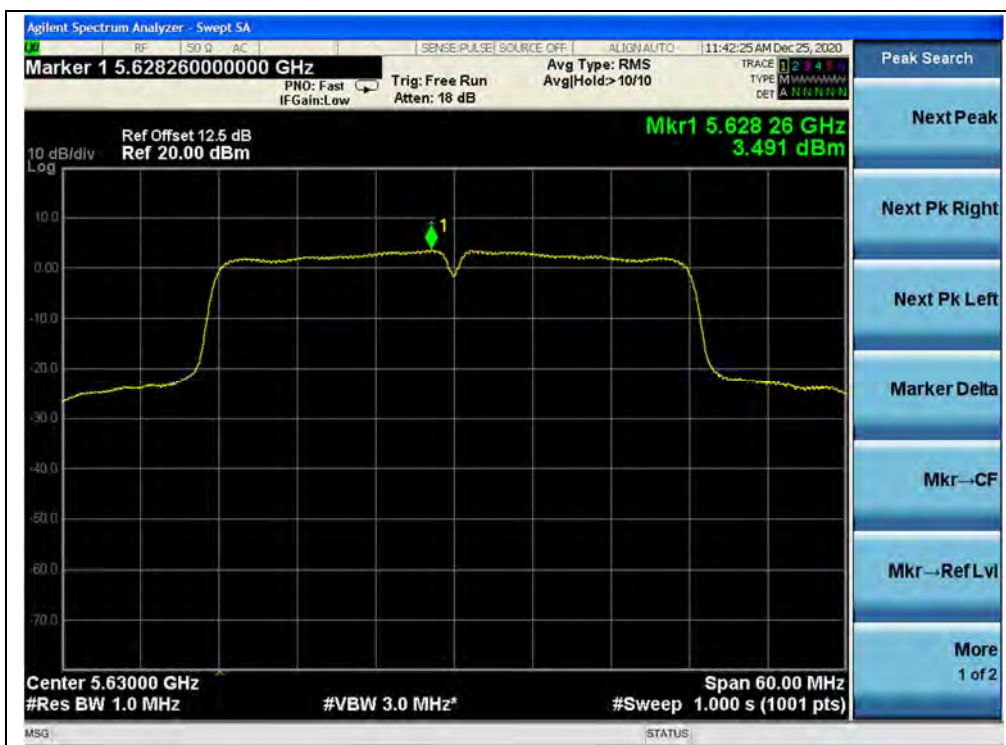
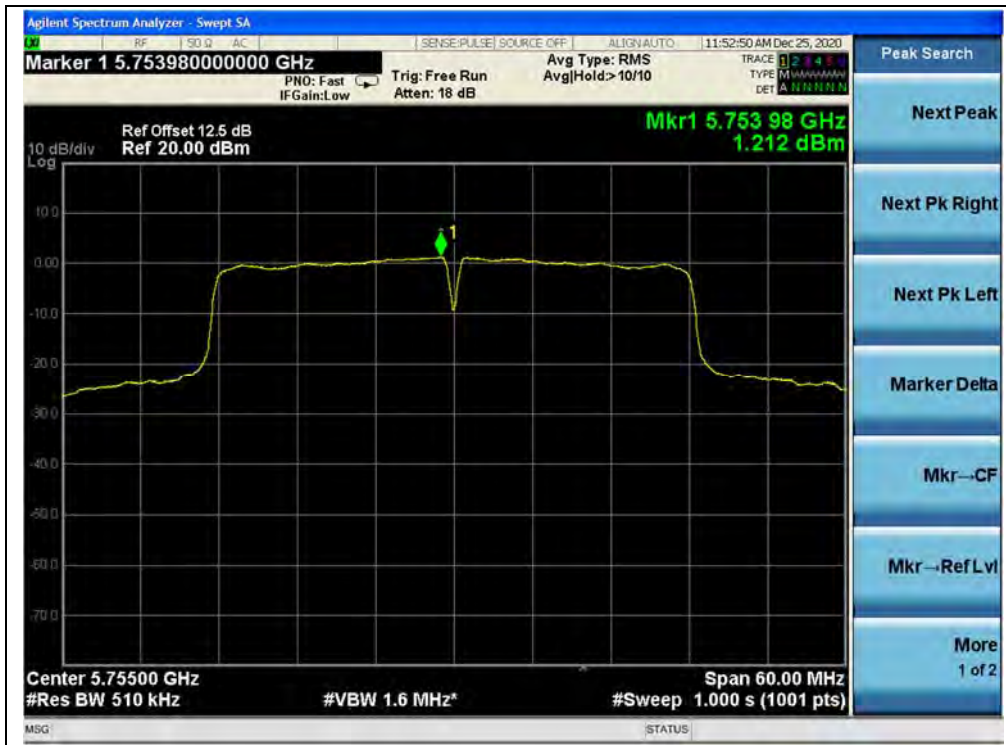




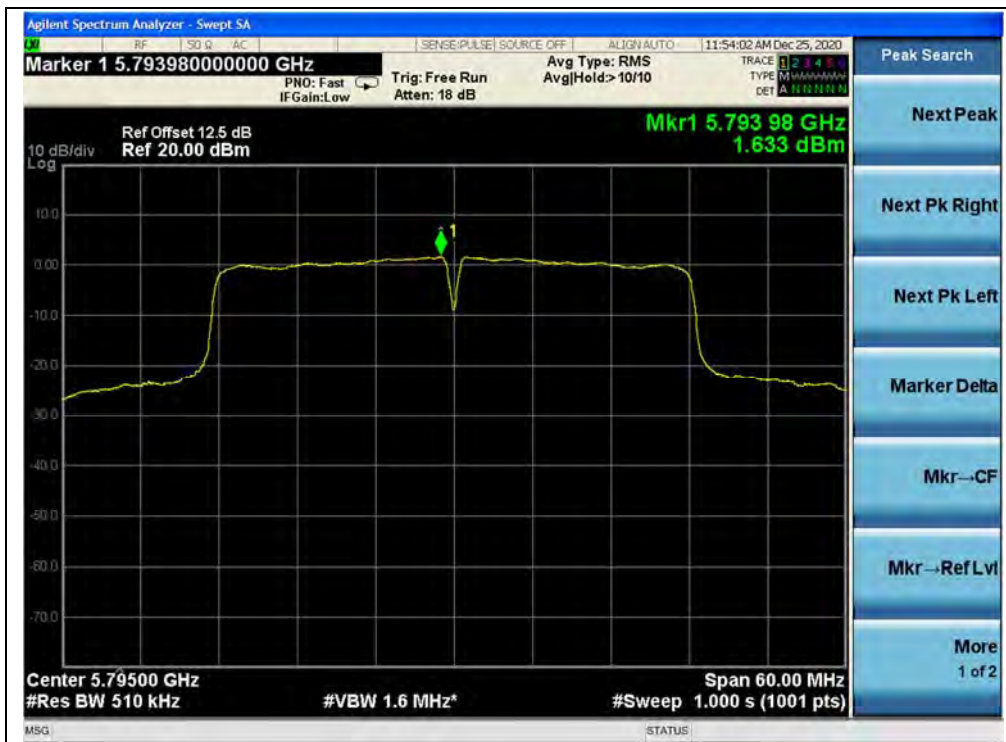
(Channel 102, 5510MHz, 802.11n (HT40), ANTO)



(Channel 126, 5630 MHz, 802.11n (HT40), ANTO)



(Channel 151, 5755MHz, 802.11n (HT40), ANT0)



(Channel 159, 5795MHz, 802.11n (HT40), ANT0)



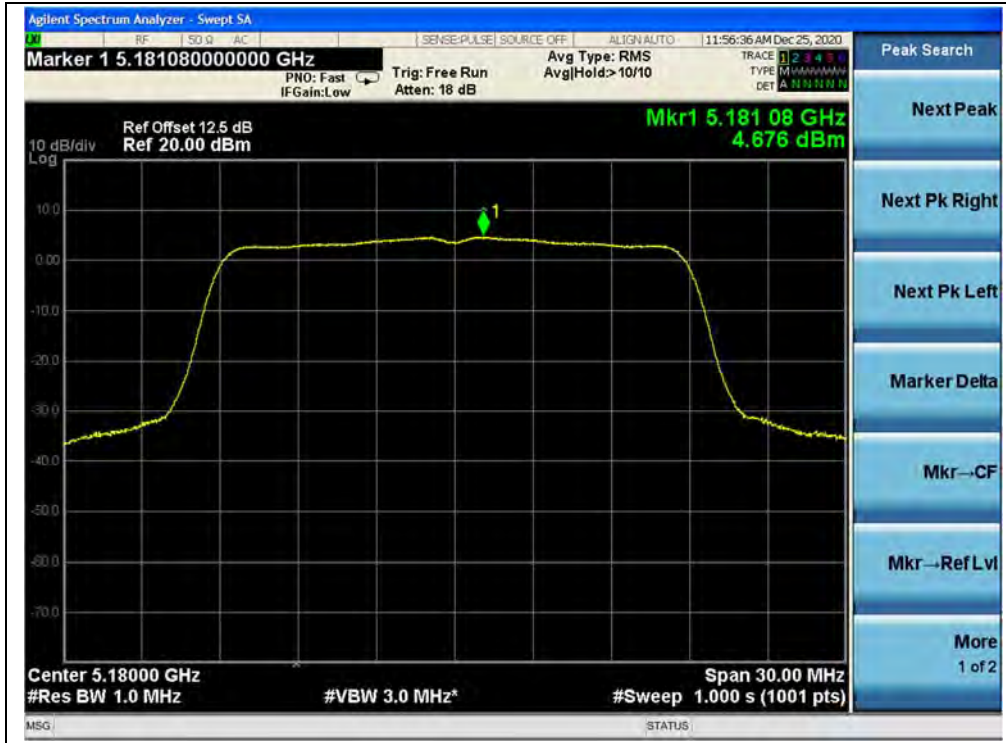
802.11ac (VHT20) Mode

A.Test Verdict:

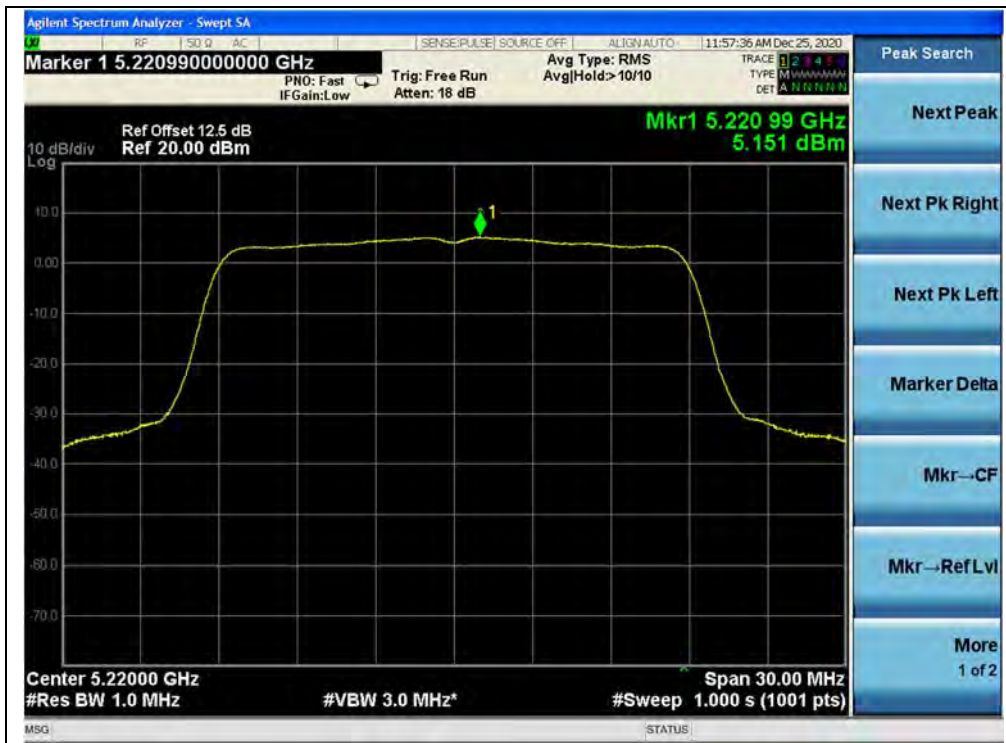
Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5180	4.68	3.39	0.62	7.71	8.99	PASS
5220	5.15	3.32		7.96		
5240	5.50	3.07		8.08		
5260	5.56	4.34		8.62		
5300	5.93	4.53		8.92		
5320	5.86	4.68		8.94		
5500	5.12	4.43		8.42		
5600	5.40	4.44		8.58		
5720	5.68	4.63		8.82		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5720	3.97	1.79	0.62	6.65	27.99	PASS
5745	4.83	4.24		8.18		
5785	5.13	4.64		8.52		
5825	5.20	4.77		8.62		
<p>Note: Directional gain = 5.00dBi +10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 11-(8.01-6) = 8.99dBm for 5.18-5.24 GHz band and reduced to 30-(8.01-6) = 27.99dBm for 5.745-5.825 GHz band.</p>						



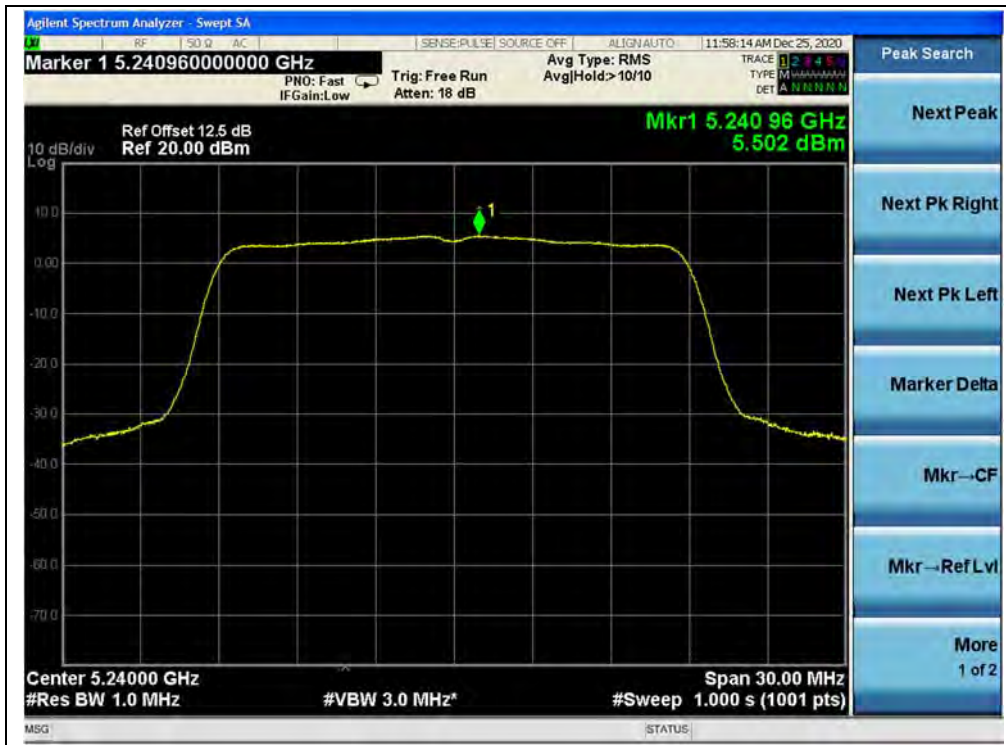
B.Test Plot:



(Channel 36, 5180MHz, 802.11ac (VHT20), ANT0)



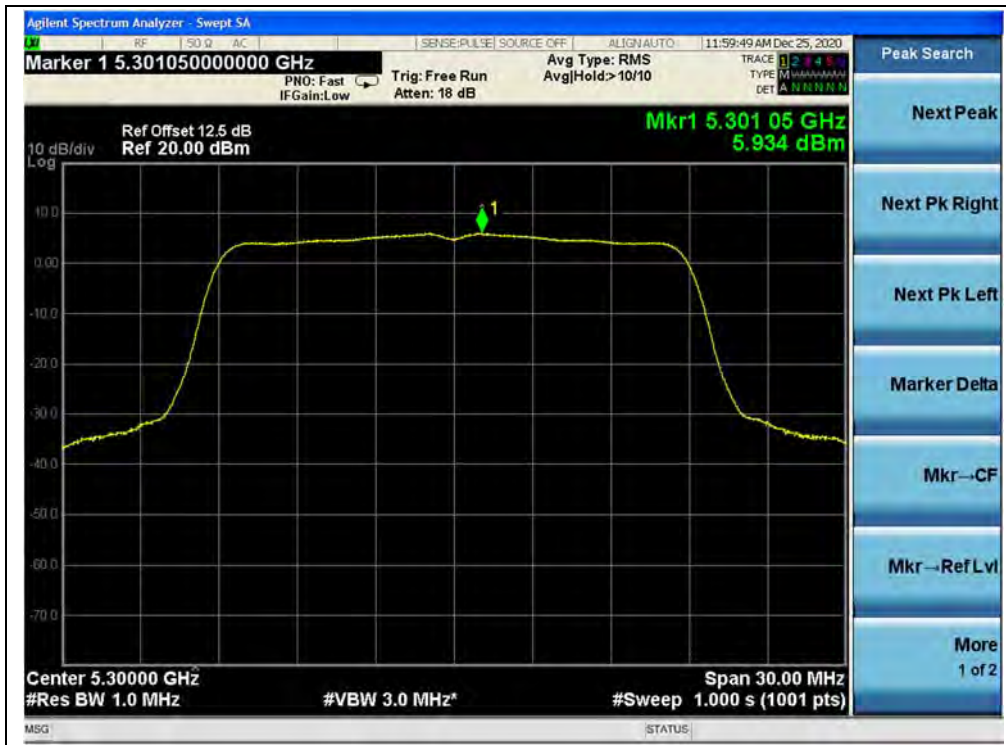
(Channel 44, 5220MHz, 802.11ac (VHT20), ANT0)



(Channel 48, 5240MHz, 802.11ac (VHT20), ANT0)



(Channel 52, 5260MHz, 802.11ac (VHT20), ANT0)



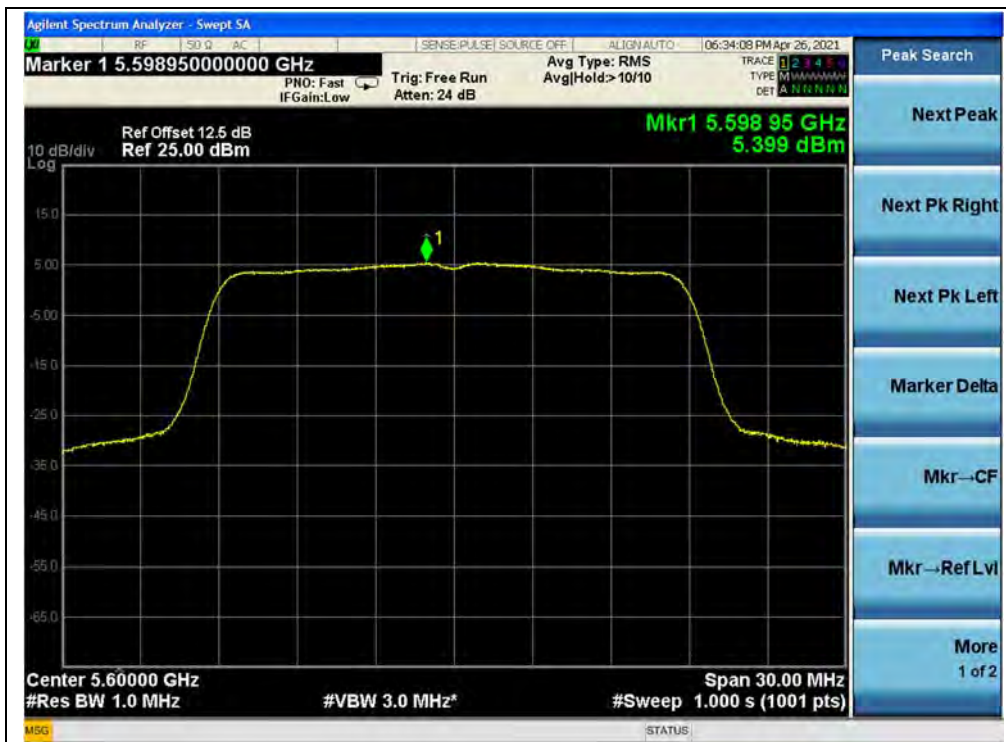
(Channel 60, 5300MHz, 802.11ac (VHT20), ANT0)



(Channel 64, 5320MHz, 802.11ac (VHT20), ANT0)



(Channel 100, 5500MHz, 802.11ac (VHT20), ANT0)



(Channel 120, 5600MHz, 802.11ac (VHT20), ANT0)



(Channel 144, 5720MHz, 802.11ac (VHT20), ANT0)



(Channel 144, 5720MHz, 802.11ac(VHT20), ANT0)



(Channel 165, 5825MHz, 802.11ac (VHT20), ANT0)



802.11ac (VHT40) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5190	0.56	-1.13	1.17	3.98	8.99	PASS
5230	1.38	-1.20		4.46		
5270	1.95	-0.05		5.24		
5310	4.11	0.37		6.81		
5510	4.53	1.49		7.45		
5630	3.17	2.22		6.90		
5710	3.12	2.35		6.93		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5710	0.13	-0.66	1.17	3.93	27.99	PASS
5755	1.11	0.51		5.00		
5795	1.38	0.79		5.28		
<p>Note: Directional gain = $5.00\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11 - (8.01 - 6) = 8.99\text{dBm}$ for 5.18-5.24 GHz band and reduced to $30 - (8.01 - 6) = 27.99\text{dBm}$ for 5.745-5.825 GHz band.</p>						

B.Test Plot:



(Channel 38, 5190MHz, 802.11ac (VHT40), ANT0)



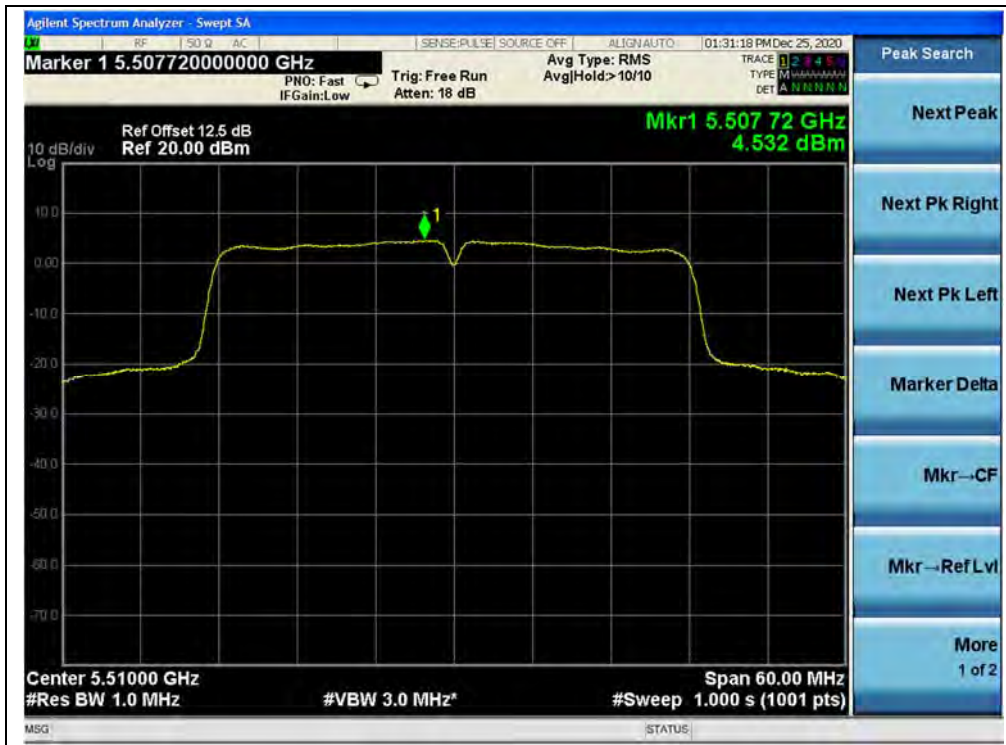
(Channel 46, 5230MHz, 802.11ac (VHT40), ANT0)



(Channel 54, 5270MHz, 802.11ac (VHT40), ANT0)



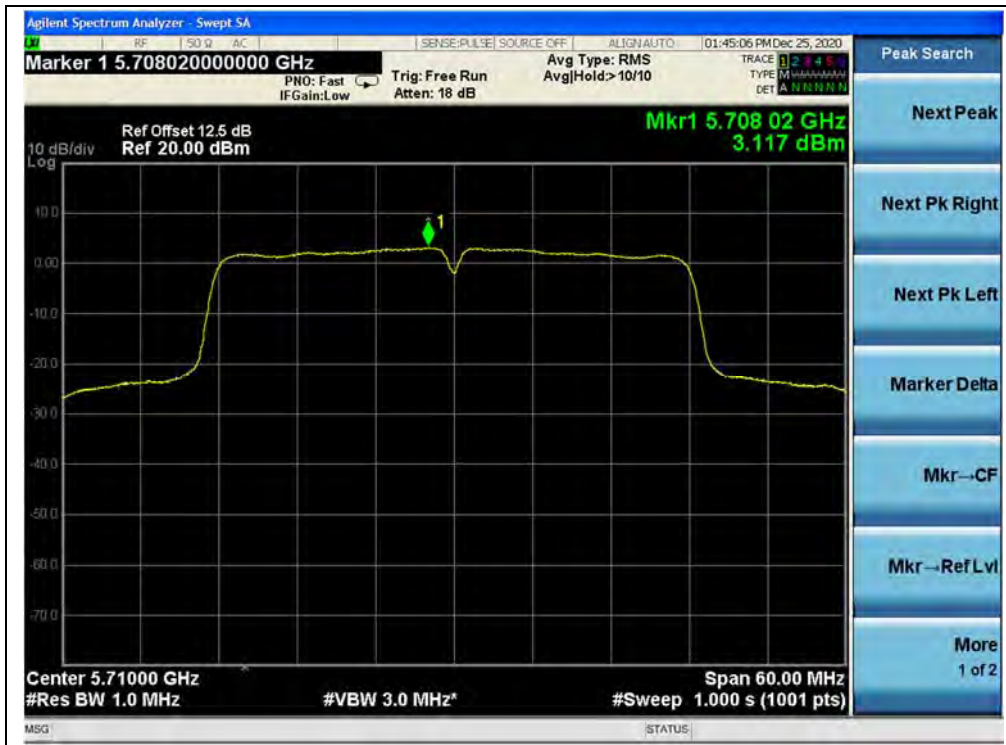
(Channel 62, 5310MHz, 802.11ac (VHT40), ANT0)



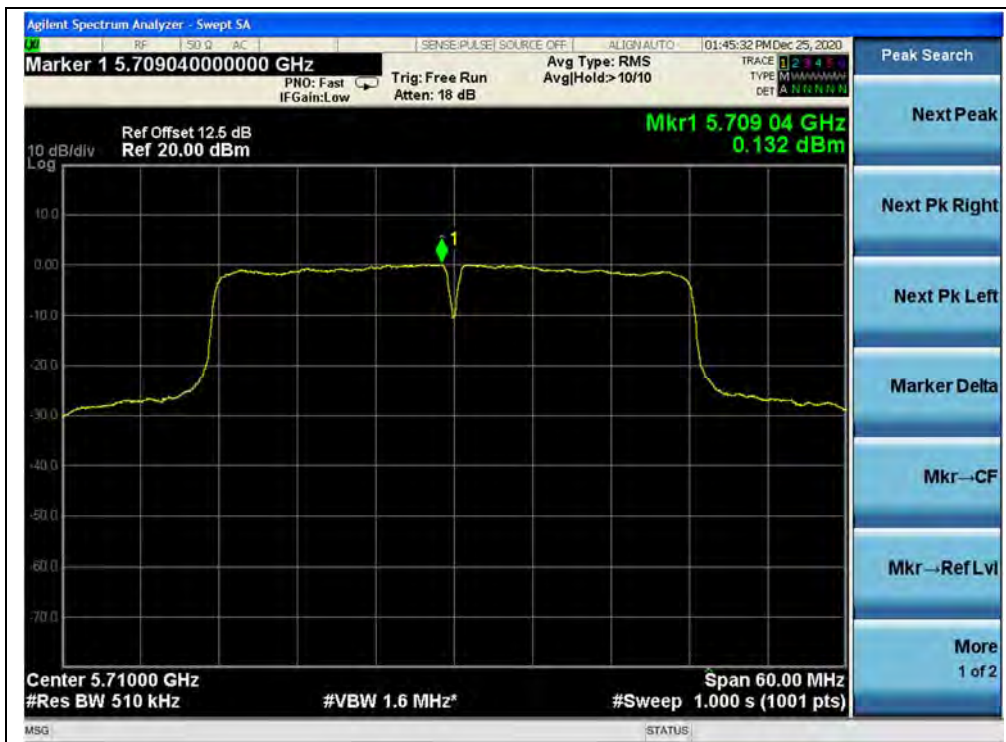
(Channel 102, 5510MHz, 802.11ac (VHT40), ANT0)



(Channel 126, 5630MHz, 802.11ac (VHT40), ANT0)



(Channel 142, 5710MHz, 802.11ac (VHT40), ANT0)



(Channel 142, 5710MHz, 802.11ac (VHT40), ANT0)



(Channel 151, 5755MHz, 802.11ac (VHT40), ANT0)



(Channel 159, 5795MHz, 802.11ac (VHT40), ANT0)



802.11ac (VHT80) Mode

A. Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5210	-1.82	-4.82	3.14	3.08	8.99	PASS
5290	-0.81	-3.50		4.20		
5530	-0.21	-2.46		4.96		
5610	-0.19	-1.76		5.25		
5690	-0.20	-1.09		5.53		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5690	-2.96	-3.50	3.14	2.93	27.99	PASS
5775	-2.03	-1.92		4.18		

Note: Directional gain = 5.01dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 11-(8.01-6) = 8.99dBm for 5.18-5.24 GHz band and reduced to 30-(8.01-6) = 27.99dBm for 5.745-5.825 GHz band.

B. Test Plot:



(Channel 42, 5210MHz, 802.11ac (VHT80), ANT0)



(Channel 58, 5290MHz, 802.11ac (VHT80), ANT0)



(Channel 106, 5530MHz, 802.11ac (VHT80), ANT0)



(Channel 122, 5610MHz, 802.11ac (VHT80), ANT0)



(Channel 138, 5690MHz, 802.11ac (VHT80), ANT0)



(Channel 138, 5690MHz, 802.11ac (VHT80), ANT0)



(Channel 155, 5775MHz, 802.11ac (VHT80), ANT0)



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)	26	5.019
100%		-30	31	5.985
100%		-20	29	5.598
100%		-10	26	5.019
100%		0	25	4.826
100%		+10	24	4.633
100%		+20	21	4.054
100%		+30	24	4.633
100%		+40	25	4.826
100%		+50	23	4.440
115%		5.75	+20	28
85%	4.25	+20	30	5.792



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	18	3.422
100%		+20	20	3.802
100%		+30	27	5.133
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	30	5.455
100%		-10	29	5.273
100%		0	21	3.818
100%		+10	20	3.636
100%		+20	24	4.364
100%		+30	32	5.818
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	27	4.700
100%		-10	21	3.655
100%		0	30	5.222
100%		+10	25	4.352
100%		+20	27	4.700
100%		+30	28	4.874
100%		+40	30	5.222
100%		+50	28	4.874
115%		5.75	+20	31
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 50 μ H/50 Ω line impedance stabilization network (LISN).

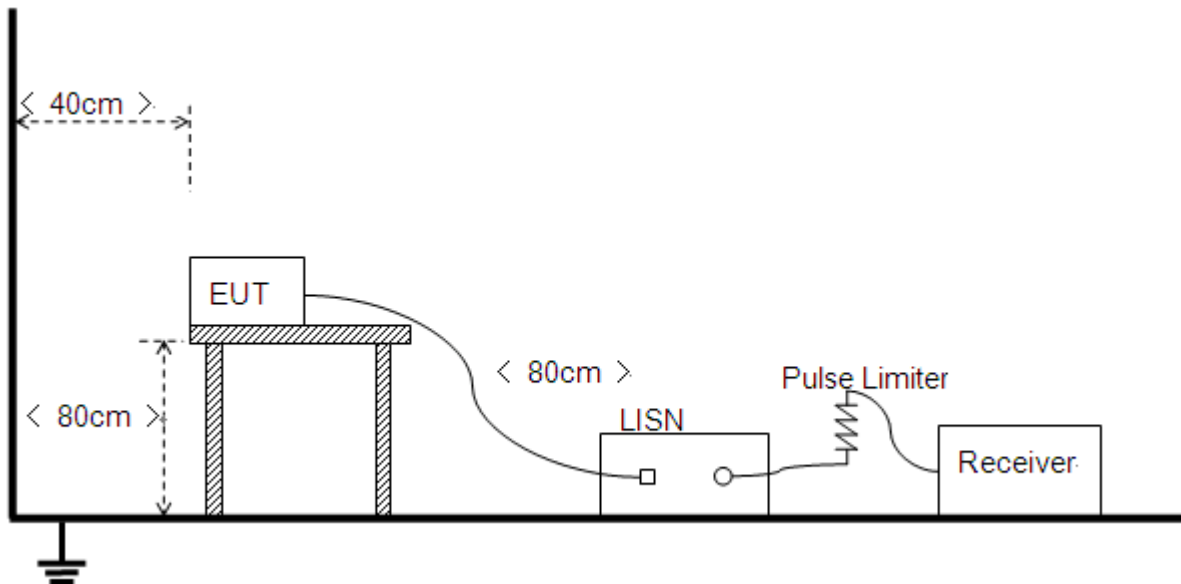
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

- (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+ADAPTER+WIFI TX

Test Voltage: AC 120V/60Hz

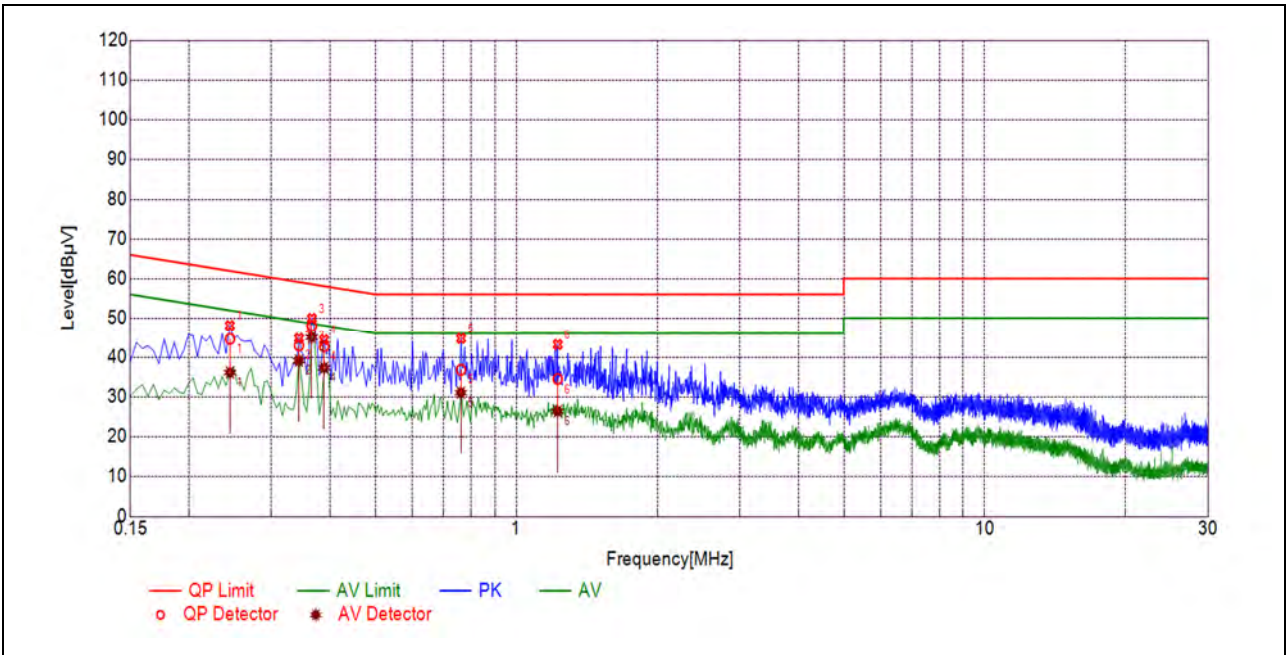
The measurement results are obtained as below:

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

U_R : Receiver Reading

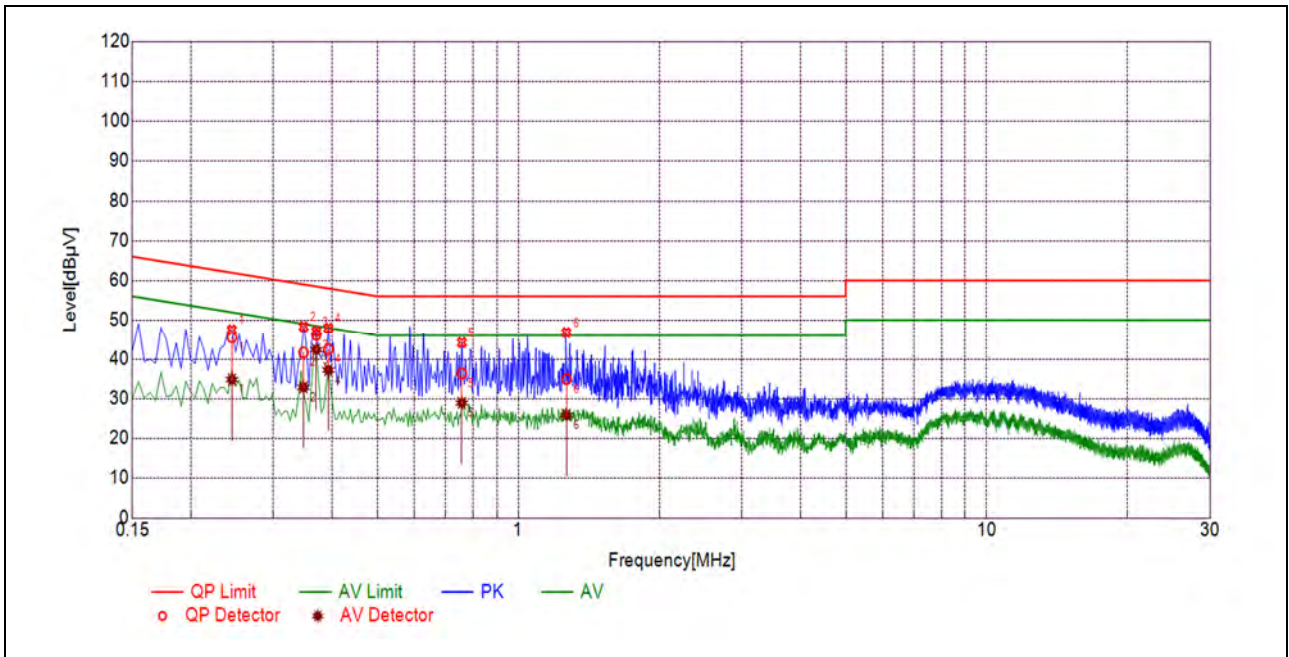
A_{Factor} : Voltage division factor of LISN

B.Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2447	44.60	36.08	61.94	51.94	Line	PASS
2	0.3434	42.92	39.07	59.12	49.12		PASS
3	0.3657	48.00	45.02	58.60	48.60		PASS
4	0.3888	42.72	37.29	58.09	48.09		PASS
5	0.7615	36.78	31.03	56.00	46.00		PASS
6	1.2251	34.45	26.32	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	0.2446	45.51	34.78	61.94	51.94	Neutral	PASS
2	0.3477	41.67	32.85	59.02	49.02		PASS
3	0.3703	46.18	42.37	58.50	48.50		PASS
4	0.3929	42.48	37.21	58.00	48.00		PASS
5	0.7573	36.36	28.90	56.00	46.00		PASS
6	1.2672	34.94	25.84	56.00	46.00		PASS



2.8. Restricted Frequency Bands

2.8.1. Requirement

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

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

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

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

where P is the EIRP in Watts

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

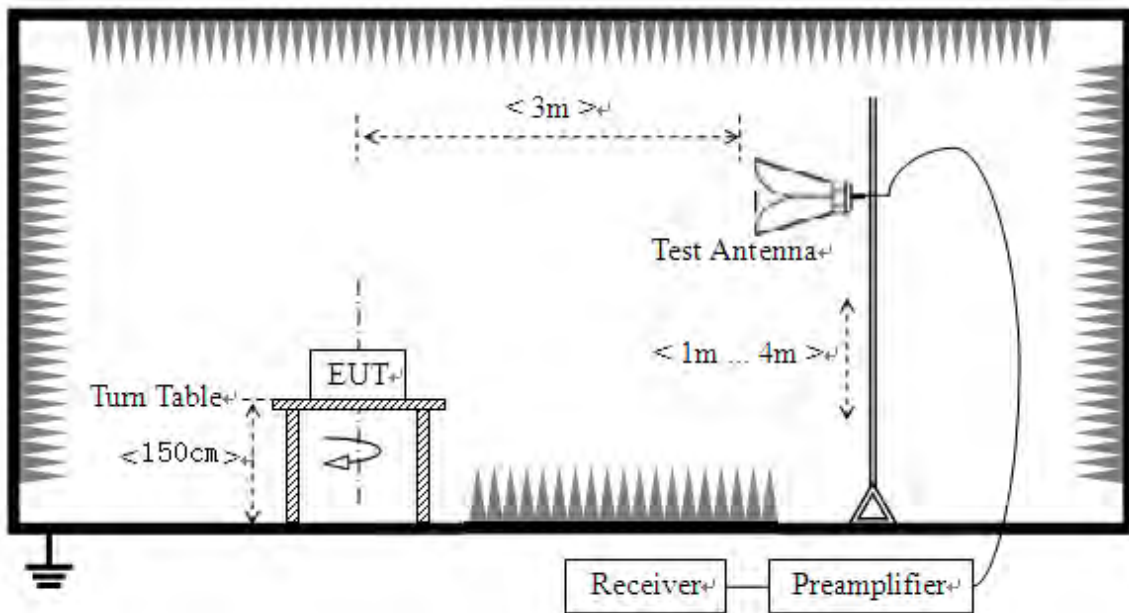
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following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

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(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_{preamp} : Preamplifier Gain; A_{Factor} : Antenna Factor at 3m

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

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

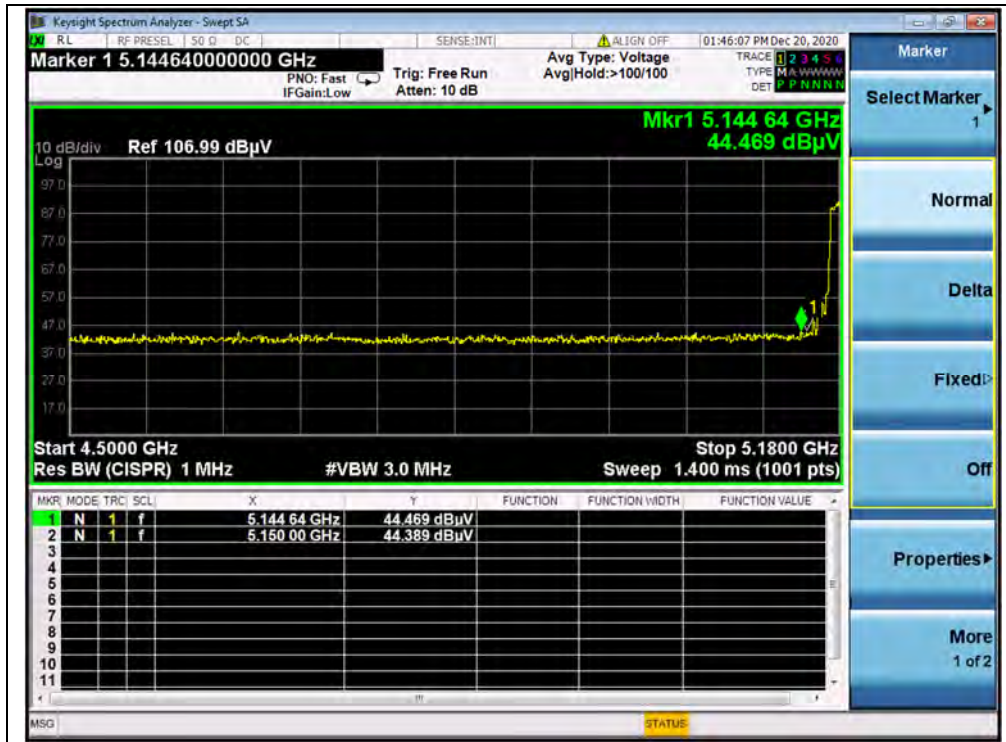
802.11a Mode

A.Test Verdict:

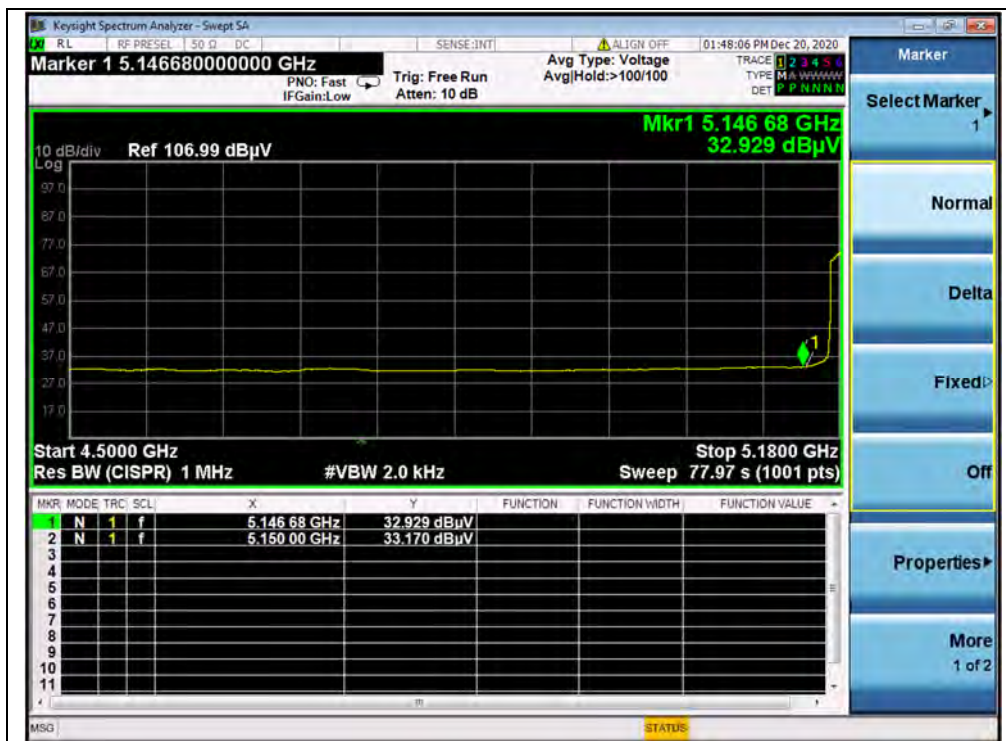
Channel	Frequency (MHz)	Detector	Receiver Reading	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dB μ V)					
36	5144.64	PK	44.47	-16.92	32.20	59.75	74	PASS
36	5150.00	AV	33.17	-16.92	32.20	48.45	54	PASS
64	5355.84	PK	39.97	-16.80	32.20	55.37	74	PASS
64	5354.02	AV	28.64	-16.80	32.20	44.04	54	PASS
100	5466.65	PK	40.85	-16.64	32.20	56.41	68.23	PASS
100	5470.00	AV	29.28	-16.64	32.20	44.84	54	PASS
144	5728.20	PK	46.23	-16.64	32.20	61.79	68.23	PASS
144	5725.00	AV	34.42	-16.64	32.20	49.98	54	PASS
149	5725.00	PK	47.61	-16.23	32.20	63.58	122.23	PASS
165	5850.00	PK	46.36	-16.23	32.20	62.33	122.23	PASS



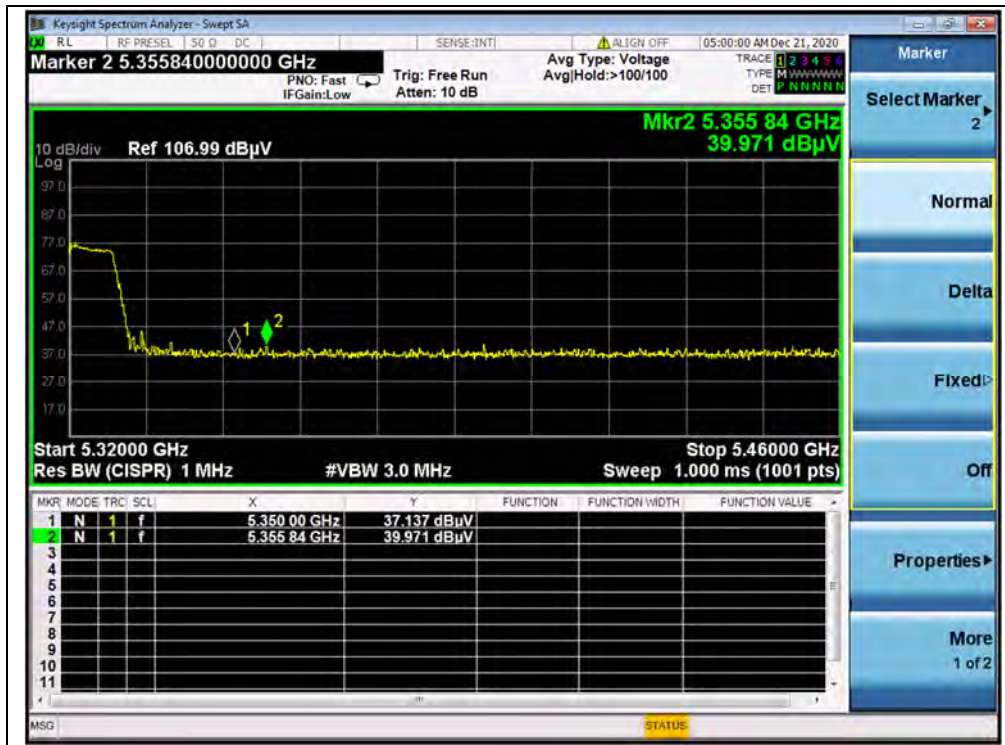
B.Test Plot:



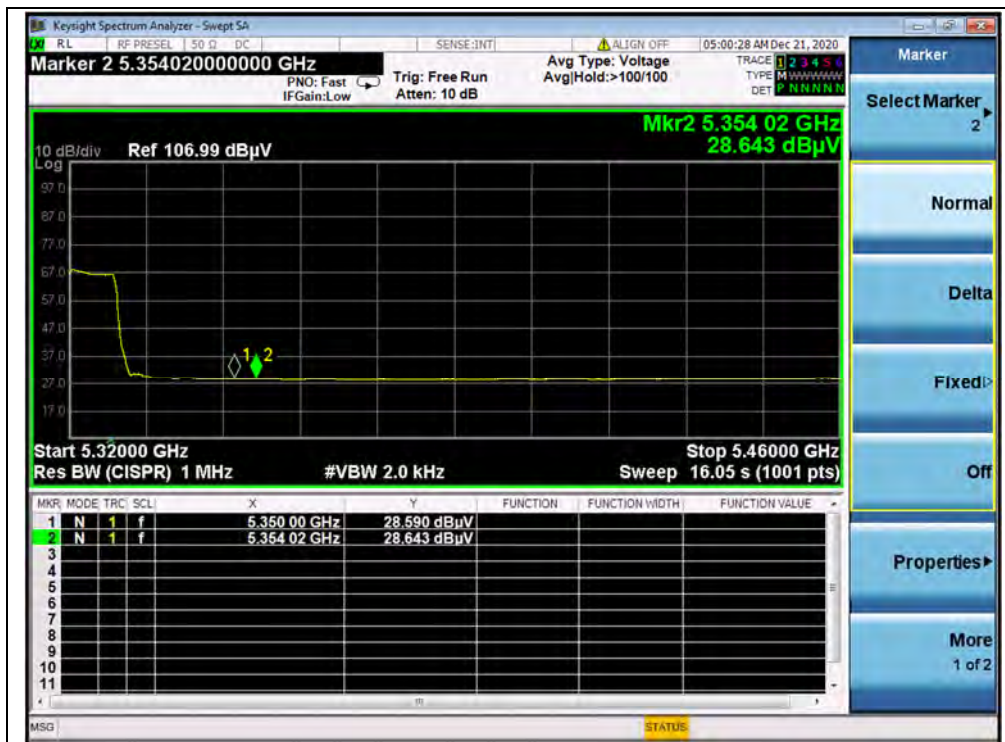
(PEAK, Channel 36, 802.11a)



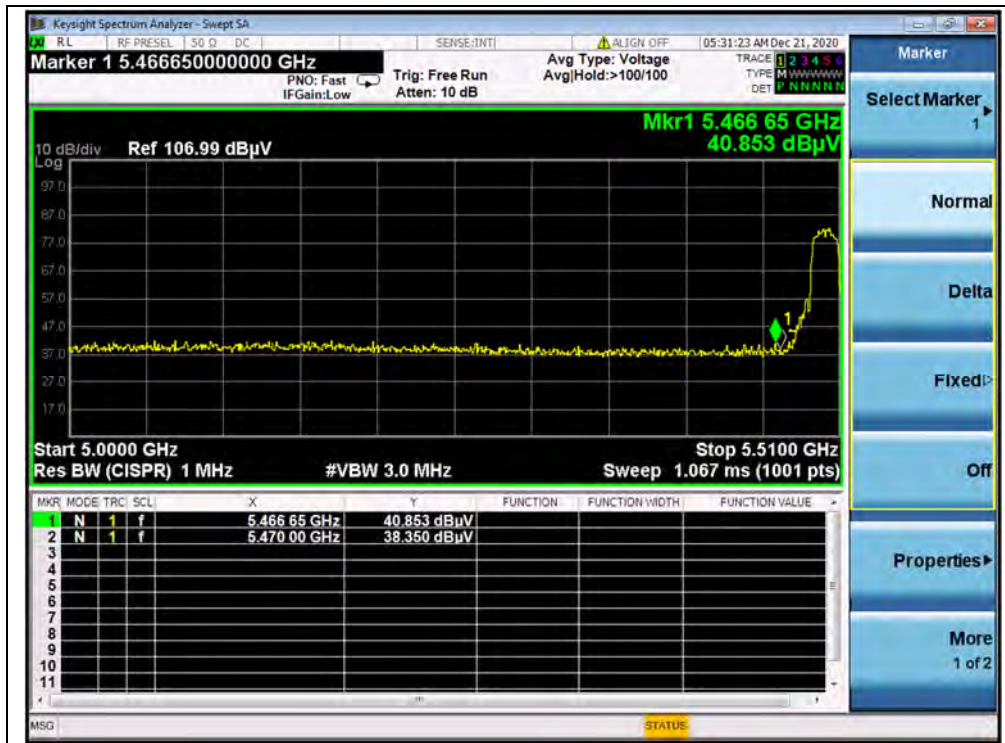
(AVERAGE, Channel 36, 802.11a)



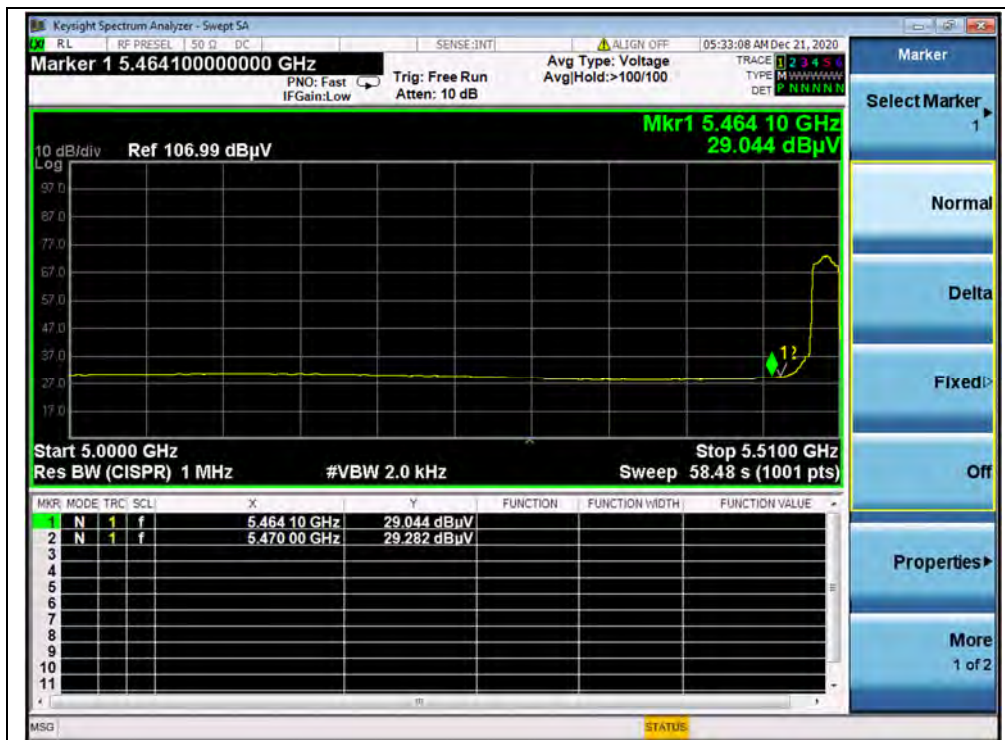
(PEAK, Channel 64, 802.11a)



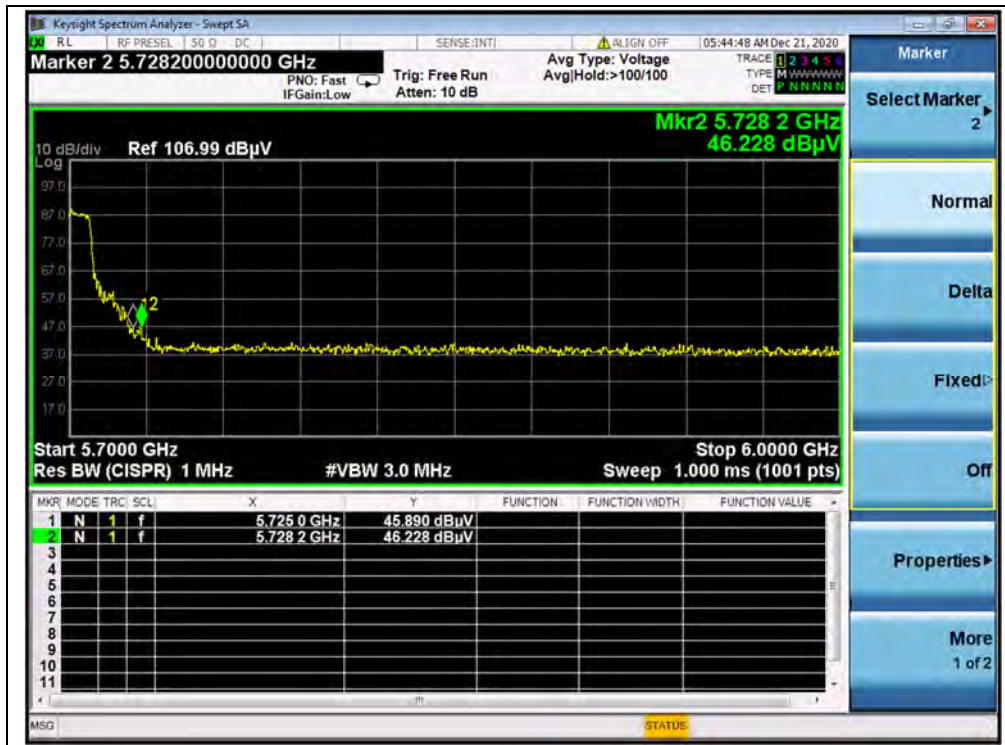
(AVERAGE, Channel 64, 802.11a)



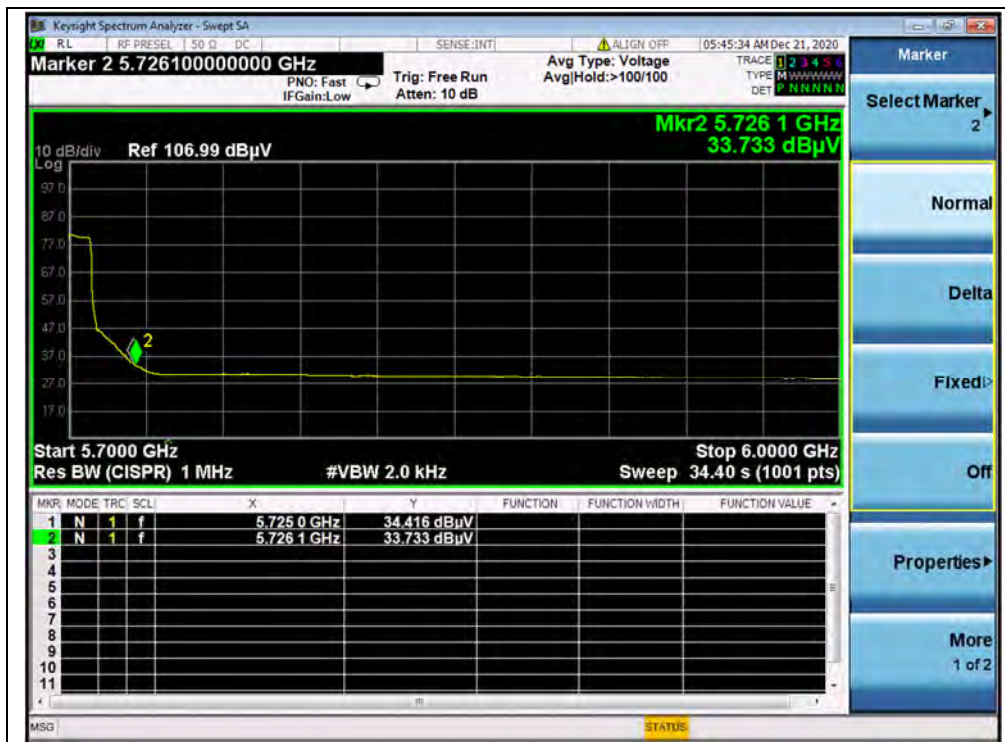
(PEAK, Channel100, 802.11a)



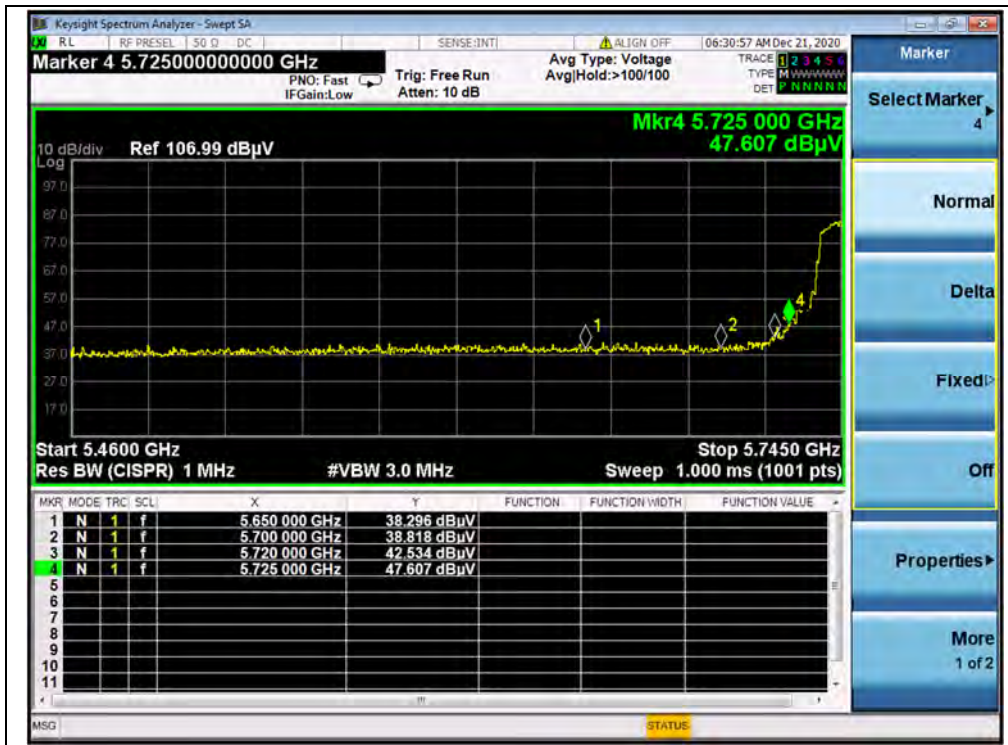
(AVERAGE, Channel 100, 802.11a)



(PEAK, Channel 144, 802.11a)



(AVERAGE, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)

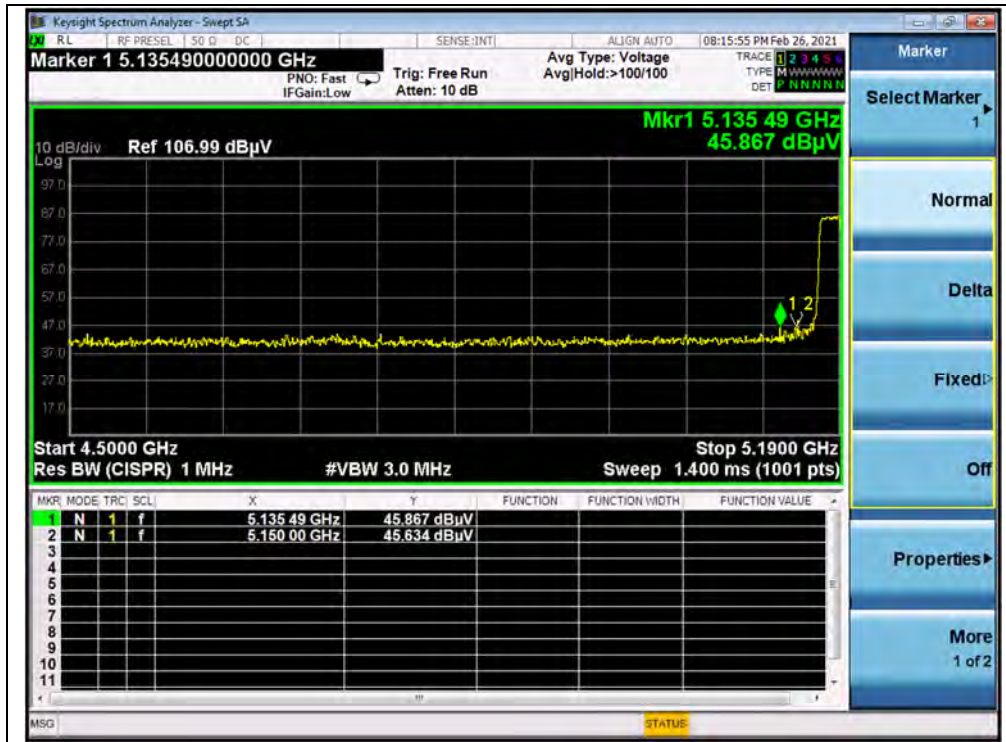


(PEAK, Channel 165, 802.11a)

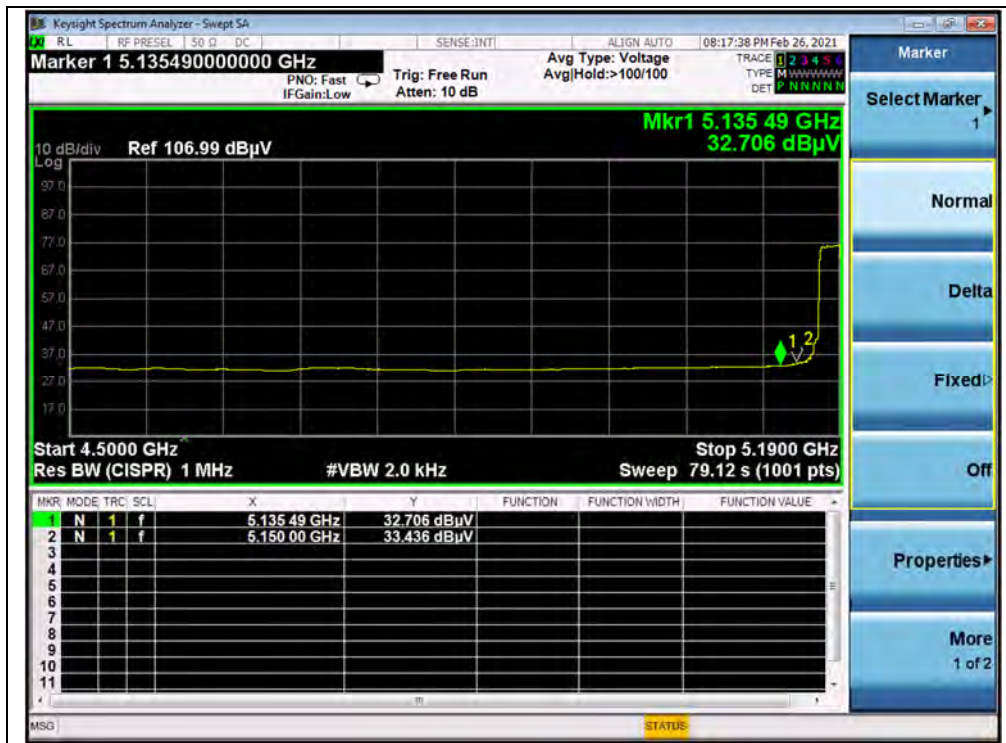
**802.11n (HT40) Mode****A.Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
38	5135.49	PK	45.87	-16.92	32.20	61.15	74	PASS
38	5150.00	AV	33.44	-16.92	32.20	48.72	54	PASS
62	5353.15	PK	43.91	-16.80	32.20	59.31	74	PASS
62	5350.00	AV	32.60	-16.80	32.20	48.00	54	PASS
102	5470.00	PK	47.33	-16.64	32.20	62.89	68.23	PASS
102	5470.00	AV	35.64	-16.64	32.20	51.20	54	PASS
142	5727.61	PK	48.77	-16.64	32.20	64.33	68.23	PASS
142	5725.00	AV	36.72	-16.64	32.20	52.28	54	PASS
151	5725.00	PK	60.05	-16.23	32.20	76.02	122.23	PASS
159	5850.00	PK	48.03	-16.23	32.20	64.00	122.23	PASS

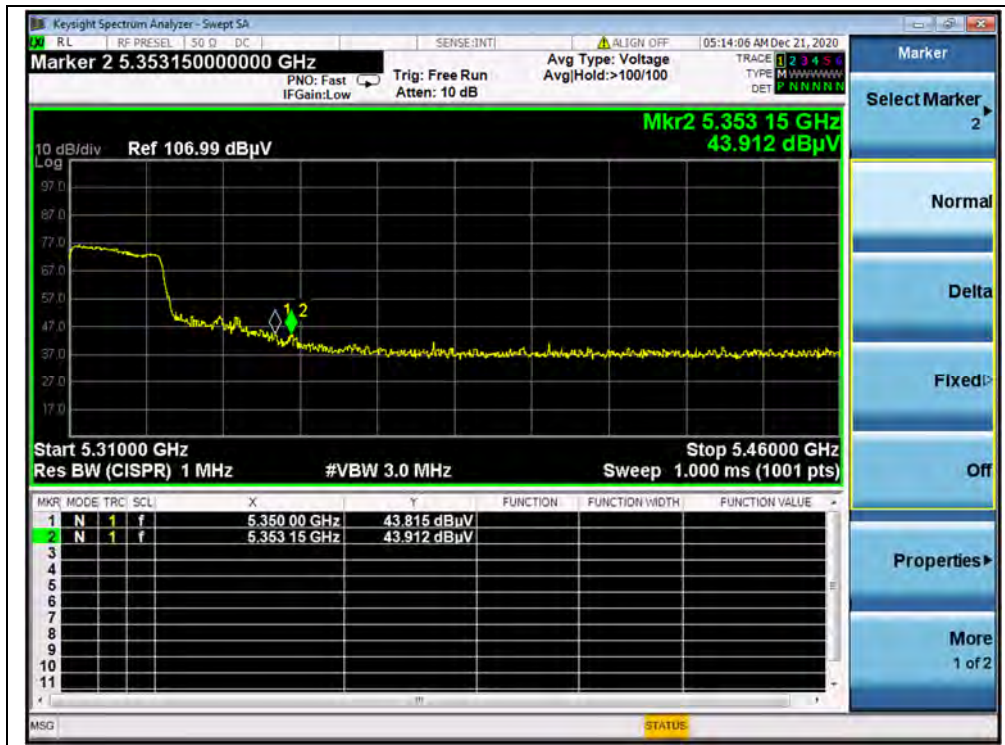
B.Test Plot:



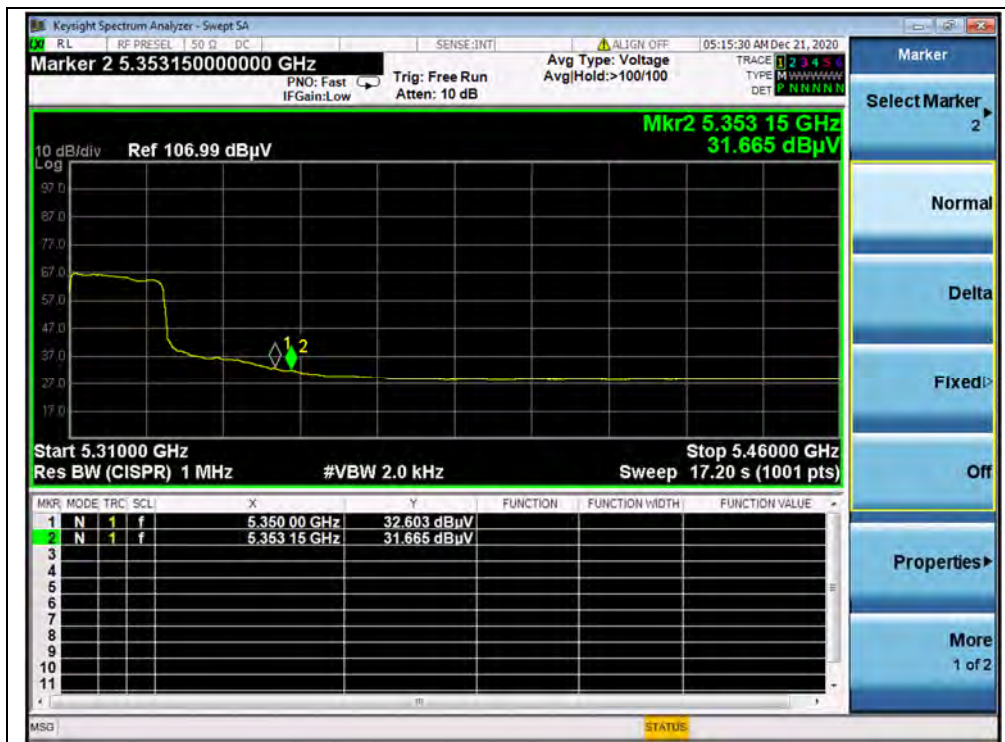
(PEAK, Channel 38, 802.11n (HT40))



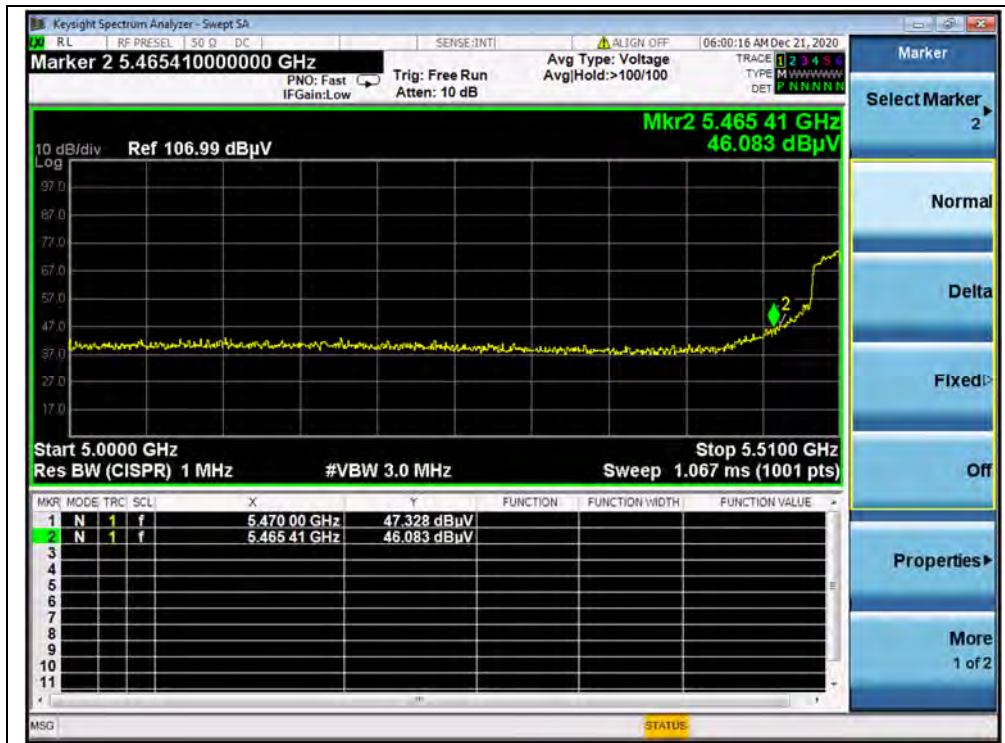
(AVERAGE, Channel 38, 802.11n (HT40))



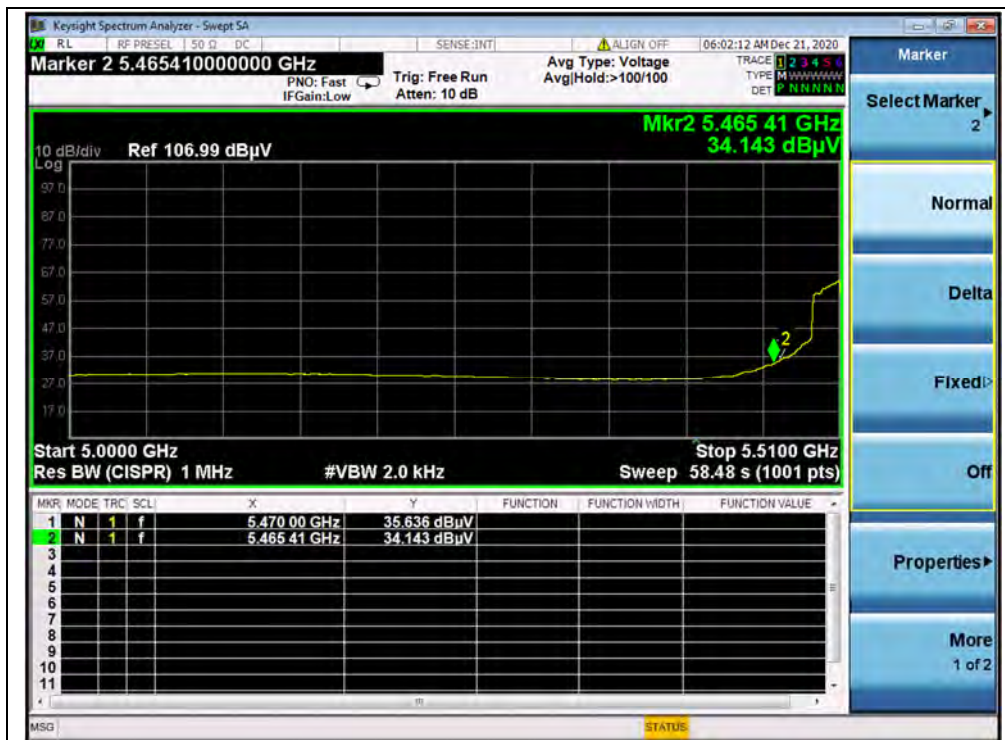
(PEAK, Channel 62, 802.11n (HT40))



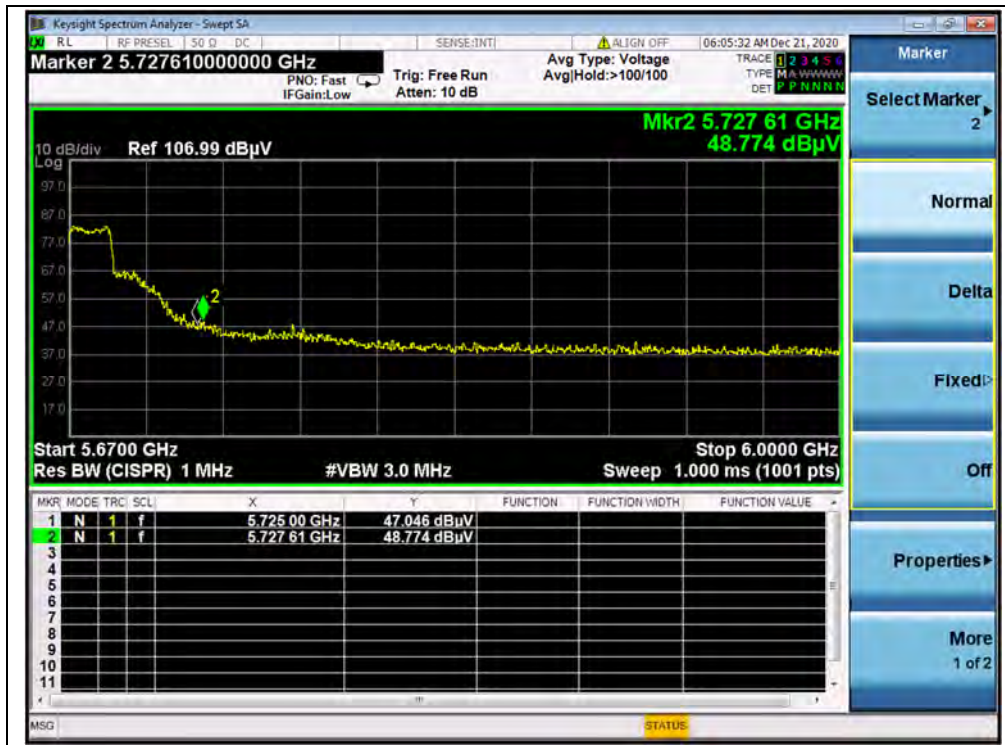
(AVERAGE, Channel 62, 802.11n (HT40))



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



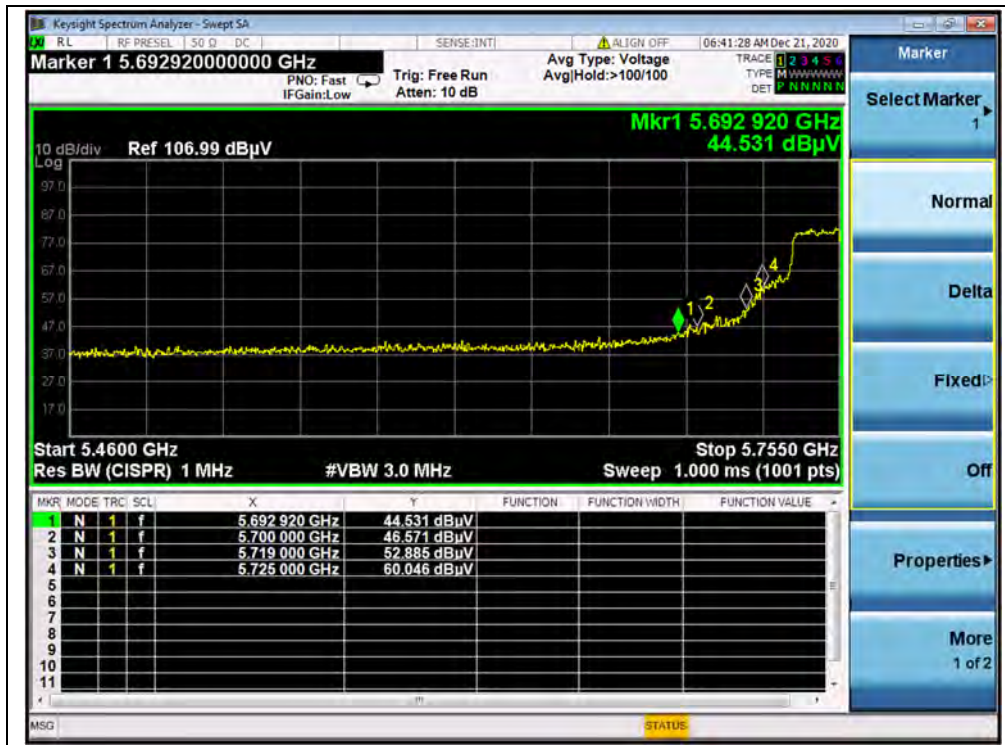
(AVERAGE, Channel 102, 802.11n (HT40))



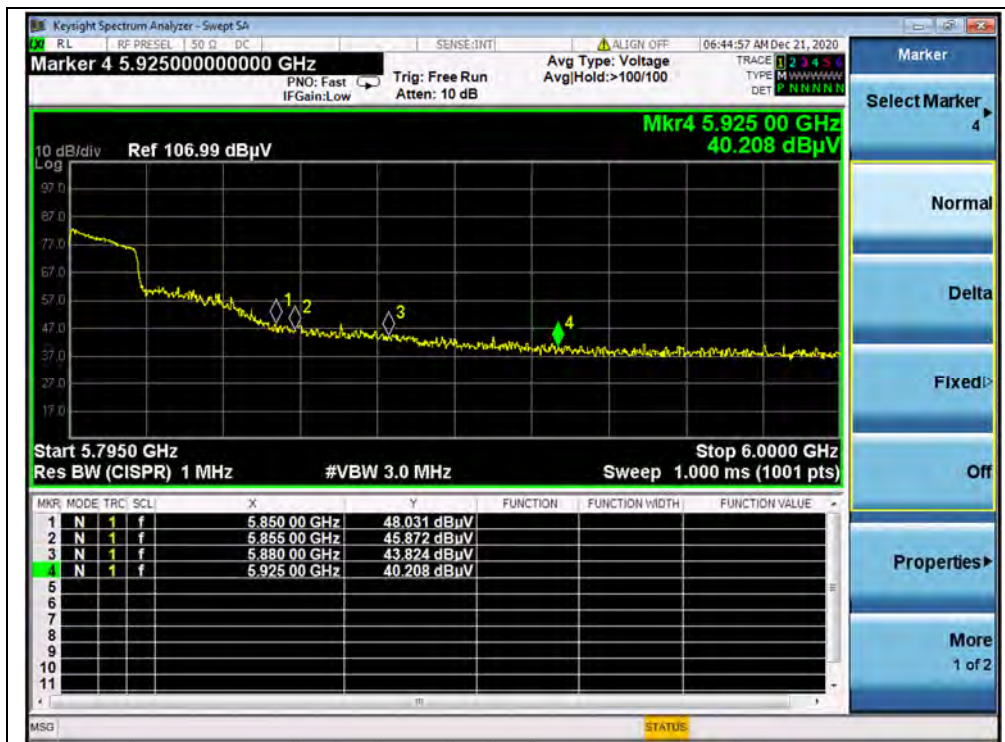
(PEAK, Channel 142, 802.11n (HT40))



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



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

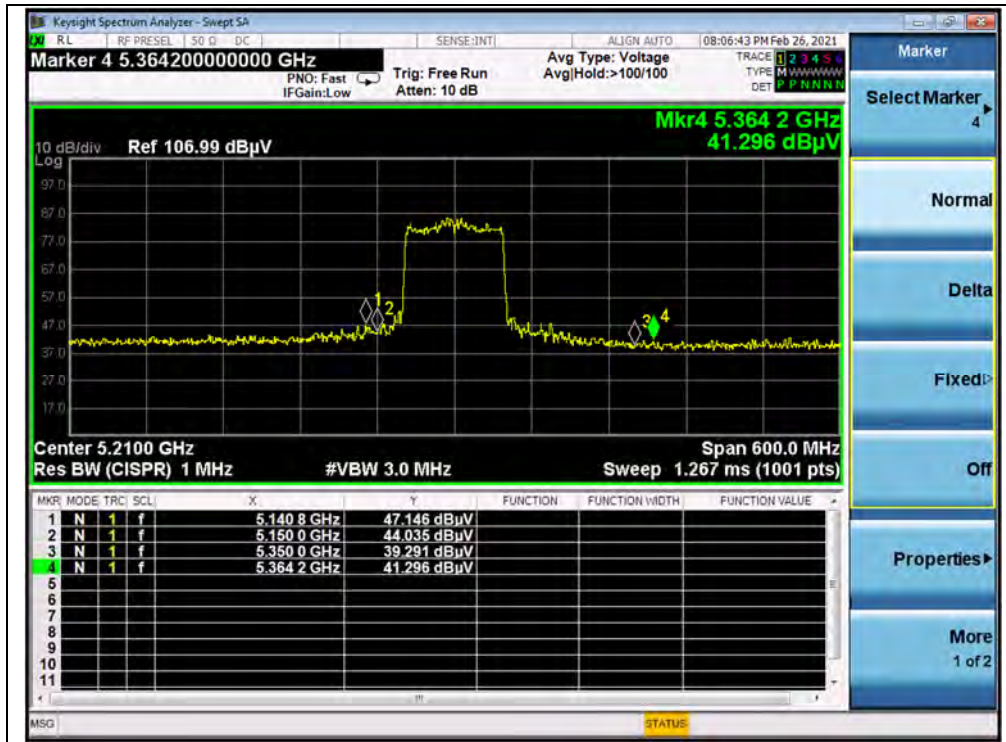


(PEAK, Channel 159, 802.11n (HT40))

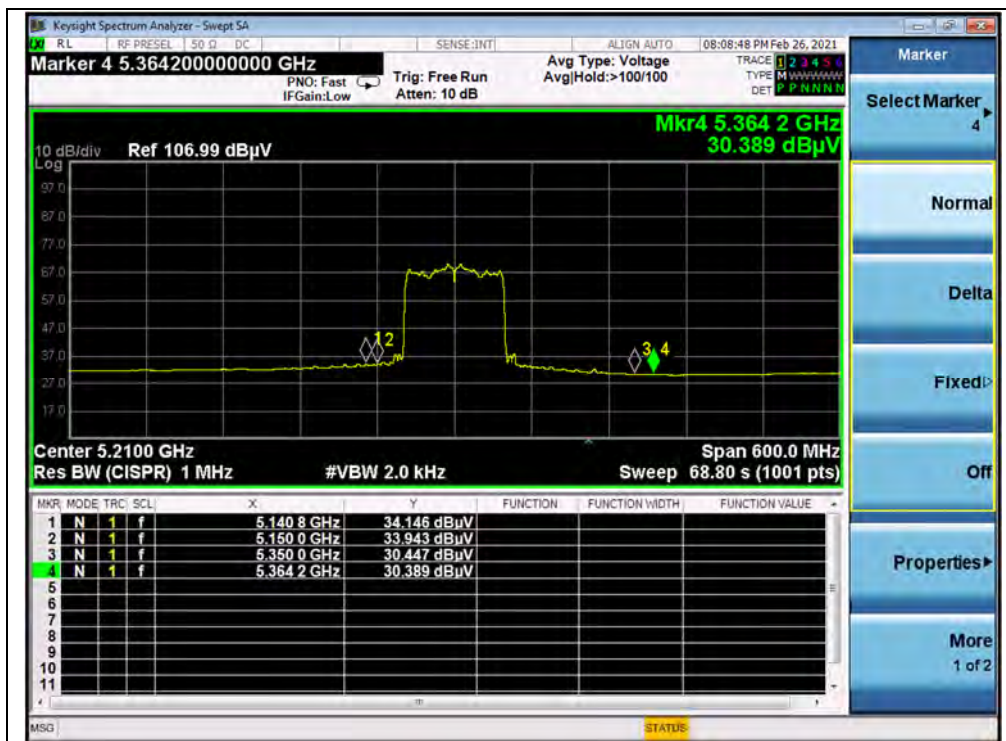
**802.11ac (VHT80) Mode****A.Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV	U _R (dBμV)					
42	5140.80	PK	47.15	-16.92	32.20	62.43	74	PASS
42	5140.80	AV	34.15	-16.92	32.20	49.43	54	PASS
58	5358.20	PK	49.76	-16.80	32.20	65.16	74	PASS
58	5358.20	AV	34.27	-16.80	32.20	49.67	54	PASS
106	5470.00	PK	44.65	-16.64	32.20	60.21	68.23	PASS
106	5470.00	AV	32.45	-16.64	32.20	48.01	54	PASS
138	5733.30	PK	43.22	-16.64	32.20	58.78	68.23	PASS
138	5733.30	AV	32.68	-16.64	32.20	48.24	54	PASS
155	5700.00	PK	49.66	-16.23	32.20	65.63	105.23	PASS
155	5850.00	PK	48.37	-16.23	32.20	64.34	122.23	PASS

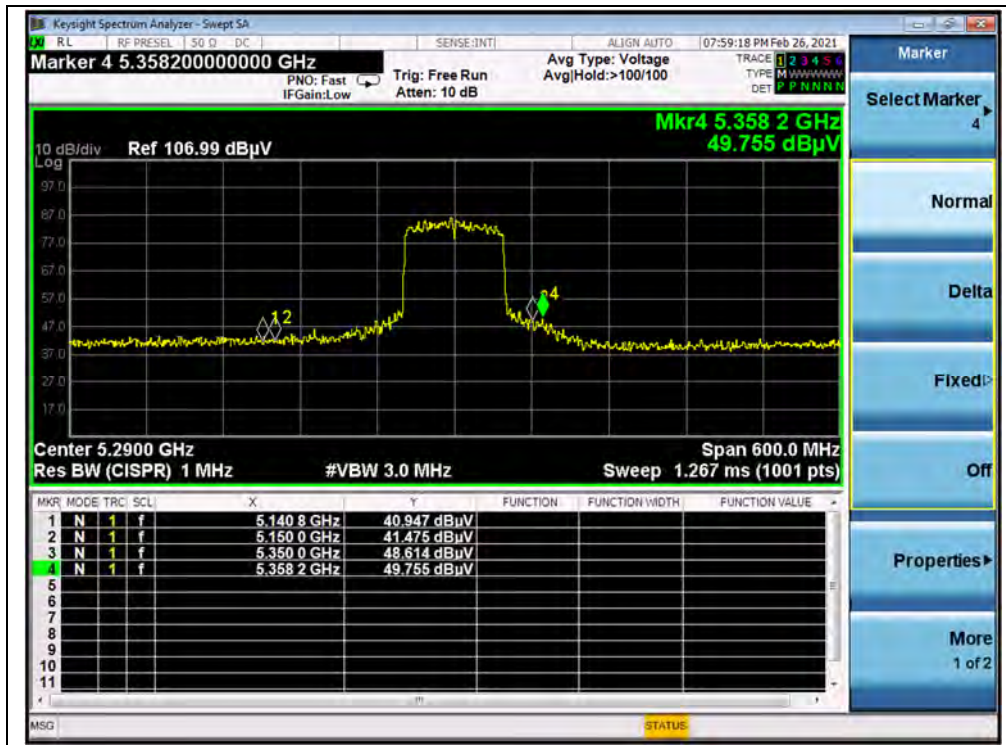
B.Test Plot:



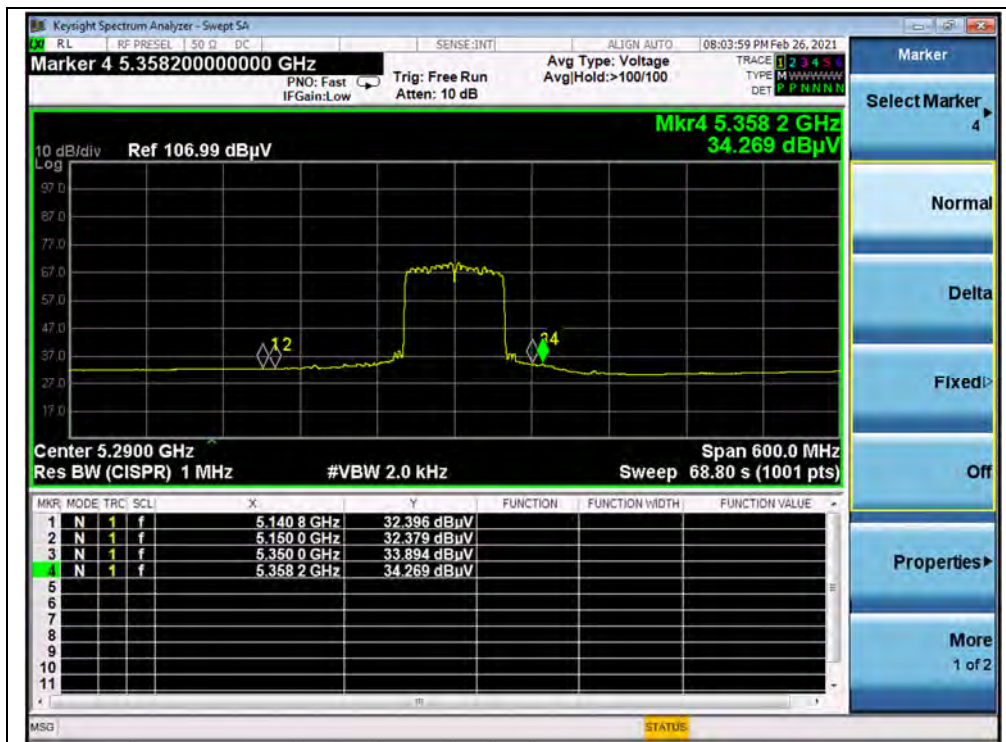
(PEAK, Channel 42, 802.11ac (VHT80))



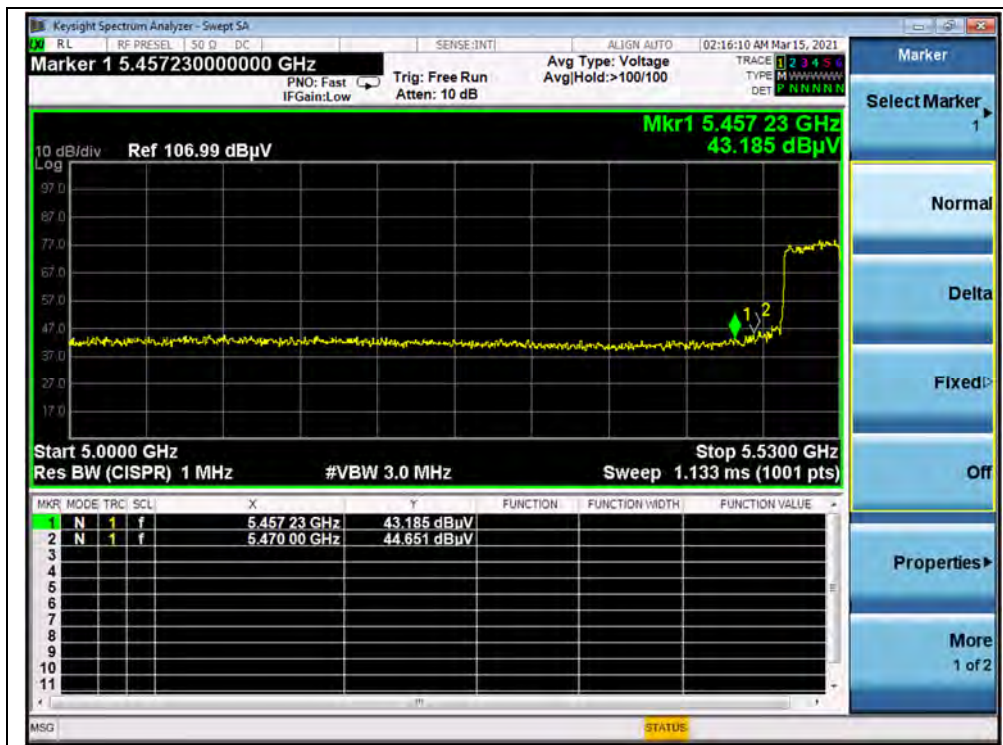
(AVERAGE, Channel 42, 802.11ac (VHT80))



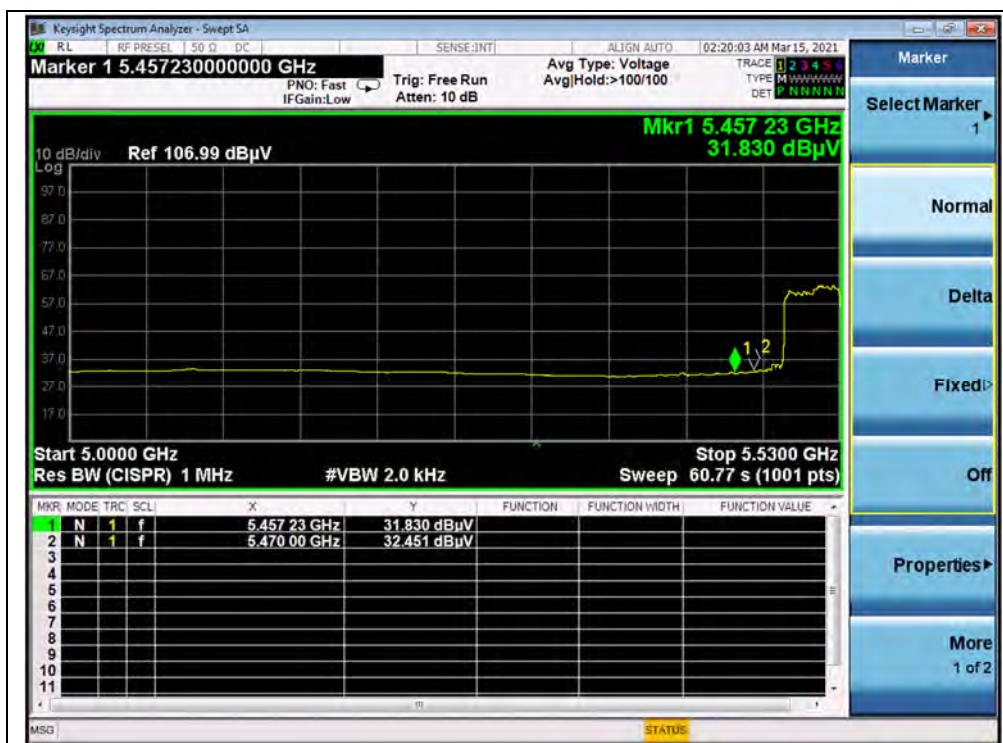
(PEAK, Channel 58, 802.11ac (VHT80))



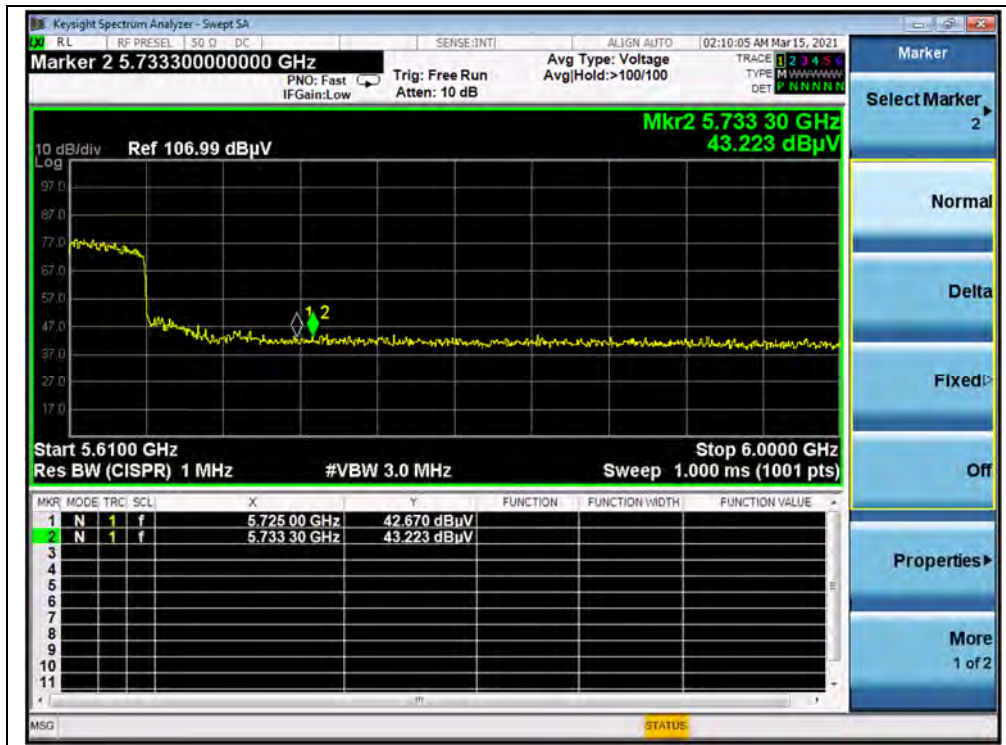
(AVERAGE, Channel 58, 802.11ac (VHT80))



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



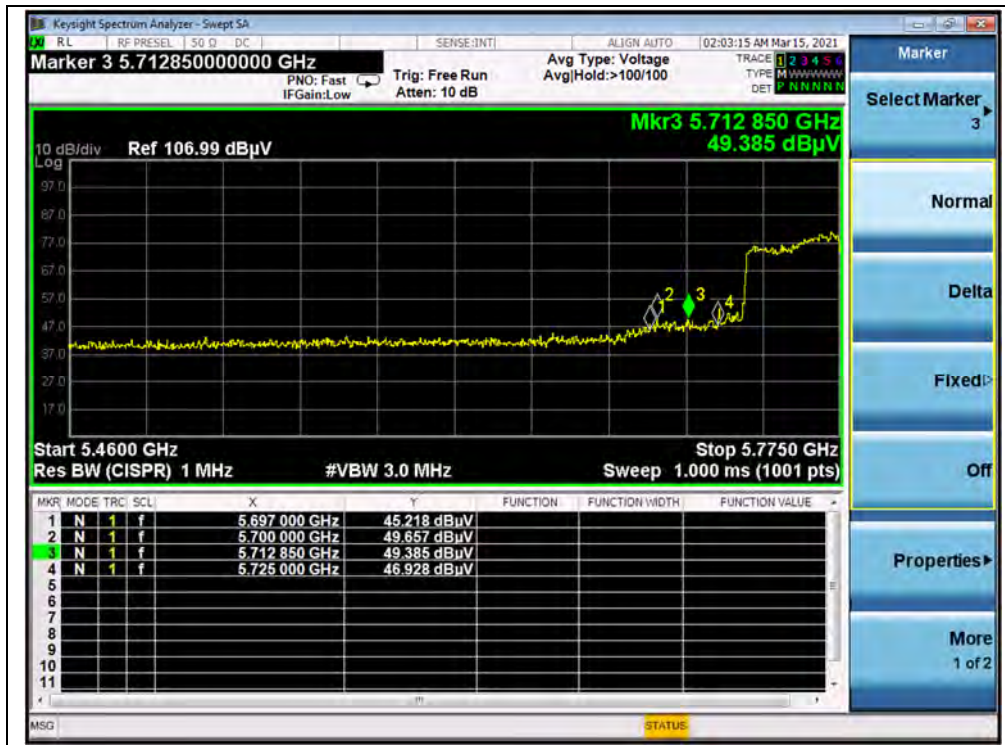
(AVERAGE, Channel 106, 802.11ac (VHT80))



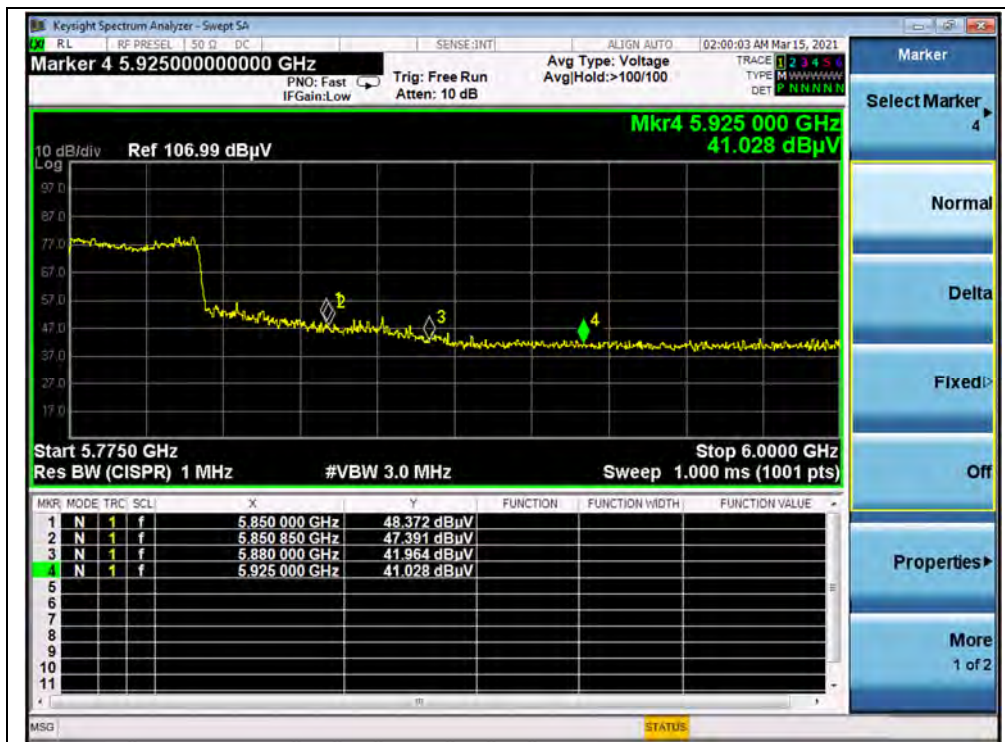
(PEAK, Channel 138, 802.11ac (VHT80))



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



(PEAK, Channel 155, 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:

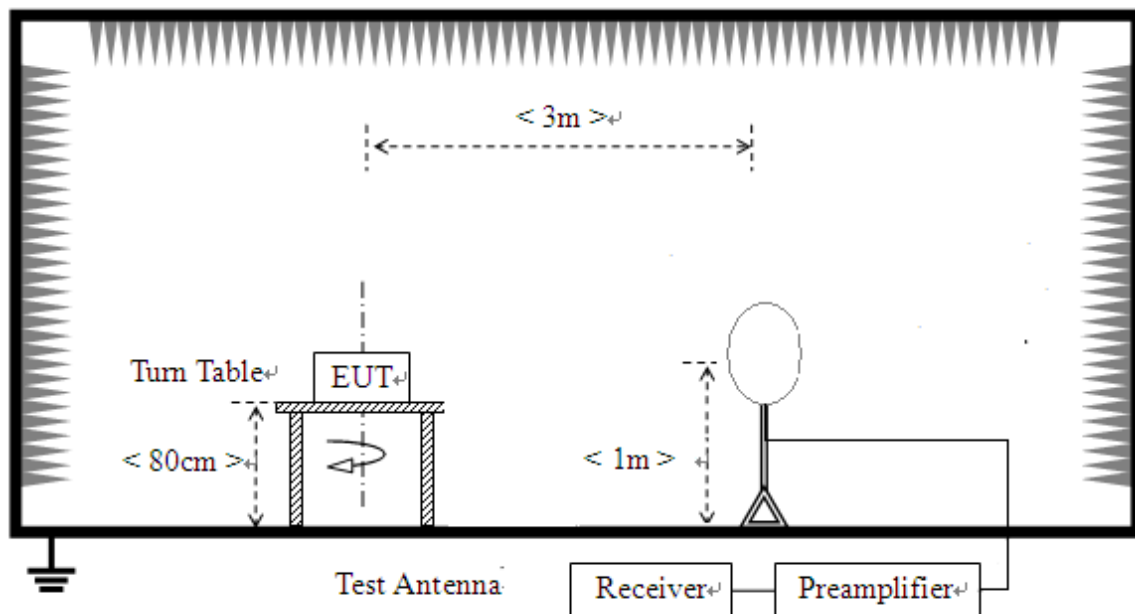
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

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).

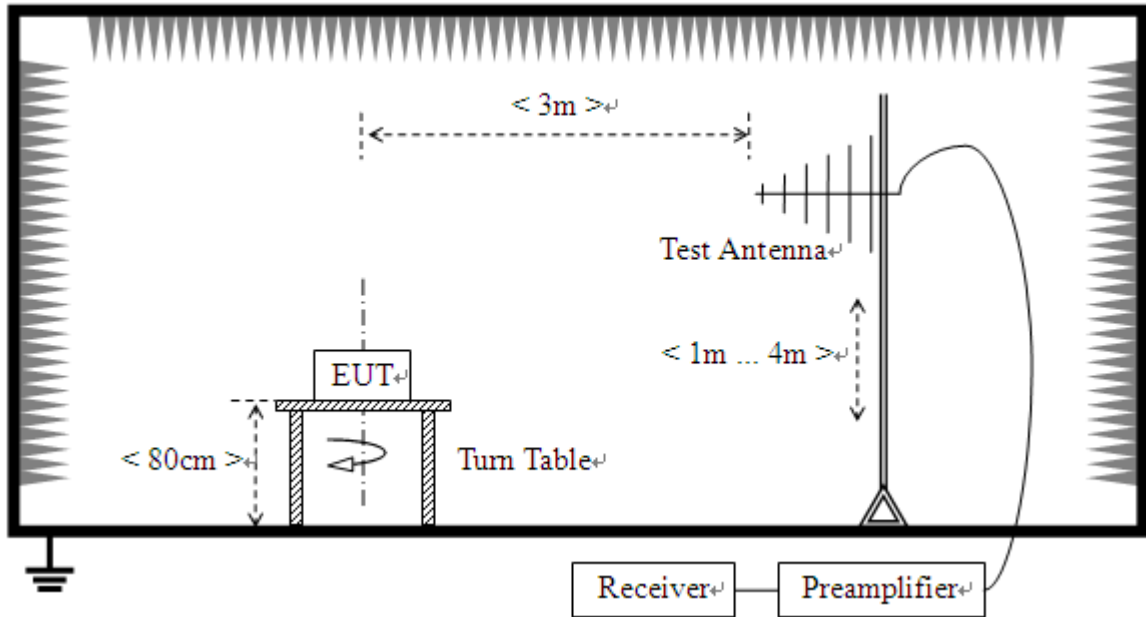
2.9.2. Test Description

Test Setup:

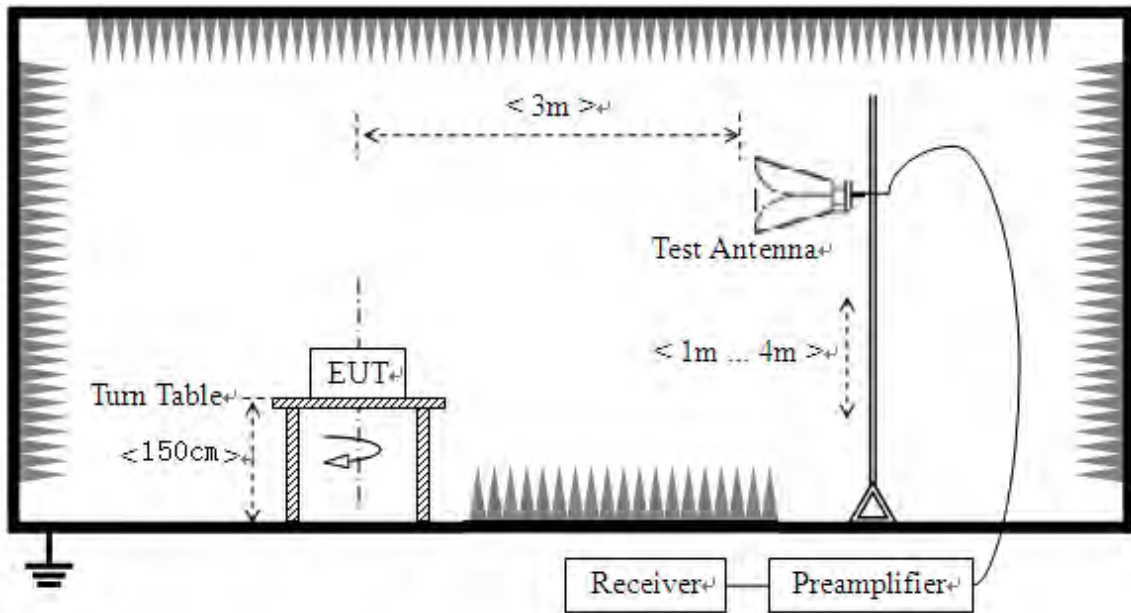
- 1) For radiated emissions from 9kHz to 30MHz



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 3 meters. 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_{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.

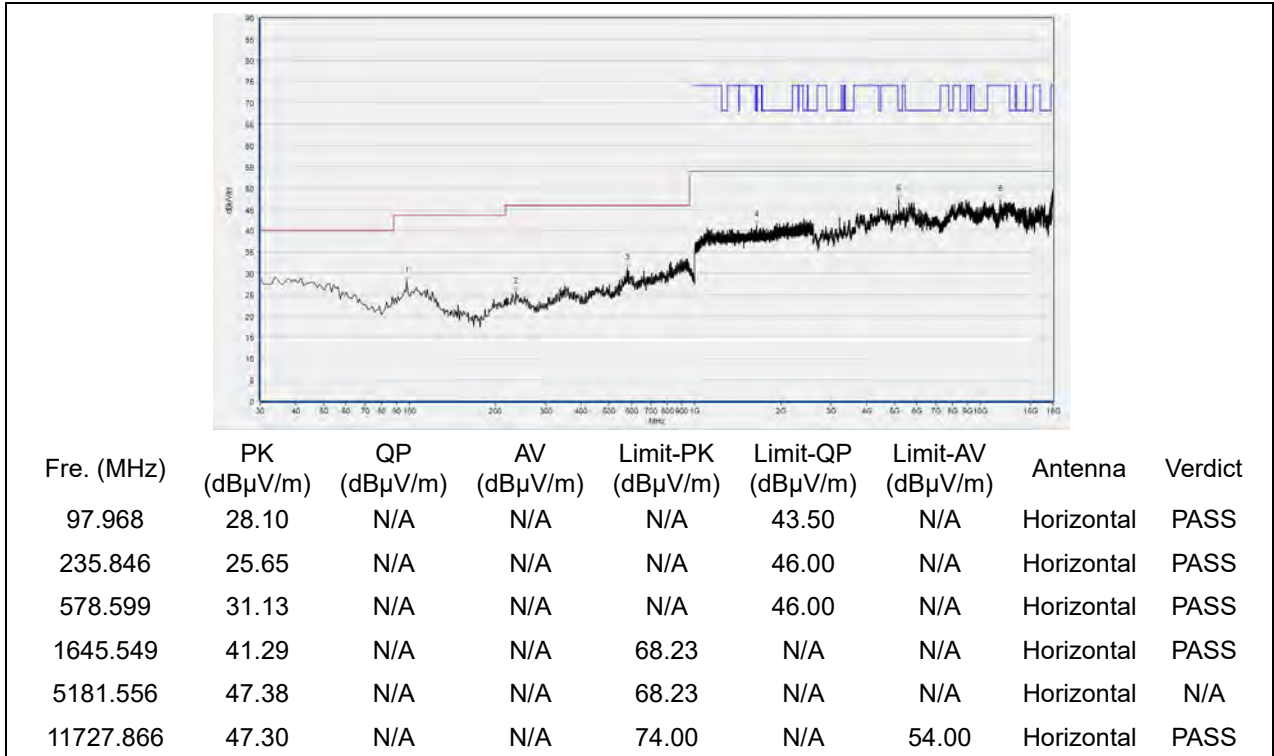
Note 3: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

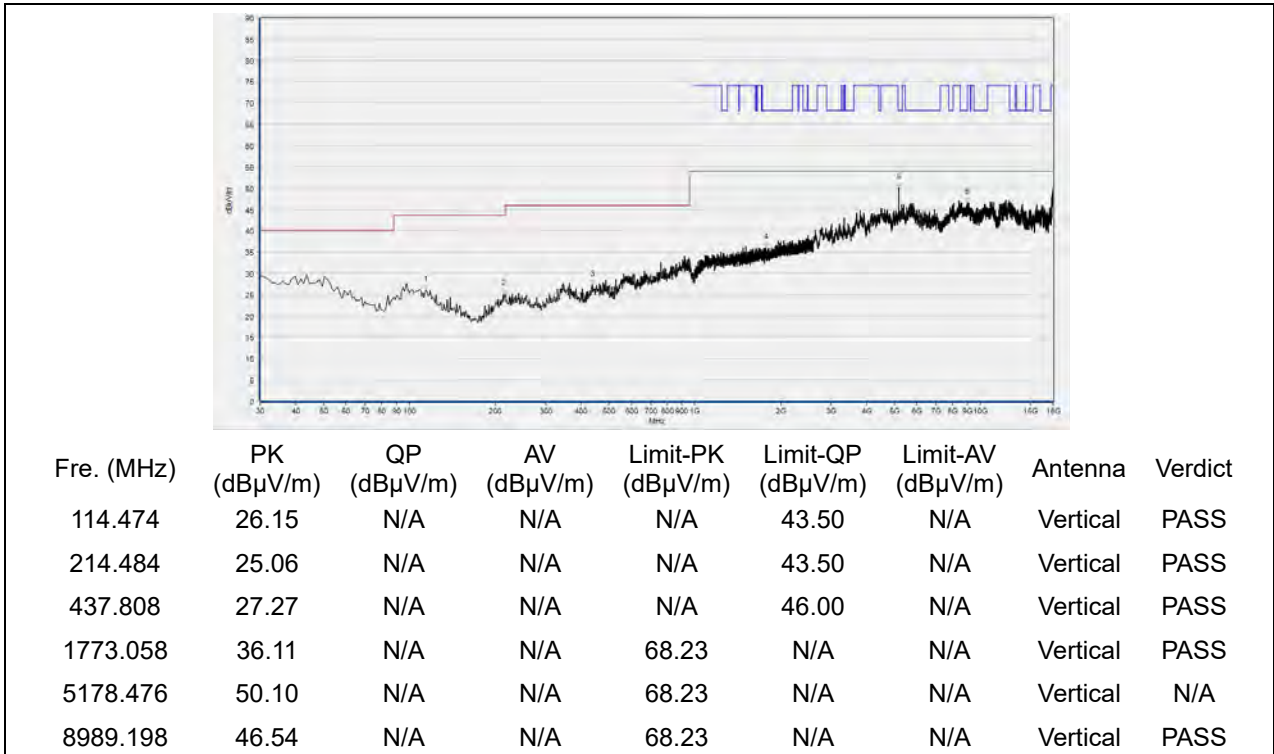


802.11a Mode

Plot for Channel 36

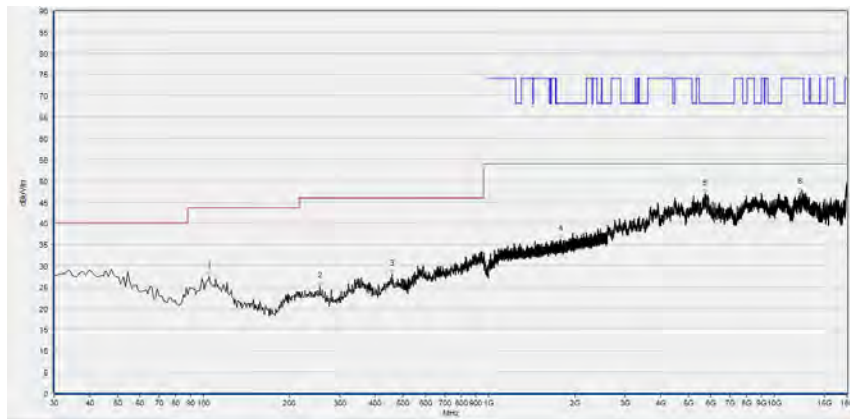


(Antenna Horizontal, 30MHz to 18GHz)



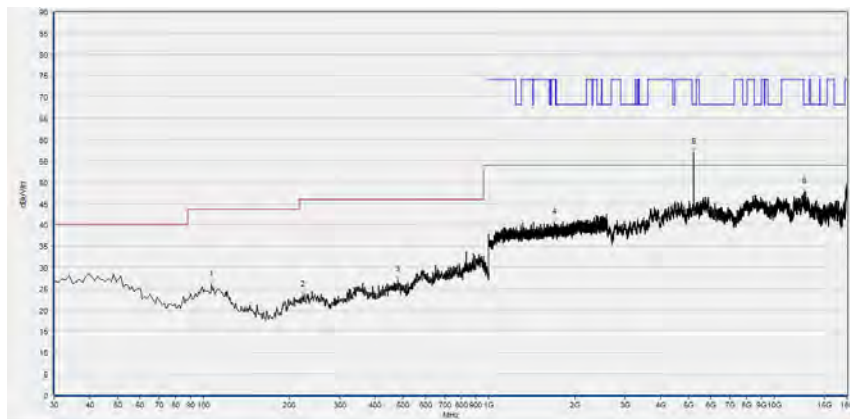
(Antenna Vertical, 30MHz to 18GHz)

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
104.765	27.56	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
255.265	25.14	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
459.169	28.03	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1782.661	36.23	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5717.584	46.86	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12294.699	47.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

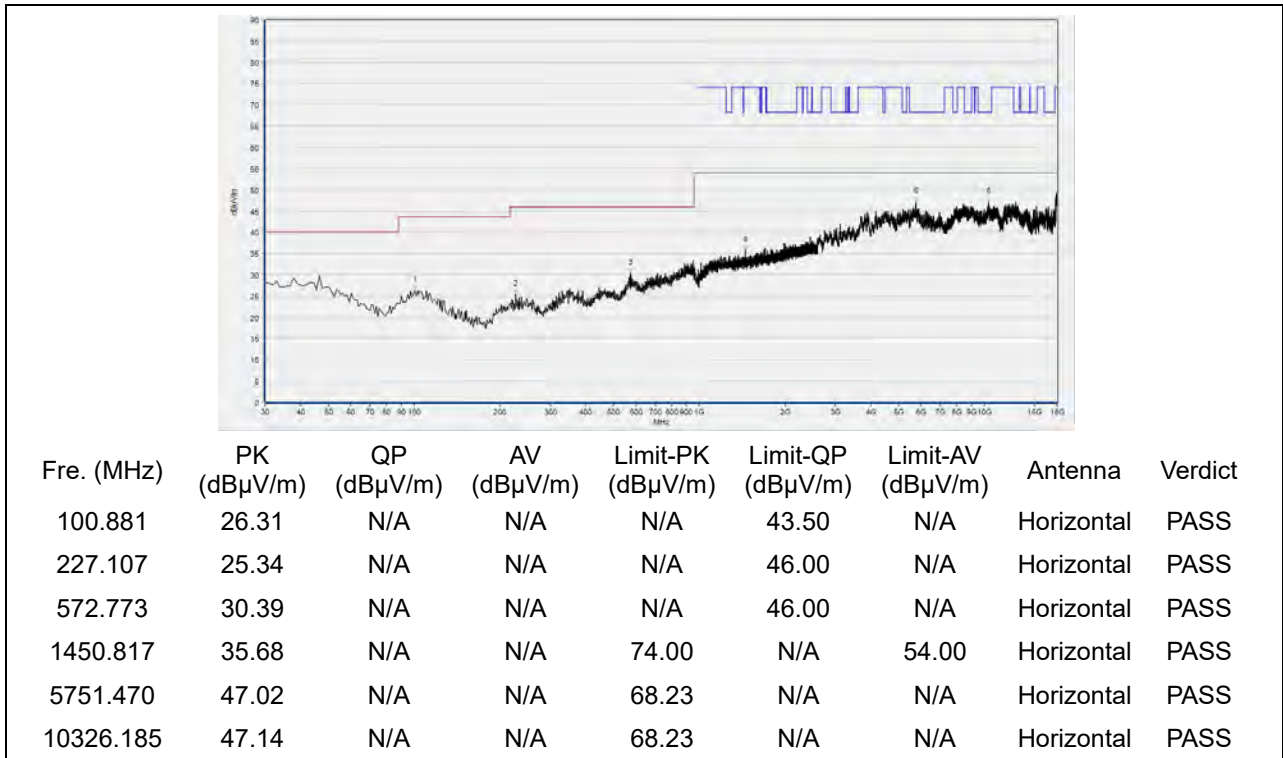
(Antenna Horizontal, 30MHz to 18GHz)



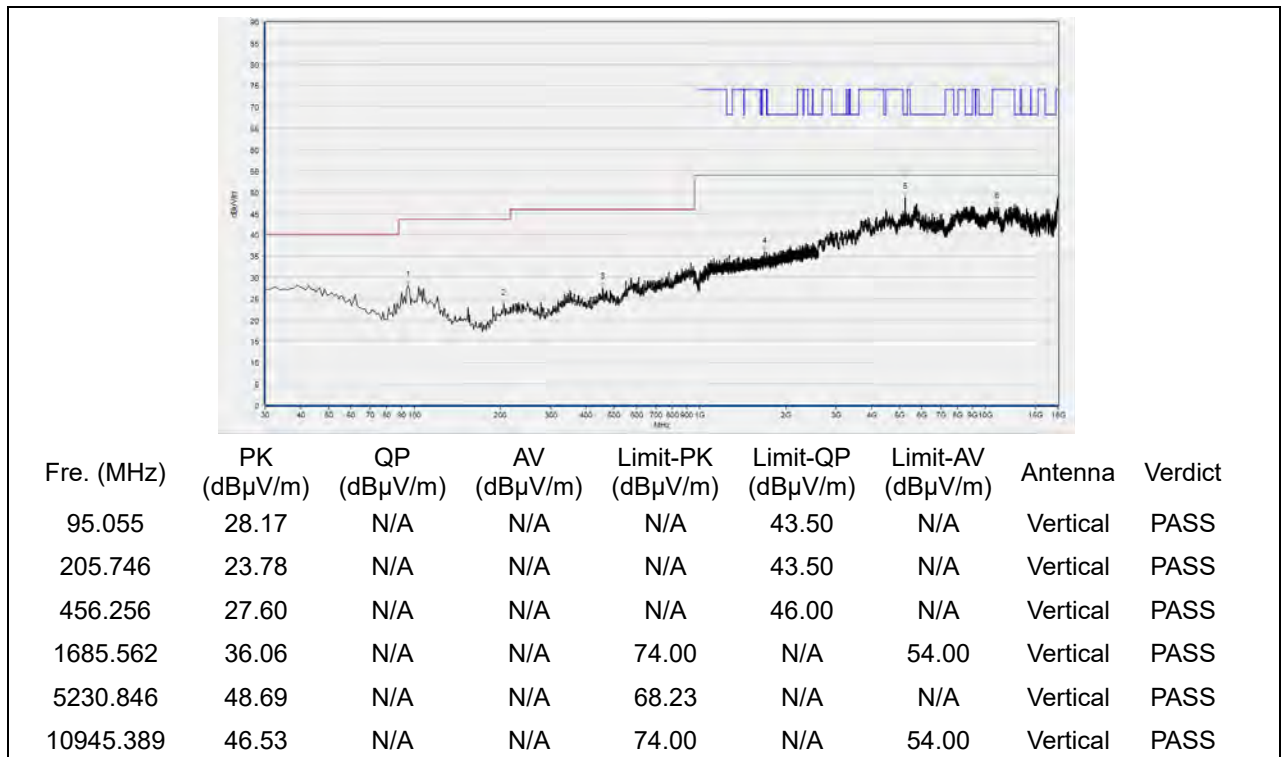
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
106.707	25.97	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
223.223	23.49	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
480.531	27.04	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1696.766	40.54	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5221.604	57.02	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12750.630	47.80	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 48

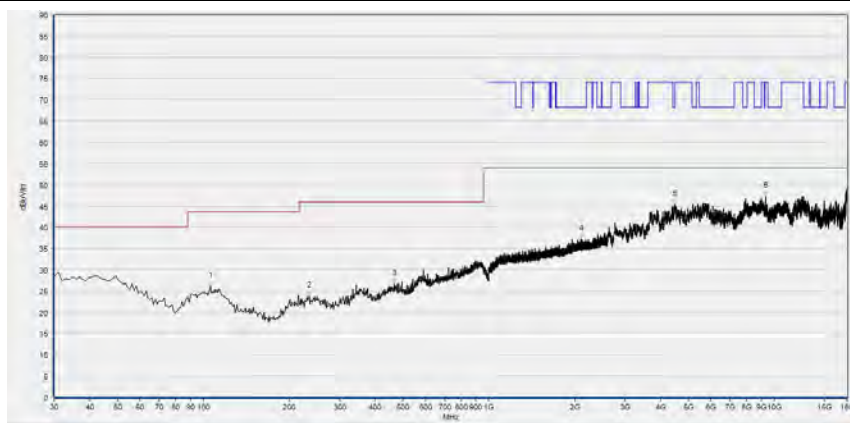


(Antenna Horizontal, 30MHz to 18GHz)



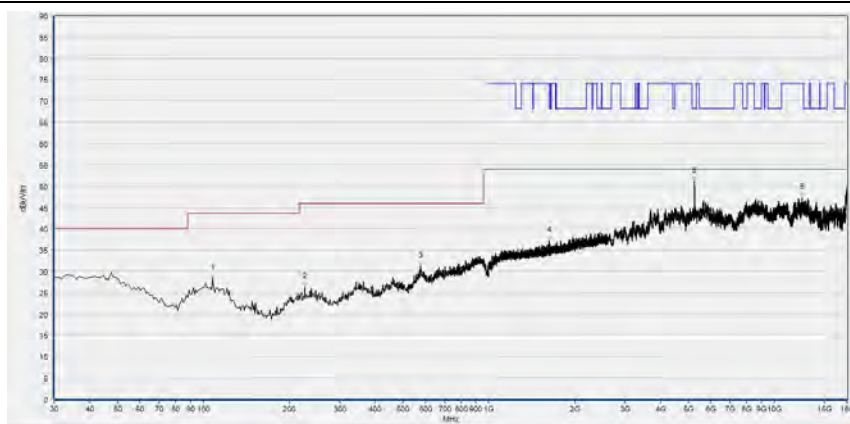
(Antenna Vertical, 30MHz to 18GHz)

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
105.736	26.21	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
234.875	23.76	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
466.937	26.72	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2108.103	37.21	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
4494.579	45.41	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9321.904	47.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

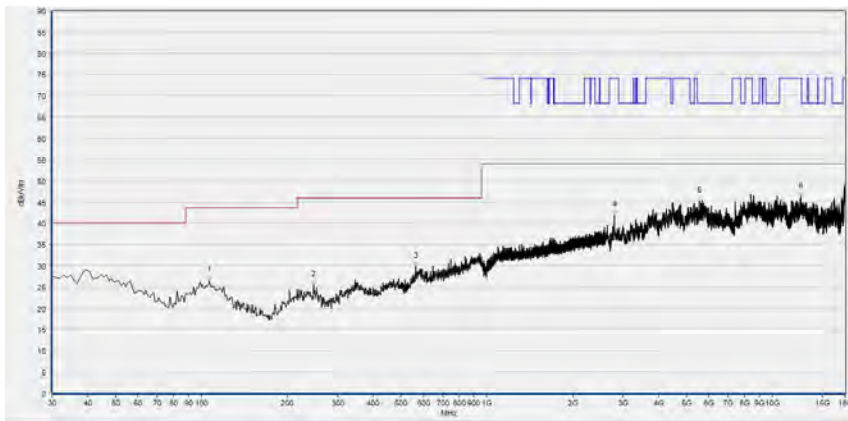
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
107.678	28.38	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
226.136	26.23	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
575.686	31.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1631.677	37.20	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5258.572	51.11	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12519.584	47.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

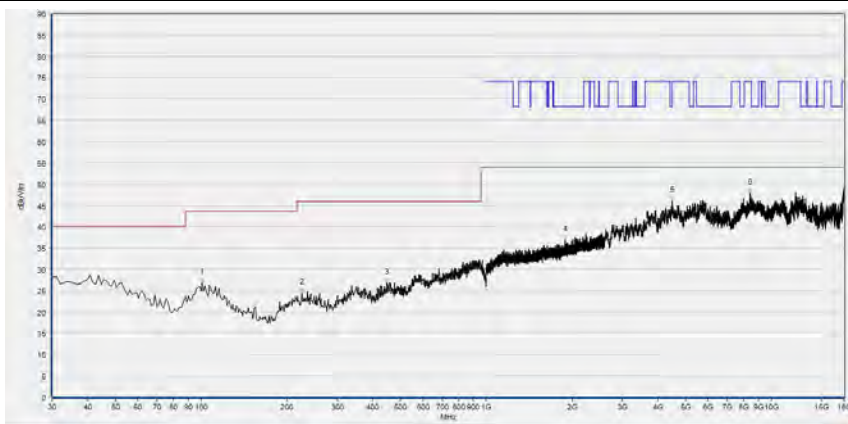
(Antenna Vertical, 30MHz to 18GHz)

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
106.707	26.43	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
247.497	25.54	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
564.034	29.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2800.240	41.87	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5541.988	45.30	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12590.438	46.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

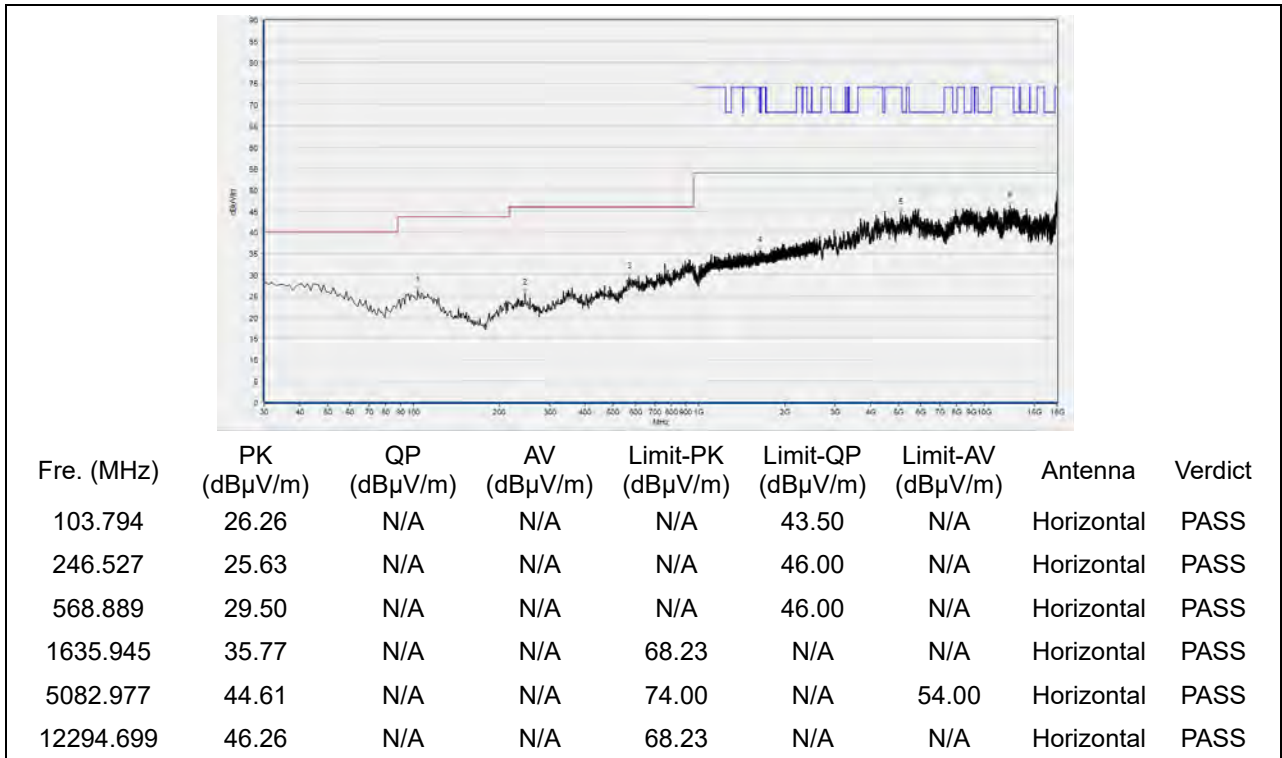
(Antenna Horizontal, 30MHz to 18GHz)



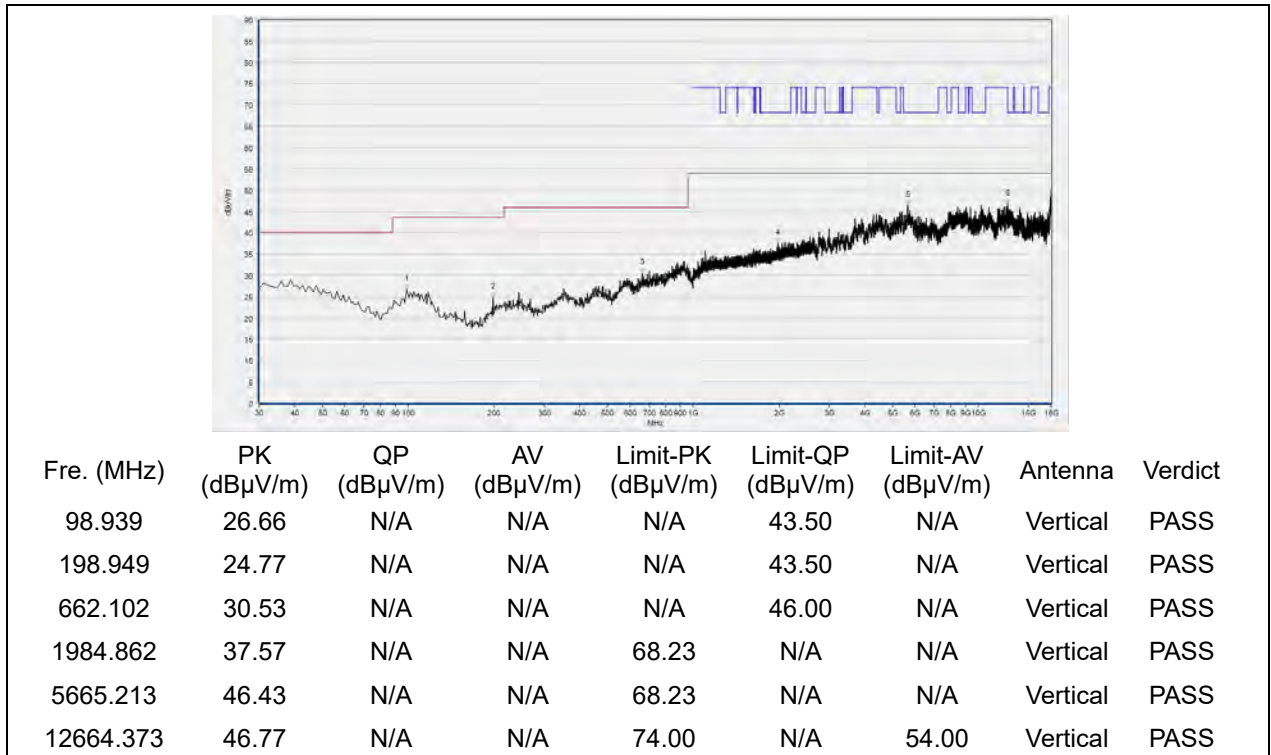
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
100.881	26.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
225.165	24.53	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
448.488	26.76	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1885.629	36.93	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
4500.740	46.12	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8419.284	47.86	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 64

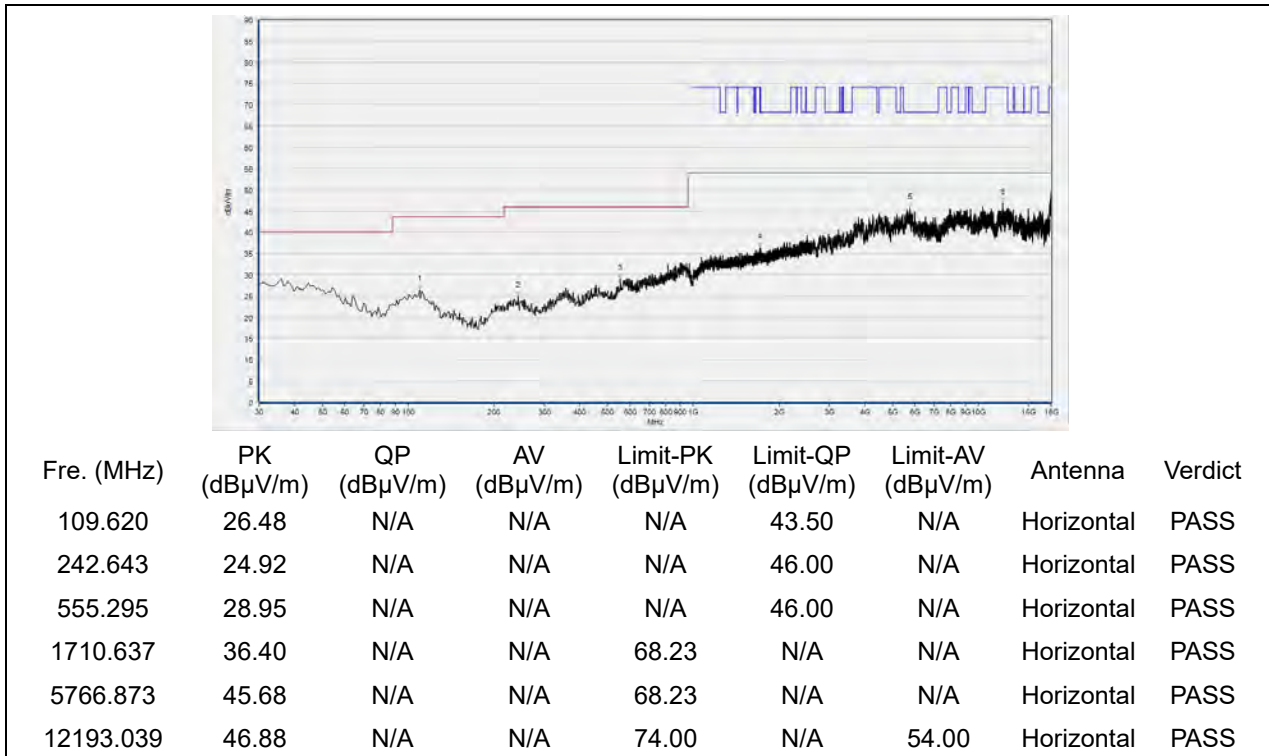


(Antenna Horizontal, 30MHz to 18GHz)

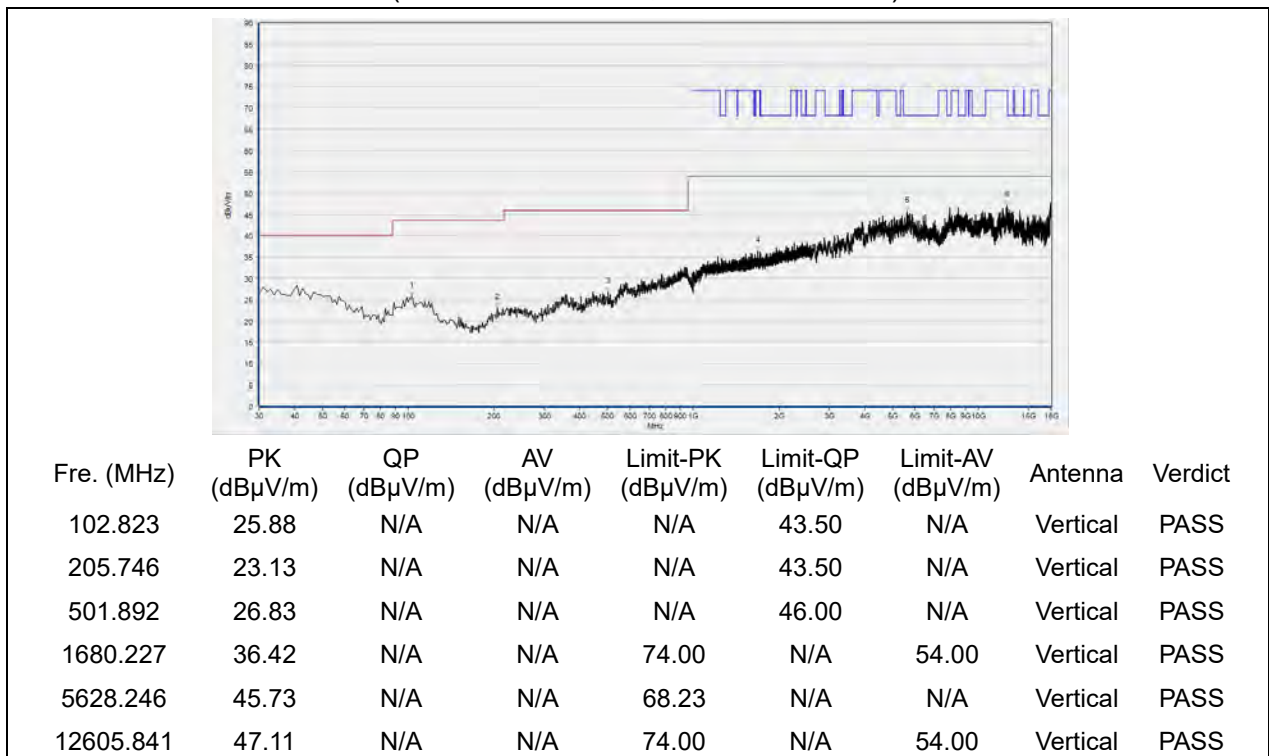


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 100

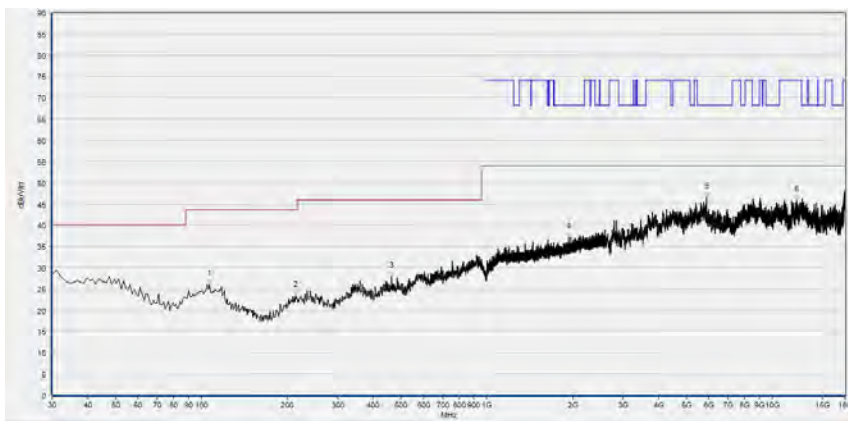


(Antenna Horizontal, 30MHz to 18GHz)



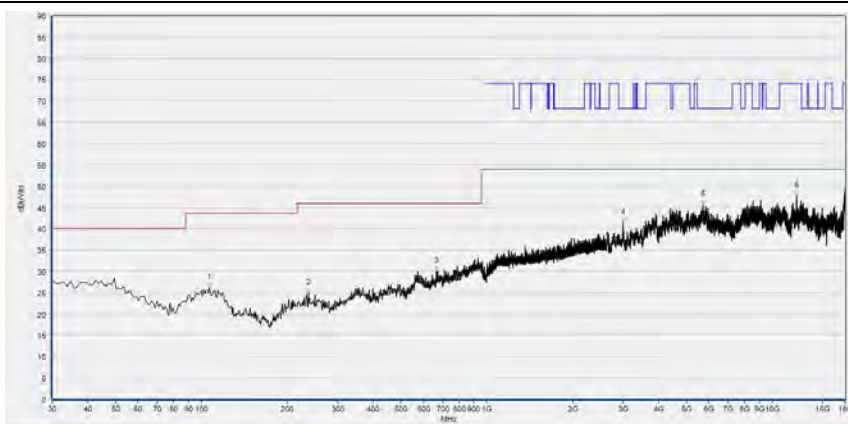
(Antenna Vertical, 30MHz to 18GHz)

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
106.707	26.23	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
213.514	23.39	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
464.024	28.03	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1932.578	37.24	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5874.695	46.61	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12196.119	46.00	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

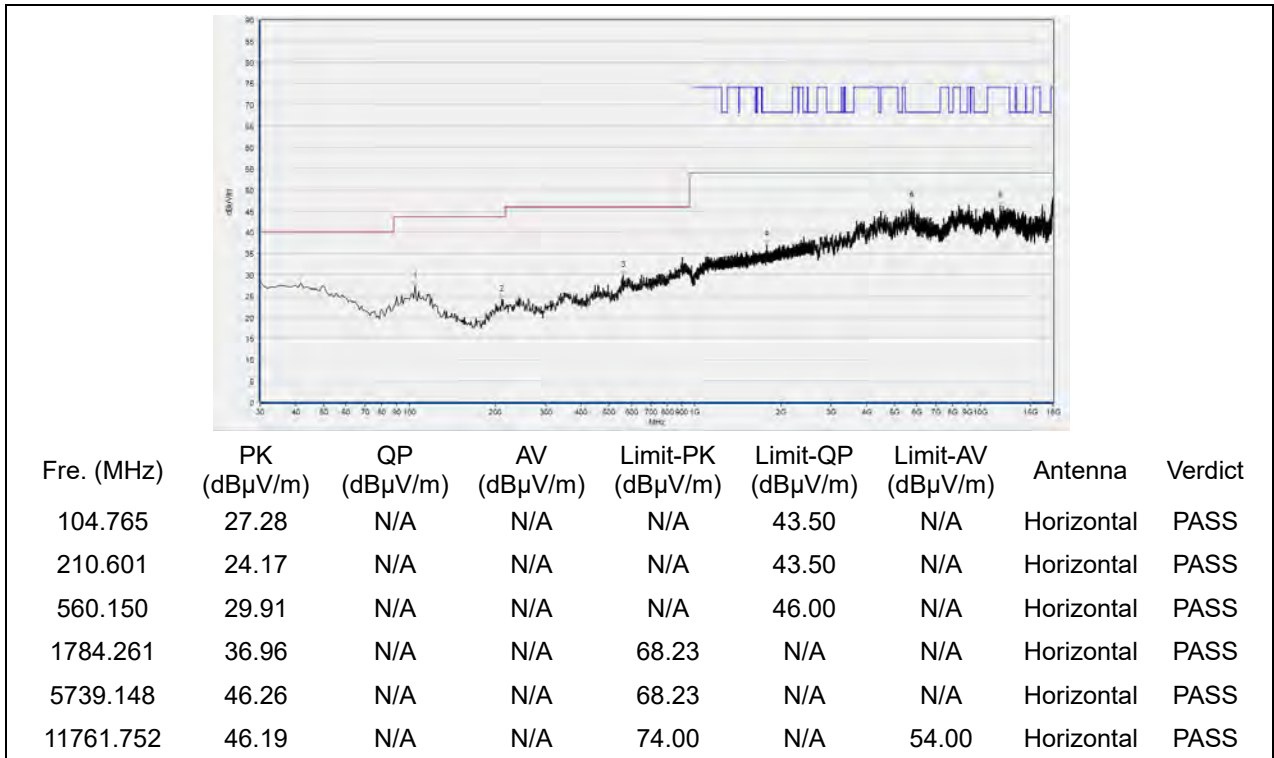
(Antenna Horizontal, 30MHz to 18GHz)



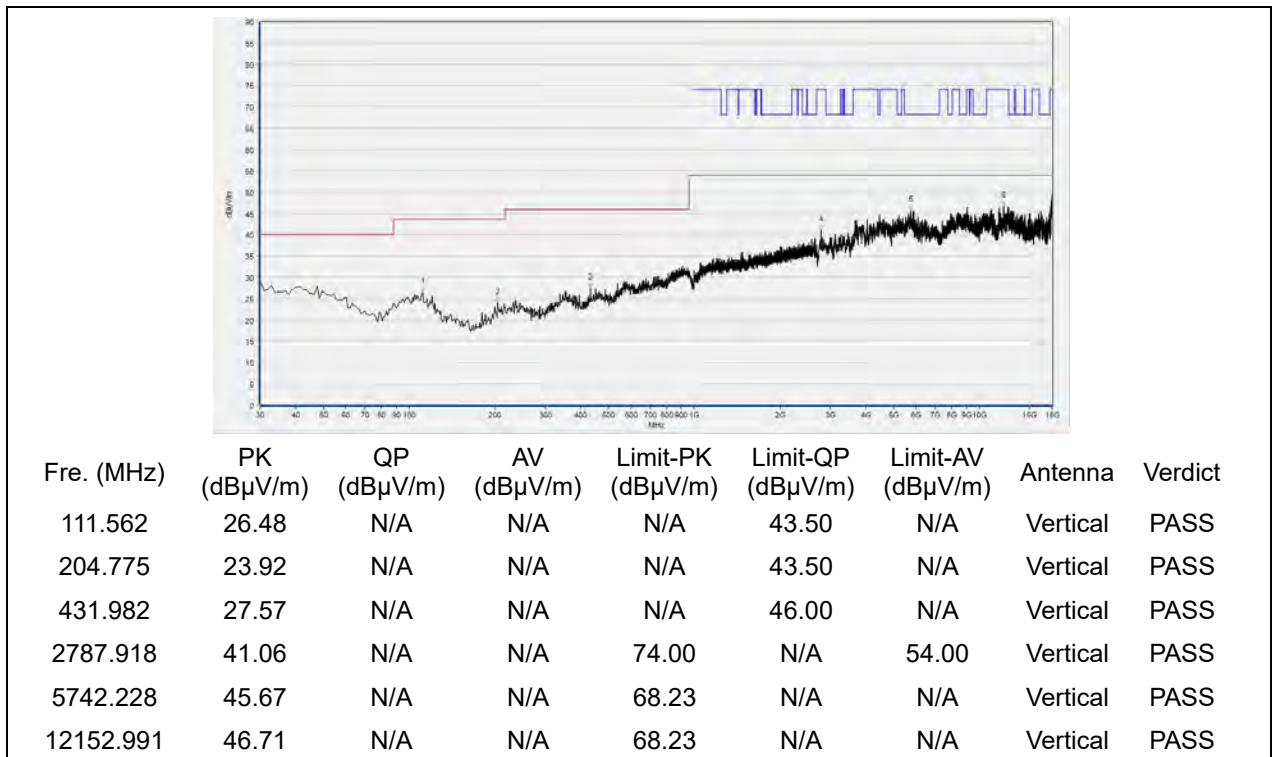
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
106.707	26.14	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
236.817	24.85	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
667.928	30.08	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
3000.480	41.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5717.584	45.59	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12152.991	47.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 144

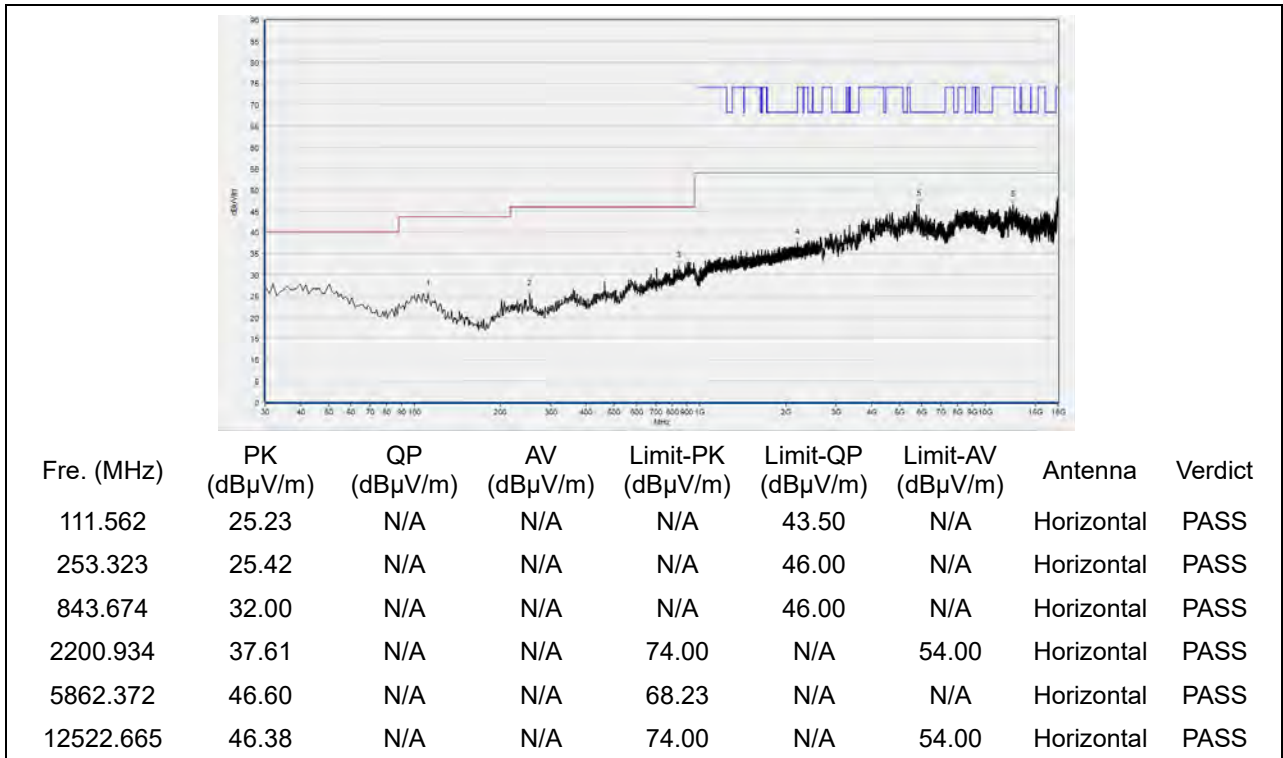


(Antenna Horizontal, 30MHz to 18GHz)

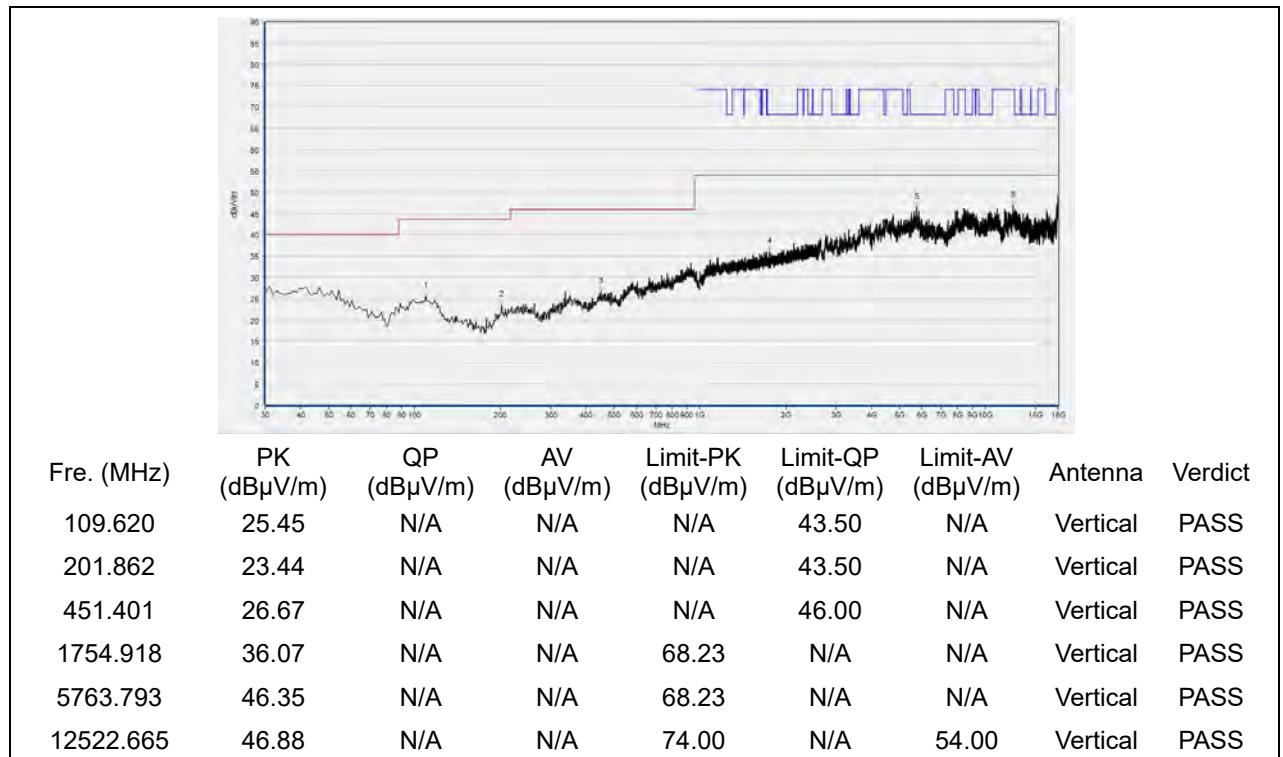


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 149

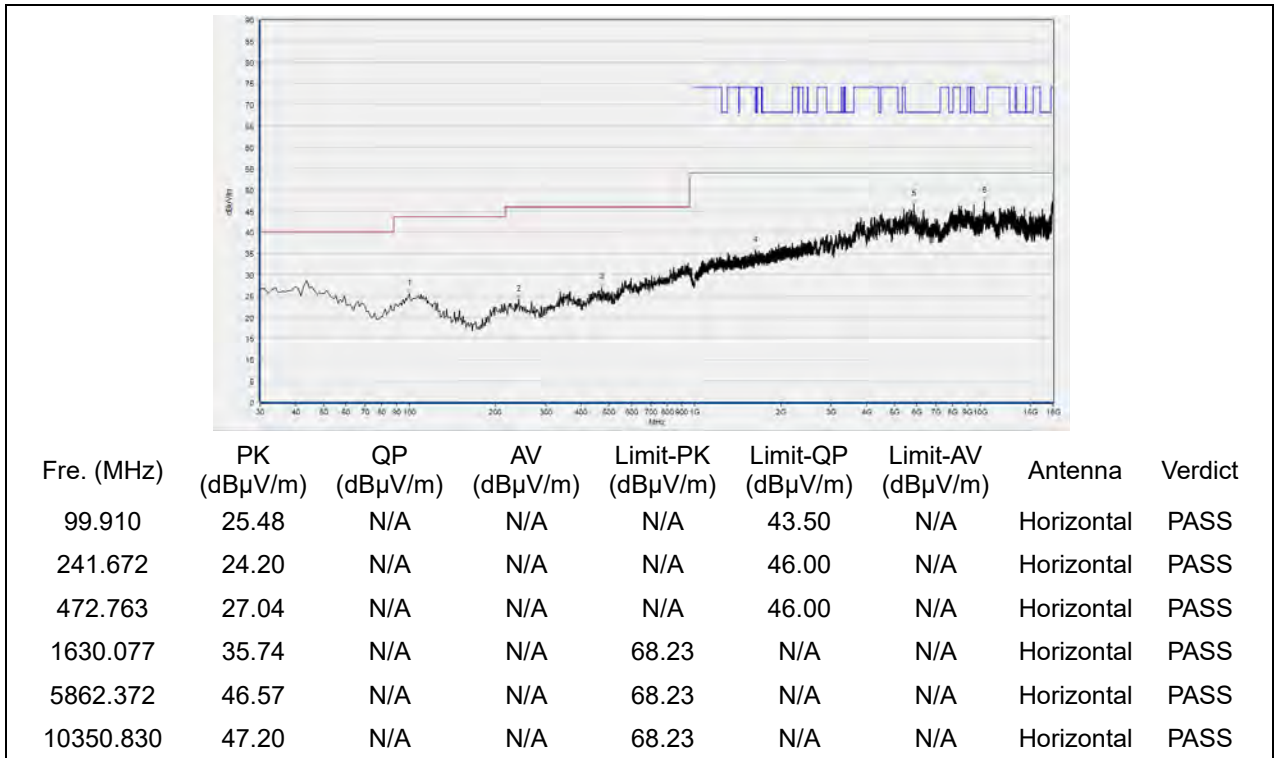


(Antenna Horizontal, 30MHz to 18GHz)

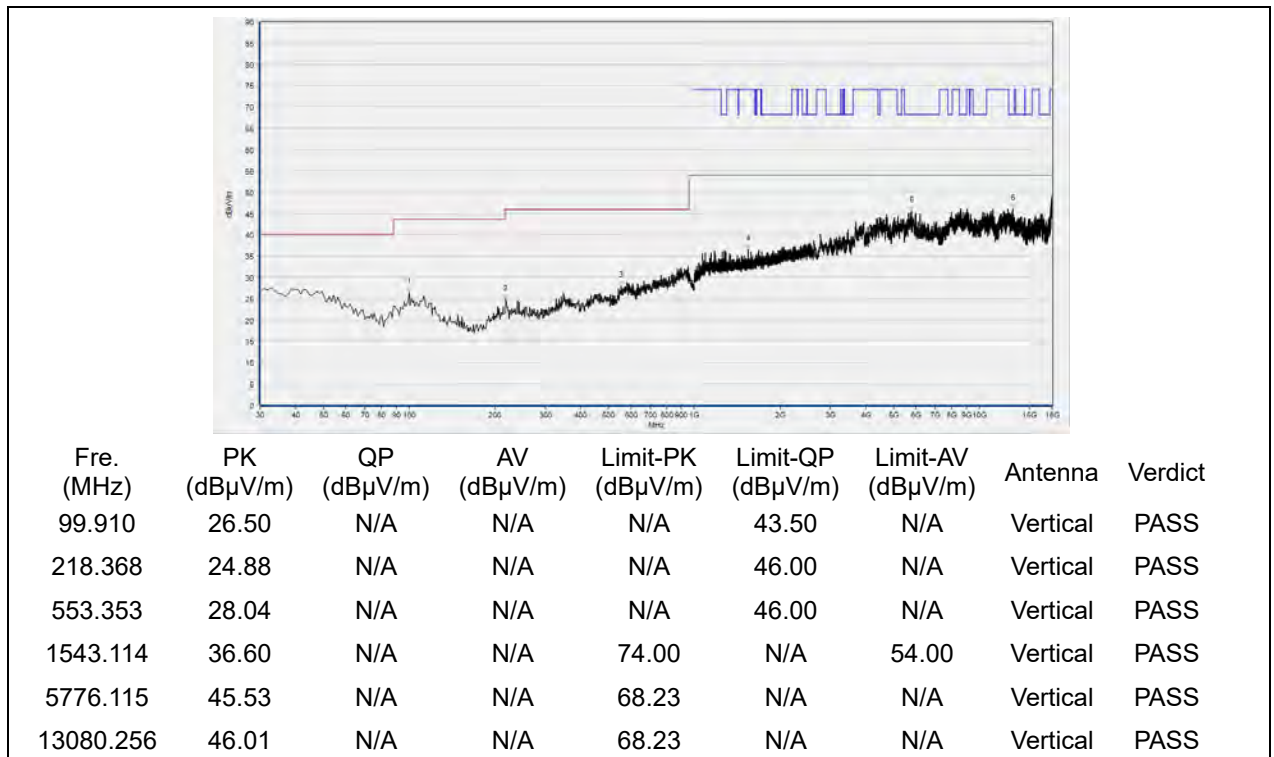


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 157

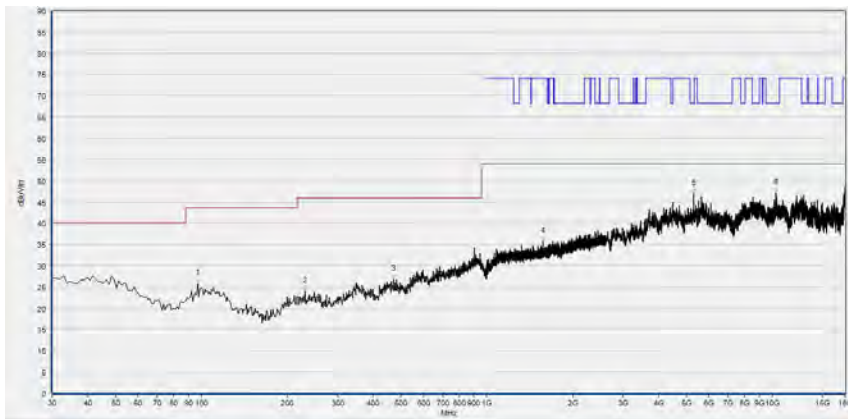


(Antenna Horizontal, 30MHz to 18GHz)



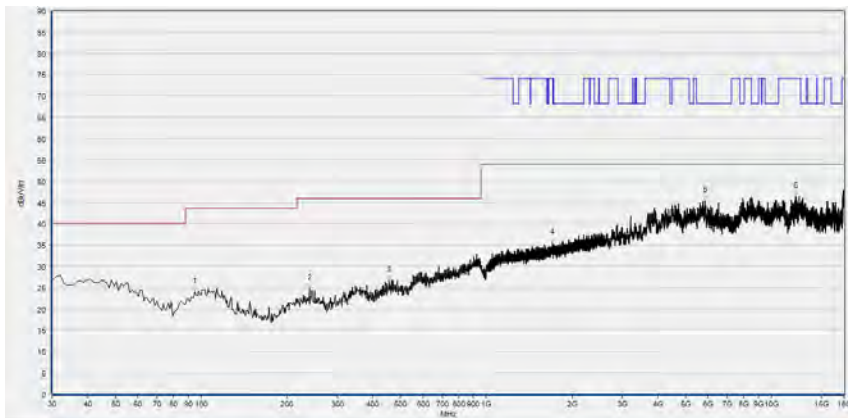
(Antenna Vertical, 30MHz to 18GHz)

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
96.997	25.74	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
230.991	23.91	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
472.763	26.85	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1568.723	35.62	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5304.781	46.92	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
10320.024	47.04	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



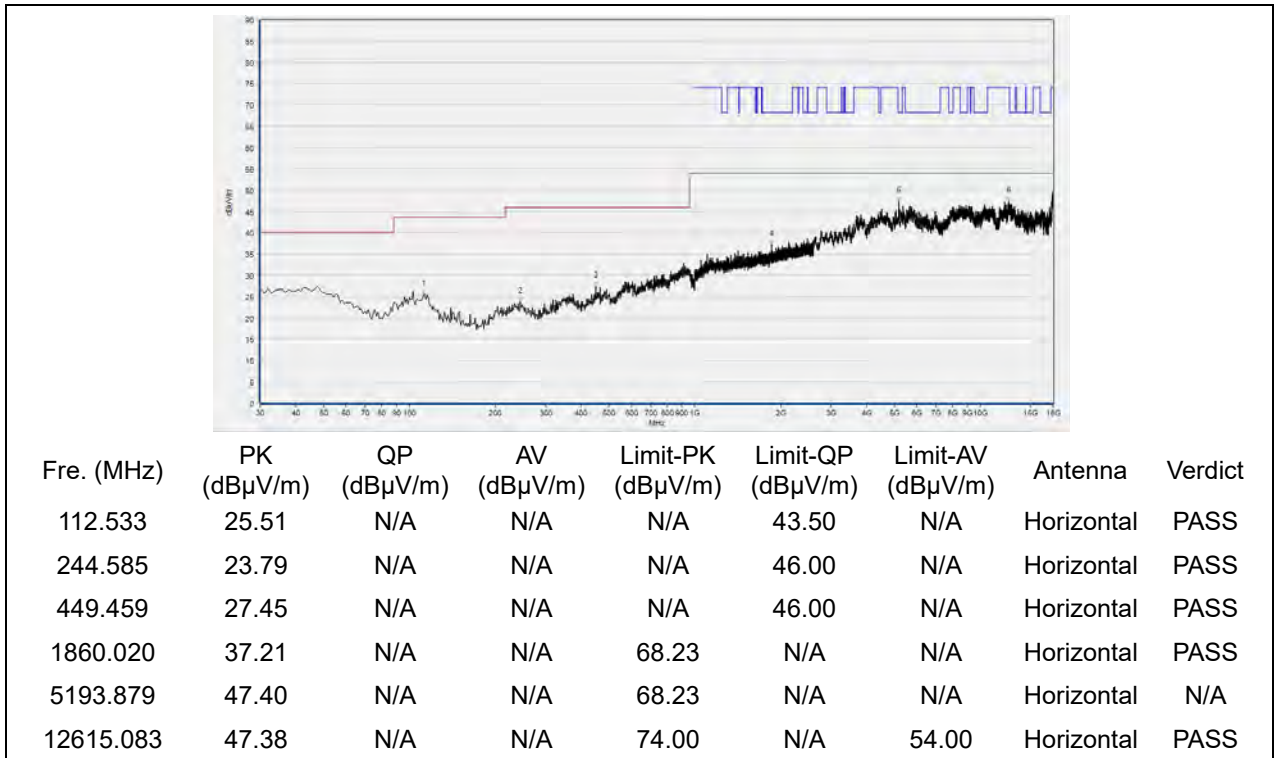
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
95.055	23.99	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
239.730	24.83	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
456.256	26.62	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1705.835	35.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5862.372	45.42	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12196.119	46.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

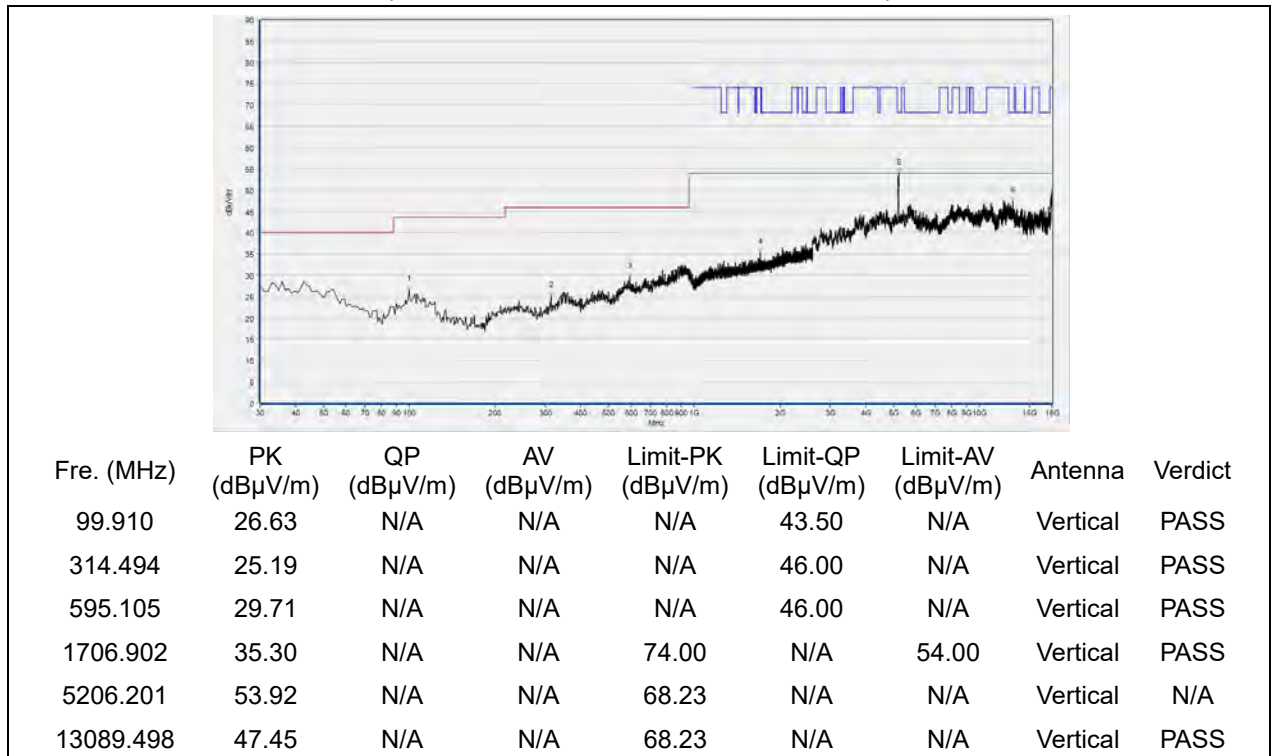


802.11n (HT40) mode

Plot for Channel 38

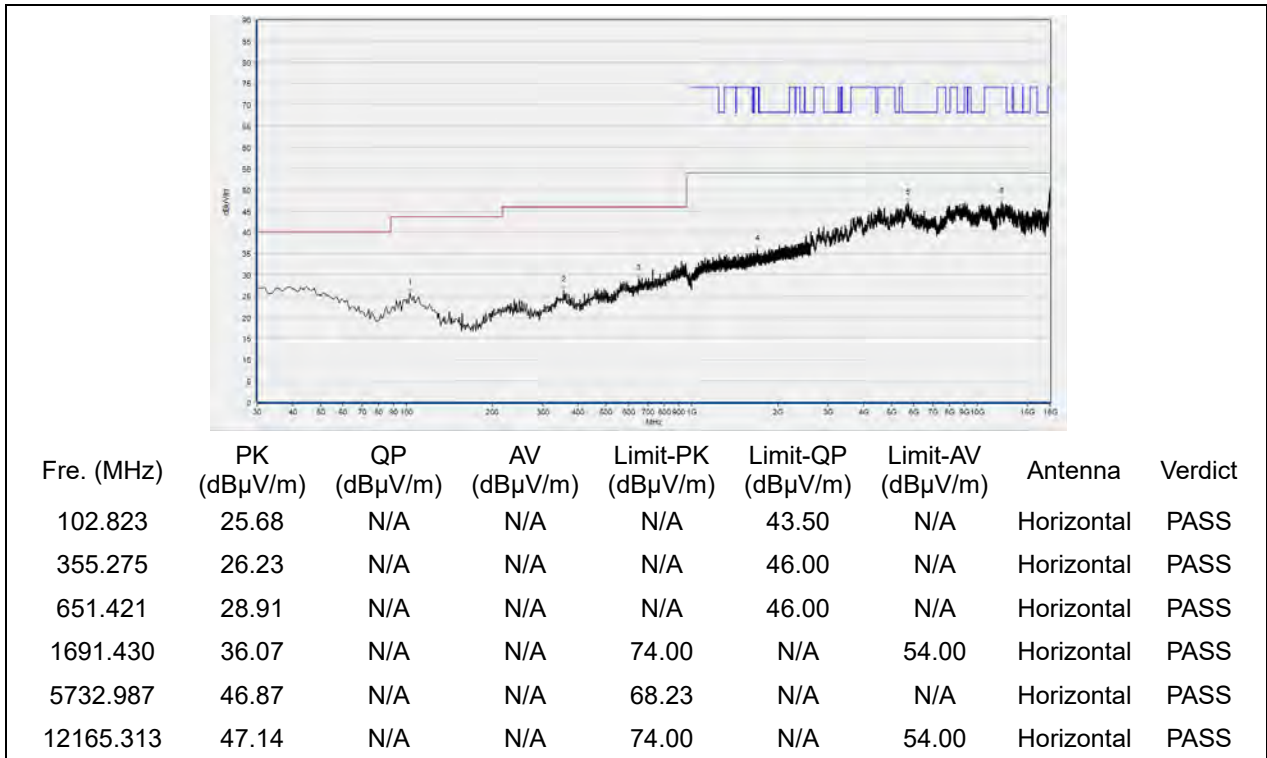


(Antenna Horizontal, 30MHz to 18GHz)

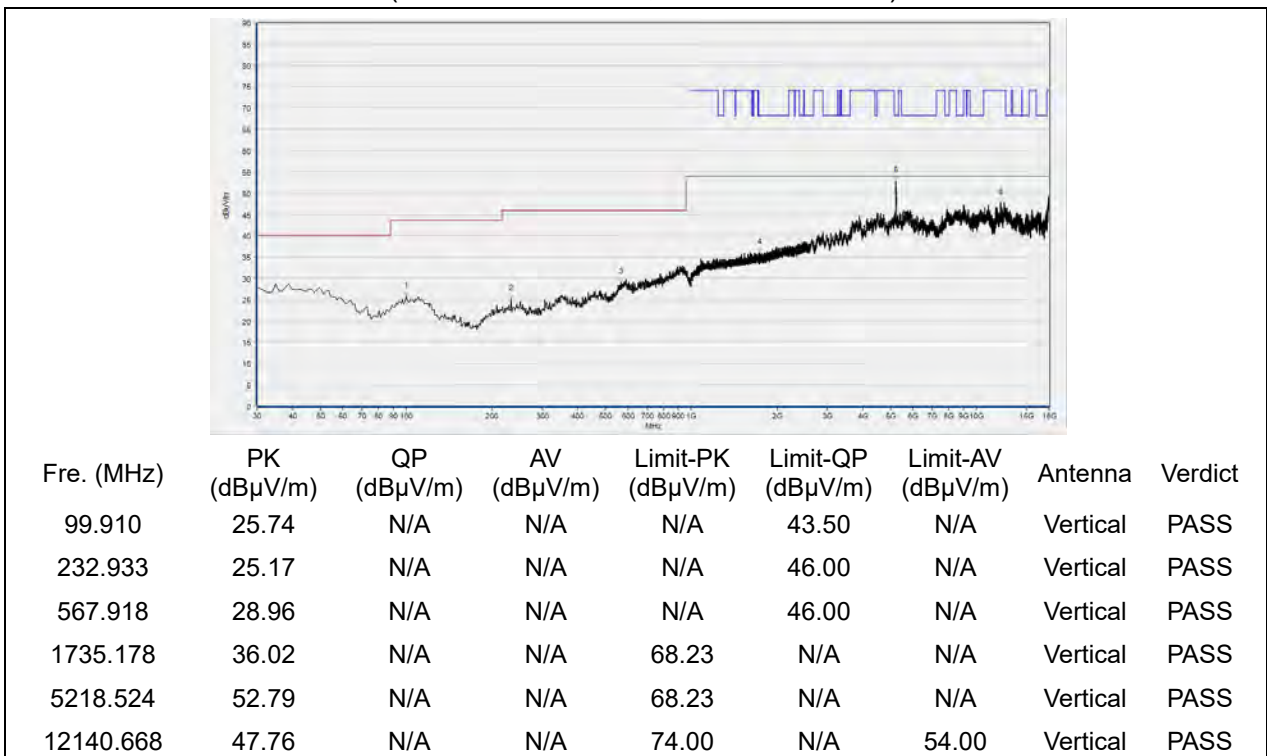


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 46

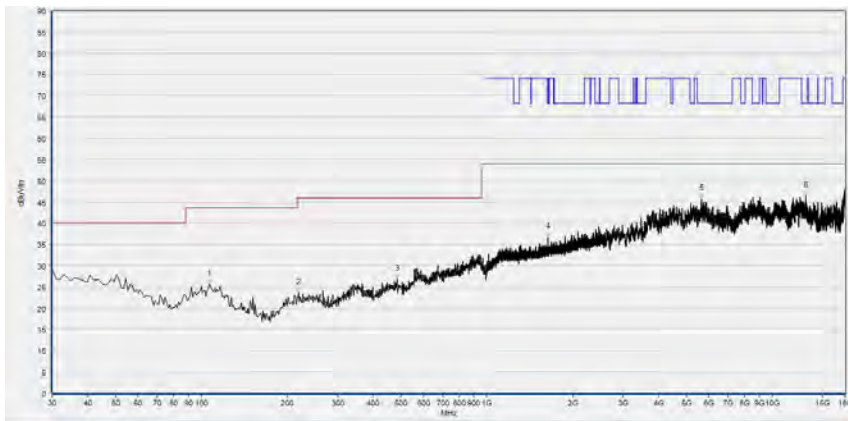


(Antenna Horizontal, 30MHz to 18GHz)



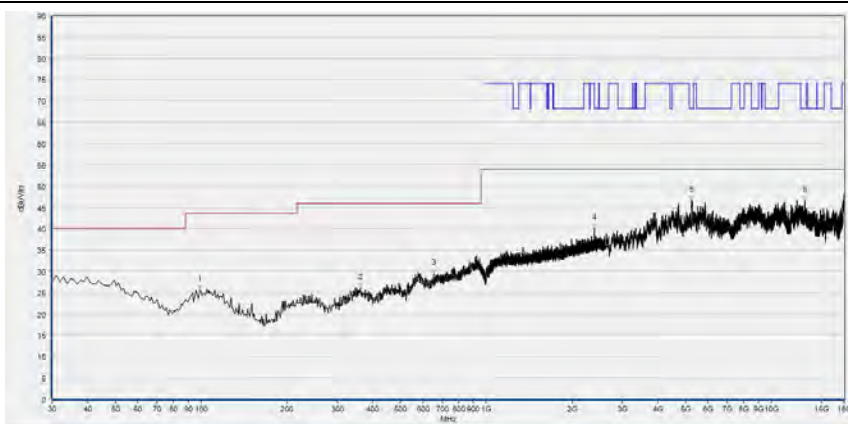
(Antenna Vertical, 30MHz to 18GHz)

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
106.707	25.71	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
219.339	23.68	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
484.414	26.87	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1637.012	36.62	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5637.487	45.70	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13148.030	46.43	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

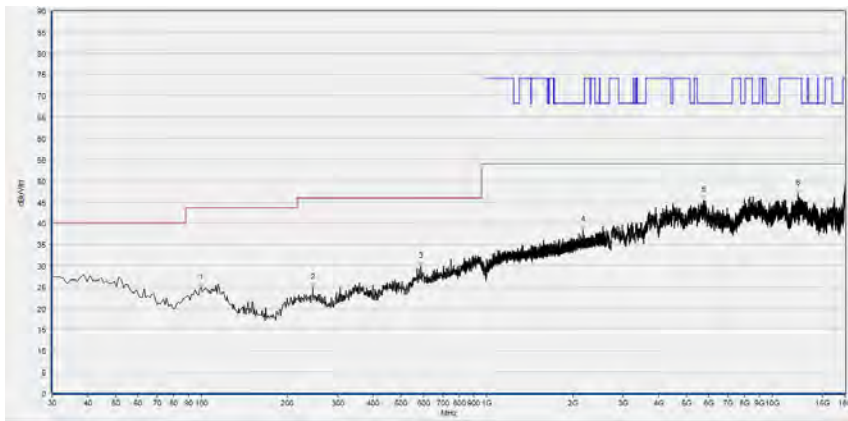
(Antenna Horizontal, 30MHz to 18GHz)



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
98.939	25.65	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
362.072	26.16	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
653.363	29.45	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2391.931	40.04	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5258.572	46.63	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13077.175	46.52	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

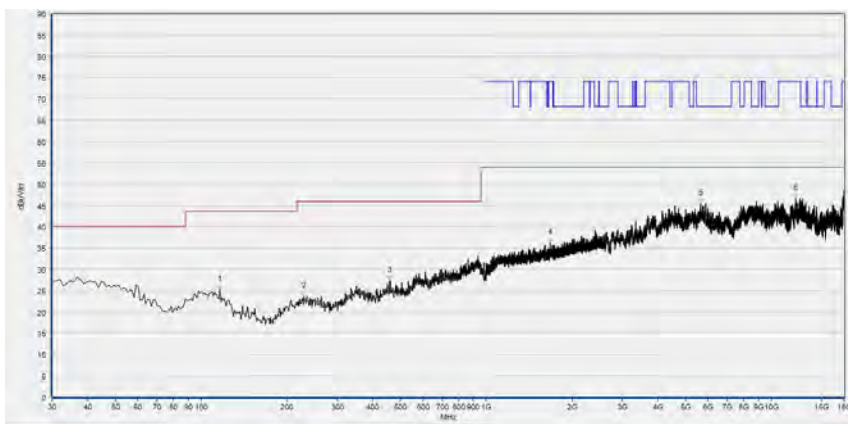
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 62



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
99.910	24.84	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
245.556	24.80	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
588.308	29.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2168.389	38.42	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5748.390	45.47	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12294.699	47.00	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

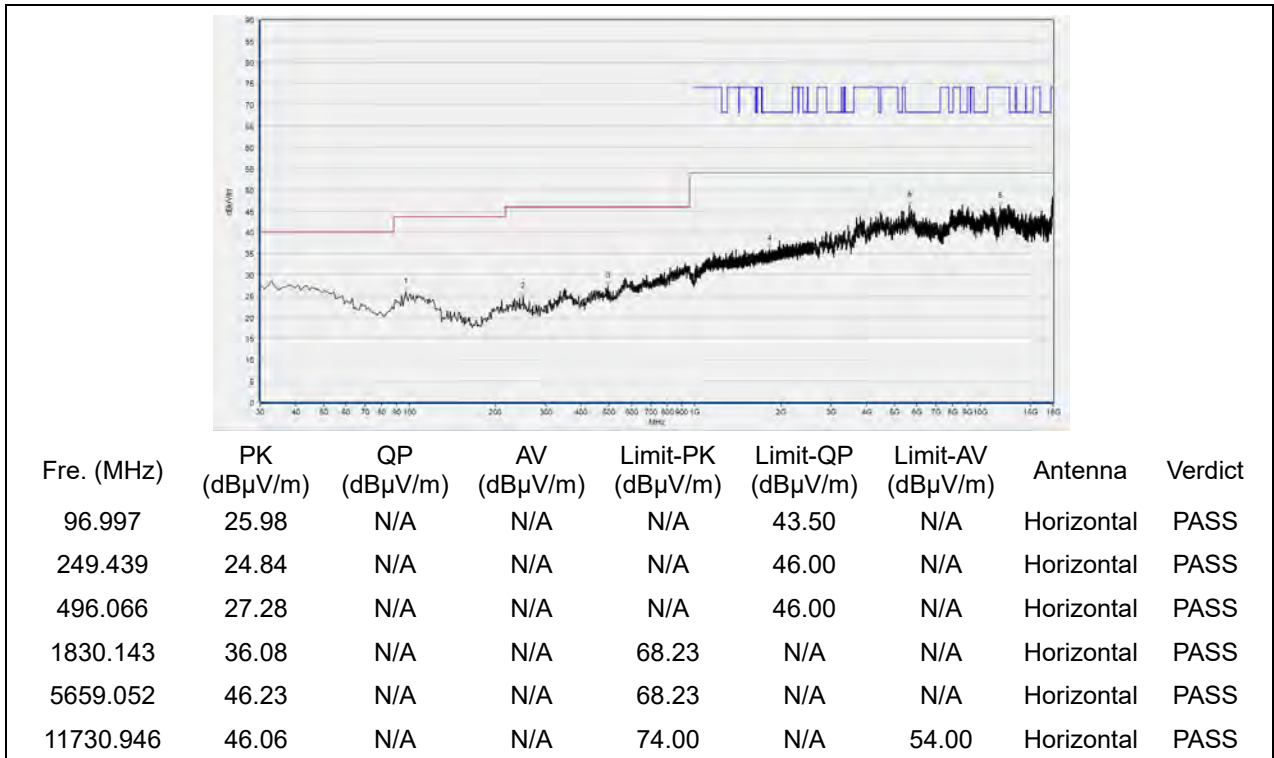
(Antenna Horizontal, 30MHz to 18GHz)



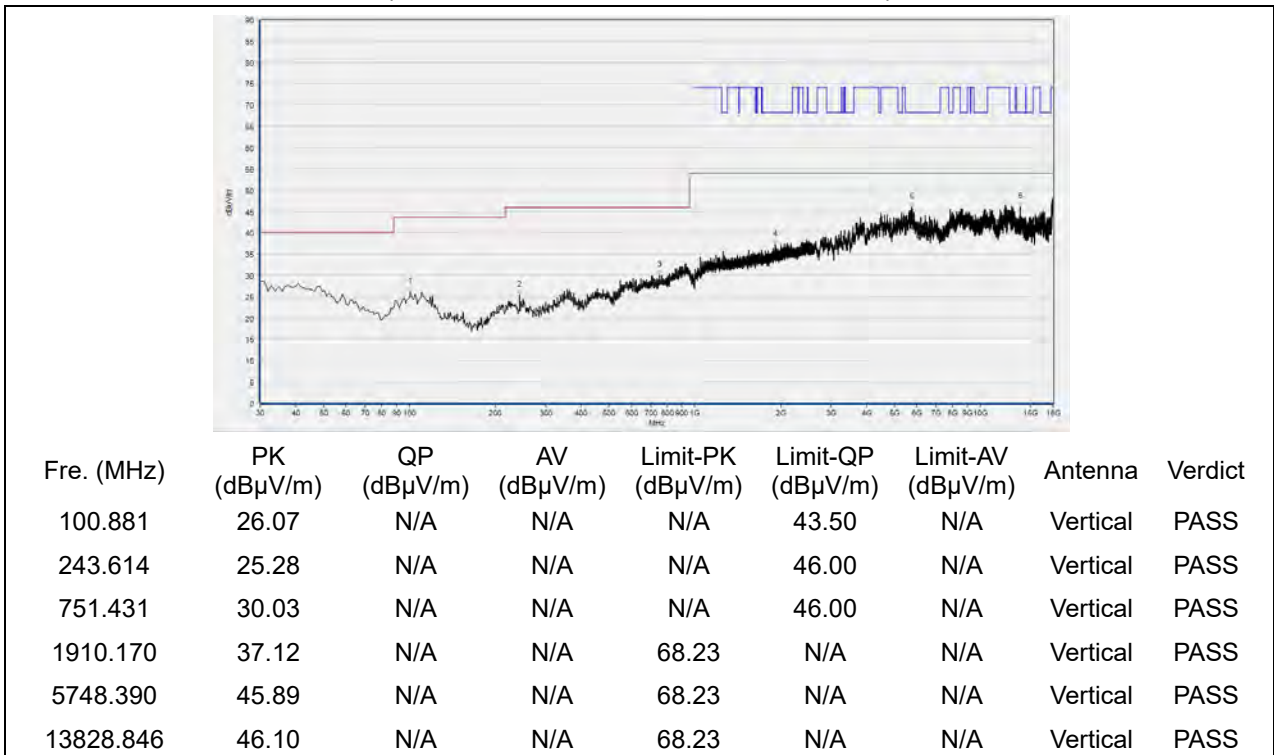
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
116.416	25.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
230.020	23.71	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
458.198	27.38	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1675.959	36.12	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5649.810	45.46	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12196.119	46.60	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 102

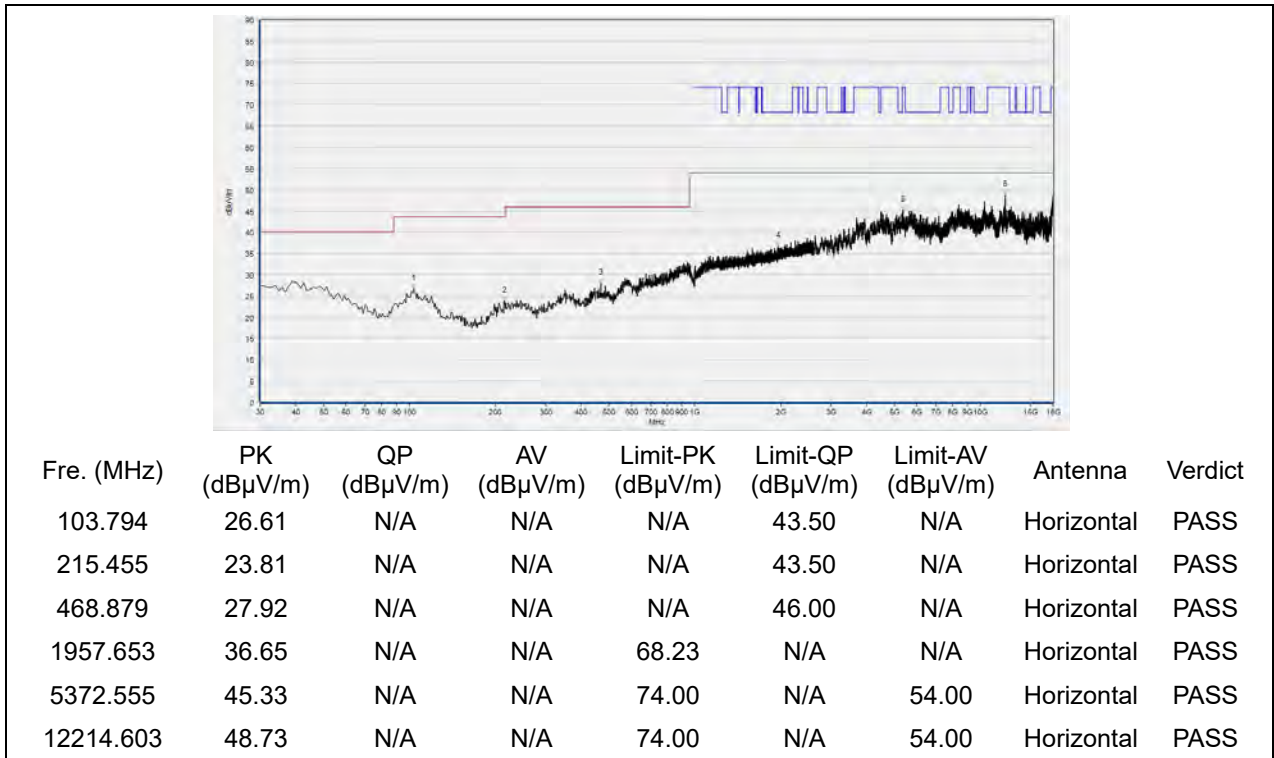


(Antenna Horizontal, 30MHz to 18GHz)

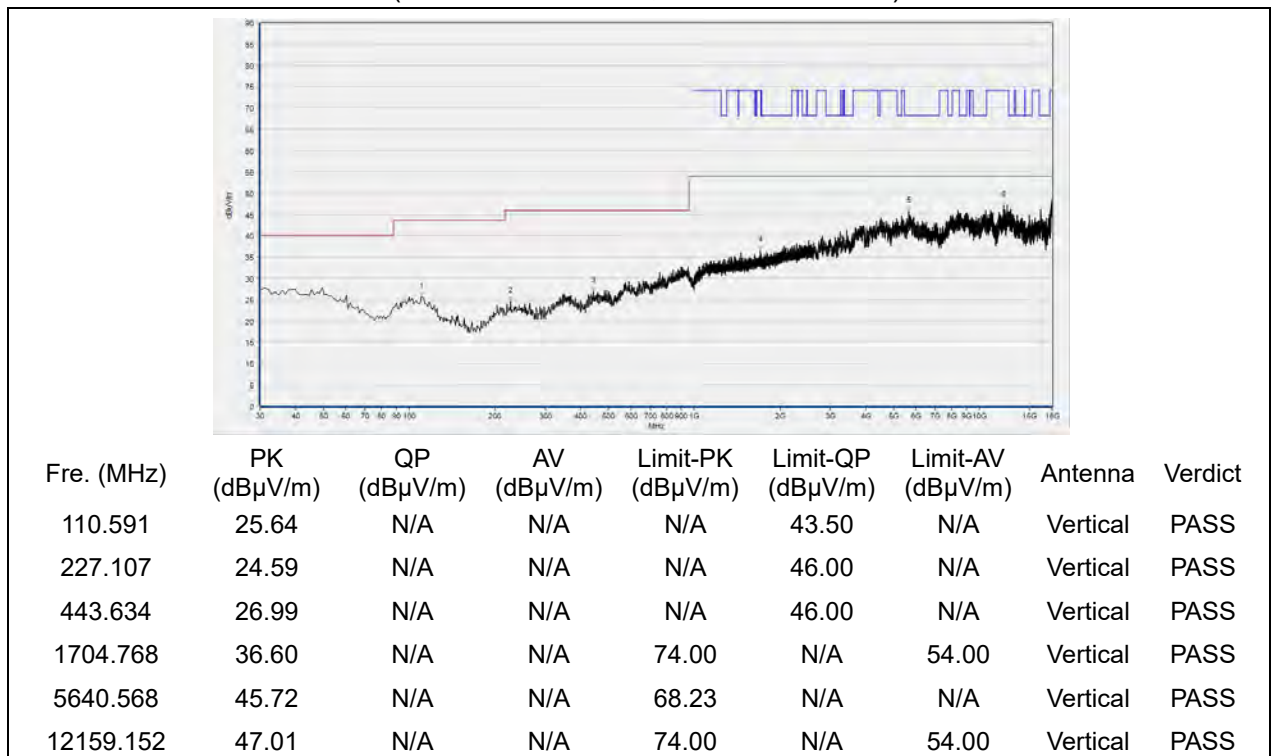


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 126

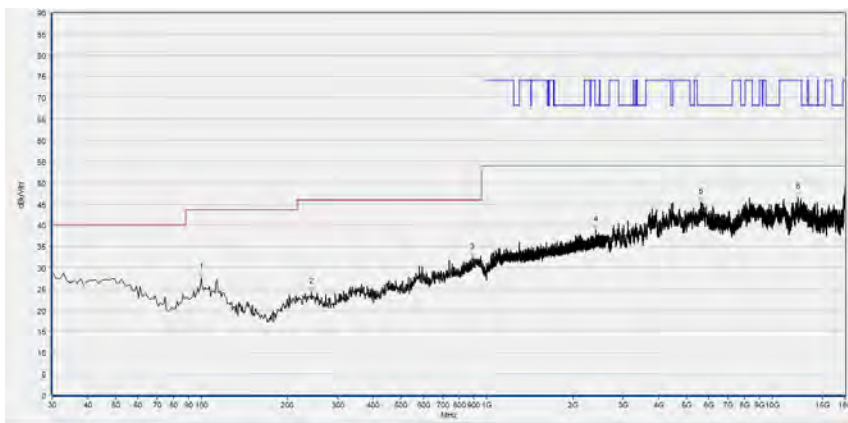


(Antenna Horizontal, 30MHz to 18GHz)



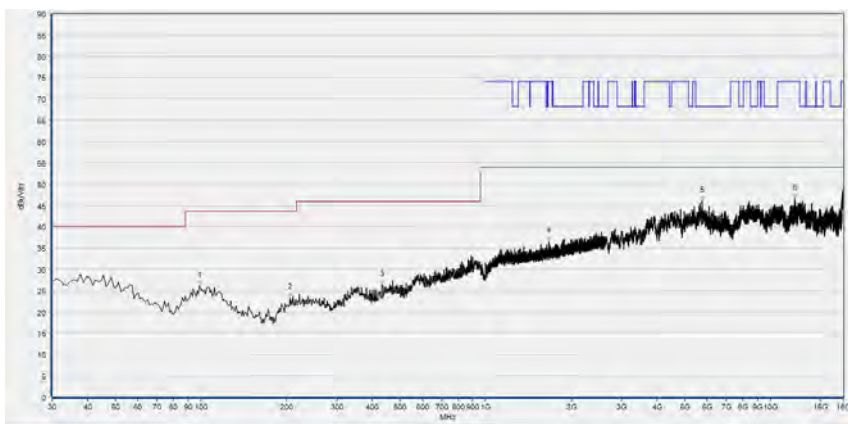
(Antenna Vertical, 30MHz to 18GHz)

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
99.910	27.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
242.643	24.27	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
890.280	32.34	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2413.805	38.80	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5634.407	45.50	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12288.538	46.60	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

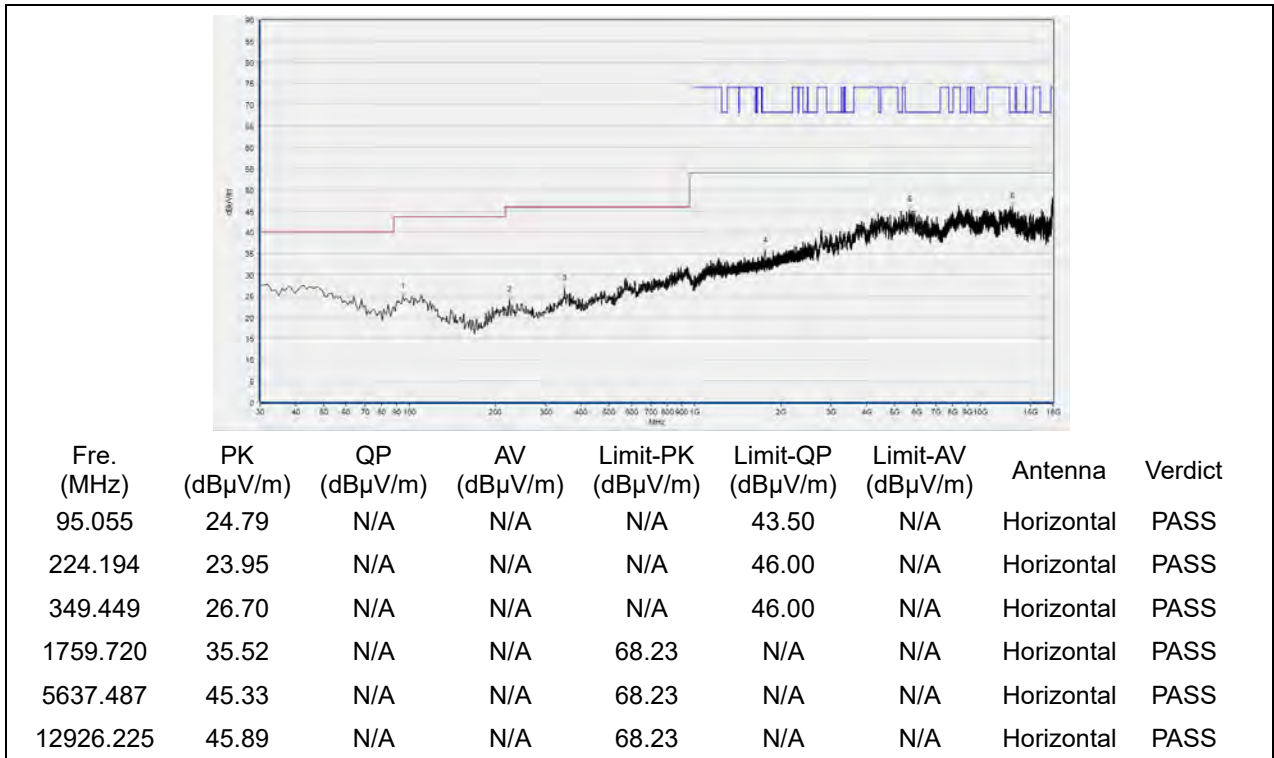
(Antenna Horizontal, 30MHz to 18GHz)



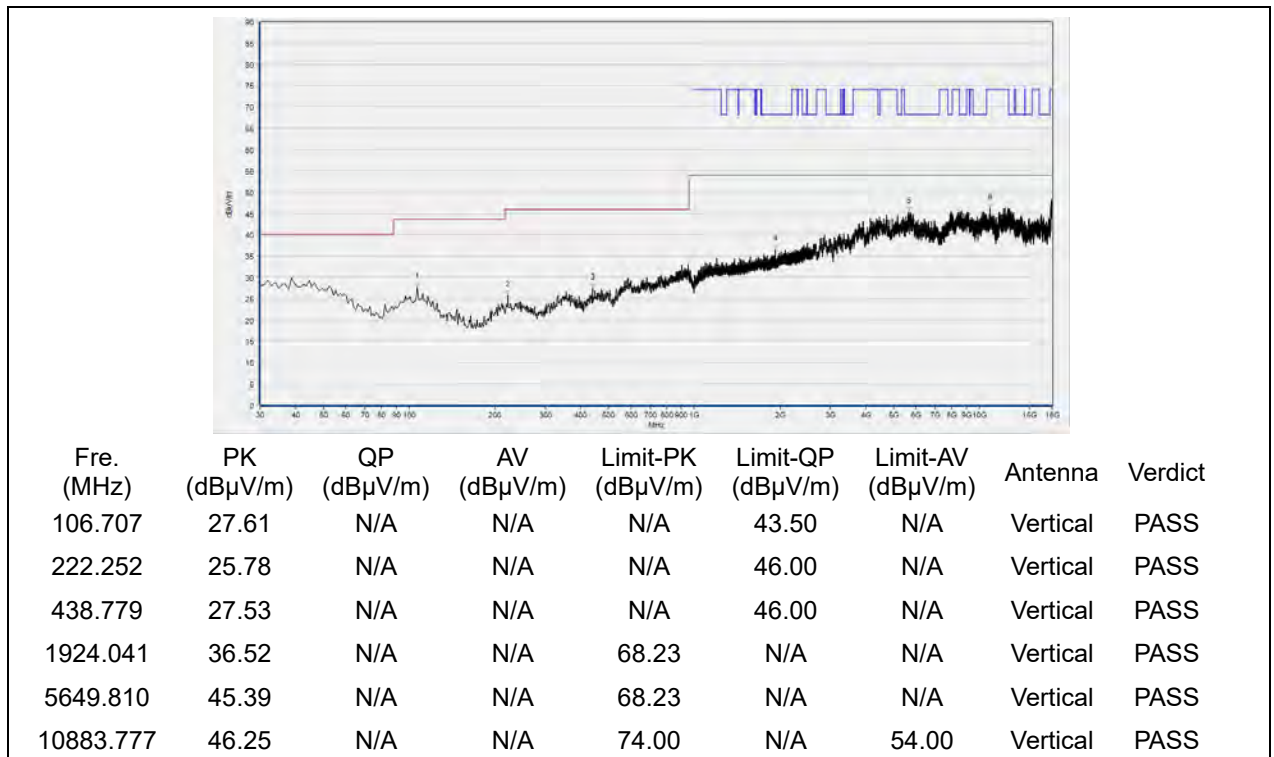
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
98.939	26.07	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
205.746	23.25	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
432.953	26.38	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1669.557	36.61	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5751.470	46.14	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12168.394	46.65	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 151

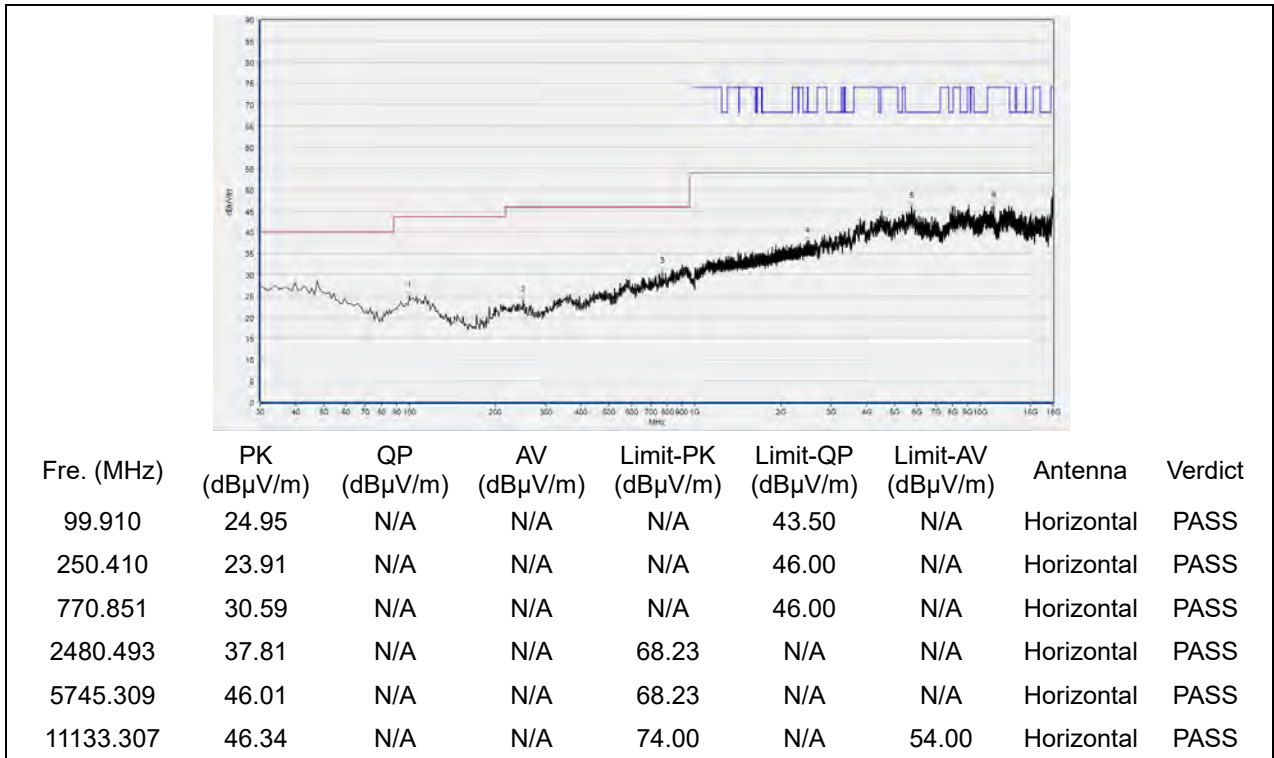


(Antenna Horizontal, 30MHz to 18GHz)

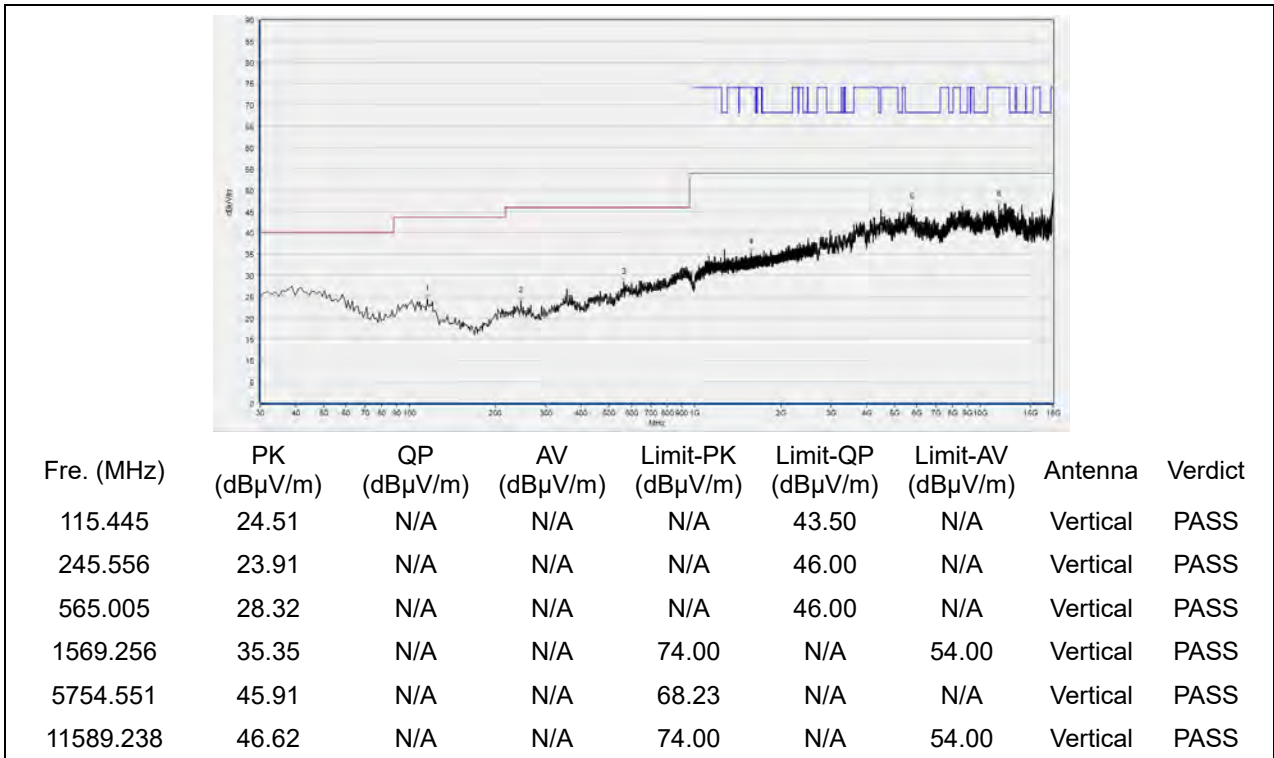


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 159



(Antenna Horizontal, 30MHz to 18GHz)

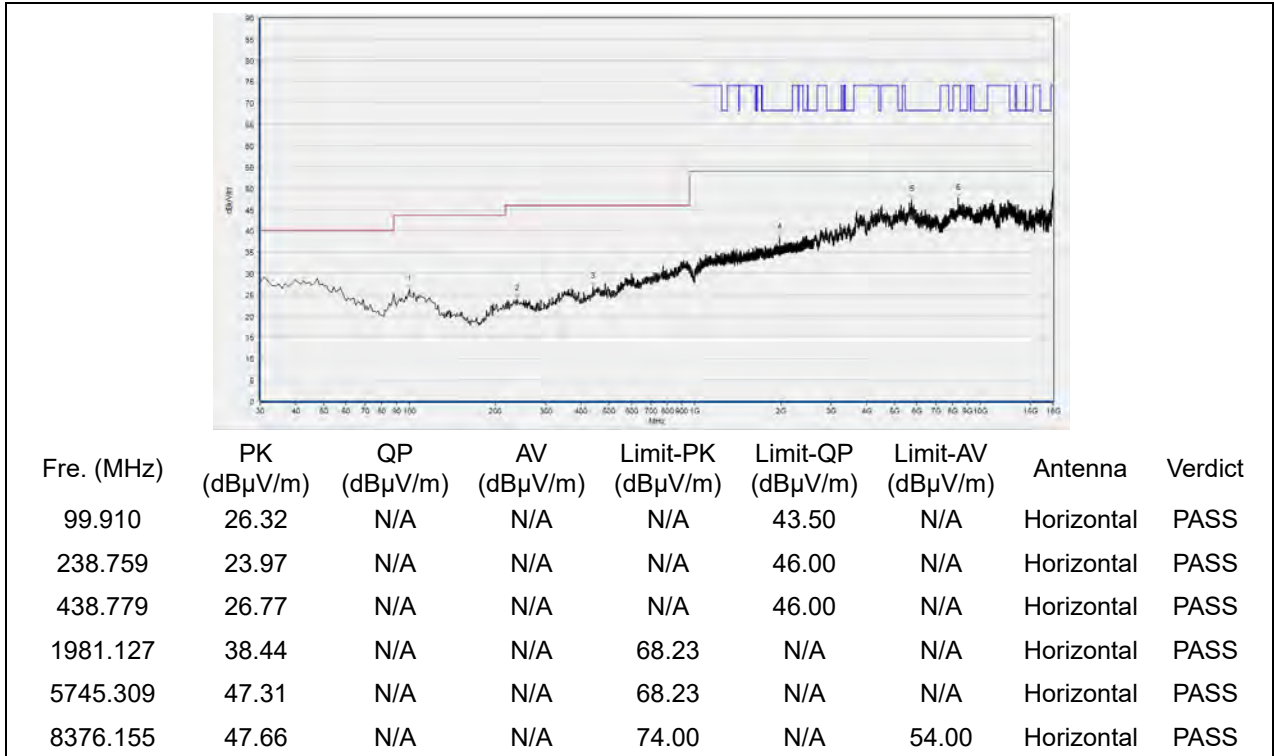


(Antenna Vertical, 30MHz to 18GHz)

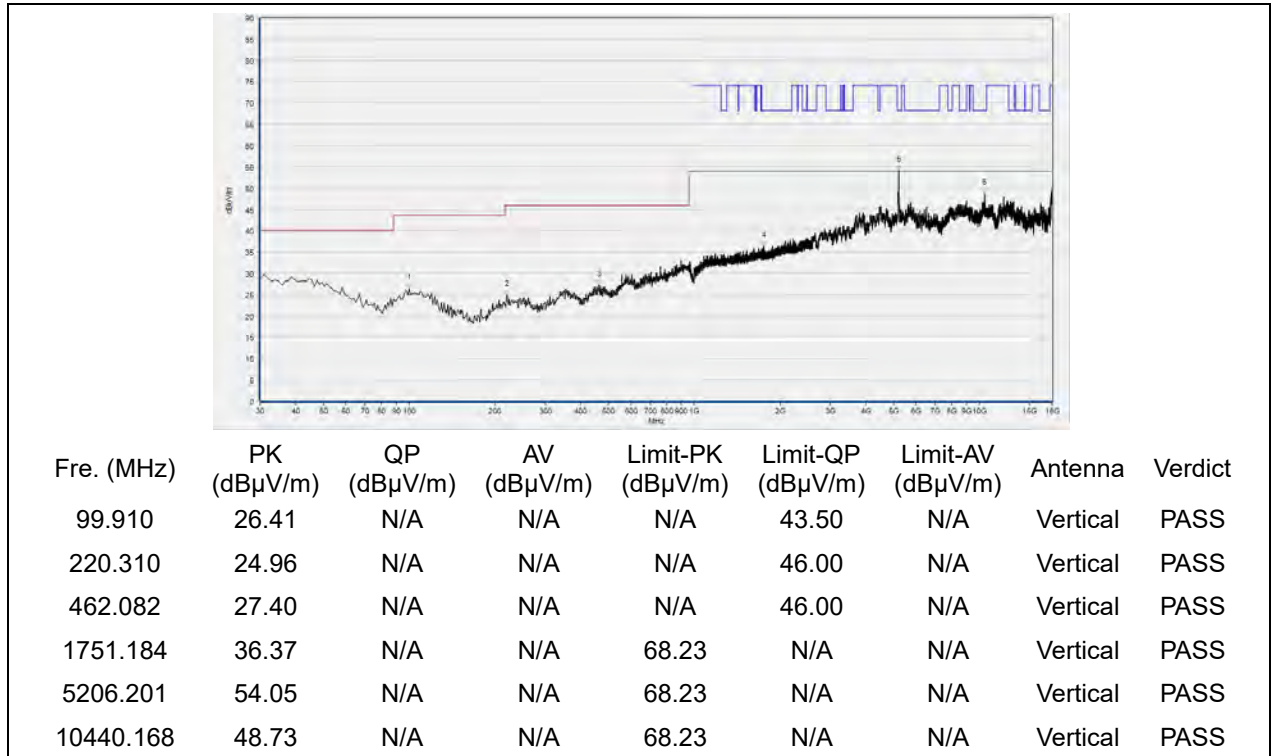


802.11ac (VHT80) Mode

Plot for Channel 42

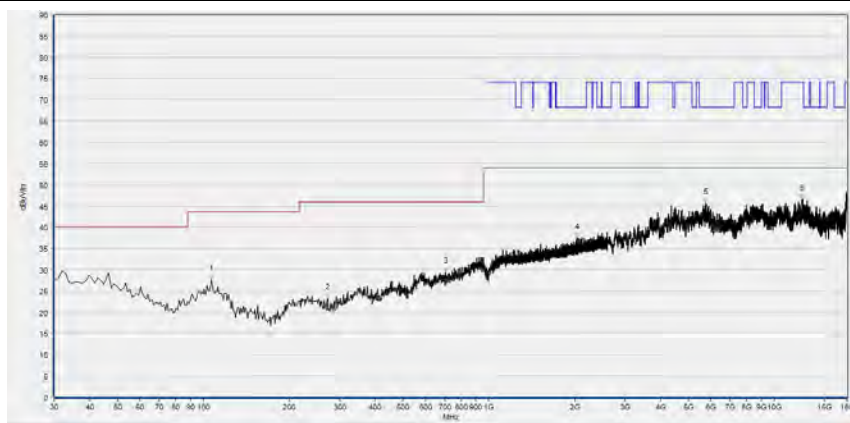


(Antenna Horizontal, 30MHz to 18GHz)



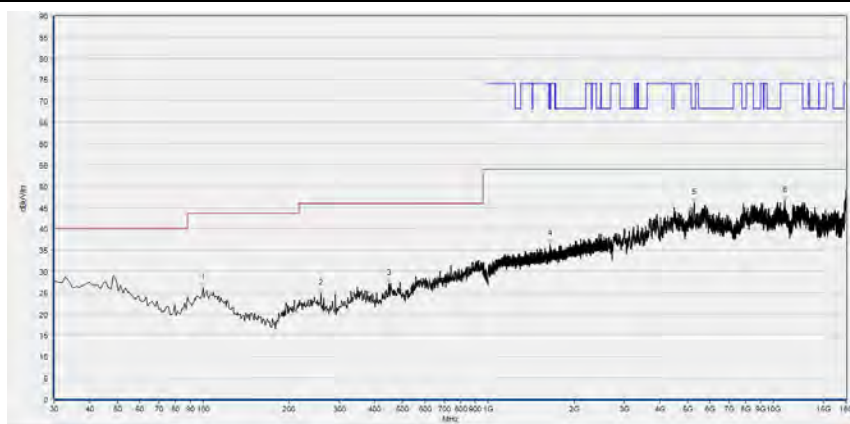
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 58



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	27.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
272.743	23.31	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
705.796	29.48	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2035.545	37.61	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5760.712	45.74	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12491.858	46.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

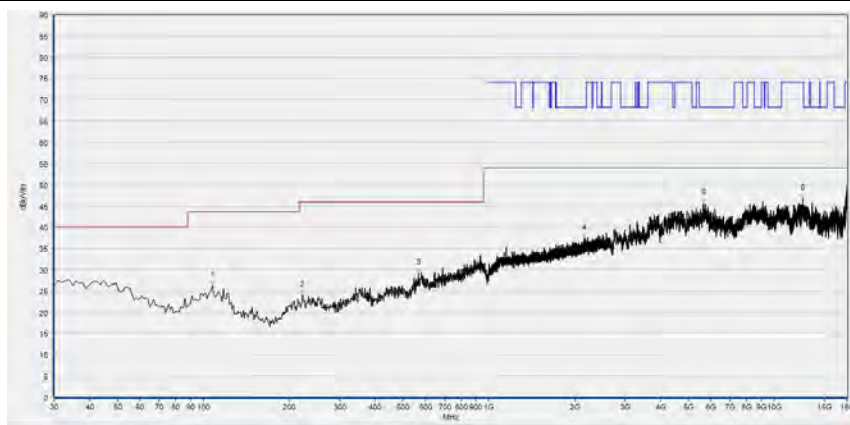
(Antenna Horizontal, 30MHz to 18GHz)



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
99.910	26.07	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
259.149	24.81	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
446.547	27.17	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1646.082	36.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5273.975	46.15	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
10979.276	46.53	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

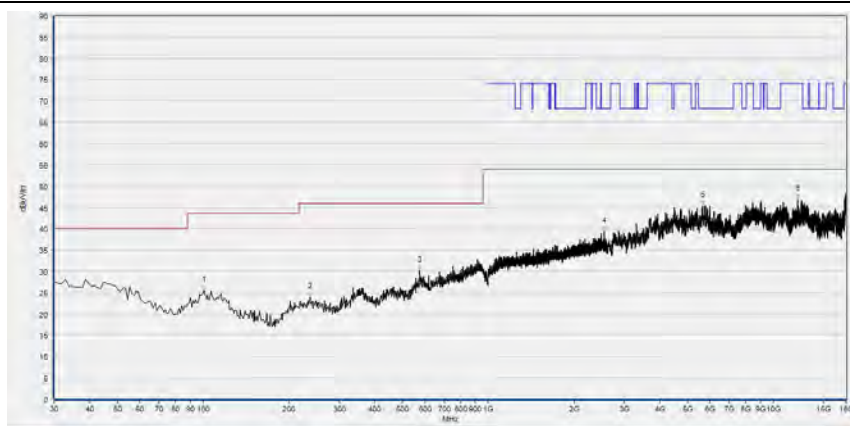
(Antenna Vertical, 30MHz to 18GHz)

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
107.678	26.37	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
222.252	23.90	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
565.976	29.23	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2164.121	37.32	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5640.568	45.52	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
12596.599	46.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

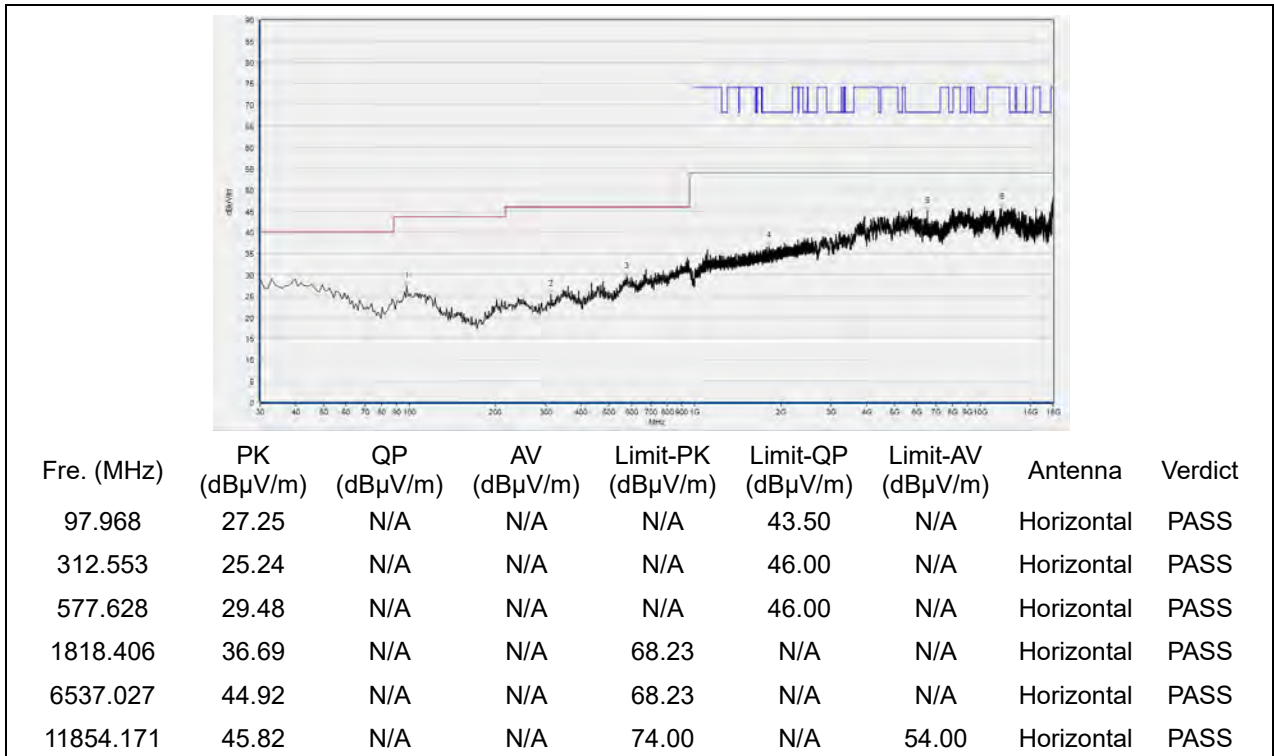
(Antenna Horizontal, 30MHz to 18GHz)



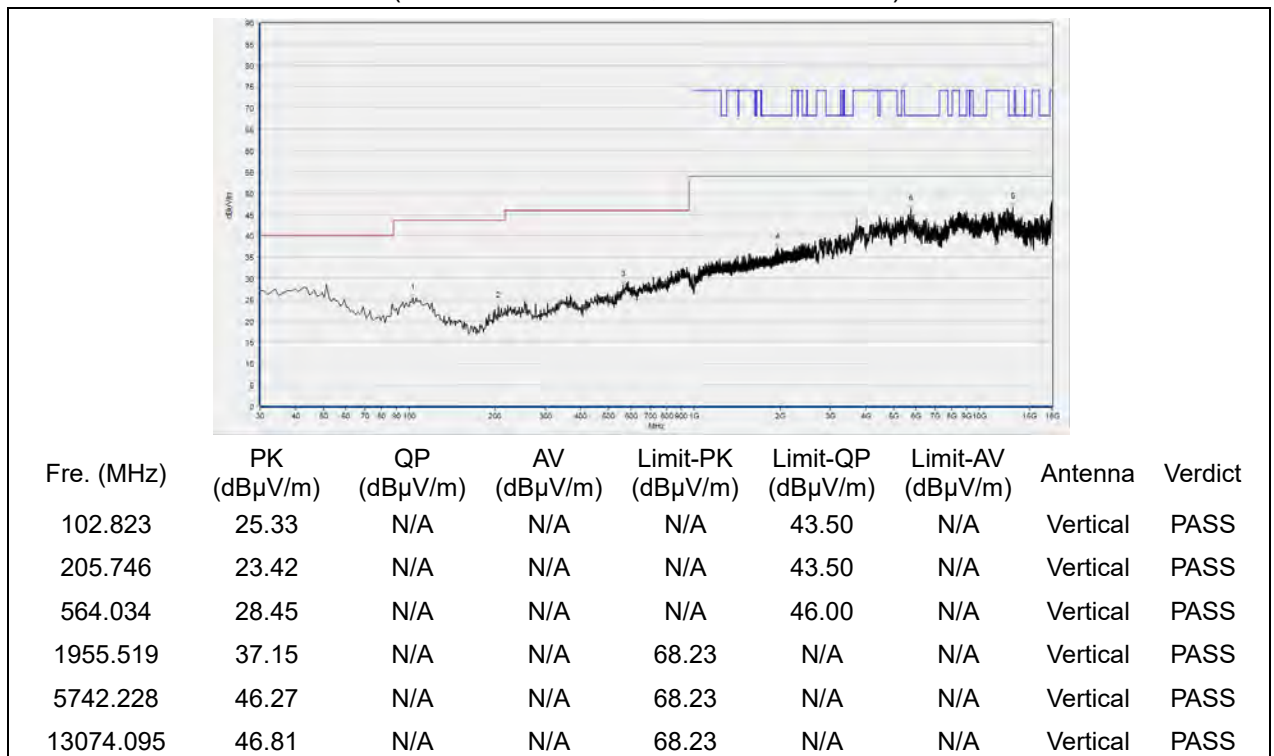
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
100.881	25.47	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
236.817	23.91	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
574.715	30.11	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2550.917	39.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
5652.891	45.49	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12140.668	46.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 122

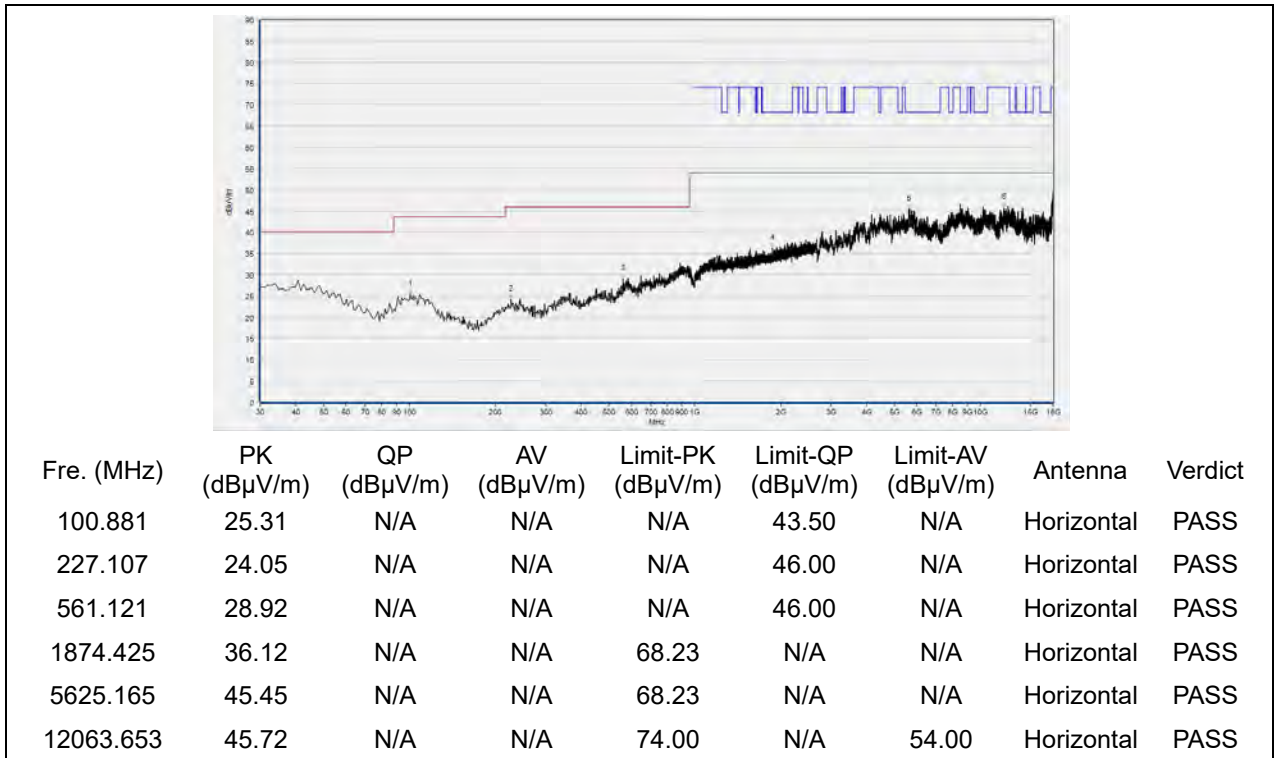


(Antenna Horizontal, 30MHz to 18GHz)

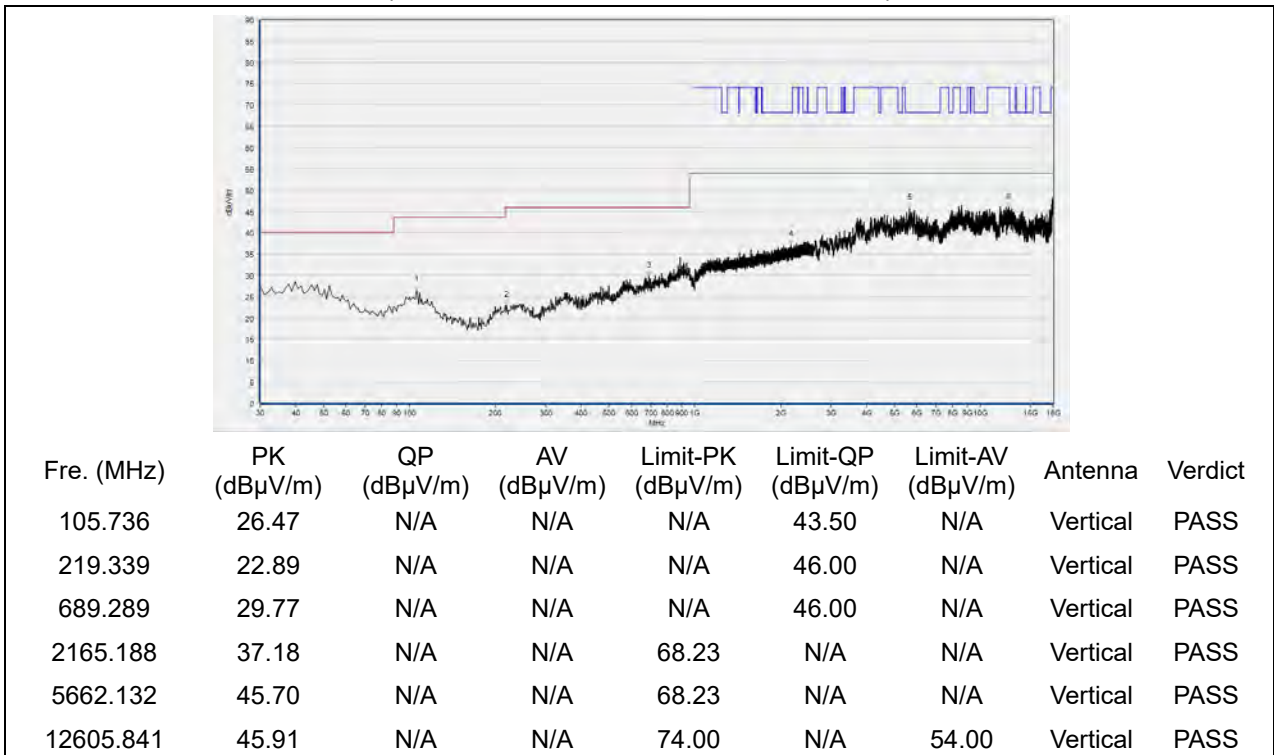


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 138

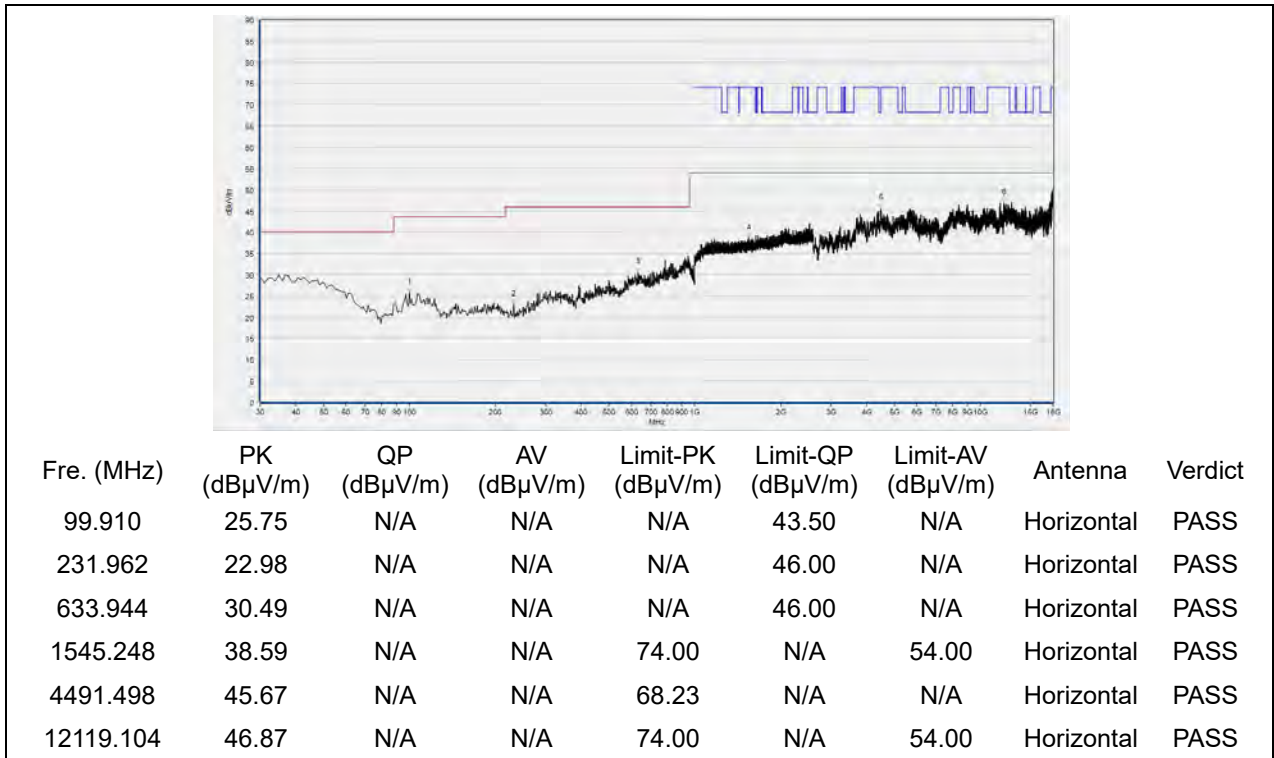


(Antenna Horizontal, 30MHz to 18GHz)

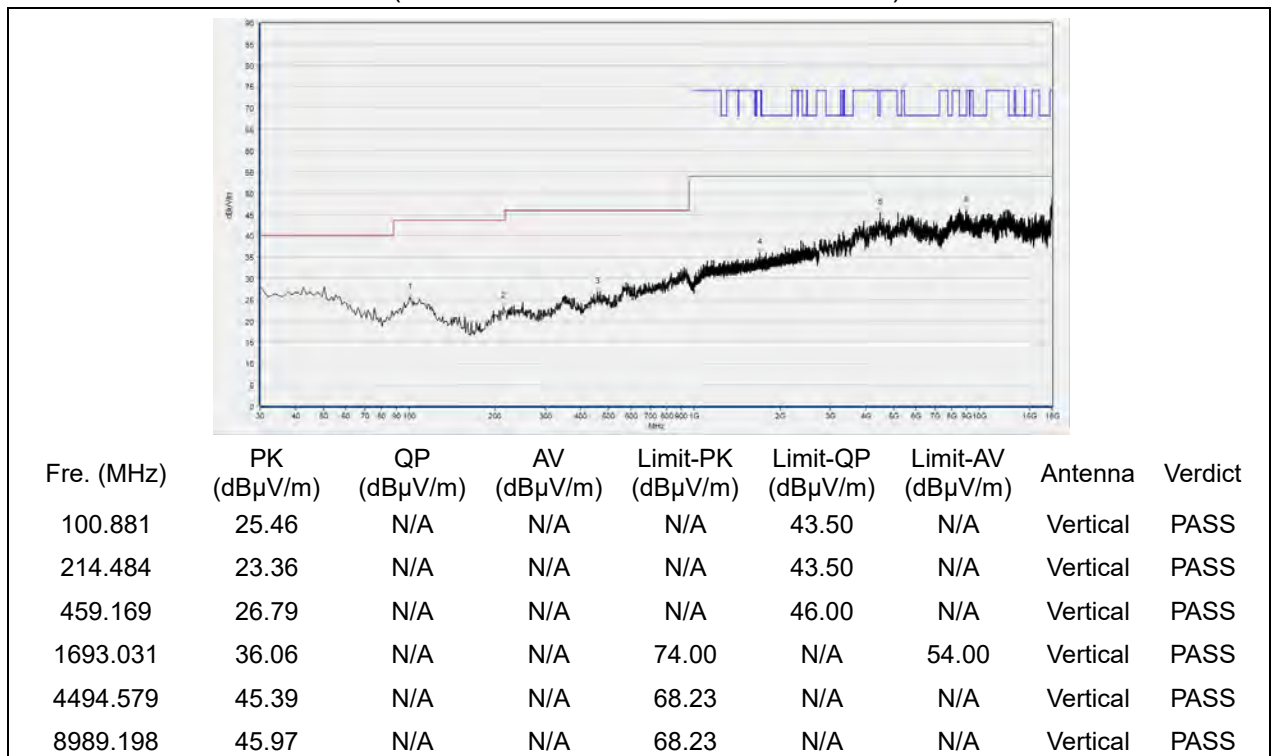


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 155



(Antenna Horizontal, 30MHz to 18GHz)



(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

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

2. Identification of the Responsible Testing Location

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

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Attenuator 1	N/A	10dB	Resnet	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2021.03.25	2022.03.24
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2020.10.23	2021.10.22
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	12108015	DTL-003S101	YOMA	2020.10.26	2021.10.25

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	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



REPORT No. : SZ21110175W02

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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