



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	-6.16	0.07	-6.09	11	PASS
46	5230	-3.11		-3.04		
54	5270	-1.47		-1.40		
62	5310	-1.08		-1.01		
102	5510	-2.62		-2.55		
126	5630	-1.61		-1.54		
142	5710	-2.23		-2.16		
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Duty Factor	Corrected (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
142	5710	-4.97	0.07	-4.90	30	PASS
151	5755	-6.06		-5.99		
155	5795	-6.37		-6.30		

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))

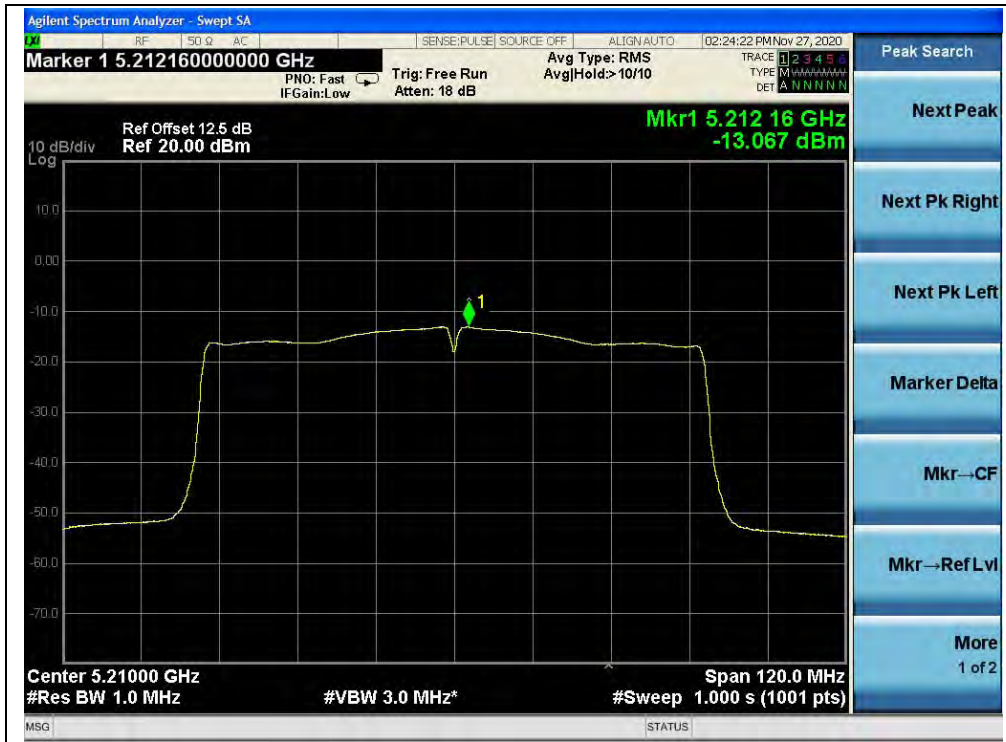


802.11ac (VHT80) Mode

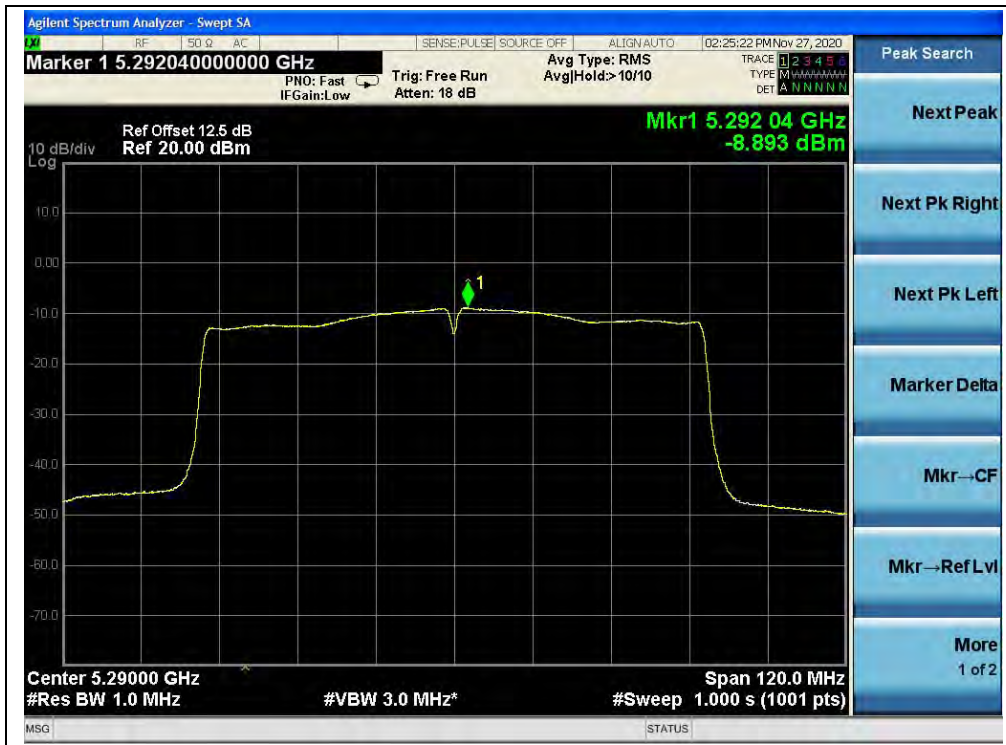
A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Corrected PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
42	5210	-13.07	0.13	-12.94	11	PASS
58	5290	-8.89		-8.76		
106	5530	-5.55		-5.42		
122	5610	-4.95		-4.82		
138	5690	-4.94		-4.81		
Channel	Frequency (MHz)	Measured PSD (dBm/500KHz)	Duty Factor	Corrected PSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
138	5690	-7.81	0.13	-7.68	30	PASS
155	5775	-8.16		-8.03		

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%	5.00	+20(Ref)	23	4.440
100%		-30	31	5.985
100%		-20	29	5.598
100%		-10	26	5.019
100%		0	25	4.826
100%		+10	22	4.247
100%		+20	20	3.861
100%		+30	23	4.440
100%		+40	26	5.019
100%		+50	23	4.440
85%		4.25	+20	30
115%	5.50	+20	28	5.405



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
85%	4.25	+20	21	3.992
115%	5.50	+20	19	3.612

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	30	5.455
100%		-10	29	5.273
100%		0	22	4.000
100%		+10	19	3.455
100%		+20	23	4.182
100%		+30	32	5.818
100%		+40	35	6.364
100%		+50	25	4.545
85%	4.25	+20	30	5.455
115%	5.50	+20	27	4.909



<b>U-NII-3 (Ch. 149)</b>				
<b>5745MHz</b>				
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	27	4.700
100%		-10	21	3.655
100%		0	30	5.222
100%		+10	25	4.352
100%		+20	26	4.526
100%		+30	26	4.526
100%		+40	28	4.874
100%		+50	28	4.874
85%		4.25	+20	29
115%	5.50	+20	31	5.396

## 2.7. Conducted Emission

### 2.7.1. Requirement

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

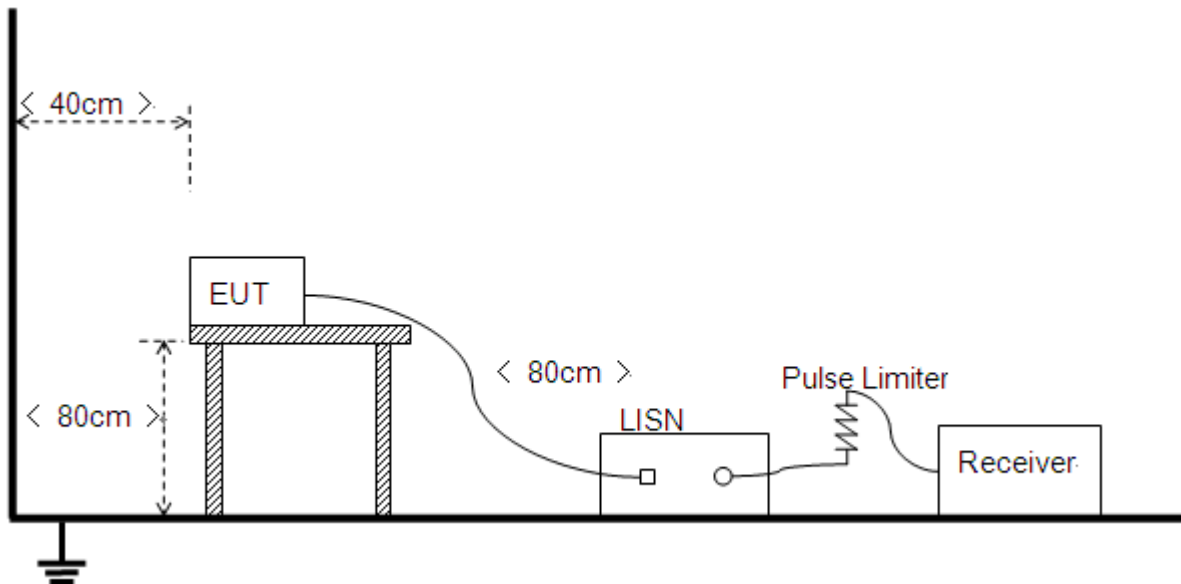
Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

**Note:**

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

### 2.7.2. Test Description

**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+PC+PC ADAPTER+WIFI TX

Test Voltage: AC 120V/60Hz

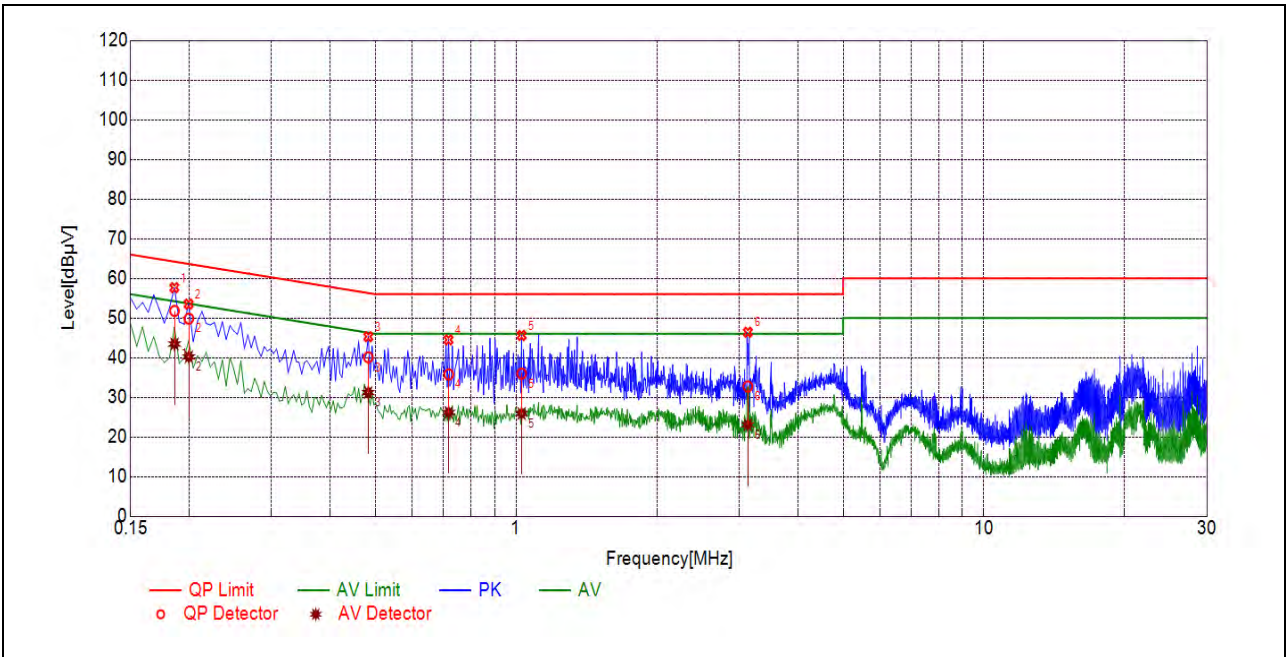
The measurement results are obtained as below:

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

$U_R$ : Receiver Reading

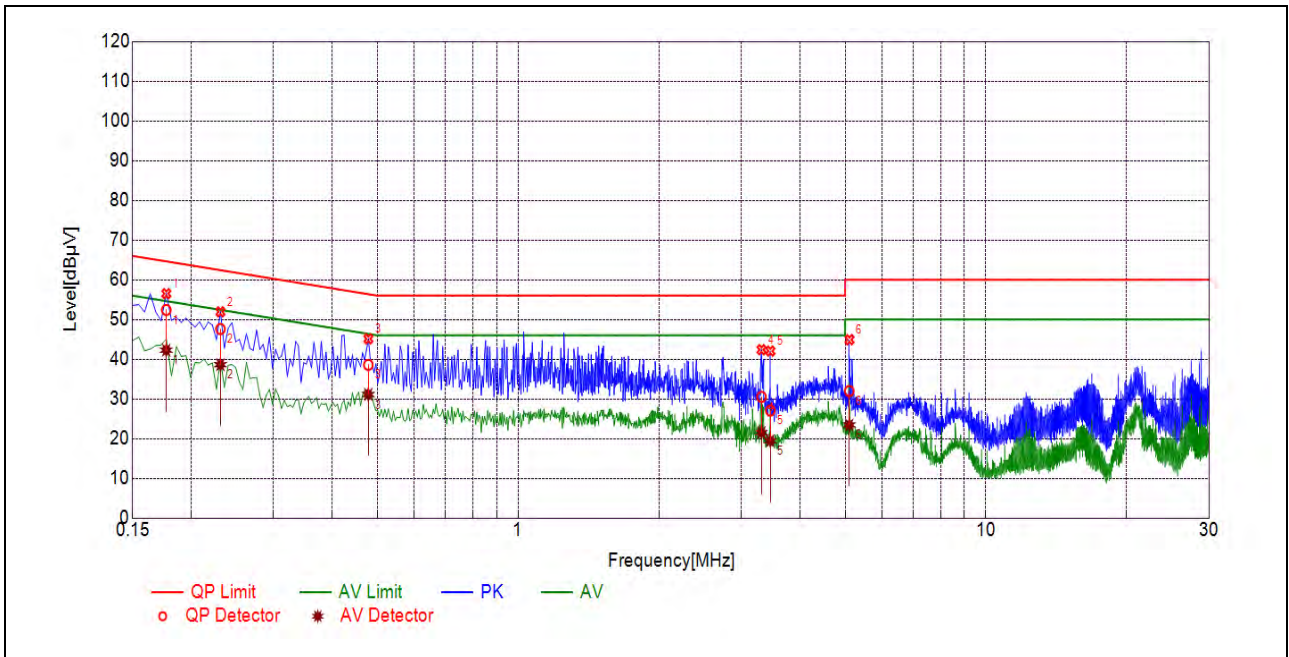
$A_{\text{Factor}}$ : Voltage division factor of LISN

**B.Test Plot:**



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1861	51.79	43.43	64.21	54.21	Line	PASS
2	0.1997	49.86	40.18	63.63	53.63		PASS
3	0.4829	40.09	31.21	56.29	46.29		PASS
4	0.7175	35.79	26.17	56.00	46.00		PASS
5	1.0274	35.99	25.92	56.00	46.00		PASS
6	3.1281	32.74	23.07	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	0.1769	52.40	42.28	64.63	54.63	Neutral	PASS
2	0.2310	47.61	38.61	62.41	52.41		PASS
3	0.4783	38.57	31.12	56.37	46.37		PASS
4	3.3131	30.52	21.52	56.00	46.00		PASS
5	3.4598	27.08	19.46	56.00	46.00		PASS
6	5.1040	31.98	23.43	60.00	50.00		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

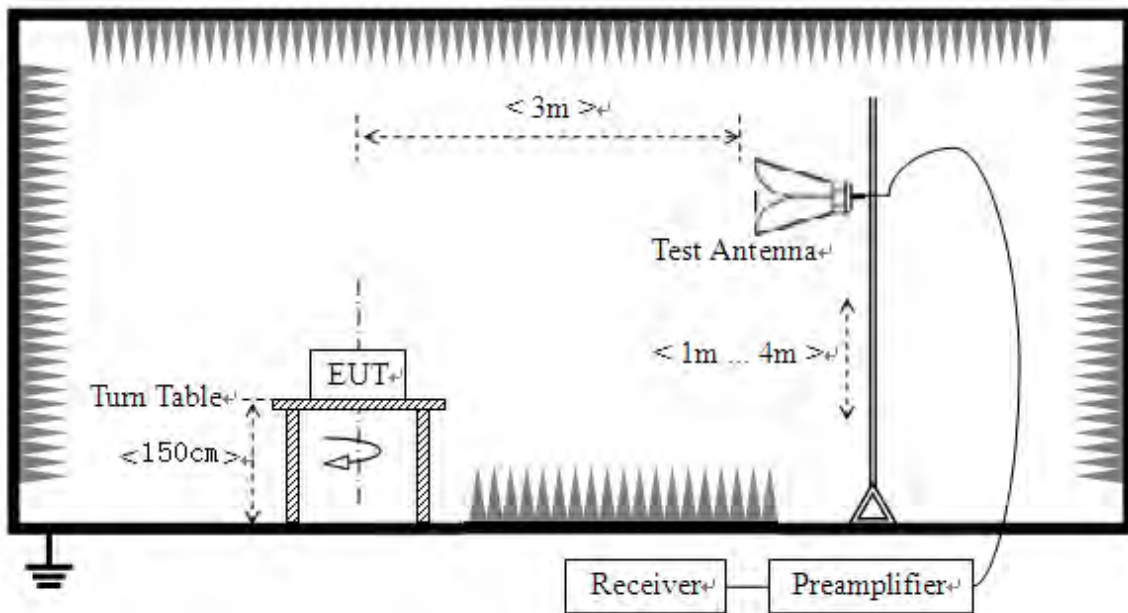
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following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

Frequency (MHz)	Field Strength ( $\mu\text{V}/\text{m}$ )	Measurement Distance (m)
0.009 - 0.490	2400/F(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:

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

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

$G_{\text{preamp}}$ : Preamplifier Gain;  $A_{\text{Factor}}$ : 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.

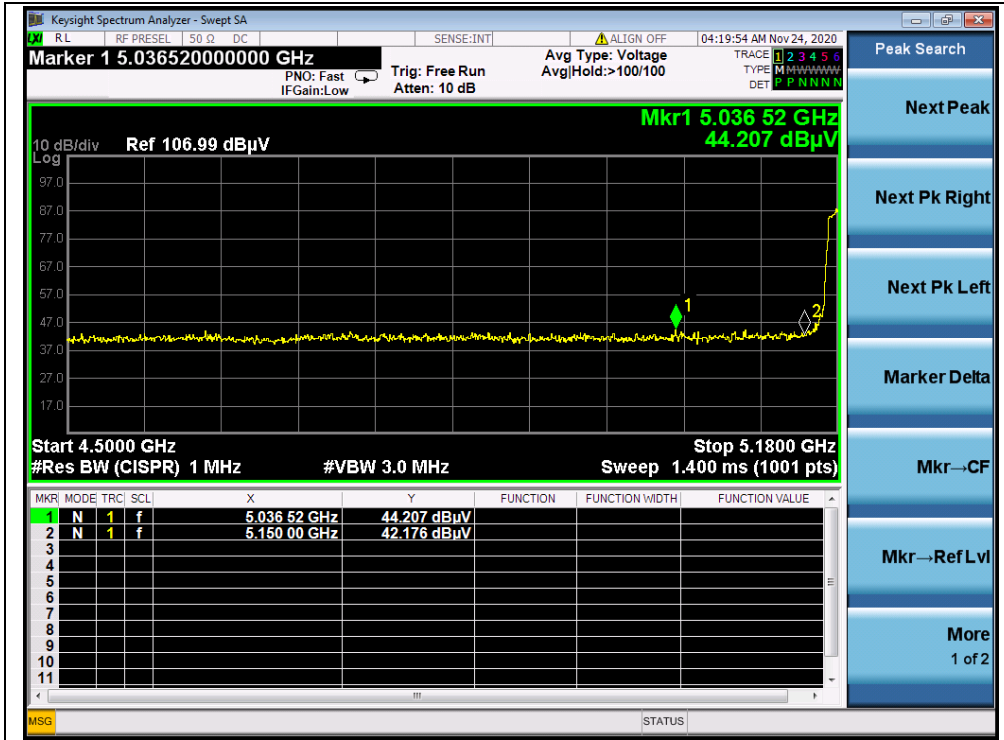
### 802.11a Mode

#### A. Test Verdict:

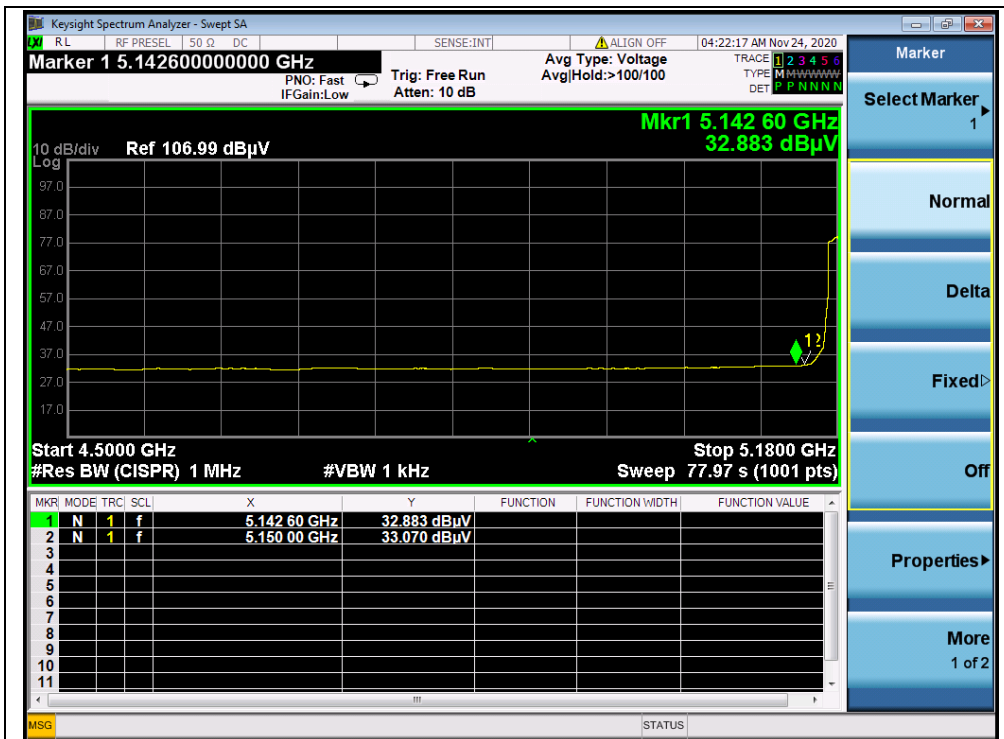
Channel	Frequency (MHz)	Detector	Receiver Reading	$A_T$ (dB)	$A_{\text{Factor}}$ (dB@3m)	Max. Emission E (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Verdict
		PK/ AV	$U_R$ (dB $\mu$ V)					
36	5036.52	PK	44.21	-16.92	32.20	59.49	74	PASS
36	5150.00	AV	33.07	-16.92	32.20	48.35	54	PASS
64	5350.00	PK	43.36	-16.80	32.20	58.76	74	PASS
64	5350.00	AV	32.80	-16.80	32.20	48.20	54	PASS
100	5470.00	PK	41.06	-16.64	32.20	56.62	68.23	PASS
100	5460.00	AV	31.21	-16.64	32.20	46.77	54	PASS
144	5742.80	PK	43.76	-16.64	32.20	59.32	68.23	PASS
144	5726.30	AV	33.39	-16.64	32.20	48.95	54	PASS
149	5725.00	PK	43.45	-16.23	32.20	59.42	122.23	PASS
165	5850.00	PK	40.78	-16.23	32.20	56.75	122.23	PASS



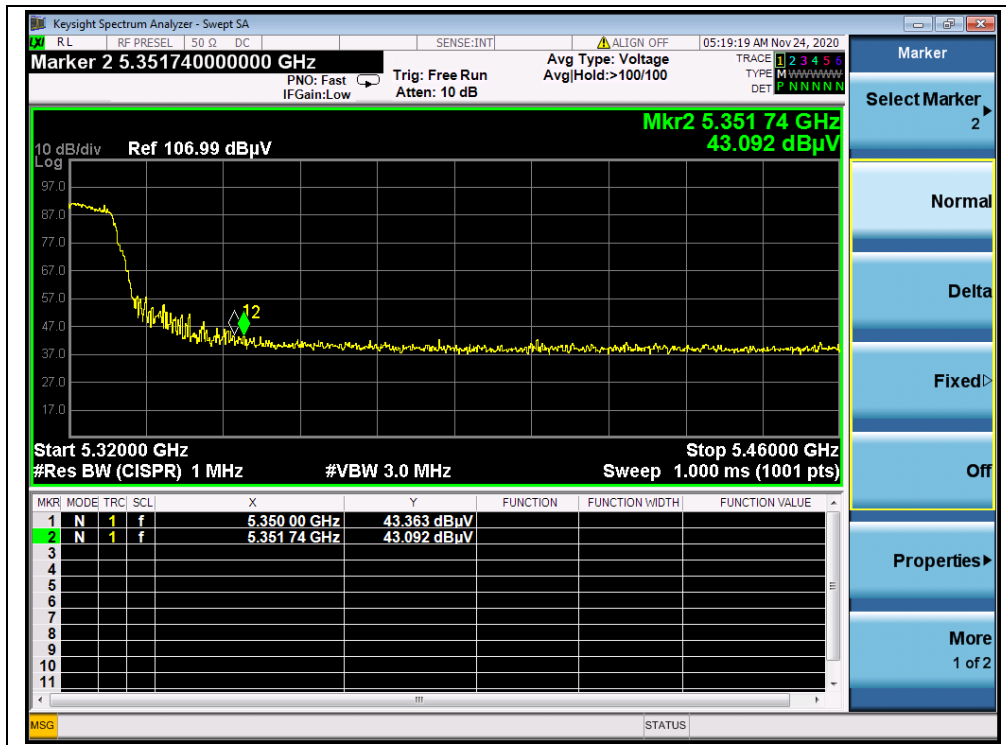
B.Test Plot:



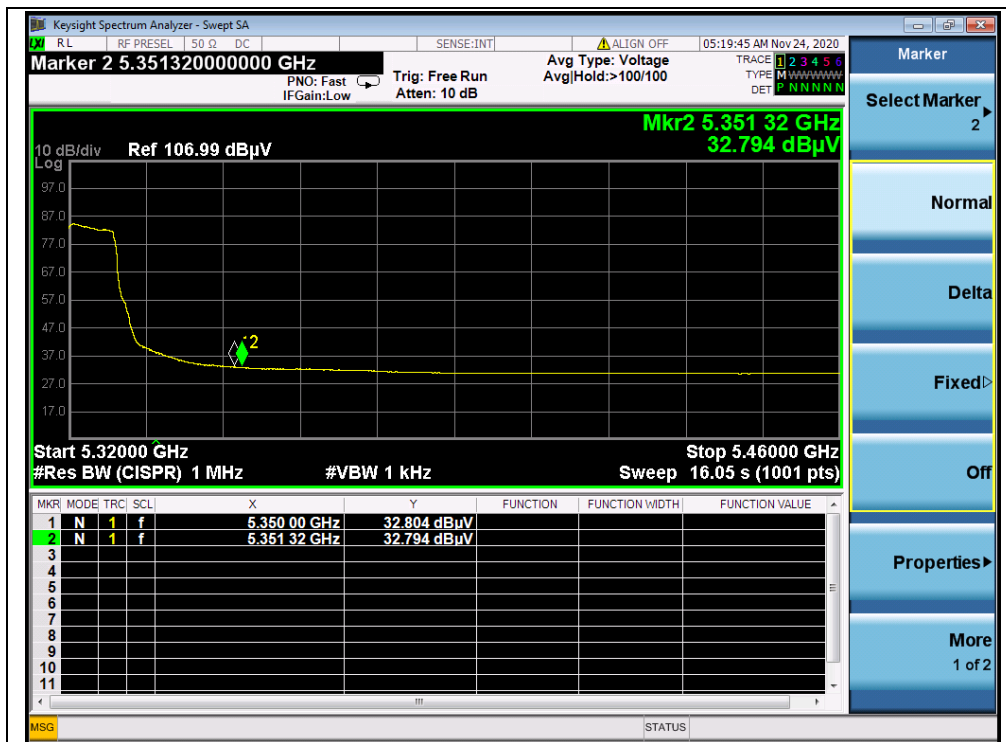
(PEAK, Channel 36, 802.11a)



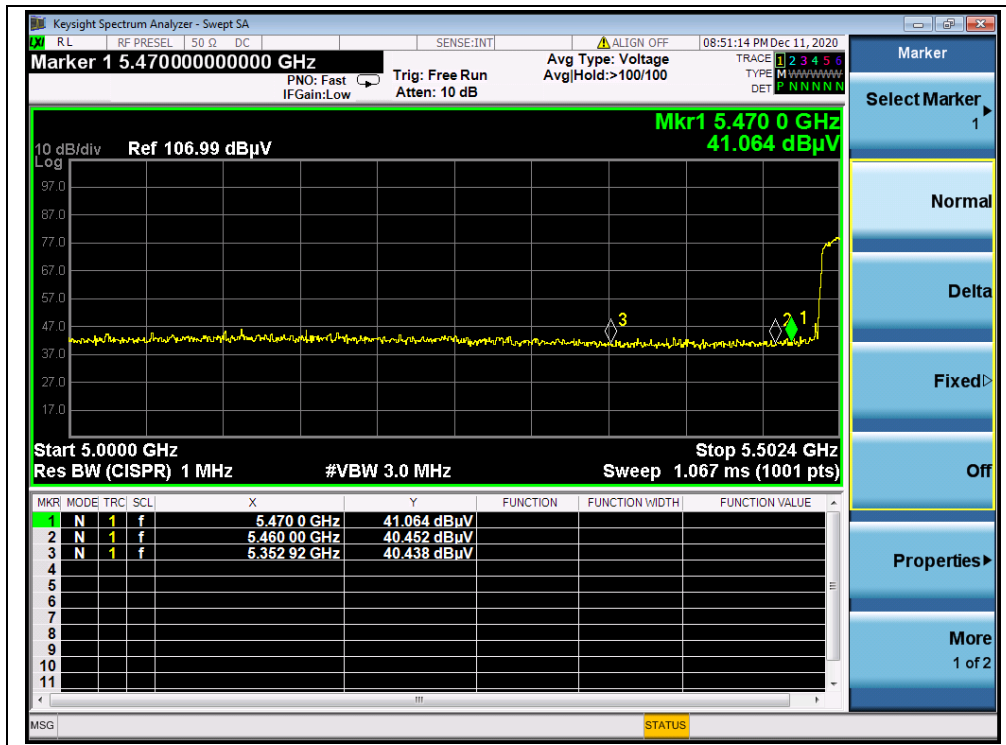
(AVERAGE, Channel 36, 802.11a)



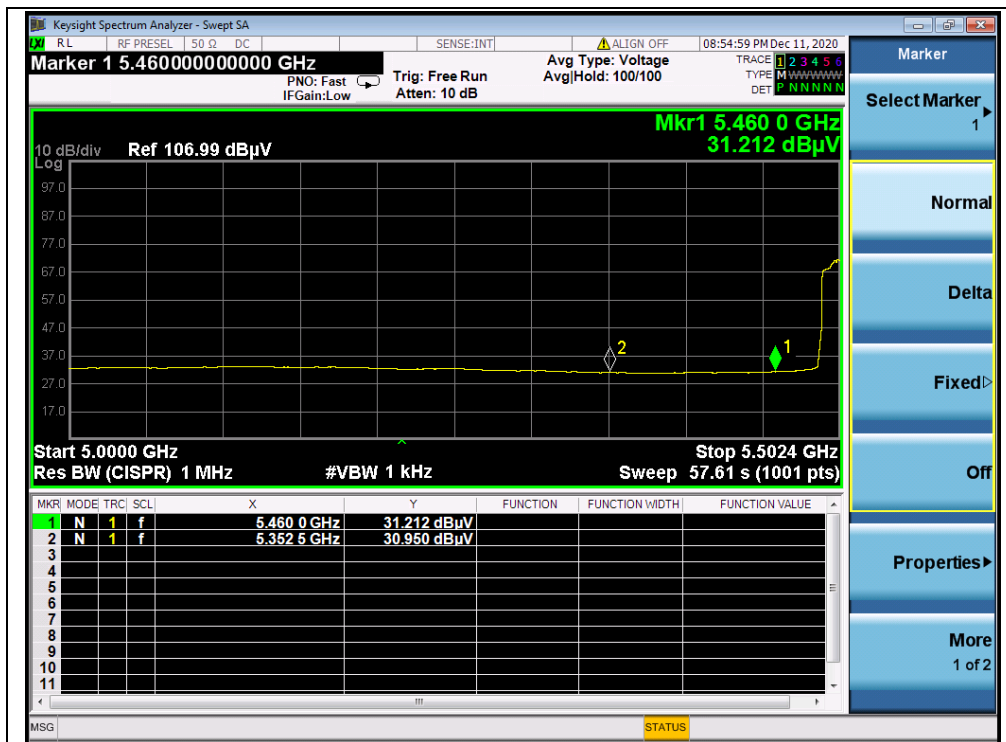
(PEAK, Channel 64, 802.11a)



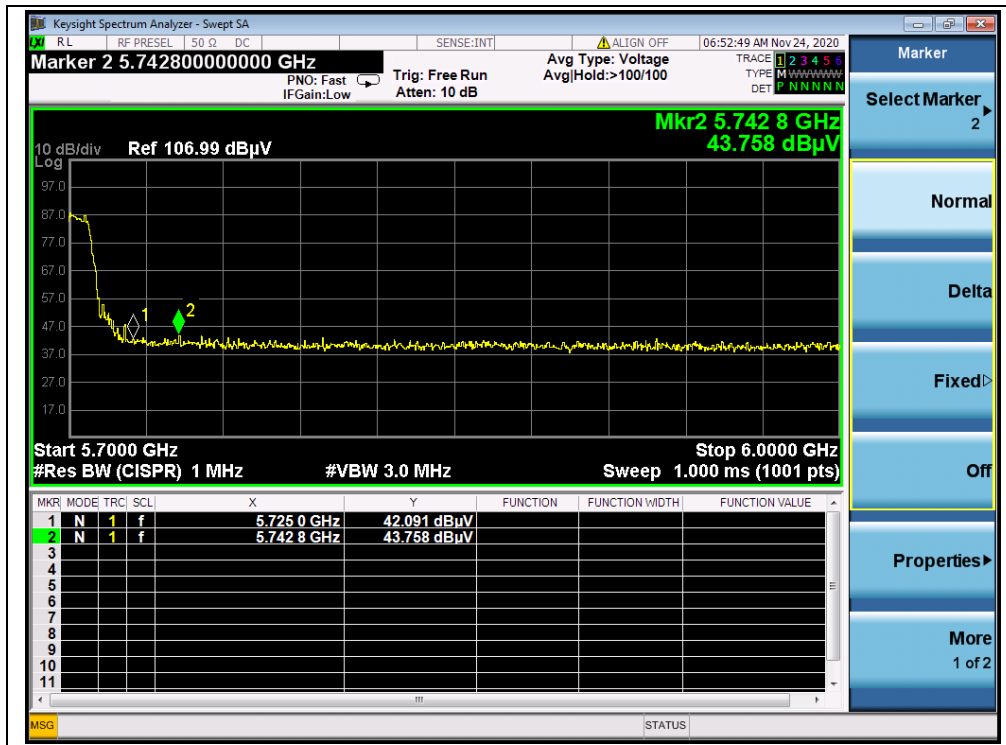
(AVERAGE, Channel 64, 802.11a)



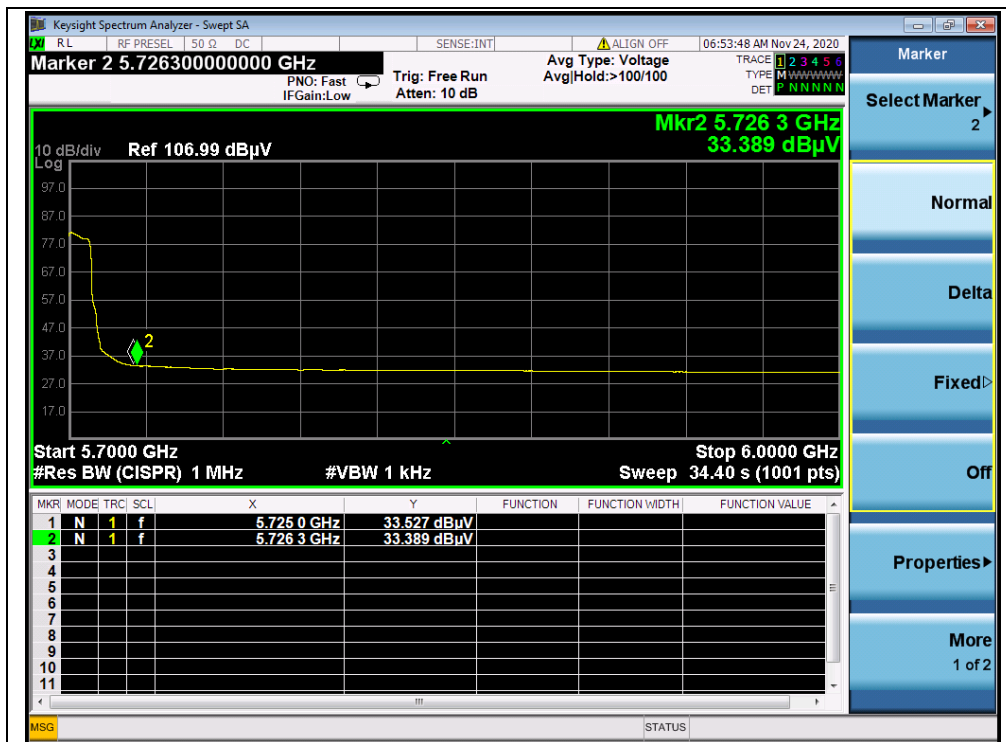
(PEAK, Channel100, 802.11a)



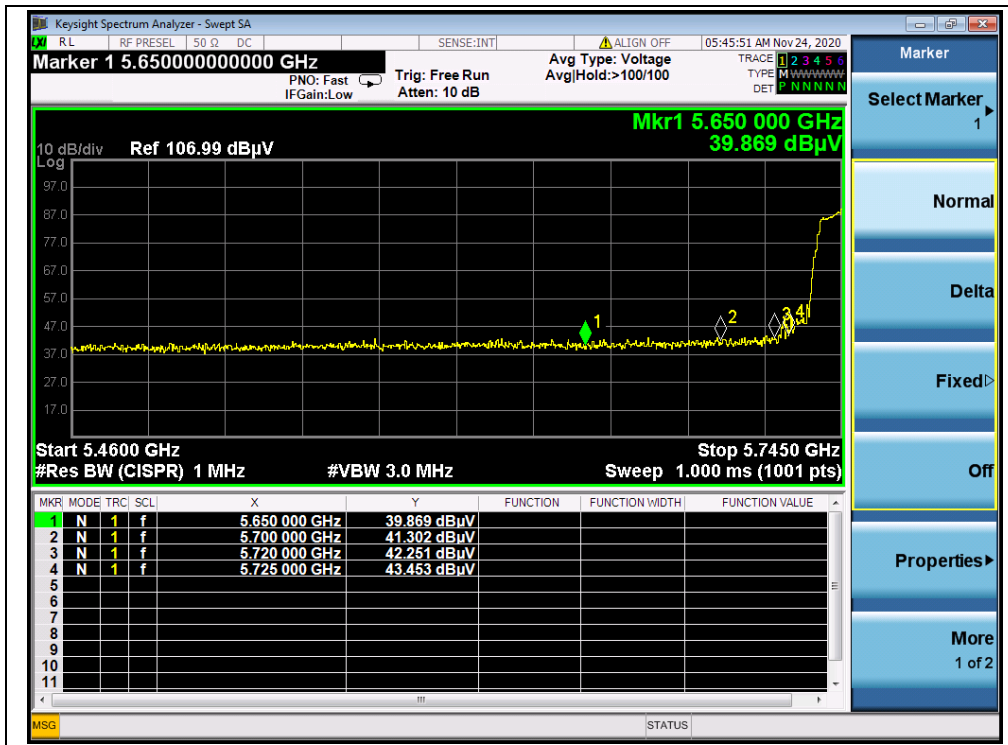
(AVERAGE, Channel 100, 802.11a)



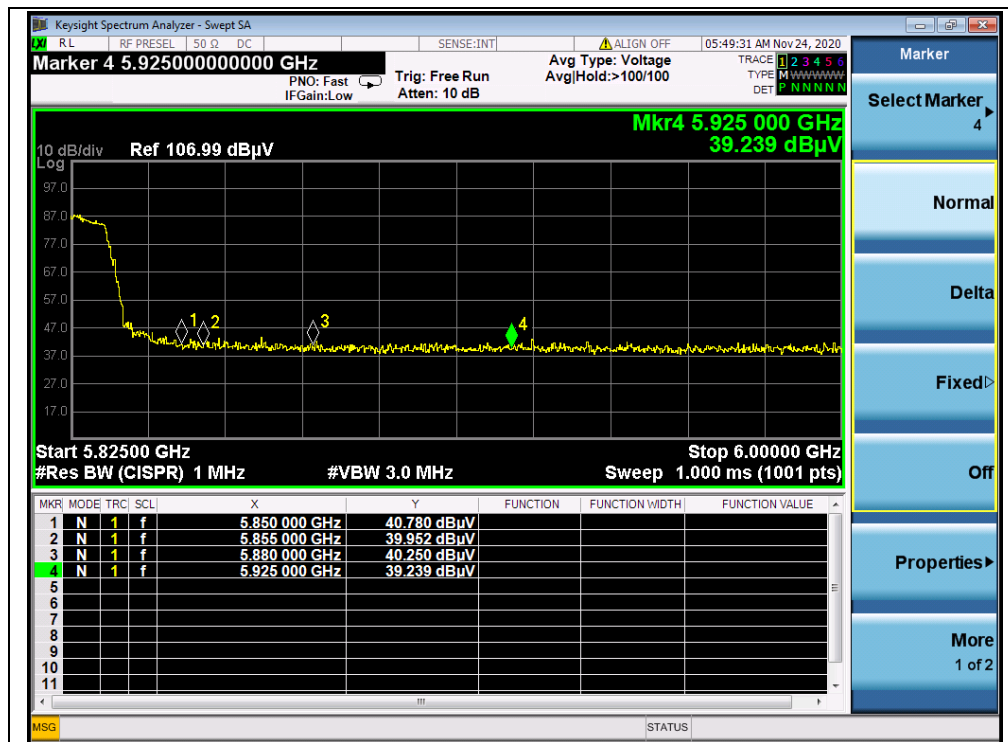
(PEAK, Channel 144, 802.11a)



(AVERAGE, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)



(PEAK, Channel 165, 802.11a)

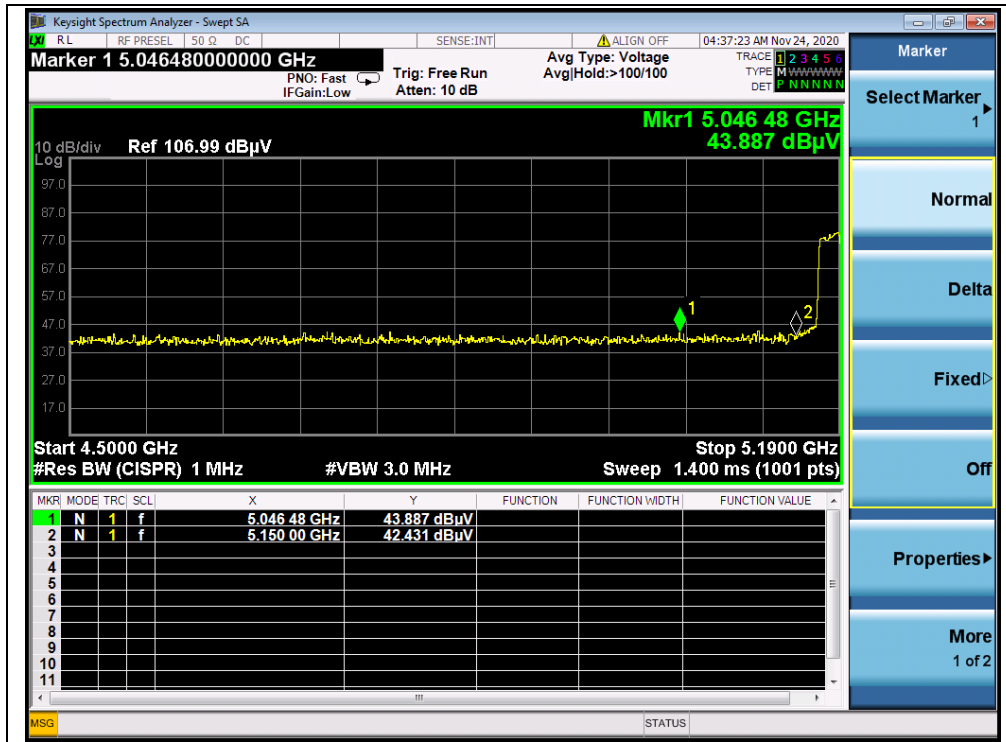


**802.11n (HT40) Mode****A.Test Verdict:**

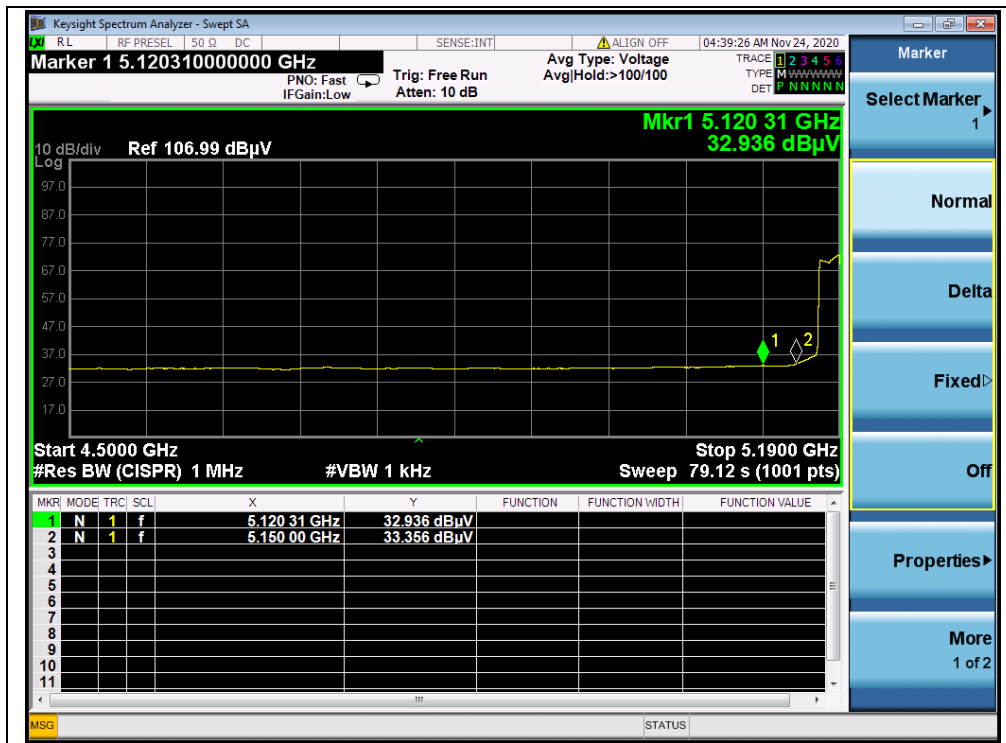
Channel	Frequency (MHz)	Detector	Receiver Reading $U_R$ (dB $\mu$ V)	$A_T$ (dB)	$A_{Factor}$ (dB@3m)	Max. Emission E (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Verdict
		PK/ AV						
38	5046.48	PK	43.89	-16.92	32.20	59.17	74	PASS
38	5150.00	AV	33.36	-16.92	32.20	48.64	54	PASS
62	5350.00	PK	45.39	-16.80	32.20	60.79	74	PASS
62	5350.00	AV	35.30	-16.80	32.20	50.70	54	PASS
102	5470.00	PK	43.87	-16.64	32.20	59.43	68.23	PASS
102	5460.00	AV	31.18	-16.64	32.20	46.74	54	PASS
142	5732.93	PK	42.68	-16.64	32.20	58.24	68.23	PASS
142	5731.94	AV	32.61	-16.64	32.20	48.17	54	PASS
151	5725.00	PK	46.05	-16.23	32.20	62.02	122.83	PASS
159	5855.00	PK	42.60	-16.23	32.20	58.57	110.83	PASS



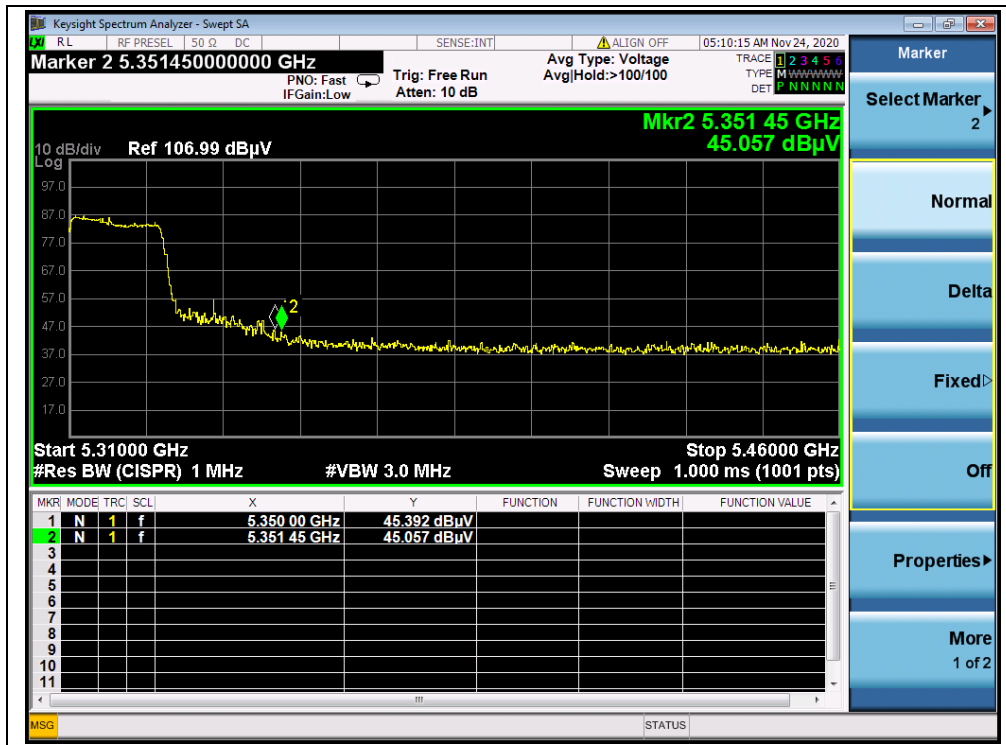
B.Test Plot:



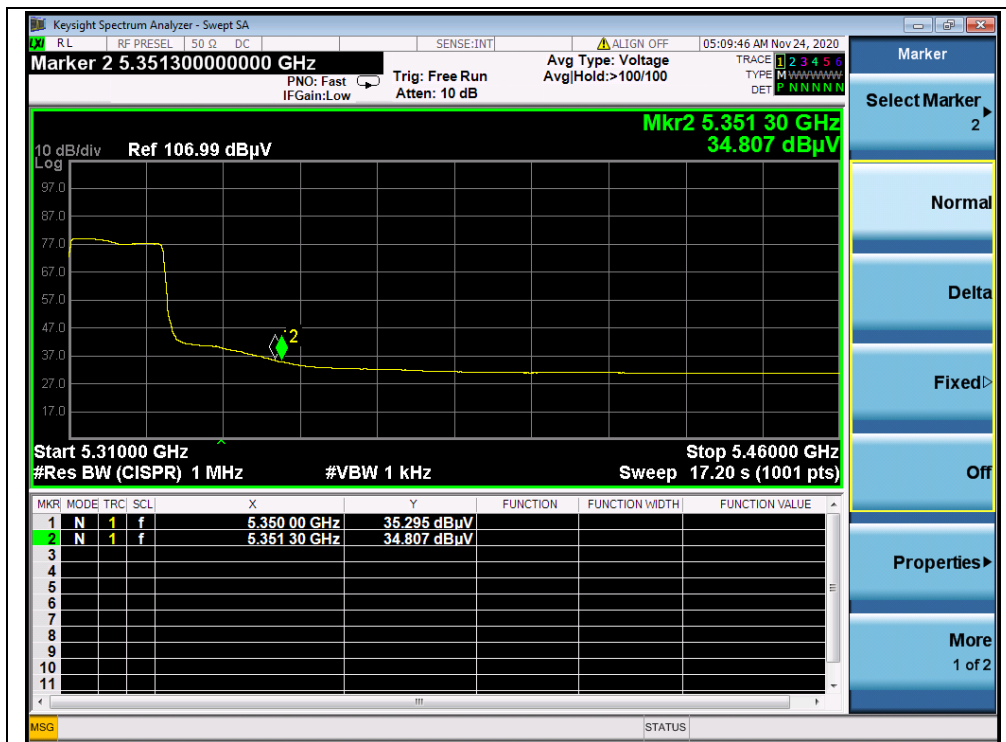
(PEAK, Channel 38, 802.11n (HT40))



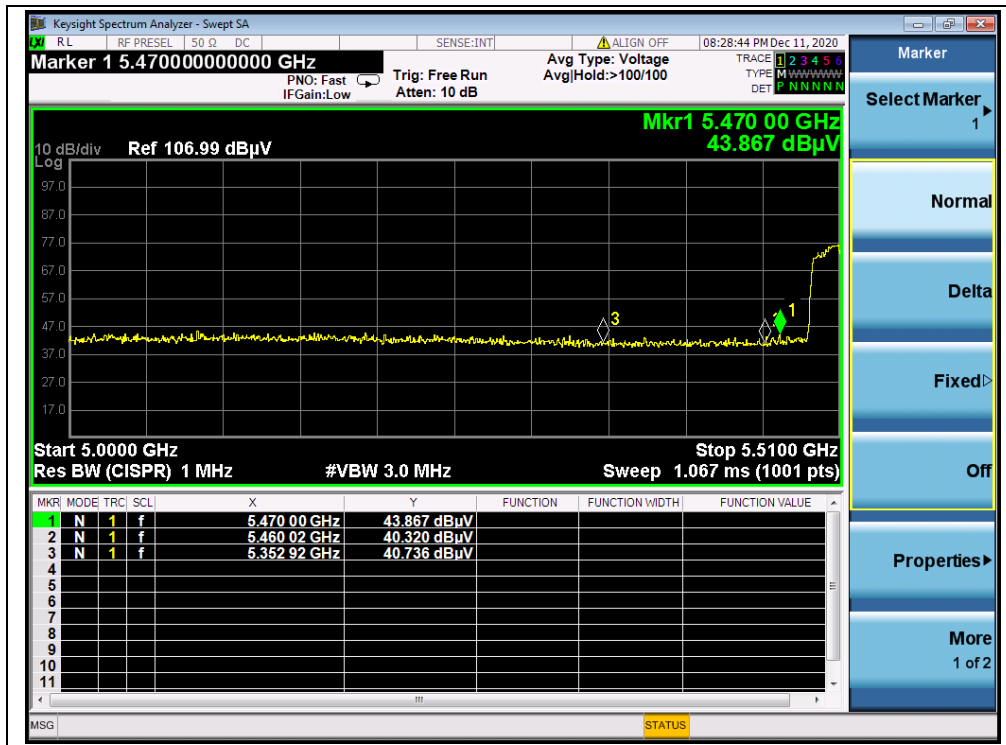
(AVERAGE, Channel 38, 802.11n (HT40))



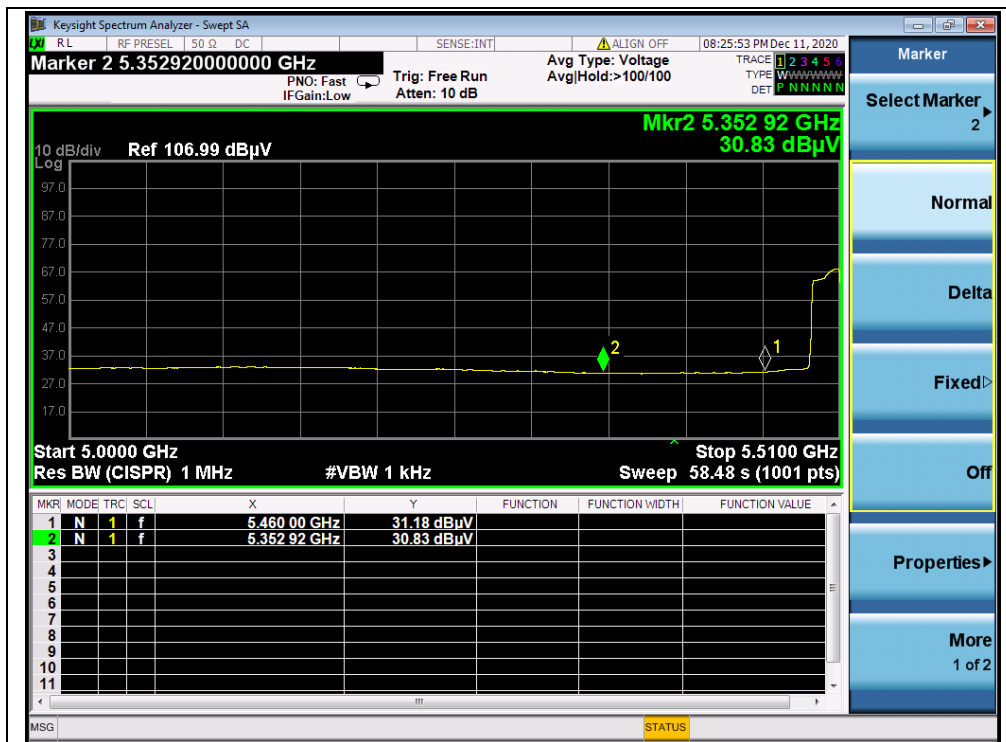
(PEAK, Channel 62, 802.11n (HT40))



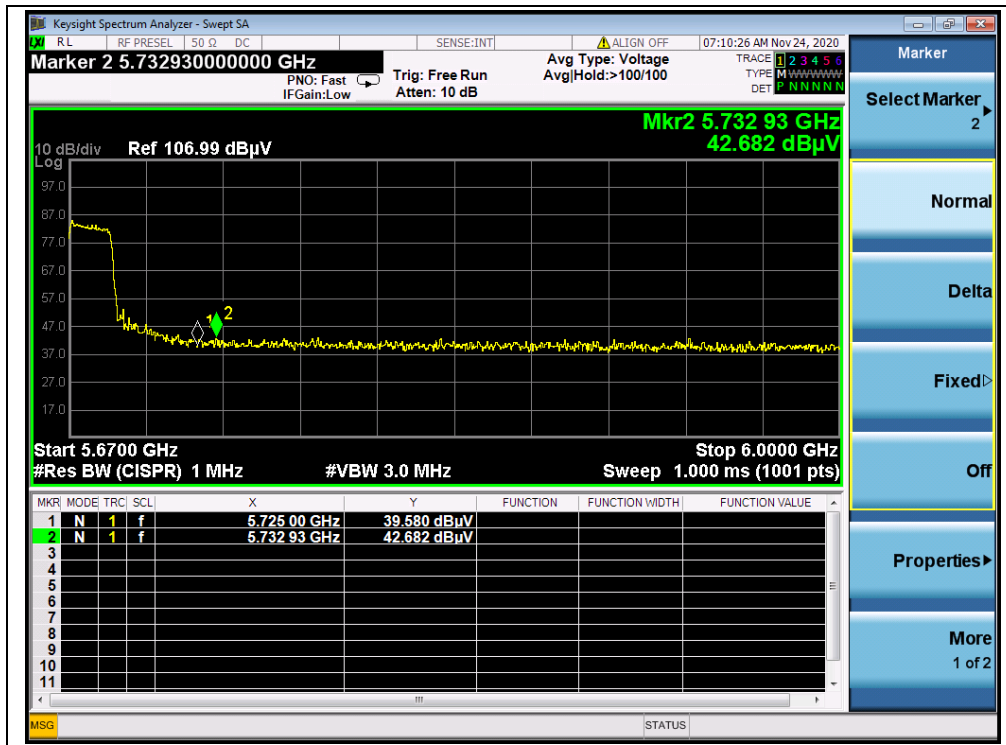
(AVERAGE, Channel 62, 802.11n (HT40))



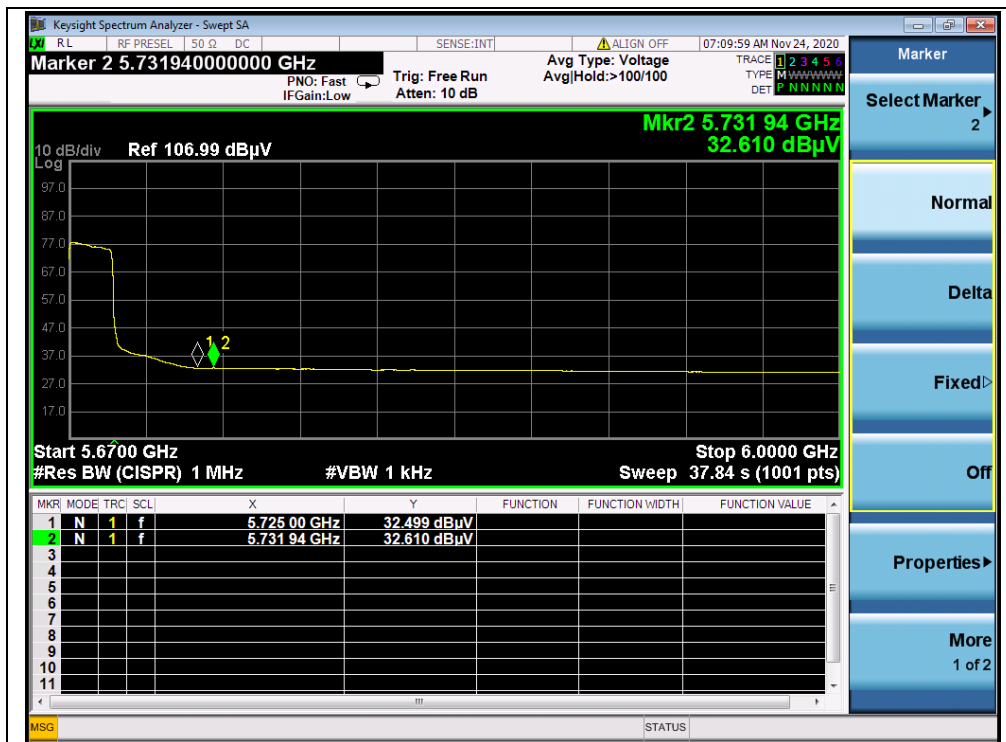
(PEAK, Channel 102, 802.11n (HT40))



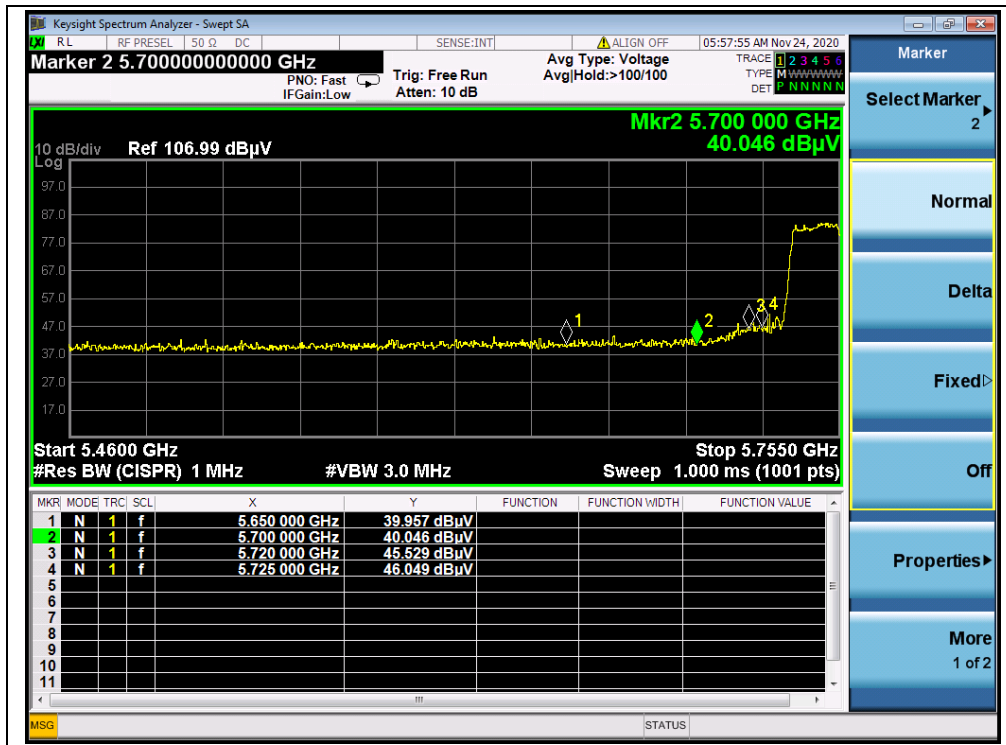
(AVERAGE, Channel 102, 802.11n (HT40))



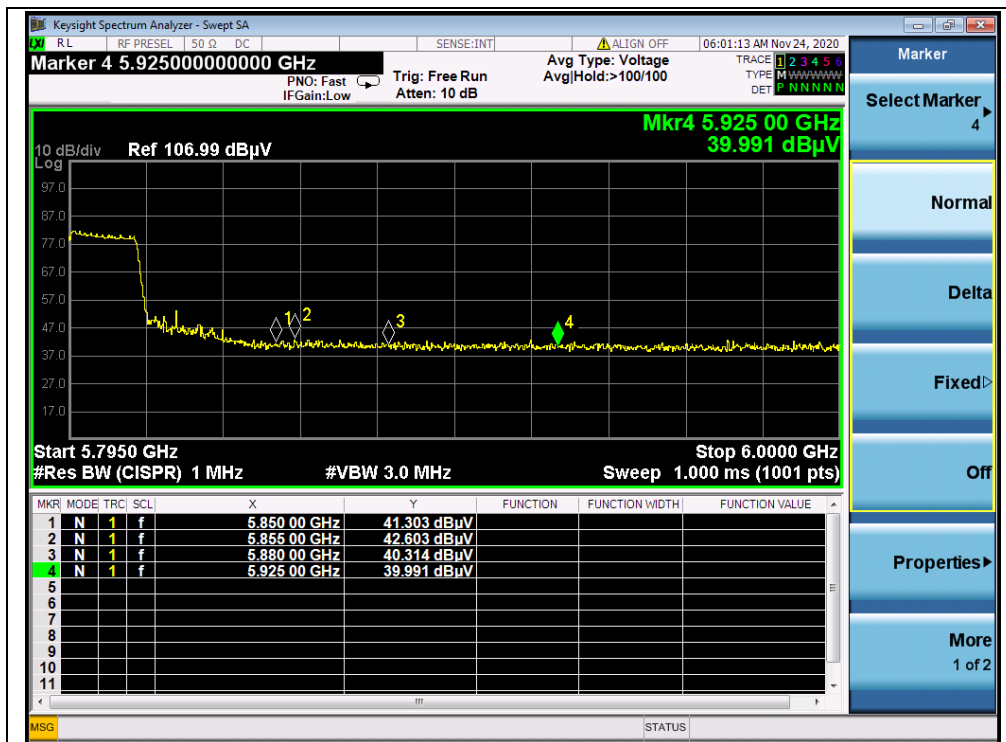
(PEAK, Channel 142, 802.11n (HT40))



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



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



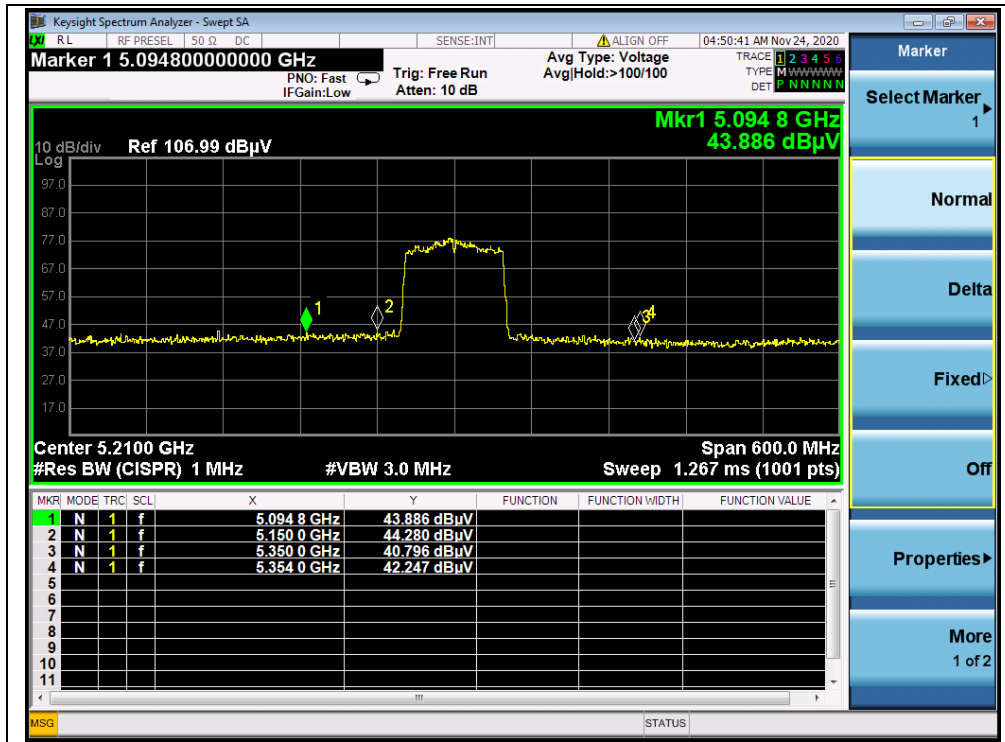
(PEAK, Channel 159, 802.11n (HT40))

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

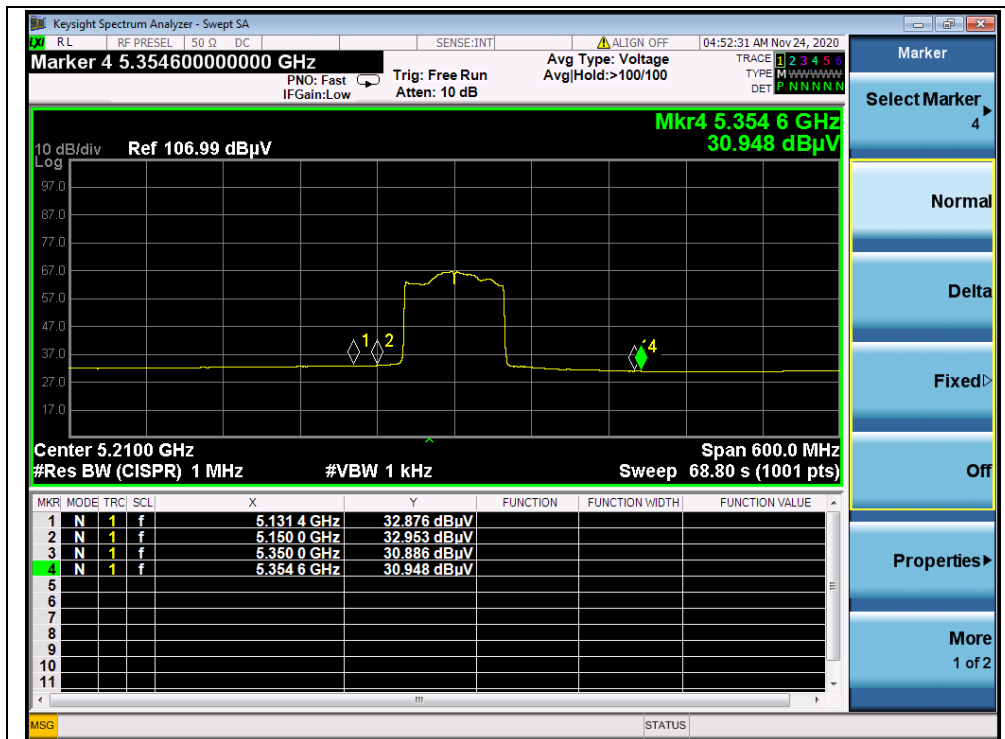
Channel	Frequency (MHz)	Detector	Receiver Reading $U_R$ (dB $\mu$ V)	$A_T$ (dB)	$A_{Factor}$ (dB@3m)	Max. Emission E (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Verdict
		PK/ AV						
42	5150.00	PK	44.28	-16.92	32.20	59.56	74	PASS
42	5150.00	AV	32.95	-16.92	32.20	48.23	54	PASS
58	5143.40	PK	43.85	-16.80	32.20	59.25	74	PASS
58	5350.00	AV	33.00	-16.80	32.20	48.40	54	PASS
106	5470.00	PK	43.87	-16.64	32.20	59.43	68.23	PASS
106	5460.00	AV	31.18	-16.64	32.20	46.74	54	PASS
138	5755.25	PK	43.82	-16.64	32.20	59.38	68.23	PASS
138	5727.56	AV	32.63	-16.64	32.20	48.19	54	PASS
155	5720.60	PK	49.02	-16.23	32.20	64.99	95.24	PASS
155	5857.80	PK	44.97	-16.23	32.20	60.94	100.47	PASS



B.Test Plot:

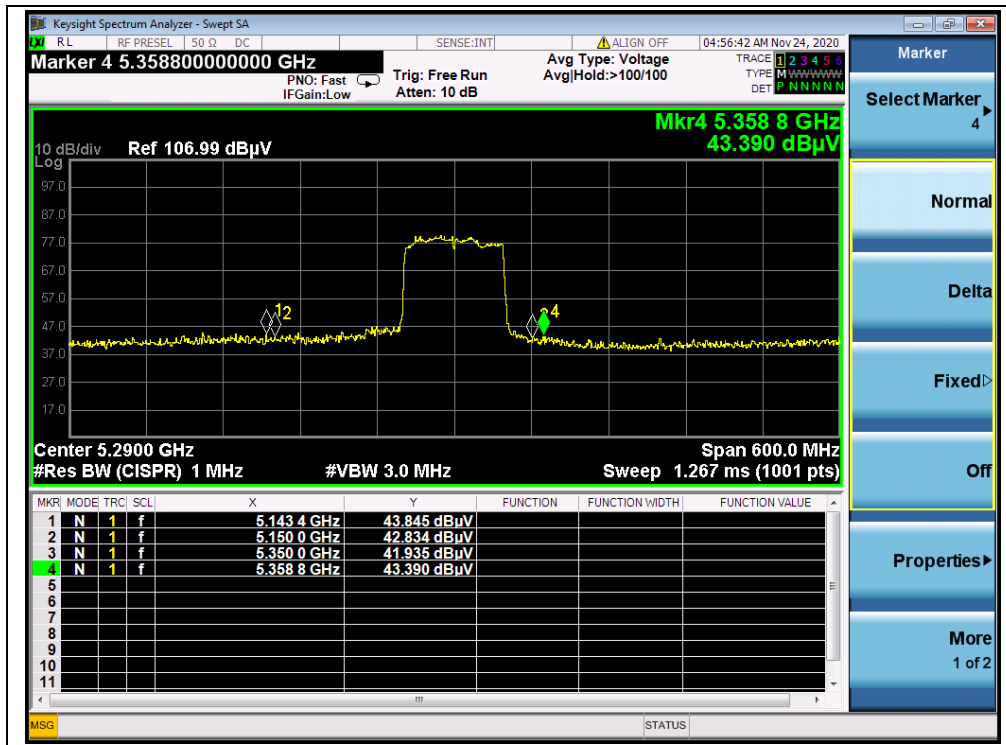


(PEAK, Channel 42, 802.11ac (VHT80))

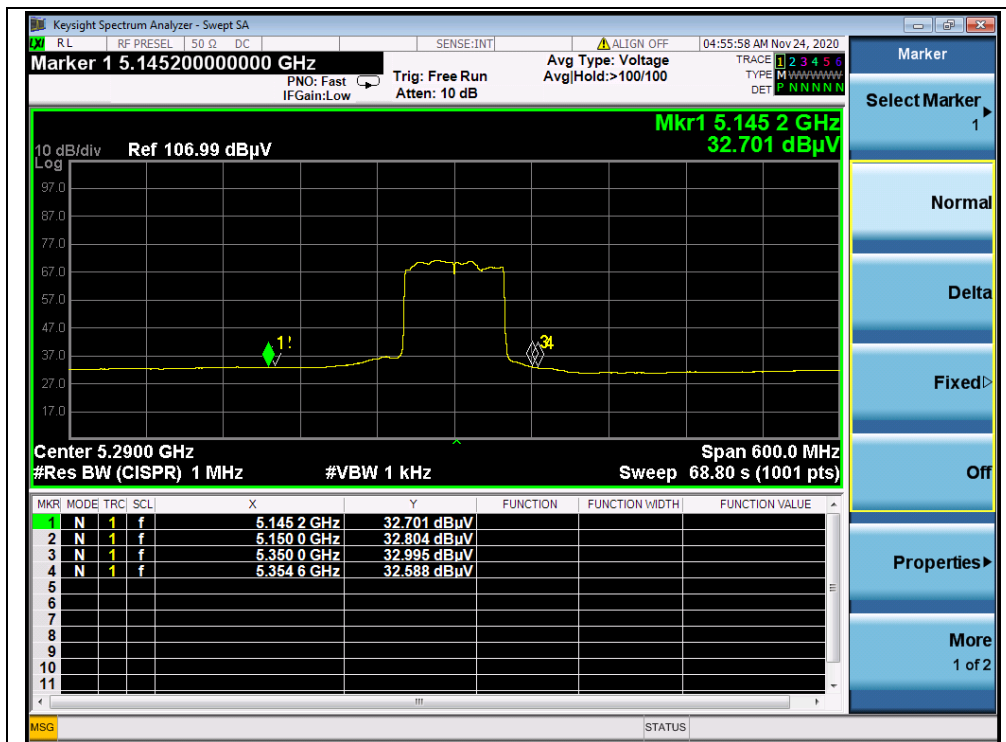


(AVERAGE, Channel 42, 802.11ac (VHT80))

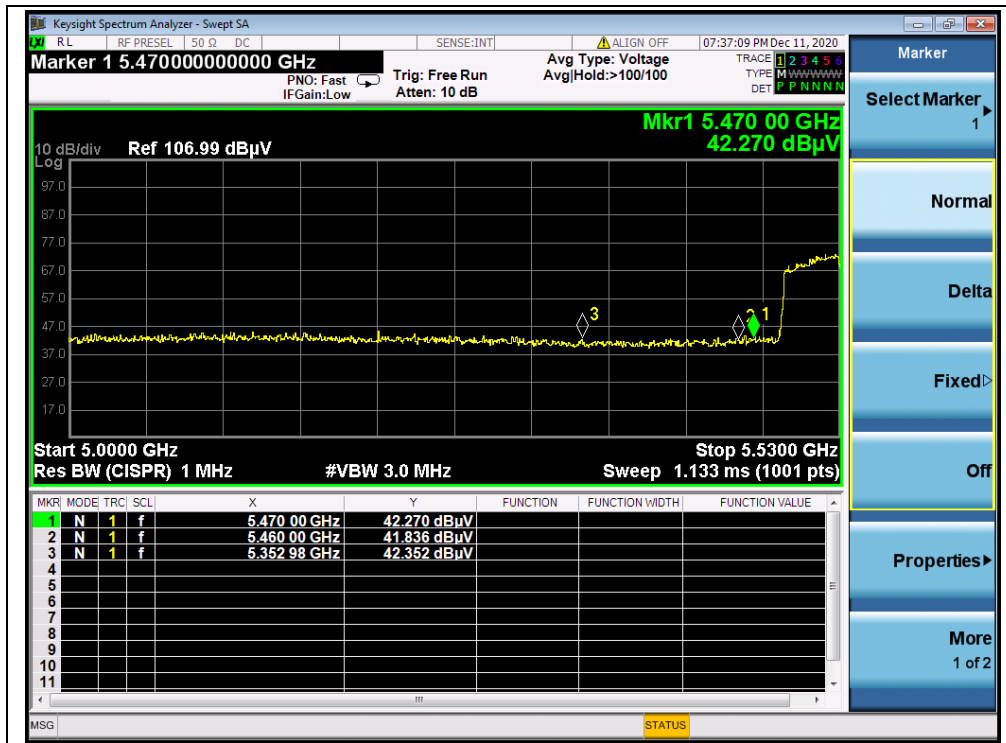




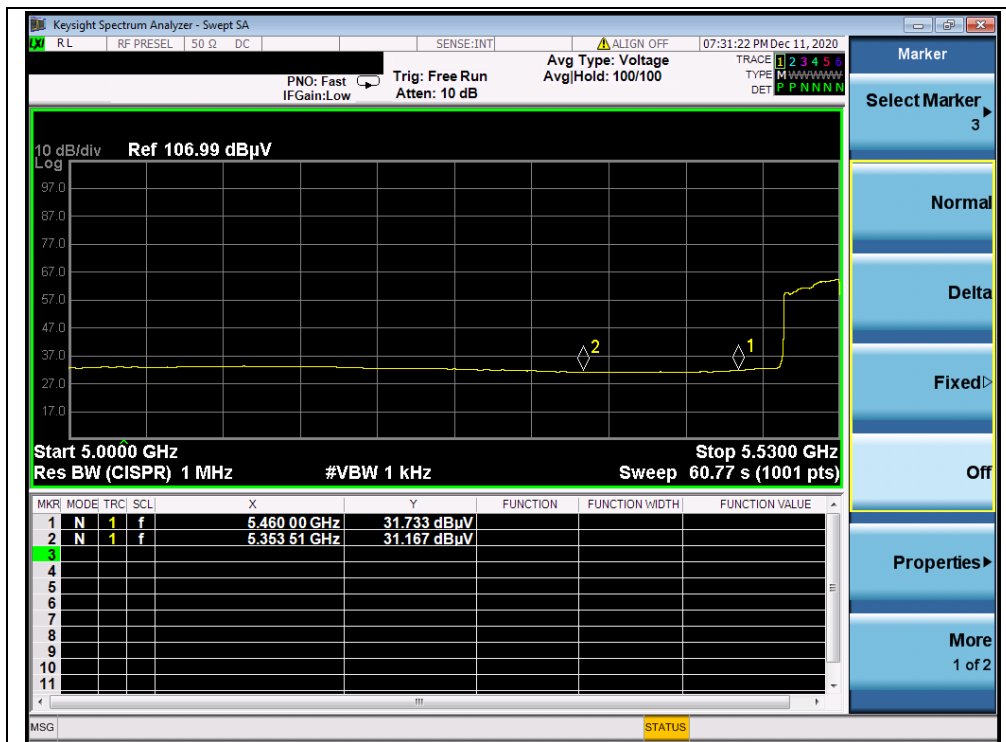
(PEAK, Channel 58, 802.11ac (VHT80))



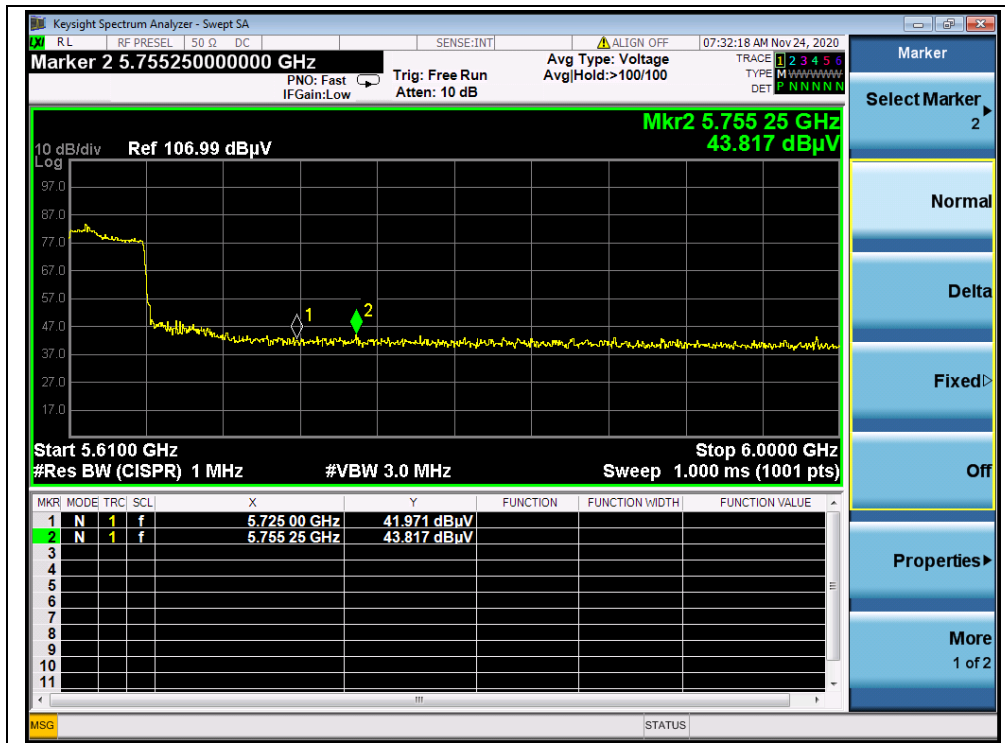
(AVERAGE, Channel 58, 802.11ac (VHT80))



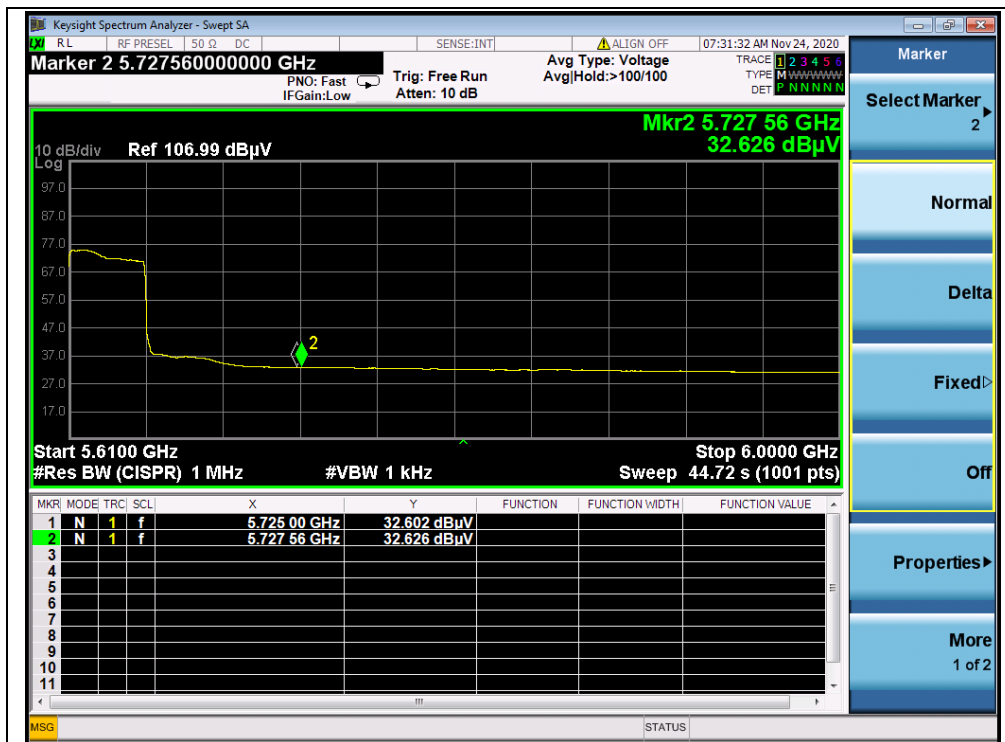
(PEAK, Channel 106, 802.11ac (VHT80))



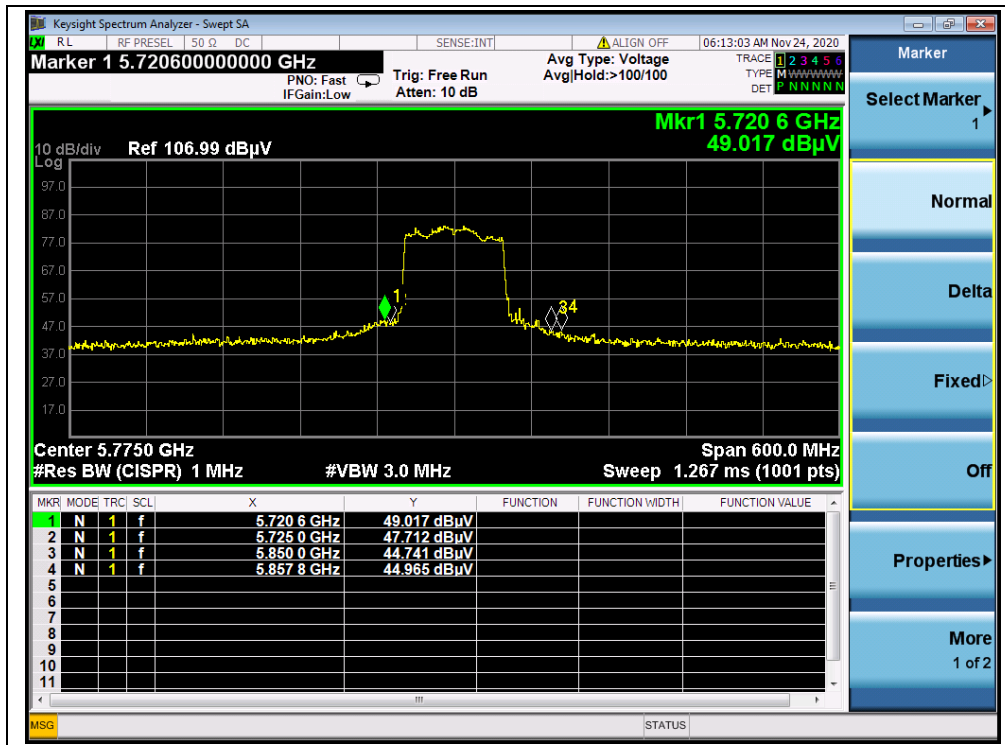
(AVERAGE, Channel 106, 802.11ac (VHT80))



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



(AVERAGE, 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);

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

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:

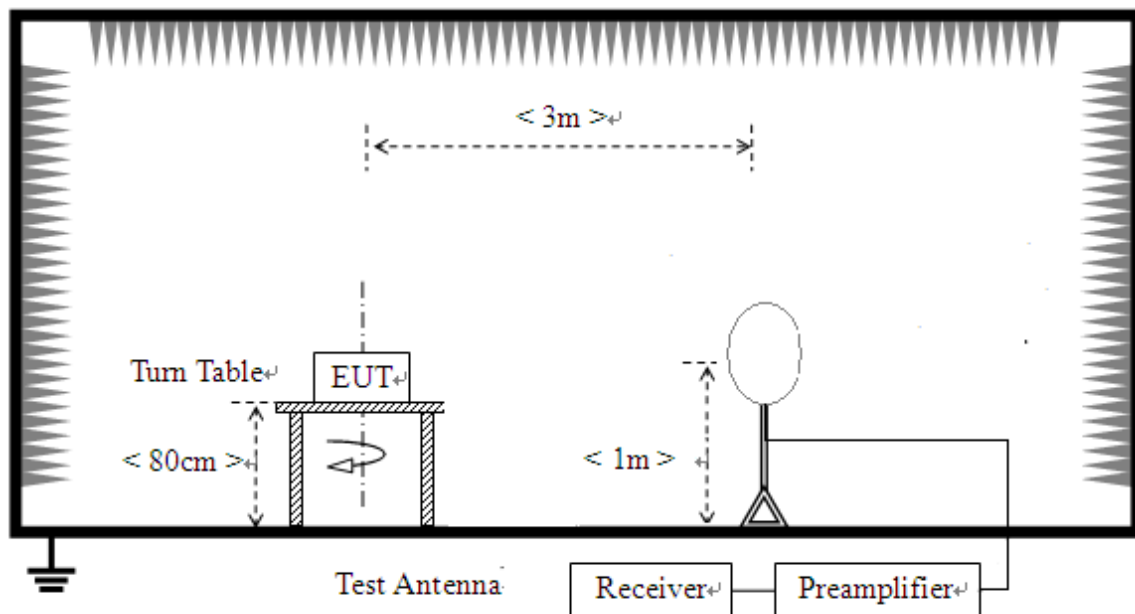
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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).

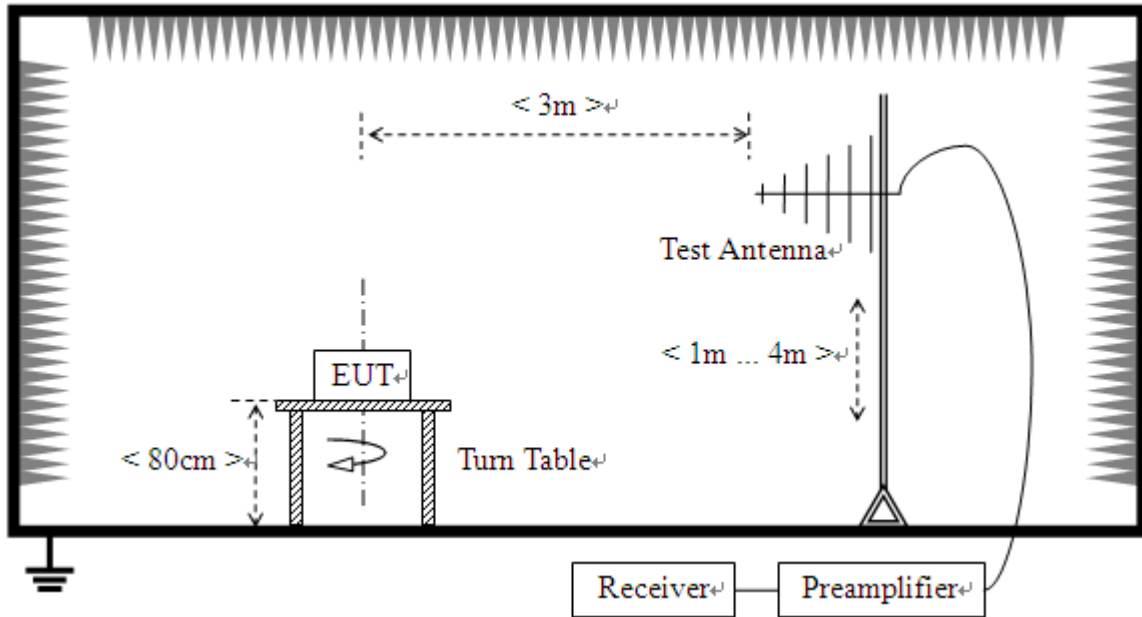
### 2.9.2. Test Description

#### Test Setup:

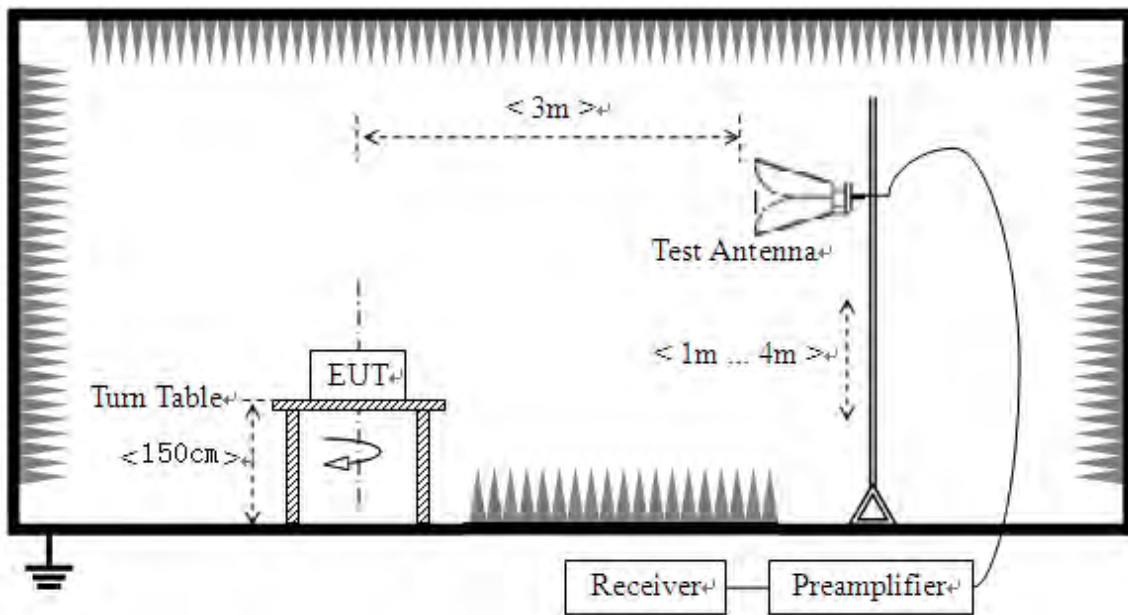
- 1) For radiated emissions from 9kHz to 30MHz



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 a 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

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

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

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

**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.

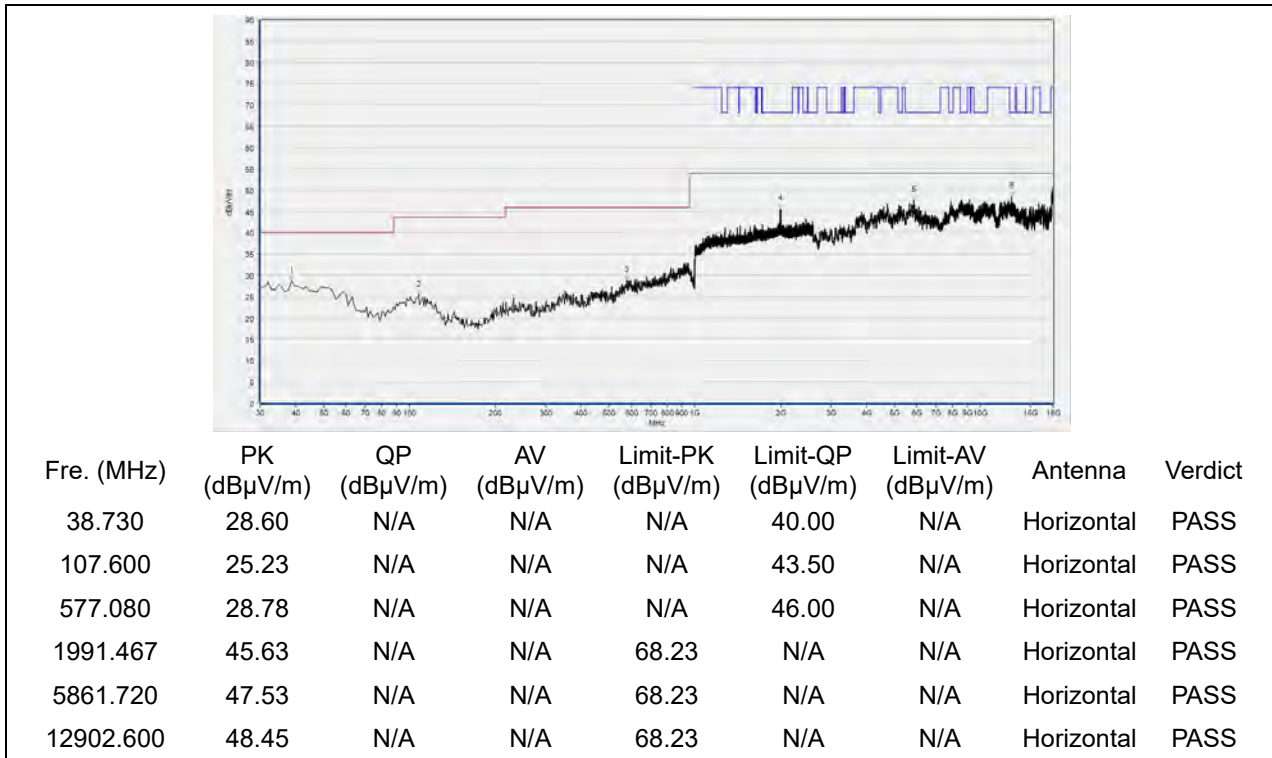
**Note 3:** For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**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.

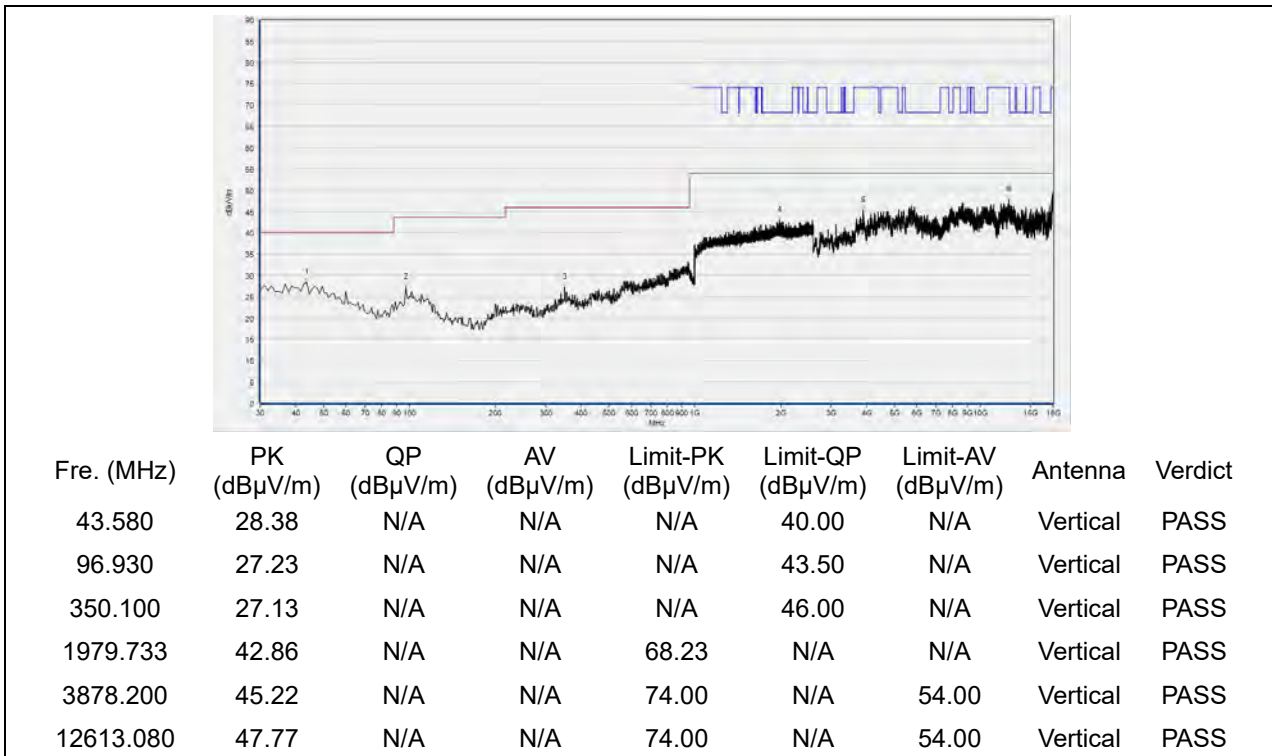


**802.11a Mode**

**Plot for Channel 36**

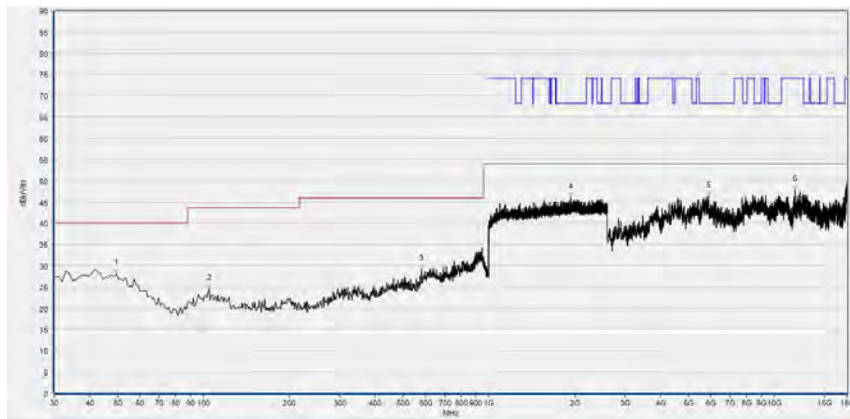


(Antenna Horizontal, 30MHz to 18GHz)



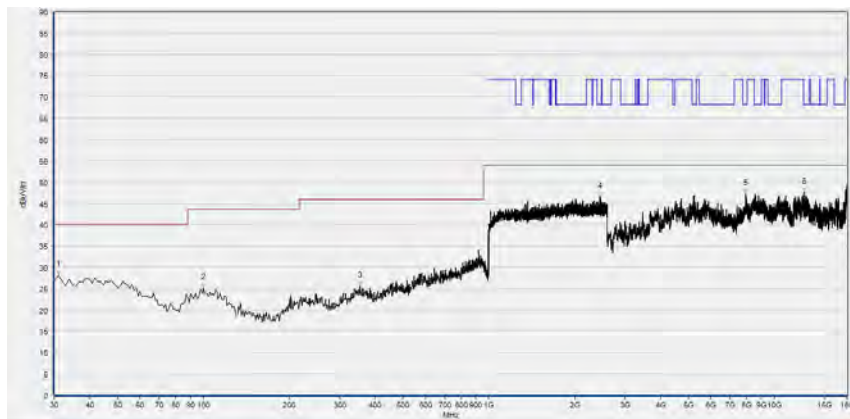
(Antenna Vertical, 30MHz to 18GHz)

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
49.400	28.19	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
104.690	24.69	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
580.960	29.23	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1940.267	46.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5874.040	46.36	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
11824.600	47.97	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

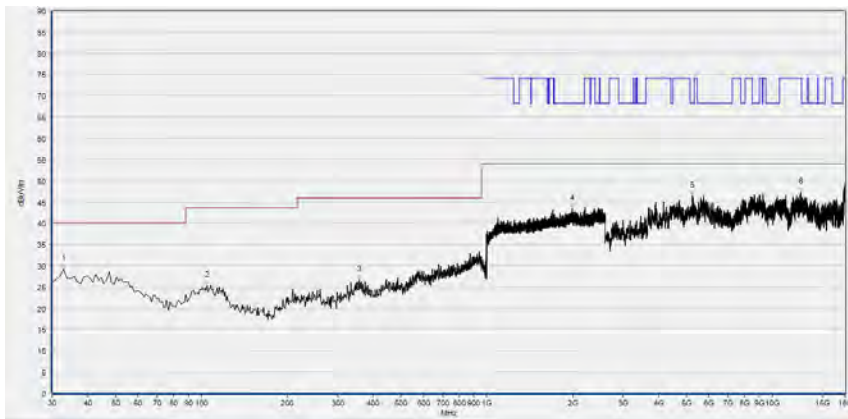
(Antenna Horizontal, 30MHz to 18GHz)



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
30.970	28.21	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.840	25.09	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
353.010	25.72	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2450.667	46.64	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
7940.720	47.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12751.680	47.64	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

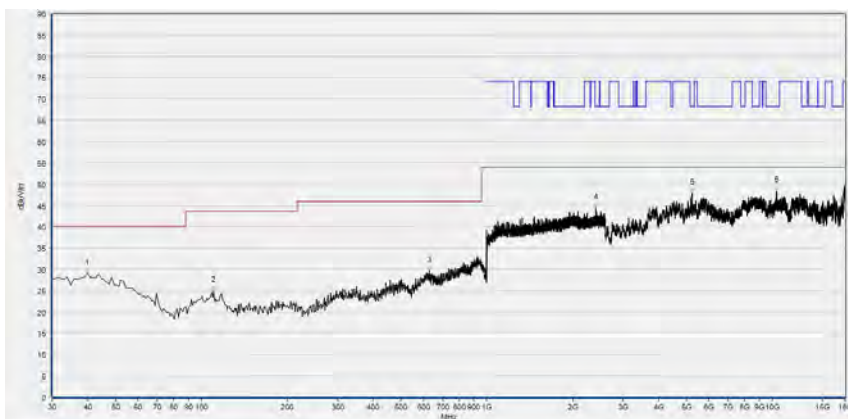
(Antenna Vertical, 30MHz to 18GHz)

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
32.910	29.11	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
104.690	25.31	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
356.890	26.59	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1996.267	43.42	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5242.640	46.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12610.000	47.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

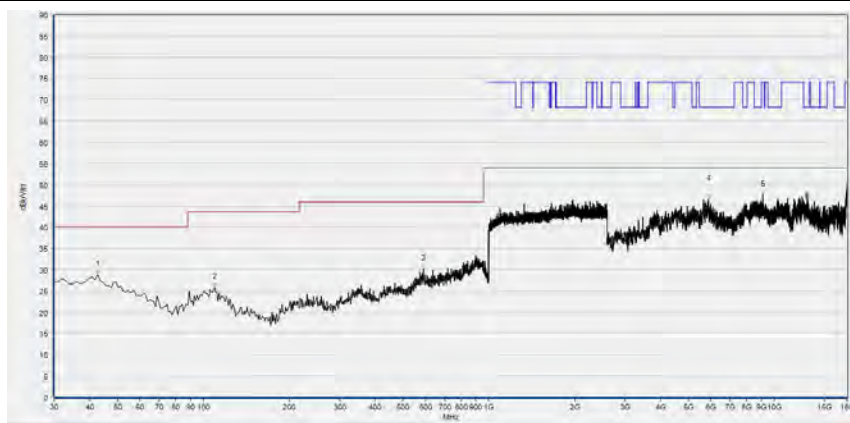
(Antenna Horizontal, 30MHz to 18GHz)



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
39.700	29.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
110.510	25.02	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
628.490	29.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2412.800	44.42	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5236.480	48.00	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10346.200	48.37	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

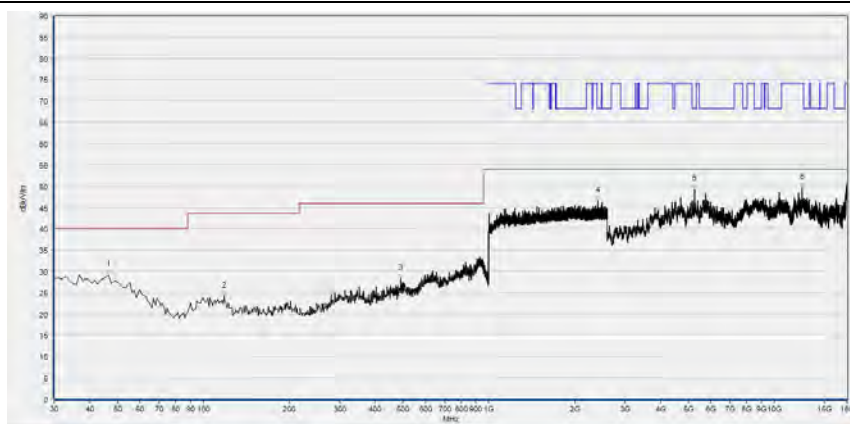
(Antenna Vertical, 30MHz to 18GHz)

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
42.610	28.89	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
109.540	25.85	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
588.720	30.24	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5880.200	46.51	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9092.640	47.63	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13038.120	47.34	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

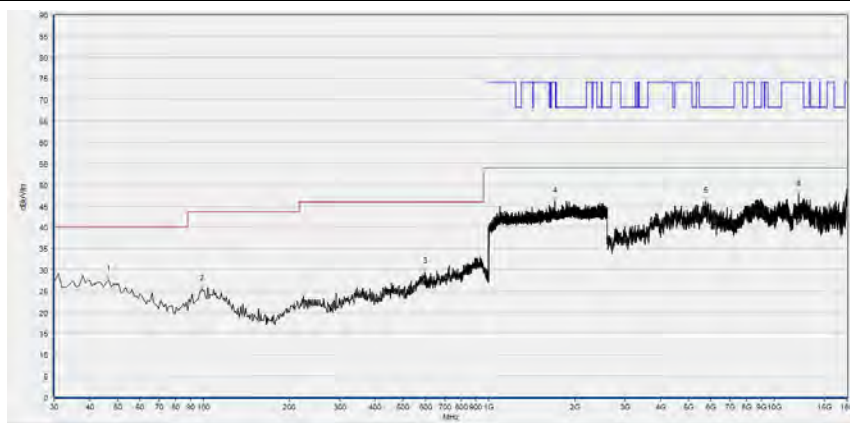
(Antenna Horizontal, 30MHz to 18GHz)



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
46.490	29.24	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
118.270	24.18	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
490.750	28.40	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2413.867	46.55	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5258.040	49.33	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12489.880	49.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

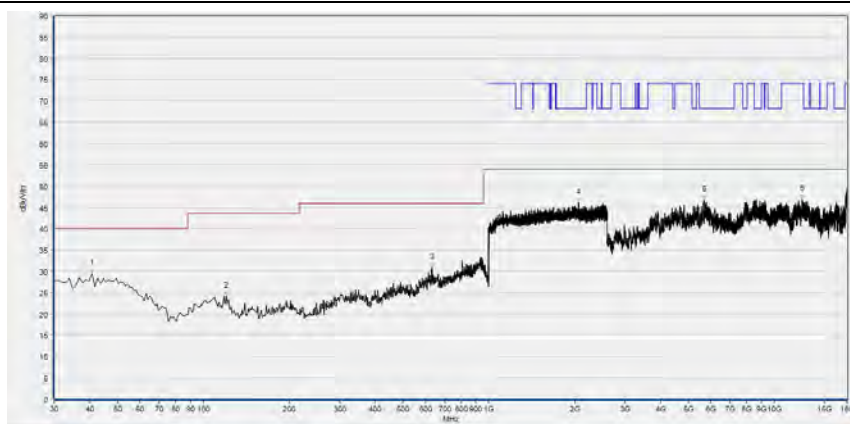
(Antenna Vertical, 30MHz to 18GHz)

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
46.490	27.61	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
98.870	25.43	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
596.480	29.44	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1707.733	46.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5747.760	46.02	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12191.120	47.74	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

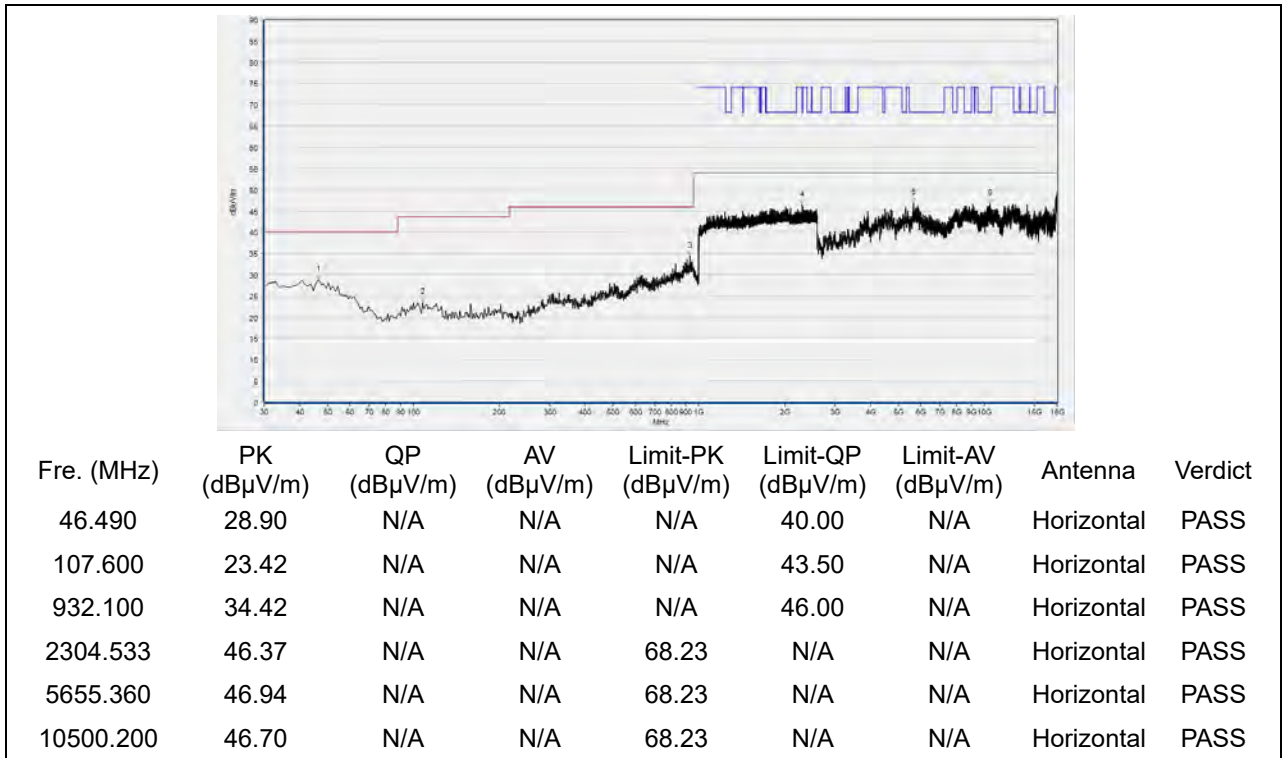
(Antenna Horizontal, 30MHz to 18GHz)



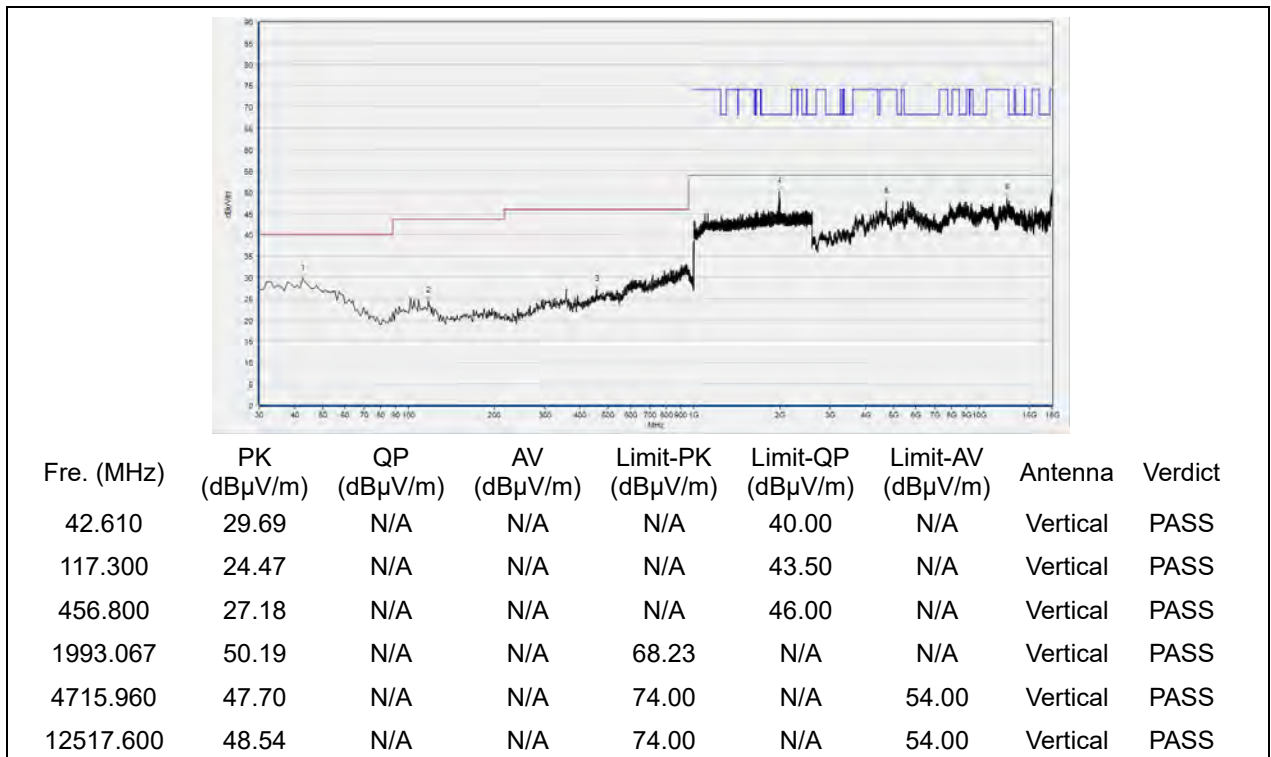
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
40.670	29.48	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
120.210	24.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
634.310	30.80	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2064.533	46.02	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5670.760	46.68	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12508.360	46.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 64

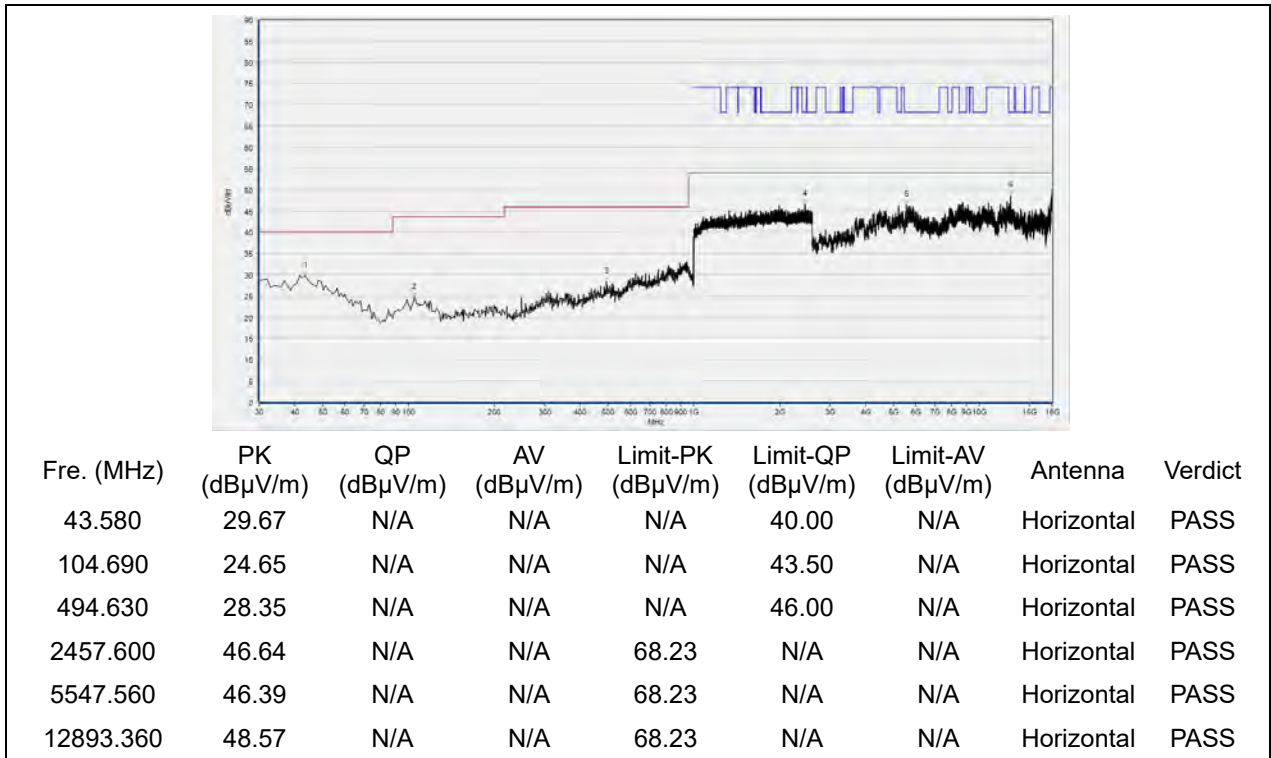


(Antenna Horizontal, 30MHz to 18GHz)

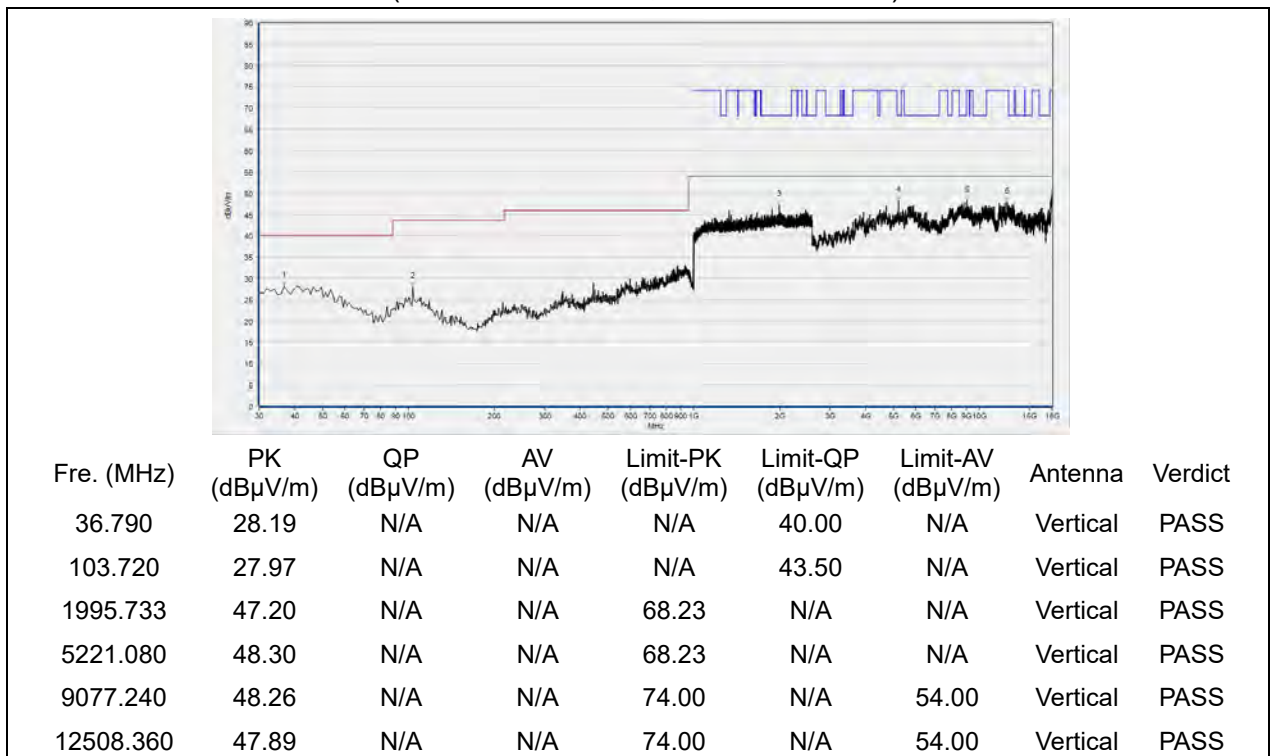


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 100

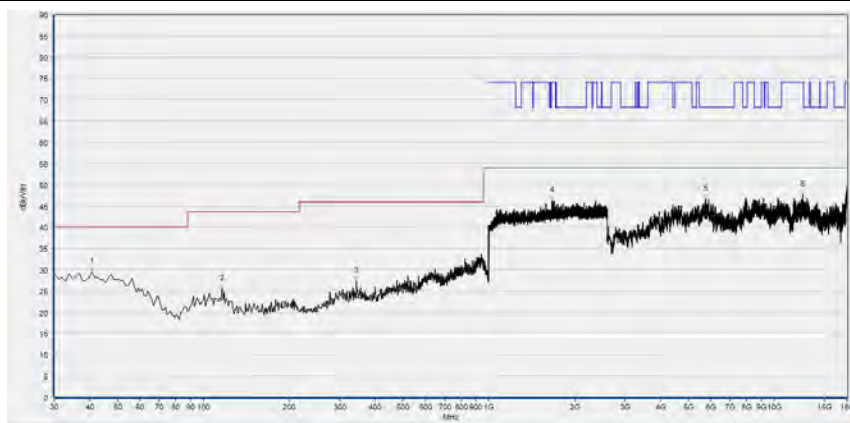


(Antenna Horizontal, 30MHz to 18GHz)



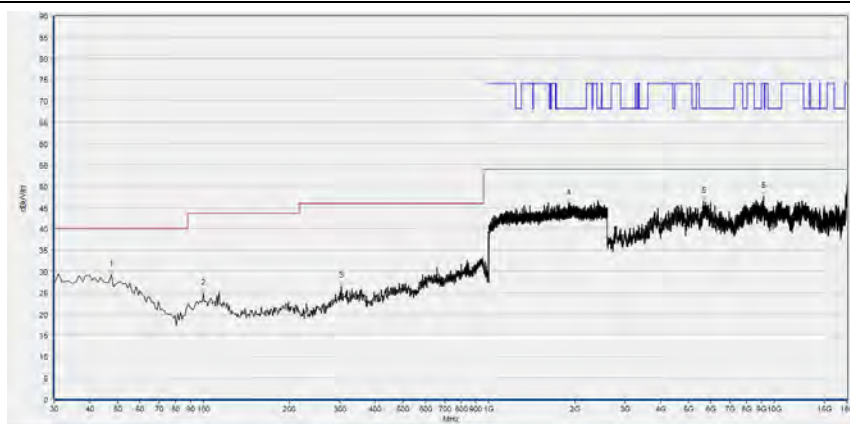
(Antenna Vertical, 30MHz to 18GHz)

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
40.670	29.43	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
116.330	25.51	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
344.280	27.31	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1662.933	46.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5757.000	46.60	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12600.760	47.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

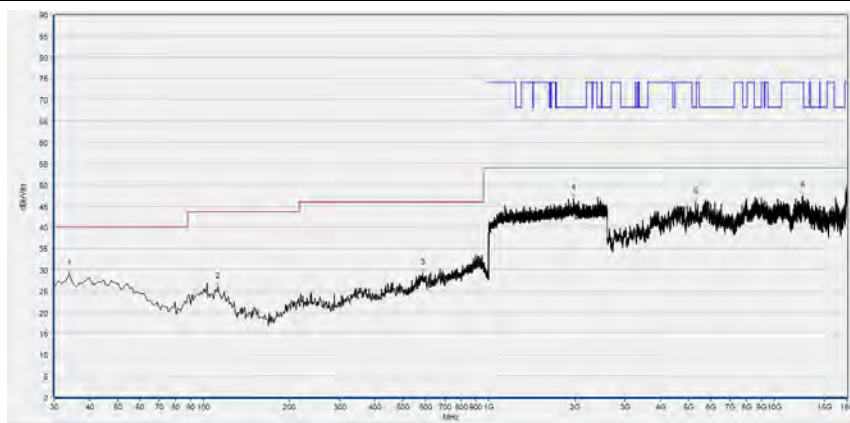


Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
47.460	29.23	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.840	24.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
303.540	26.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1907.200	45.86	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5646.120	46.50	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9191.200	47.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

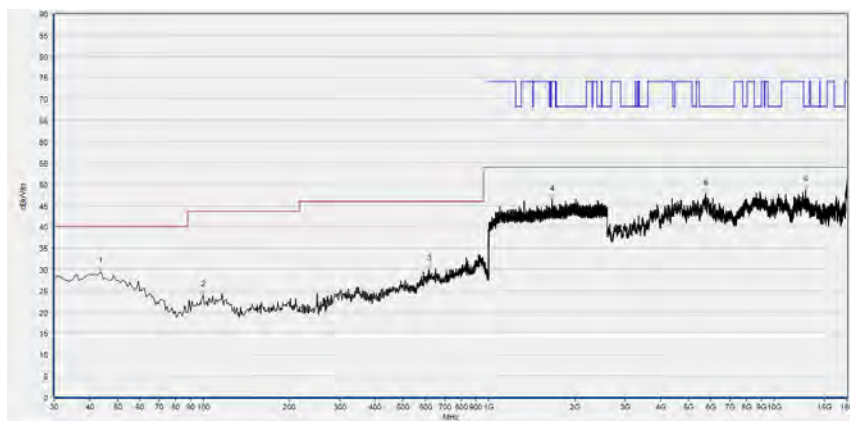


Plot for Channel 144



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
33.880	29.03	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
112.450	25.94	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
586.780	29.09	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1978.133	46.74	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5307.320	45.97	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12582.280	47.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

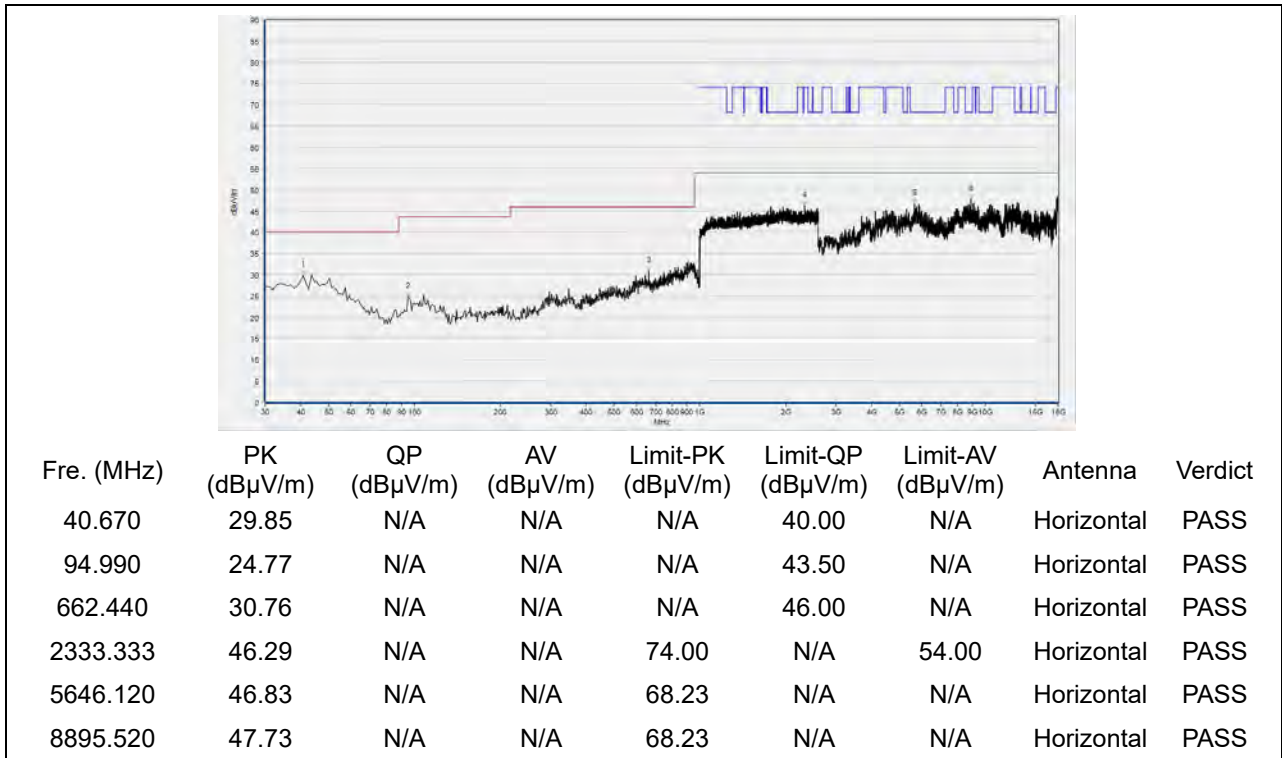
(Antenna Horizontal, 30MHz to 18GHz)



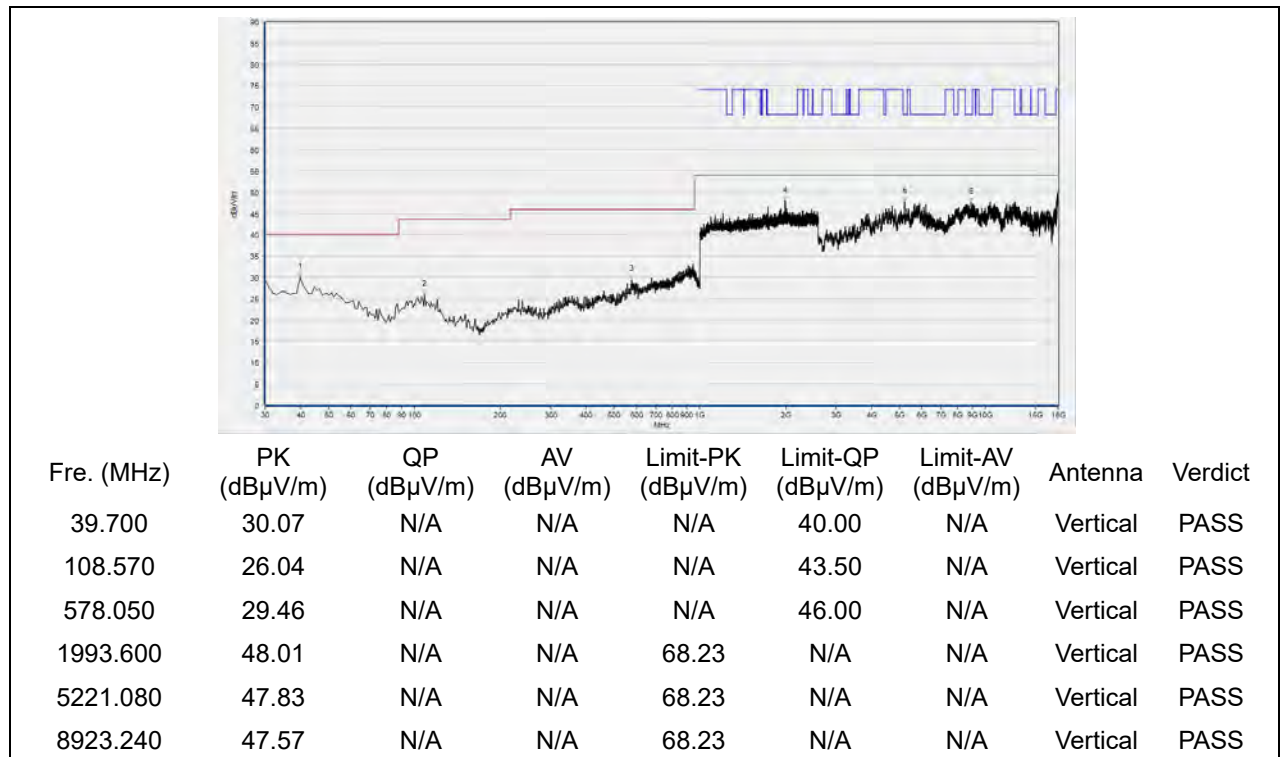
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
43.580	29.50	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.840	24.04	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
618.790	29.97	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1664.000	46.47	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5757.000	47.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12881.040	48.66	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 149

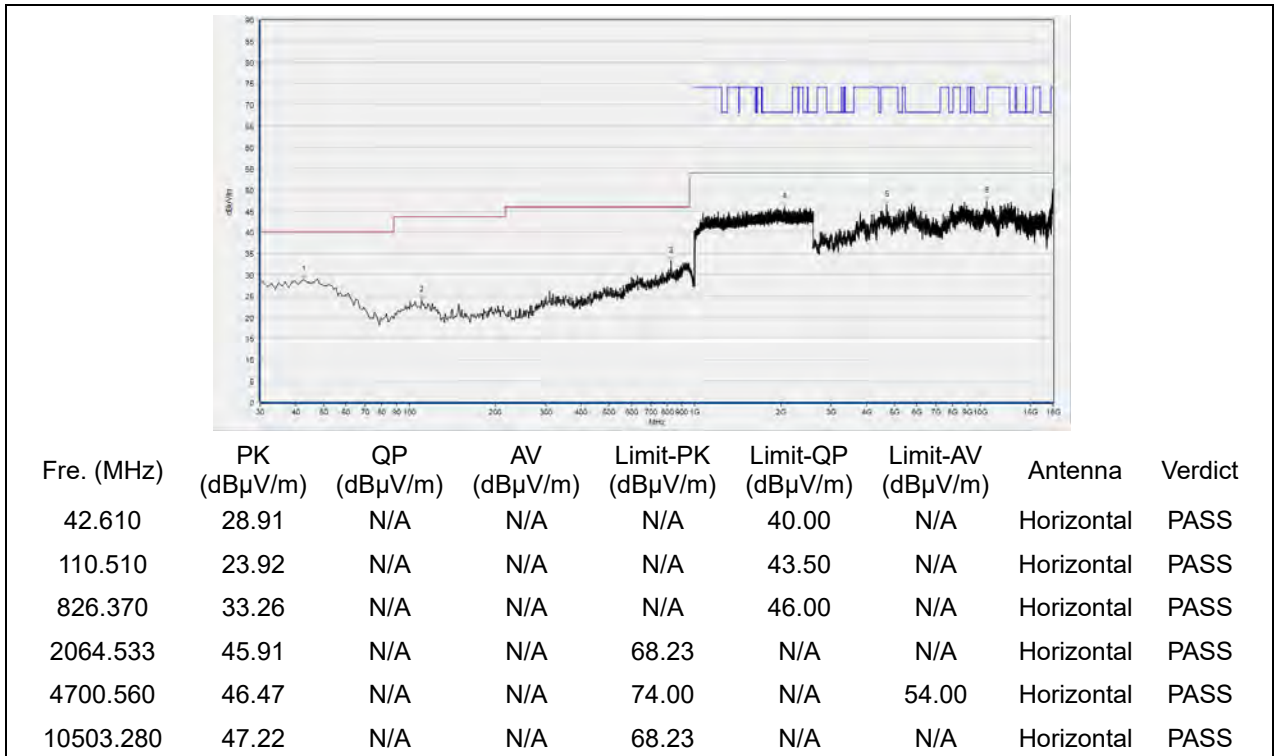


(Antenna Horizontal, 30MHz to 18GHz)

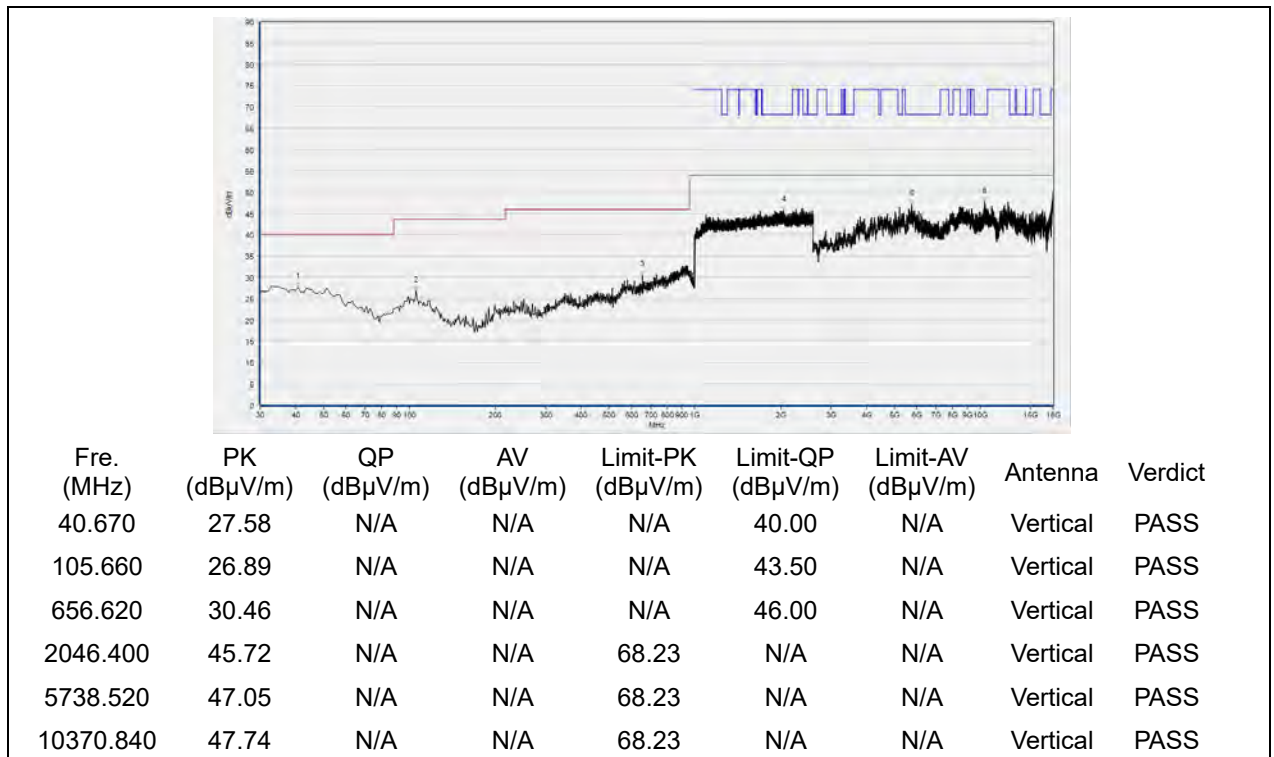


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 157

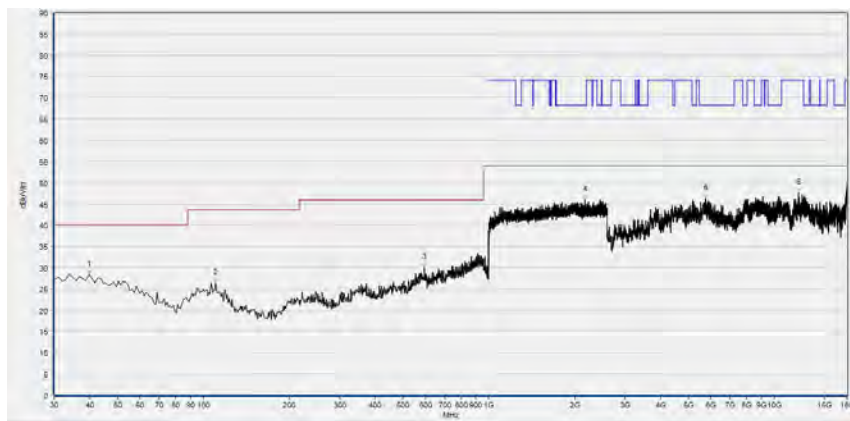


(Antenna Horizontal, 30MHz to 18GHz)



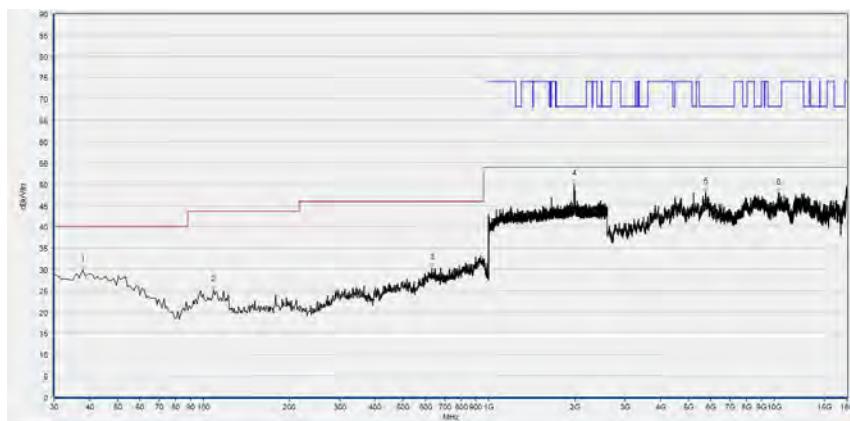
(Antenna Vertical, 30MHz to 18GHz)

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
39.700	28.35	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
110.510	26.37	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
594.540	29.95	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2166.400	45.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5763.160	46.34	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12160.320	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



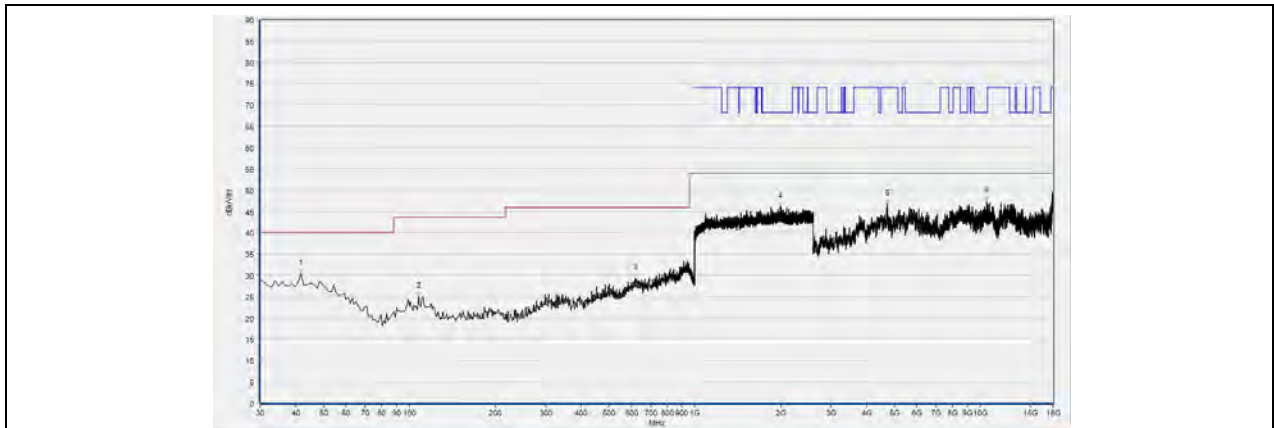
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
37.760	29.76	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
108.570	25.13	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
631.400	30.32	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1994.133	49.93	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5760.080	48.09	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10346.200	47.89	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)



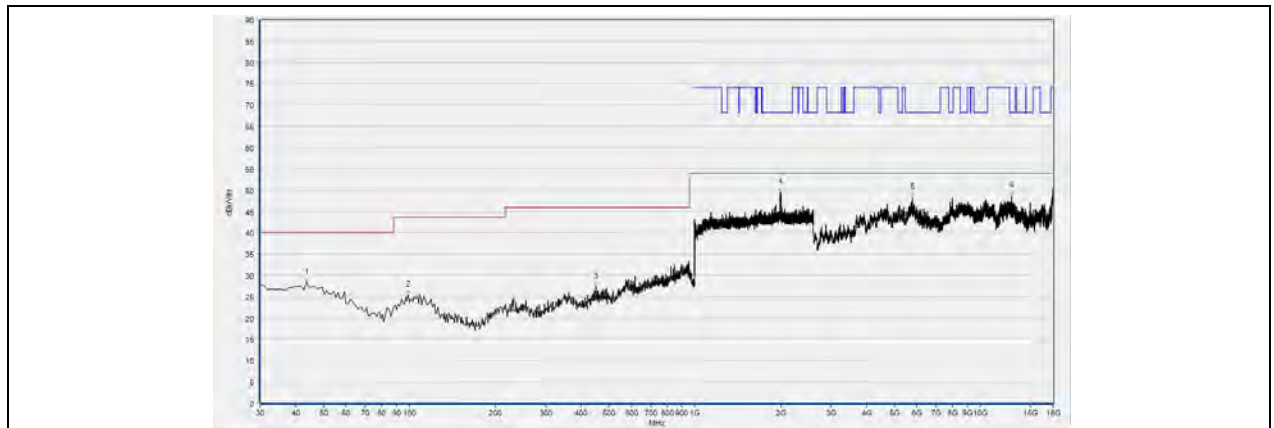
**802.11n (HT40) mode**

**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
41.640	30.27	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
107.600	24.95	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
619.760	29.26	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1991.467	46.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4719.040	46.82	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10531.000	47.41	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

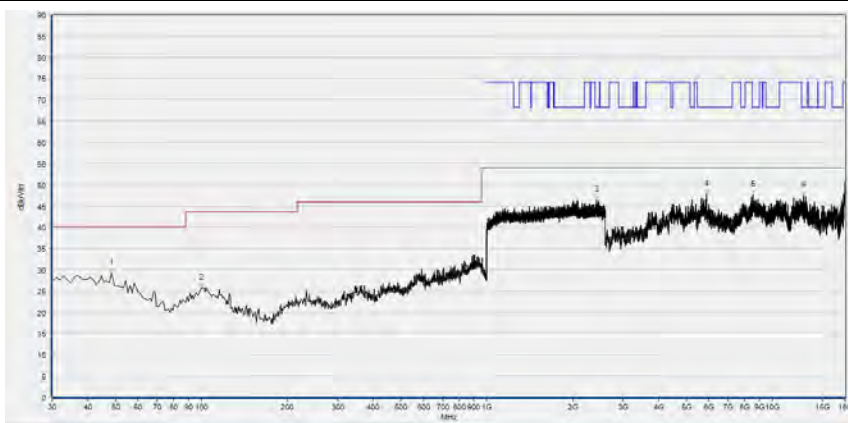
(Antenna Horizontal, 30MHz to 18GHz)



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
43.580	28.32	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
98.870	25.28	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
450.010	27.26	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1993.067	49.37	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5769.320	48.29	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12911.840	48.53	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

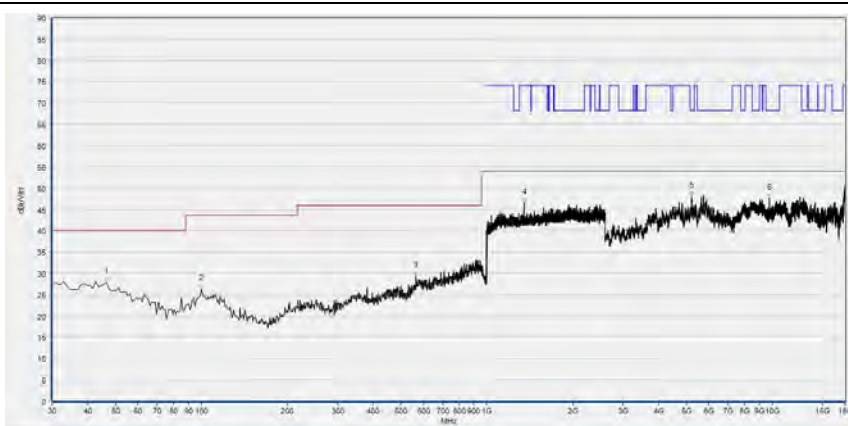
(Antenna Vertical, 30MHz to 18GHz)

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
48.430	29.08	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
99.840	25.70	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2420.267	46.46	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5867.880	47.83	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8572.120	47.58	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12902.600	47.38	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

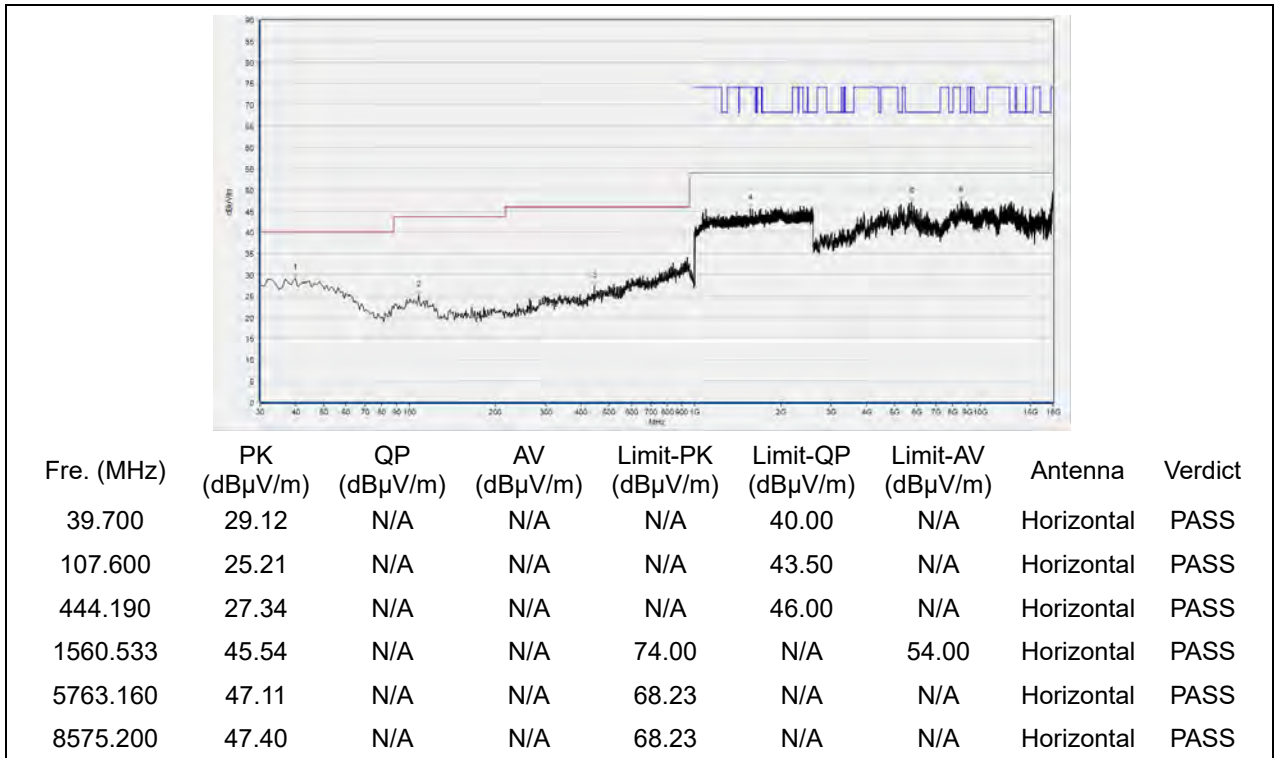
(Antenna Horizontal, 30MHz to 18GHz)



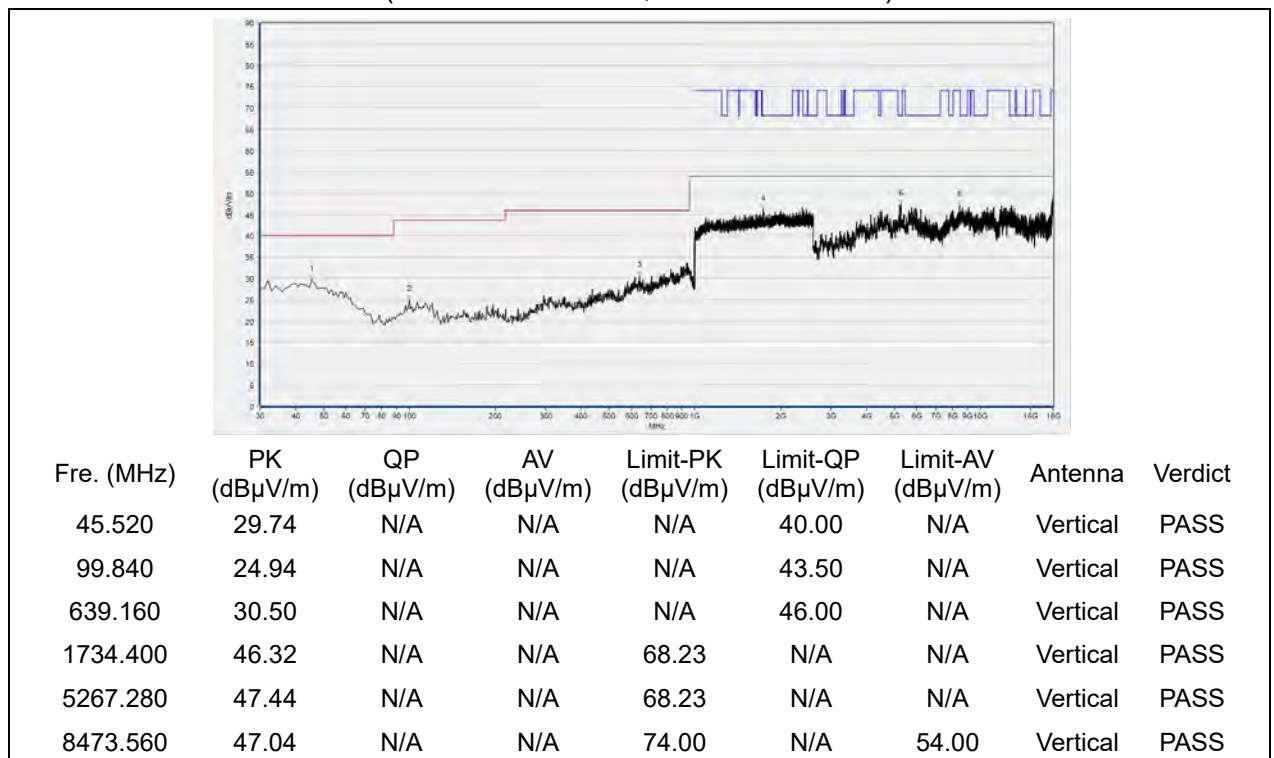
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
46.490	28.03	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.840	26.38	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
564.470	29.28	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1349.867	46.53	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5224.160	48.04	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
9776.400	47.68	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 54

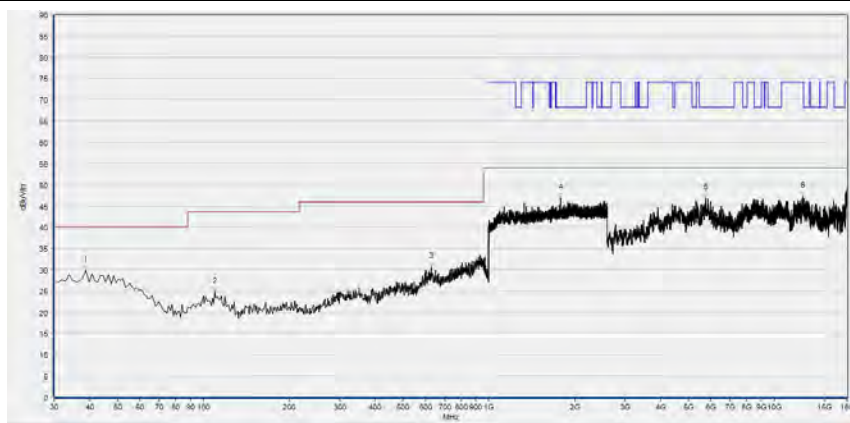


(Antenna Horizontal, 30MHz to 18GHz)



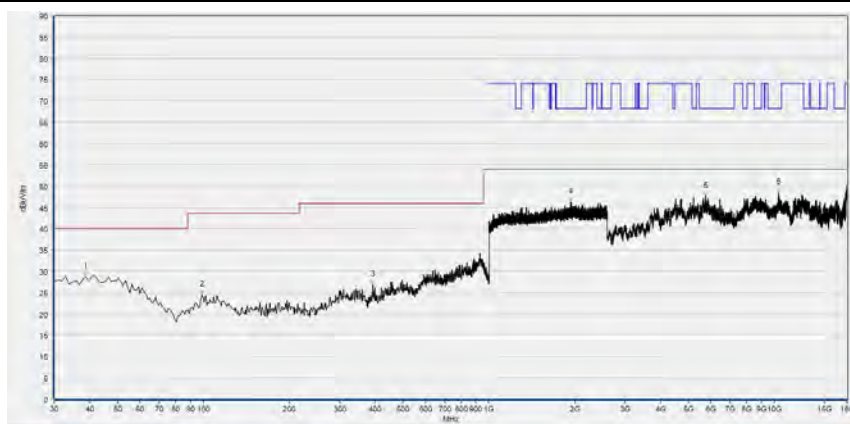
(Antenna Vertical, 30MHz to 18GHz)

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
38.730	29.85	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
109.540	24.76	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
628.490	30.66	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1789.333	46.89	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5747.760	46.90	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12560.720	47.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

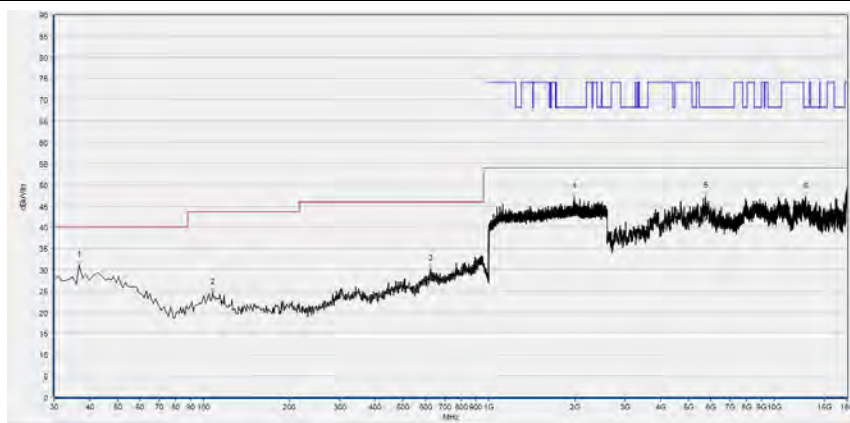


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
38.730	28.67	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
98.870	24.55	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
392.780	26.76	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1940.267	46.31	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5744.680	47.56	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10358.520	48.51	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

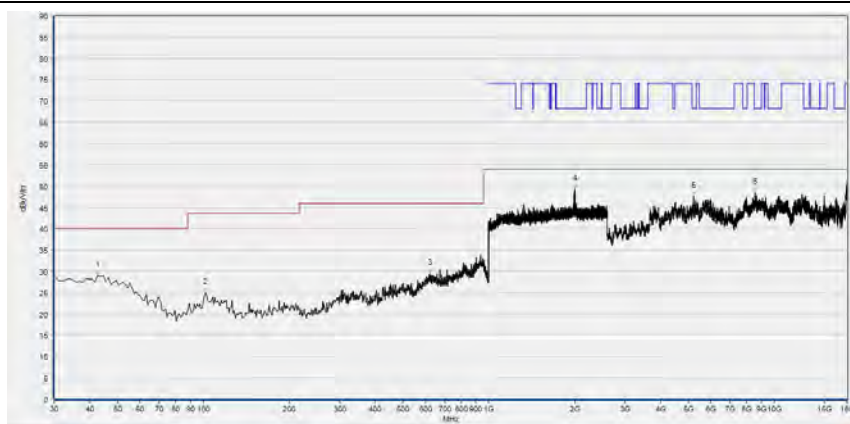


Plot for Channel 102



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
36.790	30.98	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
107.600	24.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
626.550	30.18	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1986.133	47.03	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5757.000	47.25	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12868.720	47.16	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

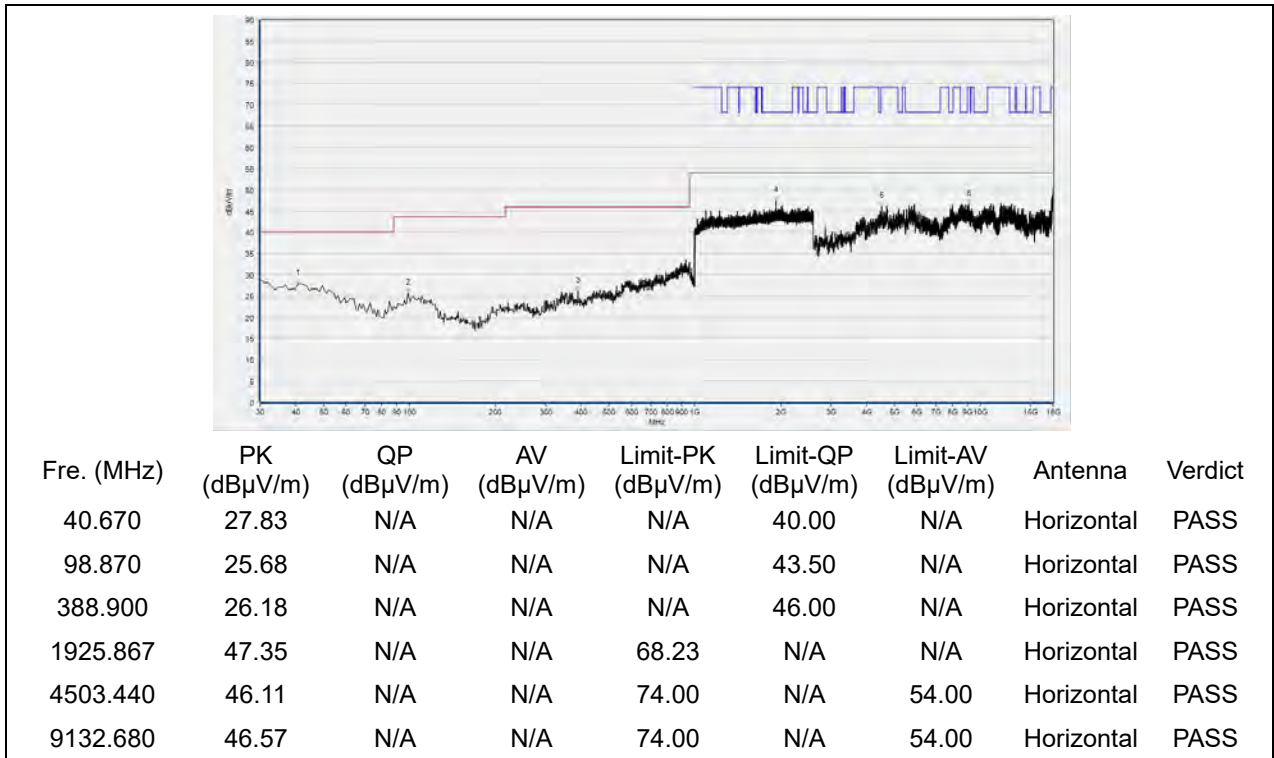
(Antenna Horizontal, 30MHz to 18GHz)



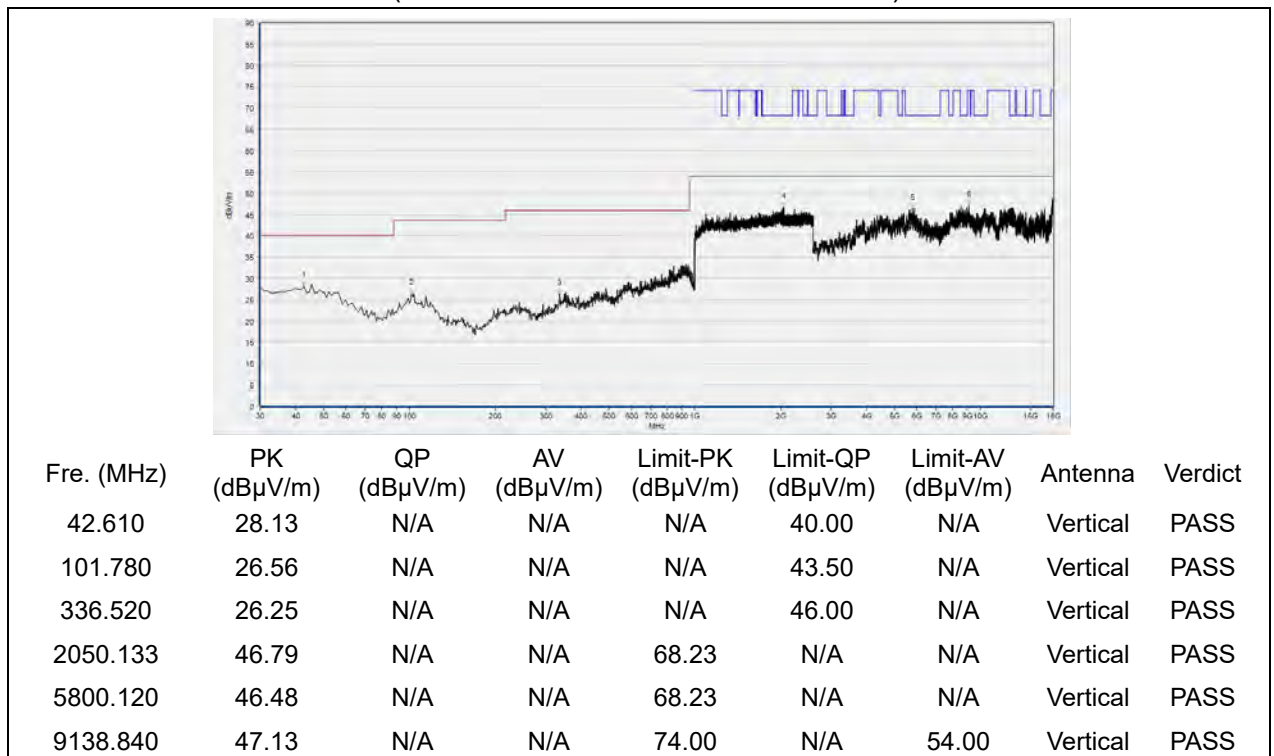
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
42.610	29.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
101.780	24.89	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
620.730	29.45	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2000.000	49.25	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5218.000	47.63	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8572.120	48.41	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 126

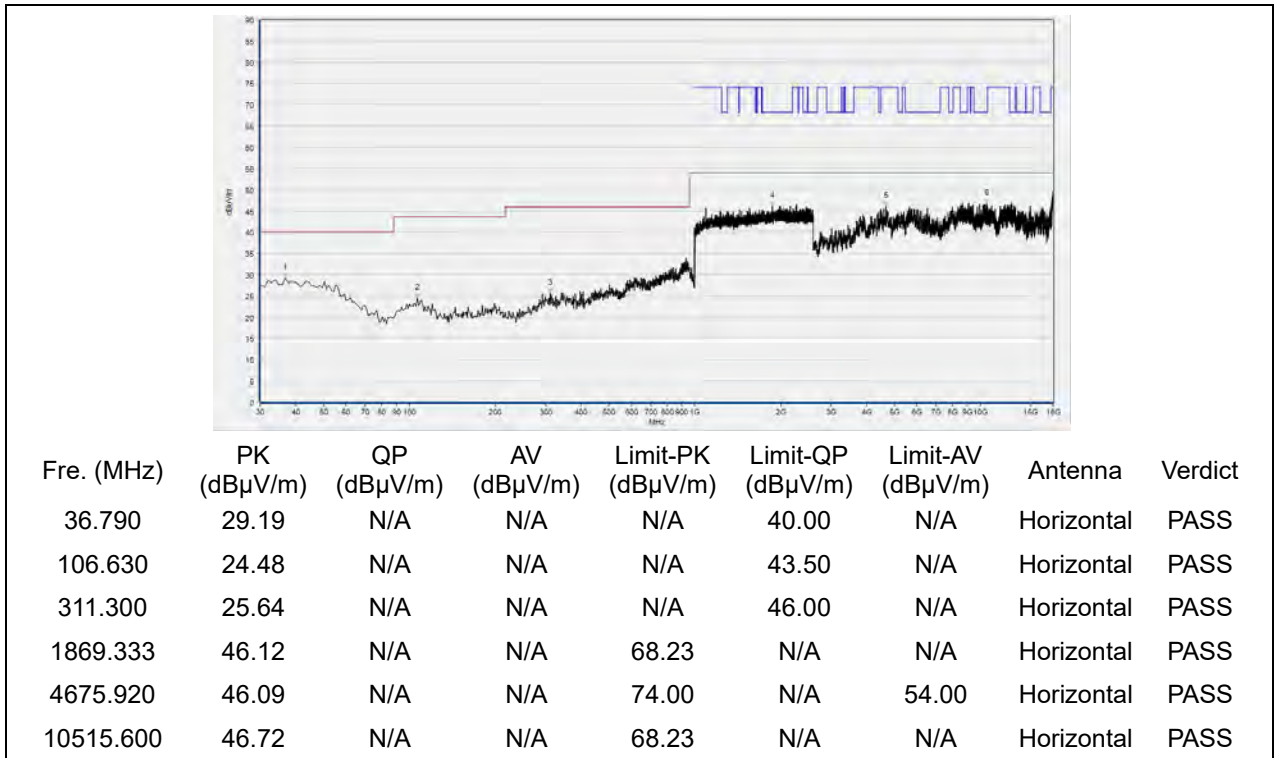


(Antenna Horizontal, 30MHz to 18GHz)

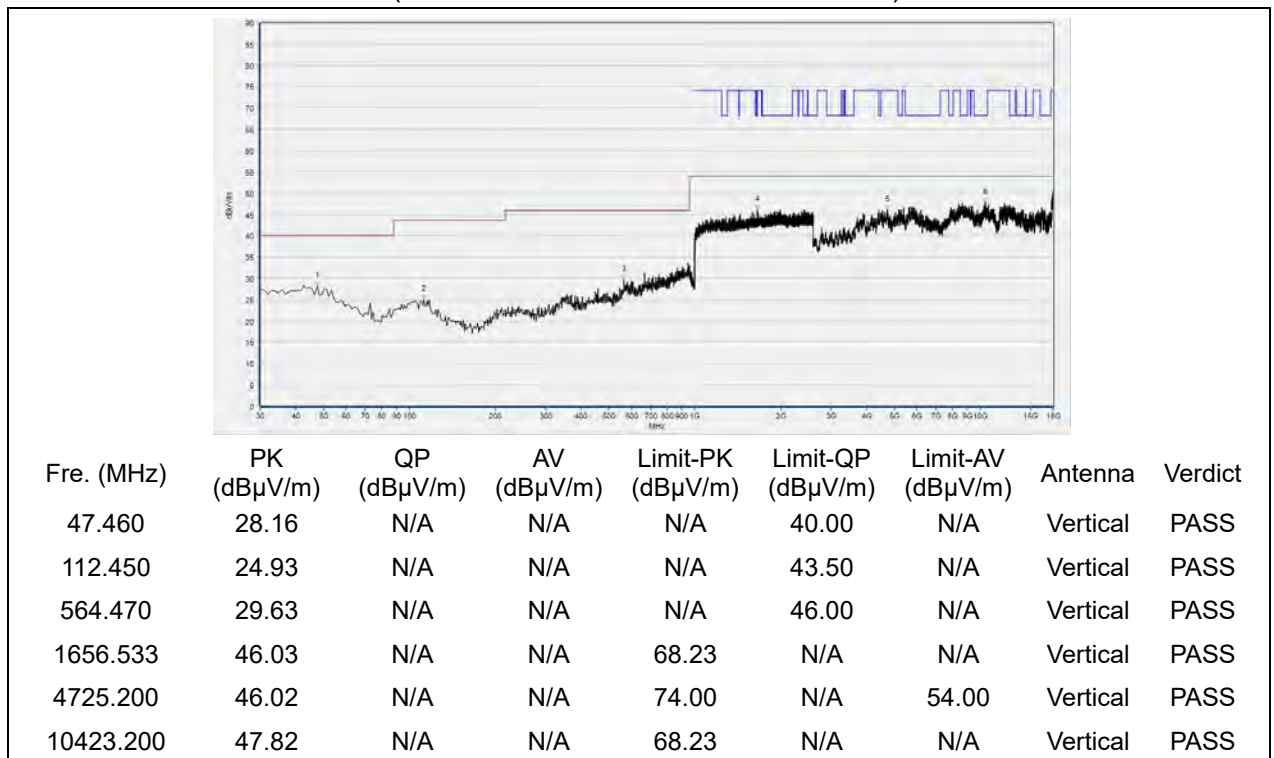


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 142

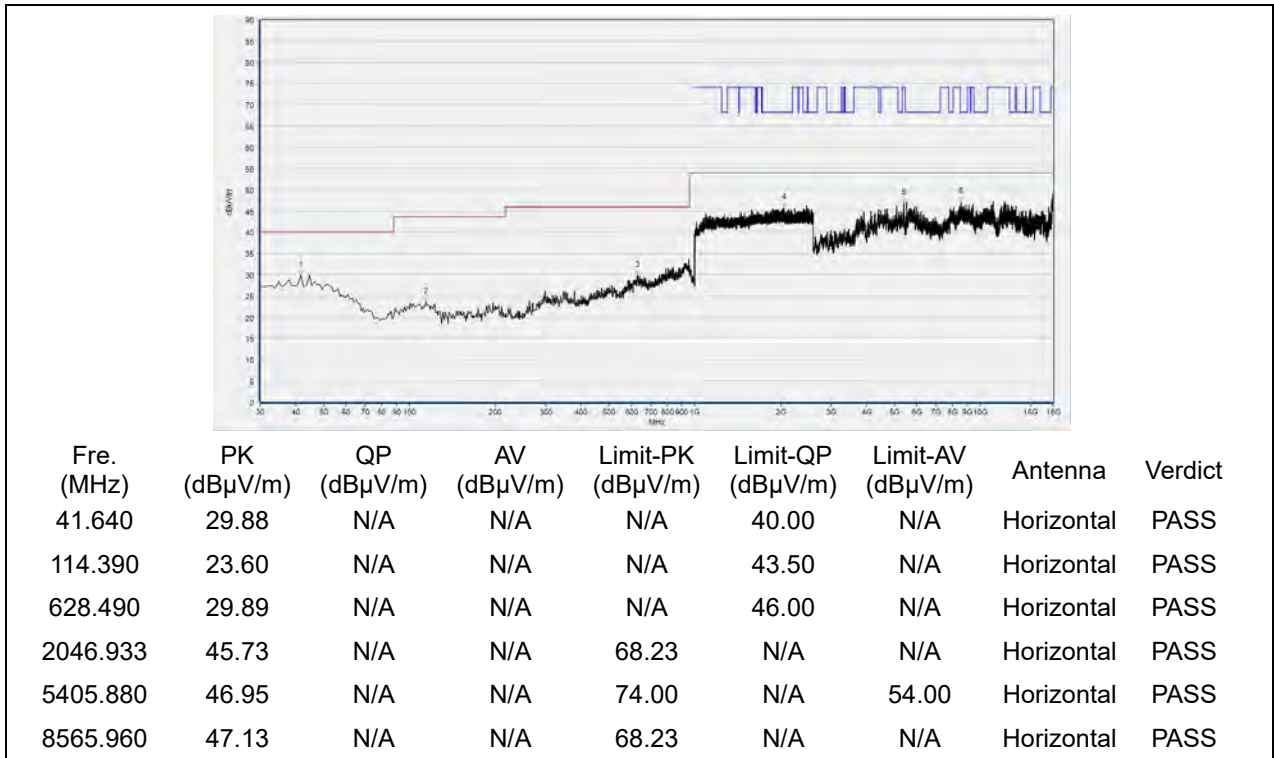


(Antenna Horizontal, 30MHz to 18GHz)

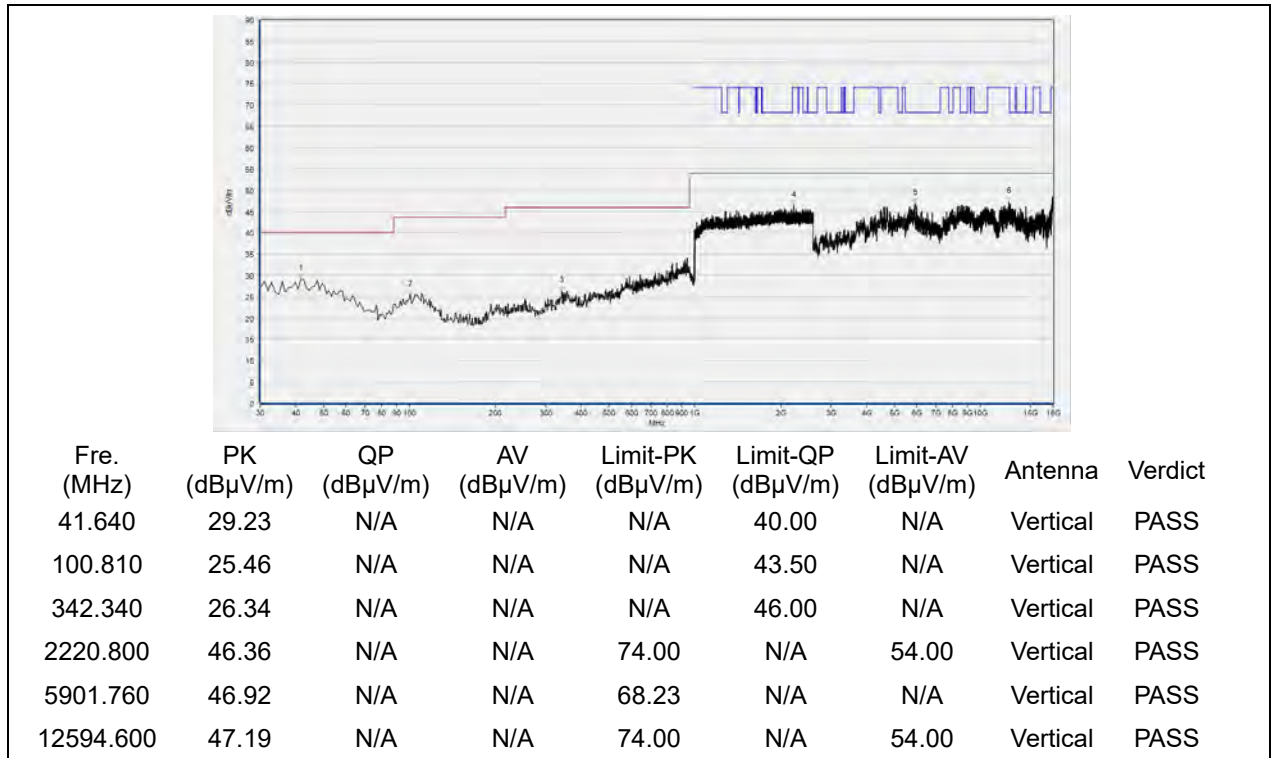


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 151

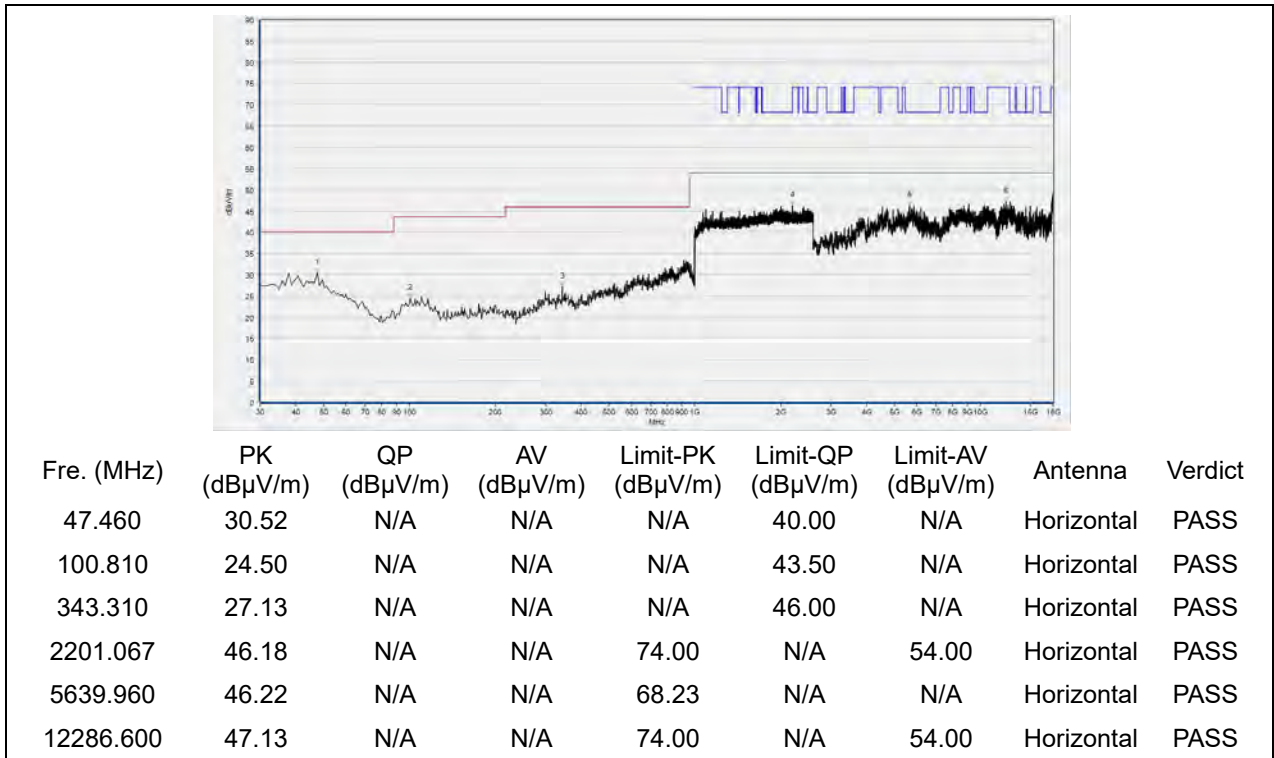


(Antenna Horizontal, 30MHz to 18GHz)

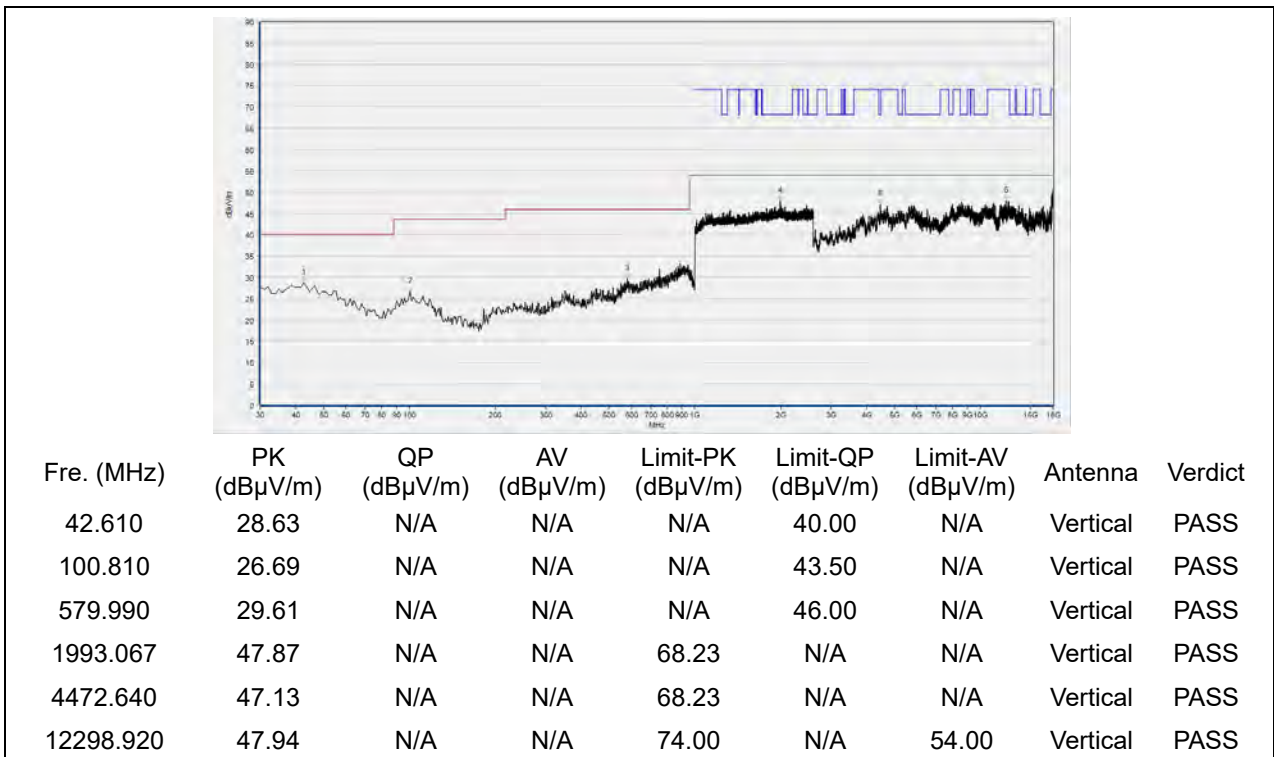


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 159



(Antenna Horizontal, 30MHz to 18GHz)

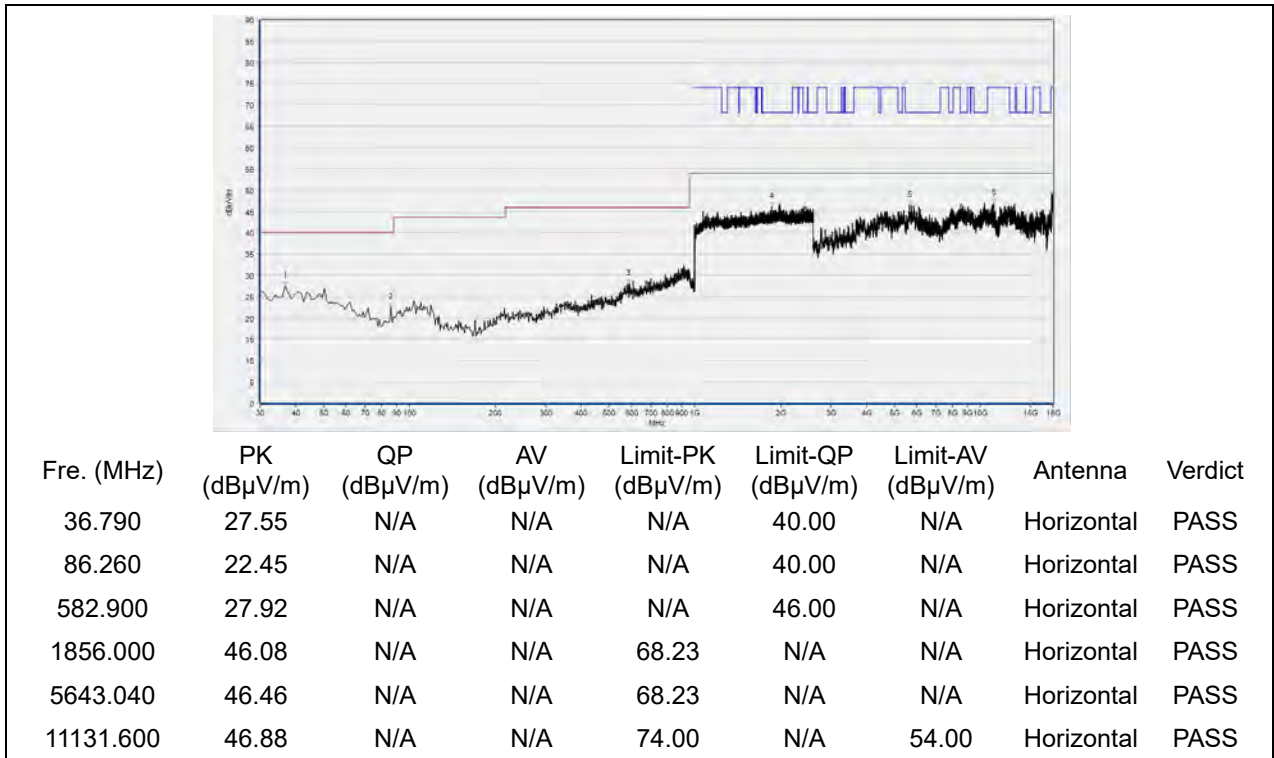


(Antenna Vertical, 30MHz to 18GHz)

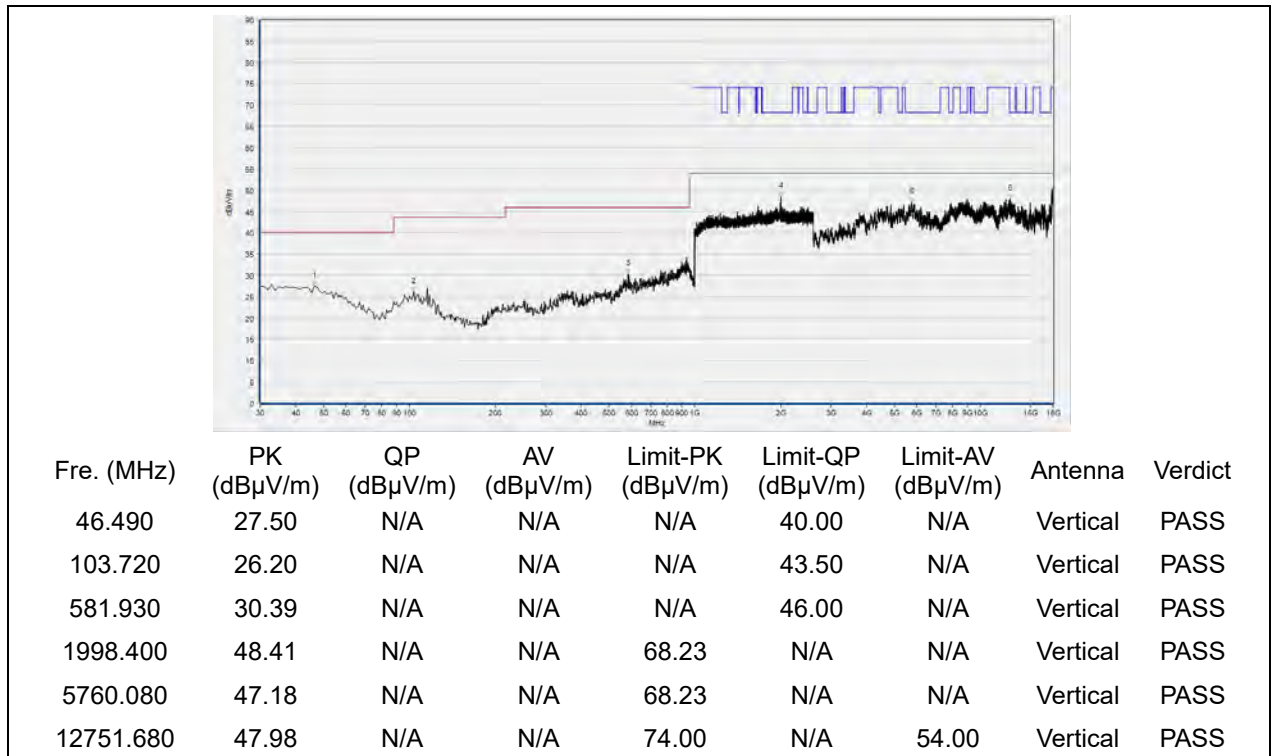


**802.11ac (VHT80) Mode**

Plot for Channel 42

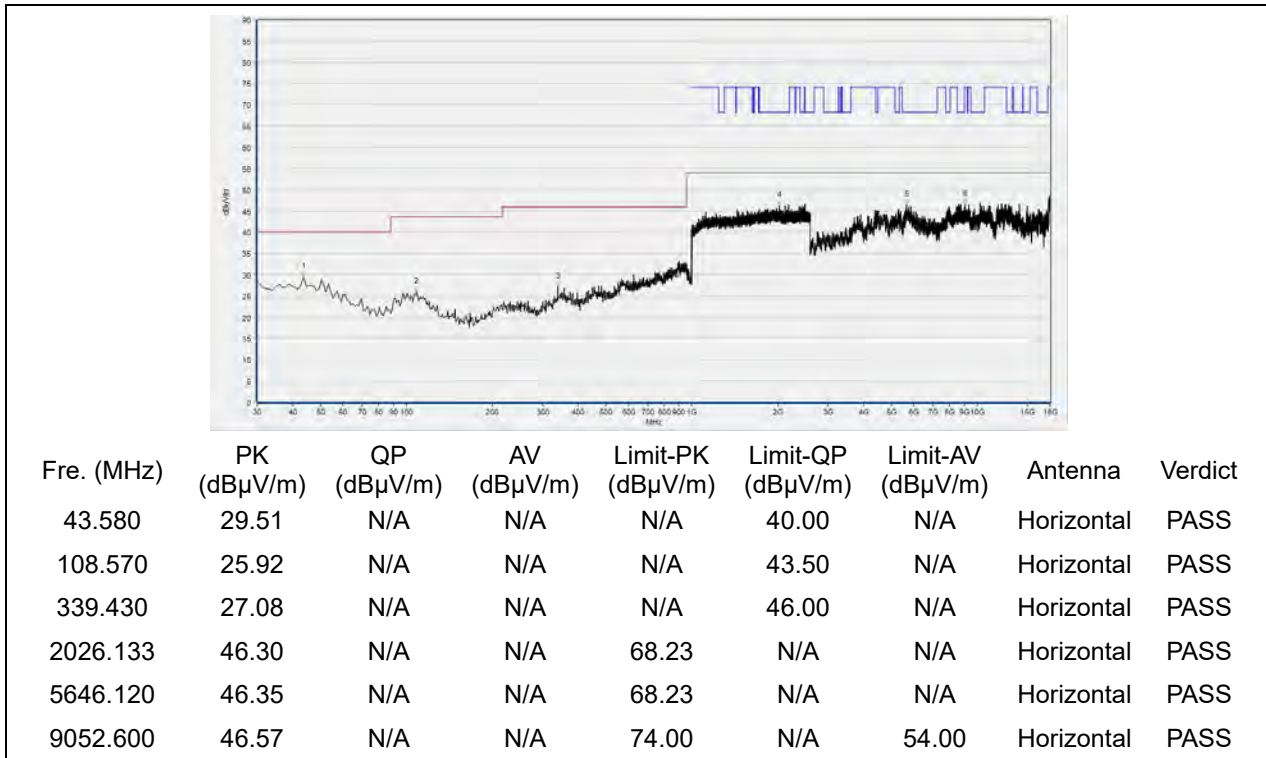


(Antenna Horizontal, 30MHz to 18GHz)

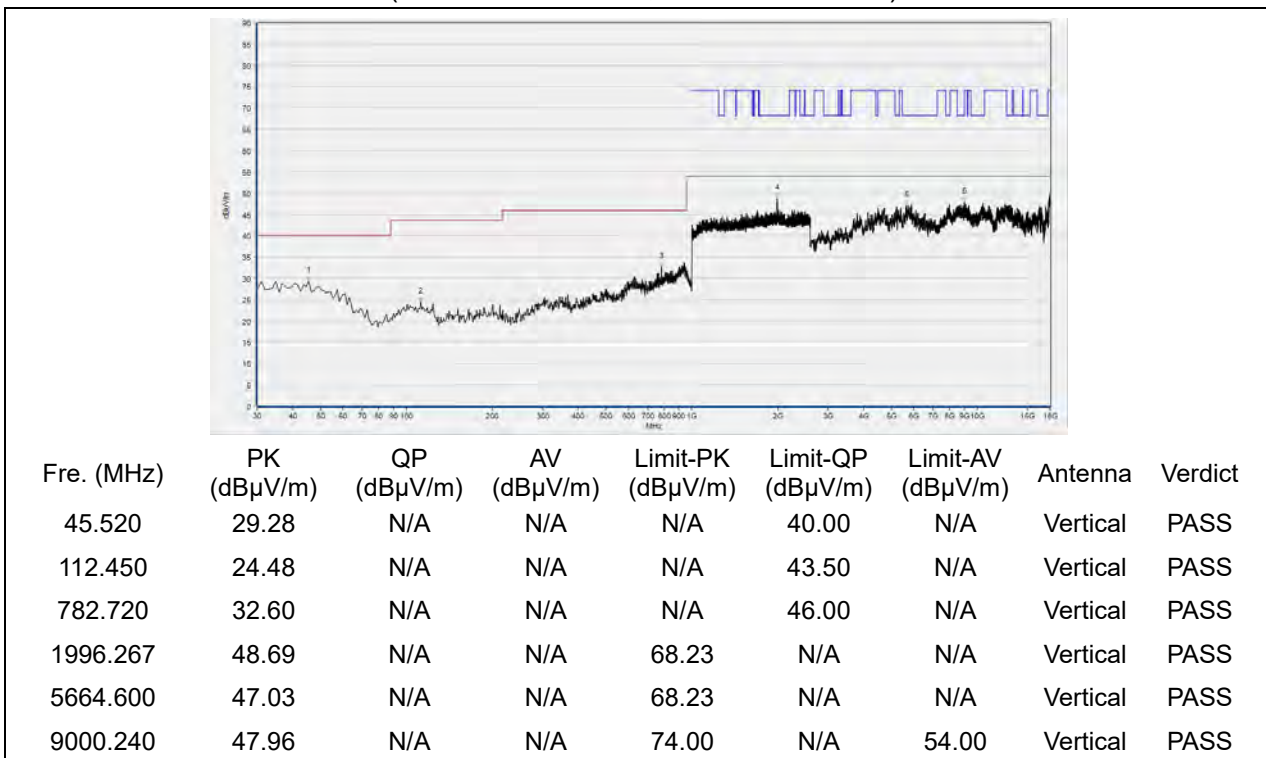


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 58

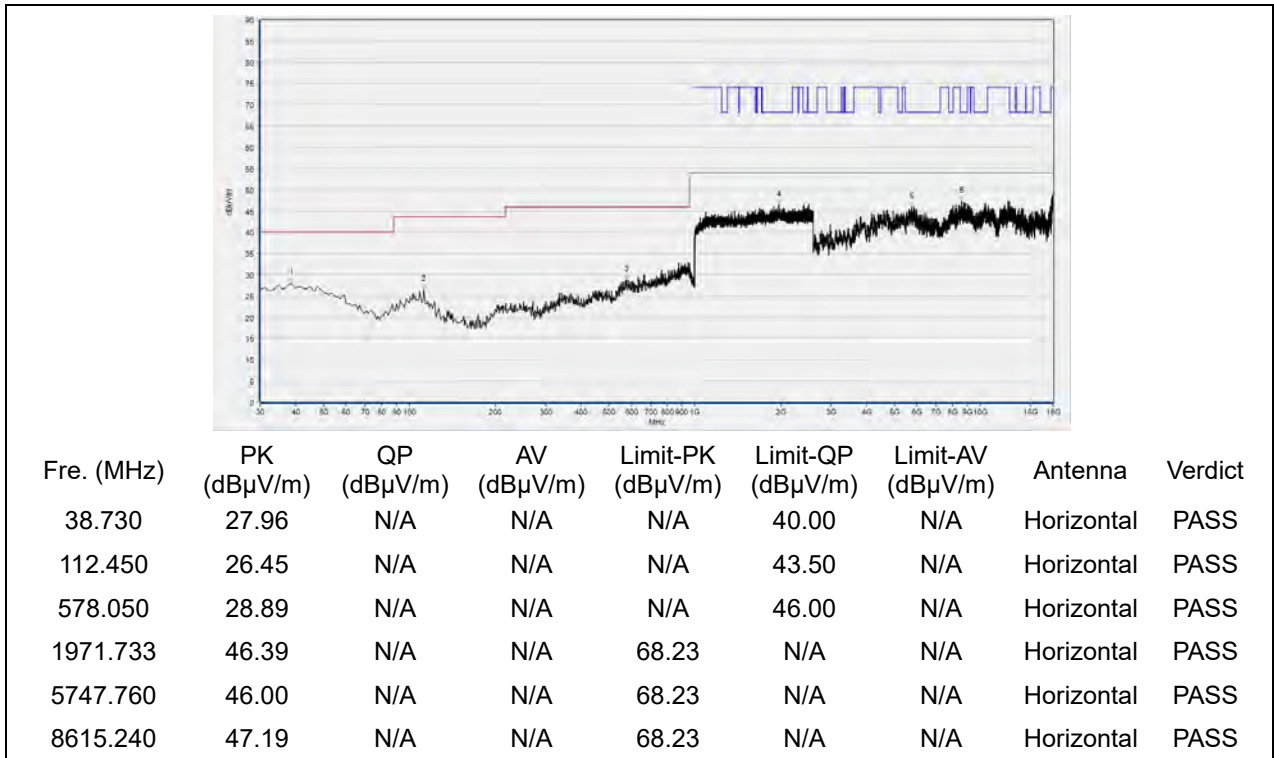


(Antenna Horizontal, 30MHz to 18GHz)

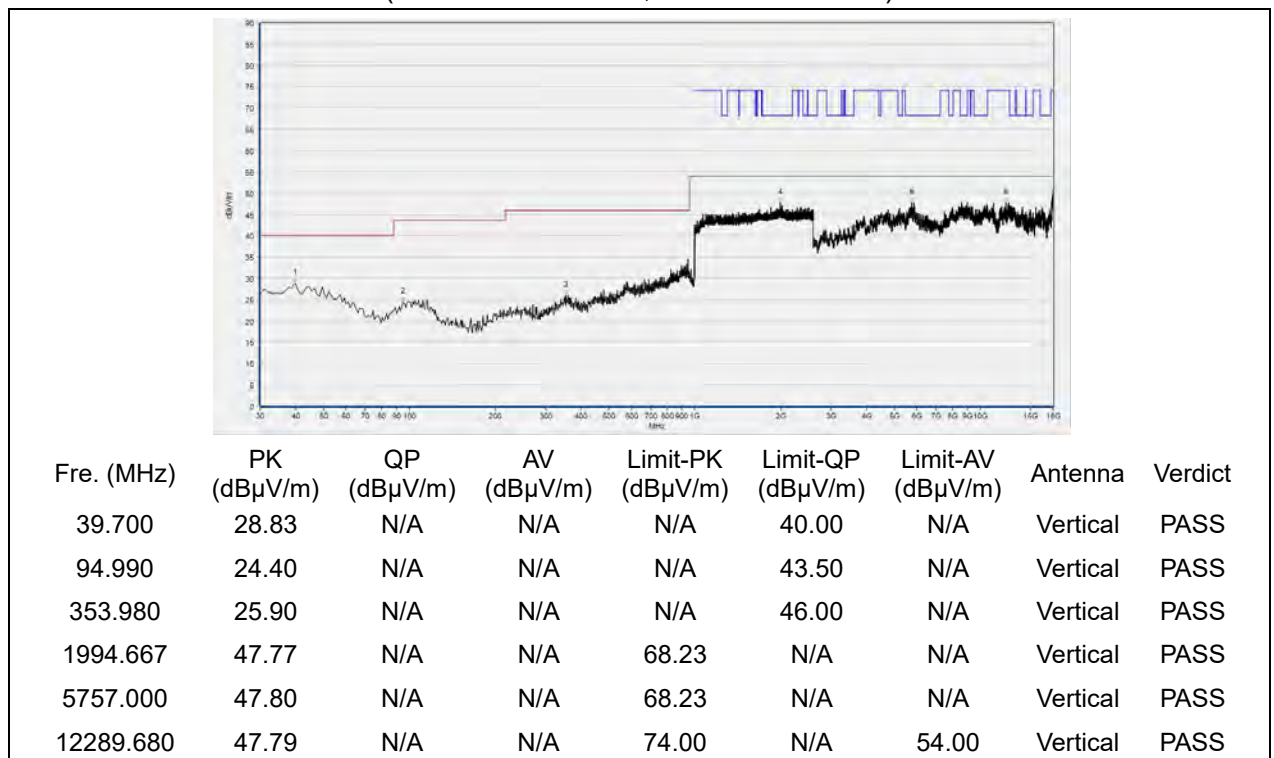


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 106



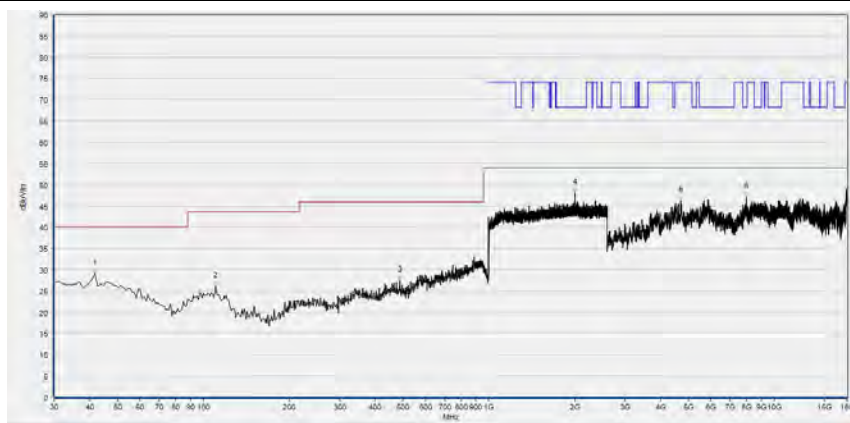
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

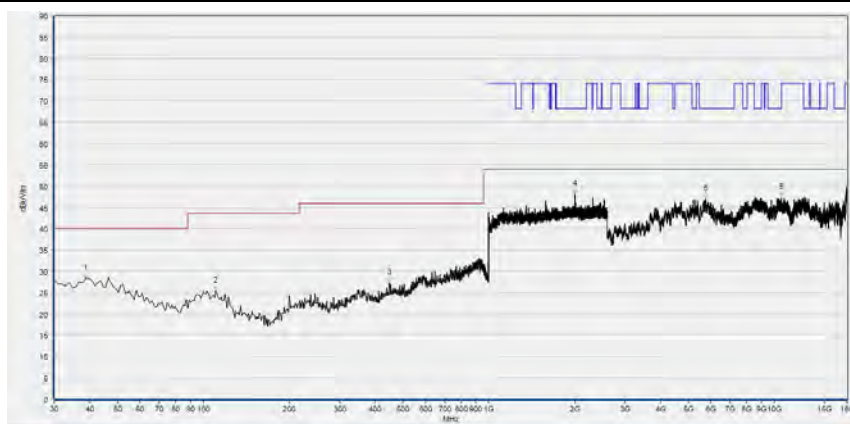


Plot for Channel 122



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
41.640	28.96	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
110.510	26.10	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
486.870	27.44	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1998.933	48.09	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4694.400	46.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7990.000	47.05	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

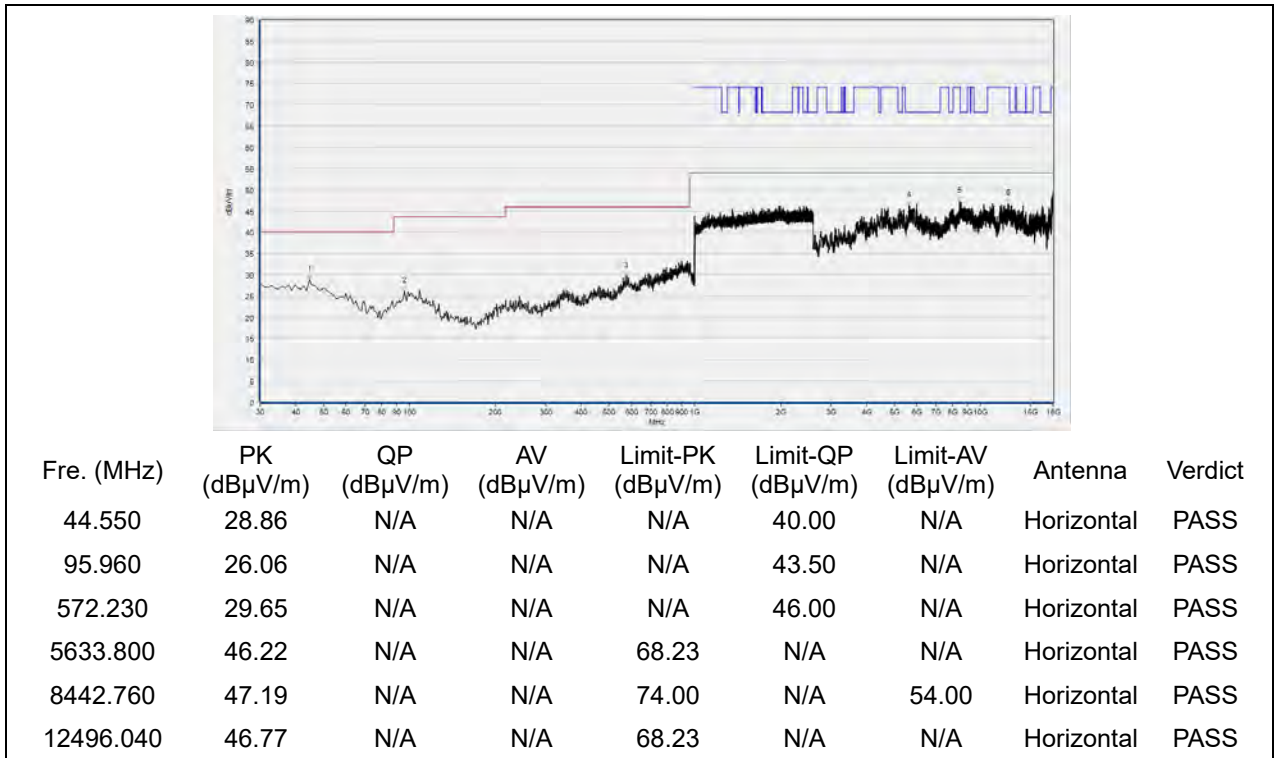
(Antenna Horizontal, 30MHz to 18GHz)



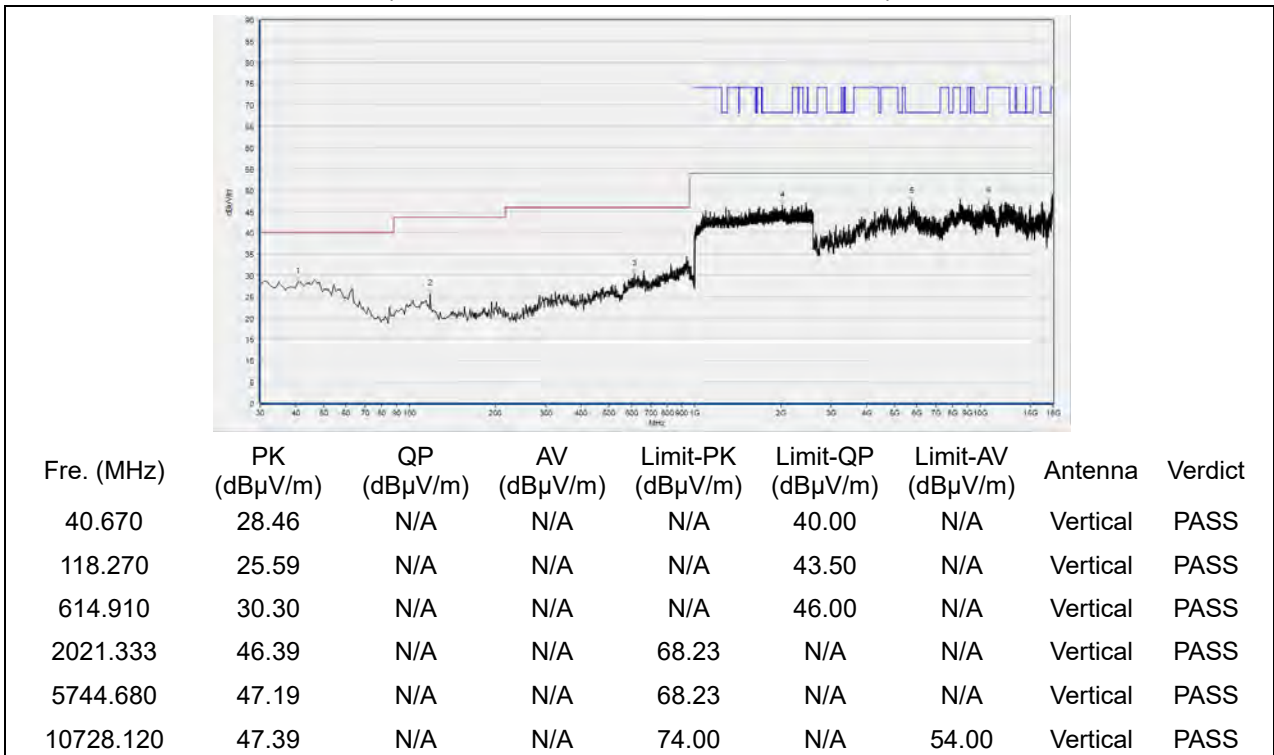
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
38.730	28.35	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
110.510	25.29	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
448.070	27.31	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1997.333	48.02	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5750.840	46.88	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10589.520	47.20	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 138

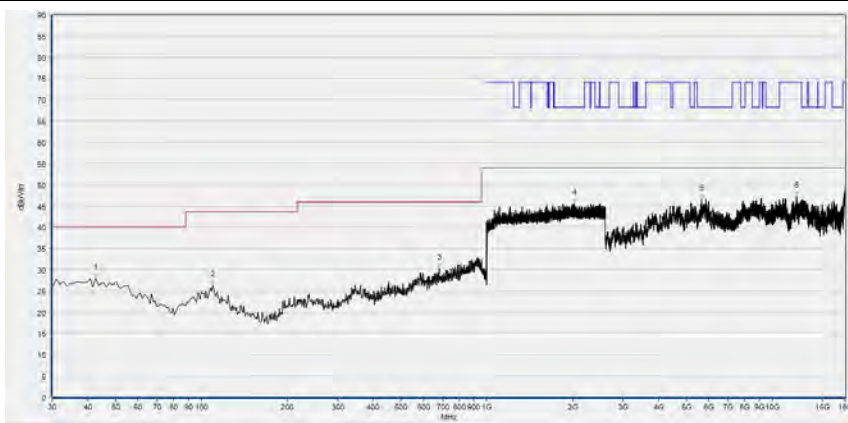


(Antenna Horizontal, 30MHz to 18GHz)



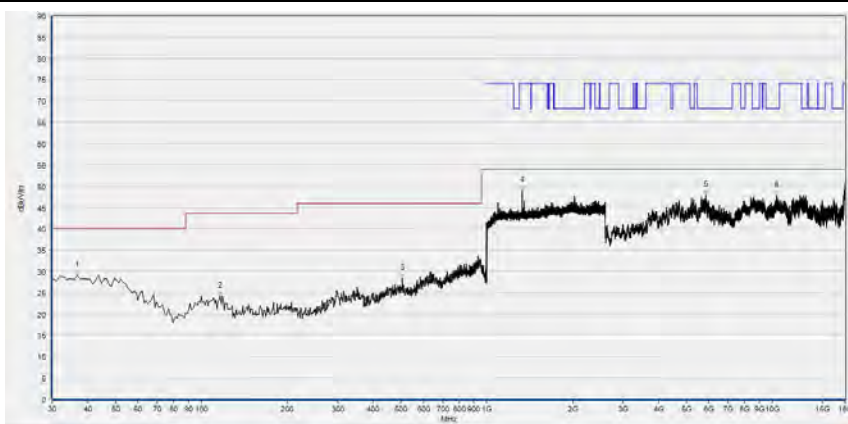
(Antenna Vertical, 30MHz to 18GHz)

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
42.610	28.02	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
109.540	26.25	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
680.870	30.35	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2023.467	45.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5652.280	46.65	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12181.880	47.18	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
36.790	29.06	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
116.330	24.15	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
506.270	28.38	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1331.200	48.96	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5861.720	47.96	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10349.280	47.72	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 (PSD)	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Restricted Frequency Bands	$\pm 5\%$
Radiated Emission	$\pm 2.95\text{dB}$
Conducted Emission	$\pm 2.44\text{dB}$

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



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

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

### 2. Identification of the Responsible Testing Location

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

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, 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	2020.04.01	2021.03.31
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2020.04.01	2021.03.31
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	2020.01.08	2021.01.07

**4.2 Conducted Emission Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2020.03.26	2021.03.25
LISN	812744	NSLK 8127	Schwarzbeck	2020.03.26	2021.03.25
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2020.07.24	2021.07.23
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A
Computer	DF2DR A01 DPC	VOSTRO 5370	DELL	N/A	N/A
PC Adapter	N/A	LA45NM1 40	LITEON	N/A	N/A

**4.3 List of Software Used**

Description	Manufacturer	Software Version
Test System	Tonscend	V2.6
Power Panel	Agilent	V3.8
MORLAB EMCR V1.2	MORLAB	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	2020.07.21	2021.07.20
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	S020180L32 03	Tonscend	2020.07.21	2021.07.20
18-26.5GHz pre-Amplifier	46732	S10M100L38 02	Tonscend	2020.07.21	2021.07.20
26-40GHz pre-Amplifier	56774	S40M400L40 02	Tonscend	2020.07.21	2021.07.20
Notch Filter	N/A	WRCG-5150-5350	Wainwright	2020.07.21	2021.07.20
Notch Filter	N/A	WRCG-5470-5725	Wainwright	2020.07.21	2021.07.20
Notch Filter	N/A	WRCG-5725-5850	Wainwright	2020.07.21	2021.07.20



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

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