



B. Test Plot:



(Channel 36, 5180MHz, 802.11ac (VHT20))



(Channel 44, 5220MHz, 802.11ac (VHT20))



(Channel 48, 5240MHz, 802.11ac (VHT20))



(Channel 52, 5260MHz, 802.11ac (VHT20))



(Channel 60, 5300MHz, 802.11ac (VHT20))



(Channel 64, 5320MHz, 802.11ac (VHT20))



(Channel 100, 5500MHz, 802.11ac (VHT20))



(Channel 120, 5600MHz, 802.11ac (VHT20))



(Channel 140, 5700MHz, 802.11ac (VHT20))



(Channel 149, 5745MHz, 802.11ac (VHT20))



(Channel 157, 5785MHz, 802.11ac (VHT20))



(Channel 165, 5825MHz, 802.11ac (VHT20))



802.11ac (VHT40) Mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Corrected PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
38	5190	2.25	0.71	2.96	11	PASS
46	5230	1.85		2.56		
54	5270	1.72		2.43		
62	5310	2.52		3.23		
102	5510	1.97		2.68		
126	5630	2.20		2.91		
134	5670	1.66		2.37		
Channel	Frequency (MHz)	Measured PSD (dBm/500KHz)	Duty Factor	Corrected (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
151	5755	-0.75	0.71	-0.04	30	PASS
155	5795	-0.97		-0.26		

B. Test Plot:



(Channel 38, 5190MHz, 802.11ac (VHT40))



(Channel 46, 5230MHz, 802.11ac (VHT40))



(Channel 54, 5270MHz, 802.11ac (VHT40))



(Channel 62, 5310MHz, 802.11ac (VHT40))



(Channel 102, 5510MHz, 802.11ac (VHT40))



(Channel 126, 5630MHz, 802.11ac (VHT40))



(Channel 134, 5670MHz, 802.11ac (VHT40))



(Channel 151, 5755MHz, 802.11ac (VHT40))



(Channel 159, 5795MHz, 802.11ac (VHT40))



802.11ac (VHT80) Mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Corrected PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
42	5210	-1.17	1.46	0.29	11	PASS
58	5290	-2.32		-0.86		
106	5530	-2.13		-0.67		
122	5610	-1.89		-0.43		
138	5690	-2.36		-0.90		
Channel	Frequency (MHz)	Measured PSD (dBm/500KHz)	Duty Factor	Corrected (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
138	5690	-6.62	1.46	-5.16	30	PASS
155	5775	-4.30		-2.84		

B. Test Plot:



(Channel 42, 5210MHz, 802.11ac (VHT80))



(Channel 58, 5290MHz, 802.11ac (VHT80))



(Channel 106, 5530MHz, 802.11ac (VHT80))



(Channel 122, 5610MHz, 802.11ac (VHT80))



(Channel 138, 5690MHz, 802.11ac (VHT80))



(Channel 138, 5690MHz, 802.11ac (VHT80))



(Channel 155, 5775MHz, 802.11ac (VHT80))



2.6. Frequency Stability

2.6.1. Requirement

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

2.6.2. Test Procedure

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

2.6.3. Test Result

U-NII-1 (Ch. 36) 5180MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	3.87	+20(Ref)	24	4.633
100%		-30	25	4.826
100%		-20	16	3.089
100%		-10	30	5.792
100%		0	17	3.282
100%		+10	22	4.247
100%		+20	21	4.054
100%		+30	23	4.440
100%		+40	28	5.405
100%		+50	25	4.826
115%	4.45	+20	16	3.089
85%	3.60	+20	31	5.985



U-NII-2A (Ch. 52)				
5260MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	3.87	+20(Ref)	19	3.612
100%		-30	26	4.943
100%		-20	24	4.563
100%		-10	25	4.753
100%		0	26	4.943
100%		+10	23	4.373
100%		+20	22	4.183
100%		+30	23	4.373
100%		+40	22	4.183
100%		+50	24	4.563
115%	4.45	+20	22	4.183
85%	3.60	+20	20	3.802

U-NII-2C (Ch. 100)				
5500MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	3.87	+20(Ref)	20	3.636
100%		-30	24	4.364
100%		-20	28	5.091
100%		-10	30	5.455
100%		0	21	3.818
100%		+10	23	4.182
100%		+20	22	4.000
100%		+30	29	5.273
100%		+40	34	6.182
100%		+50	24	4.364
115%	4.45	+20	26	4.727
85%	3.60	+20	29	5.273





U-NII-3 (Ch. 149) 5745MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	3.87	+20(Ref)	21	3.655
100%		-30	25	4.352
100%		-20	26	4.526
100%		-10	19	3.307
100%		0	28	4.874
100%		+10	23	4.003
100%		+20	25	4.352
100%		+30	22	3.829
100%		+40	24	4.178
100%		+50	27	4.700
115%	4.45	+20	30	5.222
85%	3.60	+20	27	4.700



2.7. Conducted Emission

2.7.1. Requirement

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

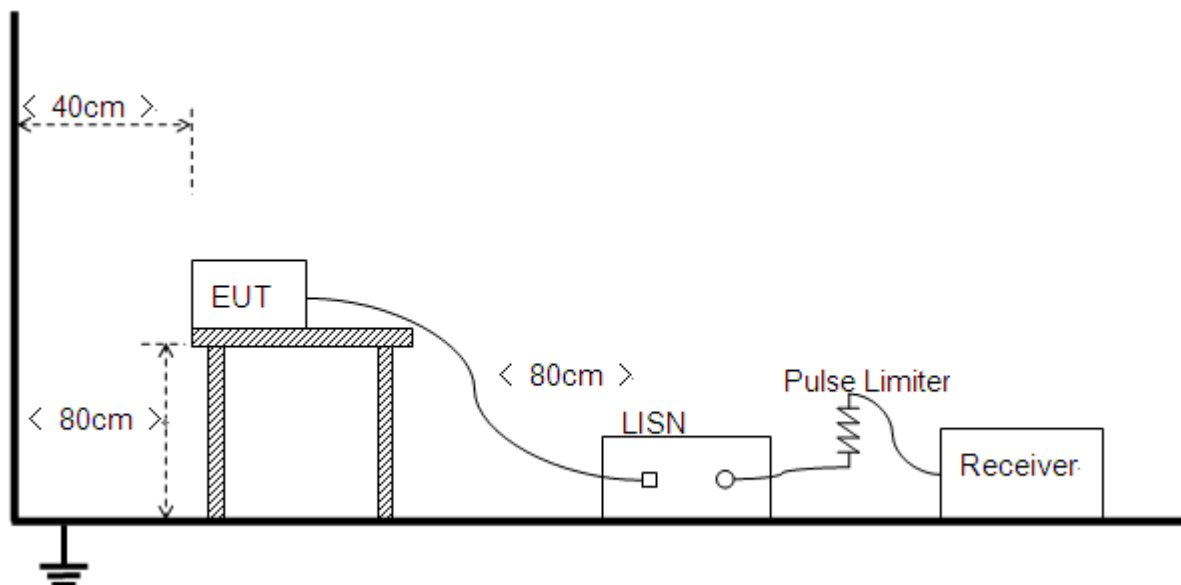
Frequency Range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

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

2.7.2. Test Description

Test Setup:



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



2.7.3. Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and Plot below.

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

A. Test Setup:

Test Mode: EUT+ Adapter+WIFI TX

Test Voltage: AC 120V/60Hz

The measurement results are obtained as below:

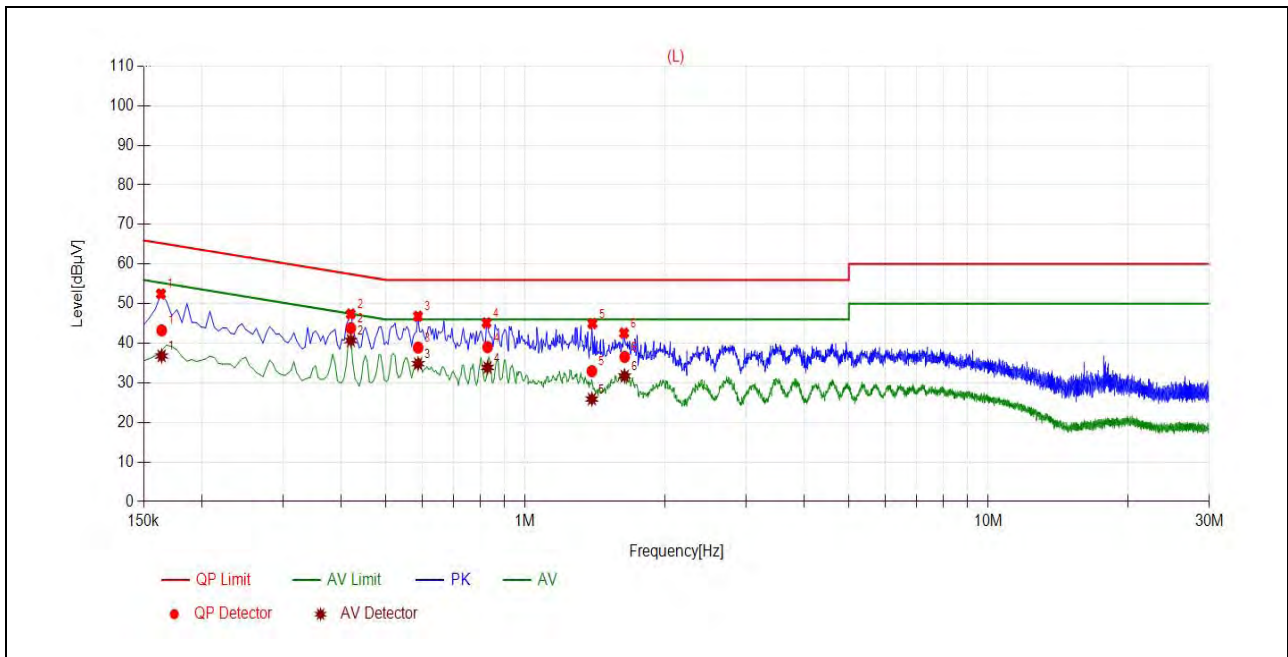
$$E [\text{dB}\mu\text{V}] = U_R + L_{\text{Cable loss}} [\text{dB}] + A_{\text{Factor}}$$

U_R : Receiver Reading

A_{Factor} : Voltage division factor of LISN

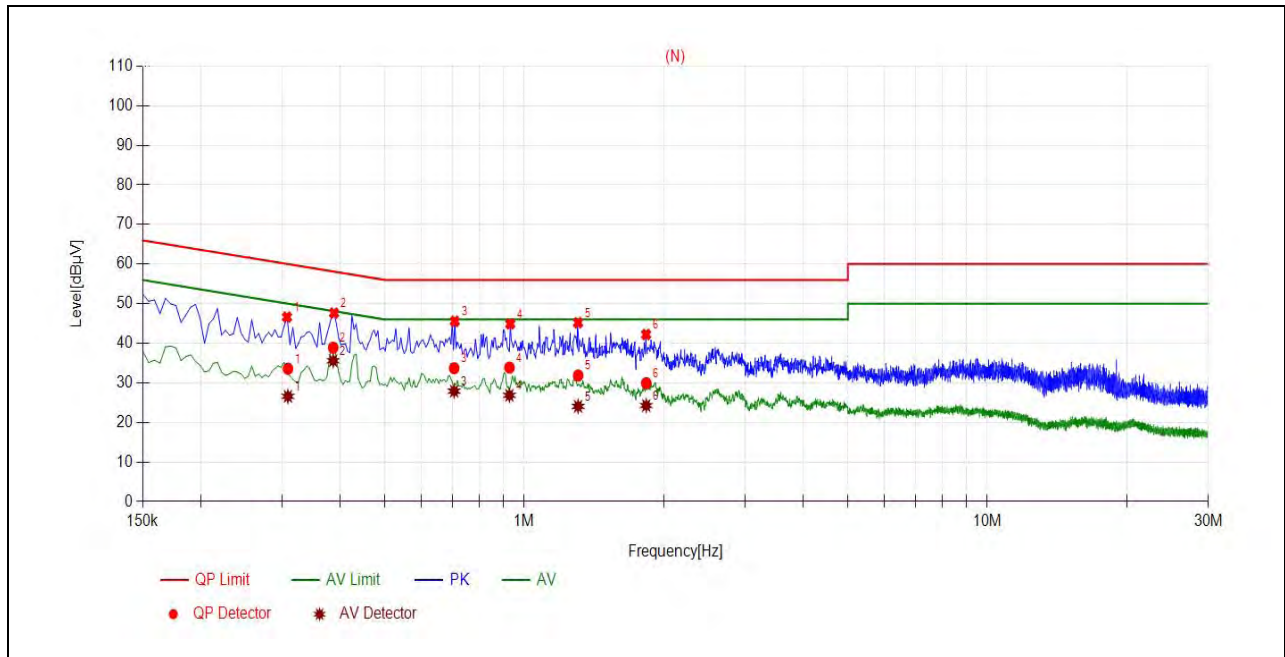


B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1640	43.25	36.80	65.26	55.26	Line	PASS
2	0.4202	43.79	40.71	57.44	47.44		PASS
3	0.5870	38.92	34.83	56.00	46.00		PASS
4	0.8291	39.03	33.88	56.00	46.00		PASS
5	1.3929	32.93	25.90	56.00	46.00		PASS
6	1.6397	36.55	31.71	56.00	46.00		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.3088	33.56	26.59	60.00	50.00	Neutral	PASS
2	0.3867	38.89	35.58	58.13	48.13		PASS
3	0.7057	33.70	27.90	56.00	46.00		PASS
4	0.9290	33.86	26.85	56.00	46.00		PASS
5	1.3071	31.86	24.06	56.00	46.00		PASS
6	1.8340	29.91	24.27	56.00	46.00		PASS

2.8. Restricted Frequency Bands

2.8.1. Requirement

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

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The following formula is used to convert the equipment isotropic radiated power(e.i.r.p.) to field strength (dBμV/m);

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

where P is the EIRP in Watts

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

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

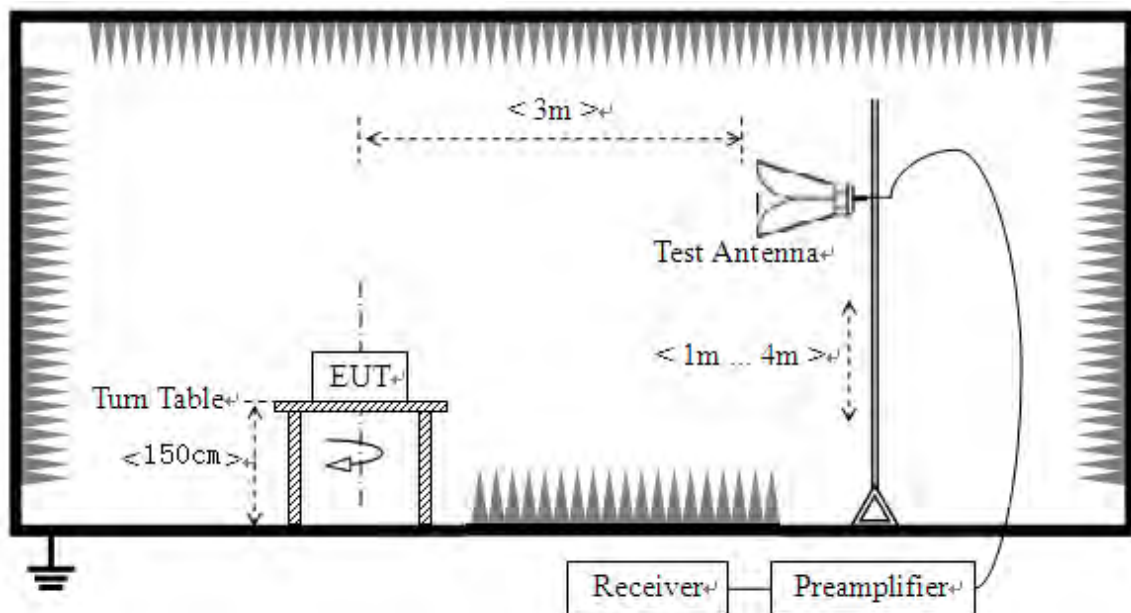
Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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

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

2.8.2. Test Description

Test Setup





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.

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

For the Test Antenna:

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

2.8.3. Test Result

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

The measurement results are obtained as below:

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

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

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

Note 1: 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.

Note 2 All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

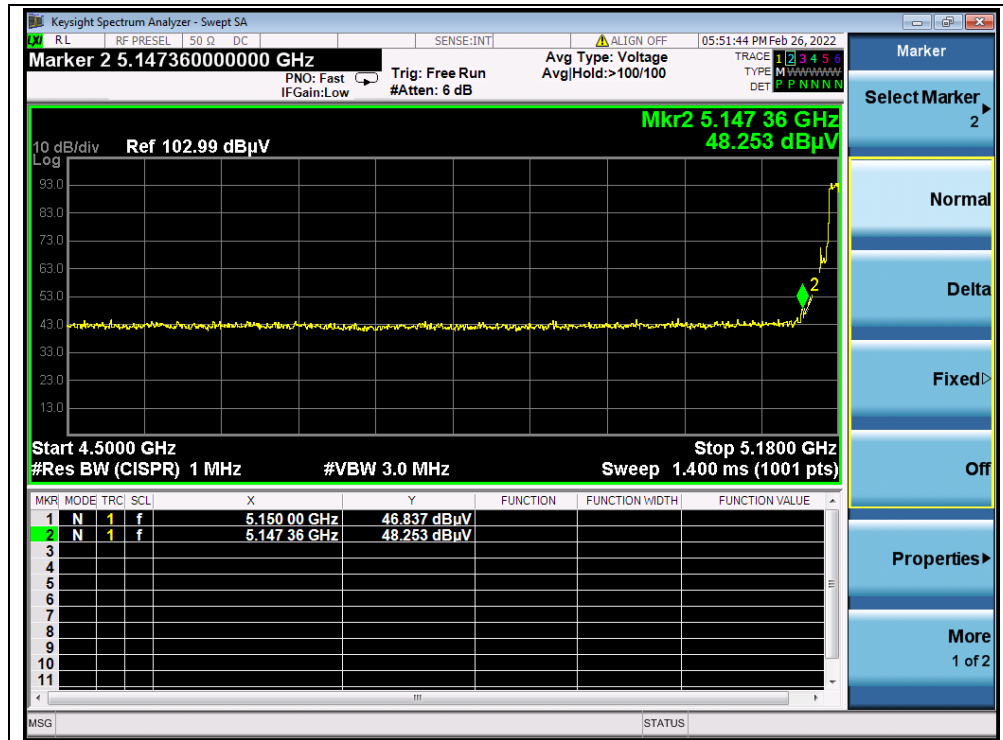
802.11a Mode

A.Test Verdict:

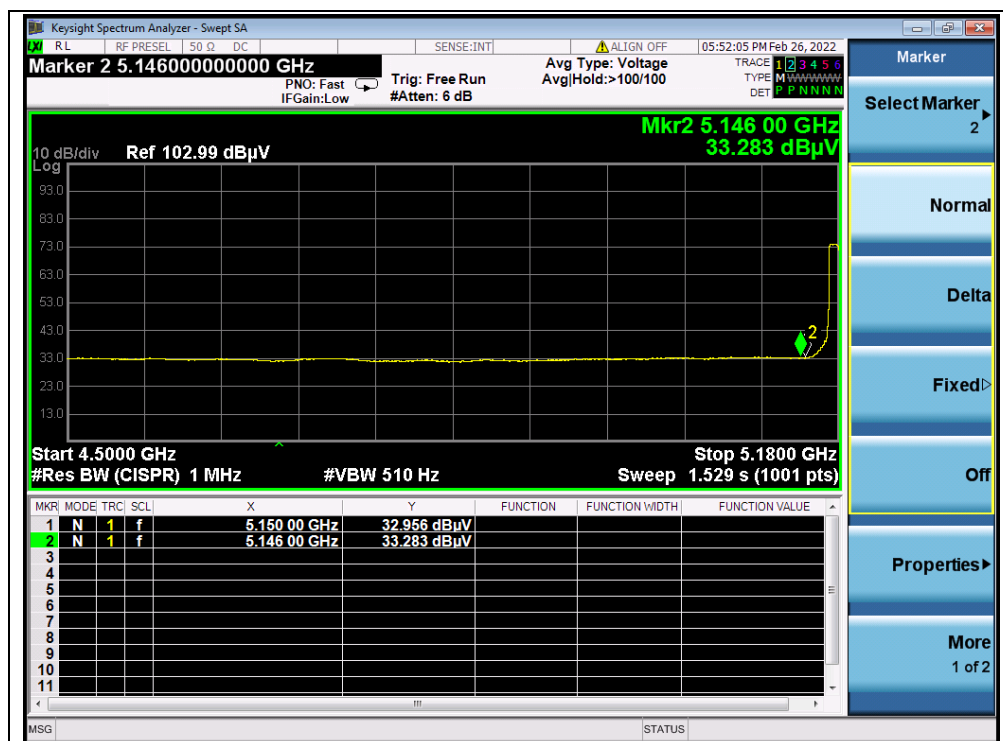
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
36	5147.36	PK	48.25	-19.54	32.20	60.91	74	PASS
36	5146.00	AV	33.28	-19.54	32.20	45.94	54	PASS
64	5350.80	PK	48.31	-18.80	32.20	61.71	74	PASS
64	5350.80	AV	31.38	-18.80	32.20	44.78	54	PASS
100	5469.20	PK	49.26	-19.20	32.20	62.26	68.23	PASS
100	5460.00	AV	31.42	-19.20	32.20	44.42	54	PASS
144	5729.40	PK	54.52	-19.20	32.20	67.52	68.23	PASS
149	5725.00	PK	58.68	-19.01	32.20	71.87	122.23	PASS
165	5850.00	PK	50.10	-19.01	32.20	63.29	122.23	PASS



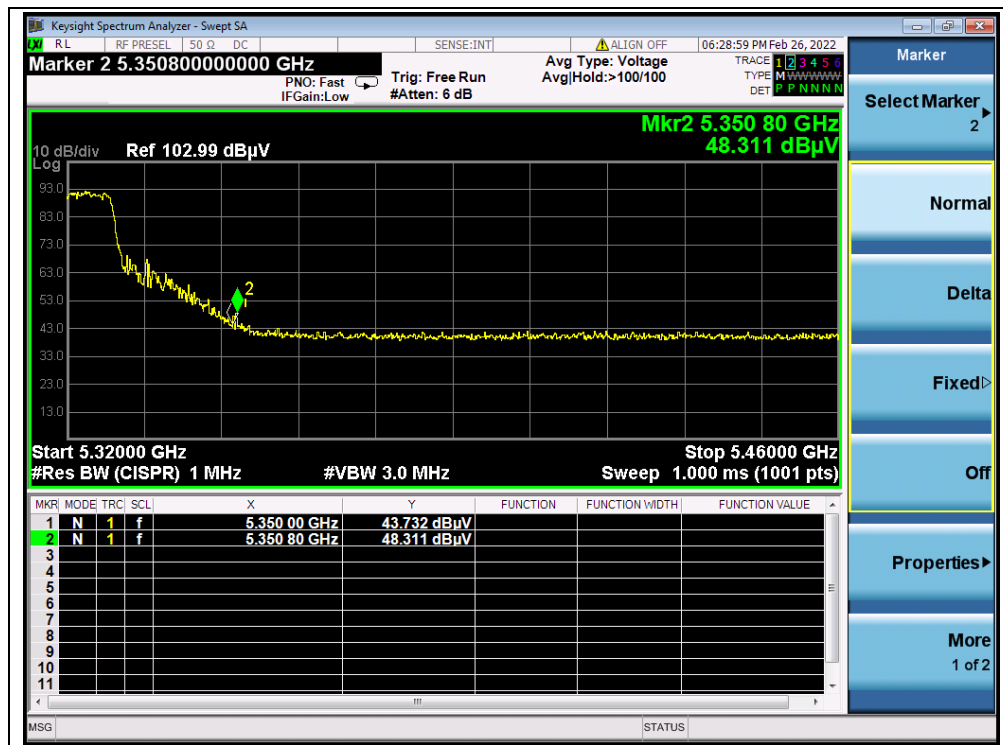
B.Test Plot:



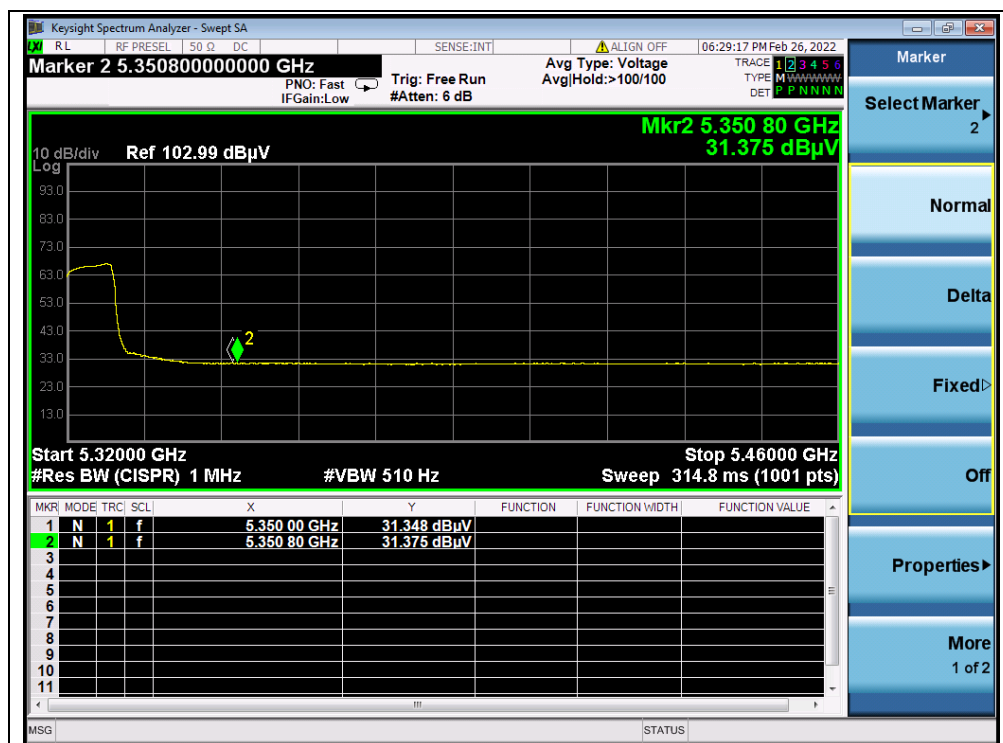
(PEAK, Channel 36, 802.11a)



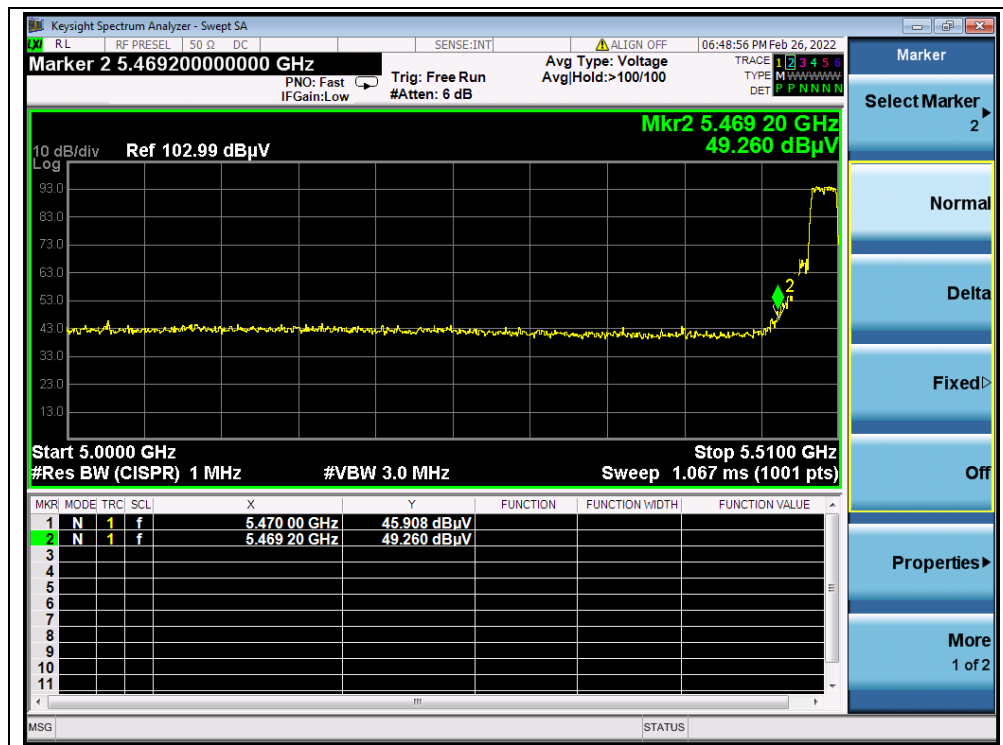
(AVERAGE, Channel 36, 802.11a)



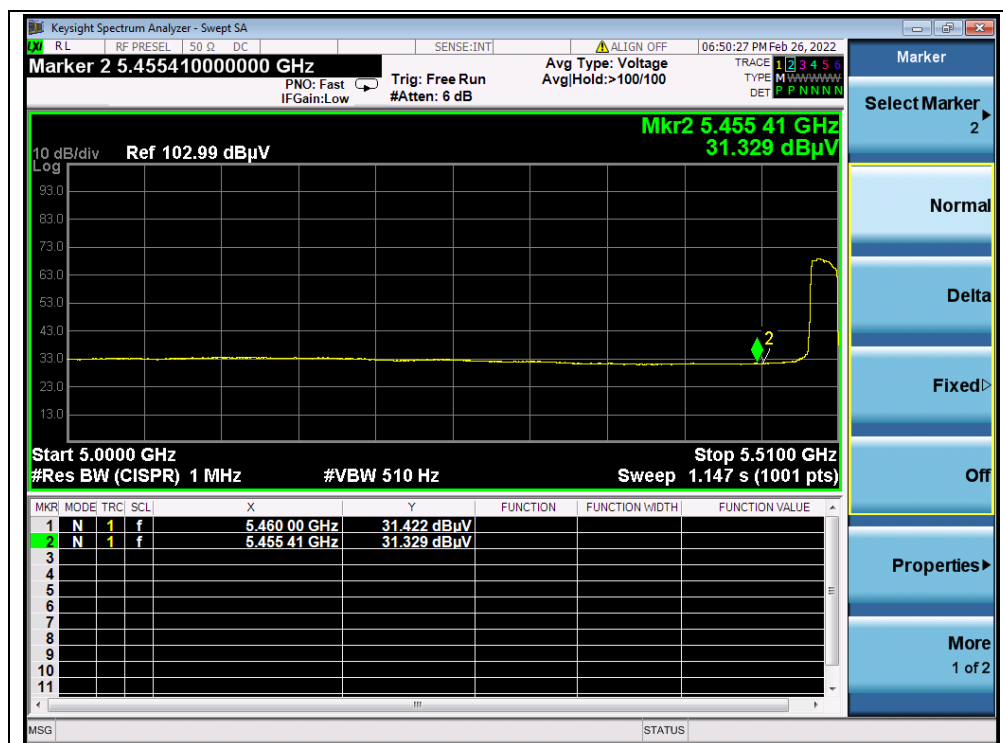
(PEAK, Channel 64, 802.11a)



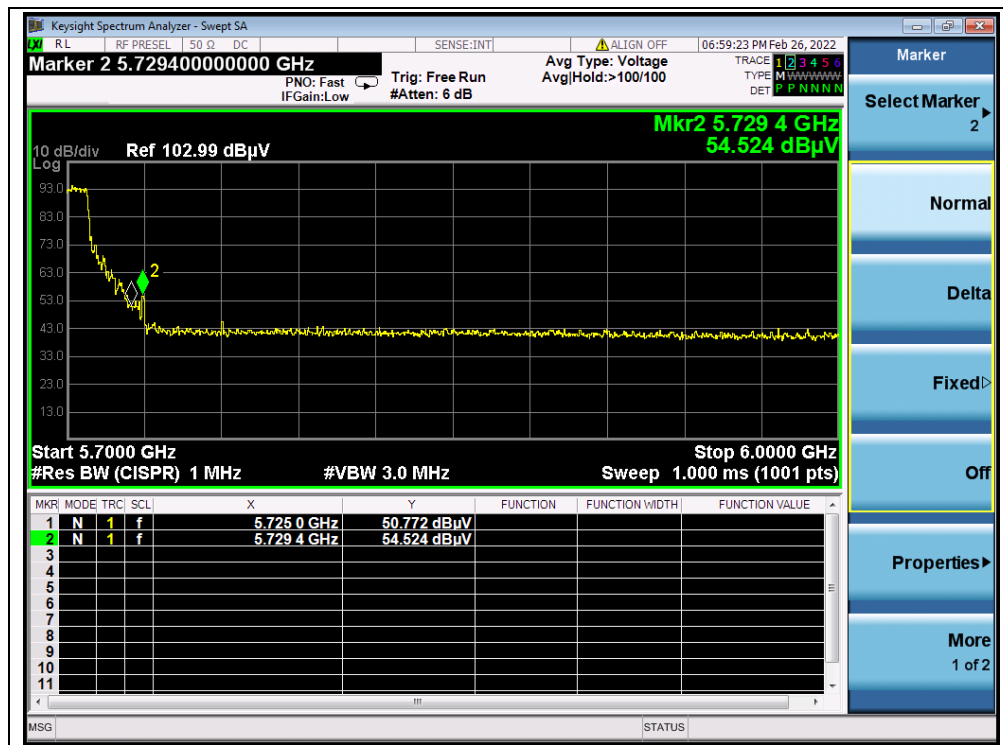
(AVERAGE, Channel 64, 802.11a)



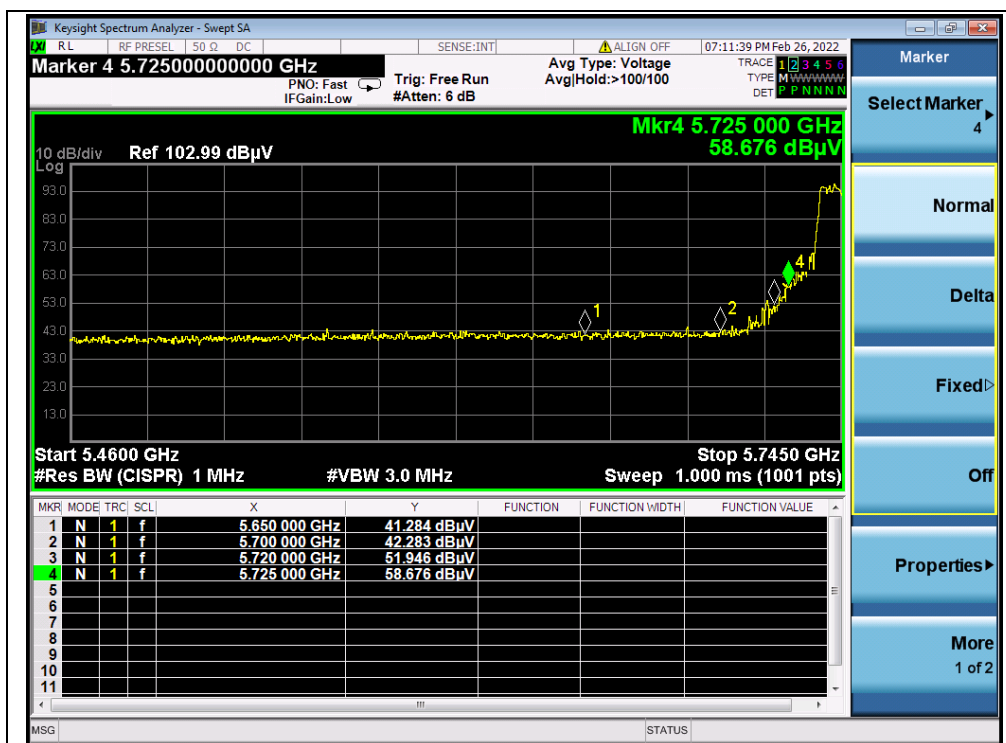
(PEAK, Channel 100, 802.11a)



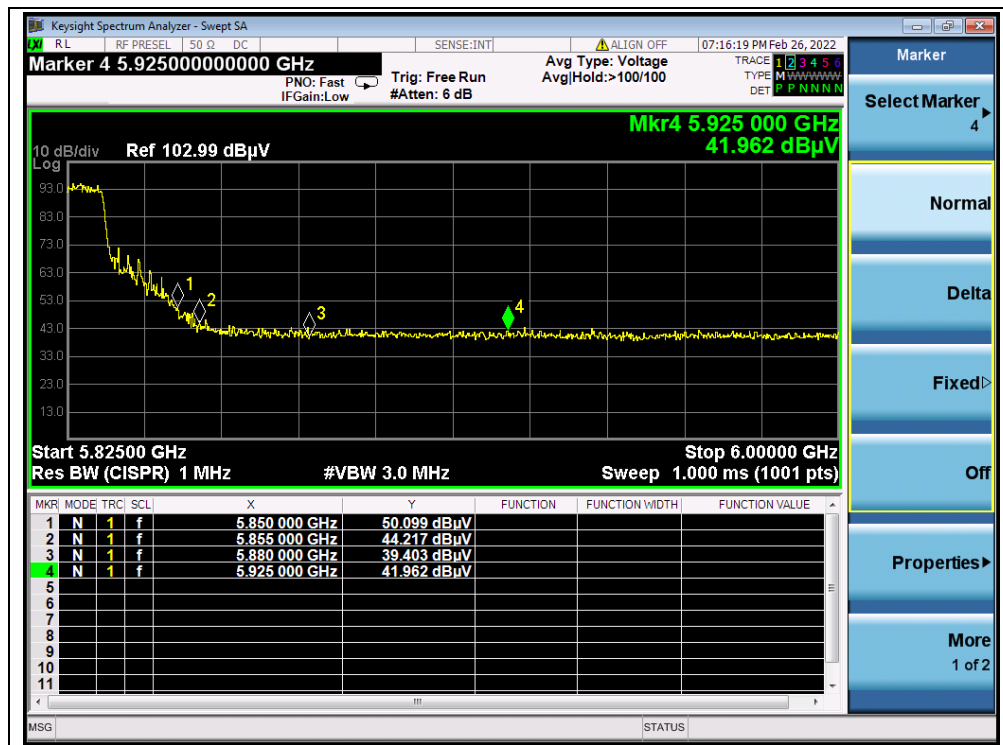
(AVERAGE, Channel 100, 802.11a)



(PEAK, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)



(PEAK, Channel 165, 802.11a)

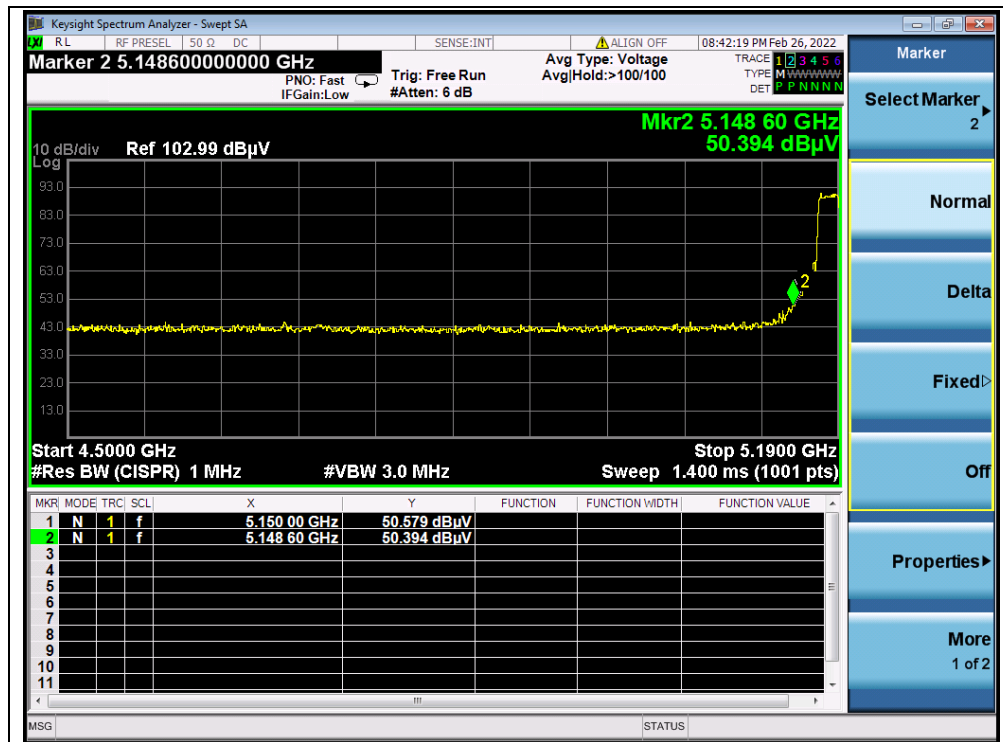


802.11n (HT40) Mode

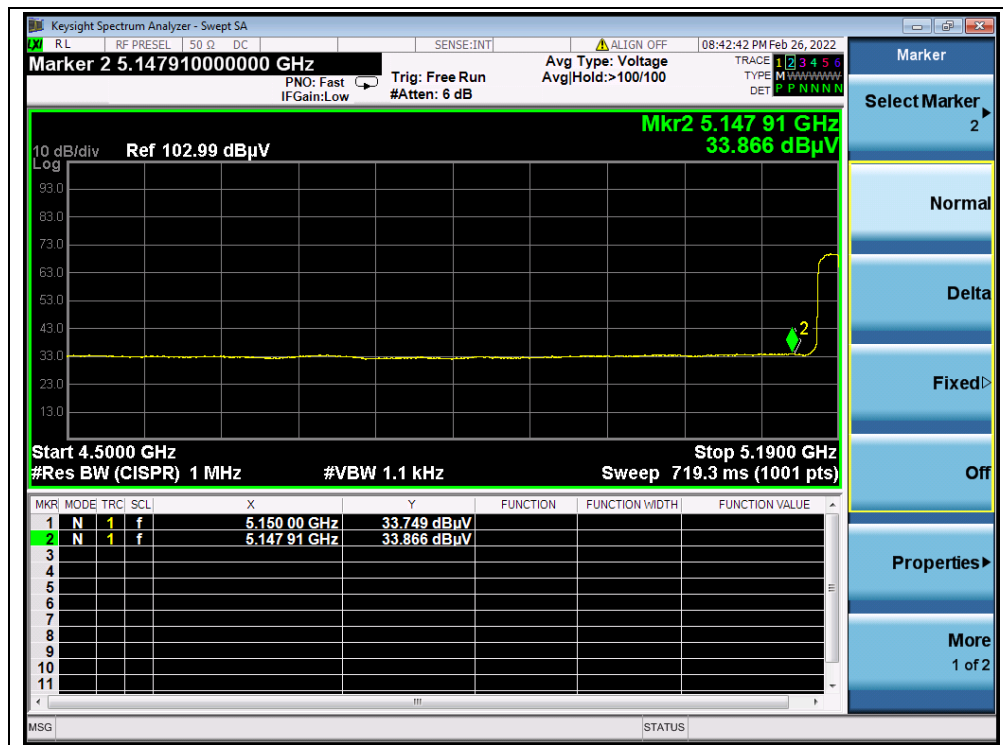
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	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	50.58	-19.54	32.20	63.24	74	PASS
38	5147.91	AV	33.87	-19.54	32.20	46.53	54	PASS
62	5350.99	PK	50.34	-18.80	32.20	63.74	74	PASS
62	5350.00	AV	31.91	-18.80	32.20	45.31	54	PASS
102	5467.14	PK	49.30	-19.20	32.20	62.30	68.23	PASS
102	5122.38	AV	33.82	-19.20	32.20	46.82	54	PASS
142	5799.69	PK	43.85	-19.20	32.20	56.85	68.23	PASS
151	5725.00	PK	62.46	-19.01	32.20	75.65	122.23	PASS
159	5855.00	PK	41.96	-19.01	32.20	55.15	110.83	PASS

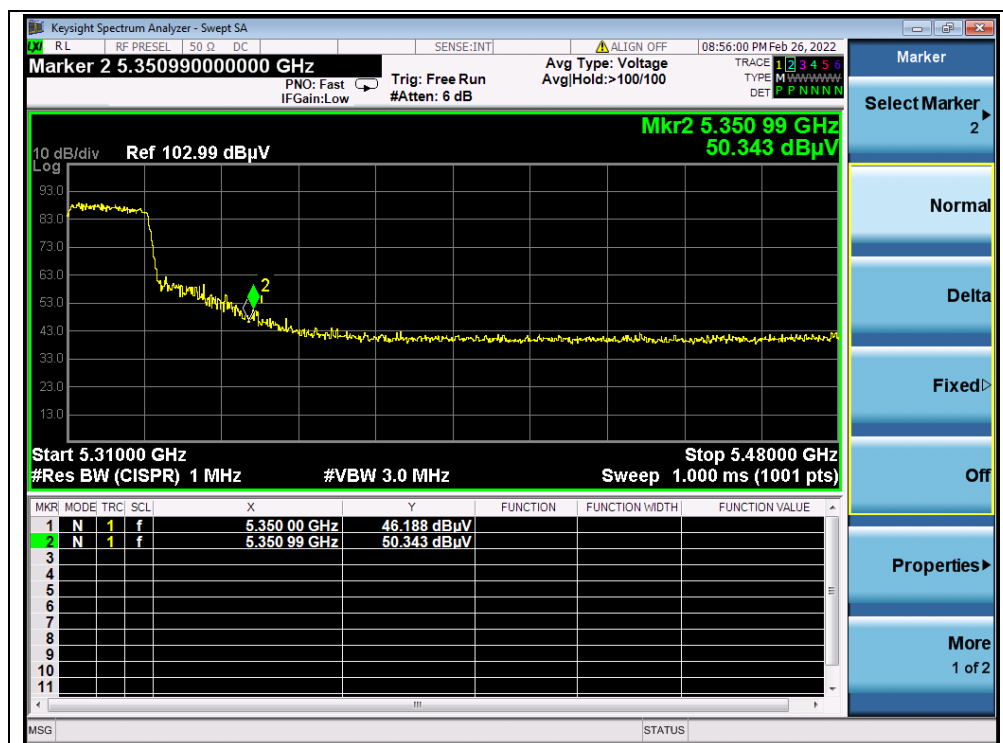
B. Test Plot:



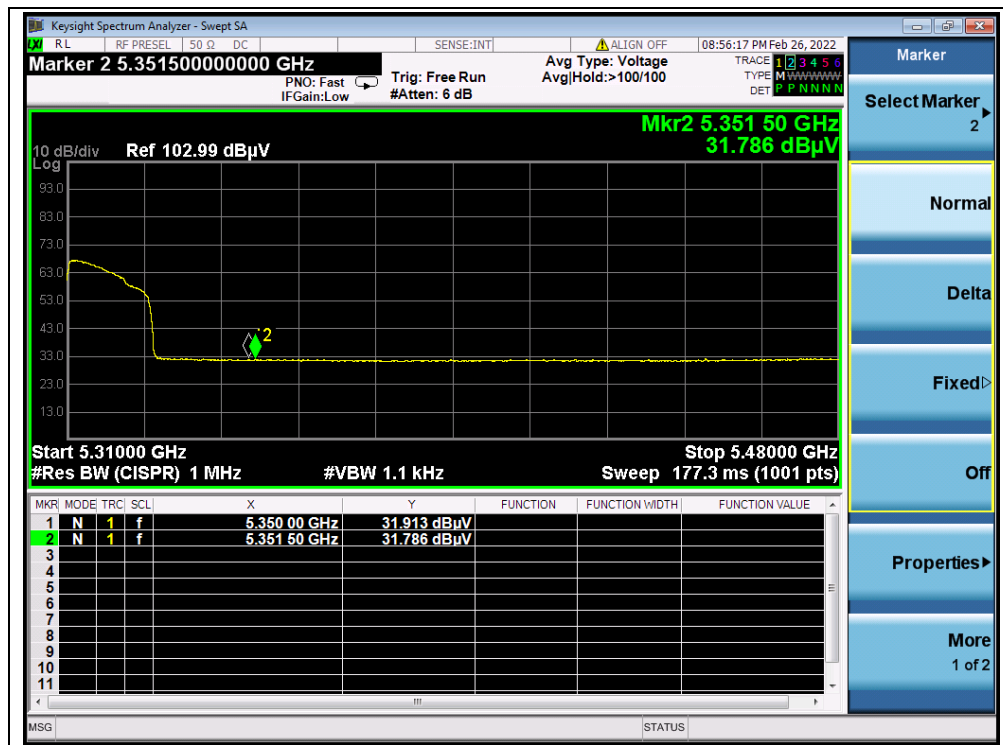
(PEAK, Channel 38, 802.11n (HT40))



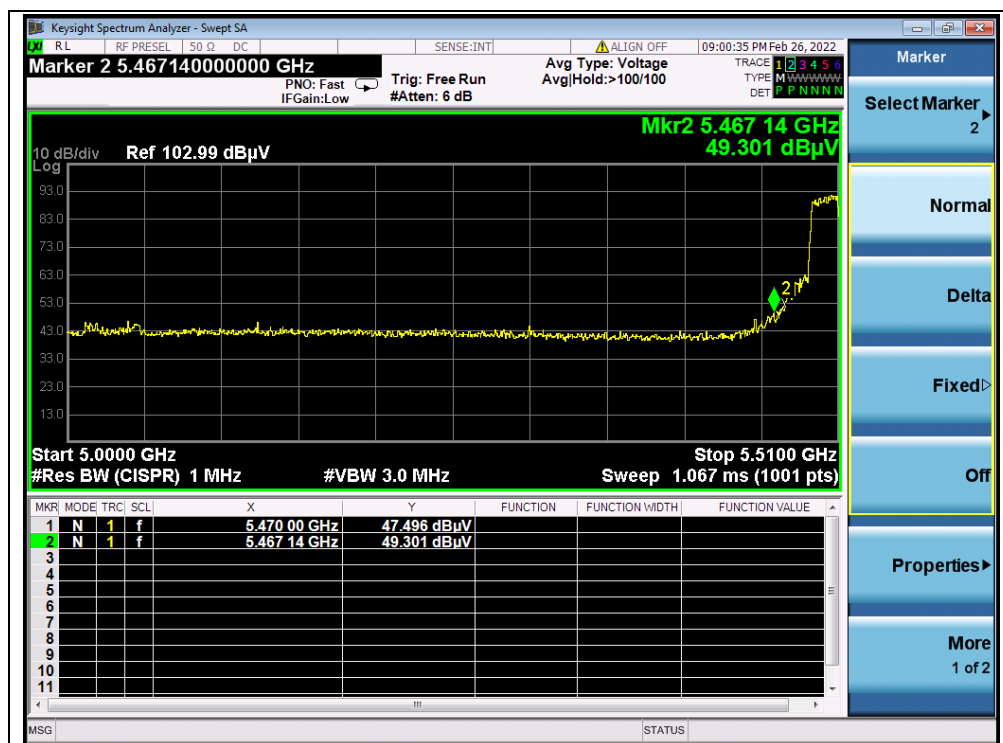
(AVERAGE, Channel 38, 802.11n (HT40))



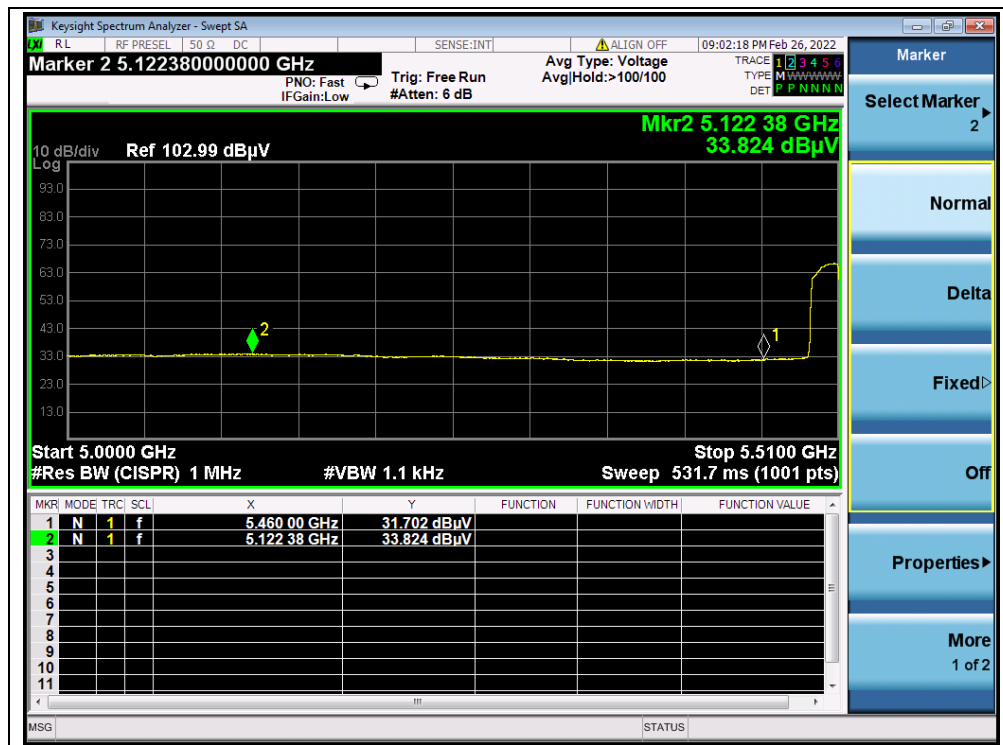
(PEAK, Channel 62, 802.11n (HT40))



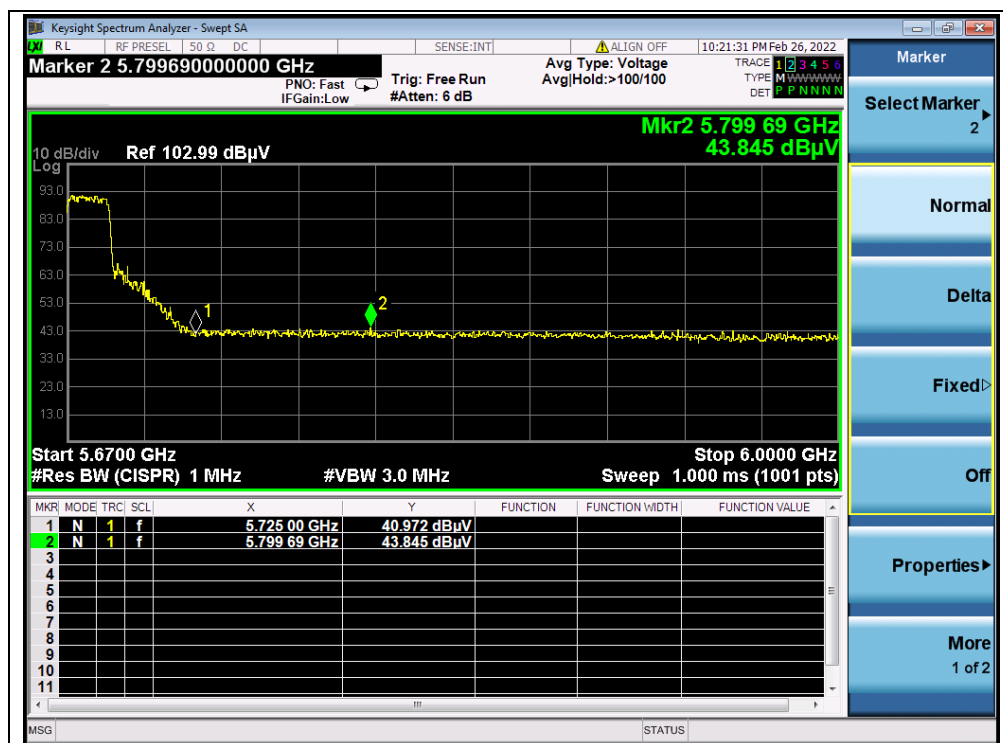
(AVERAGE, Channel 62, 802.11n (HT40))



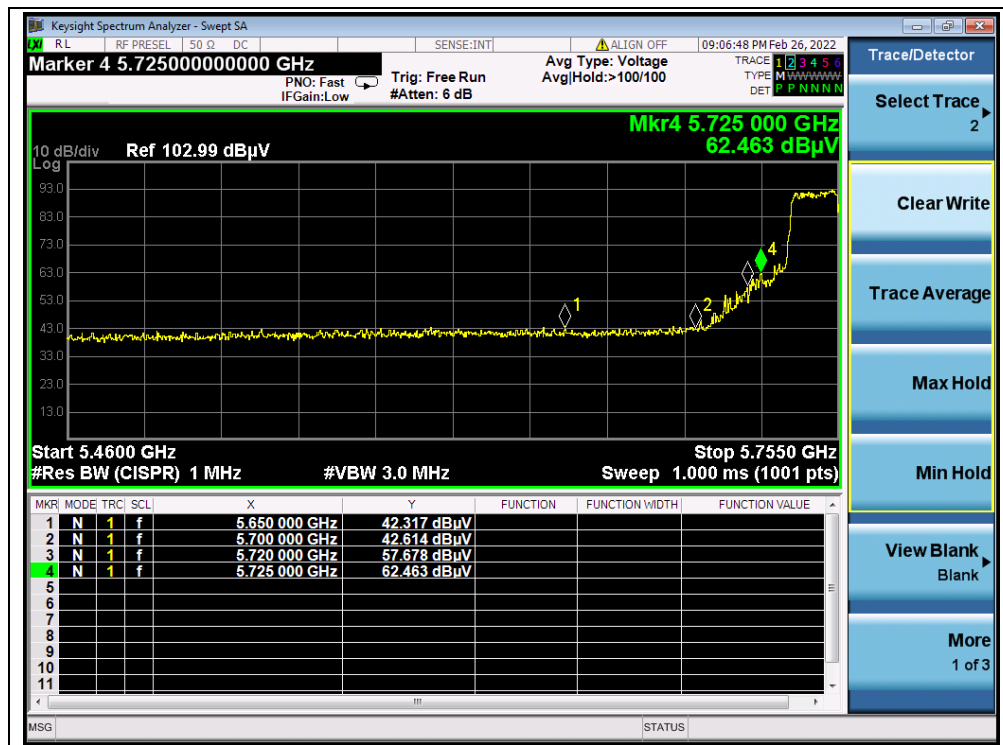
(PEAK, Channel 102, 802.11n (HT40))



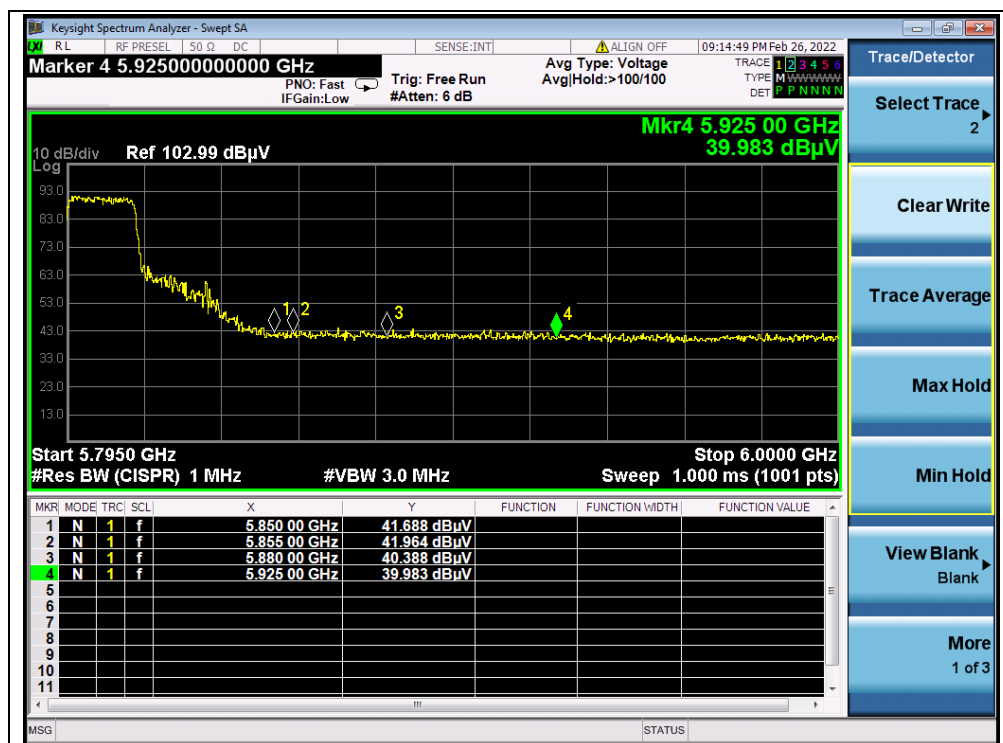
(AVERAGE, Channel 102, 802.11n (HT40))



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



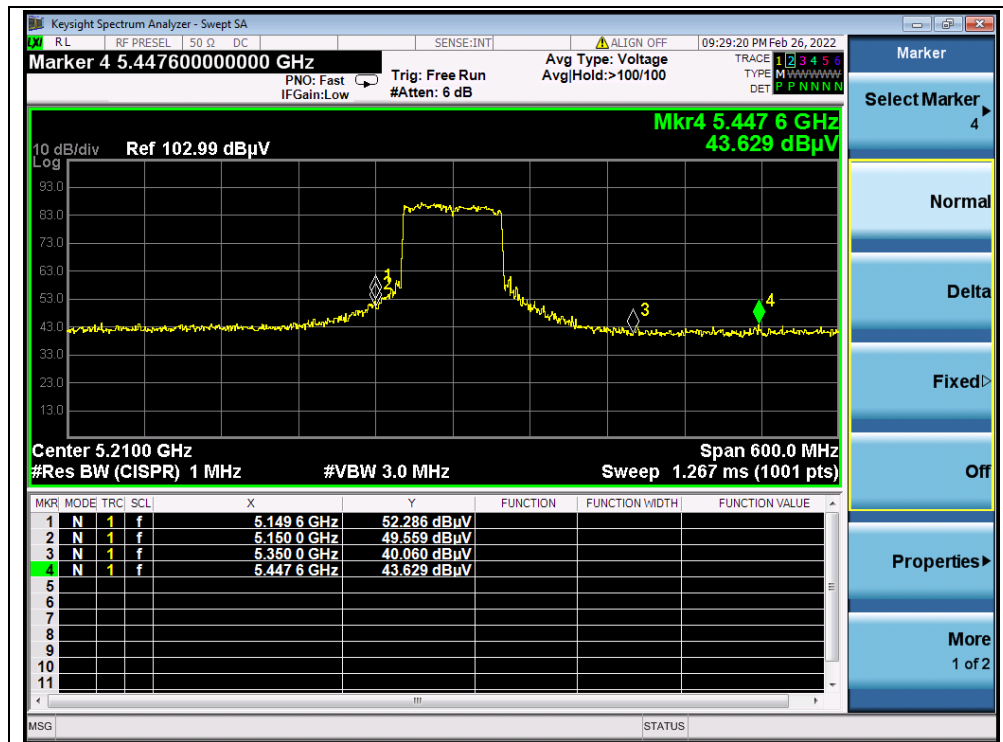
(PEAK, Channel 151, 802.11n (HT40))



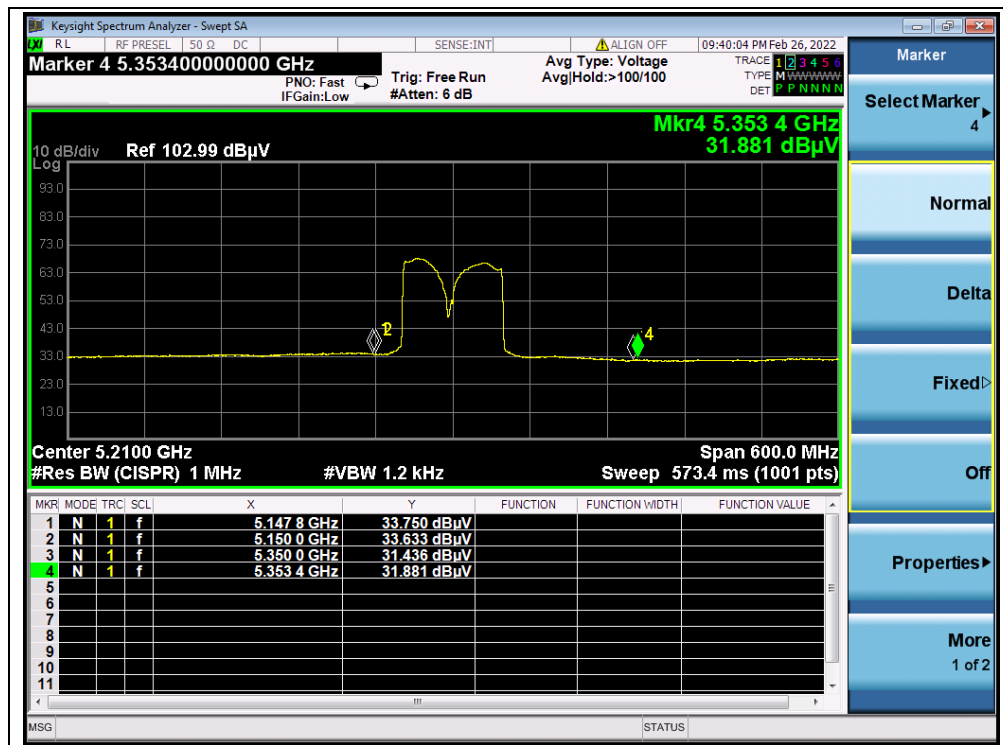
(PEAK, Channel 159, 802.11n (HT40))

**802.11ac (VHT80) Mode****A.Test Verdict:**

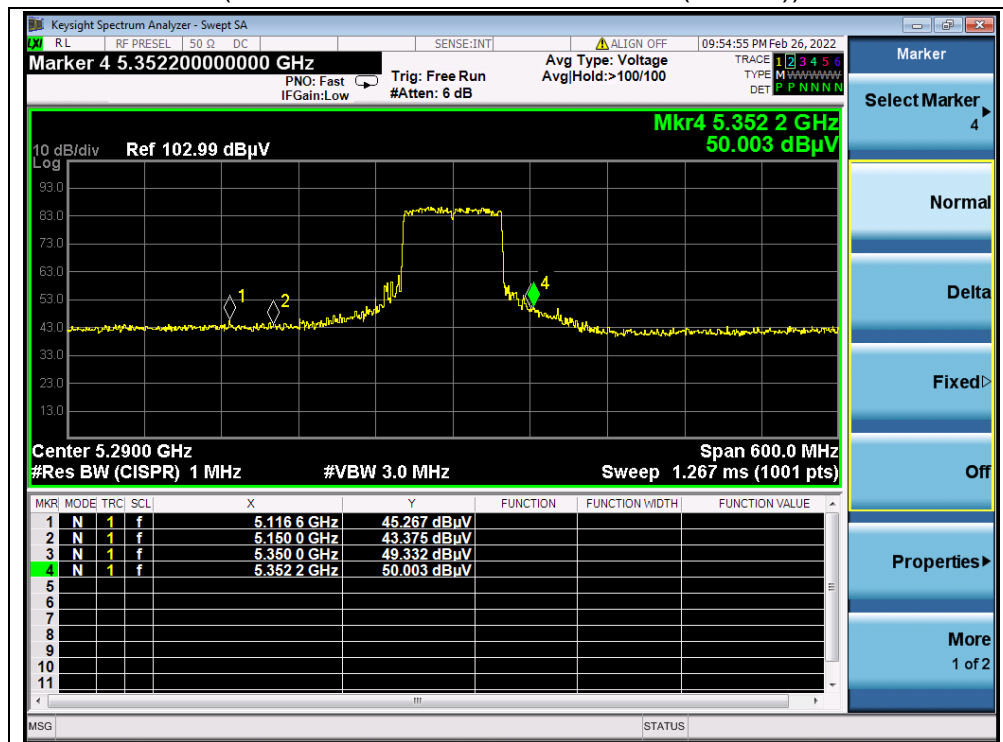
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
42	5149.60	PK	52.29	-19.54	32.20	64.95	74	PASS
42	5147.80	AV	33.75	-19.54	32.20	46.41	54	PASS
58	5352.20	PK	50.00	-18.80	32.20	63.40	74	PASS
58	5123.20	AV	33.75	-18.80	32.20	47.15	54	PASS
106	5469.01	PK	50.19	-19.20	32.20	63.19	68.23	PASS
106	5757.88	AV	32.00	-19.20	32.20	45.00	54	PASS
138	5765.61	PK	44.59	-19.20	32.20	57.59	68.23	PASS
155	5720.00	PK	57.26	-19.01	32.20	70.45	110.83	PASS
155	5850.00	PK	48.70	-19.01	32.20	61.89	122.23	PASS

B.Test Plot:

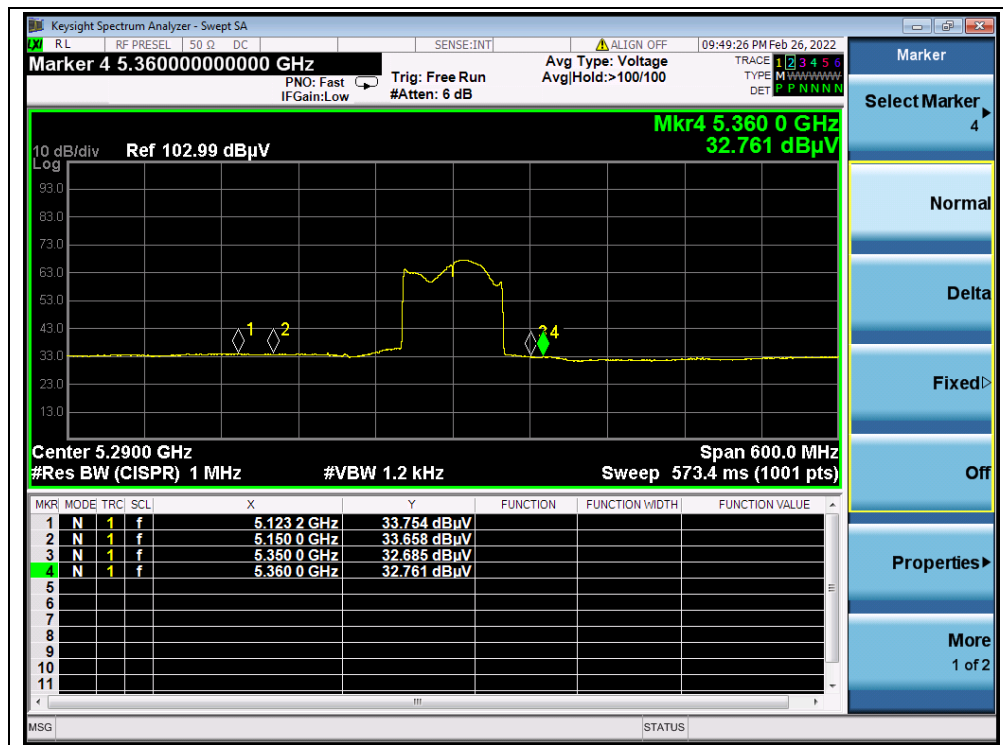
(PEAK, Channel 42, 802.11ac (VHT80))



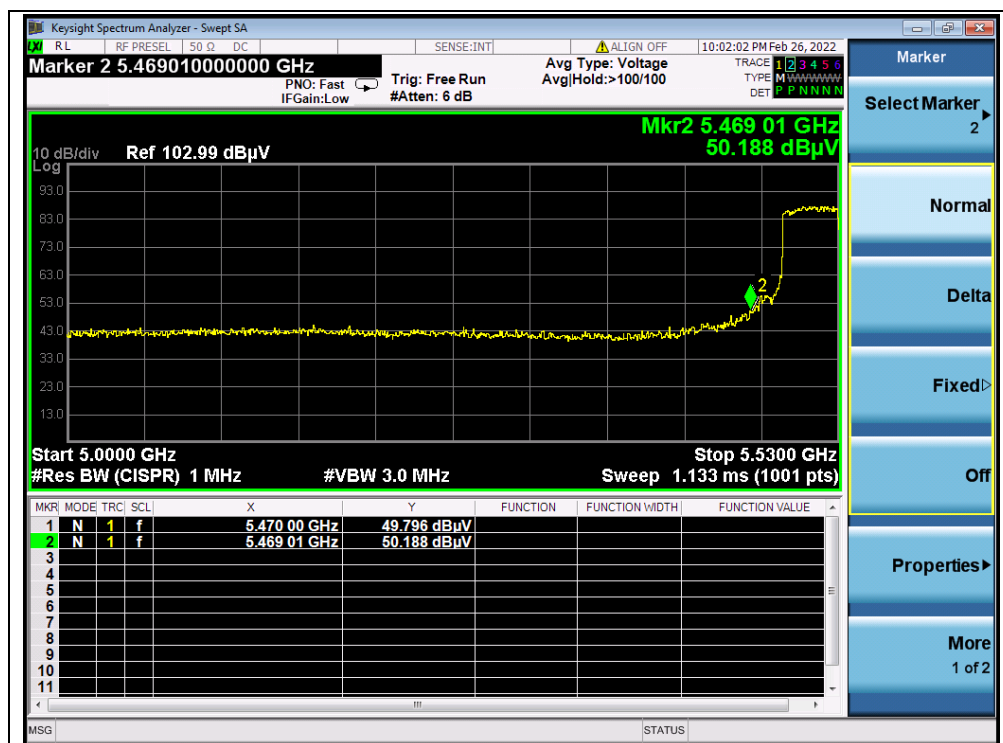
(AVERAGE, Channel 42, 802.11ac (VHT80))



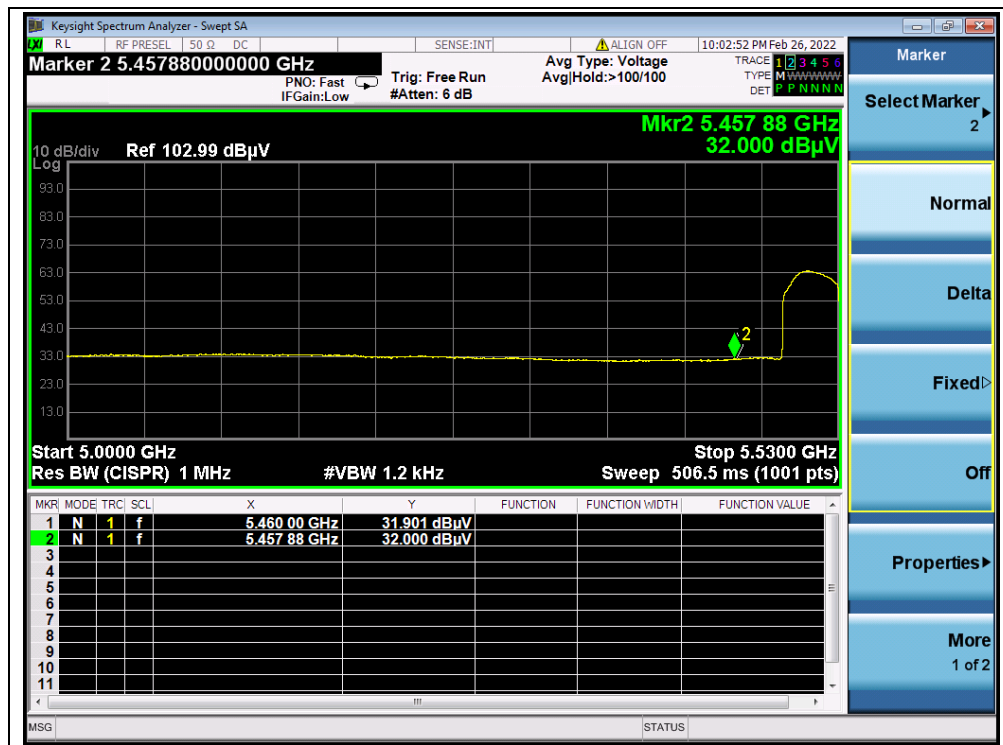
(PEAK, Channel 58, 802.11ac (VHT80))



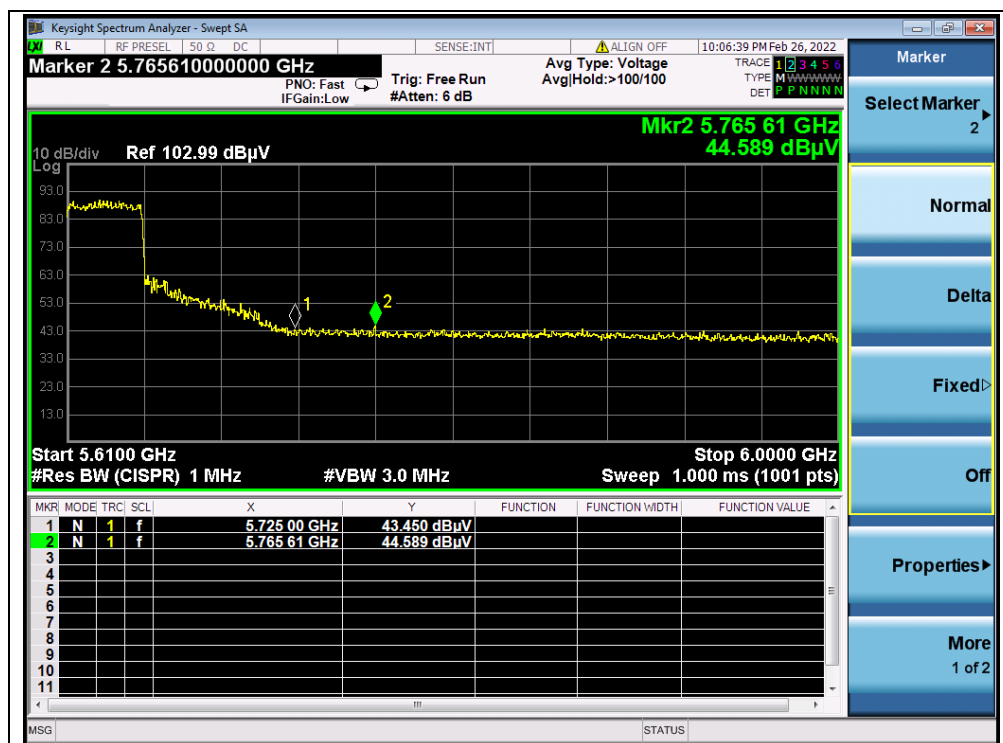
(AVERAGE, Channel 58, 802.11ac (VHT80))



(PEAK, Channel 106, 802.11ac (VHT80))



(AVERAGE, Channel 106, 802.11ac (VHT80))



(PEAK, Channel 138, 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(e.i.r.p.) to field strength (dBμV/m);

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

where P is the EIRP in Watts

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

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

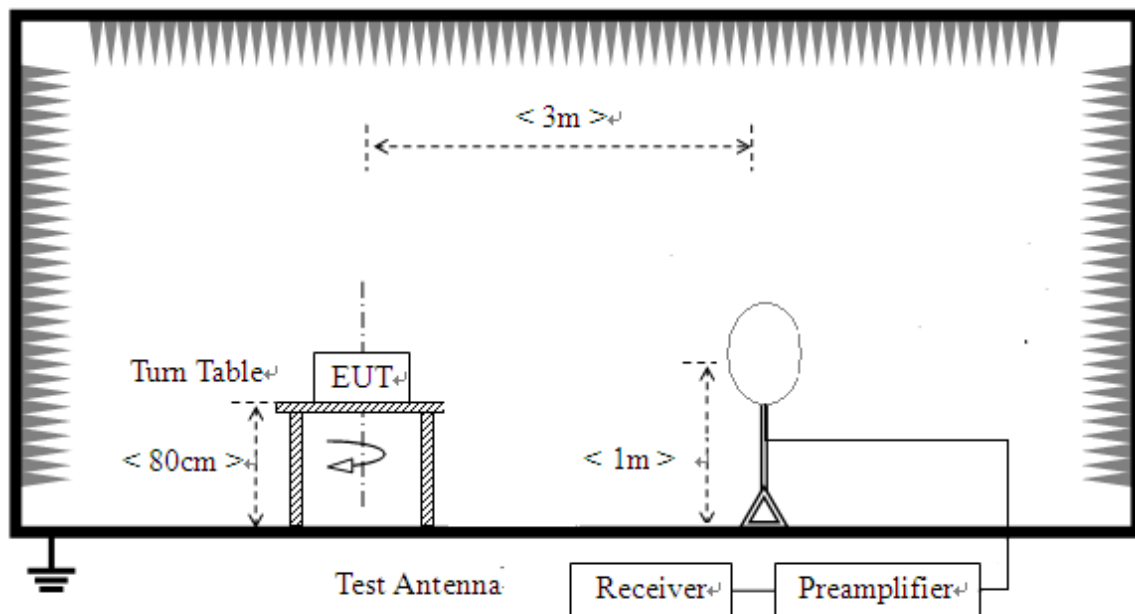
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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).

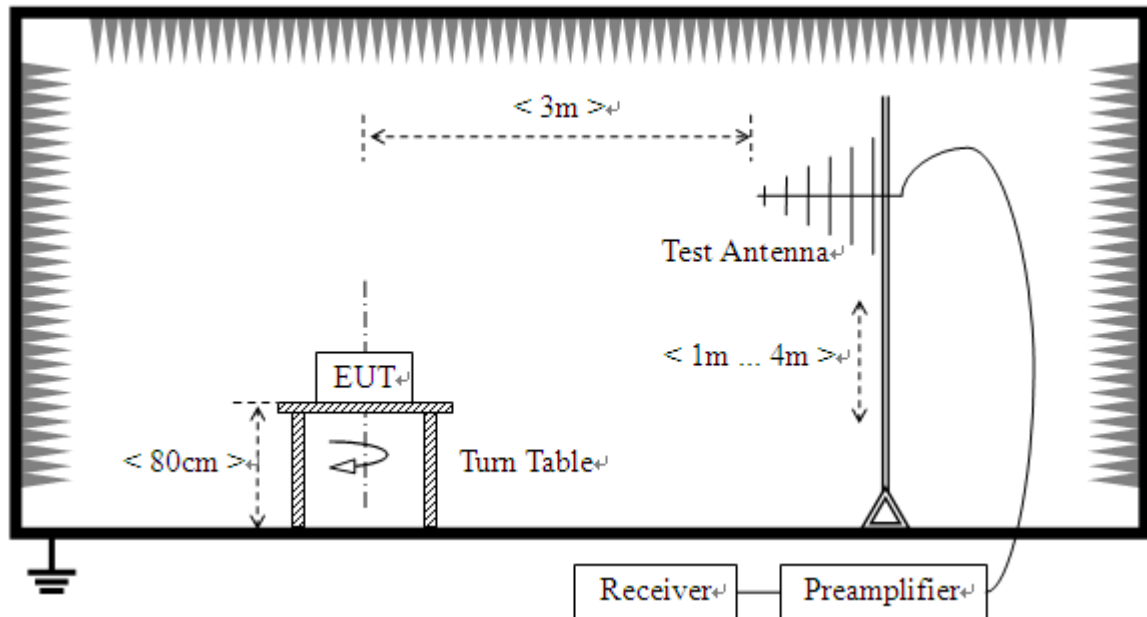
2.9.2. Test Description

Test Setup:

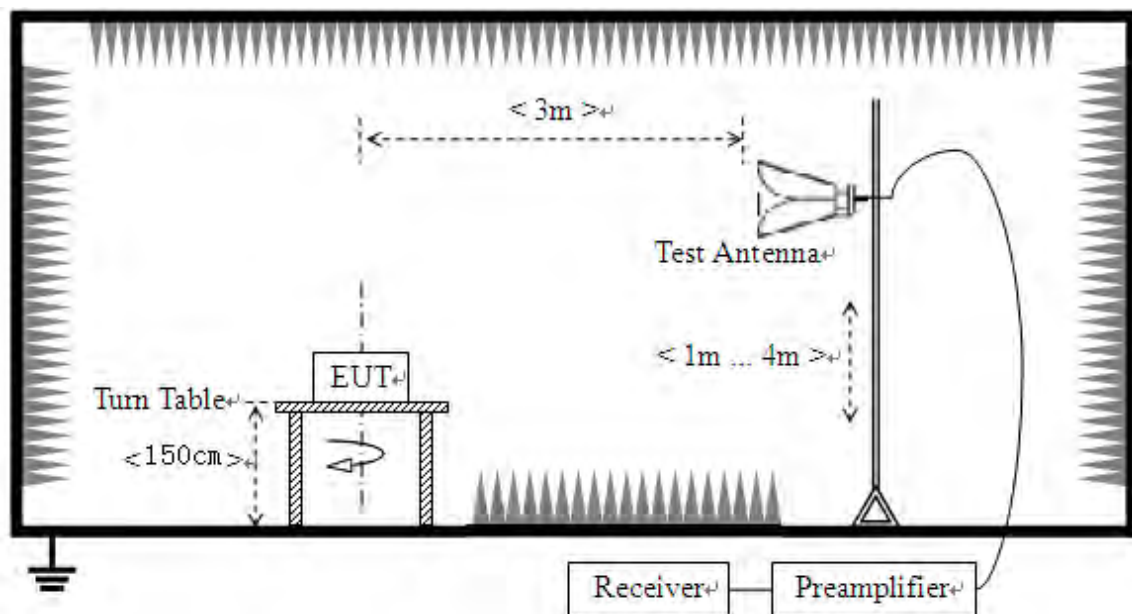
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



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



For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

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

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

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

2.9.3. Test Result

According to ANSI C63.10, 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 (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

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.

Note 1: 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.

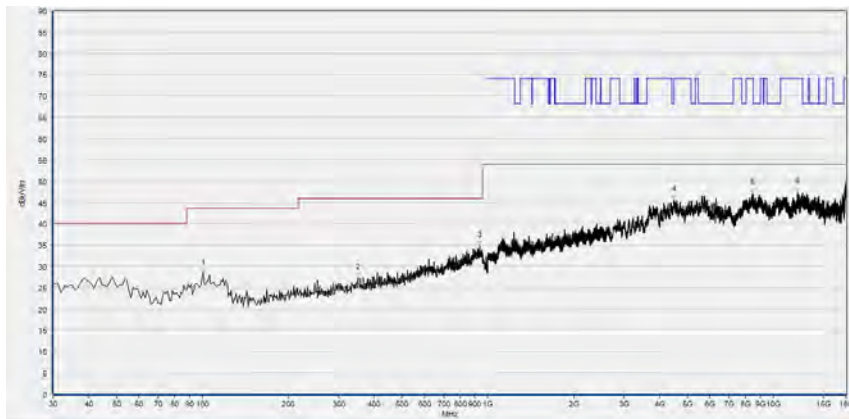
Note 2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 3: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

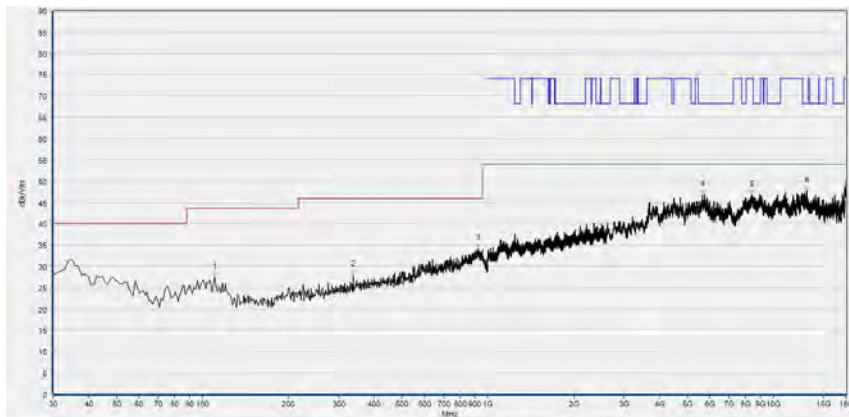
**802.11a Mode**

Plot 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
100.881	28.37	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
350.420	27.26	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
937.858	34.90	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4491.498	45.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8456.251	47.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12152.991	47.38	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

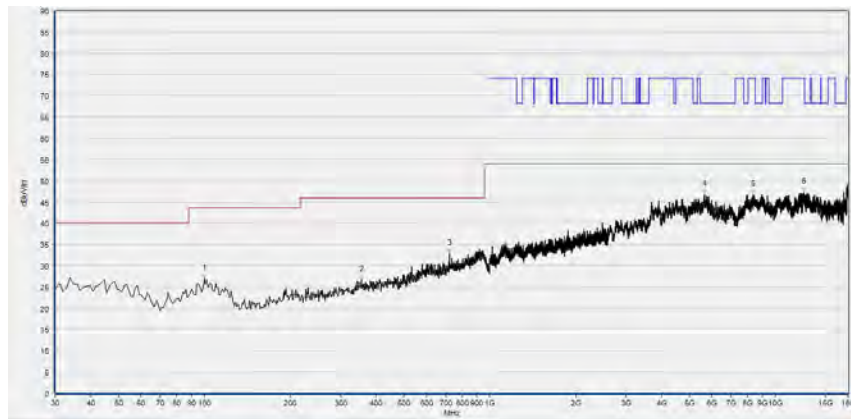
(Antenna Horizontal, 30MHz to 18GHz)



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
110.591	27.51	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
337.798	27.91	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
926.206	34.12	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5649.810	46.79	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8400.800	46.75	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13083.337	47.68	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

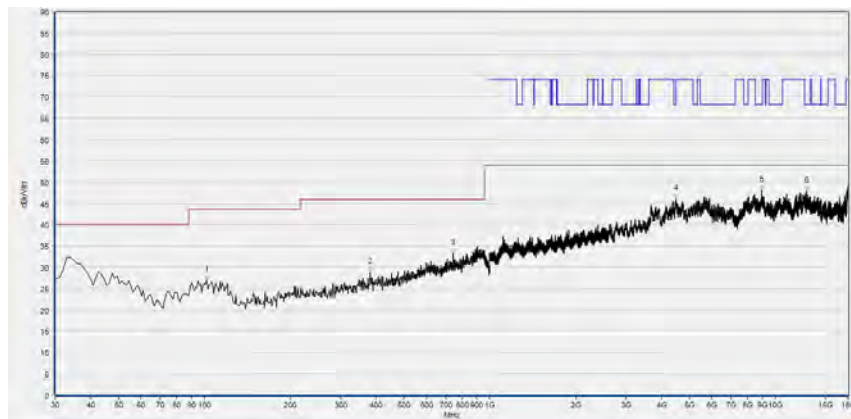
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
99.910	26.93	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
355.275	26.64	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
723.273	32.77	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5652.891	46.68	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8376.155	46.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12575.035	47.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

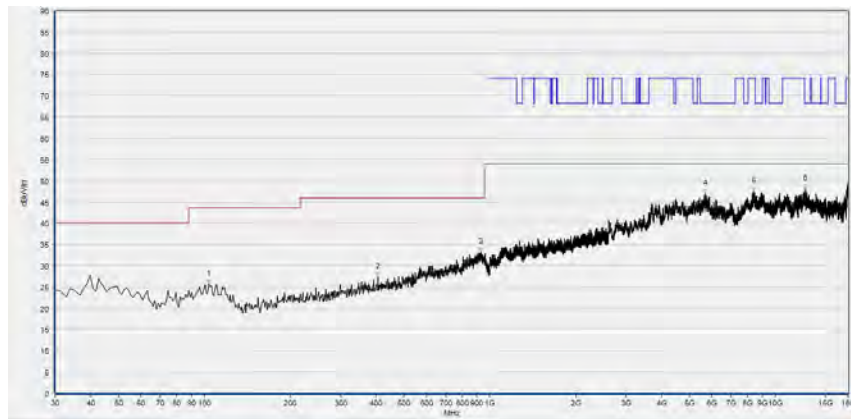


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.852	27.06	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
380.521	28.76	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
744.635	33.35	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4488.418	46.13	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8983.037	48.13	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12898.500	47.98	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

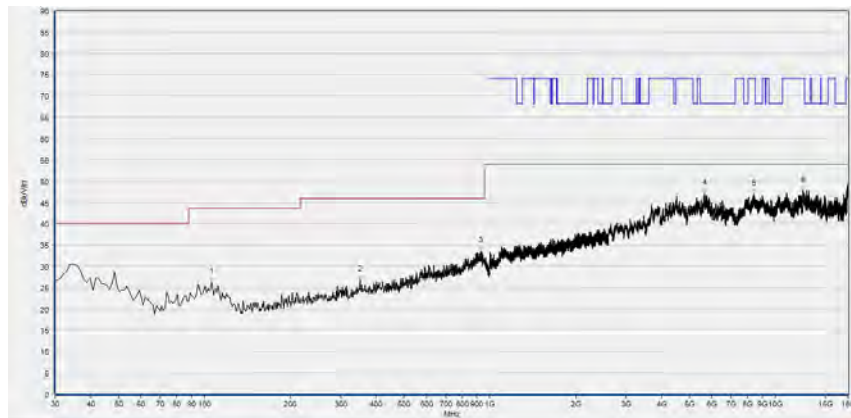


Plot for Channel 48



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
103.794	25.57	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
405.766	27.37	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
933.003	33.19	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5671.374	46.99	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8413.123	47.42	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12735.227	48.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

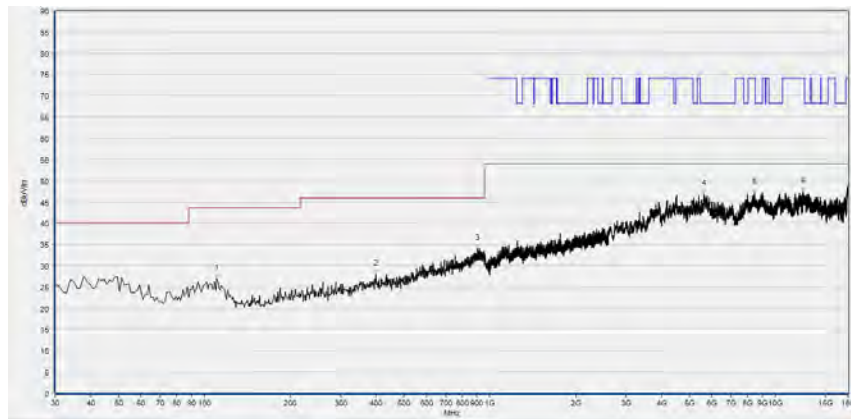
(Antenna Horizontal, 30MHz to 18GHz)



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
105.736	26.25	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
350.420	26.77	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
931.061	33.54	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5640.568	47.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8410.042	47.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12522.665	47.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

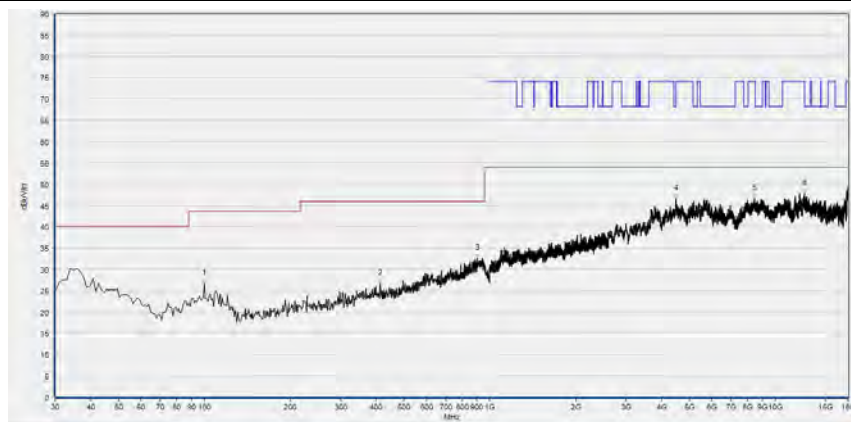
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
110.591	27.01	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
397.998	28.07	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
906.787	34.10	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5634.407	46.92	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8453.171	47.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12498.020	47.35	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

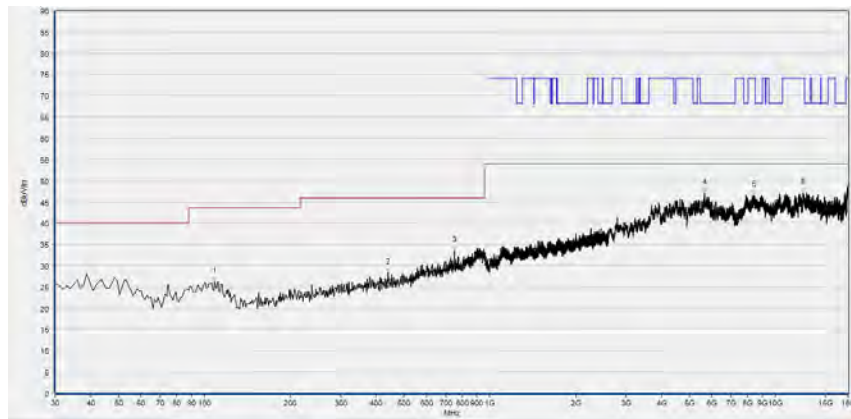
(Antenna Horizontal, 30MHz to 18GHz)



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
99.910	26.57	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
412.563	26.59	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
901.932	32.51	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4479.176	46.56	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8453.171	46.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12698.260	47.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

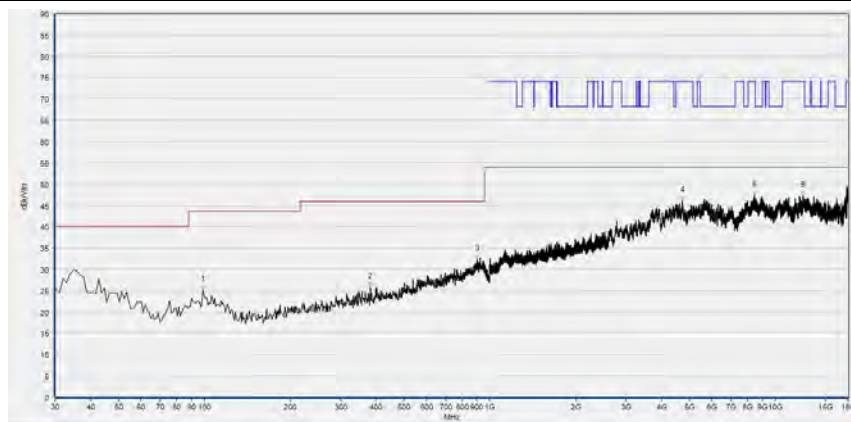
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
108.649	26.34	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
440.721	28.26	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
750.460	33.54	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5662.132	47.11	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8413.123	46.53	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12507.261	47.16	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

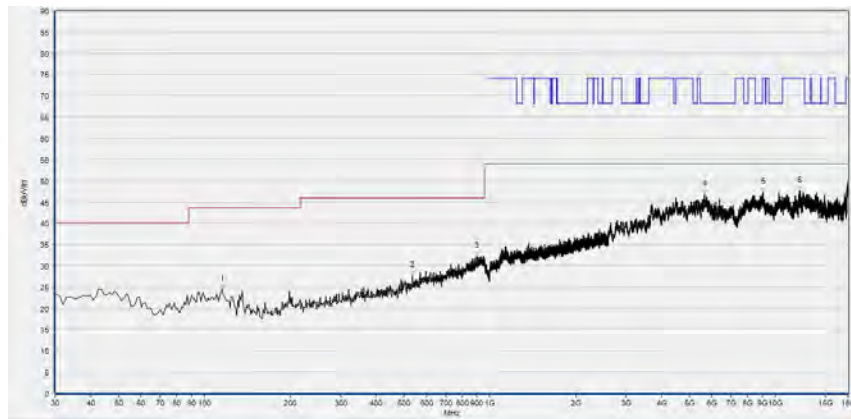
(Antenna Horizontal, 30MHz to 18GHz)



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
98.939	25.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
381.491	25.89	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
902.903	32.34	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4728.706	46.15	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8440.848	47.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12528.826	47.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

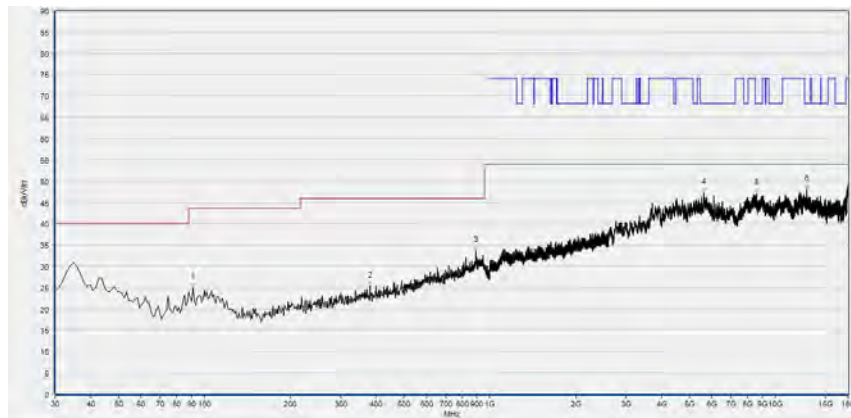
(Antenna Vertical, 30MHz to 18GHz)

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
115.445	24.49	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
535.876	27.67	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
900.961	32.19	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5646.729	46.80	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9050.810	47.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12189.958	47.53	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

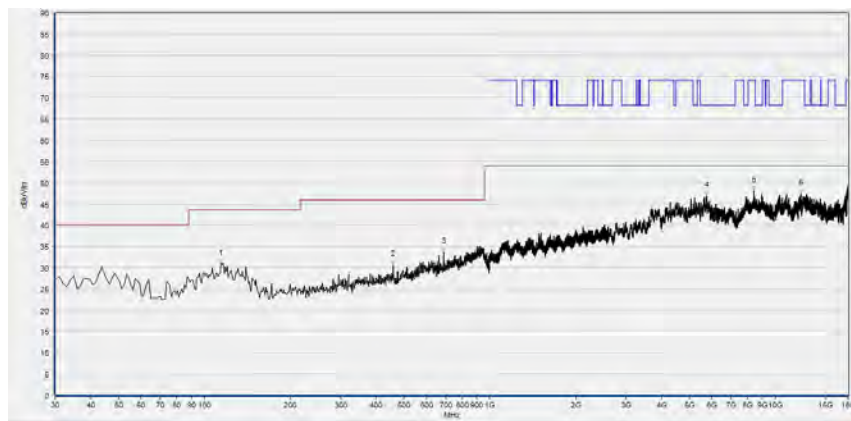
(Antenna Horizontal, 30MHz to 18GHz)



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
91.171	24.94	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
380.521	25.34	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
895.135	33.61	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5634.407	47.30	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8622.605	47.04	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12895.419	48.13	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

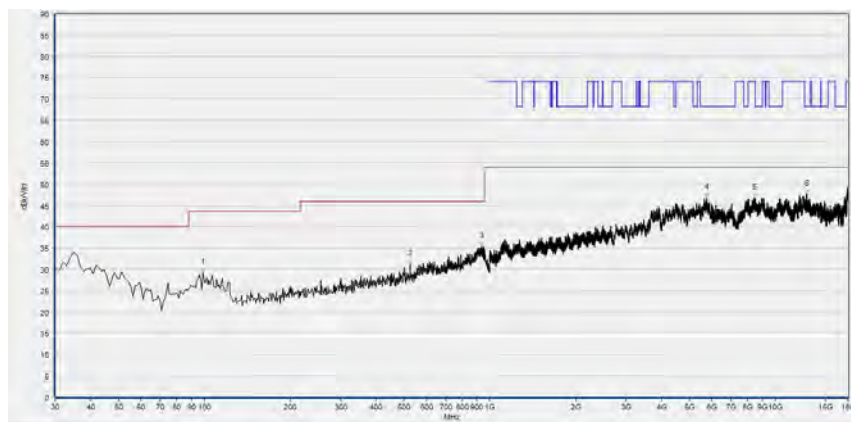
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
114.474	30.79	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
459.169	30.62	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
688.318	33.77	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5757.632	46.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8397.720	48.14	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12297.780	47.35	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

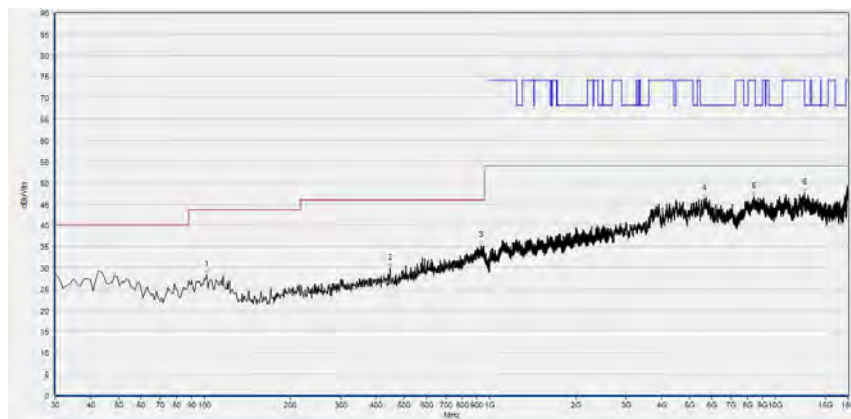
(Antenna Horizontal, 30MHz to 18GHz)



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
98.939	29.11	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
526.166	31.24	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
936.887	35.40	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5748.390	46.82	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8456.251	46.76	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12880.016	47.66	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

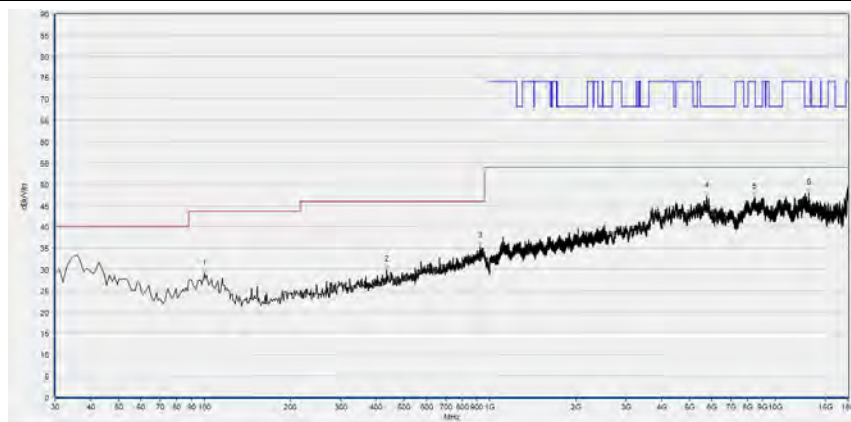
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 120



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.852	28.25	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
447.518	29.77	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
931.061	35.27	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5643.649	46.32	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8410.042	46.79	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12682.857	47.67	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

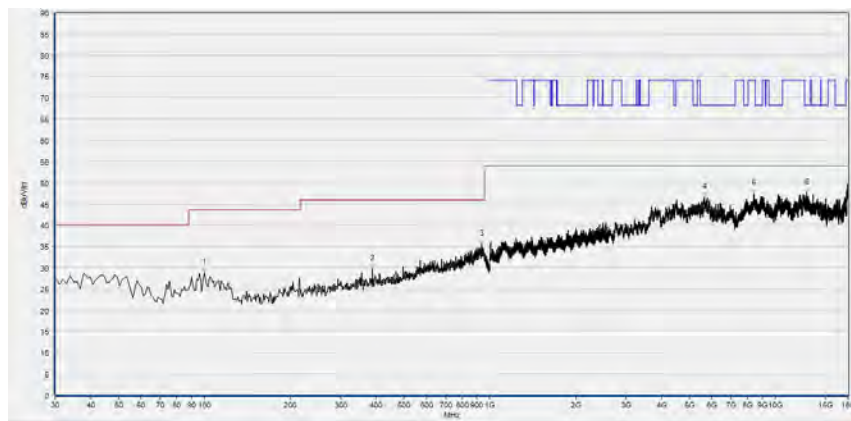
(Antenna Horizontal, 30MHz to 18GHz)



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
99.910	28.97	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
434.895	29.81	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
923.293	35.31	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5745.309	47.10	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8456.251	46.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13080.256	47.97	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

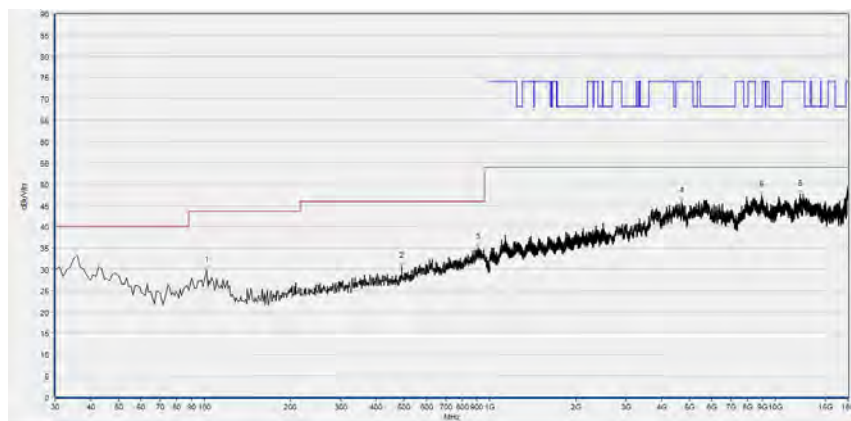
(Antenna Vertical, 30MHz to 18GHz)

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
99.910	28.86	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
388.288	29.70	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
935.916	35.55	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5637.487	46.59	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8410.042	47.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12889.258	47.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

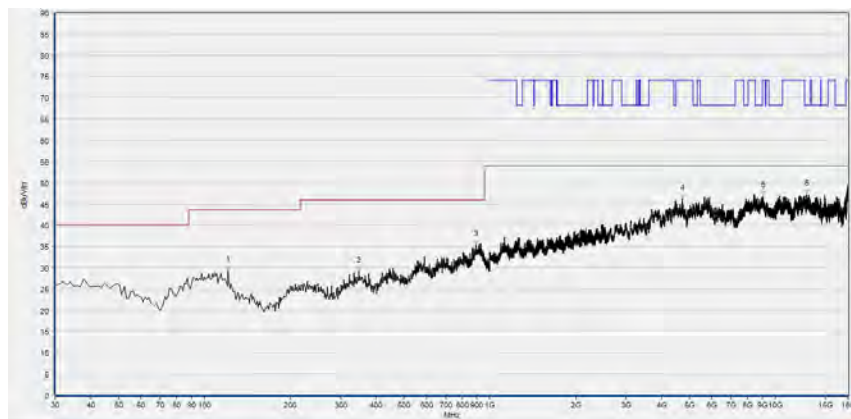
(Antenna Horizontal, 30MHz to 18GHz)



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
101.852	29.60	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
492.182	30.66	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
909.700	35.07	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4710.222	46.00	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8939.908	47.36	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12199.200	47.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

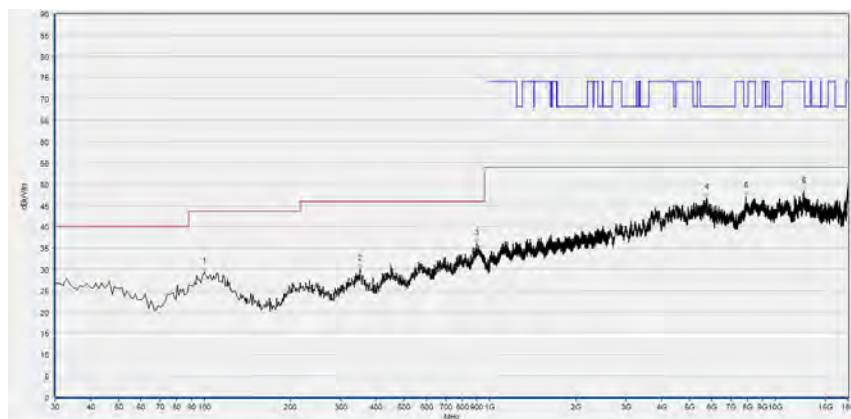
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
121.271	29.29	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
347.508	29.16	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
896.106	35.44	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4716.383	46.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9060.052	46.90	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12876.935	47.33	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

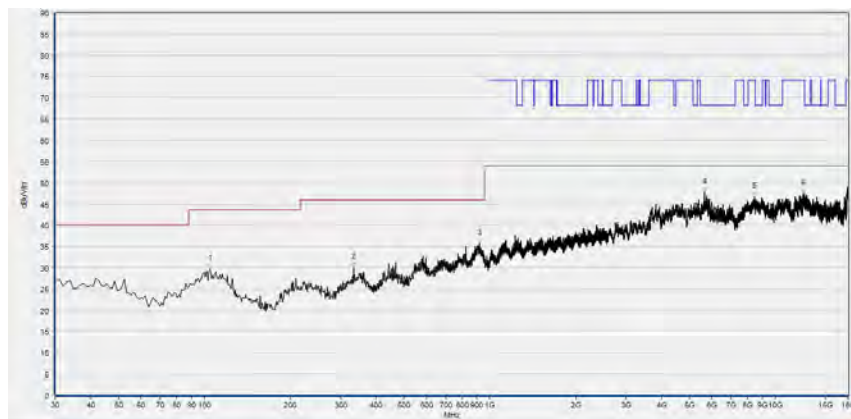
(Antenna Horizontal, 30MHz to 18GHz)



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
99.910	29.31	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
350.420	30.00	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
900.961	35.96	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5745.309	46.69	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
7892.498	47.08	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12599.680	48.32	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

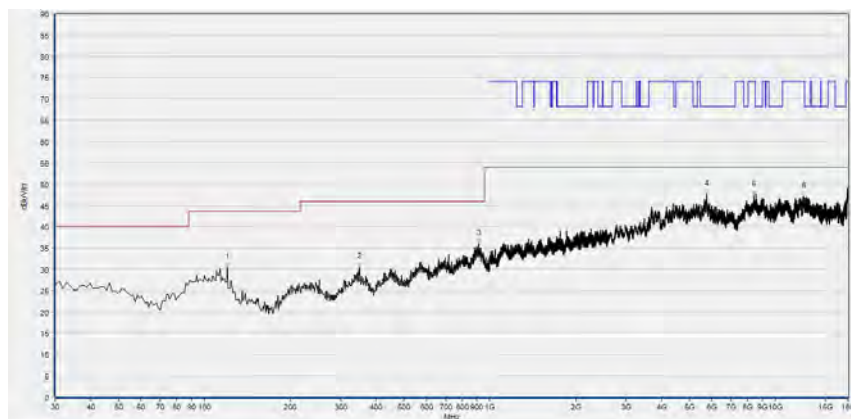
(Antenna Vertical, 30MHz to 18GHz)

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
104.765	29.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
332.943	29.97	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
919.409	35.65	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5659.052	47.71	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8440.848	46.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12522.665	47.38	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

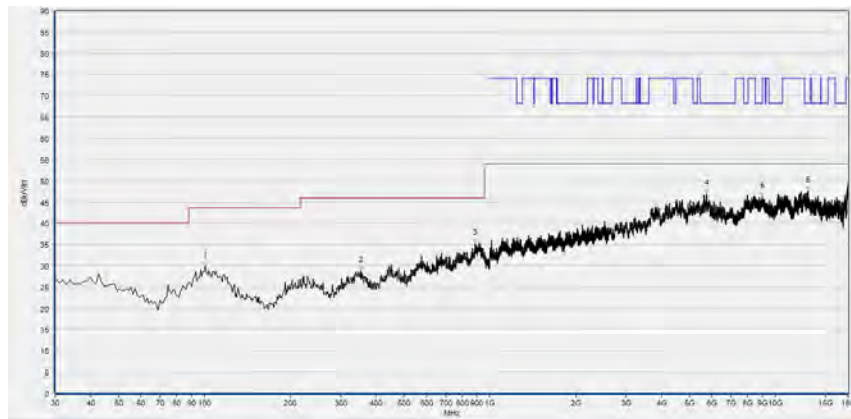
(Antenna Horizontal, 30MHz to 18GHz)



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
120.300	30.43	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
349.449	30.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
914.555	36.05	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5754.551	47.58	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8422.364	47.45	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12599.680	47.07	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

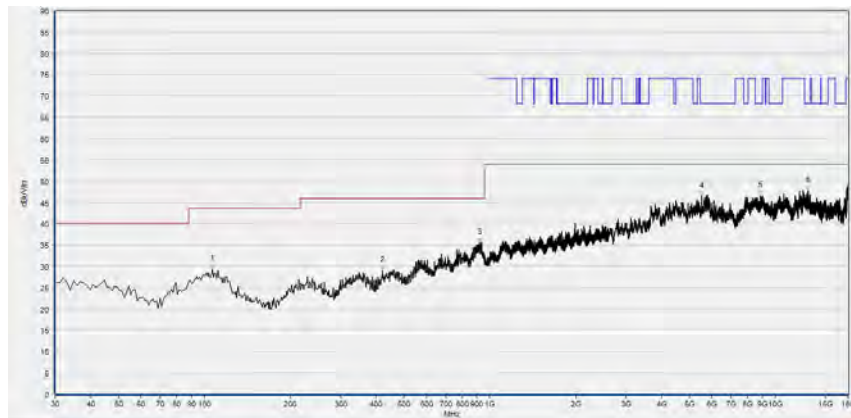
(Antenna Vertical, 30MHz to 18GHz)

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
100.881	29.83	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
353.333	28.87	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
888.338	35.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5760.712	46.86	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8989.198	46.32	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13055.611	47.54	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

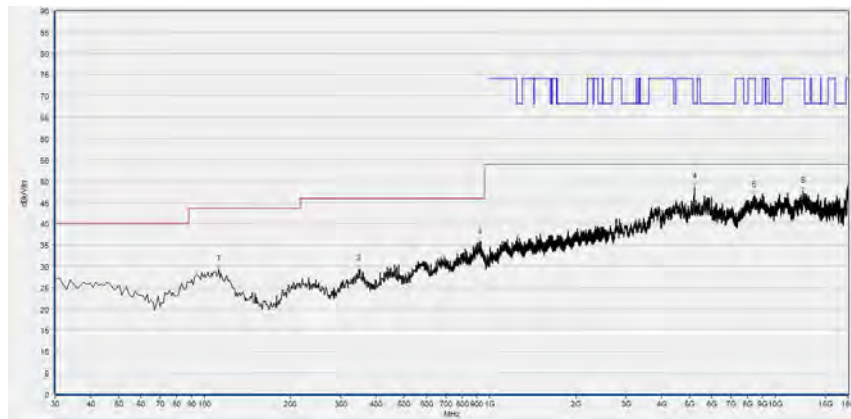


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
106.707	29.36	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
421.301	29.08	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
919.409	35.45	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5526.585	46.43	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8872.134	46.59	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13071.014	47.85	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

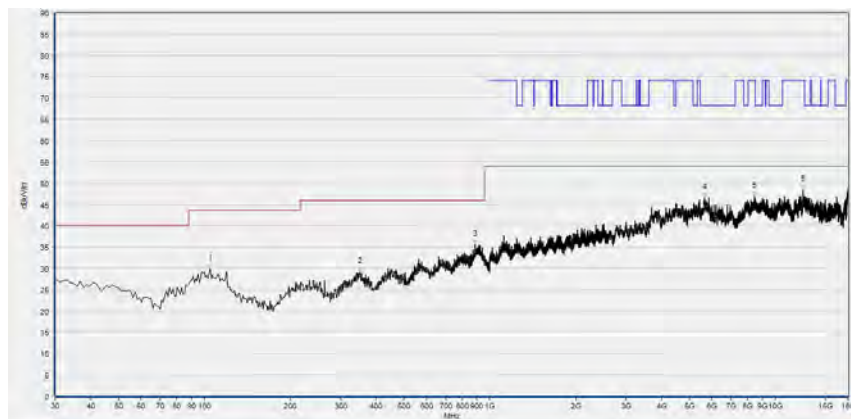
**802.11n (HT40) mode**

Plot 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
112.533	29.26	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
347.508	29.34	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
918.438	35.71	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5203.121	48.53	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8391.558	46.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12519.584	47.65	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

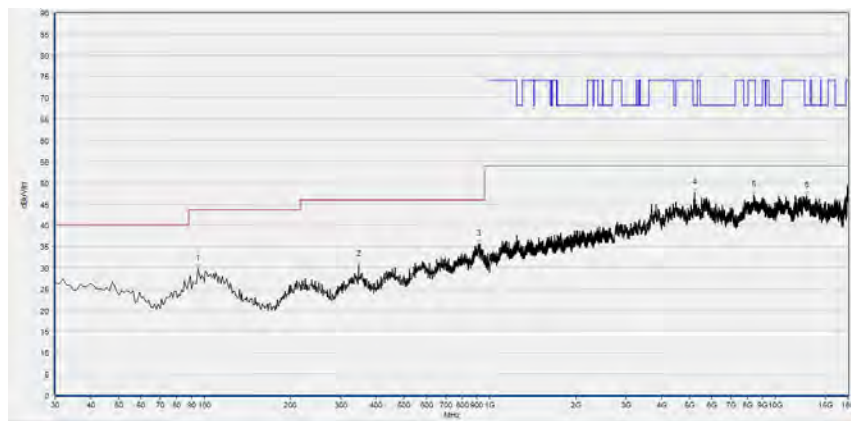
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
104.765	29.77	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
350.420	29.08	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
886.396	35.47	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5640.568	46.63	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8443.929	46.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12525.745	48.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

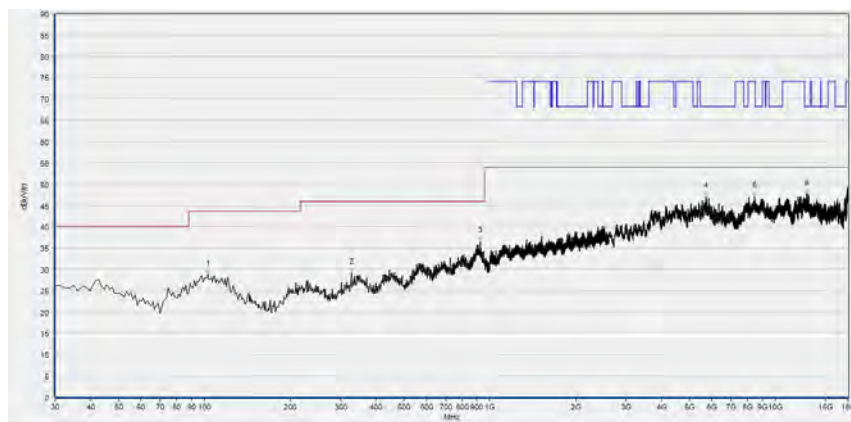
(Antenna Vertical, 30MHz to 18GHz)

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
95.055	29.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
346.537	30.61	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
916.496	35.53	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5215.443	47.64	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8416.203	47.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12889.258	46.99	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

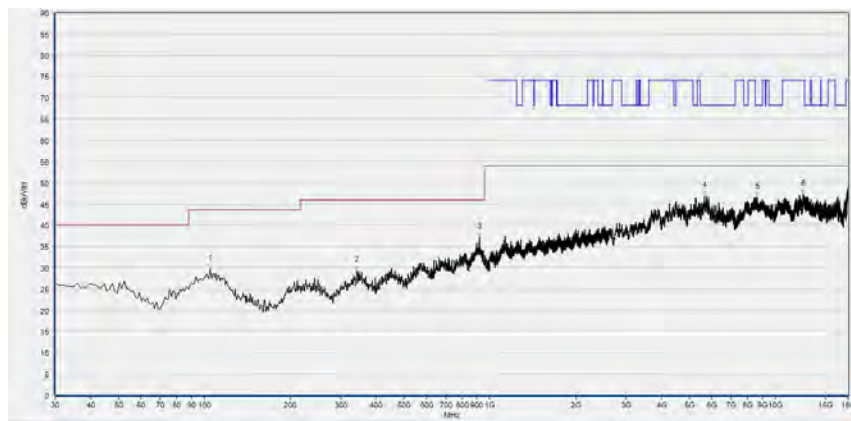
(Antenna Horizontal, 30MHz to 18GHz)



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
102.823	28.79	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
327.117	29.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
927.177	36.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5732.987	47.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8443.929	47.04	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12889.258	47.69	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

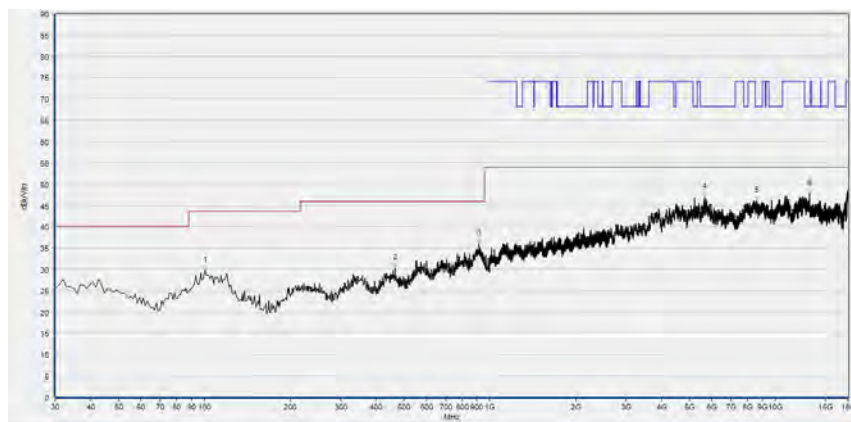
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
104.765	29.61	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
341.682	29.25	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
919.409	37.15	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5643.649	46.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8671.894	46.66	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12531.906	47.28	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

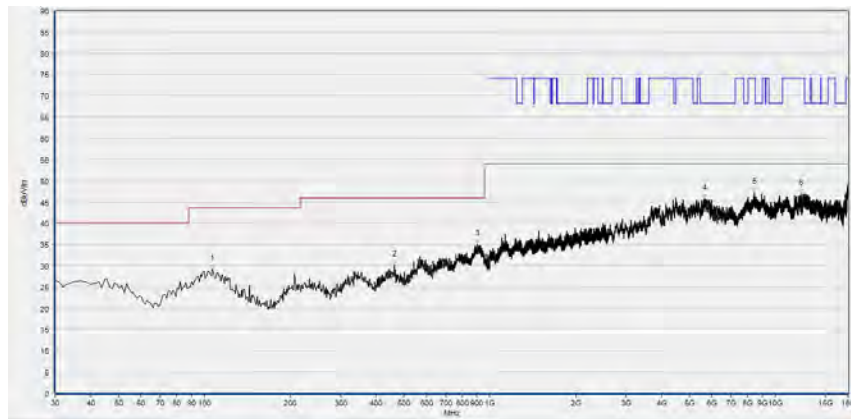
(Antenna Horizontal, 30MHz to 18GHz)



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
100.881	29.59	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
465.966	30.37	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
916.496	36.05	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5655.971	47.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8591.798	46.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13151.110	47.71	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

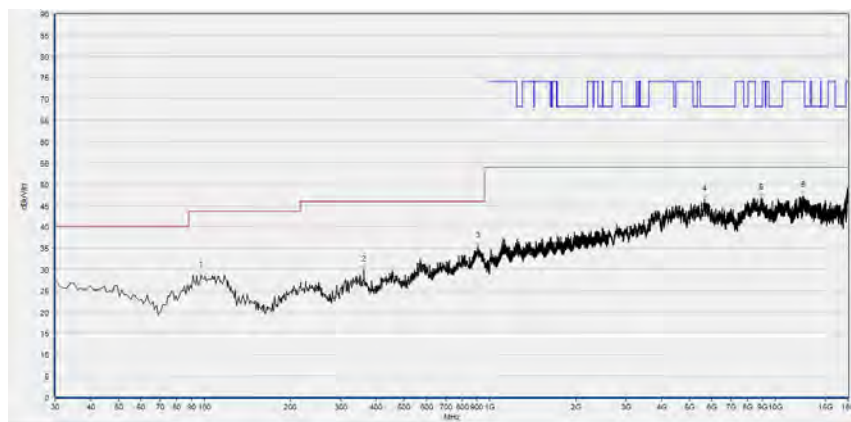
(Antenna Vertical, 30MHz to 18GHz)

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
106.707	29.13	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
462.082	30.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
902.903	35.06	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5640.568	45.73	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8437.768	47.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12300.860	46.90	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

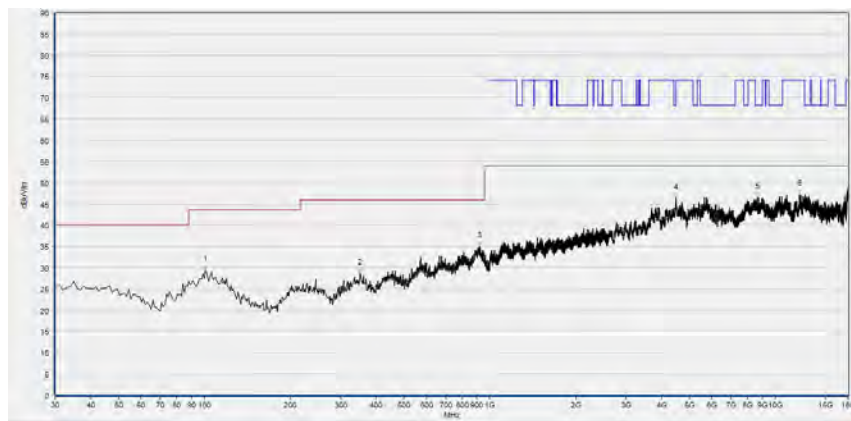
(Antenna Horizontal, 30MHz to 18GHz)



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
96.997	28.46	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
362.072	29.91	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
907.758	35.29	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5649.810	46.41	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8890.618	46.75	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12531.906	47.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

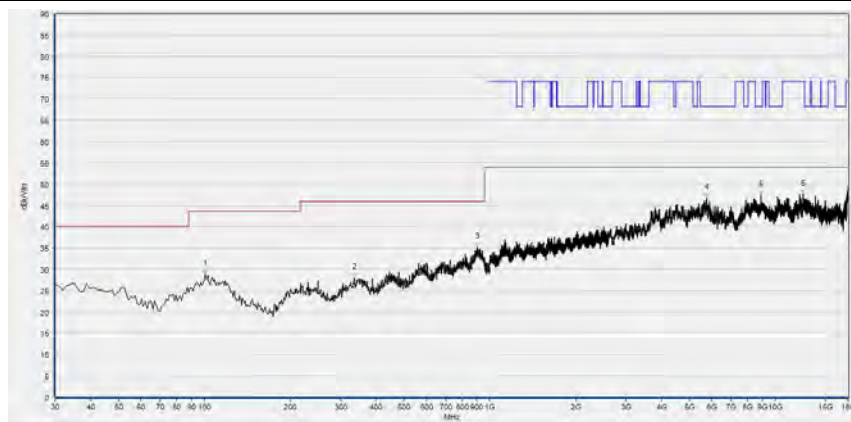
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
100.881	29.55	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
352.362	28.72	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
920.380	35.07	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4476.095	46.46	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8678.056	46.57	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12143.749	47.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

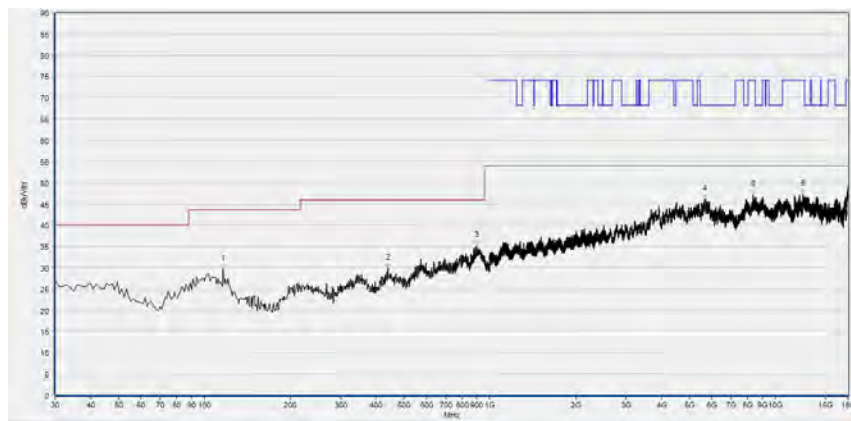
(Antenna Horizontal, 30MHz to 18GHz)



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
100.881	28.84	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
334.885	27.99	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
902.903	35.24	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5745.309	46.68	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8906.021	47.42	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12498.020	47.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

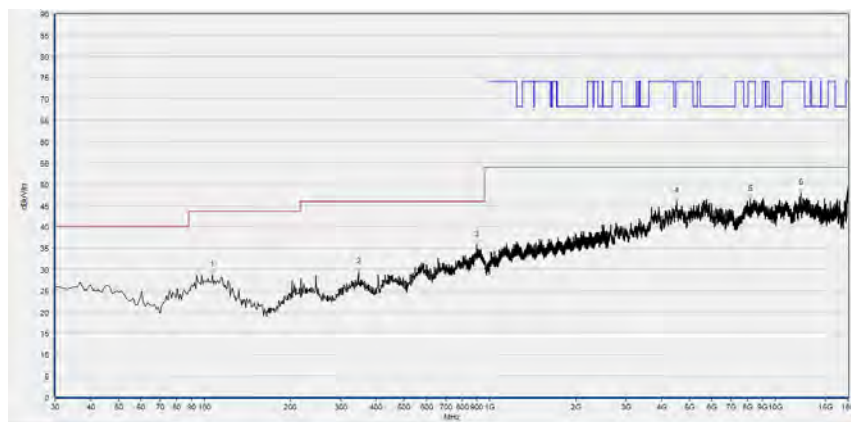
(Antenna Vertical, 30MHz to 18GHz)

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
116.416	29.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
438.779	29.91	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
899.990	35.28	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5643.649	46.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8354.591	47.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12522.665	47.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

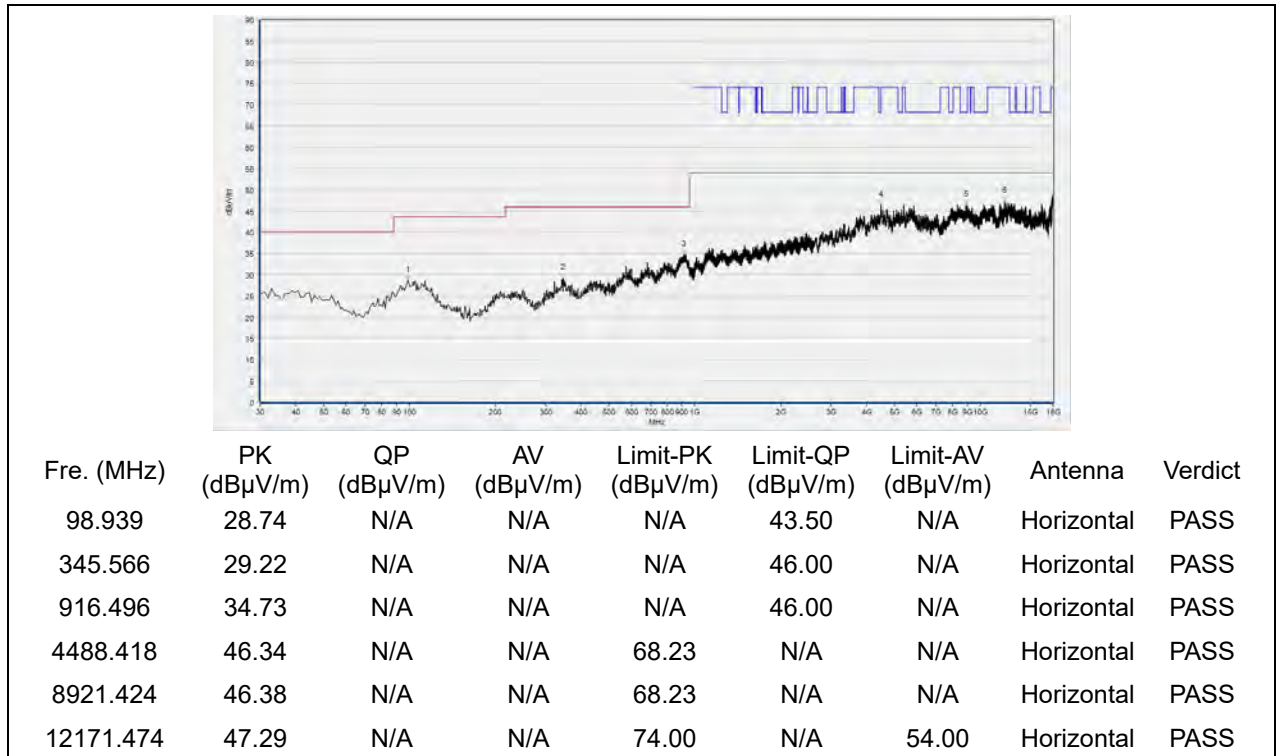
(Antenna Horizontal, 30MHz to 18GHz)



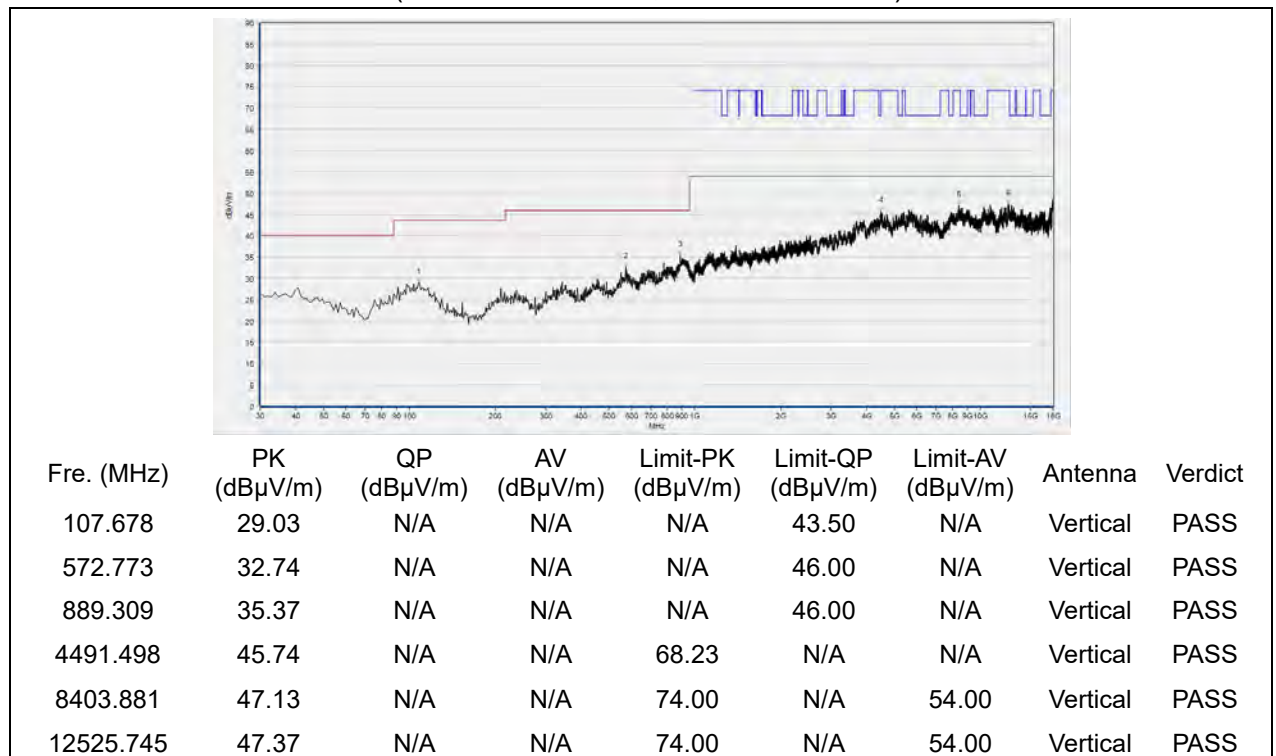
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
106.707	28.68	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
346.537	29.32	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
899.990	35.62	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4506.901	45.94	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8175.915	46.37	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12297.780	47.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 142



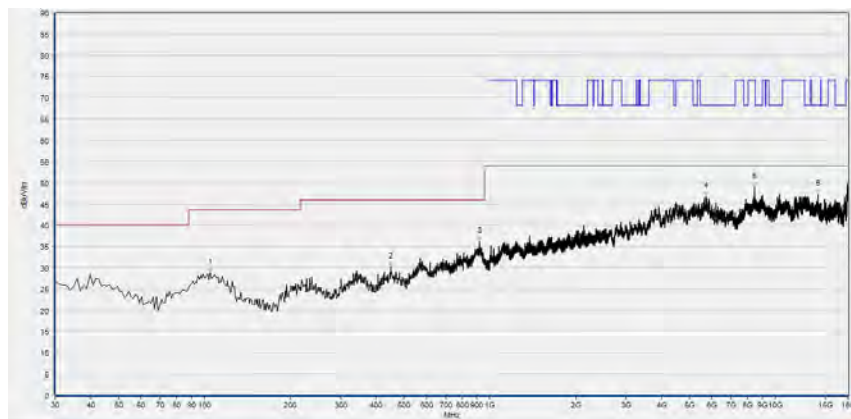
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

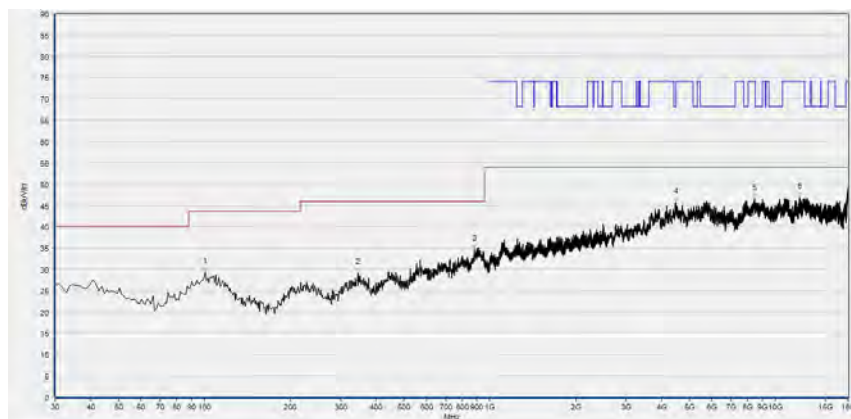


Plot for Channel 151



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
104.765	28.85	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
449.459	30.24	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
917.467	36.20	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5732.987	46.79	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8443.929	48.97	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14090.698	47.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

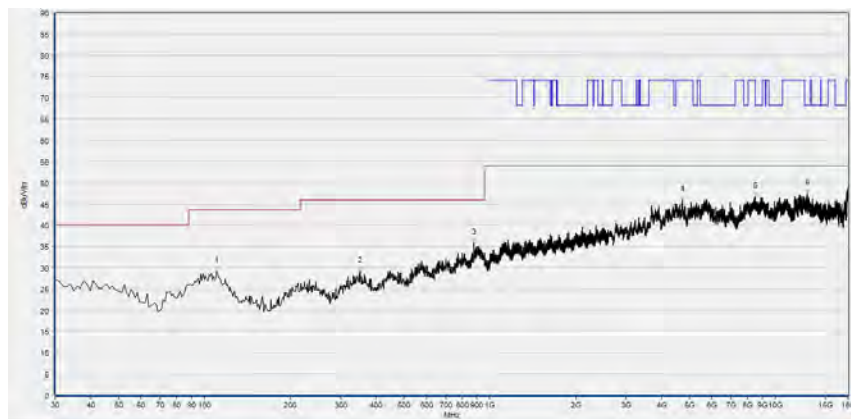
(Antenna Horizontal, 30MHz to 18GHz)



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
100.881	29.27	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
344.595	29.19	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
884.454	34.75	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4476.095	45.80	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8471.654	46.55	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12152.991	46.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

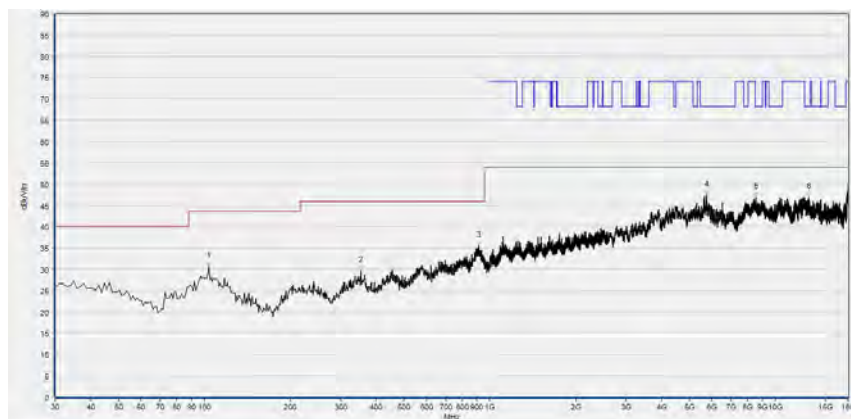
(Antenna Vertical, 30MHz to 18GHz)

Plot 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
110.591	29.18	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
351.391	29.22	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
880.571	35.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4722.545	45.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8487.057	46.68	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12984.757	47.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

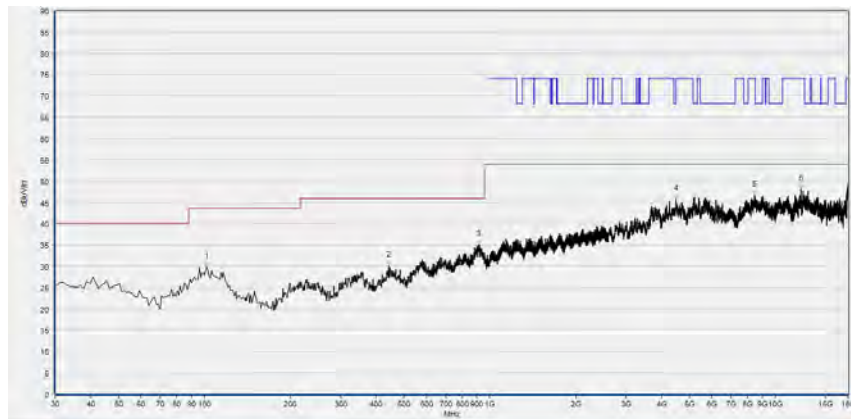


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
103.794	30.66	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
353.333	29.65	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
913.584	35.61	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5745.309	47.41	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8573.315	46.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13098.740	46.95	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

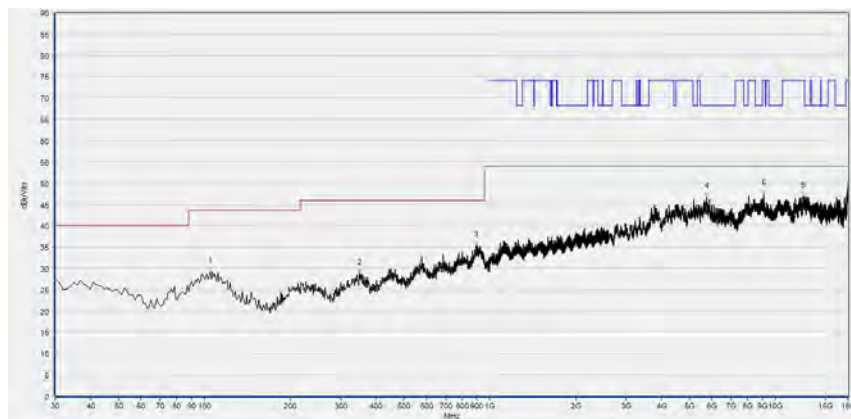
**802.11ac (VHT80) Mode**

Plot 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
101.852	29.88	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
441.692	30.14	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
913.584	35.01	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4500.740	45.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8456.251	46.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12294.699	48.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

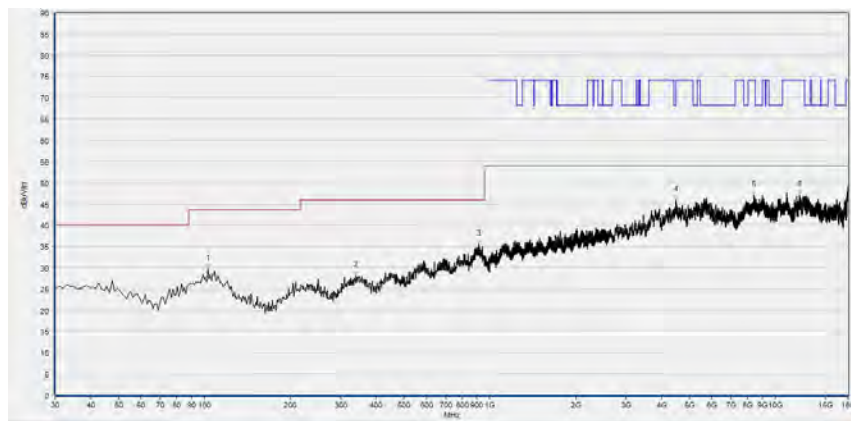
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
104.765	29.20	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
348.478	28.83	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
894.164	35.39	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5754.551	46.81	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9106.261	47.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12528.826	46.86	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

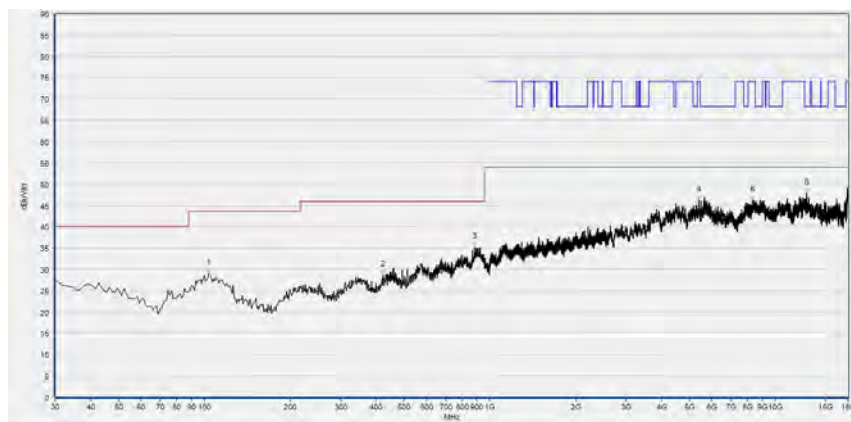
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 58



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
102.823	29.65	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
339.740	28.23	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
913.584	35.49	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4485.337	45.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8413.123	47.01	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12146.829	47.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

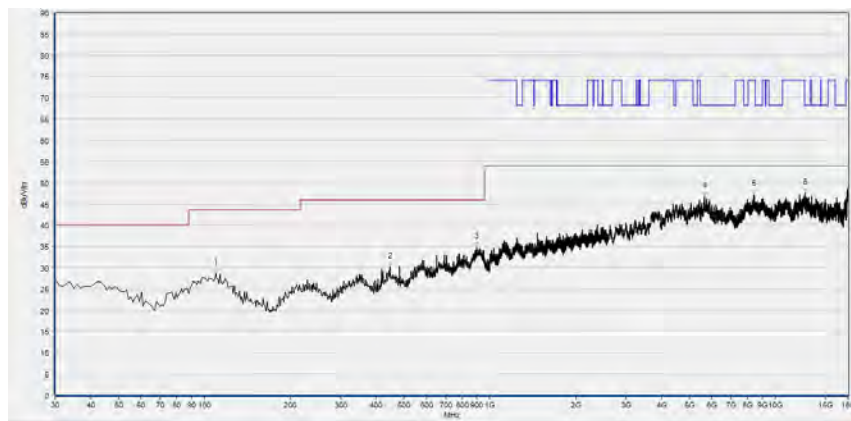


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
103.794	29.06	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
422.272	28.62	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
881.542	35.14	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5403.361	46.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8302.220	46.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12895.419	48.01	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

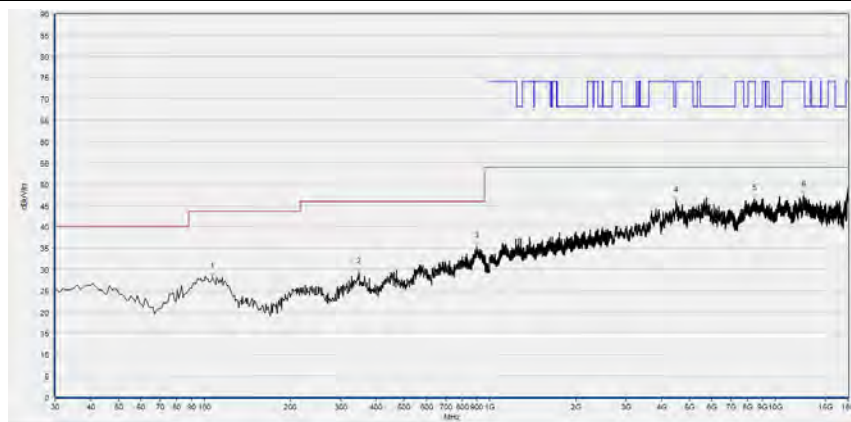


Plot for Channel 106



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
109.620	28.65	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
447.518	30.20	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
899.990	34.79	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5637.487	46.83	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8388.478	47.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12732.146	47.55	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

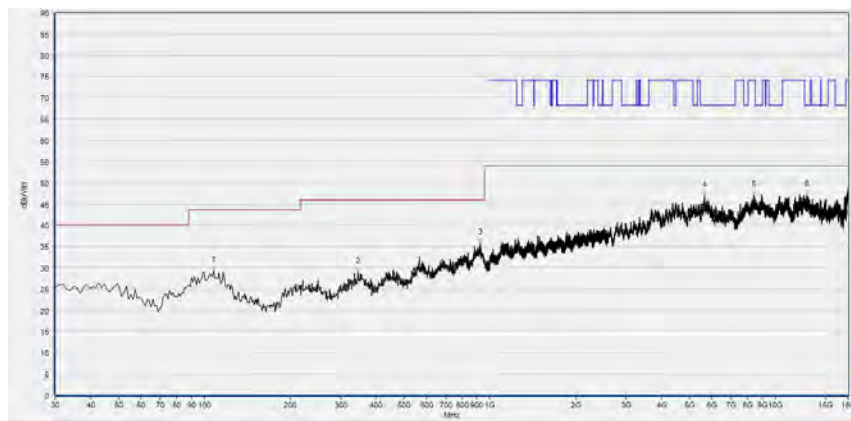
(Antenna Horizontal, 30MHz to 18GHz)



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
106.707	28.18	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
347.508	29.31	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
900.961	35.38	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4494.579	46.06	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8465.493	46.54	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12599.680	47.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

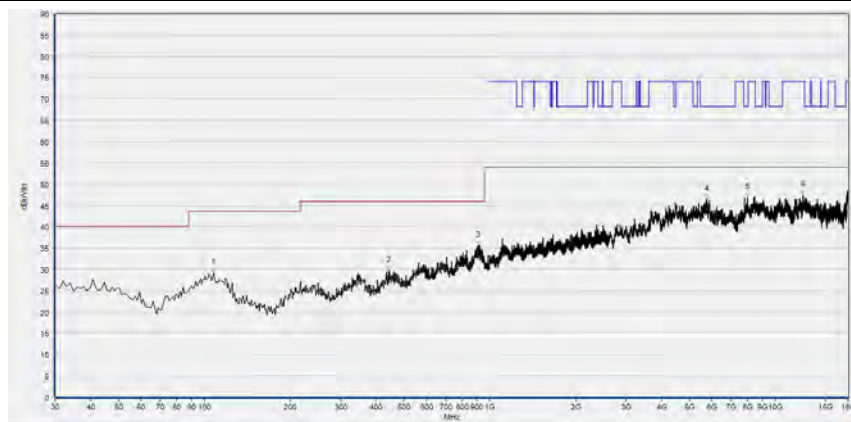
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 138



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
107.678	29.33	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
344.595	28.91	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
927.177	35.93	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5662.132	46.88	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8403.881	47.03	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12901.580	47.08	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

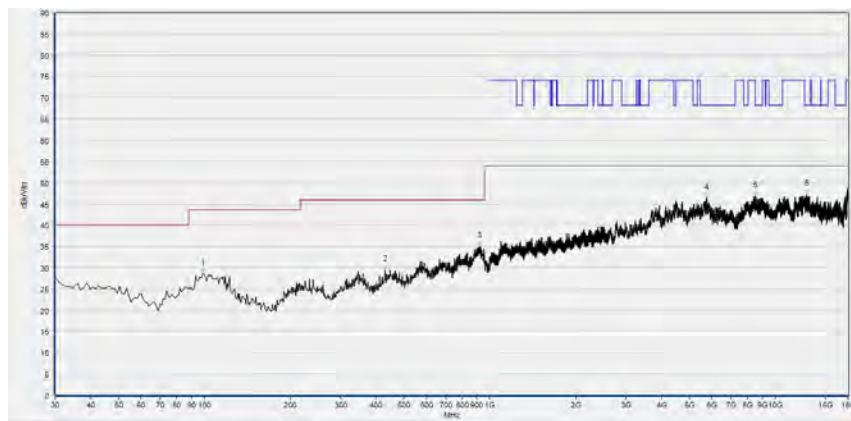
(Antenna Horizontal, 30MHz to 18GHz)



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
107.678	29.23	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
443.634	29.71	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
910.671	35.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5757.632	46.35	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
7991.078	46.87	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12510.342	47.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

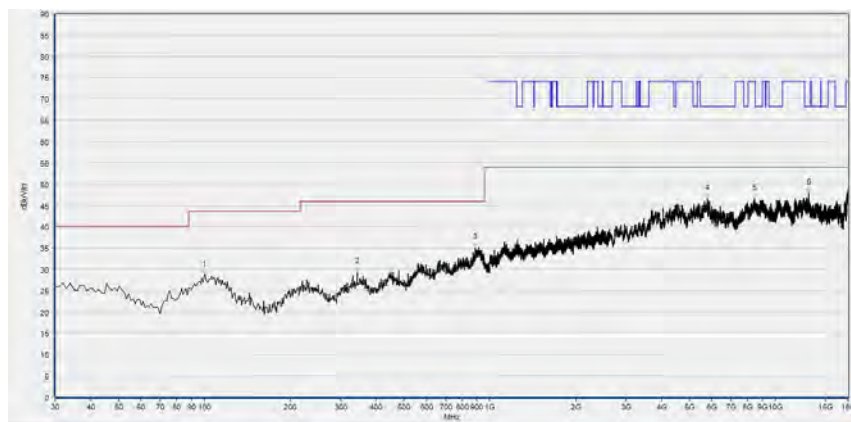
(Antenna Vertical, 30MHz to 18GHz)

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
98.939	28.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
429.069	29.44	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
922.322	35.05	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5763.793	46.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8499.380	46.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12901.580	47.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



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
99.910	28.71	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
342.653	29.25	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
887.367	35.02	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5769.954	46.67	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8447.009	46.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13080.256	47.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)



Annex A Test Uncertainty

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

Test Items	Uncertainty
Peak Output Power	$\pm 2.22\text{dB}$
Power Spectral Density	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Restricted Frequency Bands	$\pm 5\%$
Radiated Emission	$\pm 2.95\text{dB}$
Conducted Emission	$\pm 2.44\text{dB}$

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



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
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.
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	Due Date
Attenuator 1	N/A	10dB	Resnet	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2021.03.25	2022.03.24
USB Wideband Power Sensor	MY54180008	U2021XA	Agilent	2021.03.25	2022.03.24
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	12108015	DTL-003S101	YOMA	2020.10.26	2021.10.25

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2021.03.09	2022.03.08
LISN	812744	NSLK 8127	Schwarzbeck	2021.03.09	2022.03.08
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2021.07.21	2022.07.20
Coaxial Cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

4.3 List of Software Used

Description	Manufacturer	Software Version
Test System	Tonscend	V2.5.77.0418
Morlab EMCR V1.2	Morlab	V1.0
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

**4.4 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2021.07.16	2022.07.15
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Horn	BBHA9170 #774	BBHA 9170	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2019.02.14	2022.02.13
				2022.02.11	2025.02.10
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
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	61171/61172	S020180L32 03	Tonscend	2021.07.16	2022.07.15
18-26.5GHz pre-Amplifier	46732	S10M100L38 02	Tonscend	2021.07.16	2022.07.15
26-40GHz pre-Amplifier	56774	S40M400L40 02	Tonscend	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-5150-5350	Wainwright	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-5470-5725	Wainwright	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-5725-5850	Wainwright	2021.07.16	2022.07.15



REPORT No.: SZ22010233W04

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Anechoic Chamber	N/A	9m*6m*6m	CRT	2020.01.06	2023.01.05

_____ END OF REPORT _____

