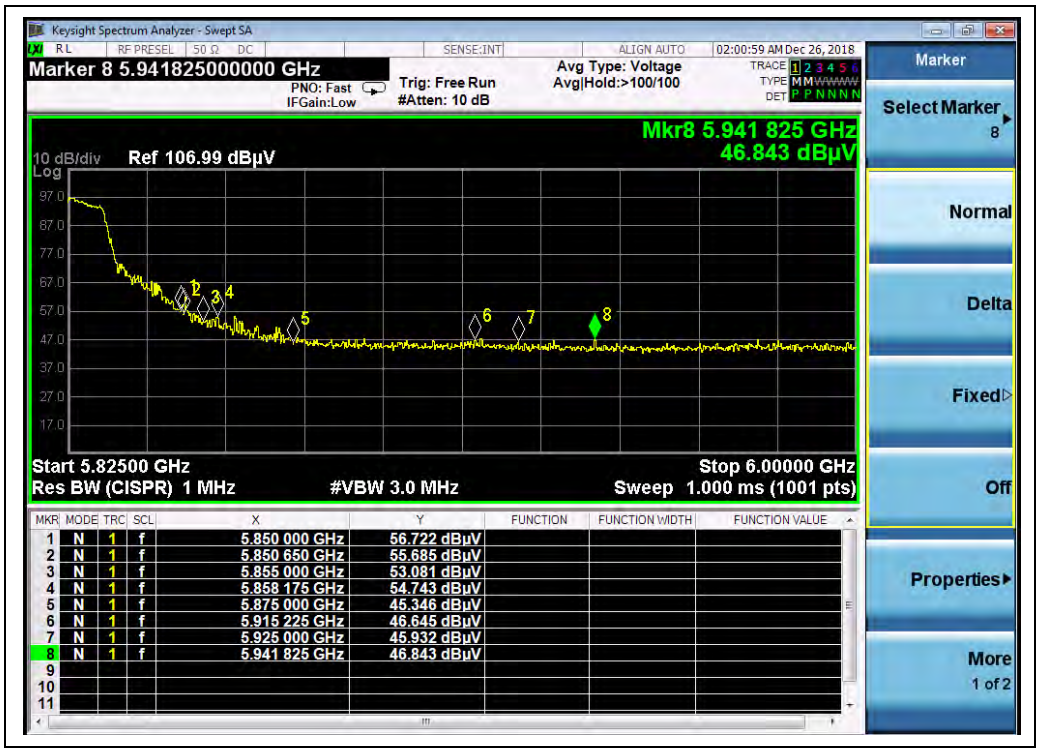
(Channel 48, PEAK, 802.11a)

(Channel 48, AVG, 802.11a)

(Channel 149, PEAK, 802.11a)

(Channel 149, AVG, 802.11a)



(Channel 165, PEAK, 802.11a)

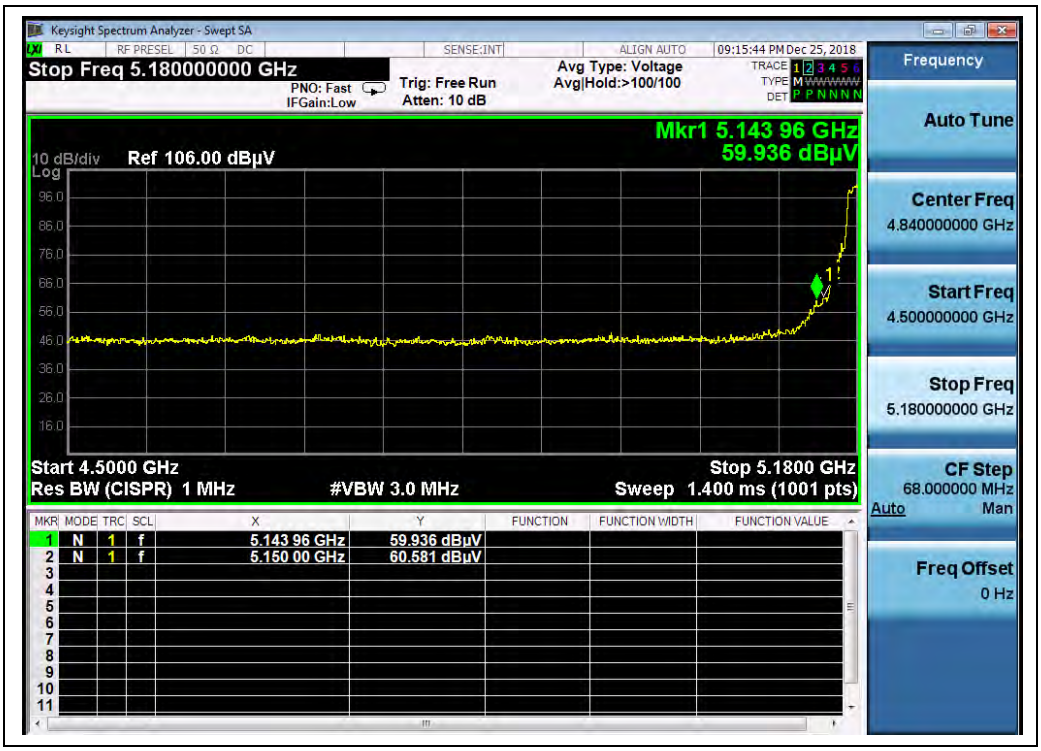
(Channel 165, AVG, 802.11a)

802.11n (HT20) Test mode

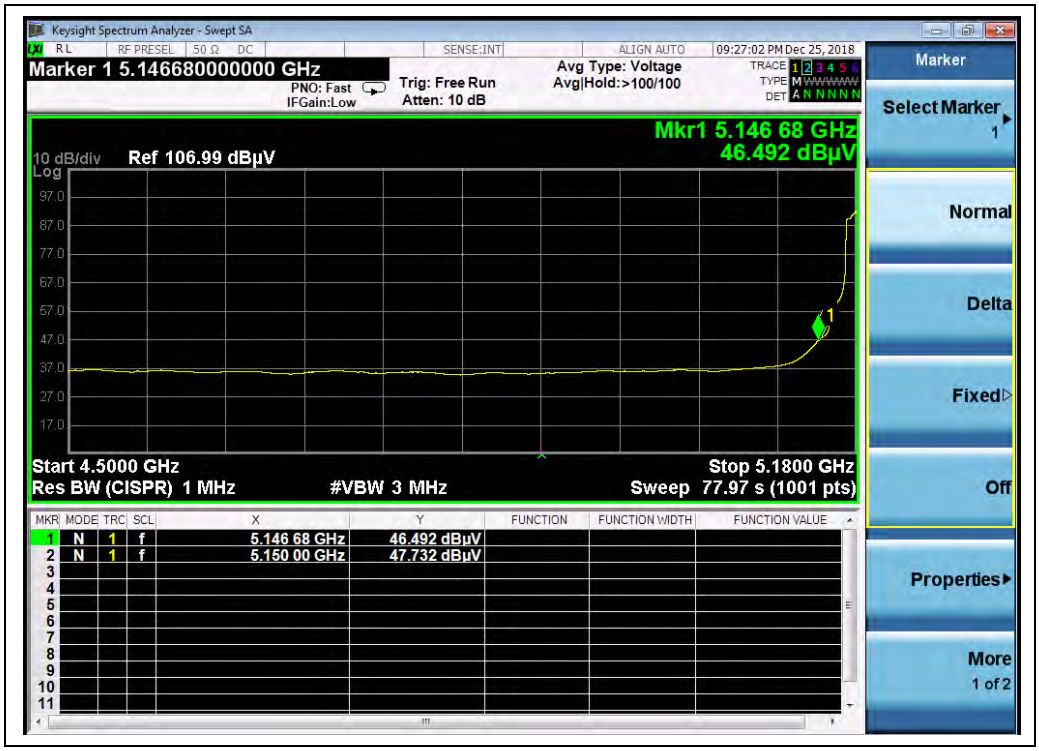
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
36	5150.00	PK	60.58	-49.53	32.20	43.25	74	PASS
36	5150.00	AV	47.73	-49.53	32.20	30.4	54	PASS
48	5358.12	PK	46.33	-49.53	32.20	29.00	74	PASS
48	5350.00	AV	35.21	-49.53	32.20	17.88	54	PASS
149	5725.00	PK	64.60	-49.53	32.20	47.27	122.23	PASS
149	5725.00	AV	50.99	-49.53	32.20	33.66	54	PASS
165	5850.65	PK	56.60	-49.53	32.20	39.27	120.75	PASS
165	5850.00	AV	42.49	-49.53	32.20	25.16	54	PASS

B. Test Plots:



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



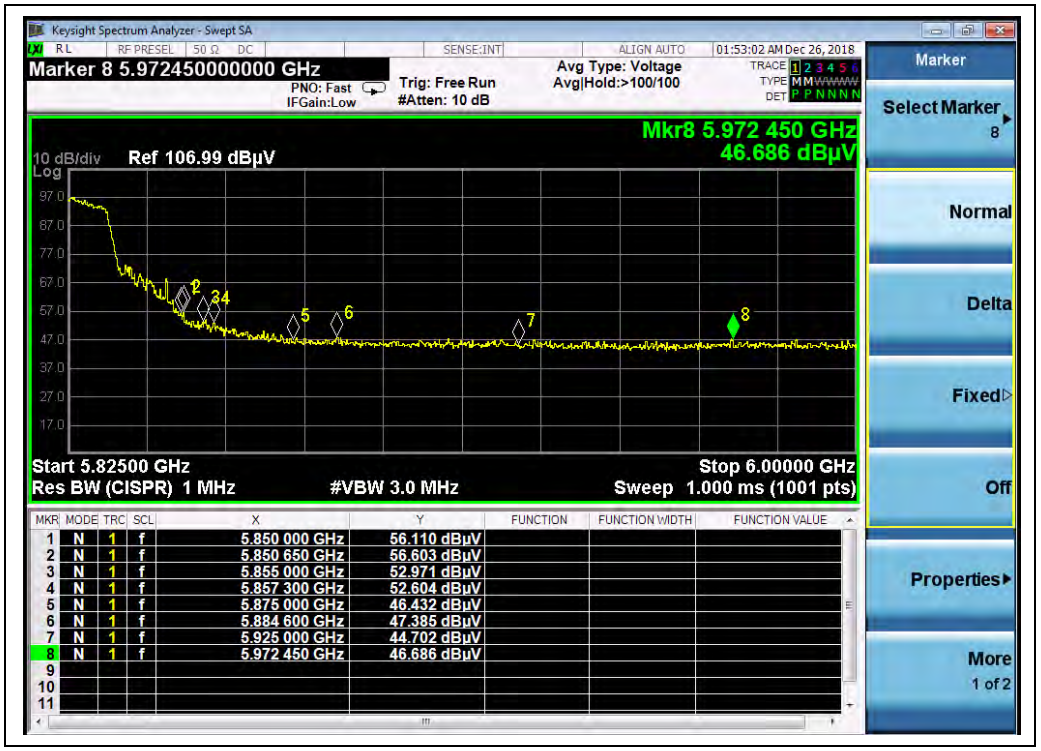
(Channel 36, AVG, 802.11 n (HT20))

(Channel 48, PEAK, 802.11 n (HT20))

(Channel 48, AVG, 802.11n (HT20))

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

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



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

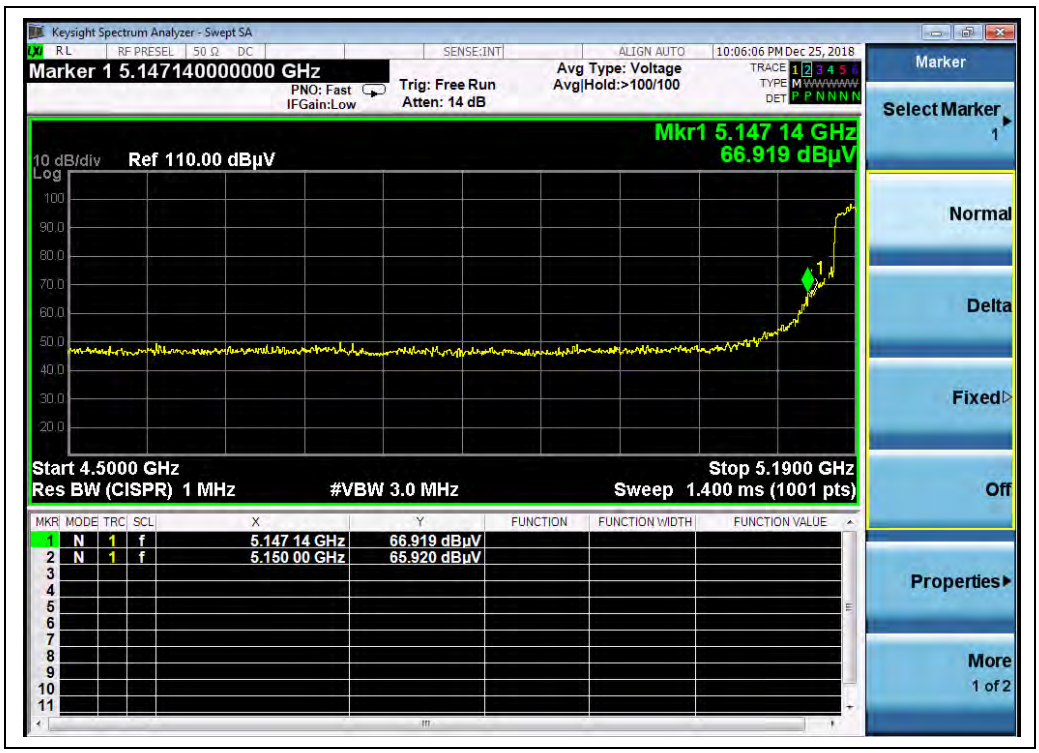
(Channel 165, AVG, 802.11n (HT20))

802.11n (HT40) Test mode

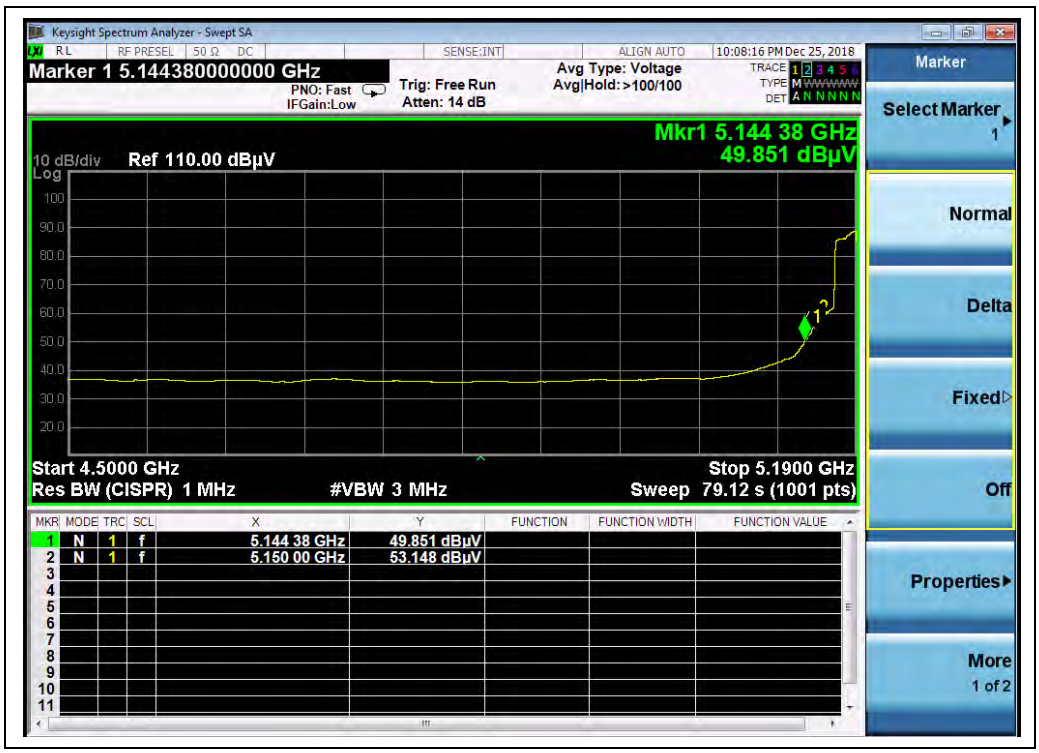
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict
38	5147.14	PK	66.92	-49.53	32.20	49.59	74	PASS
38	5150.00	AV	53.15	-49.53	32.20	35.82	54	PASS
46	5366.50	PK	45.48	-49.53	32.20	28.15	74	PASS
46	5350.00	AV	35.04	-49.53	32.20	17.71	54	PASS
151	5725.00	PK	67.81	-49.53	32.20	50.48	122.23	PASS
151	5725.00	AV	54.00	-49.53	32.20	36.67	54	PASS
159	5853.88	PK	50.85	-49.53	32.20	33.52	113.38	PASS
159	5850.00	AV	39.19	-49.53	32.20	21.86	54	PASS

B. Test Plots:



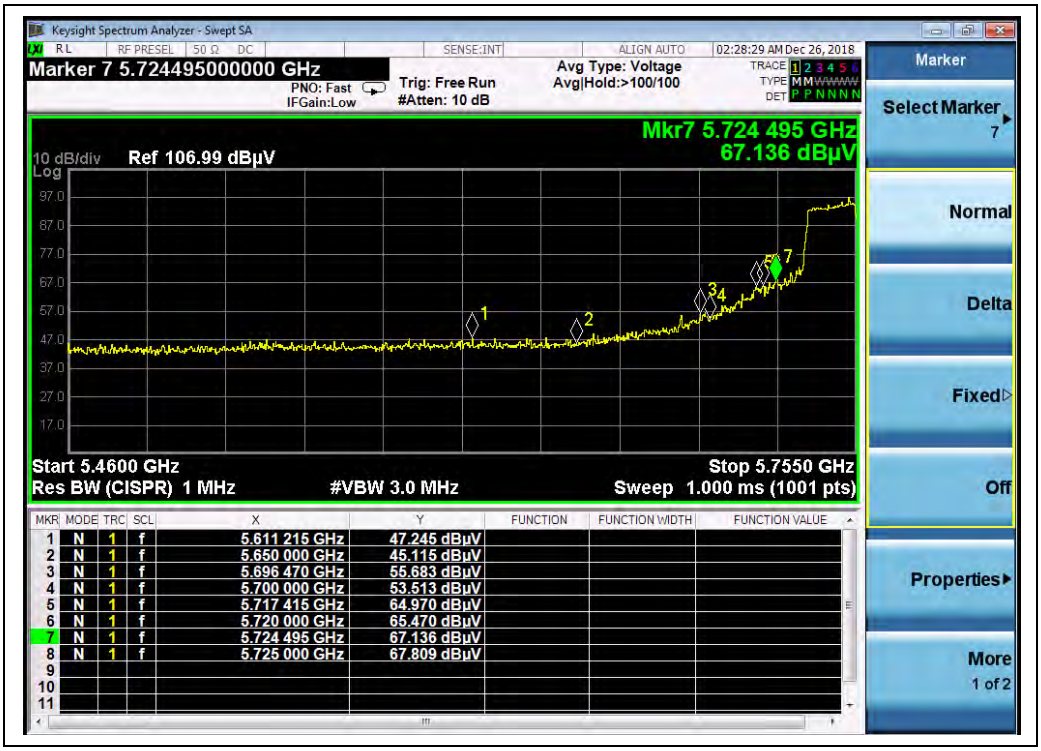
(Channel 38, PEAK, 802.11n (HT40))



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

(Channel 46, PEAK, 802.11n (HT40))

(Channel 46, AVG, 802.11n (HT40))



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

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

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

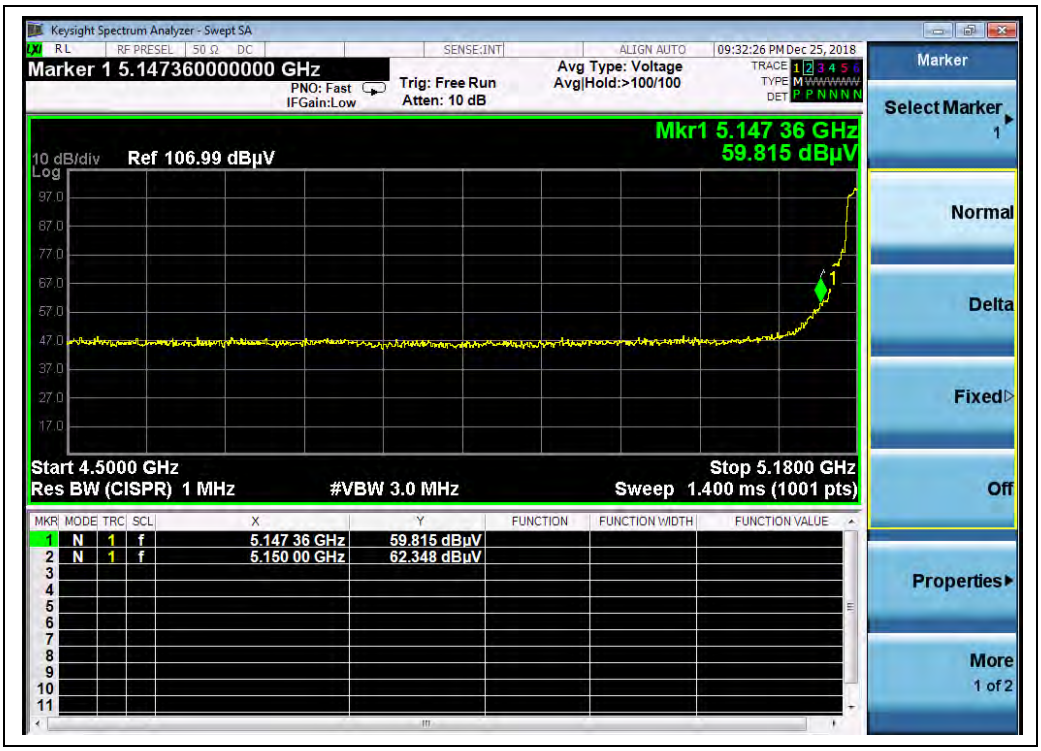
(Channel 159, AVG, 802.11n (HT40))

802.11ac (VHT20) Test mode

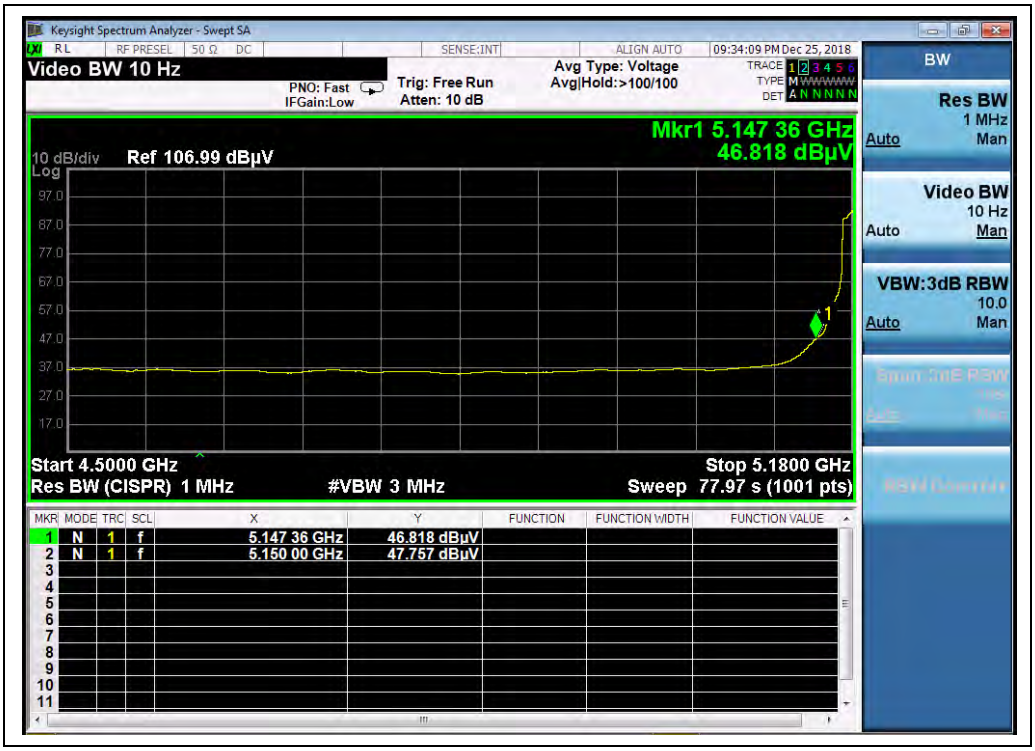
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
36	5150.00	PK	62.35	-49.53	32.20	45.02	74	PASS
36	5150.00	AV	47.76	-49.53	32.20	30.43	54	PASS
48	5383.86	PK	46.42	-49.53	32.20	29.09	74	PASS
48	5350.00	AV	35.21	-49.53	32.20	17.88	54	PASS
149	5725.00	PK	50.86	-49.53	32.20	33.53	122.23	PASS
149	5725.00	AV	65.01	-49.53	32.20	47.68	54	PASS
165	5850.00	PK	56.93	-49.53	32.20	39.60	122.23	PASS
165	5850.00	AV	42.27	-49.53	32.20	24.94	54	PASS

B. Test Plots:



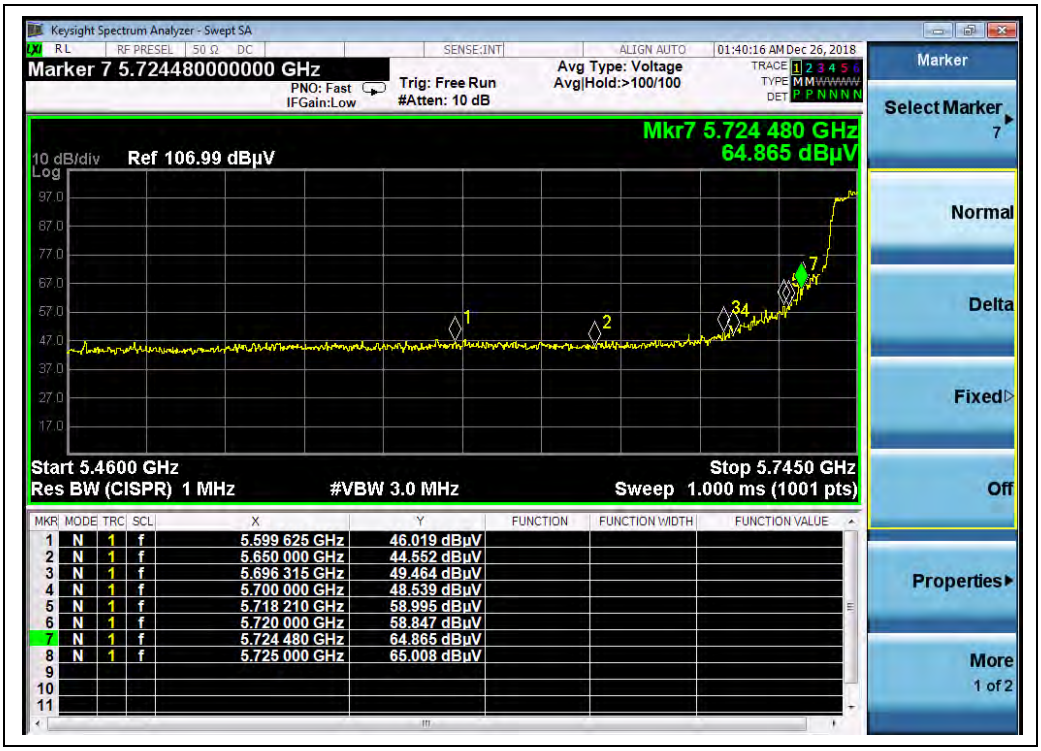
(Channel 36, PEAK, 802.11 ac (VHT20))



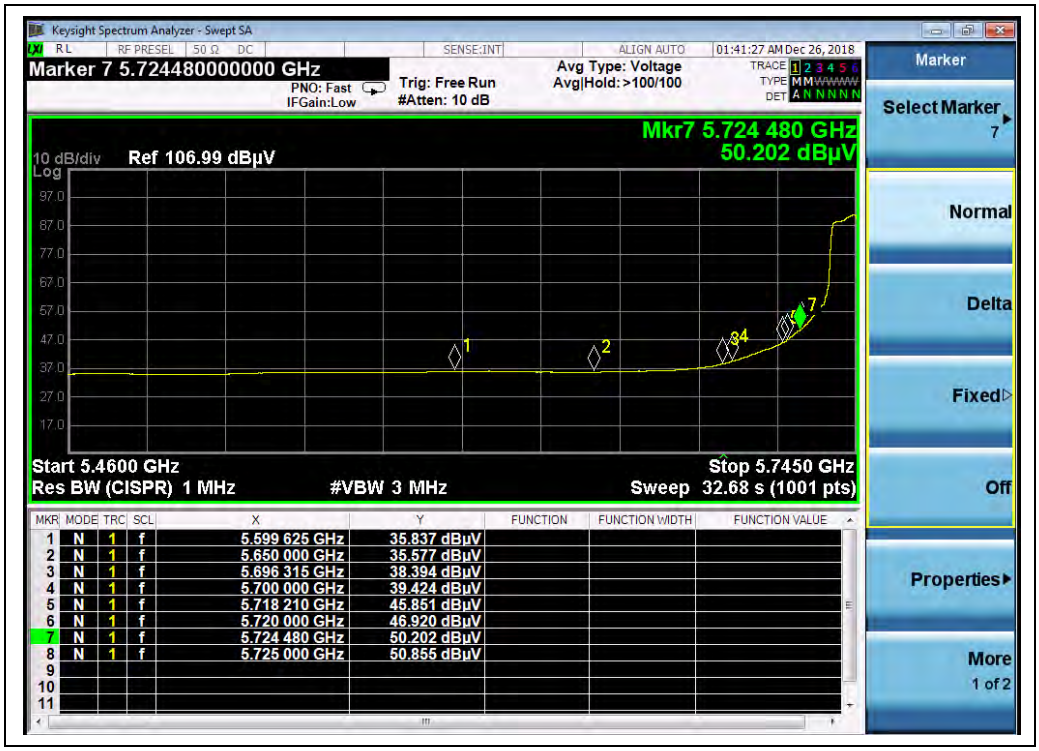
(Channel 36, AVG, 802.11 ac (VHT20))

(Channel 48, PEAK, 802.11 ac (VHT20))

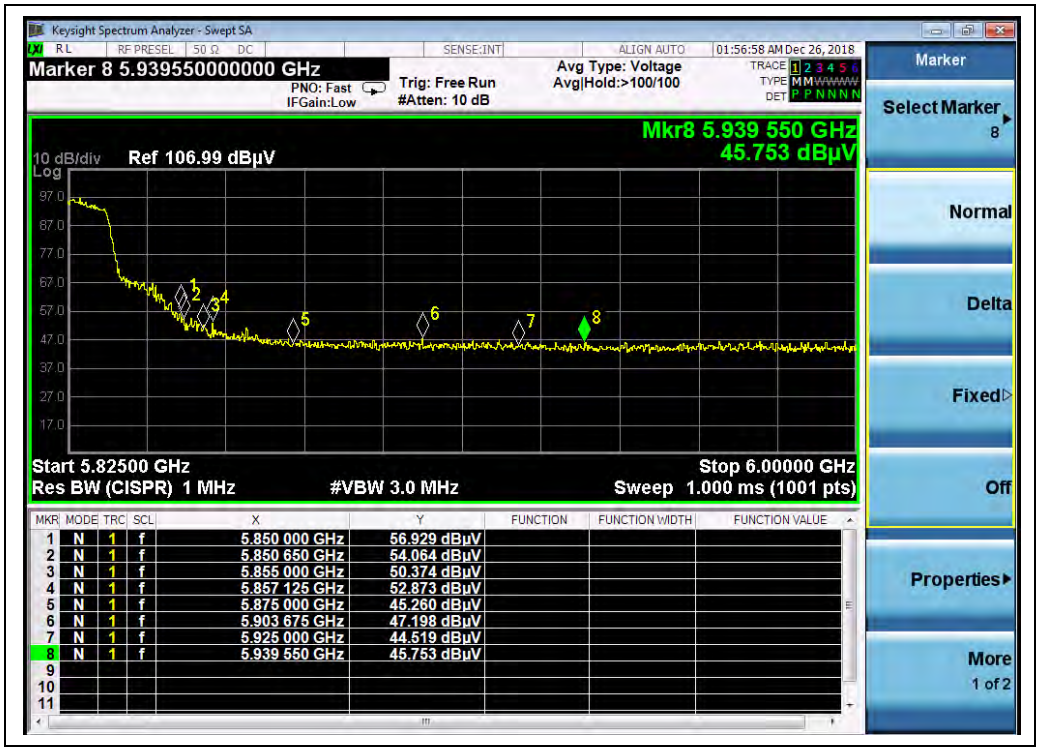
(Channel 48, AVG, 802.11 ac (VHT20))



(Channel 149, PEAK, 802.11 ac (VHT20))



(Channel 149, AVG, 802.11 ac (VHT20))



(Channel 165, PEAK, 802.11 ac (VHT20))

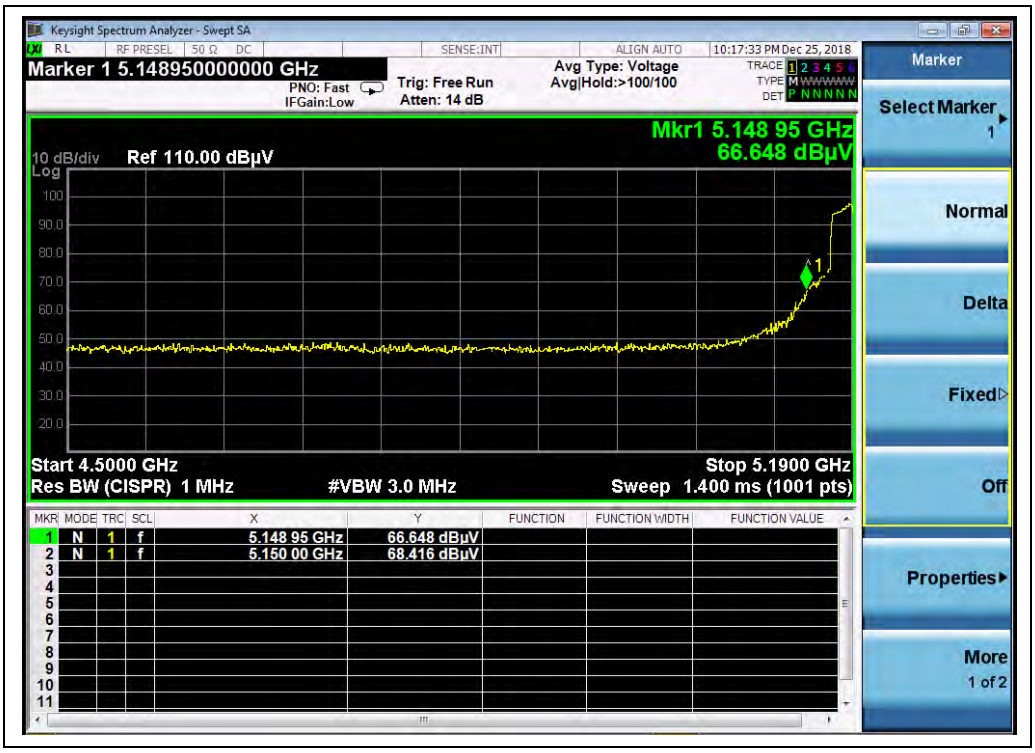
(Channel 165, AVG, 802.11 ac (VHT20))

802.11ac (VHT40) Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict
38	5150.00	PK	68.42	-49.53	32.2	51.09	74	PASS
38	5150.00	AV	53.15	-49.53	32.2	35.82	54	PASS
46	5376.84	PK	45.70	-49.53	32.2	28.37	74	PASS
46	5350.00	AV	35.04	-49.53	32.2	17.71	54	PASS
151	5725.00	PK	68.12	-49.53	32.2	50.79	122.23	PASS
151	5725.00	AV	53.89	-49.53	32.2	36.56	54	PASS
159	5850.00	PK	49.18	-49.53	32.2	31.85	122.23	PASS
159	5850.00	AV	39.56	-49.53	32.2	22.23	54	PASS

B. Test Plots:

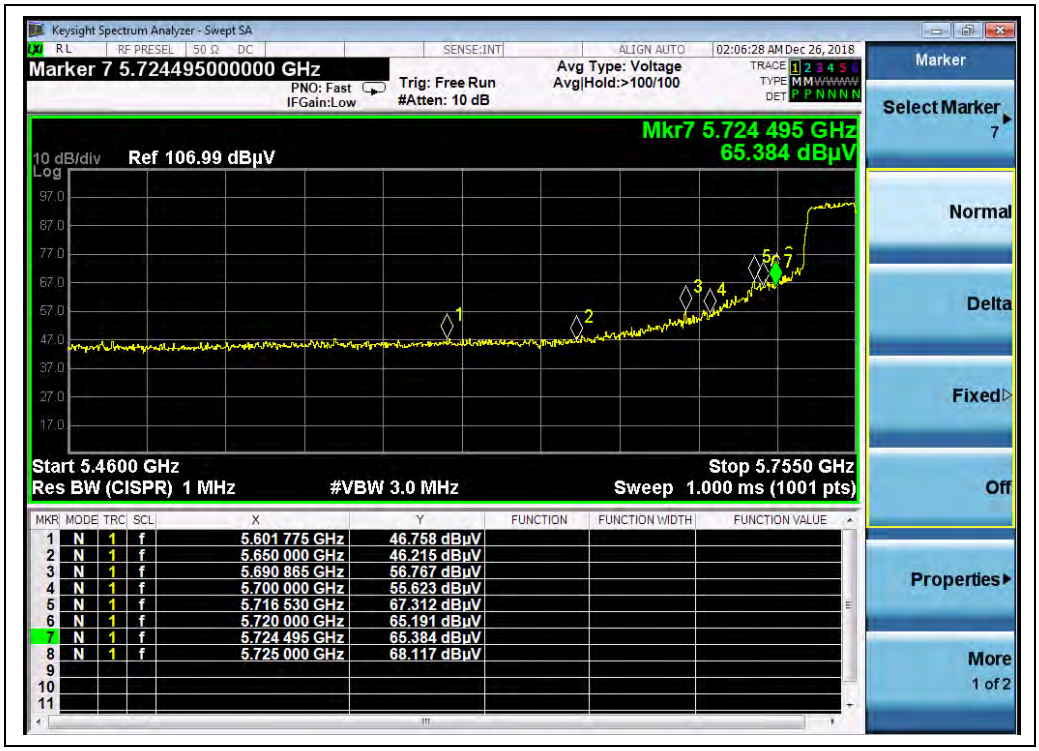


(Channel 38, PEAK, 802.11ac (VHT40))

(Channel 38, AVG, 802.11ac (VHT40))

(Channel 46, PEAK, 802.11ac (VHT40))

(Channel 46, AVG, 802.11ac (VHT40))



(Channel 151, PEAK, 802.11ac (VHT40))

(Channel 151, AVG, 802.11ac (VHT40))

(Channel 159, PEAK, 802.11ac (VHT40))

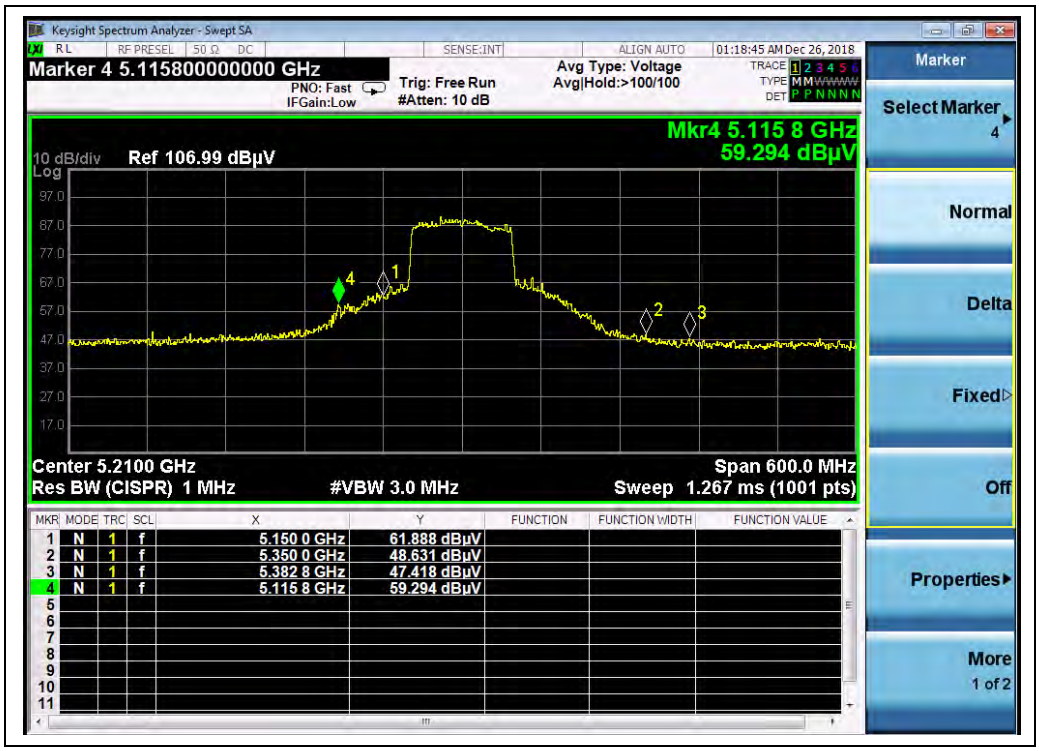
(Channel 159, AVG, 802.11ac (VHT40))

802.11ac (VHT80) Test mode

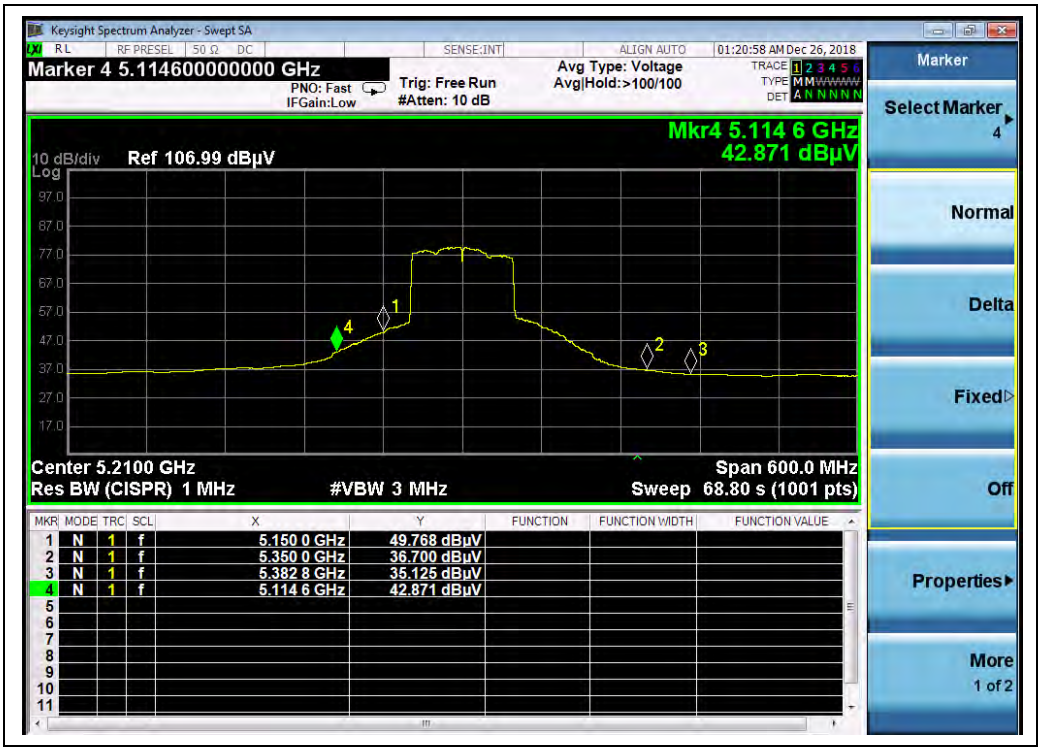
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
42	5150.00	PK	61.89	-49.53	32.2	44.56	74	PASS
42	5150.00	AV	49.77	-49.53	32.2	32.44	54	PASS
42	5350.00	PK	48.63	-49.53	32.2	31.30	74	PASS
42	5350.00	AV	36.70	-49.53	32.2	19.37	54	PASS
155	5715.80	PK	63.93	-49.53	32.2	46.60	109.65	PASS
155	5725.00	AV	52.74	-49.53	32.2	35.41	54	PASS
155	5860.90	PK	57.57	-49.53	32.2	40.24	94.31	PASS
155	5850.00	AV	45.11	-49.53	32.2	27.78	54	PASS

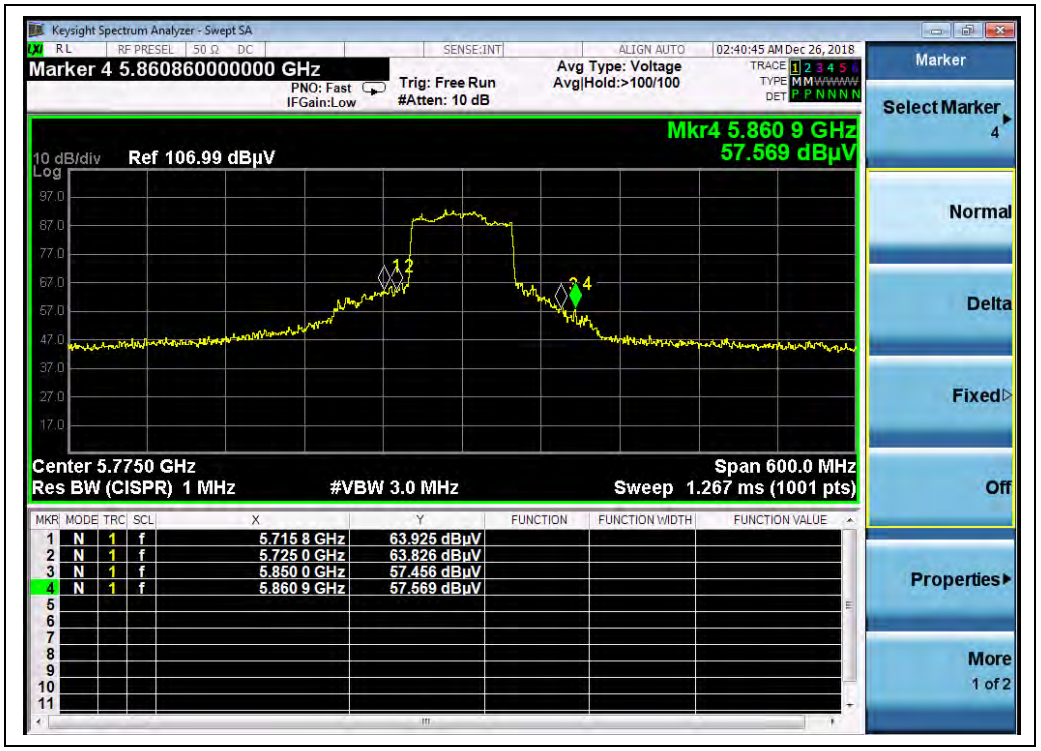
B. Test Plots:



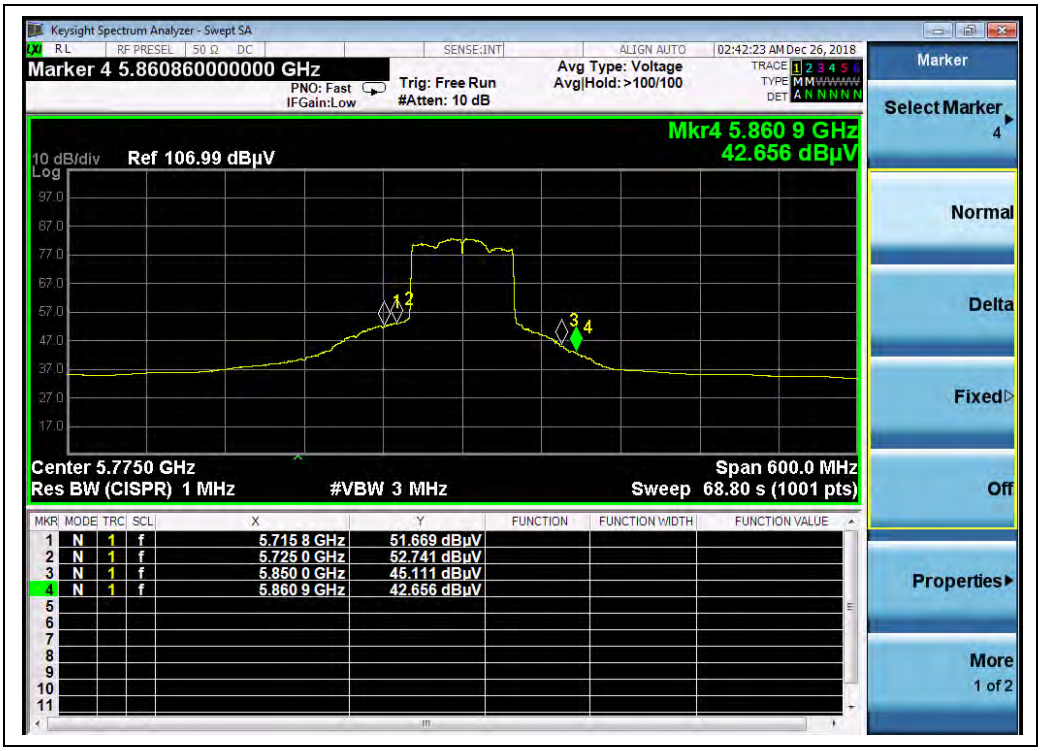
(Channel 42, PEAK, 802.11ac (VHT80))



(Channel 42, AVG, 802.11ac (VHT80))



(Channel 155, PEAK, 802.11ac (VHT80))



(Channel 155, AVG, 802.11ac (VHT80))

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);

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

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:

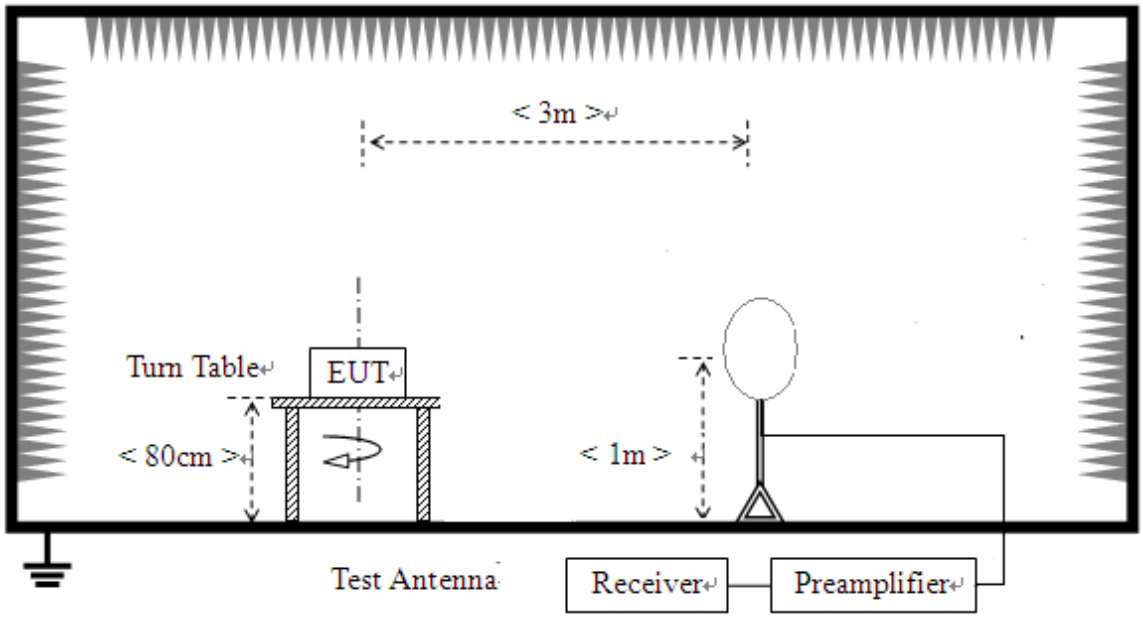
For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

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)

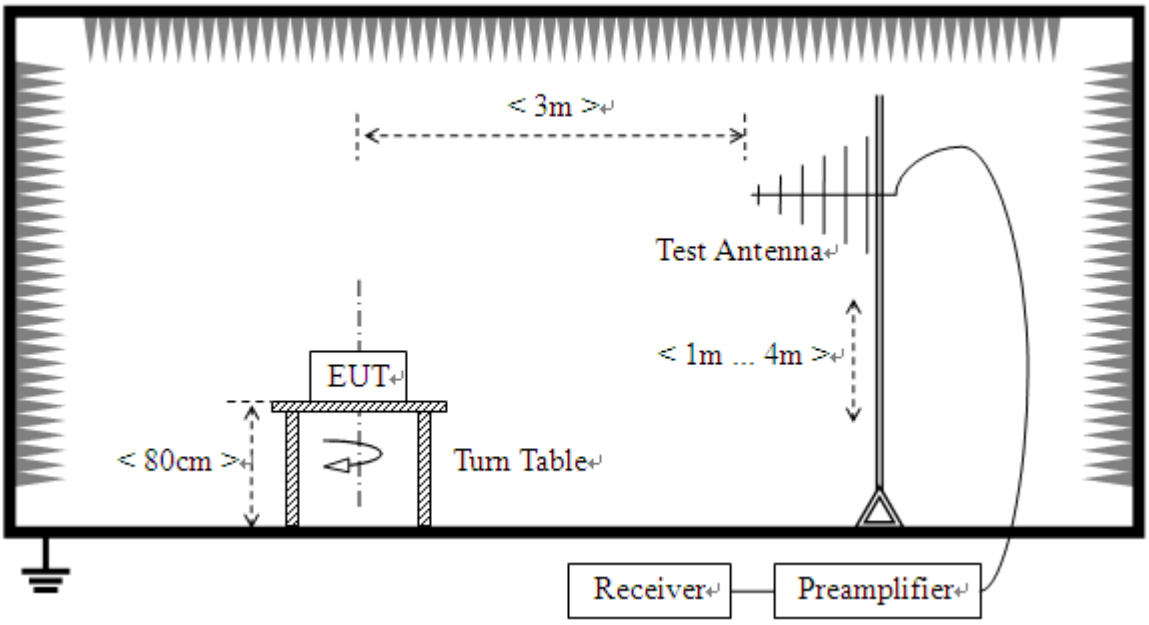
2.9.2. Test Description

A. Test Setup:

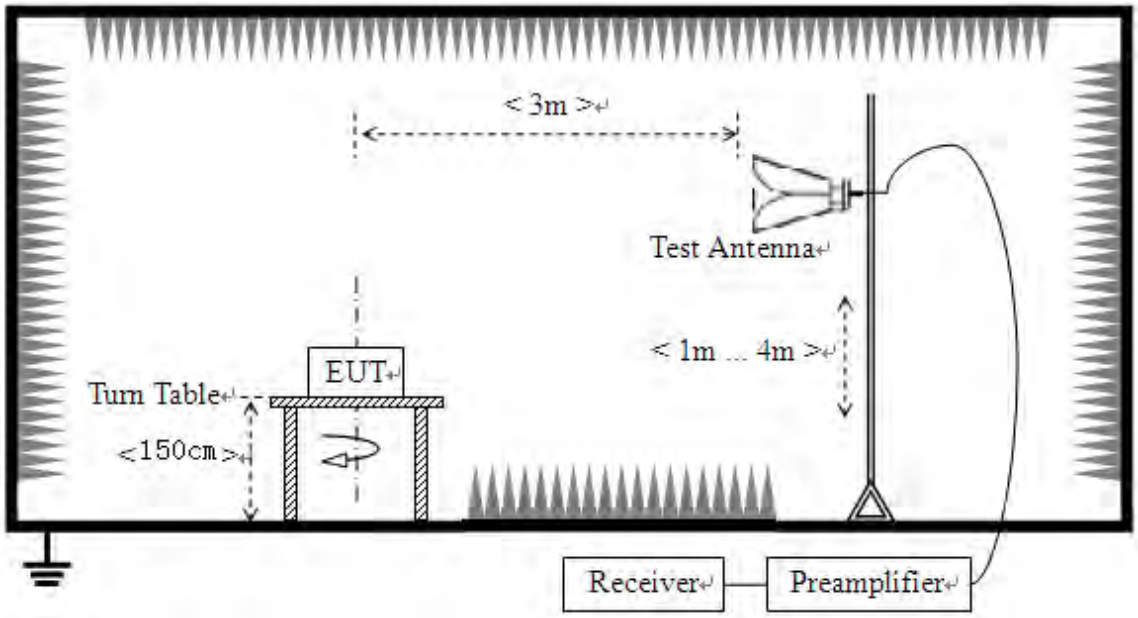
1) For radiated emissions from 9kHz to 30MHz



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 [dBμV/m] $= U_R + A_T + A_{Factor}$ [dB]; $A_T = L_{Cable\ loss}$ [dB]$-G_{preamp}$ [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.

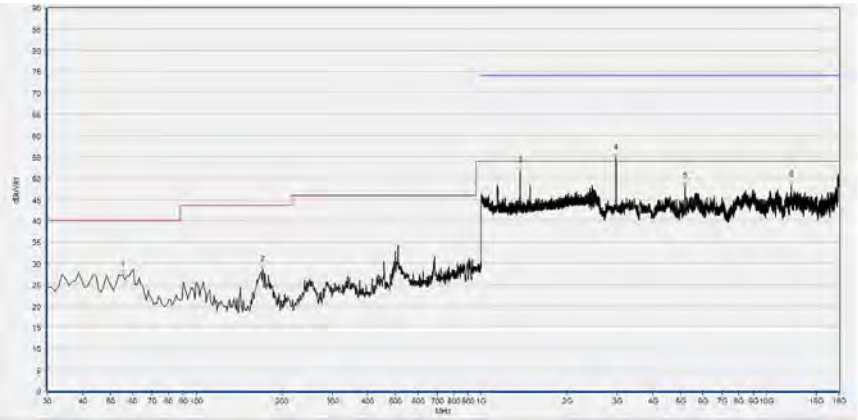
Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

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.

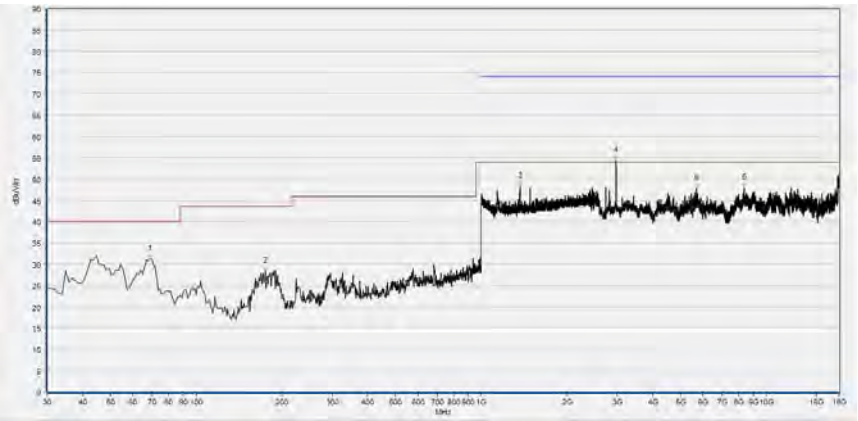
802.11a Test mode

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
55.245	27.35	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
170.791	28.46	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1367.589	51.59	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2971.400	54.10	N/A	40.79	68.23	N/A	54.00	Horizontal	PASS
5181.556	48.12	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12226.925	48.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

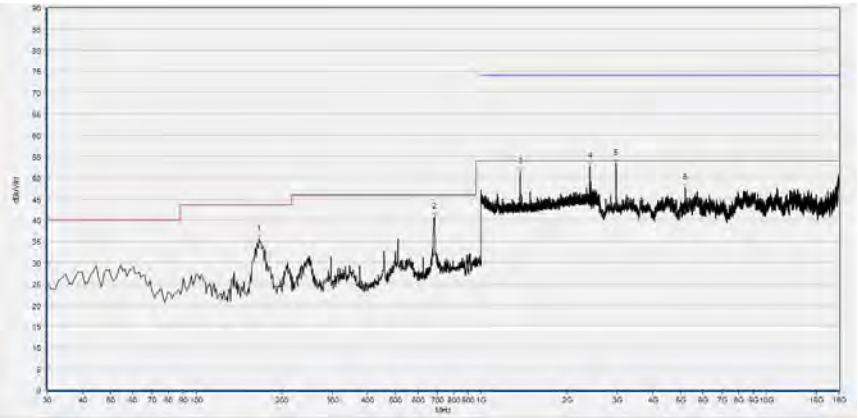
(Antenna Horizontal, 30MHz to 25GHz)



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
68.839	31.19	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
174.675	28.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	48.28	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2970.000	54.88	N/A	43.19	68.23	N/A	54.00	Vertical	PASS
5699.100	47.74	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8379.236	47.93	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

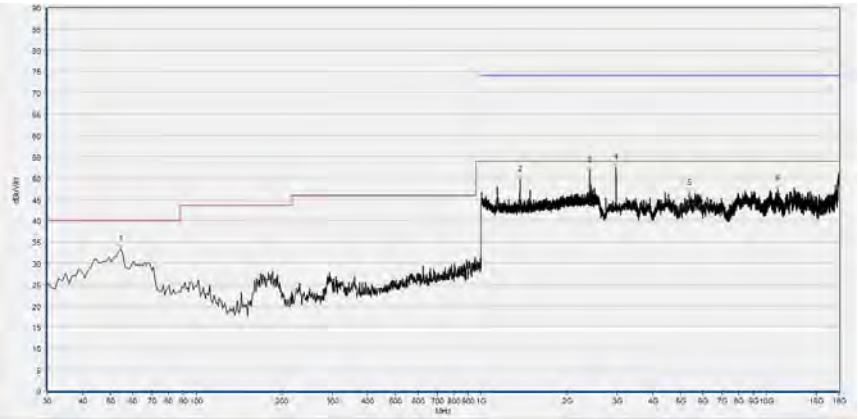
(Antenna Vertical, 30MHz to 25GHz)

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
165.936	35.59	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
686.376	40.67	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1368.123	51.24	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2402.067	52.68	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2969.000	53.74	N/A	35.51	68.23	N/A	54.00	Horizontal	PASS
5196.959	47.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

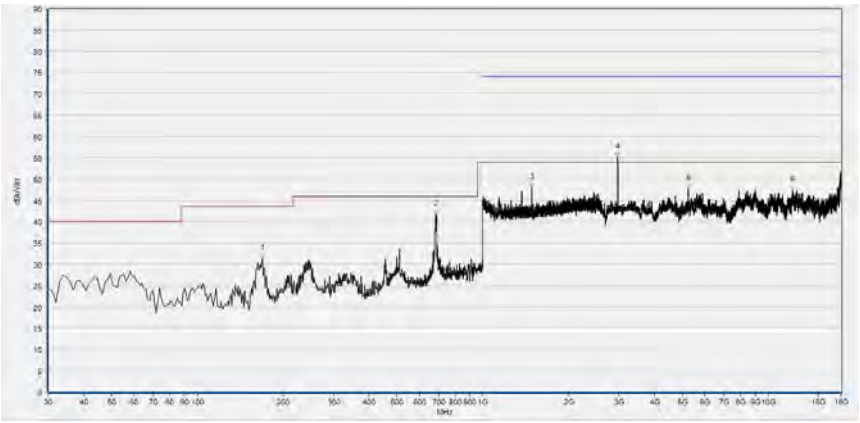
(Antenna Horizontal, 30MHz to 25GHz)



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
54.274	33.40	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1367.589	49.62	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2401.534	51.67	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.000	53.70	N/A	40.56	74.00	N/A	54.00	Vertical	PASS
5375.635	46.46	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10982.356	47.42	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

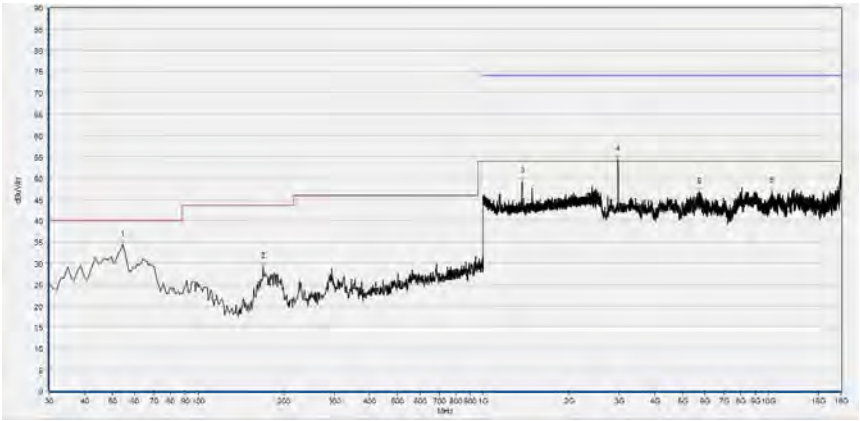
(Antenna Vertical, 30MHz to 25GHz)

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
168.849	31.29	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
685.405	41.70	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1484.428	48.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2968.800	55.39	N/A	41.72	68.23	N/A	54.00	Horizontal	PASS
5240.088	47.74	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12143.749	47.48	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

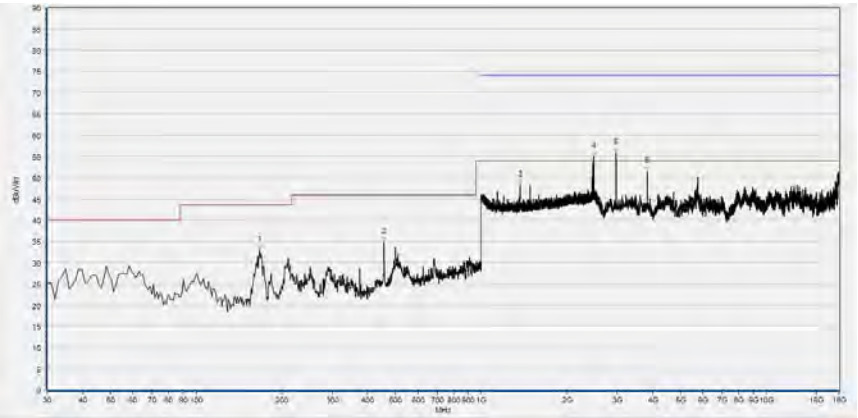
(Antenna Horizontal, 30MHz to 25GHz)



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
54.274	34.38	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
168.849	29.11	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	49.26	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2968.700	53.77	N/A	39.33	68.23	N/A	54.00	Vertical	PASS
5726.825	46.69	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10273.815	46.89	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

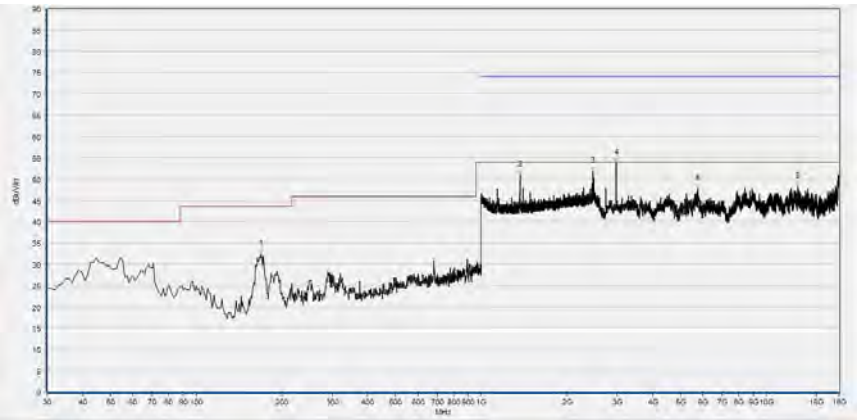
(Antenna Vertical, 30MHz to 25GHz)

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
166.907	33.08	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
456.256	34.81	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1367.589	48.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2479.500	54.37	N/A	34.47	68.23	N/A	54.00	Horizontal	PASS
2969.000	55.33	N/A	37.86	68.23	N/A	54.00	Horizontal	PASS
3829.166	51.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

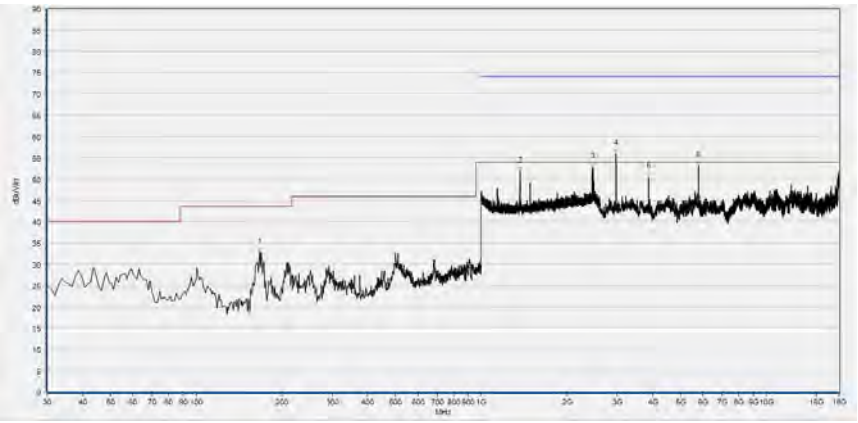
(Antenna Horizontal, 30MHz to 25GHz)



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
168.849	32.34	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	50.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2459.153	51.72	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2969.400	53.74	N/A	43.70	68.23	N/A	54.00	Vertical	PASS
5745.309	47.72	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12907.742	48.19	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

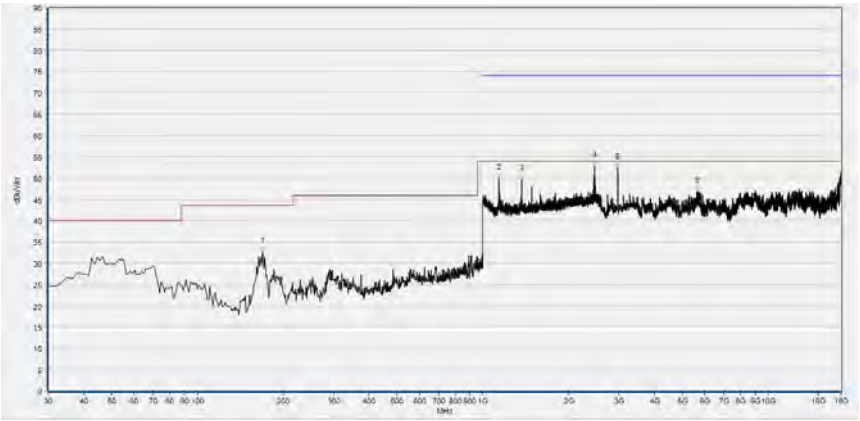
(Antenna Vertical, 30MHz to 25GHz)

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
166.907	32.79	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1367.589	51.83	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2469.823	52.72	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2968.500	56.02	N/A	40.26	68.23	N/A	54.00	Horizontal	PASS
3856.891	50.43	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5787.500	53.59	N/A	43.09	68.23	N/A	54.00	Horizontal	PASS

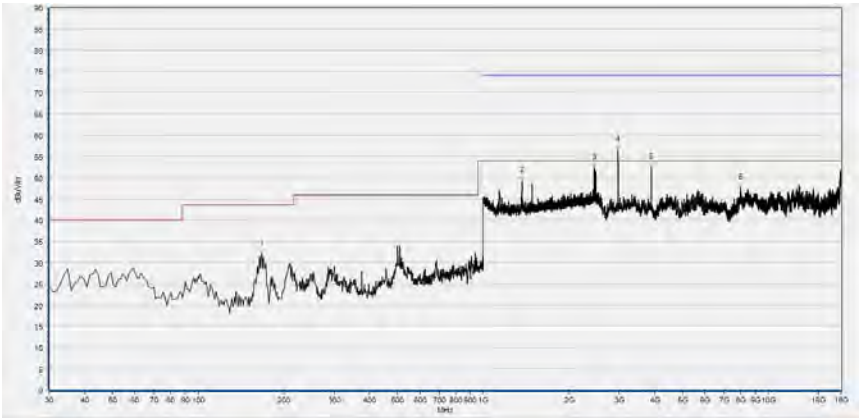
(Antenna Horizontal, 30MHz to 25GHz)



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
168.849	32.65	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1140.847	49.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1368.123	49.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2460.754	52.86	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2969.674	52.38	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5652.891	46.96	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

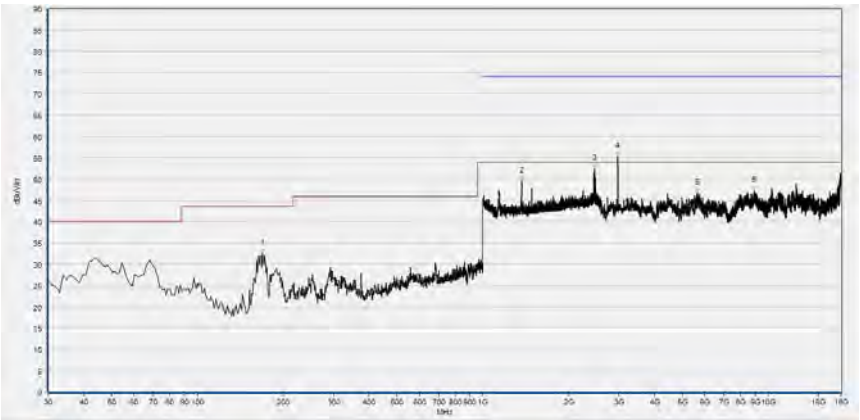
(Antenna Vertical, 30MHz to 25GHz)

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
166.907	31.99	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.123	49.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2450.083	52.22	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2970.700	55.65	N/A	41.82	68.23	N/A	54.00	Horizontal	PASS
3884.617	52.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8003.401	47.62	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

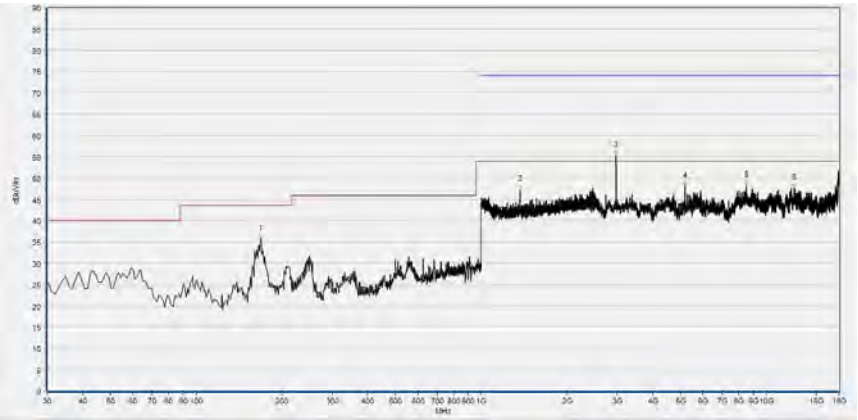


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
168.849	32.47	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1368.656	49.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2469.290	52.43	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2969.900	55.37	N/A	38.59	68.23	N/A	54.00	Vertical	PASS
5655.971	46.84	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8933.747	47.32	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

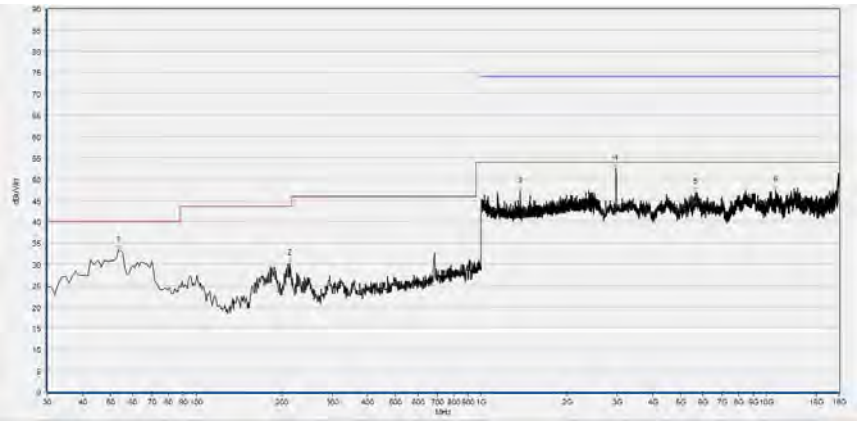
802.11n (HT20) Test mode

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
167.878	35.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1367.589	47.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2971.500	55.62	N/A	39.18	68.23	N/A	54.00	Horizontal	PASS
5178.476	48.13	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8505.541	48.19	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12498.020	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

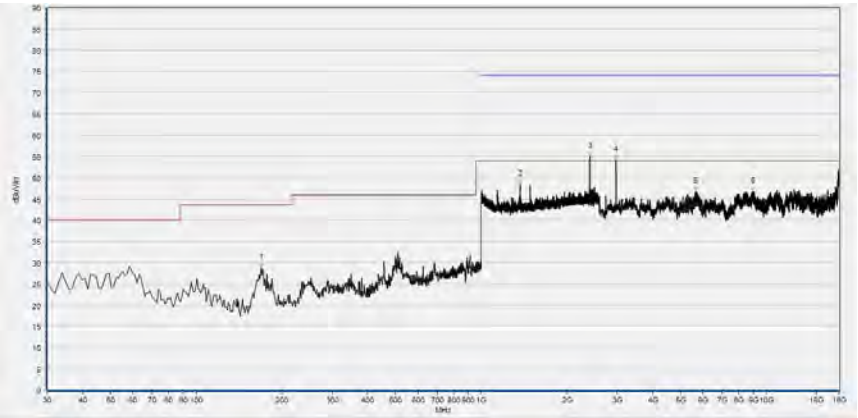
(Antenna Horizontal, 30MHz to 25GHz)



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
53.303	33.34	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
212.543	30.18	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1368.123	47.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.674	52.39	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5640.568	46.87	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10800.600	47.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

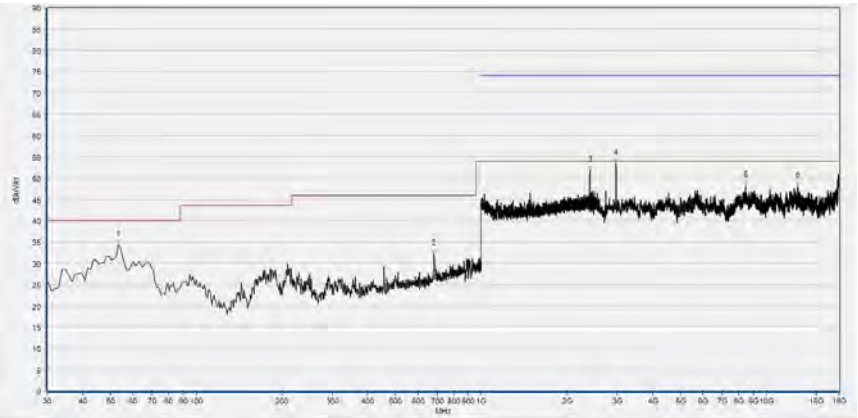
(Antenna Vertical, 30MHz to 25GHz)

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
168.849	28.85	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.123	48.49	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2401.700	55.40	N/A	34.57	68.23	N/A	54.00	Horizontal	PASS
2971.300	54.99	N/A	38.64	68.23	N/A	54.00	Horizontal	PASS
5640.568	46.70	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8979.956	46.82	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

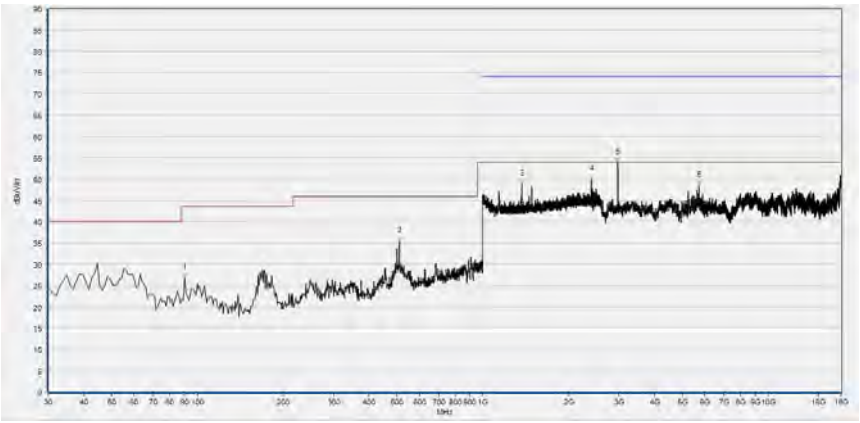
(Antenna Horizontal, 30MHz to 25GHz)



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
53.303	34.34	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
681.522	32.17	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2402.067	51.80	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2970.300	54.03	N/A	42.41	68.23	N/A	54.00	Vertical	PASS
8437.768	48.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12910.822	48.05	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

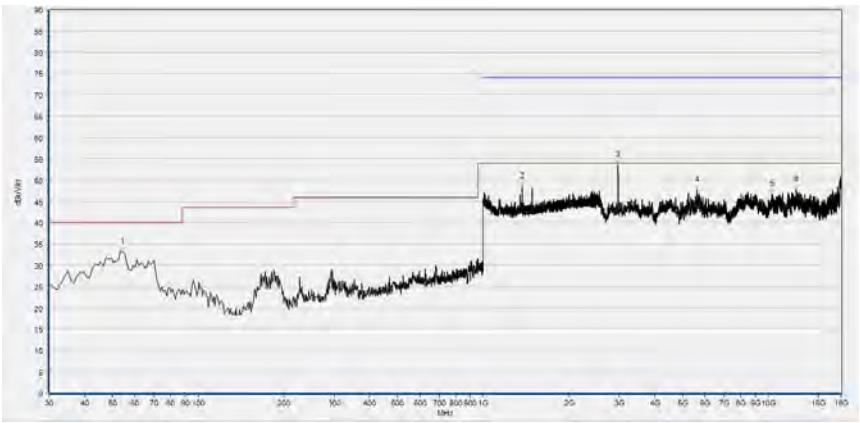
(Antenna Vertical, 30MHz to 25GHz)

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
90.200	26.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
509.660	35.37	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1367.589	48.82	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2402.067	49.90	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2970.400	54.57	N/A	33.31	68.23	N/A	54.00	Horizontal	PASS
5705.261	48.41	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

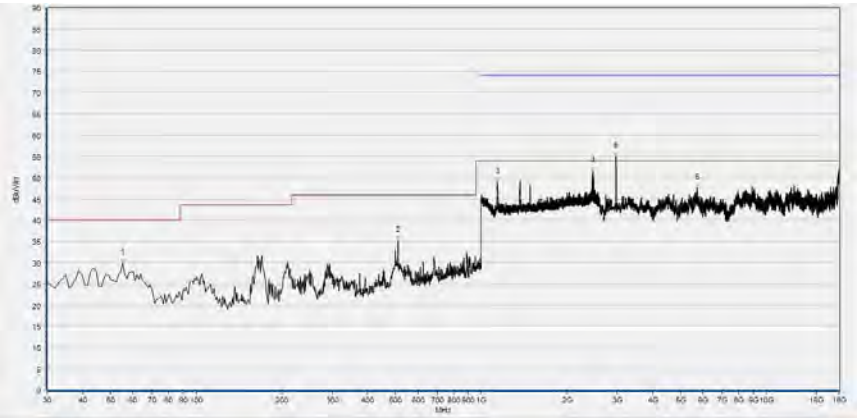
(Antenna Horizontal, 30MHz to 25GHz)



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
54.274	33.14	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1368.123	48.44	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2967.400	53.70	N/A	32.42	68.23	N/A	54.00	Vertical	PASS
5628.246	47.66	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10267.654	46.62	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12534.987	47.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

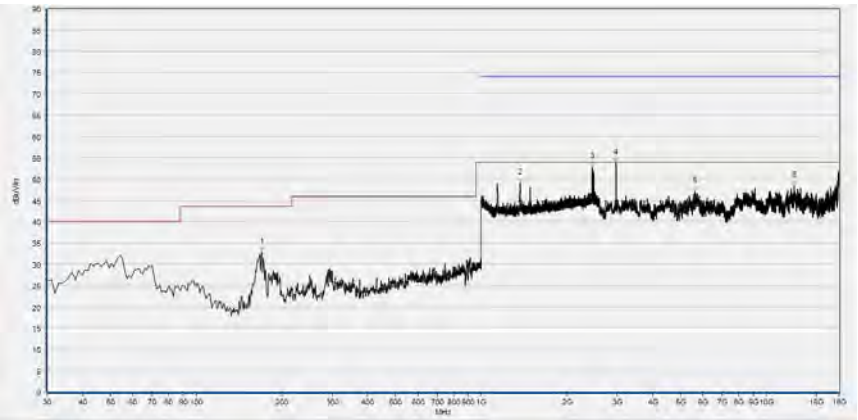
(Antenna Vertical, 30MHz to 25GHz)

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
55.245	29.88	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
509.660	35.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1139.780	48.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2466.089	51.50	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2968.700	55.40	N/A	39.83	68.23	N/A	54.00	Horizontal	PASS
5708.342	47.67	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

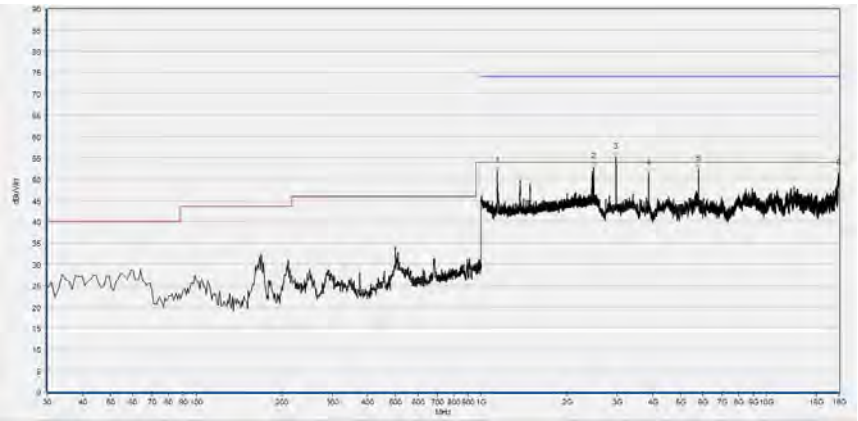
(Antenna Horizontal, 30MHz to 25GHz)



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
169.820	32.91	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	49.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2453.818	52.79	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2968.500	54.57	N/A	40.13	68.23	N/A	54.00	Vertical	PASS
5625.165	47.03	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12507.261	48.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

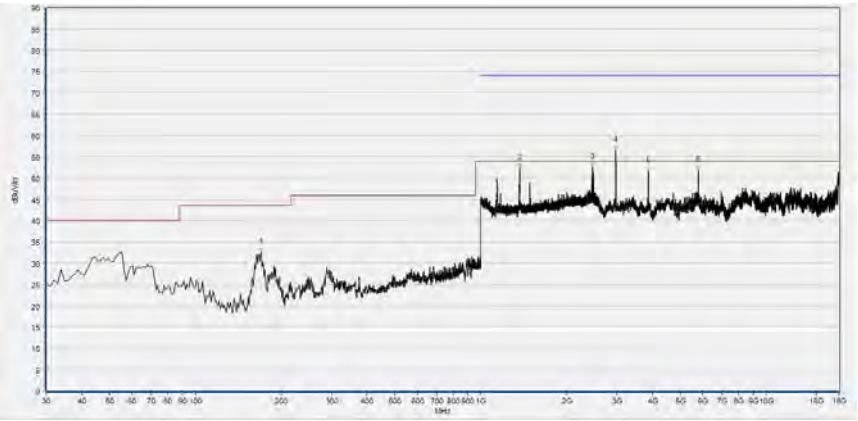
(Antenna Vertical, 30MHz to 25GHz)

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
1139.780	51.84	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2482.628	52.76	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2971.000	55.06	N/A	41.98	68.23	N/A	54.00	Horizontal	PASS
3856.891	51.28	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5784.700	52.65	N/A	42.28	68.23	N/A	54.00	Horizontal	PASS
17919.904	51.36	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

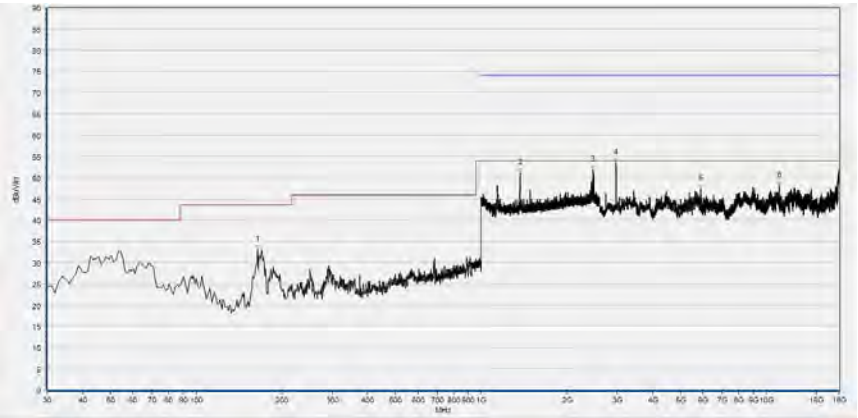
(Antenna Horizontal, 30MHz to 25GHz)



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
169.820	32.52	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1368.123	52.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2458.086	52.66	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2970.500	57.56	N/A	44.98	68.23	N/A	54.00	Vertical	PASS
3856.891	51.58	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5788.438	51.86	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

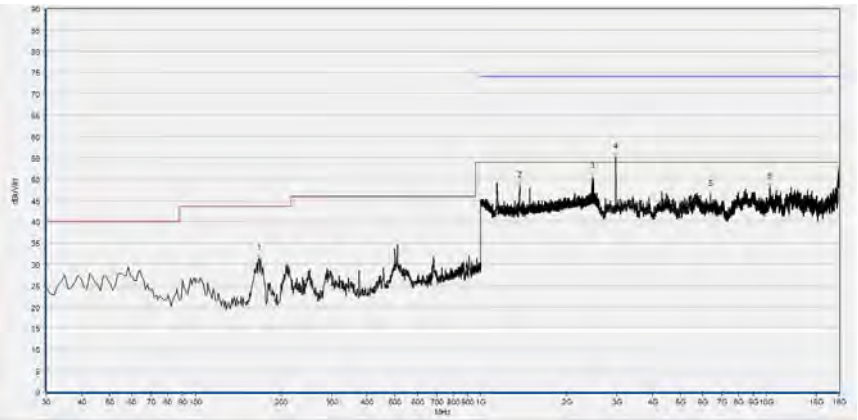
(Antenna Vertical, 30MHz to 25GHz)

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
163.994	33.09	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1367.589	51.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2460.754	51.76	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2969.500	54.00	N/A	38.61	68.23	N/A	54.00	Horizontal	PASS
5883.937	47.39	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
11071.694	48.05	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

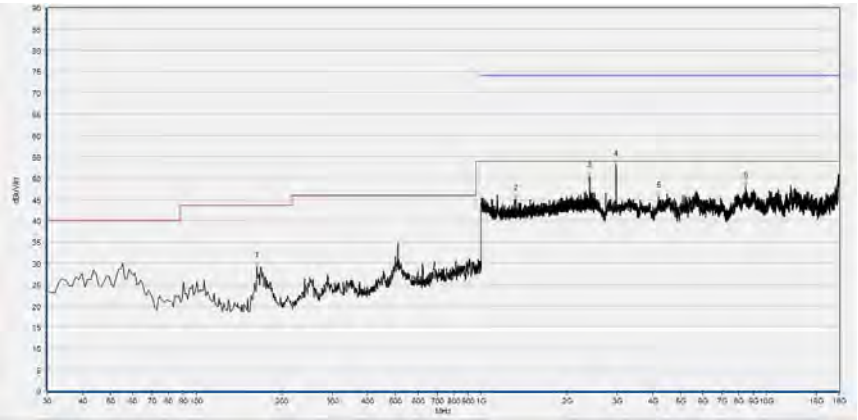


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
166.907	31.29	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.056	48.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2466.622	50.38	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2970.500	55.05	N/A	42.98	68.23	N/A	54.00	Vertical	PASS
6376.835	46.42	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
10283.057	48.13	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

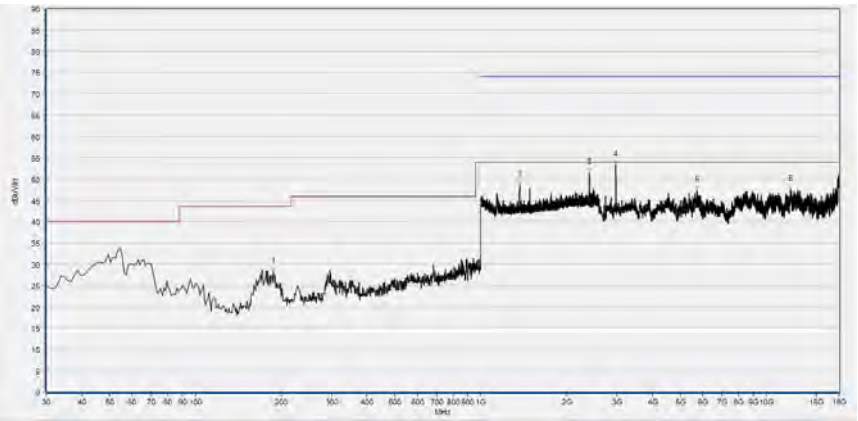
802.11n (HT40) Test mode

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
163.023	29.30	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1325.975	45.16	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2401.534	50.53	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2970.400	53.79	N/A	37.35	68.23	N/A	54.00	Horizontal	PASS
4177.275	45.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8440.848	48.14	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

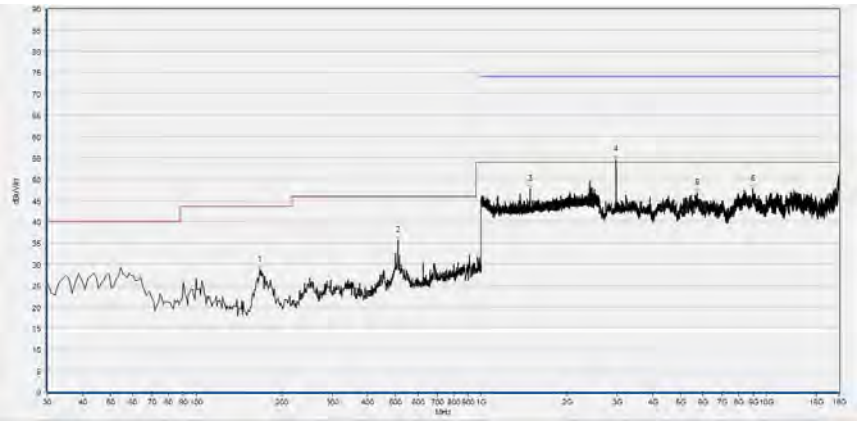
(Antenna Horizontal, 30MHz to 25GHz)



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
187.297	28.39	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.056	48.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2401.534	51.47	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2970.900	53.58	N/A	41.82	68.23	N/A	54.00	Vertical	PASS
5708.342	47.41	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12171.474	47.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

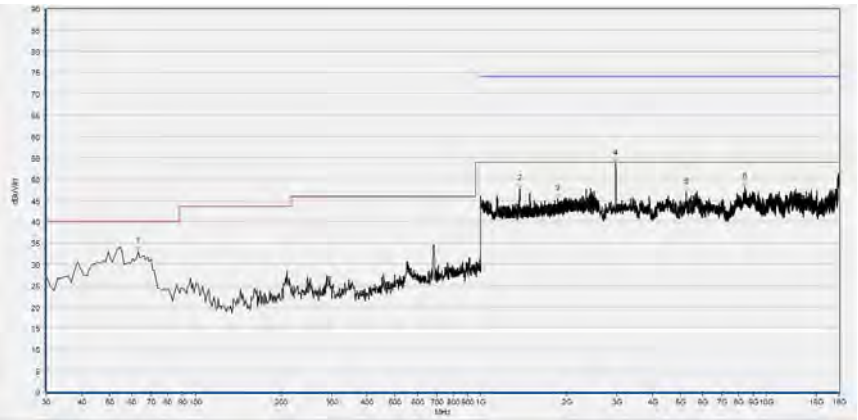
(Antenna Vertical, 30MHz to 25GHz)

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
166.907	28.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
509.660	35.53	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1484.962	47.65	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2971.200	54.73	N/A	39.26	68.23	N/A	54.00	Horizontal	PASS
5717.584	46.69	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8970.714	47.57	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

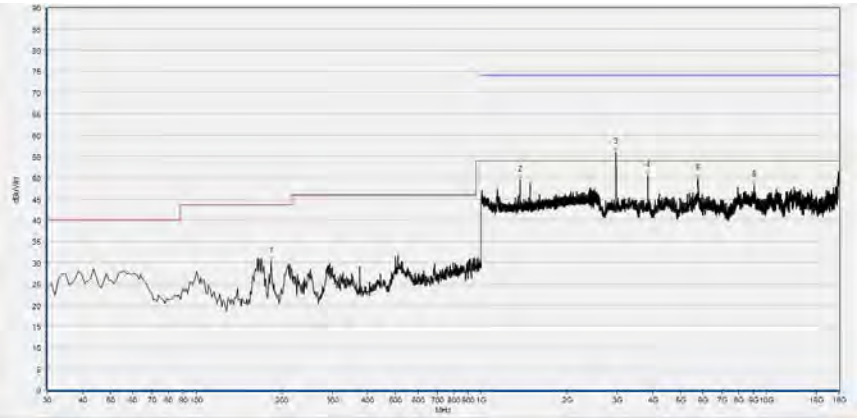
(Antenna Horizontal, 30MHz to 25GHz)



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
63.013	33.02	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1368.123	47.84	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1858.953	45.44	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2971.000	54.13	N/A	43.40	68.23	N/A	54.00	Vertical	PASS
5233.927	46.92	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8434.687	48.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

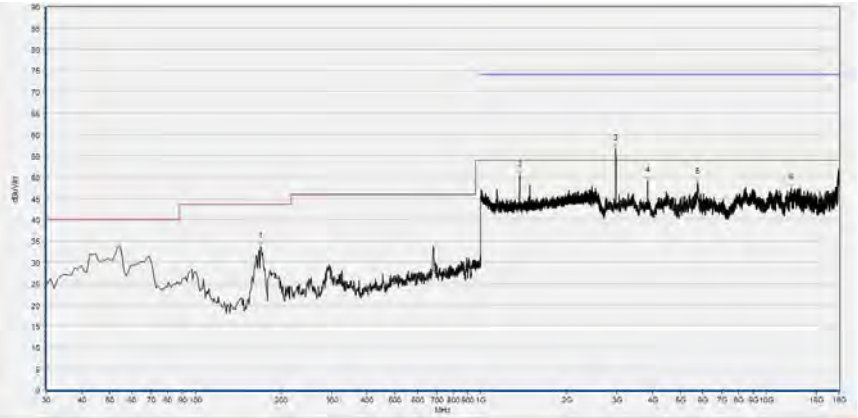
(Antenna Vertical, 30MHz to 25GHz)

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
183.413	30.28	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.656	49.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2969.300	55.51	N/A	42.66	68.23	N/A	54.00	Horizontal	PASS
3835.327	50.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5760.712	49.84	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
9078.536	48.19	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

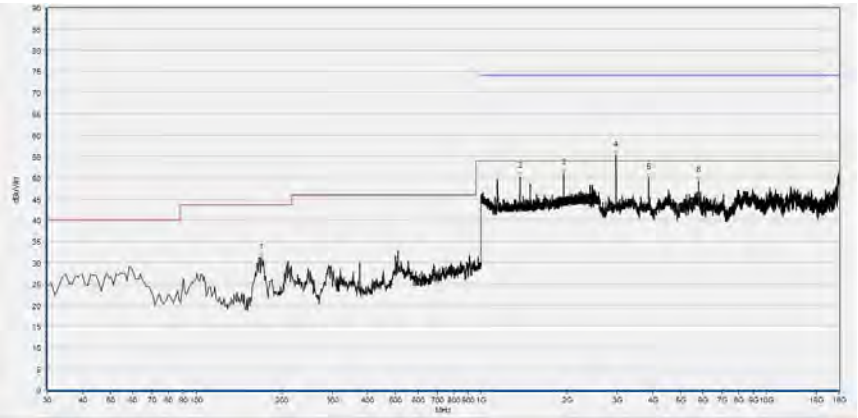
(Antenna Horizontal, 30MHz to 25GHz)



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
168.849	33.63	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	50.44	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.500	56.96	N/A	43.05	68.23	N/A	54.00	Vertical	PASS
3835.327	49.11	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5763.793	48.72	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12242.328	47.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

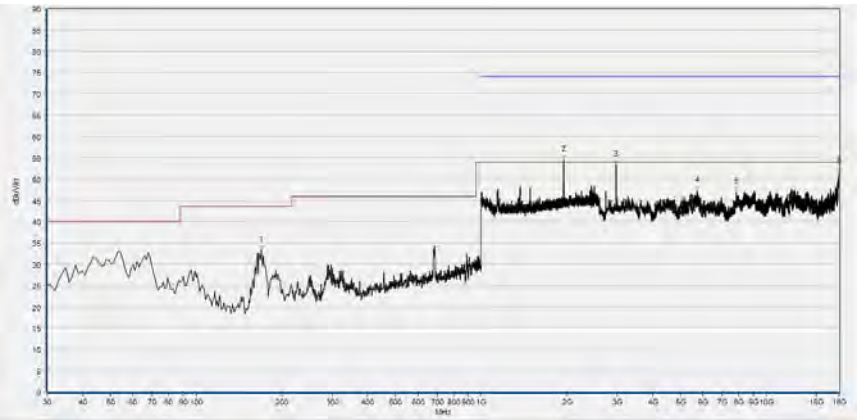
(Antenna Vertical, 30MHz to 25GHz)

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
168.849	31.09	28.32	N/A	N/A	43.50	N/A	Horizontal	PASS
1367.589	50.36	27.05	N/A	74.00	N/A	54.00	Horizontal	PASS
1943.781	51.18	29.30	N/A	68.23	N/A	54.00	Horizontal	PASS
2969.100	55.51	47.18	38.07	68.23	N/A	54.00	Horizontal	PASS
3863.053	49.89	45.56	N/A	74.00	N/A	54.00	Horizontal	PASS
5788.438	49.33	46.78	N/A	68.23	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

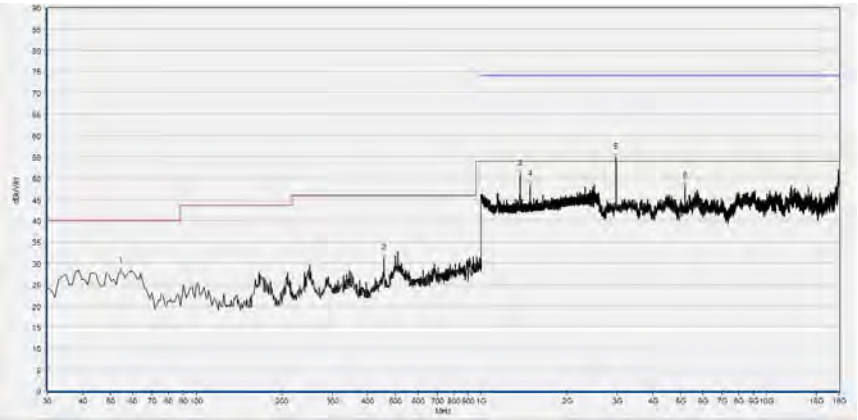


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
168.849	33.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1941.647	54.44	N/A	40.16	68.23	N/A	54.00	Vertical	PASS
2971.300	53.60	N/A	39.21	68.23	N/A	54.00	Vertical	PASS
5720.664	47.21	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
7867.854	47.01	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
18000.000	51.65	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

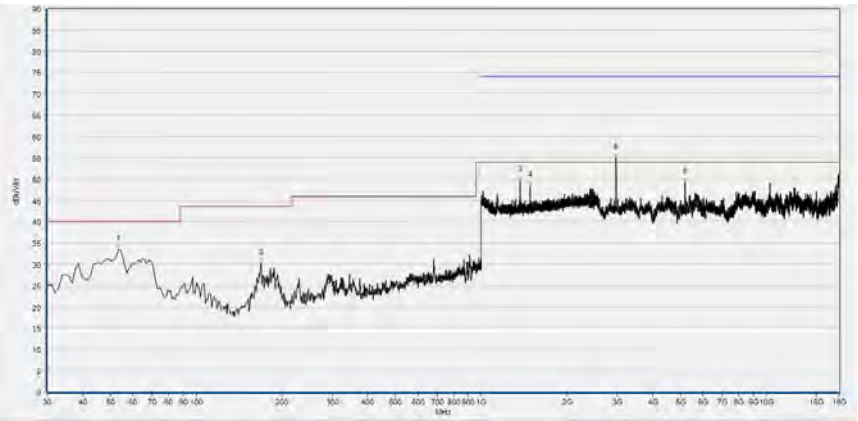
802.11ac (VHT20) Test mode

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
54.274	28.14	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
456.256	31.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1367.589	50.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1484.962	48.35	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2970.500	54.99	N/A	35.39	68.23	N/A	54.00	Horizontal	PASS
5178.476	48.11	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

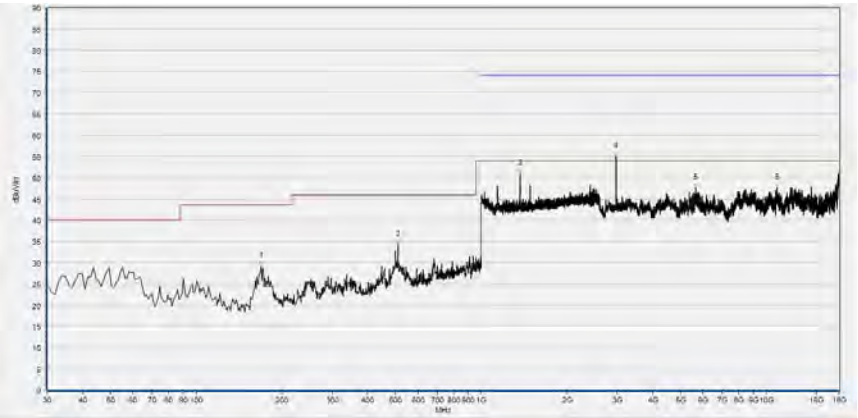
(Antenna Horizontal, 30MHz to 25GHz)



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
53.303	33.47	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
168.849	30.41	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1368.000	50.77	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1485.495	48.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.674	55.01	N/A	38.35	68.23	N/A	54.00	Vertical	PASS
5175.395	49.35	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

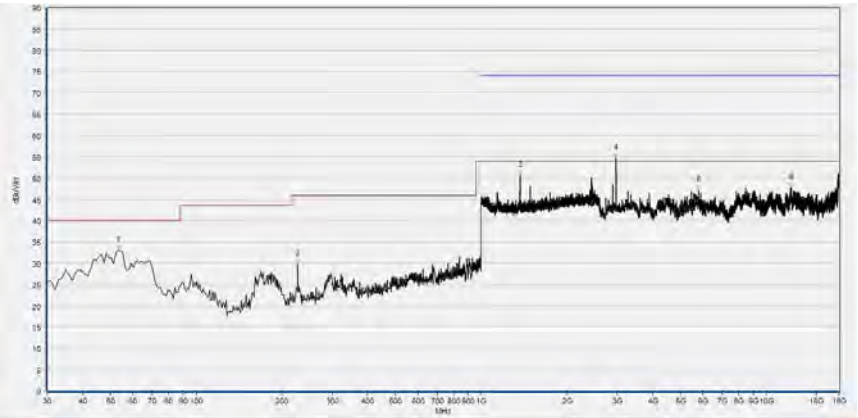
(Antenna Vertical, 30MHz to 25GHz)

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
168.849	29.10	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
509.660	34.13	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1367.589	50.93	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2969.200	54.33	N/A	42.14	68.23	N/A	54.00	Horizontal	PASS
5649.810	47.56	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
10899.180	47.66	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

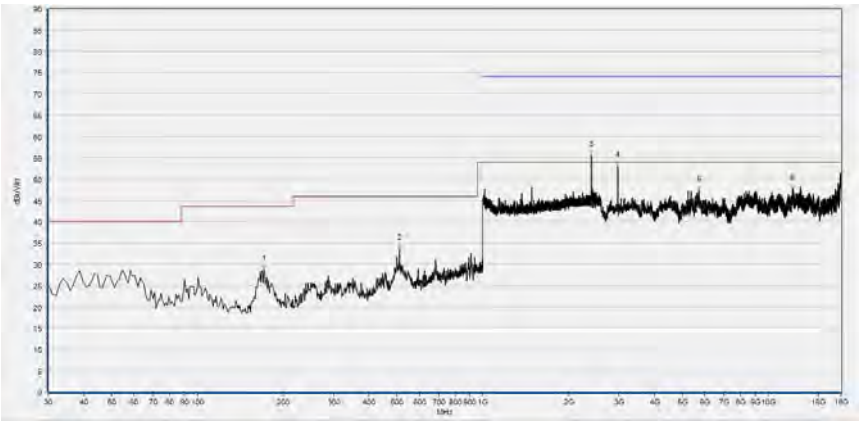
(Antenna Horizontal, 30MHz to 25GHz)



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
53.303	32.94	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
227.107	29.67	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1368.123	50.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.500	55.18	N/A	43.29	68.23	N/A	54.00	Vertical	PASS
5785.357	47.01	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12226.925	47.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

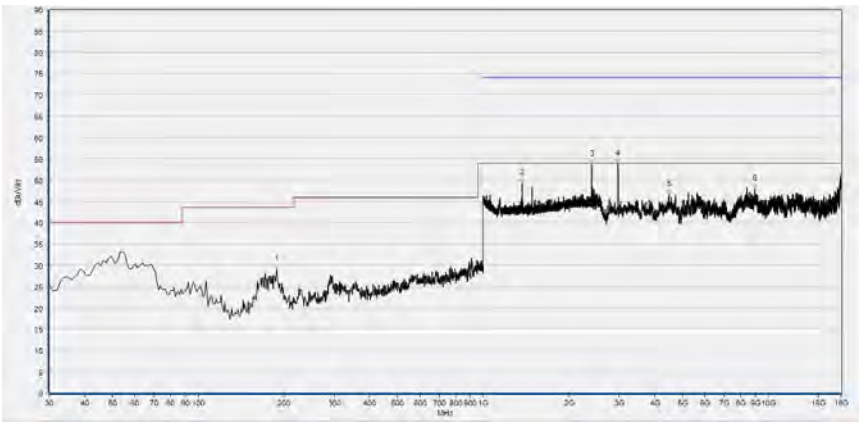
(Antenna Vertical, 30MHz to 25GHz)

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
170.791	28.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
509.660	33.69	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2402.200	55.62	N/A	34.44	68.23	N/A	54.00	Horizontal	PASS
2969.200	53.52	N/A	39.06	68.23	N/A	54.00	Horizontal	PASS
5717.584	47.51	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12140.668	47.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

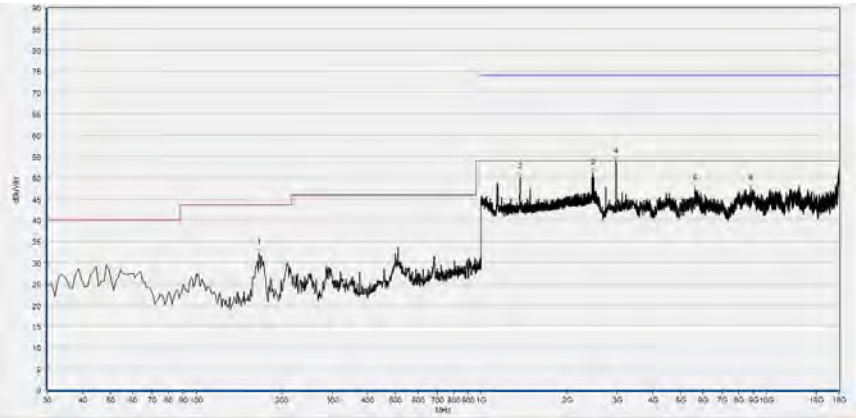
(Antenna Horizontal, 30MHz to 25GHz)



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
188.268	29.05	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1368.123	49.25	N/A	N/A	74.00	43.50	54.00	Vertical	PASS
2402.300	54.47	N/A	34.70	68.23	N/A	54.00	Vertical	PASS
2969.900	55.22	N/A	42.50	68.23	N/A	54.00	Vertical	PASS
4476.095	46.56	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
8946.069	47.91	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

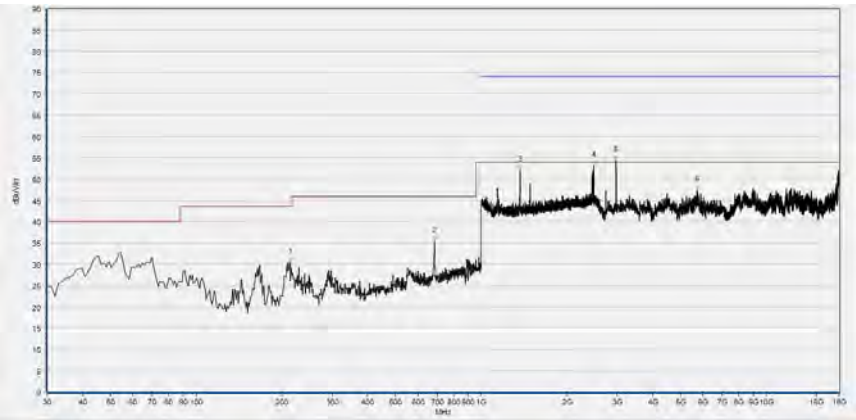
(Antenna Vertical, 30MHz to 25GHz)

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
165.936	32.19	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.123	50.08	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2465.022	51.09	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2969.300	53.40	N/A	41.47	68.23	N/A	54.00	Horizontal	PASS
5622.084	47.38	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8816.683	47.41	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

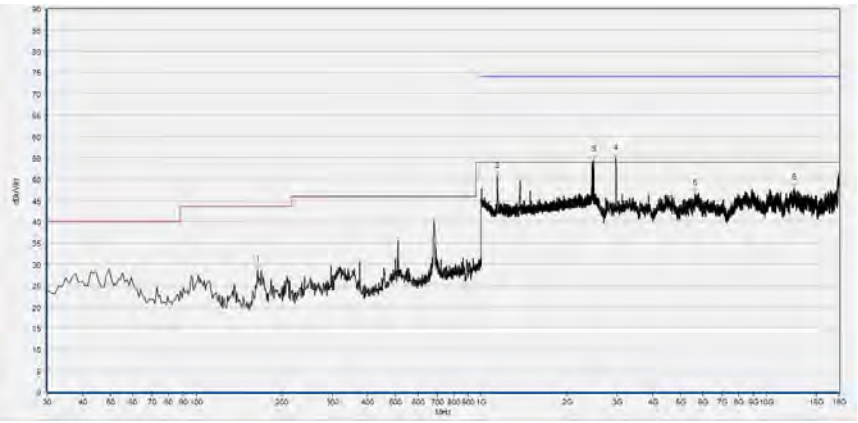
(Antenna Horizontal, 30MHz to 25GHz)



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
213.514	30.53	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
686.376	35.31	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1367.589	52.09	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2474.625	51.16	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2969.700	54.08	N/A	44.31	68.23	N/A	54.00	Vertical	PASS
5717.584	47.36	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

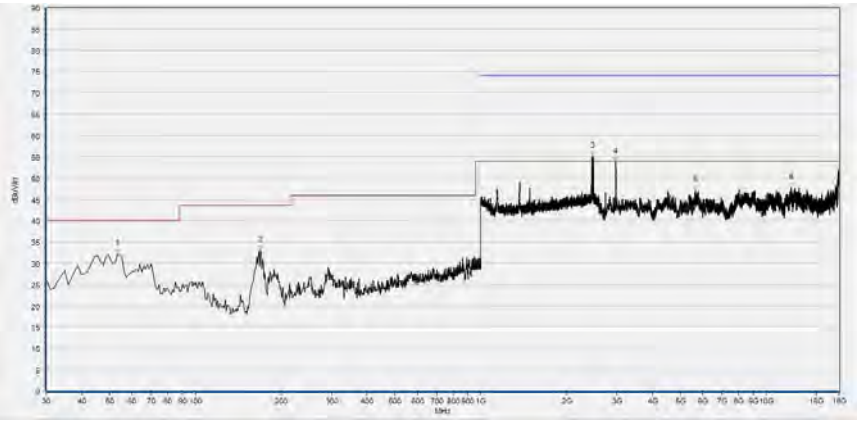
(Antenna Vertical, 30MHz to 25GHz)

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
163.994	28.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1140.313	50.60	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2476.225	54.54	N/A	39.61	68.23	N/A	54.00	Horizontal	PASS
2970.100	55.29	N/A	38.55	68.23	N/A	54.00	Horizontal	PASS
5631.326	46.62	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12522.665	47.87	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

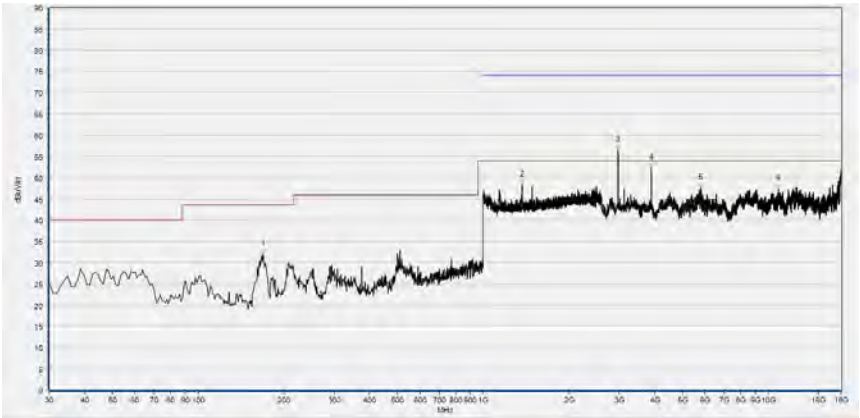
(Antenna Horizontal, 30MHz to 25GHz)



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
53.303	32.15	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
168.849	32.96	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2463.955	55.15	N/A	38.61	68.23	N/A	54.00	Vertical	PASS
2969.674	54.87	N/A	44.05	68.23	N/A	54.00	Vertical	PASS
5637.487	47.15	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12211.522	47.77	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

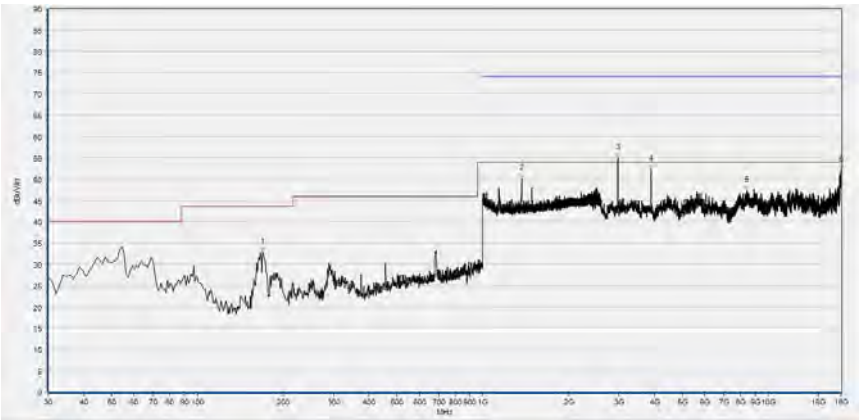
(Antenna Vertical, 30MHz to 25GHz)

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
168.849	31.94	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.123	48.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2968.600	55.72	N/A	40.32	68.23	N/A	54.00	Horizontal	PASS
3884.617	52.25	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5788.438	47.56	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
10840.648	47.37	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

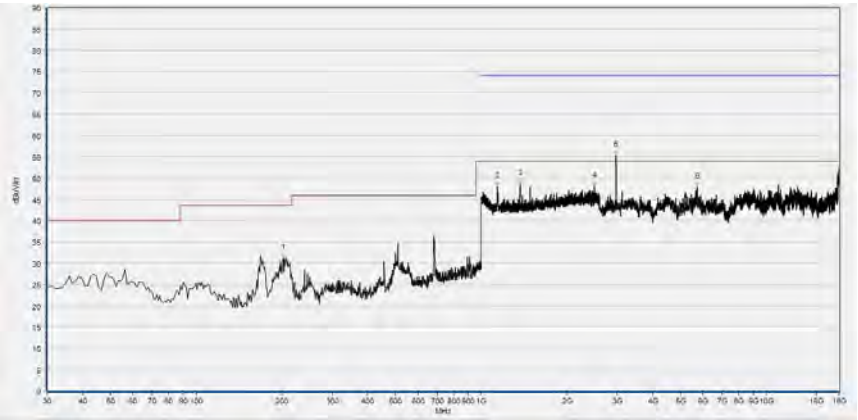


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
168.849	32.78	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1367.589	50.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2968.400	54.83	N/A	40.29	68.23	N/A	54.00	Vertical	PASS
3884.617	52.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8425.445	47.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
17963.033	52.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

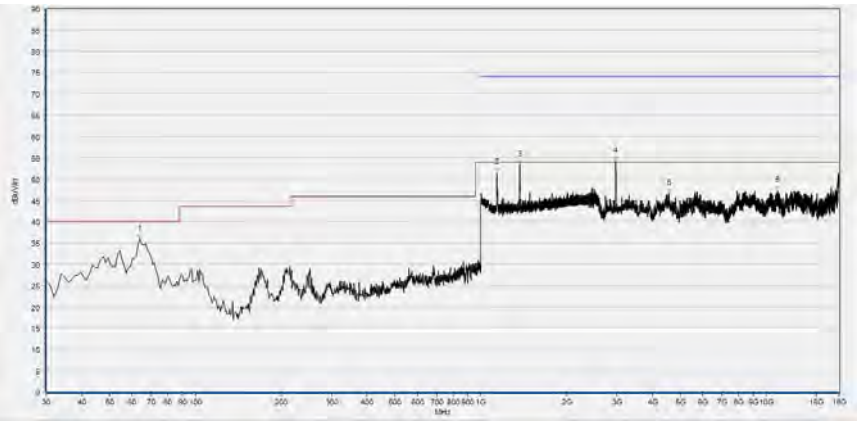
802.11ac (VHT40) Test mode

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
201.862	31.10	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1139.780	48.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1368.123	48.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2493.831	48.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2971.000	55.31	N/A	42.75	68.23	N/A	54.00	Horizontal	PASS
5726.825	47.89	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

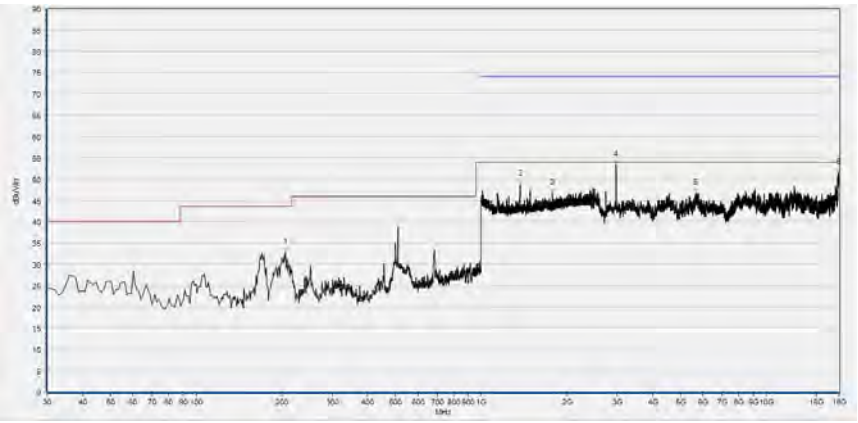
(Antenna Horizontal, 30MHz to 25GHz)



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
63.984	35.81	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1140.847	51.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1368.123	53.36	N/A	39.54	74.00	N/A	54.00	Vertical	PASS
2970.100	54.38	N/A	40.39	68.23	N/A	54.00	Vertical	PASS
4571.594	46.62	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10991.598	47.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

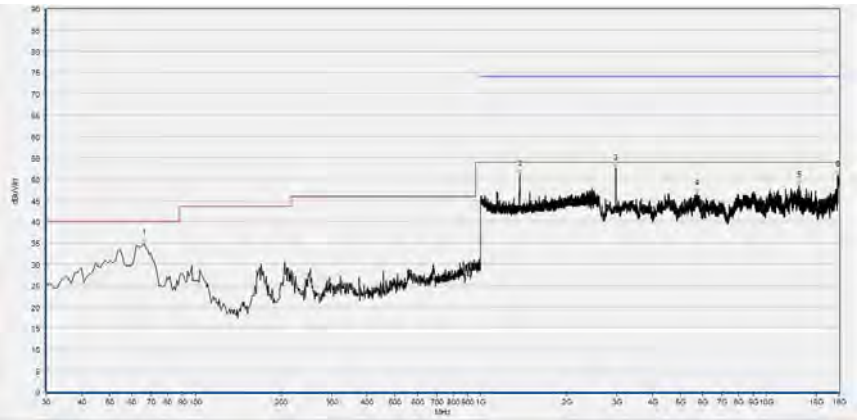
(Antenna Vertical, 30MHz to 25GHz)

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
205.746	32.91	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.656	48.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1778.393	46.75	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2971.000	54.01	N/A	41.16	68.23	N/A	54.00	Horizontal	PASS
5640.568	46.76	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
17947.630	51.44	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

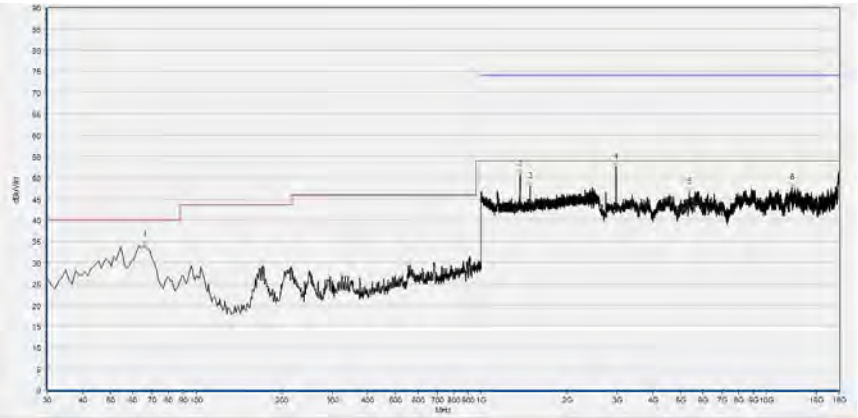
(Antenna Horizontal, 30MHz to 25GHz)



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
65.926	34.84	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1368.656	51.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.674	52.49	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5708.342	46.67	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
13058.692	48.42	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
17836.727	50.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

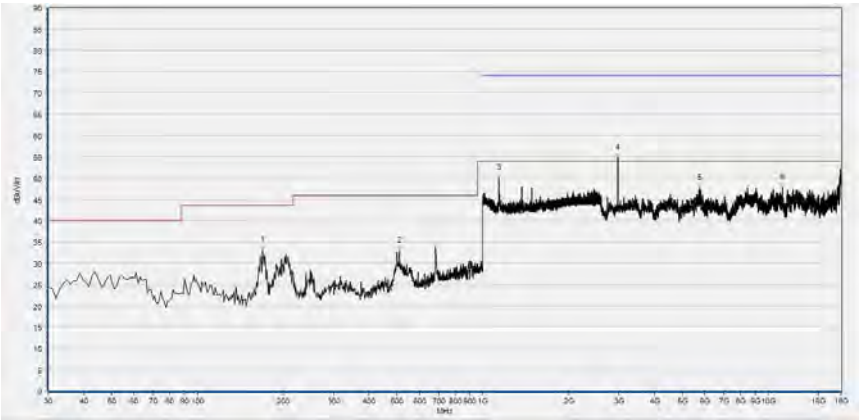
(Antenna Vertical, 30MHz to 25GHz)

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
65.926	33.94	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
1368.123	50.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1486.029	47.92	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2969.674	52.54	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5366.393	46.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12279.296	47.66	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

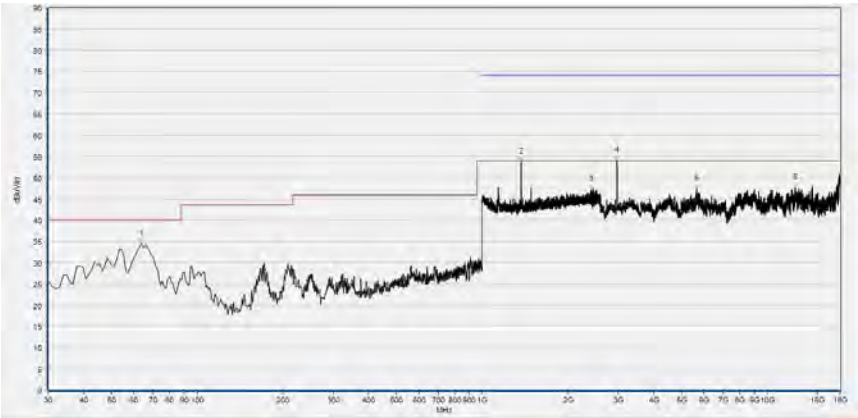
(Antenna Horizontal, 30MHz to 25GHz)



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
168.849	33.08	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
509.660	32.79	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1139.246	49.95	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.674	54.61	N/A	41.07	68.23	N/A	54.00	Vertical	PASS
5745.309	47.58	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
11194.919	47.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

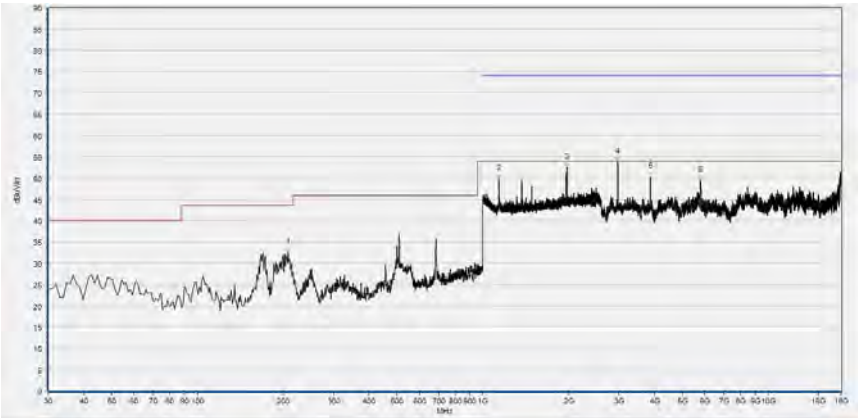
(Antenna Vertical, 30MHz to 25GHz)

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
63.984	34.29	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
1368.123	53.60	N/A	41.25	74.00	N/A	54.00	Horizontal	PASS
2409.003	47.17	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
2969.400	54.92	N/A	42.46	68.23	N/A	54.00	Horizontal	PASS
5637.487	47.36	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
12510.342	47.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

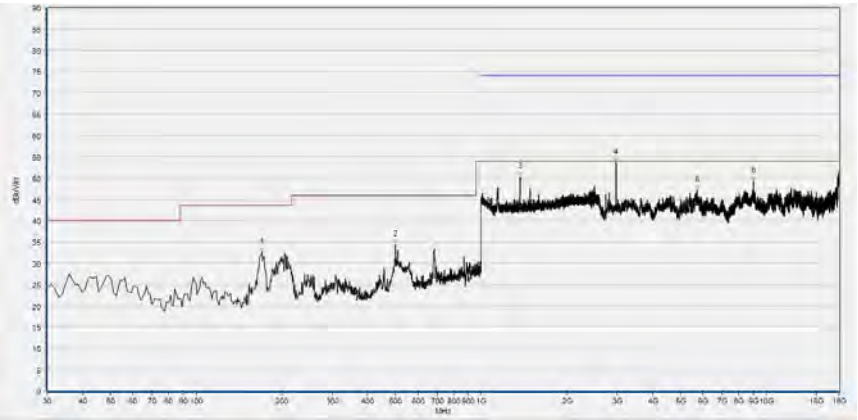


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
207.688	32.51	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1140.313	49.80	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1974.191	52.45	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
2969.400	54.62	N/A	37.62	68.23	N/A	54.00	Vertical	PASS
3863.053	50.28	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5791.518	49.37	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

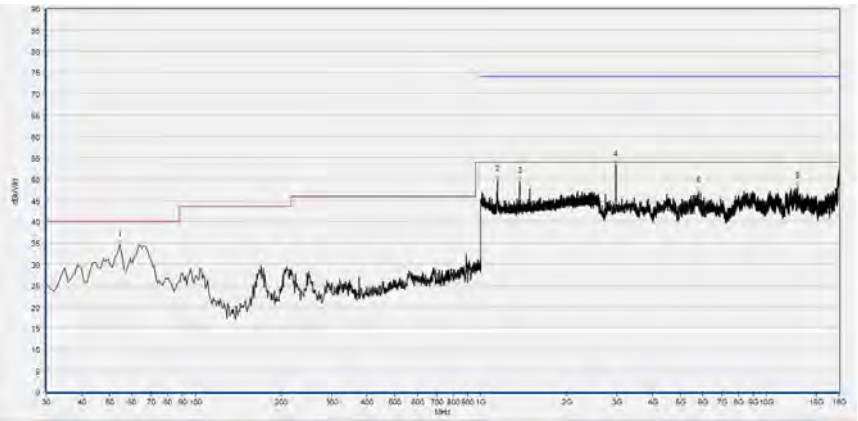
802.11ac (VHT80) Test mode

Plots for Channel = 42



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
169.820	32.53	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
499.950	34.31	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1368.656	50.29	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2971.200	54.03	N/A	38.66	68.23	N/A	54.00	Horizontal	PASS
5714.503	47.10	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
9010.762	49.33	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

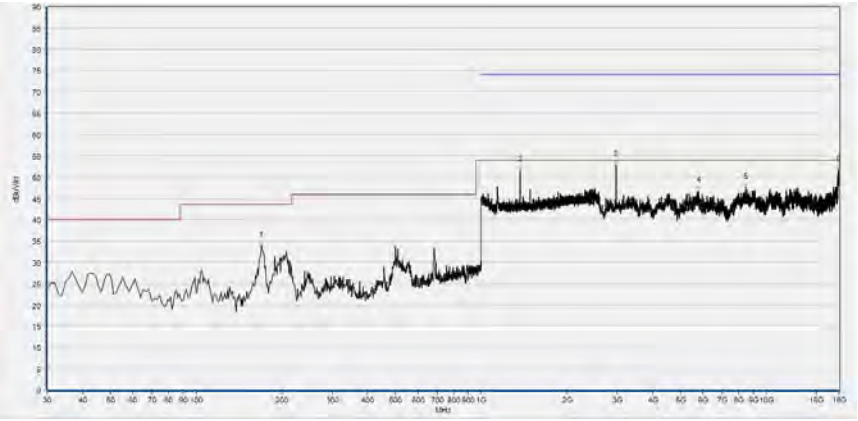
(Antenna Horizontal, 30MHz to 25GHz)



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
54.274	34.58	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1142.447	49.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1368.656	49.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2969.674	53.26	N/A	40.31	68.23	N/A	54.00	Vertical	PASS
5791.518	47.02	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
12892.338	48.32	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

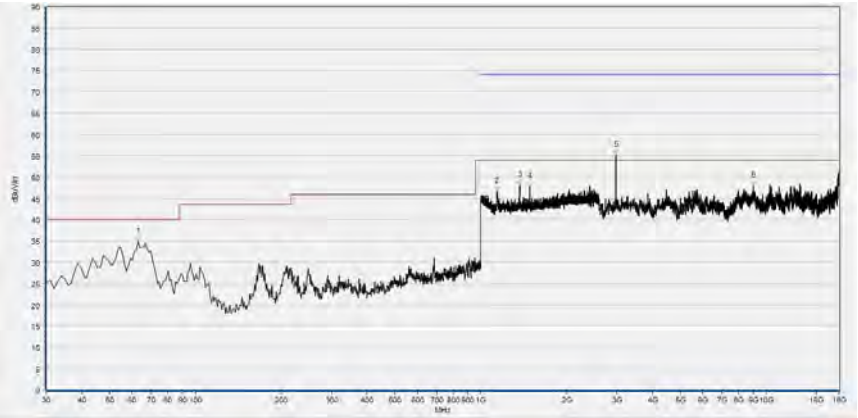
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 155



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
168.849	33.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1368.656	51.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2969.674	52.74	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5782.276	46.80	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
8447.009	47.57	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
17867.534	51.56	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
63.013	34.86	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
1137.112	46.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1368.656	48.09	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1486.029	47.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2972.755	55.13	N/A	40.18	68.23	N/A	54.00	Vertical	PASS
9013.843	48.01	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	2018.04.17	2019.04.16
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2018.11.06	2019.11.05
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2018.04.17	2019.04.16
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	2018.04.17	2019.04.16
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	2018.05.08	2019.05.07
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)	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	2018.05.18	2019.05.17
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2018.03.03	2019.03.02
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	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
Notch Filter	N/A	WRCG-5150-5350	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCG-5725-5850	Wainwright	2018.12.01	2019.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT