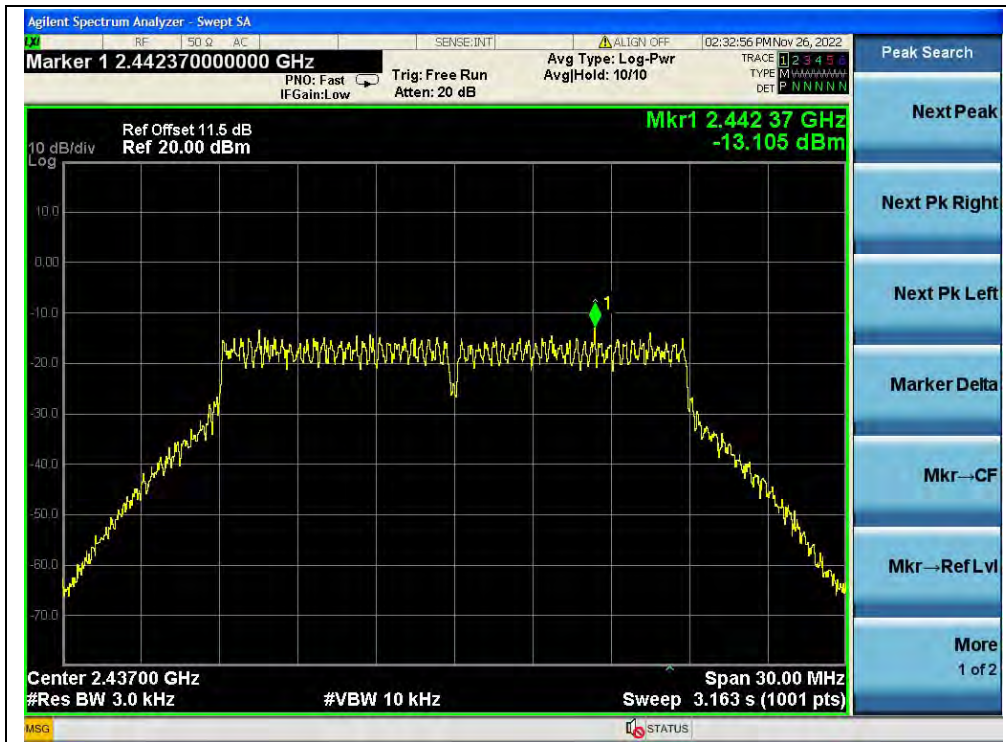


(Channel 1, 802.11n (HT20), ANT 1)



(Channel 6, 802.11n (HT20), ANT 1)



(Channel 11, 802.11n (HT20), ANT 1)



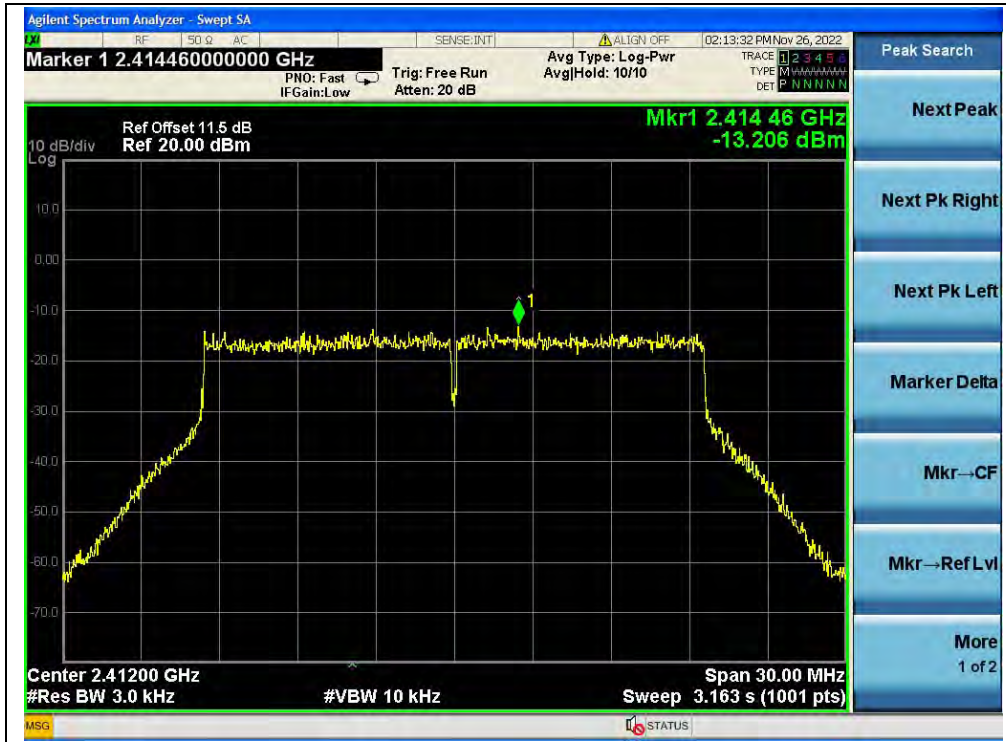
802.11ax (HEW20) Mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1			
1	2412	-13.21	-13.32	-10.25	8	PASS
6	2437	-13.22	-12.96	-10.08	8	PASS
11	2462	-13.49	-14.35	-10.89	8	PASS

Note: Directional gain = 0.70dBi + 10log(2) = 3.71dBi < 6dBi, so the power density limit is 8 dBm/3kHz.

B. Test Plot:



(Channel 1, 802.11ax (HEW20), ANT 0)



(Channel 6, 802.11ax (HEW20), ANT 0)



(Channel 11, 802.11ax (HEW20), ANT 0)



(Channel 1, 802.11ax (HEW20), ANT 1)



(Channel 6, 802.11ax (HEW20), ANT 1)



(Channel 11, 802.11ax (HEW20), ANT 1)



802.11ax (HEW20) RU26 Mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1			
1	2412	-1.91	-3.55	0.36	8	PASS
6	2437	-2.93	-3.61	-0.25	8	PASS
11	2462	-2.27	-4.62	-0.28	8	PASS

Note: Directional gain = 0.70dBi + 10log(2) = 3.71dBi < 6dBi, so the power density limit is 8 dBm/3kHz.

B. Test Plot:



(Channel 1, 802.11ax (HEW20) RU26, ANT 0)



(Channel 6, 802.11ax (HEW20) RU26, ANT 0)



(Channel 11, 802.11ax (HEW20) RU26, ANT 0)



(Channel 1, 802.11ax (HEW20) RU26, ANT 1)



(Channel 6, 802.11ax (HEW20) RU26, ANT 1)



(Channel 11, 802.11ax (HEW20) RU26, ANT 1)



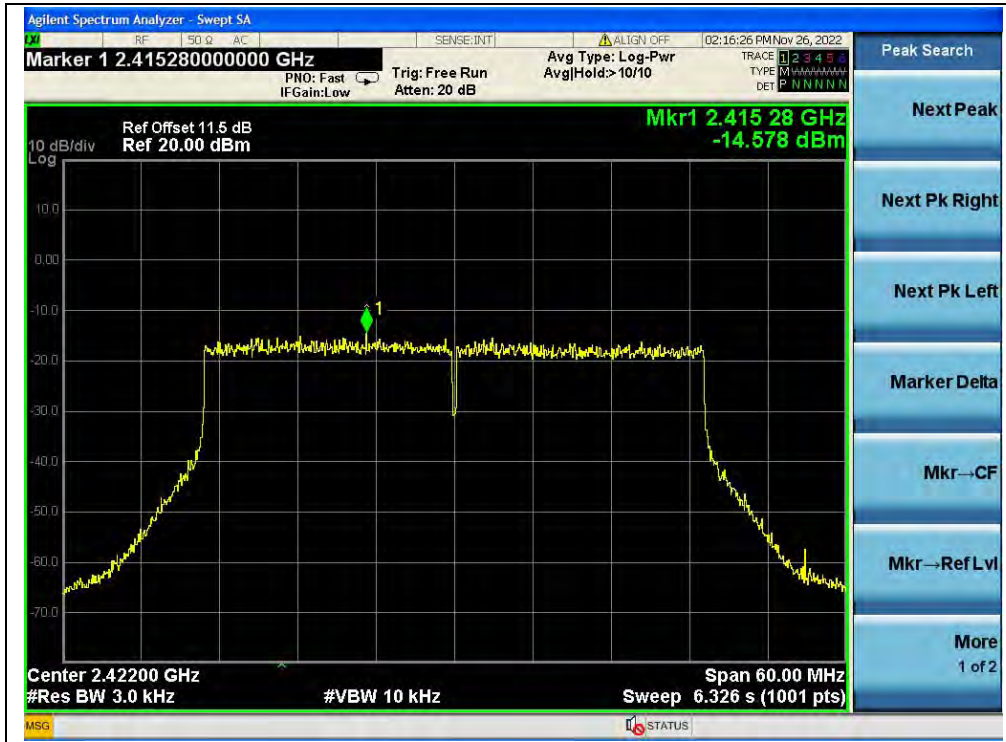
802.11ax (HEW40) Mode

A. Test Verdict:

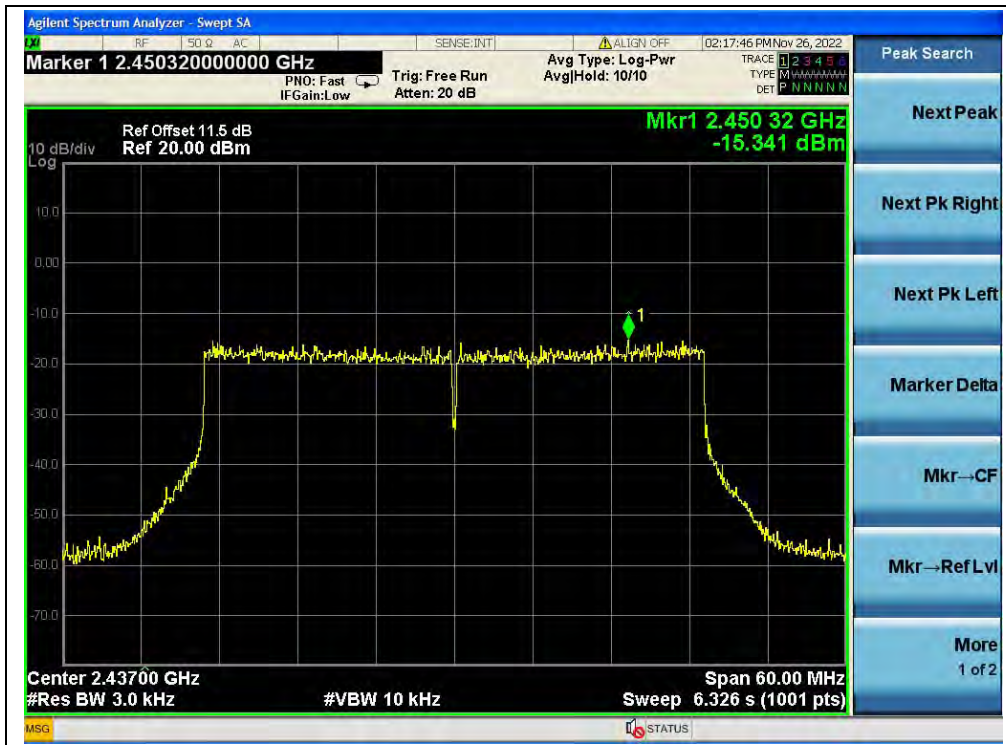
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1			
3	2422	-14.58	-15.32	-11.92	8	PASS
6	2437	-15.34	-14.13	-11.68	8	PASS
9	2452	-14.94	-15.68	-12.28	8	PASS

Note: Directional gain = 0.70dBi + 10log(2) = 3.71dBi < 6dBi, so the power density limit is 8 dBm/3kHz.

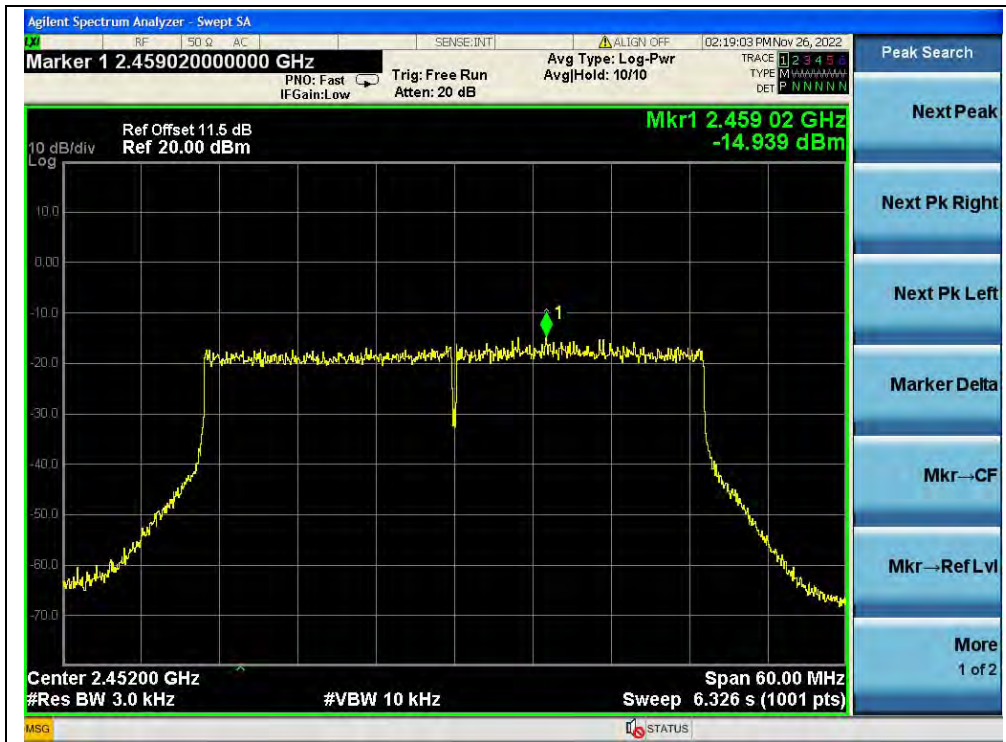
B. Test Plot:



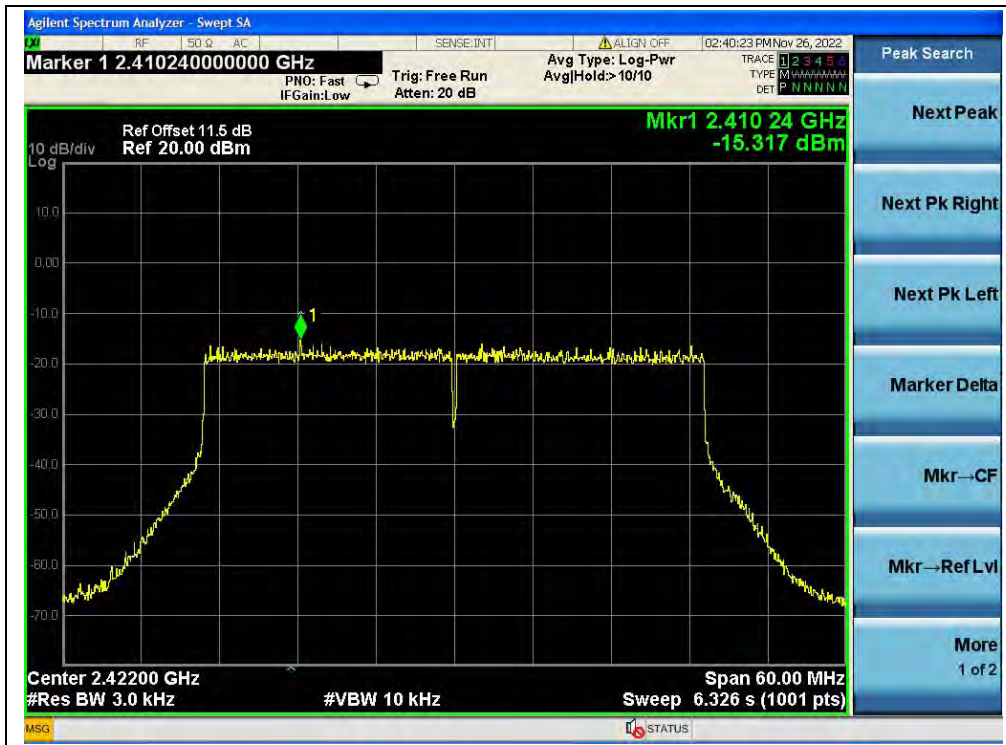
(Channel 3, 802.11ax (HEW40), ANT 0)



(Channel 6, 802.11ax (HEW40), ANT 0)



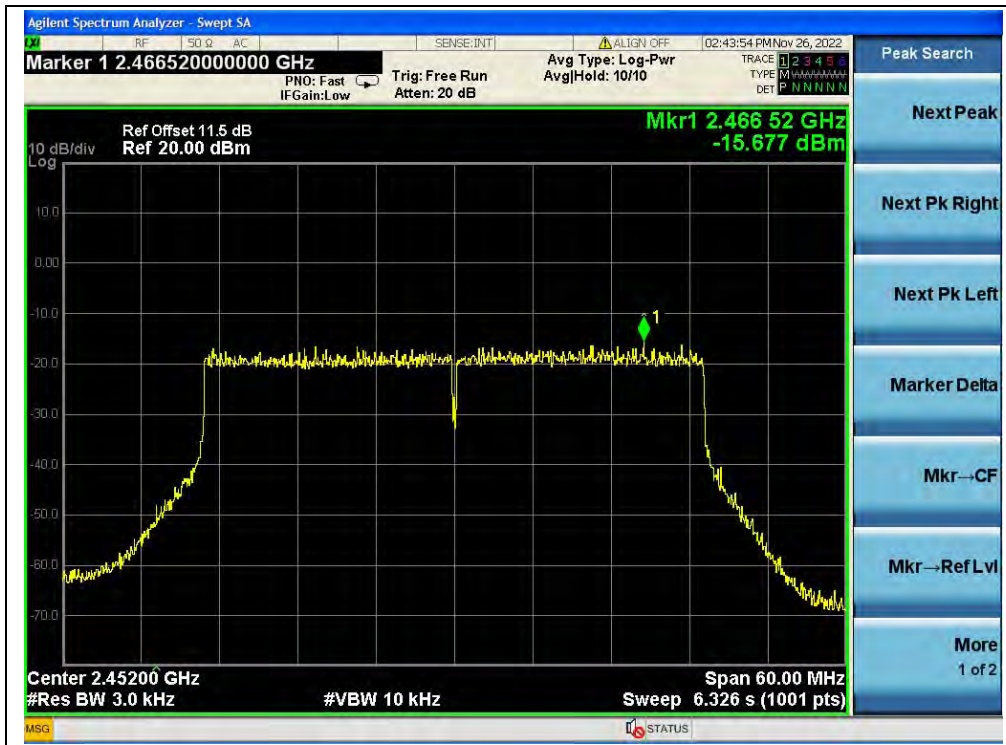
(Channel 9, 802.11ax (HEW40), ANT 0)



(Channel 3, 802.11ax (HEW40), ANT 1)



(Channel 6, 802.11ax (HEW40), ANT 1)



(Channel 9, 802.11ax (HEW40), ANT 1)

2.7. Conducted Emission

2.7.1. Requirement

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

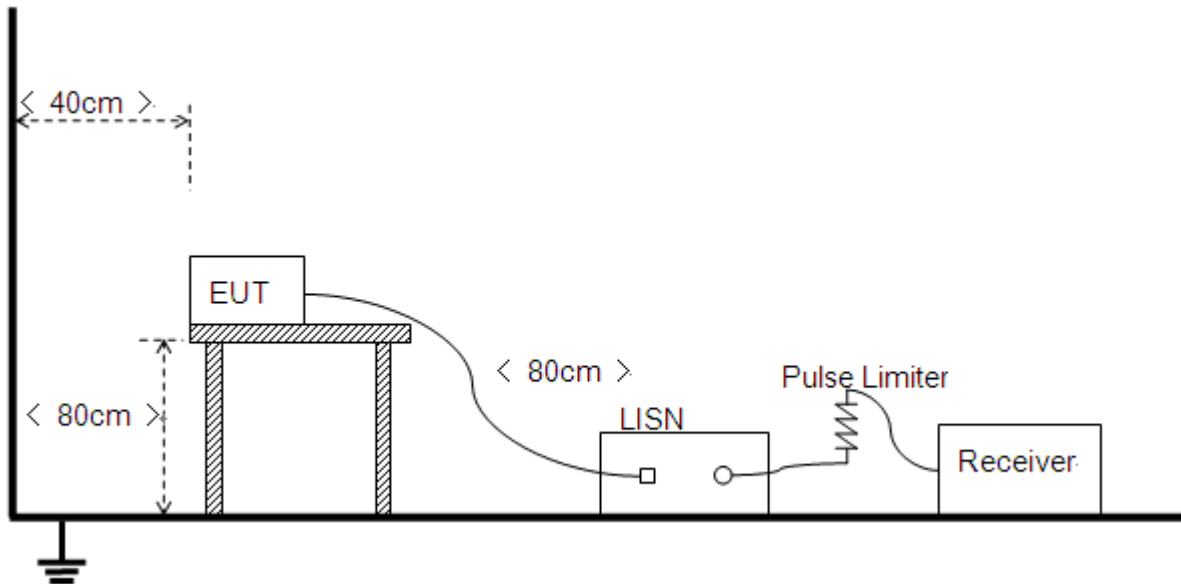
Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

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

2.7.2. Test Description

Test Setup:



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



2.7.3. Test Result

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

Test Voltage: AC 120V/60Hz

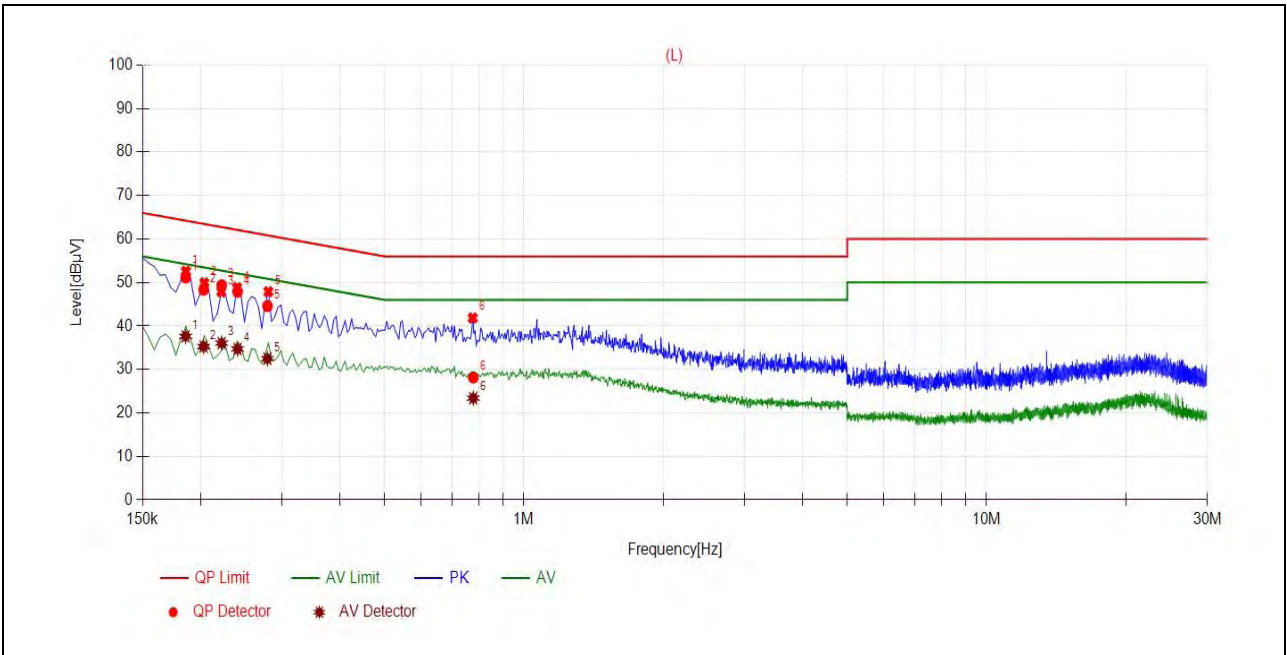
The measurement results are obtained as below:

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

U_R : Receiver Reading

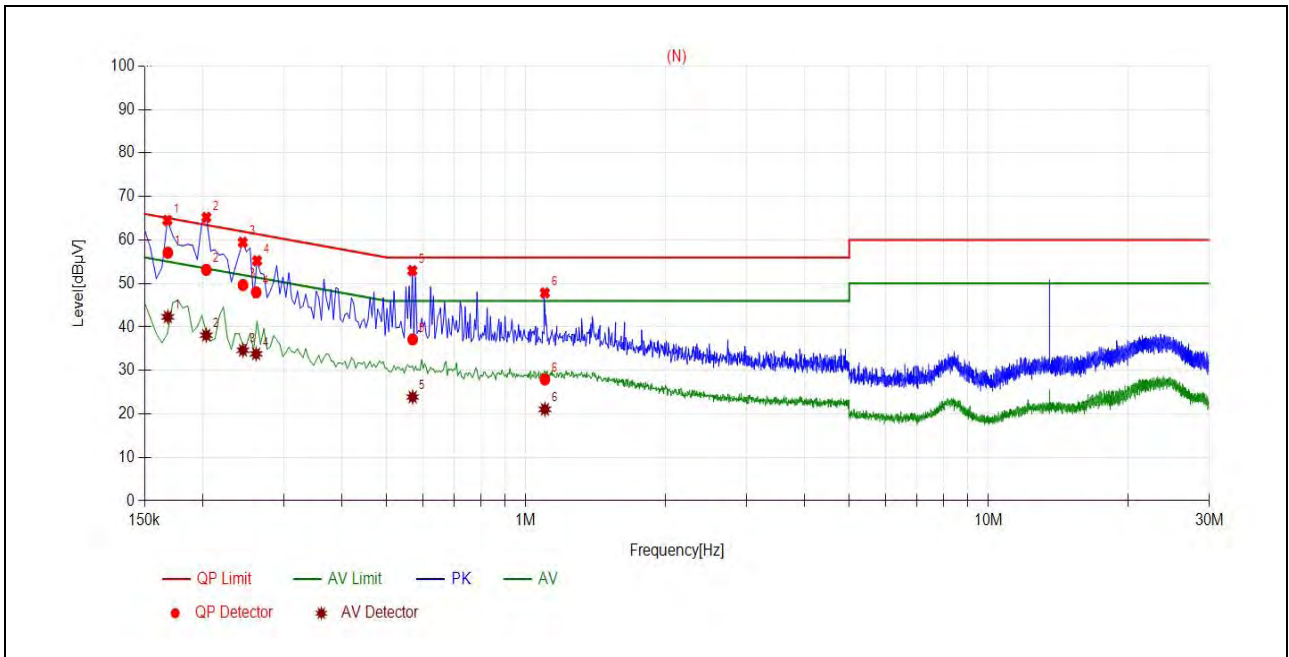
A_{Factor} : Voltage division factor of LISN

B.Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1858	51.16	37.60	64.22	54.22	Line	PASS
2	0.2032	48.33	35.26	63.48	53.48		PASS
3	0.2223	49.34	36.05	62.73	52.73		PASS
4	0.2406	47.85	34.69	62.08	52.08		PASS
5	0.2792	44.57	32.47	60.84	50.84		PASS
6	0.7776	28.14	23.39	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	0.1684	57.07	42.32	65.04	55.04	Neutral	PASS
2	0.2039	53.15	38.10	63.45	53.45		PASS
3	0.2447	49.64	34.63	61.93	51.93		PASS
4	0.2613	47.97	33.80	61.39	51.39		PASS
5	0.5694	37.13	23.88	56.00	46.00		PASS
6	1.0996	27.93	21.04	56.00	46.00		PASS

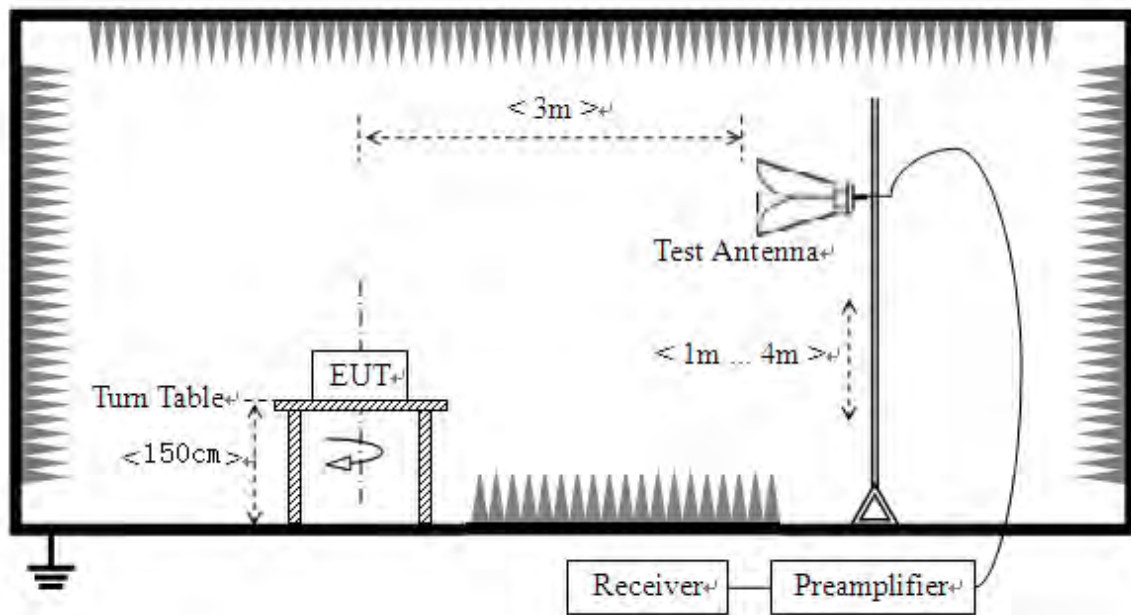
2.8. Restricted Frequency Bands

2.8.1. Requirement

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

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.

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 Procedure

KDB 558074 Section 8.6 and 8.7 was used in order to prove compliance.

2.8.4. 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.

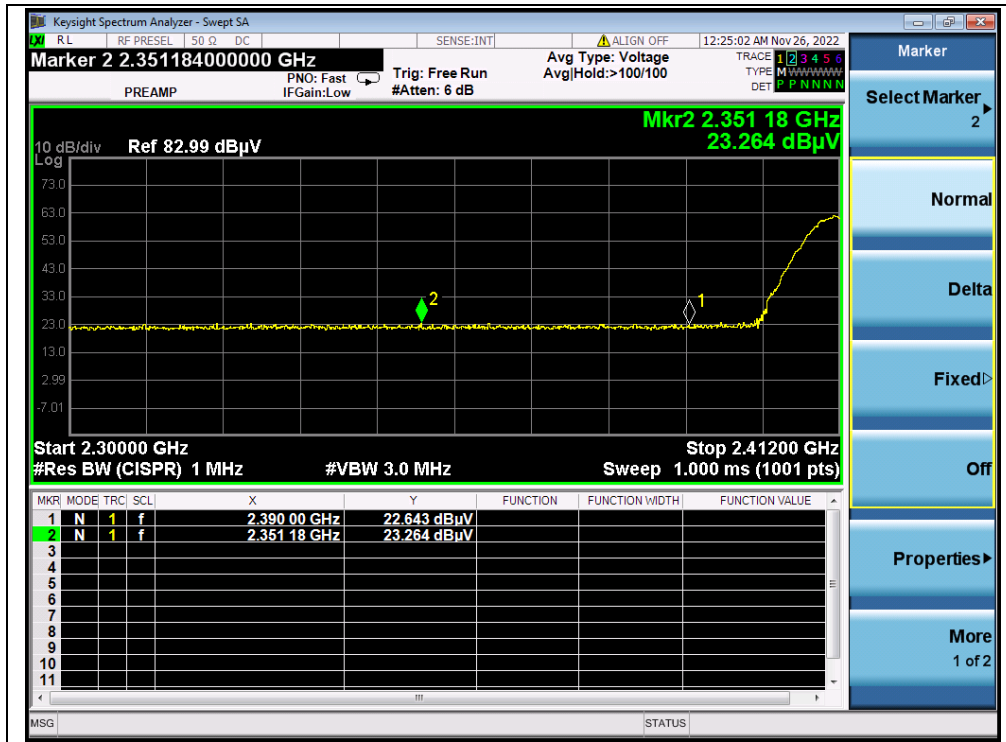
802.11b Mode

A. Test Verdict:

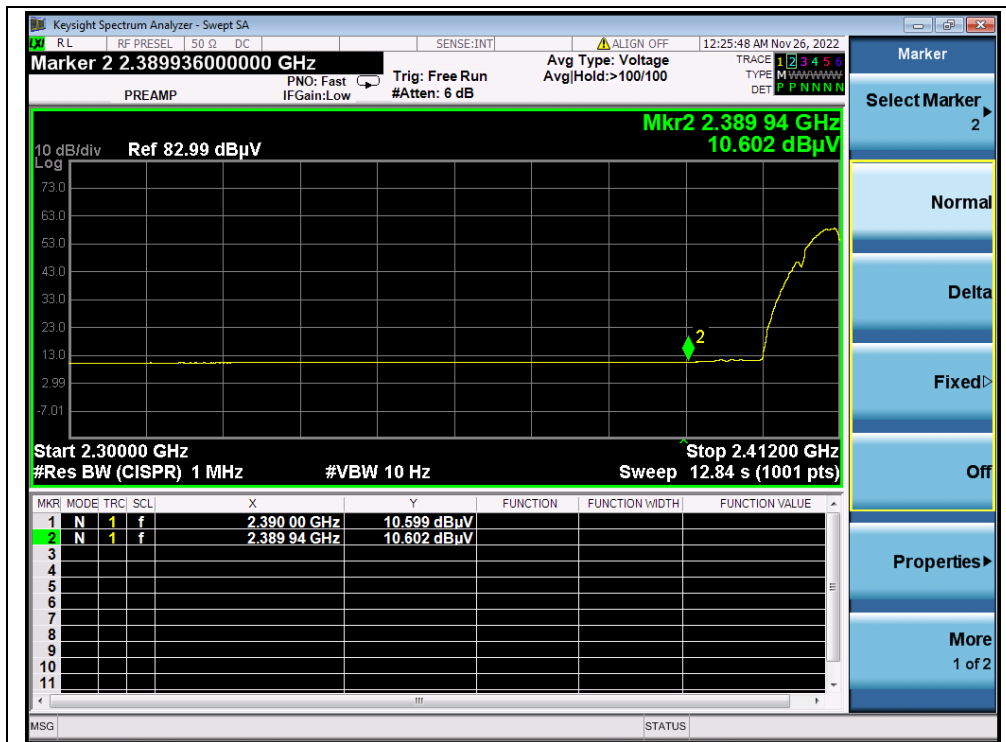
Channel	Frequency (MHz)	Detector	Receiver Reading	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dB μ V)					
1	2351.18	PK	23.26	6.74	27.20	57.20	74	PASS
1	2389.94	AV	10.60	6.74	27.20	44.54	54	PASS
11	2484.21	PK	22.83	6.74	27.20	56.77	74	PASS
11	2483.64	AV	10.31	6.74	27.20	44.25	54	PASS



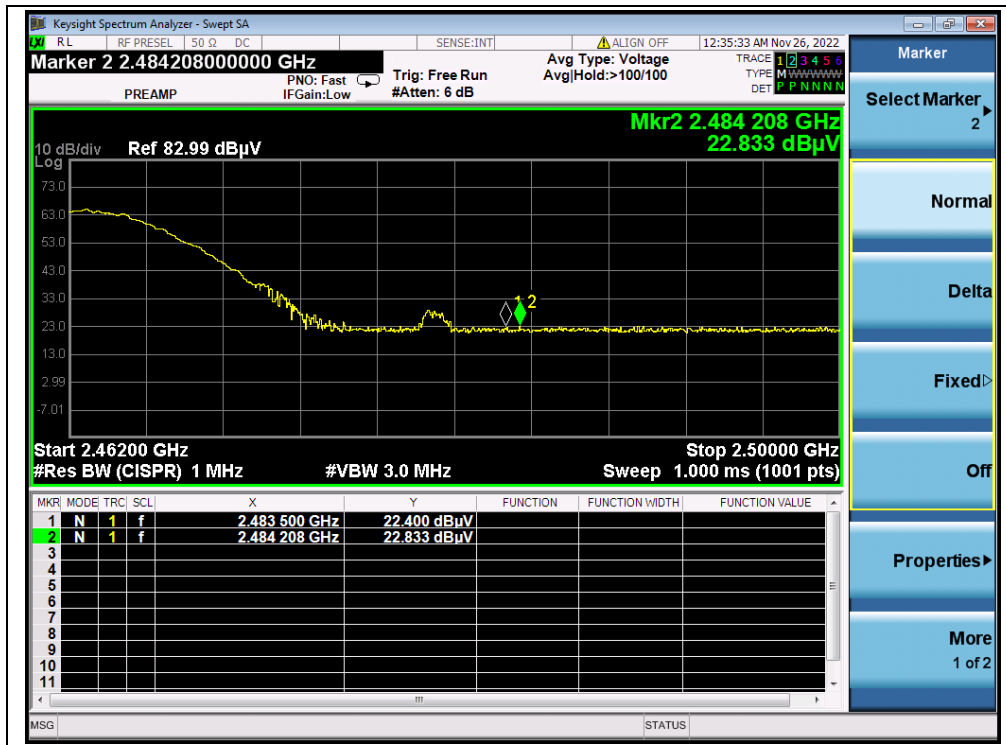
B.Test Plot:



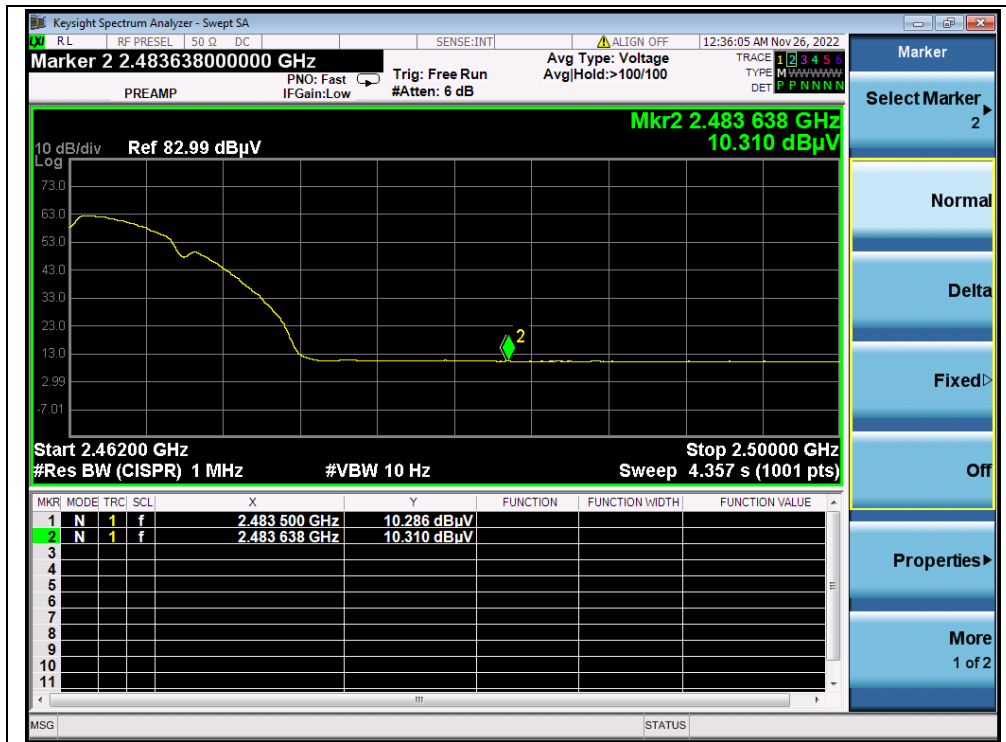
(PEAK, Channel 1, 802.11b)



(AVERAGE, Channel 1, 802.11b)



(PEAK, Channel 11, 802.11b)



(AVERAGE, Channel 11, 802.11b)

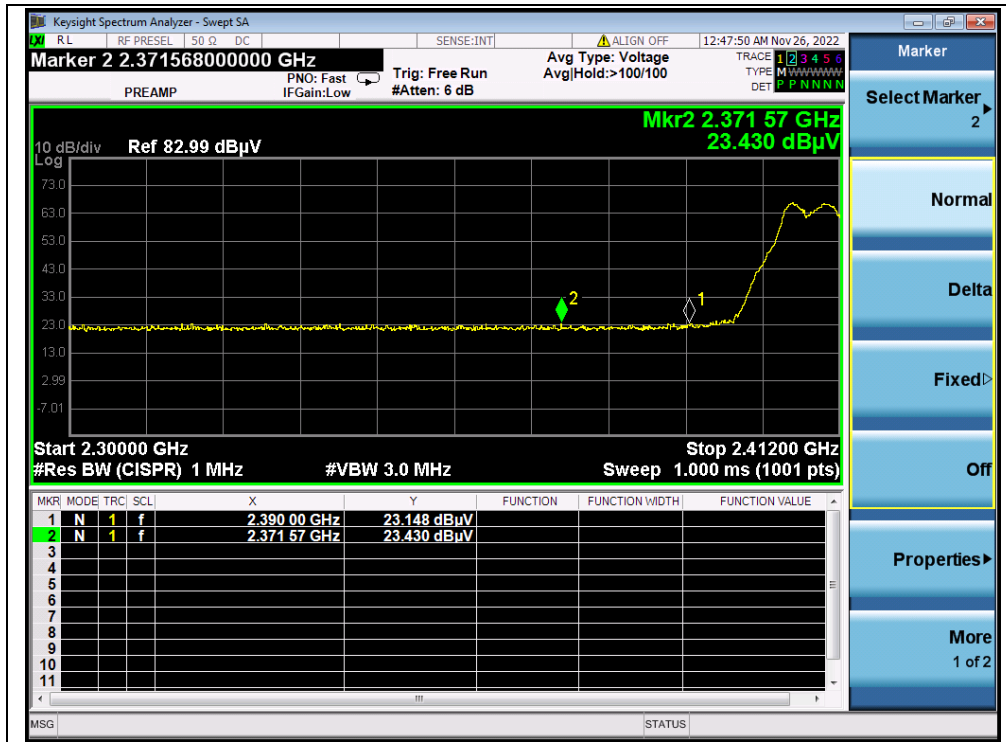


802.11g Mode

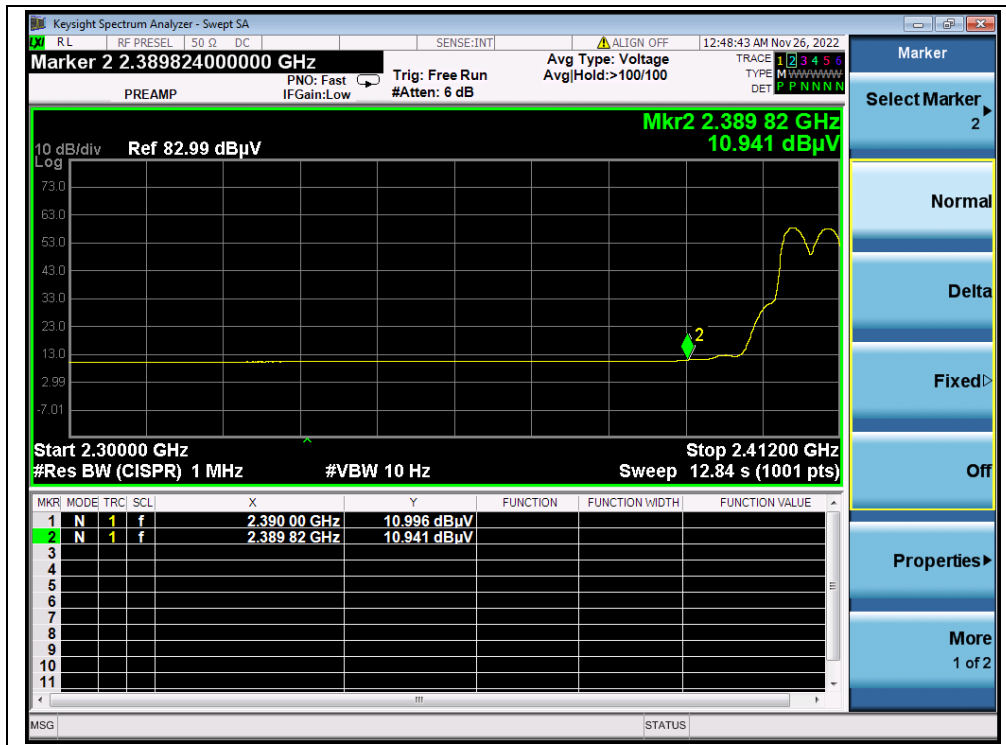
A.Test Verdict:

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)					
1	2371.57	PK	23.43	6.74	27.20	57.37	74	PASS
1	2390.00	AV	11.00	6.74	27.20	44.94	54	PASS
11	2493.71	PK	22.88	6.74	27.20	56.82	74	PASS
11	2483.87	AV	10.28	6.74	27.20	44.22	54	PASS

B.Test Plot:



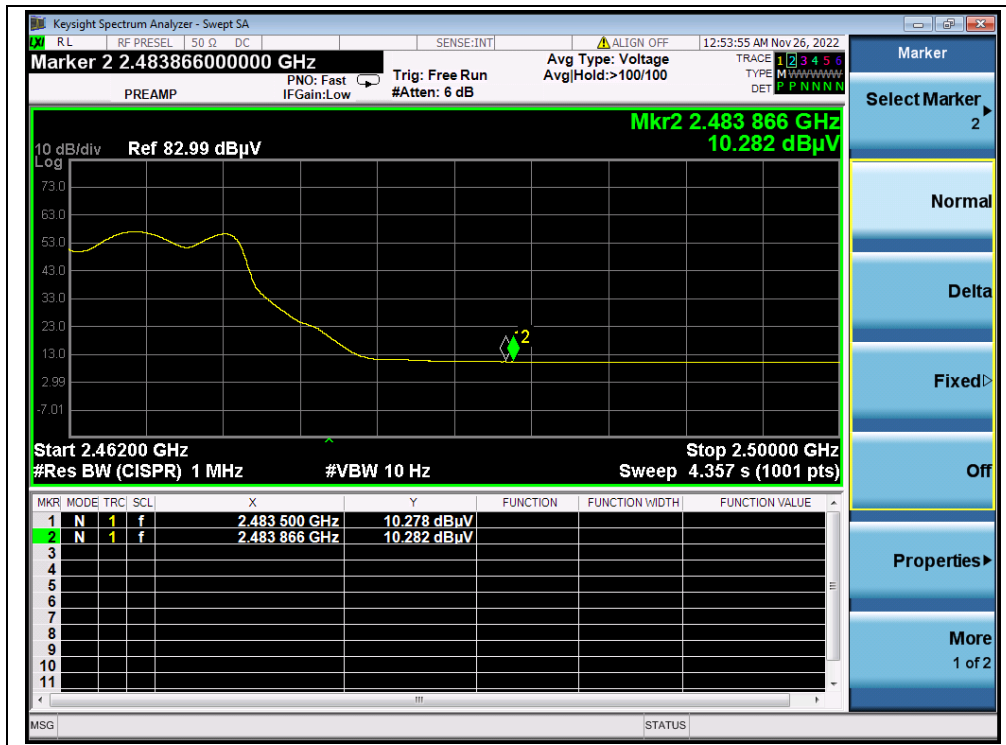
(PEAK, Channel 1, 802.11g)



(AVERAGE, Channel 1, 802.11g)



(PEAK, Channel 11, 802.11g)



(AVERAGE, Channel 11, 802.11g)

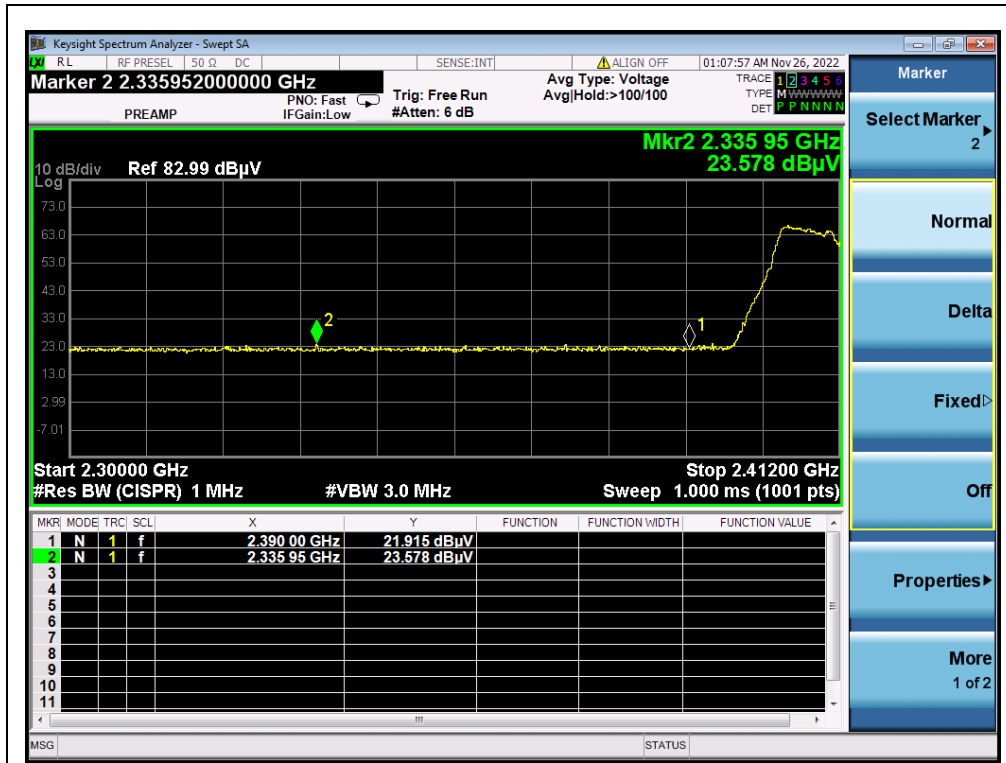


802.11n (HT20) Mode

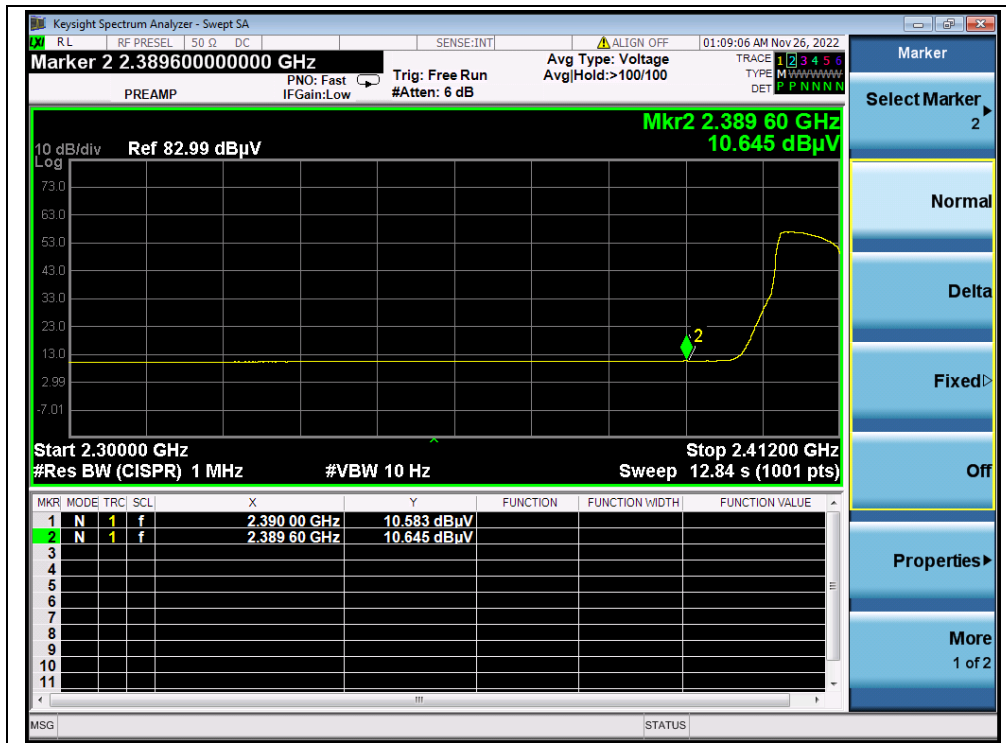
A. Test Verdict:

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						
1	2335.95	PK	23.58	6.74	27.20	57.52	74	PASS
1	2389.60	AV	10.65	6.74	27.20	44.59	54	PASS
11	2489.31	PK	22.87	6.74	27.20	56.81	74	PASS
11	2483.77	AV	11.29	6.74	27.20	45.23	54	PASS

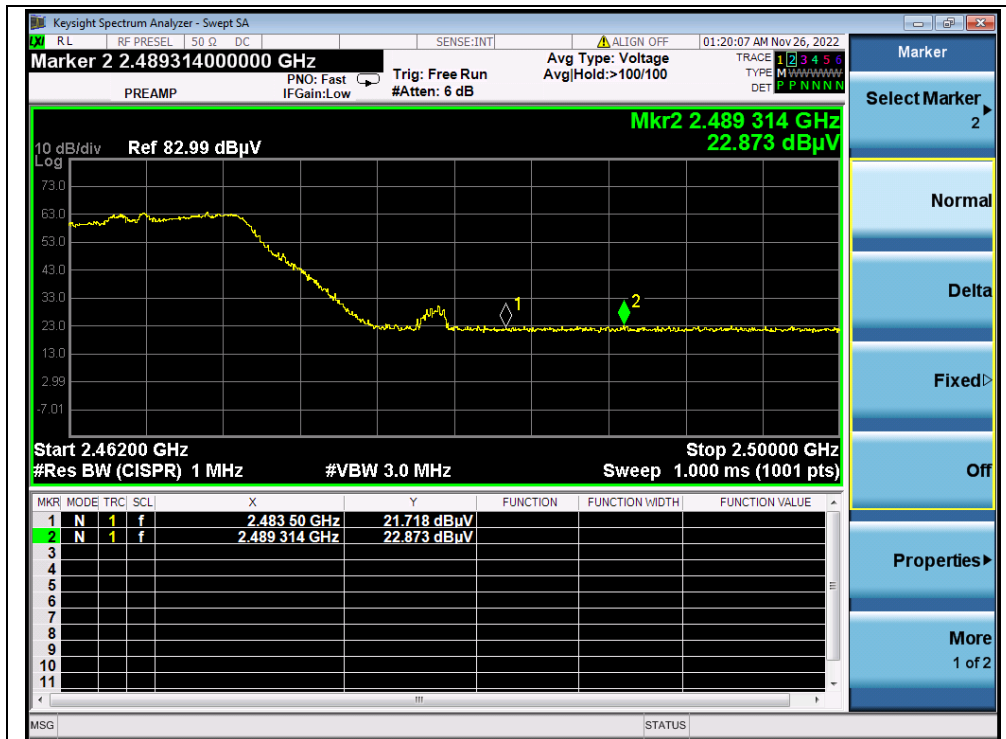
B. Test Plot:



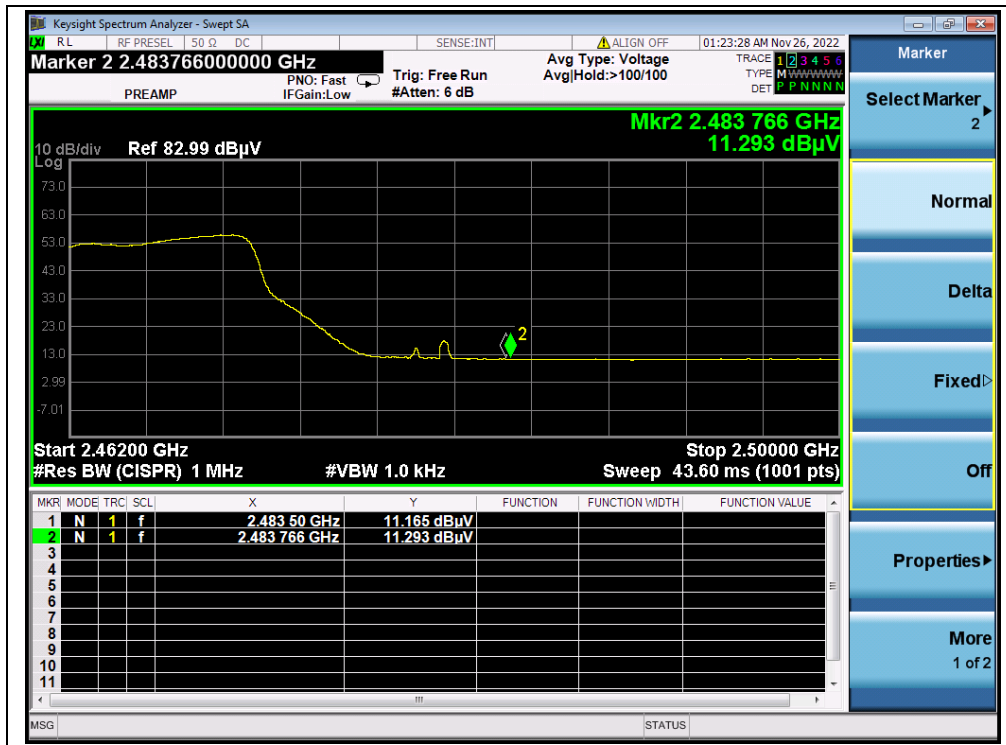
(PEAK, Channel 1, 802.11n (HT20))



(AVERAGE, Channel 1, 802.11n (HT20))



(PEAK, Channel 11, 802.11n (HT20))



(AVERAGE, Channel 11, 802.11n (HT20))

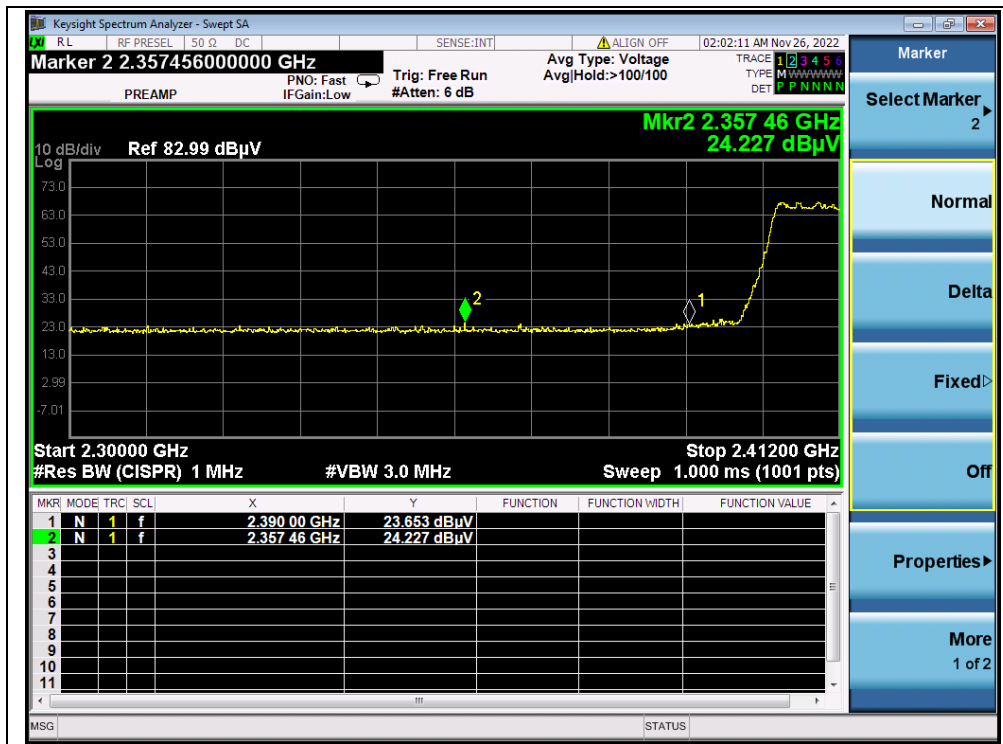


802.11ax (HEW20) Mode

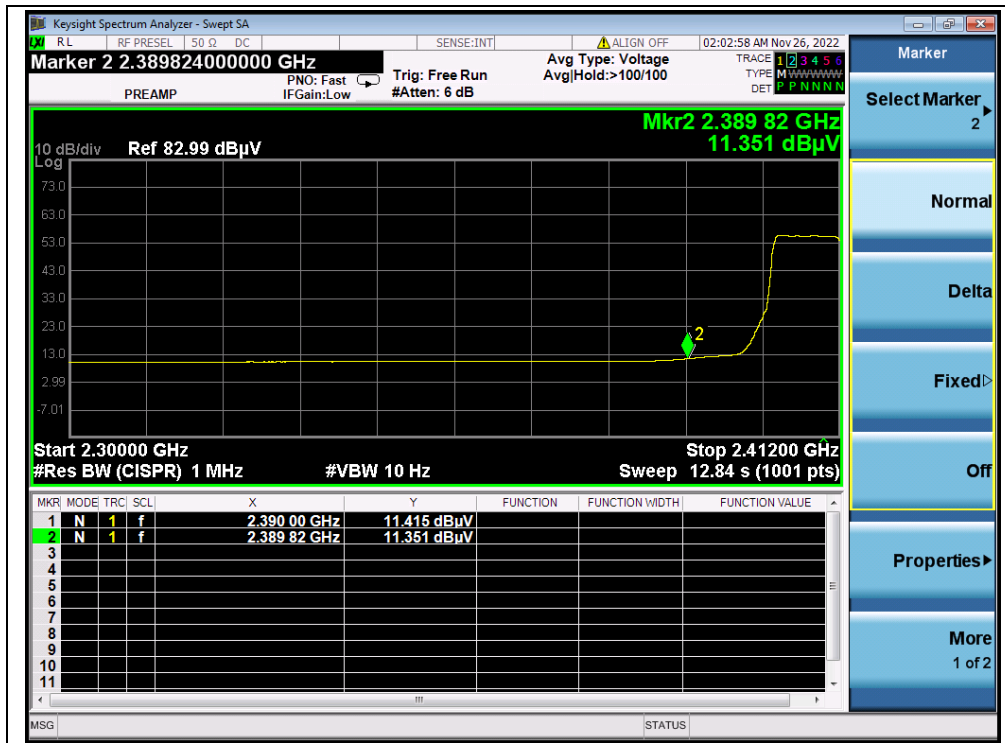
A. Test Verdict:

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)					
1	2357.46	PK	24.23	6.74	27.20	58.17	74	PASS
1	2390.00	AV	11.42	6.74	27.20	45.36	54	PASS
11	2485.08	PK	23.42	6.74	27.20	57.36	74	PASS
11	2483.660	AV	10.57	6.74	27.20	44.51	54	PASS

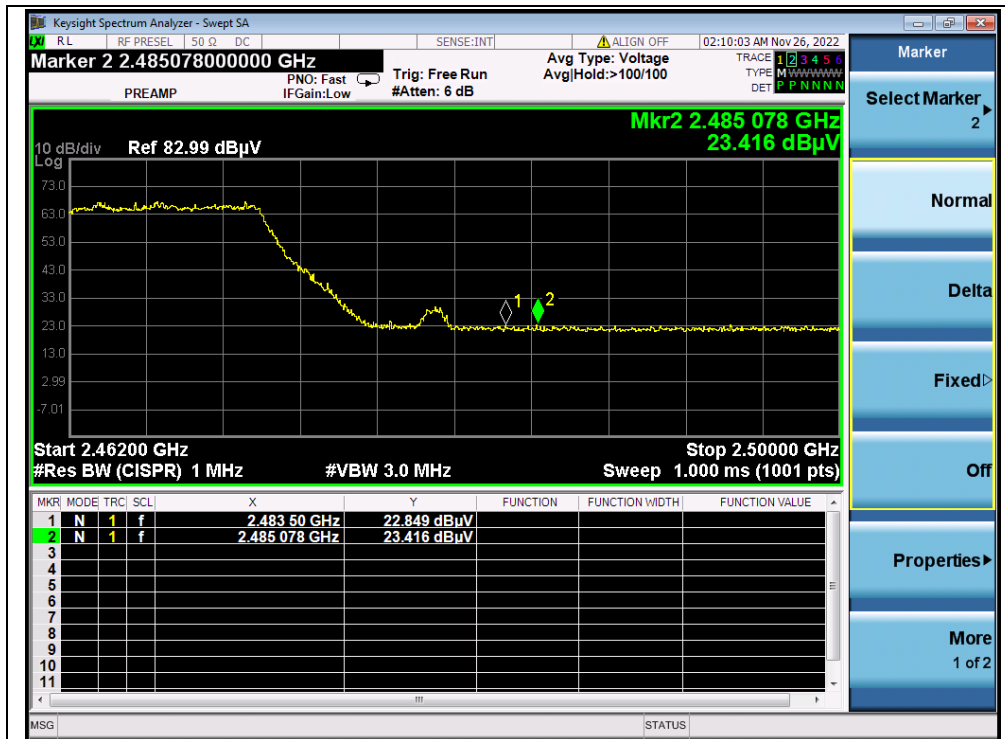
B. Test Plot:



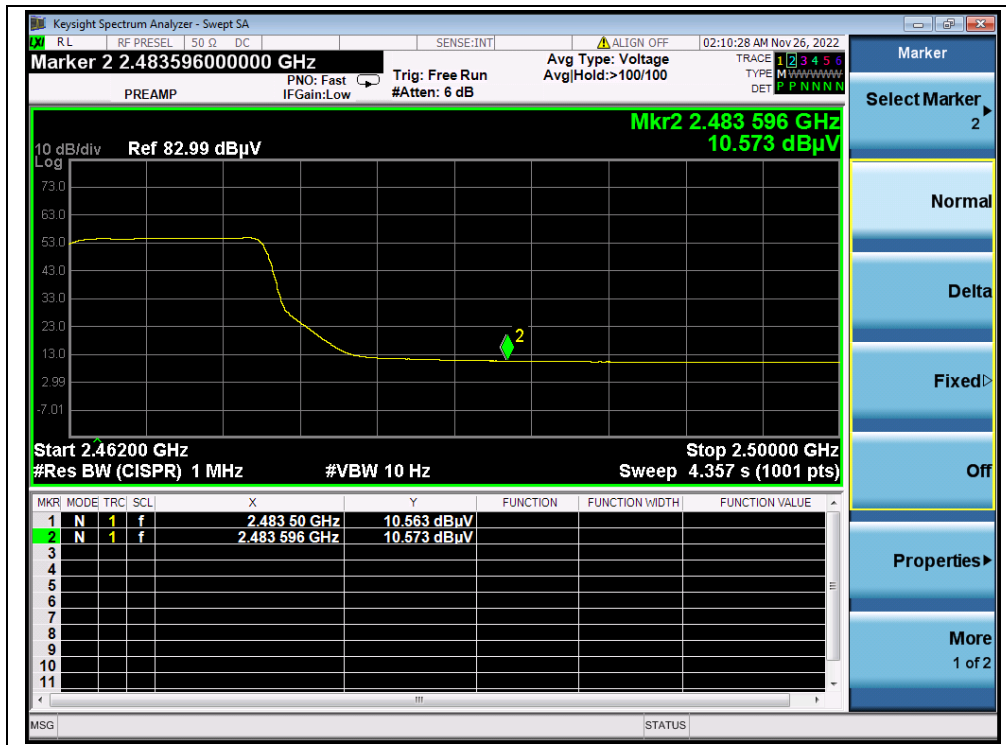
(PEAK, Channel 1, 802.11ax (HEW20))



(AVERAGE, Channel 1, 802.11ax (HEW20))



(PEAK, Channel 11, 802.11ax (HEW20))



(AVERAGE, Channel 11, 802.11ax (HEW20))

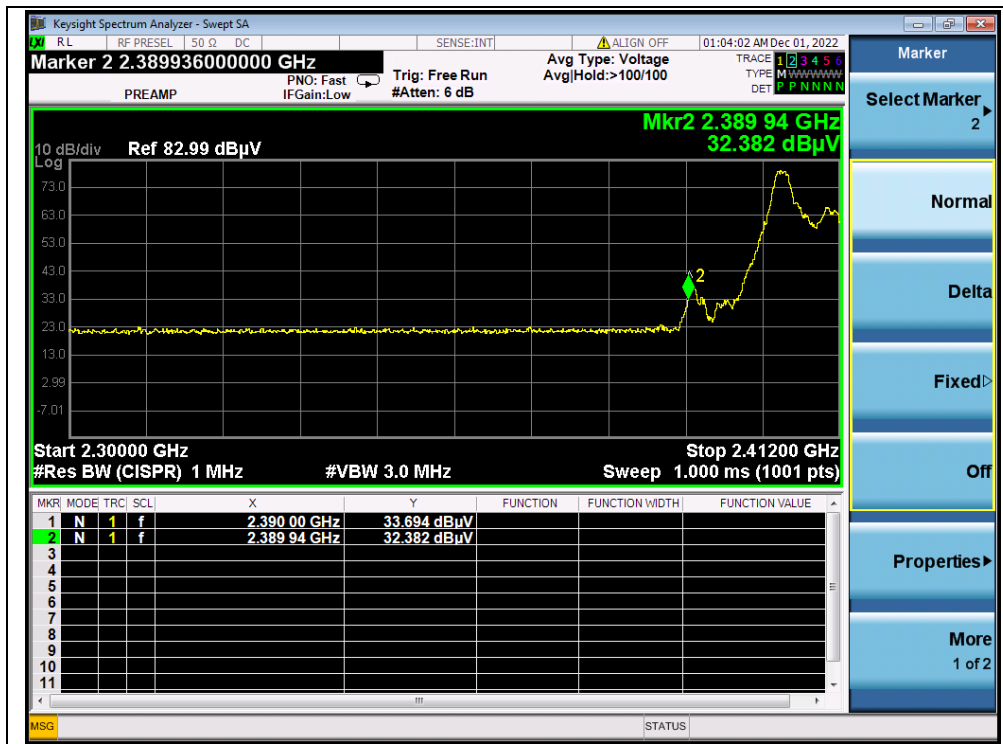


802.11ax (HEW20) RU26 Mode

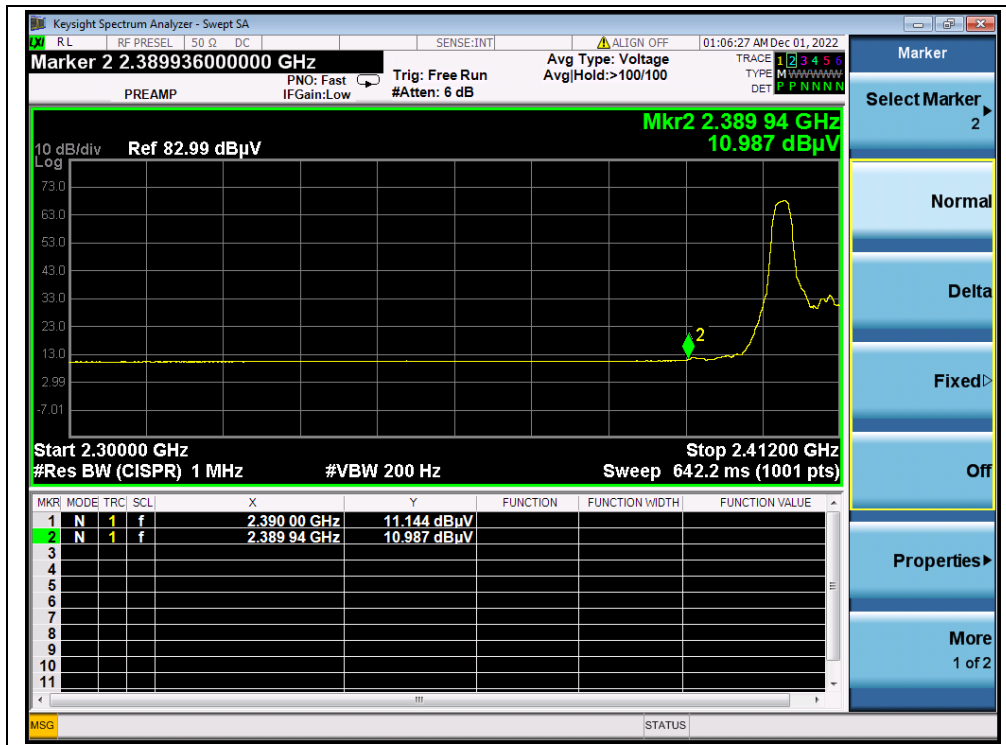
A.Test Verdict:

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)					
1	2390.00	PK	33.69	6.74	27.20	67.63	74	PASS
1	2390.00	AV	11.14	6.74	27.20	45.08	54	PASS
11	2484.08	PK	29.96	6.74	27.20	63.90	74	PASS
11	2483.50	AV	10.57	6.74	27.20	44.51	54	PASS

B.Test Plot:



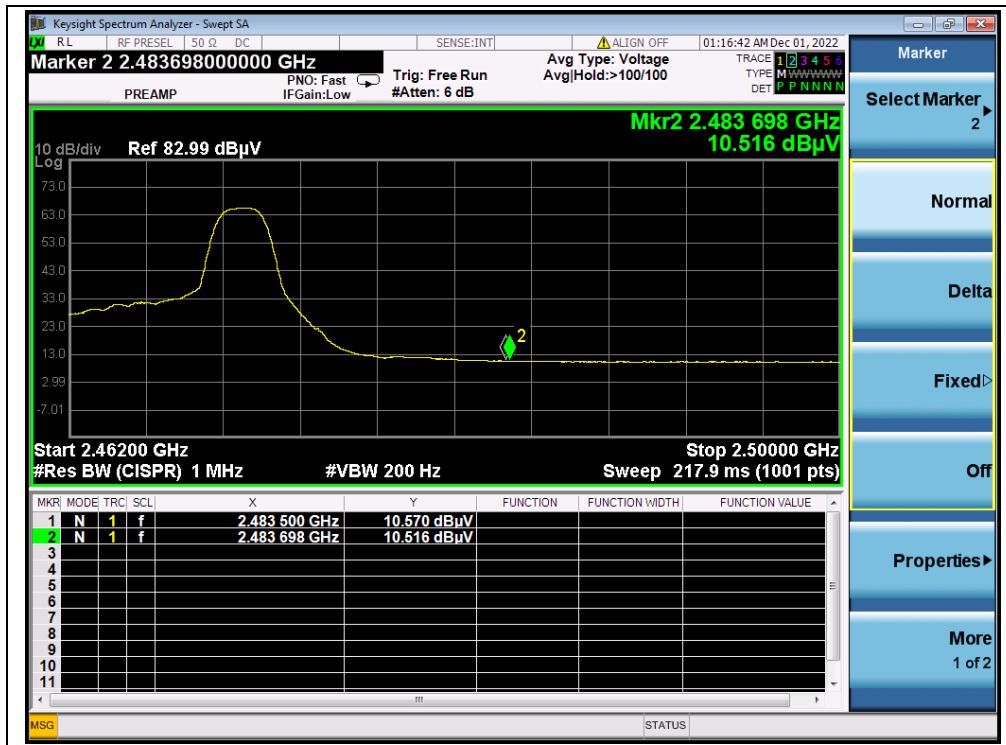
(PEAK, Channel 1, 802.11ax (HEW20) RU26)



(AVERAGE, Channel 1, 802.11ax (HEW20) RU26)



(PEAK, Channel 11, 802.11ax (HEW20) RU26)



(AVERAGE, Channel 11, 802.11ax (HEW20) RU26)

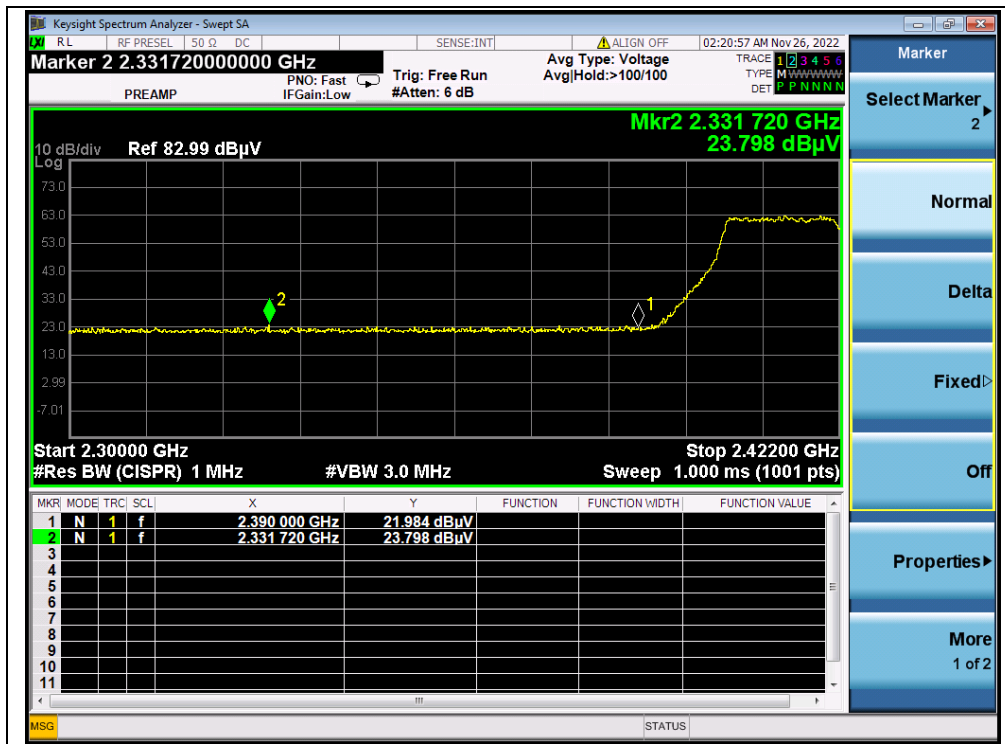


802.11ax (HEW20) Mode

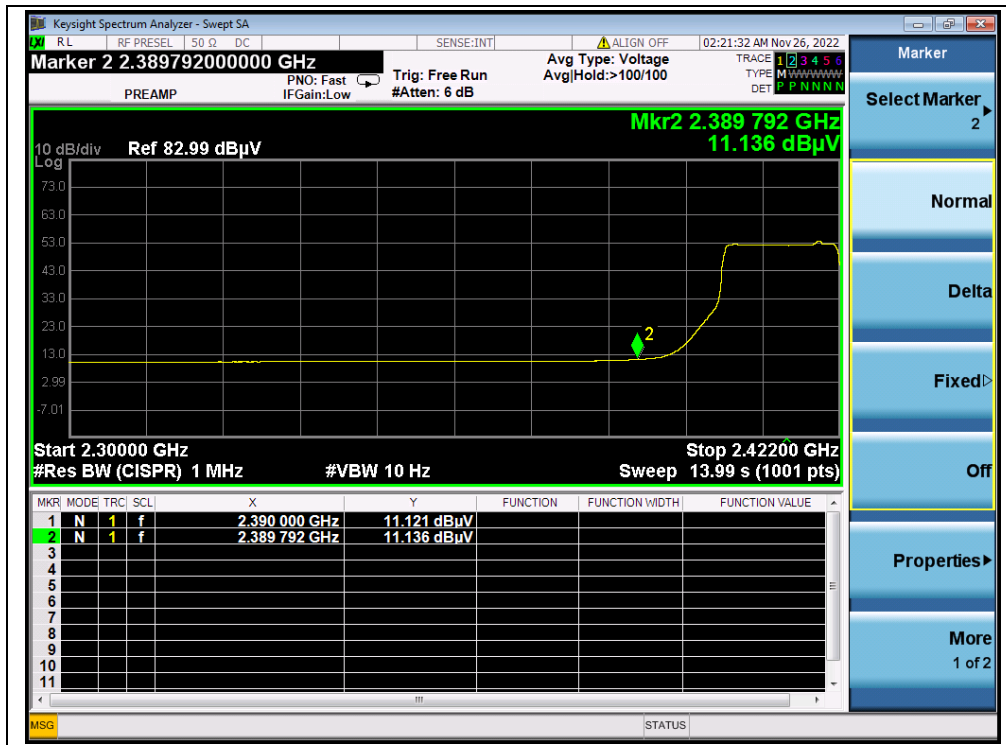
A. Test Verdict:

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)					
3	2331.72	PK	23.80	6.74	27.20	57.74	74	PASS
3	2389.79	AV	11.14	6.74	27.20	45.08	54	PASS
9	2489.52	PK	23.39	6.74	27.20	57.33	74	PASS
9	2483.50	AV	10.47	6.74	27.20	44.41	54	PASS

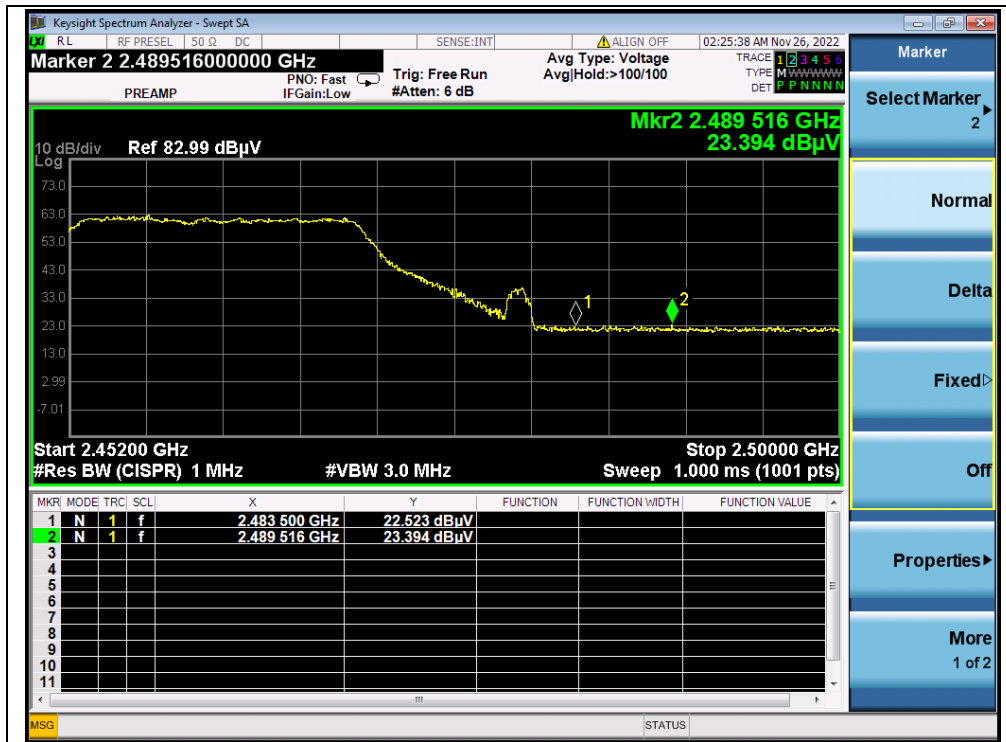
B. Test Plot:



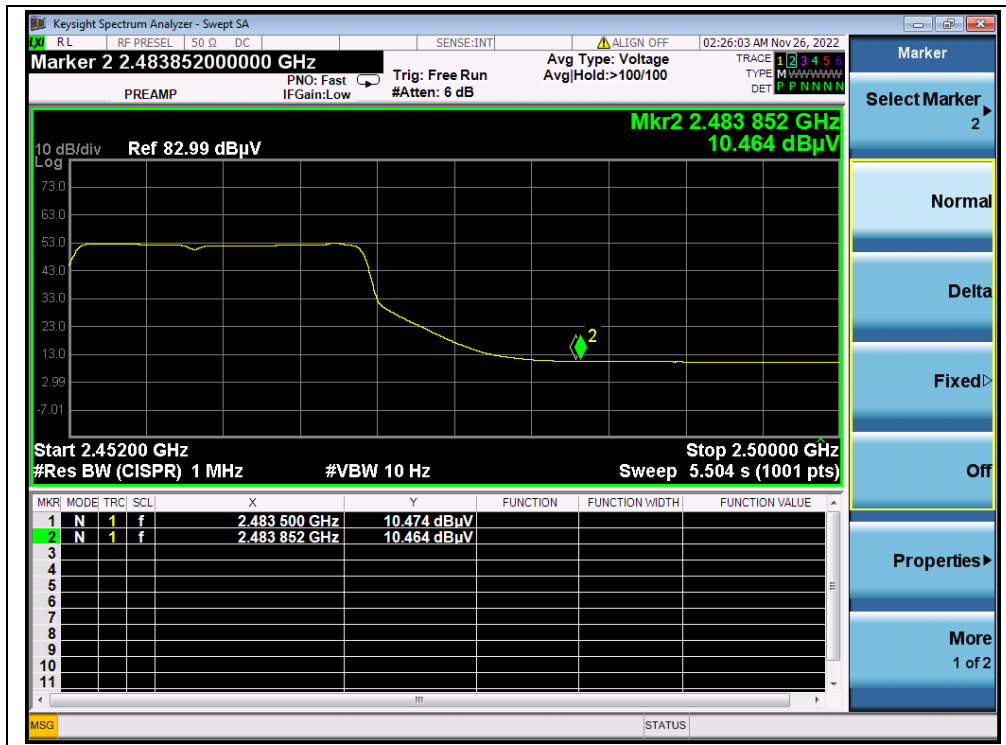
(PEAK, Channel 3, 802.11ax (HEW40))



(AVERAGE, Channel 3, 802.11ax (HEW40))



(PEAK, Channel 9, 802.11ax (HEW40))



(AVERAGE, Channel 9, 802.11ax (HEW40))



2.9. Radiated Emission

2.9.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

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

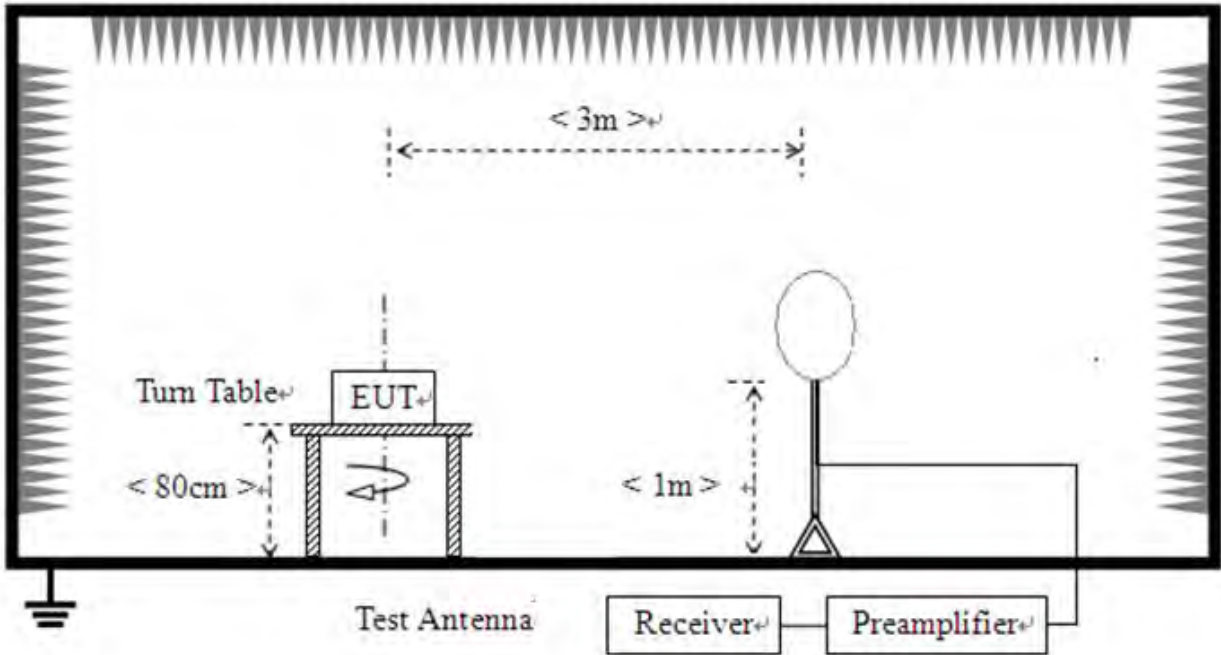
Note1: For above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

Note2: For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK). 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).

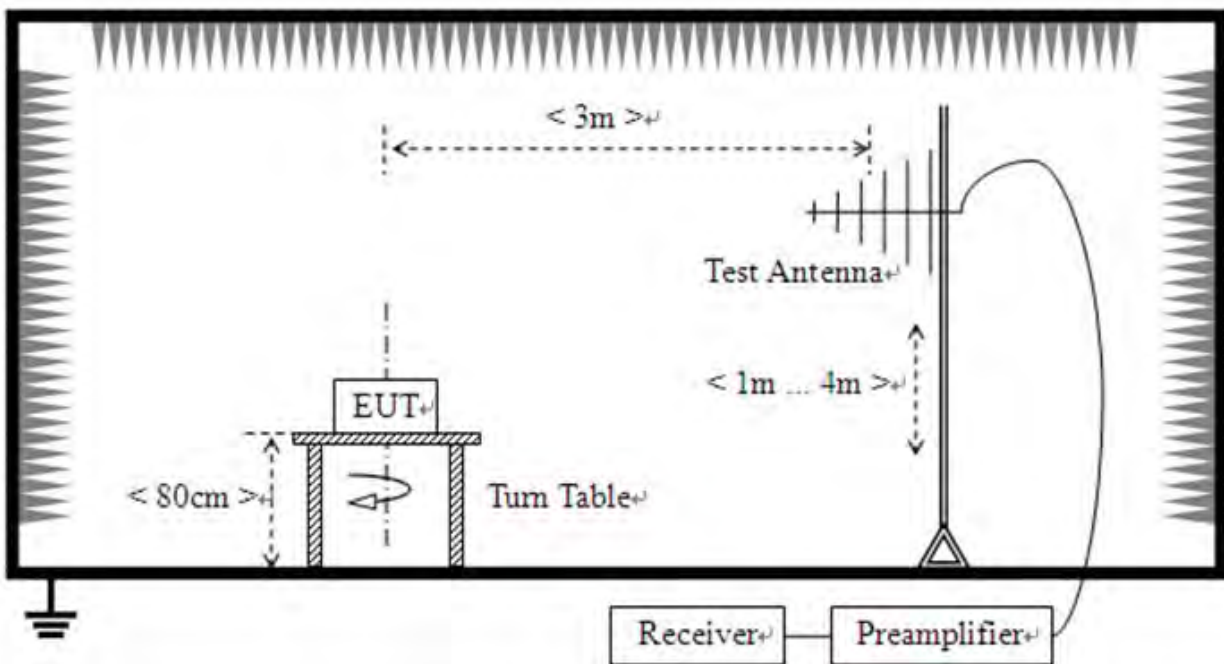
2.9.2. Test Description

Test Setup:

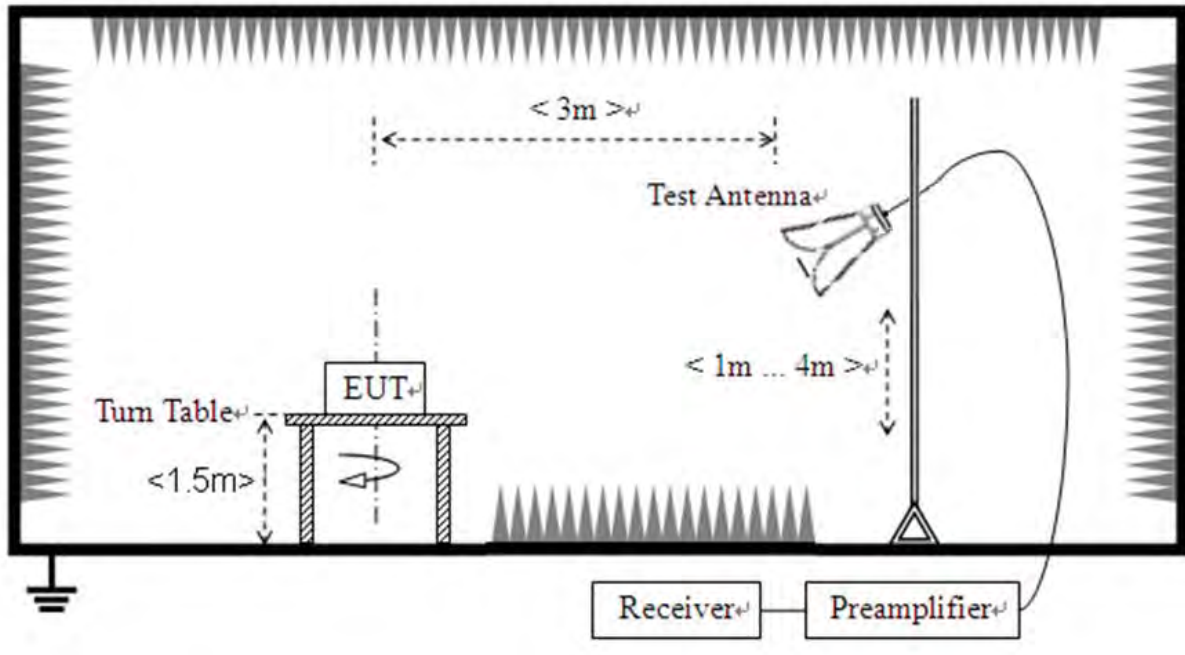
- 1) For radiated emissions from 9kHz to 30MHz



- 2) For radiated emissions from 30MHz to 1GHz



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 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. For measurements above 1 GHz, keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.



2.9.3. Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

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

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

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

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

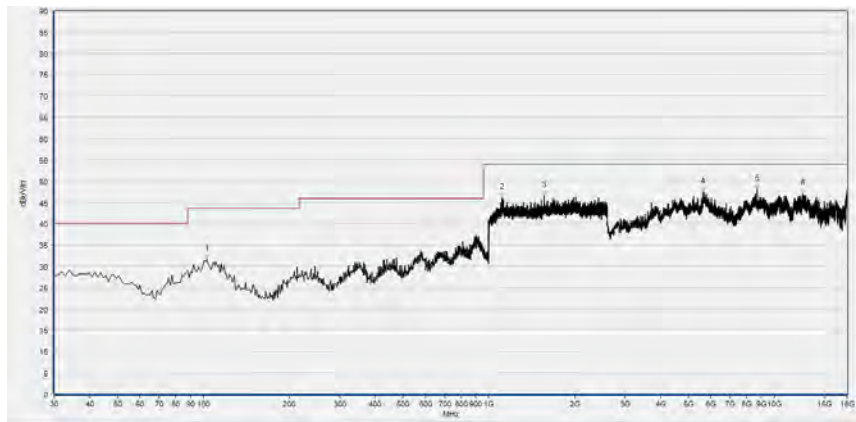
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 18GHz to 10th harmonic of the highest frequency, 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.

802.11b Mode

Plot for Channel 1



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
102.750	31.60	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1115.733	46.14	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1560.533	46.59	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5606.080	47.36	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8732.280	48.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12603.840	47.16	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

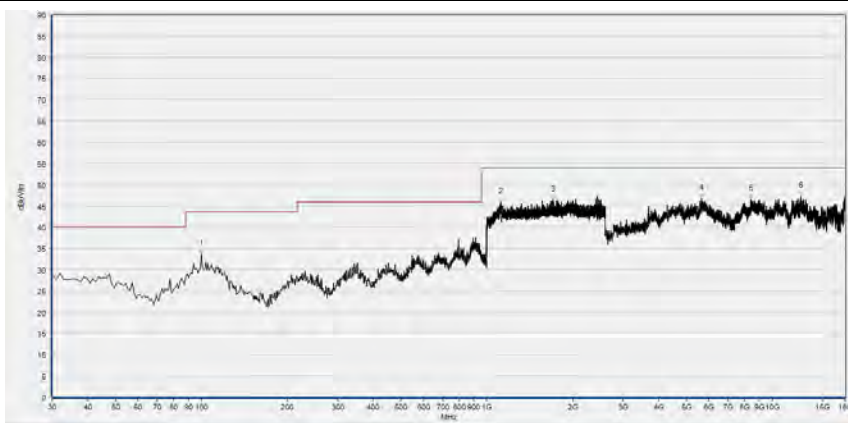
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
100.810	30.62	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1124.267	46.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1872.533	47.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5732.360	47.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10361.600	48.10	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12499.120	46.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

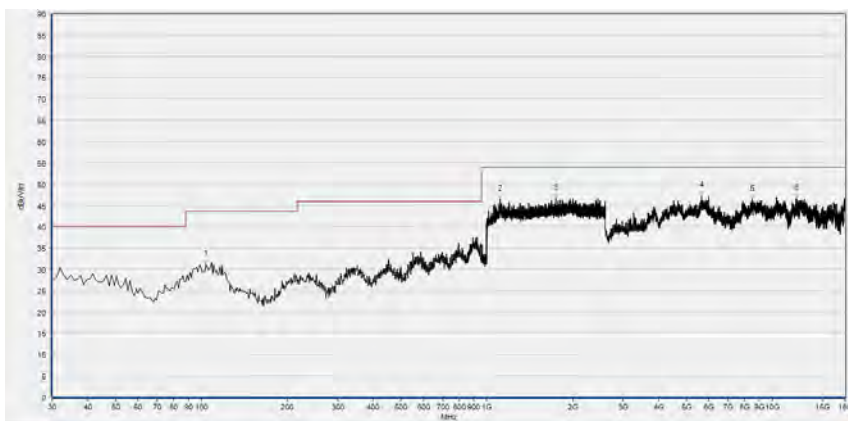
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6



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
99.840	33.63	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1116.267	45.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1702.400	46.44	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5658.440	46.77	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8408.880	46.59	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12576.120	47.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

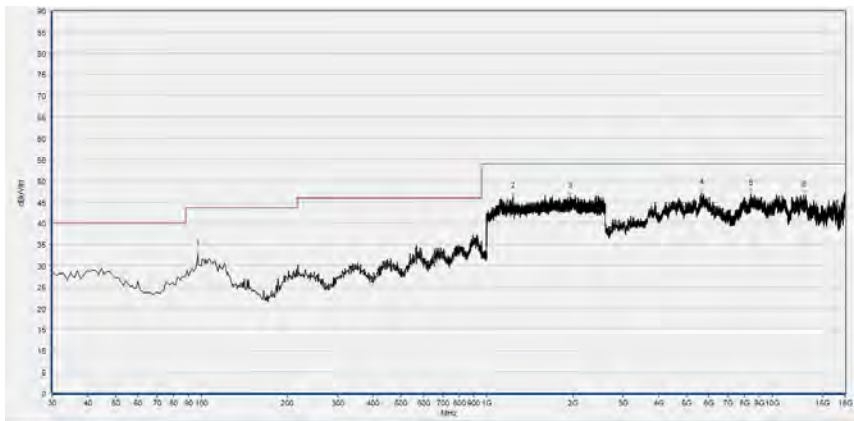


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
103.720	31.14	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1113.600	46.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1747.200	46.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5649.200	47.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8492.040	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12154.160	46.55	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

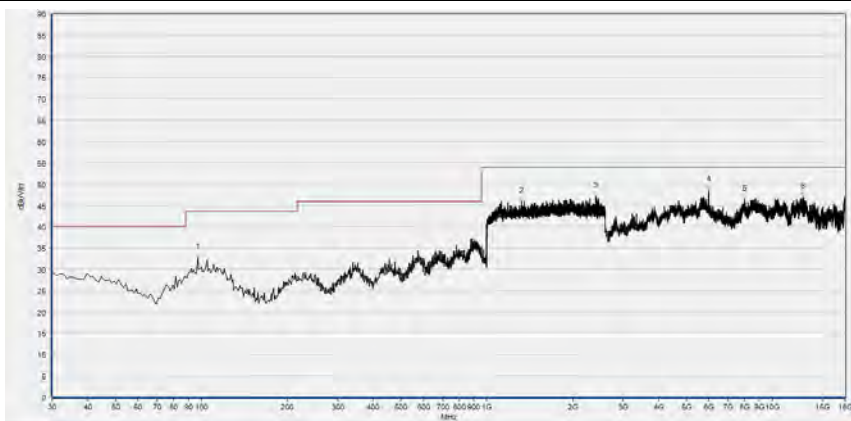


Plot for Channel 11



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
96.930	32.48	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1232.533	46.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1955.200	46.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5661.520	47.17	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8430.440	46.94	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12896.440	46.58	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

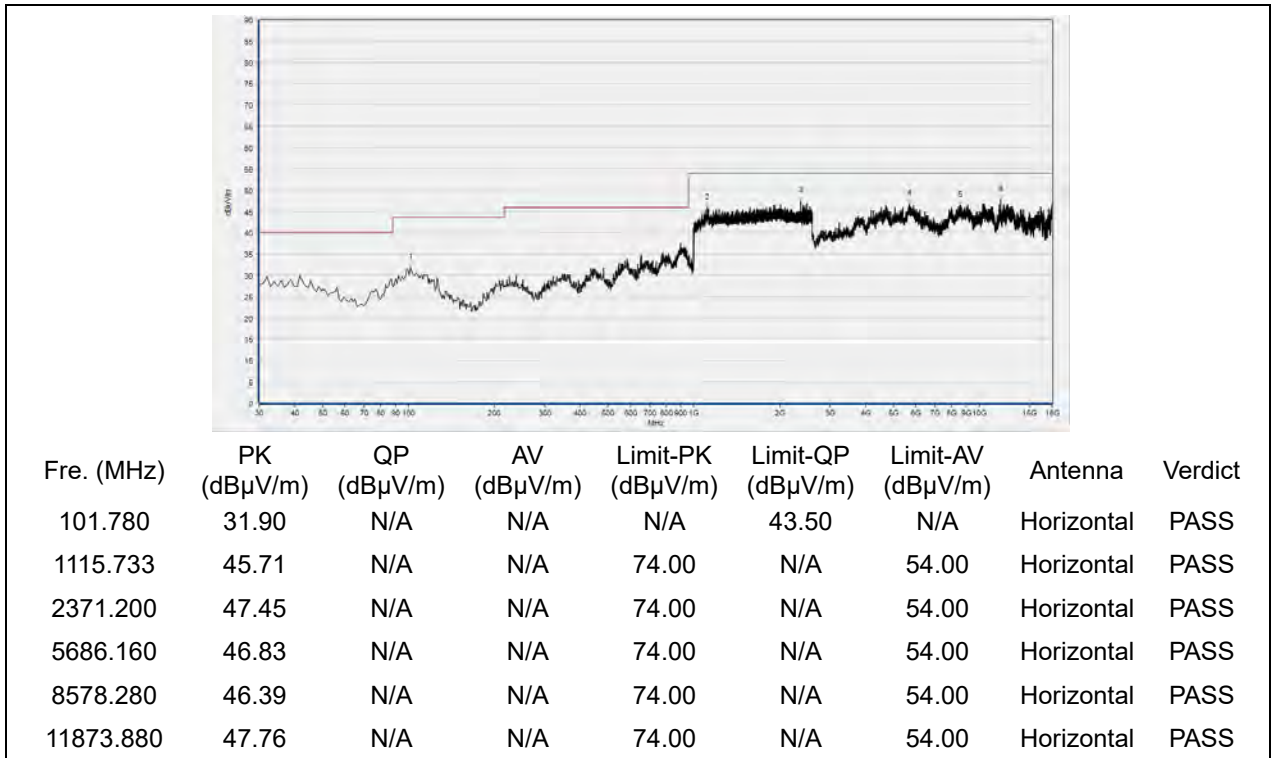


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
96.930	32.65	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1322.667	45.86	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2409.600	47.02	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5991.080	48.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7999.240	46.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12816.360	46.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

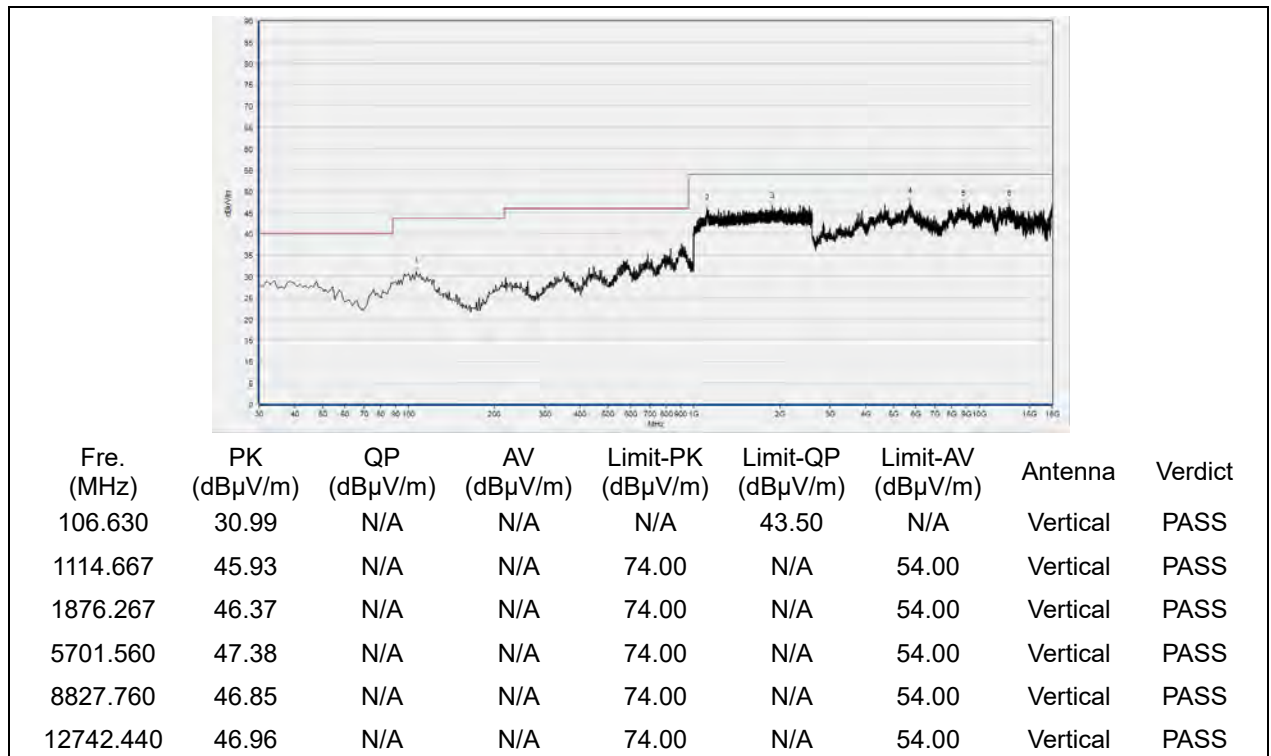
(Antenna Vertical, 30MHz to 18GHz)

802.11g Mode

Plot for Channel 1



(Antenna Horizontal, 30MHz to 18GHz)



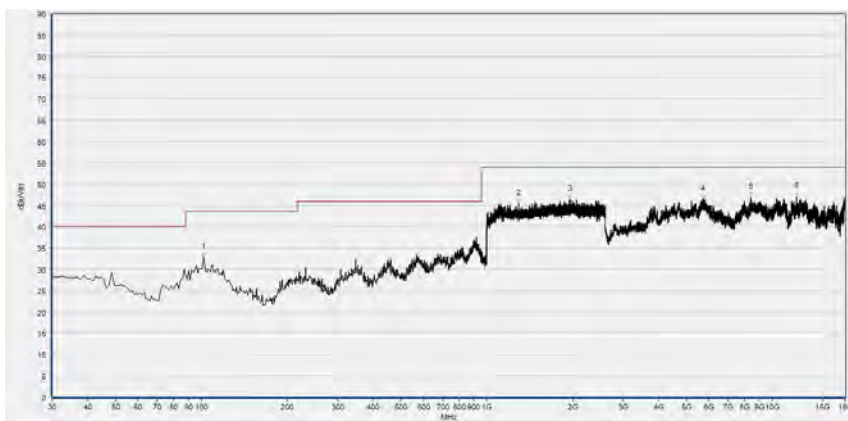
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
111.480	31.33	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1121.600	46.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1982.400	46.83	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5603.000	46.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8538.240	46.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13207.520	46.63	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.780	32.82	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1289.067	45.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1960.000	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5732.360	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8424.280	46.89	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12191.120	47.07	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

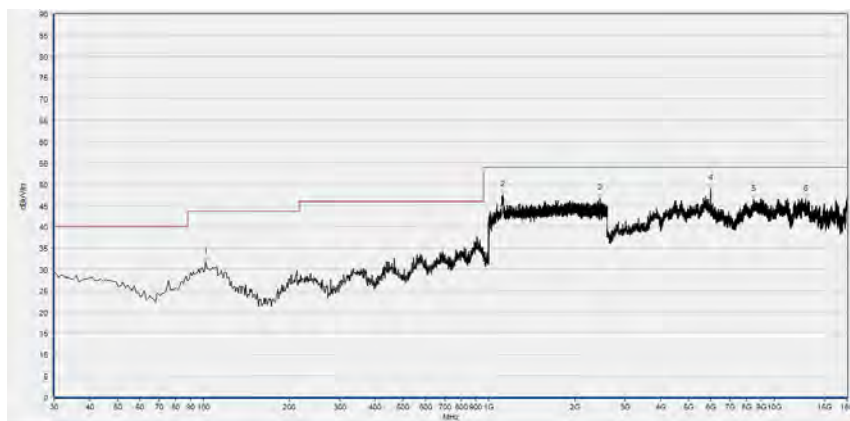
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 11



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
99.840	31.95	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1118.400	45.53	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1933.333	46.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5618.400	46.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8504.360	46.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12499.120	47.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



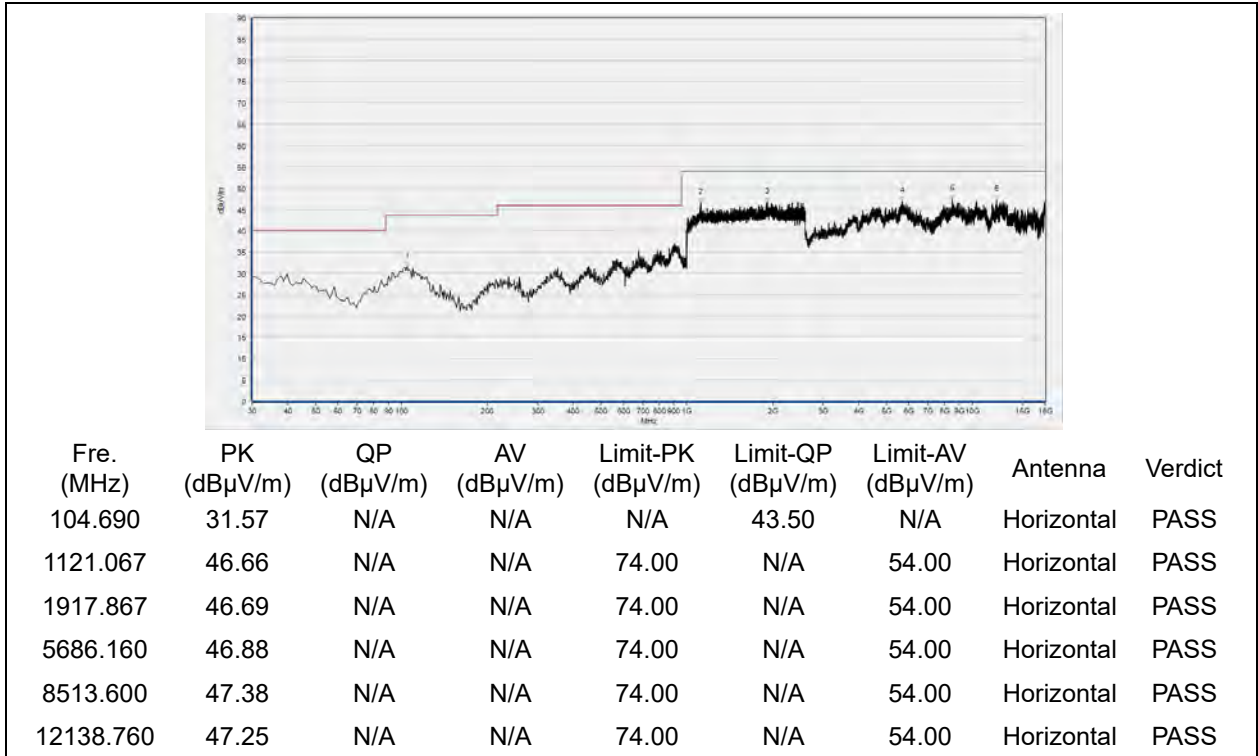
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
101.780	31.61	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1121.600	47.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2450.667	46.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5994.160	48.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8458.160	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12884.120	46.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

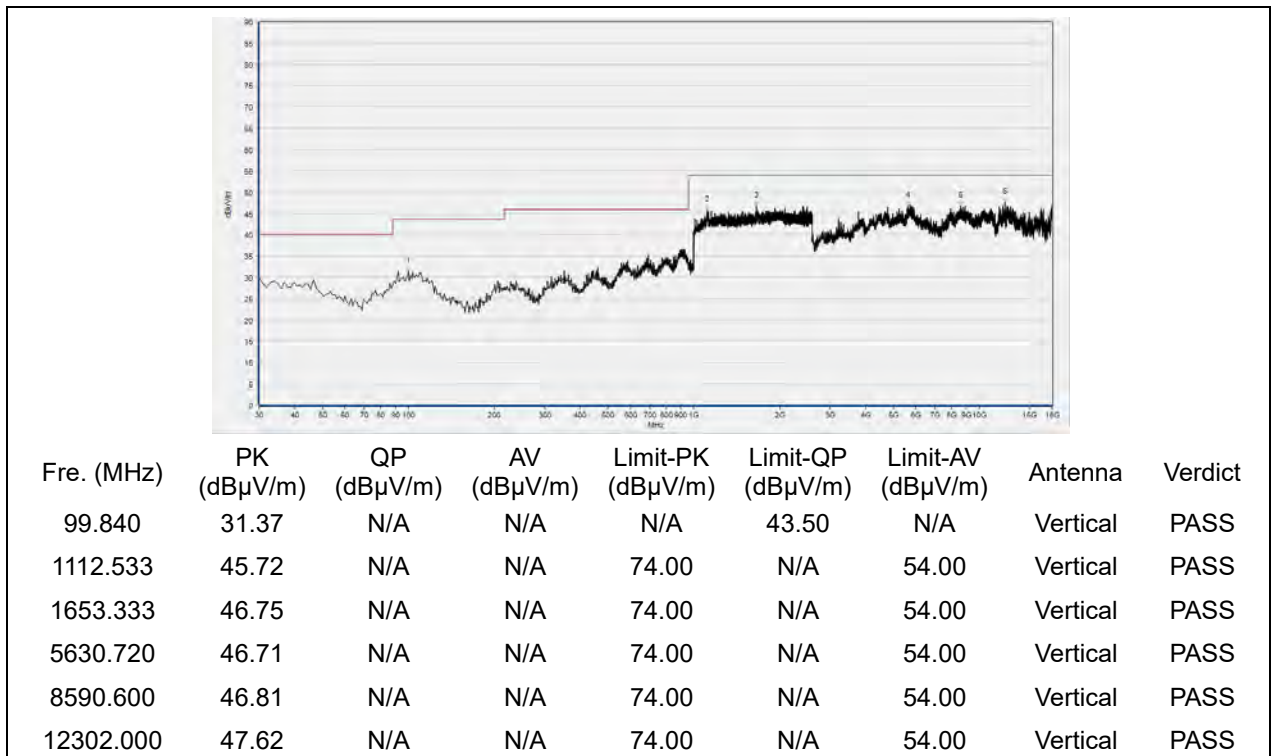


802.11n (HT20) Mode

Plot for Channel 1

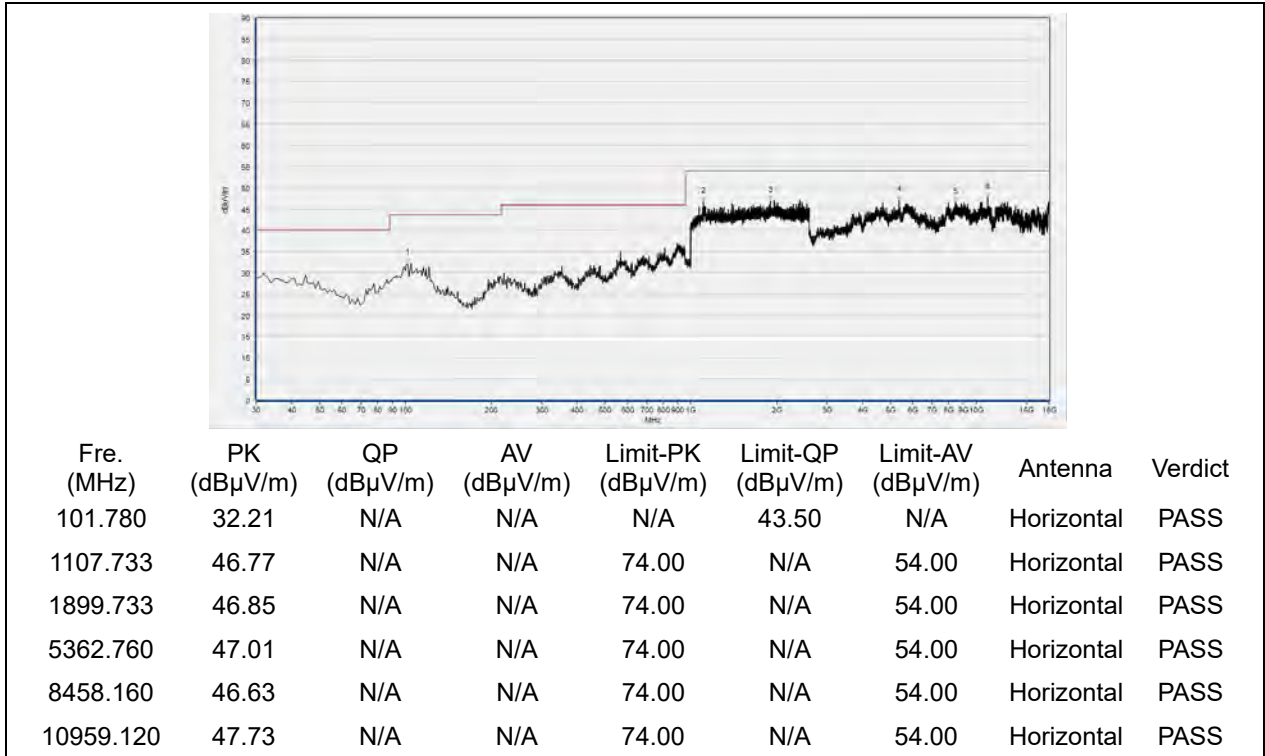


(Antenna Horizontal, 30MHz to 18GHz)

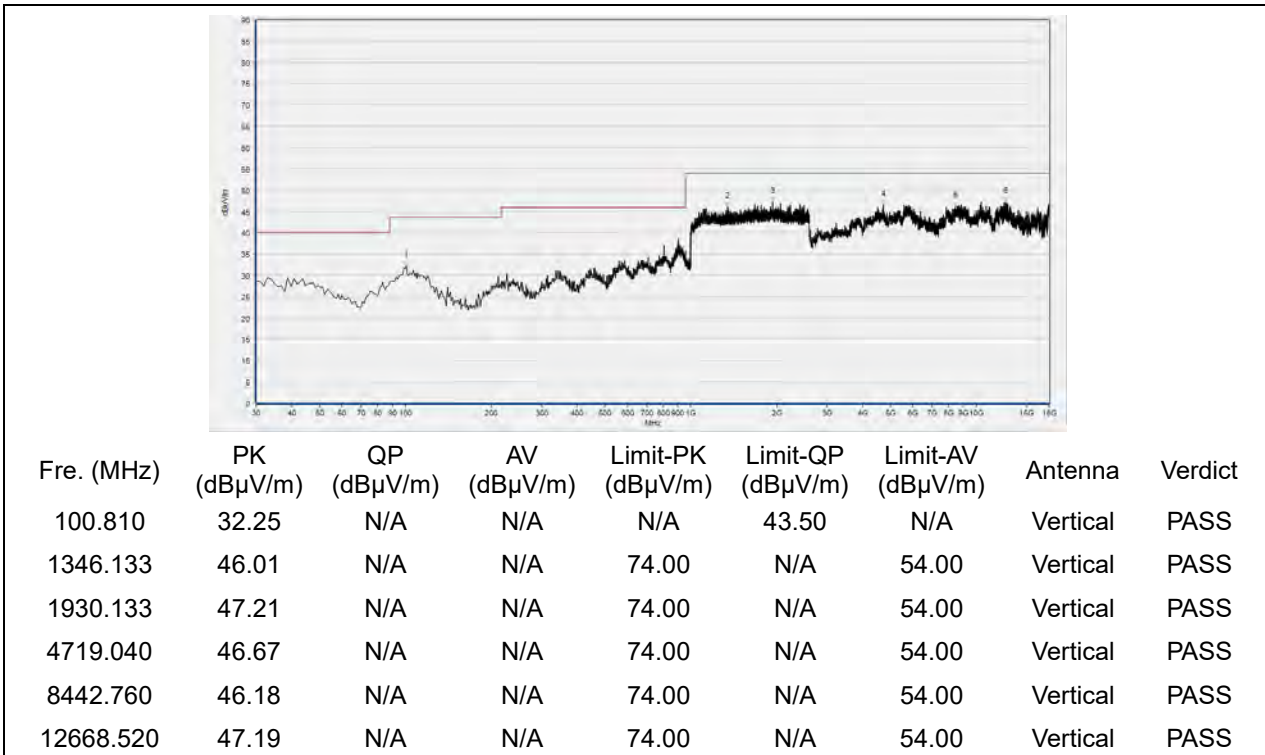


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6

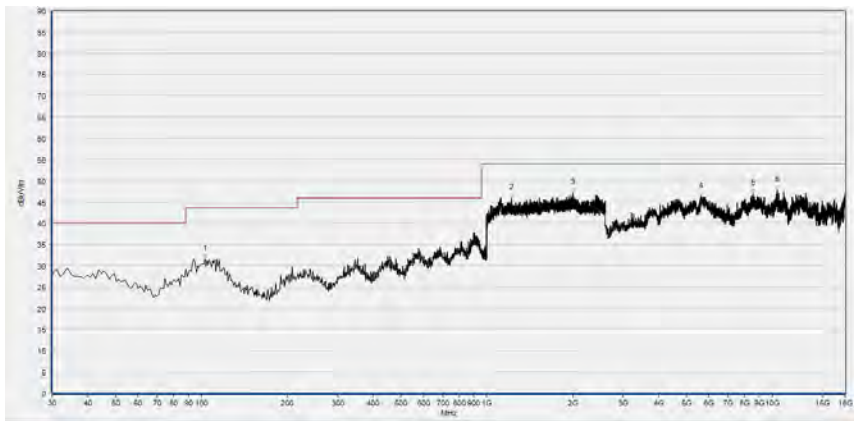


(Antenna Horizontal, 30MHz to 18GHz)



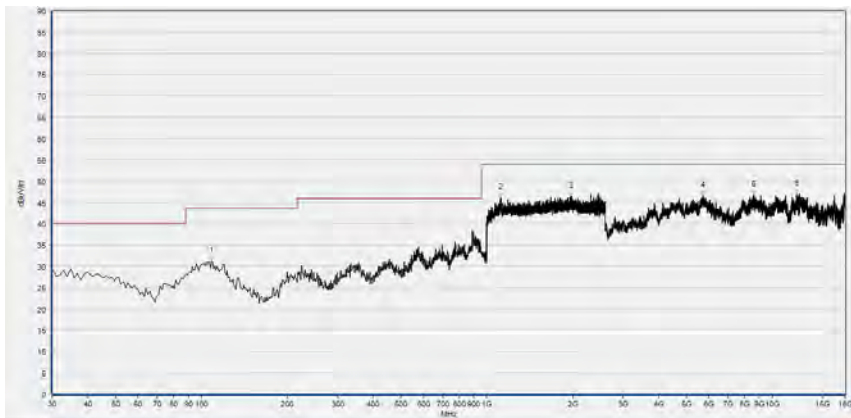
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 11



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
102.750	31.43	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1221.867	45.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2000.000	47.12	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5621.480	46.28	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8547.480	46.93	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10410.880	47.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

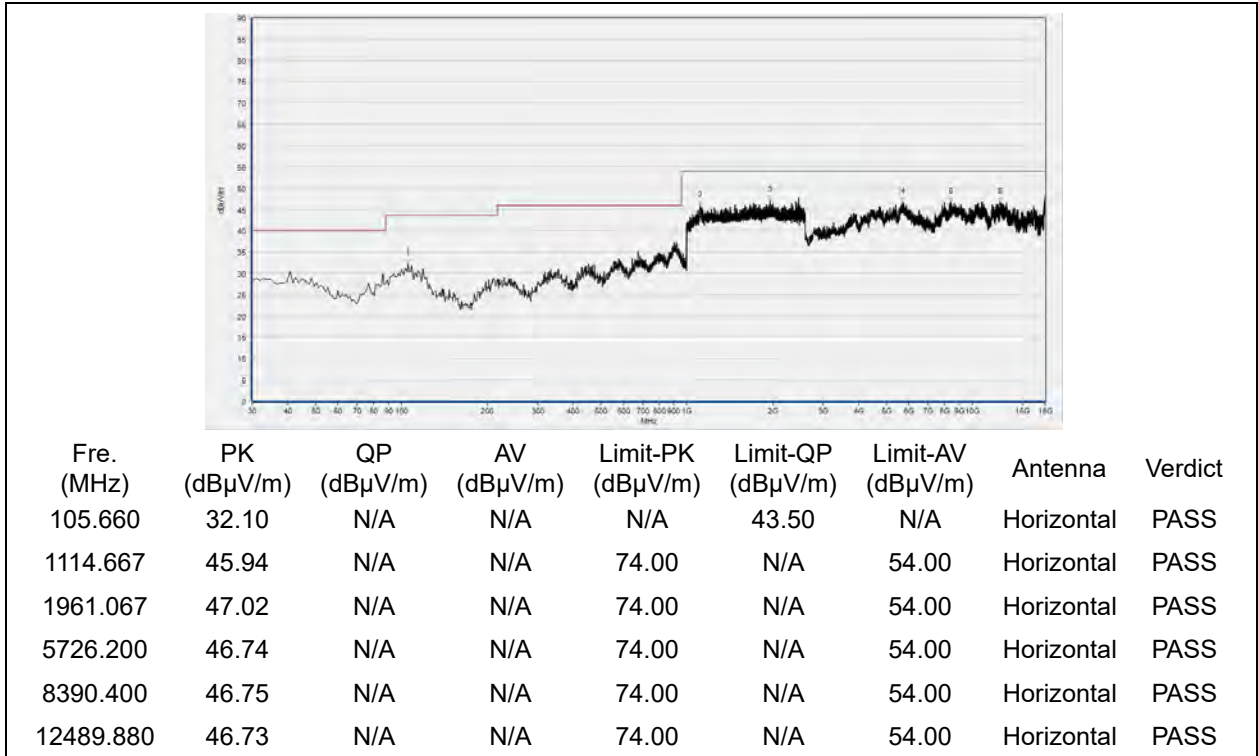


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
108.570	31.09	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1121.067	46.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1963.200	46.37	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5710.800	46.67	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8615.240	46.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12138.760	46.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

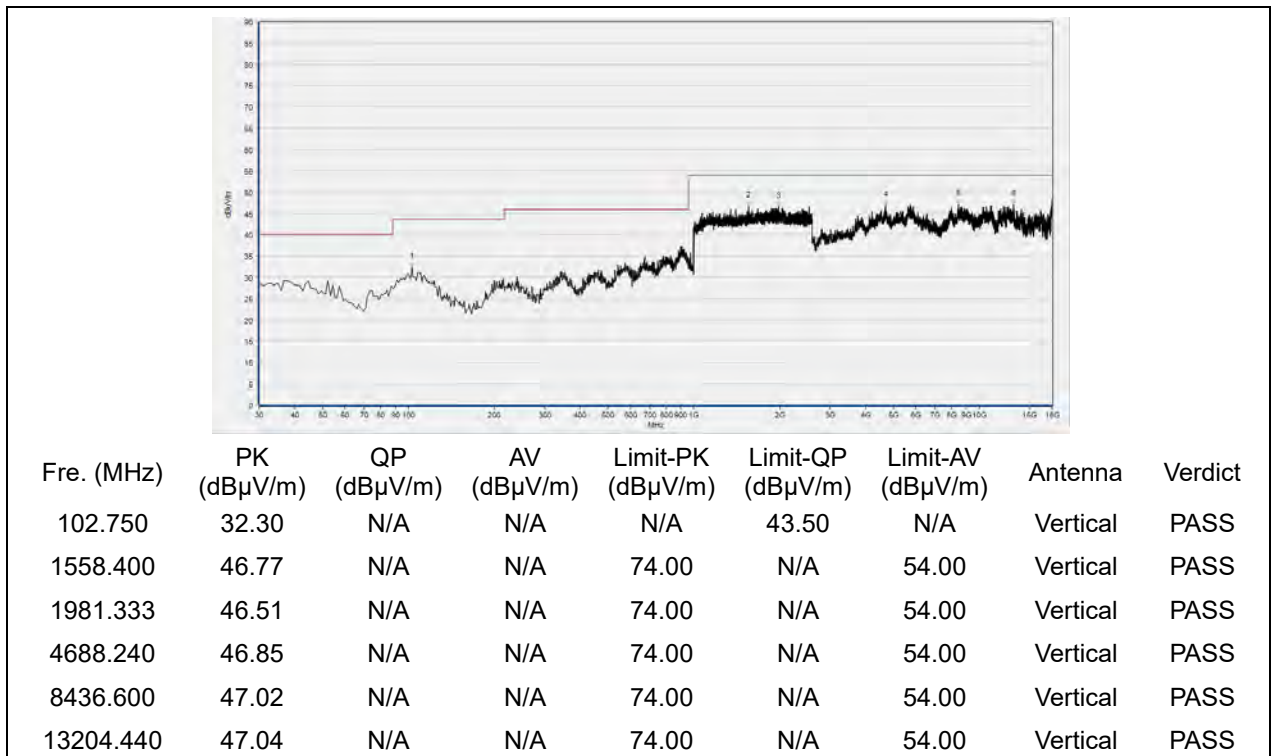
(Antenna Vertical, 30MHz to 18GHz)

802.11ax (HEW20) Mode

Plot for Channel 1

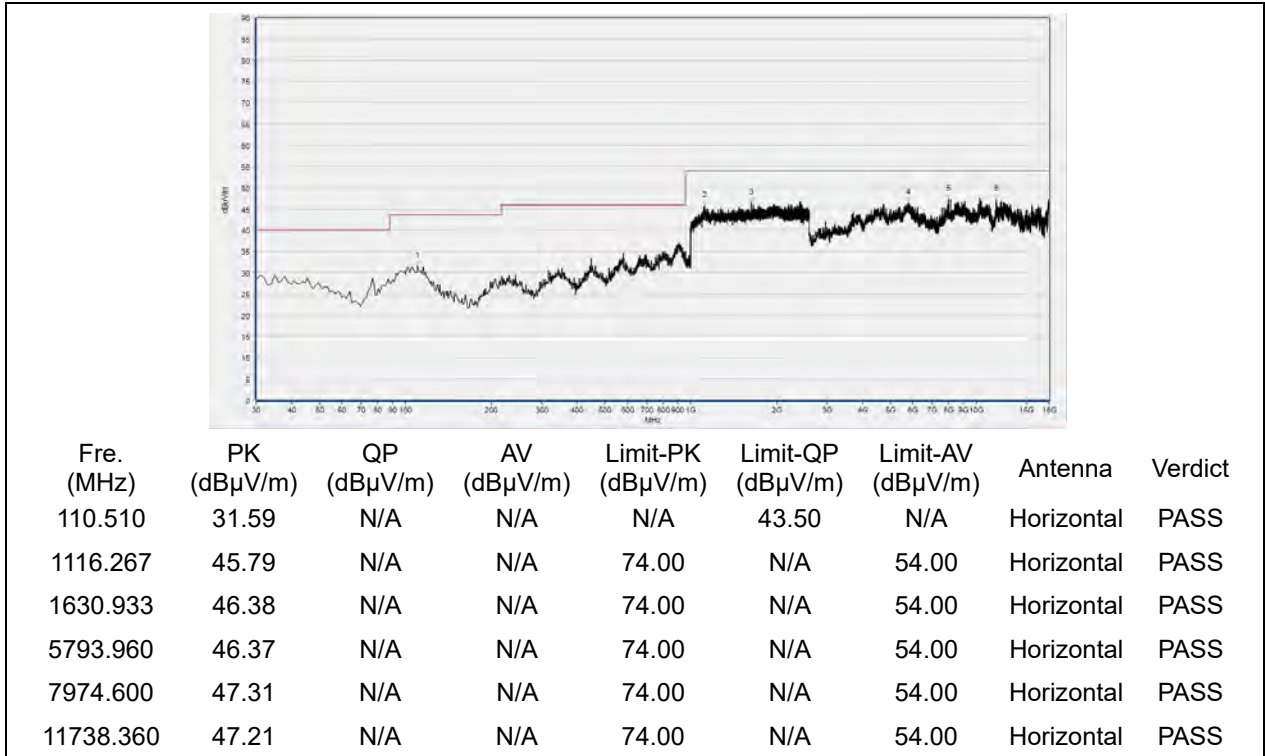


(Antenna Horizontal, 30MHz to 18GHz)

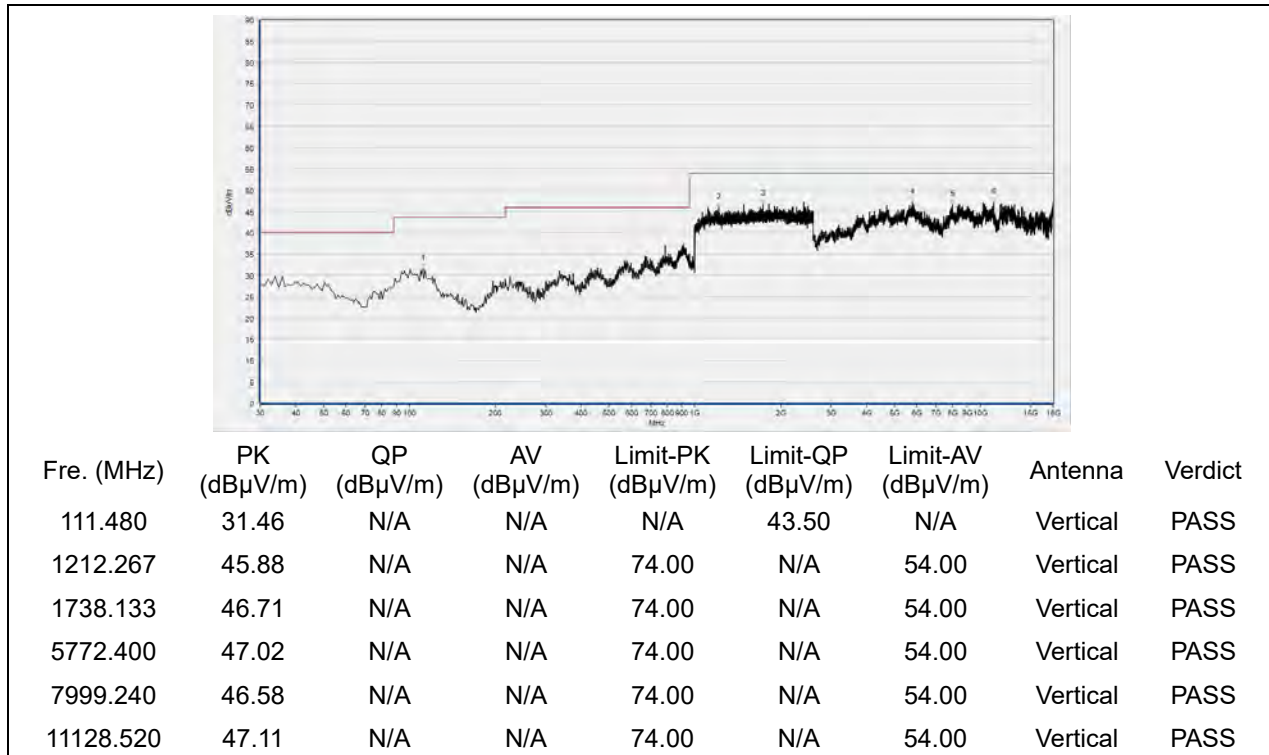


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6

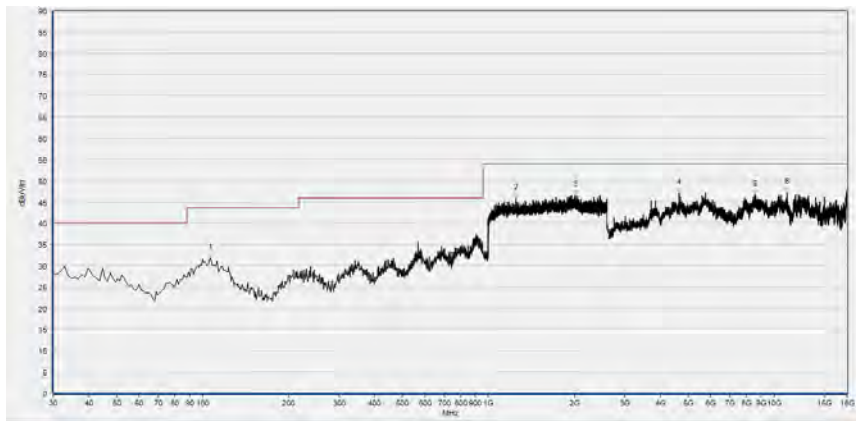


(Antenna Horizontal, 30MHz to 18GHz)



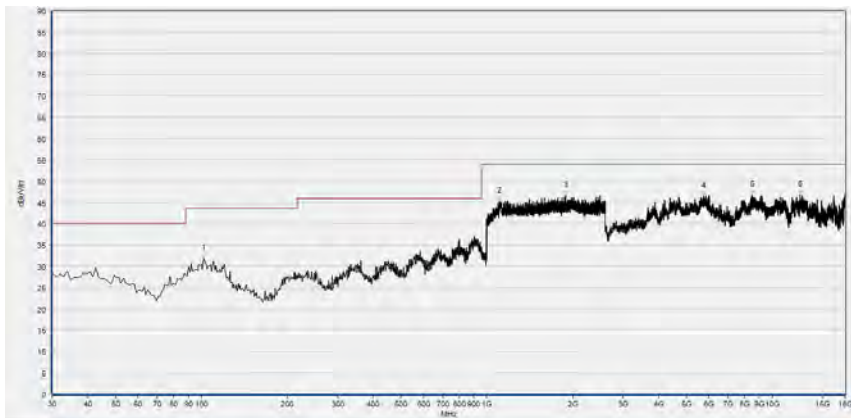
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 11



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
106.630	31.85	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1251.200	45.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2012.267	46.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4645.120	47.04	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8569.040	46.84	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11119.280	47.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



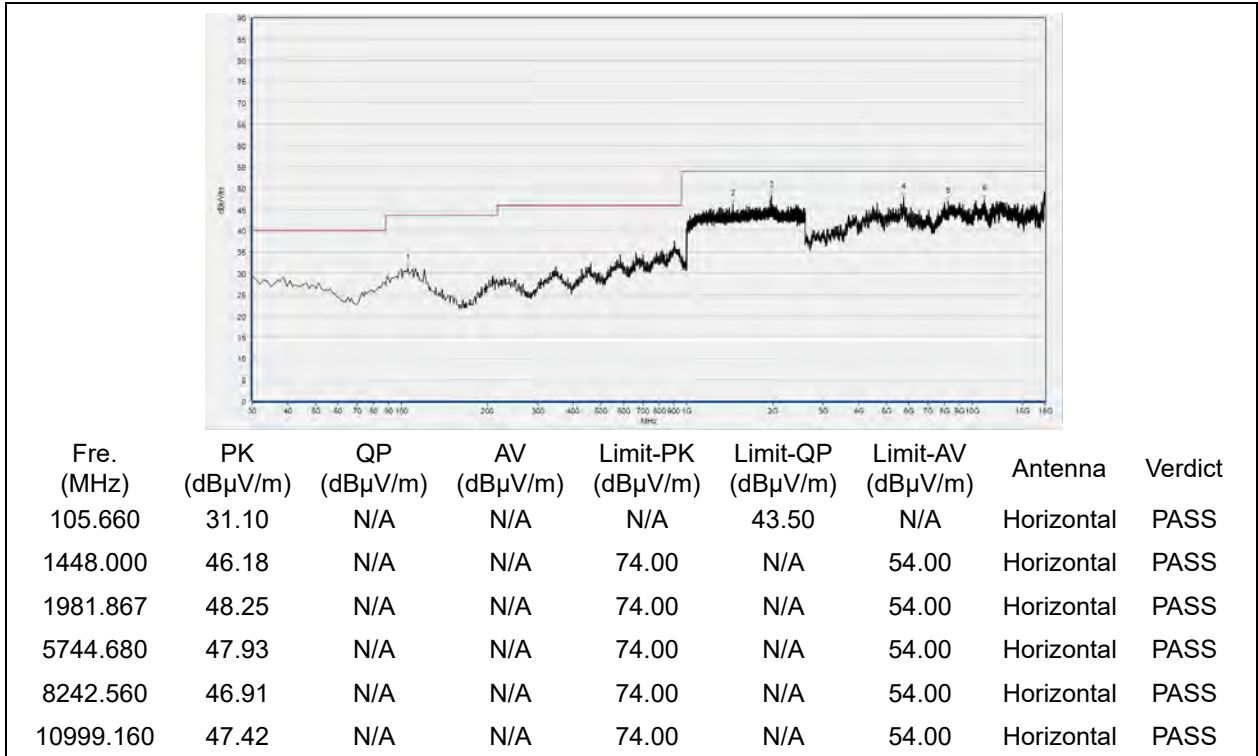
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.780	31.81	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1104.000	45.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1892.800	46.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5766.240	46.46	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8507.440	46.68	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12514.520	46.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

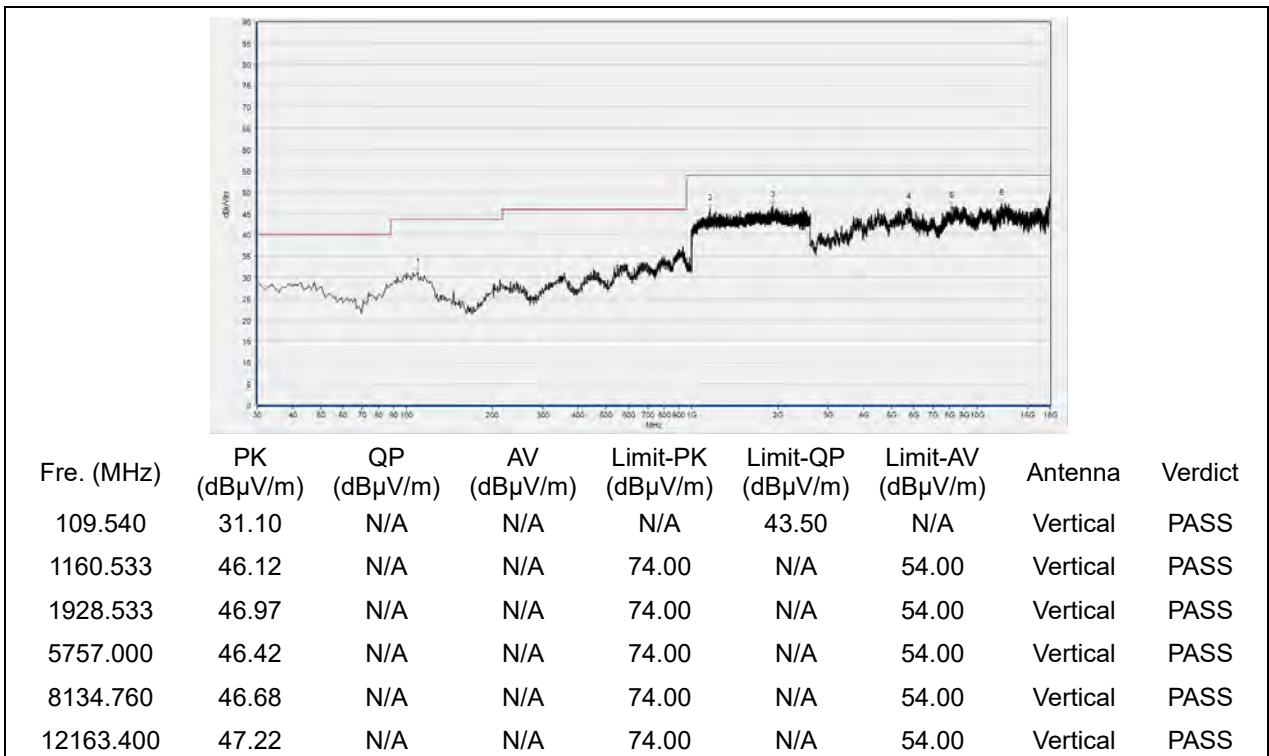


802.11ax (HEW20) RU26 Mode

Plot for Channel 1

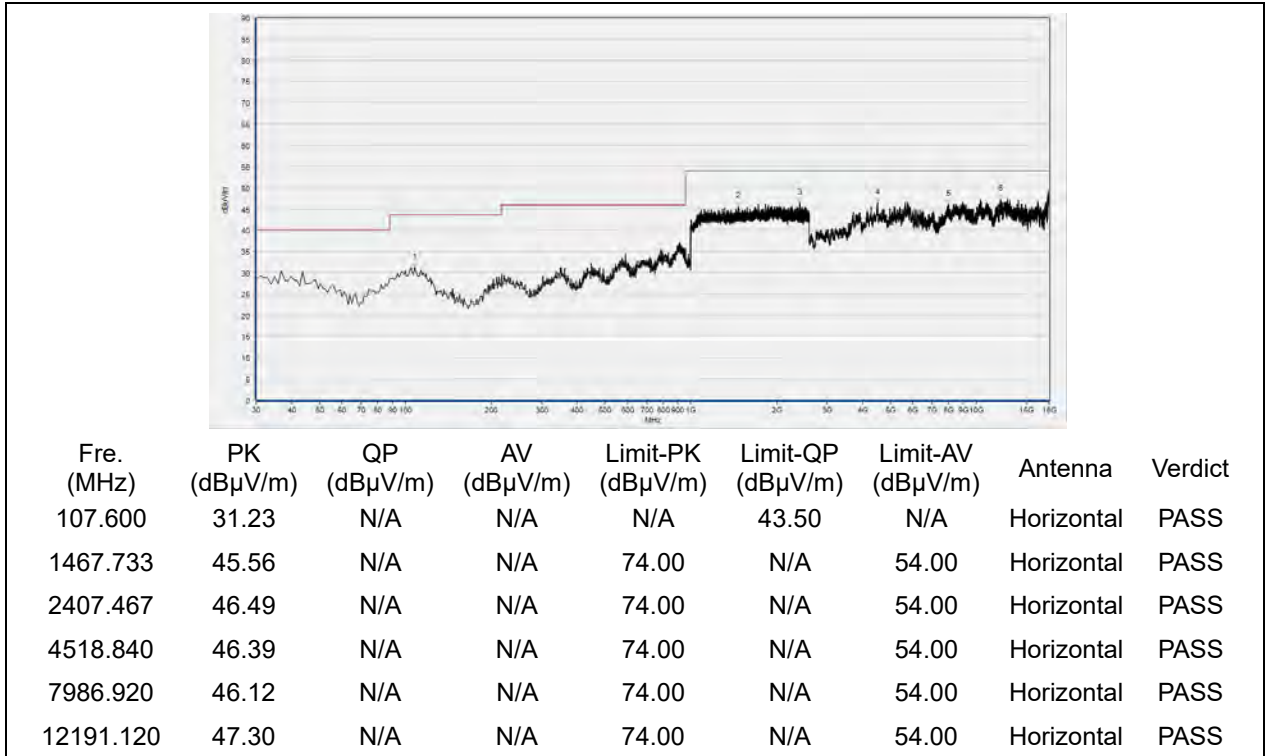


(Antenna Horizontal, 30MHz to 18GHz)

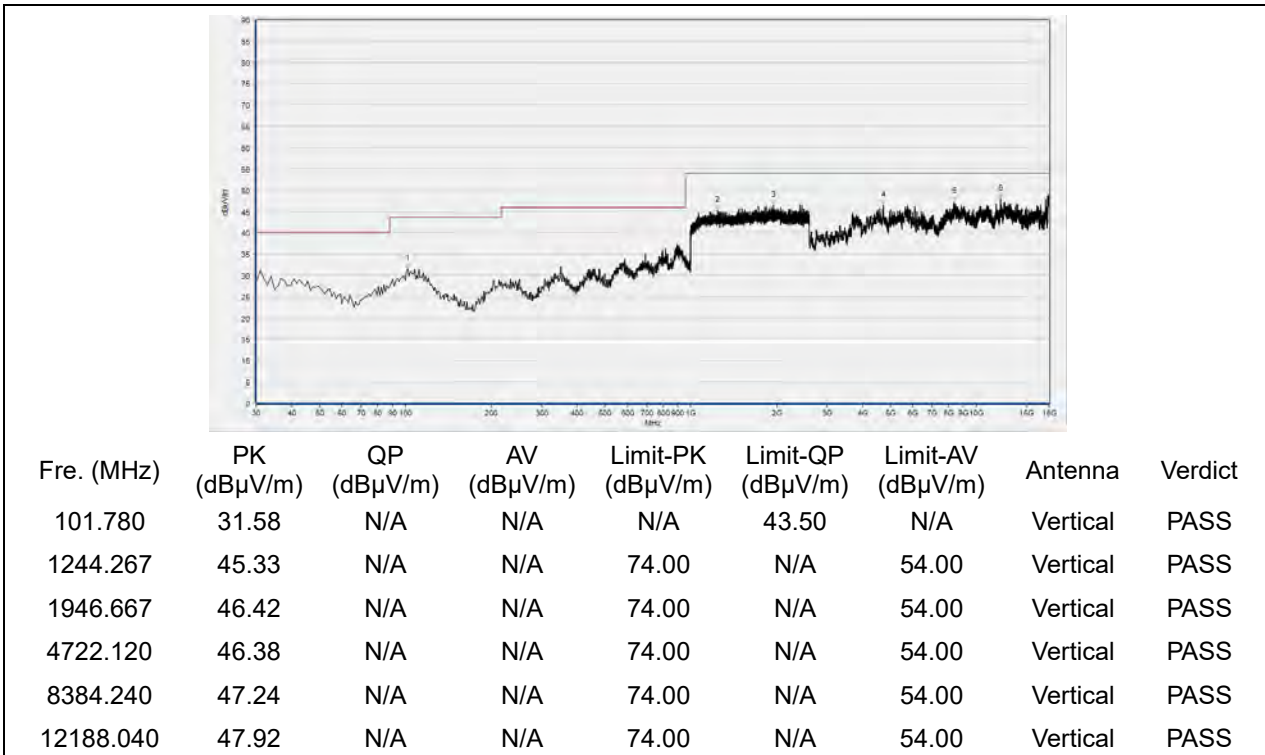


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6

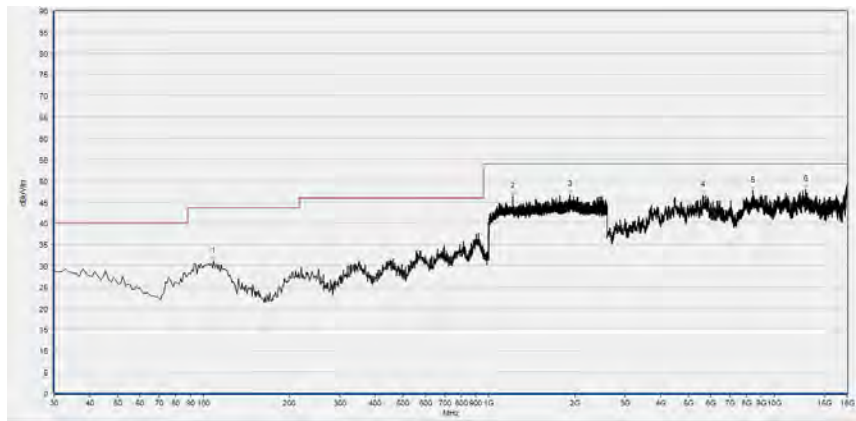


(Antenna Horizontal, 30MHz to 18GHz)



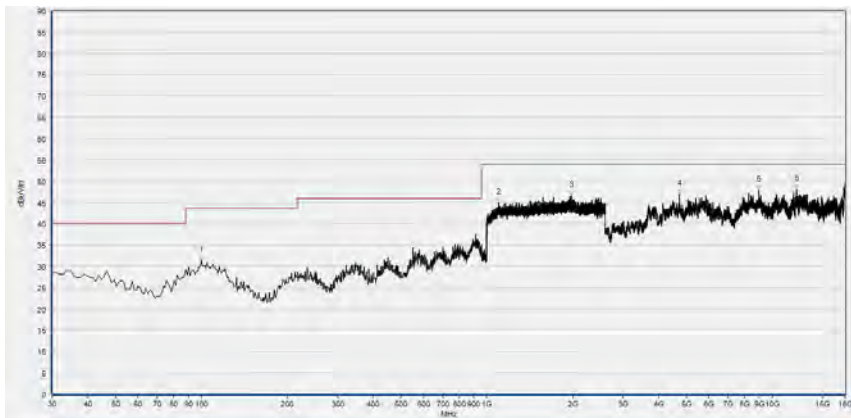
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 11



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
108.570	31.08	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1214.400	46.33	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1919.467	46.72	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5630.720	46.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8430.440	47.60	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12908.760	47.94	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

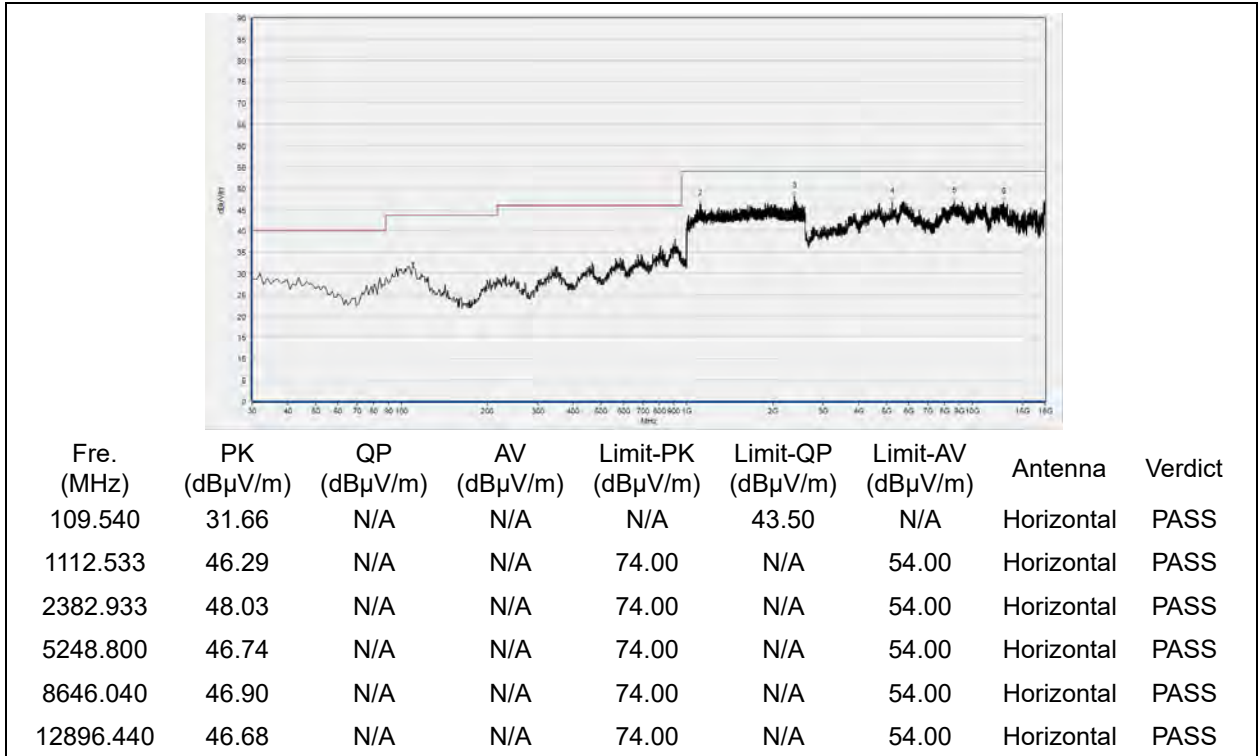


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
99.840	31.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1097.600	44.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1981.333	46.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4719.040	47.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8987.920	47.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12148.000	48.18	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

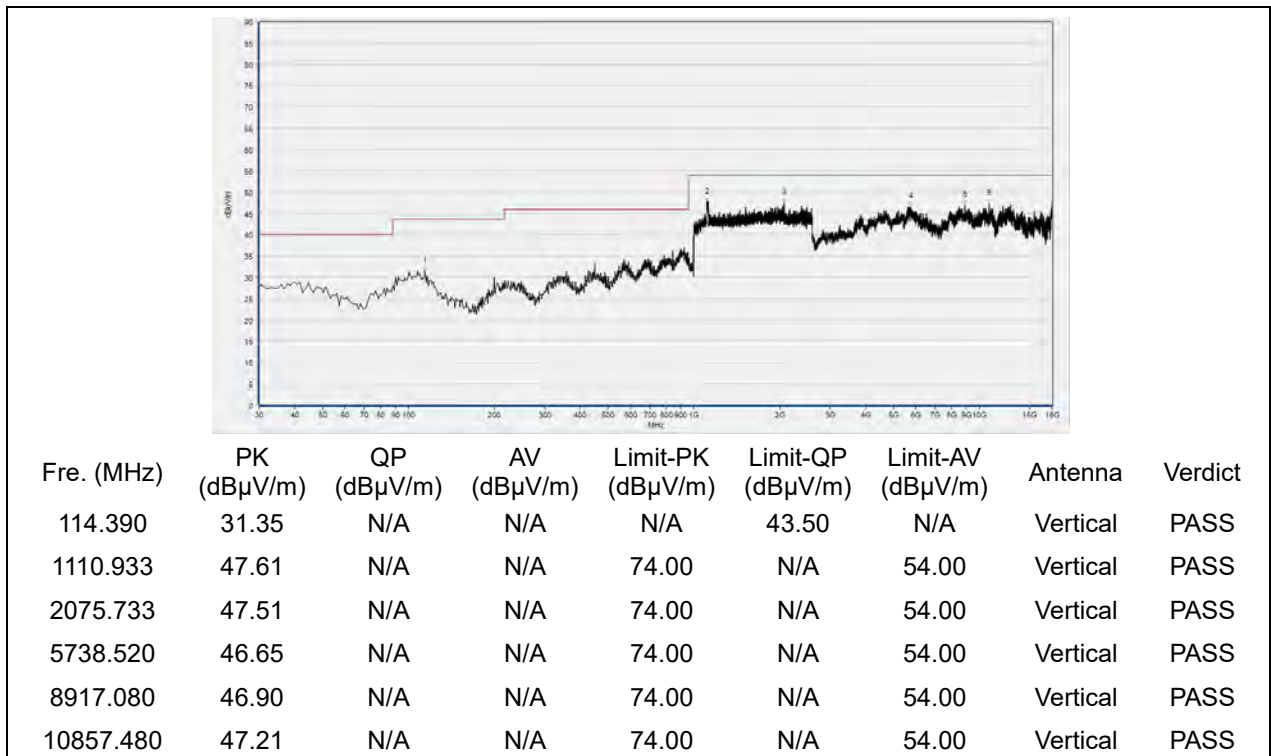
(Antenna Vertical, 30MHz to 18GHz)

802.11ax (HEW40) Mode

Plot for Channel 3

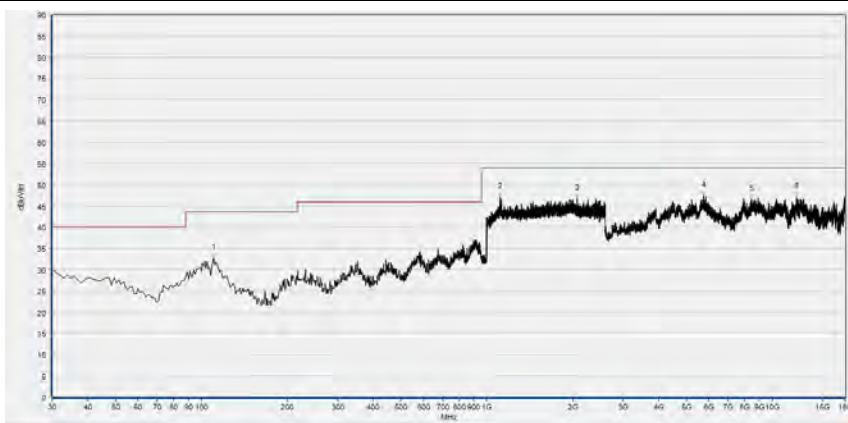


(Antenna Horizontal, 30MHz to 18GHz)



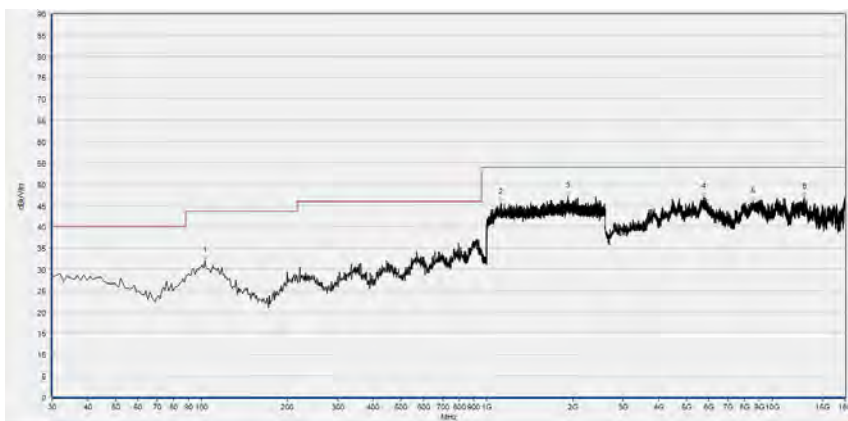
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 6



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
110.510	32.69	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1115.200	47.04	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2069.867	46.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5738.520	47.36	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8479.720	46.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12188.040	47.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

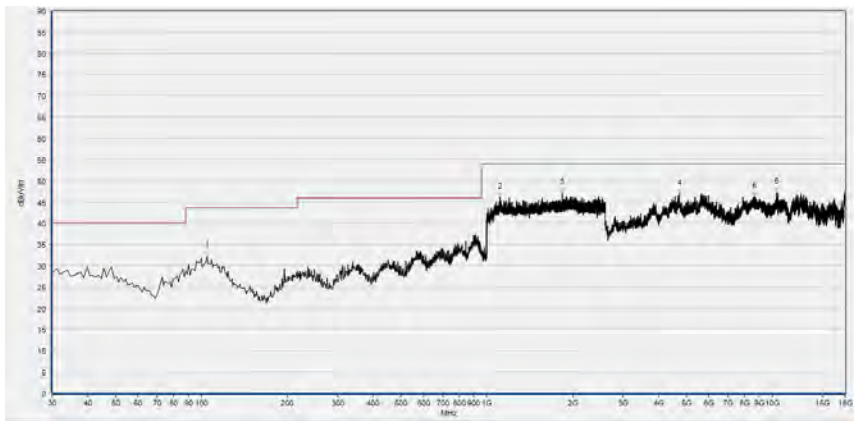
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
102.750	32.09	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1120.533	45.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1921.600	47.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5757.000	46.96	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8578.280	45.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12967.280	46.87	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

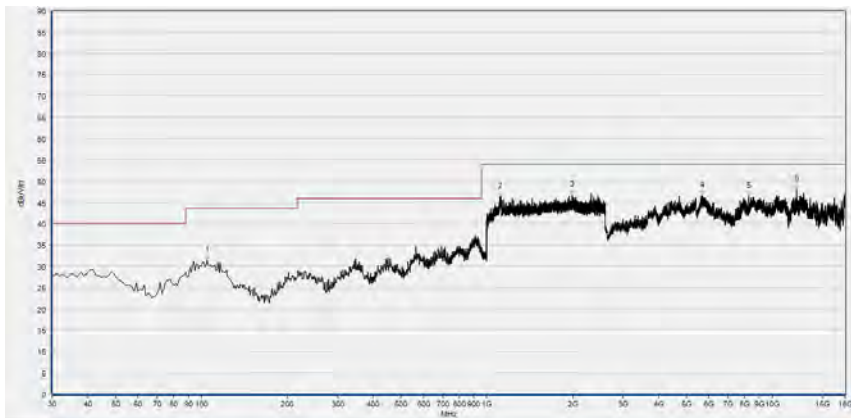
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 9



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
104.690	32.17	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1115.200	46.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1834.133	47.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4715.960	46.97	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8676.840	46.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10355.440	47.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
104.690	31.39	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1114.133	46.24	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1990.933	46.68	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5670.760	46.54	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8254.880	46.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12132.600	48.09	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Annex A Test Uncertainty

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

Test Items	Uncertainty
Peak Output Power	$\pm 2.22\text{dB}$
Power Spectral Density	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77\text{dB}$
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 Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Attenuator 1	(N/A.)	10dB	Resent	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2022.03.01	2023.02.28
USB Wideband Power Sensor	MY54180008	U2021XA	Agilent	2022.10.11	2023.10.10
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
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2022.03.03	2023.03.02
LISN	812744	NSLK 8127	Schwarzbeck	2022.03.03	2023.03.02
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2022.07.06	2023.07.05
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

4.3 List of Software Used

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

**4.4 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2022.07.06	2023.07.05
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2022.05.25	2025.05.24
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2022.02.11	2025.02.10
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2022.07.13	2025.07.12
Test Antenna – Horn	BBHA9170#773	BBHA 9170	Schwarzbeck	2022.07.14	2025.07.13
Coaxial Cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L3203	Tonscend	2022.07.08	2023.07.07
18-26.5GHz pre-Amplifier	46732	S10M100L3802	Tonscend	2022.07.08	2023.07.07
26-40GHz pre-Amplifier	56774	S40M400L4002	Tonscend	2022.07.08	2023.07.07
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	2022.07.08	2023.07.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2020.01.06	2023.01.05

————— END OF REPORT —————