



PSD NVNT ax40 106@53 2437MHz Ant1



PSD NVNT ax40 106@53 2437MHz Ant2





PSD NVNT ax40 106@53 2452MHz Ant1



PSD NVNT ax40 106@53 2452MHz Ant2



PSD NVNT ax40 242@61 2422MHz Ant1



PSD NVNT ax40 242@61 2422MHz Ant2





PSD NVNT ax40 242@61 2437MHz Ant1



PSD NVNT ax40 242@61 2437MHz Ant2



PSD NVNT ax40 242@61 2452MHz Ant1



PSD NVNT ax40 242@61 2452MHz Ant2





A.8. Conducted Emission

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 + WIFI TX

Test voltage: AC 120V/60Hz

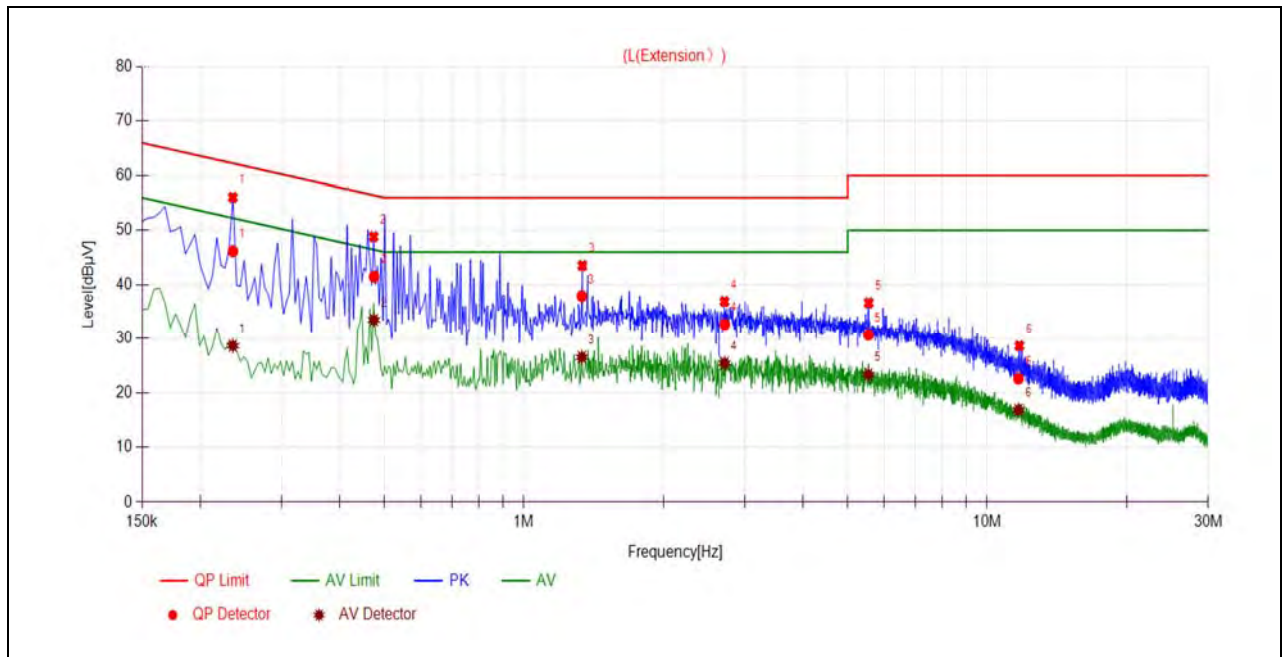
The measurement results are obtained as below:

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

U_R : Receiver Reading

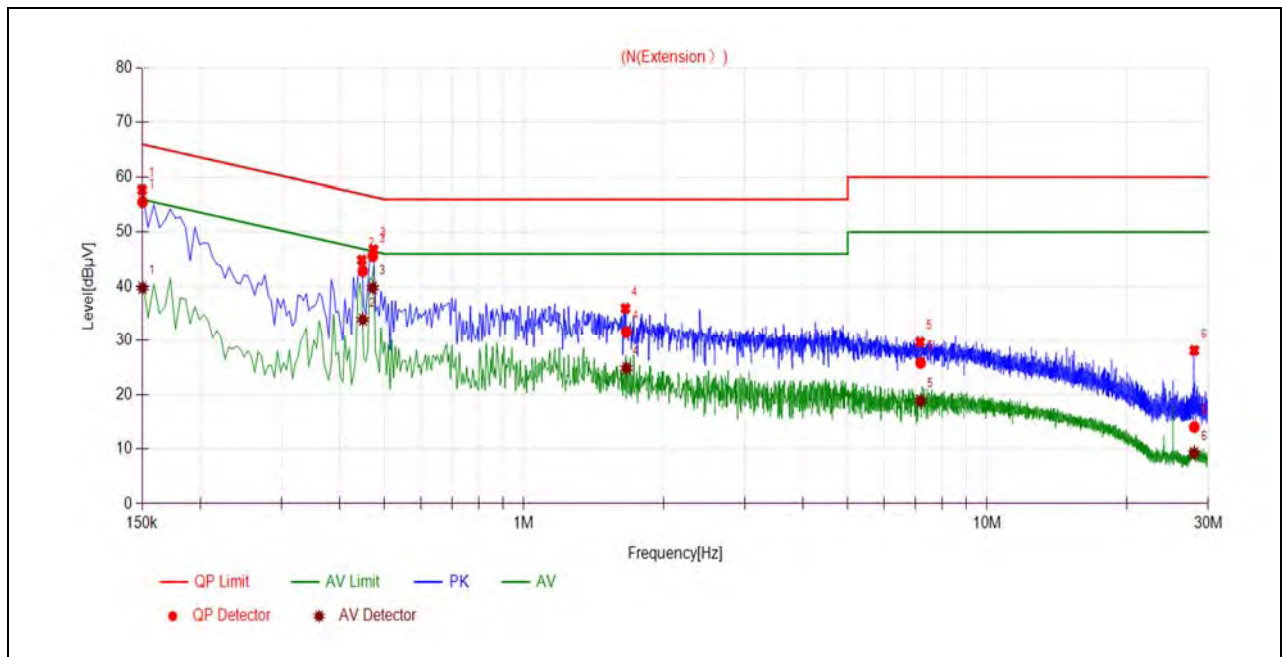
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2355	46.16	28.62	62.25	52.25	Line	PASS
2	0.4749	41.48	33.49	56.43	46.43		PASS
3	1.3339	37.88	26.53	56.00	46.00		PASS
4	2.7132	32.66	25.41	56.00	46.00		PASS
5	5.5413	30.68	23.33	60.00	50.00		PASS
6	11.6830	22.58	16.83	60.00	50.00		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1503	55.53	39.78	65.99	55.99	Neutral	PASS
2	0.4492	42.87	33.94	56.89	46.89		PASS
3	0.4719	45.60	39.79	56.48	46.48		PASS
4	1.6643	31.59	24.86	56.00	46.00		PASS
5	7.1831	25.80	18.84	60.00	50.00		PASS
6	27.9926	14.01	9.20	60.00	50.00		PASS



A.9. Restricted Frequency Bands

The lowest and highest channels are tested to verify the 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

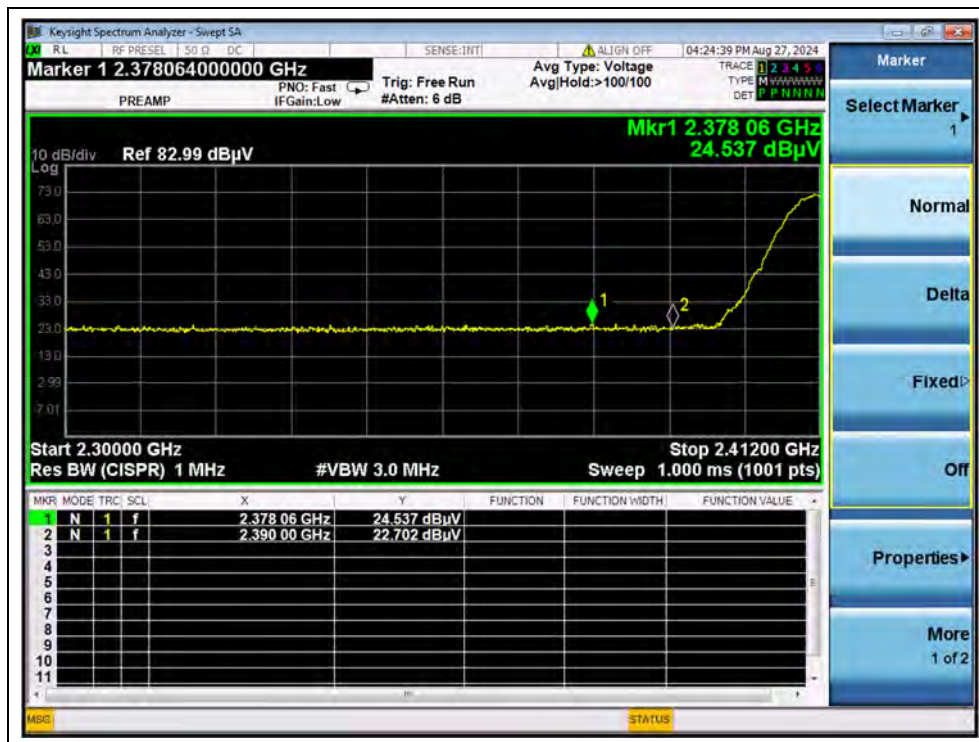
Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (horizontal) was recorded in this test report.

Note 2: Restricted Frequency Bands were performed in X, Y, Z axis direction, and only the worst axis (X axis) test condition was recorded in this test report.

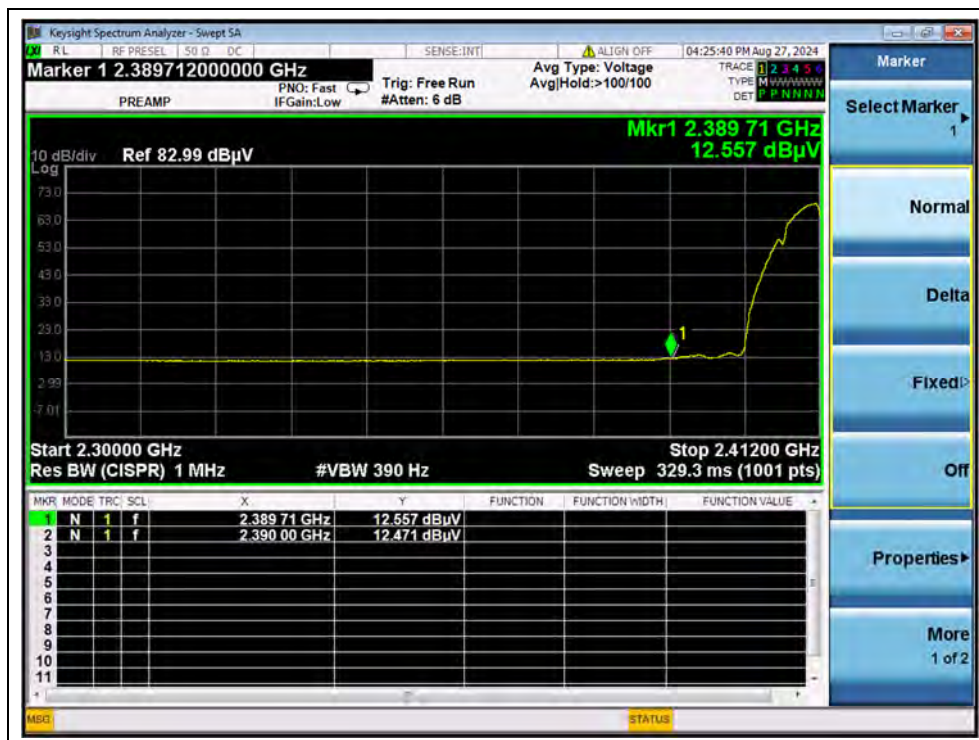
Note 3: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

802.11b Mode

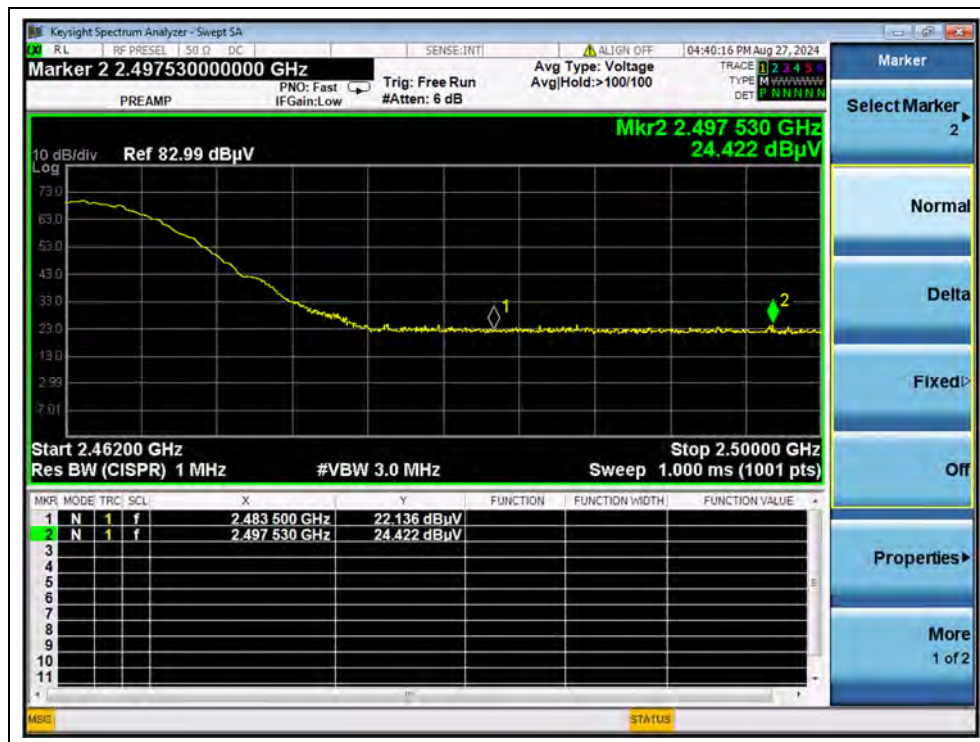
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
1	2378.06	PK	24.54	6.74	27.20	58.48	74	PASS
1	2389.71	AV	12.56	6.74	27.20	46.50	54	PASS
11	2497.53	PK	24.42	6.74	27.20	58.36	74	PASS
11	2483.85	AV	11.95	6.74	27.20	45.89	54	PASS



(PEAK, Channel 1, 802.11b)



(AVERAGE, Channel 1, 802.11b)



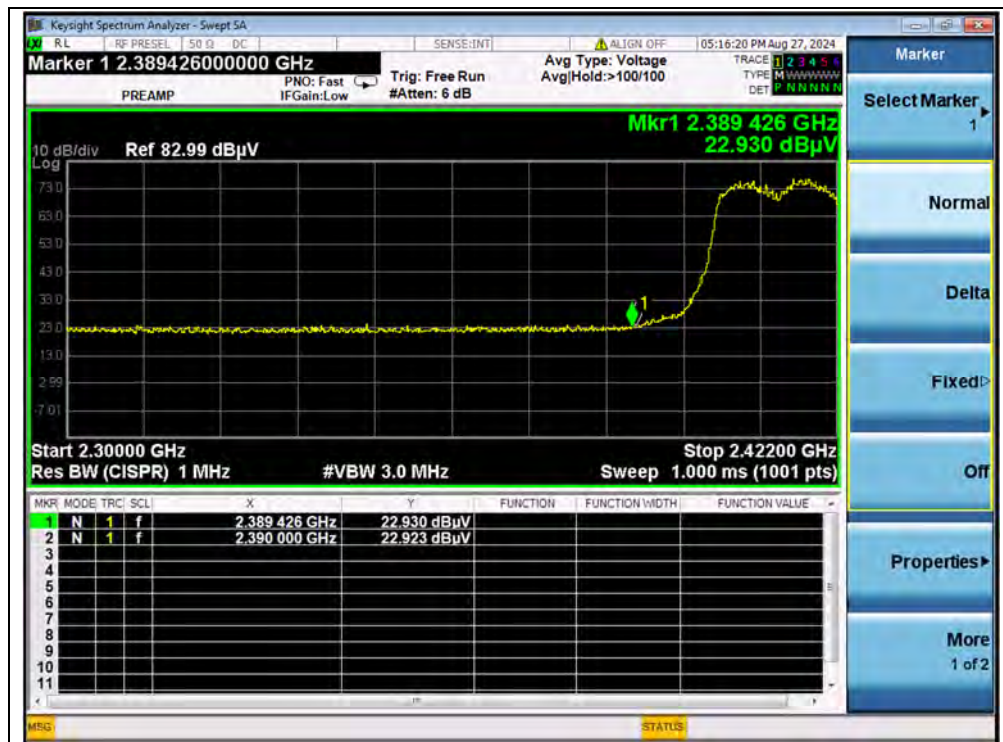
(PEAK, Channel 11, 802.11b)



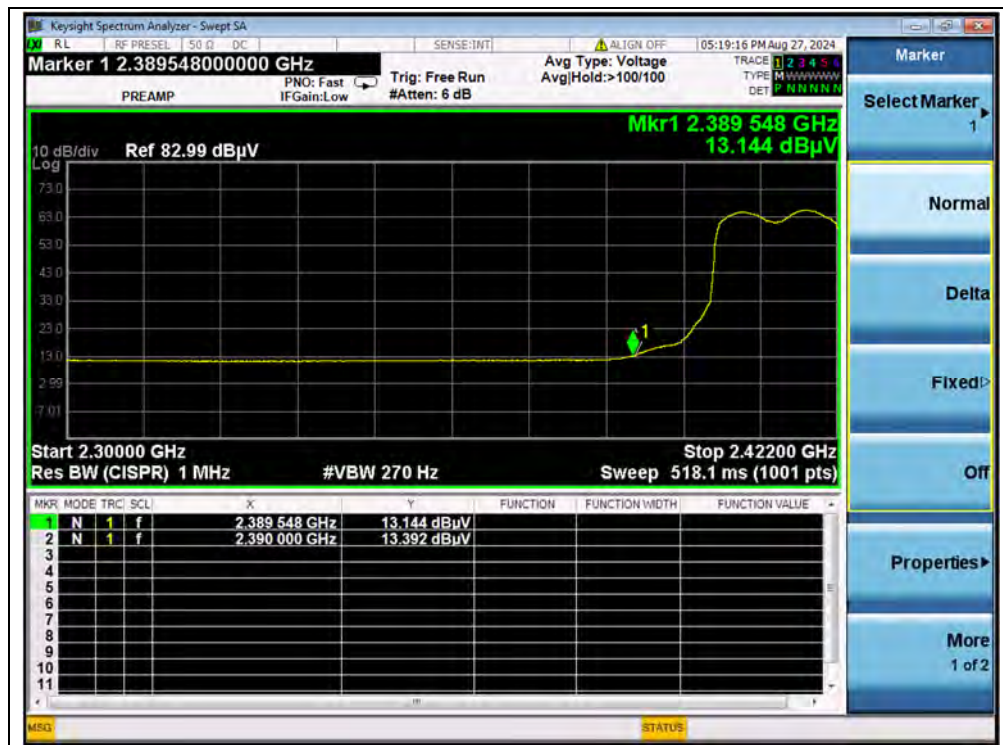
(AVERAGE, Channel 11, 802.11b)

**802.11ax (HEW40) Mode**

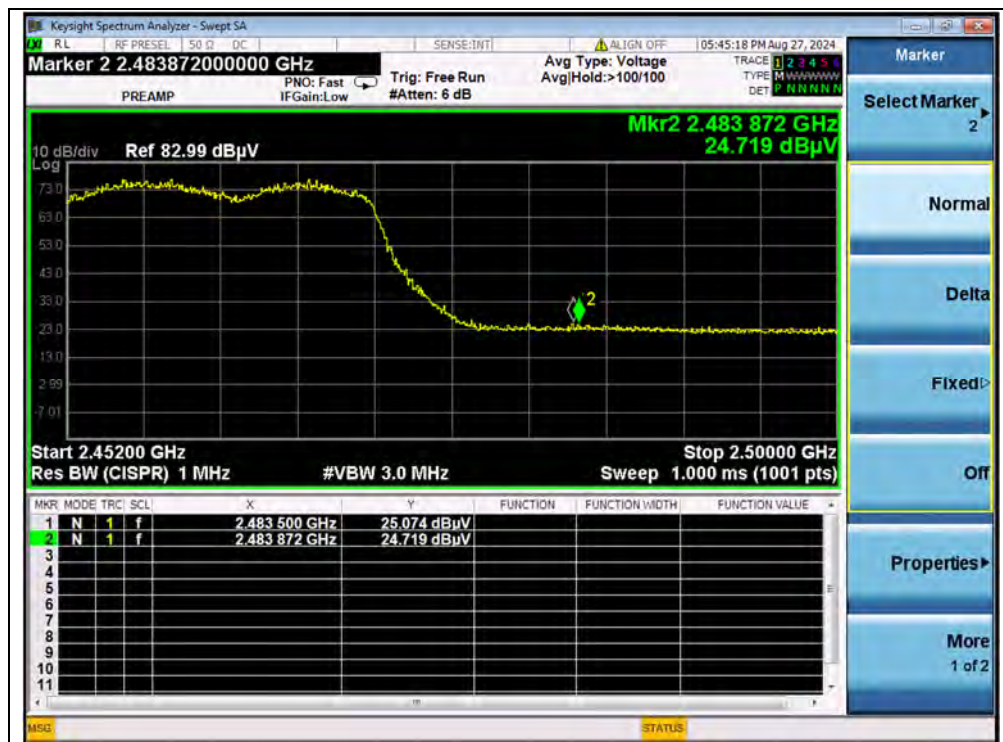
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
3	2389.43	PK	22.93	6.74	27.20	56.87	74	PASS
3	2390.00	AV	13.39	6.74	27.20	47.33	54	PASS
9	2483.50	PK	25.07	6.74	27.20	59.01	74	PASS
9	2484.59	AV	13.01	6.74	27.20	46.95	54	PASS



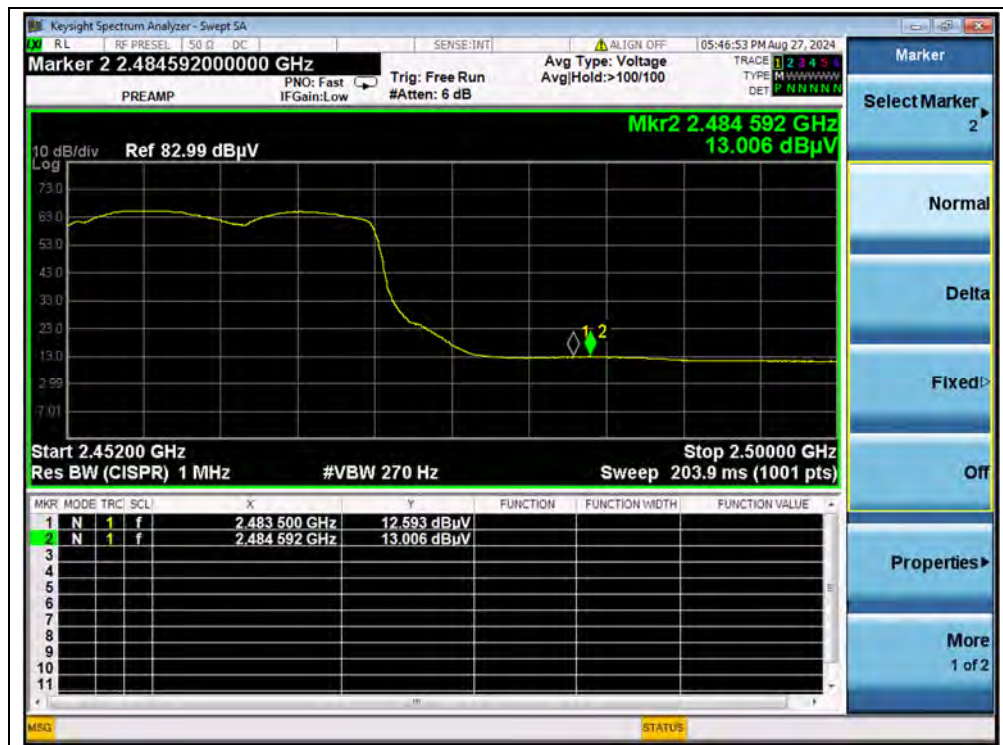
(PEAK, Channel 3, 802.11ax (HEW40))



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



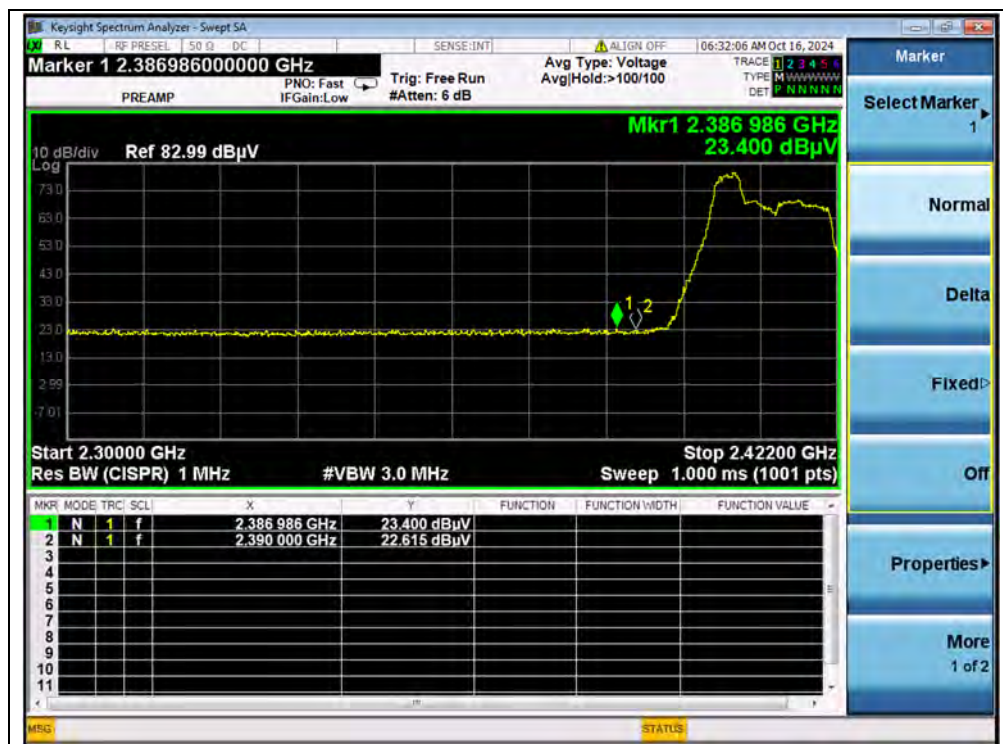
(PEAK, Channel 9, 802.11ax (HEW40))



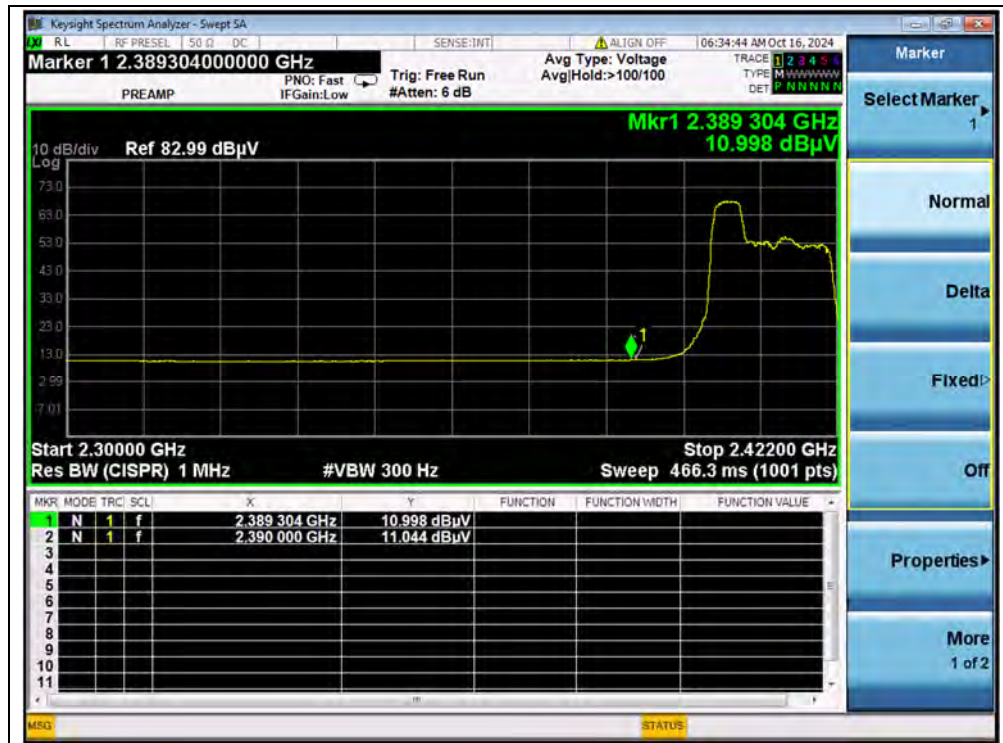
(AVERAGE, Channel 9, 802.11ax (HEW40))

**802.11ax (HEW20) RU52 Mode**

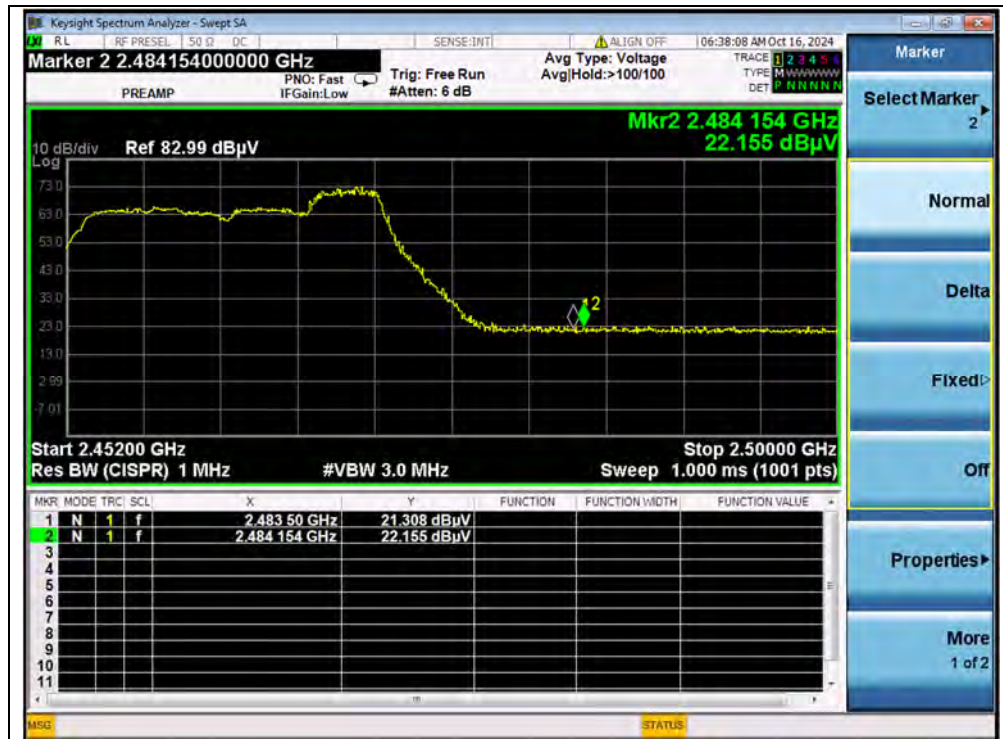
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
1	2386.99	PK	23.40	6.74	27.20	57.34	74	PASS
1	2390.00	AV	11.04	6.74	27.20	44.98	54	PASS
11	2484.15	PK	22.16	6.74	27.20	56.10	74	PASS
11	2483.50	AV	10.93	6.74	27.20	44.87	54	PASS



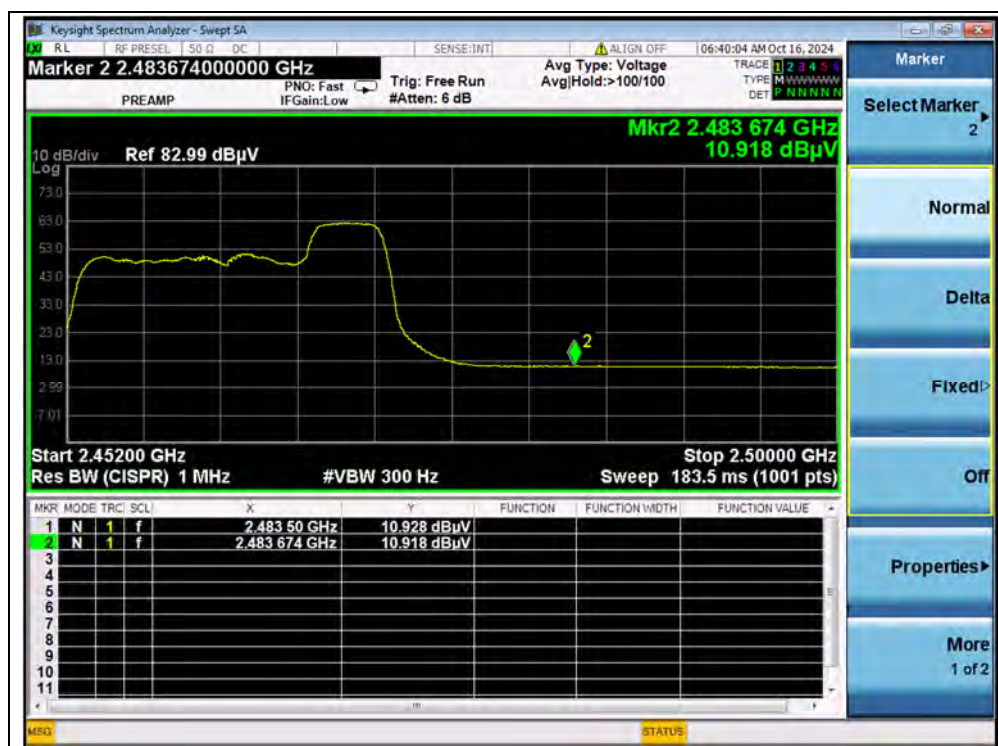
(PEAK, Channel 1, 802.11ax (HEW20) RU52)



(AVERAGE, Channel 1, 802.11ax (HEW20) RU52)



(PEAK, Channel 11, 802.11ax (HEW20) RU52)



(AVERAGE, Channel 11, 802.11ax (HEW20) RU52)



A.10. Radiated Emission

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 (X axis) test condition was recorded in this test report.

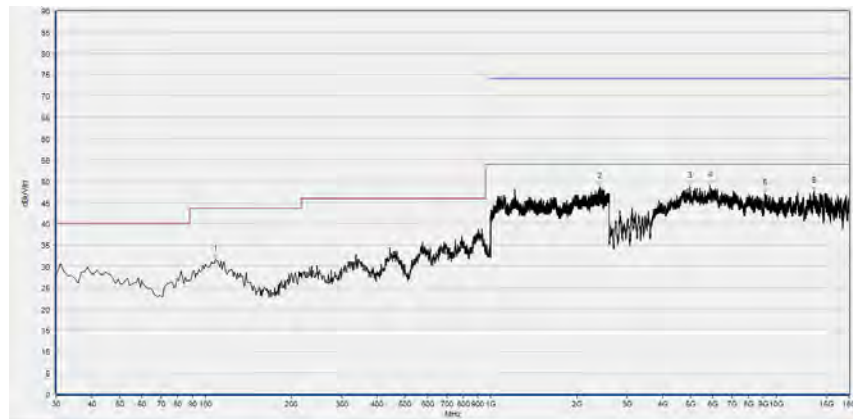
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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
108.570	31.76	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2408.000	48.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4993.160	48.73	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5855.560	48.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9095.720	47.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13595.600	47.57	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

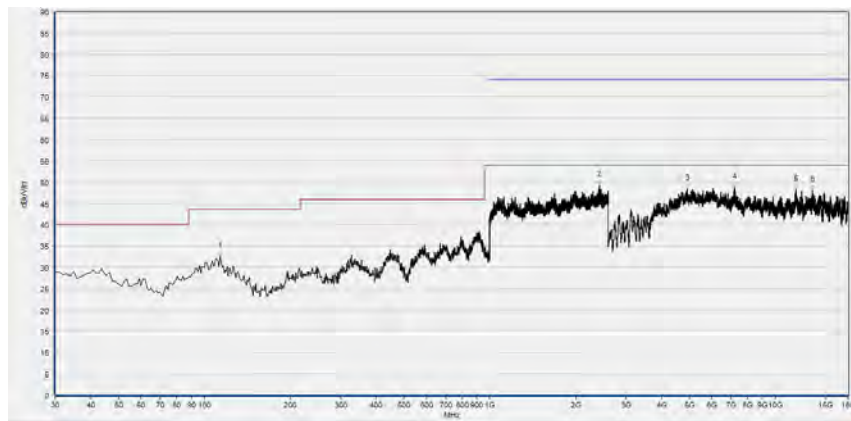


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
104.690	31.40	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2411.733	48.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5042.440	48.55	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6080.400	48.67	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8513.600	47.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11809.200	48.12	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

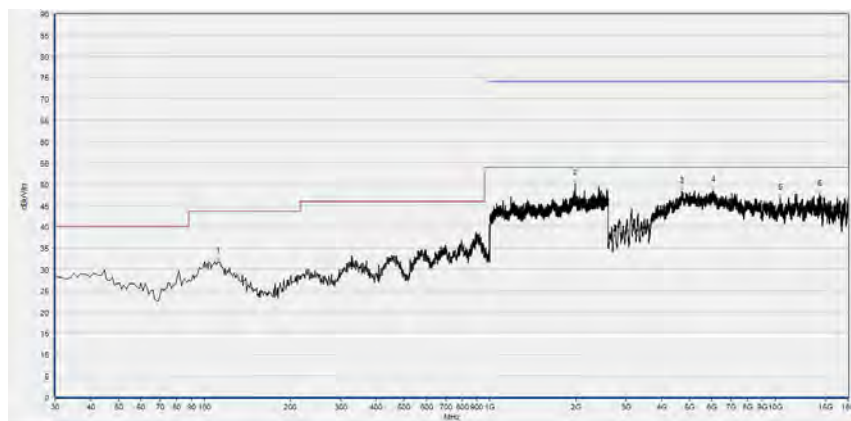


Plot for Channel 6



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
113.420	32.44	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2417.067	49.29	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4910.000	48.41	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7220.000	48.72	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11815.360	48.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13487.800	48.04	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

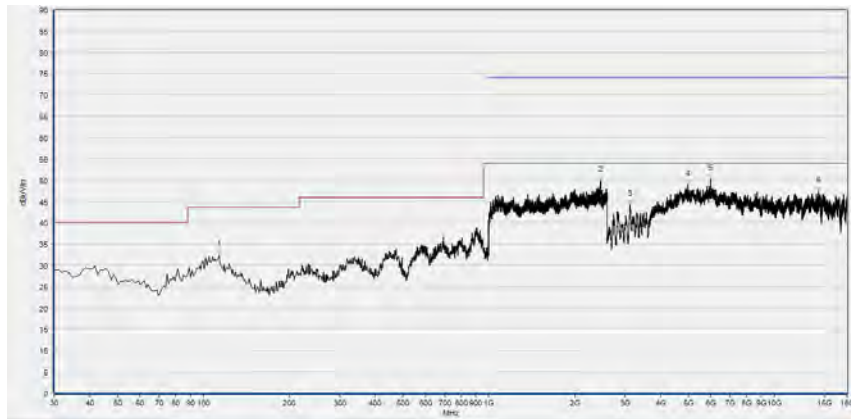


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
111.480	31.81	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1992.000	50.11	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4709.800	48.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6055.760	48.45	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10413.960	46.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14263.960	47.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

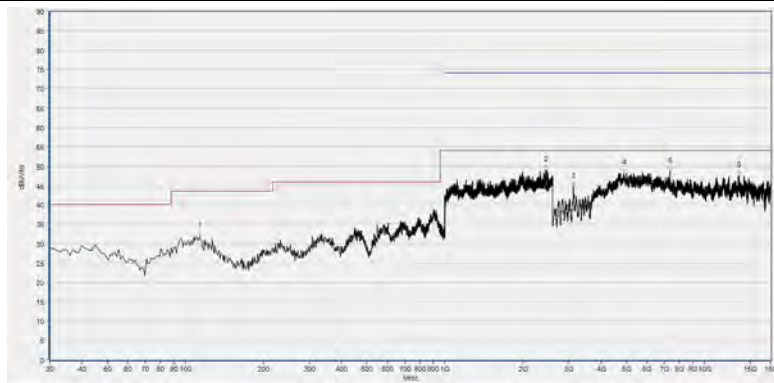


Plot for Channel 11



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
113.420	32.41	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2464.000	50.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3120.520	44.17	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4993.160	48.92	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5994.160	50.24	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14270.120	47.42	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
113.420	31.96	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2454.400	49.03	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3123.600	44.92	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4900.760	48.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7349.360	48.83	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13595.600	47.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

END OF REPORT