

PSD NVNT n40 2422MHz Ant0



PSD NVNT n40 2437MHz Ant0



PSD NVNT n40 2452MHz Ant0



PSD NVNT n40 2422MHz Ant1





PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1

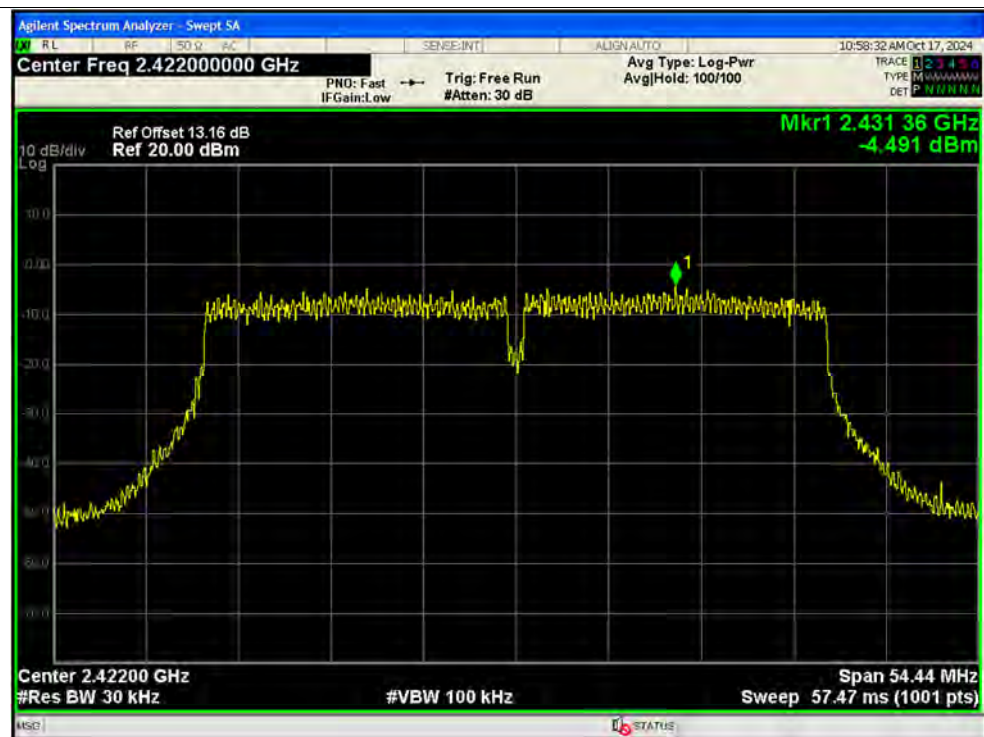




PSD NVNT n40 2422MHz Ant0



PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant0



PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant0



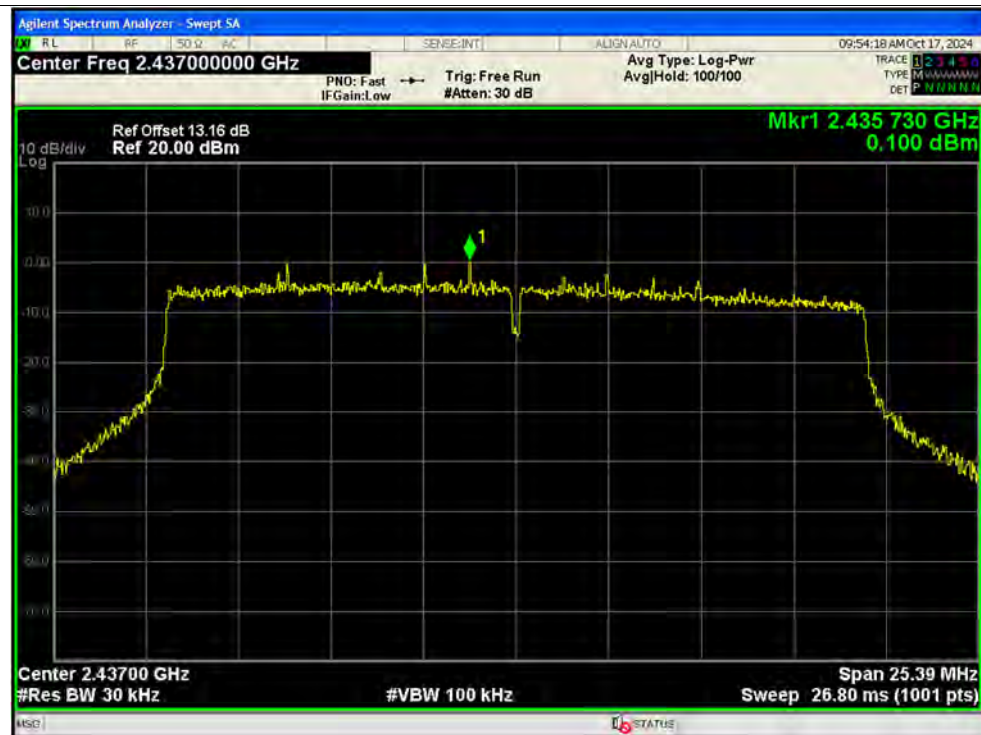
PSD NVNT n40 2452MHz Ant1



PSD NVNT ax20 2412MHz Ant0



PSD NVNT ax20 2437MHz Ant0

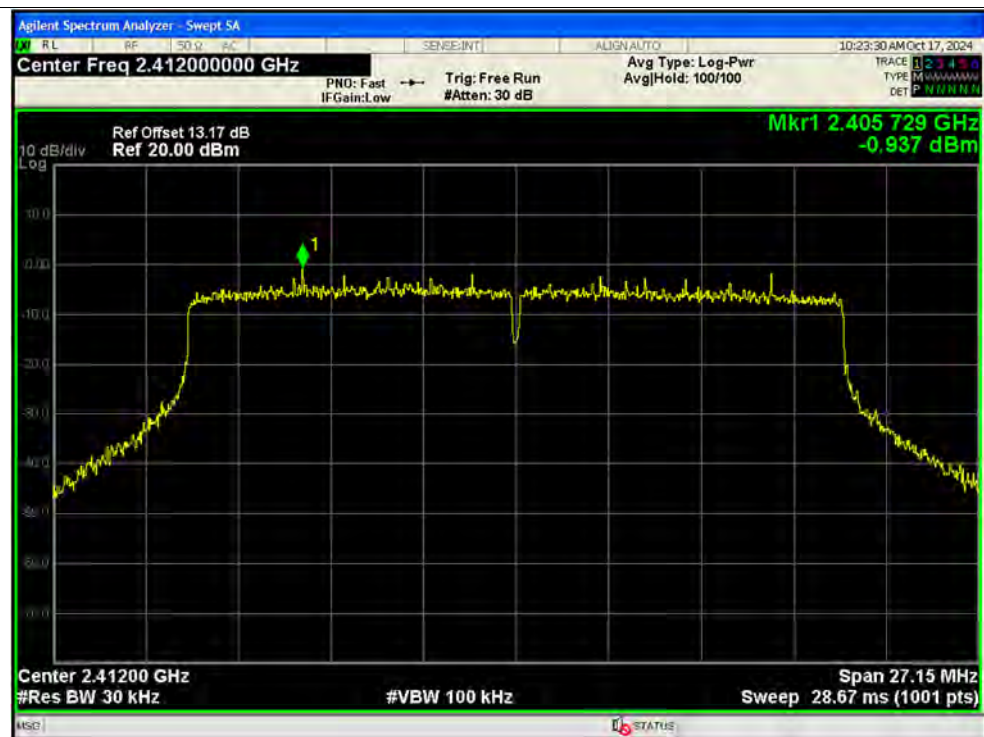




PSD NVNT ax20 2462MHz Ant0



PSD NVNT ax20 2412MHz Ant1





PSD NVNT ax20 2437MHz Ant1



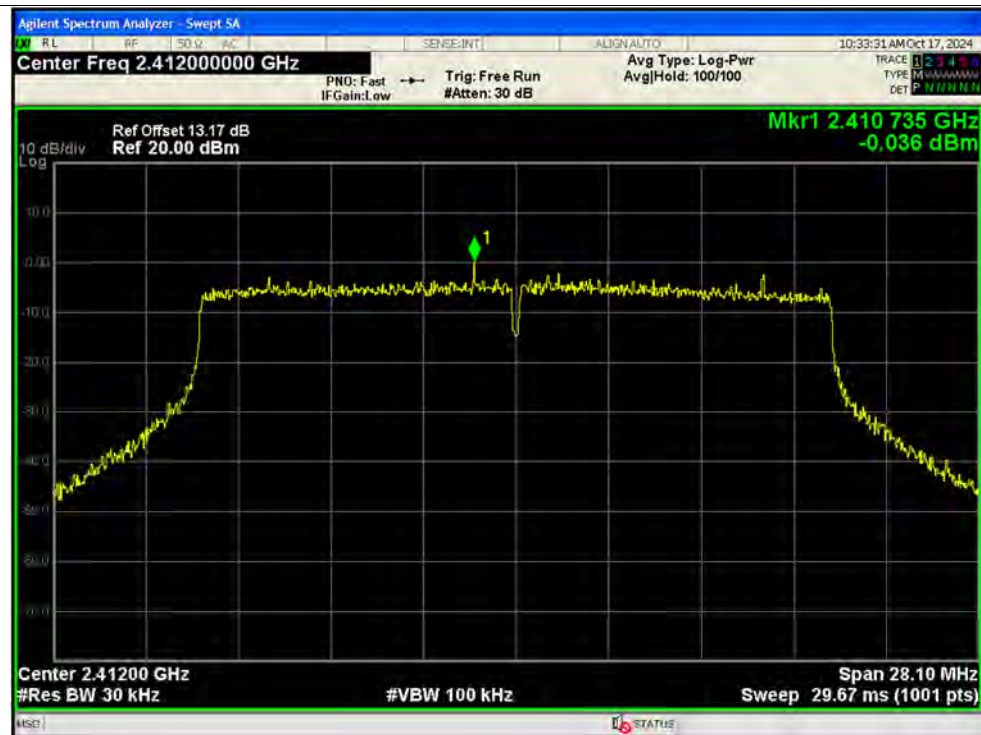
PSD NVNT ax20 2462MHz Ant1



PSD NVNT ax20 2412MHz Ant0



PSD NVNT ax20 2412MHz Ant1



PSD NVNT ax20 2437MHz Ant0



PSD NVNT ax20 2437MHz Ant1



PSD NVNT ax20 2462MHz Ant0



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PSD NVNT ax40 2437MHz Ant1



PSD NVNT ax40 2452MHz Ant0



PSD NVNT ax40 2452MHz Ant1





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 +USB Cable + WIFI TX

Test voltage: AC 120V/60Hz

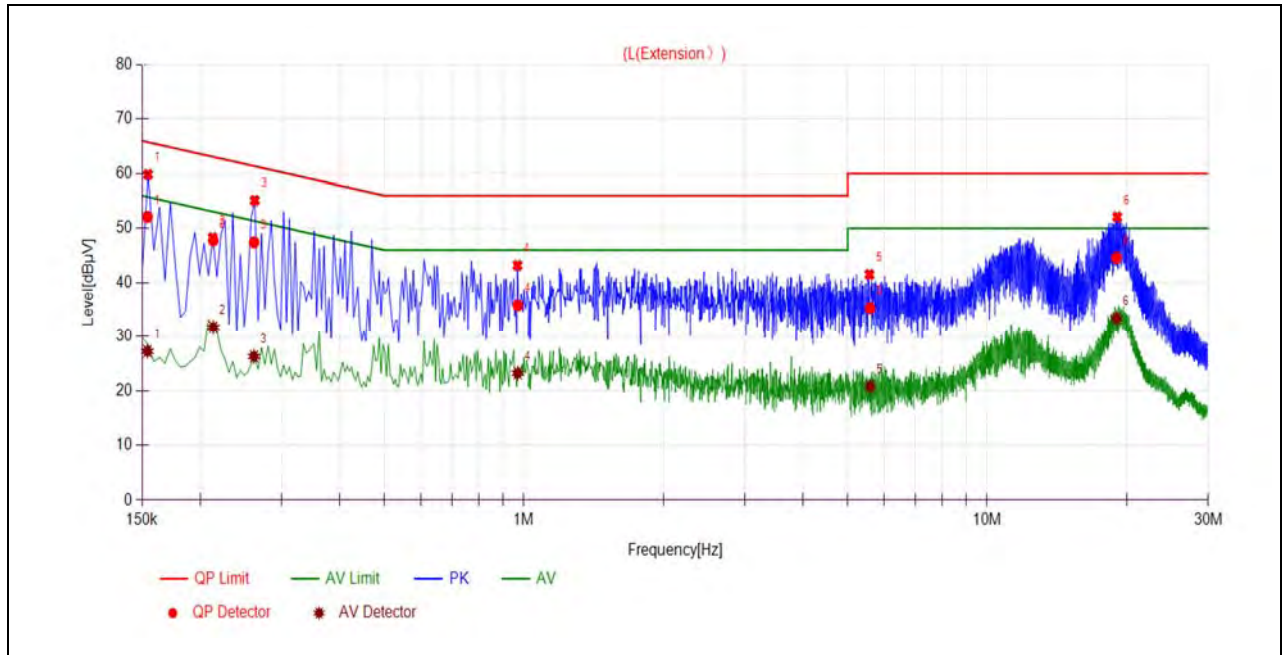
The measurement results are obtained as below:

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

U_R : Receiver Reading

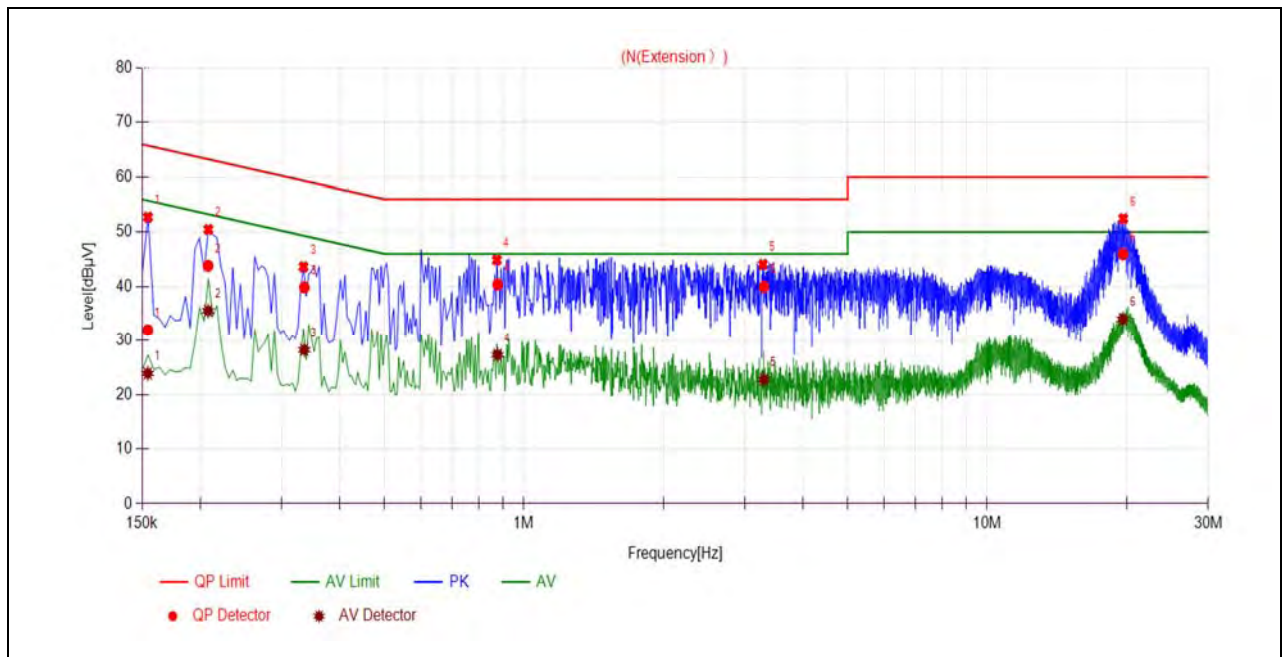
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1540	52.10	27.25	65.78	55.78	Line	PASS
2	0.2136	47.78	31.74	63.07	53.07		PASS
3	0.2616	47.44	26.29	61.38	51.38		PASS
4	0.9700	35.84	23.19	56.00	46.00		PASS
5	5.5891	35.32	20.74	60.00	50.00		PASS
6	19.0200	44.57	33.44	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	0.1543	31.95	23.88	65.76	55.76	Neutral	PASS
2	0.2082	43.83	35.55	63.28	53.28		PASS
3	0.3358	39.85	28.24	59.31	49.31		PASS
4	0.8780	40.39	27.32	56.00	46.00		PASS
5	3.2981	39.98	22.77	56.00	46.00		PASS
6	19.6374	45.96	33.99	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

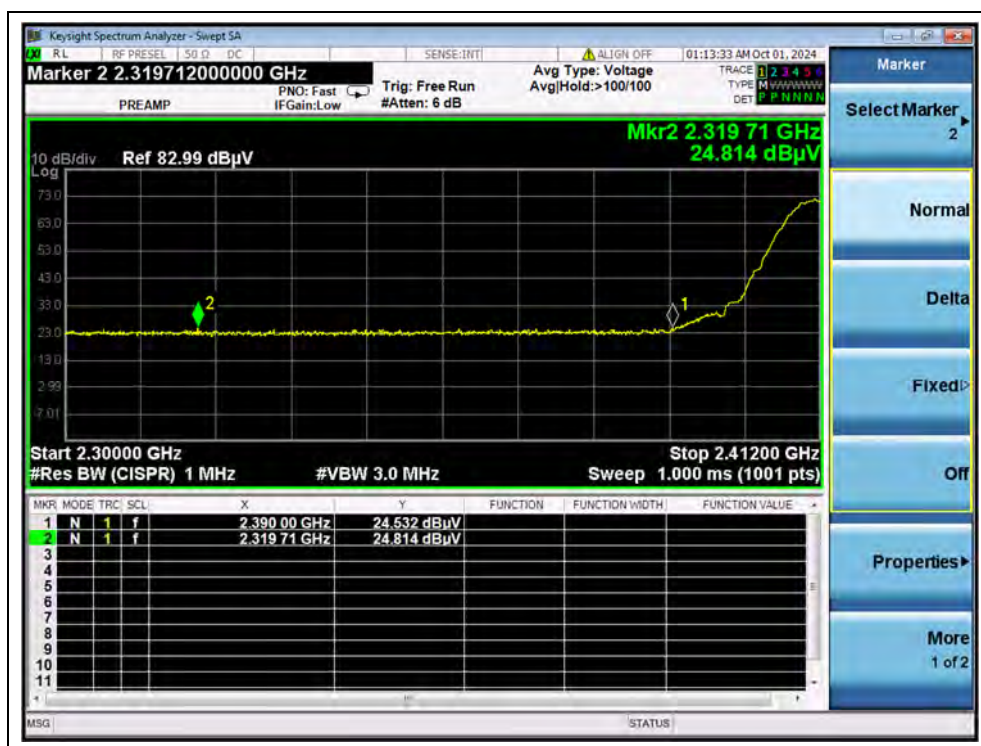
Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (horizontal) was recorded in this test report.

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

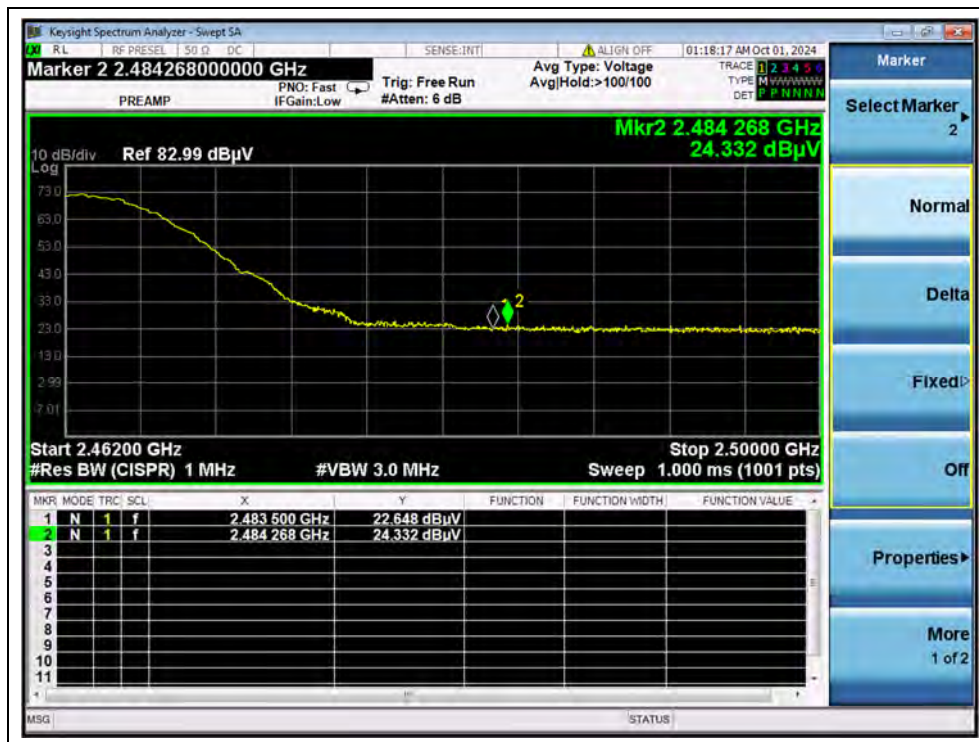
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
1	2319.71	PK	24.81	6.74	27.20	60.81	74	PASS
1	2390.00	AV	12.57	6.74	27.20	48.57	54	PASS
11	2490.58	PK	25.29	6.74	27.20	61.29	74	PASS
11	2484.88	AV	12.37	6.74	27.20	48.37	54	PASS



(PEAK, Channel 1, 802.11b)



(AVERAGE, Channel 1, 802.11b)



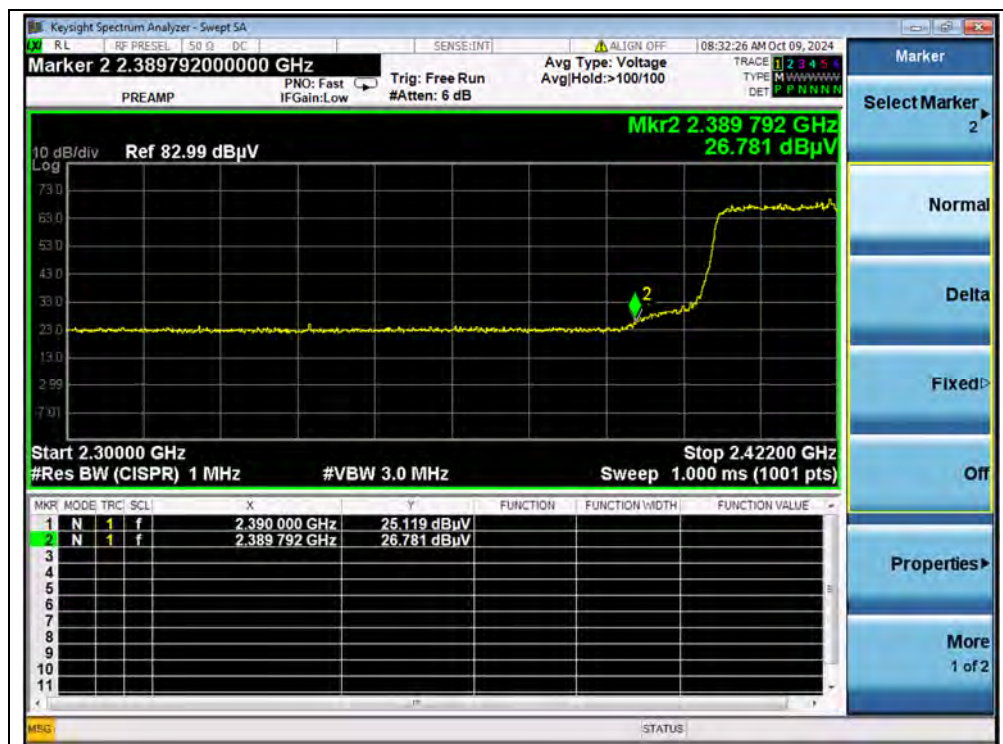
(PEAK, Channel 11, 802.11b)



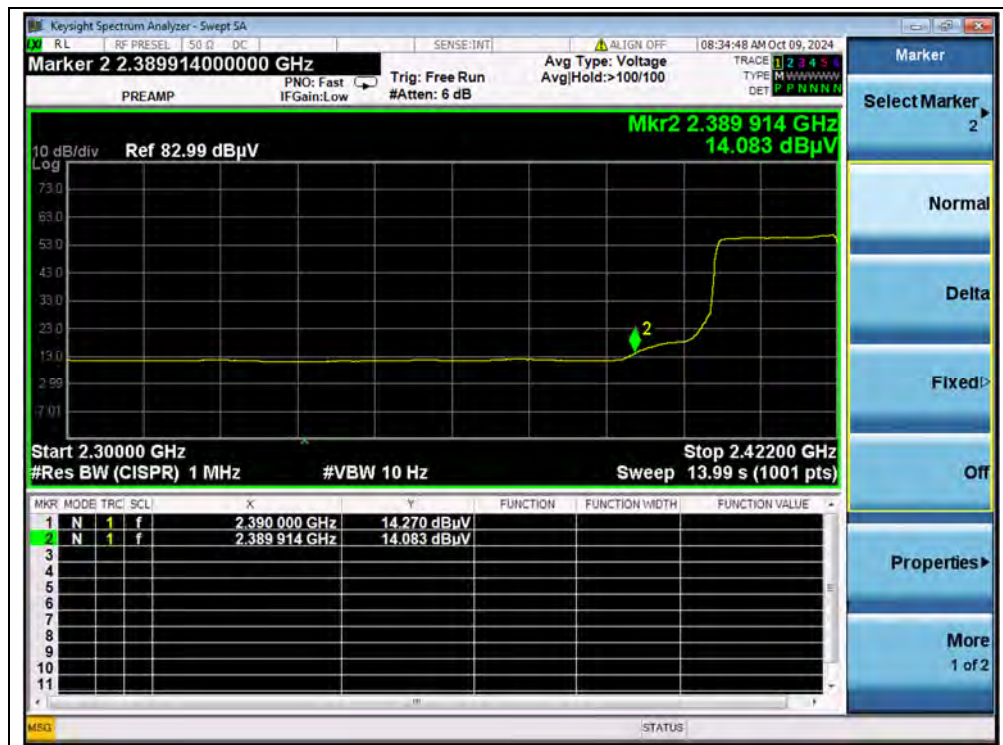
(AVERAGE, Channel 11, 802.11b)

**802.11ax (HEW40) Mode**

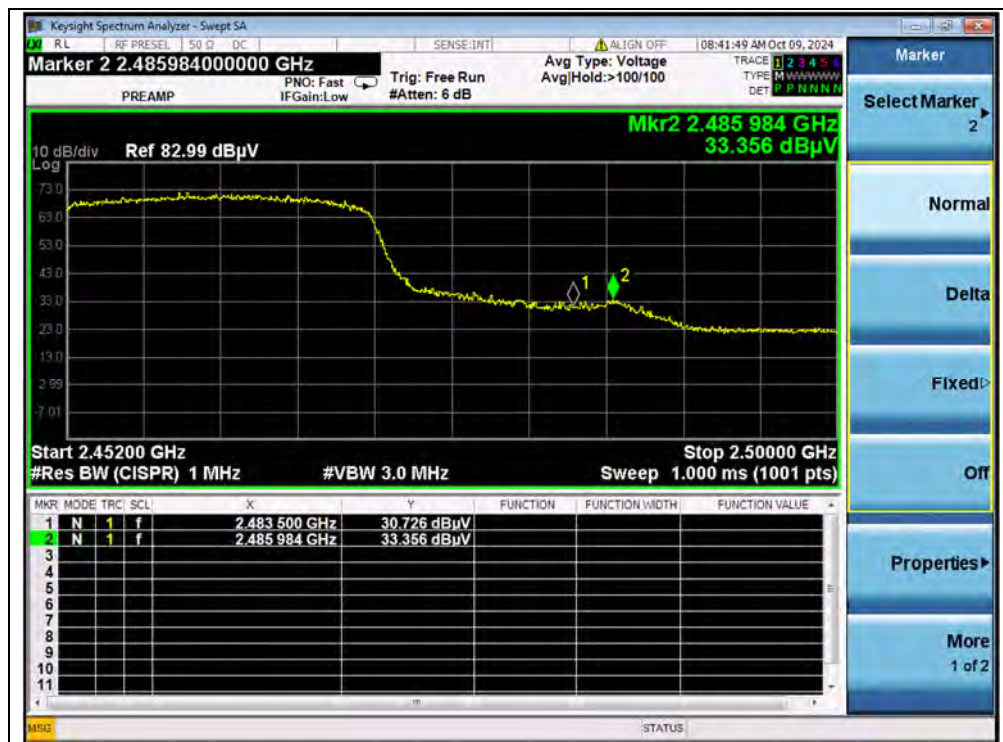
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
3	2389.79	PK	26.78	6.74	27.20	62.78	74	PASS
3	2390.00	AV	14.27	6.74	27.20	50.27	54	PASS
9	2485.98	PK	33.36	6.74	27.20	69.36	74	PASS
9	2483.68	AV	18.45	6.74	27.20	54.45	54	PASS



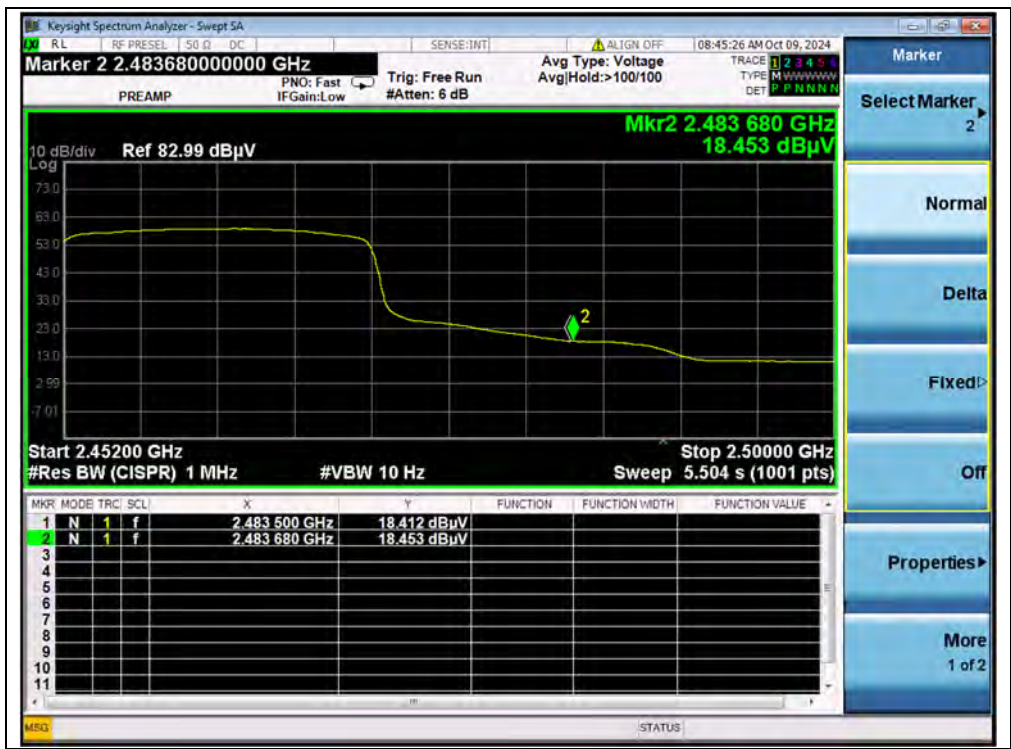
(PEAK, Channel 3, 802.11ax (HEW40))



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



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



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



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.

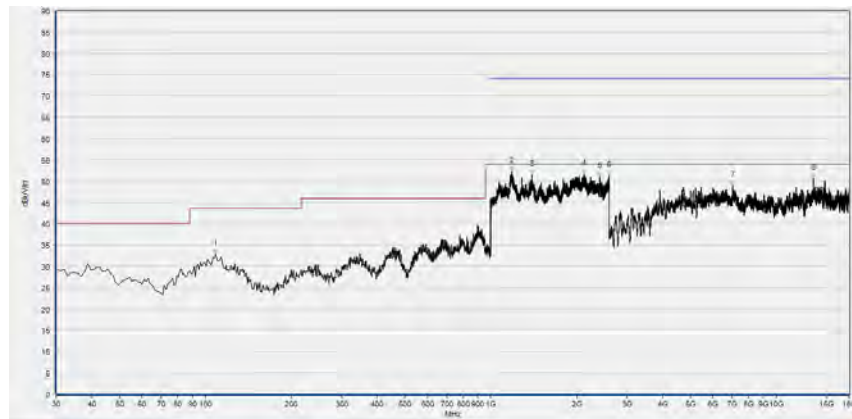
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

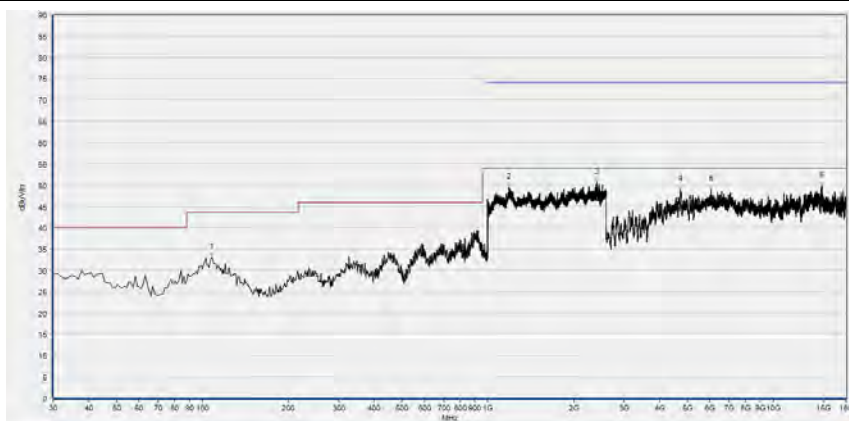
**802.11b Mode**

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	32.90	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1186.133	52.24	N/A	40.63	74.00	N/A	54.00	Horizontal	PASS
1394.667	51.40	N/A	39.23	74.00	N/A	54.00	Horizontal	PASS
2118.400	51.64	N/A	40.12	74.00	N/A	54.00	Horizontal	PASS
2412.800	51.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2589.333	51.22	N/A	40.07	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
107.600	33.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1187.733	49.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2408.533	50.60	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4734.440	49.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6049.600	48.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14759.840	49.77	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

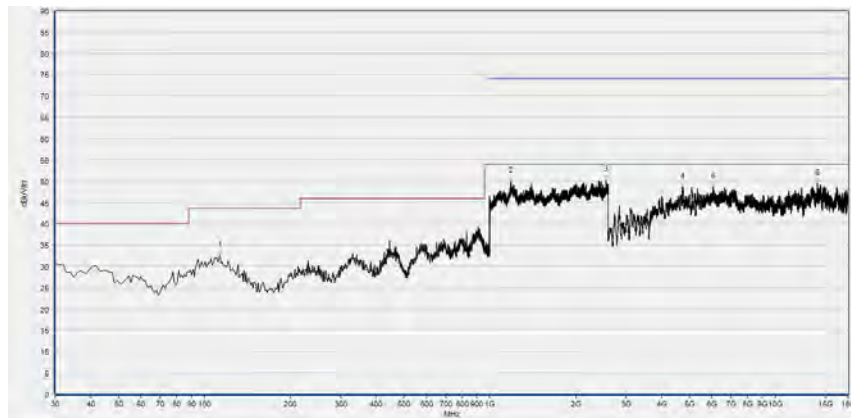
(Antenna Vertical, 30MHz to 18GHz)

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
116.330	32.68	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1179.200	52.63	N/A	41.44	74.00	N/A	54.00	Horizontal	PASS
1404.800	50.63	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2128.533	51.78	N/A	40.04	74.00	N/A	54.00	Horizontal	PASS
4746.760	48.92	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14787.560	49.16	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

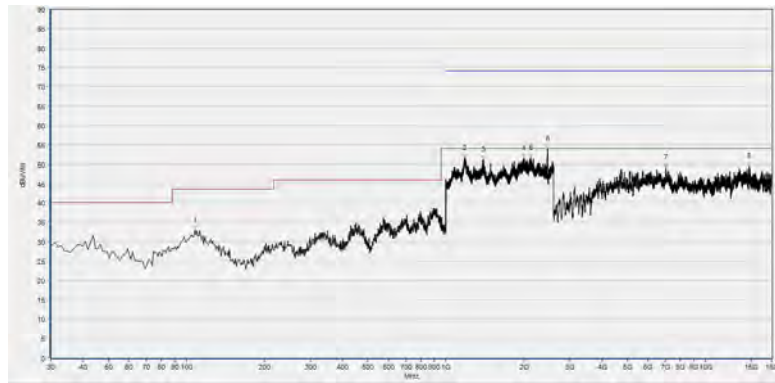


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
113.420	32.37	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1188.267	49.87	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2550.400	50.31	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4737.520	48.61	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6040.360	48.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14079.160	49.44	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

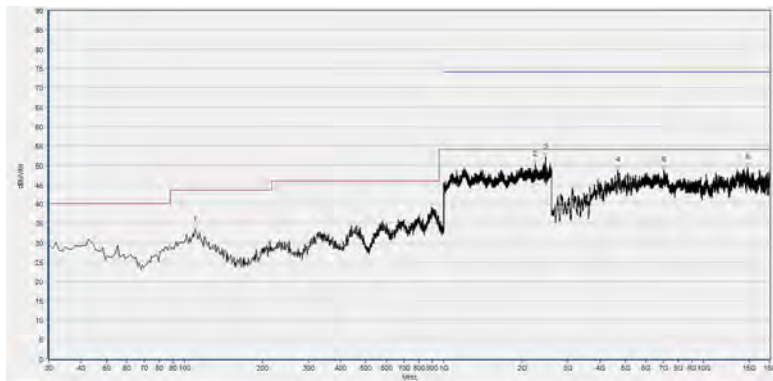


Plot for Channel 11



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
107.600	33.01	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1176.533	51.60	N/A	40.91	74.00	N/A	54.00	Horizontal	PASS
1392.000	51.06	N/A	39.11	74.00	N/A	54.00	Horizontal	PASS
1995.200	51.43	N/A	39.79	74.00	N/A	54.00	Horizontal	PASS
2126.400	51.67	N/A	39.89	74.00	N/A	54.00	Horizontal	PASS
2462.933	53.93	N/A	N/A	74.00	N/A	54.00	Horizontal	N/A
7050.600	49.15	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
109.540	33.36	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2245.867	50.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2462.933	52.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4663.600	48.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7029.040	48.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14756.760	49.51	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

END OF REPORT