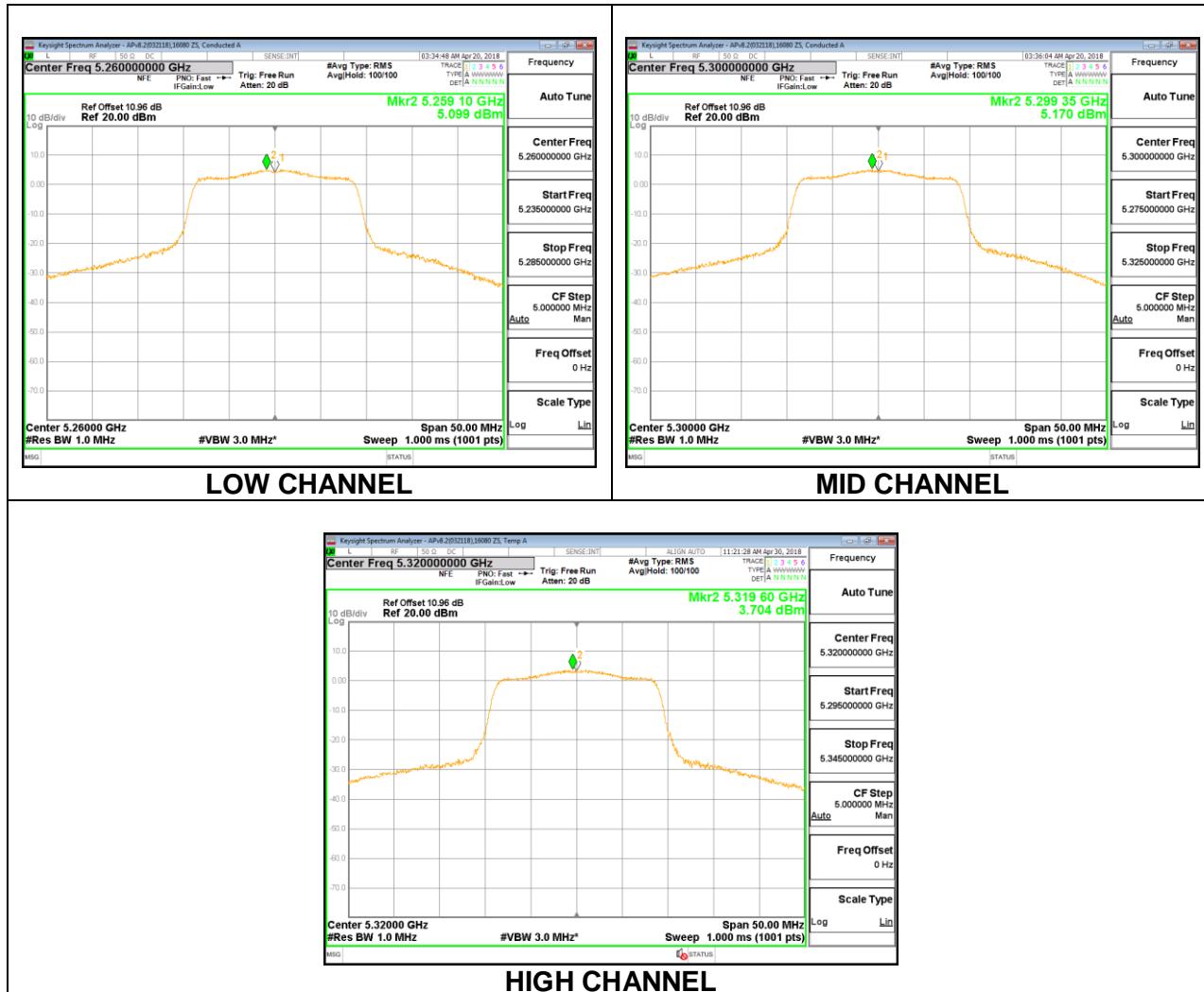
Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.59	15.59	24.00	-8.41
Mid	5300	15.71	15.71	24.00	-8.29
High	5320	15.05	15.05	24.00	-8.95

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	5.099	5.42	11.00	-5.58
Mid	5300	5.170	5.49	11.00	-5.51
High	5320	3.704	4.02	11.00	-6.98



(IC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	17.8020	5.00	23.50	11.00
Mid	5300	17.6640	5.00	23.47	11.00
High	5320	17.8370	5.00	23.51	11.00

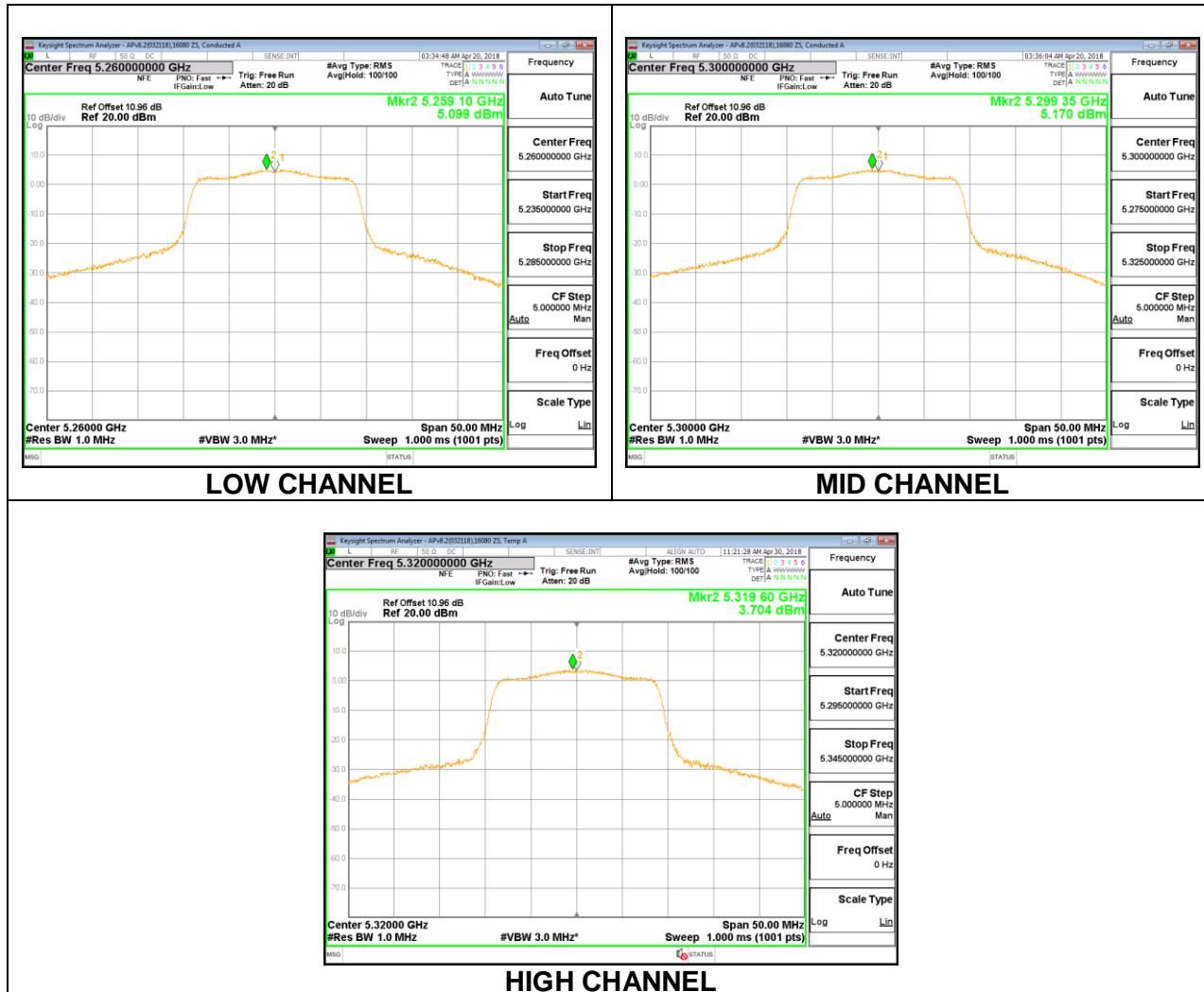
Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.59	15.59	23.50	-7.91
Mid	5300	15.71	15.71	23.47	-7.76
High	5320	15.05	15.05	23.51	-8.46

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	5.099	5.42	11.00	-5.58
Mid	5300	5.170	5.49	11.00	-5.51
High	5320	3.704	4.02	11.00	-6.98



8.5.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

(FCC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5270	40.50	5.00	24.00	11.00
High	5310	40.30	5.00	24.00	11.00

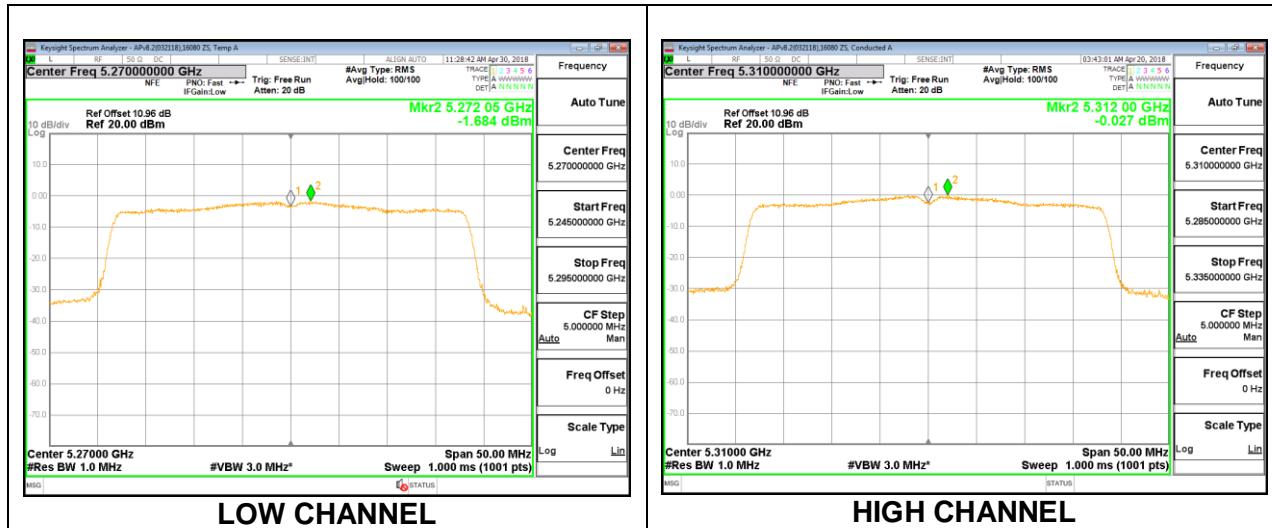
Duty Cycle CF (dB)	0.62	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	12.11	12.11	24.00	-11.89
High	5310	13.38	13.38	24.00	-10.62

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5270	-1.684	-1.06	11.00	-12.06
High	5310	-0.027	0.59	11.00	-10.41



(IC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5270	36.2640	6.00	24.00	11.00
High	5310	36.2200	6.00	24.00	11.00

Duty Cycle CF (dB)	0.62	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	12.11	12.11	24.00	-11.89
High	5310	13.38	13.38	24.00	-10.62

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5270	-1.684	-1.06	11.00	-12.06
High	5310	-0.027	0.59	11.00	-10.41



8.5.7. 802.11a MODE IN THE 5.6 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	21.65	16.5530	6.00
Mid	5580	21.75	16.6680	6.00
High	5700	21.70	16.7310	6.00
144	5720	21.85	16.7180	6.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5500	24.00	23.19	29.19	23.19	11.00	11.00	11.00
Mid	5580	24.00	23.22	29.22	23.22	11.00	11.00	11.00
High	5700	24.00	23.24	29.24	23.24	11.00	11.00	11.00
144	5720	24.00	23.23	29.23	23.23	11.00	11.00	11.00

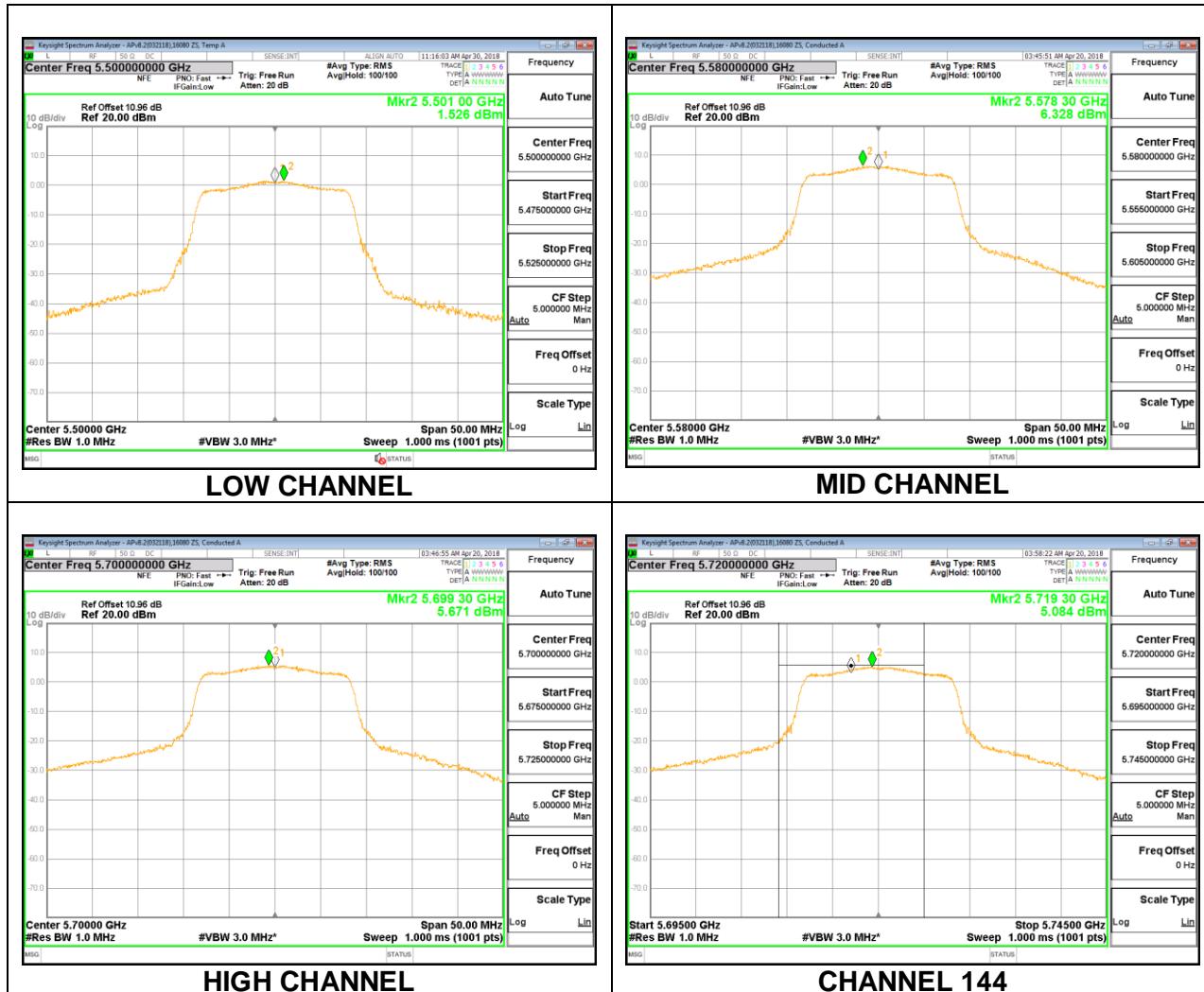
Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.600	12.60	23.19	-10.59
Mid	5580	15.610	15.61	23.22	-7.61
High	5700	12.430	12.43	23.24	-10.81
144	5720	15.030	15.33	23.23	-7.90

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	1.526	1.826	11.00	-9.17
Mid	5580	6.328	6.628	11.00	-4.37
High	5700	5.671	5.971	11.00	-5.03



8.5.8. 802.11n HT20 MODE IN THE 5.6 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	21.60	17.6340	6.00
Mid	5580	21.45	17.7120	6.00
High	5700	21.60	17.7180	6.00
144	5720	21.65	17.6810	6.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5500	24.00	23.46	29.46	23.46	11.00	11.00	11.00
Mid	5580	24.00	23.48	29.48	23.48	11.00	11.00	11.00
High	5700	24.00	23.48	29.48	23.48	11.00	11.00	11.00
144	5720	24.00	23.48	29.48	23.48	11.00	11.00	11.00

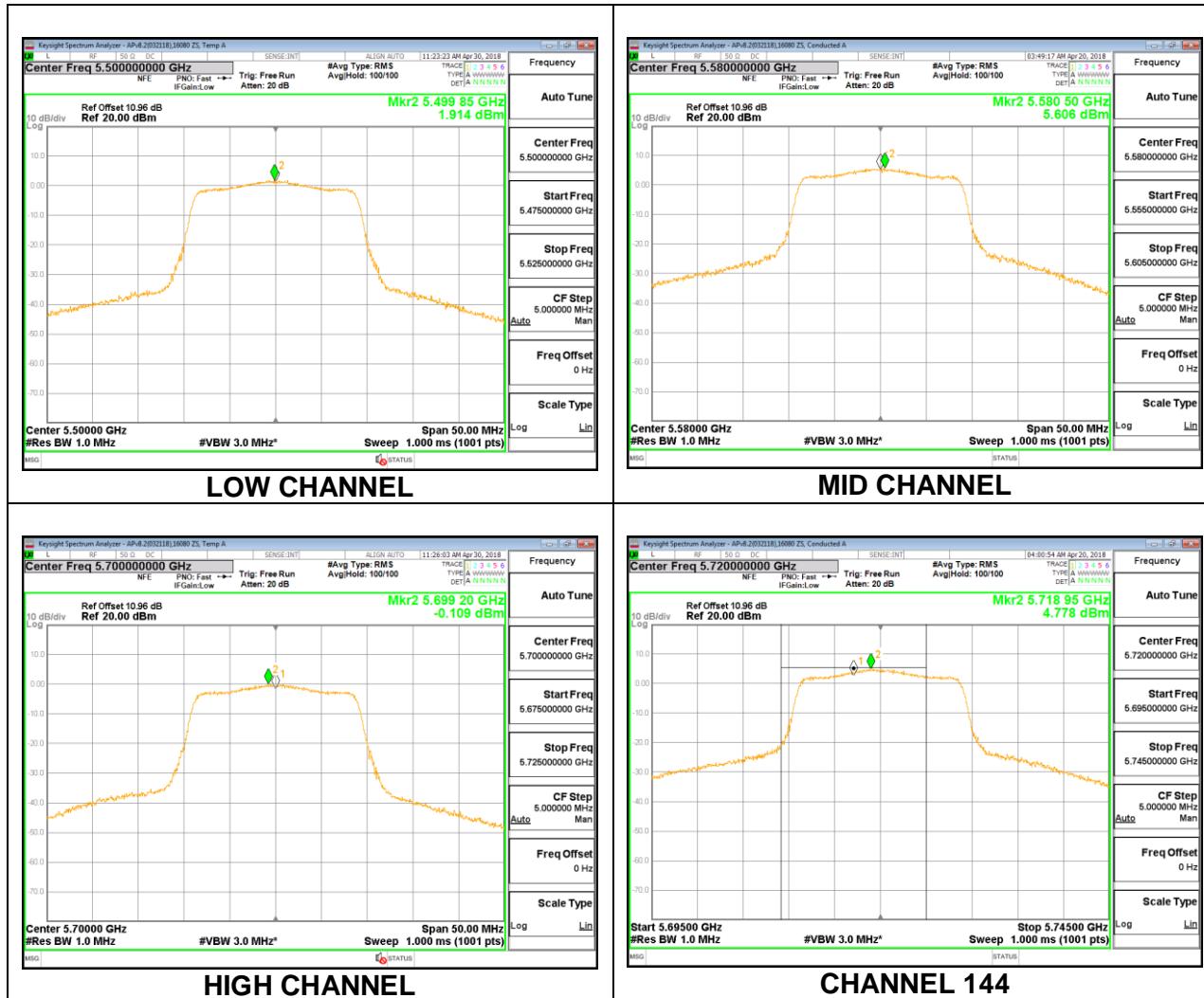
Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	13.390	13.39	23.46	-10.07
Mid	5580	15.760	15.76	23.48	-7.72
High	5700	11.670	11.67	23.48	-11.81
144	5720	14.920	15.24	23.48	-8.24

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	1.914	2.234	11.00	-8.77
Mid	5580	5.606	5.926	11.00	-5.07
High	5700	-0.109	0.211	11.00	-10.79
144	5720	4.778	5.098	11.00	-5.90



8.5.9. 802.11n HT40 MODE IN THE 5.6 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	40.10	36.1900	6.00
Mid	5550	40.20	36.4280	6.00
High	5670	40.30	36.3480	6.00
142	5710	40.20	36.2730	6.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00
142	5710	24.00	24.00	30.00	24.00	11.00	11.00	11.00

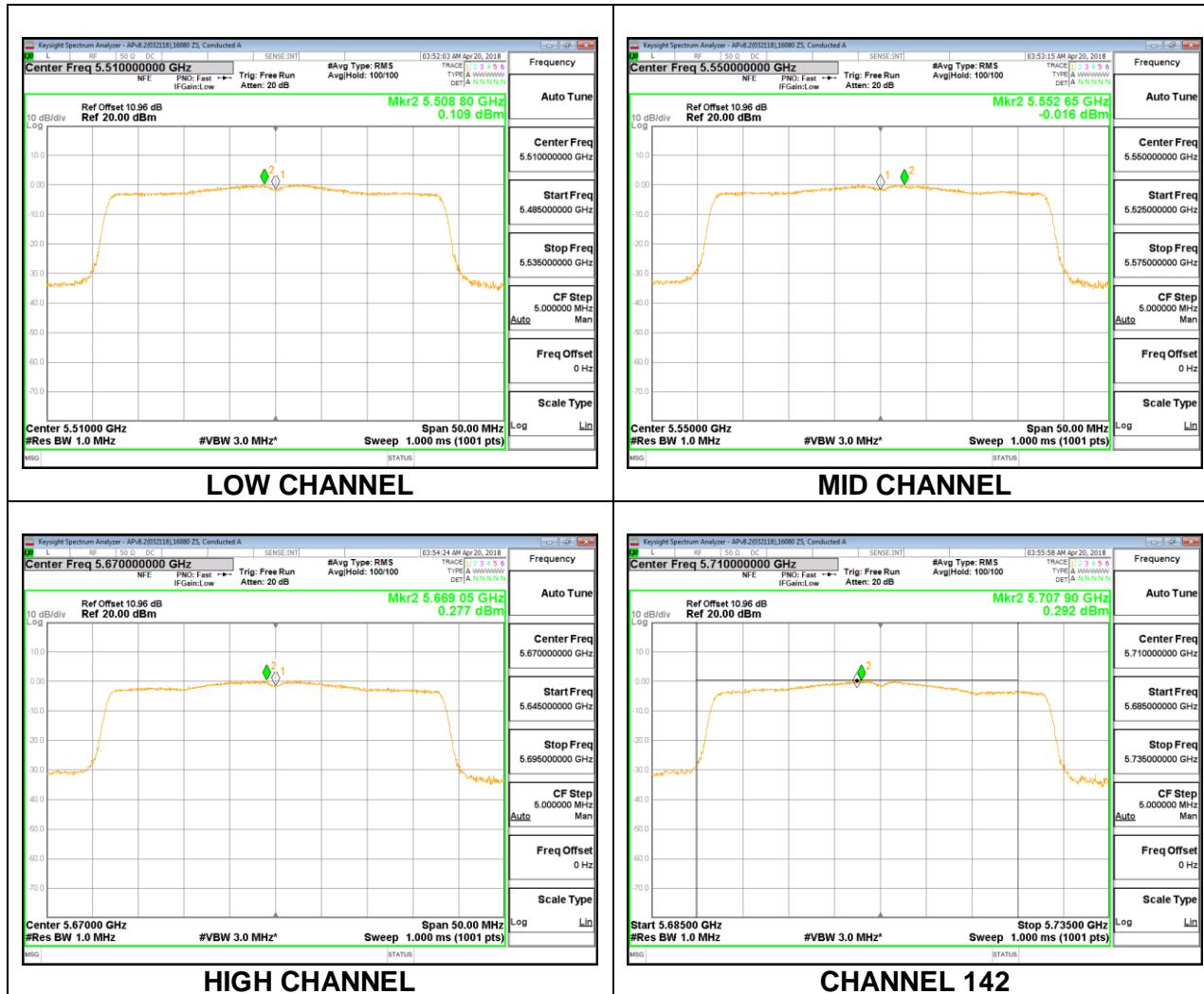
Duty Cycle CF (dB)	0.62	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	13.290	13.29	24.00	-10.71
Mid	5550	13.270	13.27	24.00	-10.73
High	5670	12.920	12.92	24.00	-11.08
142	5710	12.710	13.33	24.00	-10.67

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	0.109	0.73	11.00	-10.27
Mid	5550	-0.016	0.60	11.00	-10.40
High	5670	0.277	0.90	11.00	-10.10
142	5710	0.292	0.91	11.00	-10.09



8.5.10. 802.11a MODE IN THE 5.8 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	FCC/ISED PSD Limit (dBm/ 1MHz)
Low	5745	6.00	30.00	30.00
Mid	5785	6.00	30.00	30.00
High	5825	6.00	30.00	30.00

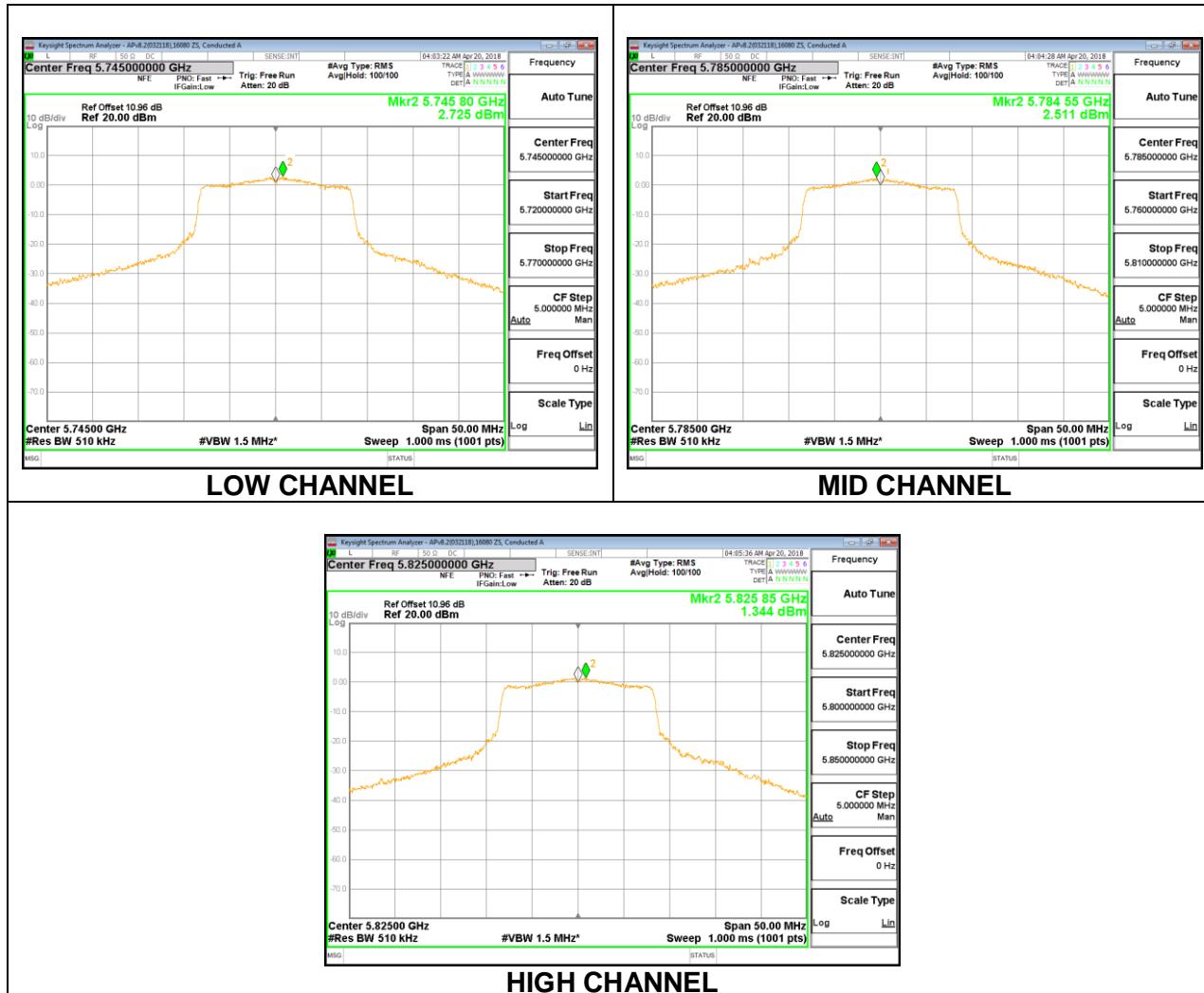
Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.17	15.17	30.00	-14.83
Mid	5785	14.85	14.85	30.00	-15.15
High	5825	13.83	13.83	30.00	-16.17

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5745	2.725	3.025	30.00	-26.98
Mid	5785	2.511	2.811	30.00	-27.19
High	5825	1.344	1.644	30.00	-28.36



8.5.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	FCC/ISED PSD Limit (dBm/ 1MHz)
Low	5745	6.00	30.00	30.00
Mid	5785	6.00	30.00	30.00
High	5825	6.00	30.00	30.00

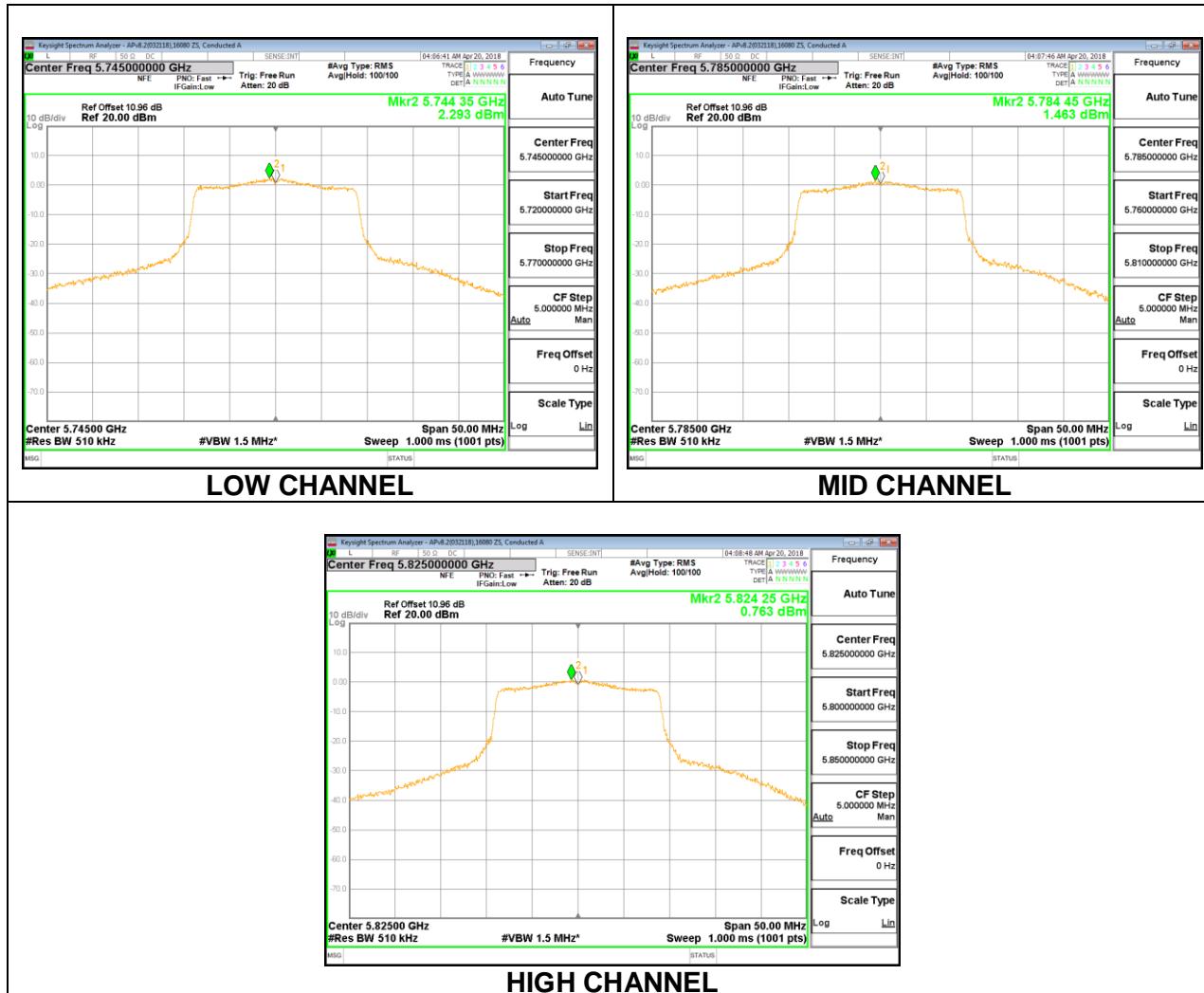
Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	14.92	14.92	30.00	-15.08
Mid	5785	14.70	14.70	30.00	-15.30
High	5825	14.02	14.02	30.00	-15.98

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5745	2.293	2.613	30.00	-27.39
Mid	5785	1.463	1.783	30.00	-28.22
High	5825	0.763	1.083	30.00	-28.92



8.5.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISE Power Limit (dBm)	FCC/ISED PSD Limit (dBm/ 1MHz)
Low	5755	6.00	30.00	30.00
High	5795	6.00	30.00	30.00

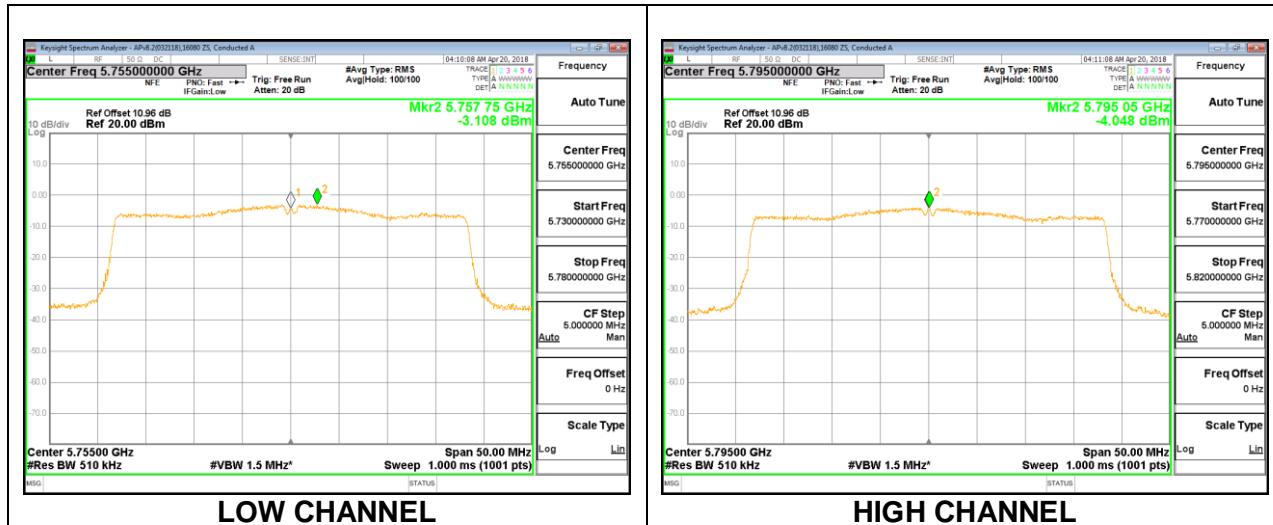
Duty Cycle CF (dB)	0.62	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	12.77	12.77	30.00	-17.23
High	5795	12.25	12.25	30.00	-17.75

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5755	-3.108	-2.488	30.00	-32.49
High	5795	-4.048	-3.428	30.00	-33.43



9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 1GHz and 18GHz to 40 GHz is investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 5 GHz bands.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

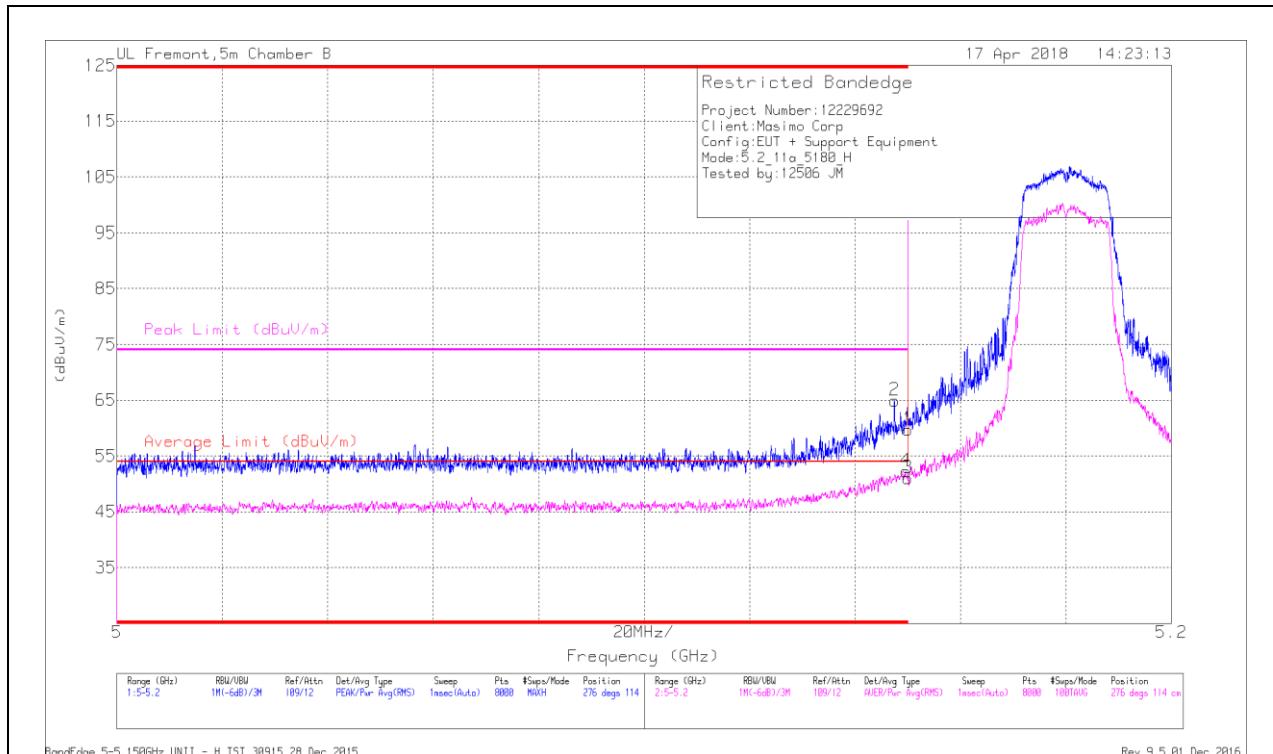
2D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



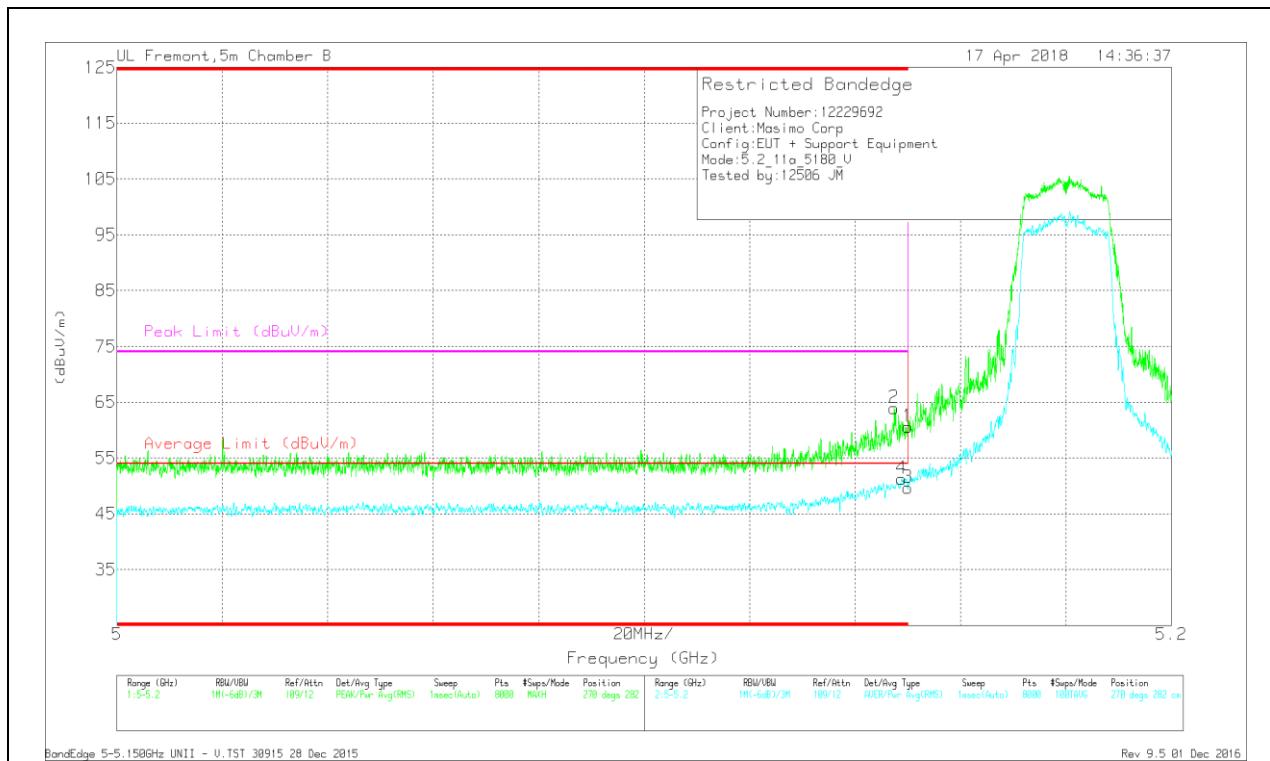
Marker	Frequency (GHz)	Meas Reading (dBm/m)	Det	AF T863 (dB/m)	Amp/Cpl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBm/m)	Average Limit (dBm/m)	Margin (dB)	Peak Limit (dBm/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*5.15	43.78	Pk	34.4	-18.5	0	59.68	-	-	74	-14.32	276	114	H
2	*5.147	49.12	Pk	34.4	-18.6	0	64.92	-	-	74	-9.08	276	114	H
3	*5.15	34.88	RMS	34.4	-18.5	.3	51.08	54	-2.92	-	-	276	114	H
4	*5.15	36.1	RMS	34.4	-18.5	.3	52.3	54	-1.7	-	-	276	114	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	*5.147	48.1	Pk	34.4	-18.6	0	63.9	-	-	74	-10.1	270	282	V
4	*5.149	35.11	RMS	34.4	-18.5	.3	51.31	54	-2.69	-	-	270	282	V
1	*5.15	44.73	Pk	34.4	-18.5	0	60.63	-	-	74	-13.37	270	282	V
3	*5.15	33.42	RMS	34.4	-18.5	.3	49.62	54	-4.38	-	-	270	282	V

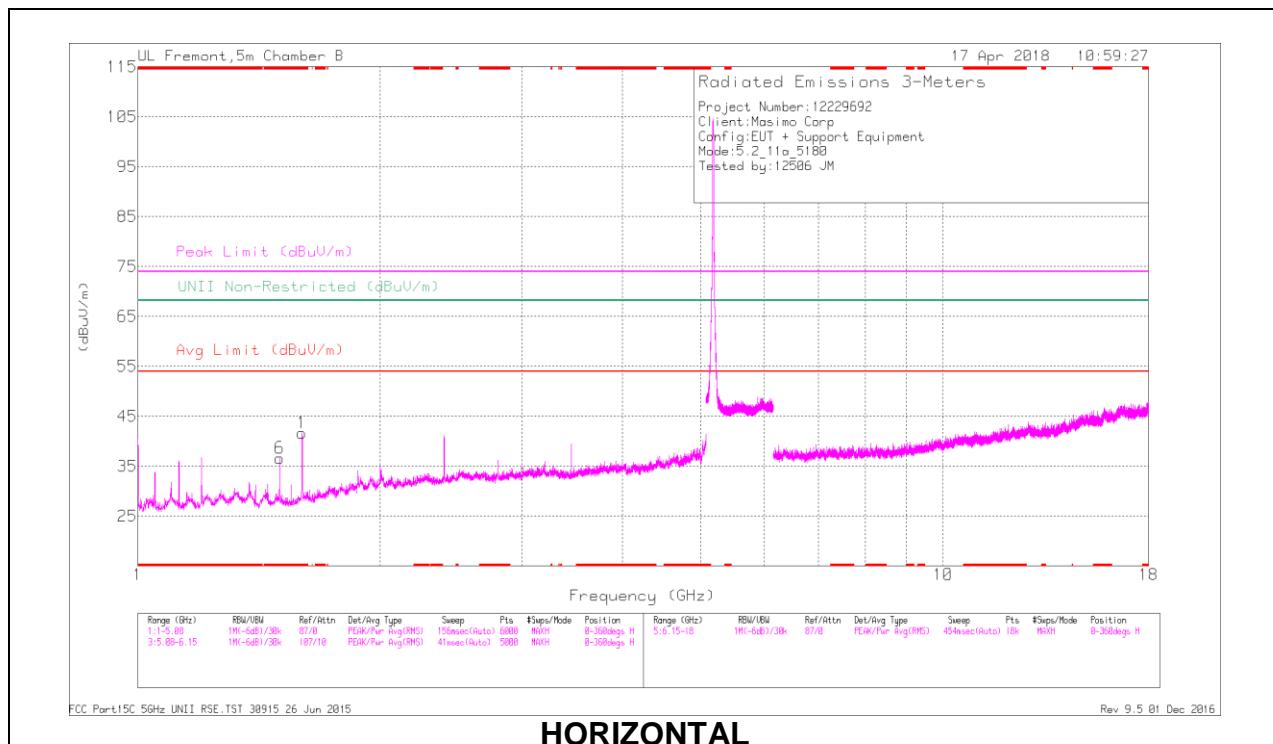
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

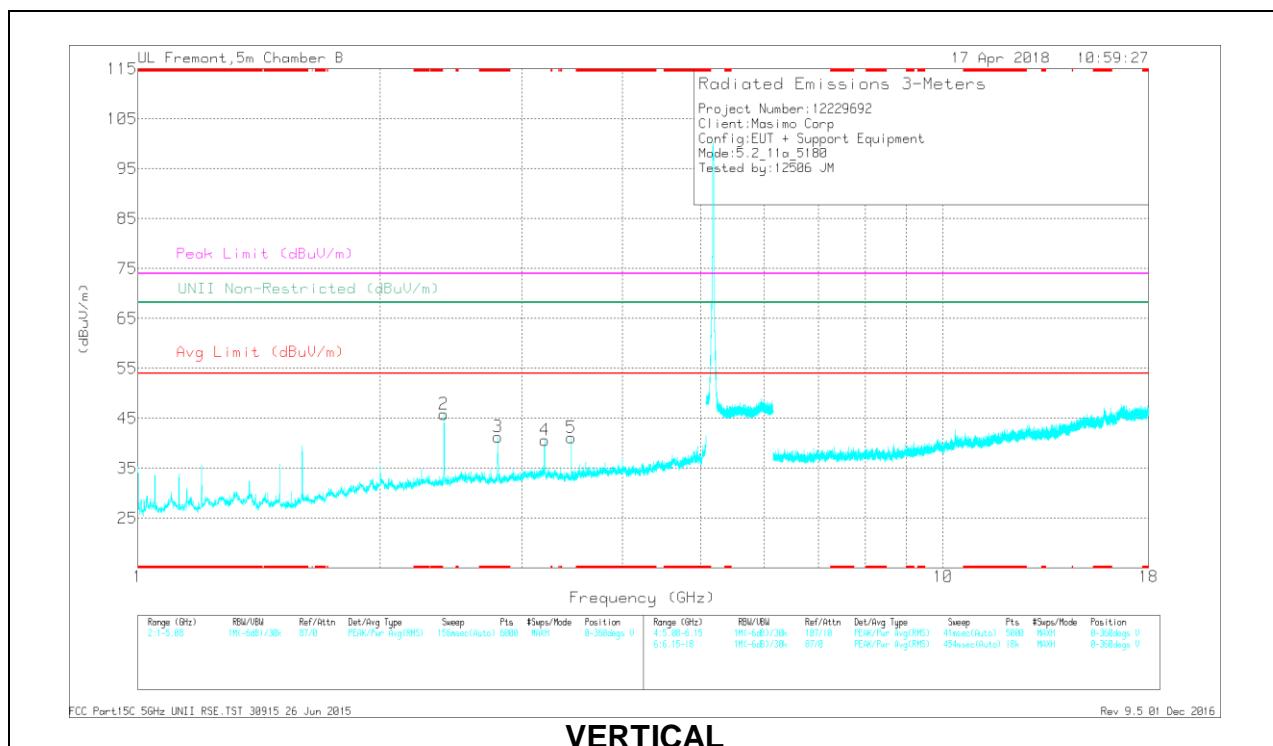
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

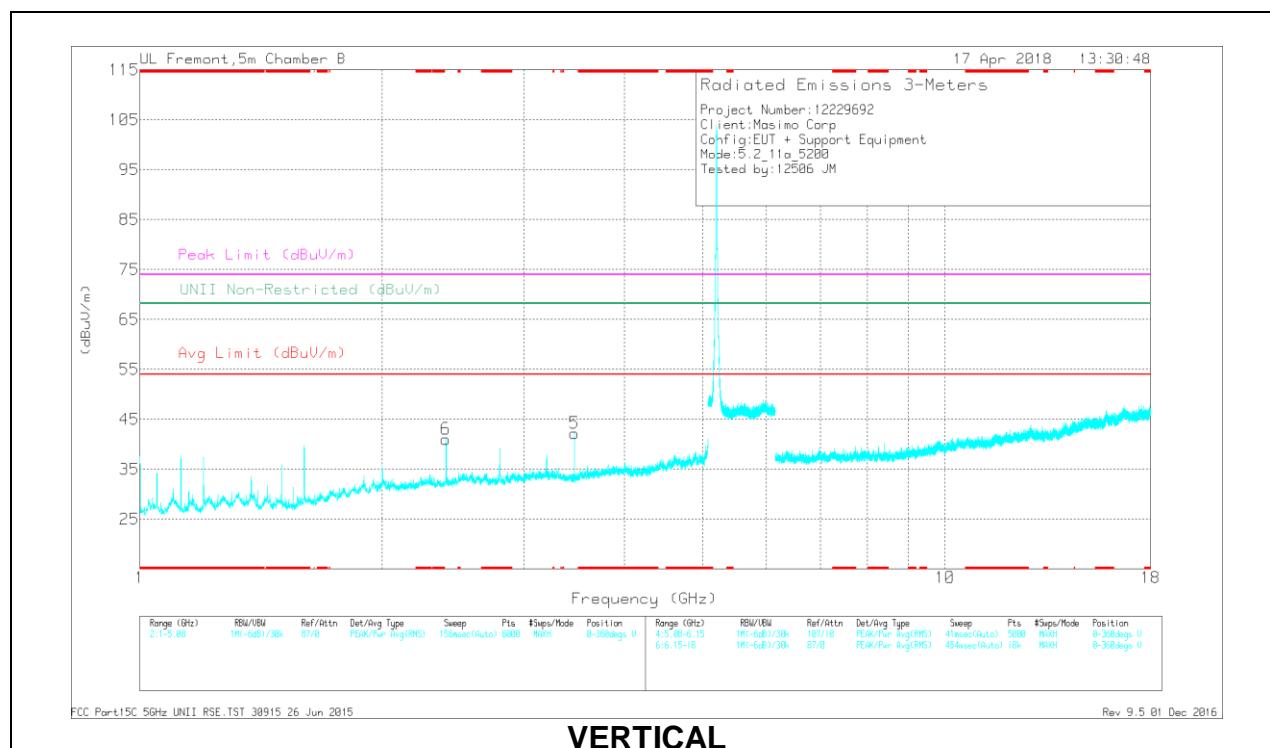
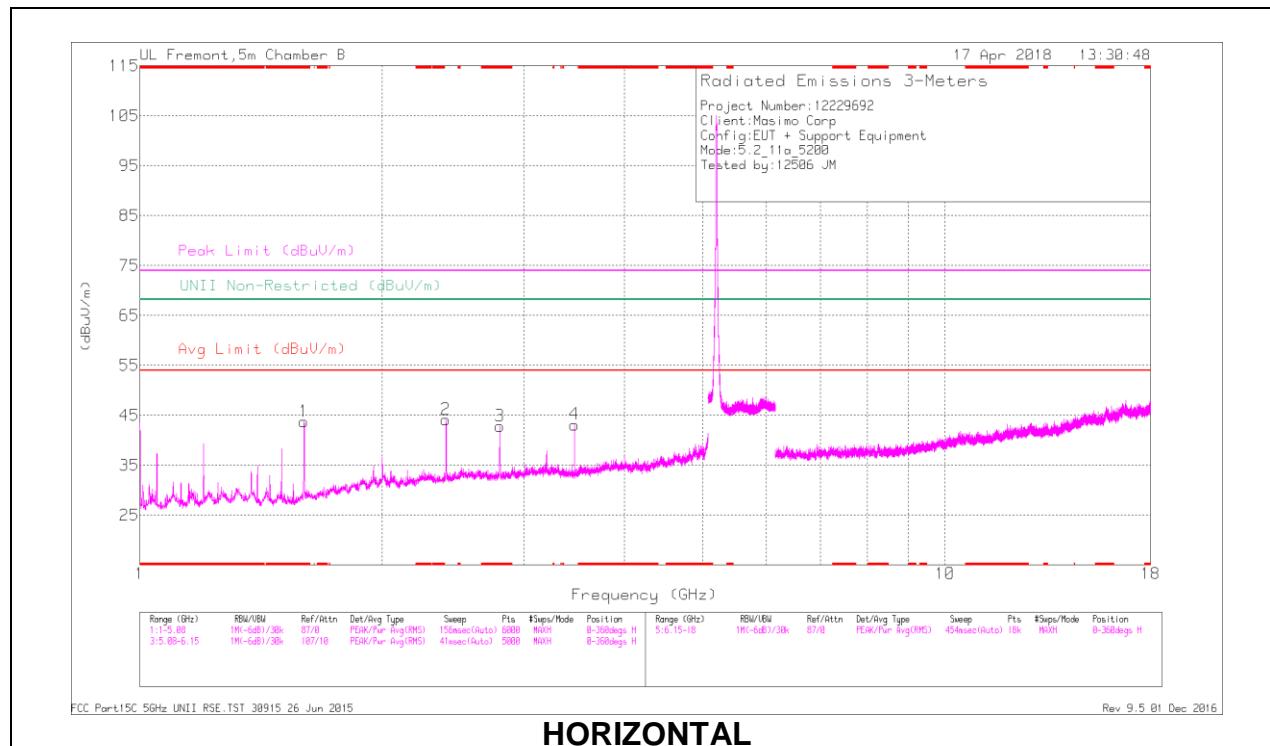
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dBm)	AmpGain/AttPad (dB)	DC Corr (dB)	Corrected Power (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarity
* 1.599	54.18	PK-U	28.3	-33.7	0	48.78	-	-	74	-25.22	-	-	86	336	H
* 1.6	41.2	ADR	28.3	-33.7	.3	36.1	54	-17.9	-	-	-	-	86	336	H
* 1.5	47.03	PK-U	28.2	-34.3	0	40.93	-	-	74	-33.07	-	-	206	150	H
* 1.5	41.75	ADR	28.2	-34.3	.3	35.95	54	-18.05	-	-	-	-	206	150	H
* 2.799	47.29	PK-U	32.4	-32.8	0	46.89	-	-	74	-27.11	-	-	268	183	V
* 2.8	38.91	ADR	32.4	-32.8	.3	38.81	54	-15.19	-	-	-	-	268	183	V
2.4	50.98	PK-U	32	-33.2	0	49.78	-	-	-	-	68.2	-18.42	286	207	V
3.199	45.47	PK-U	33	-31.5	0	46.97	-	-	-	-	68.2	-21.23	5	260	V
3.454	45.75	PK-U	32.6	-32.5	0	45.85	-	-	-	-	68.2	-22.35	308	102	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL RESULTS



RADIATED EMISSIONS

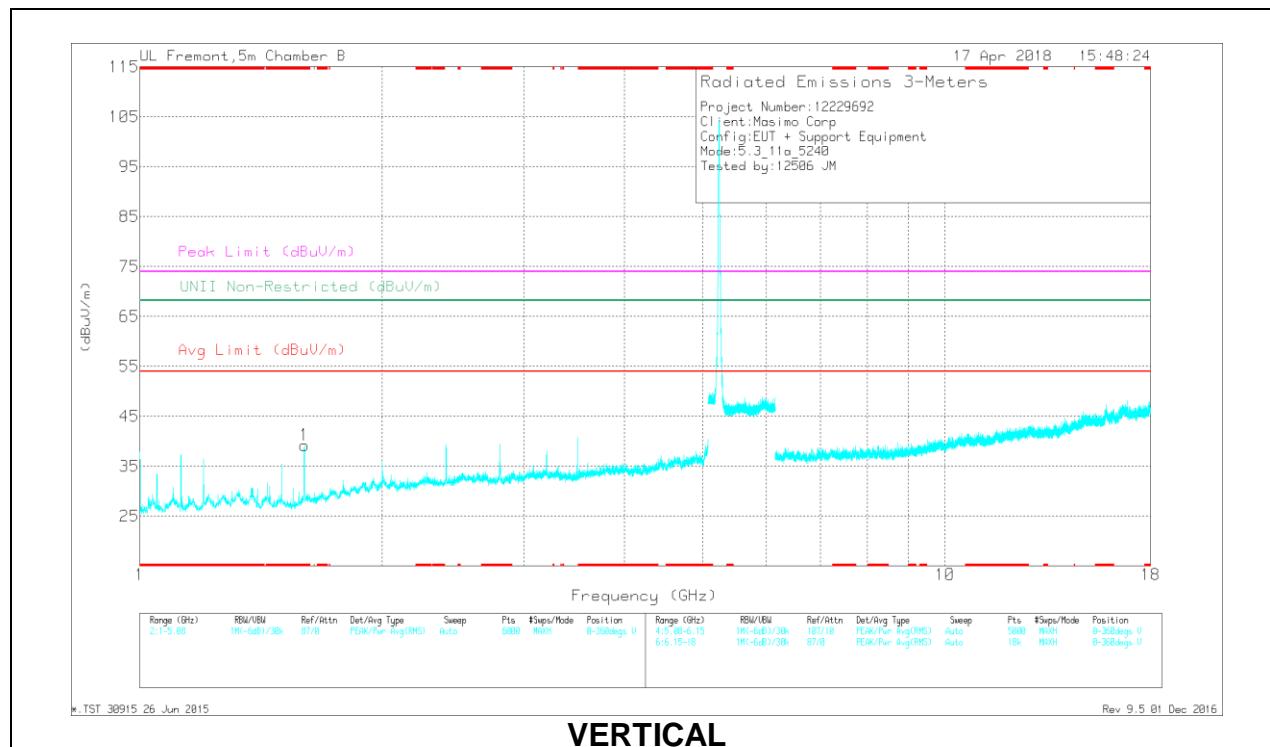
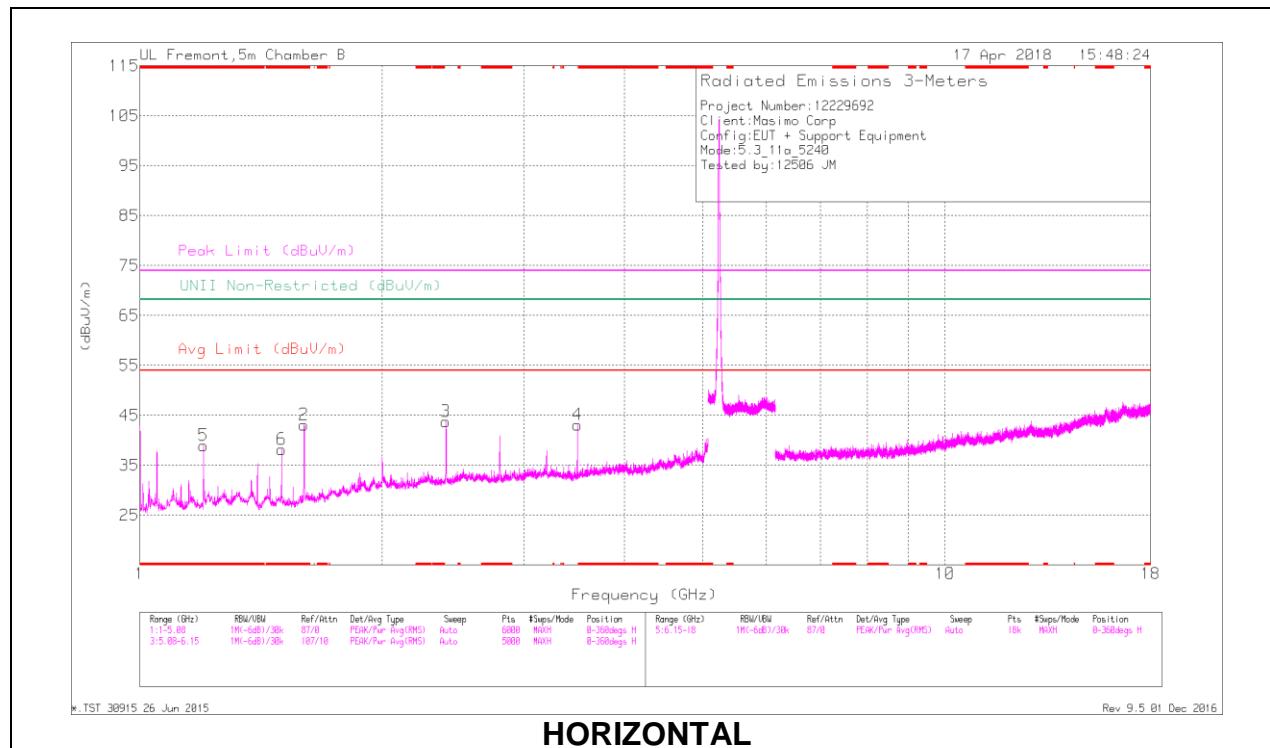
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dBm)	Amp/Cat/Filt/Pad (dB)	DC Corr (dB)	Corrected Avg (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNI Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.6	55.81	PK-U	28.3	-33.7	0	50.41	-	-	74	-23.59	-	-	154	201	H
* 1.6	42.87	ADR	28.3	-33.7	.3	37.77	54	-16.23	-	-	-	-	154	201	H
* 2.801	47.11	PK-U	32.4	-32.8	0	46.71	-	-	74	-27.29	-	-	324	102	H
* 2.8	38.72	ADR	32.4	-32.8	.3	38.62	54	-15.38	-	-	-	-	324	102	H
2.4	51.02	PK-U	32	-33.1	0	49.92	-	-	-	-	68.2	-18.28	25	134	H
2.4	47.02	PK-U	32	-33.2	0	45.82	-	-	-	-	68.2	-22.38	282	246	V
3.467	47.38	PK-U	32.7	-32.4	0	47.68	-	-	-	-	68.2	-20.52	341	109	H
3.467	45.15	PK-U	32.7	-32.4	0	45.45	-	-	-	-	68.2	-22.75	318	103	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Dct	AF T863 (dBm)	AmpGain/AttPad (dB)	DC Corr (dB)	Corrected Power (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarity
* 1.6	54.59	PK-U	28.3	-33.7	0	49.19	-	-	74	-24.81	-	-	153	153	H
* 1.6	41.99	ADR	28.3	-33.7	.3	36.89	54	-17.11	-	-	-	-	153	153	H
* 1.2	49.74	PK-U	28	-34.7	0	43.04	-	-	74	-30.96	-	-	341	104	H
* 1.2	44.42	ADR	28	-34.7	.3	38.02	54	-15.98	-	-	-	-	341	104	H
* 1.5	47.4	PK-U	28.2	-34.3	0	41.3	-	-	74	-32.7	-	-	353	109	H
* 1.5	42.66	ADR	28.2	-34.3	.3	36.86	54	-17.14	-	-	-	-	353	109	H
* 1.6	50.9	PK-U	28.3	-33.7	0	45.5	-	-	74	-28.5	-	-	44	201	V
* 1.6	39.52	ADR	28.3	-33.7	.3	34.42	54	-19.58	-	-	-	-	44	201	V
2.401	49.94	PK-U	32	-33.2	0	48.74	-	-	-	-	68.2	-19.46	105	220	H
3.493	46.89	PK-U	32.8	-32	0	47.69	-	-	-	-	68.2	-20.51	340	107	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

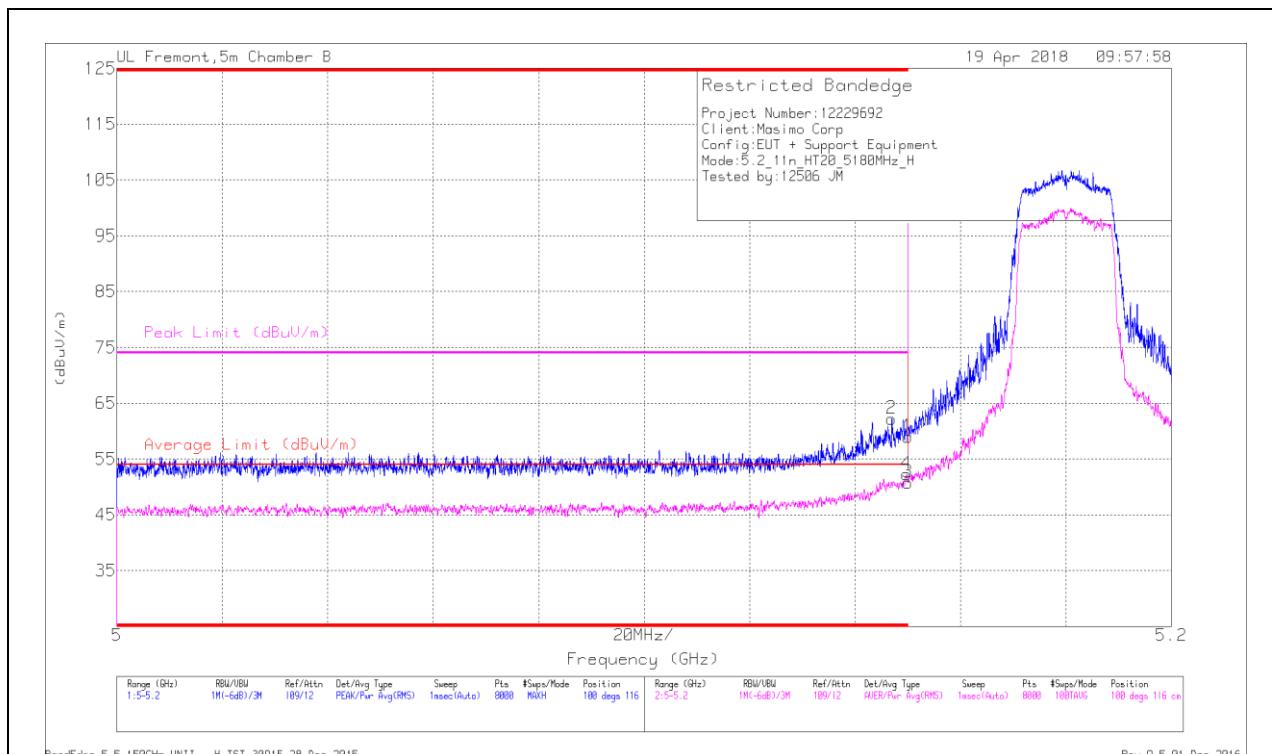
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

9.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



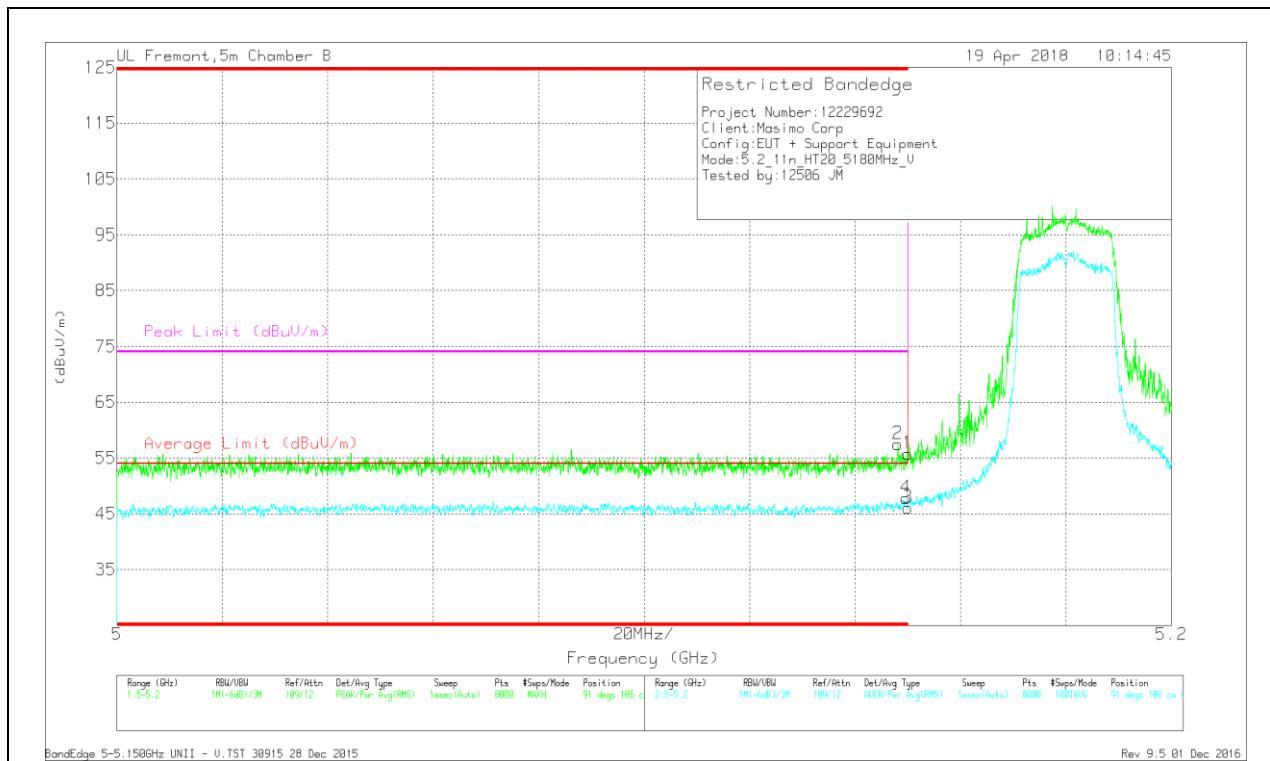
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	*5.147	46.32	Pk	34.4	-18.5	0	62.22	-	-	74	-11.78	100	116	H
1	*5.15	43.06	Pk	34.4	-18.5	0	58.96	-	-	74	-15.04	100	116	H
3	*5.15	34.61	RMS	34.4	-18.5	.32	50.83	54	-3.17	-	-	100	116	H
4	*5.15	36.09	RMS	34.4	-18.5	.32	52.31	54	-1.69	-	-	100	116	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.148	41.57	PK	34.4	-18.5	0	57.47	-	-	74	-16.53	91	106	V
1	* 5.15	39.91	PK	34.4	-18.5	0	55.81	-	-	74	-18.19	91	106	V
3	* 5.15	29.83	RMS	34.4	-18.5	.32	46.05	54	-7.95	-	-	91	106	V
4	* 5.15	31.58	RMS	34.4	-18.5	.32	47.8	54	-6.2	-	-	91	106	V

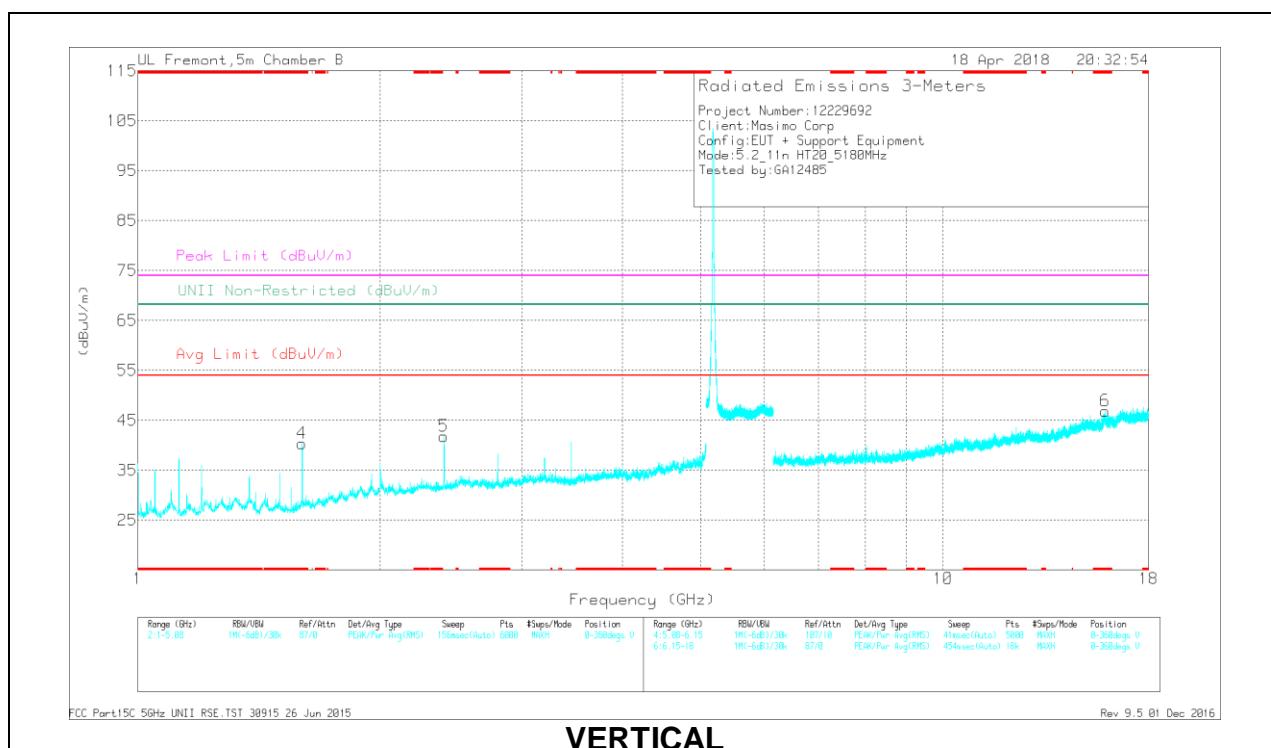
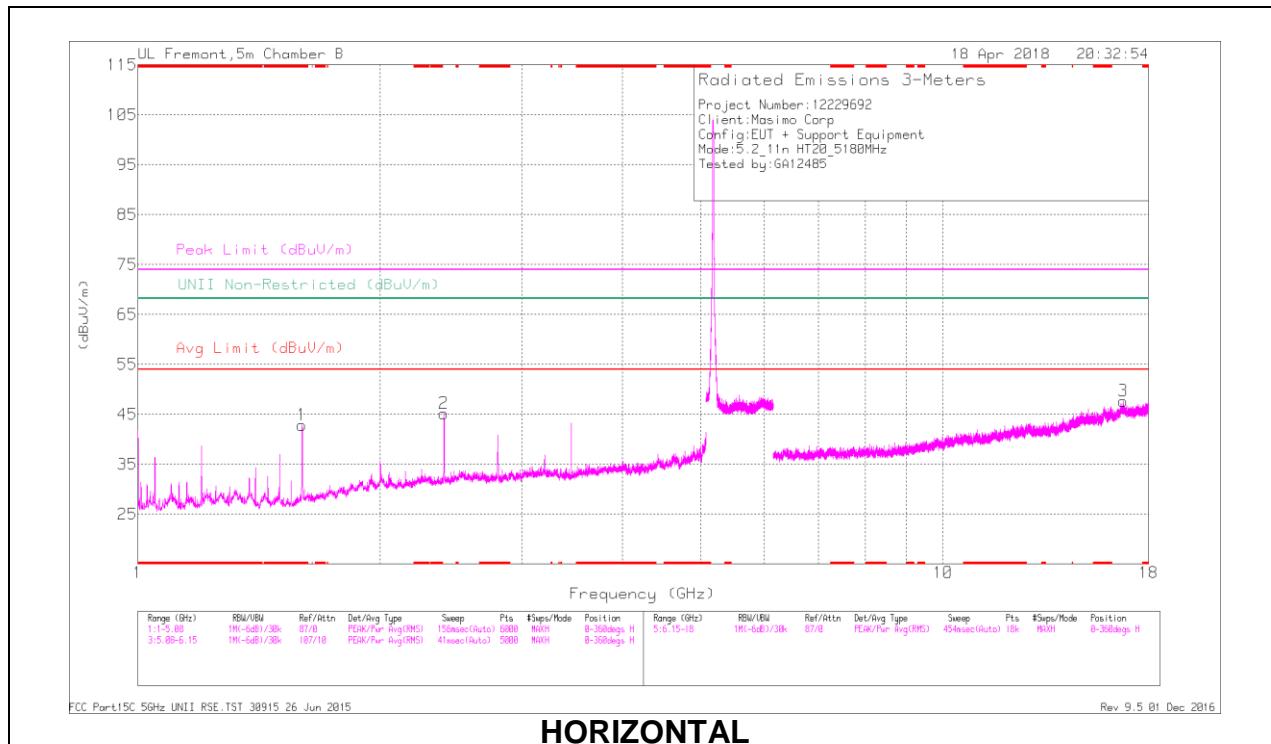
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

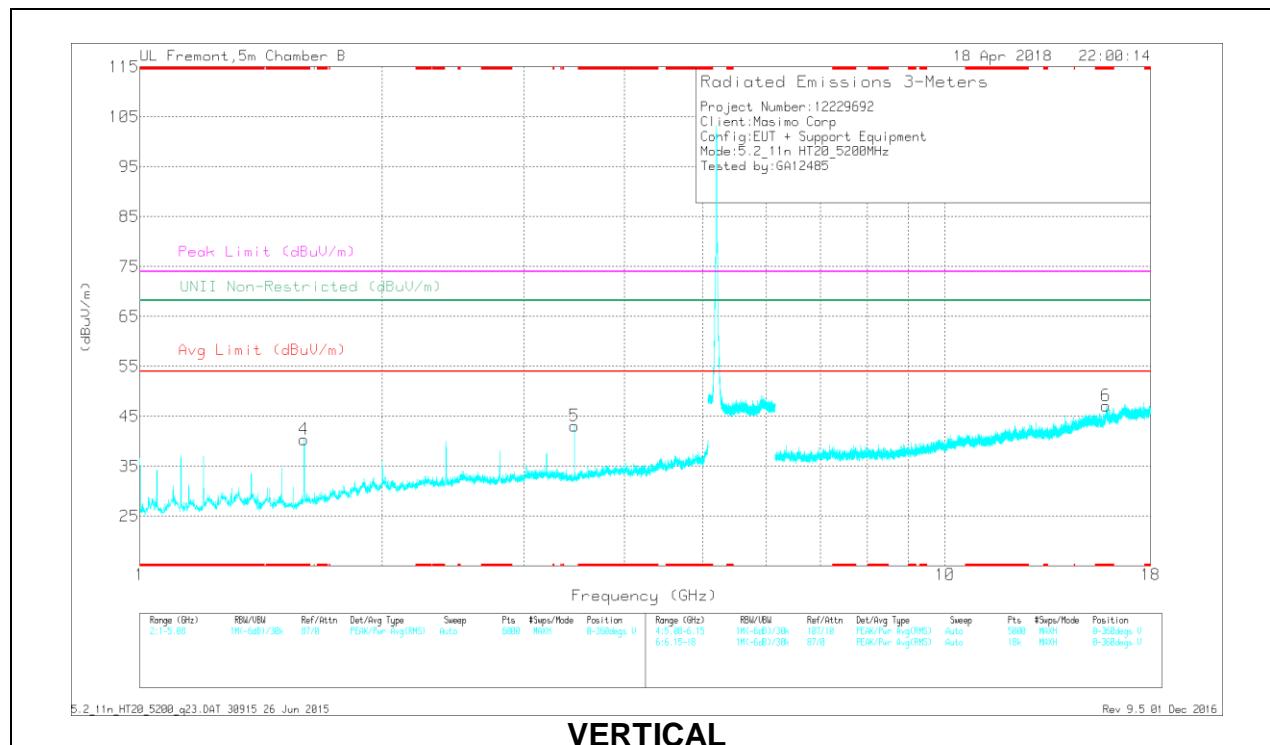
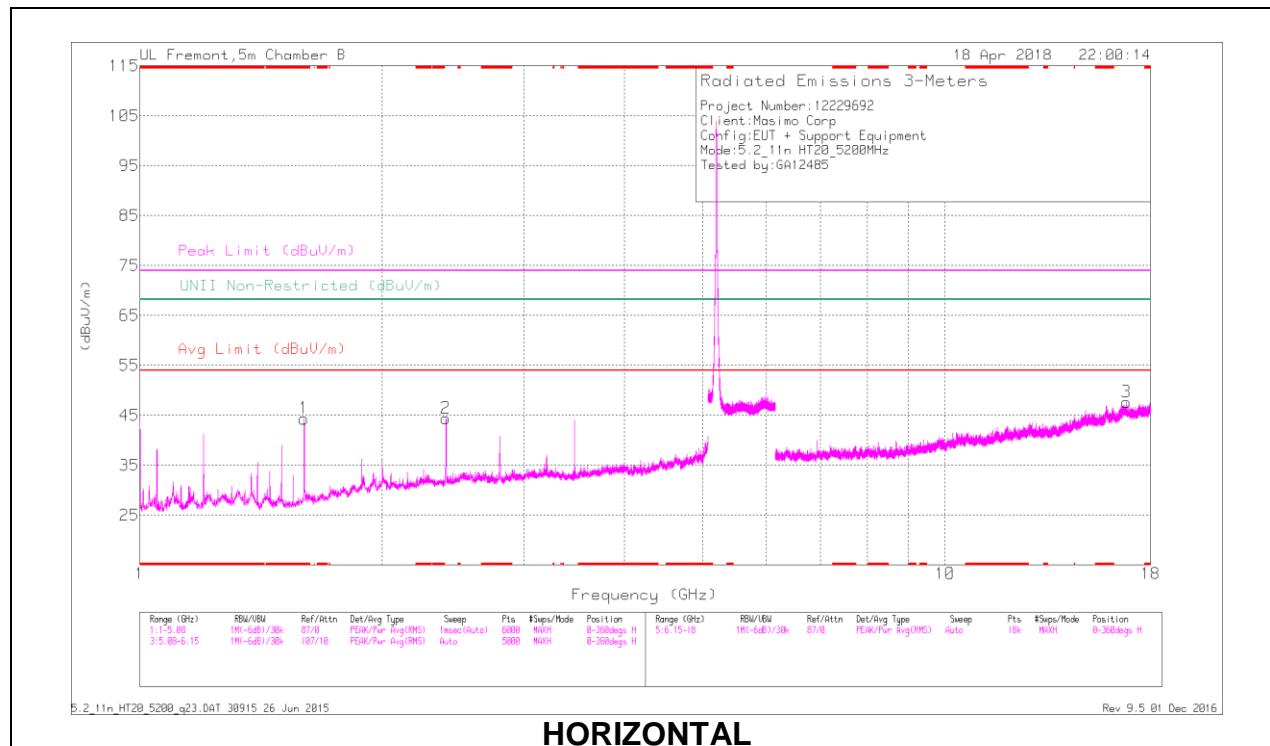
Marker	Frequency (GHz)	Meter Reading (dBuV)	Dct	AF T863 (dBm)	Amp/Gain/Pad (dB)	DC Corr (dB)	Corrected Min (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarity
1	* 1.6	54.21	PK-U	28.3	-33.7	0	48.81	-	74	-25.19	-	-	-	67	290	H
	* 1.6	41.44	ADR	28.3	-33.7	.32	36.36	54	-17.64	-	-	-	-	67	290	H
4	* 1.6	51.55	PK-U	28.3	-33.7	0	46.15	-	74	-27.85	-	-	-	71	149	V
	* 1.6	38.78	ADR	28.3	-33.7	.32	33.70	54	-20.3	-	-	-	-	71	149	V
6	* 15.91	31.9	PK-U	41	-20.8	0	52.1	-	74	-21.9	-	-	-	6	302	V
	* 15.91	20.4	ADR	41	-20.8	.32	40.92	54	-13.08	-	-	-	-	6	302	V
2	2.399	40.19	PK-U	32	-33.1	0	39.09	-	-	-	-	68.2	-29.11	294	190	V
5	2.4	51.04	PK-U	32	-33.2	0	49.84	-	-	-	-	68.2	-18.36	36	105	H
3	16.737	32.06	PK-U	42.3	-21.5	0	52.86	-	-	-	-	68.2	-15.34	48	237	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL RESULTS



RADIATED EMISSIONS

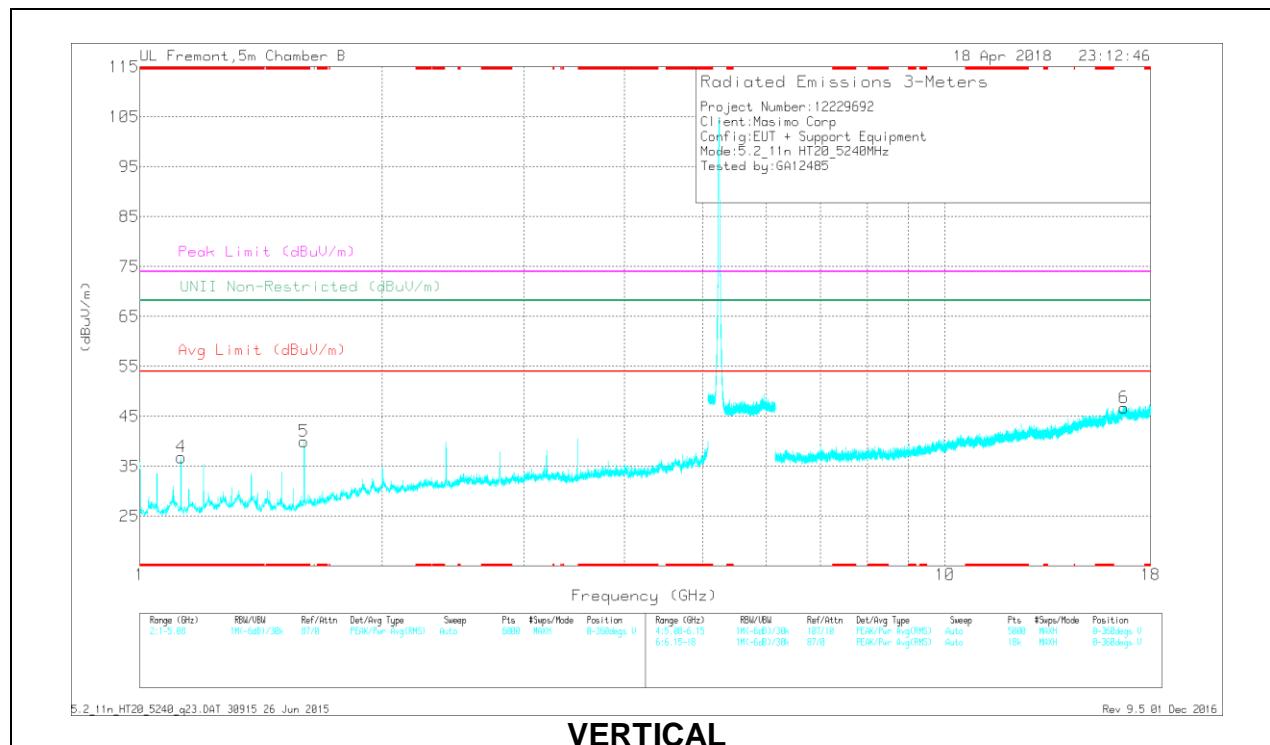
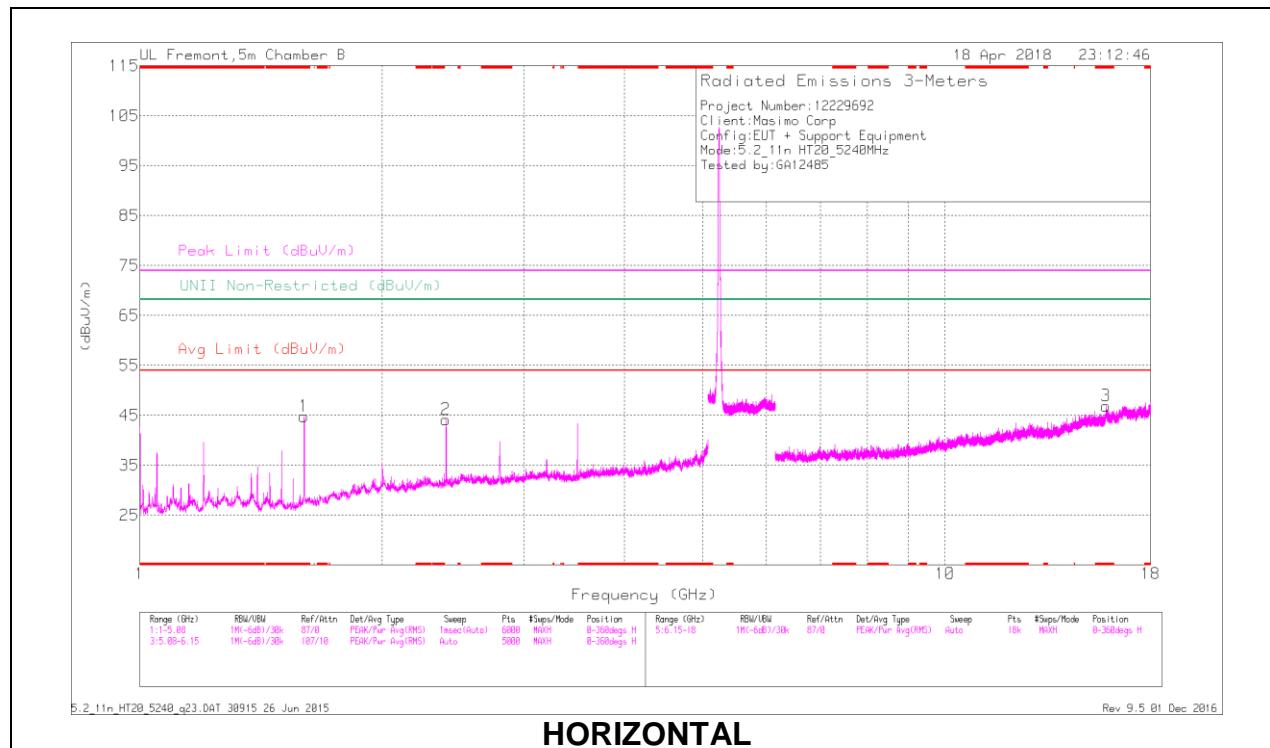
Marker	Frequency (GHz)	Measuring (dBuV)	Det	AF T863 (dBm)	Amp/Gain/Pad (dB)	DC Corr (dB)	Corrected Measuring (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Deg)	Height (cm)	Polarity
1	* 1.6	54.4	PK-U	28.3	-33.7	0	49	-	74	-25	-	-	-	162	169	H
	* 1.6	41.1	ADR	28.3	-33.7	.32	36.02	54	-17.98	-	-	-	-	162	169	H
4	* 1.6	52.21	PK-U	28.3	-33.7	0	46.81	-	74	-27.19	-	-	-	267	154	V
	* 1.6	41.39	ADR	28.3	-33.7	.32	36.31	54	-17.69	-	-	-	-	267	154	V
6	* 15.847	31.98	PK-U	41	-20.5	0	52.48	-	74	-21.52	-	-	-	141	225	V
	* 15.847	20.48	ADR	41	-20.5	.32	41.3	54	-12.7	-	-	-	-	141	225	V
2	2.4	50.41	PK-U	32	-33.1	0	49.31	-	-	-	-	68.2	-18.89	36	161	H
5	3.467	45.58	PK-U	32.7	-32.4	0	45.88	-	-	-	-	68.2	-22.32	325	105	V
3	16.788	31.81	PK-U	42.3	-21.5	0	52.61	-	-	-	-	68.2	-15.59	183	216	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meas Rising (dBuV)	Det	AF T863 (dBm)	Amp/Gain/Pad (dB)	DC Corr (dB)	Corrected Rising (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Deg)	Height (cm)	Polarity
1	* 1.6	54.89	PK-U	28.3	-33.7	0	49.49	-	74	-24.51	-	-	-	68	158	H
	* 1.6	42.6	ADR	28.3	-33.7	.32	37.52	54	-16.48	-	-	-	-	68	158	H
4	* 1.125	46.76	PK-U	27.6	-34.5	0	39.86	-	74	-34.14	-	-	-	75	108	V
	* 1.125	42.51	ADR	27.6	-34.5	.32	35.93	54	-18.07	-	-	-	-	75	108	V
5	* 1.6	48.87	PK-U	28.3	-33.7	0	43.47	-	74	-30.53	-	-	-	3	239	V
	* 1.6	36.97	ADR	28.3	-33.7	.32	31.89	54	-22.11	-	-	-	-	3	239	V
3	* 15.843	31.81	PK-U	41	-20.4	0	52.41	-	74	-21.59	-	-	-	5	161	H
	* 15.846	20.37	ADR	41	-20.5	.32	41.19	54	-12.81	-	-	-	-	5	161	H
2	2.4	50.51	PK-U	32	-33.1	0	49.41	-	-	-	-	68.2	-18.79	35	194	H
	16.683	32.13	PK-U	42.2	-21.2	0	53.13	-	-	-	-	68.2	-15.07	23	270	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

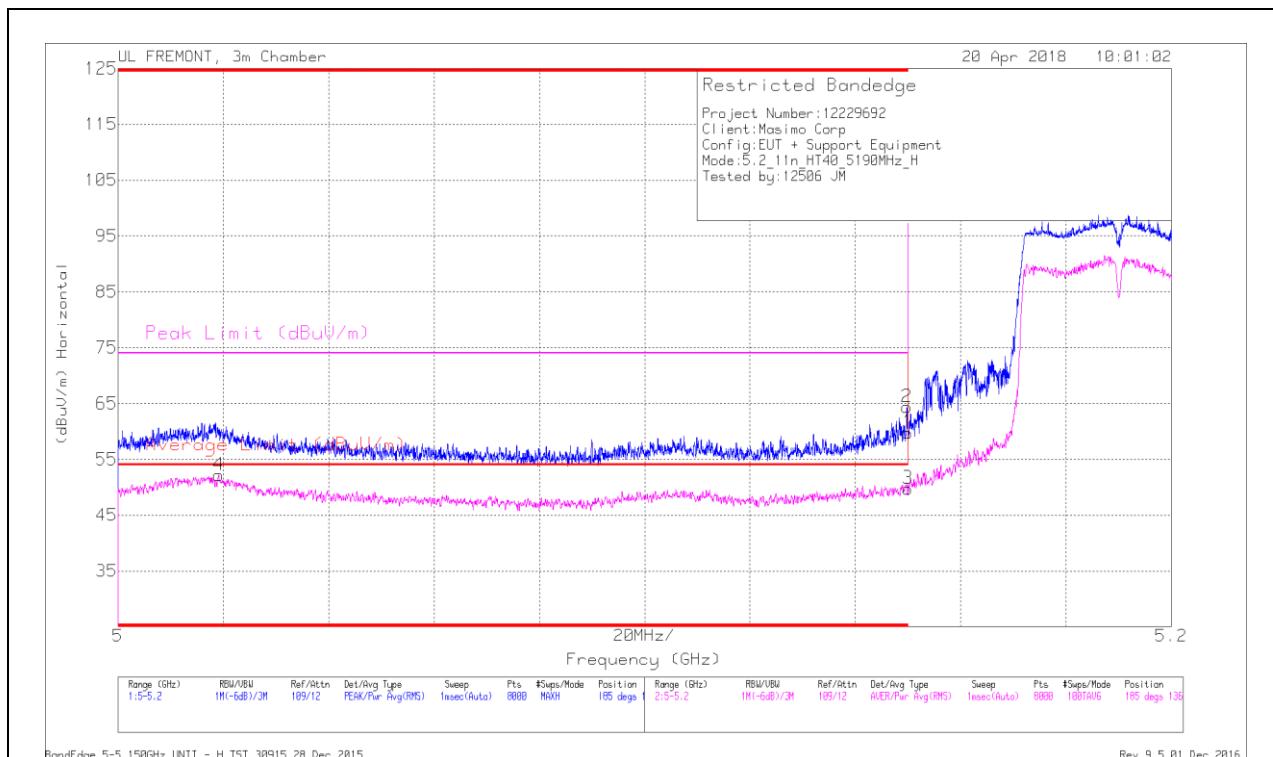
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

9.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



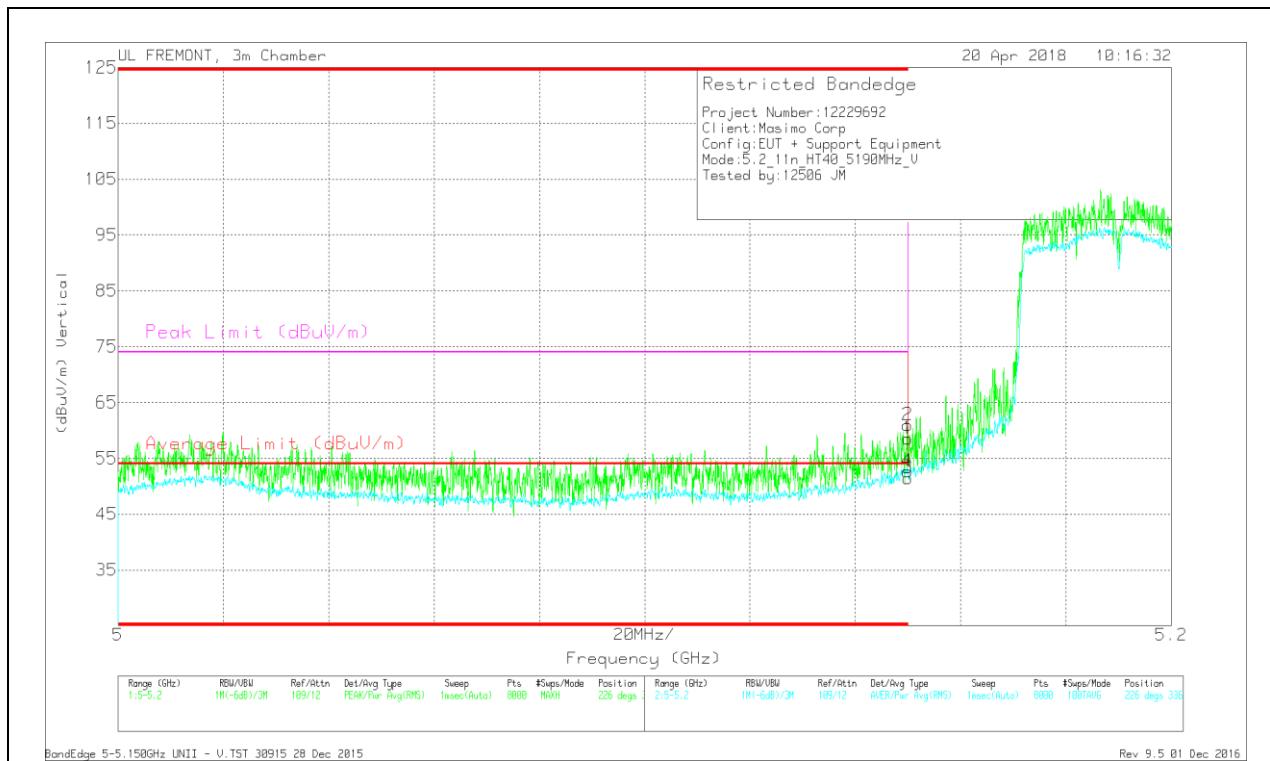
Marker	Frequency (GHz)	RMS	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	*5.019	32.33	RMS	342	-15	.62	52.15	54	-1.85	-	-	-	185	136	H
1	*5.15	43.49	Pk	34.4	-18.1	0	59.79	-	-	74	-14.21	185	136	H	
2	*5.15	48.05	Pk	34.4	-18.1	0	64.35	-	-	74	-9.65	185	136	H	
3	*5.15	32.82	RMS	34.4	-18.1	.62	49.74	54	-4.26	-	-	-	185	136	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dB _U V)	Det	AF T120 (dB/m)	Amp/Cbl/Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dB _U /m)	Average Limit (dB _U /m)	Margin (dB)	Peak Limit (dB _U /m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*5.15	42.21	PK	34.4	-18.1	0	58.51	-	-	74	-15.49	226	336	V
2	*5.15	44.66	PK	34.4	-18.1	0	60.96	-	-	74	-13.04	226	336	V
3	*5.15	35.16	RMS	34.4	-18.1	.62	52.08	54	-1.92	-	-	226	336	V
4	*5.15	36.32	RMS	34.4	-18.1	.62	53.24	54	-.76	-	-	226	336	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection