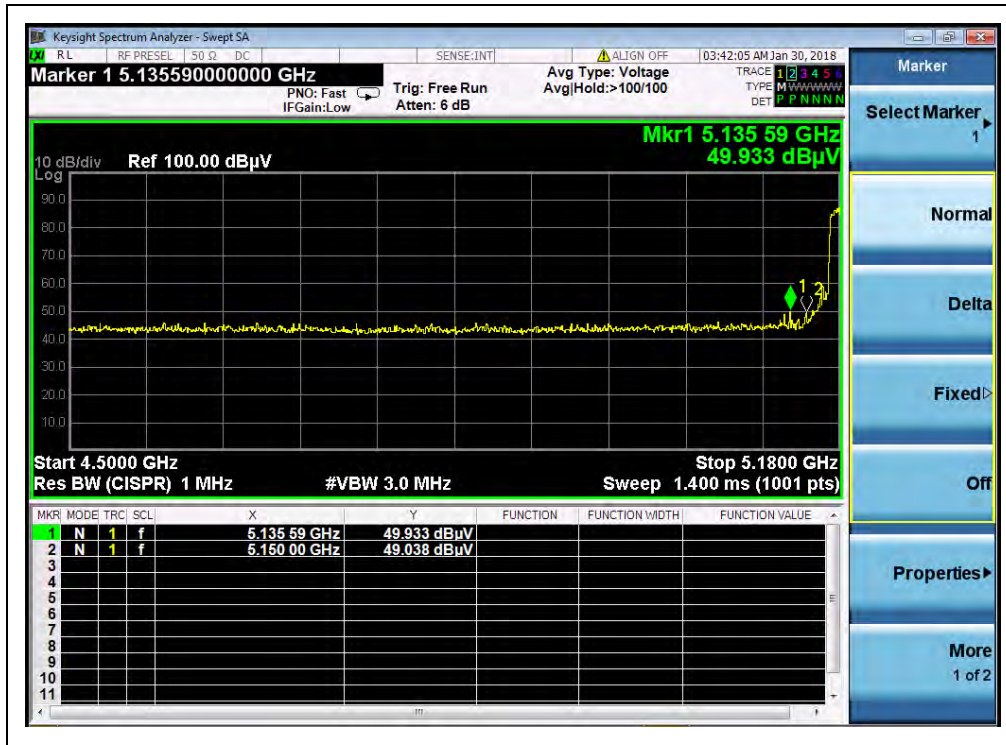


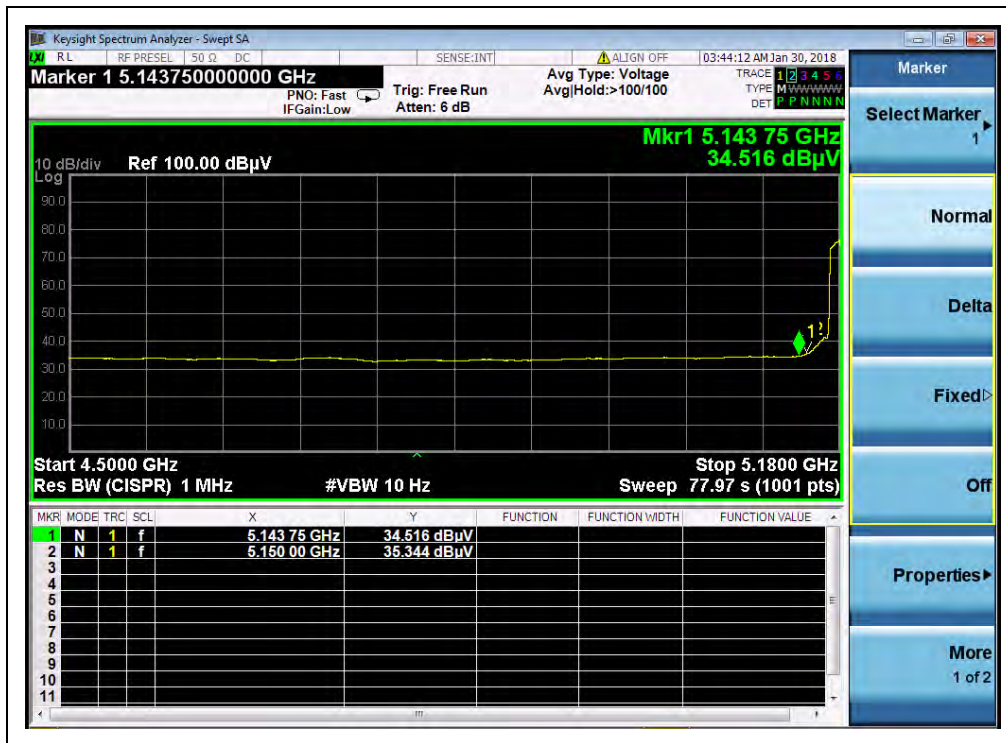
**802.11n (HT20) Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading $U_R$ (dBuV)	$A_T$ (dB)	$A_{Factor}$ (dB@3m)	Max. Emission E (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Verdict
		PK/ AV						
36	5135.59	PK	49.93	-50.65	32.11	31.39	74	PASS
36	5143.75	AV	34.52	-50.65	32.11	15.98	54	PASS
64	5354.42	PK	42.75	-50.65	32.11	24.21	74	PASS
64	5351.62	AV	32.10	-50.65	32.11	13.56	54	PASS
100	5453.50	PK	45.29	-50.65	32.11	26.75	74	PASS
100	5464.50	AV	34.83	-50.65	32.11	16.29	54	PASS
144	5767.50	PK	47.53	-50.65	32.11	28.99	68.23	PASS
144	5745.30	AV	36.14	-50.65	32.11	17.60	54	PASS
149	5720.00	PK	51.92	-50.65	32.11	33.38	110.83	PASS
149	5720.00	AV	38.62	-50.65	32.11	20.08	54	PASS
165	5880.00	PK	45.83	-50.65	32.11	27.29	101.53	PASS
165	5855.00	AV	37.20	-50.65	32.11	18.66	54	PASS

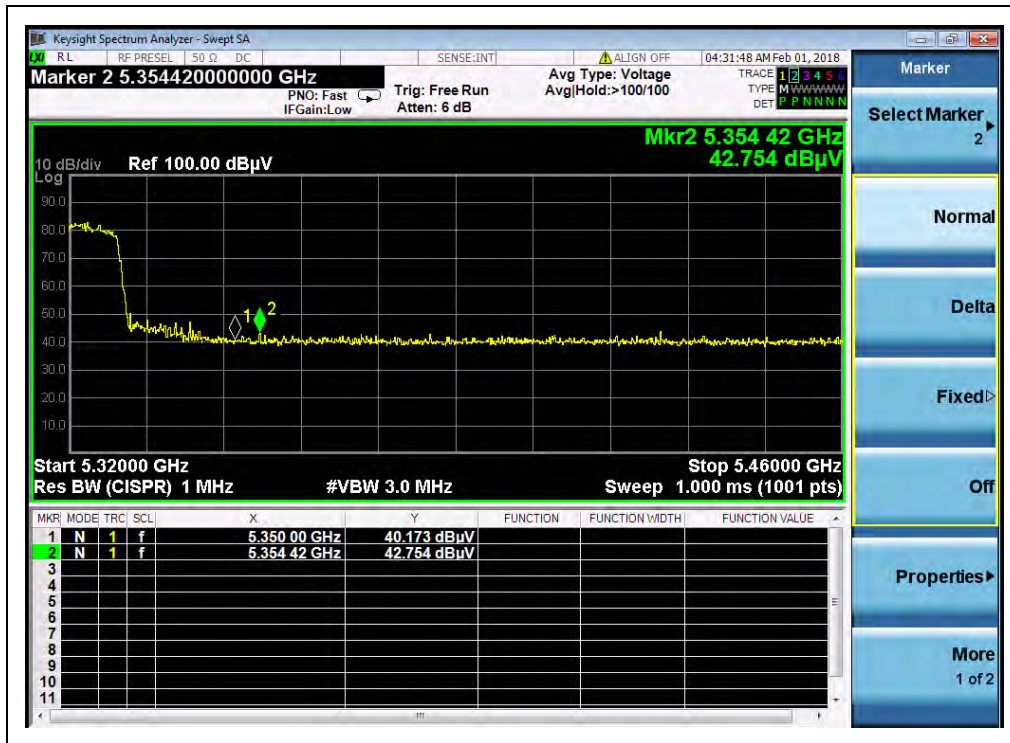
B. Test Plots:



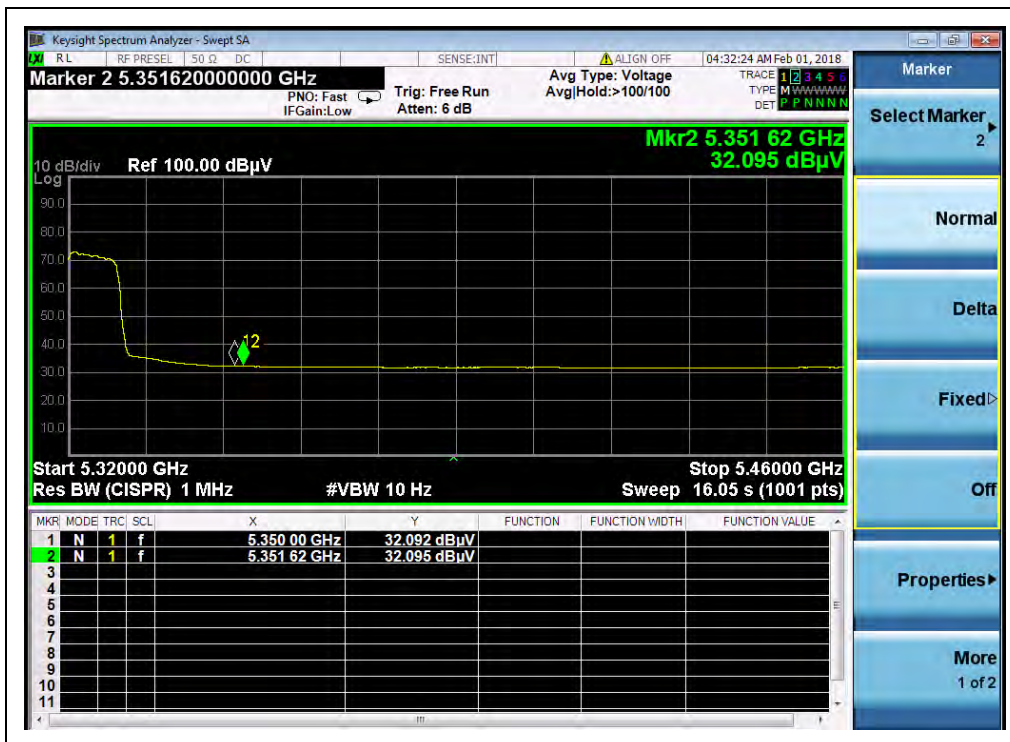
(Channel 36, PEAK, 802.11n (HT20))



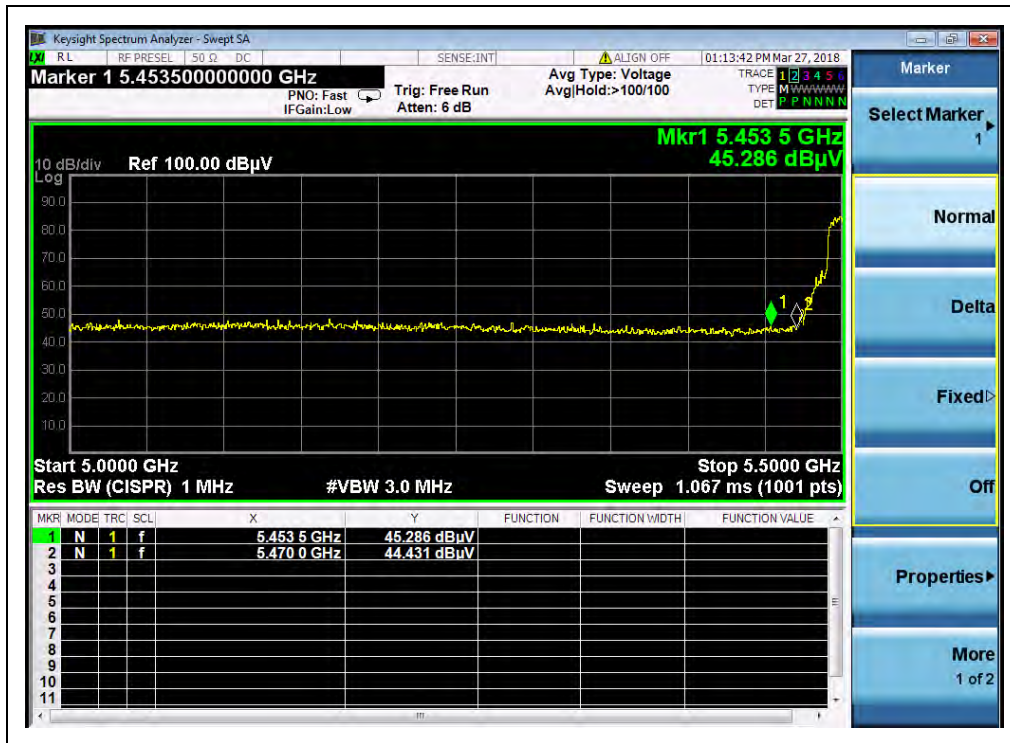
(Channel 36, AVG, 802.11 n (HT20))



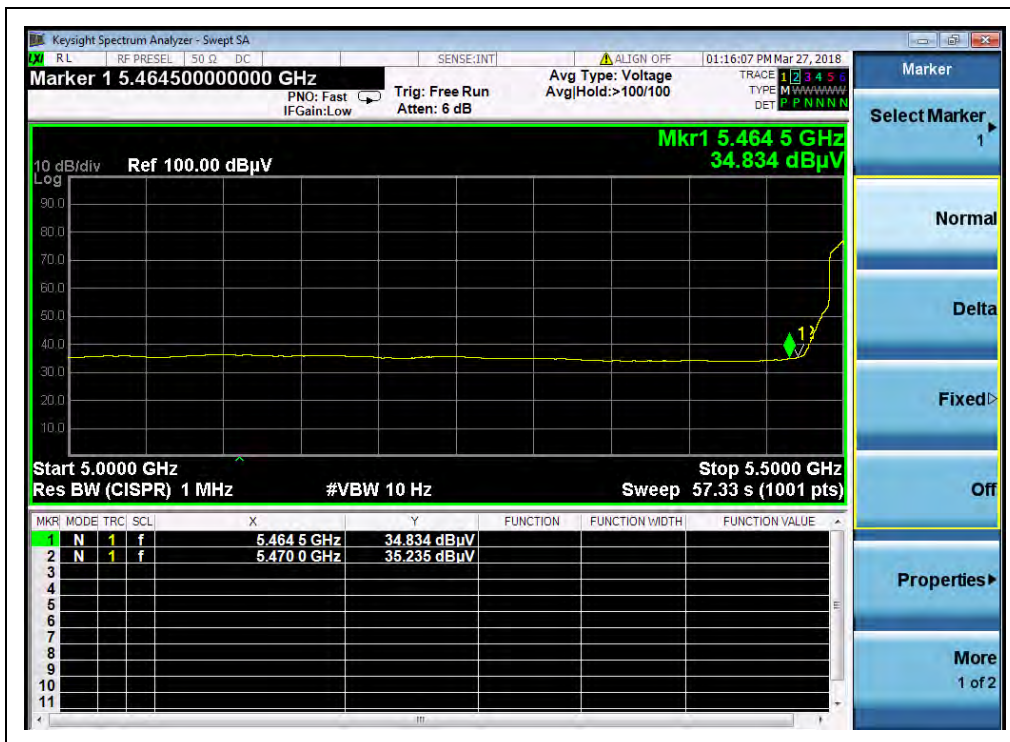
(Channel 64, PEAK, 802.11 n (HT20))



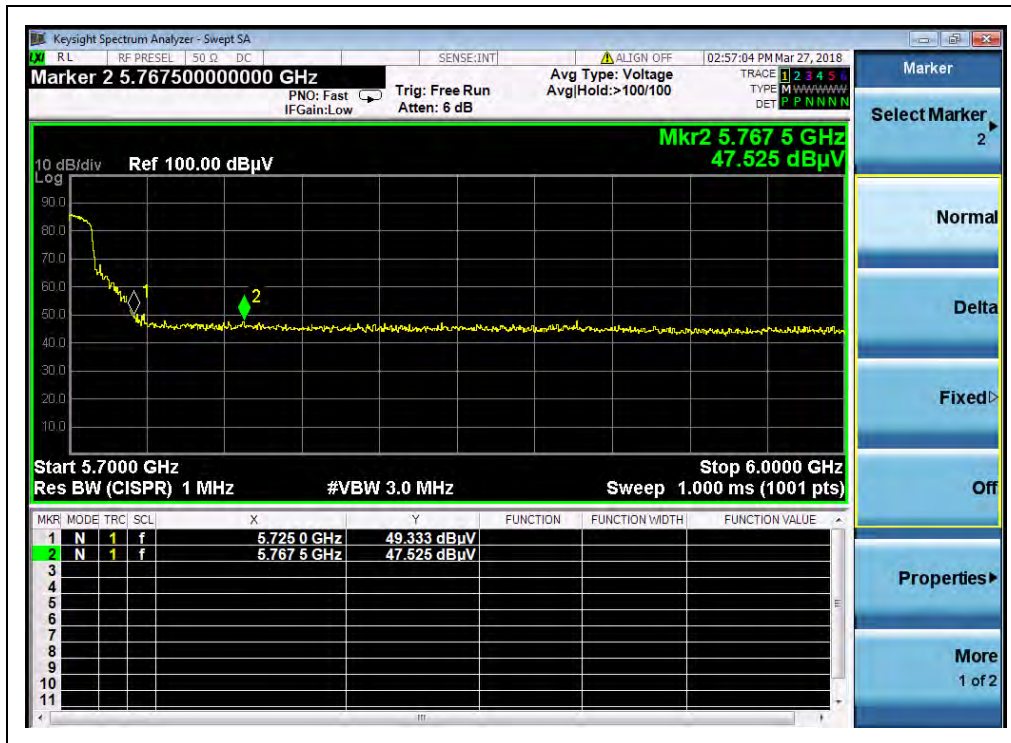
(Channel 64, AVG, 802.11n (HT20))



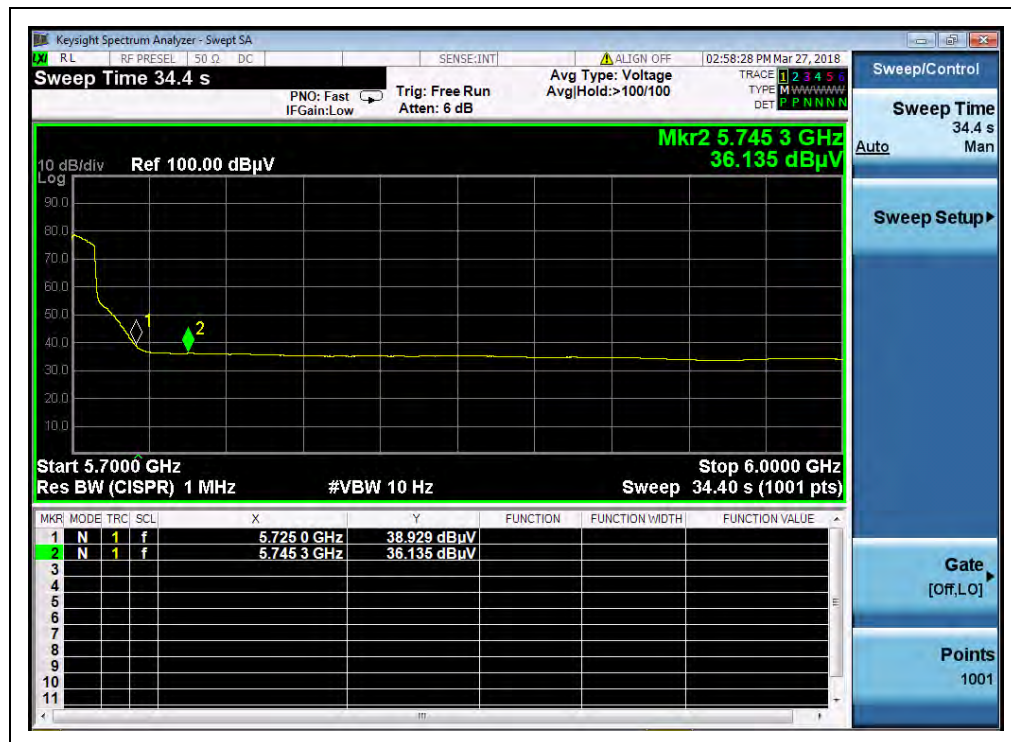
(Channel 100, PEAK, 802.11 n (HT20))



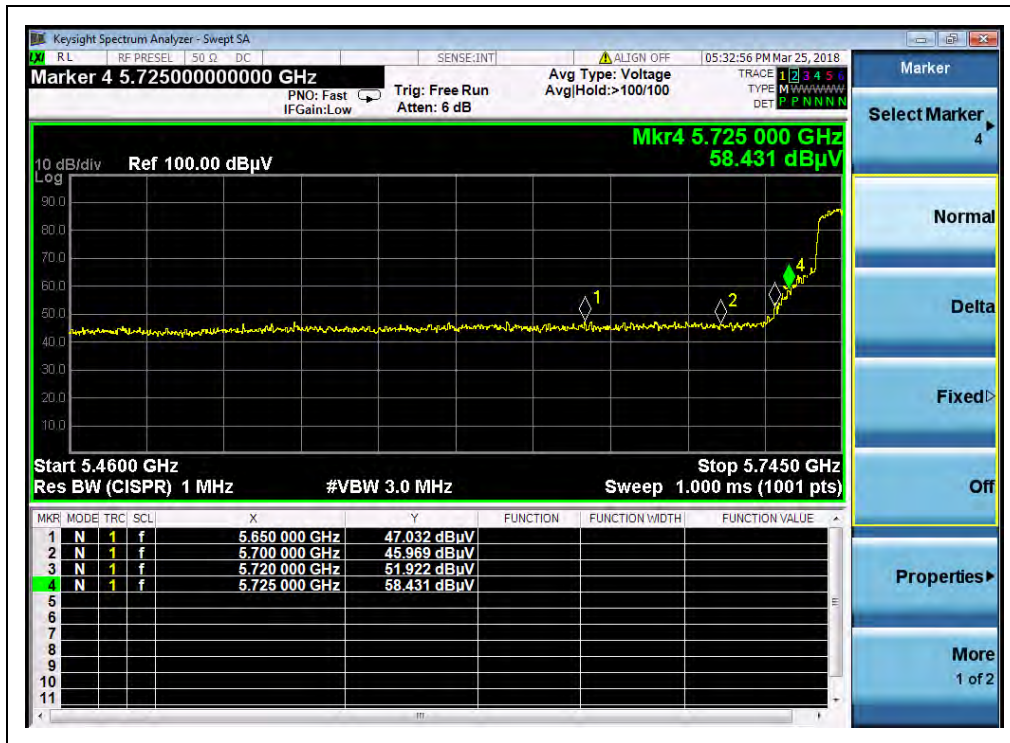
(Channel 100, AVG, 802.11n (HT20))



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



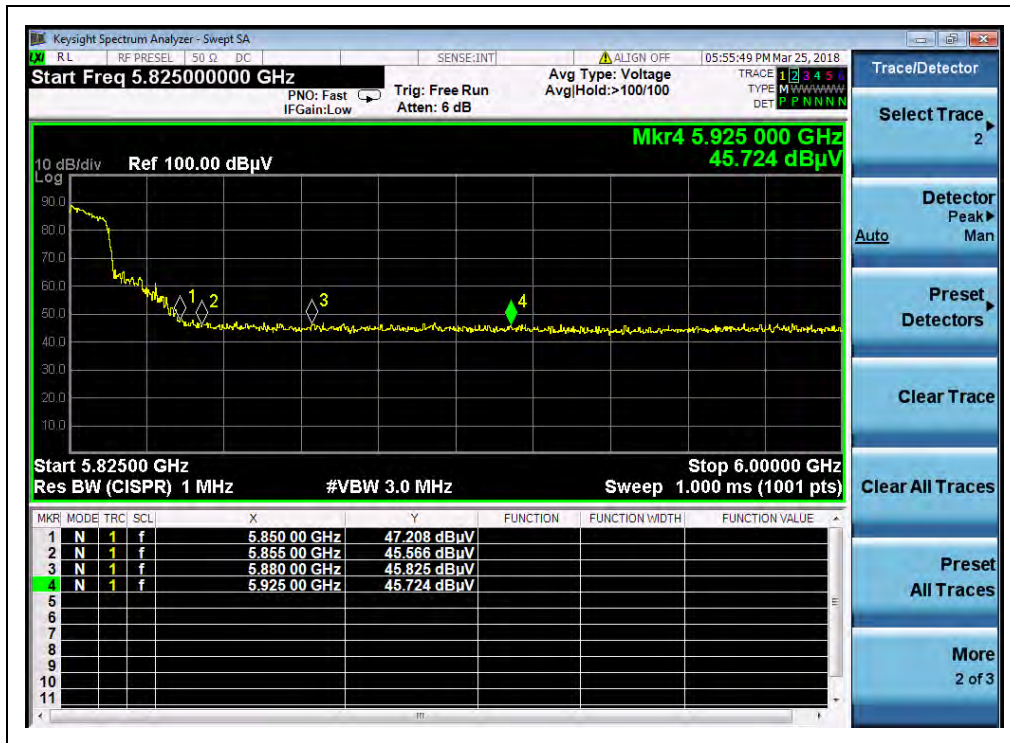
(Channel 144, AVG, 802.11n (HT20))



(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))

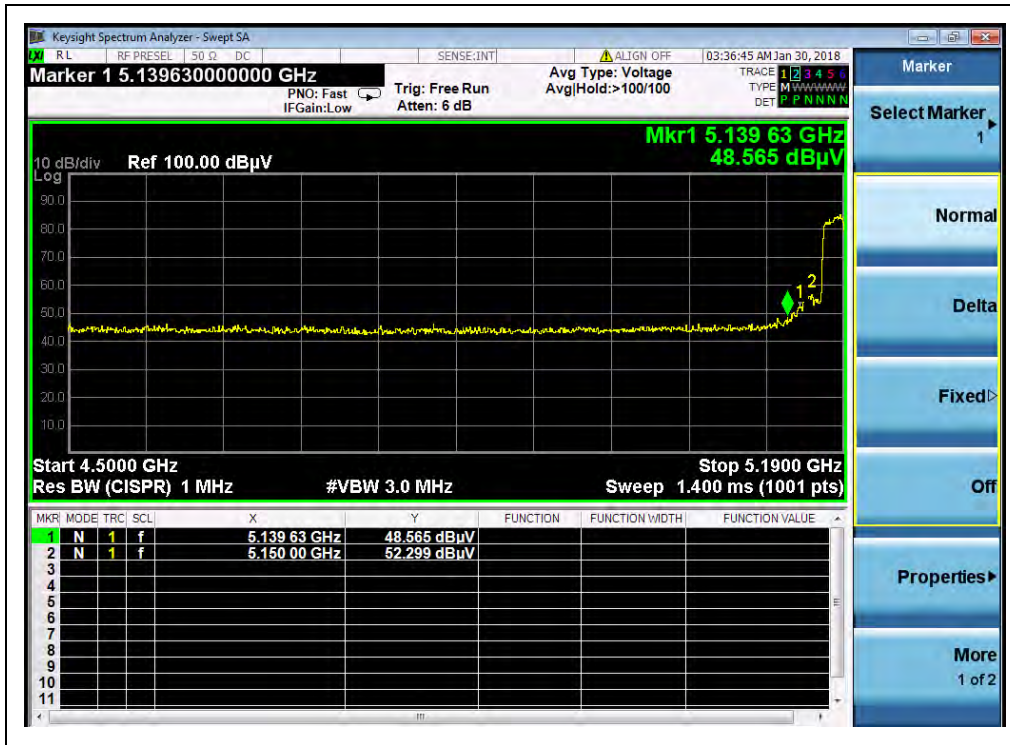
**802.11n (HT40) Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading $U_R$ (dBuV)	$A_T$ (dB)	$A_{Factor}$ (dB@3m)	Max. Emission E (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Verdict
		PK/ AV						
38	5139.63	PK	48.57	-50.65	32.11	30.03	74	PASS
38	5142.39	AV	37.56	-50.65	32.11	19.02	54	PASS
62	5358.90	PK	43.58	-50.65	32.11	25.04	74	PASS
62	5352.60	AV	32.39	-50.65	32.11	13.85	54	PASS
102	5468.89	PK	55.11	-50.65	32.11	36.57	68.23	PASS
102	5468.89	AV	43.00	-50.65	32.11	24.46	54	PASS
134	5726.33	PK	48.66	-50.65	32.11	30.12	68.23	PASS
134	5726.66	AV	37.32	-50.65	32.11	18.78	54	PASS
151	5720.00	PK	61.11	-50.65	32.11	42.57	110.83	PASS
151	5720.00	AV	48.10	-50.65	32.11	29.56	54	PASS
159	5925.00	PK	45.22	-50.65	32.11	26.68	68.23	PASS
159	5855.00	AV	36.64	-50.65	32.11	18.10	54	PASS

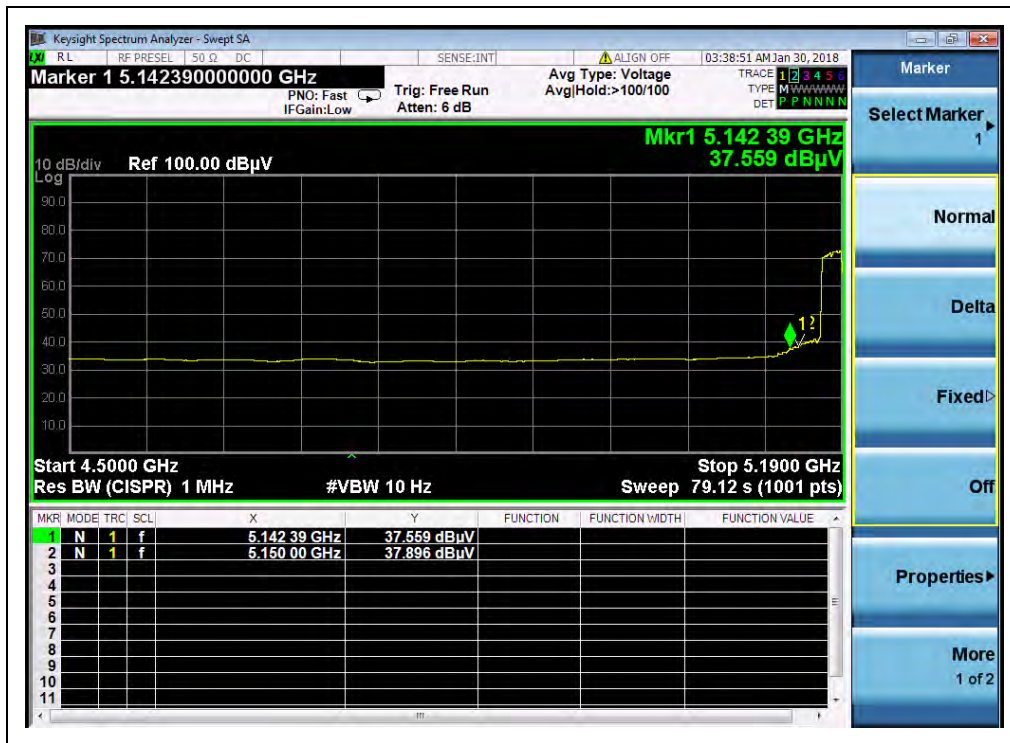




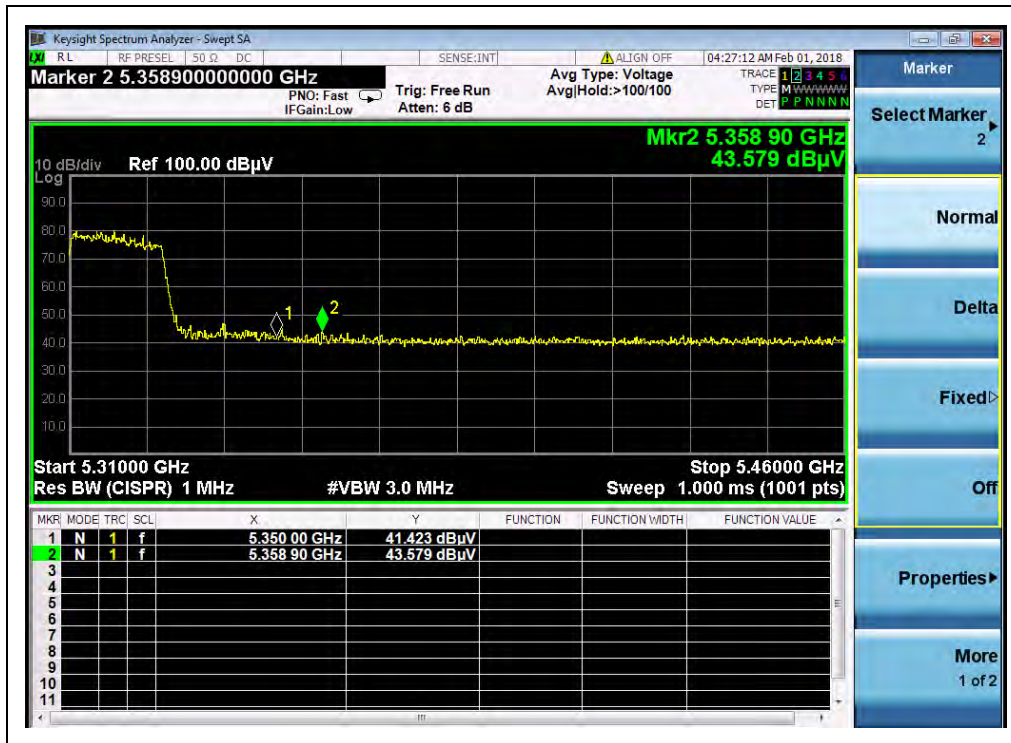
B. Test Plots:



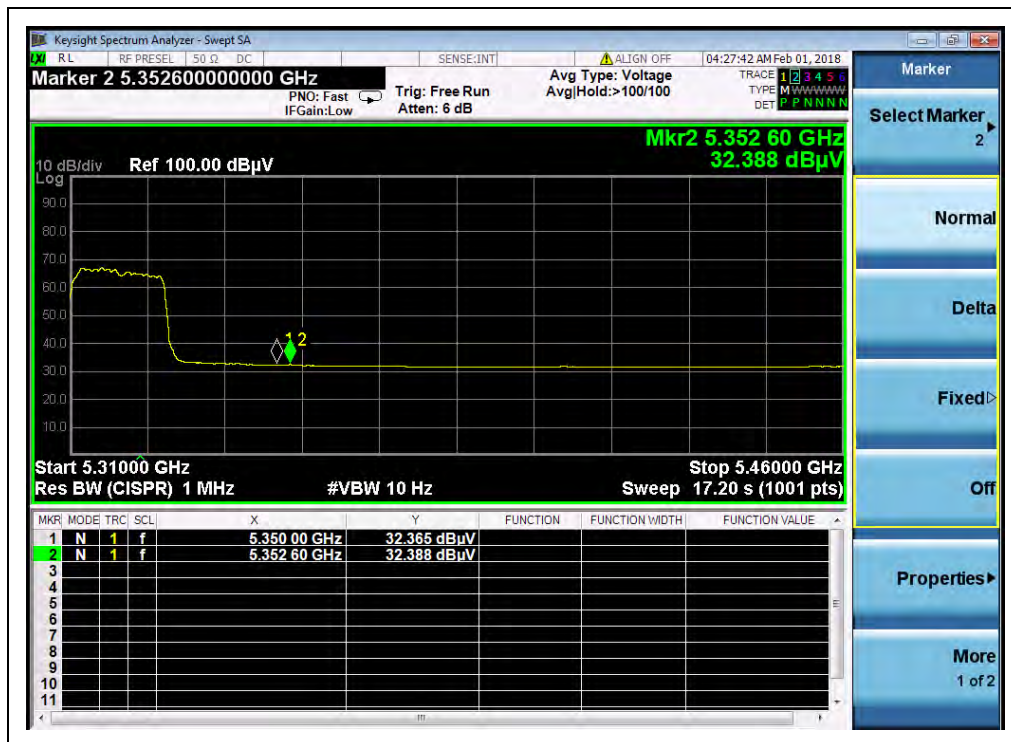
(Channel 38, PEAK, 802.11n (HT40))



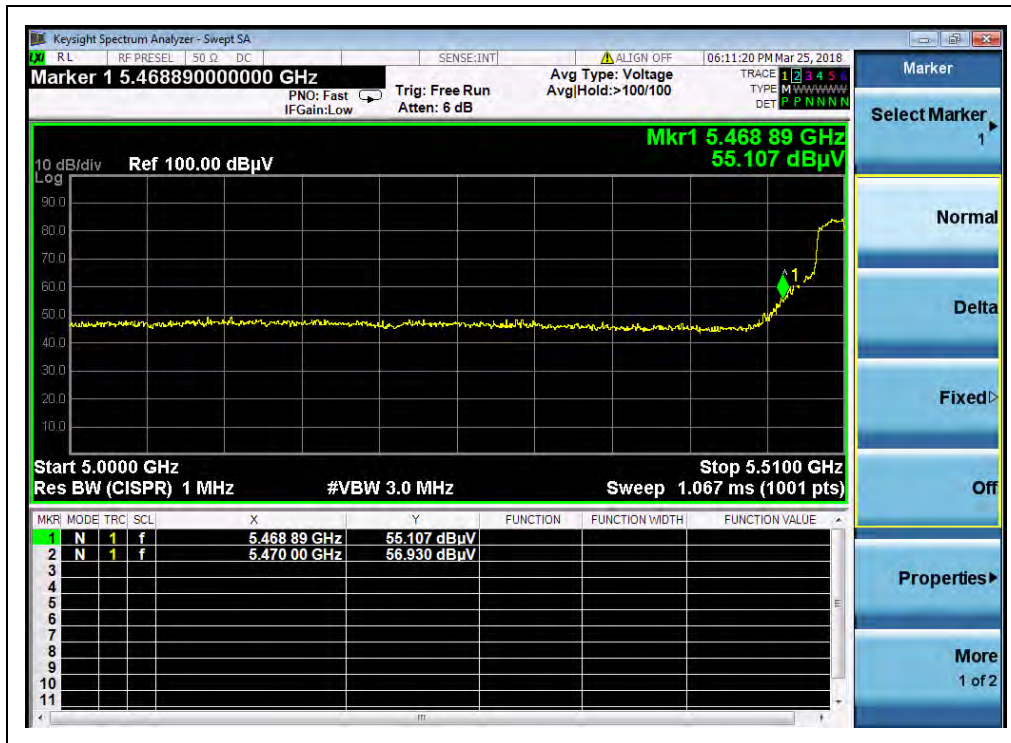
(Channel 38, AVG, 802.11n (HT40))



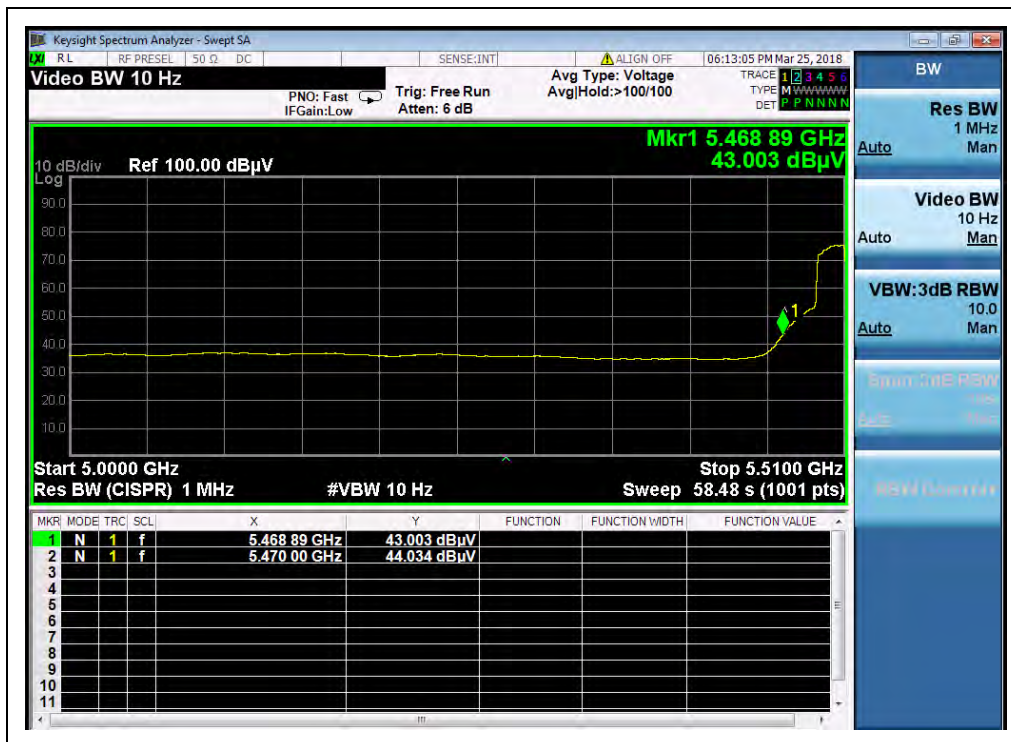
(Channel 62, PEAK, 802.11n (HT40))



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



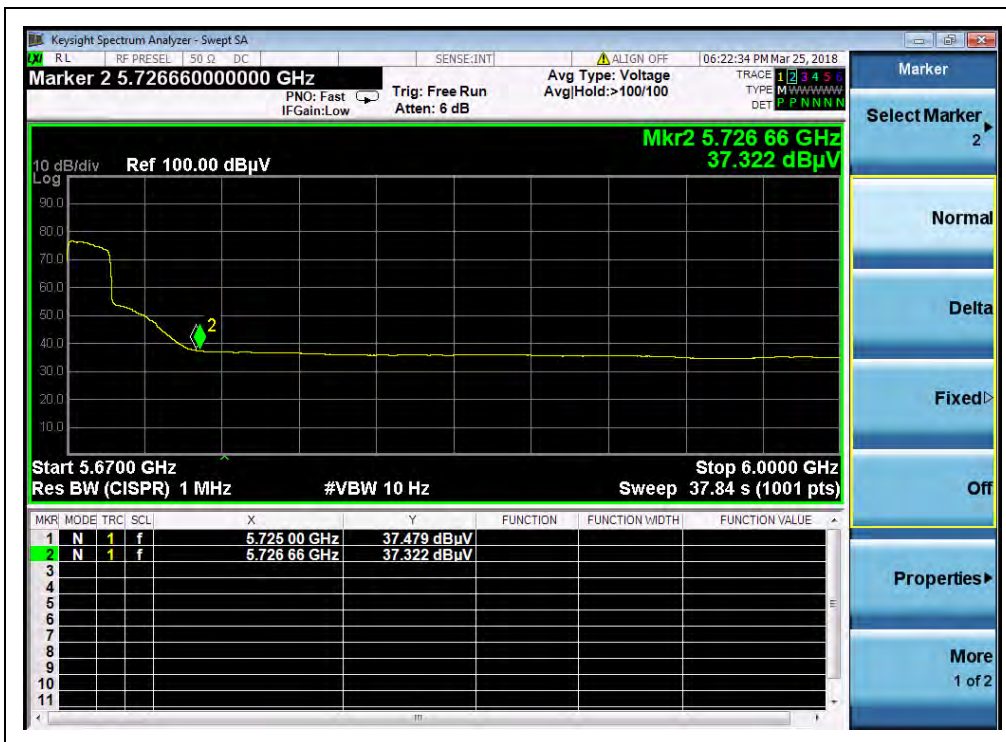
(Channel 102, PEAK, 802.11n (HT40))



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



(Channel 134, PEAK, 802.11n (HT40))



(Channel 134, AVG, 802.11n (HT40))



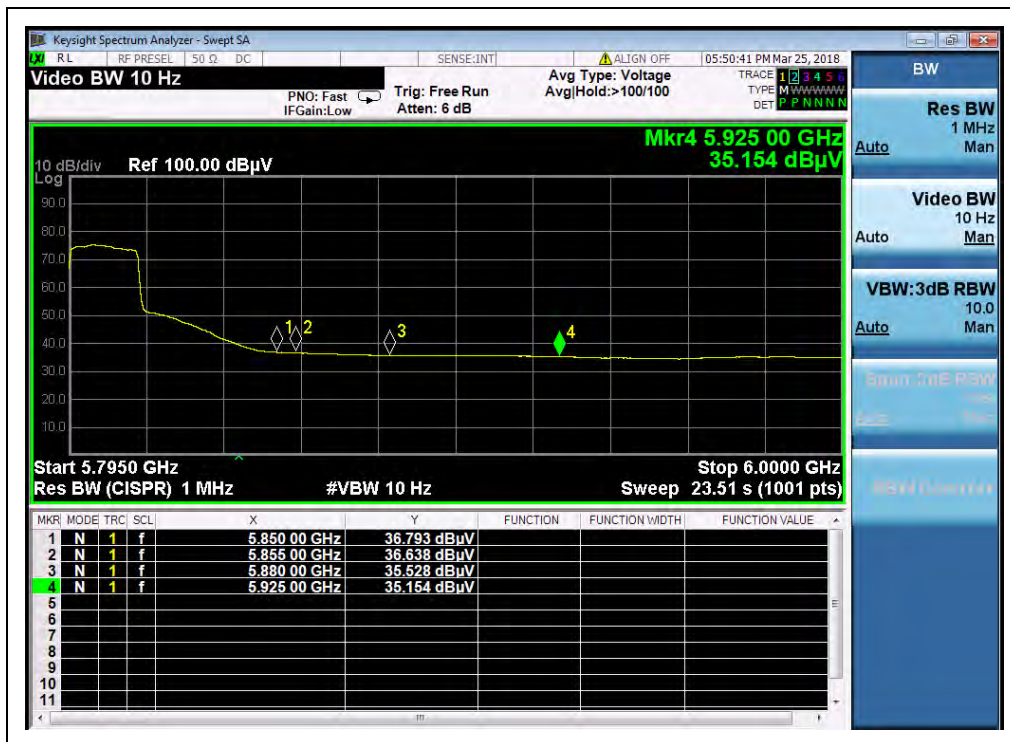
(Channel 151, PEAK, 802.11n (HT40))



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



(Channel 159, PEAK, 802.11n (HT40))



(Channel 159, 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)	5,179,999,988	-12	-0.0000002
100%		-30	5,180,000,023	23	0.0000004
100%		-20	5,180,000,011	11	0.0000002
100%		-10	5,179,999,979	-21	-0.0000004
100%		0	5,180,000,028	28	0.0000005
100%		+10	5,180,000,022	22	0.0000004
100%		+20	5,179,999,987	-13	-0.0000003
100%		+30	5,179,999,982	-18	-0.0000003
100%		+40	5,180,000,011	11	0.0000002
100%		+50	5,180,000,014	14	0.0000003
85%	3.6	+20	5,179,999,988	-12	-0.0000002
115%	4.35	+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)	5,259,999,989	-11	-0.0000002
100%		-30	5,259,999,985	-15	-0.0000003
100%		-20	5,260,000,018	18	0.0000003
100%		-10	5,260,000,014	14	0.0000003
100%		0	5,259,999,987	-13	-0.0000002
100%		+10	5,260,000,026	26	0.0000005
100%		+20	5,260,000,014	14	0.0000003
100%		+30	5,260,000,018	18	0.0000003
100%		+40	5,259,999,985	-15	-0.0000003
100%		+50	5,260,000,023	23	0.0000004
85%	3.6	+20	5,260,000,022	22	0.0000004
115%	4.35	+20	5,259,999,988	-12	-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)	5,500,000,021	21	0.0000004
100%		-30	5,500,000,028	28	0.0000005
100%		-20	5,500,000,024	24	0.0000004
100%		-10	5,499,999,984	-16	-0.0000003
100%		0	5,500,000,015	15	0.0000003
100%		+10	5,499,999,992	-8	-0.0000001
100%		+20	5,500,000,017	17	0.0000003
100%		+30	5,500,000,021	21	0.0000004
100%		+40	5,499,999,979	-21	-0.0000004
100%		+50	5,500,000,014	14	0.0000003
85%	3.6	+20	5,500,000,026	26	0.0000005
115%	4.35	+20	5,499,999,982	-18	-0.0000003





## 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)	5,745,000,021	21	0.0000004
100%		-30	5,744,999,985	-15	-0.0000003
100%		-20	5,745,000,021	21	0.0000004
100%		-10	5,744,999,978	-22	-0.0000004
100%		0	5,745,000,028	28	0.0000005
100%		+10	5,744,999,976	-24	-0.0000004
100%		+20	5,745,000,031	31	0.0000005
100%		+30	5,745,000,028	28	0.0000005
100%		+40	5,744,999,981	-19	-0.0000003
100%		+50	5,745,000,022	22	0.0000004
85%		3.6	+20	5,745,000,024	24
115%	4.35	+20	5,745,000,030	30	0.0000005

**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 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

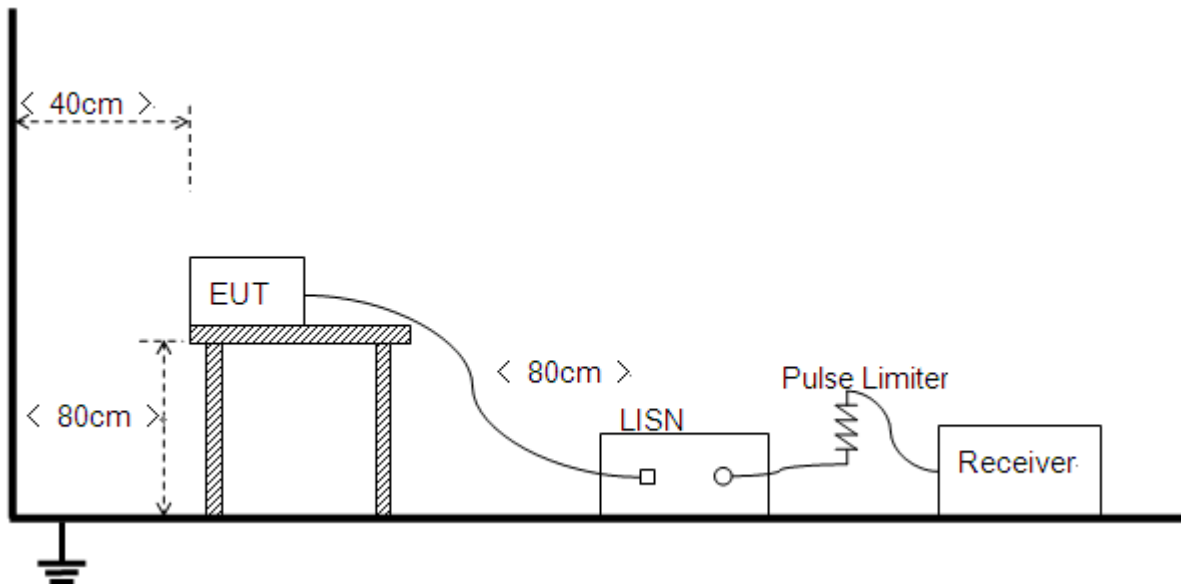
Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

**NOTE:**

- (a) The lower limit shall apply at the band edges.
- (b) 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.

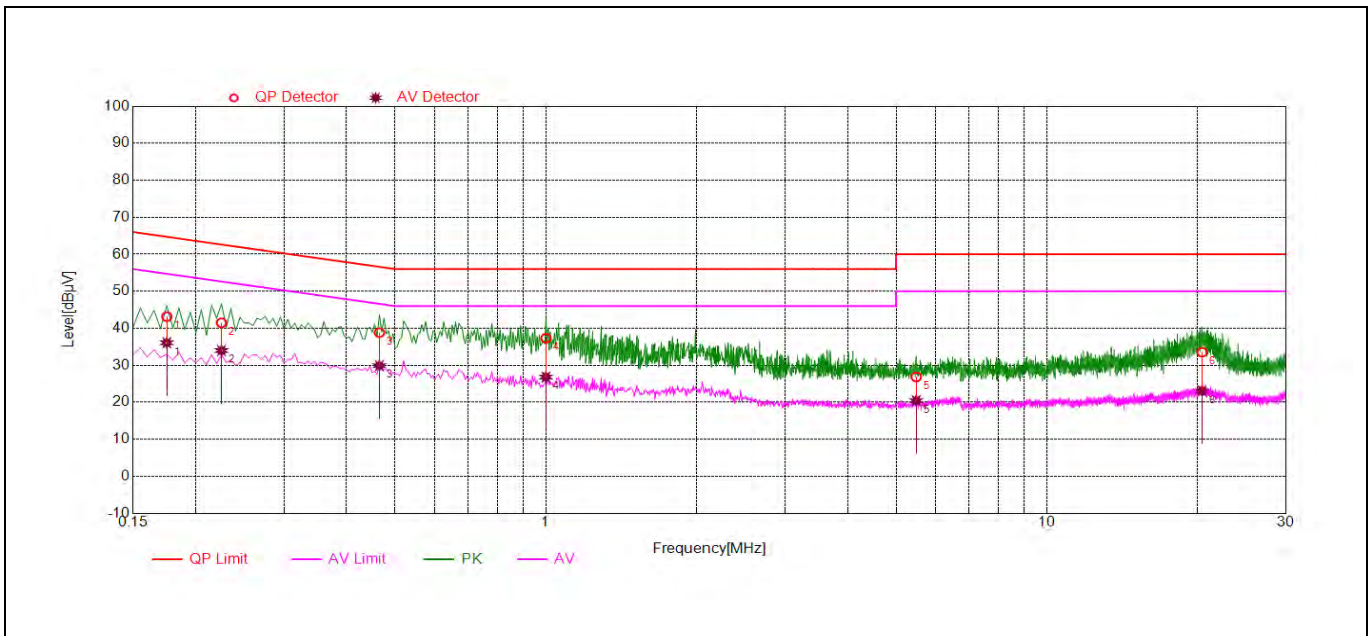
**Note:** Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

**A. Test setup:**

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

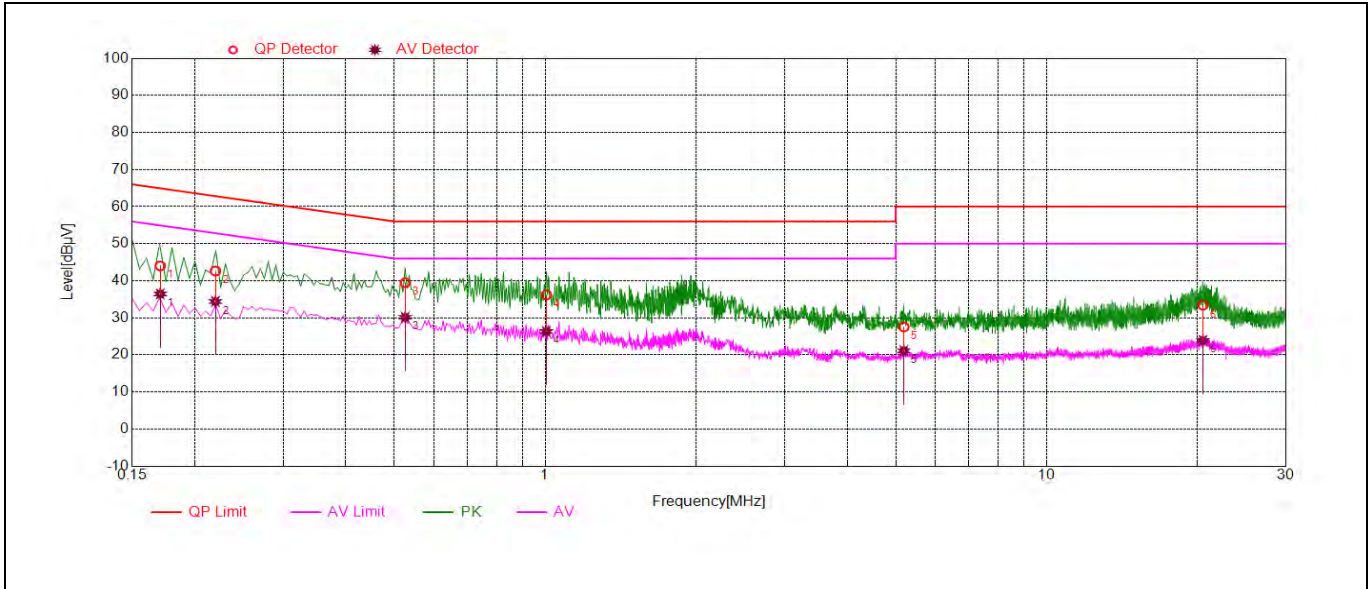
**Note:** The test voltage is AC 120V/60Hz.

**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	0.17	43.15	36.08	64.72	54.72	Line	PASS
2	0.23	41.48	33.99	62.63	52.63		PASS
3	0.46	38.81	29.90	56.60	46.60		PASS
4	1.00	37.31	26.80	56.00	46.00		PASS
5	5.48	26.83	20.45	60.00	50.00		PASS
6	20.42	33.53	23.09	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	0.17	44.02	36.46	64.94	54.94	Neutral	PASS
2	0.22	42.64	34.40	62.83	52.83		PASS
3	0.53	39.48	30.14	56.00	46.00		PASS
4	1.00	36.21	26.32	56.00	46.00		PASS
5	5.19	27.54	21.12	60.00	50.00		PASS
6	20.51	33.43	23.87	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);

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

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

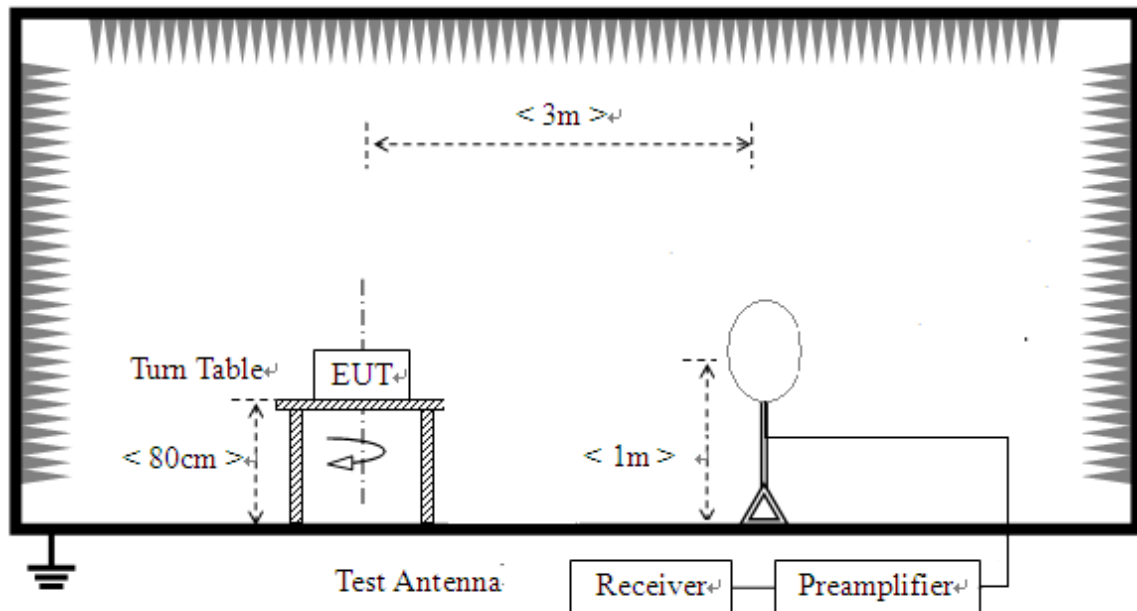
**Note:**

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.

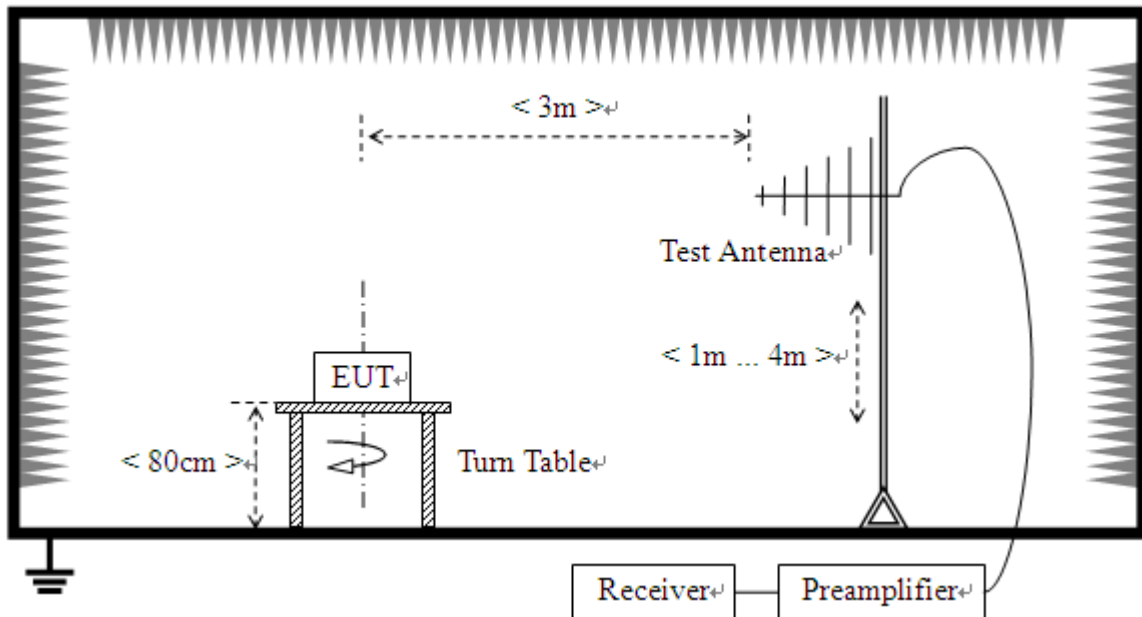
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

**2.8.2. Test Description****A. Test Setup:**

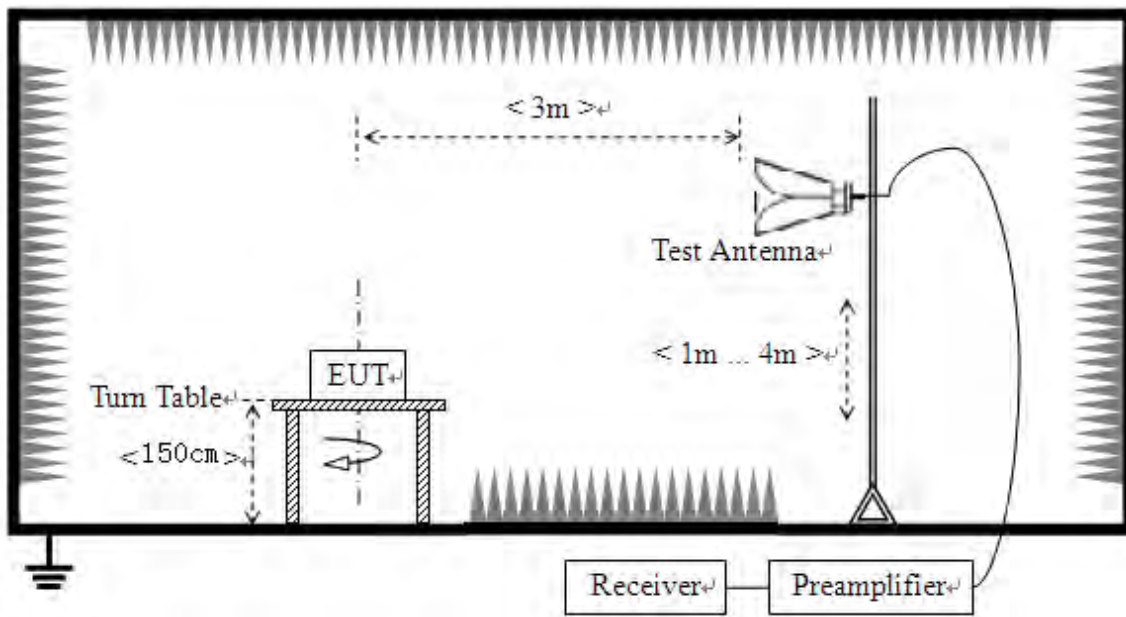
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



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:

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

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

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

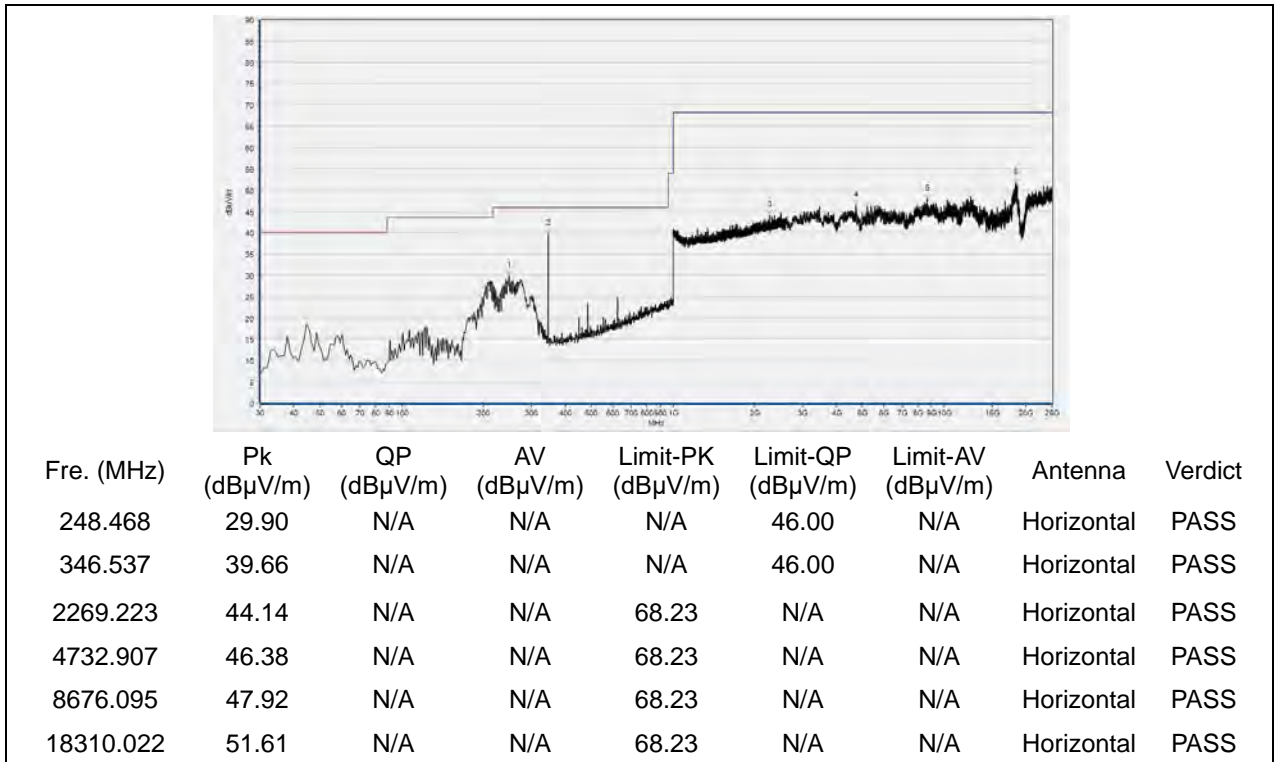
**Note1:** All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

**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.

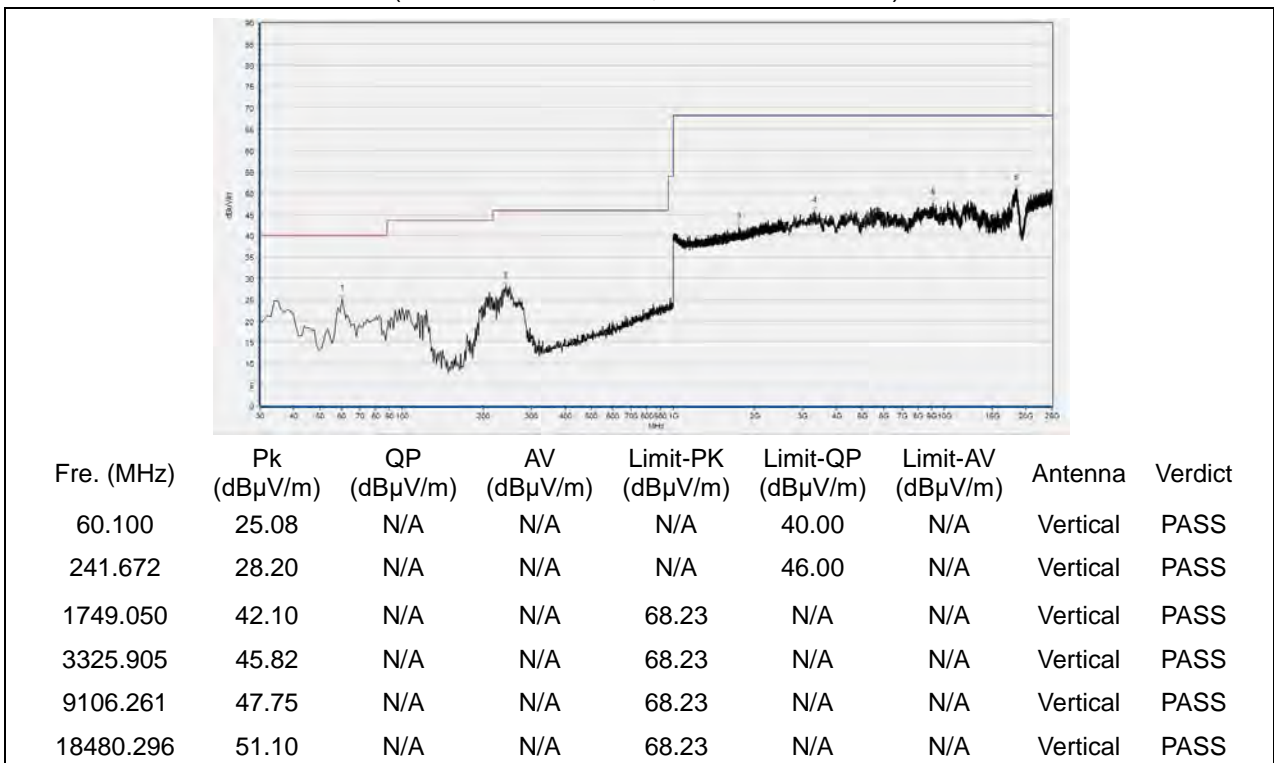
**Note3:** For the frequency, which started from 25GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**802.11a Test mode**

Plots for Channel = 36

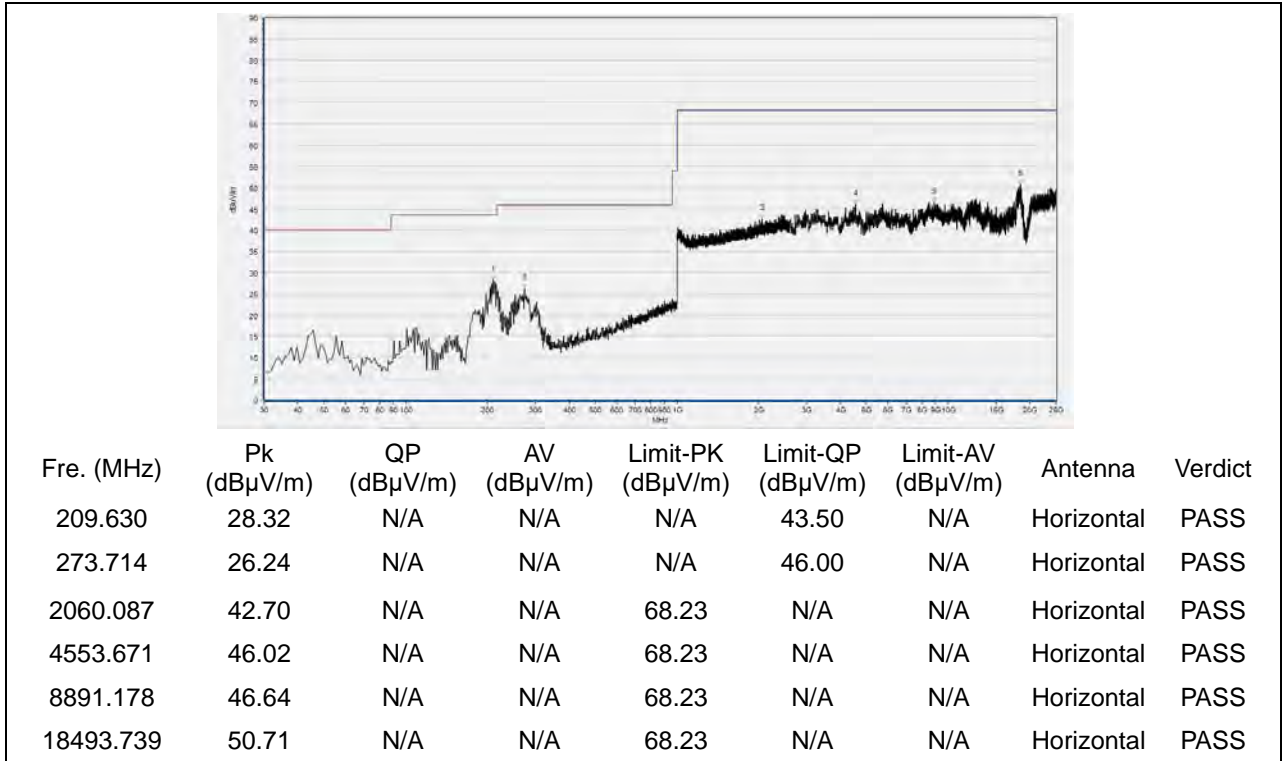


(Antenna Horizontal, 30MHz to 25GHz)

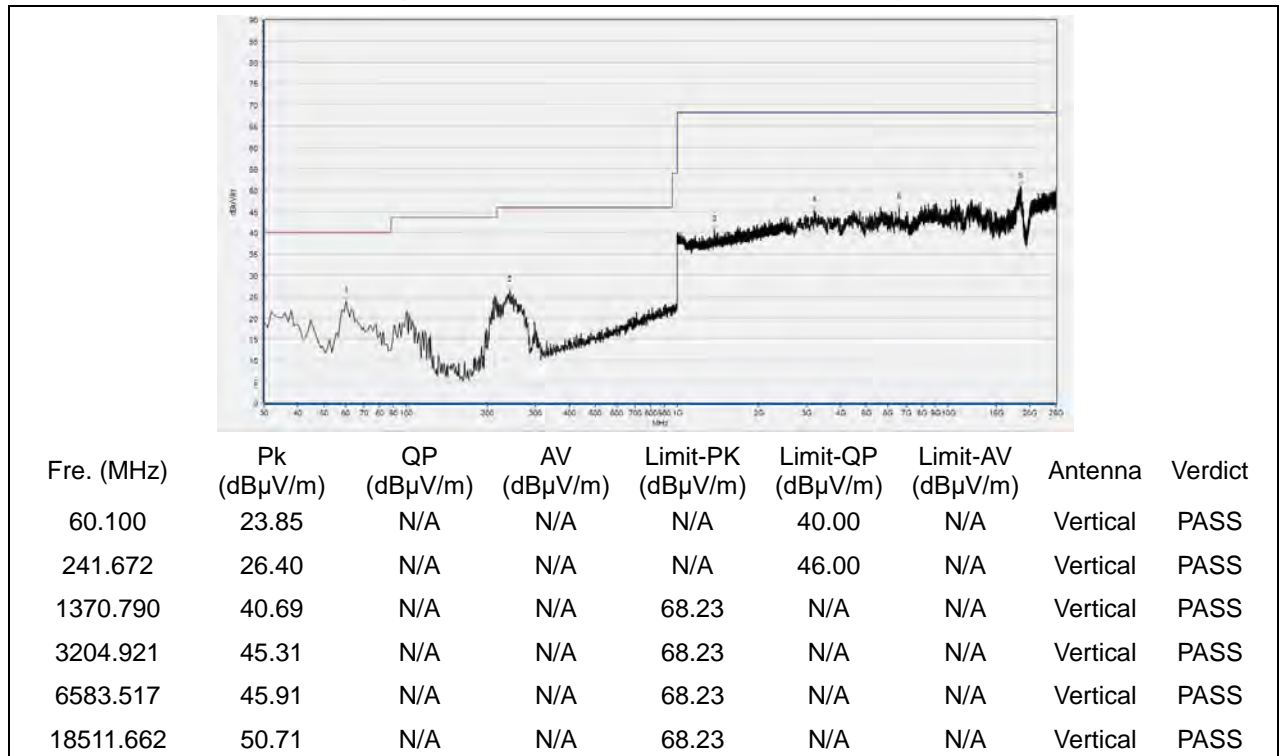


(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 44

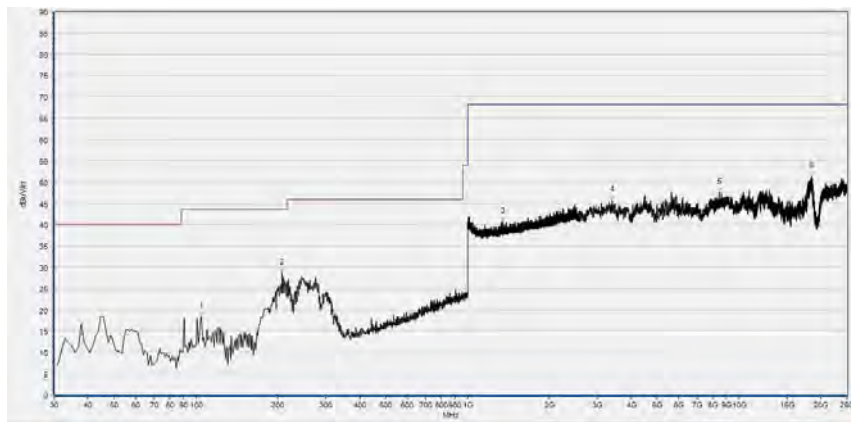


(Antenna Horizontal, 30MHz to 25GHz)



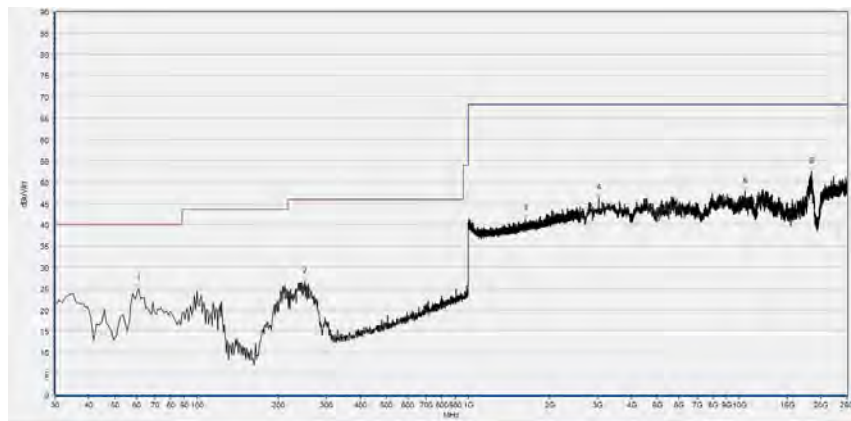
(Antenna Vertical, 30MHz to 25GHz)

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
104.765	18.40	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
207.688	28.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1347.849	40.72	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3415.523	45.76	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8443.089	47.58	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18426.525	51.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

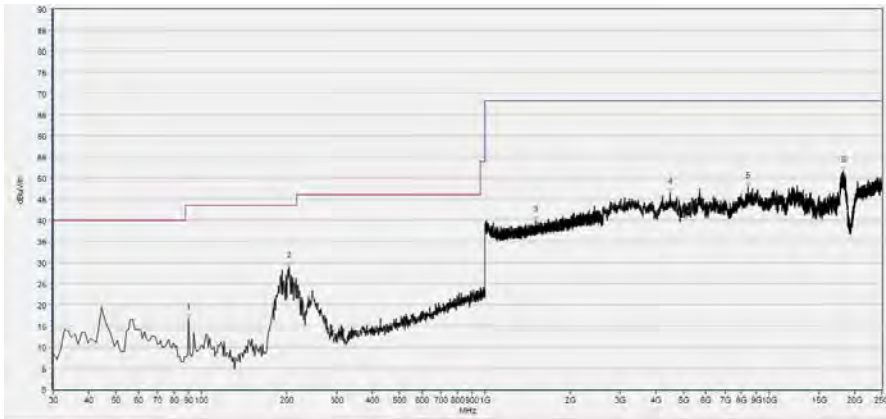
(Antenna Horizontal, 30MHz to 25GHz)



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
61.071	25.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
250.410	26.57	40.87	N/A	N/A	46.00	N/A	Vertical	PASS
1624.208	41.33	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
3030.166	46.27	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10513.263	47.69	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18480.296	52.40	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

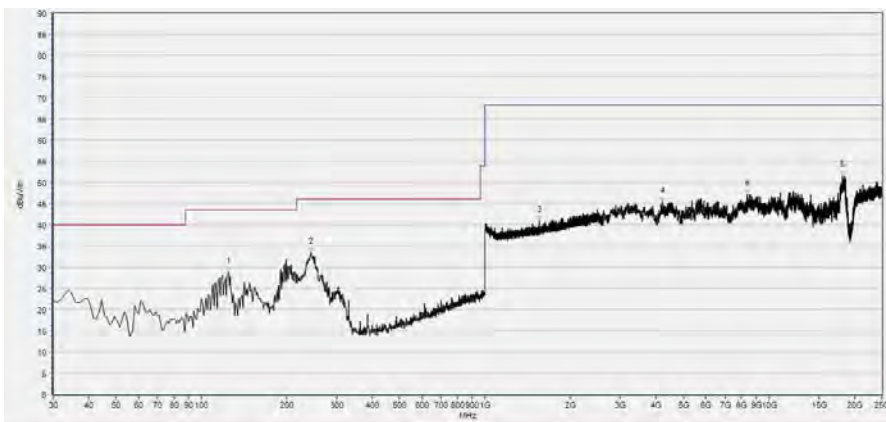
(Antenna Vertical, 30MHz to 25GHz)

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
90.200	16.57	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
203.804	28.90	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1508.436	39.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4477.495	46.46	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8461.012	47.77	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18238.328	51.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

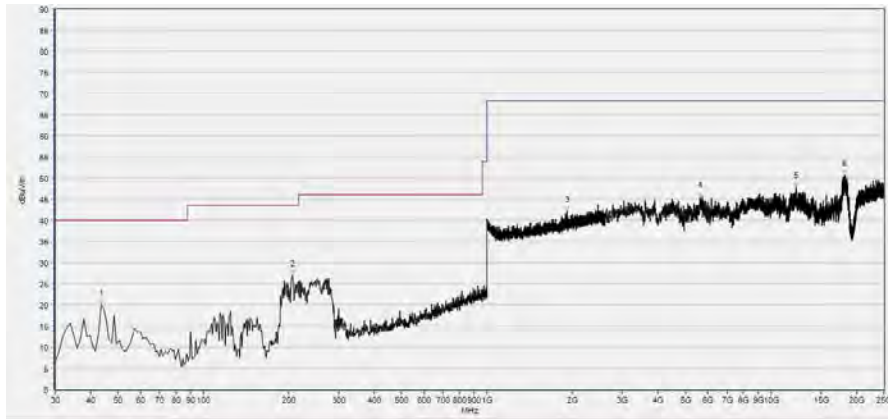
(Antenna Horizontal, 30MHz to 25GHz)



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
124.184	28.68	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
243.614	33.44	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1551.117	40.97	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4217.604	45.43	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8384.837	47.12	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18211.442	51.60	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

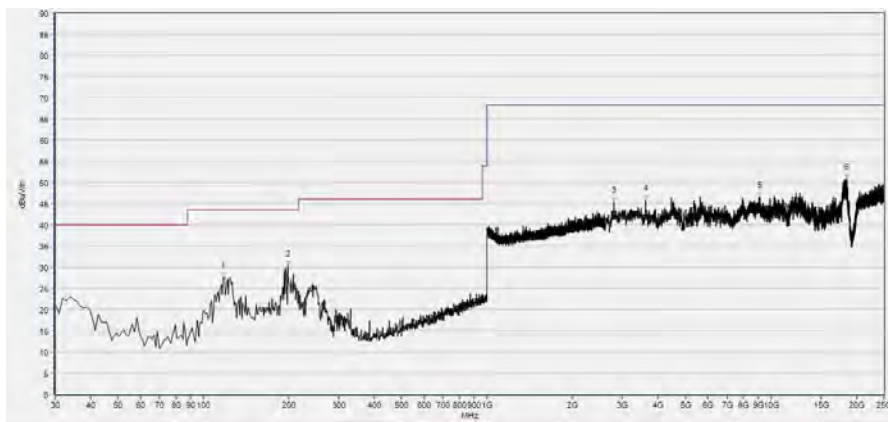
(Antenna Vertical, 30MHz to 25GHz)

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
43.594	20.06	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
205.746	26.95	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1910.170	42.16	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5611.162	45.53	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12269.774	47.84	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18198.000	50.72	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

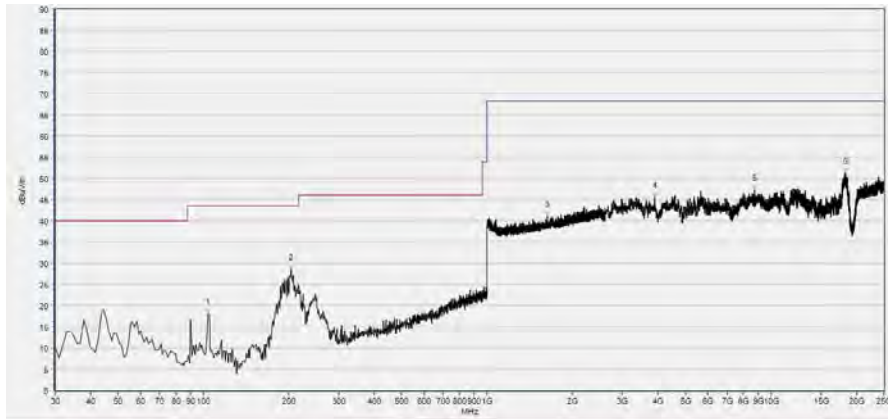
(Antenna Horizontal, 30MHz to 25GHz)



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
117.387	27.46	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.978	30.27	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2792.679	45.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
3608.202	45.92	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9128.666	46.60	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18560.952	50.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

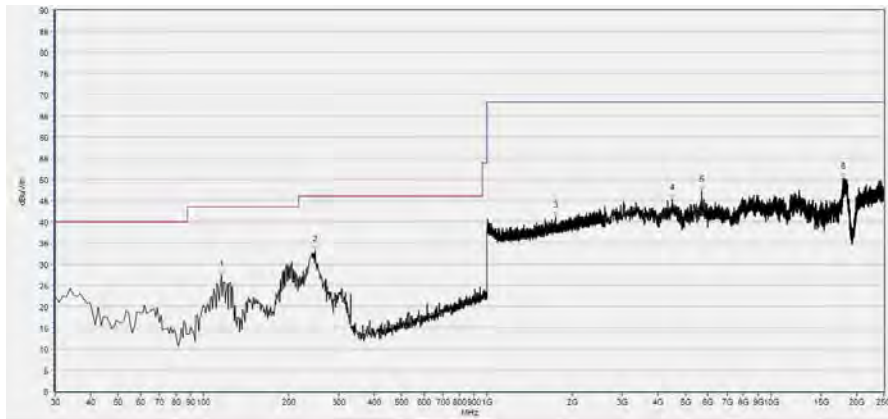
(Antenna Vertical, 30MHz to 25GHz)

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
103.794	18.03	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
203.804	28.56	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1626.876	41.14	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3886.017	45.46	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8747.790	47.24	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18233.847	51.22	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

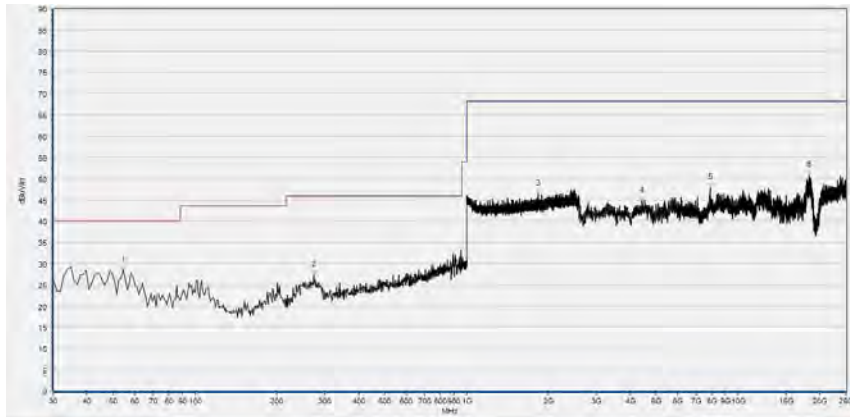
(Antenna Horizontal, 30MHz to 25GHz)



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
115.445	27.35	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
247.497	33.18	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1745.849	41.33	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4477.495	45.36	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5709.742	47.34	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
17973.955	50.36	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

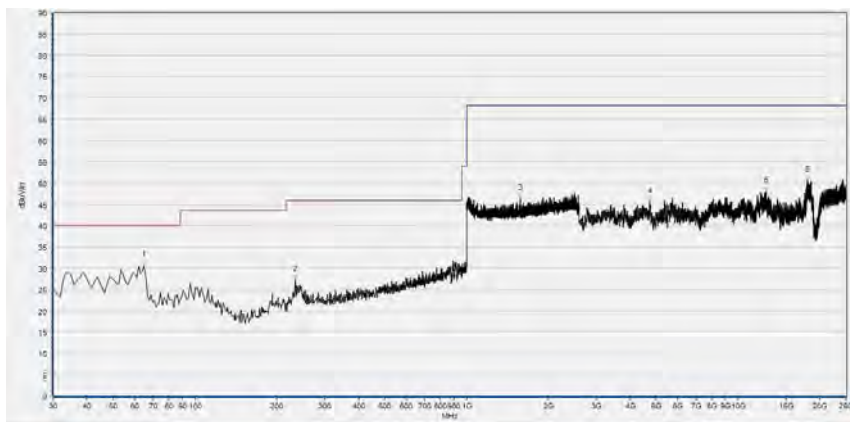
(Antenna Vertical, 30MHz to 25GHz)

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
54.274	28.45	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
273.714	27.27	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1838.146	46.37	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4432.687	44.74	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
7882.977	47.95	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18256.251	50.85	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

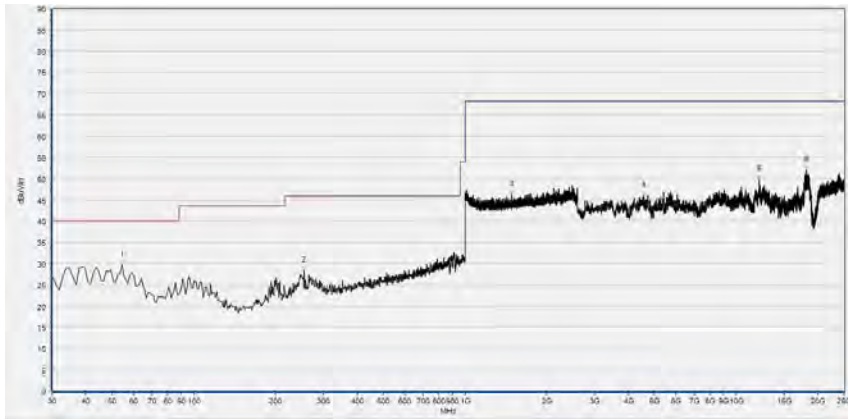


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
64.955	30.62	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
233.904	27.27	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1576.726	46.47	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4723.945	45.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12699.940	48.04	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
17969.474	50.59	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

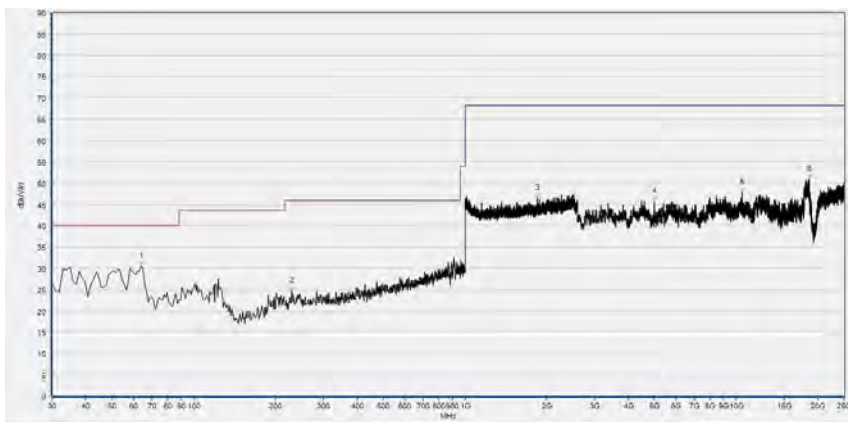


Plots for Channel = 120



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
54.274	29.60	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
255.265	28.28	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1484.428	46.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4549.190	45.86	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12157.752	49.74	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18130.786	51.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

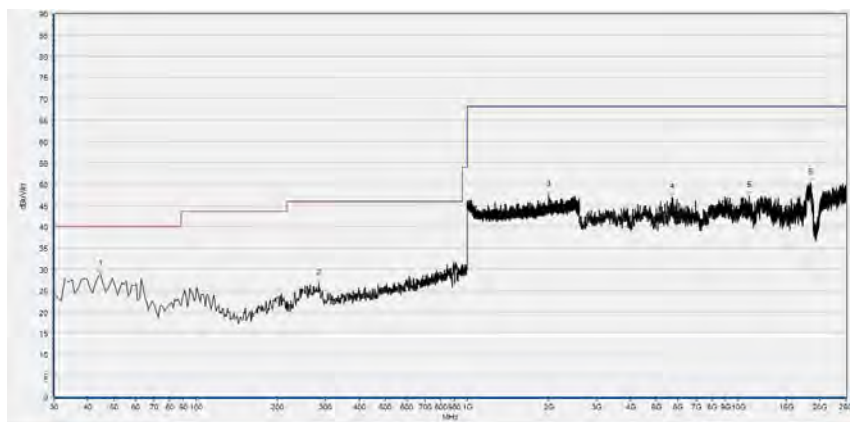
(Antenna Horizontal, 30MHz to 25GHz)



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
63.984	30.45	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
230.020	24.61	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1846.149	46.50	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4988.318	45.55	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10499.820	47.83	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18565.433	50.85	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

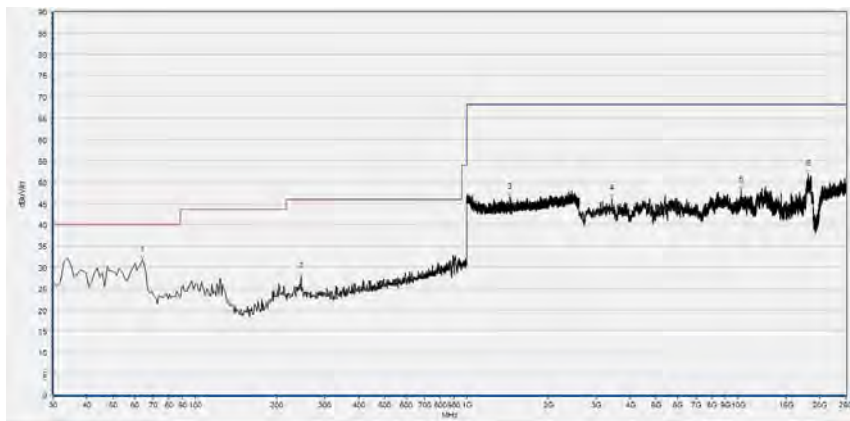
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 144



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
44.565	28.87	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
283.423	26.61	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1994.465	47.50	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5705.261	46.98	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10997.199	47.20	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18475.815	50.29	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

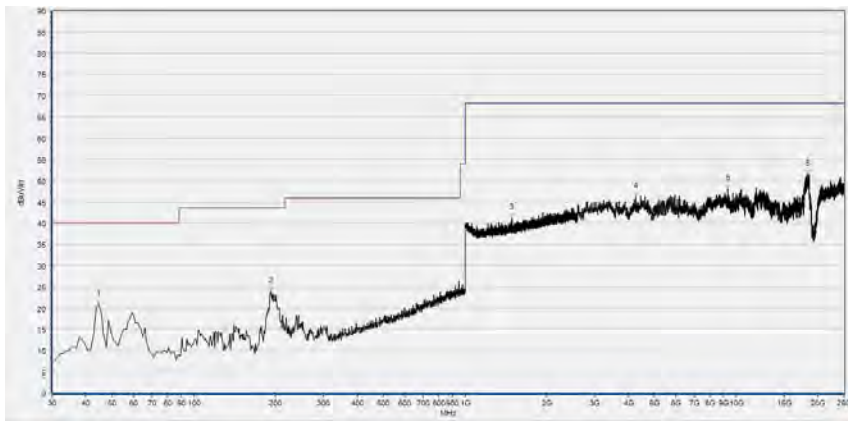
(Antenna Horizontal, 30MHz to 25GHz)



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
63.984	31.69	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
245.556	27.74	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1444.948	46.49	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
3433.447	46.16	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10284.737	48.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18148.710	51.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

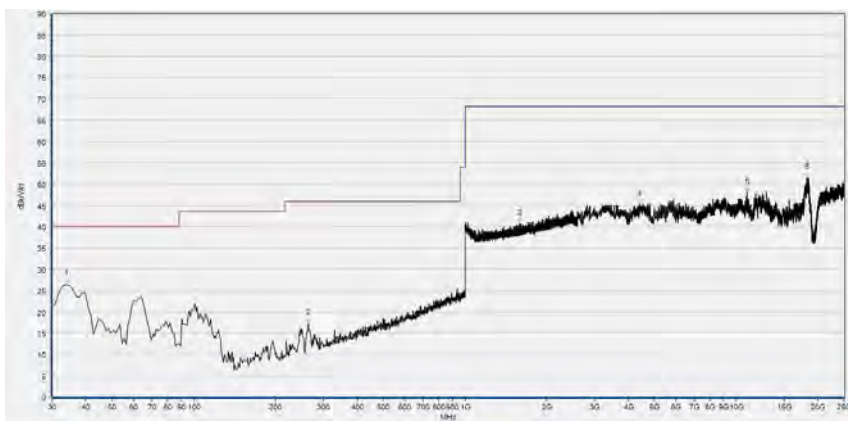
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 149



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
44.565	20.89	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
192.152	23.91	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1489.230	41.20	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4262.412	46.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9316.863	48.12	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18301.060	51.44	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

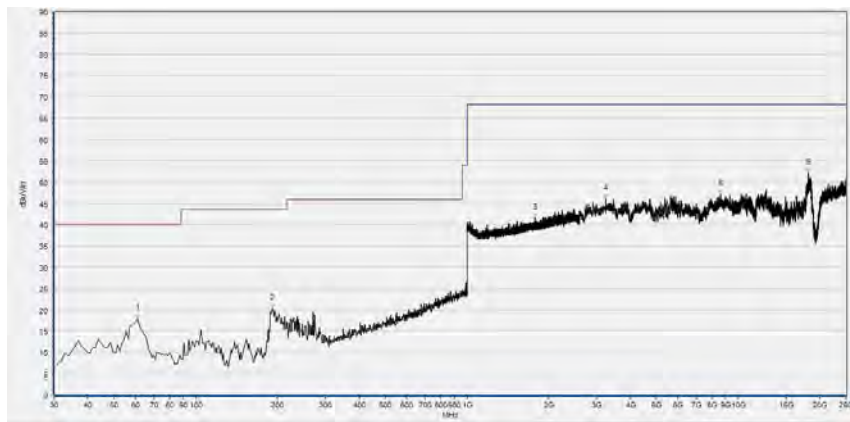
(Antenna Horizontal, 30MHz to 25GHz)



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
33.884	26.42	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
264.004	17.22	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1587.929	40.81	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4396.839	45.22	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10988.238	48.11	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18238.328	51.51	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

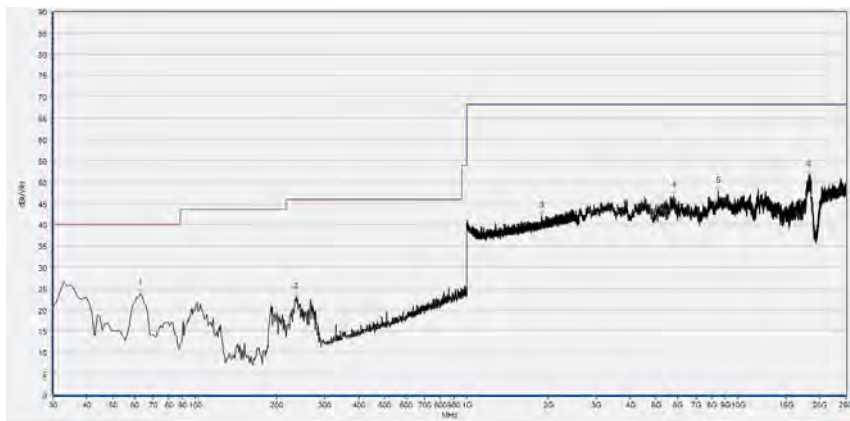
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 157



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	17.87	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
191.181	20.34	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1783.728	41.61	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3254.211	46.08	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8617.844	47.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18153.191	52.07	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

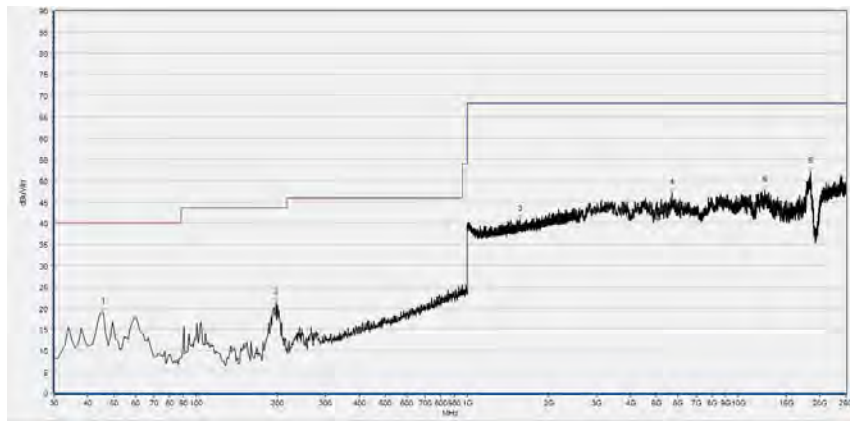
(Antenna Horizontal, 30MHz to 25GHz)



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
63.013	23.80	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
235.846	23.19	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1891.497	42.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5799.360	46.73	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8438.608	47.91	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18296.579	51.63	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

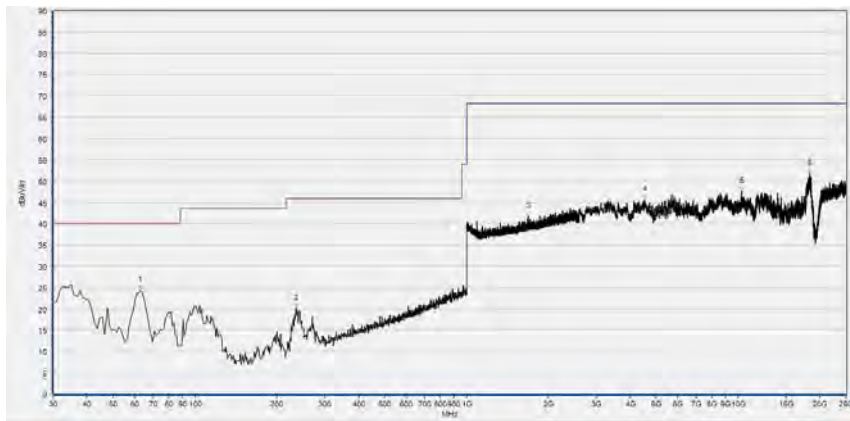
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 165



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
45.536	18.92	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
197.978	21.25	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1566.589	40.97	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5709.742	47.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12534.147	47.73	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18498.220	52.09	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



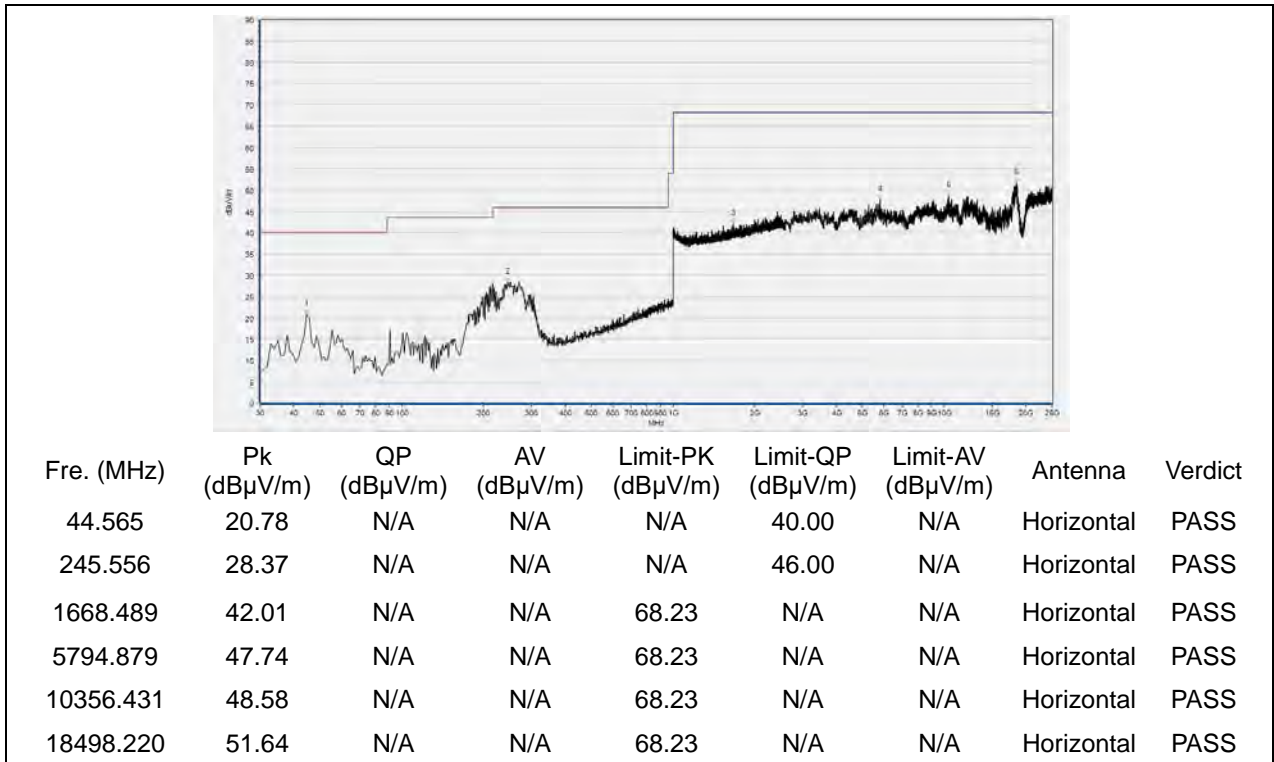
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
63.013	24.38	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
234.875	20.12	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1688.229	41.70	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4535.747	45.67	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10293.699	47.61	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18395.159	51.70	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

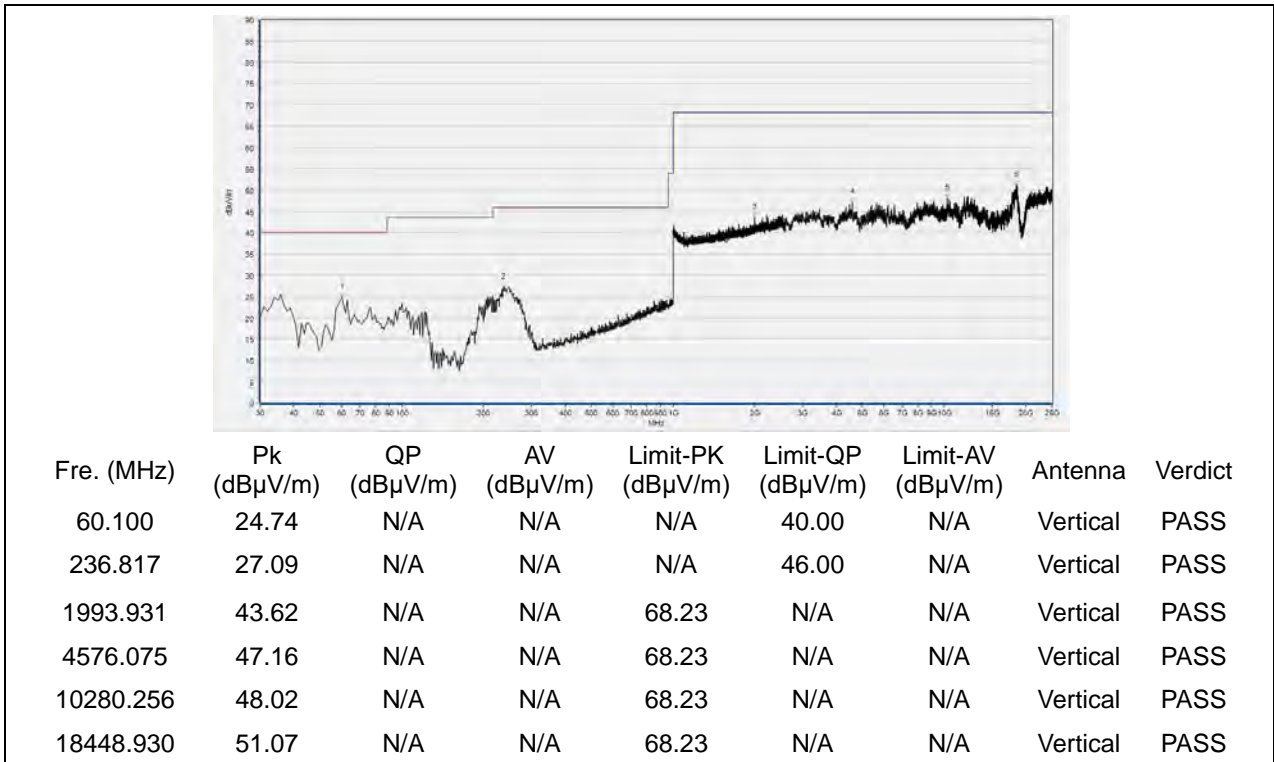


**802.11n (HT20) Test mode**

Plots for Channel = 36

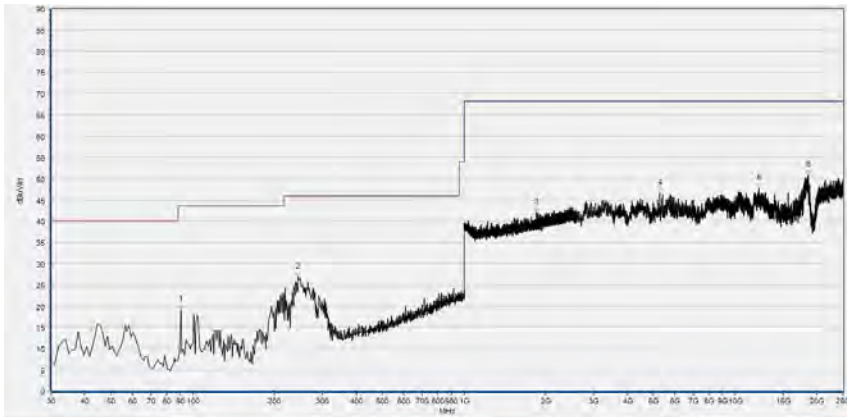


(Antenna Horizontal, 30MHz to 25GHz)



(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
90.200	19.17	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
244.585	26.76	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1849.350	42.01	41.29	N/A	68.23	N/A	N/A	Horizontal	PASS
5275.095	46.66	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12242.889	47.77	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18583.357	50.71	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

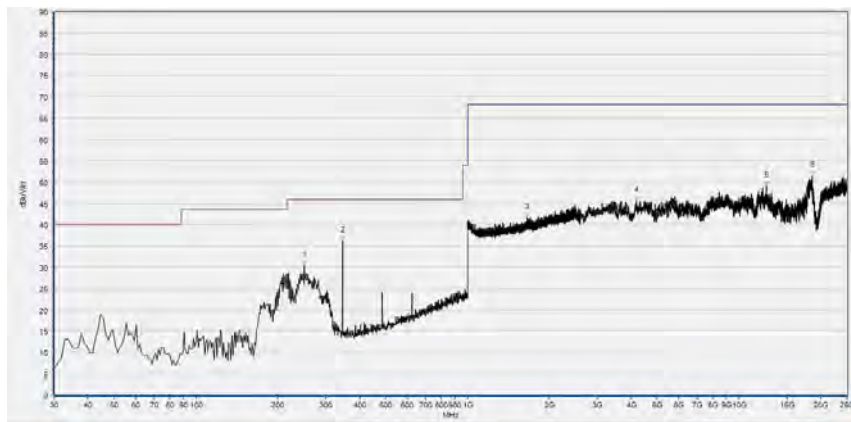
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	24.82	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
239.730	25.98	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1433.211	41.06	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4486.457	45.73	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11781.356	48.06	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18475.815	52.27	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

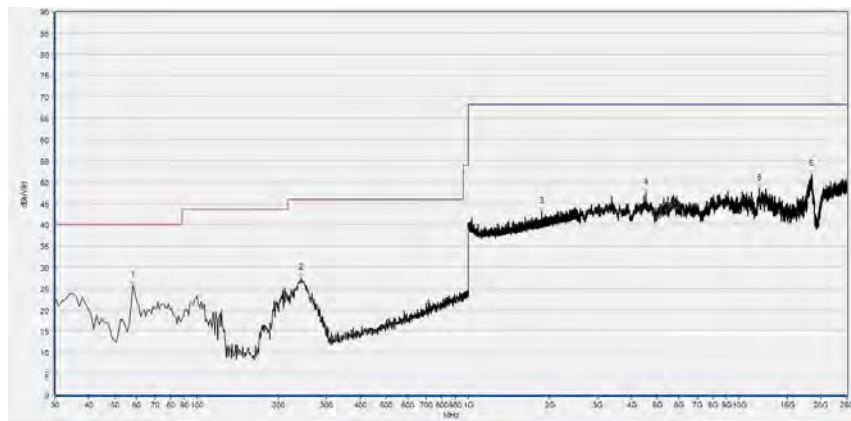
(Antenna Vertical, 30MHz to 25GHz)

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
250.410	30.53	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
346.537	36.15	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1660.487	41.72	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4181.756	45.60	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12628.246	49.15	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18565.433	51.44	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

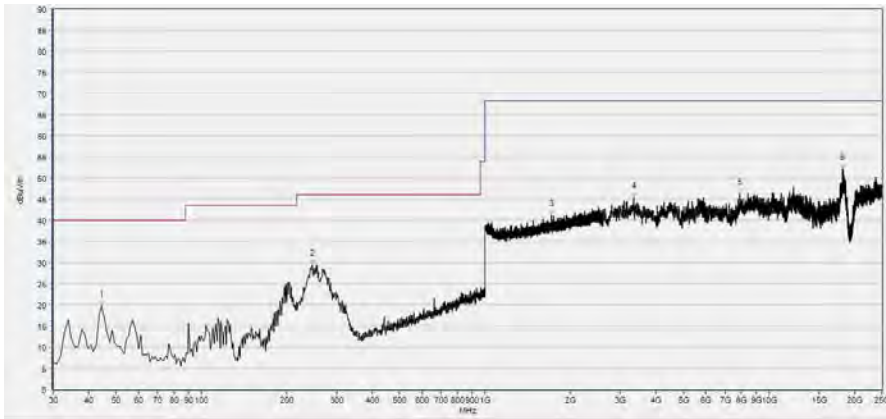


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
58.158	25.84	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
242.643	27.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1870.157	43.06	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4522.304	47.42	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11866.493	48.37	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18511.662	51.76	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

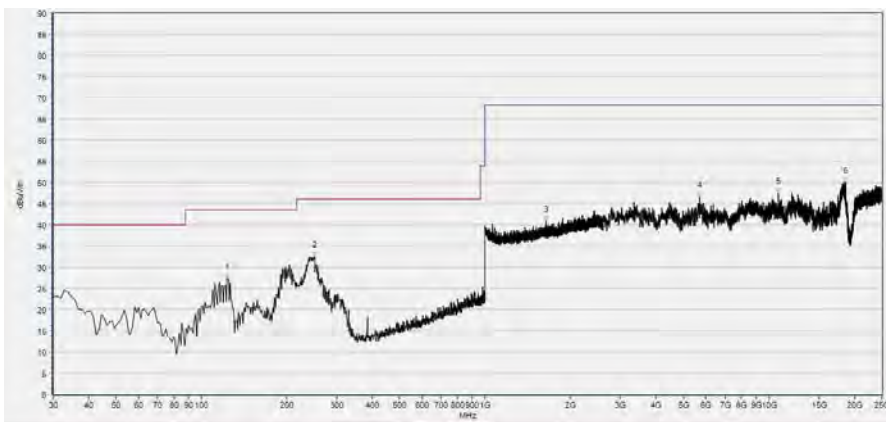


Plots for Channel = 52



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
44.565	19.56	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
245.556	29.42	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1711.170	41.30	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3330.386	45.30	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
7909.862	46.30	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18198.000	52.14	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

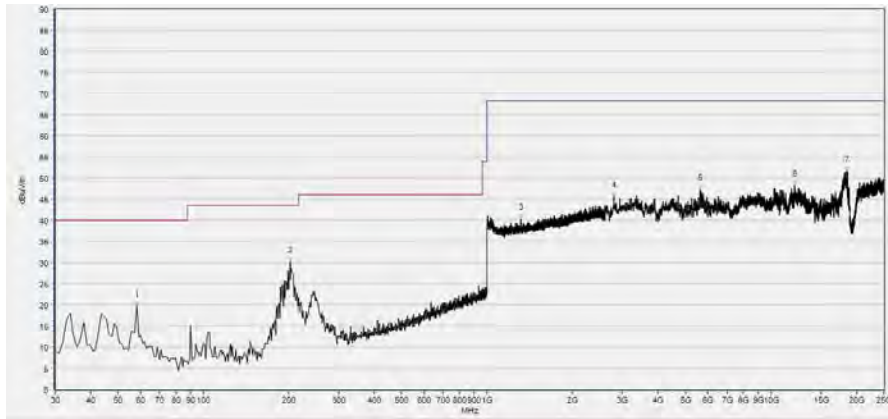
(Antenna Horizontal, 30MHz to 25GHz)



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
123.213	27.31	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
250.410	32.54	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1642.881	40.81	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5709.742	46.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10817.964	47.49	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18569.914	50.08	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

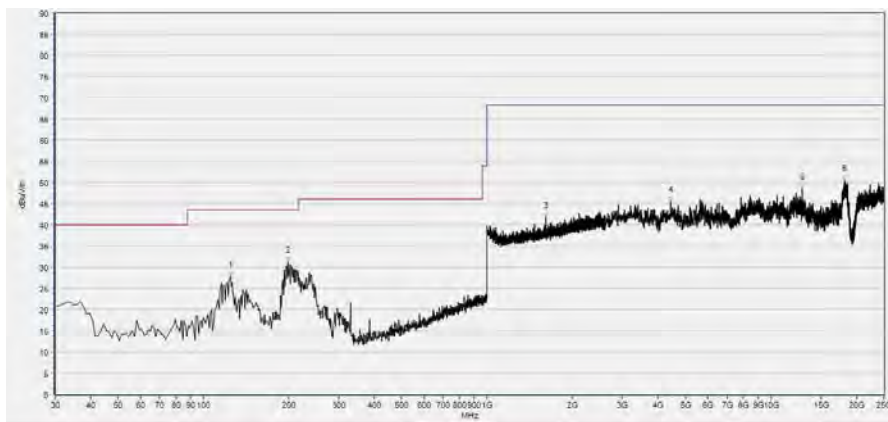
(Antenna Vertical, 30MHz to 25GHz)

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
58.158	19.68	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
201.862	30.12	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1313.171	40.42	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
2792.679	45.62	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5629.086	47.26	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12135.347	48.19	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

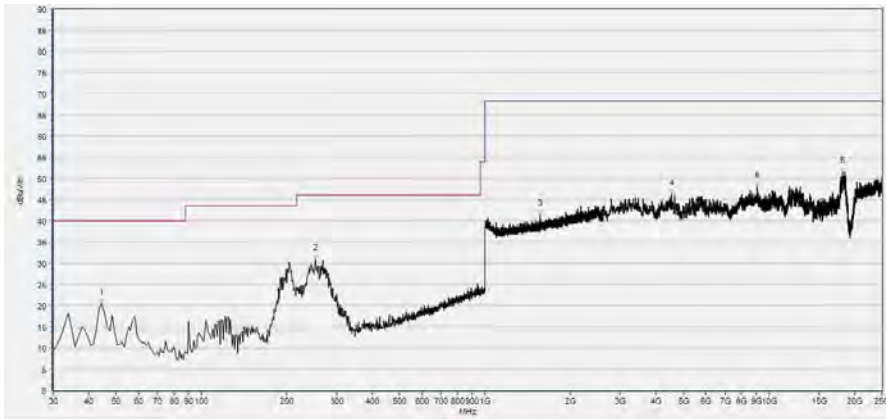
(Antenna Horizontal, 30MHz to 25GHz)



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
124.184	27.91	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.978	31.18	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1612.471	41.75	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4432.687	45.46	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12906.061	48.50	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18144.229	50.48	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

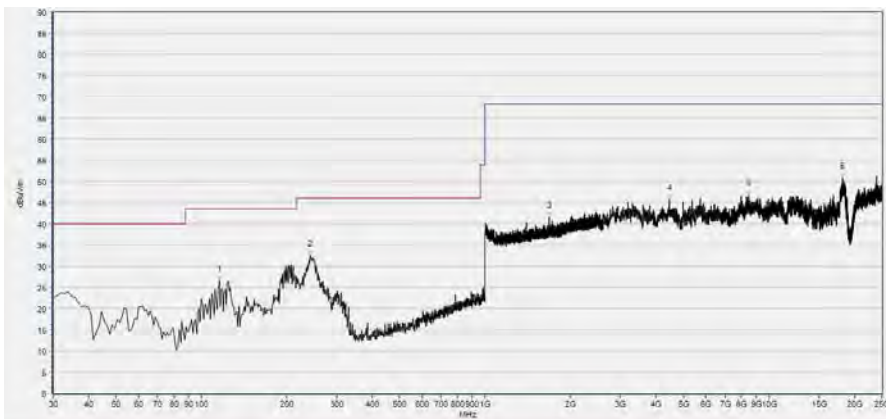
(Antenna Vertical, 30MHz to 25GHz)

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
44.565	20.42	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
252.352	30.93	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1562.321	41.42	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4526.785	46.22	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9101.780	48.12	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18130.786	51.36	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

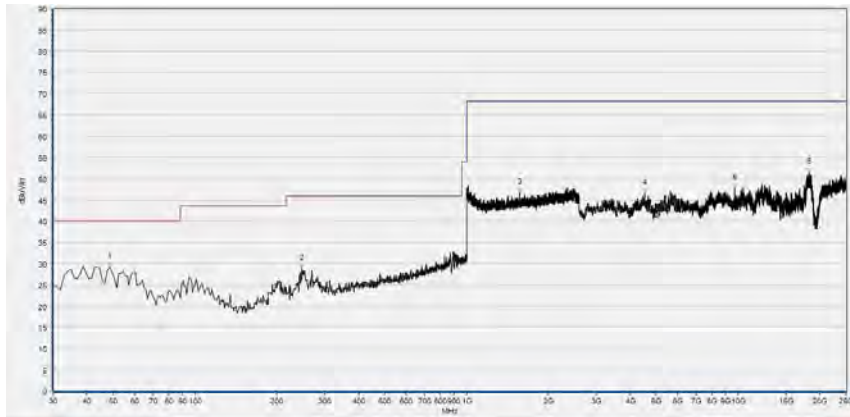
(Antenna Horizontal, 30MHz to 25GHz)



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
115.445	26.63	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
241.672	32.50	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1683.428	41.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4450.610	45.75	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8496.859	46.76	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18202.480	50.92	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

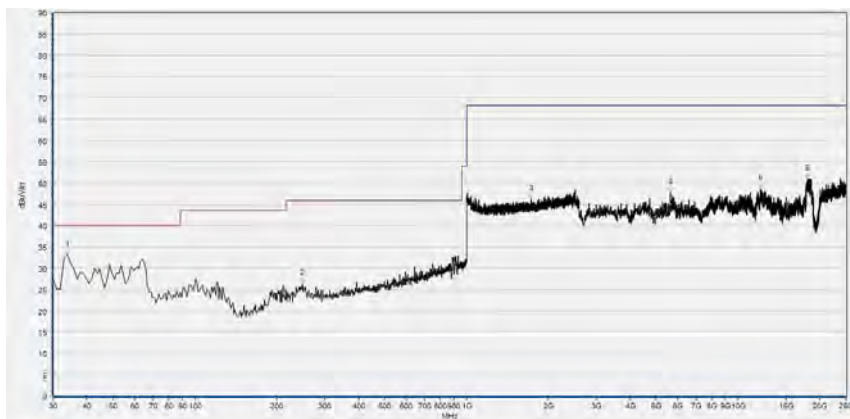
(Antenna Vertical, 30MHz to 25GHz)

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
48.448	29.18	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
247.497	28.86	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1568.723	46.82	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4526.785	46.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9706.701	47.80	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18220.404	51.38	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

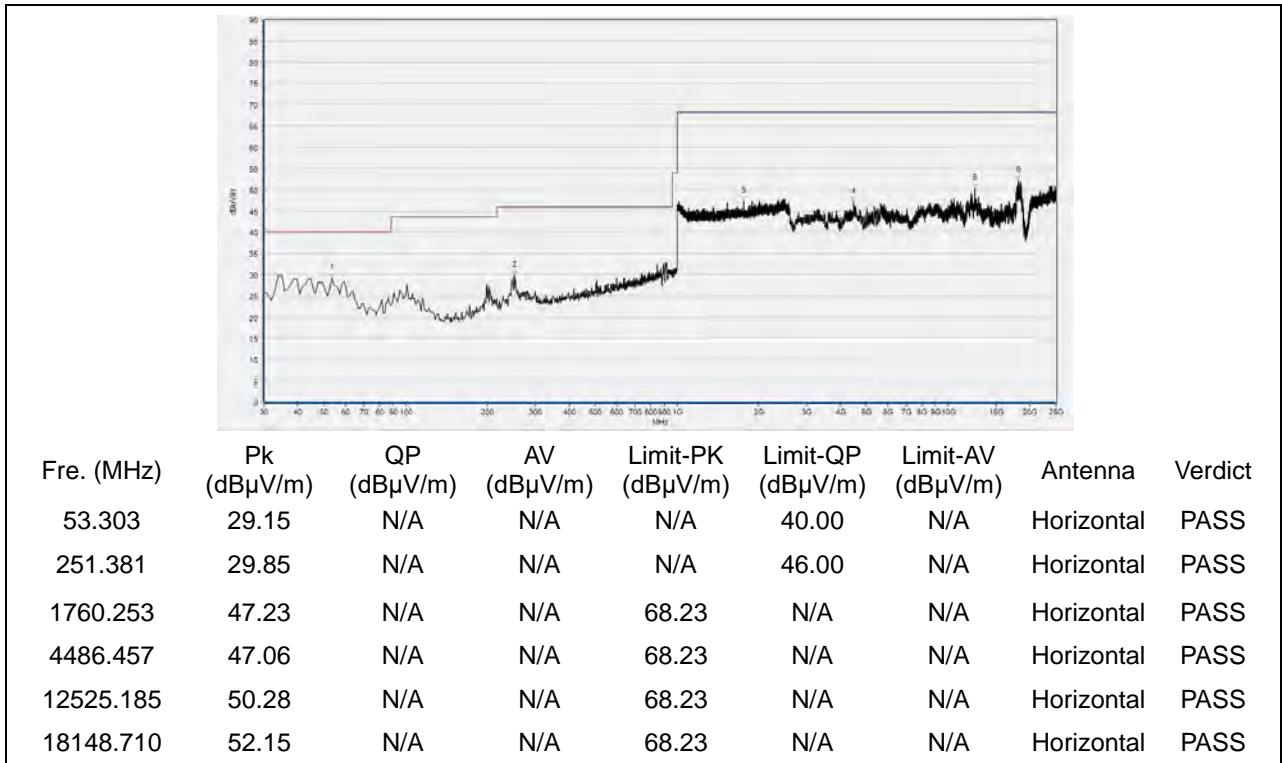
(Antenna Horizontal, 30MHz to 25GHz)



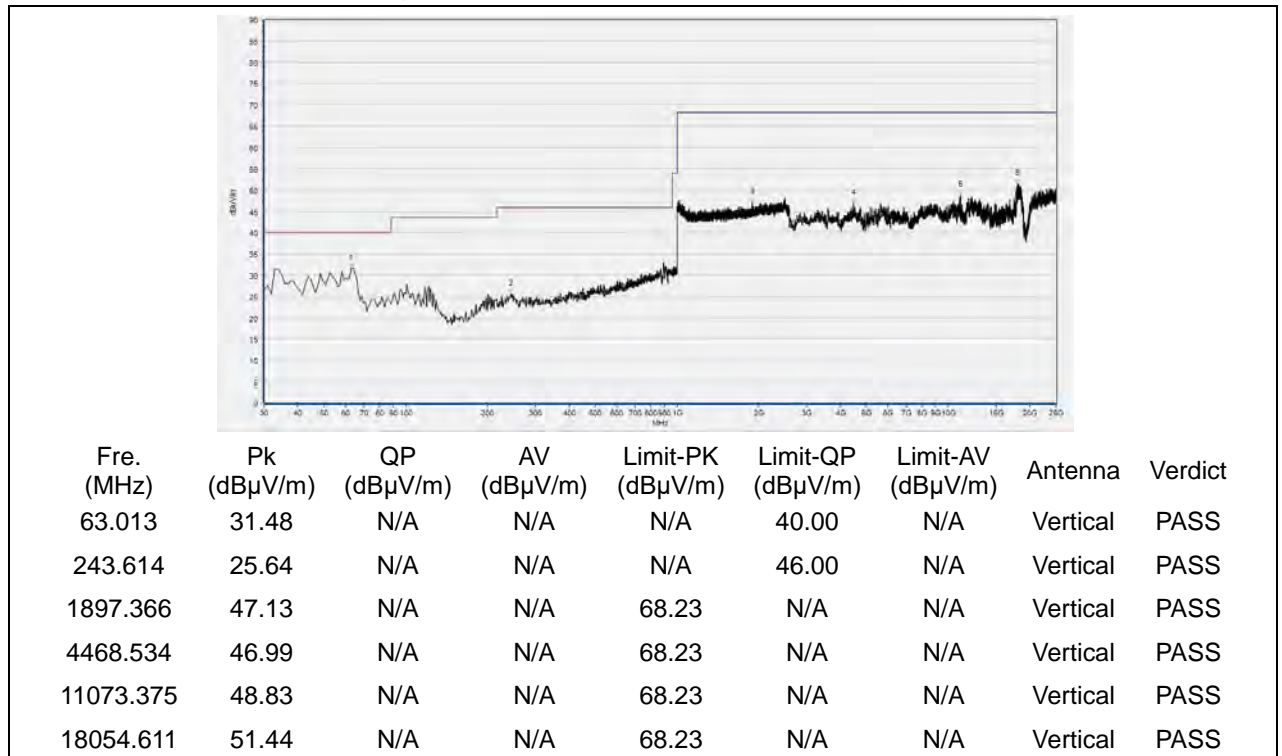
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
33.884	33.15	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
248.468	26.29	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1728.243	46.30	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5624.605	47.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12068.134	48.53	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
17978.436	50.96	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 120

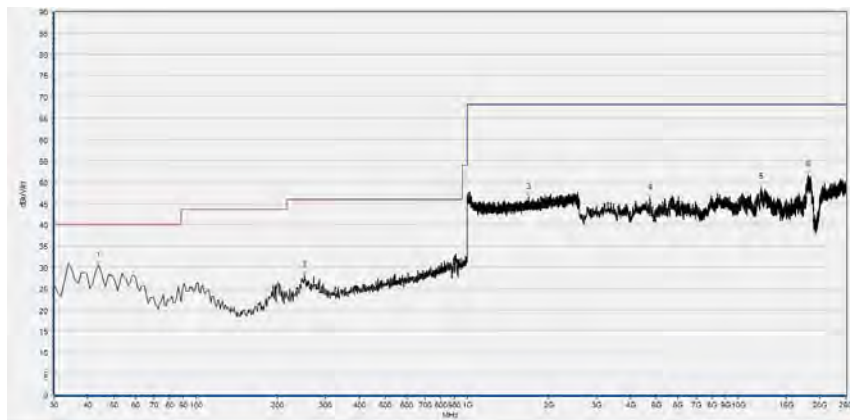


(Antenna Horizontal, 30MHz to 25GHz)



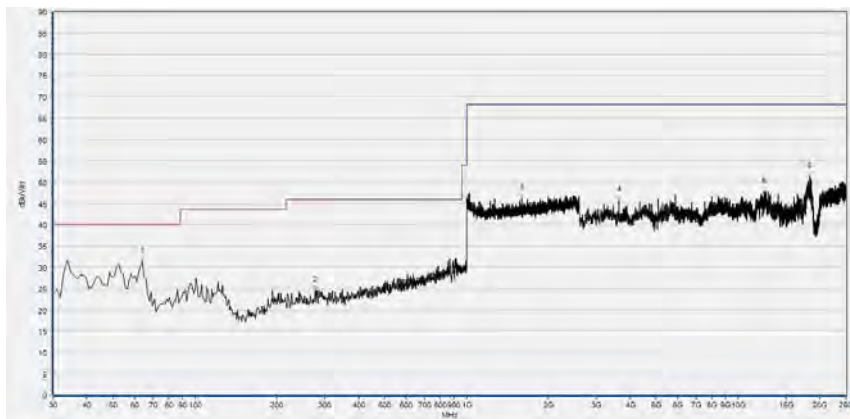
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 144



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
43.594	30.45	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
251.381	28.22	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1687.162	46.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4719.464	46.28	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12157.752	48.79	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18157.672	51.68	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

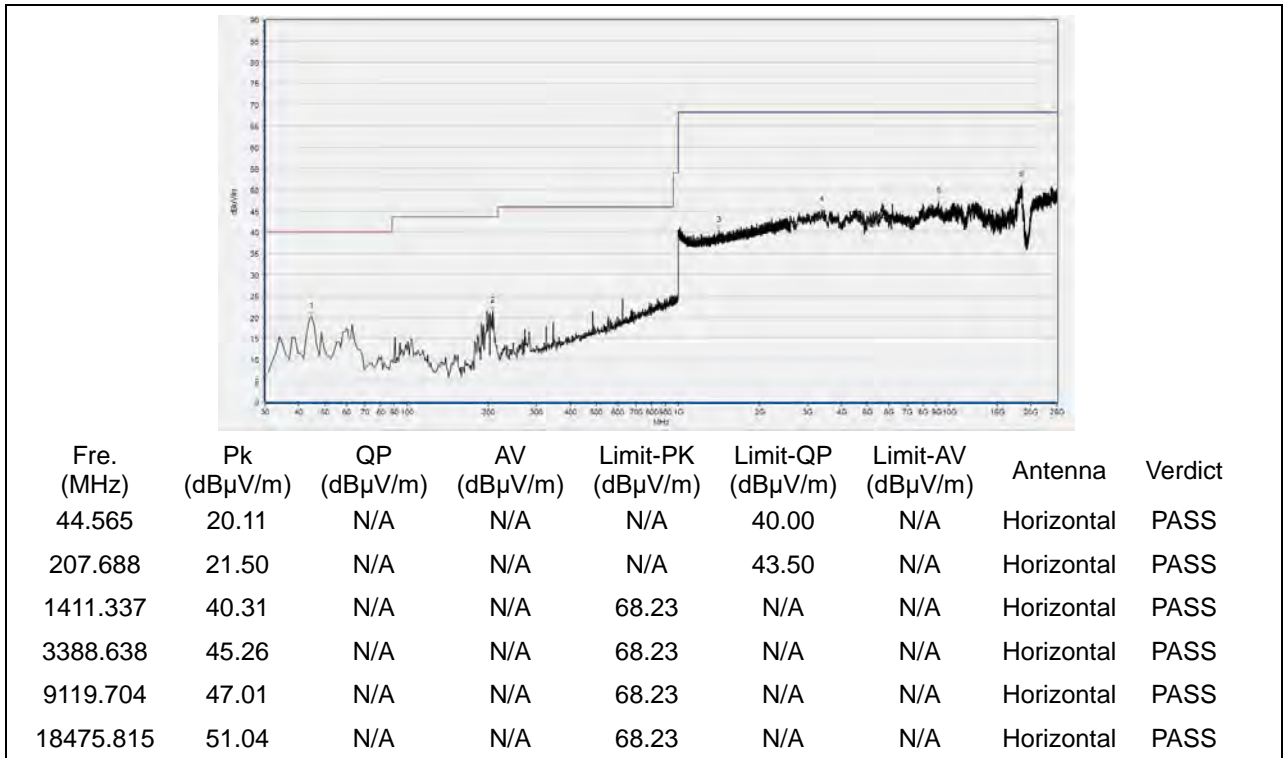


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
63.984	31.36	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
276.627	24.68	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1599.133	46.21	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
3644.049	45.75	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12489.338	47.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18408.602	51.35	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

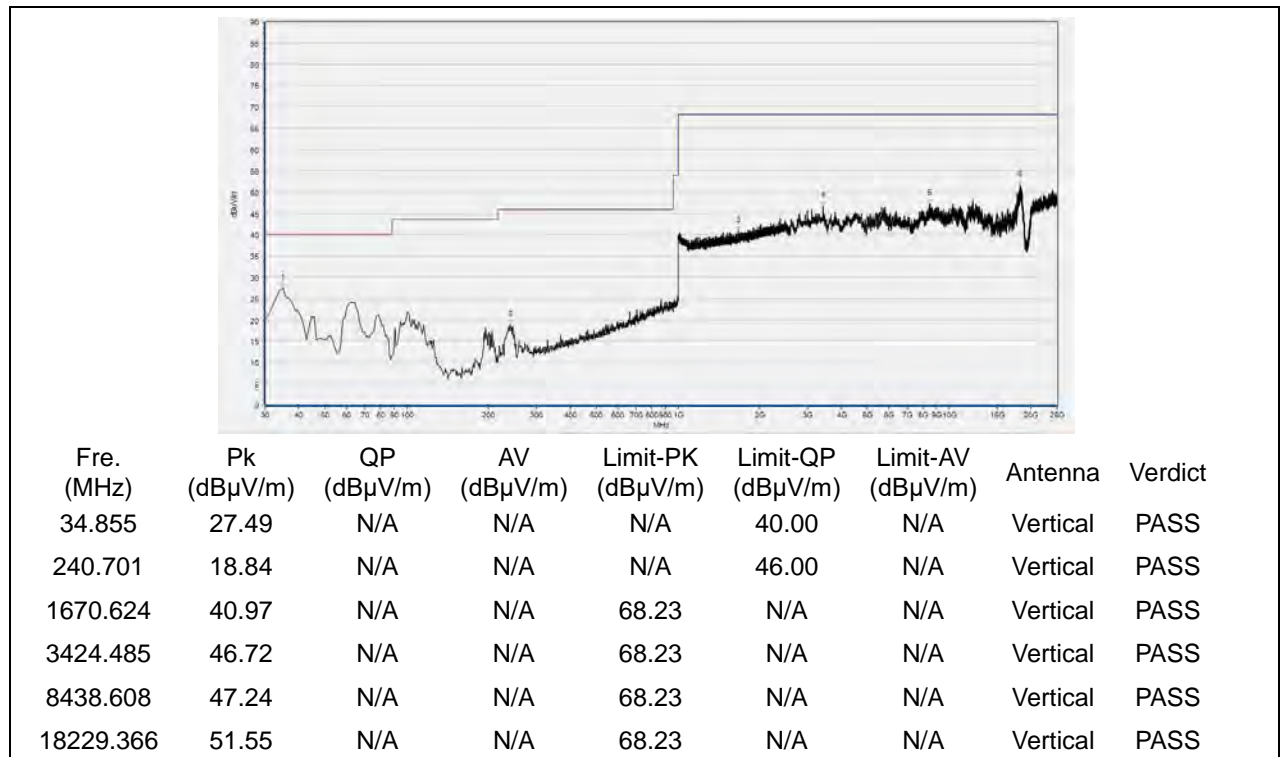
(Antenna Vertical, 30MHz to 25GHz)



Plots for Channel = 149

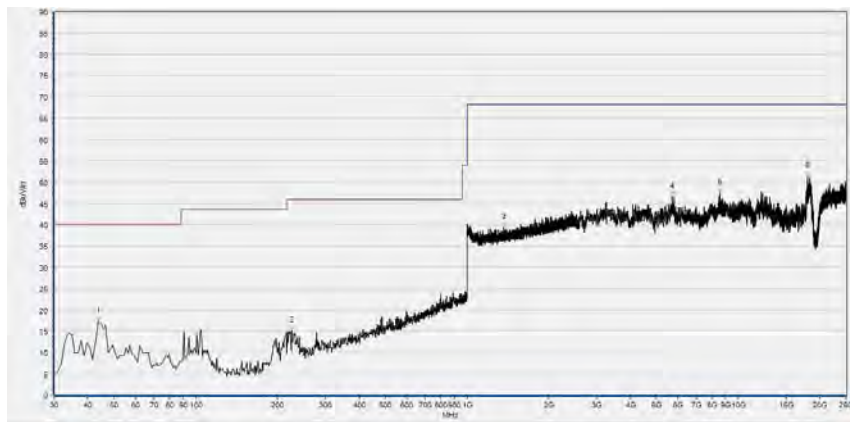


(Antenna Horizontal, 30MHz to 25GHz)



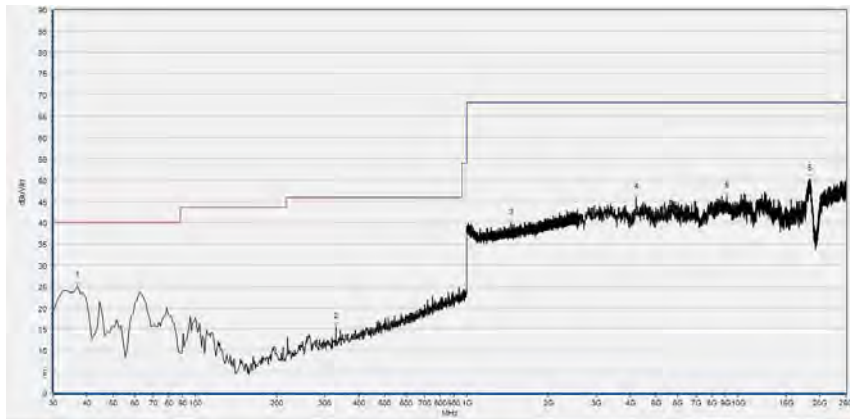
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 157



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
43.594	17.29	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
226.136	15.04	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1363.321	39.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5714.223	46.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8550.630	47.42	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18014.283	51.34	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

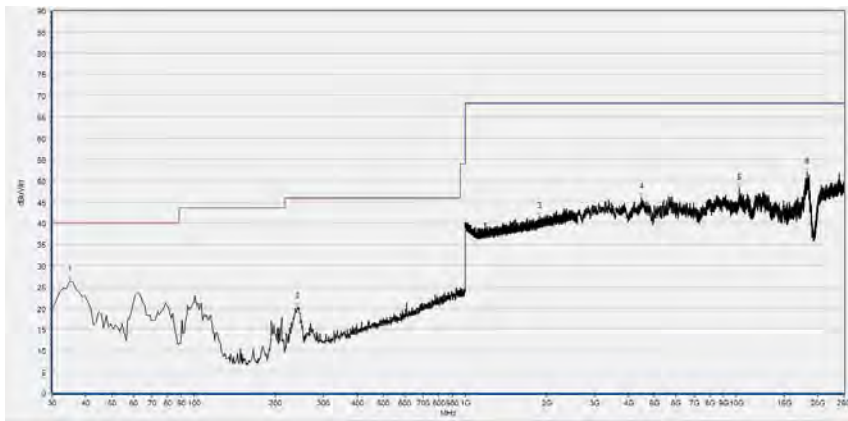


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
36.797	25.15	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
330.030	15.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1459.887	39.90	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4204.161	46.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9106.261	46.20	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18310.022	50.26	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

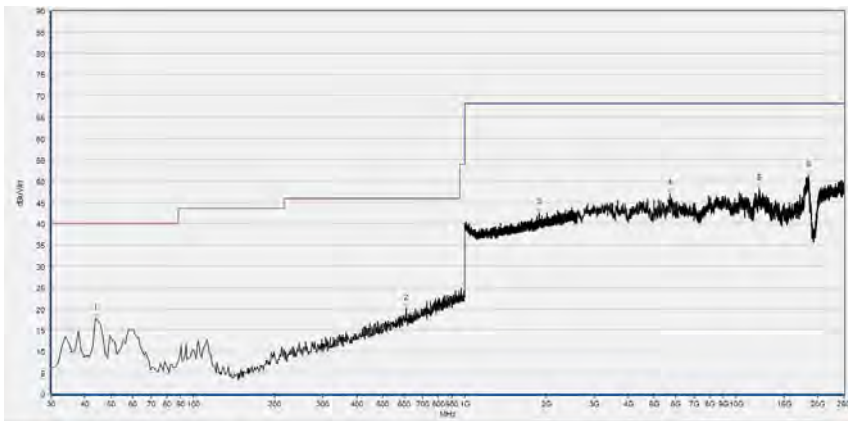


Plot for Channel = 165



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	26.43	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
240.701	20.24	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1877.626	41.50	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4473.015	46.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10284.737	48.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18220.404	52.01	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



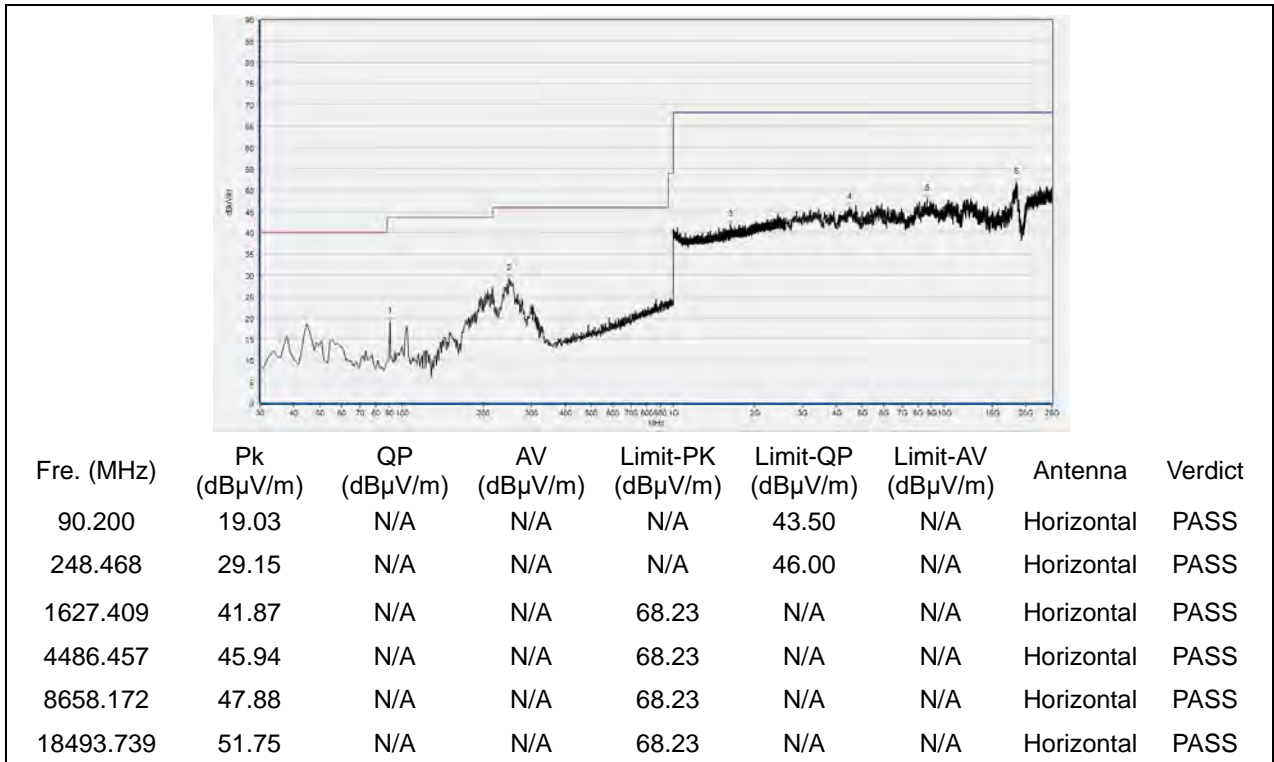
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.594	17.78	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
610.641	20.11	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1879.760	42.51	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5714.223	47.16	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12153.271	48.31	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18417.564	51.26	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

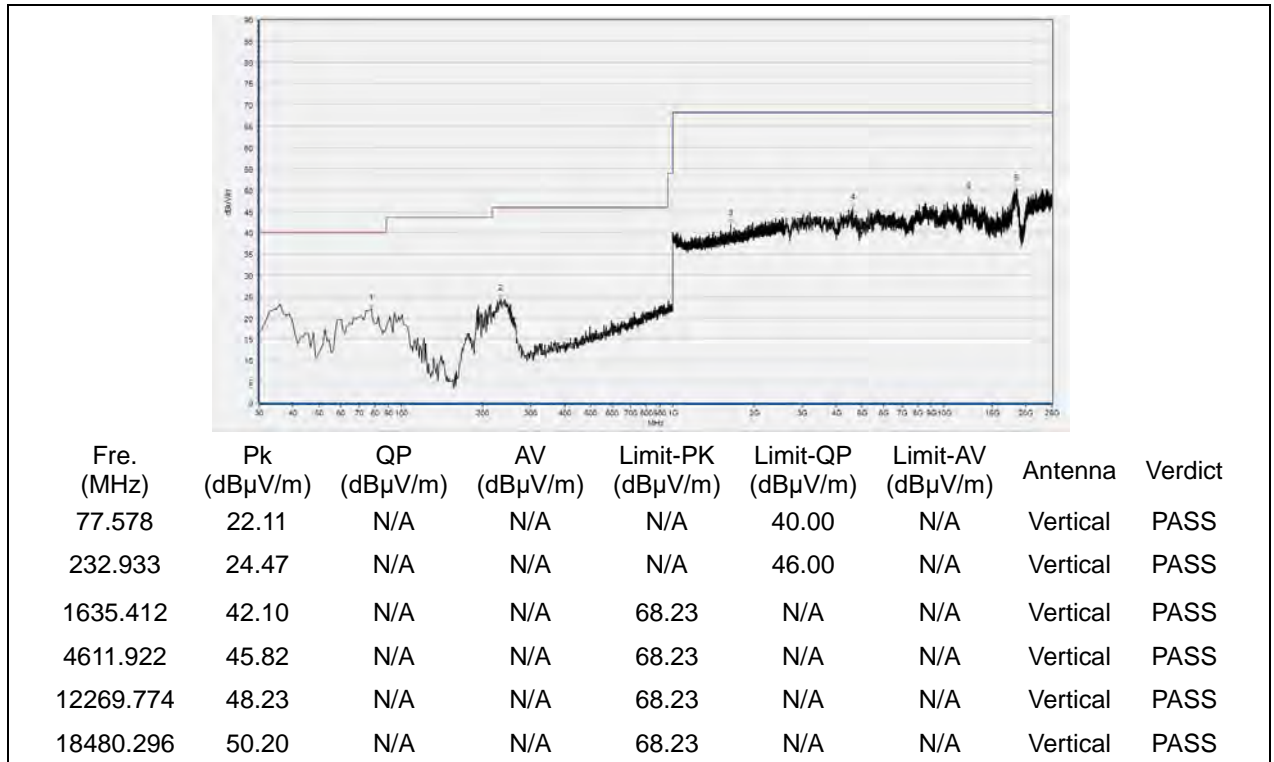


**802.11n (HT40) Test mode**

Plots for Channel = 38

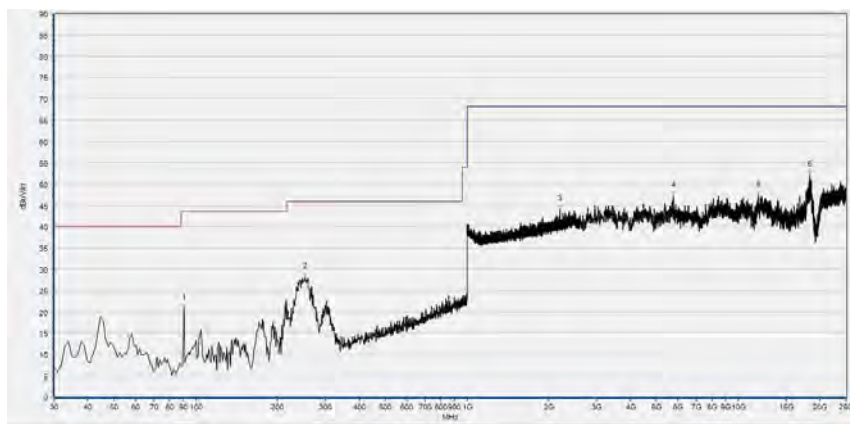


(Antenna Horizontal, 30MHz to 25GHz)



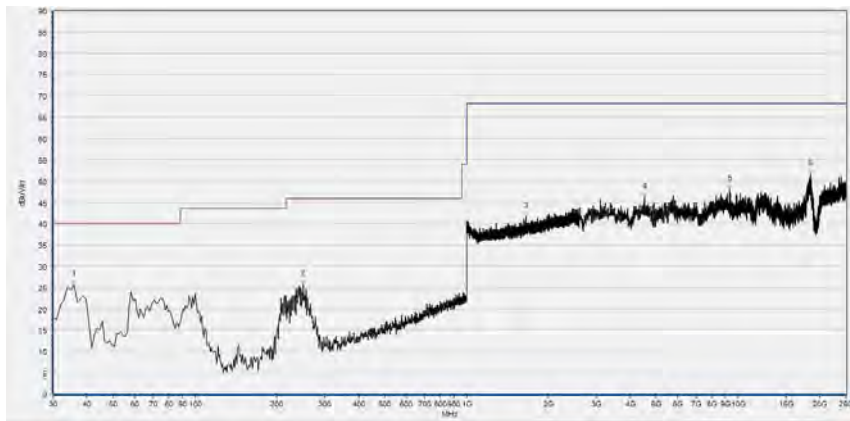
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 46



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
90.200	20.75	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
253.323	28.22	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2197.733	44.00	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5772.474	47.28	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11862.012	47.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18305.541	52.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

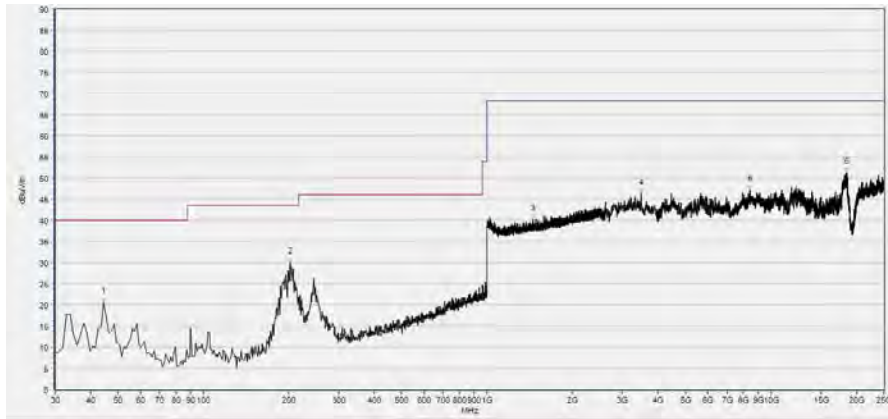
(Antenna Horizontal, 30MHz to 25GHz)



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
35.826	25.71	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
250.410	25.76	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1656.752	41.79	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4517.824	46.19	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9325.825	48.12	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18453.411	51.66	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

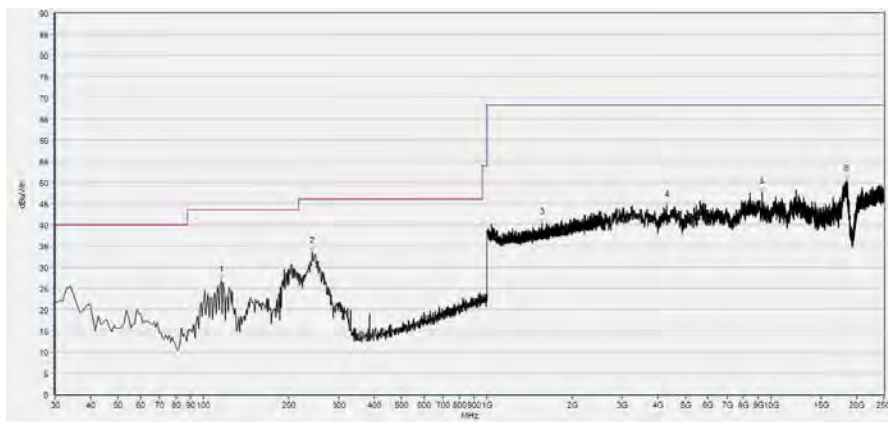
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 54



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
44.565	20.62	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
201.862	30.02	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1446.015	40.20	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3487.217	46.23	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8434.127	47.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18484.777	51.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

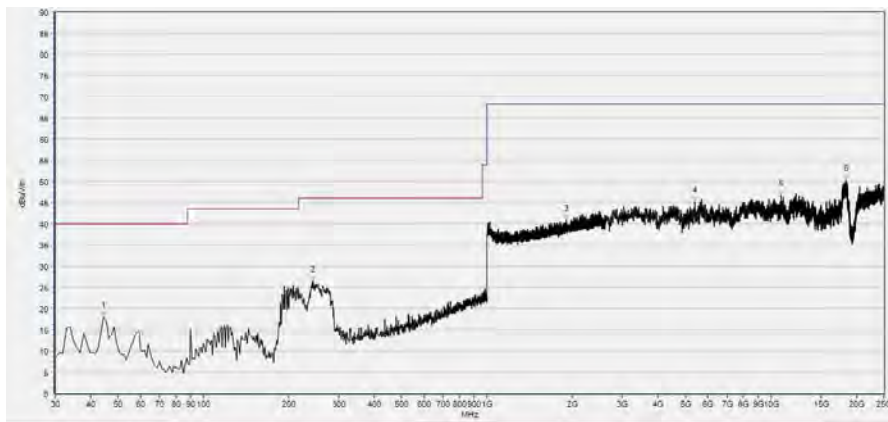
(Antenna Horizontal, 30MHz to 25GHz)



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
115.445	26.78	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
241.672	33.64	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1562.854	40.33	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4284.817	44.38	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9307.902	47.59	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18516.143	50.53	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

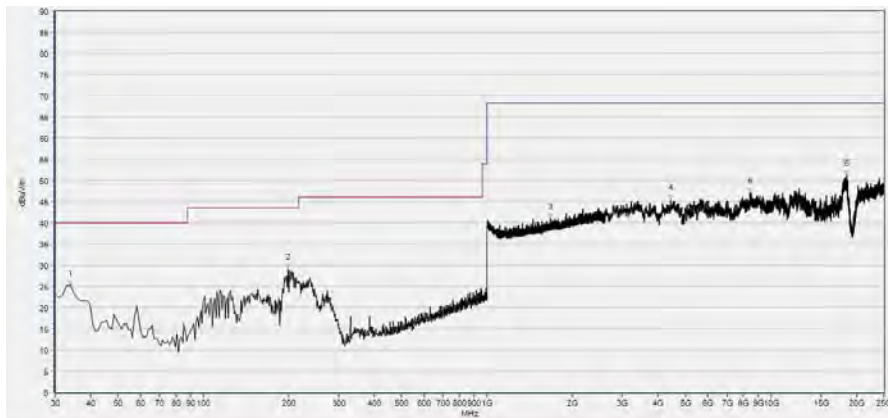
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 62



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
44.565	17.95	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
243.614	26.37	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1903.768	40.87	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5391.598	45.17	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10831.406	46.83	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18413.083	50.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

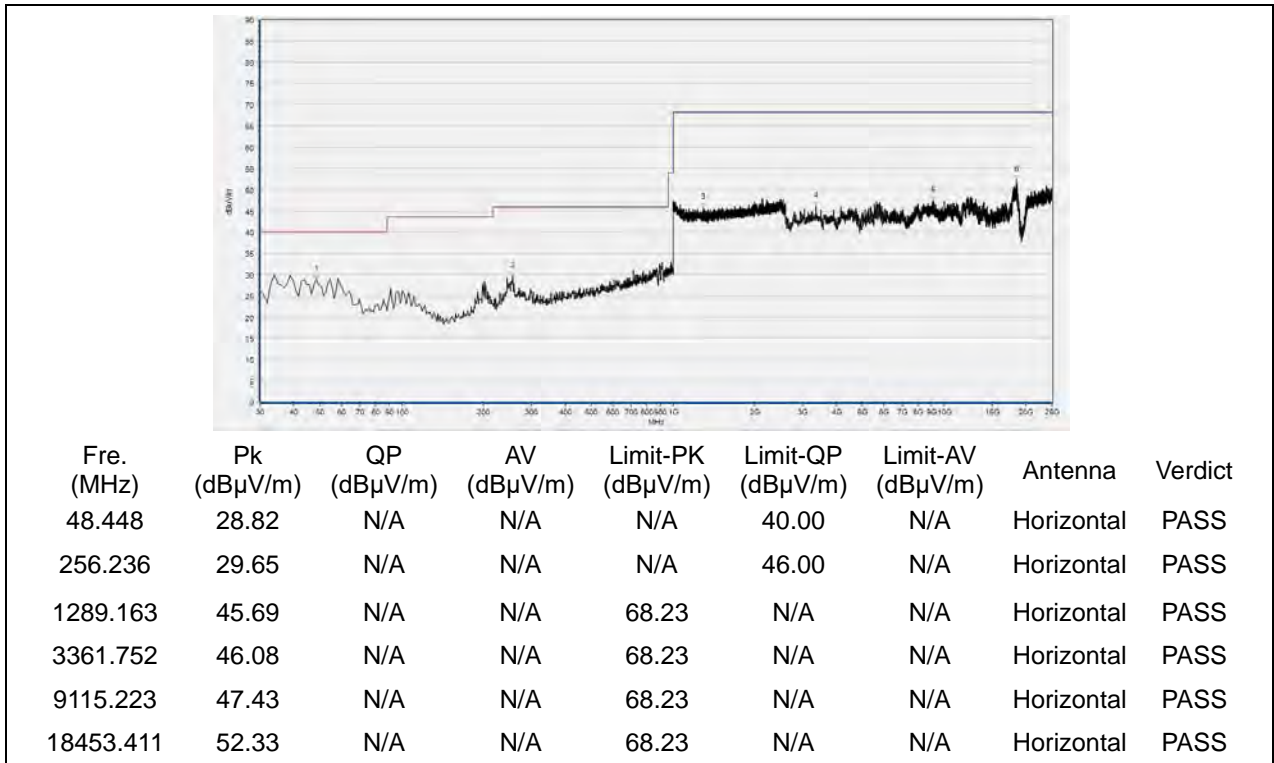
(Antenna Horizontal, 30MHz to 25GHz)



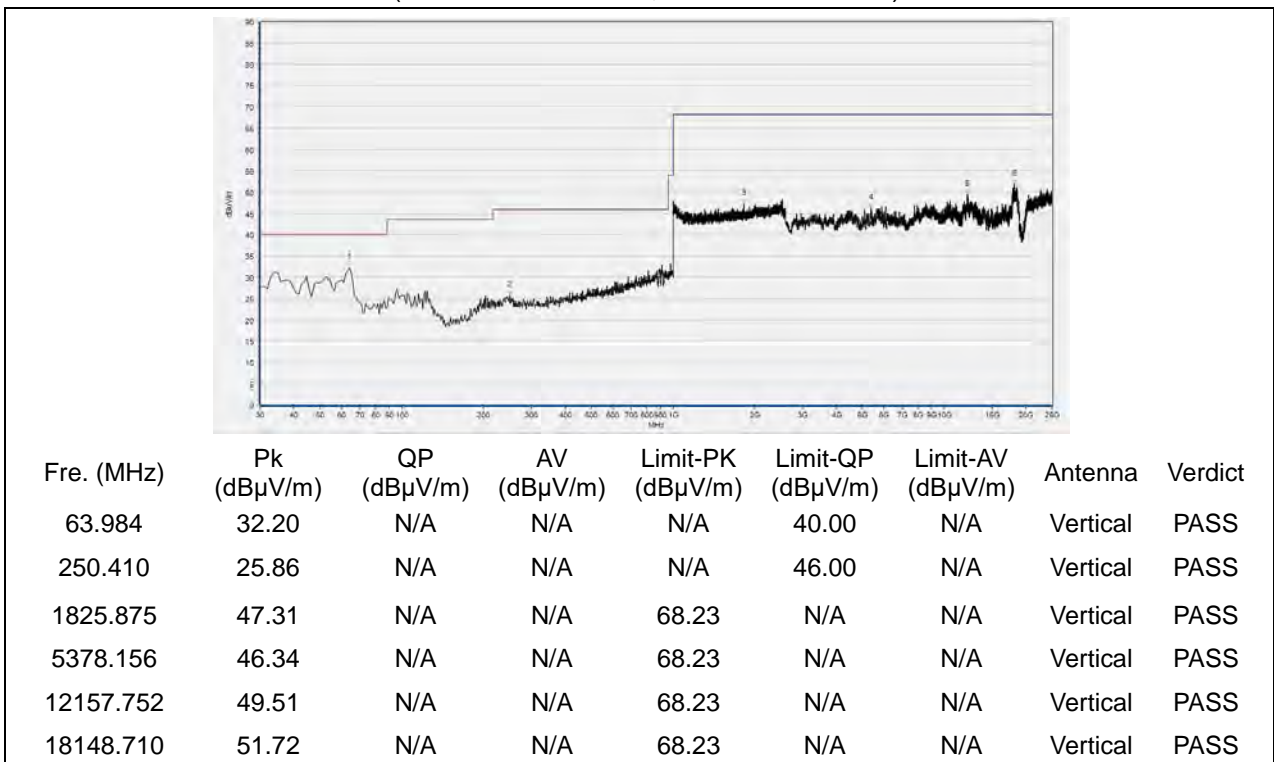
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	25.32	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
198.949	29.20	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1666.889	41.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4428.206	45.59	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8438.608	47.10	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18471.334	51.25	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 102

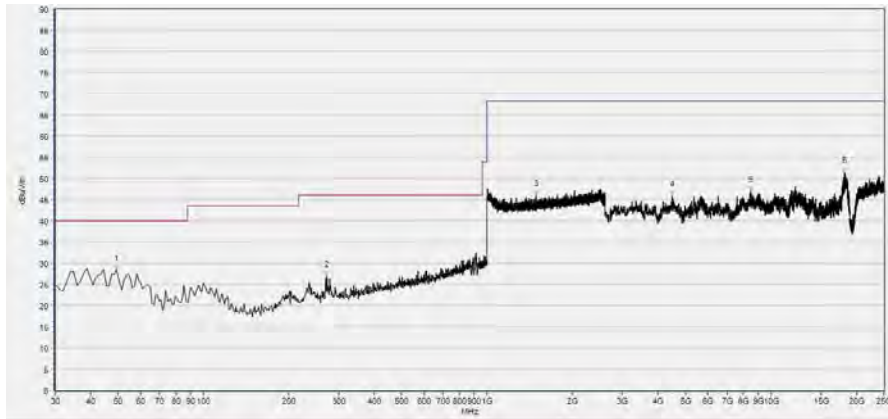


(Antenna Horizontal, 30MHz to 25GHz)



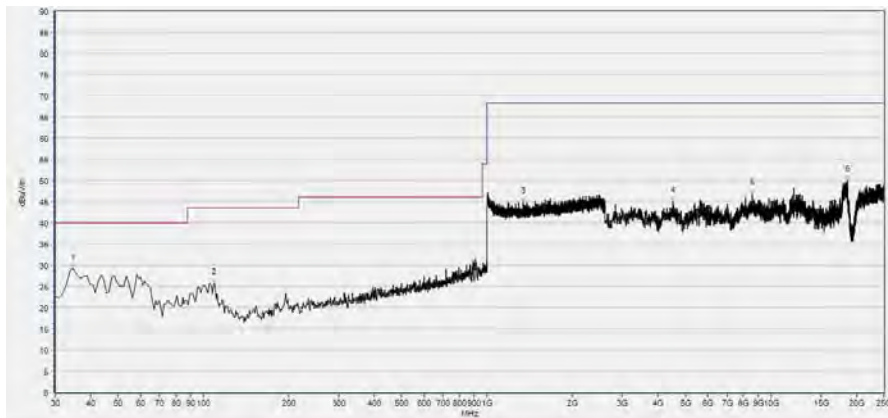
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 126



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	28.45	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
271.772	27.04	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1485.495	46.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4490.938	45.81	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8483.417	47.00	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18211.442	51.38	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

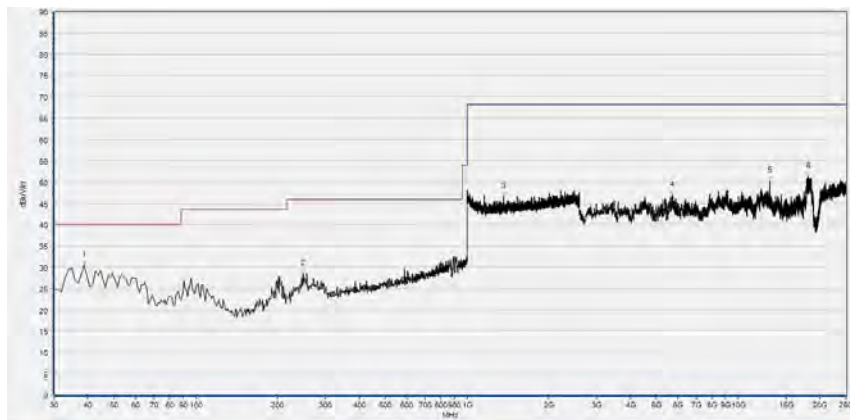
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.20	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
108.649	25.73	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1338.780	44.80	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4504.381	44.95	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8581.996	46.83	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18574.395	49.92	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

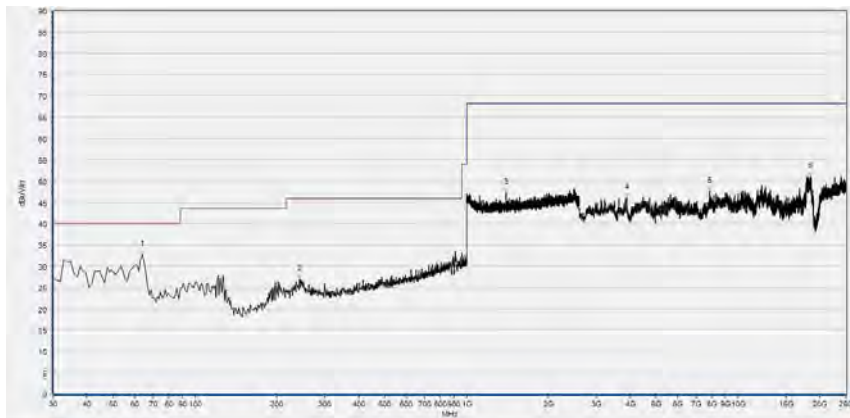
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 142



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
38.739	30.48	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
248.468	28.52	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1363.321	46.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5714.223	46.89	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13062.893	50.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18130.786	51.23	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

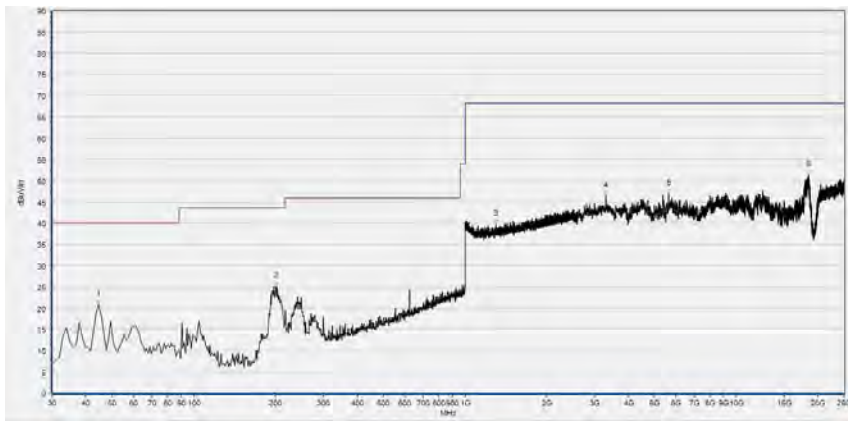


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
63.984	32.71	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
242.643	26.93	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1394.798	47.22	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
3890.498	46.08	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
7869.534	47.61	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18462.372	51.13	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

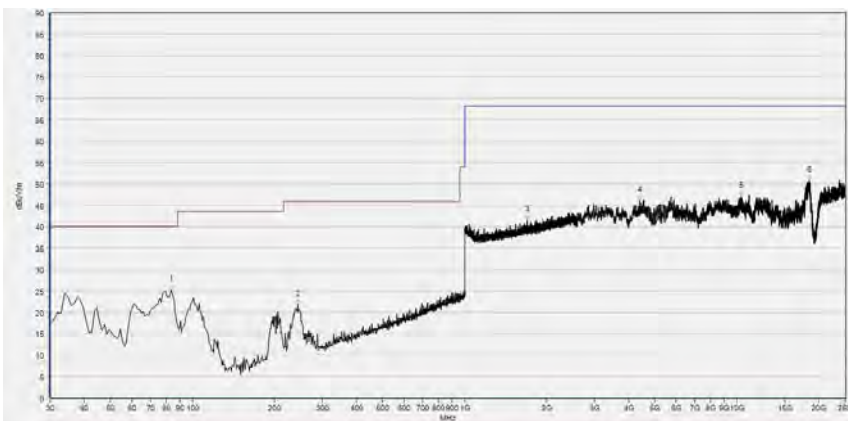


Plot for Channel = 151



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
44.565	20.80	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
200.891	25.17	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1297.166	39.72	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3312.462	46.34	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5629.086	46.89	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18422.044	51.28	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

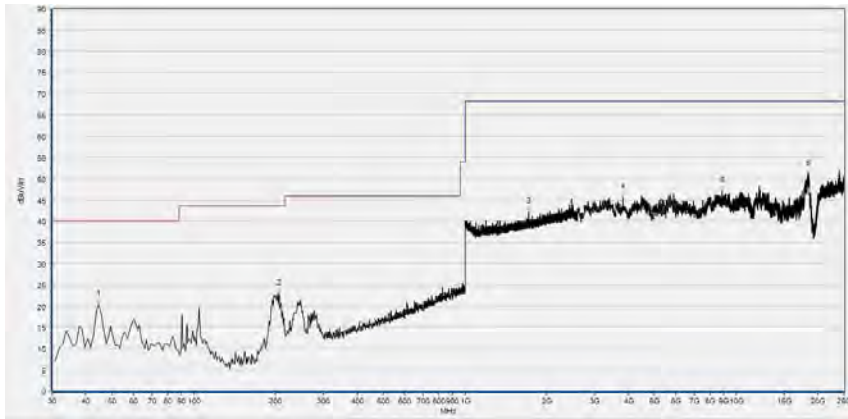
(Antenna Horizontal, 30MHz to 25GHz)



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
83.403	25.13	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
243.614	21.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1699.433	41.49	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4383.397	46.15	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10401.240	47.05	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18431.006	50.73	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

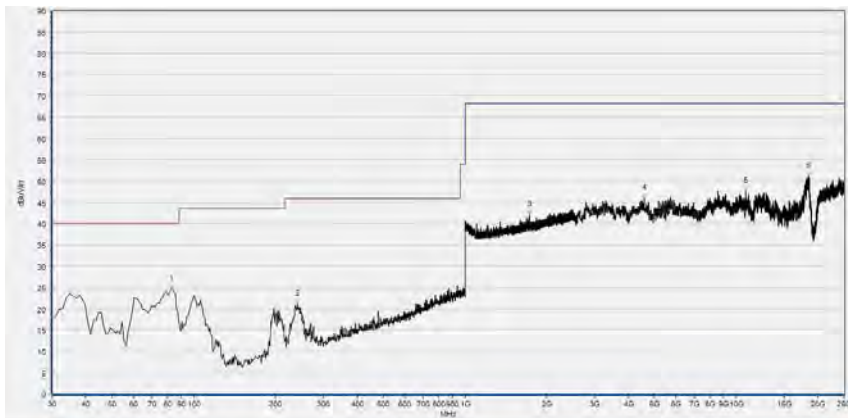
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 159



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
44.565	20.53	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
205.746	23.03	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1719.173	42.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3809.842	45.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8886.697	47.06	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
18422.044	51.08	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
82.432	24.67	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
240.701	21.07	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1728.243	41.99	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4571.594	45.96	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10813.483	47.64	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
18471.334	51.15	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)



## **2.9. Automatically discontinue transmission requirement**

### **2.9.1. Requirement**

According to 15.407(c), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met

### **2.9.2. Result**

The EUT will automatically discontinue transmission in case of either absence of information to transmit or operational failure.



## Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Peak Output Power	$\pm 2.22\text{dB}$
Power spectral density (PSD)	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Restricted Frequency Bands	$\pm 5\%$
Radiated Emission	$\pm 2.95\text{dB}$
Conducted Emission	$\pm 2.44\text{dB}$

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

<b>Company Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd.
<b>Department:</b>	Morlab Laboratory
<b>Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China
<b>Responsible Test Lab Manager:</b>	Mr. Su Feng
<b>Telephone:</b>	+86 755 36698555
<b>Facsimile:</b>	+86 755 36698525

### 2. Identification of the Responsible Testing Location

<b>Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
<b>Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192.



#### 4. Test Equipments Utilized

##### 4.1 Conducted Test Equipments

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2017.05.24	2018.05.23
Attenuator 1	(N/A)	10dB	Resnet	2017.05.24	2018.05.23
Attenuator 2	(N/A)	3dB	Resnet	2017.05.24	2018.05.23
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2017.05.24	2018.05.23
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2017.05.24	2018.05.23

##### 4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY56400093	N9038A	KEYSIGHT	2017.07.13	2018.07.12
LISN	812744	NSLK 8127	Schwarzbeck	2018.05.08	2019.05.07
Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2018.05.08	2019.05.07
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

##### 4.3 Auxiliary Test Equipment

Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal. Due
Computer	T430i	Think Pad	Lenovo	N/A	N/A

**4.4 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY54130016	N9038A	Agilent	2018.05.08	2019.05.07
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.05.08	2019.05.07
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2017.09.13	2018.09.12
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2017.09.13	2018.09.12
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
26GHz -40GHz pre-Amplifier	MA05	BBV9721	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT