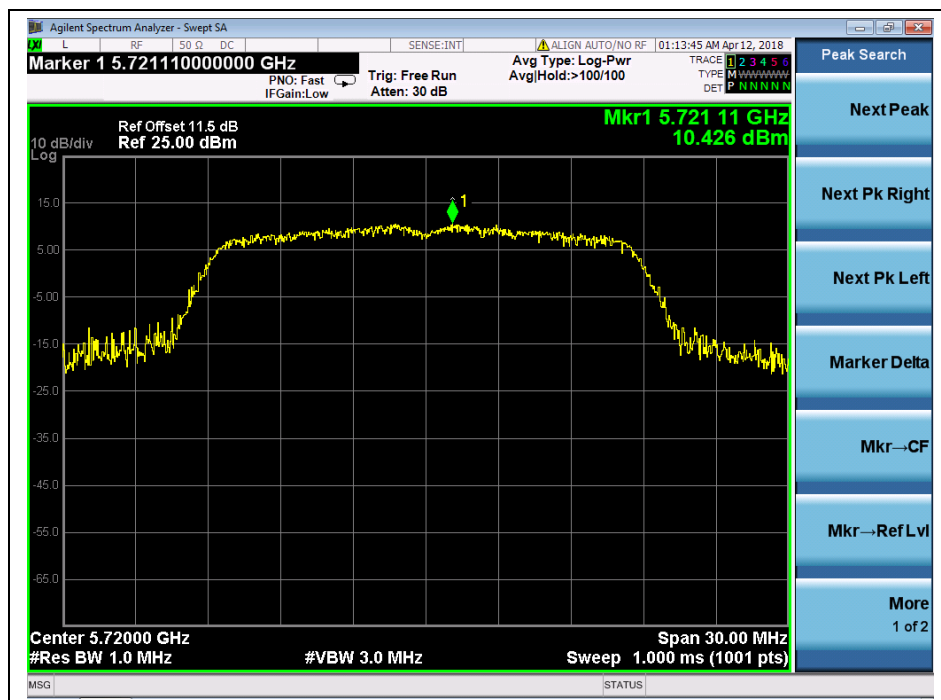
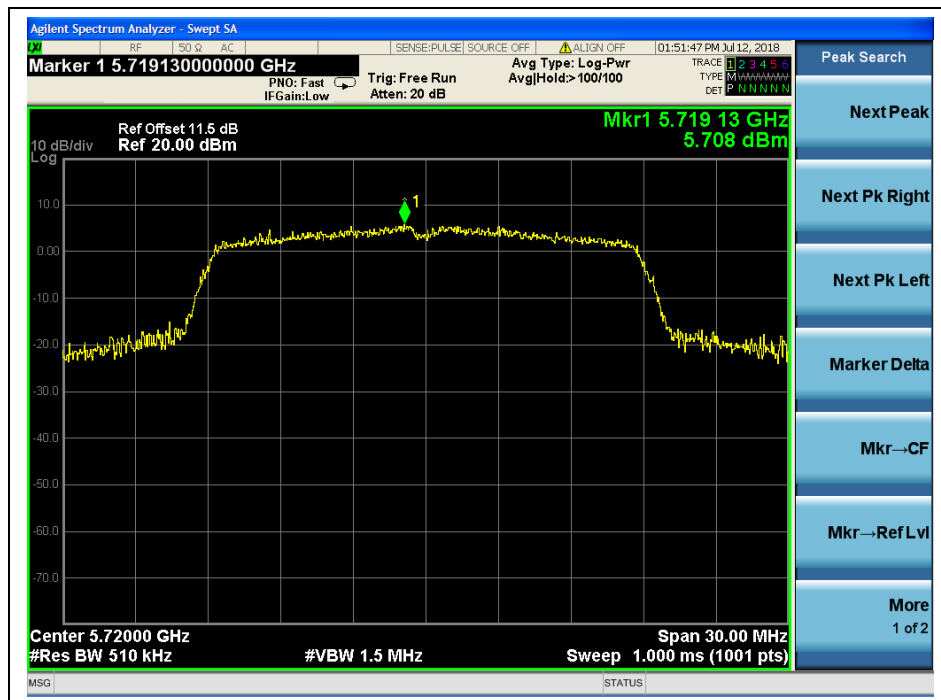




(Channel 120, 5600 MHz, 802.11 n (HT20))



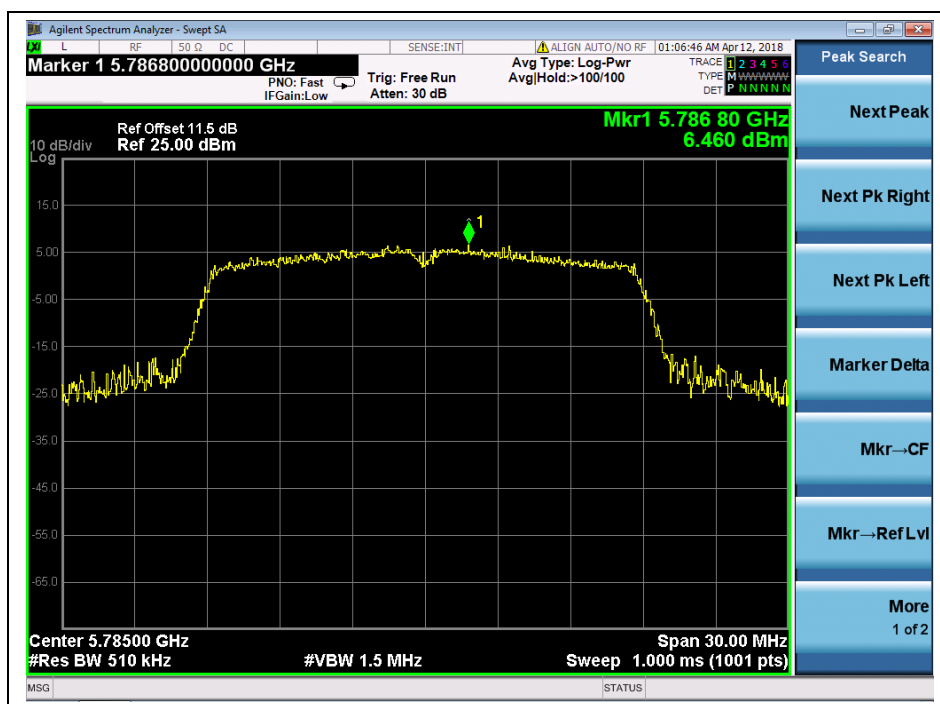
(Channel 144, 5720MHz, 802.11 n (HT20))



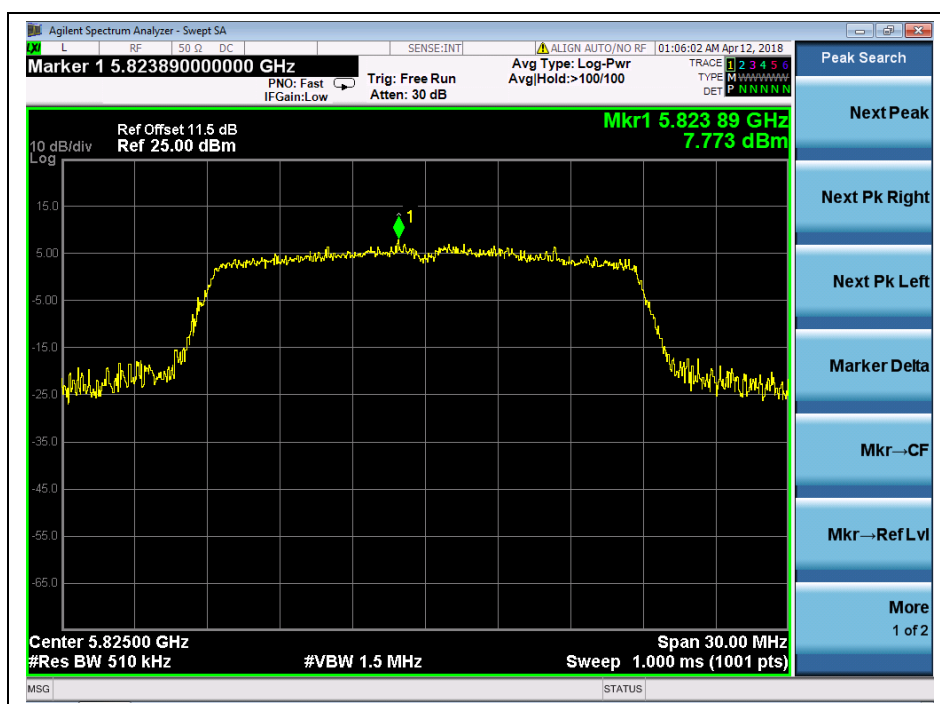
(Channel 144, 5720MHz, 802.11 n (HT20))



(Channel 149, 5745MHz, 802.11 n (HT20))



(Channel 157, 5785MHz, 802.11 n (HT20))



(Channel 165, 5825MHz, 802.11 n (HT20))



A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSP (dBm/MHz)	Limit (dBm/MHz)	Verdict
38	5190	6.88	11	PASS
46	5230	7.05		
54	5270	5.69		
62	5310	5.68		
102	5510	7.12		
126	5630	8.22		
142	5710	8.72		
Channel	Frequency (MHz)	Measured PPSP (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
142	5710	3.06	30	PASS
151	5755	7.49		
159	5795	7.72		

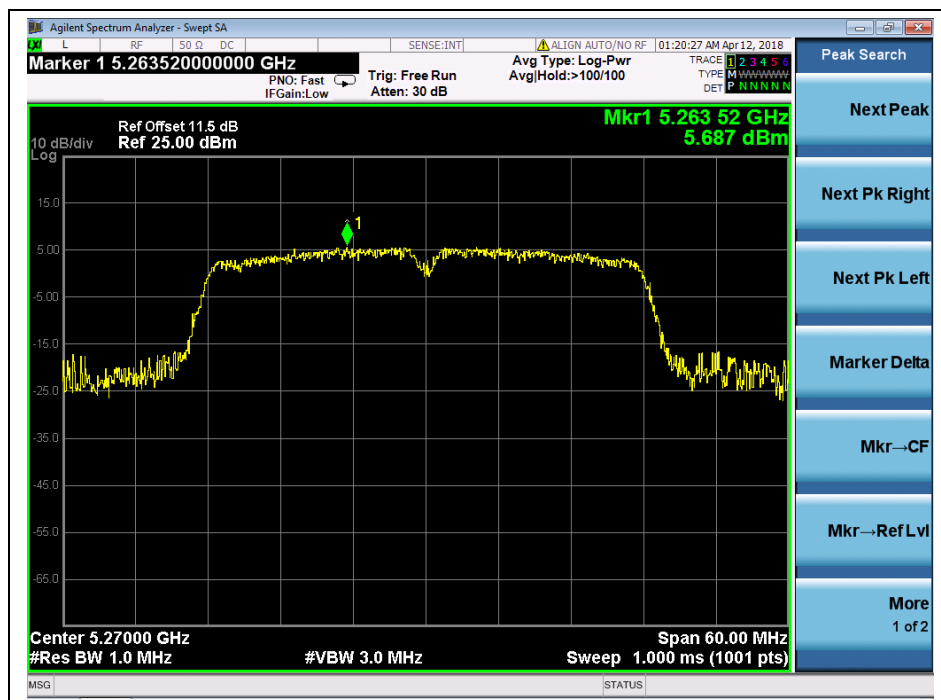
B. Test Plots



(Channel 38, 5190MHz, 802.11n (HT40))



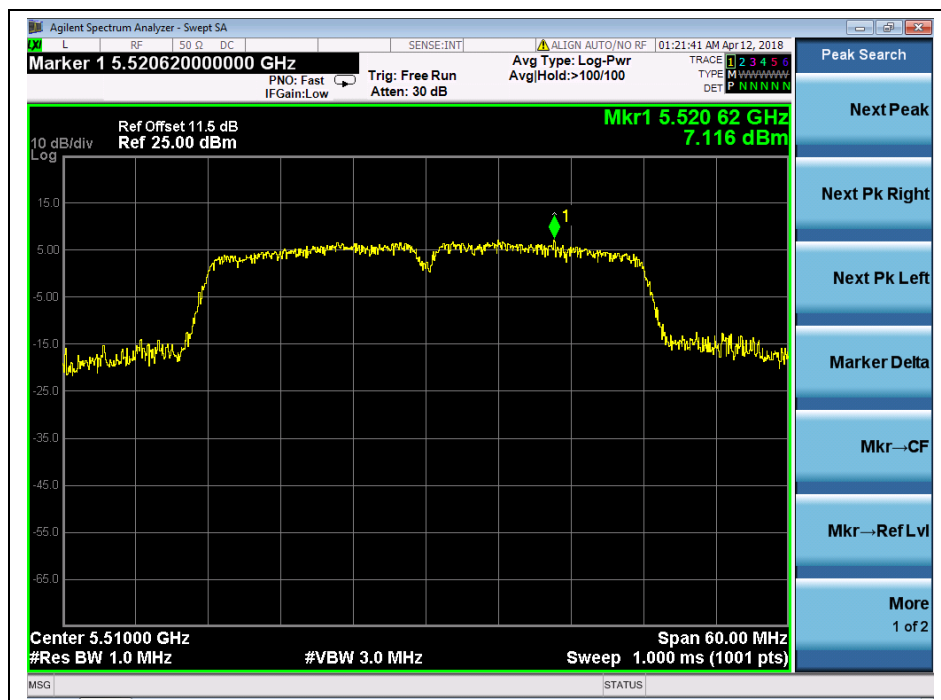
(Channel 46, 5230 MHz, 802.11n (HT40))



(Channel 54, 5270MHz, 802.11n (HT40))



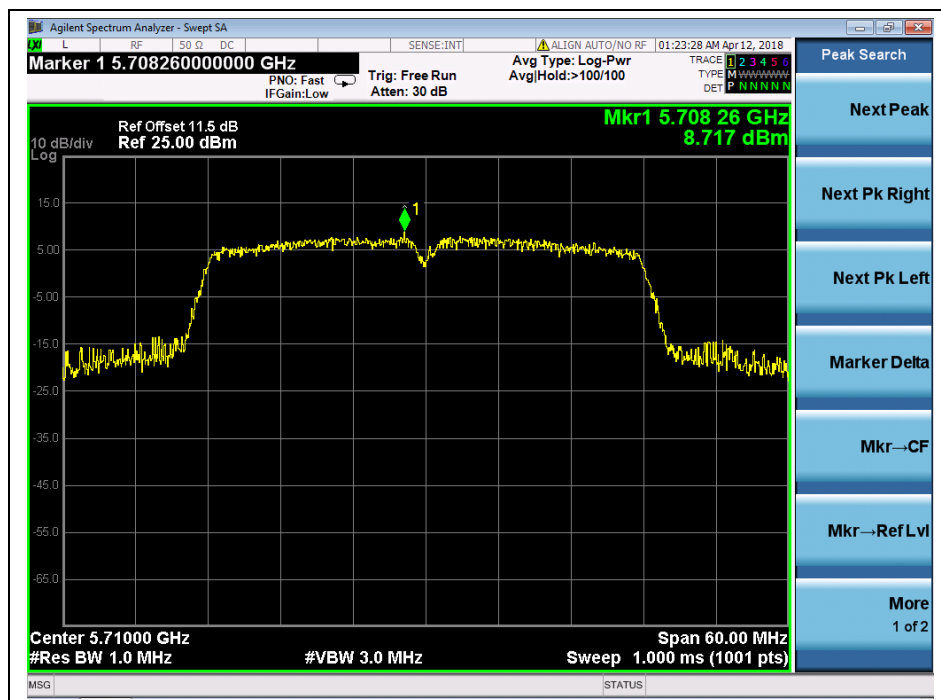
(Channel 62, 5310 MHz, 802.11n (HT40))



(Channel 102, 5510MHz, 802.11n (HT40))



(Channel 126, 5630 MHz, 802.11n (HT40))



(Channel 142, 5710MHz, 802.11n (HT40))



(Channel 142, 5710MHz, 802.11n (HT40))



(Channel 151, 5755 MHz, 802.11n (HT40))



(Channel 159, 5795MHz, 802.11n (HT40))

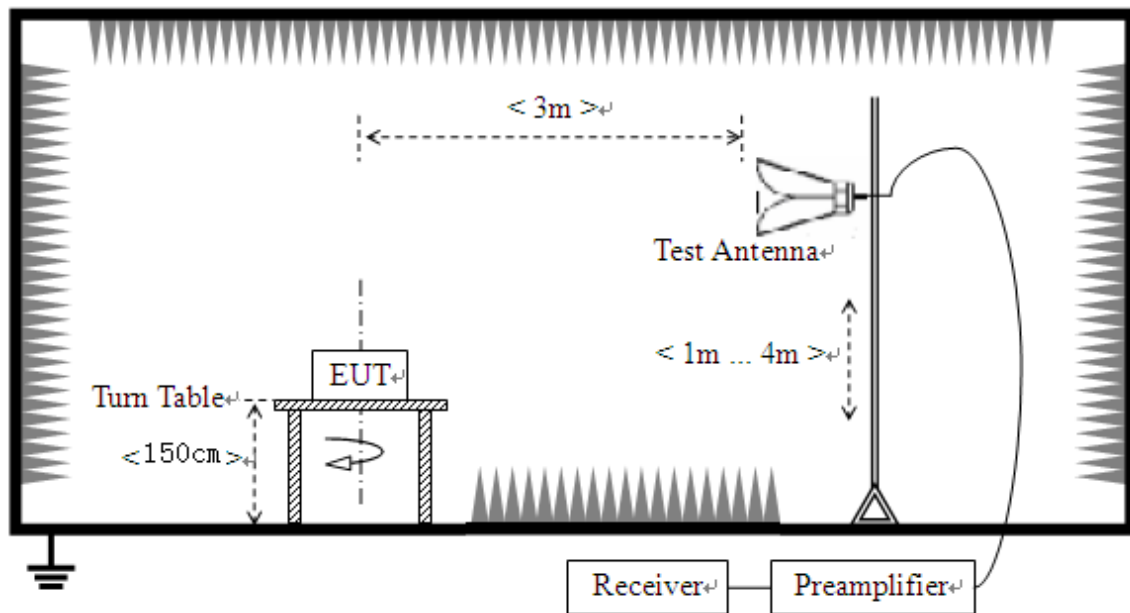
2.5. Restricted Frequency Bands

2.5.1. Requirement

According to FCC section 15.407(b)(7), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

2.5.2. Test Description

A. Test Setup



The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

KDB 789033 Section H) 3)5)6(d)) was used in order to prove compliance

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.



2.5.3. Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

A_T : Total correction Factor except Antenna; U_R : Receiver Reading

G_{preamp} : Preamplifier Gain; A_{Factor} : Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

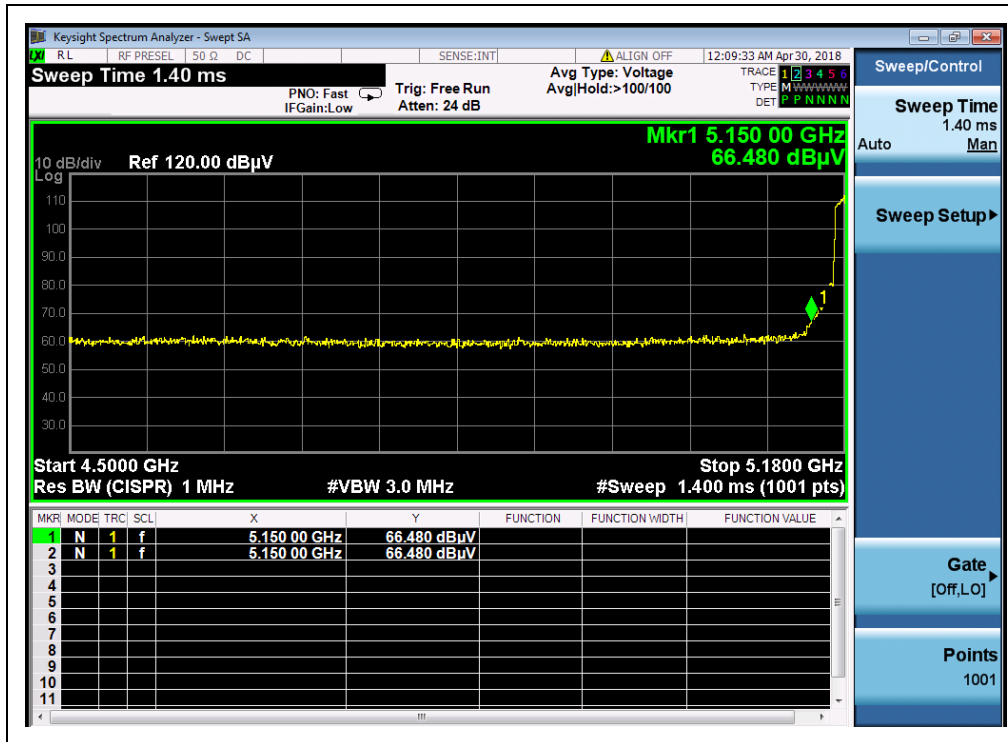
802.11a Test mode

A. Test Verdict:

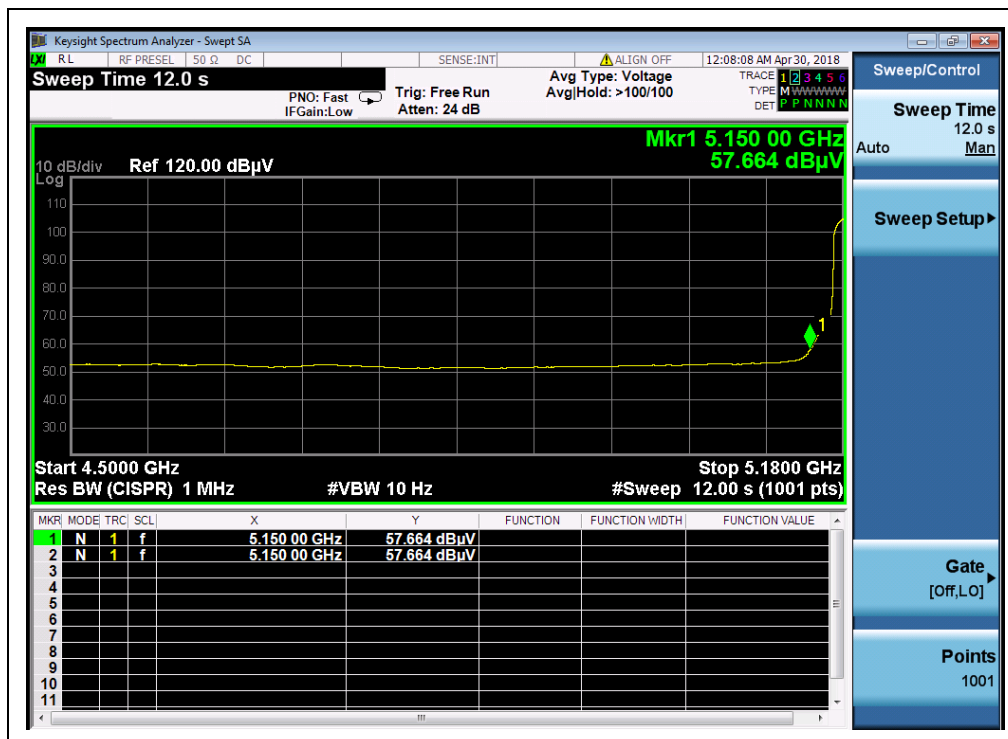
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
36	5150.00	PK	66.48	-50.65	32.11	47.94	74	PASS
36	5150.00	AV	57.66	-50.65	32.11	39.12	54	PASS
64	5351.08	PK	63.87	-50.65	32.11	45.33	74	PASS
64	5350.52	AV	52.50	-50.65	32.11	33.96	54	PASS
100	5257.04	PK	61.89	-50.65	32.11	43.35	68.23	PASS
100	5202.47	AV	52.34	-50.65	32.11	33.80	54	PASS
144	5759.70	PK	62.08	-50.65	32.11	43.54	68.23	PASS
144	5725.00	AV	53.92	-50.65	32.11	35.38	54	PASS
149	5720.00	PK	61.90	-50.65	32.11	43.36	110.83	PASS
149	5720.00	AV	53.71	-50.65	32.11	35.17	54	PASS
165	5910.50	PK	63.46	-50.65	32.11	44.92	78.96	PASS
165	5855.50	AV	50.98	-50.65	32.11	32.44	54	PASS



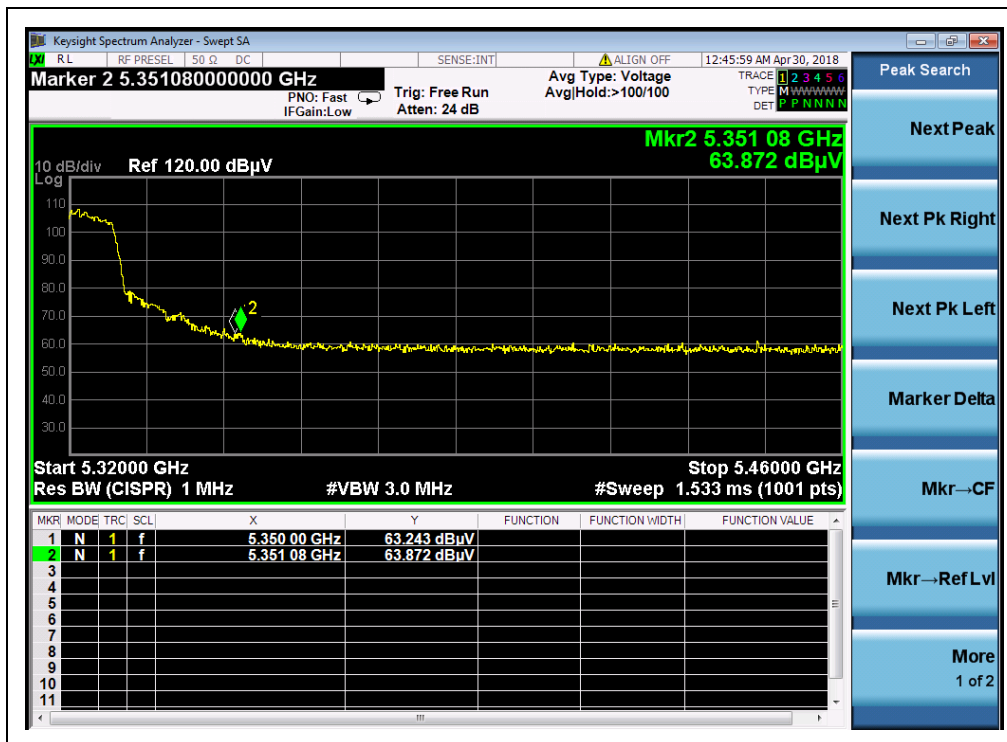
B. Test Plots:



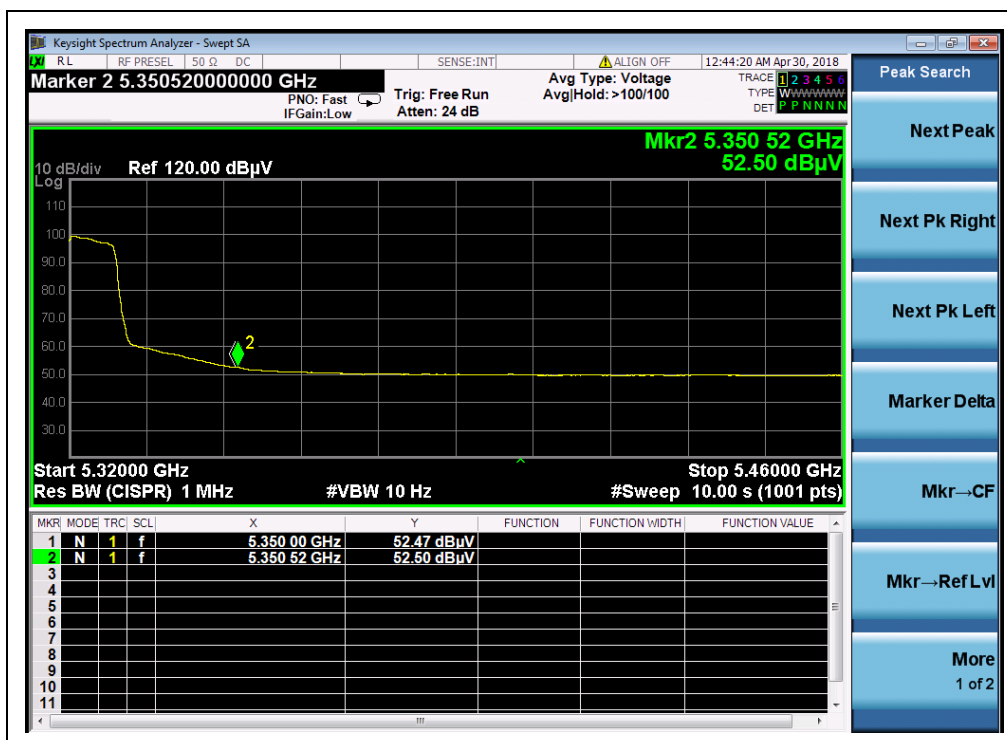
(Channel 36, PEAK, 802.11a)



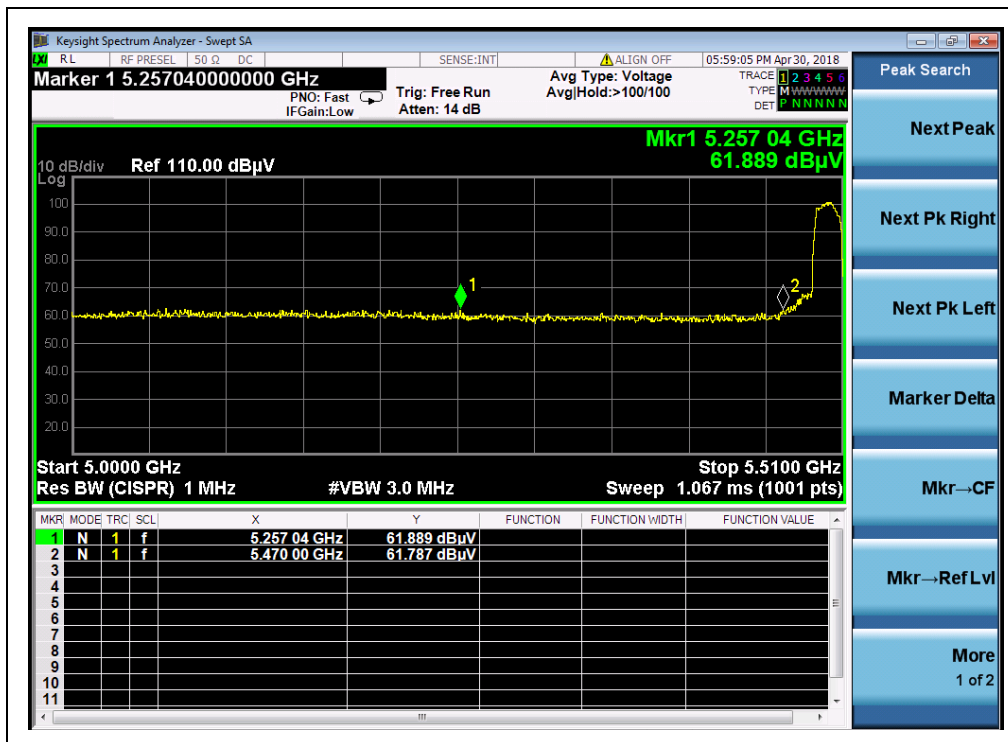
(Channel 36, AVG, 802.11a)



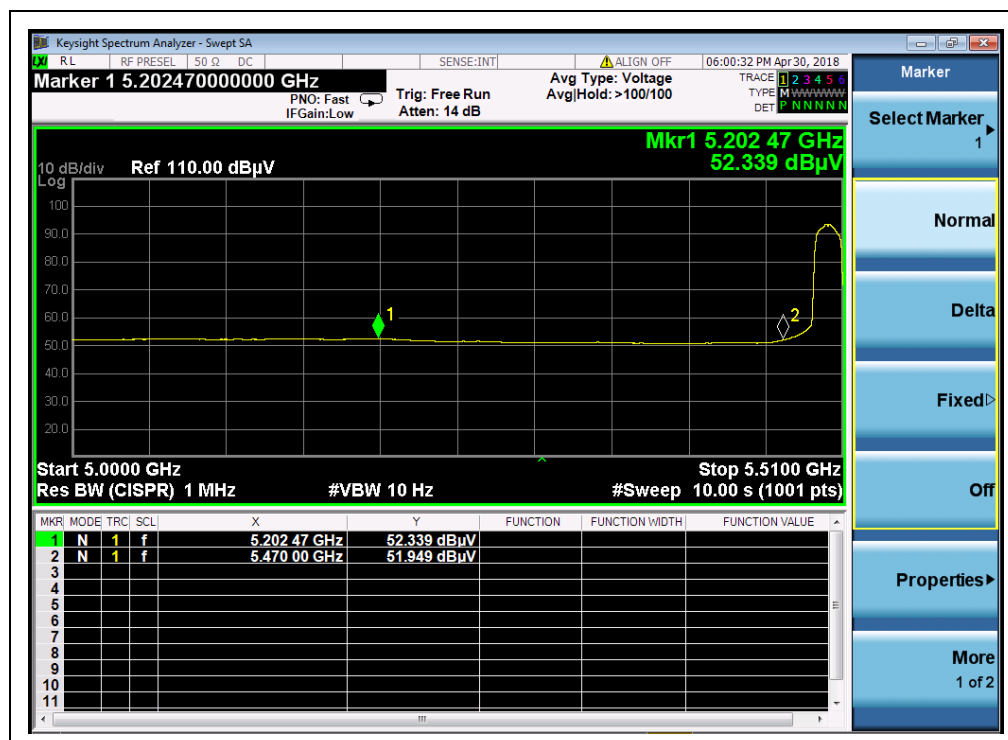
(Channel 64, PEAK, 802.11a)



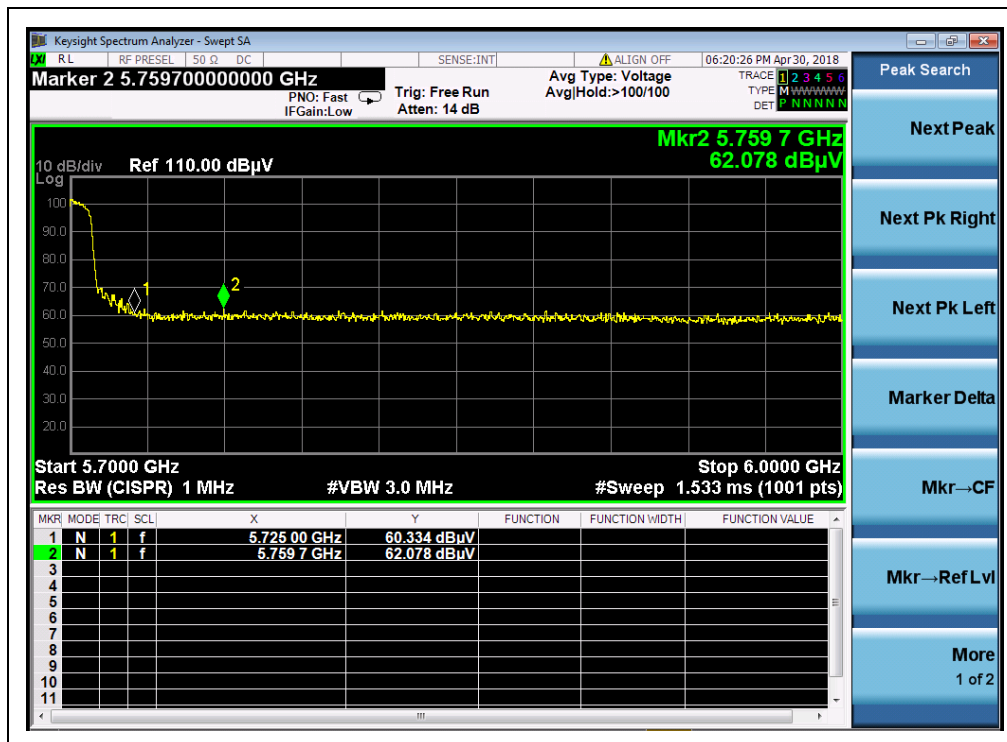
(Channel 64, AVG, 802.11a)



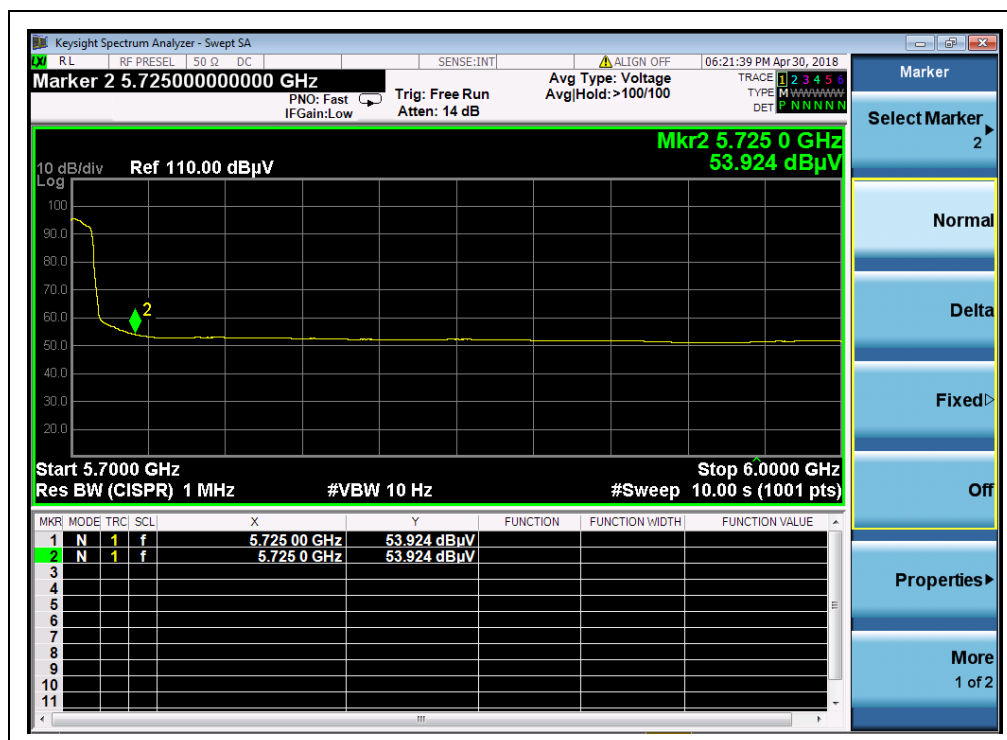
(Channel 100, PEAK, 802.11a)



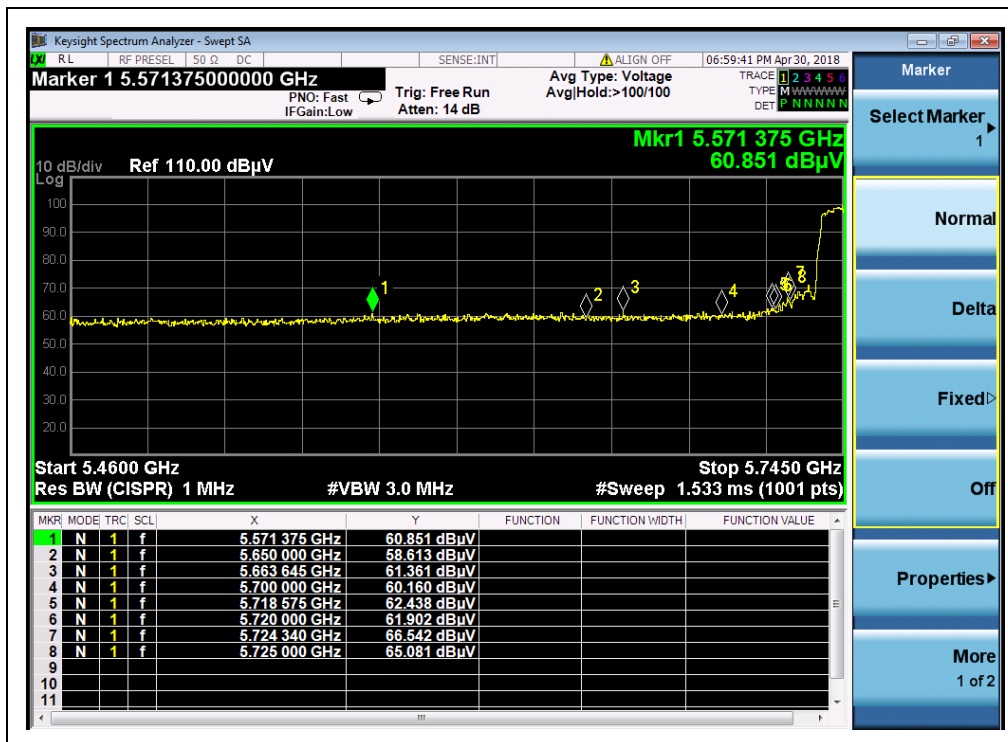
(Channel 100, AVG, 802.11a)



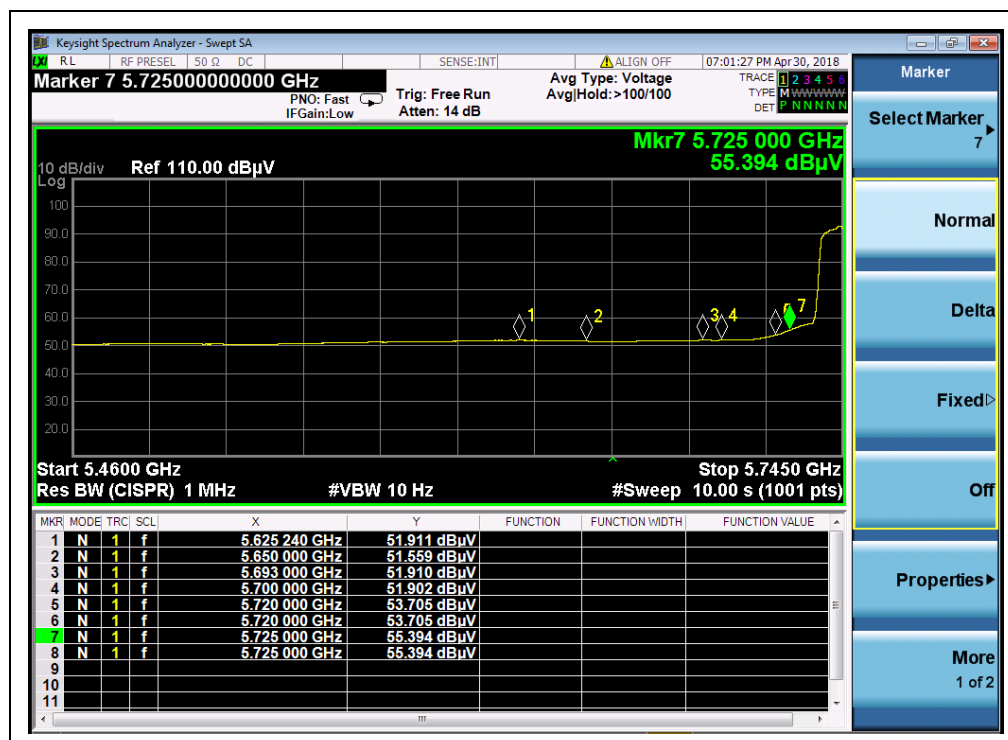
(Channel 144, PEAK, 802.11a)



(Channel 144, AVG, 802.11a)



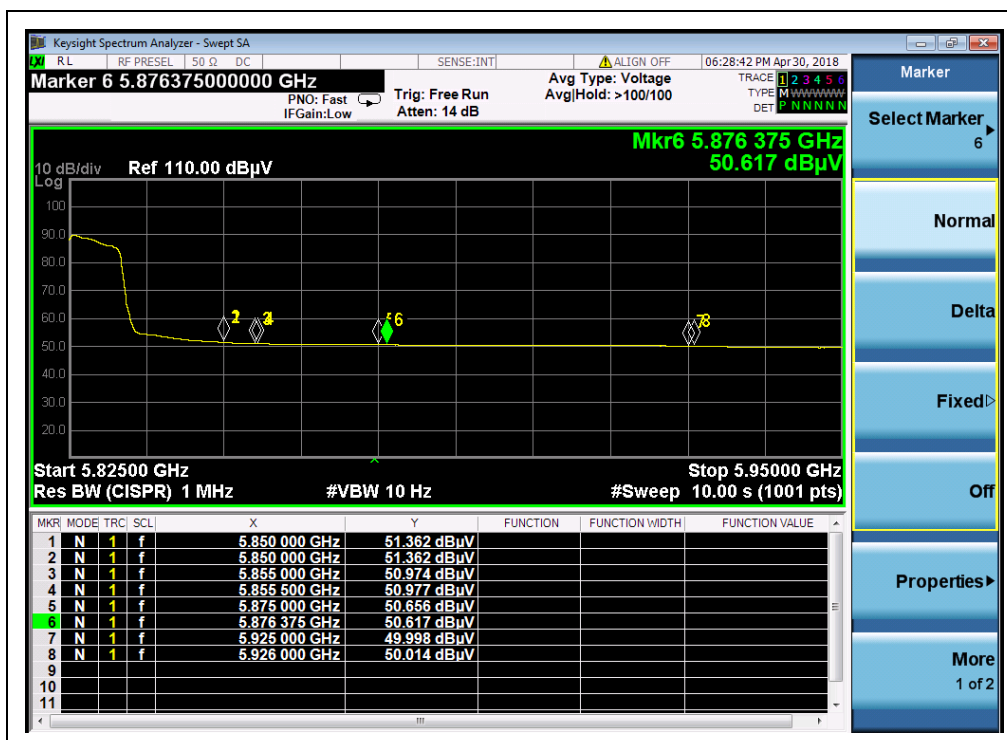
(Channel 149, PEAK, 802.11a)



(Channel 149, AVG, 802.11a)



(Channel 165, PEAK, 802.11a)

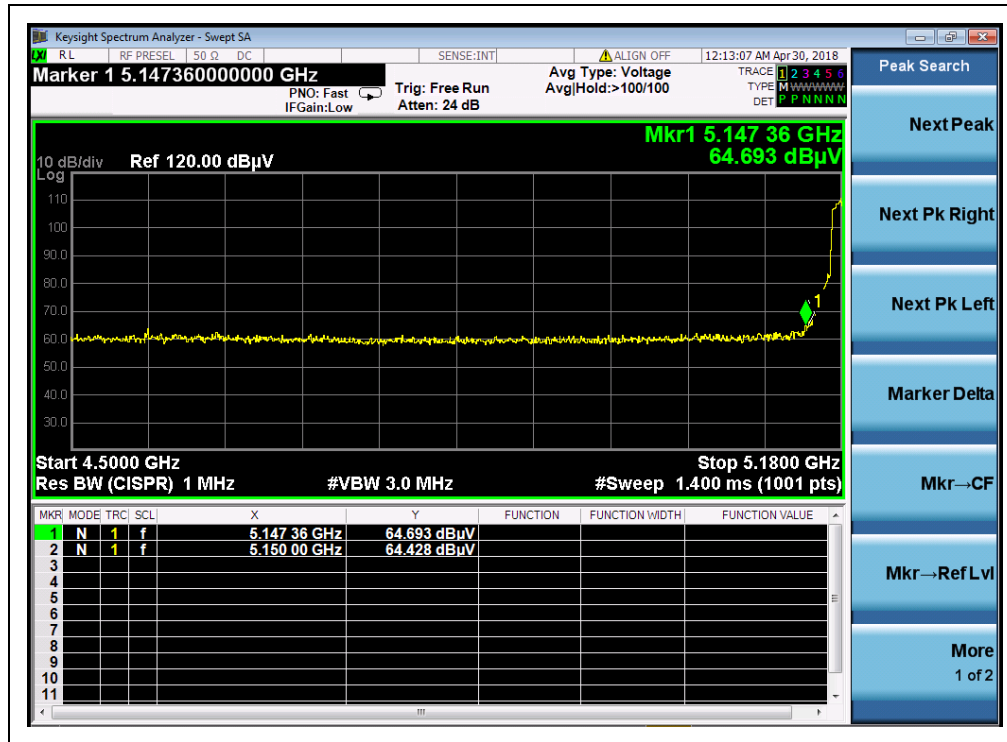


(Channel 165, AVG, 802.11a)

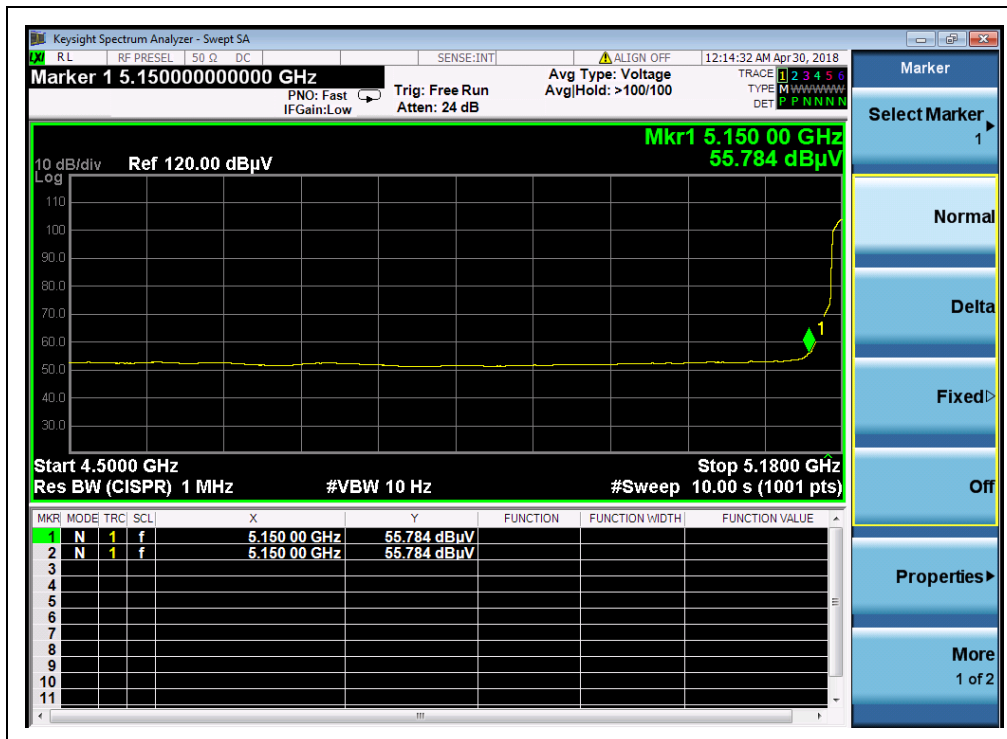
**802.11n (HT20) Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
36	5147.36	PK	64.69	-50.65	32.11	46.15	74	PASS
36	5150.00	AV	55.78	-50.65	32.11	37.24	54	PASS
64	5357.66	PK	61.17	-50.65	32.11	42.63	74	PASS
64	5350.10	AV	51.59	-50.65	32.11	33.05	54	PASS
100	5425.85	PK	77.42	-50.65	32.11	58.88	74	PASS
100	5447.78	AV	52.66	-50.65	32.11	34.12	54	PASS
144	5773.30	PK	61.80	-50.65	32.11	43.26	68.23	PASS
144	5725.00	AV	53.24	-50.65	32.11	34.70	54	PASS
149	5724.06	PK	65.35	-50.65	32.11	46.81	120.09	PASS
149	5724.91	AV	55.56	-50.65	32.11	37.02	54	PASS
165	5912.25	PK	62.34	-50.65	32.11	43.8	77.66	PASS
165	5850.38	AV	51.24	-50.65	32.11	32.70	54	PASS

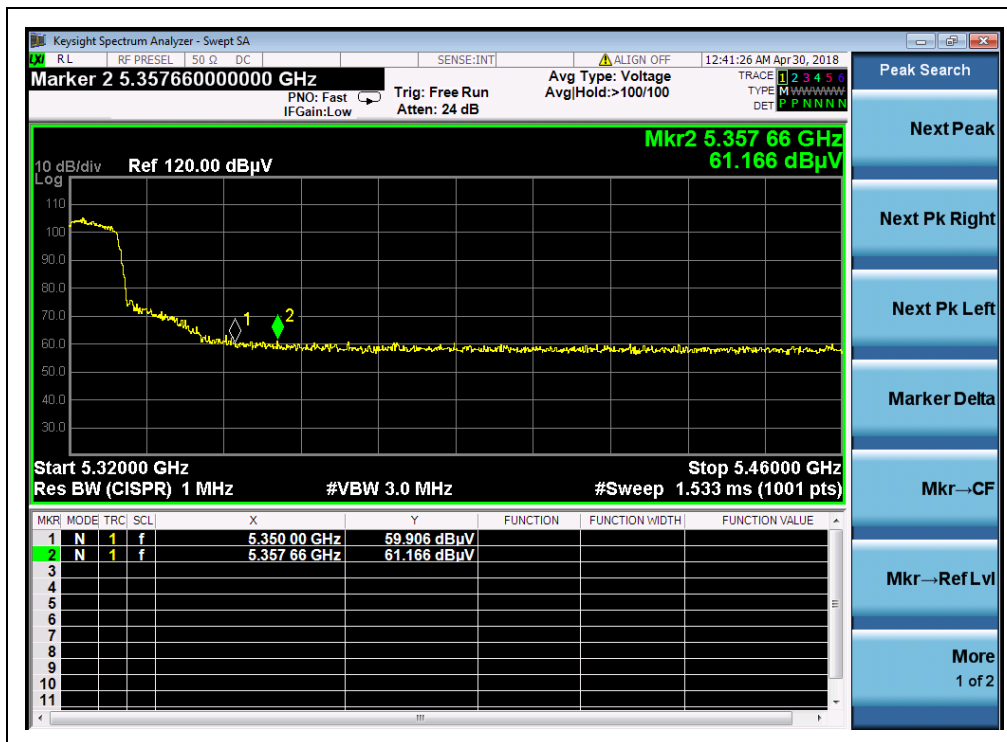
B. Test Plots:



(Channel 36, PEAK, 802.11n (HT20))



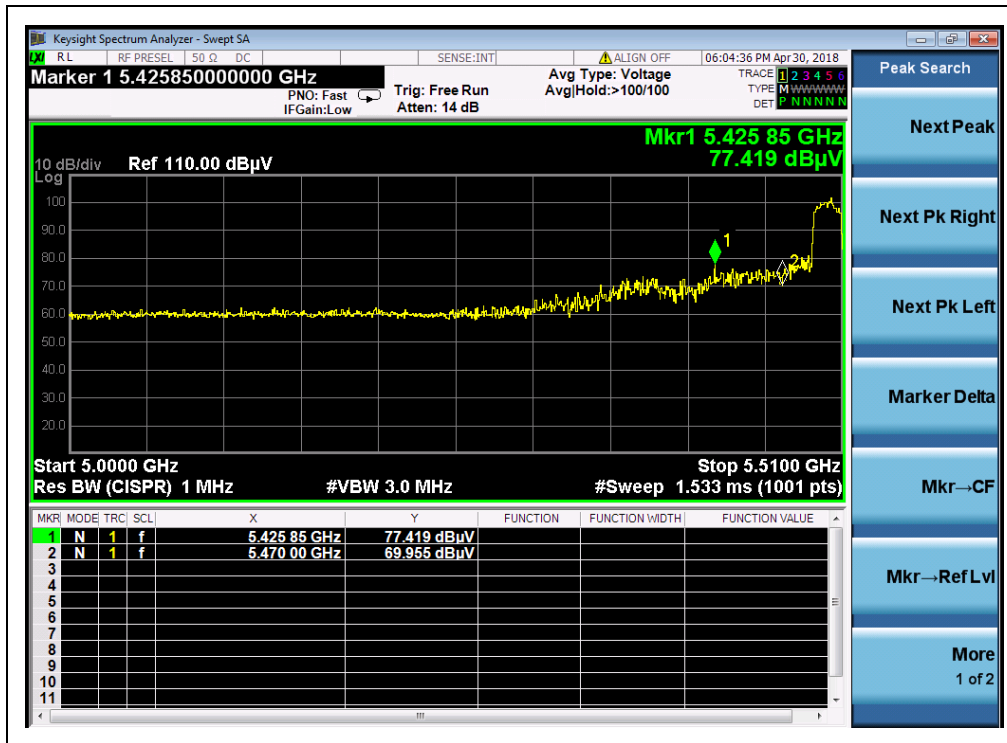
(Channel 36, AVG, 802.11 n (HT20))



(Channel 64, PEAK, 802.11 n (HT20))



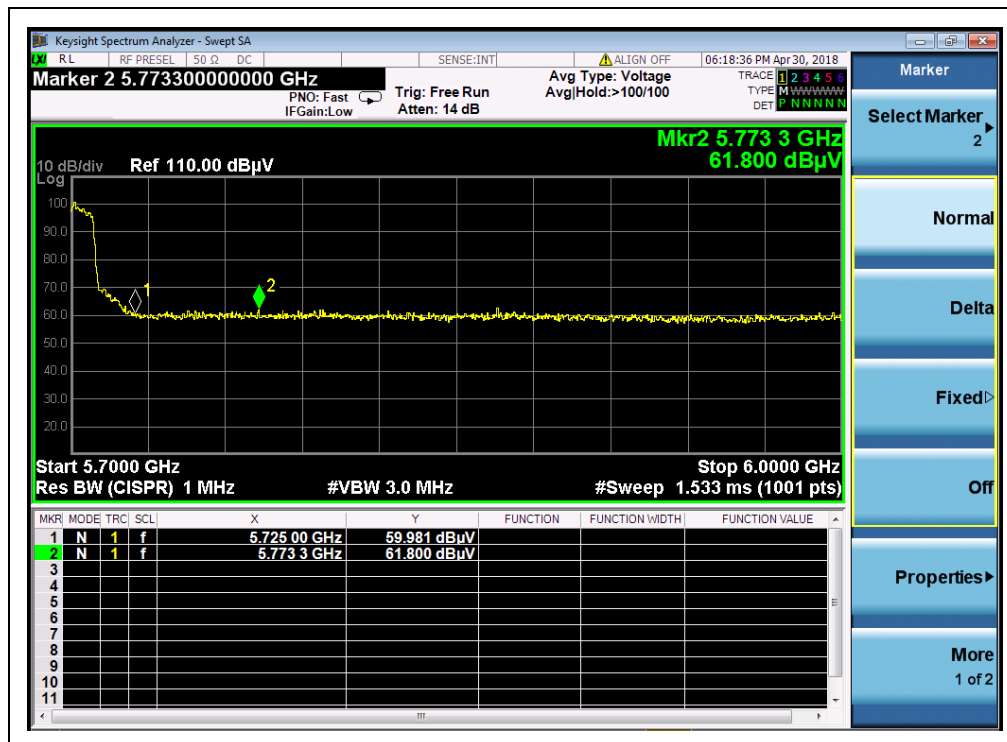
(Channel 64, AVG, 802.11n (HT20))



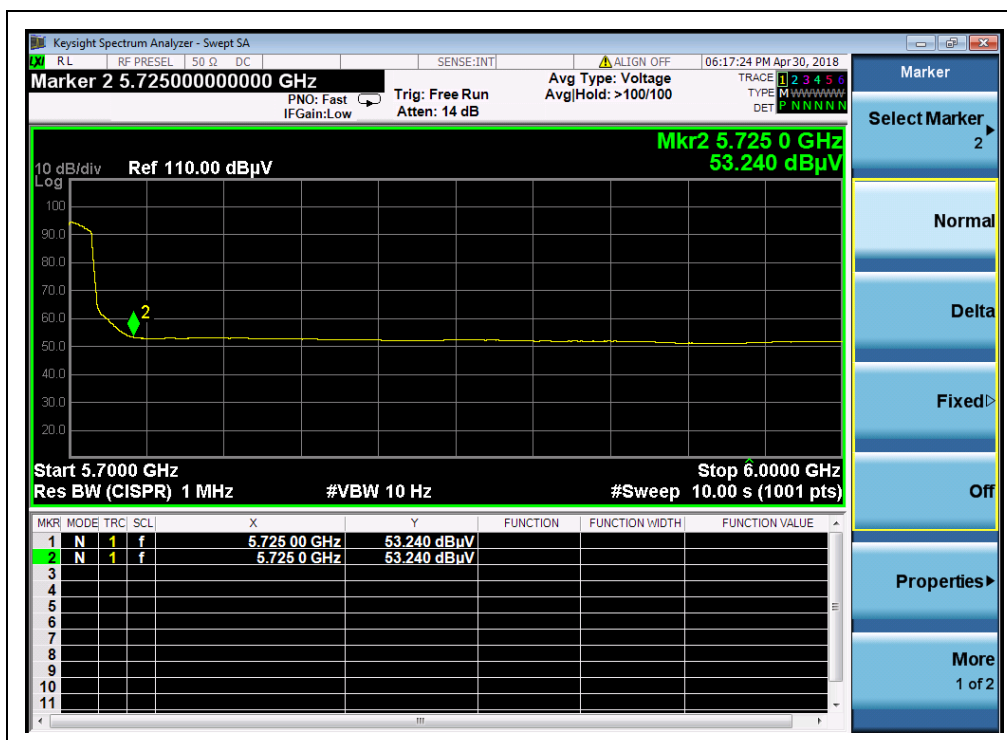
(Channel 100, PEAK, 802.11 n (HT20))



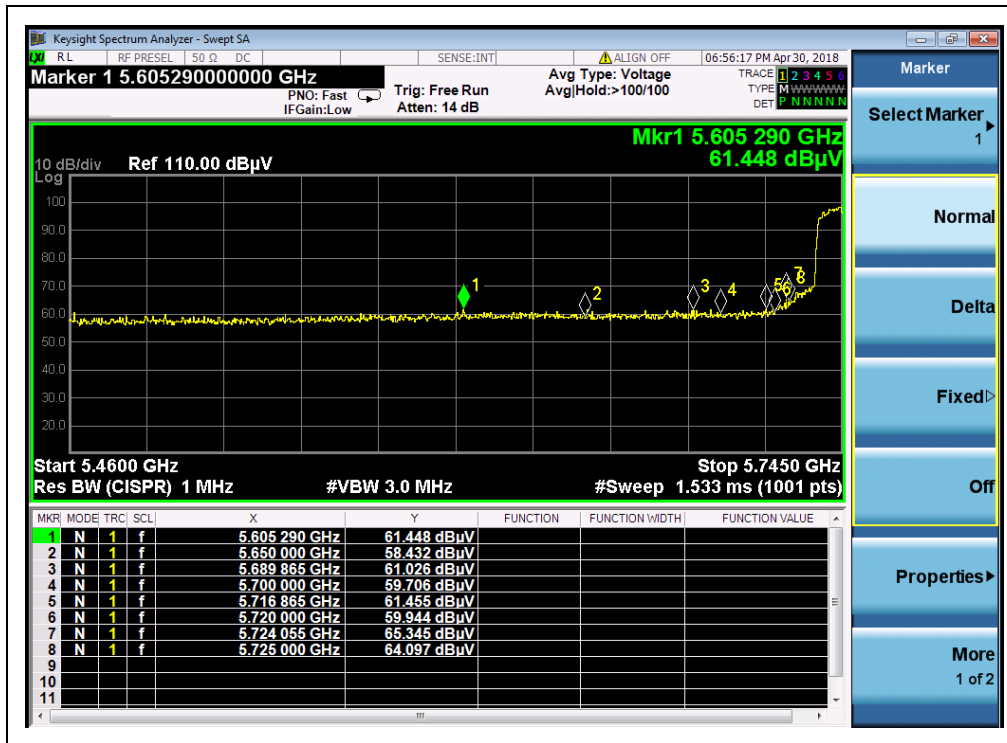
(Channel 100, AVG, 802.11n (HT20))



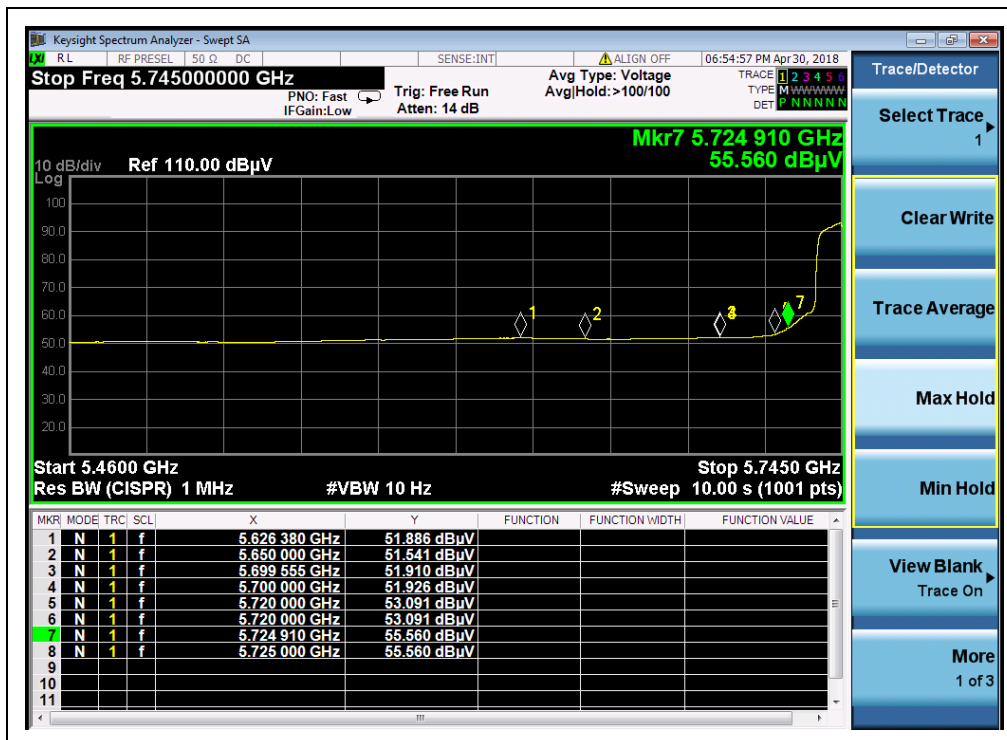
(Channel 144, PEAK, 802.11 n (HT20))



(Channel 144, AVG, 802.11n (HT20))



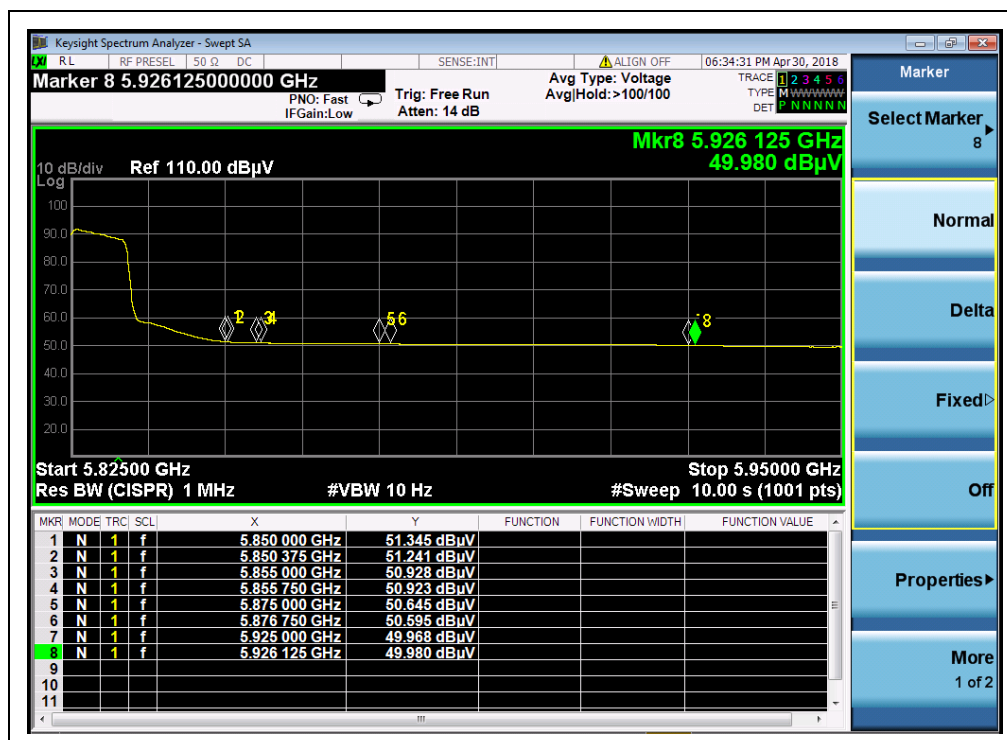
(Channel 149, PEAK, 802.11 n (HT20))



(Channel 149, AVG, 802.11n (HT20))



(Channel 165, PEAK, 802.11 n (HT20))



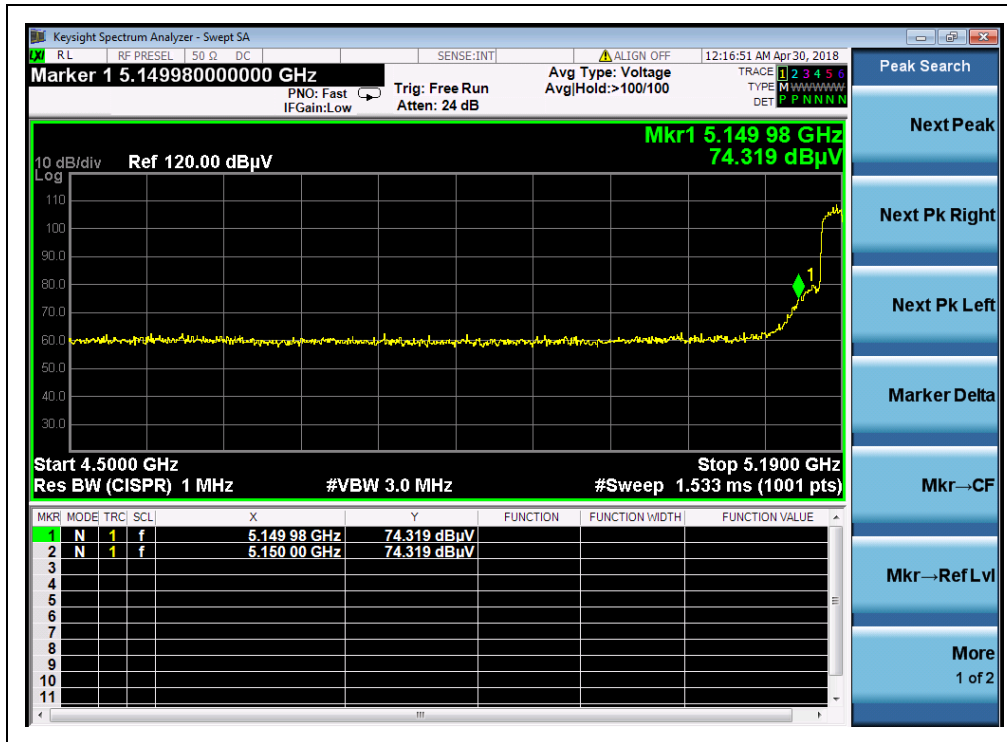
(Channel 165, AVG, 802.11n (HT20))

**802.11n (HT40) Test mode****A. Test Verdict:**

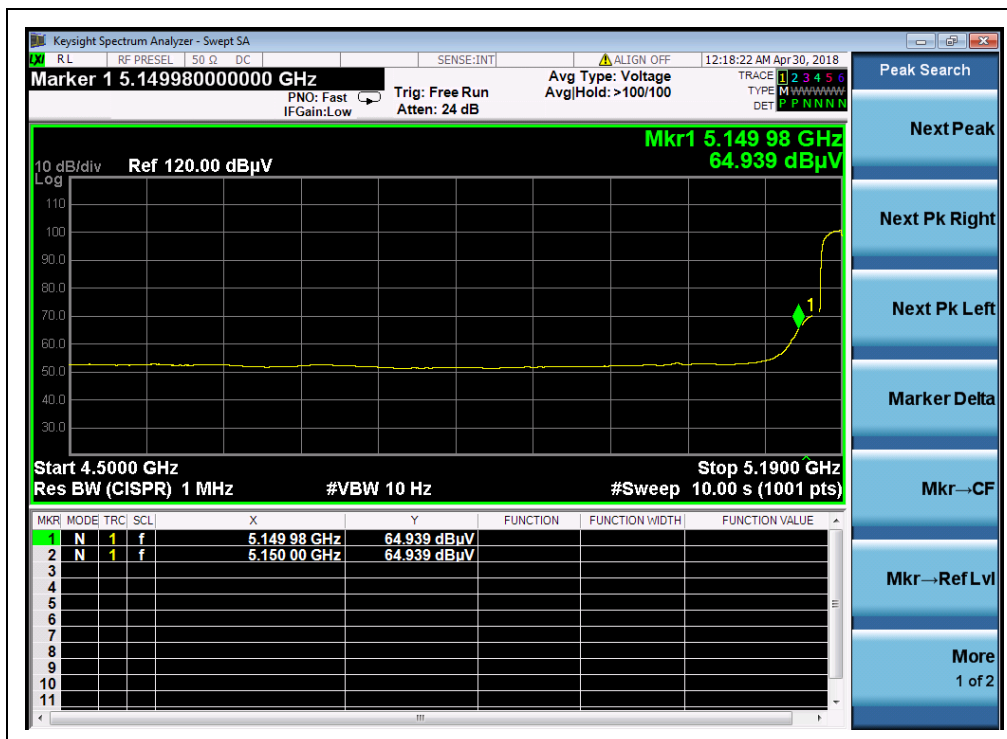
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
38	5150.00	PK	74.32	-50.65	32.11	55.78	74	PASS
38	5150.00	AV	64.94	-50.65	32.11	46.40	54	PASS
62	5350.35	PK	67.58	-50.65	32.11	49.04	74	PASS
62	5350.05	AV	55.96	-50.65	32.11	37.42	54	PASS
102	5439.11	PK	69.71	-50.65	32.11	51.17	68.23	PASS
102	5470.00	AV	55.12	-50.65	32.11	36.58	54	PASS
142	5747.55	PK	64.55	-50.65	32.11	46.01	68.23	PASS
142	5759.10	AV	52.95	-50.65	32.11	34.41	54	PASS
151	5724.91	PK	67.69	-50.65	32.11	49.15	110.83	PASS
151	5724.91	AV	58.81	-50.65	32.11	40.27	54	PASS
159	5876.91	PK	61.73	-50.65	32.11	43.19	68.23	PASS
159	5850.38	AV	51.46	-50.65	32.11	32.92	54	PASS



B. Test Plots:



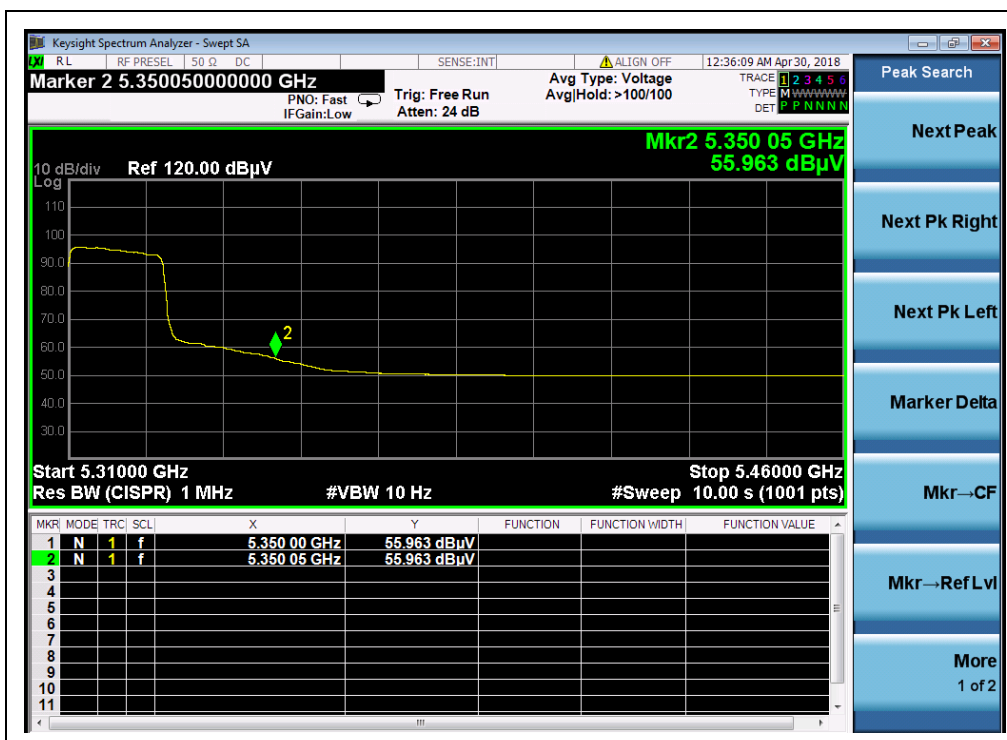
(Channel 38, PEAK, 802.11n (HT40))



(Channel 38, AVG, 802.11n (HT40))



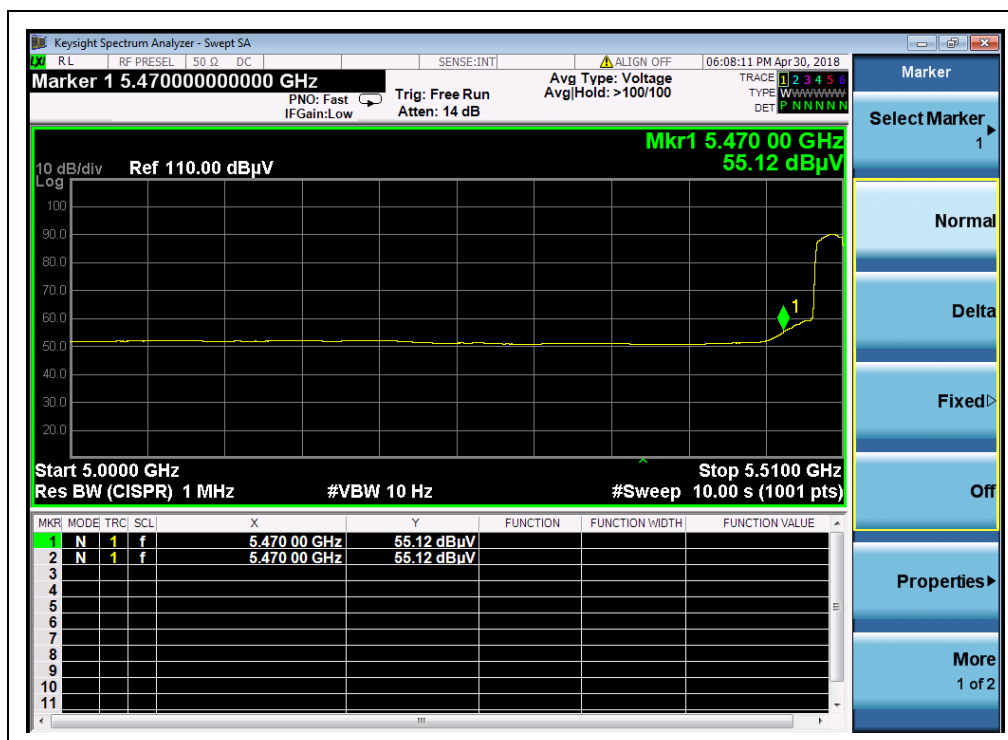
(Channel 62, PEAK, 802.11n (HT40))



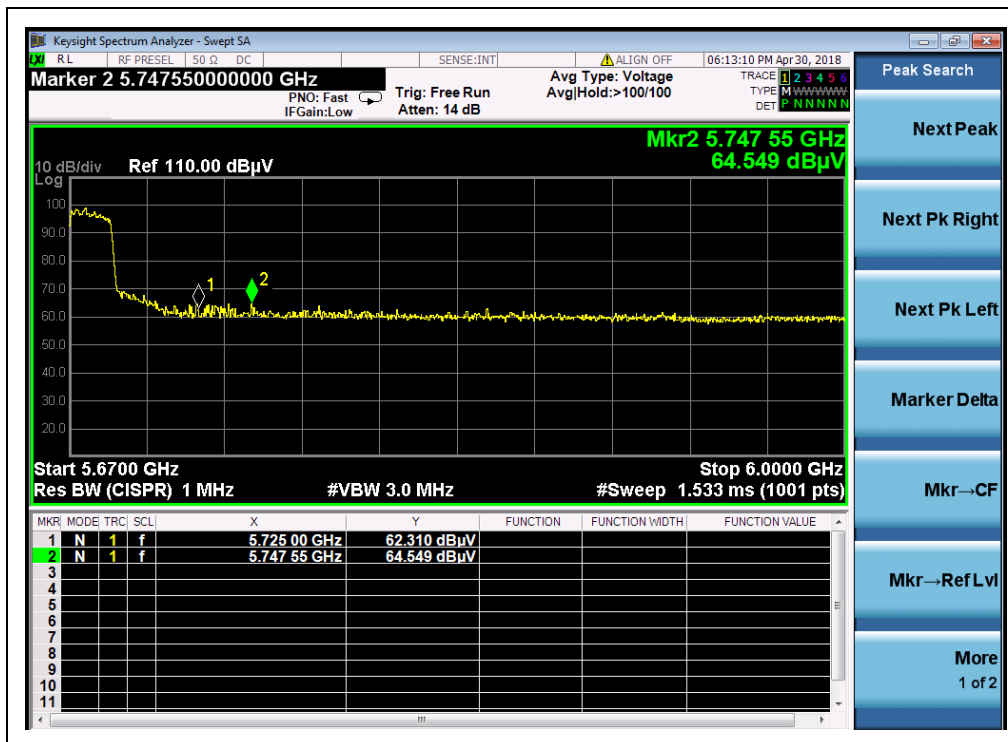
(Channel 62, AVG, 802.11n (HT40))



(Channel 102, PEAK, 802.11n (HT40))



(Channel 102, AVG, 802.11n (HT40))



(Channel 142, PEAK, 802.11n (HT40))



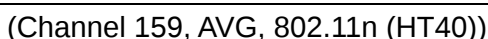
(Channel 142, AVG, 802.11n (HT40))



(Channel 151, PEAK, 802.11n (HT40))



(Channel 151, AVG, 802.11n (HT40))





2.6. Frequency Stability

2.6.1. Requirement

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

2.6.2. Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between 5°C to 40°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

2.6.3. Test Result

Frequency Stability Measurements for UNII Band 1 (Ch. 36)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.8	+20(Ref)	5,179,999,995	-5	-0.0000001
100%		-30	5,180,000,017	17	0.0000003
100%		-20	5,180,000,011	11	0.0000002
100%		-10	5,179,999,989	-11	-0.0000002
100%		0	5,180,000,024	24	0.0000005
100%		+10	5,180,000,018	18	0.0000003
100%		+20	5,179,999,994	-6	-0.0000001
100%		+30	5,179,999,989	-11	-0.0000002
100%		+40	5,180,000,015	15	0.0000003
100%		+50	5,180,000,017	17	0.0000003
85%	3.5	+20	5,179,999,990	-10	-0.0000002
115%	4.4	+20	5,179,999,990	-10	-0.0000002



Frequency Stability Measurements for UNII Band 2A (Ch. 52)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.8	+20(Ref)	5,259,999,985	-15	-0.0000003
100%		-30	5,259,999,987	-13	-0.0000002
100%		-20	5,260,000,028	28	0.0000005
100%		-10	5,260,000,019	19	0.0000004
100%		0	5,259,999,982	-18	-0.0000003
100%		+10	5,260,000,016	16	0.0000003
100%		+20	5,260,000,022	22	0.0000004
100%		+30	5,260,000,018	18	0.0000003
100%		+40	5,259,999,996	-4	-0.0000001
100%		+50	5,260,000,017	17	0.0000003
85%	3.5	+20	5,260,000,020	20	0.0000004
115%	4.4	+20	5,259,999,990	-10	-0.0000002

Frequency Stability Measurements for UNII Band 2C (Ch. 100)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.8	+20(Ref)	5,499,999,992	-8	-0.0000001
100%		-30	5,500,000,020	20	0.0000004
100%		-20	5,500,000,014	14	0.0000003
100%		-10	5,499,999,992	-8	-0.0000001
100%		0	5,500,000,020	20	0.0000004
100%		+10	5,499,999,989	-11	-0.0000002
100%		+20	5,500,000,013	13	0.0000002
100%		+30	5,500,000,015	15	0.0000003
100%		+40	5,499,999,990	-10	-0.0000002
100%		+50	5,500,000,011	11	0.0000002
85%	3.5	+20	5,500,000,020	20	0.0000004
115%	4.4	+20	5,499,999,993	-7	-0.0000001



Frequency Stability Measurements for UNII Band 3 (Ch. 149)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.8	+20(Ref)	5,745,000,018	18	0.0000003
100%		-30	5,744,999,992	-8	-0.0000001
100%		-20	5,745,000,016	16	0.0000003
100%		-10	5,744,999,989	-11	-0.0000002
100%		0	5,745,000,013	13	0.0000002
100%		+10	5,744,999,988	-12	-0.0000002
100%		+20	5,745,000,014	14	0.0000002
100%		+30	5,745,000,011	11	0.0000002
100%		+40	5,744,999,992	-8	-0.0000001
100%		+50	5,745,000,018	18	0.0000003
85%	3.5	+20	5,745,000,009	9	0.0000002
115%	4.4	+20	5,745,000,013	13	0.0000002

Note: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2.7. Conducted Emission

2.7.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

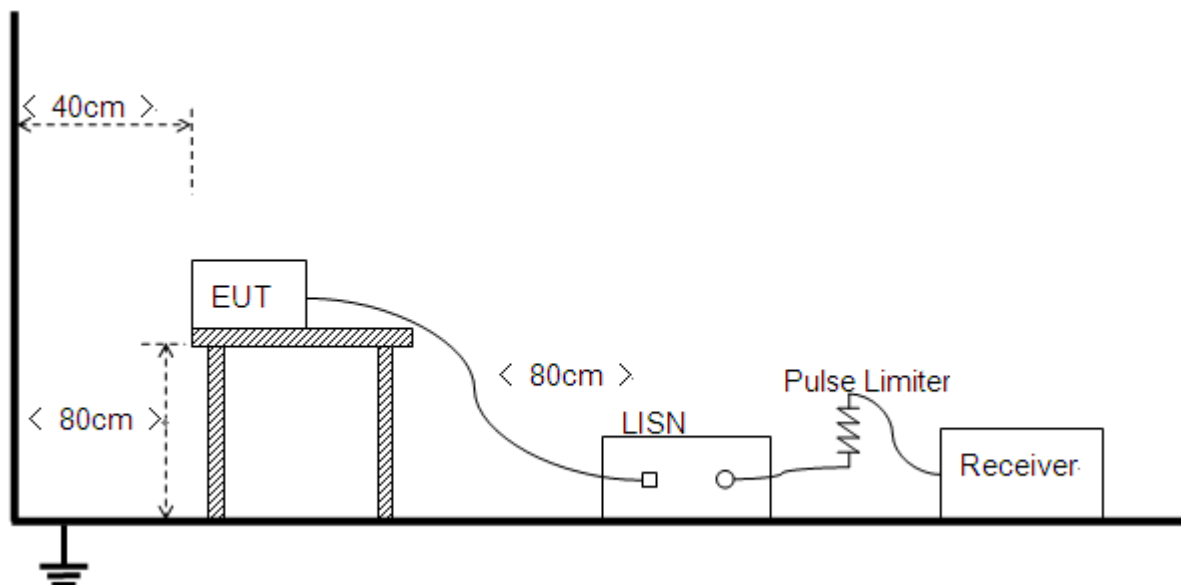
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2. Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

2.7.3. Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

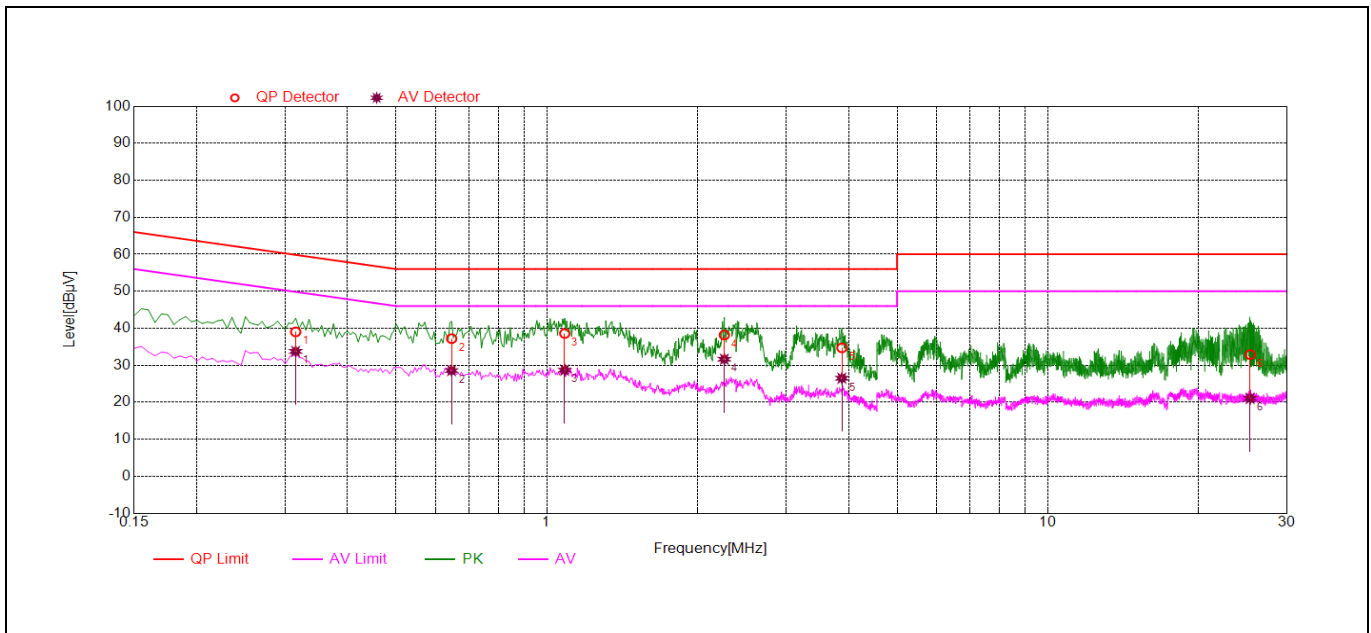
Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test setup:

The EUT configuration of the emission tests is EUT + Link.

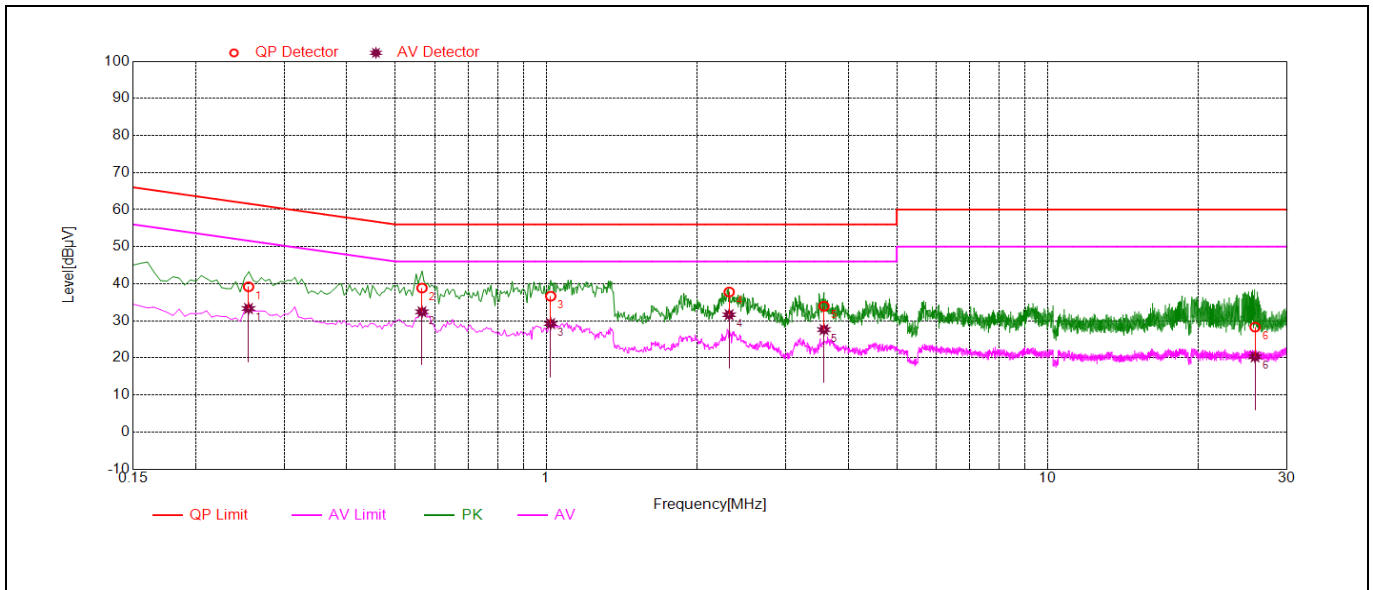
Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



(Plot A: L Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.32	39.02	33.75	59.84	49.84	Line	PASS
2	0.65	37.20	28.57	56.00	46.00		PASS
3	1.09	38.59	28.68	56.00	46.00		PASS
4	2.26	38.17	31.64	56.00	46.00		PASS
5	3.88	34.71	26.50	56.00	46.00		PASS
6	25.35	32.89	21.05	60.00	50.00		PASS



(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.25	39.19	33.32	61.61	51.61	Neutral	PASS
2	0.56	38.84	32.43	56.00	46.00		PASS
3	1.02	36.64	29.25	56.00	46.00		PASS
4	2.32	37.79	31.64	56.00	46.00		PASS
5	3.58	33.95	27.63	56.00	46.00		PASS
6	25.94	28.32	20.29	60.00	50.00		PASS

2.8. Radiated Emission

2.8.1. Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

The following formula is used to convert the equipment isotropic radiated power(eirp) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

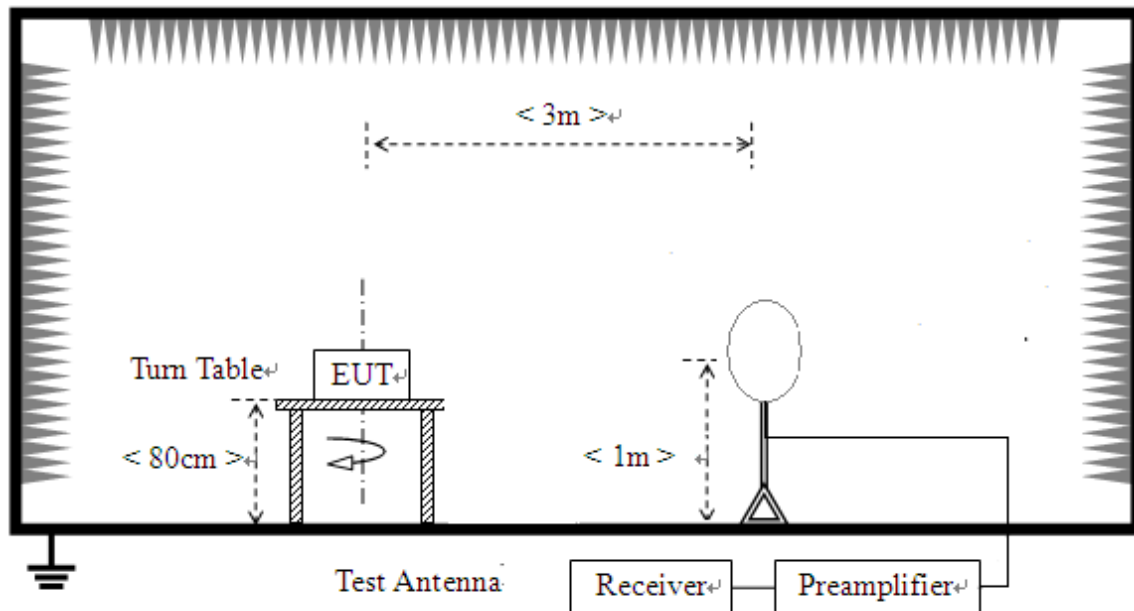
Note:

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

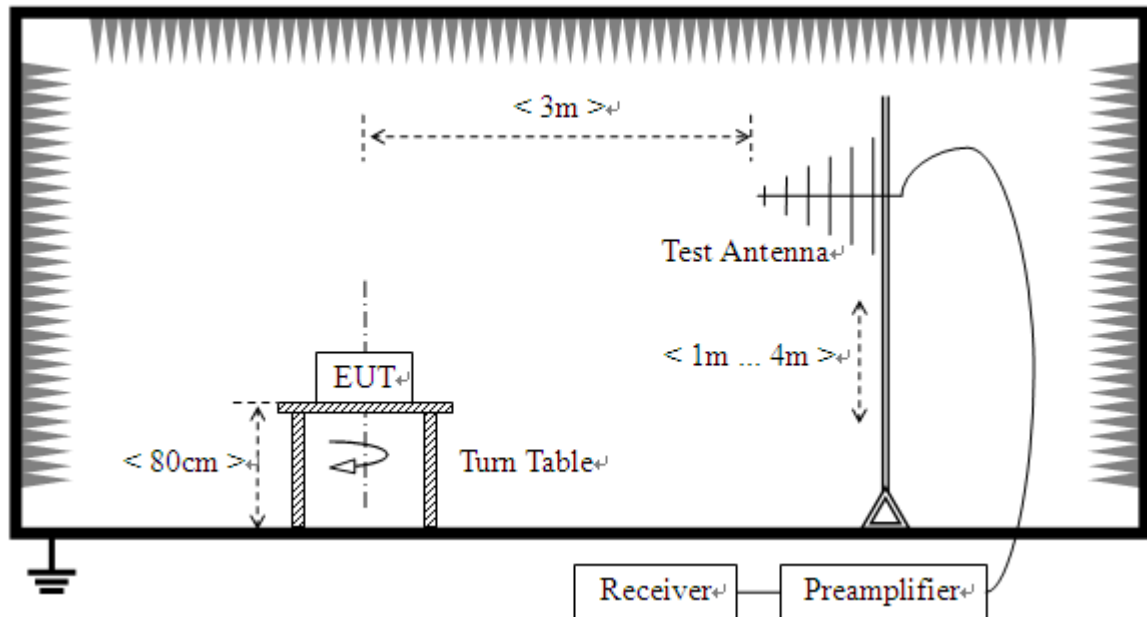
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

2.8.2. Test Description
A. Test Setup:

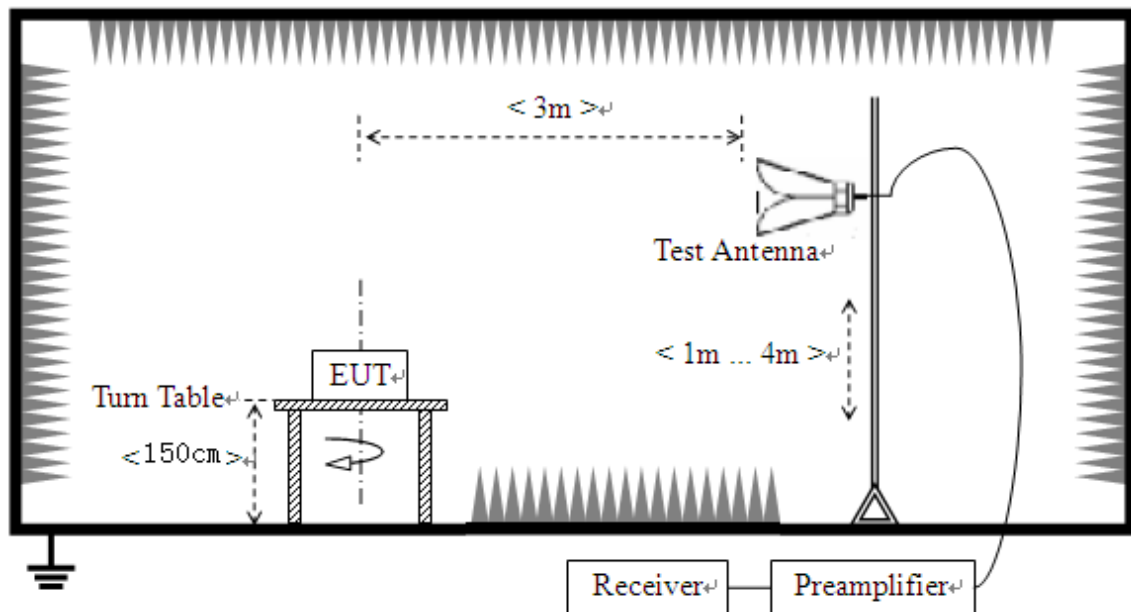
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz.

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10 (2013). For radiated emissions below or equal to 1GHz, The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT



was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading

For the Test Antenna:

(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.



2.8.3. Test Result

According to ANSI C63.4 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

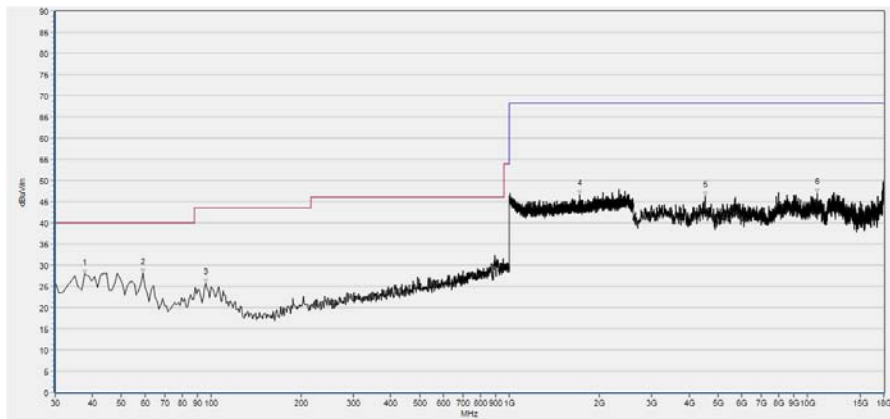
A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

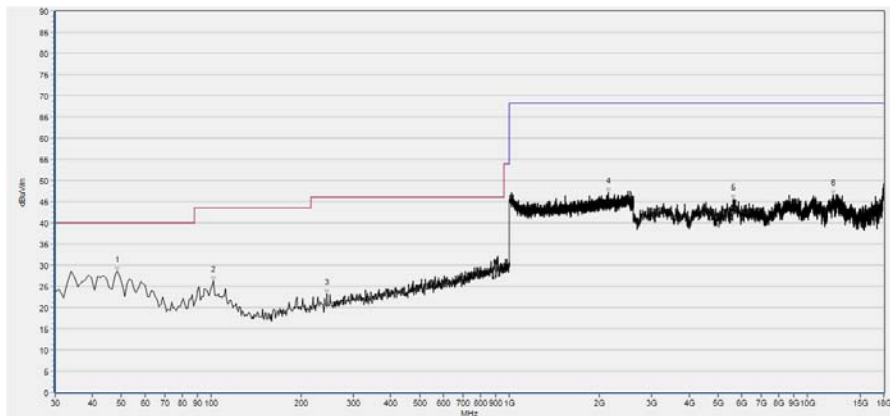
Note2: For the frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 25GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**802.11a Test mode****Plots for Channel = 36**

Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
37.768	27.94	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
59.129	27.96	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
96.026	25.67	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1723.441	46.67	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4531.266	46.28	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
10795.559	46.99	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

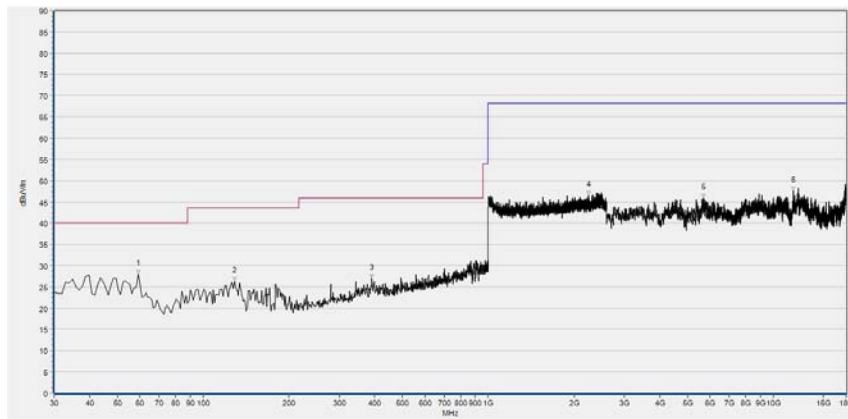


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.448	28.51	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
101.852	26.25	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
244.585	23.19	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2142.247	47.08	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5624.605	45.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12153.271	46.63	N/A	N/A	74.00	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

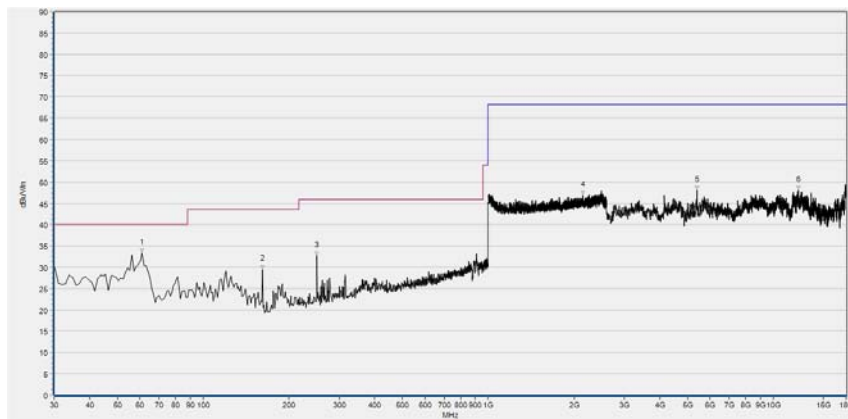


Plots for Channel = 44



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
59.129	27.95	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
129.039	26.32	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
390.230	27.04	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2242.014	46.55	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
5682.857	45.91	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11776.875	47.58	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

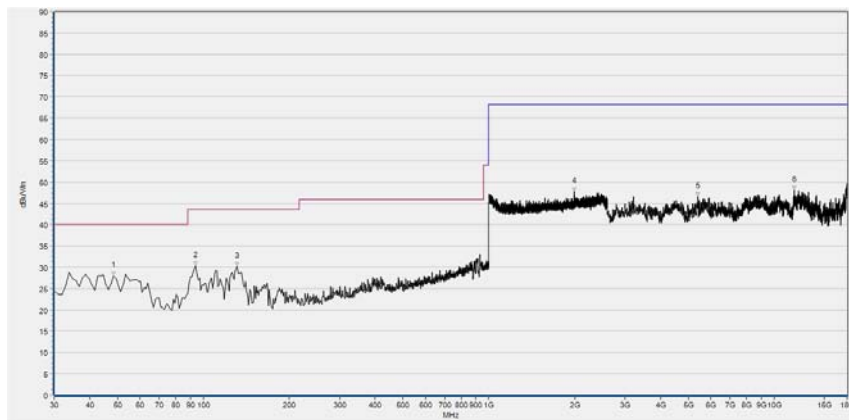


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
61.071	33.42	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
161.081	29.45	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
250.410	32.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2140.647	47.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5387.117	48.12	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
12265.293	48.14	N/A	N/A	74.00	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

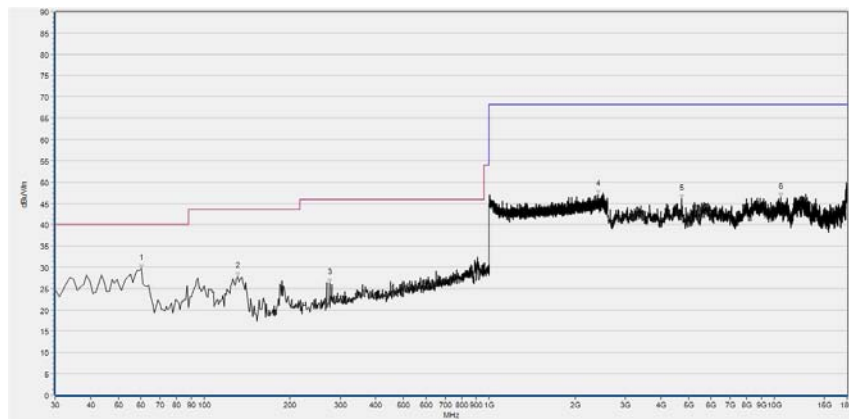


Plot for Channel = 48



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.448	27.98	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
94.084	30.35	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
130.981	30.25	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1997.132	47.75	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5387.117	46.64	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
11767.914	48.02	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

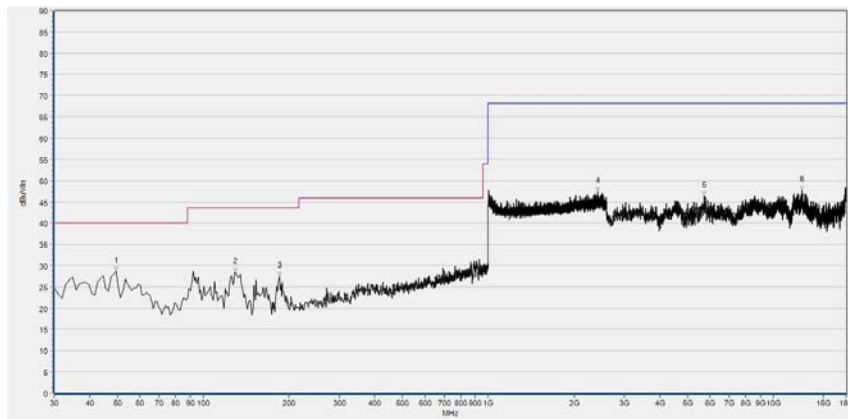
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
60.100	29.71	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
130.981	27.88	40.87	N/A	N/A	43.50	N/A	Vertical	PASS
275.656	26.36	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2406.869	47.04	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4719.464	46.10	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
10504.301	46.35	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

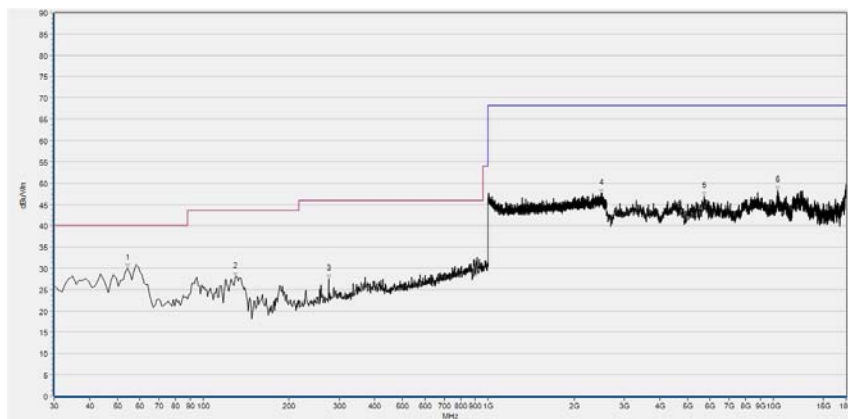
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 52



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
49.419	28.59	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
130.010	28.54	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
185.355	27.44	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2426.609	47.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5718.704	46.44	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12623.765	47.70	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

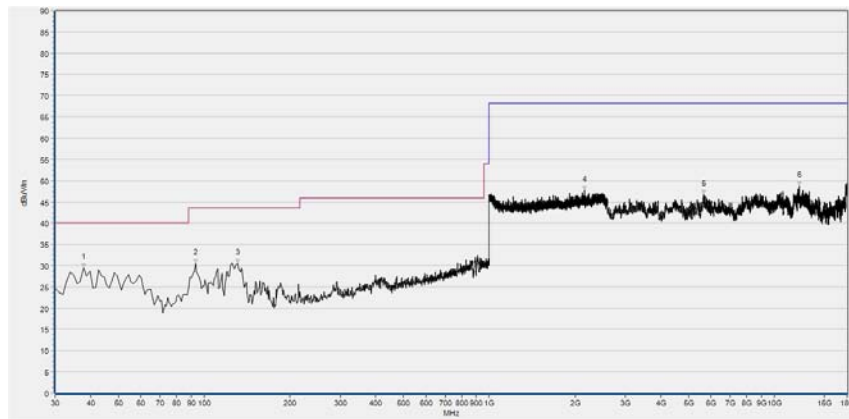


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
54.274	29.94	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
130.010	28.00	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
275.656	27.54	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2491.164	47.67	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
5705.261	46.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10342.989	48.21	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

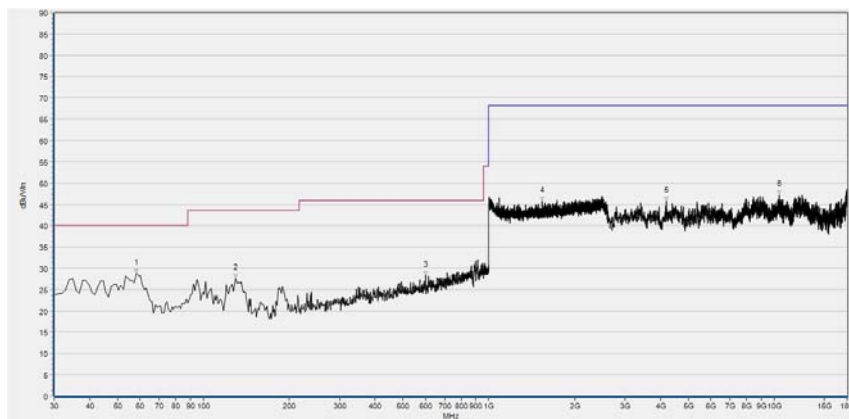


Plots for Channel = 60



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
37.768	29.44	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
93.113	30.47	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
130.981	30.52	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2163.054	47.76	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5638.048	46.76	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12260.812	48.79	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

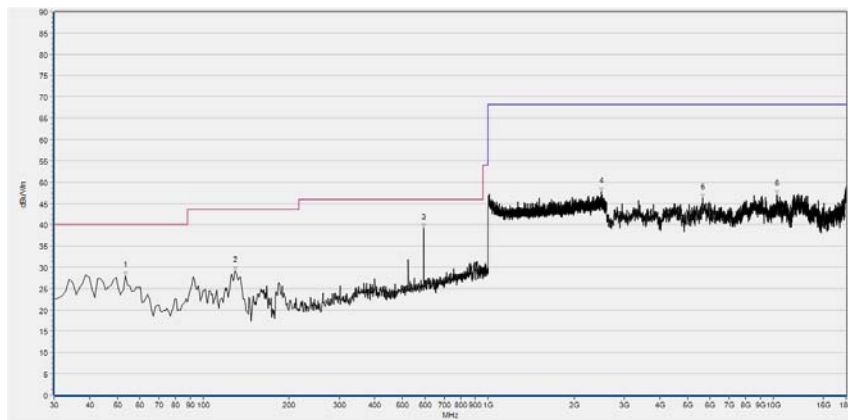


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
58.158	28.80	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
130.010	27.68	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
600.931	28.36	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1533.511	45.72	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
4181.756	45.77	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
10419.164	47.28	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

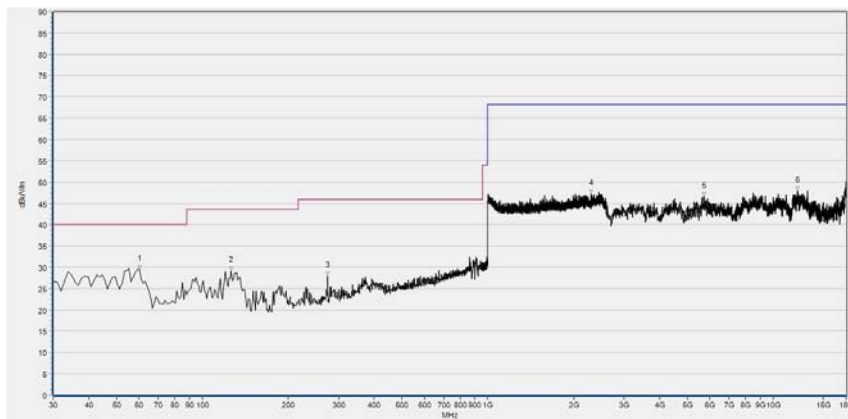


Plot for Channel = 64



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
53.303	27.97	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
130.010	29.08	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
593.163	39.27	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2495.432	47.81	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
5651.490	46.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10289.218	47.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

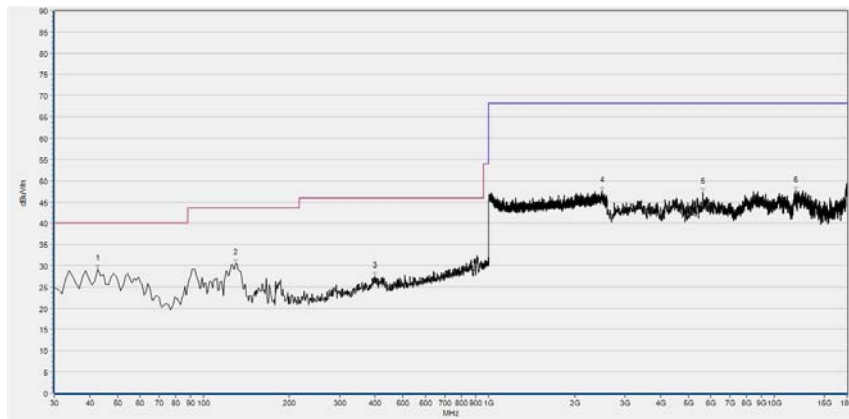
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
60.100	29.57	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
126.126	29.17	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
274.685	27.92	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2294.832	47.21	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
5709.742	46.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12166.713	47.97	N/A	N/A	74.00	N/A	N/A	Vertical	PASS

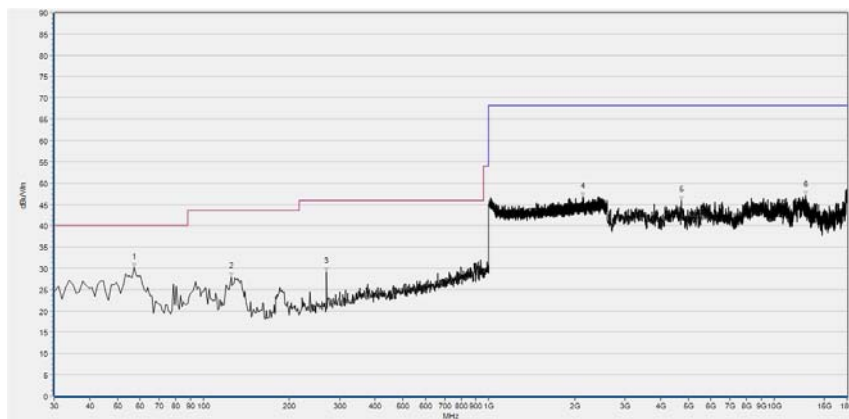
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 100



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
42.623	29.13	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
130.010	30.47	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
397.998	27.50	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2495.432	47.58	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
5629.086	47.23	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11875.455	47.59	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

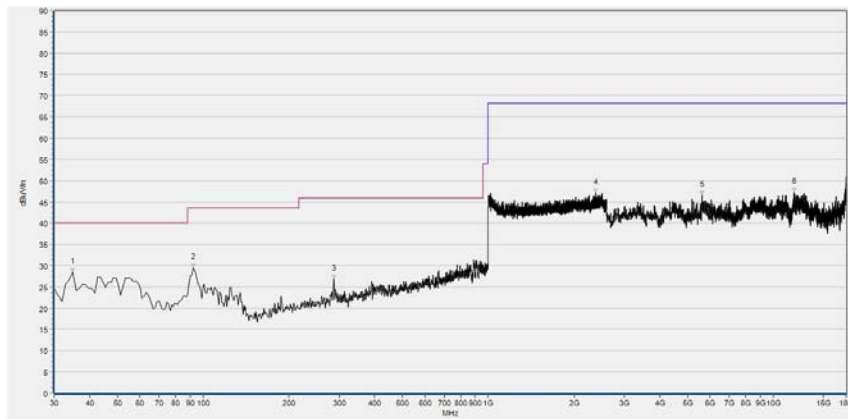


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
57.187	30.21	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
125.155	27.98	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
269.830	29.15	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2139.580	46.79	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4723.945	45.88	N/A	N/A	74.00	N/A	N/A	Vertical	PASS
12888.138	47.18	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

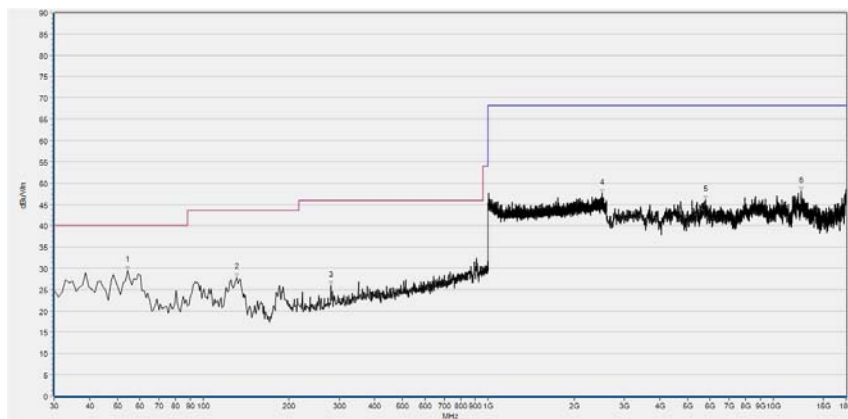


Plots for Channel = 120



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	28.47	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
92.142	29.47	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
287.307	26.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2379.660	47.03	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS
5620.124	46.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11844.089	47.34	N/A	N/A	74.00	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
54.274	29.56	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
130.981	27.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
280.511	25.94	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2502.367	47.56	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5790.398	46.03	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12552.070	48.16	N/A	N/A	74.00	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)