



2.8.3. 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.

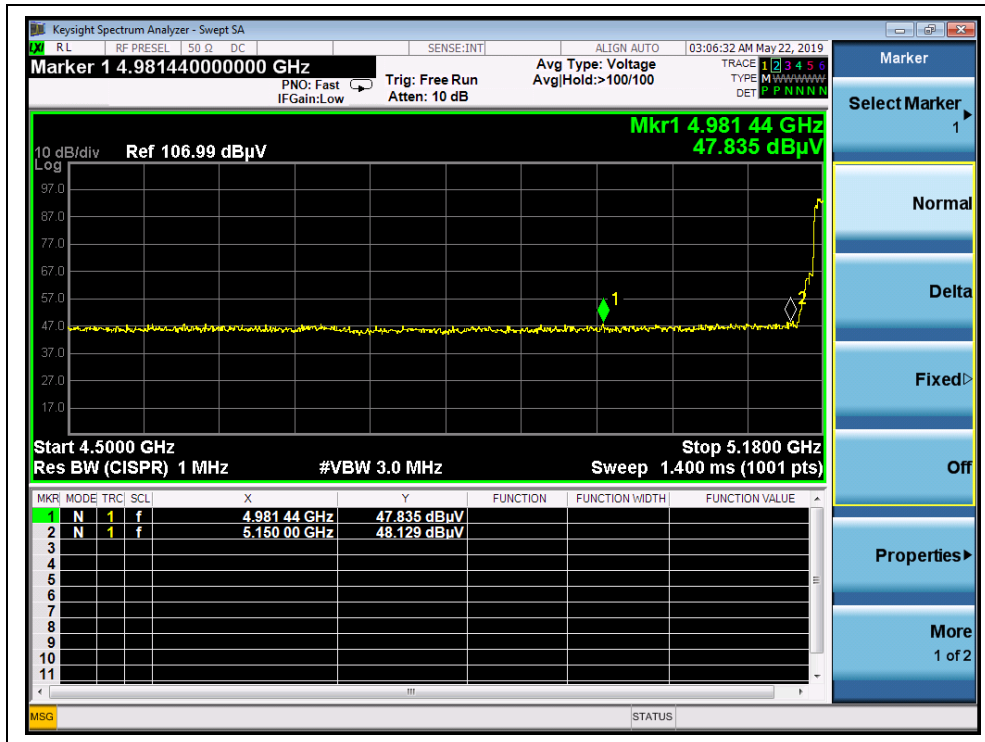
802.11a Test mode

A. Test Verdict:

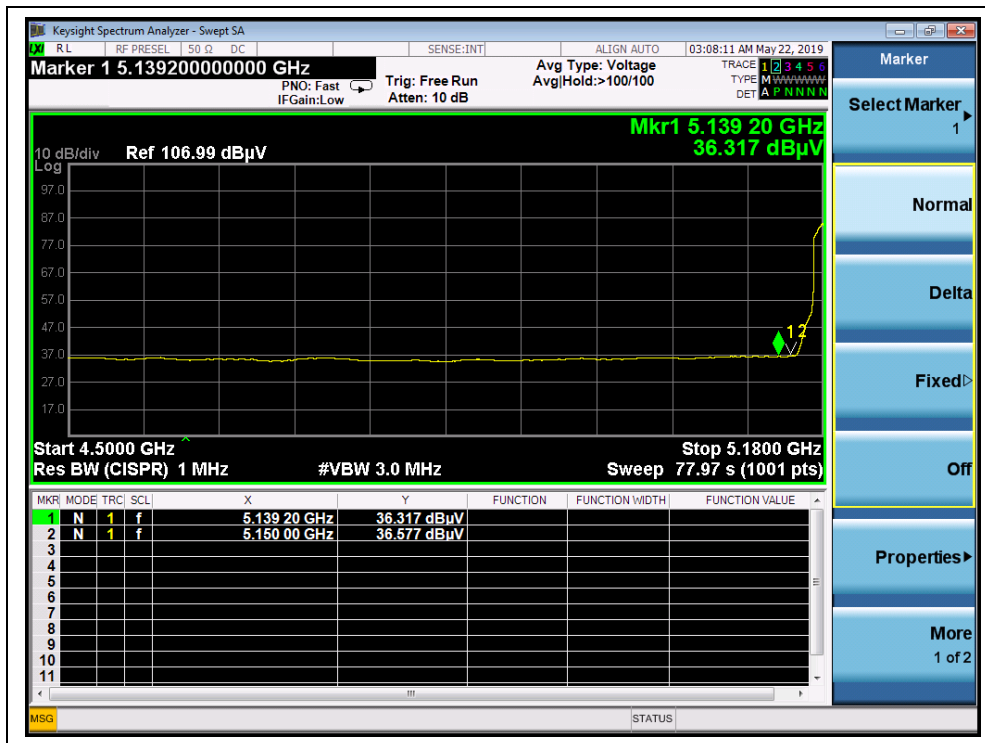
Channel	Frequency (MHz)	Detector	Receiver Reading	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dBuV)					
36	5151.00	PK	48.13	-26.92	32.20	53.41	68.23	PASS
36	5150.00	AV	36.58	-26.92	32.20	41.86	54	PASS
64	5350.58	PK	45.88	-26.80	32.20	51.28	74	PASS
64	5350.00	AV	34.67	-26.80	32.20	40.07	54	PASS
100	5168.50	PK	48.29	-26.64	32.20	53.85	68.23	PASS
100	5470.00	AV	34.92	-26.64	32.20	40.48	54	PASS
144	5733.10	PK	46.63	-26.64	32.20	52.19	68.23	PASS
144	5725.00	AV	36.50	-26.64	32.20	42.06	54	PASS
149	5725.00	PK	51.56	-26.23	32.20	57.53	122.23	PASS
149	5725.00	AV	39.98	-26.23	32.20	45.95	54	PASS
165	5858.30	PK	47.37	-26.23	32.20	53.34	101.59	PASS
165	5850.00	AV	36.64	-26.23	32.20	42.61	54	PASS



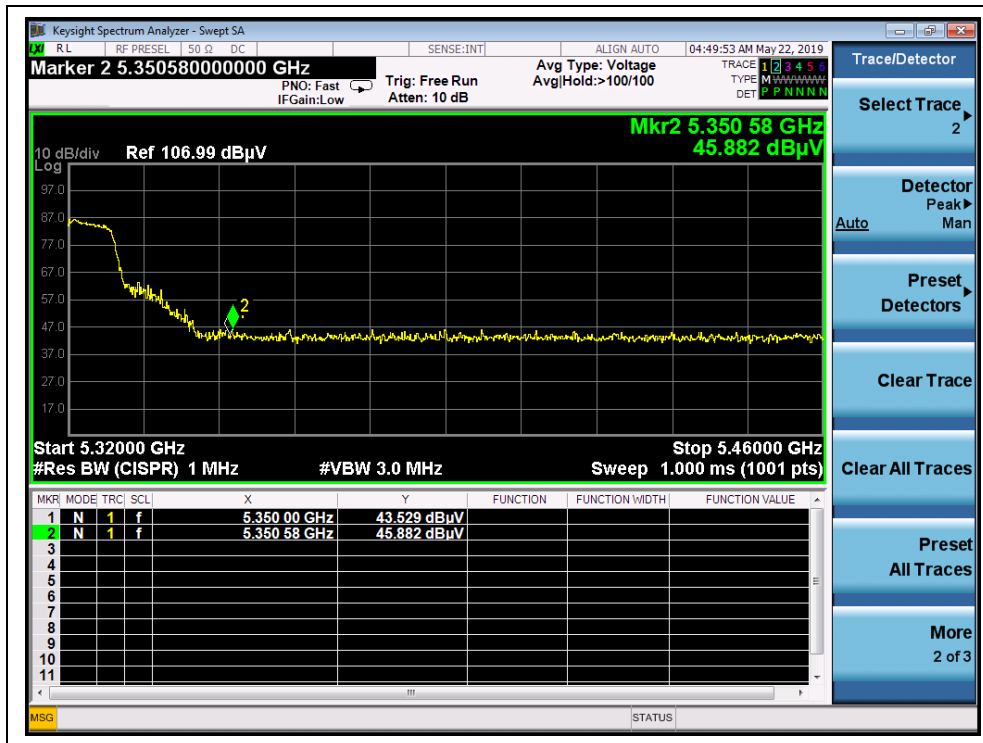
B. Test Plots:



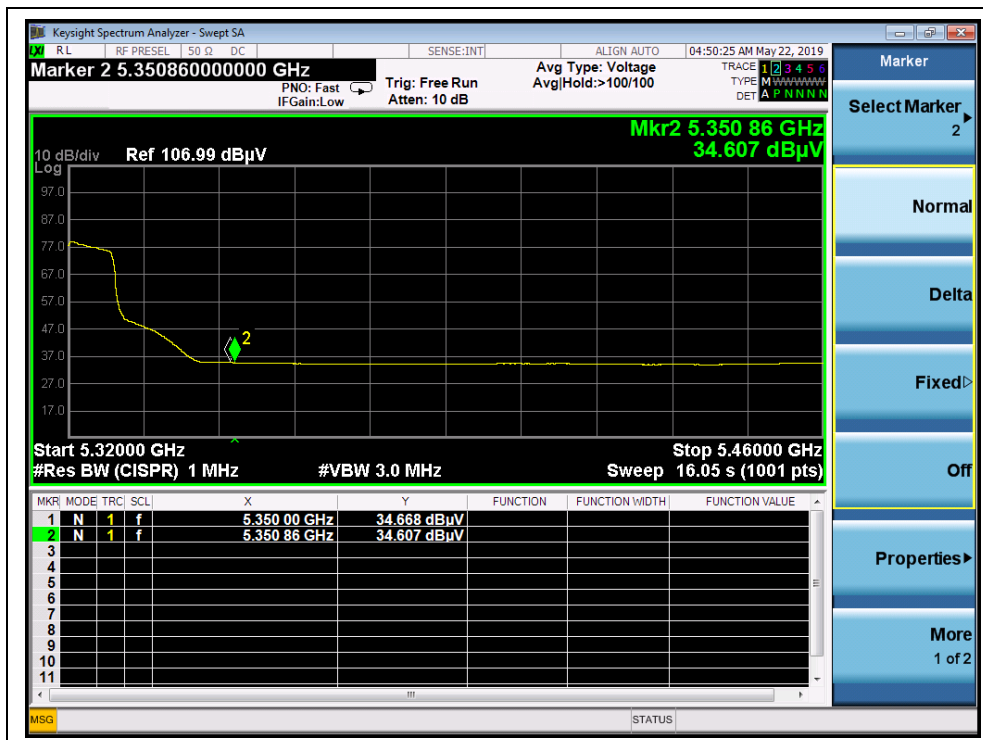
(Channel 36, PEAK, 802.11a)



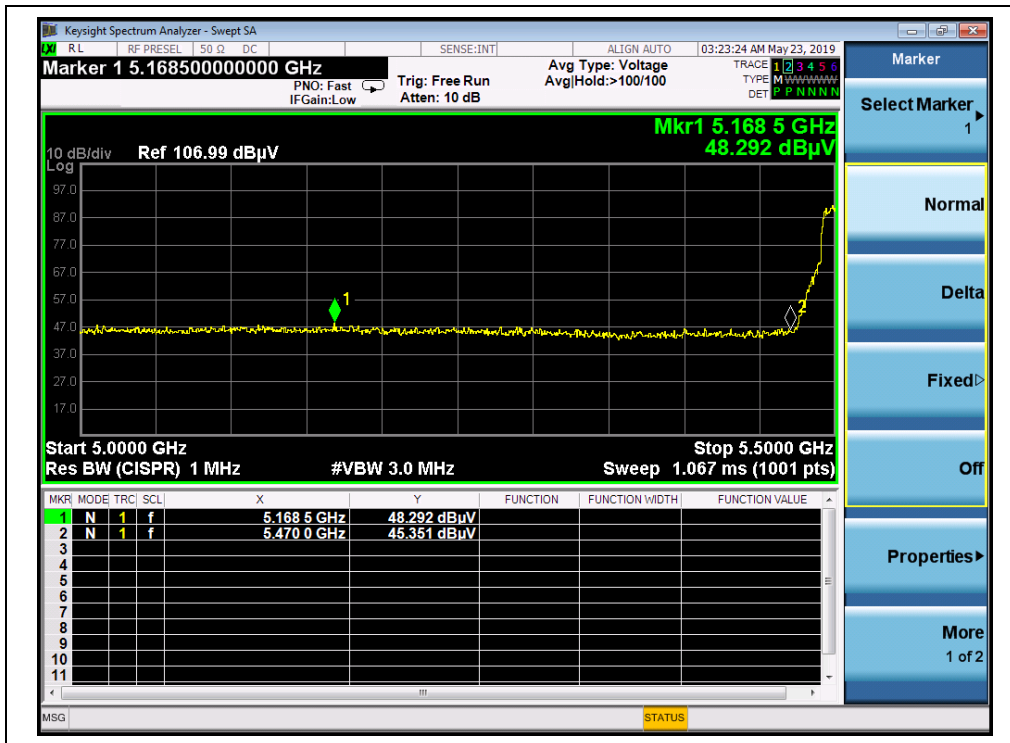
(Channel 36, AVG, 802.11a)



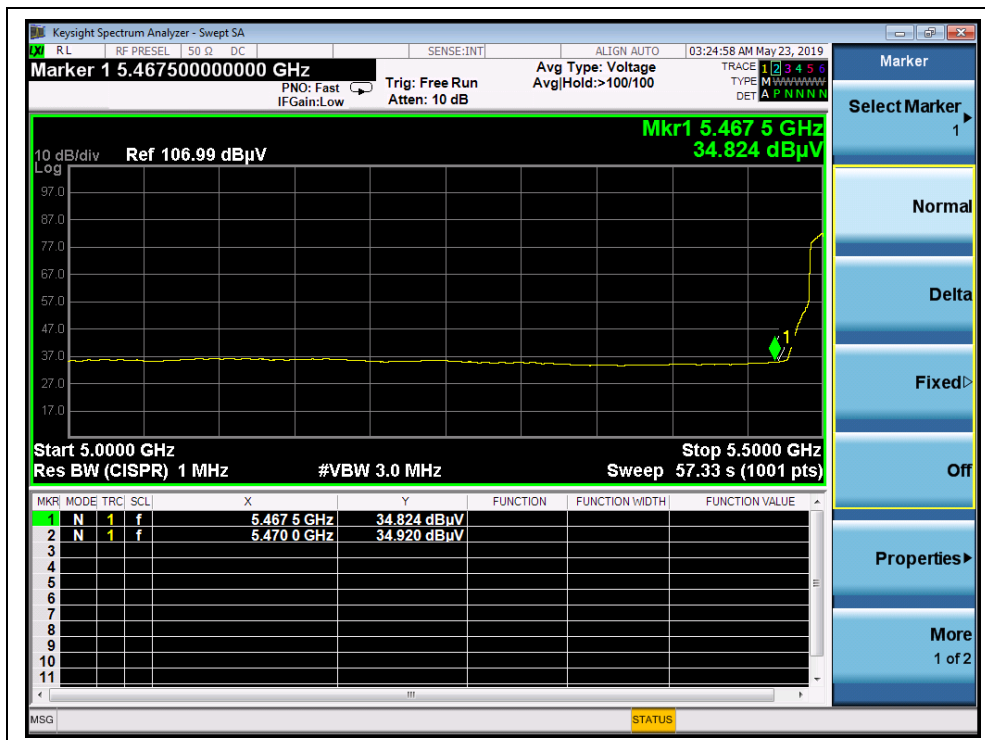
(Channel 64, PEAK, 802.11a)



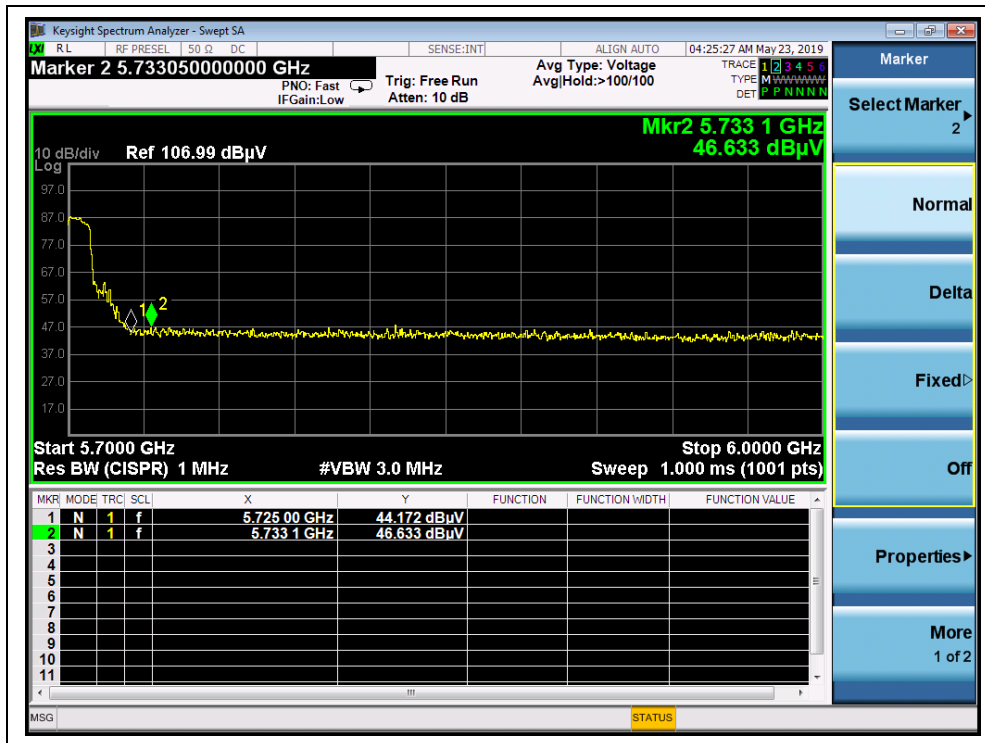
(Channel 64, AVG, 802.11a)



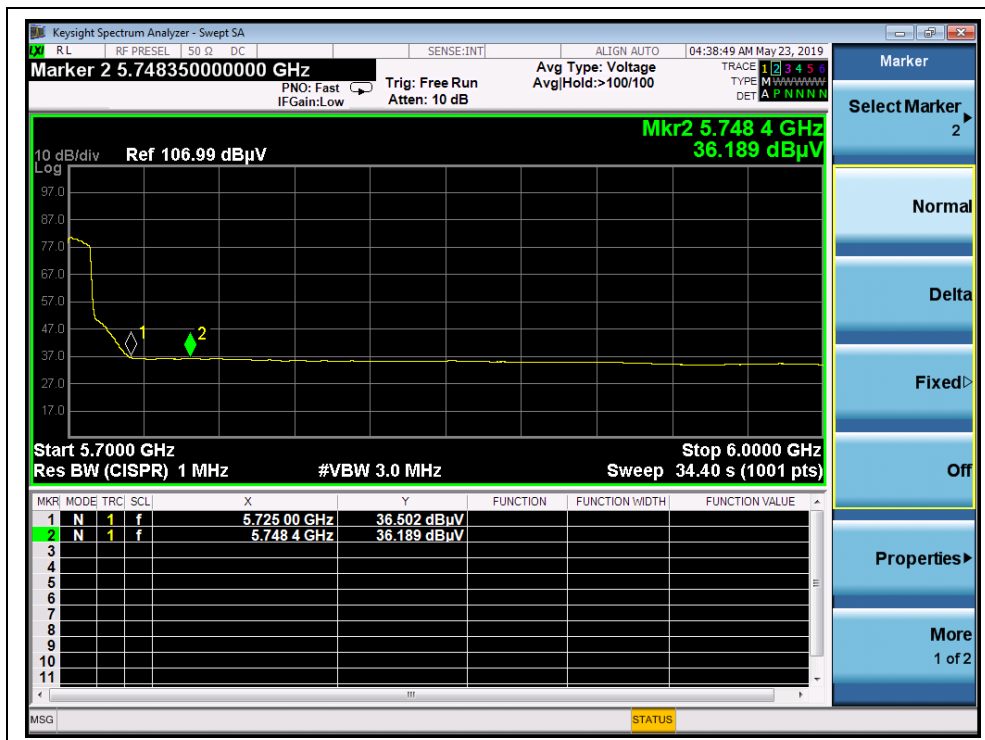
(Channel 100, PEAK, 802.11a)



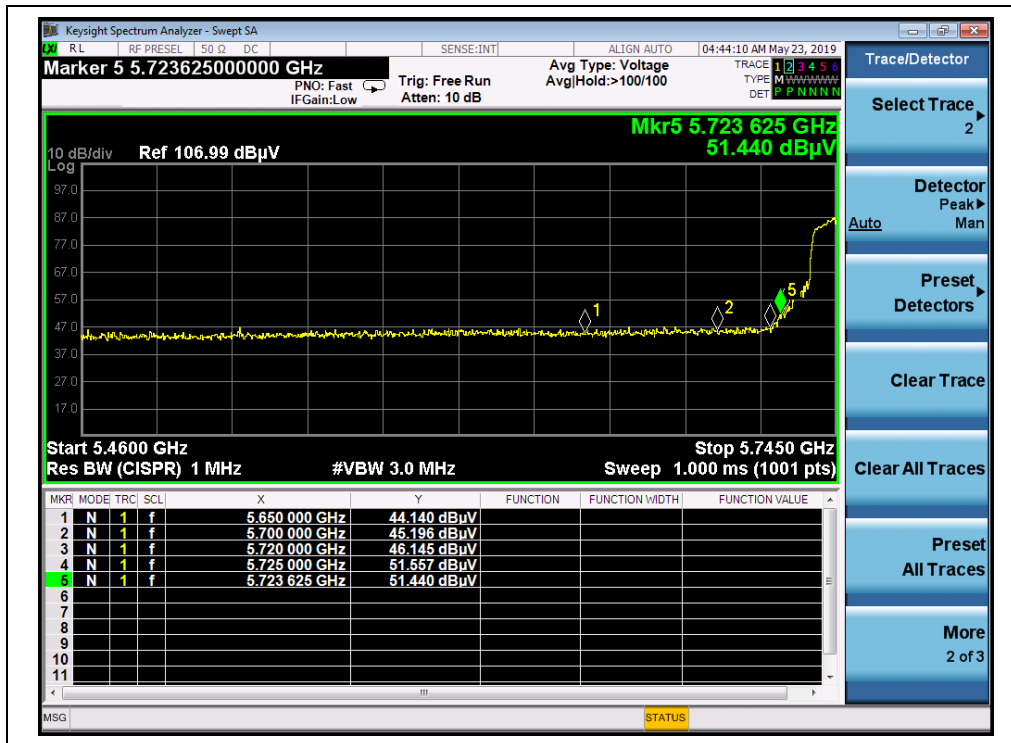
(Channel 100, AVG, 802.11a)



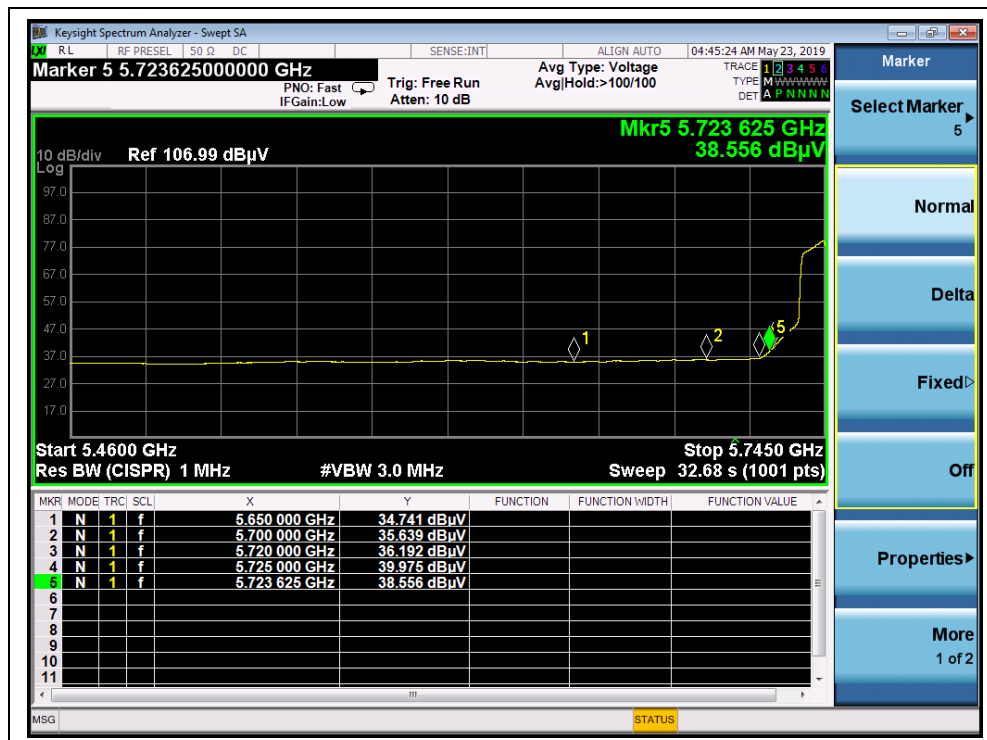
(Channel 144, PEAK, 802.11a)



(Channel 144, AVG, 802.11a)



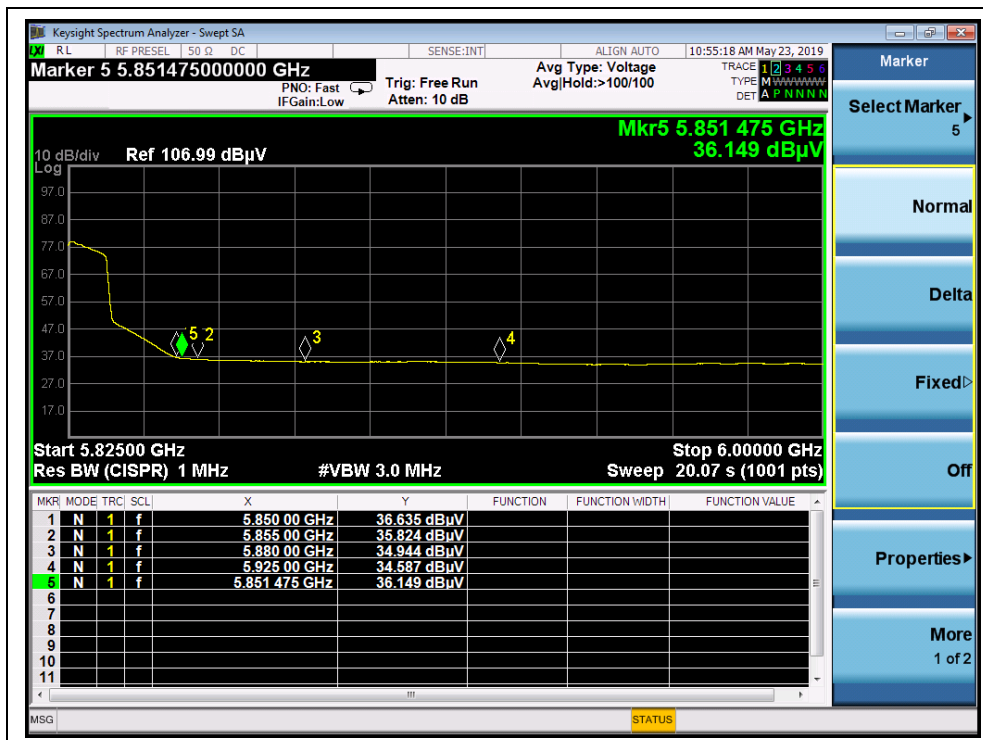
(Channel 149, PEAK, 802.11a)



(Channel 149, AVG, 802.11a)



(Channel 165, PEAK, 802.11a)



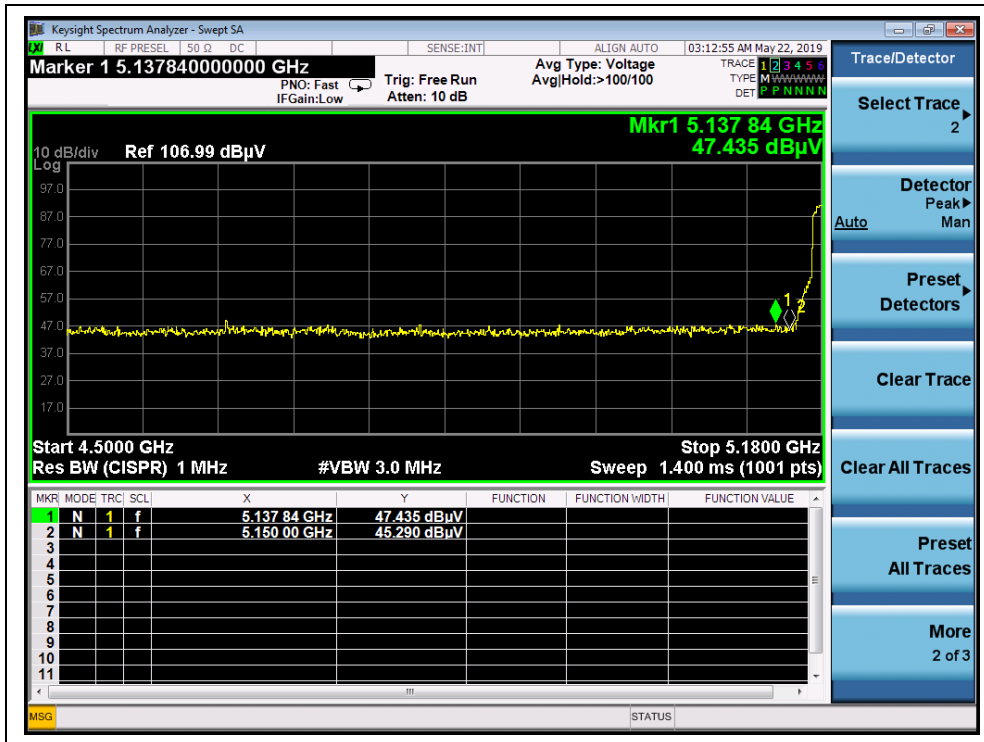
(Channel 165, AVG, 802.11a)

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

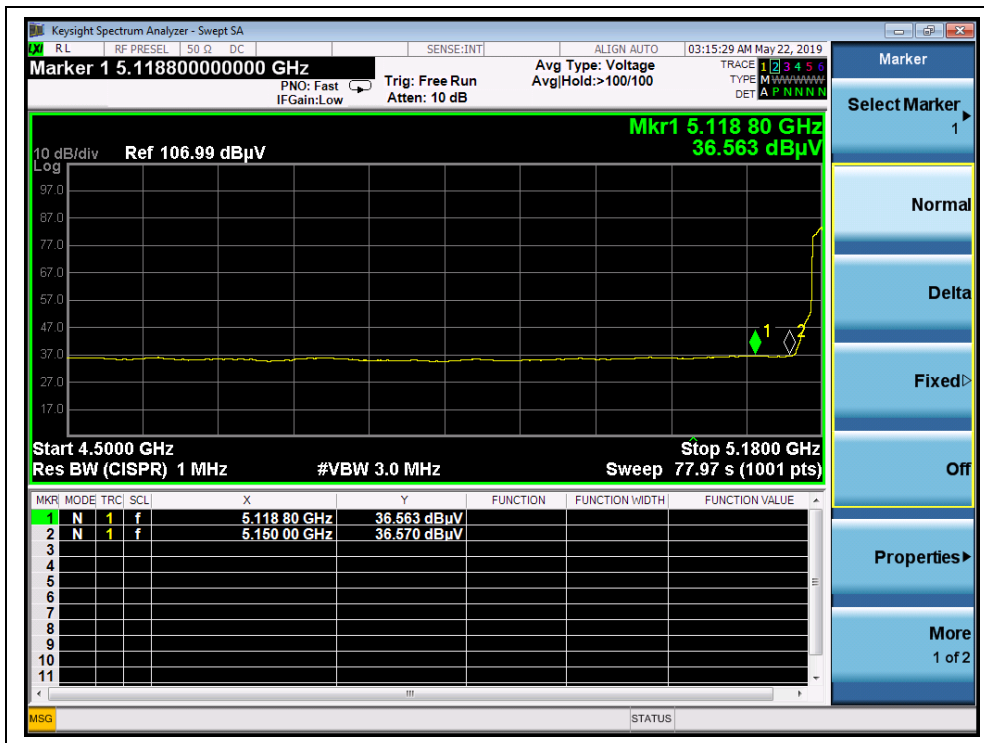
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
36	5137.84	PK	47.44	-26.92	32.20	52.72	74	PASS
36	5150.00	AV	36.57	-26.92	32.20	41.85	54	PASS
64	5350.58	PK	45.88	-26.80	32.20	51.28	74	PASS
64	5350.00	AV	34.67	-26.80	32.20	40.07	54	PASS
100	5260.00	PK	46.67	-26.64	32.20	52.23	68.23	PASS
100	5170.00	AV	35.52	-26.64	32.20	41.08	54	PASS
144	5774.20	PK	45.83	-26.64	32.20	51.39	68.23	PASS
144	5725.00	AV	36.39	-26.64	32.20	41.95	54	PASS
149	5724.48	PK	55.33	-26.23	32.20	61.3	121.04	PASS
149	5725.00	AV	40.27	-26.23	32.20	46.24	54	PASS
165	5851.83	PK	46.24	-26.23	32.20	52.21	118.06	PASS
165	5850.00	AV	36.55	-26.23	32.20	42.52	54	PASS



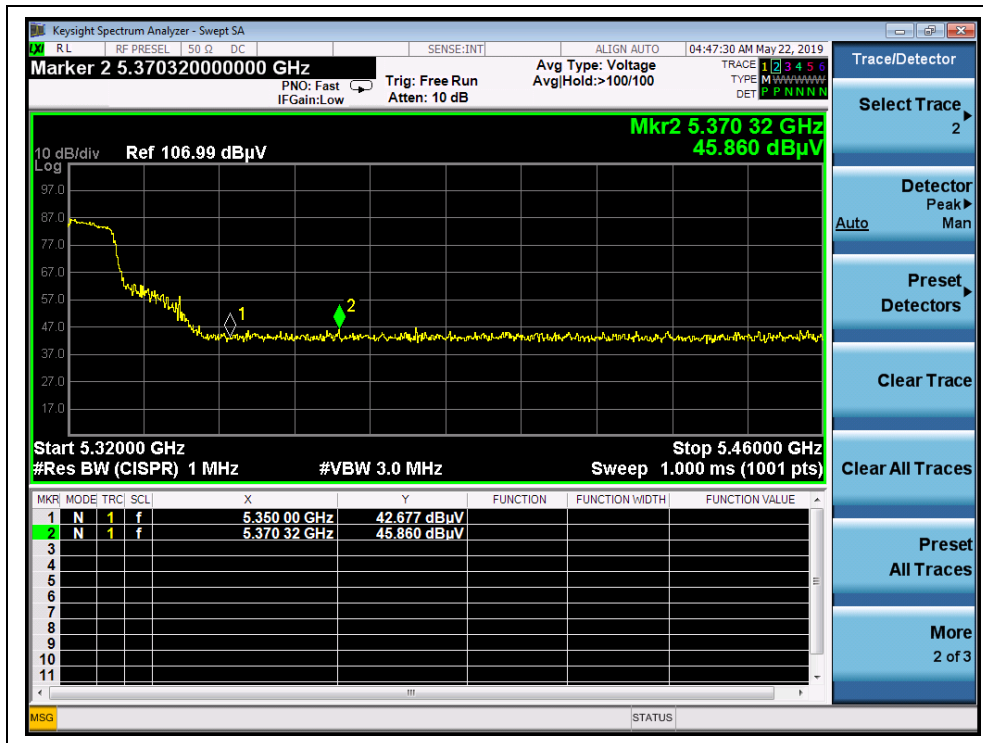
B. Test Plots:



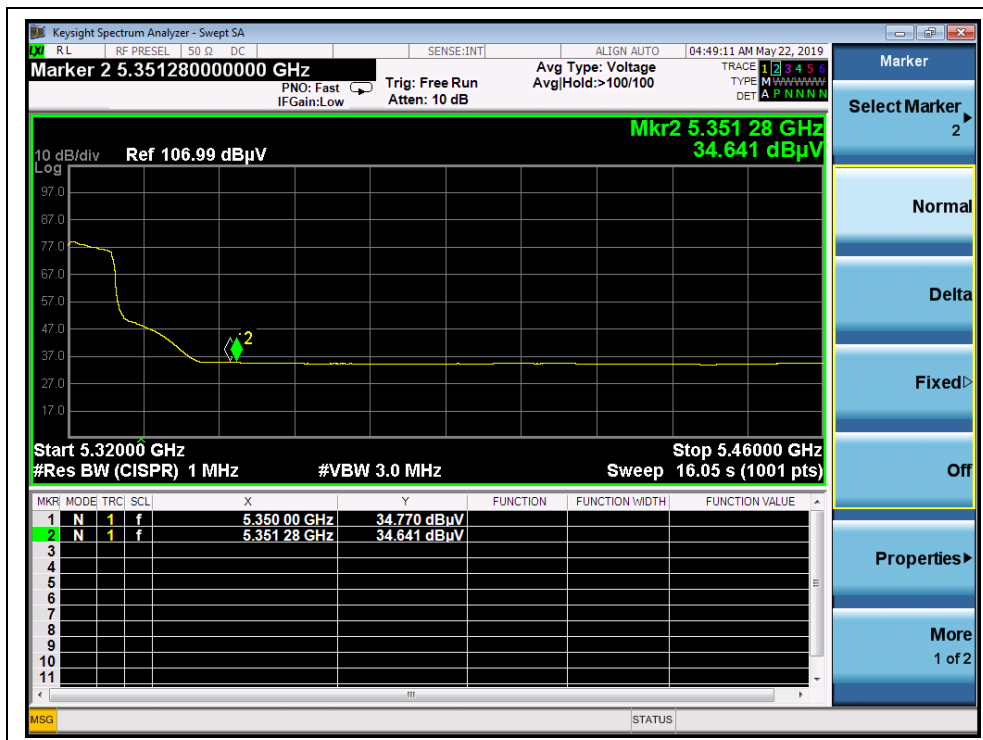
(Channel 36, PEAK, 802.11n (HT20))



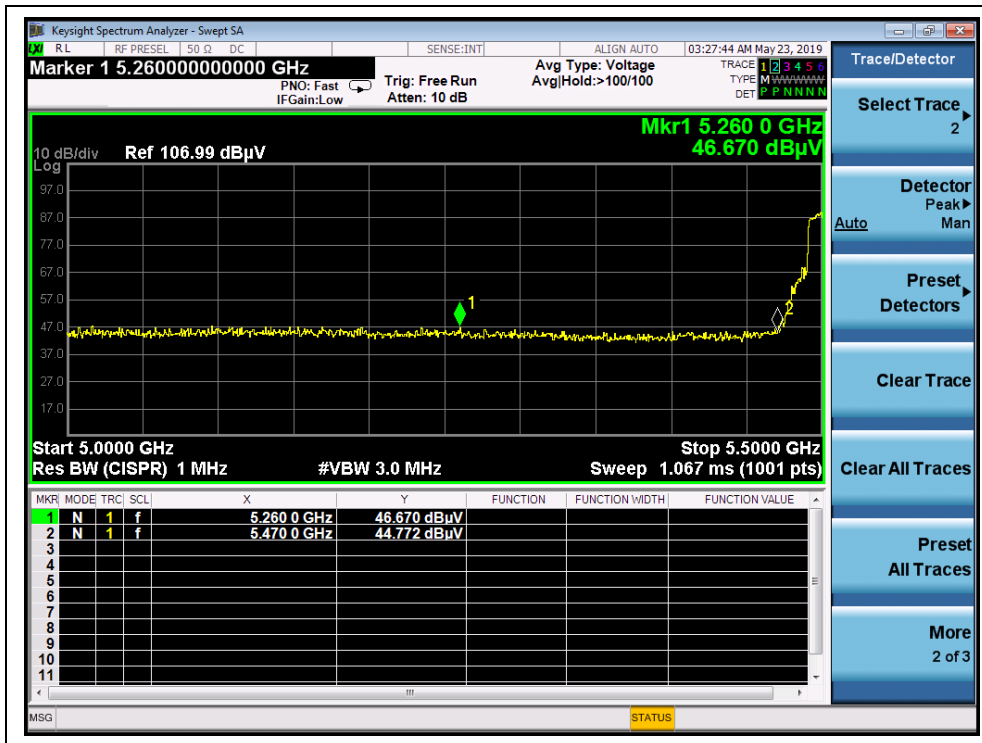
(Channel 36, AVG, 802.11 n (HT20))



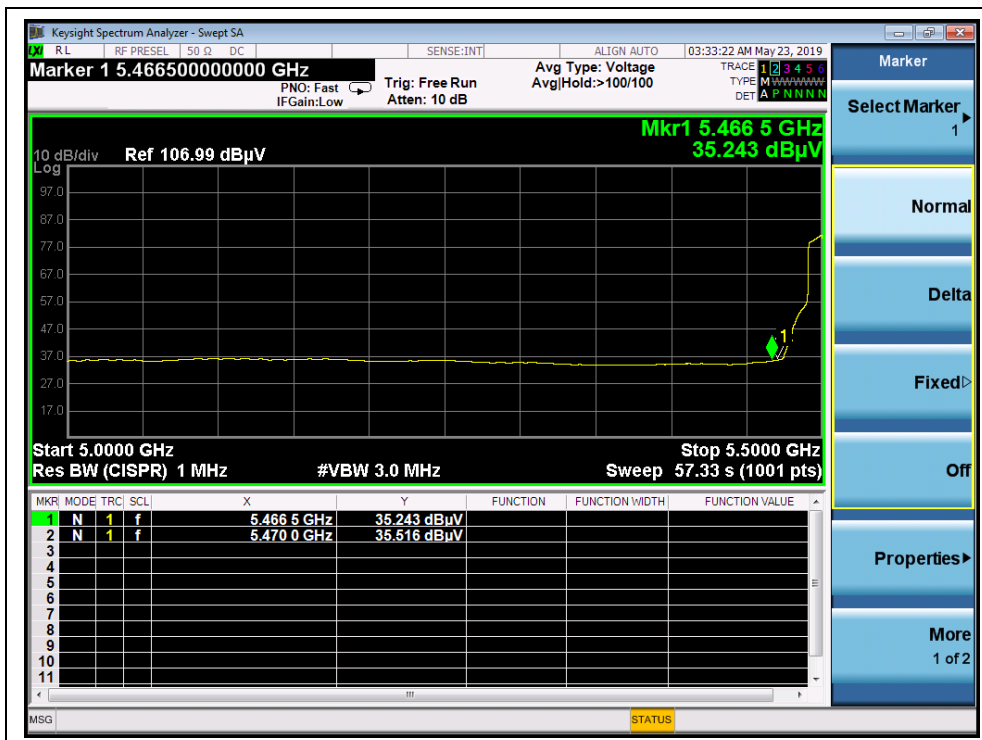
(Channel 64, PEAK, 802.11 n (HT20))



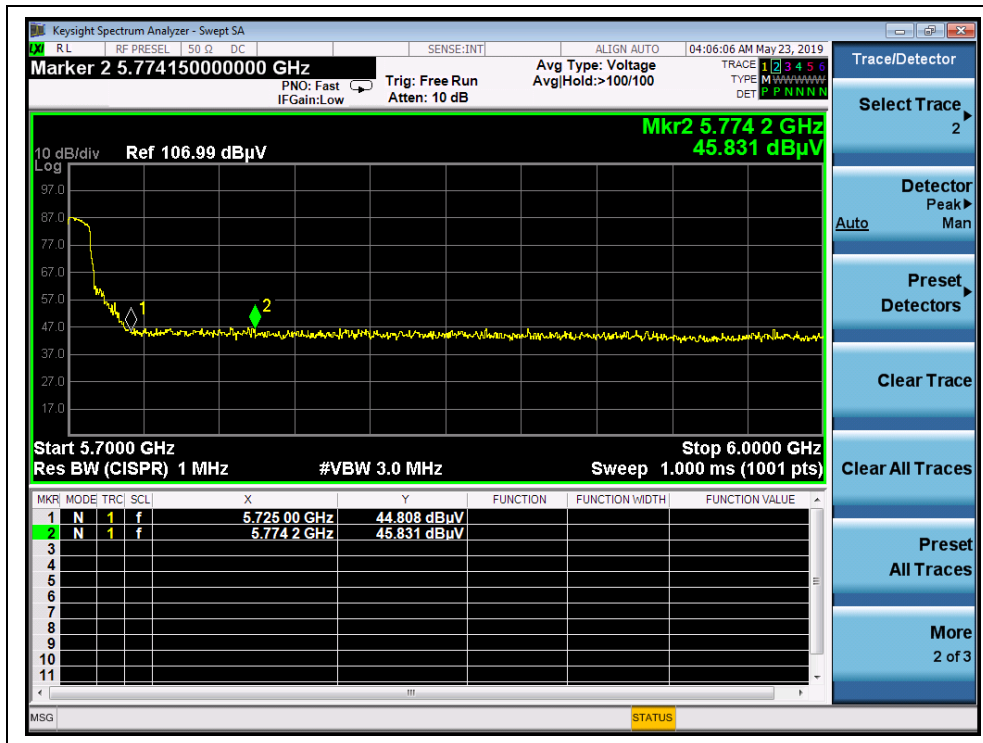
(Channel 64, AVG, 802.11n (HT20))



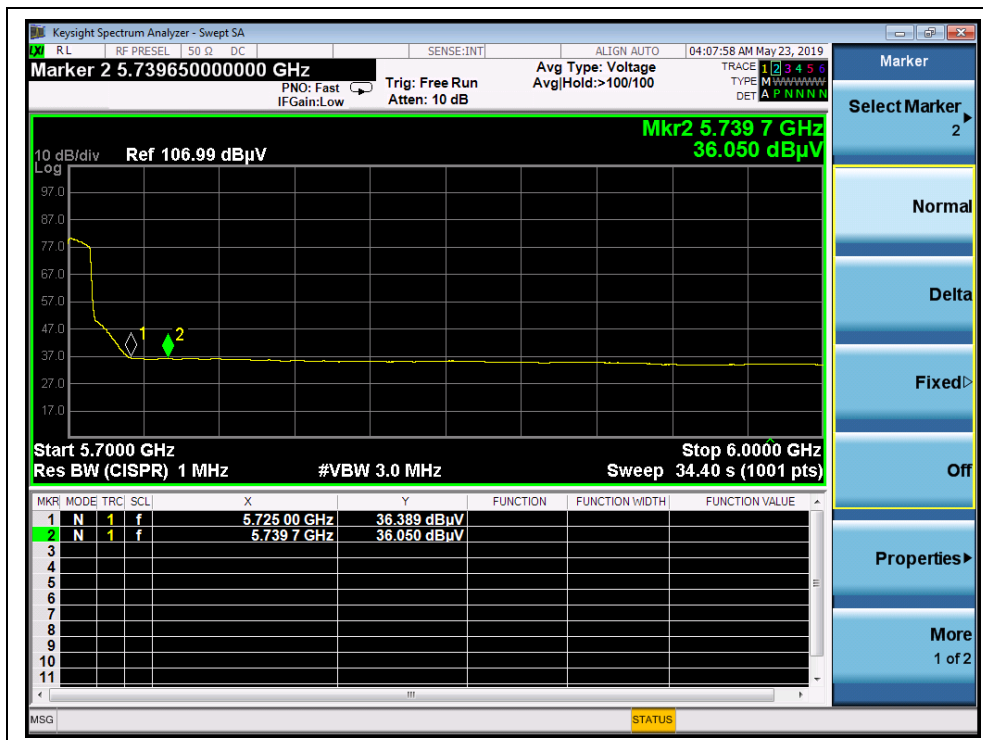
(Channel 100, PEAK, 802.11 n (HT20))



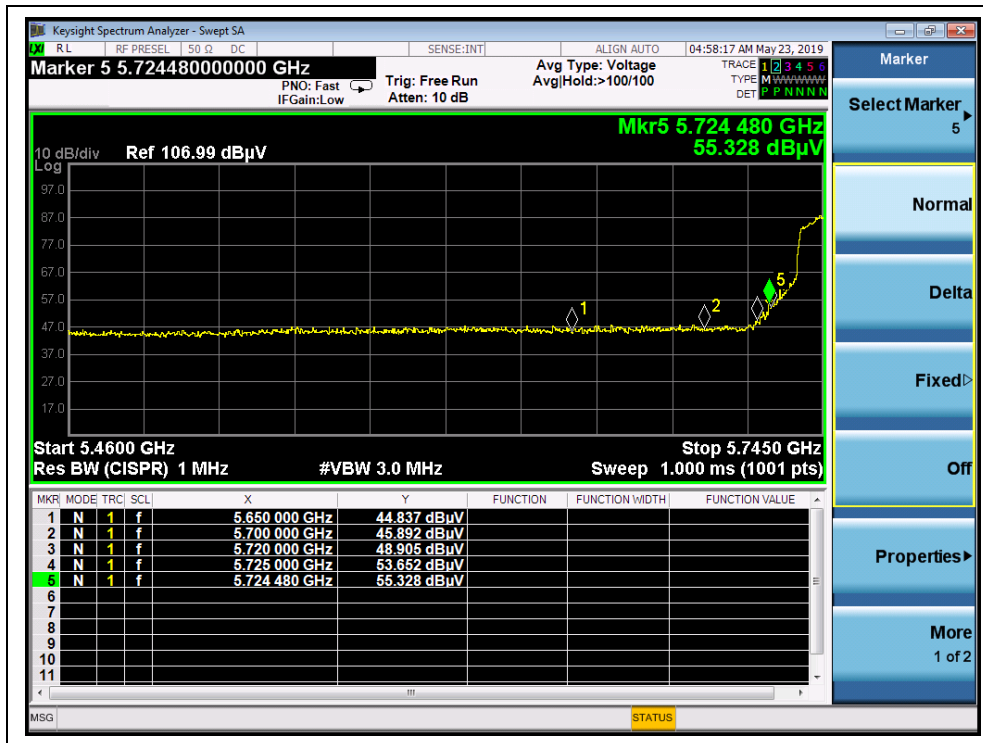
(Channel 100, AVG, 802.11n (HT20))



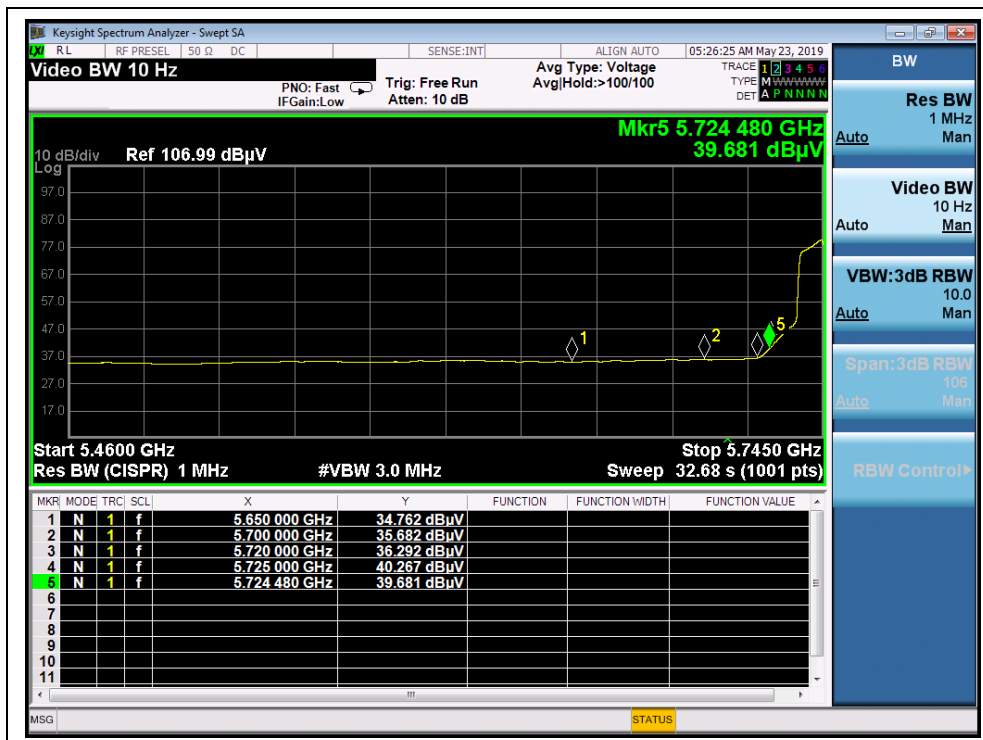
(Channel 144, PEAK, 802.11 n (HT20))



(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))



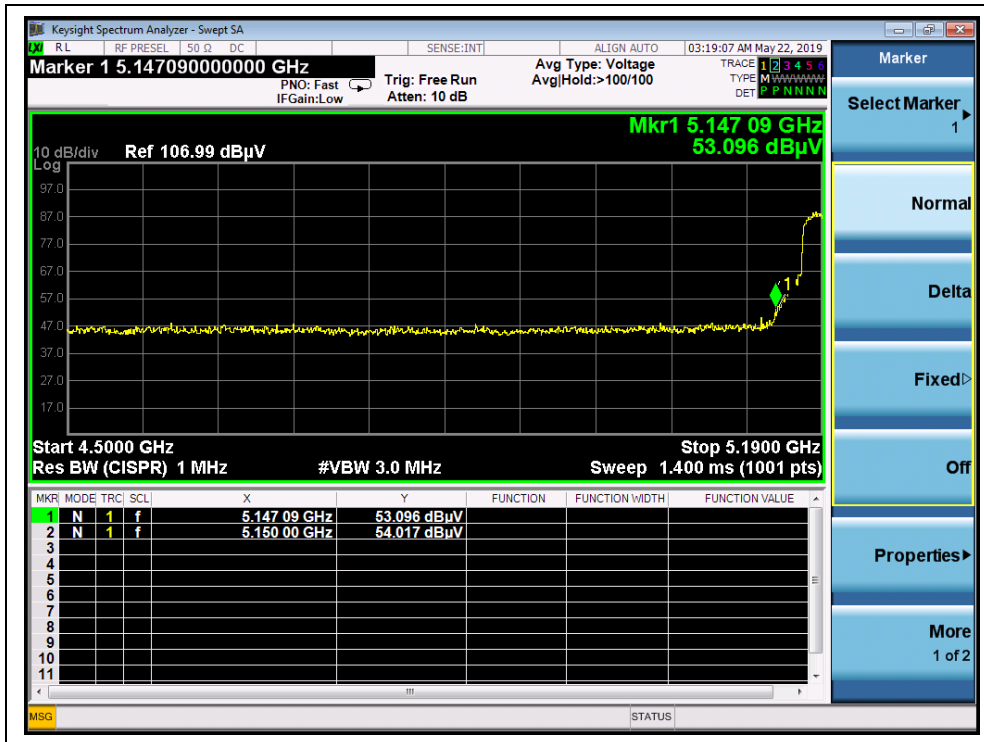
(Channel 165, AVG, 802.11n (HT20))

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

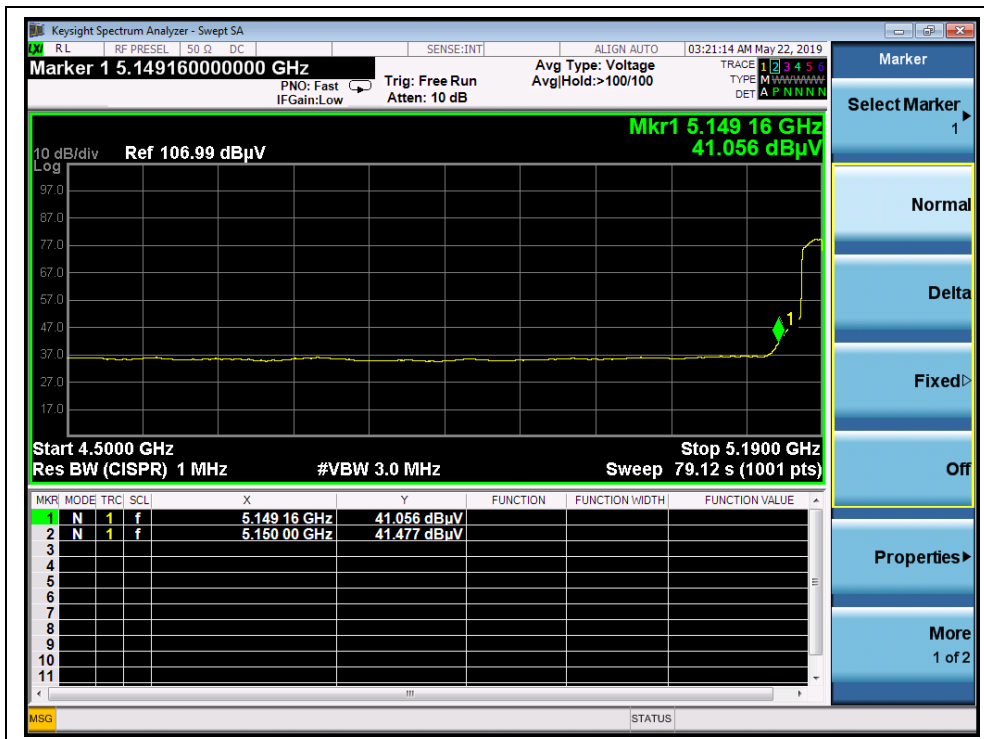
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
38	5150.00	PK	54.02	-26.92	32.20	59.30	74	PASS
38	5150.00	AV	41.48	-26.92	32.20	46.76	54	PASS
62	5350.00	PK	53.65	-26.80	32.20	59.05	74	PASS
62	5350.00	AV	41.63	-26.80	32.20	47.03	54	PASS
102	5465.99	PK	58.96	-26.64	32.20	64.52	68.23	PASS
102	5470.00	AV	44.63	-26.64	32.20	50.19	54	PASS
142	5737.22	PK	46.51	-26.64	32.20	52.07	68.23	PASS
142	5727.65	AV	36.04	-26.64	32.20	41.60	54	PASS
151	5721.83	PK	58.78	-26.23	32.20	64.75	115.00	PASS
151	5725.00	AV	46.08	-26.23	32.20	52.05	54	PASS
159	5853.26	PK	46.62	-26.23	32.20	52.59	114.80	PASS
159	5851.83	AV	35.52	-26.23	32.20	41.49	54	PASS



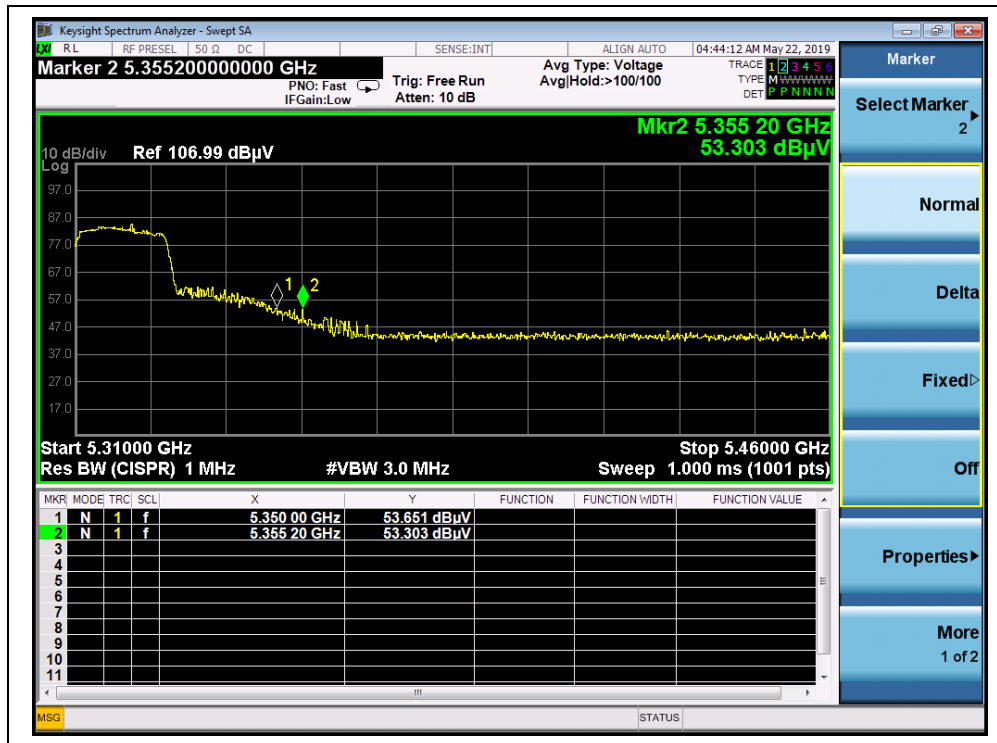
B. Test Plots:



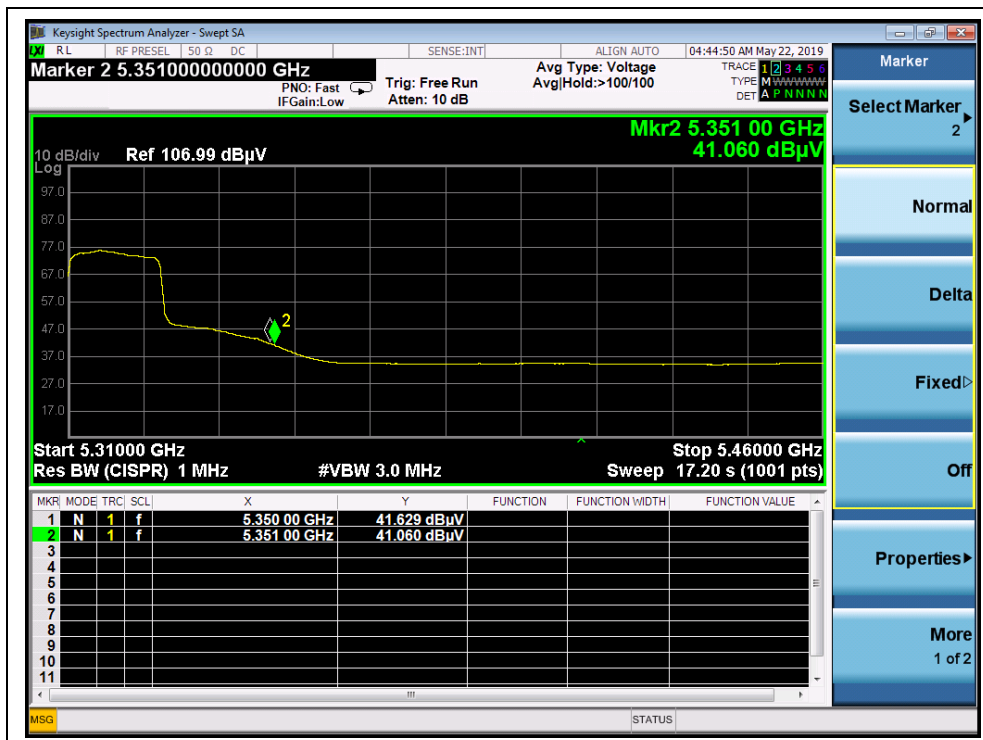
(Channel 38, PEAK, 802.11n (HT40))



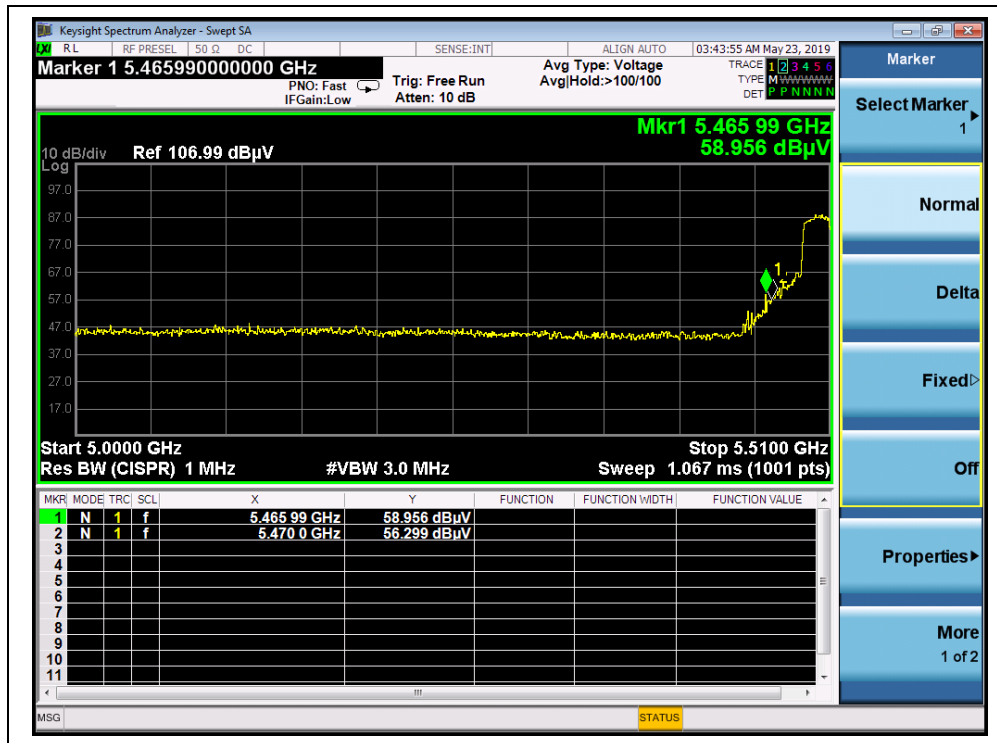
(Channel 38, AVG, 802.11n (HT40))



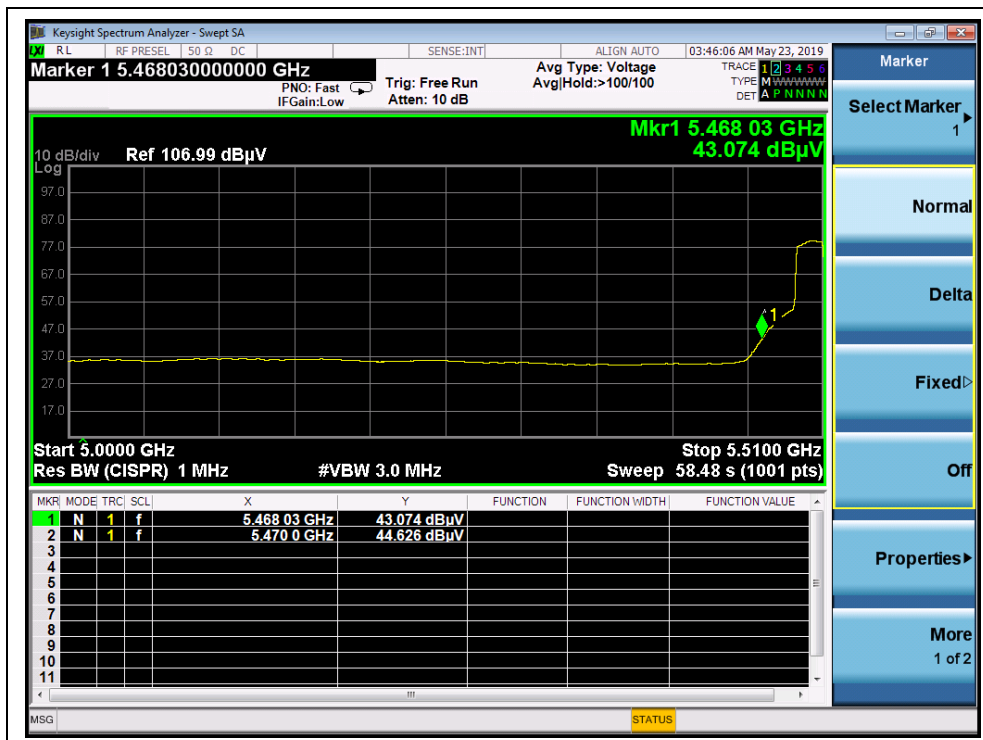
(Channel 62, PEAK, 802.11n (HT40))



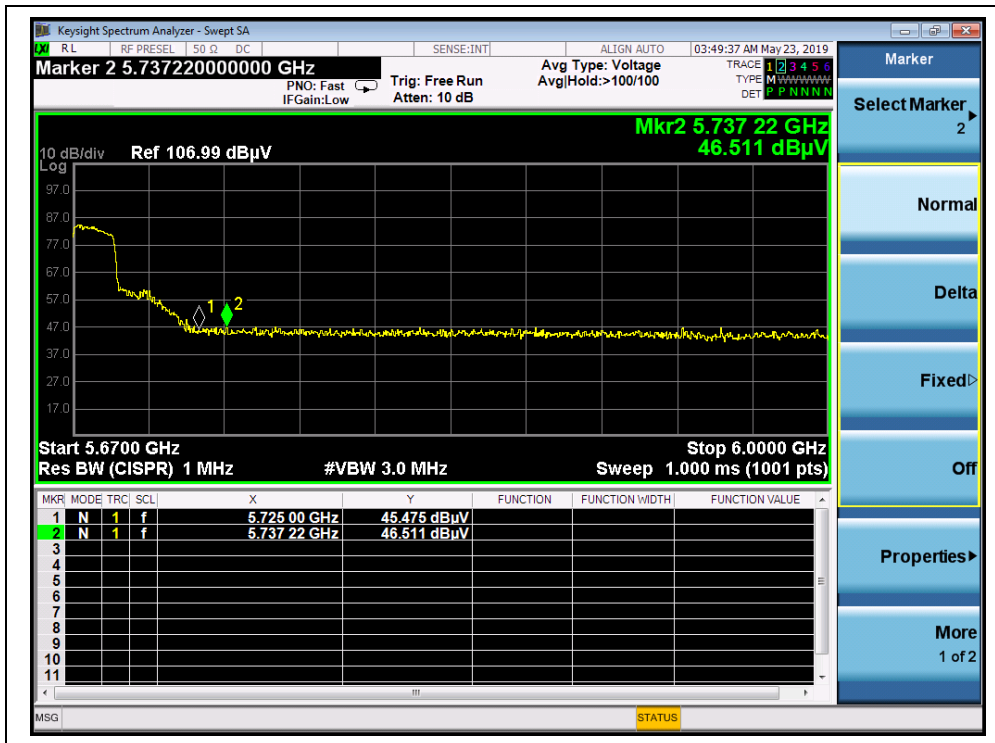
(Channel 62, AVG, 802.11n (HT40))



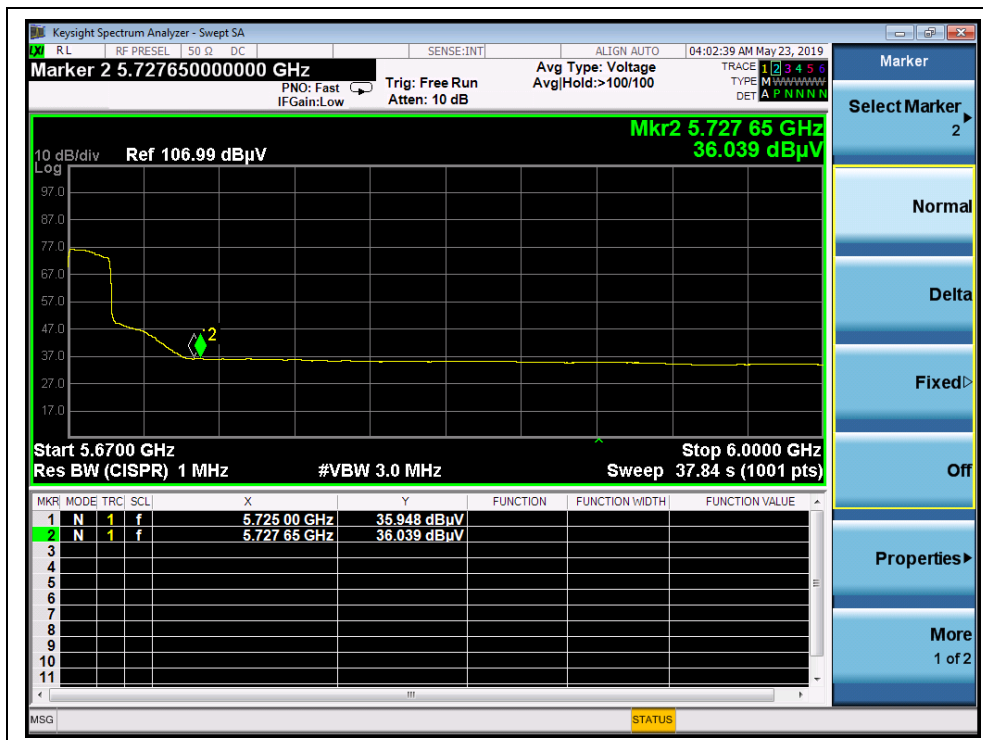
(Channel 102, PEAK, 802.11n (HT40))



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



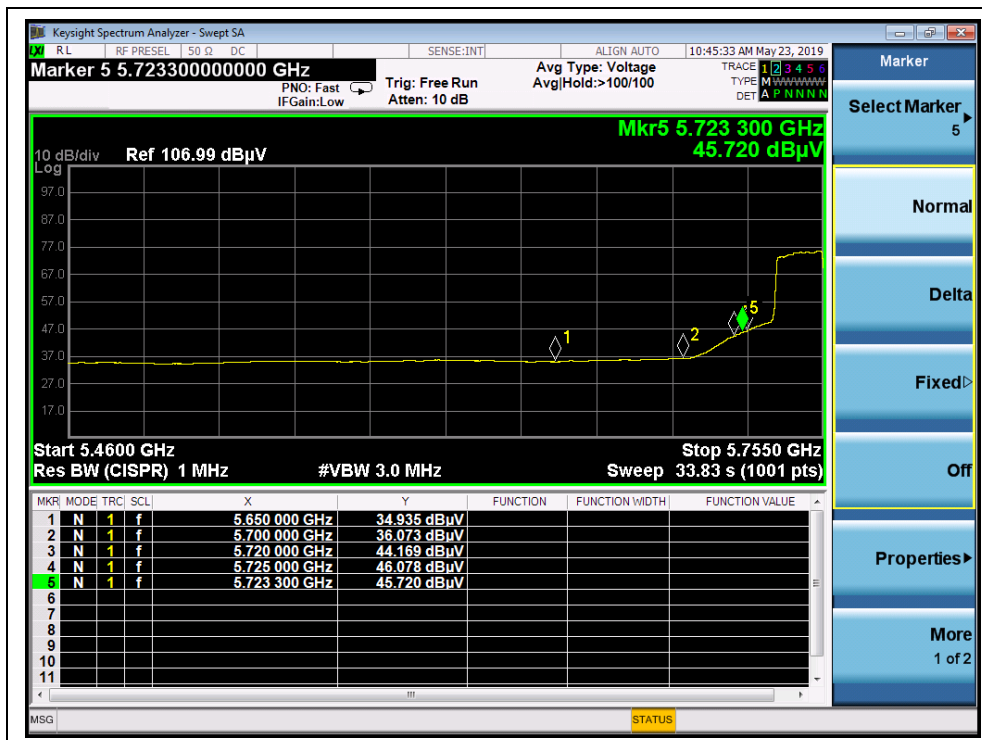
(Channel 142, PEAK, 802.11n (HT40))



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



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



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



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



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

2.9. Radiated Emission

2.9.1. 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

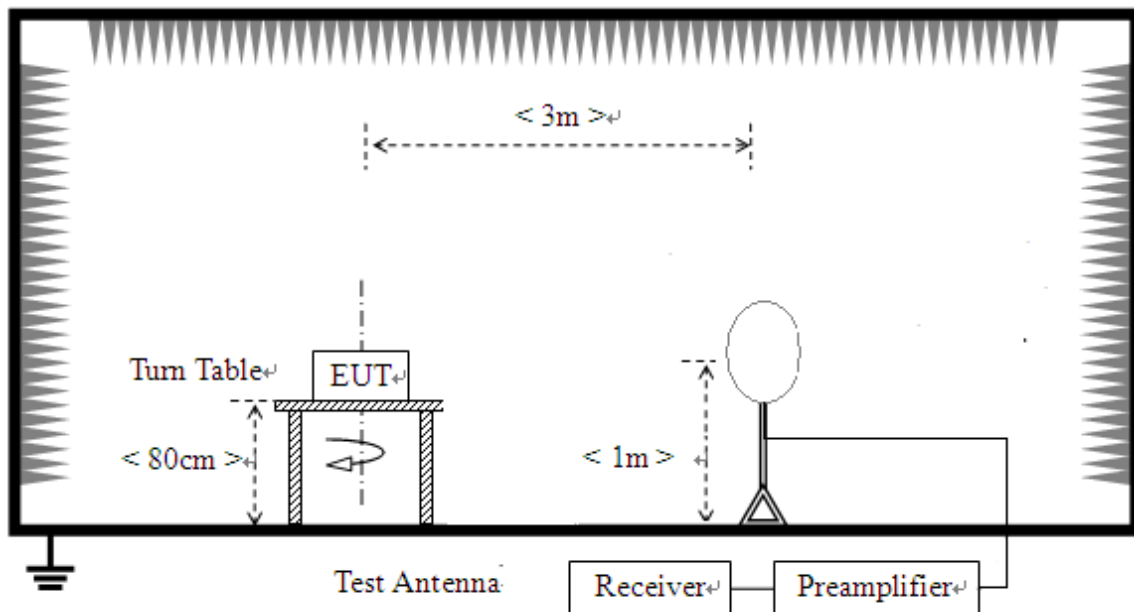
Note:

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.

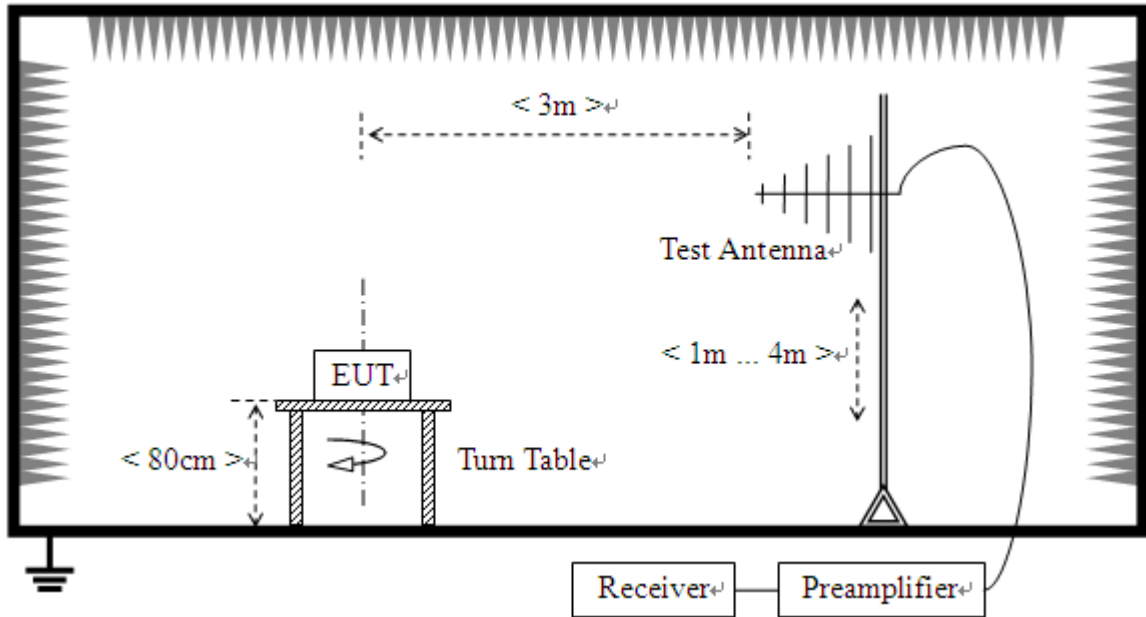
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

2.9.2. Test Description**A. Test Setup:**

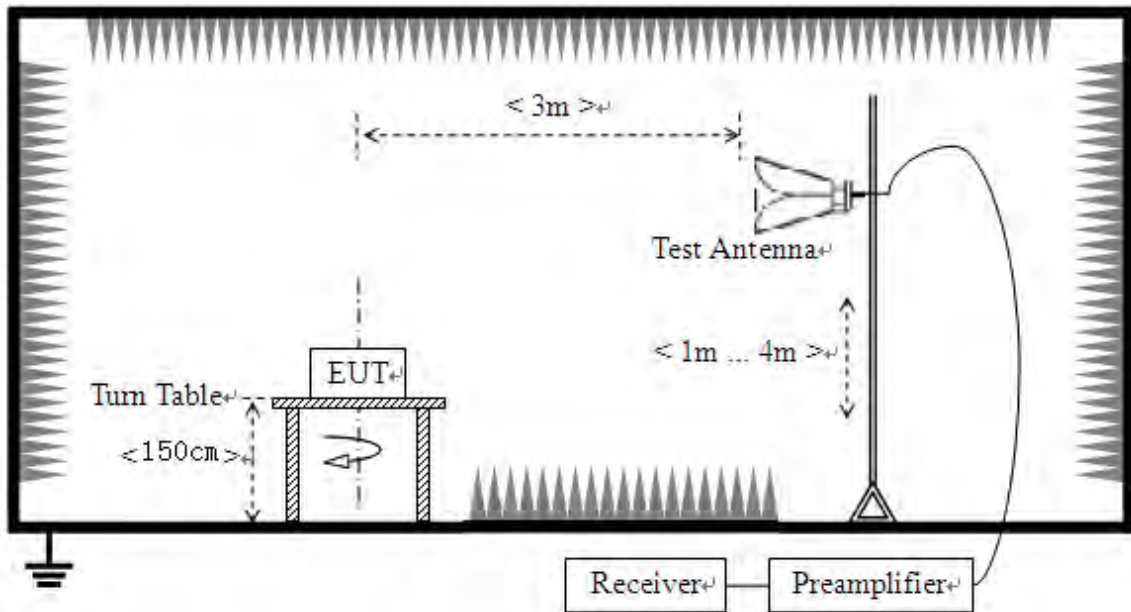
- 1) For radiated emissions from 9kHz to 30MHz



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.



2.9.3. 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.

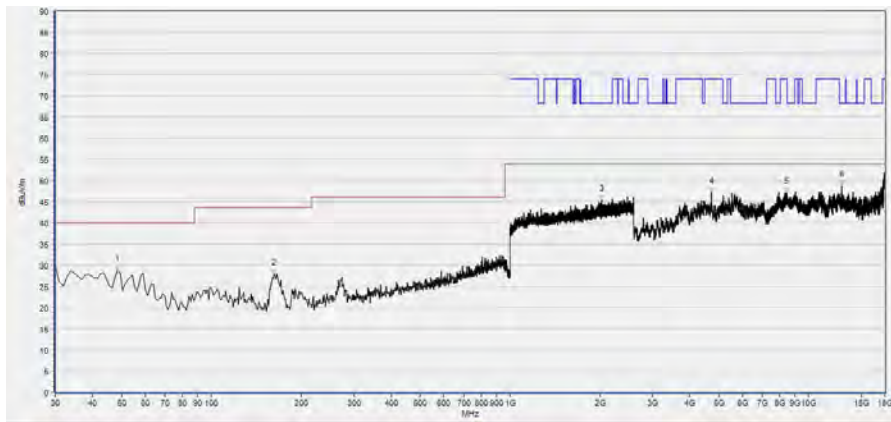
Note2: For the frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.



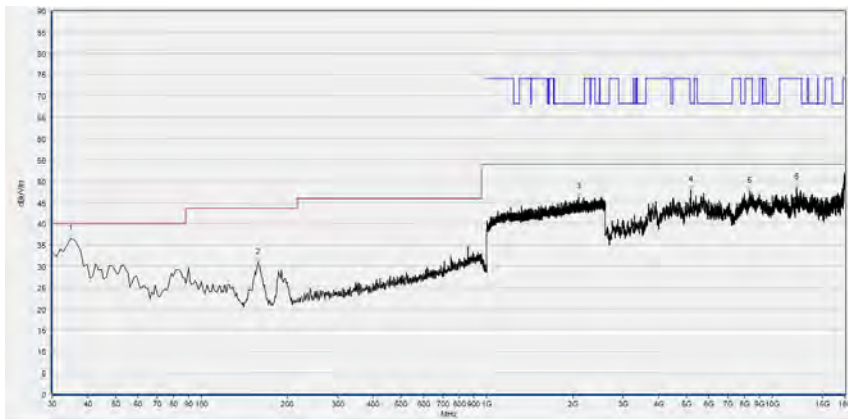
802.11a Test mode

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
48.448	28.77	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
162.052	27.93	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2026.475	45.38	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4725.625	47.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8428.526	47.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12889.258	48.81	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

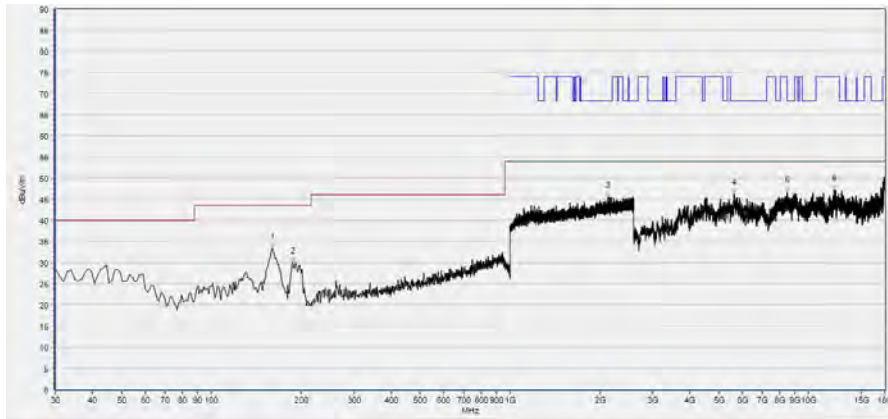
(Antenna Horizontal, 30MHz to 25GHz)



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	36.58	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
158.168	30.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2102.234	46.31	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5181.556	47.94	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8296.059	47.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12193.039	48.44	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

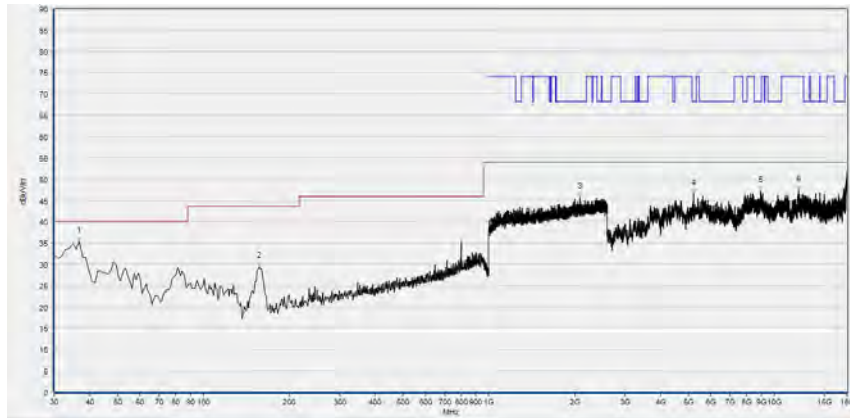
(Antenna Vertical, 30MHz to 25GHz)

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
160.110	33.37	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
187.297	30.03	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2129.977	45.61	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5631.326	46.17	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8499.380	46.82	N/A	N/A	74.0	N/A	54.00	Horizontal	PASS
12202.280	47.11	N/A	N/A	74.0	N/A	54.00	Horizontal	PASS

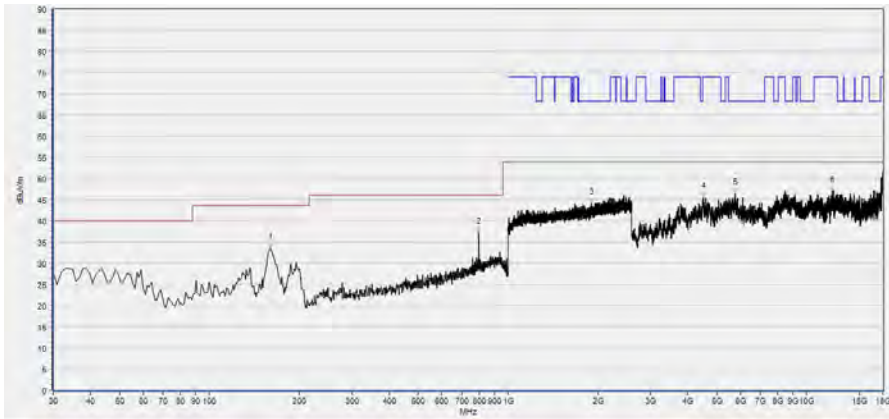
(Antenna Horizontal, 30MHz to 25GHz)



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	35.30	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
157.197	29.48	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2089.963	45.67	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5218.524	46.67	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8970.714	47.20	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12177.636	47.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

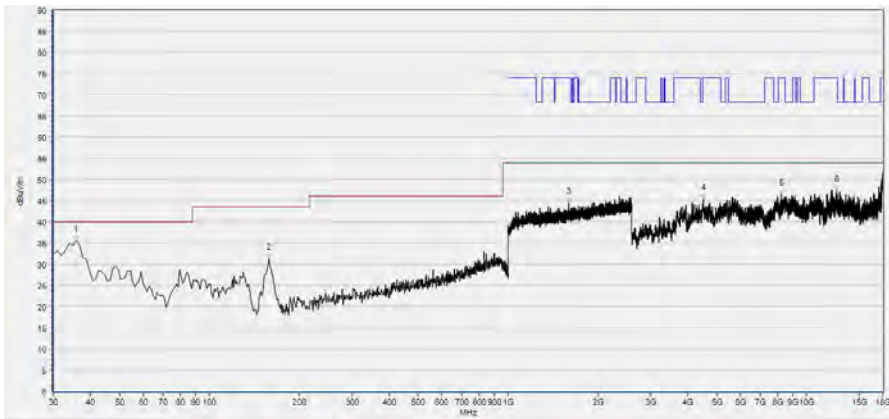
(Antenna Vertical, 30MHz to 25GHz)

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
160.110	33.52	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
799.009	37.08	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1906.435	44.15	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4516.143	45.53	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5763.793	46.52	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12171.474	46.99	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

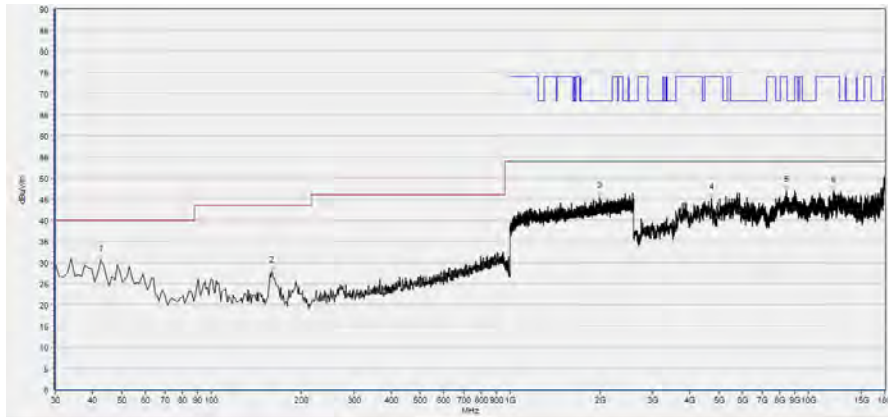
(Antenna Horizontal, 30MHz to 25GHz)



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	35.50	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
158.168	31.33	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1593.264	44.45	N/A	N/A	74.00	43.50	N/A	Vertical	PASS
4506.901	45.34	N/A	N/A	74.00	46.00	N/A	Vertical	PASS
8231.366	46.34	N/A	N/A	74.00	46.00	N/A	Vertical	PASS
12599.680	47.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

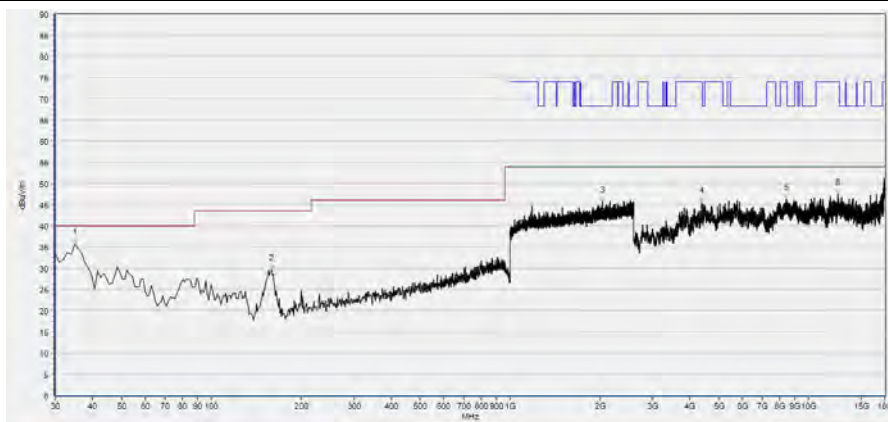
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	30.48	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	27.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1992.864	45.52	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4722.545	45.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8428.526	47.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12137.588	46.81	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

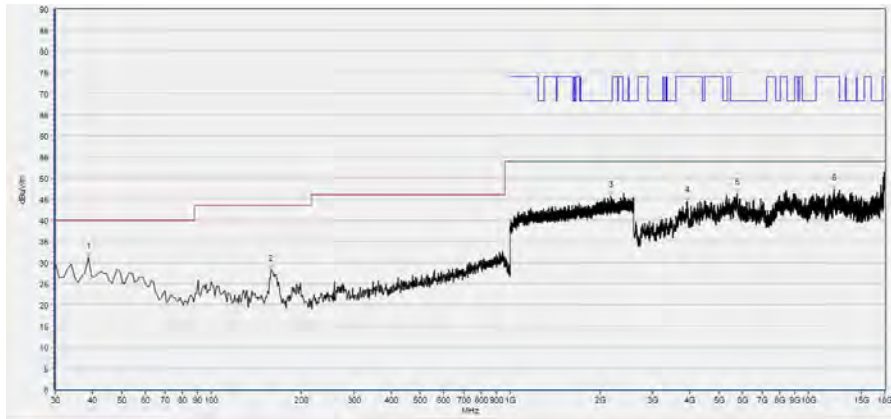
(Antenna Horizontal, 30MHz to 25GHz)



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	35.79	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
159.139	29.71	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2044.081	45.80	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4389.838	45.55	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8422.364	46.23	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12525.745	47.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

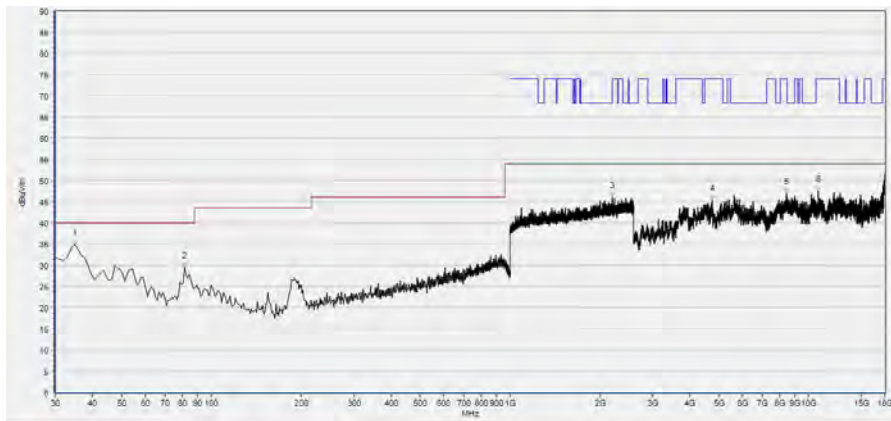
(Antenna Vertical, 30MHz to 25GHz)

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
38.739	31.12	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
158.168	28.24	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2181.727	45.72	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3915.423	44.53	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5760.712	46.29	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12159.152	47.37	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

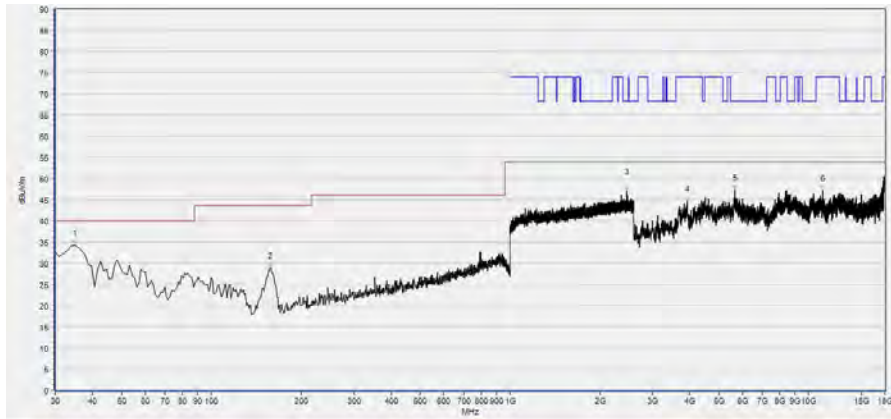
(Antenna Horizontal, 30MHz to 25GHz)



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	34.88	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
81.461	29.41	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
2203.601	46.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4753.351	45.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8440.848	47.04	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10794.439	47.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

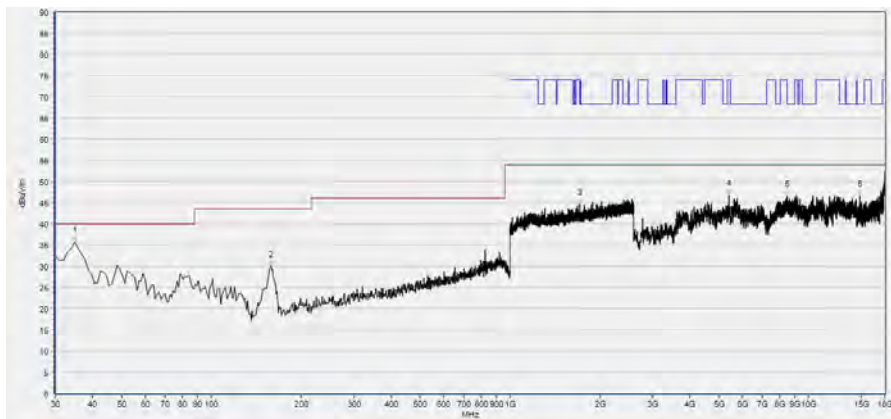
(Antenna Vertical, 30MHz to 25GHz)

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
34.855	34.27	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
157.197	28.97	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2460.754	46.99	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3918.504	44.67	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5652.891	47.29	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
11136.387	47.08	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

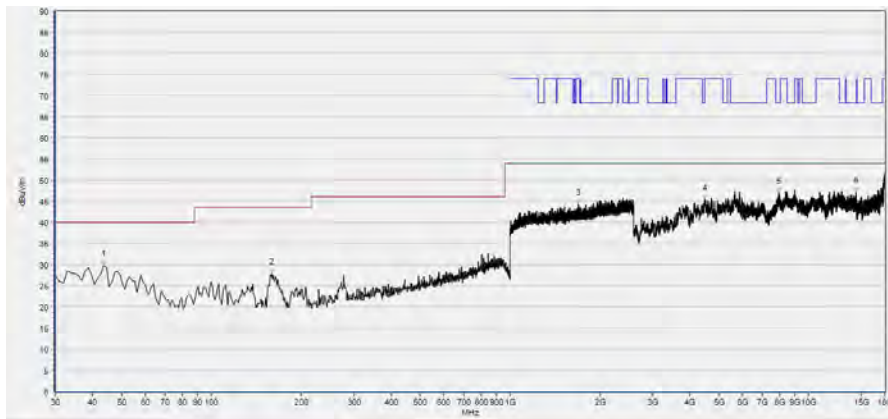
(Antenna Horizontal, 30MHz to 25GHz)



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	35.64	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
158.168	29.97	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1713.304	44.57	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5400.280	46.80	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8499.380	46.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14860.852	46.68	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

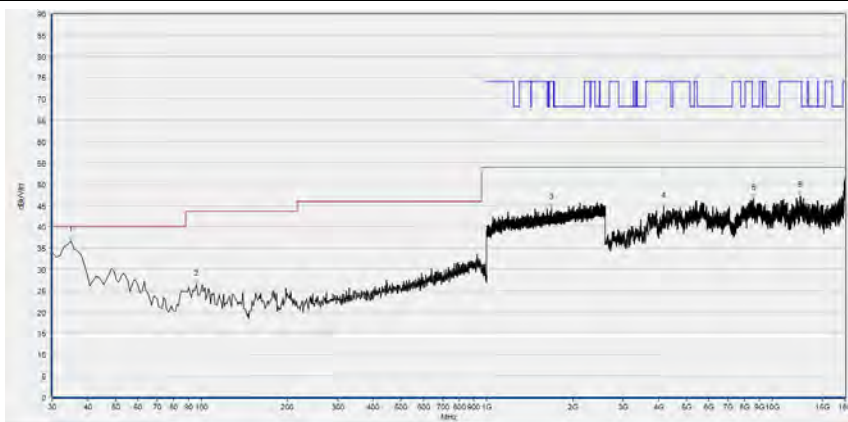
(Antenna Vertical, 30MHz to 25GHz)

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
43.594	29.91	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	27.78	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1691.964	44.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4494.579	45.37	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
7929.466	46.90	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
14392.599	47.19	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

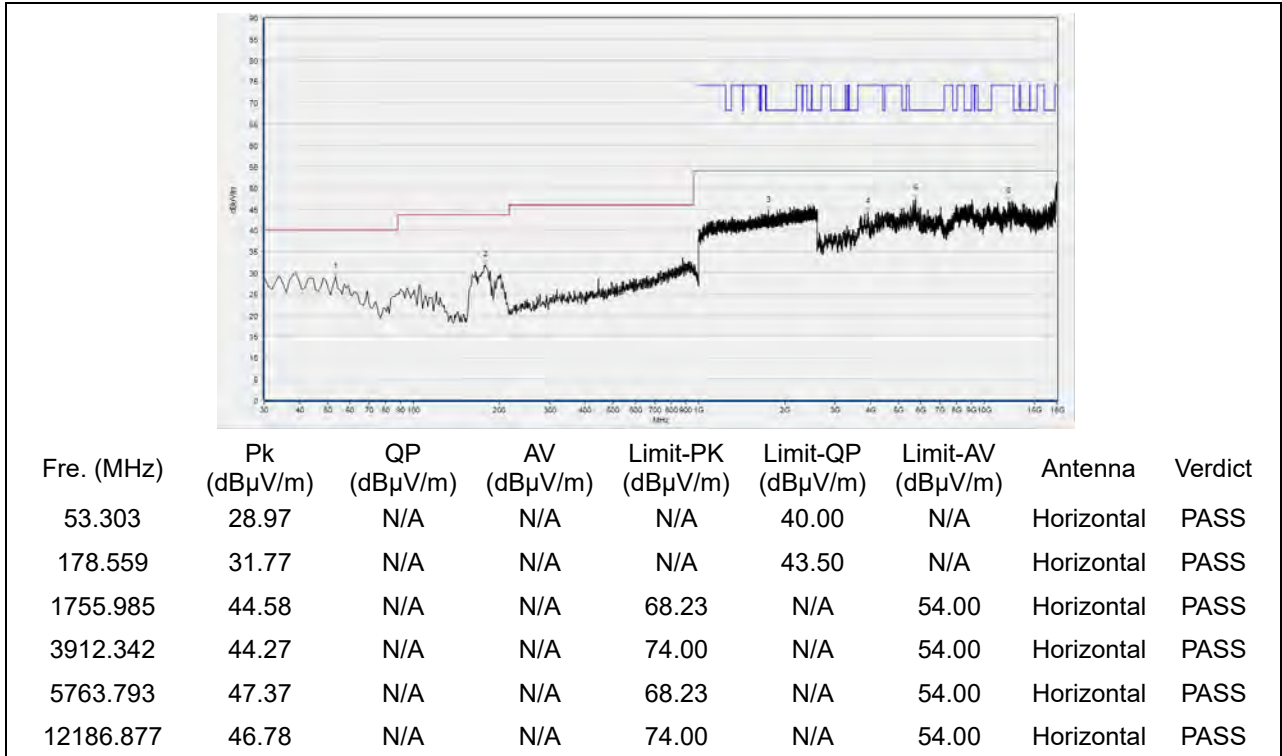
(Antenna Horizontal, 30MHz to 25GHz)



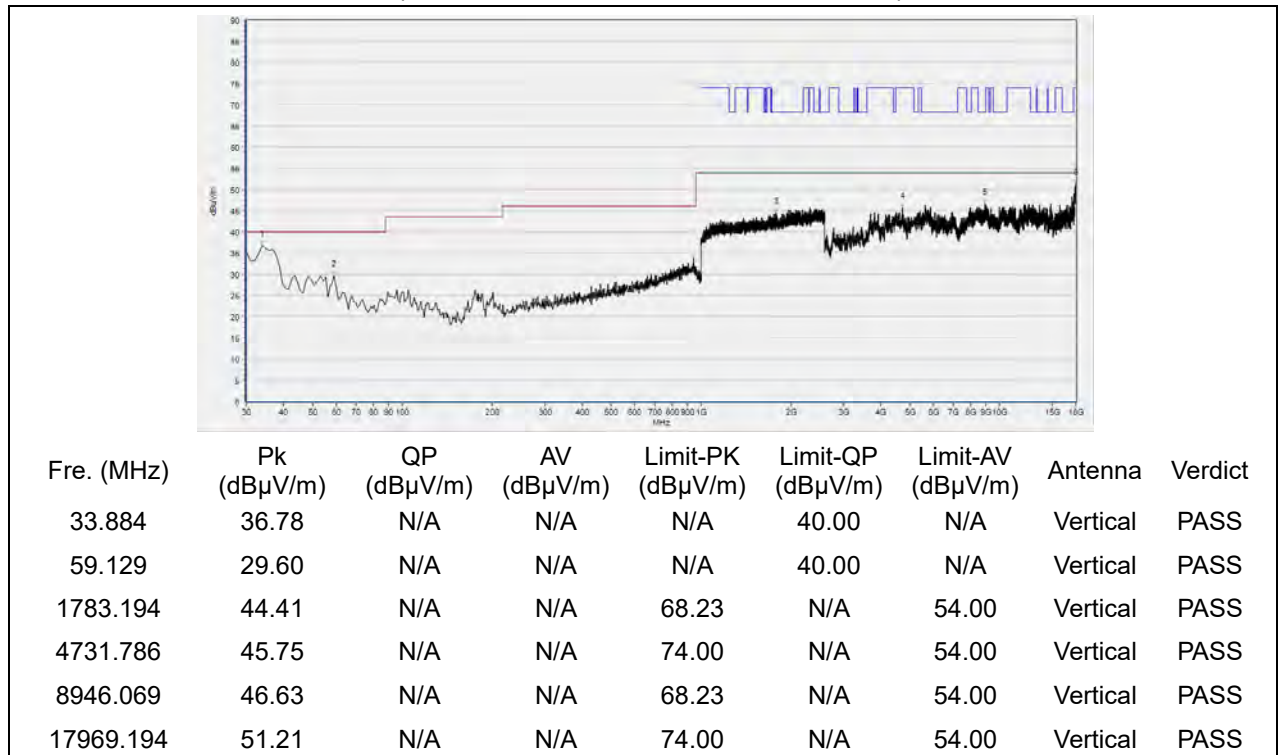
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
34.855	36.70	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	26.51	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1683.961	44.39	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4168.034	44.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8622.605	46.61	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12519.584	47.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 120

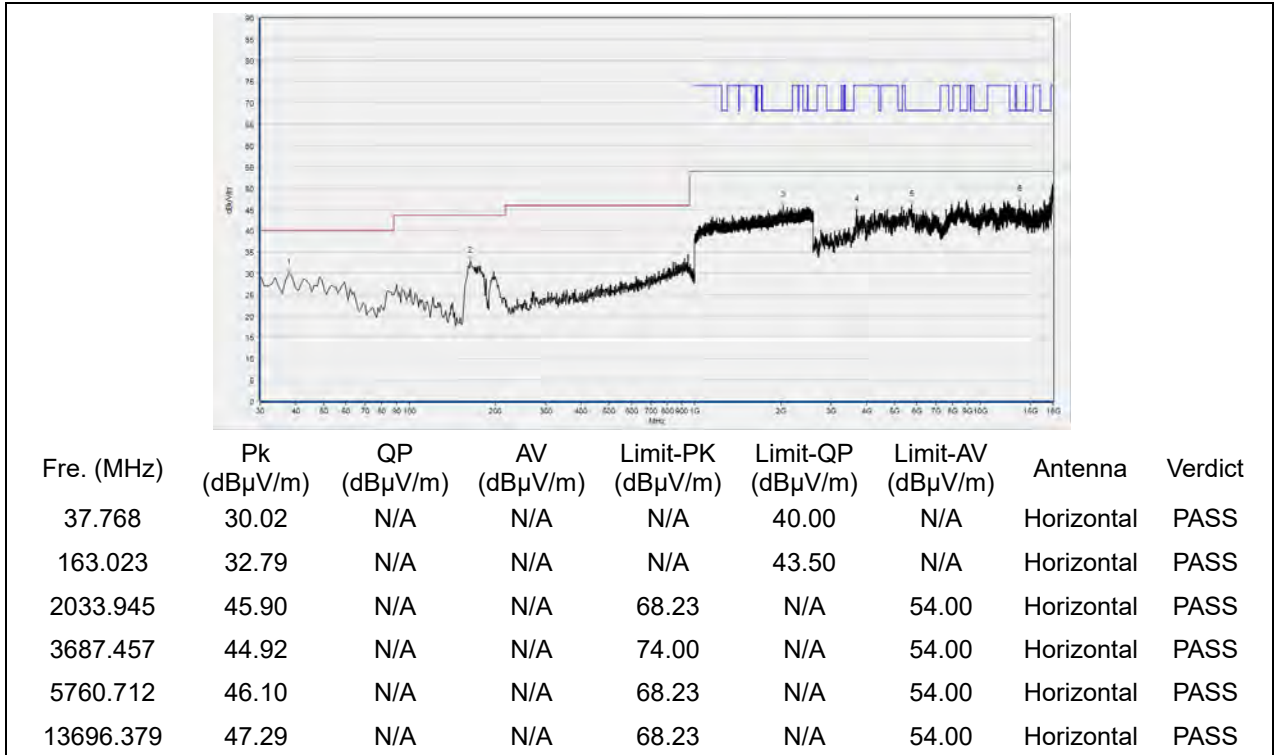


(Antenna Horizontal, 30MHz to 25GHz)

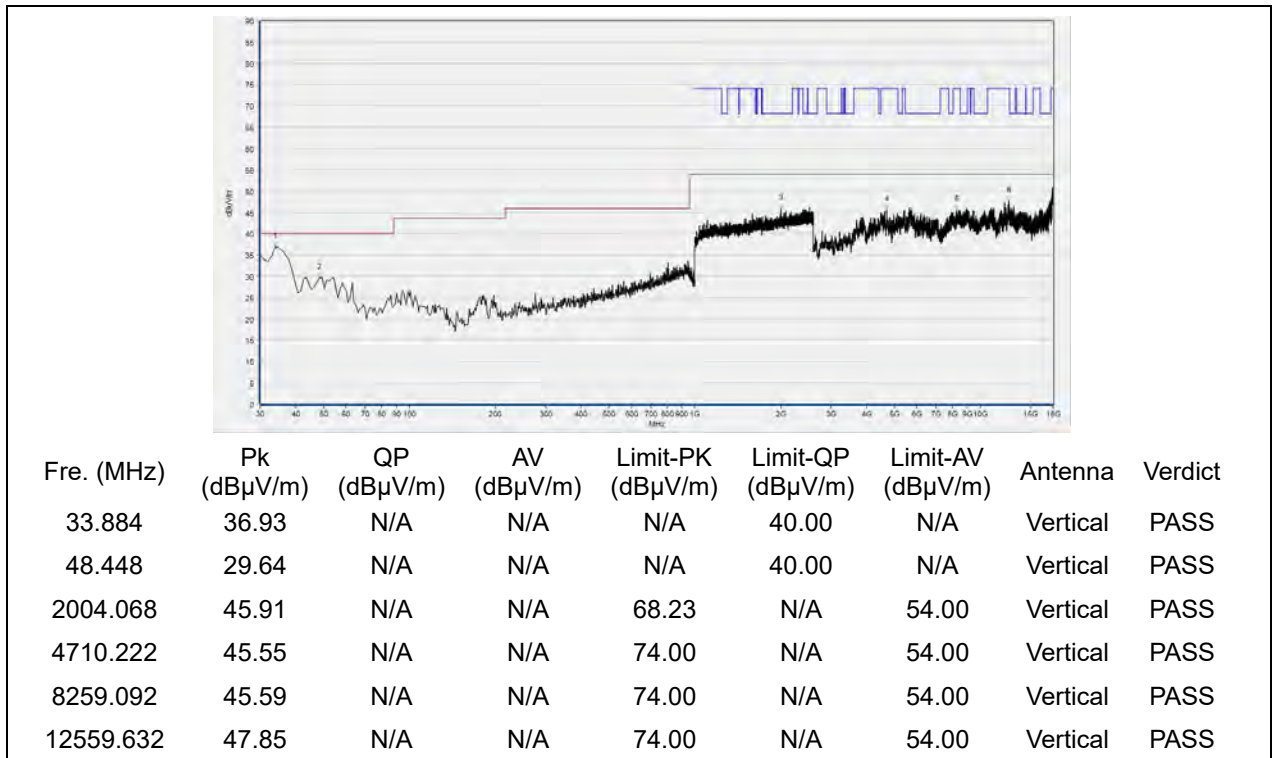


(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 144

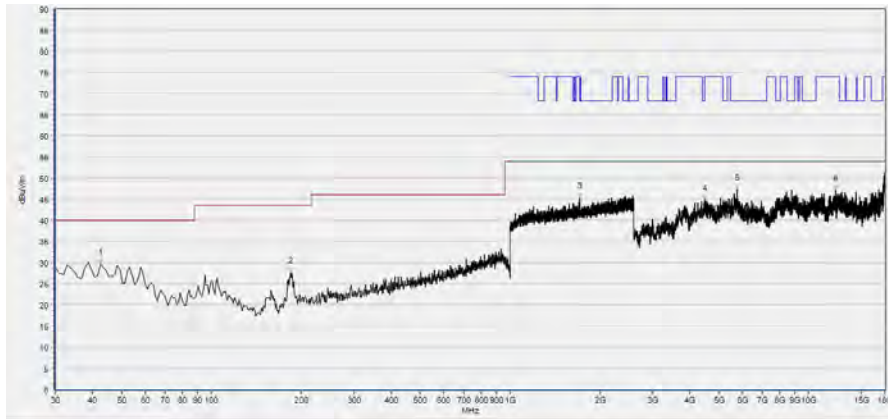


(Antenna Horizontal, 30MHz to 25GHz)



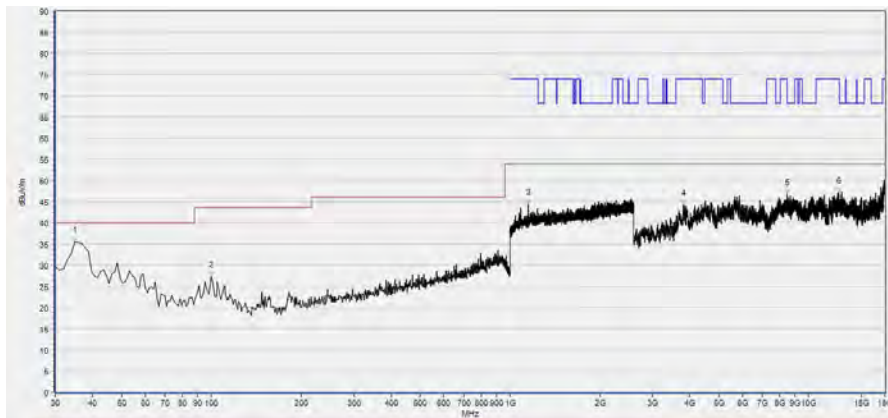
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	29.56	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
184.384	27.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1716.506	45.33	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4491.498	44.79	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5751.470	47.32	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12310.102	47.12	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

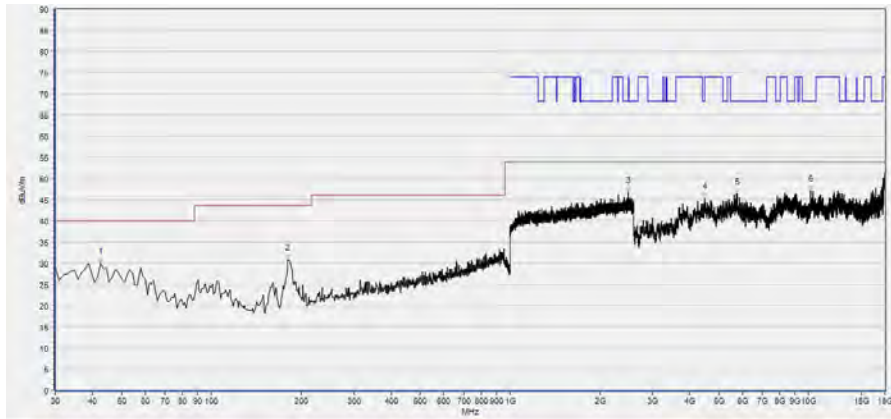
(Antenna Horizontal, 30MHz to 25GHz)



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	35.61	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.910	27.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1151.517	44.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3807.602	44.28	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8480.896	46.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12627.405	47.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

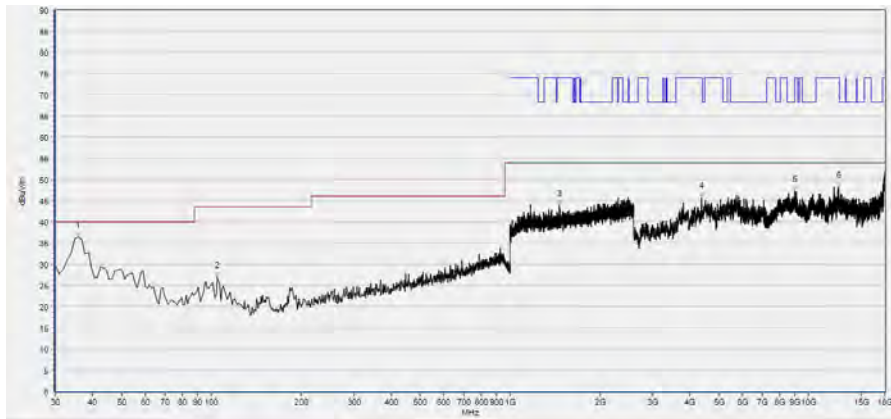
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	29.98	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
180.501	30.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2482.628	46.85	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4491.498	45.33	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5760.712	46.42	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
10165.993	47.12	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

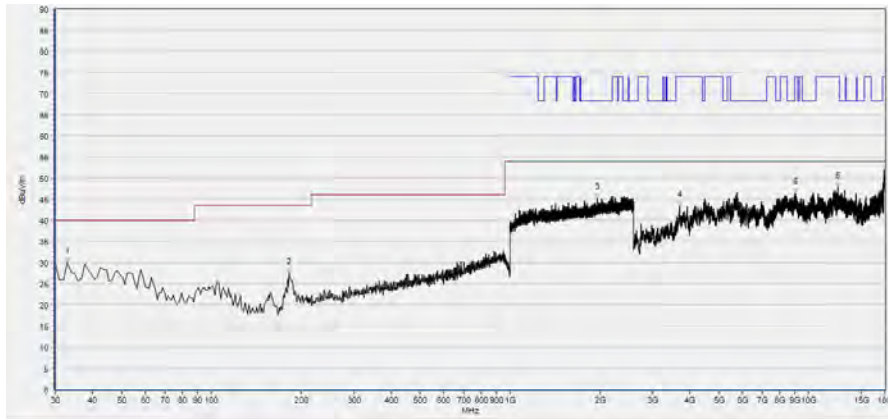
(Antenna Horizontal, 30MHz to 25GHz)



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	37.39	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
104.765	27.01	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1463.621	43.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4377.516	45.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8976.875	47.25	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12615.083	48.18	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

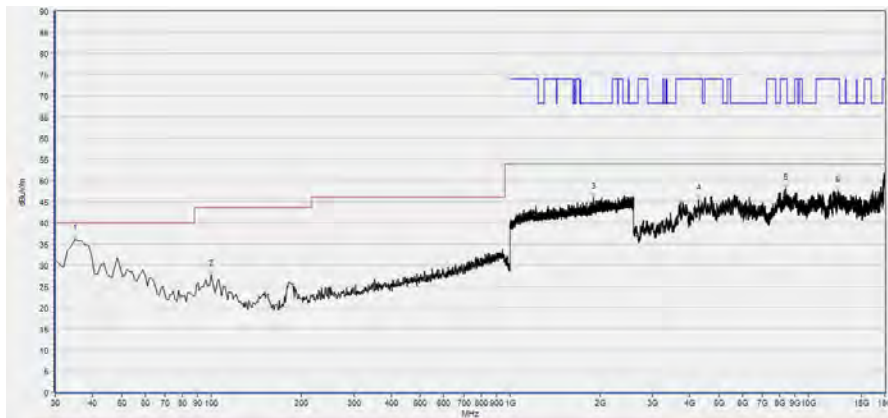
(Antenna Vertical, 30MHz to 25GHz)

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
32.913	30.05	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
182.442	27.41	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1964.588	45.21	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3690.538	43.39	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9041.568	46.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12544.229	47.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



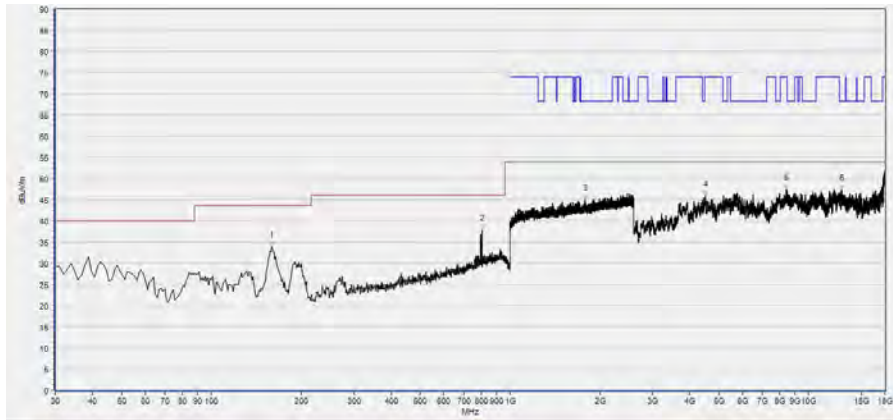
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
34.855	37.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.910	27.75	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1905.902	45.88	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4275.855	45.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8394.639	48.02	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12513.423	47.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)



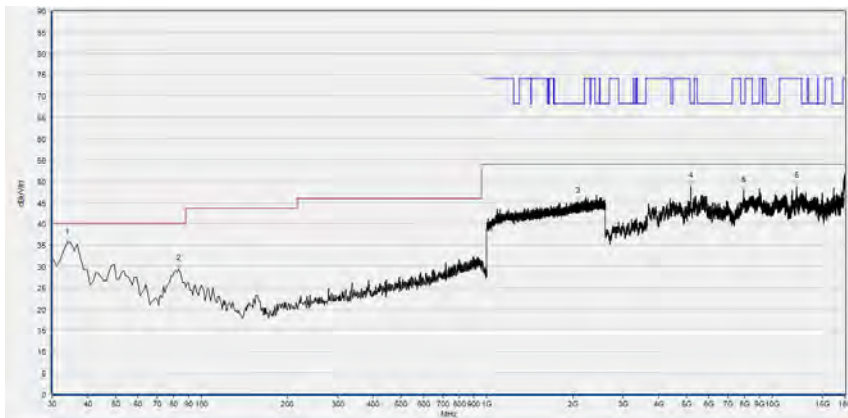
802.11n (HT20) Test mode

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
159.139	33.86	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
804.835	37.83	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1780.527	45.08	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4516.143	45.92	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8406.961	47.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12913.903	47.31	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

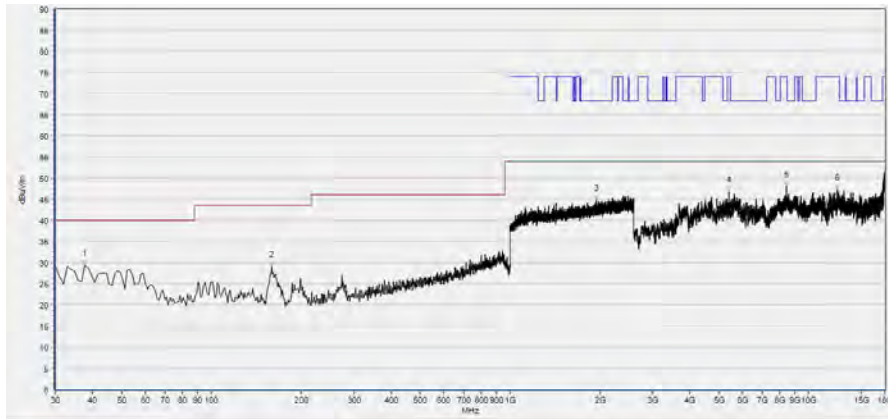
(Antenna Horizontal, 30MHz to 25GHz)



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	35.57	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
83.403	29.32	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
2081.427	45.33	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5184.637	48.78	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
7954.111	47.77	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12168.394	48.80	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

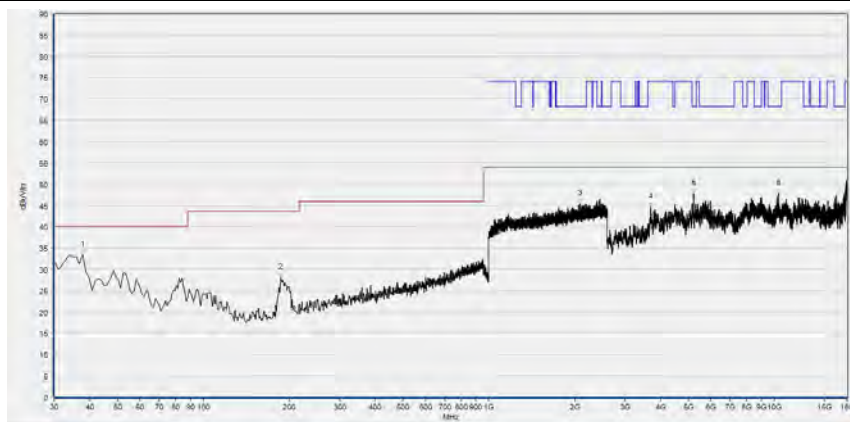
(Antenna Vertical, 30MHz to 25GHz)

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
37.768	29.40	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	29.12	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1944.848	44.80	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5400.280	46.84	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8447.009	48.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12461.052	47.35	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

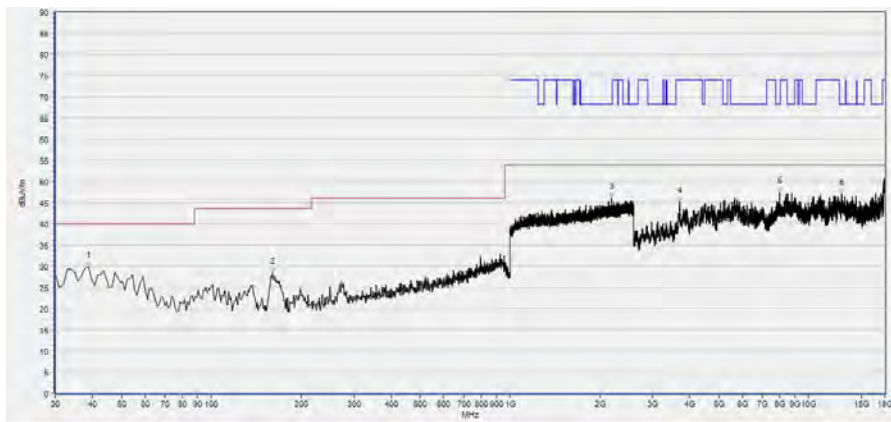
(Antenna Horizontal, 30MHz to 25GHz)



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
37.768	33.33	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
186.326	27.99	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2081.427	45.50	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
3693.619	44.65	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5215.443	47.74	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10335.427	47.84	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

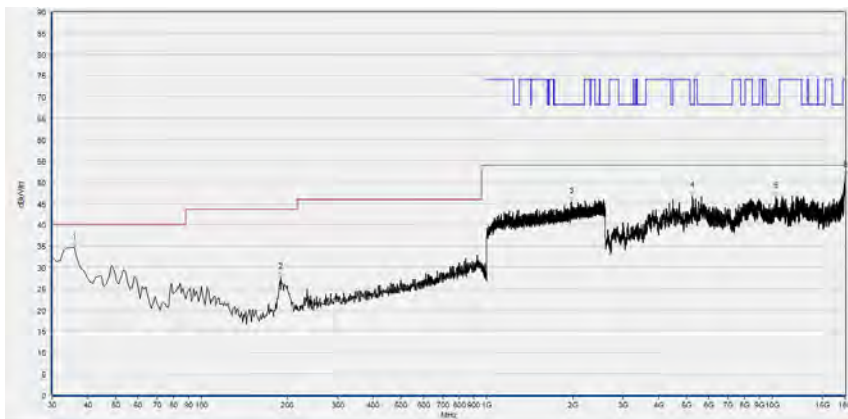
(Antenna Vertical, 30MHz to 25GHz)

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
38.739	29.77	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
160.110	28.46	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2194.532	46.00	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3693.619	45.24	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7987.998	47.43	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12883.097	47.00	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

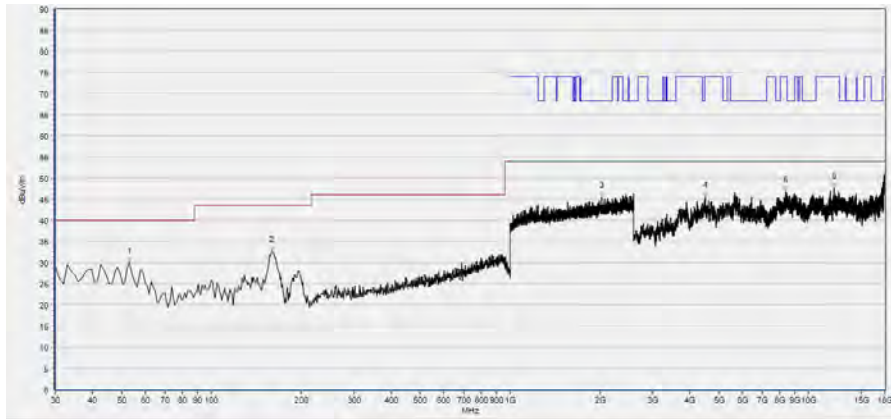
(Antenna Horizontal, 30MHz to 25GHz)



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	34.70	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
190.210	27.64	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1984.862	45.37	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5240.088	46.69	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10310.782	46.62	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
17978.436	51.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

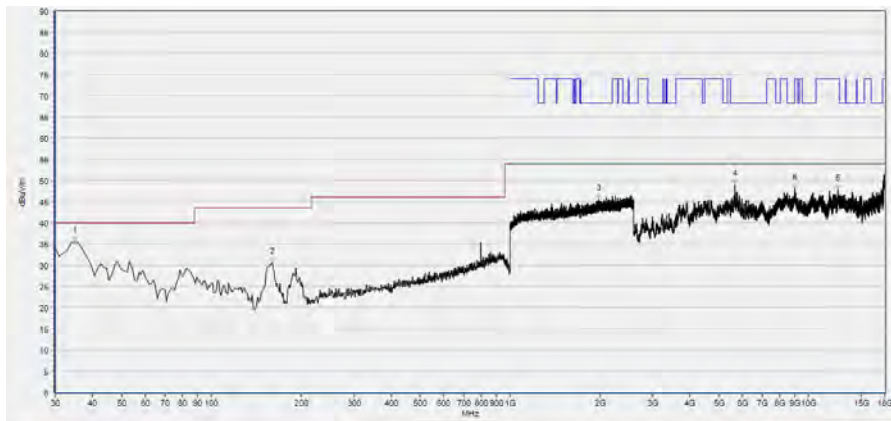
(Antenna Vertical, 30MHz to 25GHz)

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
53.303	30.04	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	32.63	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2023.808	45.57	N/A	N/A	40.00	N/A	54.00	Horizontal	PASS
4513.063	45.59	N/A	N/A	43.50	N/A	54.00	Horizontal	PASS
8400.800	46.79	N/A	N/A	40.00	N/A	54.00	Horizontal	PASS
12140.668	47.74	N/A	N/A	43.50	N/A	54.00	Horizontal	PASS

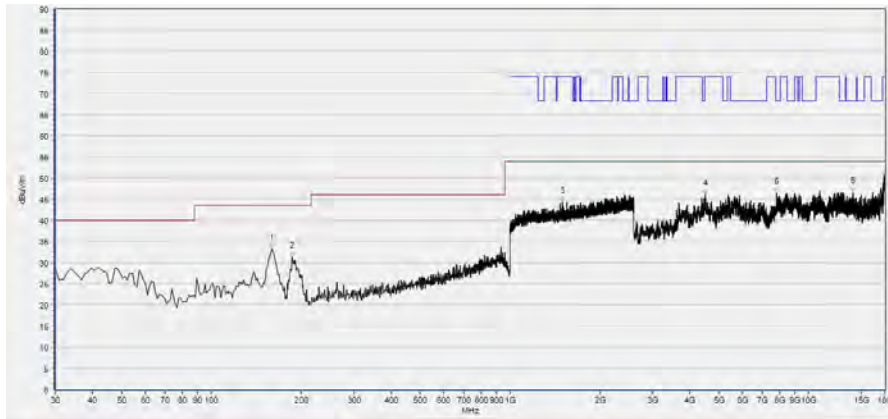
(Antenna Horizontal, 30MHz to 25GHz)



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	35.61	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
160.110	30.49	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1980.594	45.62	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5662.132	48.91	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
9001.520	48.00	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12531.906	47.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

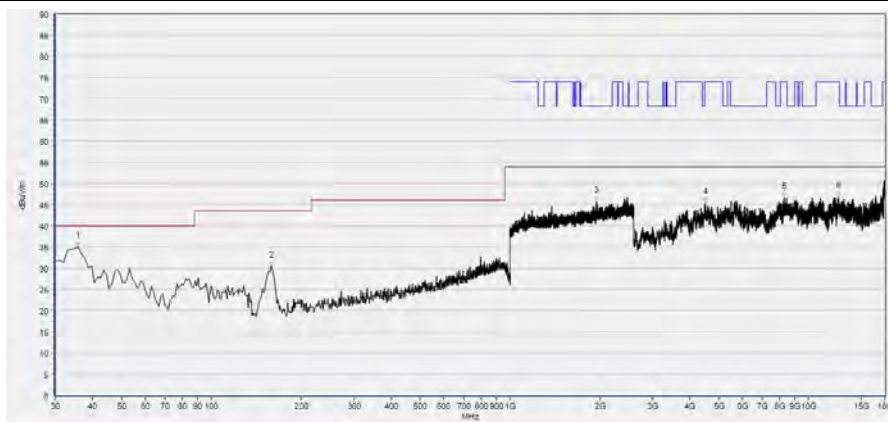
(Antenna Vertical, 30MHz to 25GHz)

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
159.139	33.15	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
186.326	31.30	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1495.098	44.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4503.821	46.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7827.806	46.50	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
14062.973	46.52	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

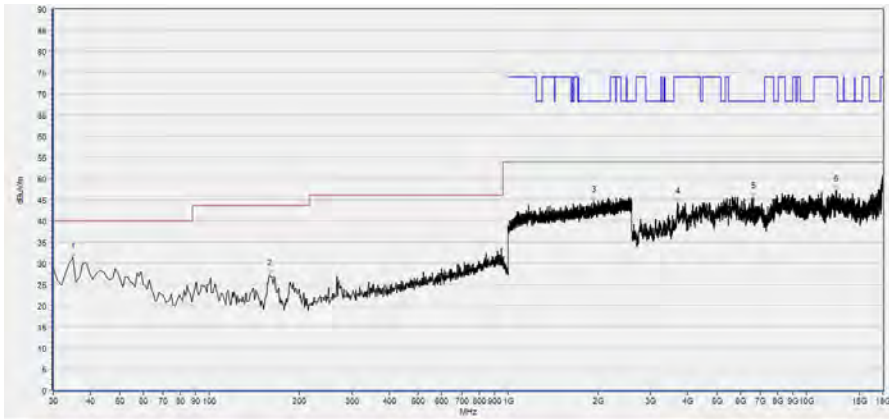
(Antenna Horizontal, 30MHz to 25GHz)



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	34.94	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
159.139	30.35	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1945.915	45.64	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4500.740	45.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8265.253	46.68	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12612.002	46.71	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

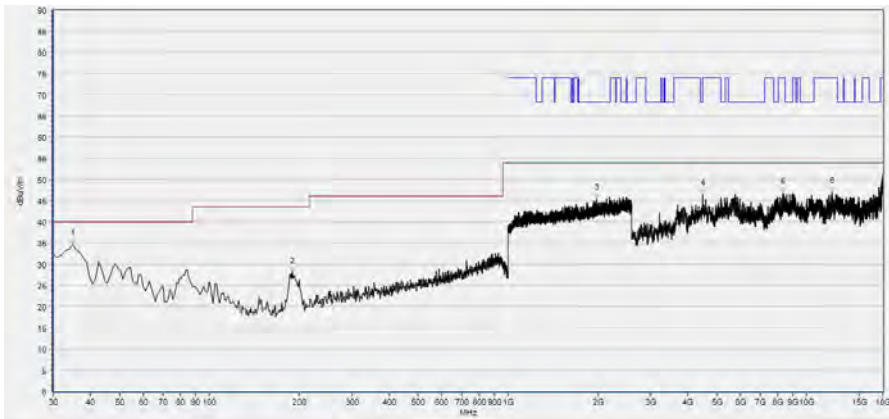
(Antenna Vertical, 30MHz to 25GHz)

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
34.855	31.18	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	27.35	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1938.980	44.68	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3705.941	44.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6641.768	45.60	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12507.261	47.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

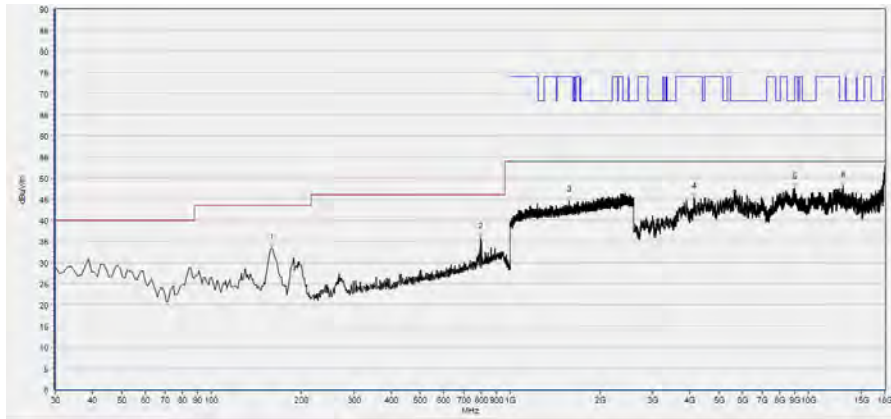
(Antenna Horizontal, 30MHz to 25GHz)



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	34.67	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
190.210	27.99	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1976.325	45.29	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4488.418	46.36	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8326.865	46.82	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12149.910	46.94	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

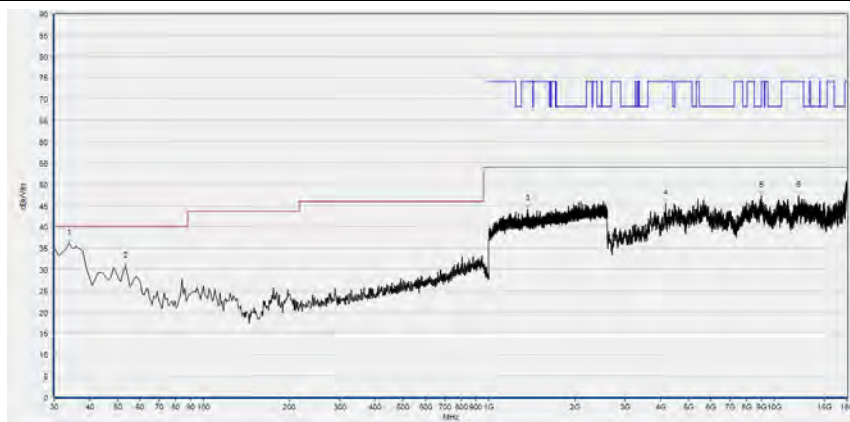
(Antenna Vertical, 30MHz to 25GHz)

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
159.139	33.44	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
798.038	35.87	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1577.793	44.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4124.905	45.32	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8989.198	47.60	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
13067.934	48.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

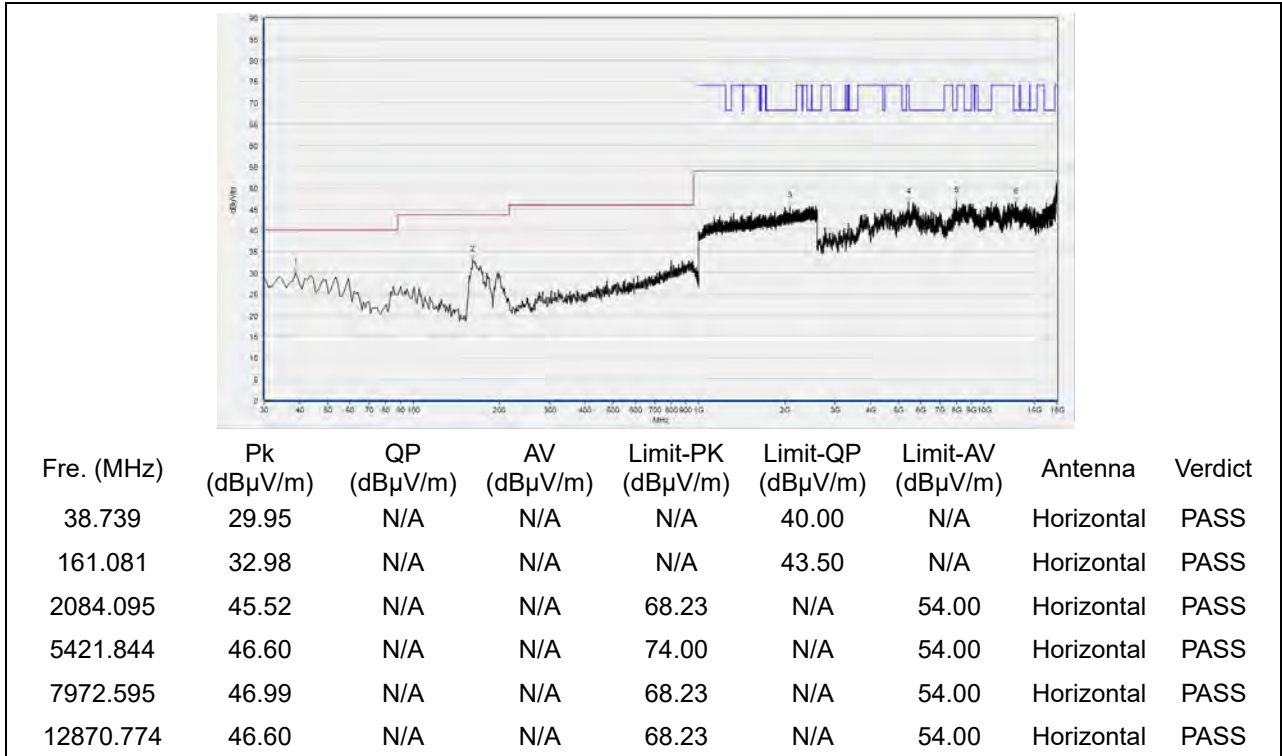
(Antenna Horizontal, 30MHz to 25GHz)



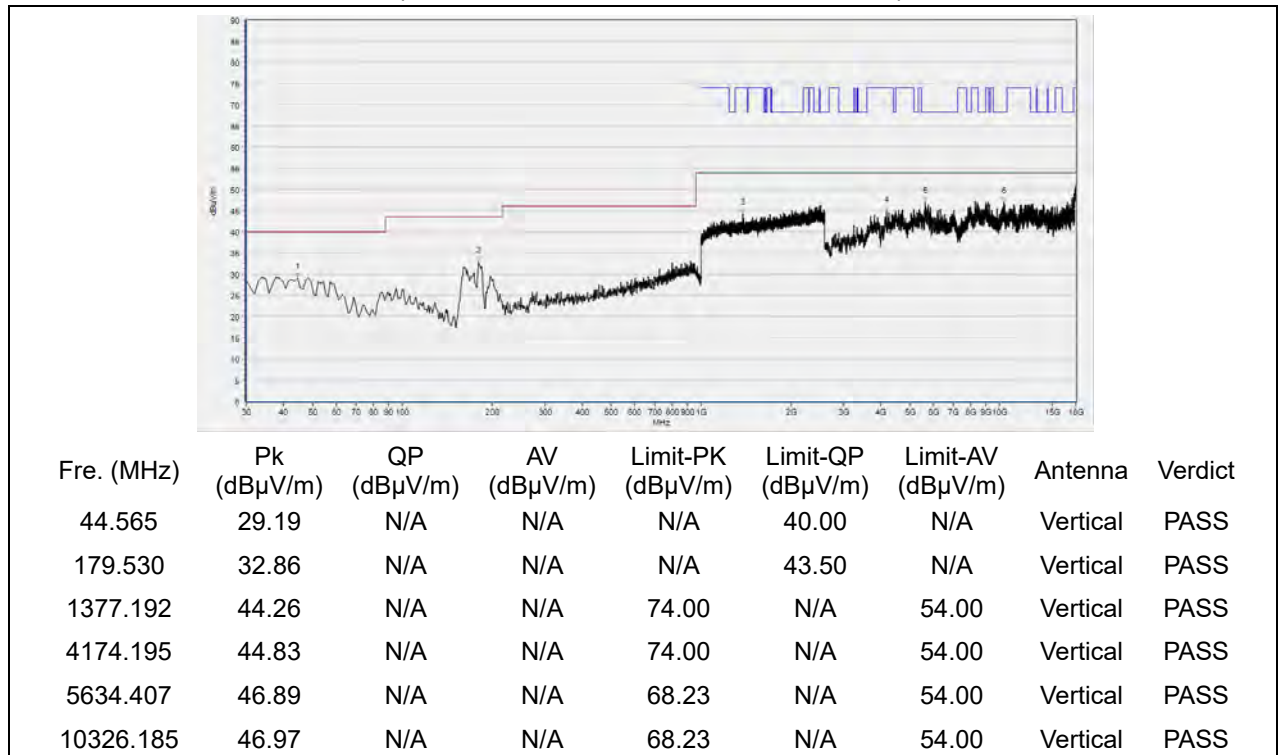
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
33.884	35.97	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
53.303	30.71	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1372.391	44.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4155.711	45.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9010.762	47.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12193.039	47.29	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 120

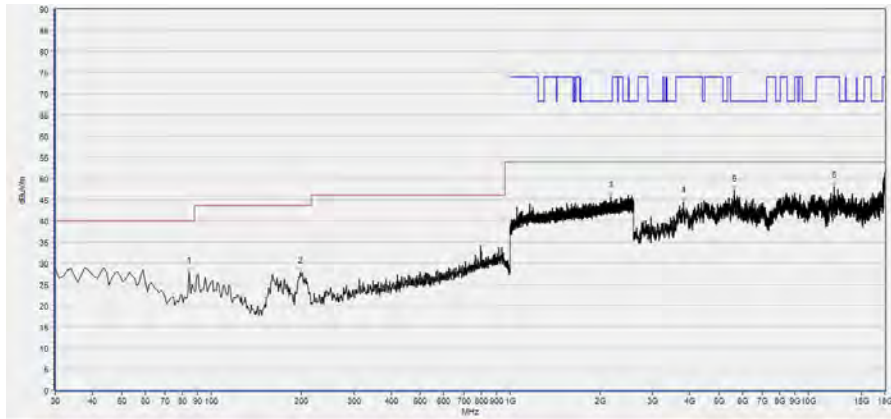


(Antenna Horizontal, 30MHz to 25GHz)



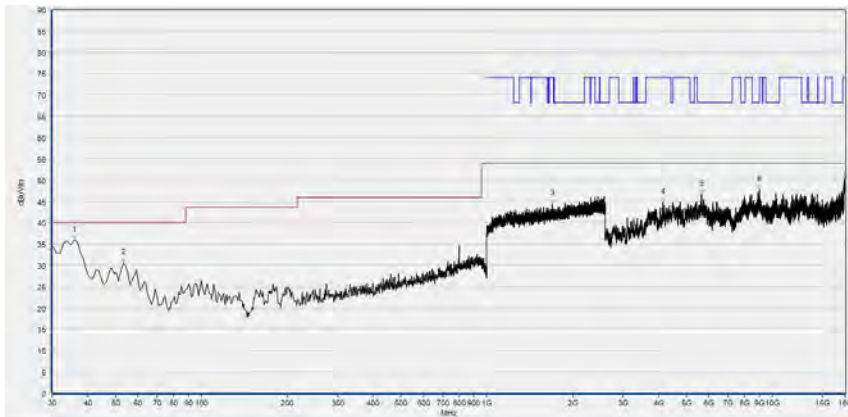
(Antenna Vertical, 30MHz to 25GHz)

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
84.374	27.88	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
198.949	27.78	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2177.993	45.69	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3807.602	44.43	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5649.810	47.14	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12146.829	48.12	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

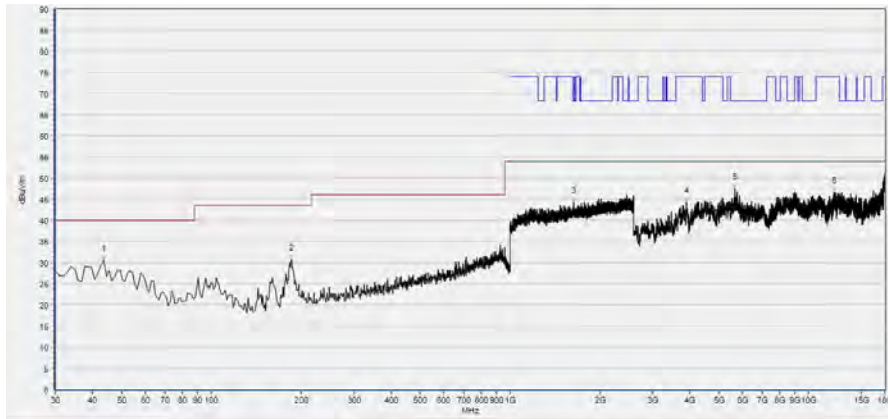
(Antenna Horizontal, 30MHz to 25GHz)



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	35.94	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
53.303	30.55	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1691.964	44.41	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4140.308	44.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5646.729	46.57	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
9026.165	47.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

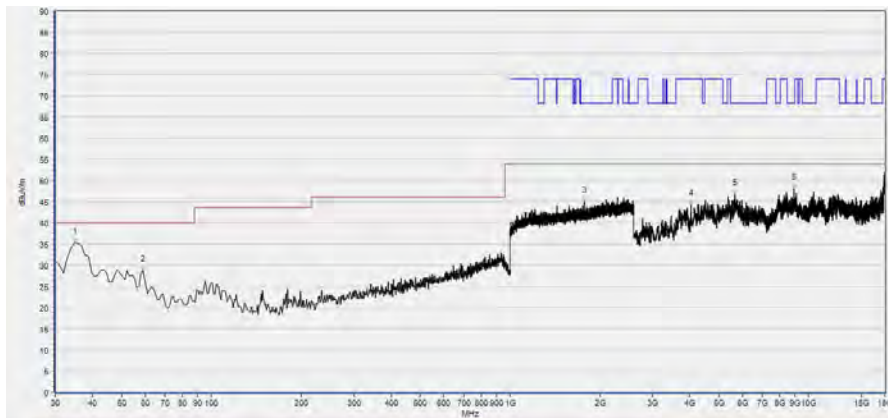
(Antenna Vertical, 30MHz to 25GHz)

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
43.594	30.48	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
185.355	30.78	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1636.479	44.25	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3903.101	44.37	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5655.971	47.48	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12168.394	46.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

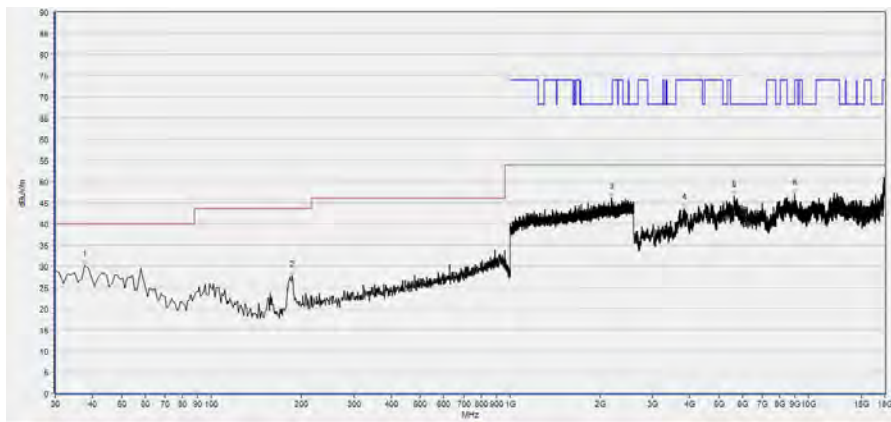
(Antenna Horizontal, 30MHz to 25GHz)



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	35.41	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
59.129	28.73	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1777.859	45.06	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4032.486	44.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5668.294	46.77	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8936.827	48.09	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

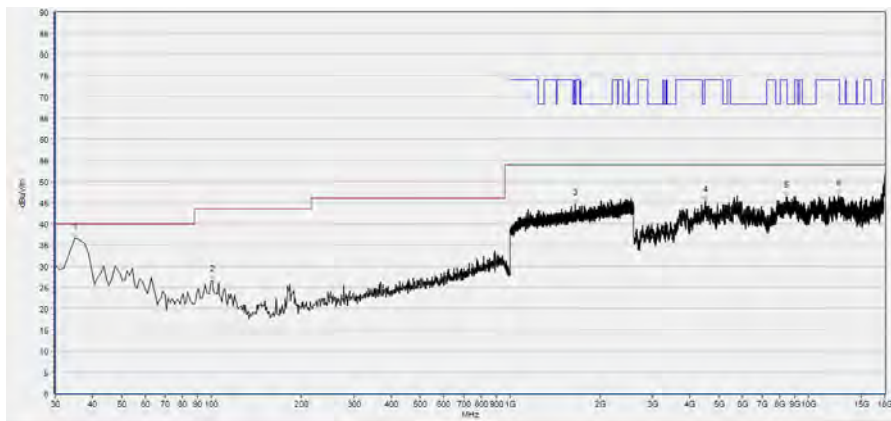
(Antenna Vertical, 30MHz to 25GHz)

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
37.768	30.18	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
186.326	27.65	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2183.861	46.15	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3826.085	43.62	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5631.326	46.67	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8967.634	46.94	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

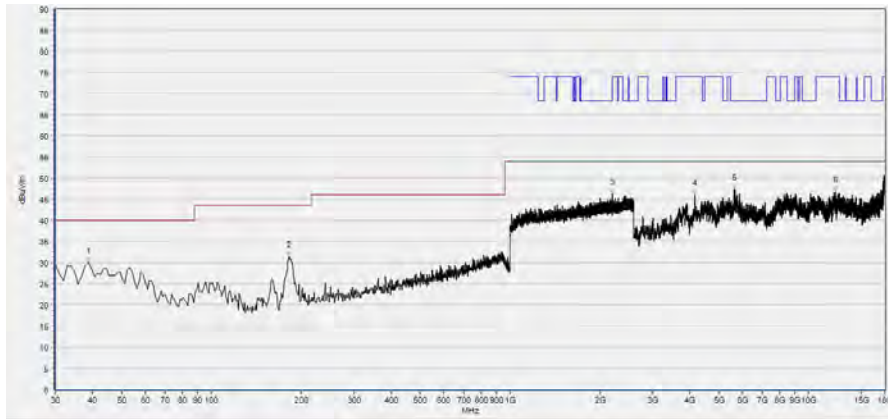
(Antenna Horizontal, 30MHz to 25GHz)



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	36.60	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.881	26.54	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1654.618	44.63	N/A	N/A	40.00	N/A	54.00	Vertical	PASS
4516.143	45.35	N/A	N/A	43.50	N/A	54.00	Vertical	PASS
8437.768	46.38	N/A	N/A	40.00	N/A	54.00	Vertical	PASS
12602.761	46.75	N/A	N/A	43.50	N/A	54.00	Vertical	PASS

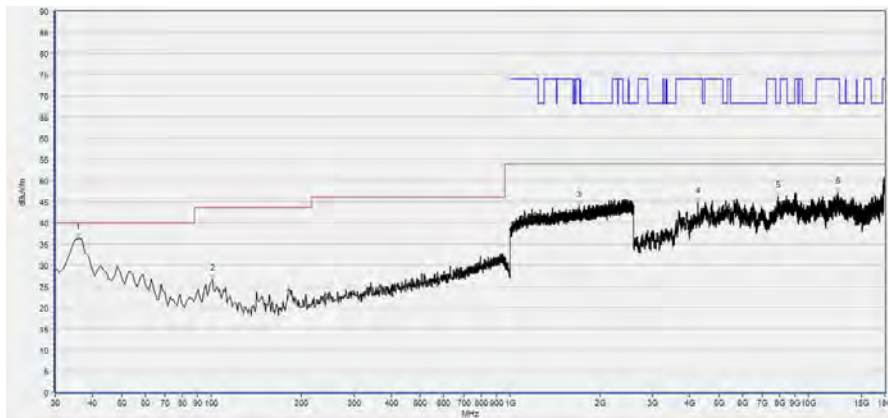
(Antenna Vertical, 30MHz to 25GHz)

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
38.739	29.92	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
182.442	31.43	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2203.601	46.26	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4161.872	46.04	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5649.810	47.38	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12288.538	46.75	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



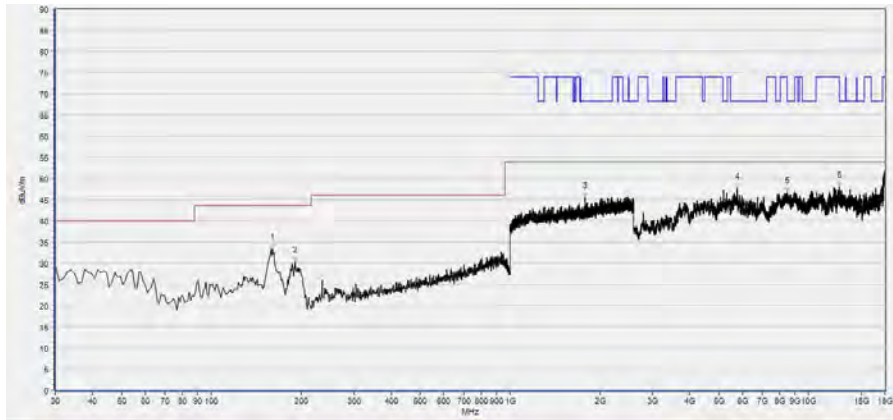
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
35.826	36.29	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.881	26.65	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1698.900	43.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4257.371	44.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7910.982	46.27	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12534.987	47.09	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)



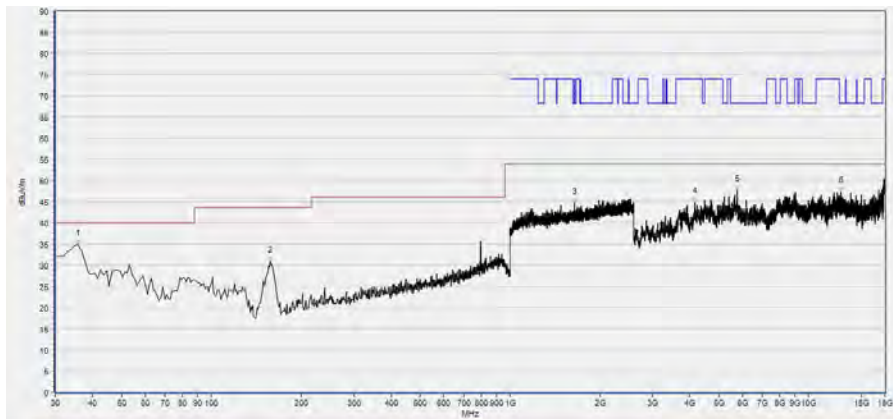
802.11n (HT40) Test mode

Plots for Channel = 38



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
160.110	33.32	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
191.181	30.39	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1782.661	45.46	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5763.793	47.67	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8462.412	46.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12710.582	48.03	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

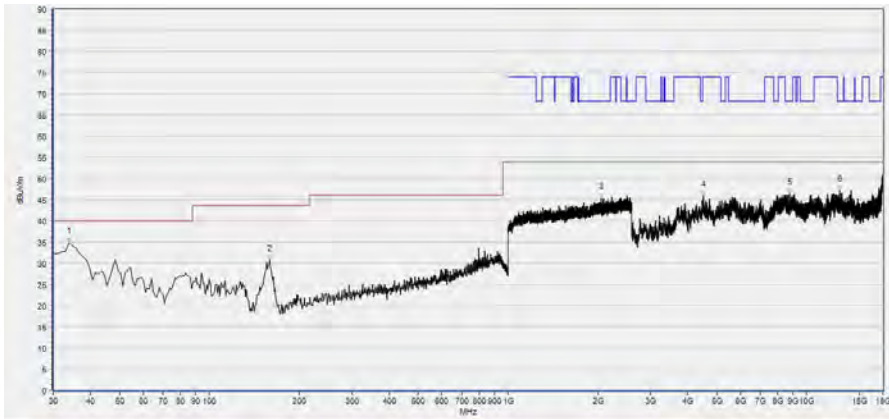
(Antenna Horizontal, 30MHz to 25GHz)



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	34.90	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
157.197	30.88	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1643.414	44.59	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4152.631	44.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5757.632	47.74	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12849.210	47.29	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

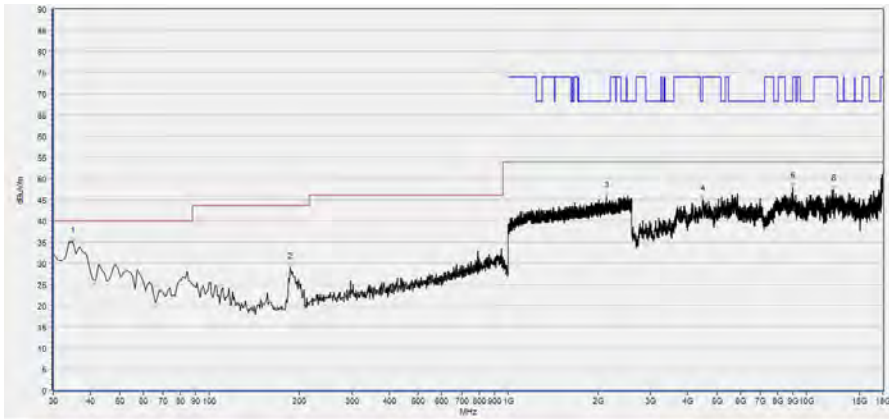
(Antenna Vertical, 30MHz to 25GHz)

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
33.884	34.91	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	30.65	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2055.819	45.37	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4522.304	45.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8795.119	46.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12883.097	47.12	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

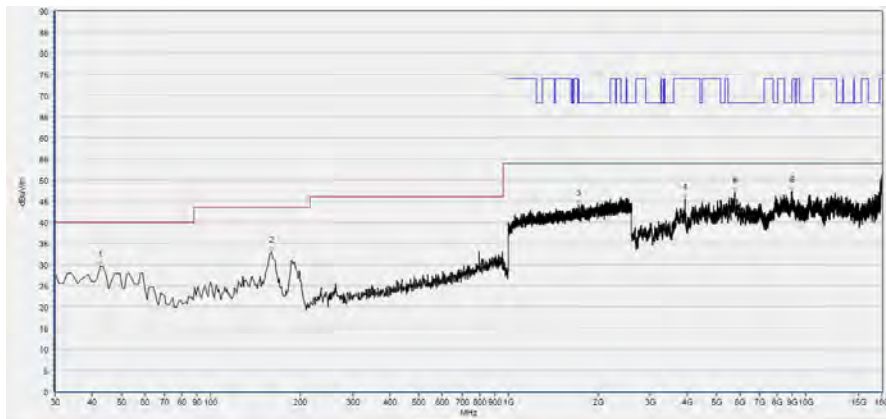
(Antenna Horizontal, 30MHz to 25GHz)



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	35.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
186.326	28.91	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2132.111	45.78	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4488.418	44.92	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8964.553	47.78	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12294.699	47.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

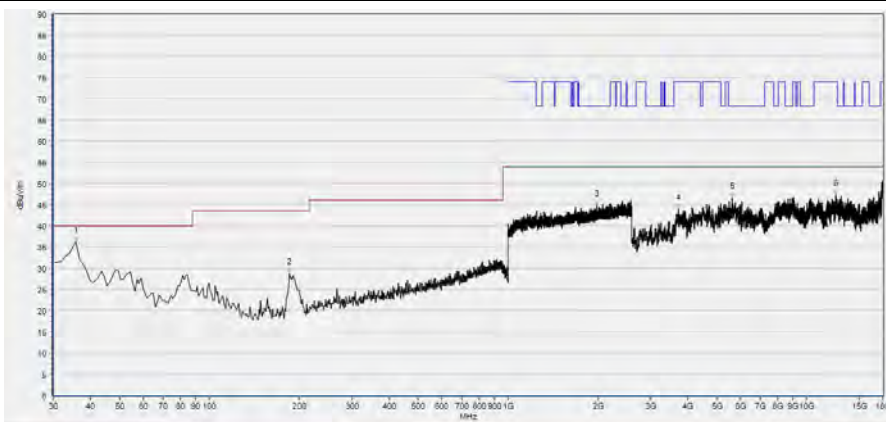
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	29.61	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
160.110	32.98	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1723.441	44.08	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3918.504	45.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5757.632	47.20	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
9001.520	47.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

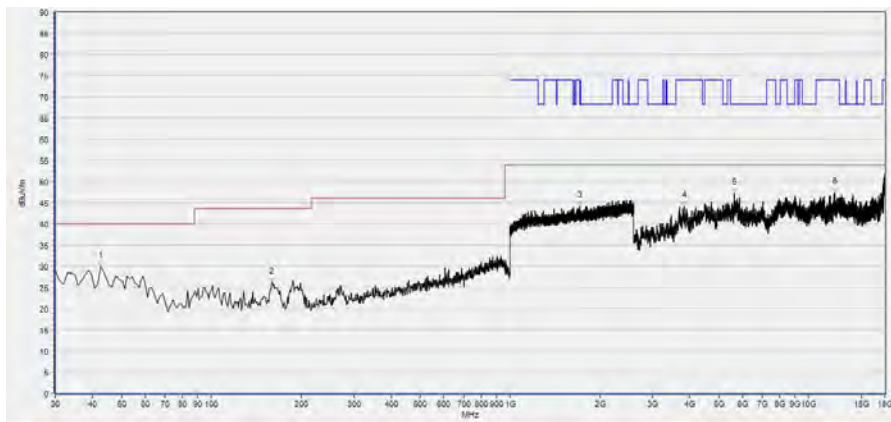
(Antenna Horizontal, 30MHz to 25GHz)



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	36.23	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
185.355	28.77	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1984.328	44.82	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
3733.667	43.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5643.649	46.55	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12531.906	47.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

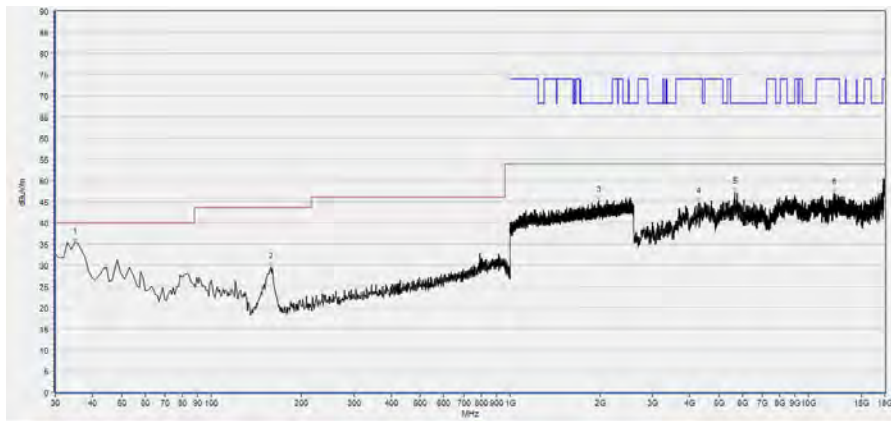
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	29.77	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
159.139	26.11	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1708.503	44.03	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3835.327	44.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5649.810	47.09	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12266.973	47.33	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

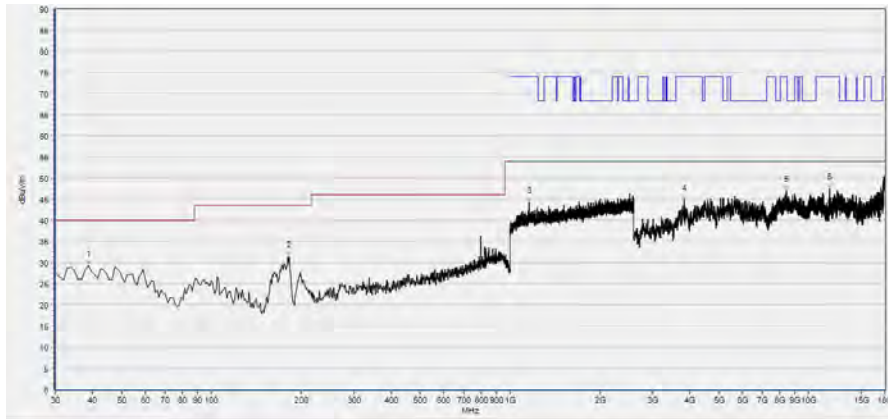
(Antenna Horizontal, 30MHz to 25GHz)



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	35.32	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
158.168	29.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1980.594	45.15	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4272.775	44.75	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5652.891	47.12	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12199.200	46.95	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

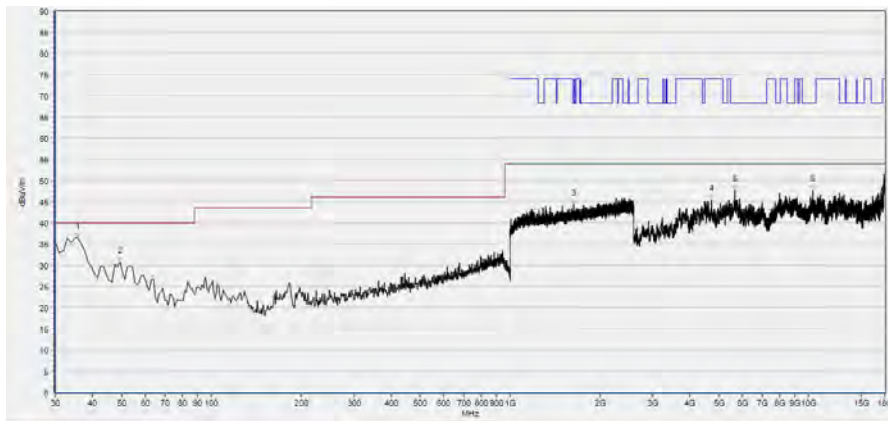
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 102



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	29.28	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
182.442	31.37	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1161.654	44.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3832.246	44.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8419.284	47.00	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11740.188	47.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

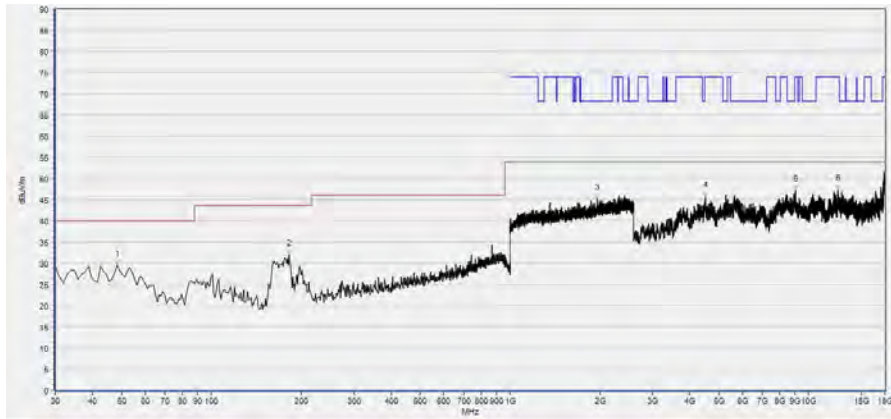
(Antenna Horizontal, 30MHz to 25GHz)



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	36.38	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
49.419	30.79	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1634.878	44.29	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4719.464	45.39	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5659.052	47.69	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10329.266	47.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

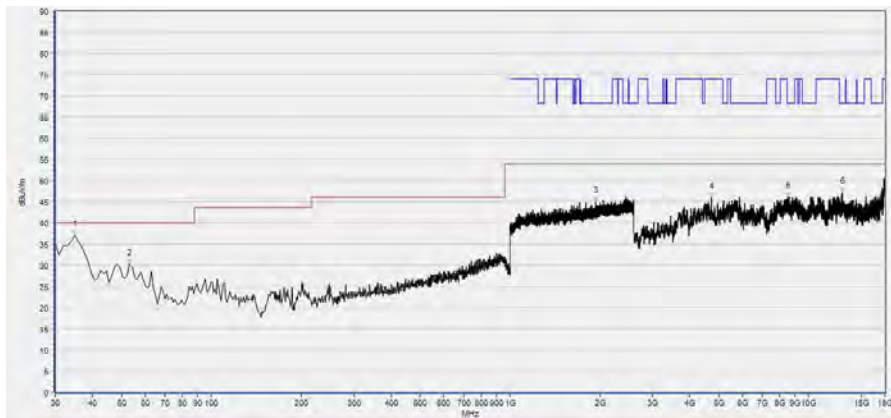
(Antenna Vertical, 30MHz to 25GHz)

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
48.448	29.39	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
182.442	31.88	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1957.119	45.11	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4525.385	45.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9056.971	47.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12531.906	47.41	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

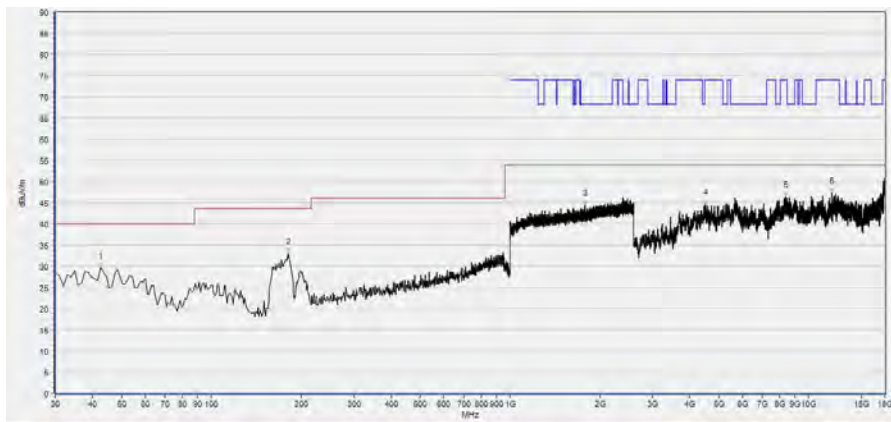
(Antenna Horizontal, 30MHz to 25GHz)



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	36.97	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
53.303	30.26	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1936.846	45.06	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
4719.464	45.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8511.702	46.01	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12984.757	47.21	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

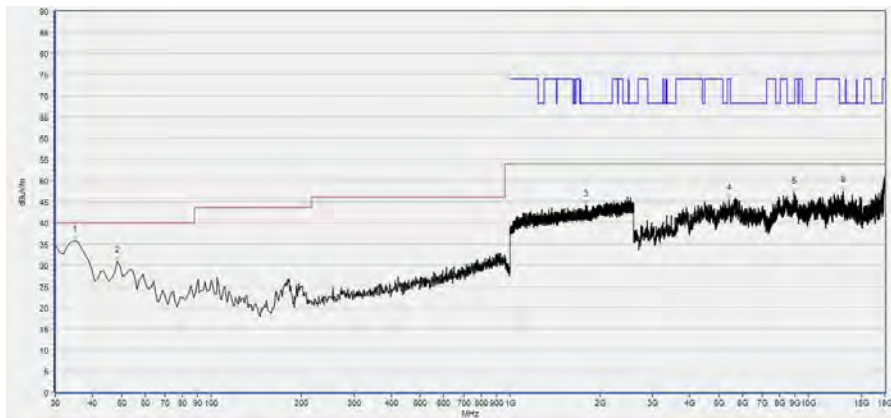
(Antenna Vertical, 30MHz to 25GHz)

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
42.623	29.59	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
181.471	33.01	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1786.395	44.39	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4509.982	44.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8379.236	46.43	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11937.347	47.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

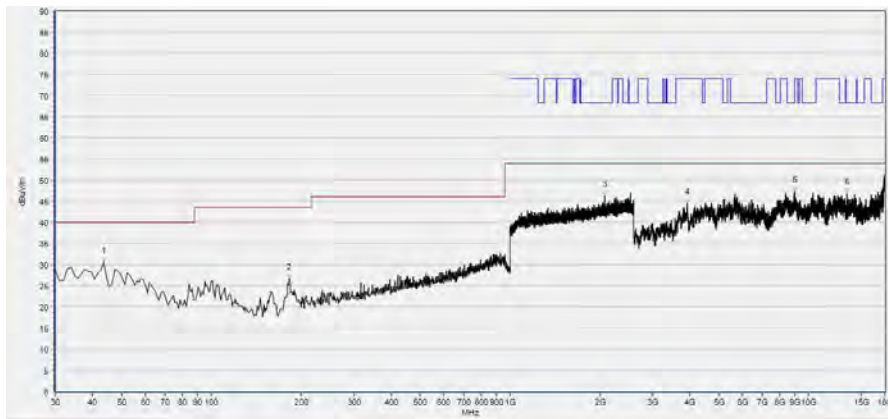
(Antenna Horizontal, 30MHz to 25GHz)



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	35.78	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
48.448	30.81	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1793.331	44.14	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5400.280	45.48	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8924.505	47.10	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
13077.175	47.50	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

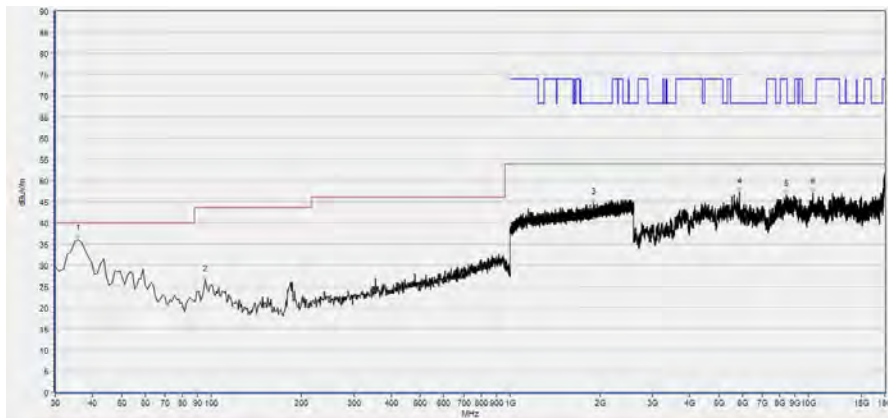
(Antenna Vertical, 30MHz to 25GHz)

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
43.594	30.60	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
182.442	26.58	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2078.760	46.20	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
3930.826	44.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8992.278	47.30	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
13477.656	46.84	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

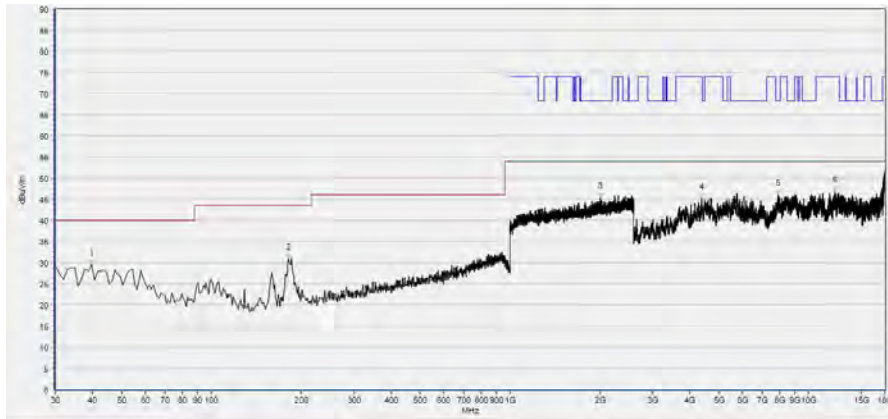
(Antenna Horizontal, 30MHz to 25GHz)



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	36.09	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
95.055	26.43	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1905.902	44.61	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5862.372	47.21	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8443.929	46.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10347.750	46.93	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

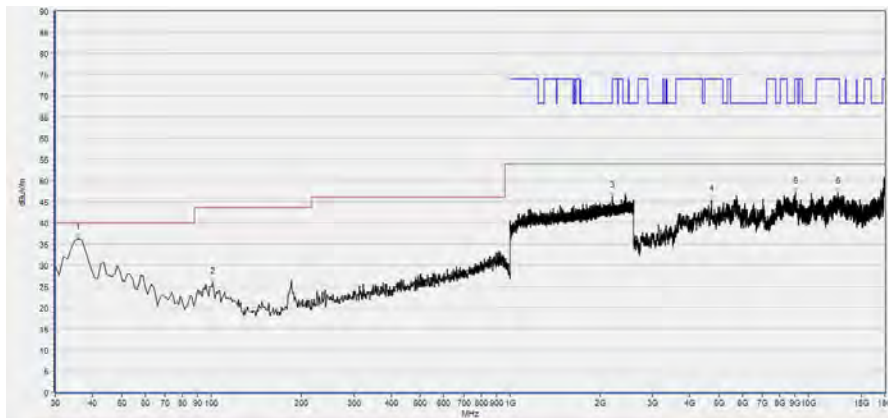
(Antenna Vertical, 30MHz to 25GHz)

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
39.710	29.39	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
181.471	30.90	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2005.669	45.35	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
4374.435	45.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7920.224	46.05	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12279.296	46.74	N/A	N/A	74.00	N/A	54.00	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	36.20	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.881	25.93	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2201.467	46.29	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4741.028	45.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9013.843	47.15	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12516.503	47.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

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	±2.22dB
Power spectral density (PSD)	±2.22dB
Bandwidth	±5%
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

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

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	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, the test firm registration number is 226174.



4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Attenuator 1	(N/A)	10dB	Resnet	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2019.04.09	2020.04.08
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2019.04.16	2020.04.15
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	YOMA	(N/A)	(N/A)	2019.01.22	2020.01.21
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY56400093	N9038A	KEYSIGHT	2019.05.08	2020.05.09
LISN	812744	NSLK 8127	Schwarzbeck	2019.05.08	2020.05.09
Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2019.05.08	2020.05.09
Coaxial cable(BNC)	CB01	EMC01	Morlab	N/A	N/A

4.3 List of Software Used

Description	Manufacturer	Software Version
Test system	Tonscend	V2.6
Power Panel	Agilent	V3.8
MORLAB EMCR V1.2	MORLAB	V 1.0

**4.4 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY54130016	N9038A	Agilent	2018.08.04	2019.08.03
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.08	2020.05.09
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.02.15	2020.02.14
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2018.08.06	2019.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2018.08.02	2019.08.01
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	2019.05.08	2020.05.09
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.09
26GHz -40GHz pre-Amplifier	MA05	BBV9721	Rohde& Schwarz	2019.05.08	2020.05.09
Notch Filter	N/A	WRCG-5150-5350	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCG-5470-5725	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCG-5725-5850	Wainwright	2018.12.01	2019.11.30



REPORT No.: SZ19040375W04

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

————— END OF REPORT —————