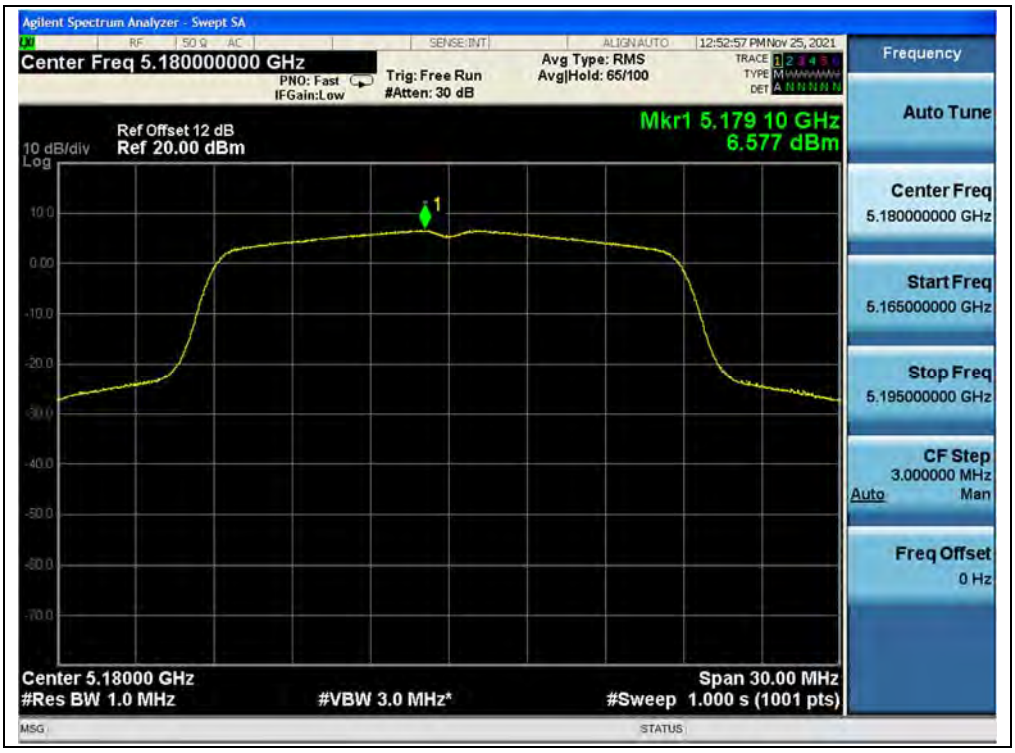
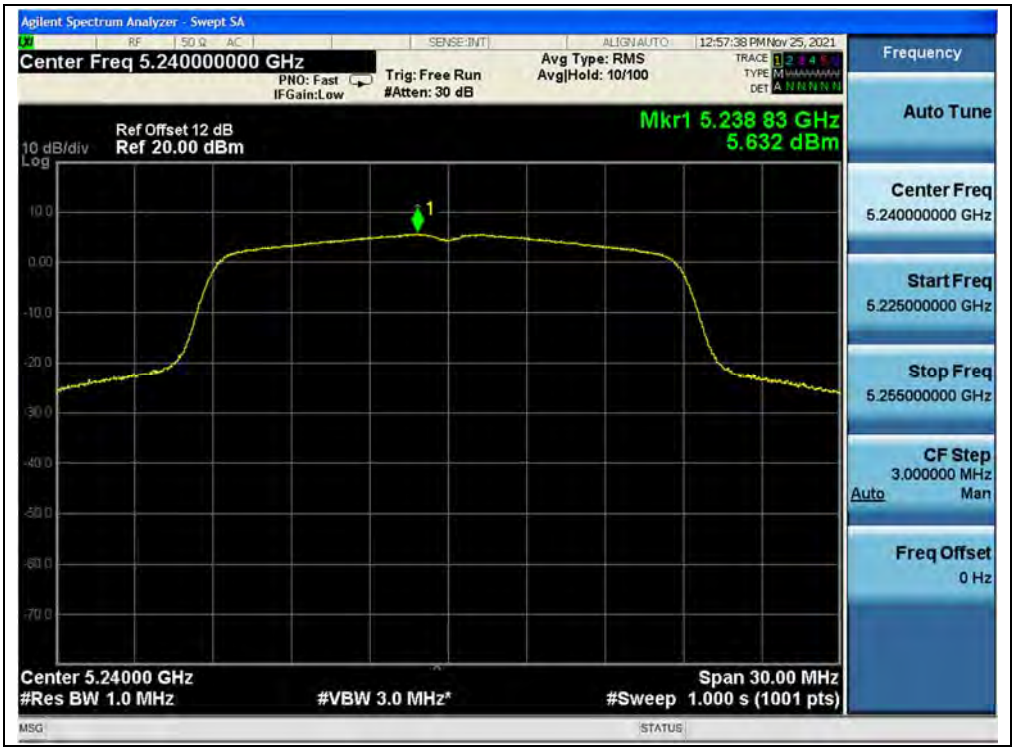
B. Test Plot:

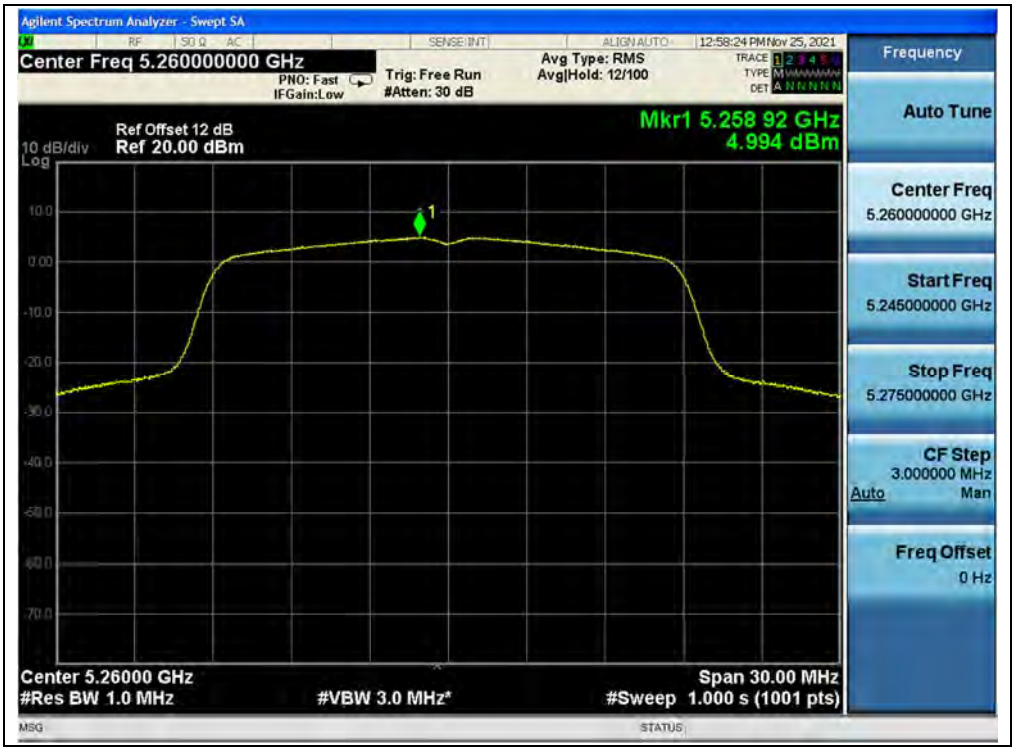


(Channel 36, 5180MHz, 802.11ac (VHT20))

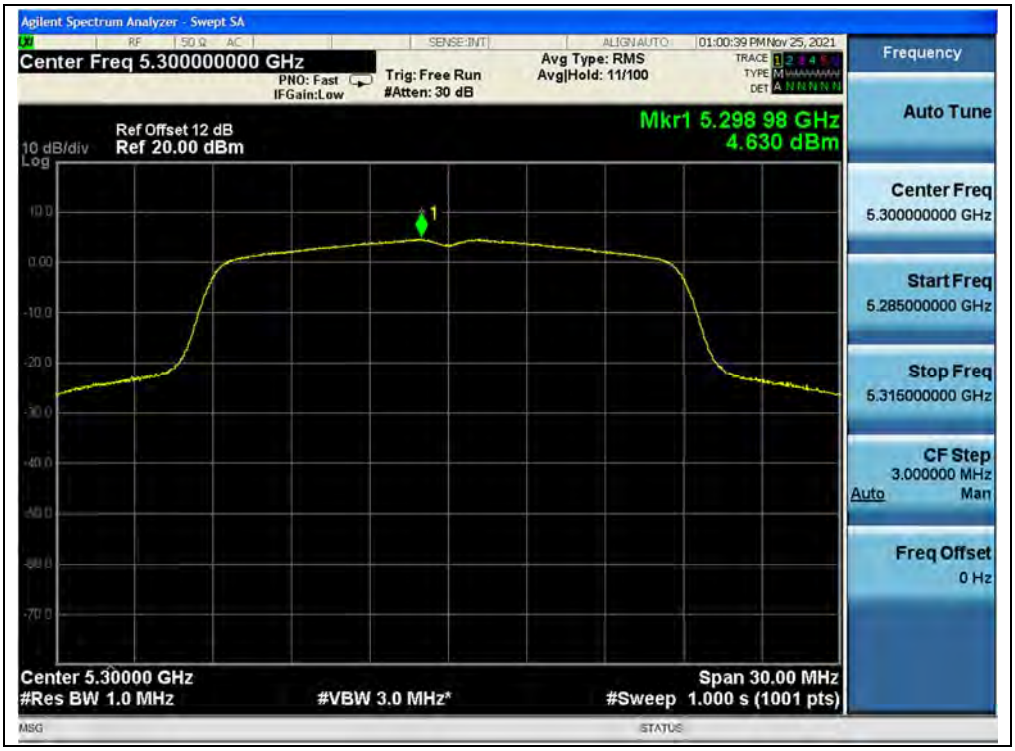
(Channel 44, 5220MHz, 802.11ac (VHT20))



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



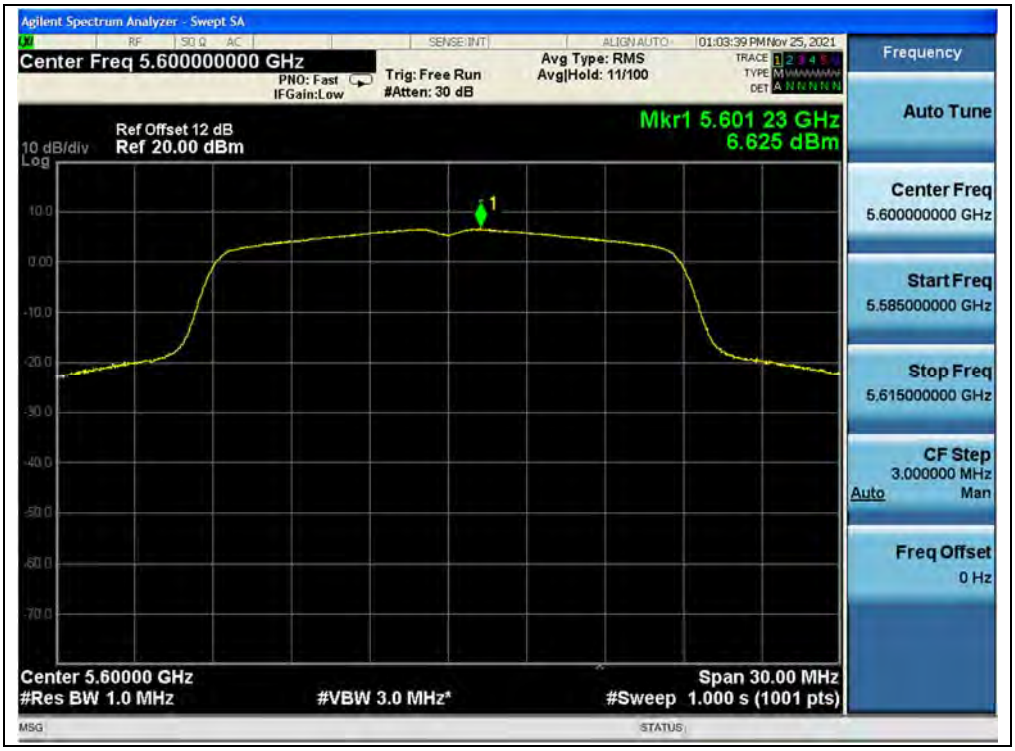
(Channel 52, 5260MHz, 802.11ac (VHT20))



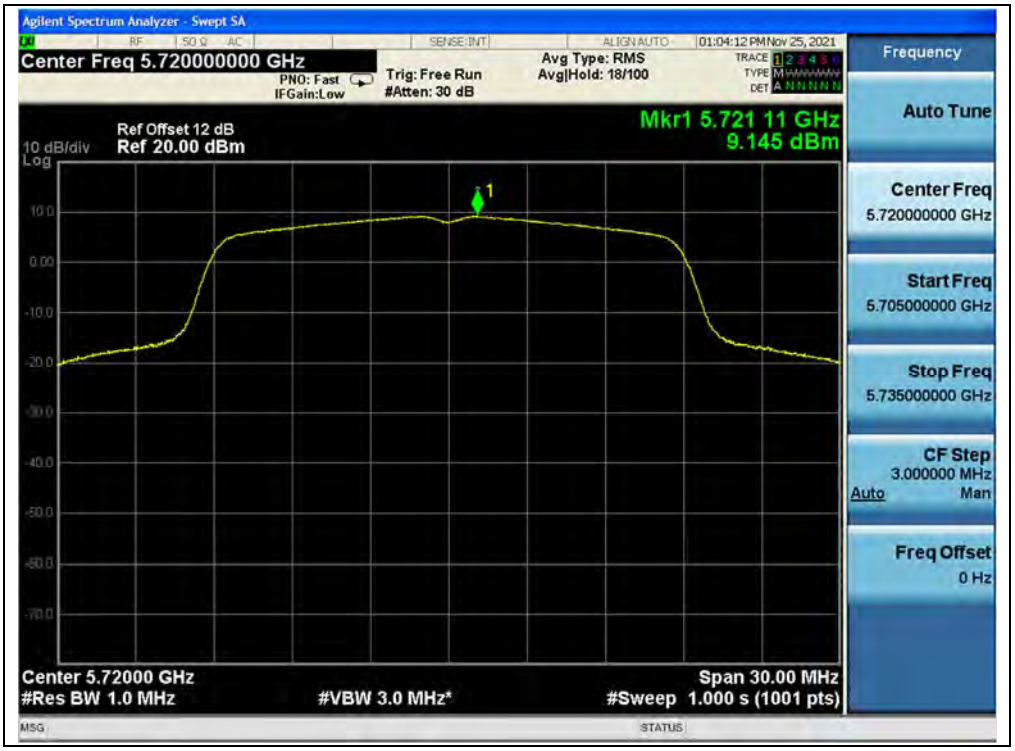
(Channel 60, 5300MHz, 802.11ac (VHT20))

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

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



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



(Channel 144, 5720MHz, 802.11ac (VHT20))

(Channel 144, 5720MHz, 802.11ac(VHT20))

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

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

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

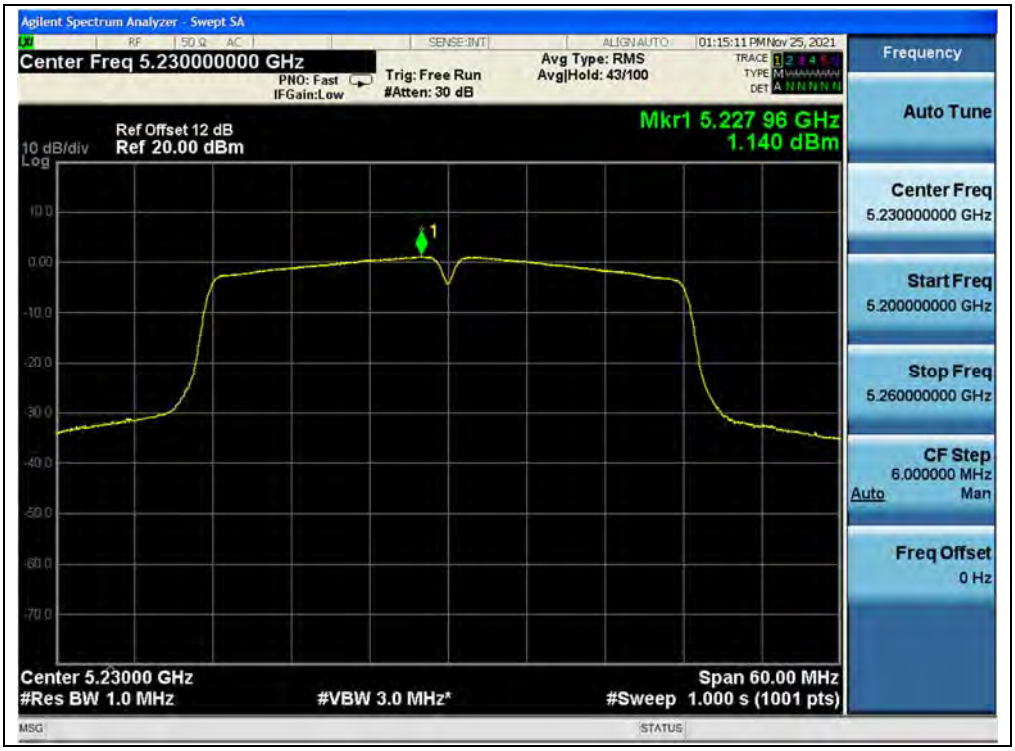
802.11ac (VHT40) Mode

A. Test Verdict:

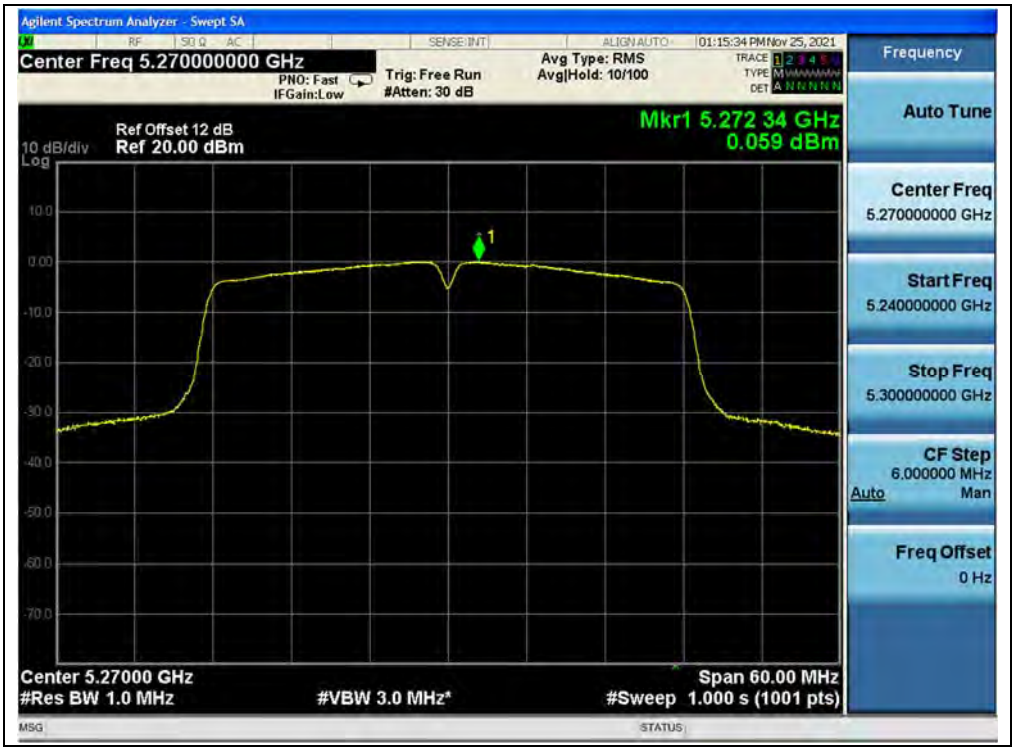
Channel	Frequency (MHz)	Measured PPSD (dBm/MHz)	Duty Factor	Corrected PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
38	5190	2.40	0.32	2.72	11	PASS
46	5230	1.14		1.46		
54	5270	0.06		0.38		
62	5310	-0.07		0.25		
102	5510	0.22		0.54		
126	5630	2.74		3.06		
142	5710	4.79		5.11		
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Duty Factor	Corrected (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
142	5710	1.94	0.32	2.26	30	PASS
151	5755	1.71		2.03		
155	5795	0.66		0.98		

B. Test Plot:

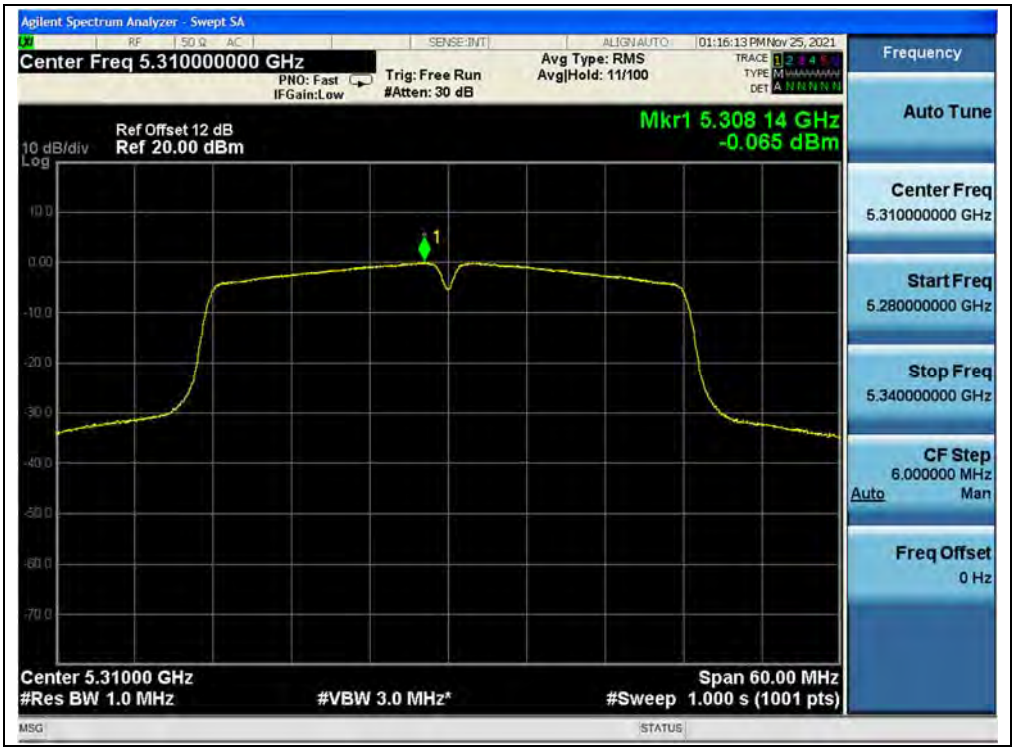
(Channel 38, 5190MHz, 802.11ac (VHT40))



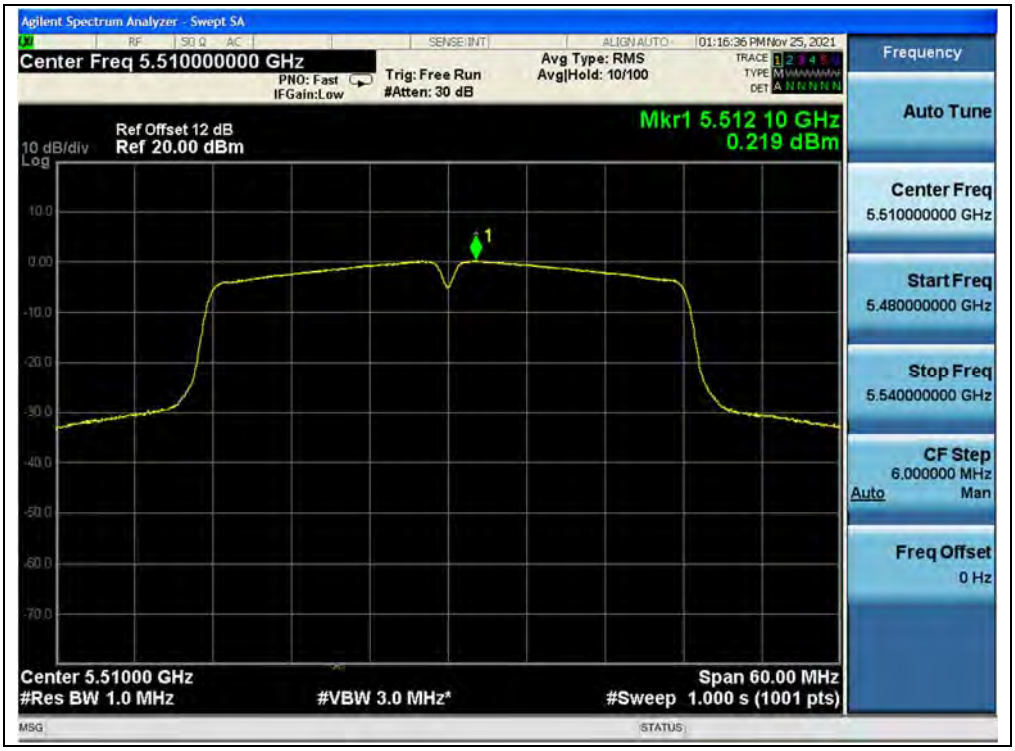
(Channel 46, 5230MHz, 802.11ac (VHT40))



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



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

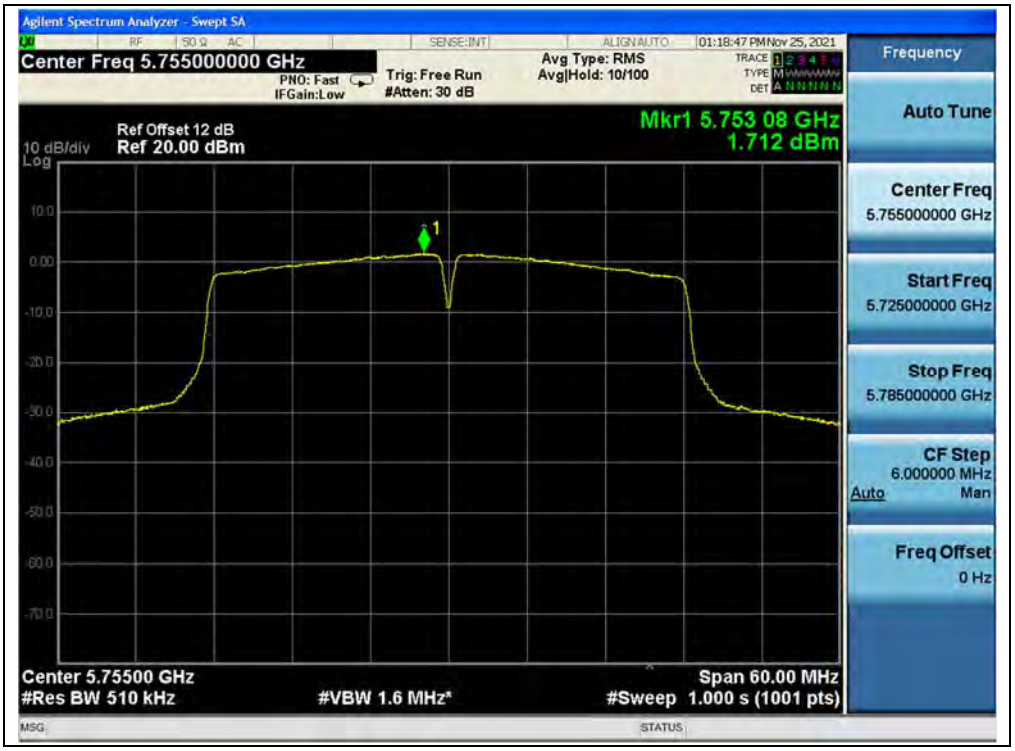


(Channel 102, 5510MHz, 802.11ac (VHT40))

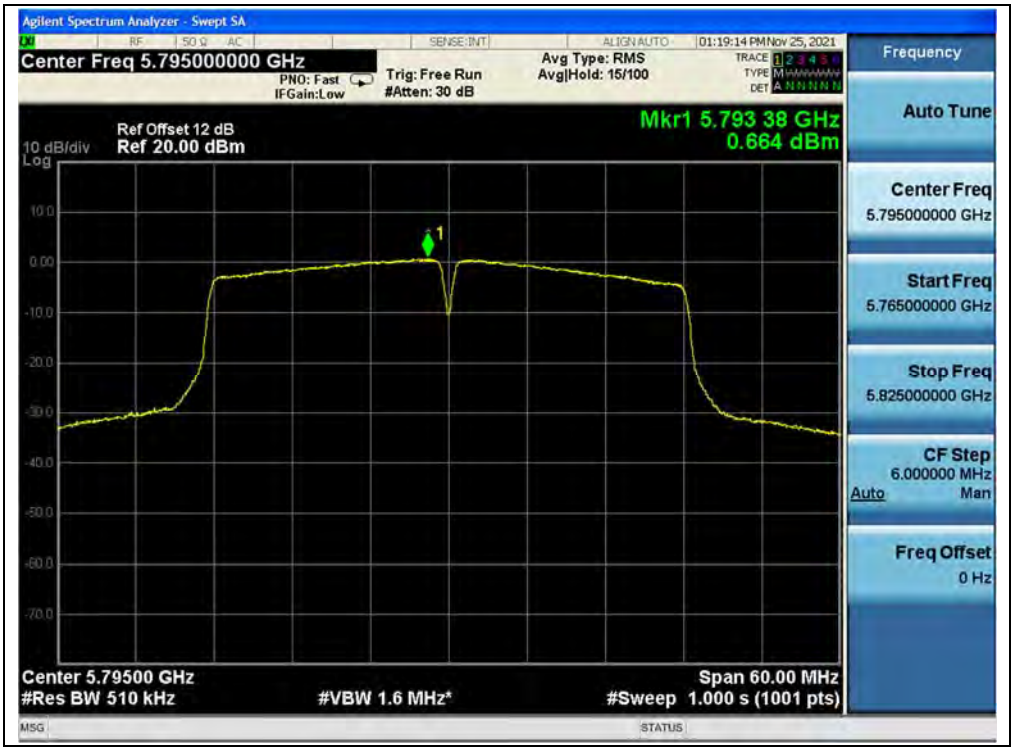
(Channel 126, 5630MHz, 802.11ac (VHT40))

(Channel 142, 5710MHz, 802.11ac (VHT40))

(Channel 142, 5710MHz, 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 PPSD (dBm/MHz)	Duty Factor	Corrected PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
42	5210	-3.06	0.63	-2.43	11	PASS
58	5290	-3.77		-3.14		
106	5530	-3.72		-3.09		
122	5610	-1.83		-1.20		
138	5690	0.40		1.03		
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Duty Factor	Corrected (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
138	5690	-2.06	0.63	-1.43	30	PASS
155	5775	-1.82		-1.19		

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°Cto 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%	5.00	+20(Ref)	24	4.633
100%		-30	30	5.792
100%		-20	29	5.598
100%		-10	25	4.826
100%		0	24	4.633
100%		+10	23	4.440
100%		+20	24	4.633
100%		+30	25	4.826
100%		+40	21	4.054
100%		+50	25	4.826
115%	5.75	+20	23	4.440
85%	4.25	+20	29	5.598

U-NII-2A (Ch. 52) 5260MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	5.00	+20(Ref)	18	3.422
100%		-30	22	4.183
100%		-20	25	4.753
100%		-10	27	5.133
100%		0	19	3.612
100%		+10	17	3.232
100%		+20	21	3.992
100%		+30	26	4.943
100%		+40	30	5.703
100%		+50	25	4.753
115%	5.75	+20	19	3.612
85%	4.25	+20	21	3.992

U-NII-2C (Ch. 100) 5500MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	5.00	+20(Ref)	21	3.818
100%		-30	25	4.545
100%		-20	31	5.636
100%		-10	30	5.455
100%		0	22	4.000
100%		+10	23	4.182
100%		+20	23	4.182
100%		+30	31	5.636
100%		+40	35	6.364
100%		+50	25	4.545
115%	5.75	+20	27	4.909
85%	4.25	+20	30	5.455

U-NII-3 (Ch. 149) 5745MHz				
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Fre. Dev. (kHz)	Deviation (ppm)
100%	5.00	+20(Ref)	22	3.829
100%		-30	26	4.526
100%		-20	26	4.526
100%		-10	22	3.829
100%		0	29	5.048
100%		+10	24	4.178
100%		+20	27	4.700
100%		+30	28	4.874
100%		+40	29	5.048
100%		+50	28	4.874
115%	5.75	+20	31	5.396
85%	4.25	+20	29	5.048

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 50μH/50Ω line impedance stabilization network (LISN).

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

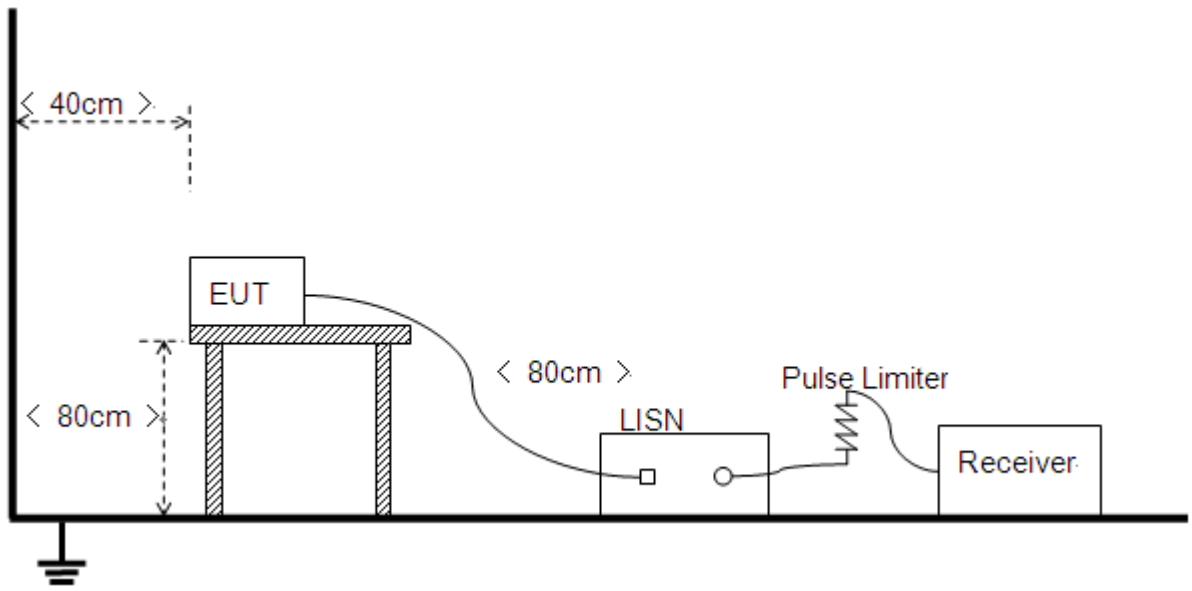
Note:

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

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2. Test Description

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/50Hzwere 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

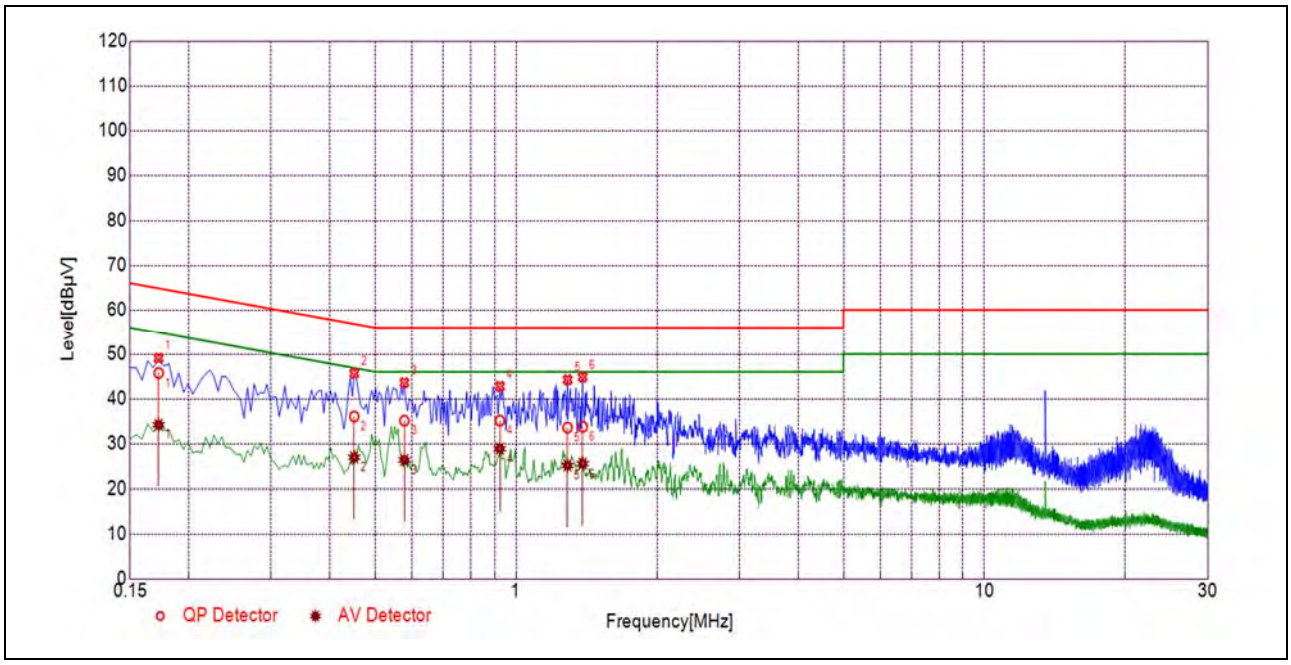
The measurement results are obtained as below:

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

U_R: Receiver Reading

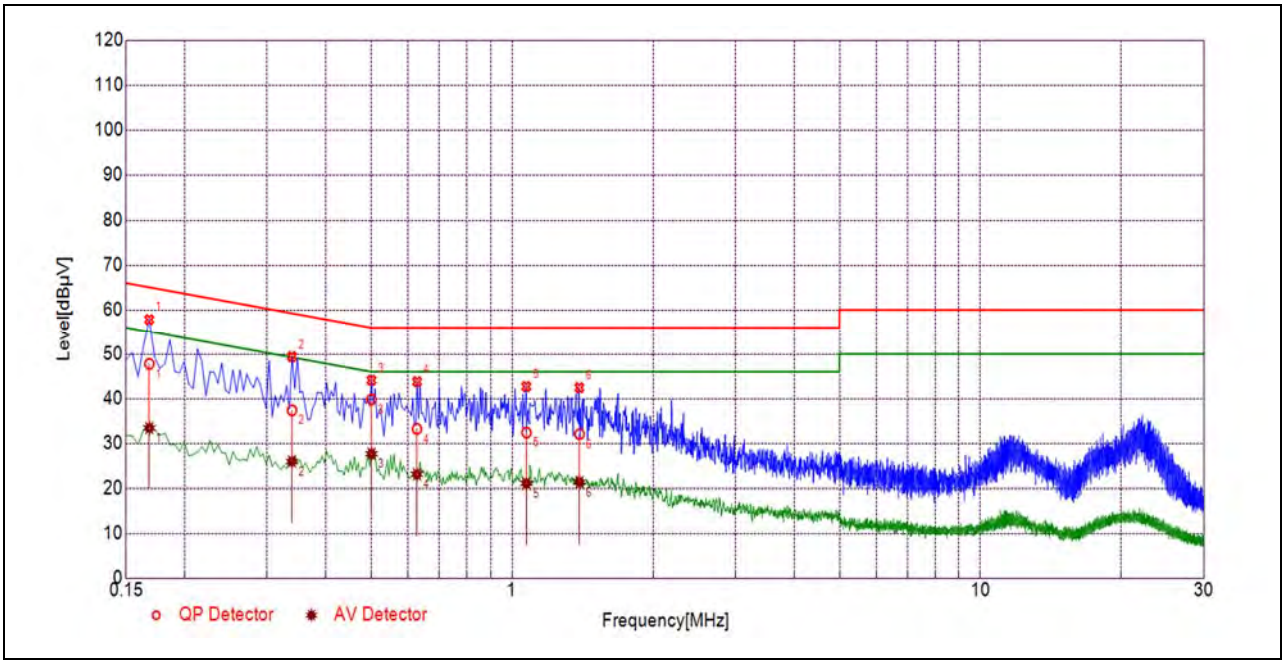
A_{Factor}: Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1725	45.72	34.17	64.84	54.84	Line	PASS
2	0.4513	36.03	26.94	56.85	46.85		PASS
3	0.5774	35.10	26.36	56.00	46.00		PASS
4	0.9235	35.11	28.84	56.00	46.00		PASS
5	1.2878	33.56	25.12	56.00	46.00		PASS
6	1.3878	33.73	25.51	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	0.1681	47.77	33.41	65.05	55.05	Neutral	PASS
2	0.3389	37.36	25.93	59.23	49.23		PASS
3	0.5010	39.78	27.65	56.00	46.00		PASS
4	0.6265	33.22	23.07	56.00	46.00		PASS
5	1.0731	32.39	21.03	56.00	46.00		PASS
6	1.3931	32.05	21.30	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);

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

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:

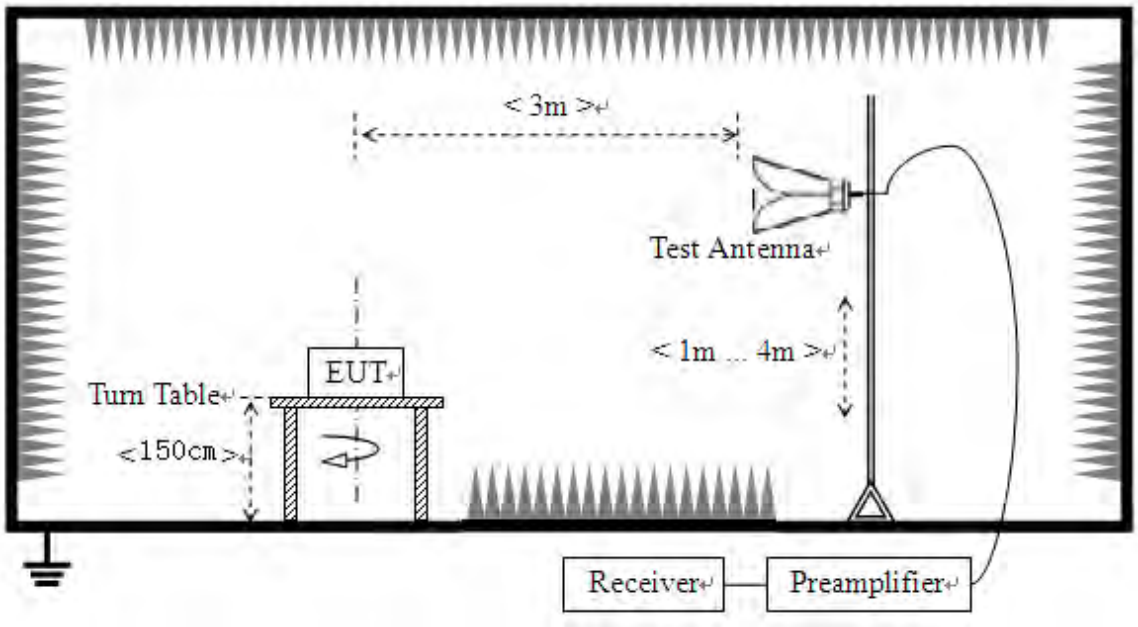
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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).

2.8.2. 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

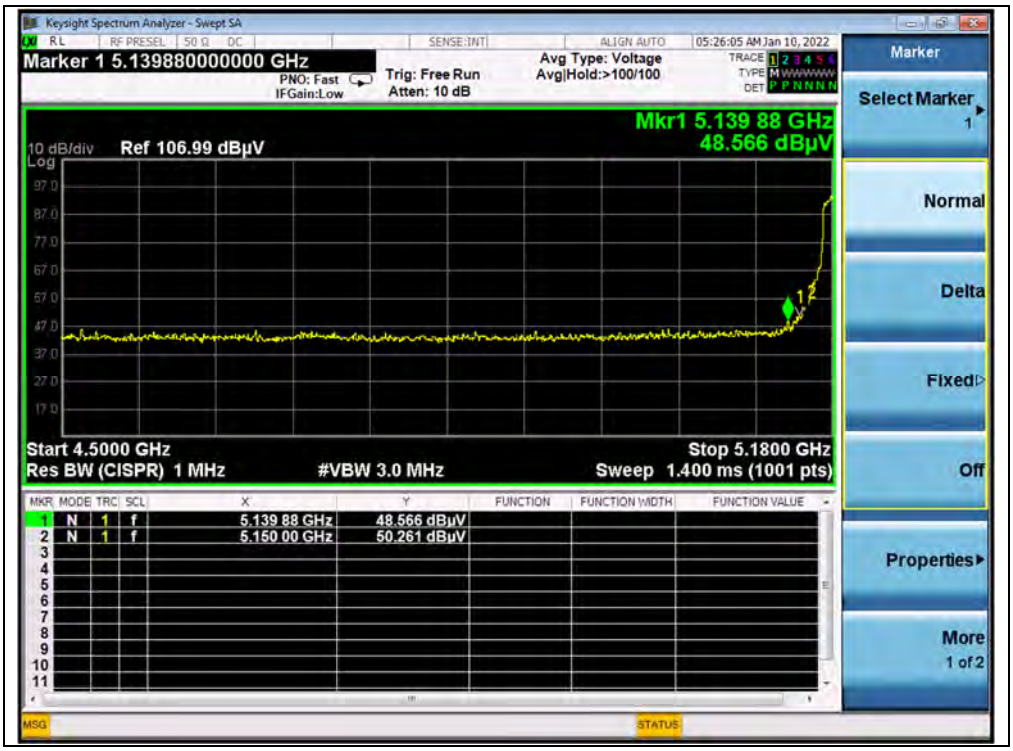
The lowest and highest channels are tested to verify Restricted Frequency Bands.
The measurement results are obtained as below:
E [dBμV/m] $=U_R + A_T + A_{Factor}$ [dB]; $A_T = L_{Cable\ loss}$ [dB]$-G_{preamp}$ [dB]
A_T: Total correction Factor except Antenna; U_R: Receiver Reading
G_{preamp}: Preamplifier Gain; A_{Factor}: Antenna Factor at 3m
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

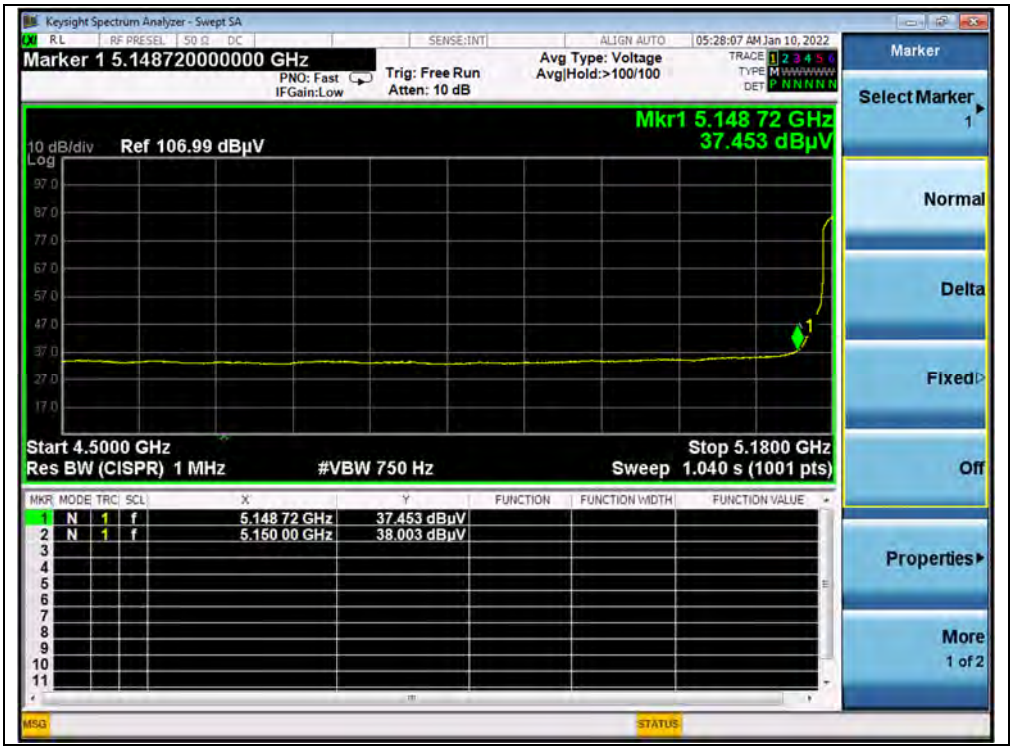
A.Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
36	5150.00	PK	50.26	-19.54	32.20	62.92	74	PASS
36	5150.00	AV	38.00	-19.54	32.20	50.66	54	PASS
64	5350.00	PK	48.35	-18.80	32.20	61.75	74	PASS
64	5350.00	AV	36.34	-18.80	32.20	49.74	54	PASS
100	5469.20	PK	45.85	-19.20	32.20	58.85	68.23	PASS
100	5470.00	AV	35.08	-19.20	32.20	48.08	54	PASS
144	5726.90	PK	49.99	-19.20	32.20	62.99	68.23	PASS
149	5725.00	PK	53.41	-19.01	32.20	66.60	122.23	PASS
165	5850.00	PK	46.07	-19.01	32.20	59.26	122.23	PASS

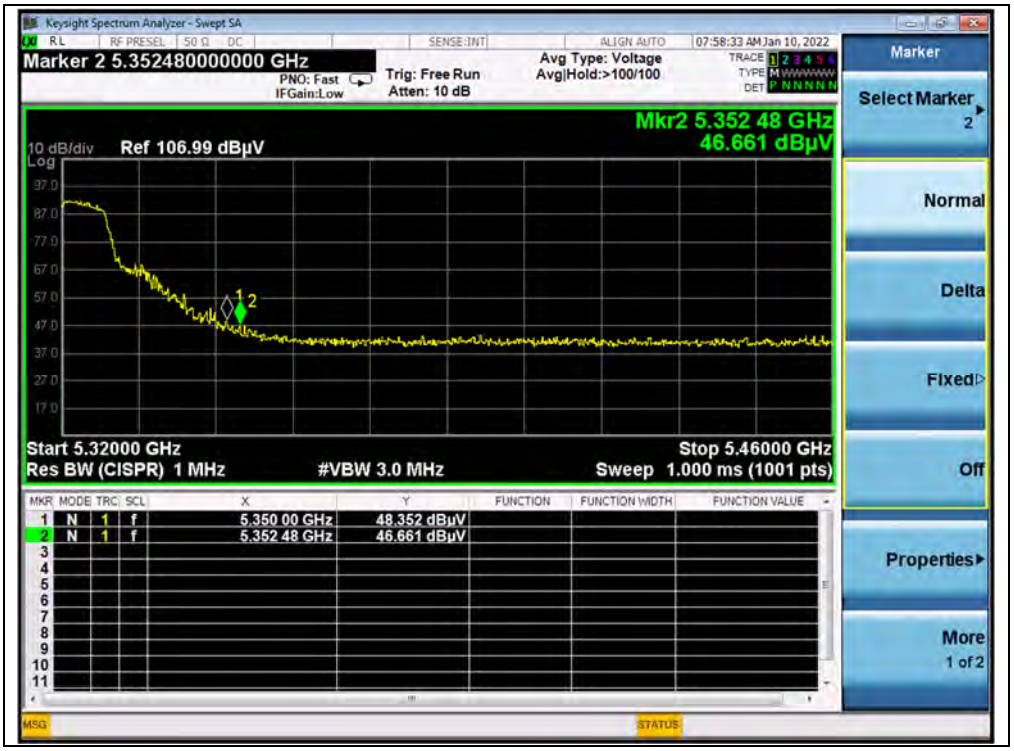
B.Test Plot:



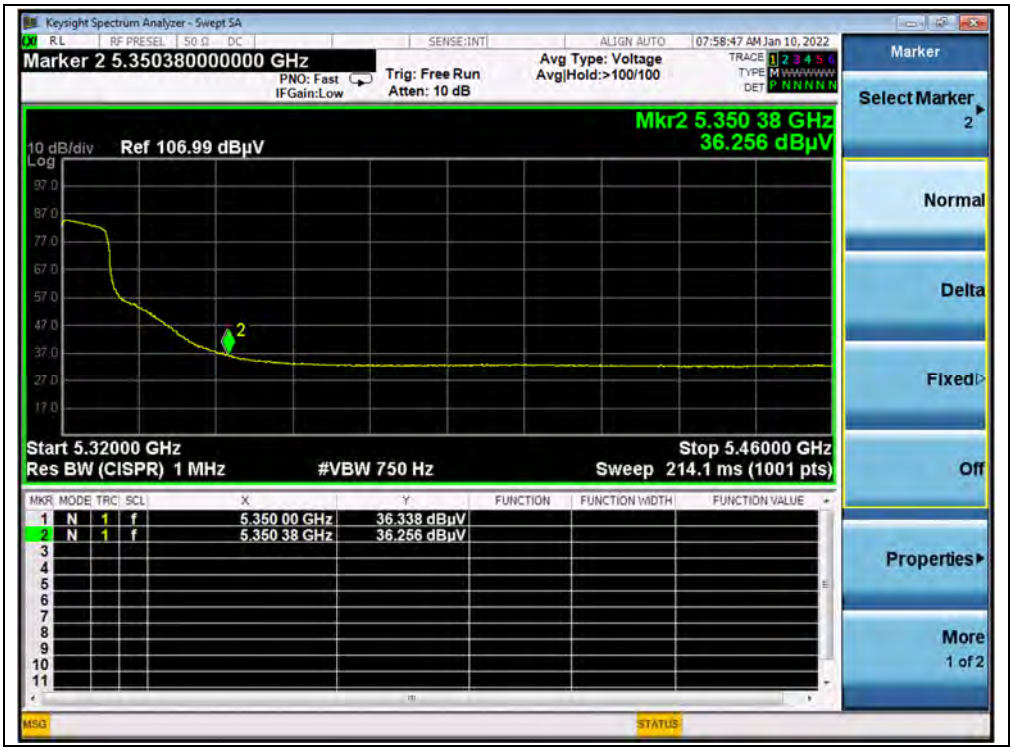
(PEAK, Channel 36, 802.11a)



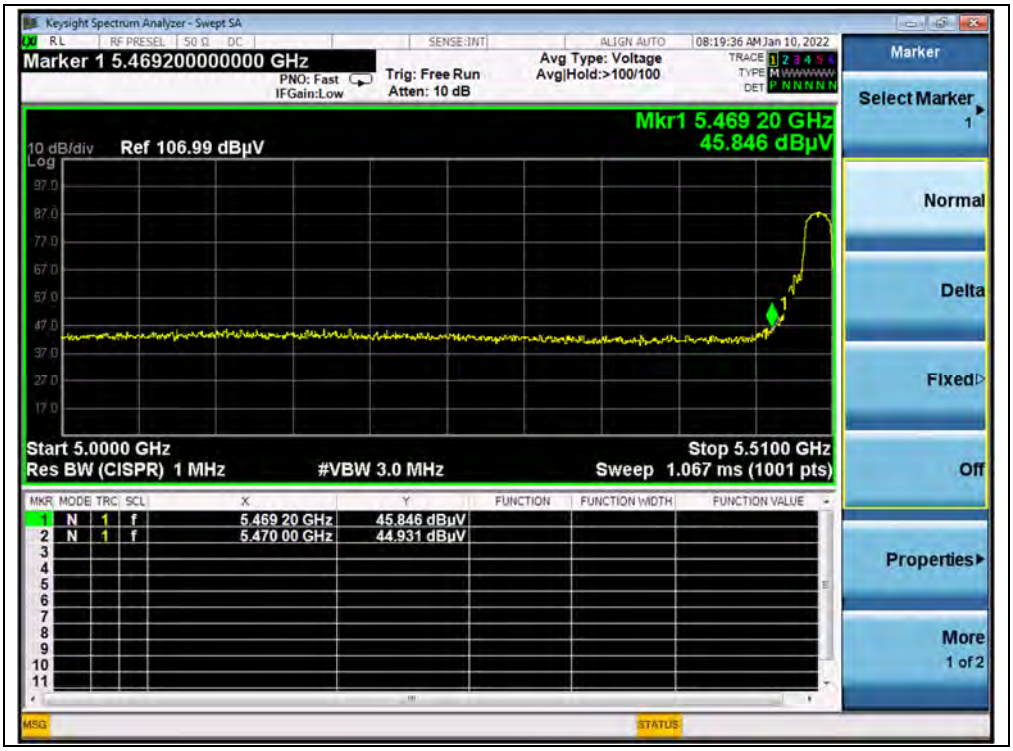
(AVERAGE, Channel 36, 802.11a)



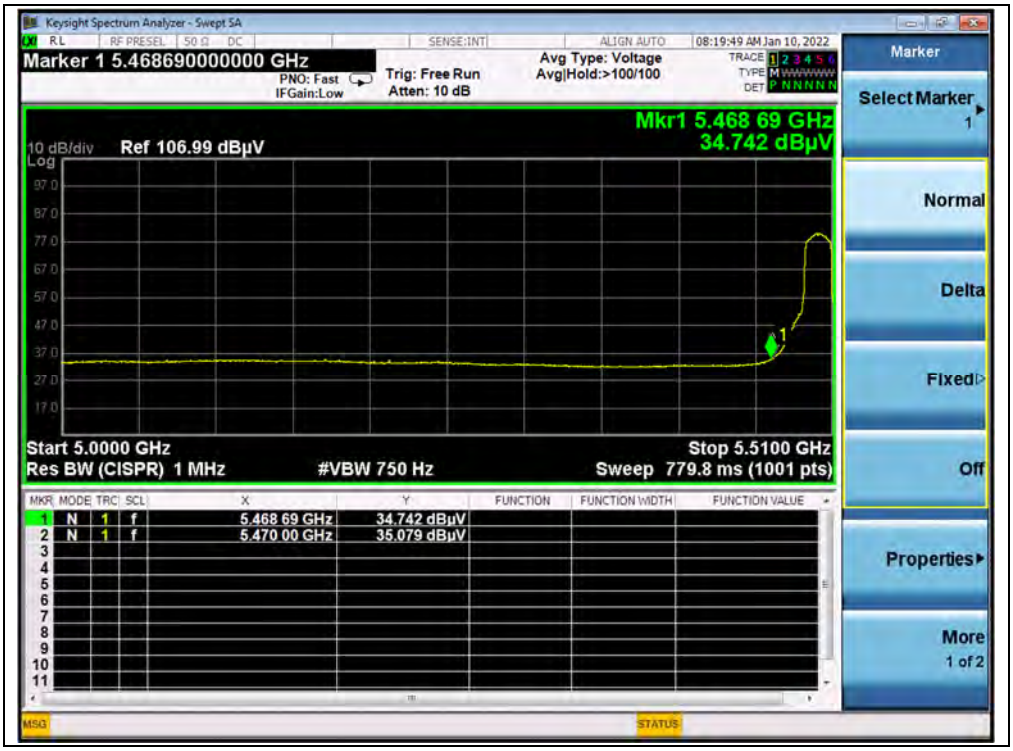
(PEAK, Channel 64, 802.11a)



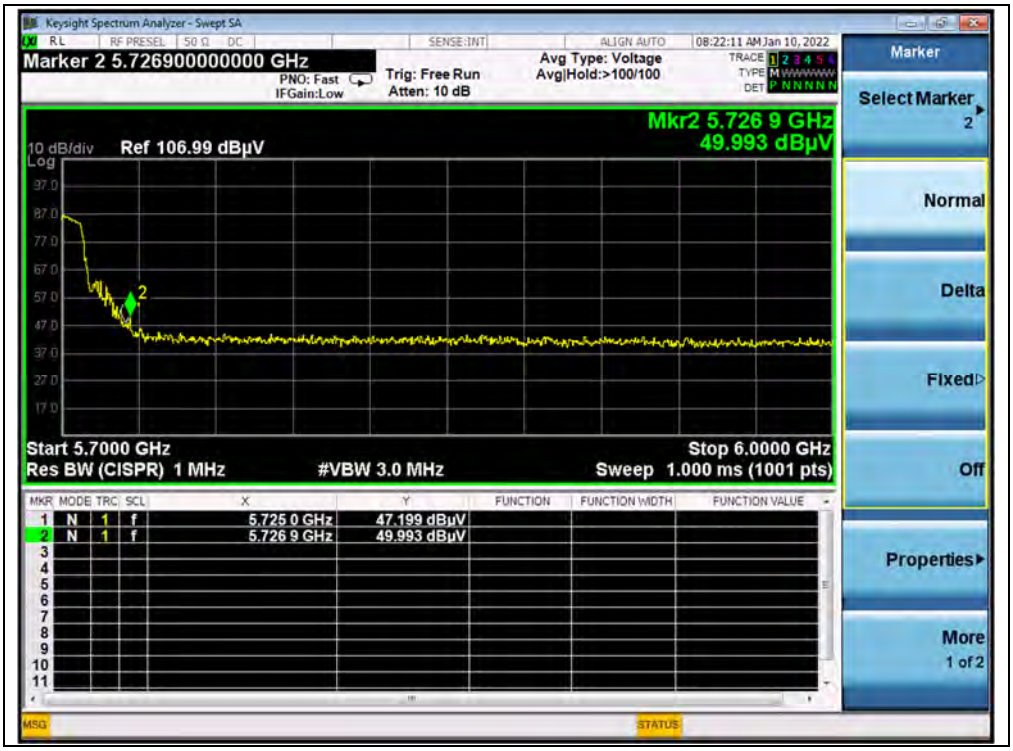
(AVERAGE, Channel 64, 802.11a)



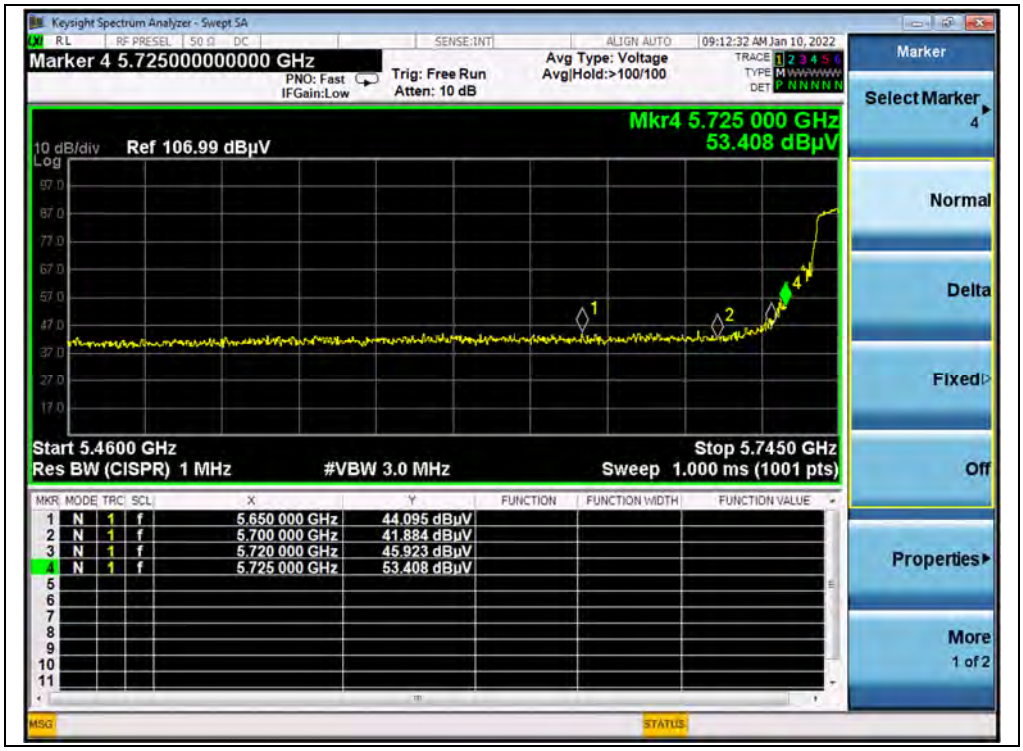
(PEAK, Channel 100, 802.11a)



(AVERAGE, Channel 100, 802.11a)



(PEAK, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)

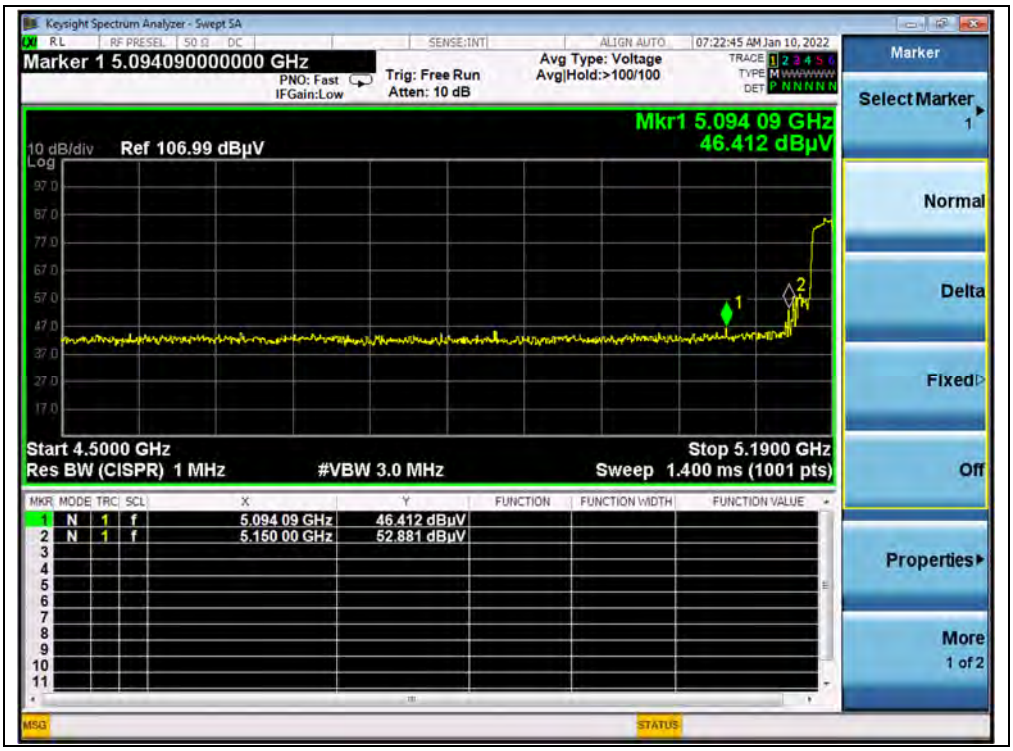
(PEAK, Channel 165, 802.11a)

802.11n (HT40) Mode

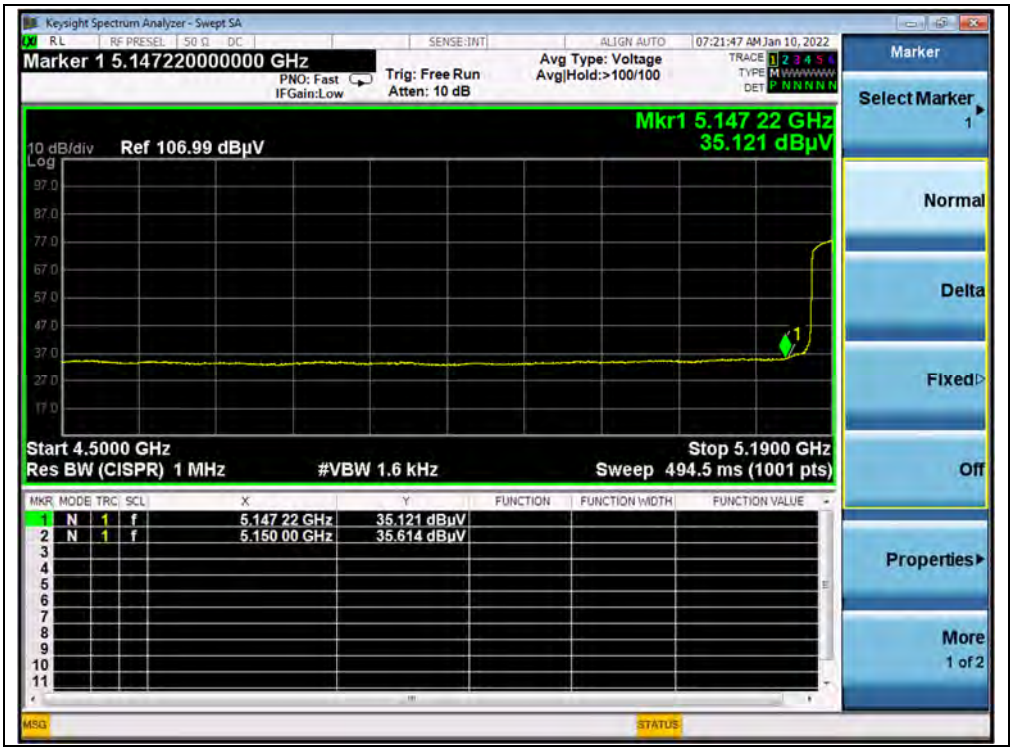
A.Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
38	5150.00	PK	52.88	-19.54	32.20	65.54	74	PASS
38	5150.00	AV	35.61	-19.54	32.20	48.27	54	PASS
62	5351.50	PK	48.32	-18.80	32.20	61.72	74	PASS
62	5350.00	AV	36.54	-18.80	32.20	49.94	54	PASS
102	5470.00	PK	48.75	-19.20	32.20	61.75	68.23	PASS
102	5470.00	AV	38.00	-19.20	32.20	51.00	54	PASS
142	5727.09	PK	46.11	-19.20	32.20	59.11	68.23	PASS
151	5725.00	PK	62.66	-19.01	32.20	75.85	122.23	PASS
159	5850.00	PK	46.89	-19.01	32.20	60.08	122.23	PASS

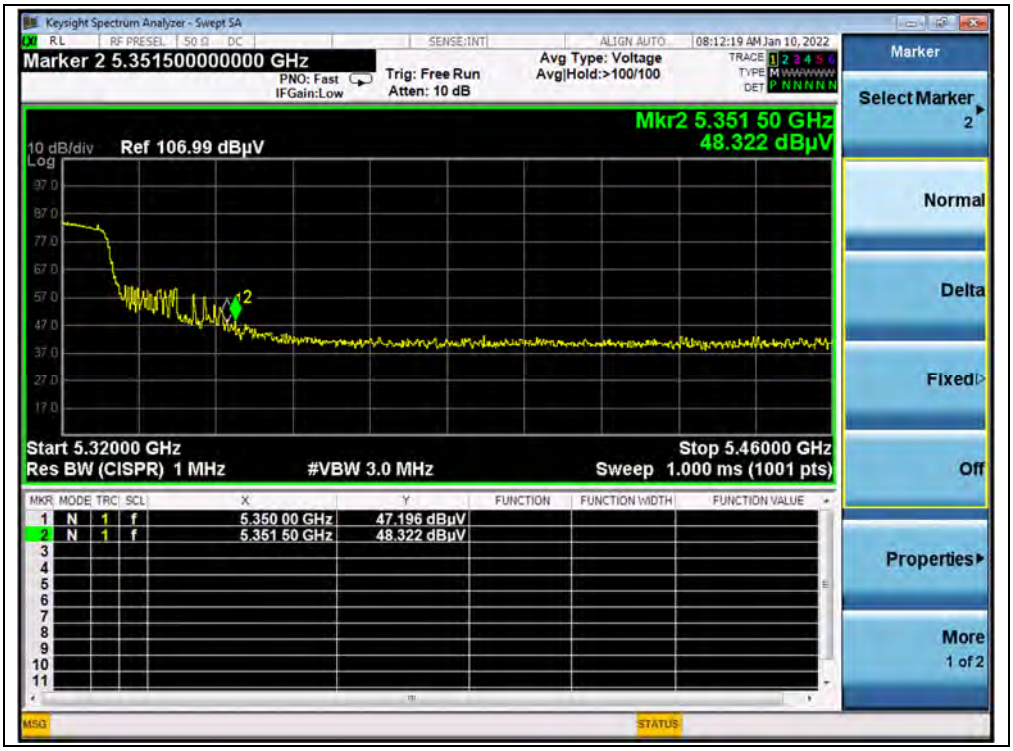
B.Test Plot:



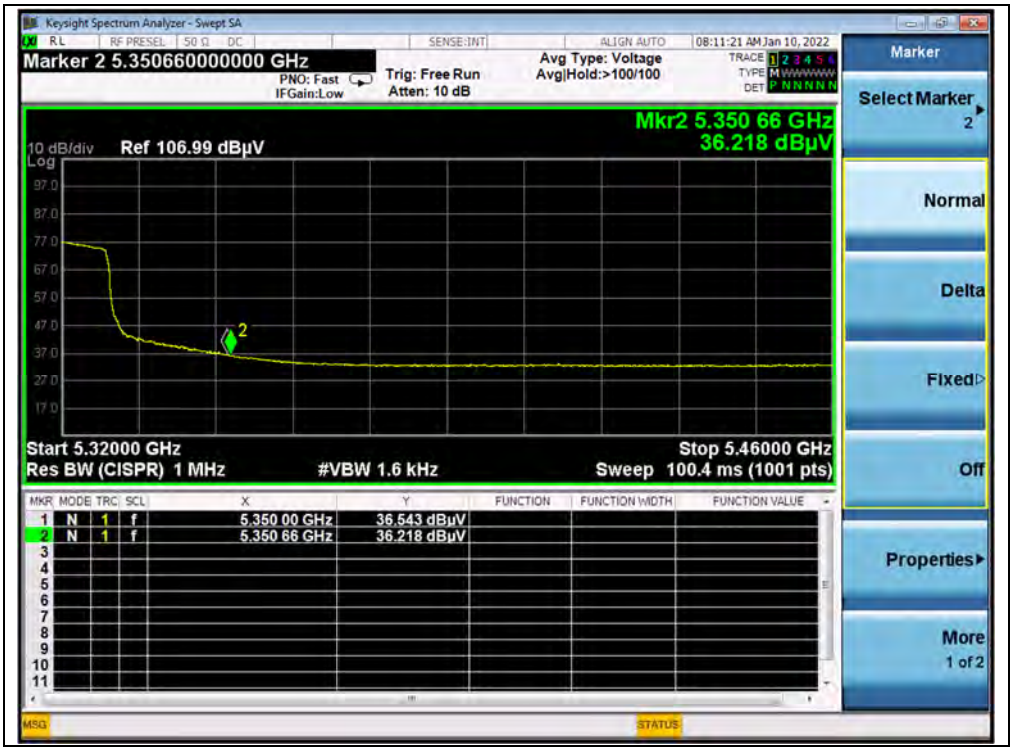
(PEAK, Channel 38, 802.11n (HT40))



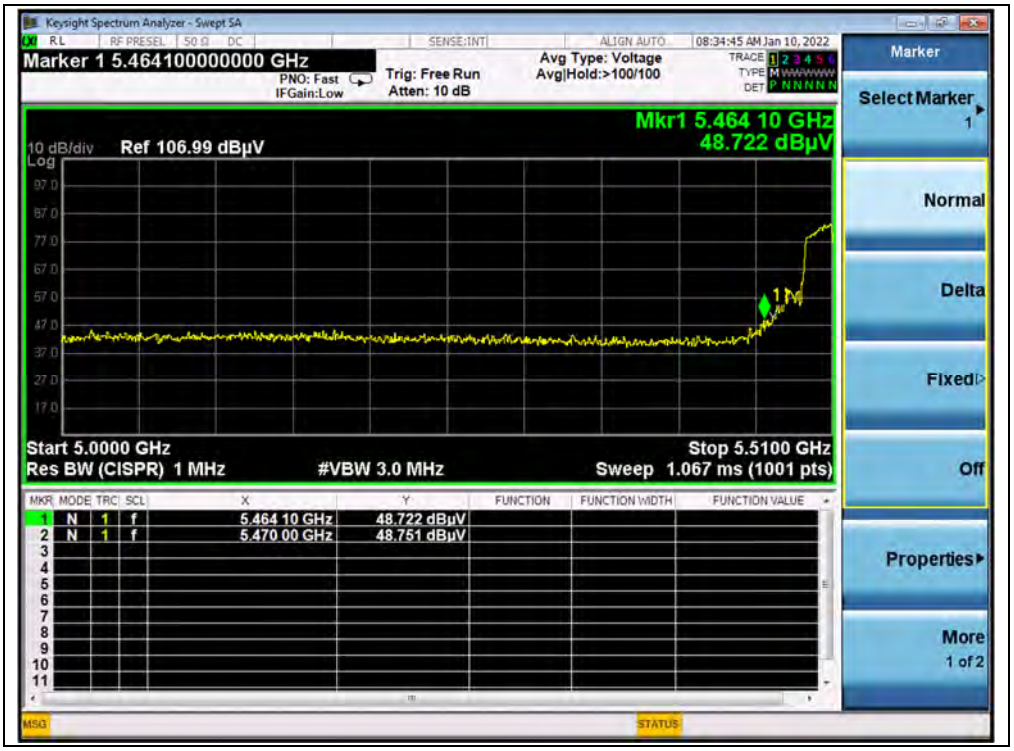
(AVERAGE, Channel 38, 802.11n (HT40))



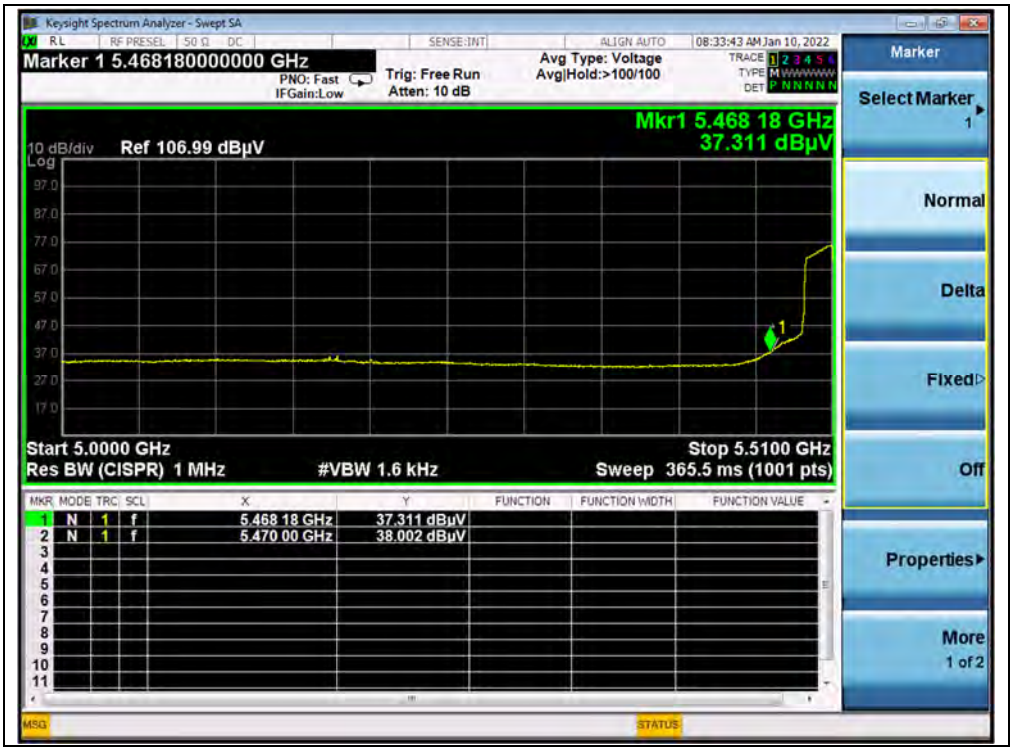
(PEAK, Channel 62, 802.11n (HT40))



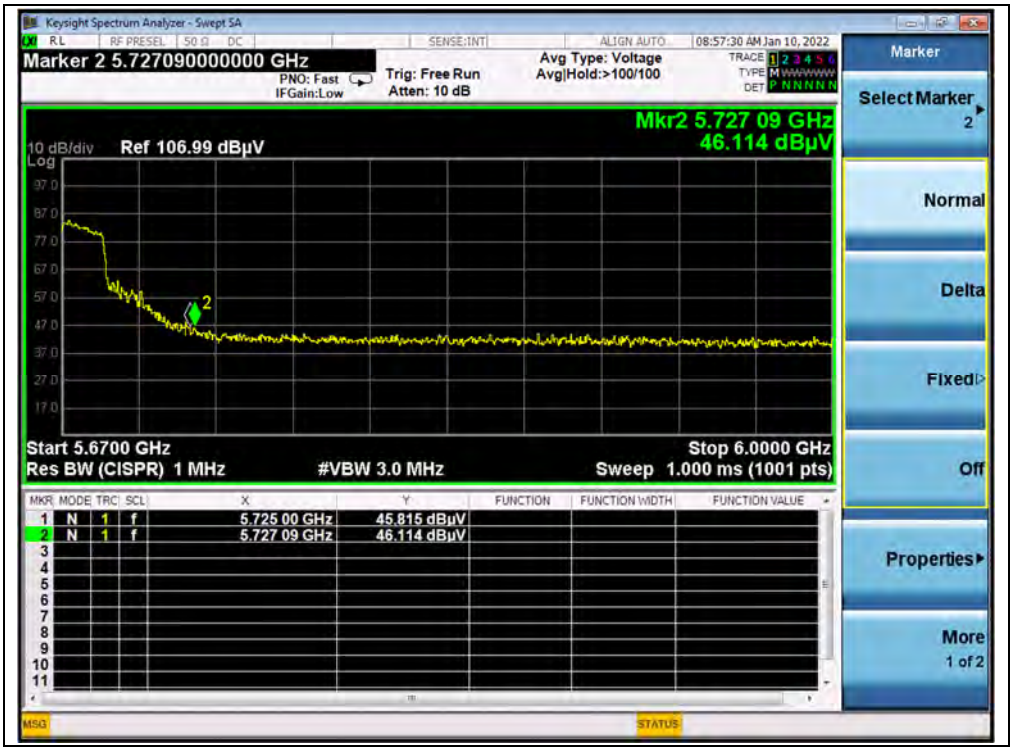
(AVERAGE, Channel 62, 802.11n (HT40))



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



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



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

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

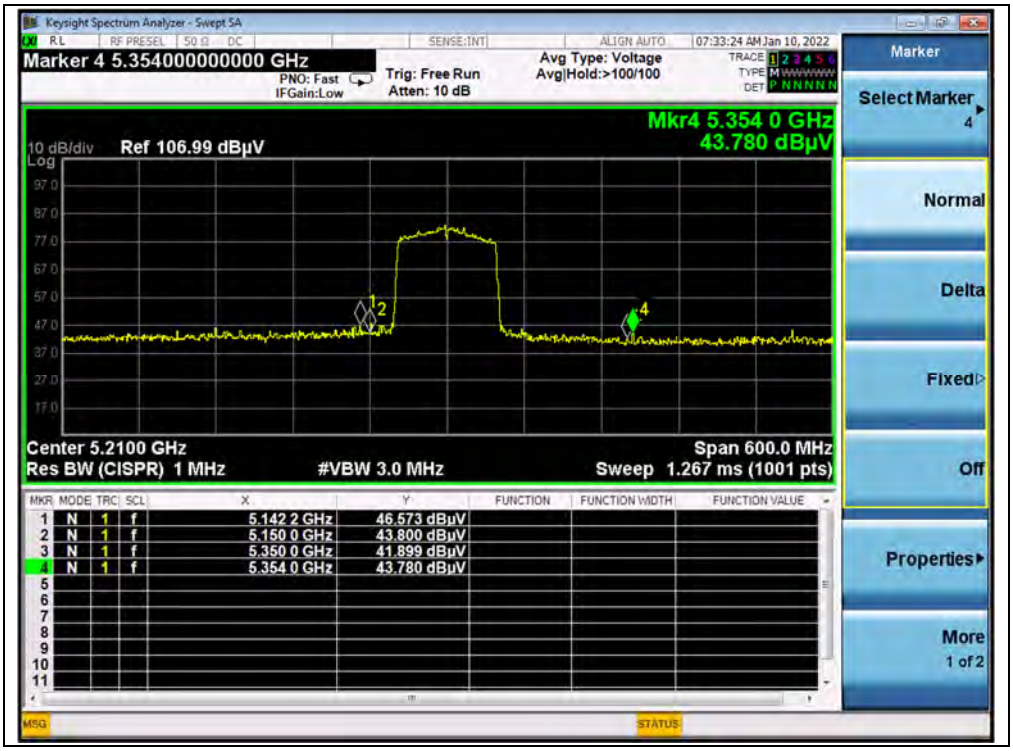
(PEAK, Channel 159, 802.11n (HT40))

802.11ac (VHT80) Mode

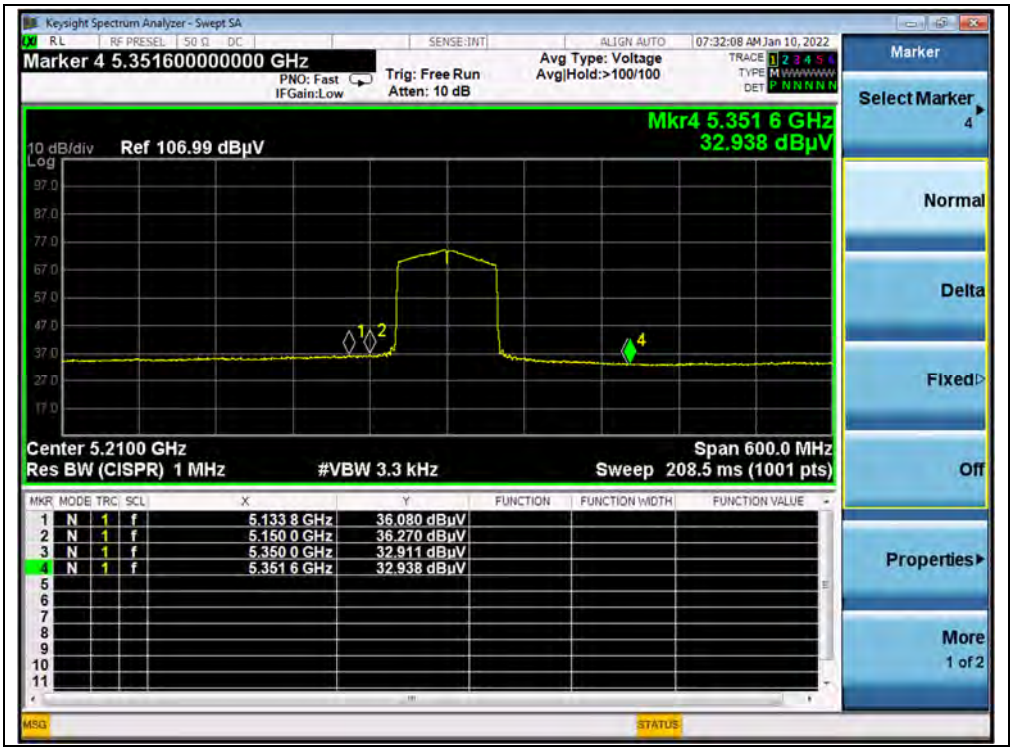
A.Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
42	5142.20	PK	46.57	-19.54	32.20	59.23	74	PASS
42	5150.00	AV	36.27	-19.54	32.20	48.93	54	PASS
58	5150.00	PK	44.67	-18.80	32.20	58.07	74	PASS
58	5150.00	AV	35.17	-18.80	32.20	48.57	54	PASS
106	5464.81	PK	58.49	-19.20	32.20	71.49	68.23	PASS
106	5468.52	AV	36.52	-19.20	32.20	49.52	54	PASS
138	5768.34	PK	44.32	-19.20	32.20	57.32	68.23	PASS
155	5725.00	PK	57.06	-19.01	32.20	70.25	122.23	PASS
155	5850.00	PK	54.41	-19.01	32.20	67.60	122.23	PASS

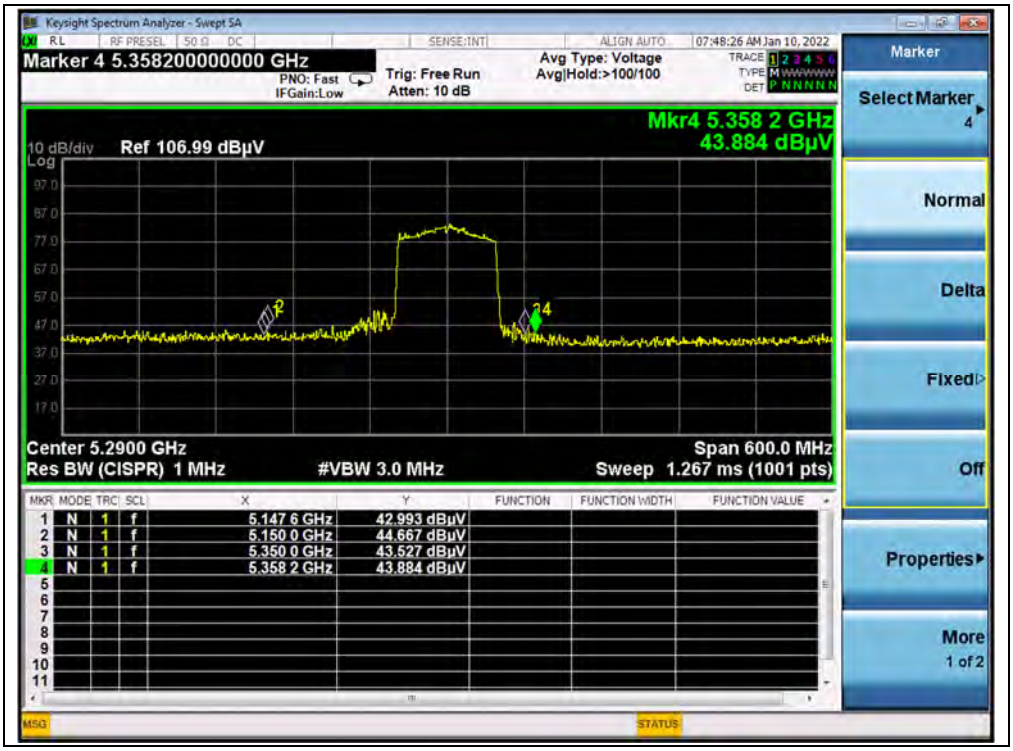
B.Test Plot:



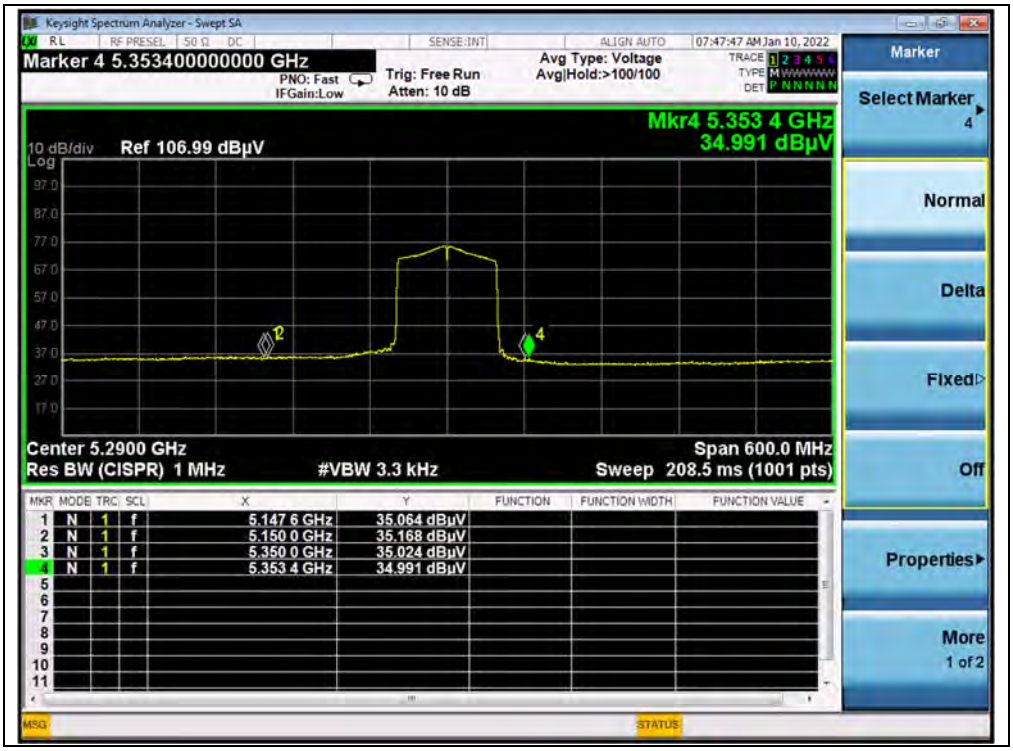
(PEAK, Channel 42, 802.11ac (VHT80))



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

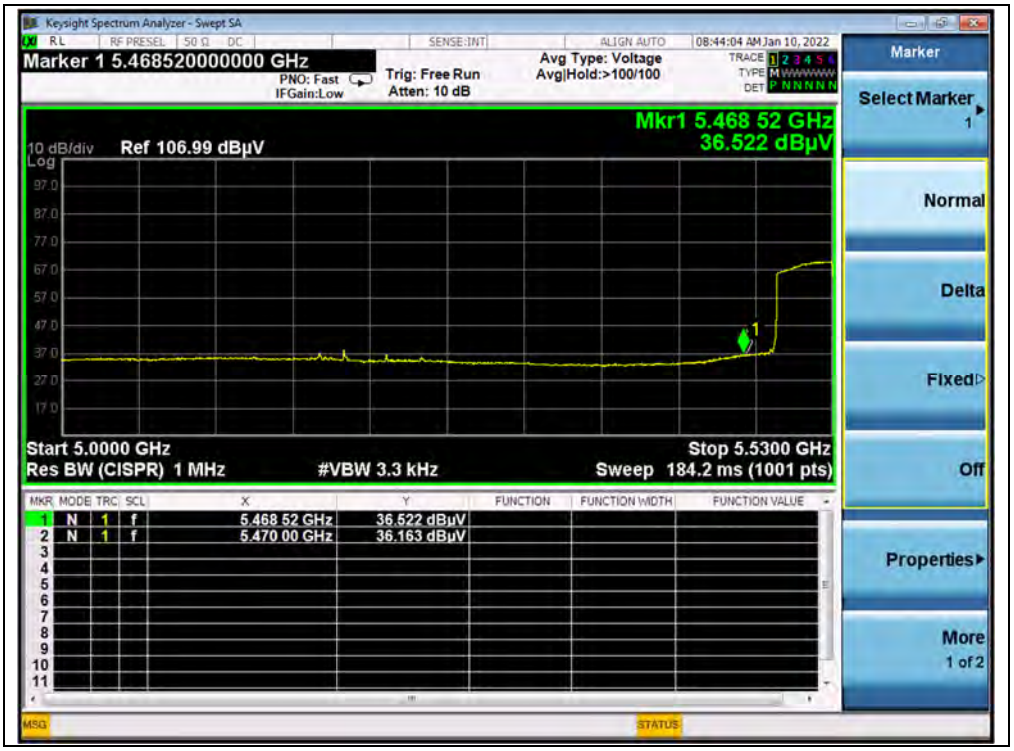


(PEAK, Channel 58, 802.11ac (VHT80))



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

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



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

(PEAK, Channel 138, 802.11ac (VHT80))

(PEAK, Channel 155, 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);

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

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:

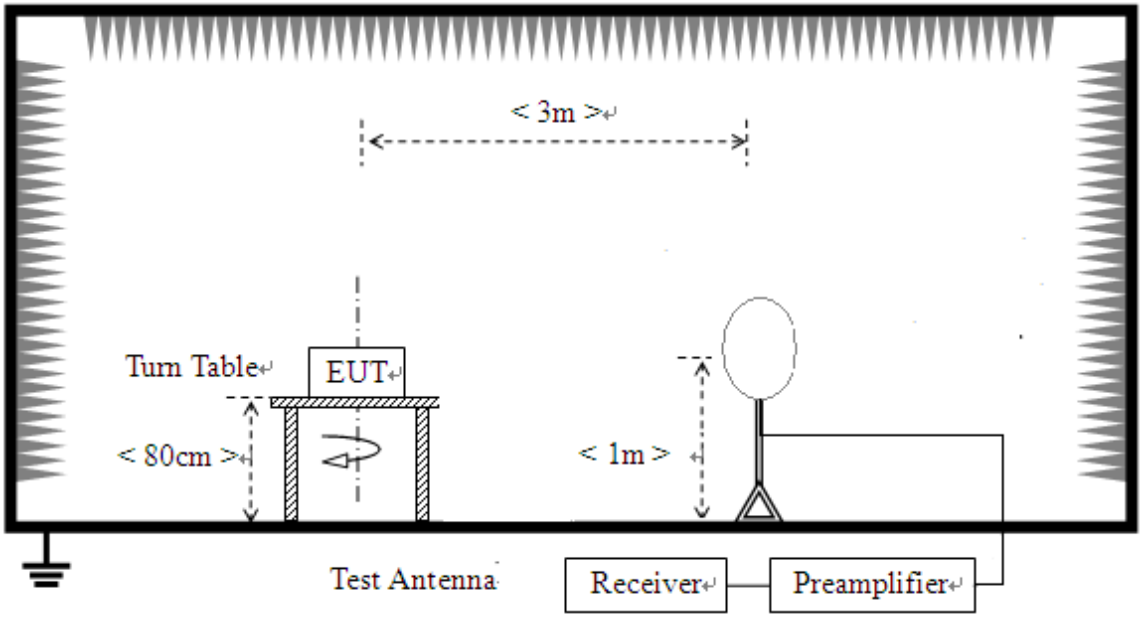
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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).

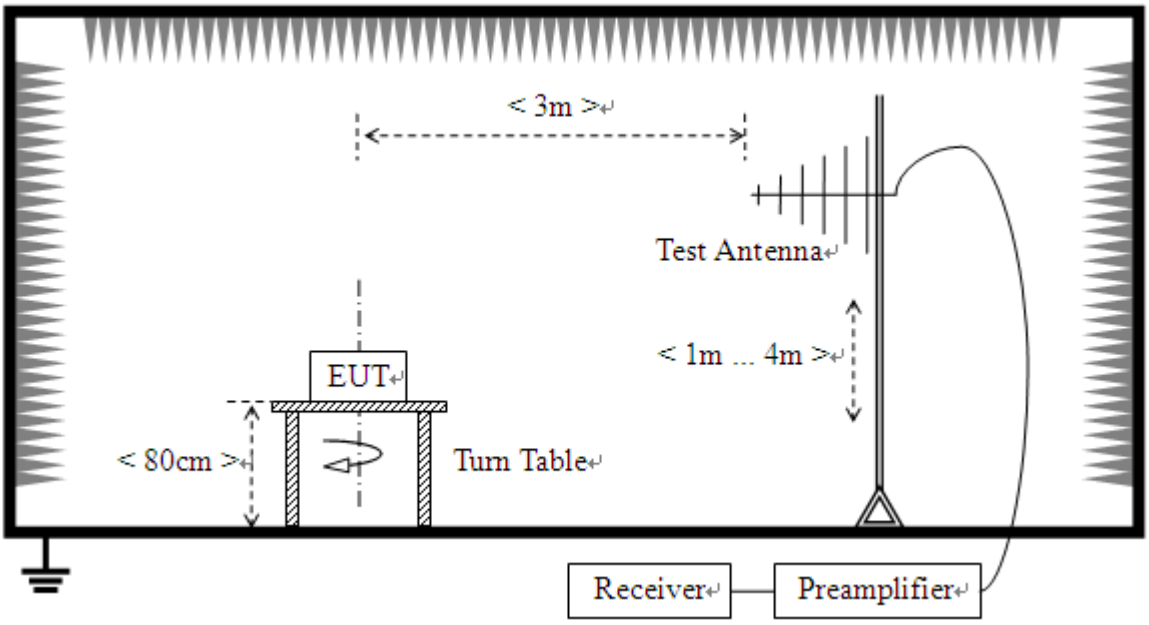
2.9.2. Test Description

Test Setup:

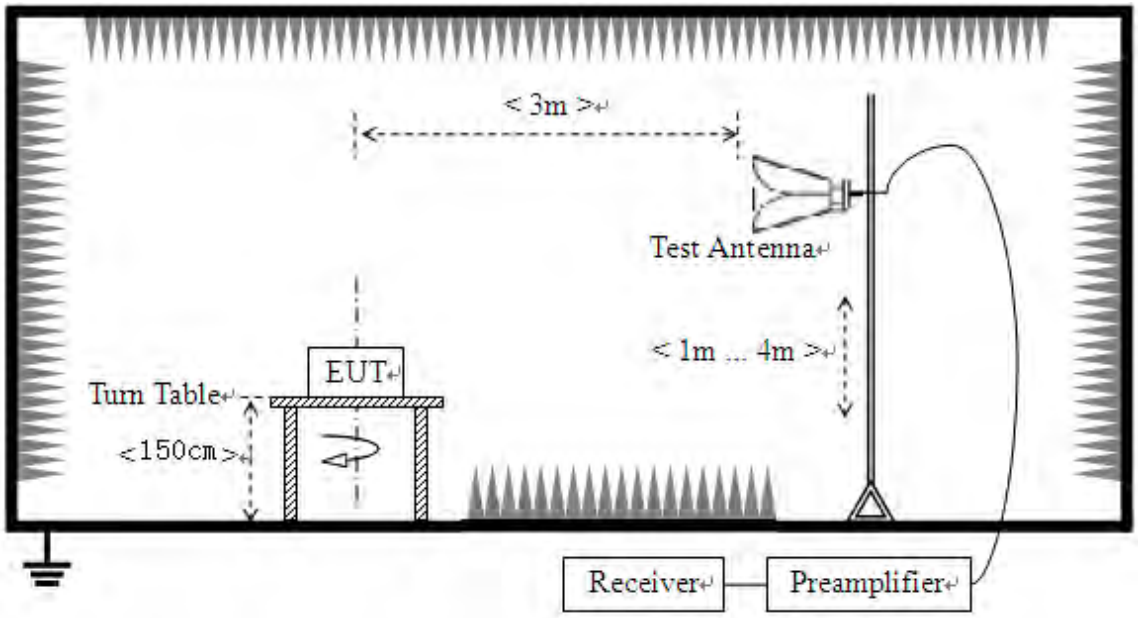
1) For radiated emissions from 9kHz to 30MHz



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 [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.

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.

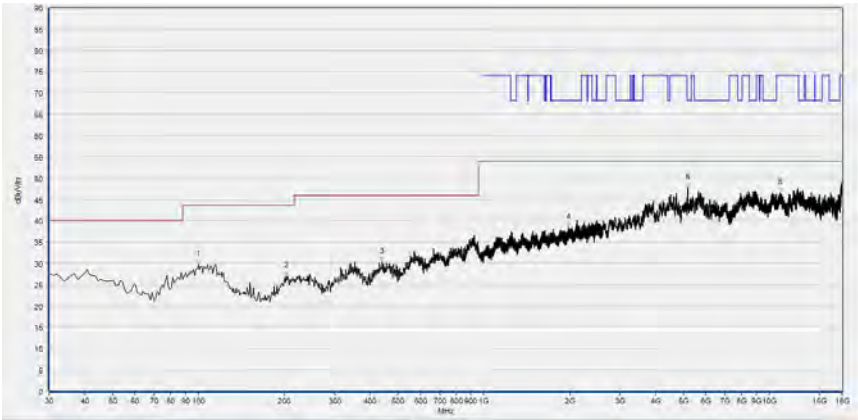
Note 2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

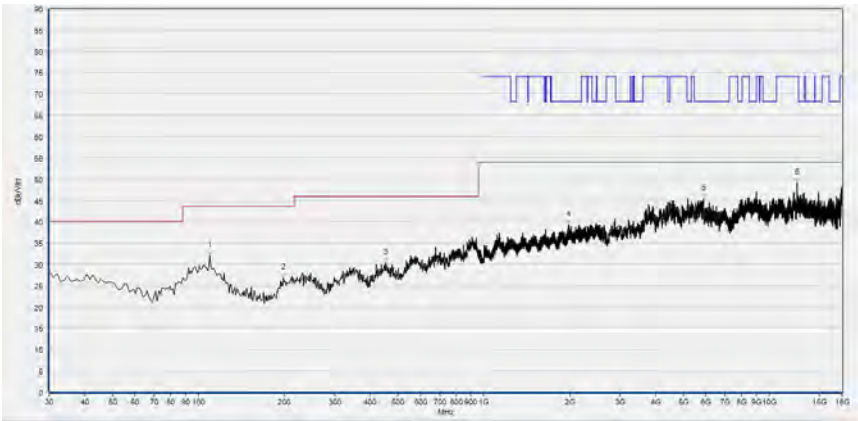
802.11a Mode

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
99.910	29.60	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
202.833	26.91	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
440.721	30.42	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1981.127	38.30	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5181.556	47.83	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10896.099	46.64	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

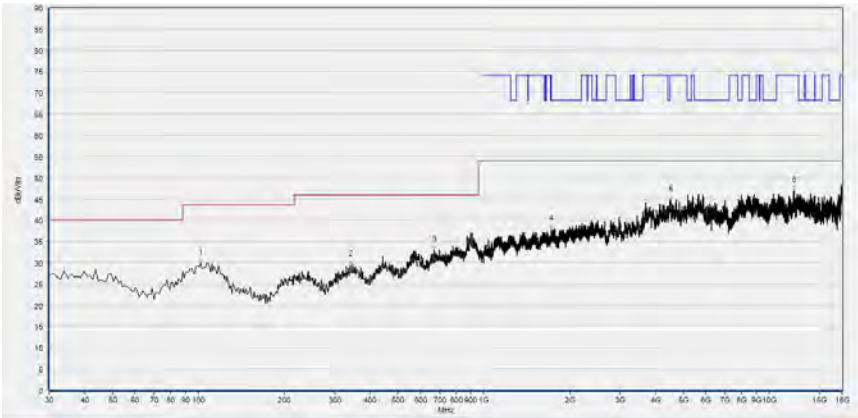
(Antenna Horizontal, 30MHz to 18GHz)



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
109.620	32.09	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
198.949	26.84	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
452.372	30.35	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1974.725	39.17	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5874.695	45.34	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12522.665	49.14	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

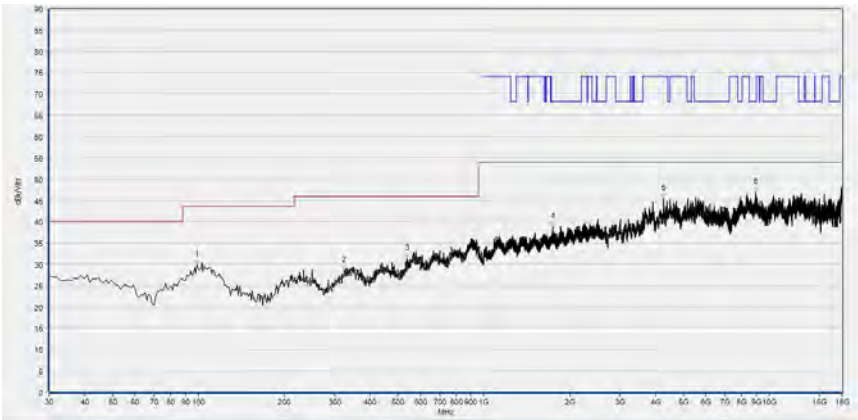
(Antenna Vertical, 30MHz to 18GHz)

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
101.852	29.75	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
340.711	29.58	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
670.841	33.06	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1724.508	37.84	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4506.901	44.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12217.684	46.95	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

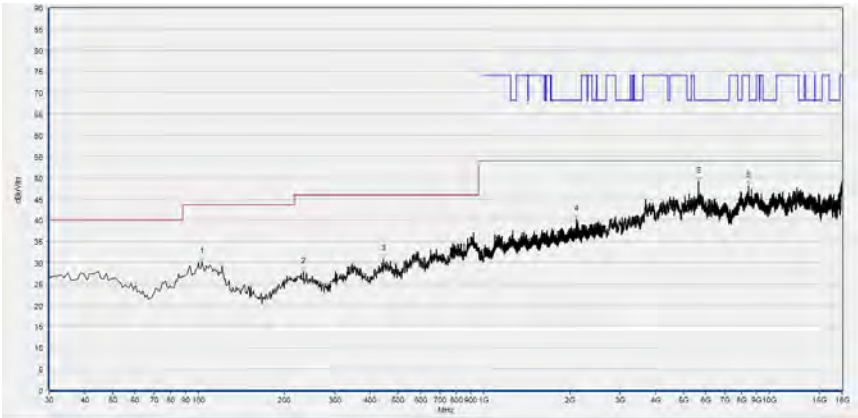
(Antenna Horizontal, 30MHz to 18GHz)



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	29.81	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
324.204	28.55	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
536.847	31.28	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1743.181	38.69	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4272.775	45.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8936.827	46.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

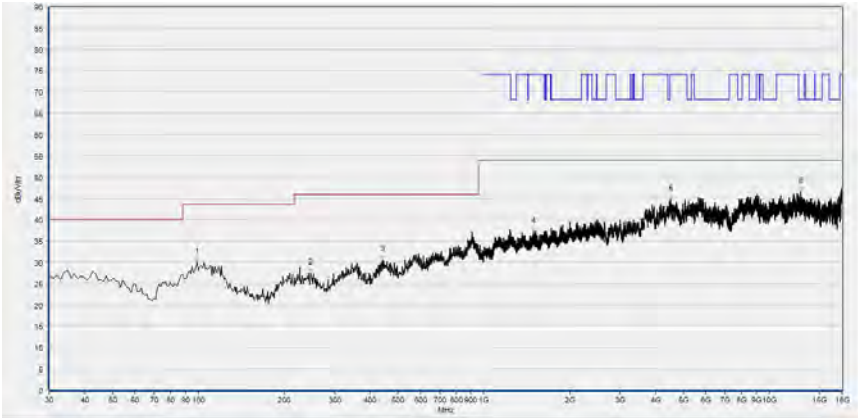
(Antenna Vertical, 30MHz to 18GHz)

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
102.823	30.21	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
233.904	27.90	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
445.576	30.77	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2113.971	40.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5643.649	49.12	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8468.574	48.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

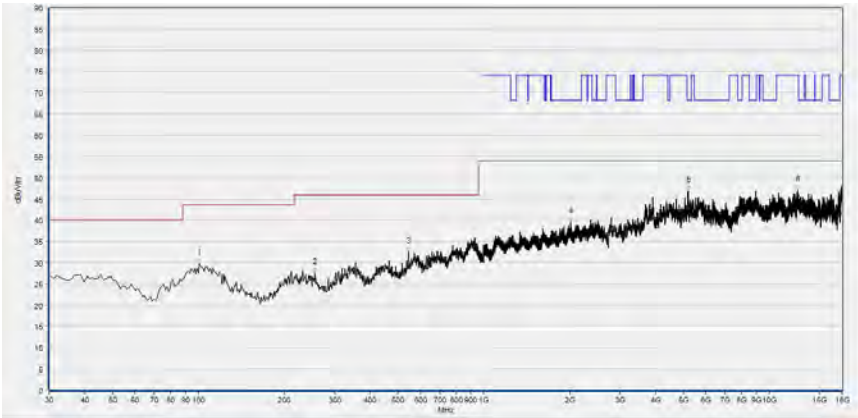
(Antenna Horizontal, 30MHz to 18GHz)



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	29.95	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
247.497	27.49	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
443.634	30.50	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1490.830	37.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4503.821	44.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12920.064	46.61	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

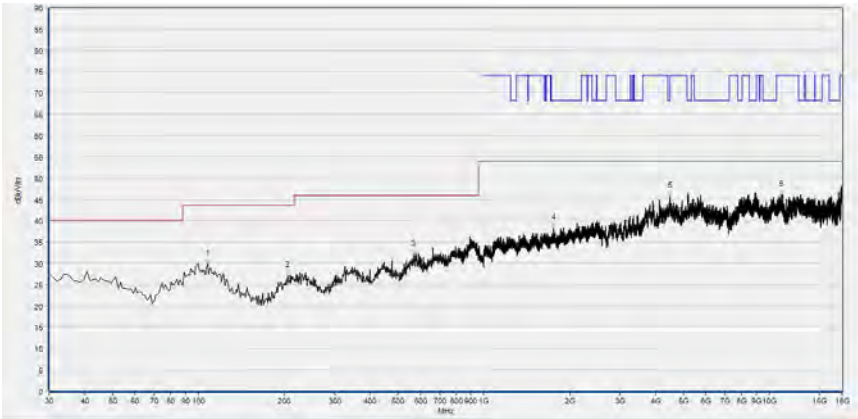
(Antenna Vertical, 30MHz to 18GHz)

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
100.881	29.78	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
255.265	27.62	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
544.615	32.51	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2019.006	39.52	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5200.040	46.92	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12612.002	47.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

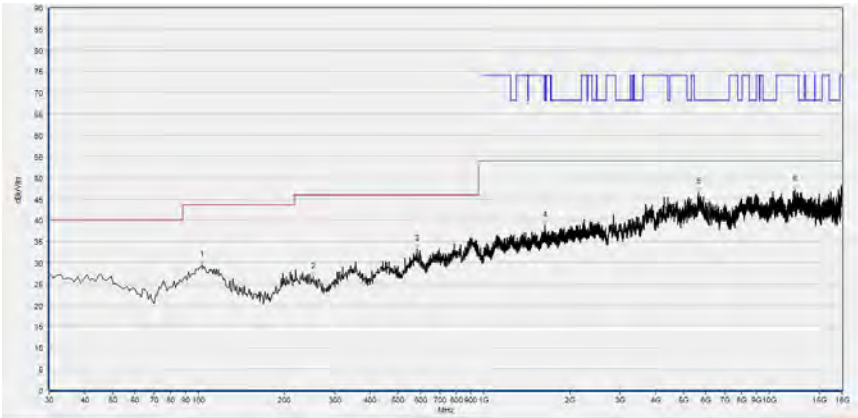
(Antenna Horizontal, 30MHz to 18GHz)



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
107.678	29.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
205.746	27.23	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
565.976	32.07	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1753.851	38.26	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4488.418	45.81	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11047.049	46.07	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

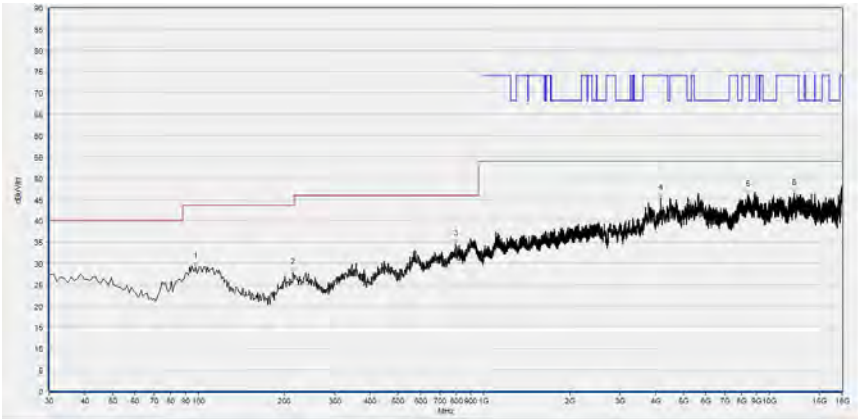
(Antenna Vertical, 30MHz to 18GHz)

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
102.823	29.45	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
252.352	26.71	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
583.453	33.23	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1635.412	38.70	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5659.052	46.66	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12294.699	47.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

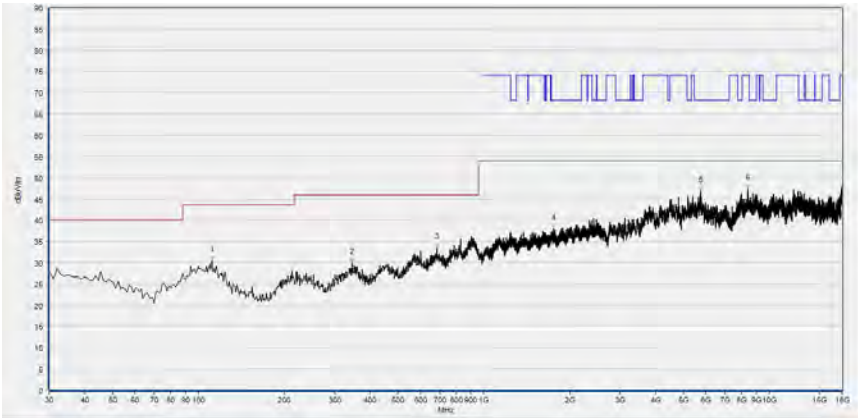
(Antenna Horizontal, 30MHz to 18GHz)



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
97.968	29.09	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
214.484	27.87	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
796.096	34.58	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
4155.711	45.29	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8391.558	46.10	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12199.200	46.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

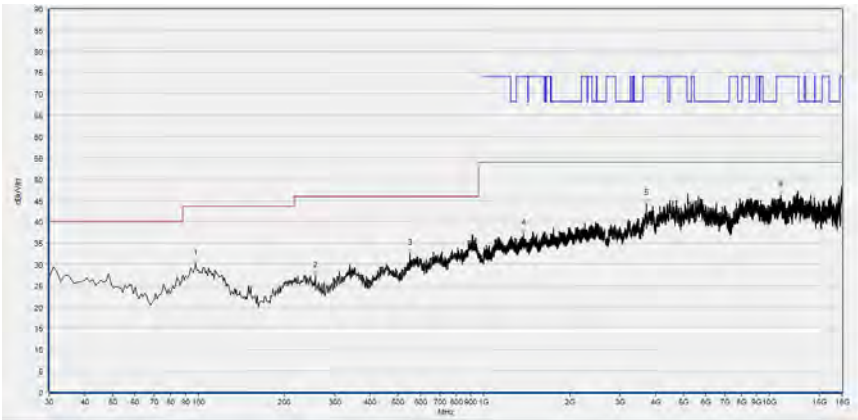
(Antenna Vertical, 30MHz to 18GHz)

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
111.562	30.51	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
344.595	29.93	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
684.434	33.55	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1752.784	38.11	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5745.309	46.91	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

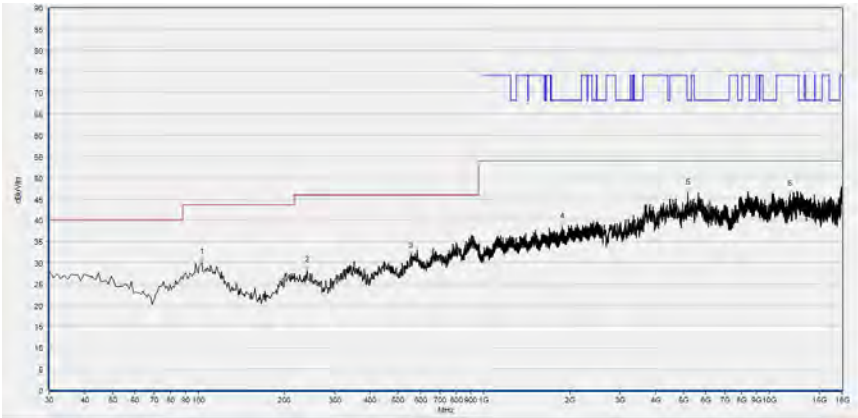
(Antenna Horizontal, 30MHz to 18GHz)



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
97.968	30.14	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
257.207	27.27	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
552.382	32.46	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1375.058	37.14	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3705.941	44.28	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10939.228	46.24	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

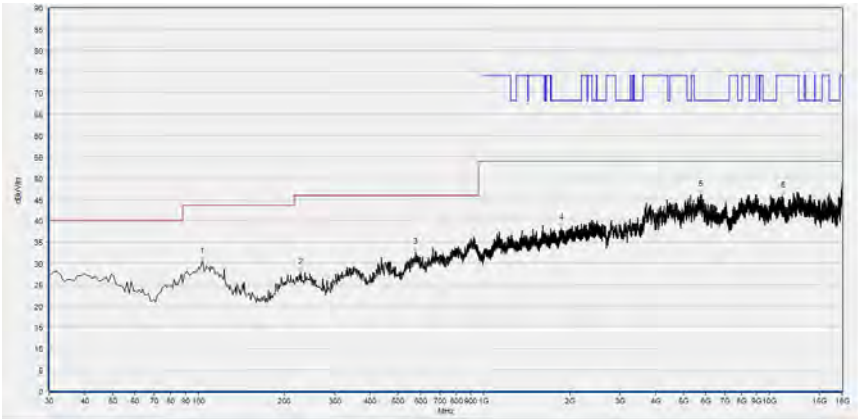
(Antenna Vertical, 30MHz to 18GHz)

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
102.823	29.96	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
240.701	28.17	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
555.295	31.58	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1882.961	38.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5184.637	46.50	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11814.123	46.15	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

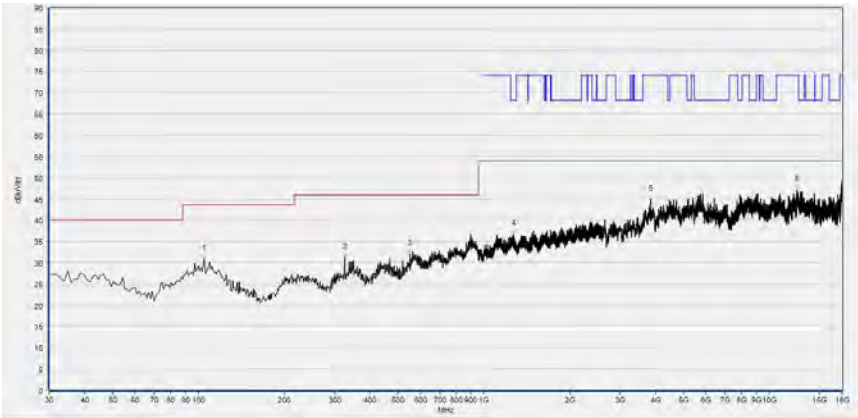
(Antenna Horizontal, 30MHz to 18GHz)



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
102.823	30.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
228.078	27.77	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
576.657	32.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1871.757	38.14	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5748.390	46.13	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11139.468	45.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

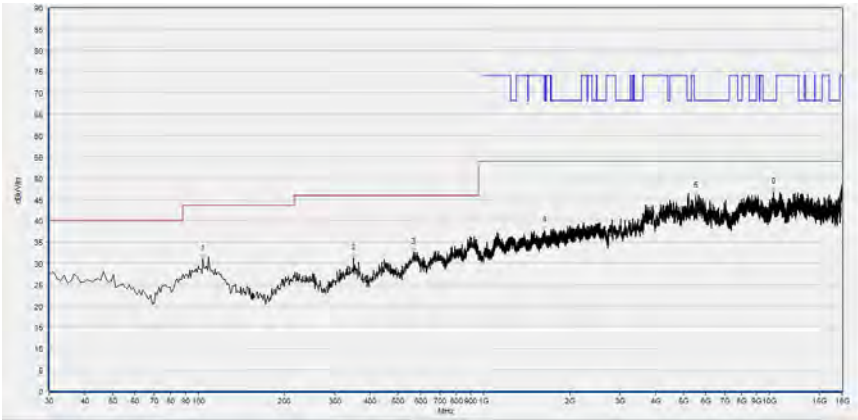
(Antenna Vertical, 30MHz to 18GHz)

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
104.765	30.90	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
325.175	31.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
552.382	32.06	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1272.091	36.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
3847.650	44.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12504.181	47.08	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

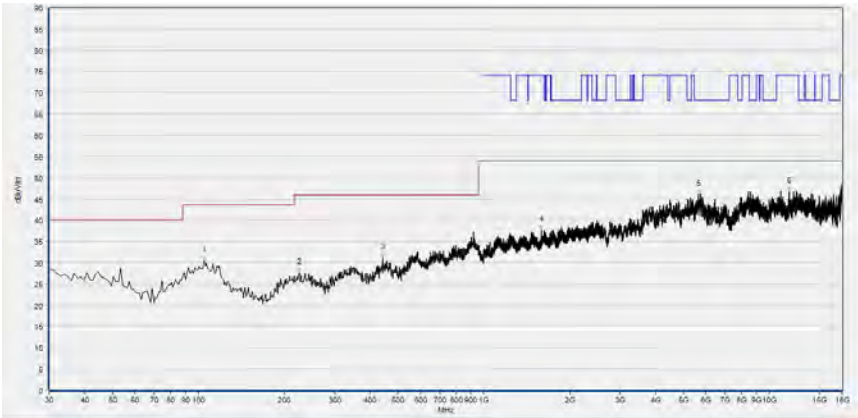
(Antenna Horizontal, 30MHz to 18GHz)



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	30.94	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
349.449	31.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
567.918	32.48	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1625.809	37.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5517.343	45.82	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10347.750	46.81	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

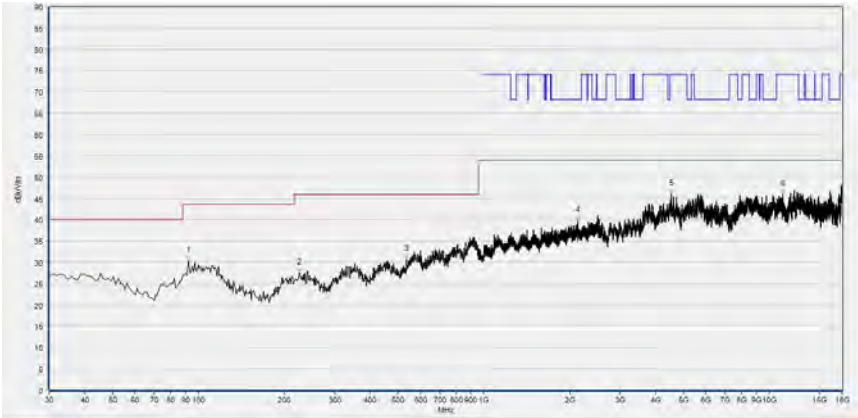
(Antenna Vertical, 30MHz to 18GHz)

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
104.765	30.55	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
225.165	27.69	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
441.692	31.20	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1590.063	37.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5646.729	46.06	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11740.188	46.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

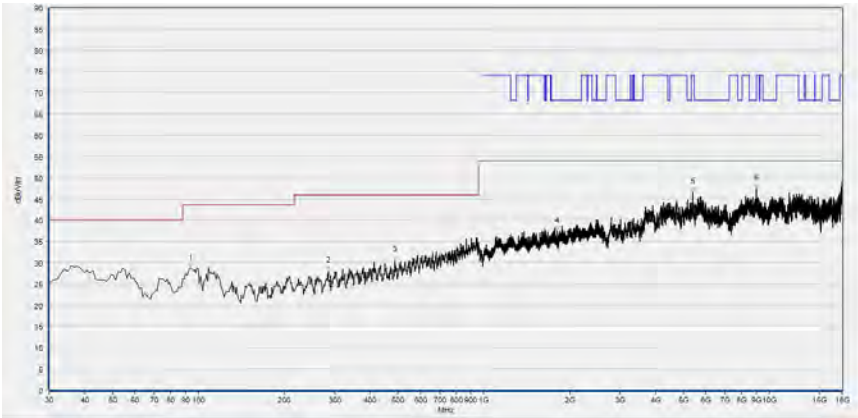
(Antenna Horizontal, 30MHz to 18GHz)



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
92.142	30.32	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
225.165	27.55	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
535.876	30.67	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2132.111	39.79	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4531.546	46.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11148.710	46.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

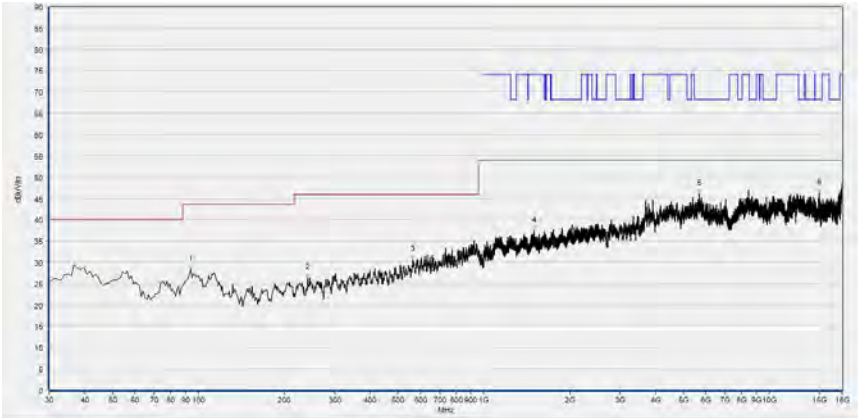
(Antenna Vertical, 30MHz to 18GHz)

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
94.084	28.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
285.365	27.92	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
487.327	30.48	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1810.403	37.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5403.361	46.60	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8989.198	47.35	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

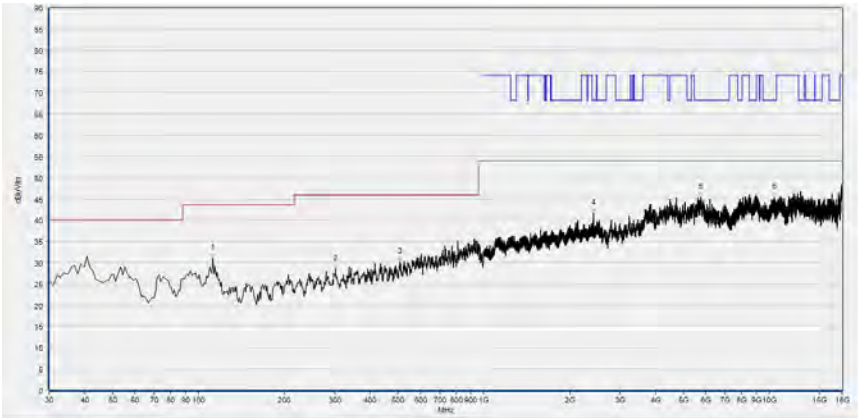
(Antenna Horizontal, 30MHz to 18GHz)



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
94.084	28.34	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
241.672	26.31	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
564.034	30.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1498.299	37.31	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5674.455	46.05	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
15002.561	46.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

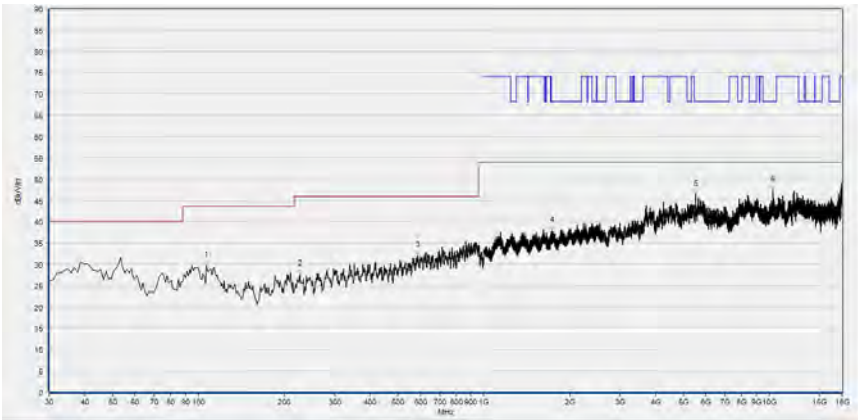
(Antenna Vertical, 30MHz to 18GHz)

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
112.533	30.93	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
301.872	28.54	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
507.718	30.10	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2426.075	41.63	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5763.793	45.47	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10424.765	45.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

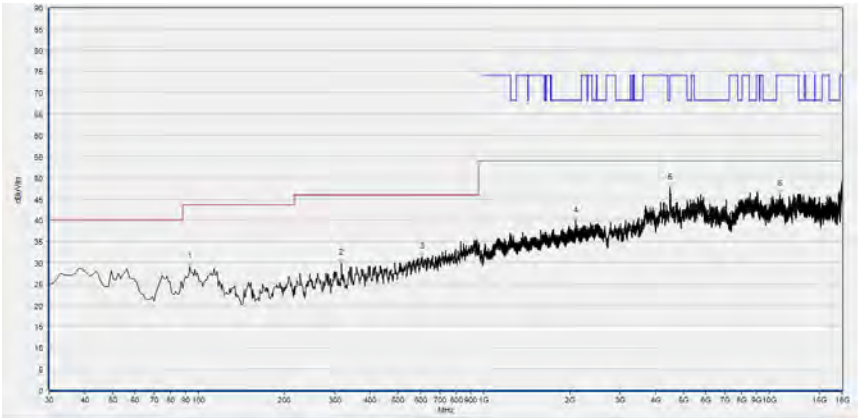
(Antenna Horizontal, 30MHz to 18GHz)



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
106.707	29.60	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
227.107	27.63	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
587.337	32.01	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1738.379	37.80	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5526.585	46.50	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10316.943	47.49	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

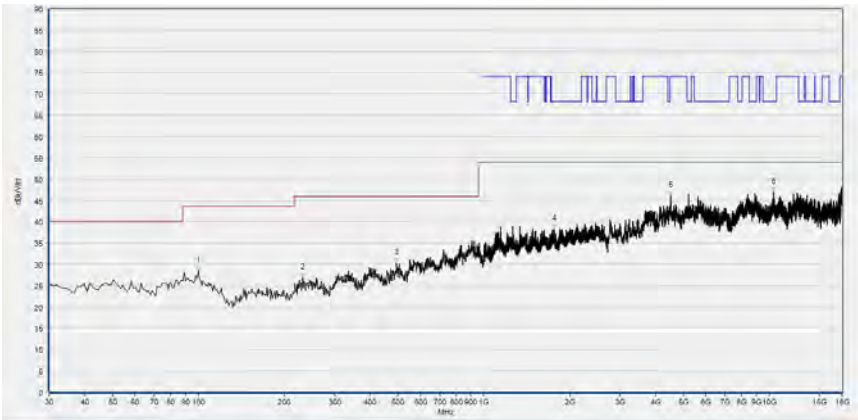
(Antenna Vertical, 30MHz to 18GHz)

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
93.113	29.08	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
317.407	29.86	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
608.699	31.28	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2099.033	39.79	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4491.498	47.67	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10883.777	46.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

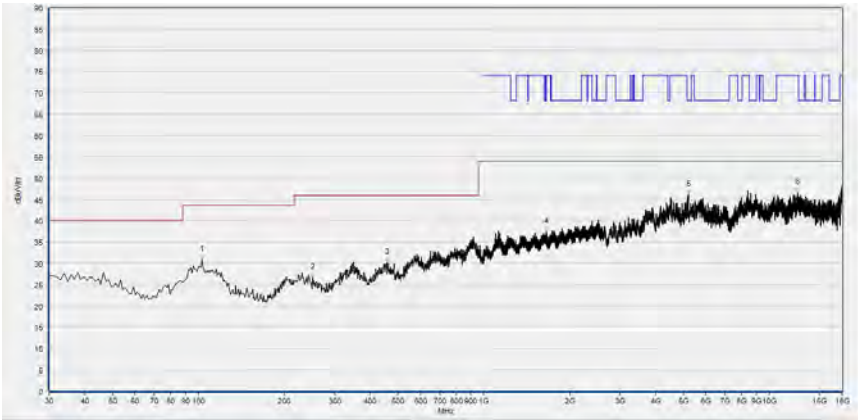


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
99.910	28.47	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
231.962	26.82	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
495.095	30.36	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1762.921	38.27	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4509.982	46.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10332.346	46.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

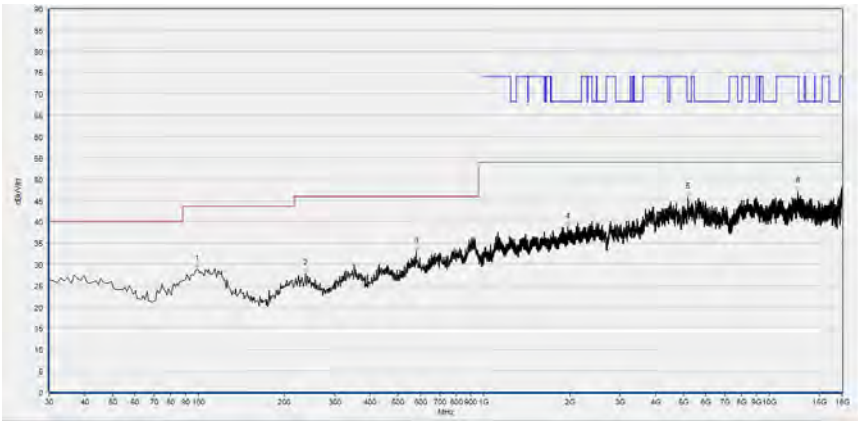
802.11n (HT40) mode

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
102.823	30.83	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
251.381	26.64	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
457.227	30.25	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1654.618	37.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5203.121	46.04	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12599.680	46.59	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

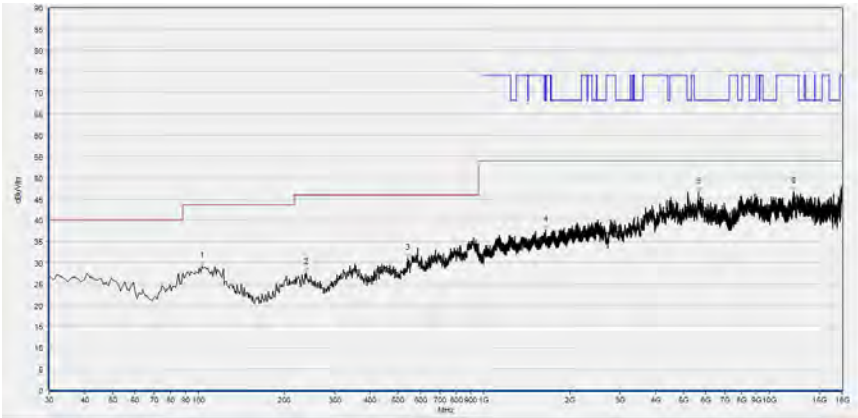
(Antenna Horizontal, 30MHz to 18GHz)



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	28.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
236.817	27.75	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
579.570	33.04	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1973.124	38.76	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5190.798	45.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12618.164	47.04	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

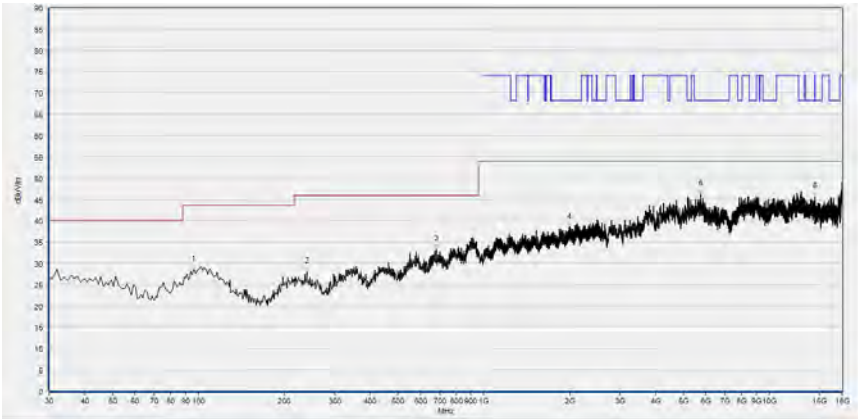
(Antenna Vertical, 30MHz to 18GHz)

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
102.823	29.16	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
238.759	27.67	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
541.702	31.02	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1645.015	37.64	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5659.052	46.53	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12146.829	46.74	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

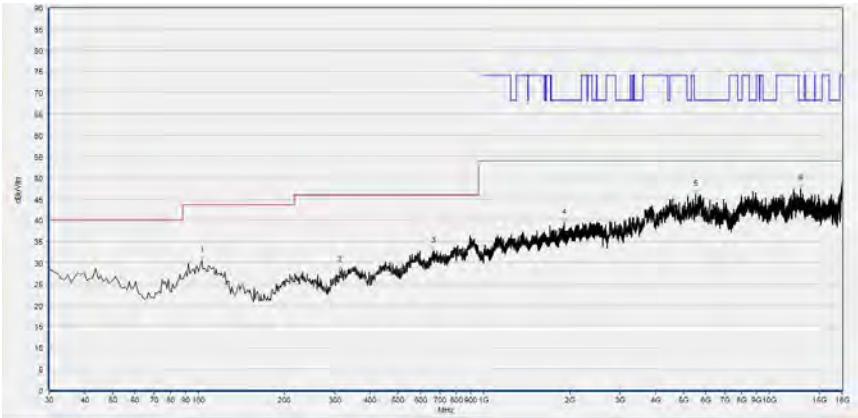
(Antenna Horizontal, 30MHz to 18GHz)



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
96.026	28.55	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
239.730	27.91	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
683.463	33.38	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1988.063	38.34	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5760.712	46.28	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
14460.372	45.55	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

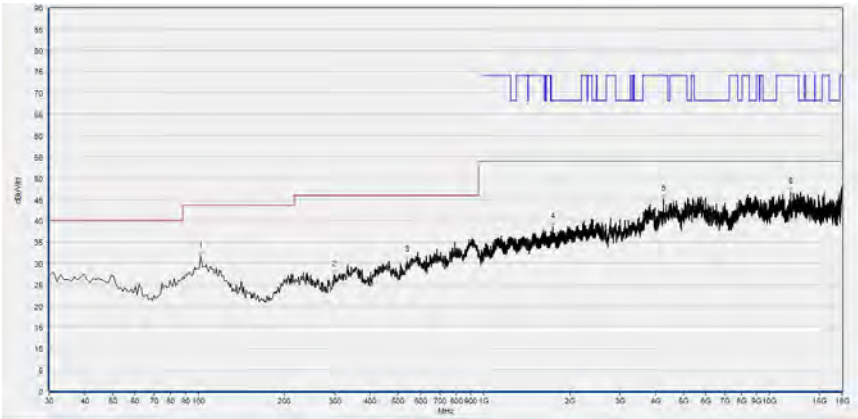
(Antenna Vertical, 30MHz to 18GHz)

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
102.823	30.43	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
313.524	28.17	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
665.986	32.61	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1916.572	39.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5535.827	46.02	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12873.855	47.39	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

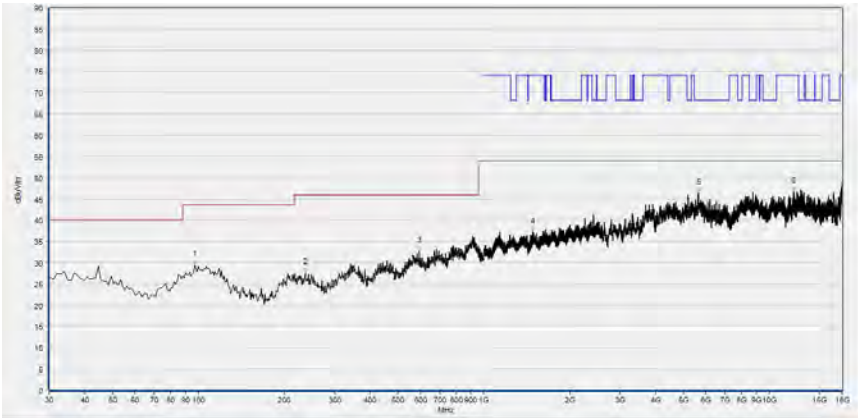
(Antenna Horizontal, 30MHz to 18GHz)



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	31.76	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
298.959	27.35	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
539.760	30.62	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1742.648	38.62	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4254.291	45.14	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11891.138	46.77	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

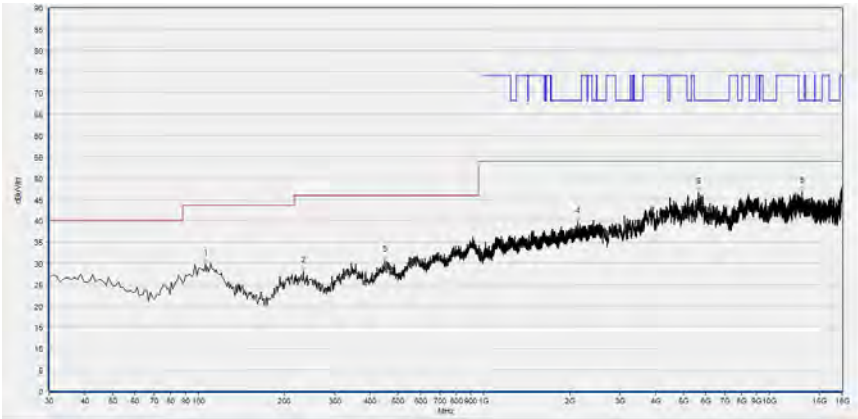
(Antenna Vertical, 30MHz to 18GHz)

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
96.997	29.48	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
236.817	27.62	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
595.105	32.61	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1487.629	37.25	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5640.568	46.35	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12149.910	46.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

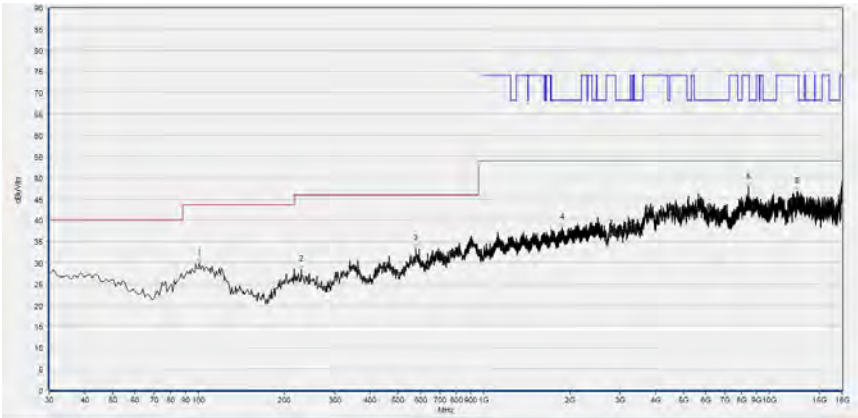
(Antenna Horizontal, 30MHz to 18GHz)



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
105.736	29.86	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
232.933	28.20	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
449.459	30.59	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2129.443	39.72	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5665.213	46.73	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13067.934	46.94	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

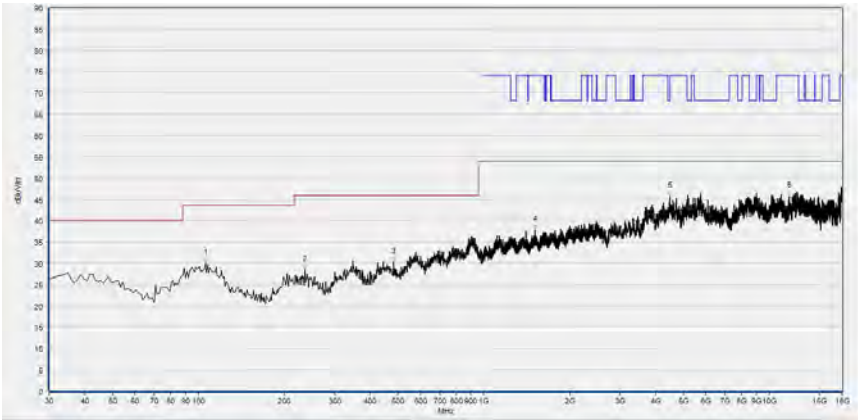
(Antenna Vertical, 30MHz to 18GHz)

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	29.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
229.049	28.38	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
577.628	33.33	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1882.427	38.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8437.768	47.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12544.229	46.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

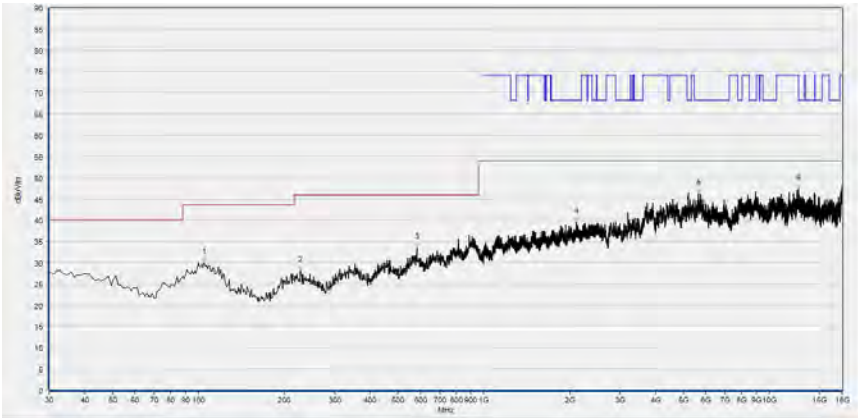
(Antenna Horizontal, 30MHz to 18GHz)



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
105.736	30.03	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
235.846	28.50	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
483.443	30.25	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1507.903	37.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4485.337	45.72	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11746.349	45.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

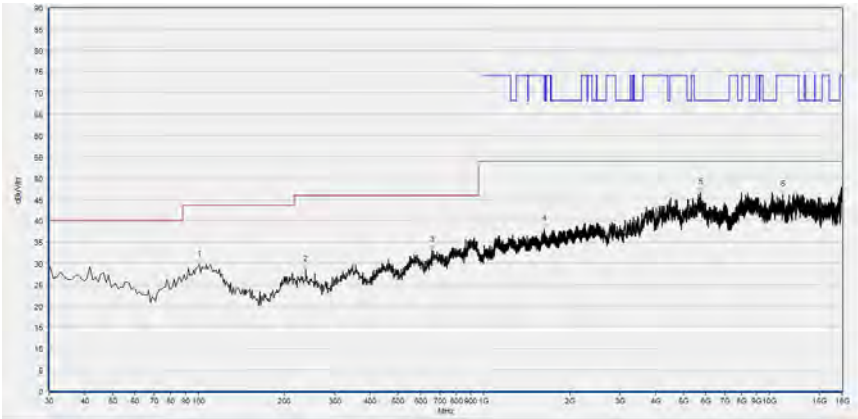
(Antenna Vertical, 30MHz to 18GHz)

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
104.765	30.08	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
228.078	28.10	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
582.482	33.58	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2103.835	39.54	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5640.568	46.33	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12689.018	47.37	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

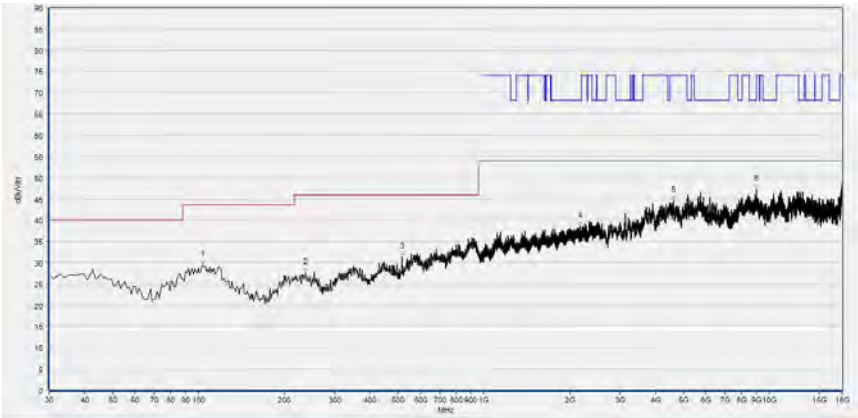
(Antenna Horizontal, 30MHz to 18GHz)



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	29.67	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
237.788	28.54	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
658.218	33.08	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1629.543	38.10	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5754.551	46.57	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11136.387	46.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

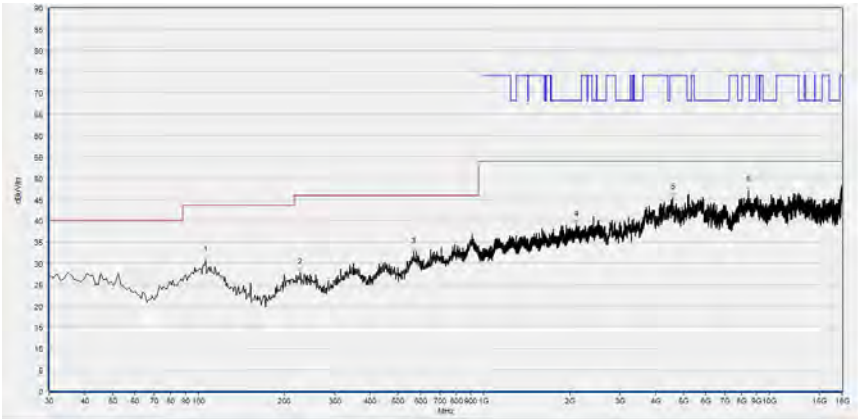
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 142



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
103.794	29.54	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
236.817	27.64	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
516.456	31.26	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2172.658	38.49	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4611.642	44.58	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9004.601	47.35	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

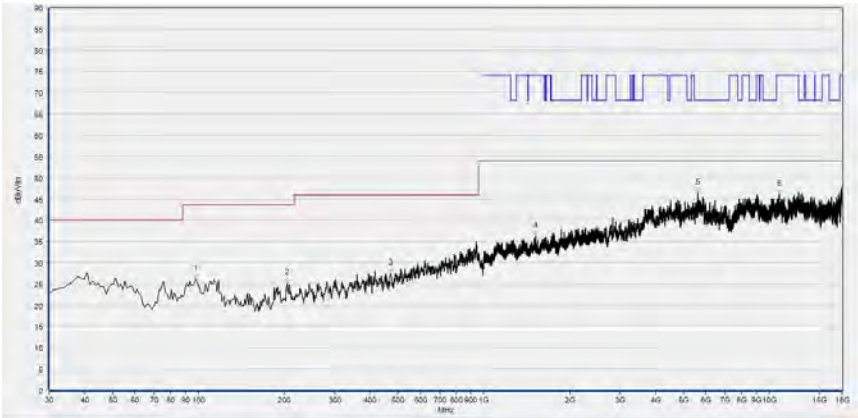
(Antenna Horizontal, 30MHz to 18GHz)



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
105.736	30.62	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
227.107	27.75	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
567.918	32.76	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2113.971	39.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4583.917	45.39	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8440.848	47.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

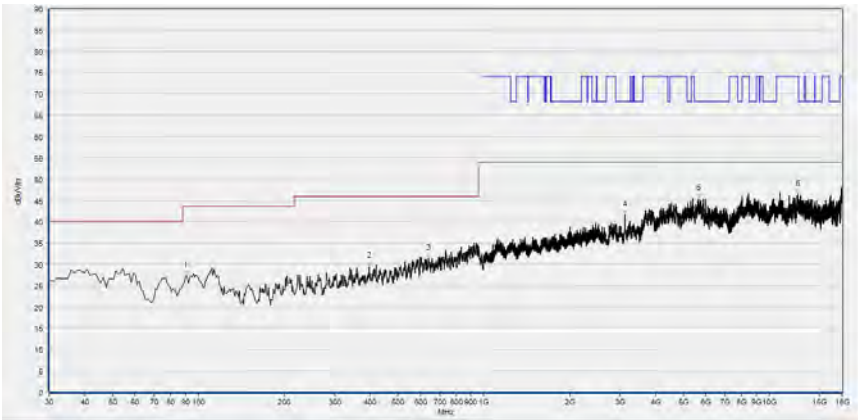
(Antenna Vertical, 30MHz to 18GHz)

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
97.968	26.13	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
204.775	25.20	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
470.821	27.48	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1515.905	36.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5628.246	46.35	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10859.132	46.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

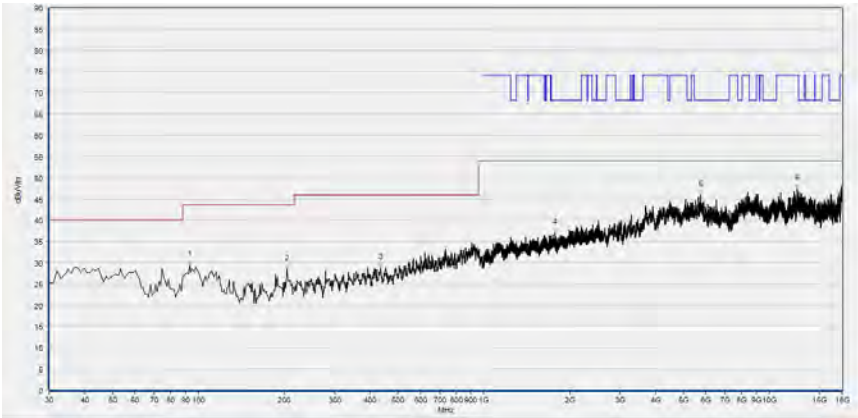
(Antenna Horizontal, 30MHz to 18GHz)



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
90.200	27.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
396.056	29.51	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
639.770	31.29	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
3123.705	41.63	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5659.052	45.42	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12608.922	46.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

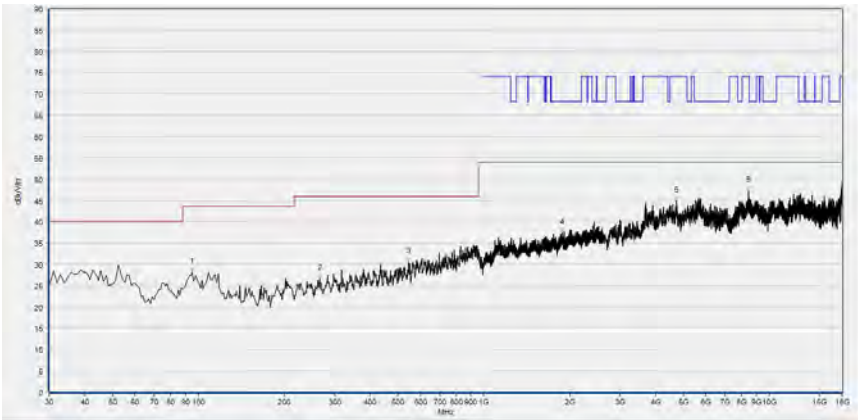
(Antenna Vertical, 30MHz to 18GHz)

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
93.113	29.58	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
204.775	28.54	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
434.895	28.81	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1775.192	37.02	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5745.309	45.94	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12522.665	47.49	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

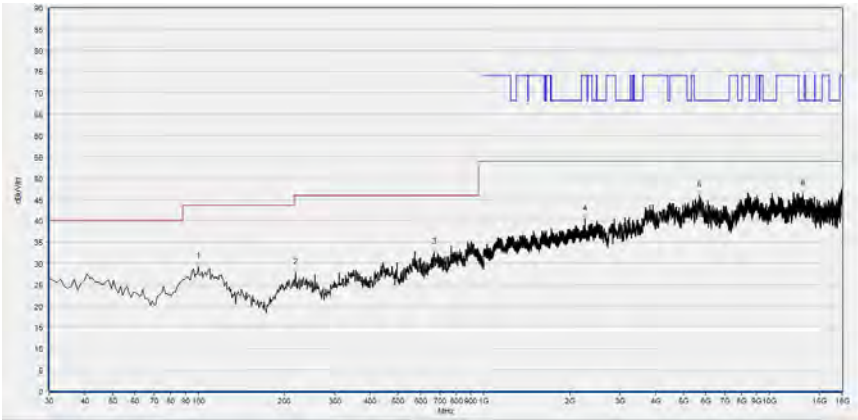


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
95.055	28.22	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
265.946	26.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
544.615	30.54	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1876.025	37.31	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4737.948	44.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8440.848	47.22	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

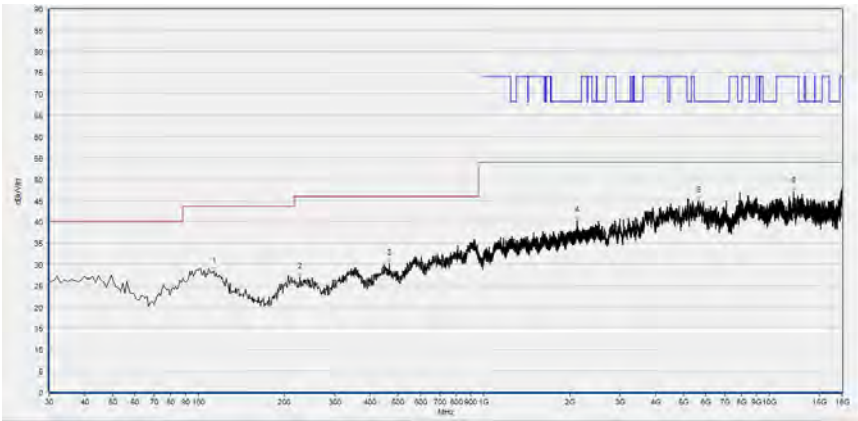
802.11ac (VHT80) Mode

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
99.910	29.17	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
219.339	27.86	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
669.870	32.51	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2262.821	40.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5686.777	45.99	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13148.030	46.23	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

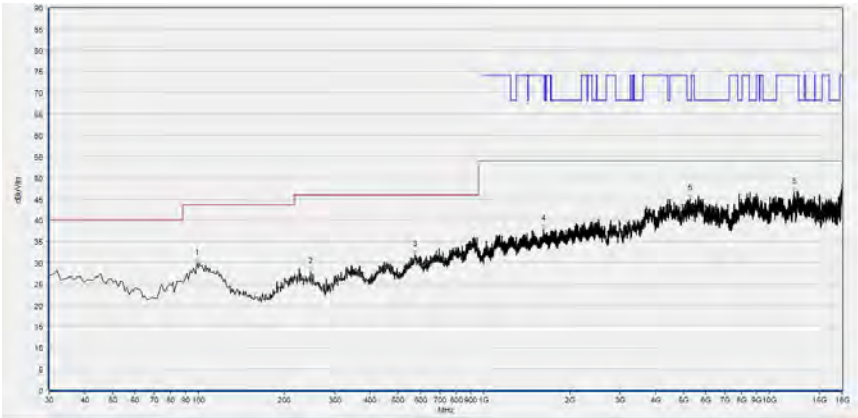
(Antenna Horizontal, 30MHz to 18GHz)



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
113.504	28.37	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
226.136	26.95	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
466.937	30.14	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2125.175	40.23	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5662.132	44.87	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12189.958	47.15	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

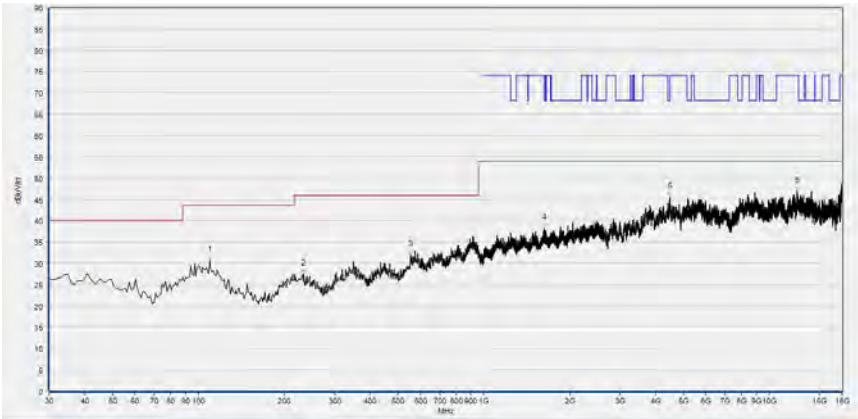
(Antenna Vertical, 30MHz to 18GHz)

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
98.939	29.79	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
247.497	27.81	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
574.715	31.87	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1615.138	37.83	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5270.894	45.09	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12217.684	46.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

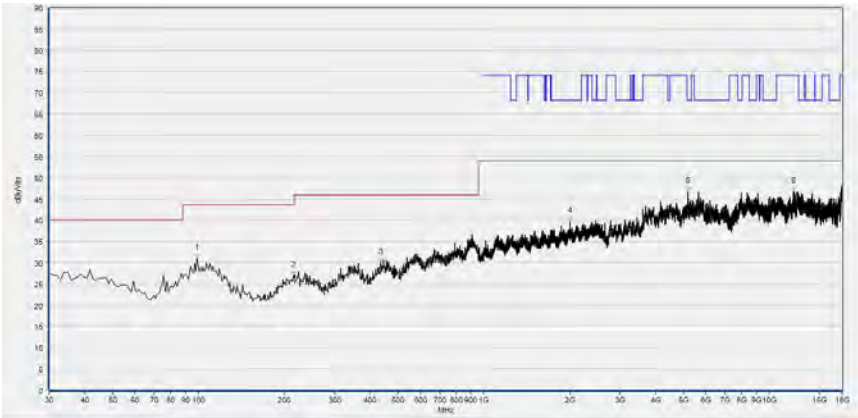
(Antenna Horizontal, 30MHz to 18GHz)



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
109.620	30.60	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
233.904	27.51	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
553.353	32.05	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1631.677	38.14	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4482.256	45.65	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12488.778	46.95	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

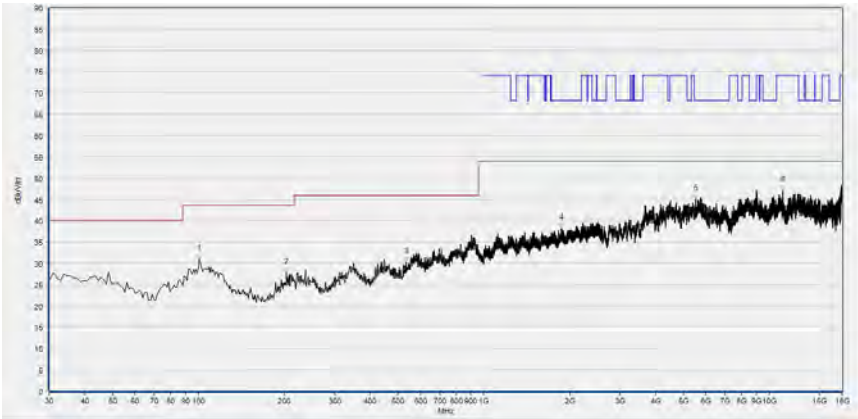
(Antenna Vertical, 30MHz to 18GHz)

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
98.939	30.98	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
215.455	26.91	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
434.895	29.94	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2005.669	39.64	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5187.718	46.77	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12174.555	46.84	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

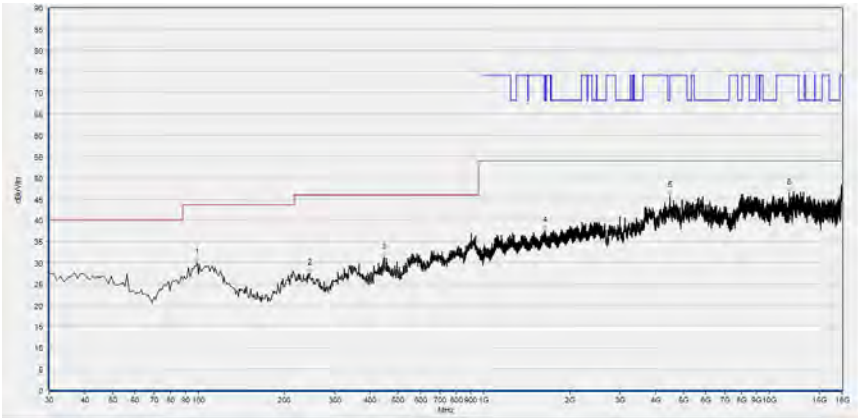
(Antenna Horizontal, 30MHz to 18GHz)



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	31.05	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
203.804	27.86	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
533.934	30.30	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1873.891	38.21	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5532.747	45.03	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11142.549	47.02	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

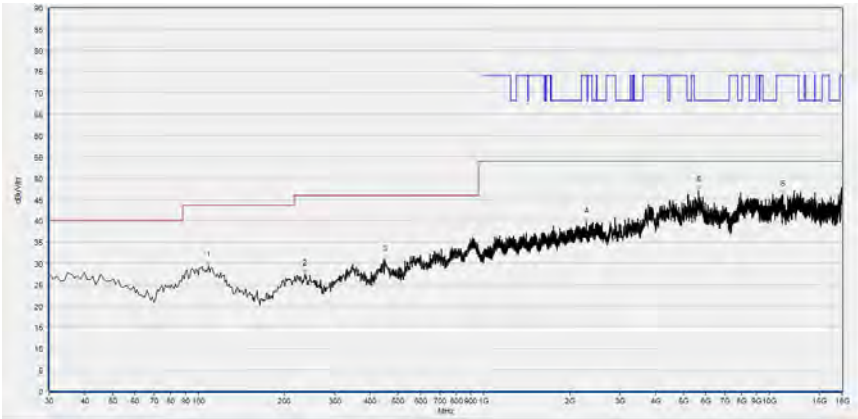
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 122



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	29.93	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
245.556	27.54	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
446.547	31.20	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1635.412	37.56	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4491.498	45.74	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11749.430	46.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

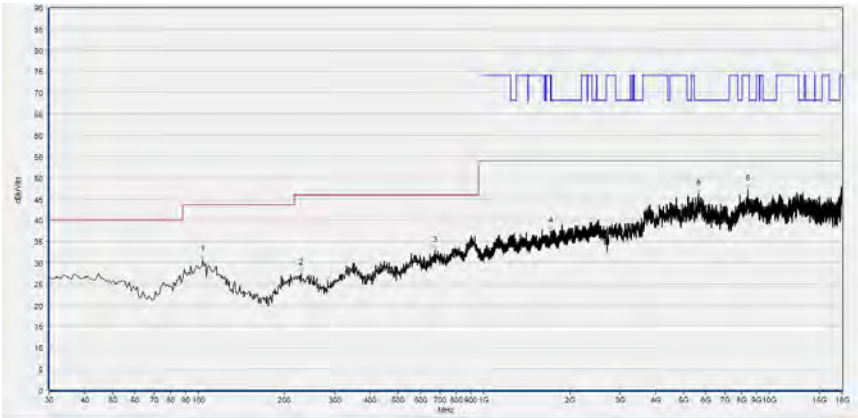
(Antenna Horizontal, 30MHz to 18GHz)



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
108.649	29.51	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
235.846	27.42	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
451.401	30.79	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2281.494	39.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5646.729	47.03	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11139.468	46.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

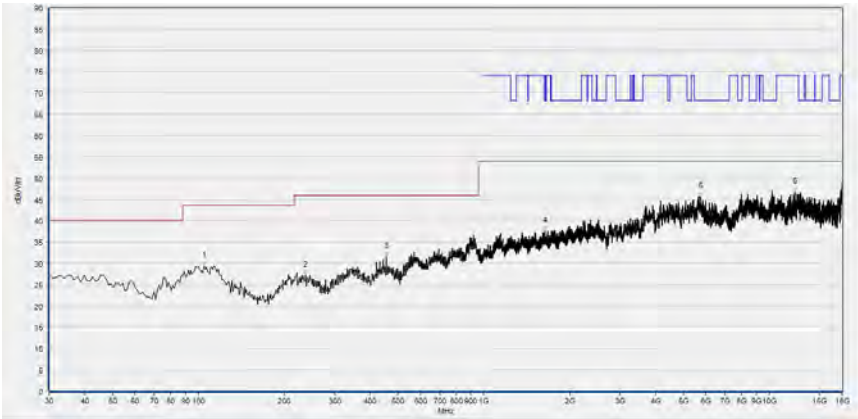
(Antenna Vertical, 30MHz to 18GHz)

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
103.794	30.73	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
229.049	27.50	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
672.783	32.82	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1717.573	37.32	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5643.649	46.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8394.639	47.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

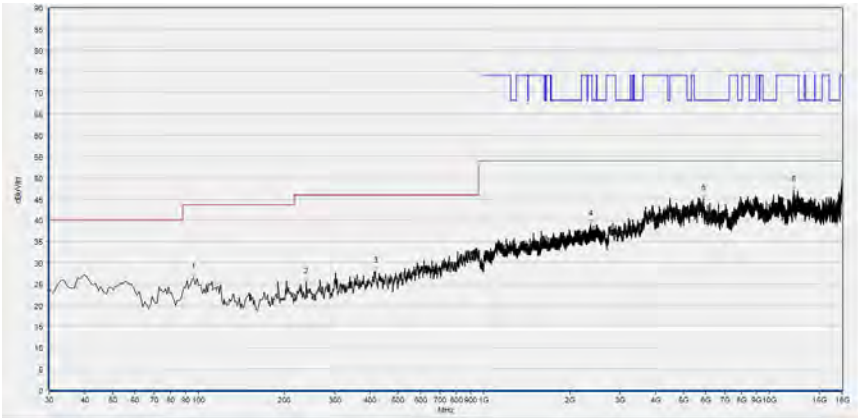
(Antenna Horizontal, 30MHz to 18GHz)



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	29.32	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
236.817	27.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
455.285	31.49	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1635.945	37.47	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5751.470	45.58	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12316.263	46.83	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

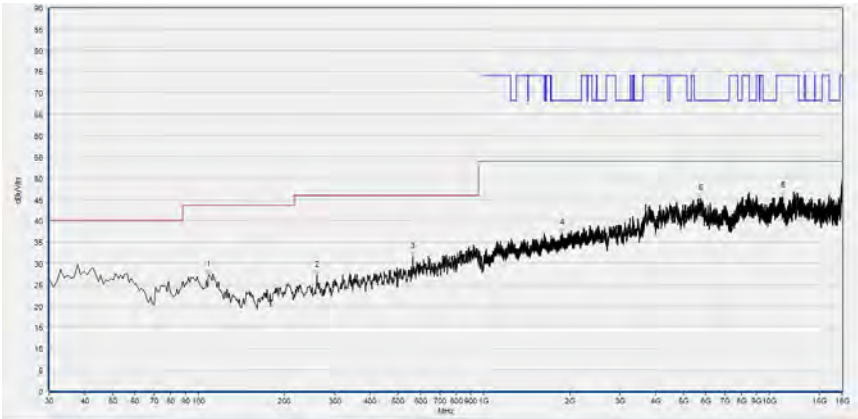
(Antenna Vertical, 30MHz to 18GHz)

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
96.026	26.54	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
238.759	25.39	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
417.417	28.01	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2361.521	39.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5868.534	45.15	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12186.877	47.14	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
108.649	27.29	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
260.120	27.15	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
565.005	31.58	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1877.626	37.06	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5751.470	45.23	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11142.549	45.83	N/A	N/A	74.00	N/A	54.00	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	±2.22dB
Power Spectral Density	±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.
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 C63.10-2013and 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 Analzyer	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	2021.10.20	2022.10.19

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

4.4Radiated 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
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	S020180L3203	Tonscend	2021.07.16	2022.07.15
18-26.5GHz pre-Amplifier	46732	S10M100L3802	Tonscend	2021.07.16	2022.07.15
26-40GHz pre-Amplifier	56774	S40M400L4002	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

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