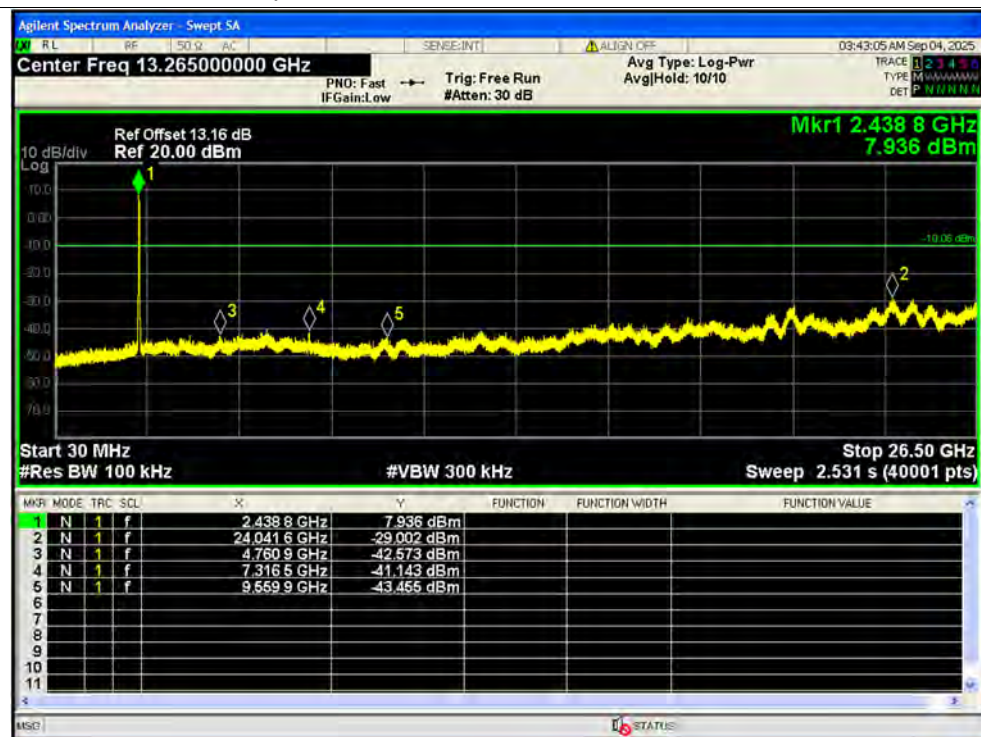


Tx. Spurious NVNT n20 2437MHz Ant1 Ref



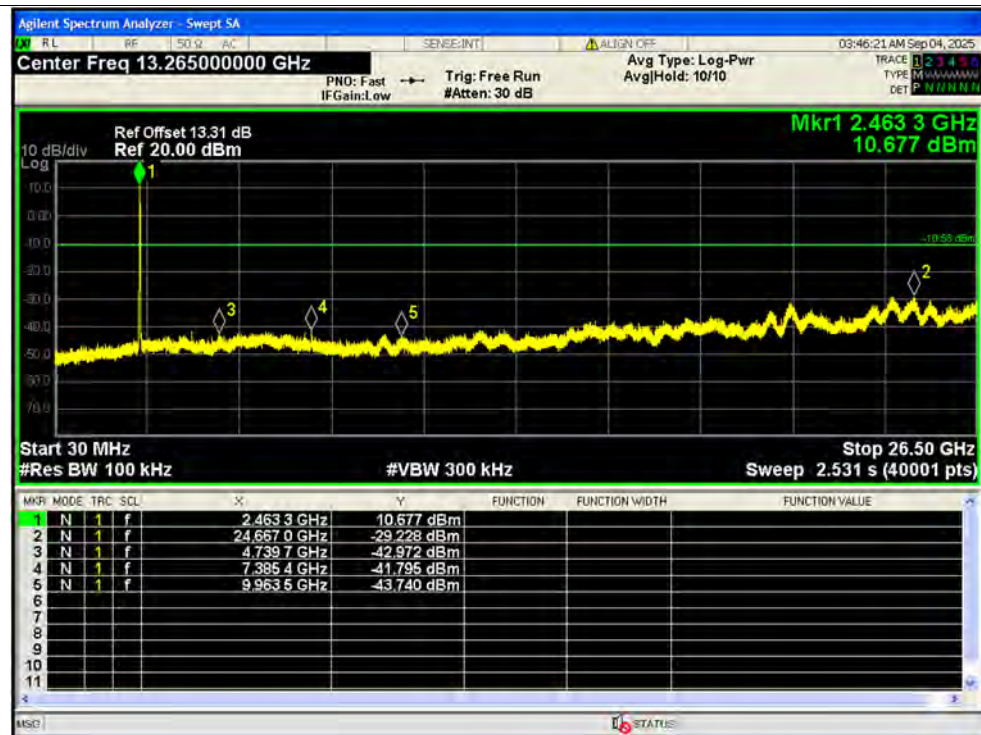
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



Tx. Spurious NVNT n20 2462MHz Ant1 Ref



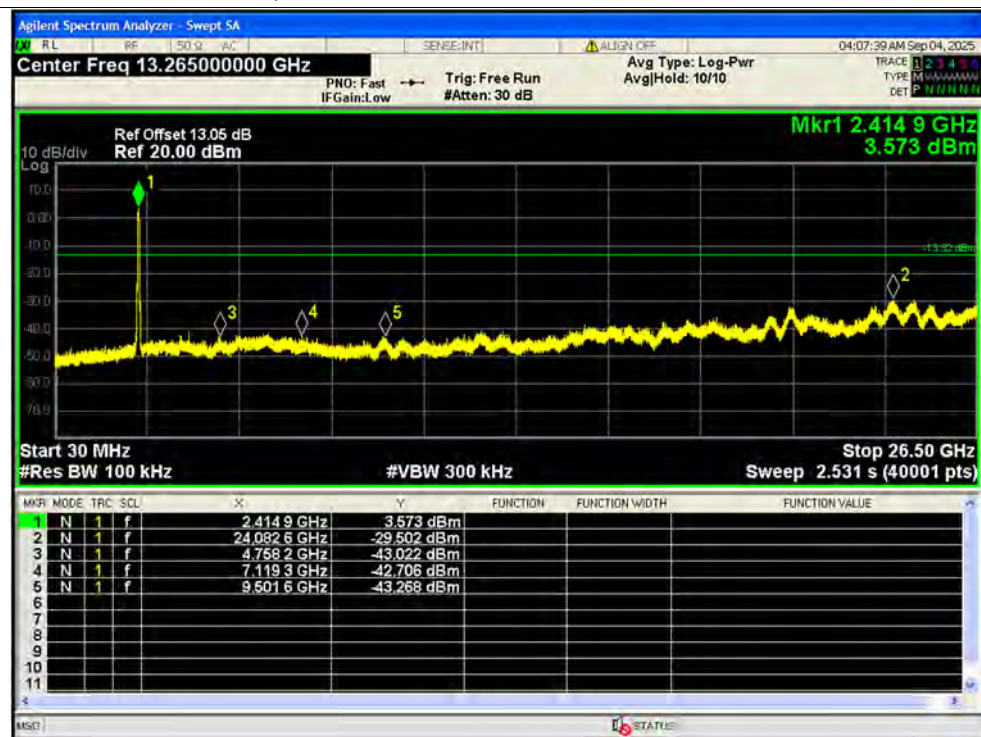
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



Tx. Spurious NVNT n40 2422MHz Ant1 Ref



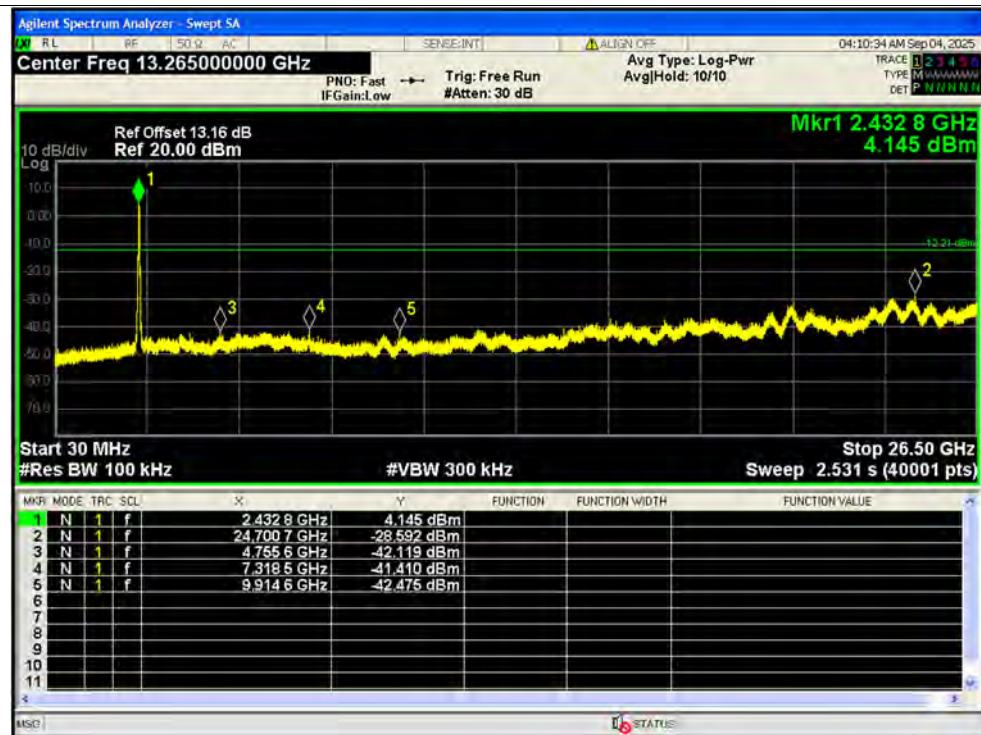
Tx. Spurious NVNT n40 2422MHz Ant1 Emission



Tx. Spurious NVNT n40 2437MHz Ant1 Ref



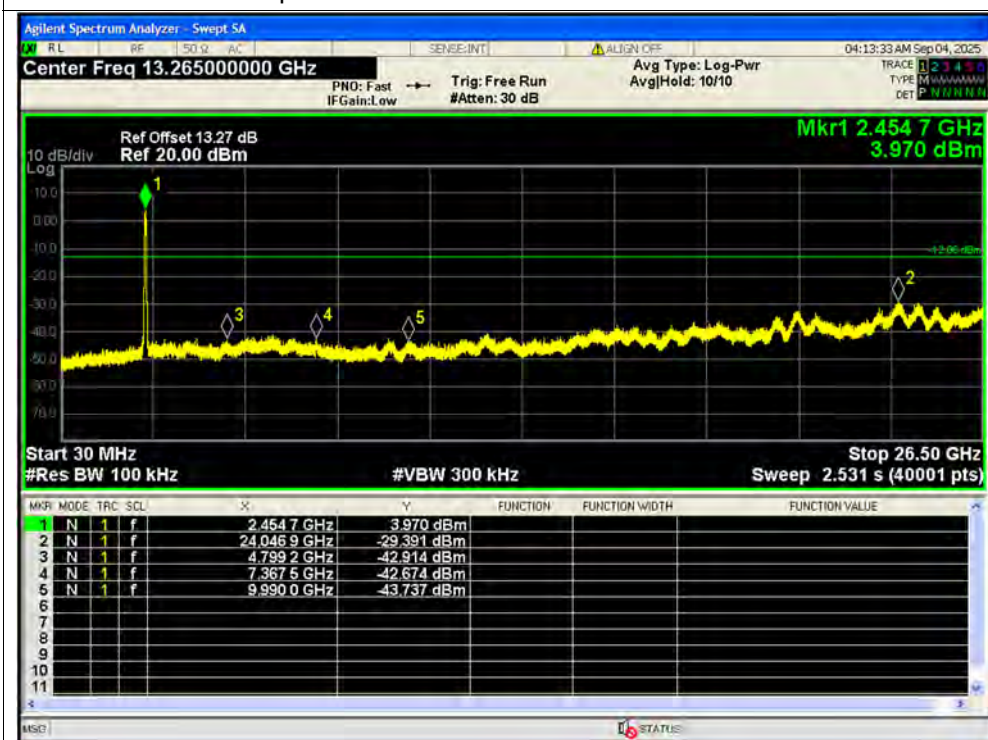
Tx. Spurious NVNT n40 2437MHz Ant1 Emission



Tx. Spurious NVNT n40 2452MHz Ant1 Ref



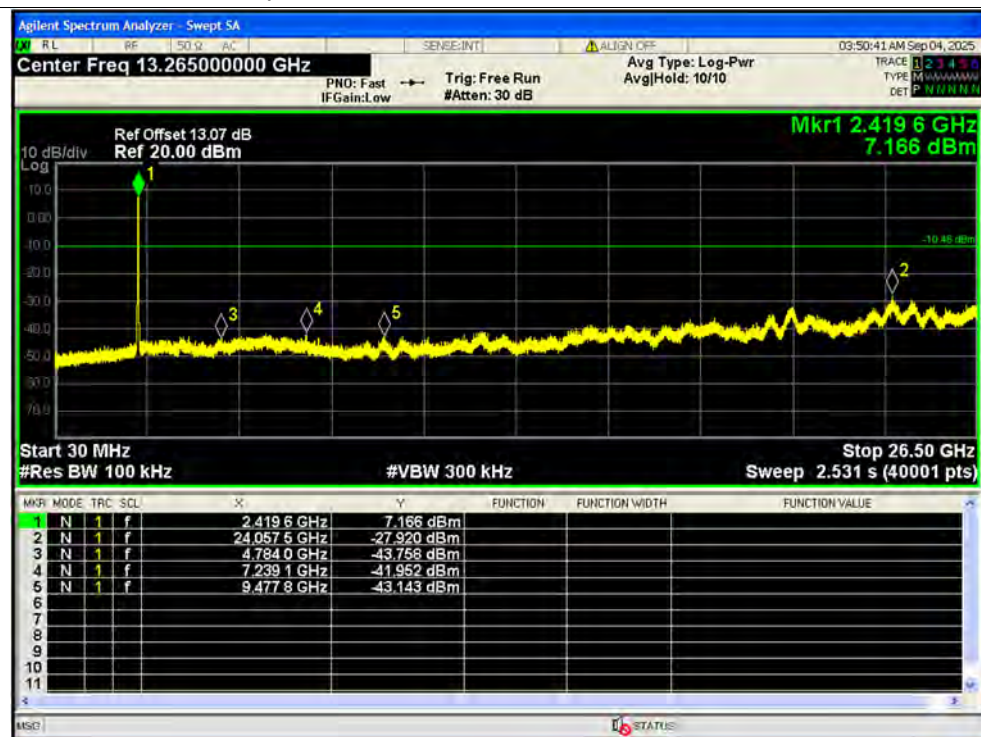
Tx. Spurious NVNT n40 2452MHz Ant1 Emission



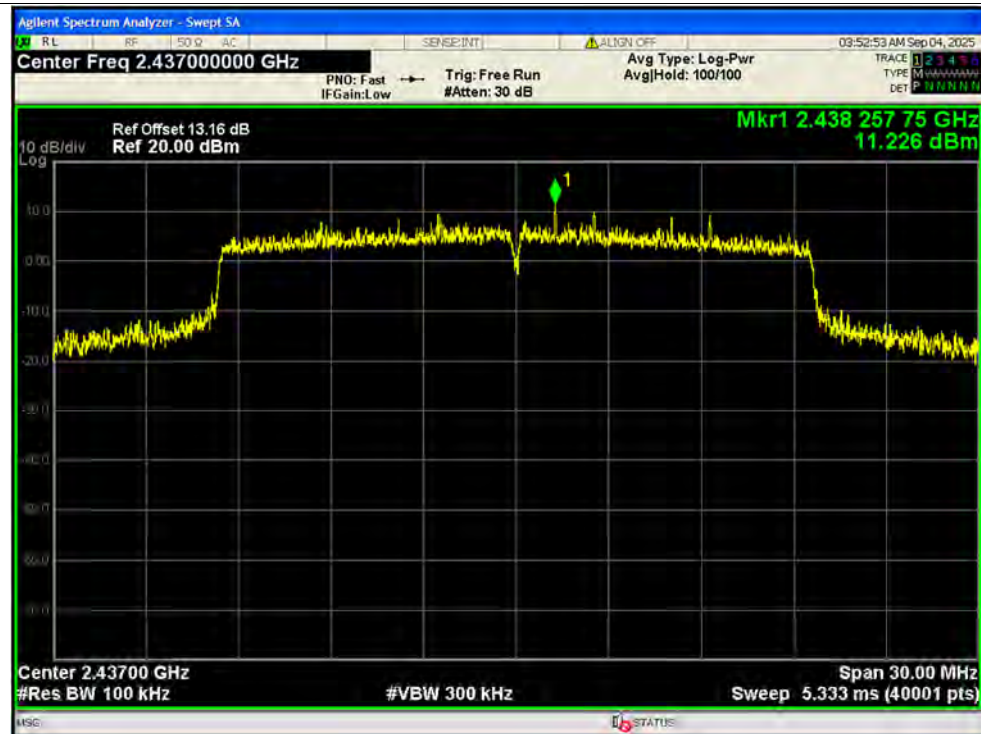
Tx. Spurious NVNT ax20 2412MHz Ant1 Ref



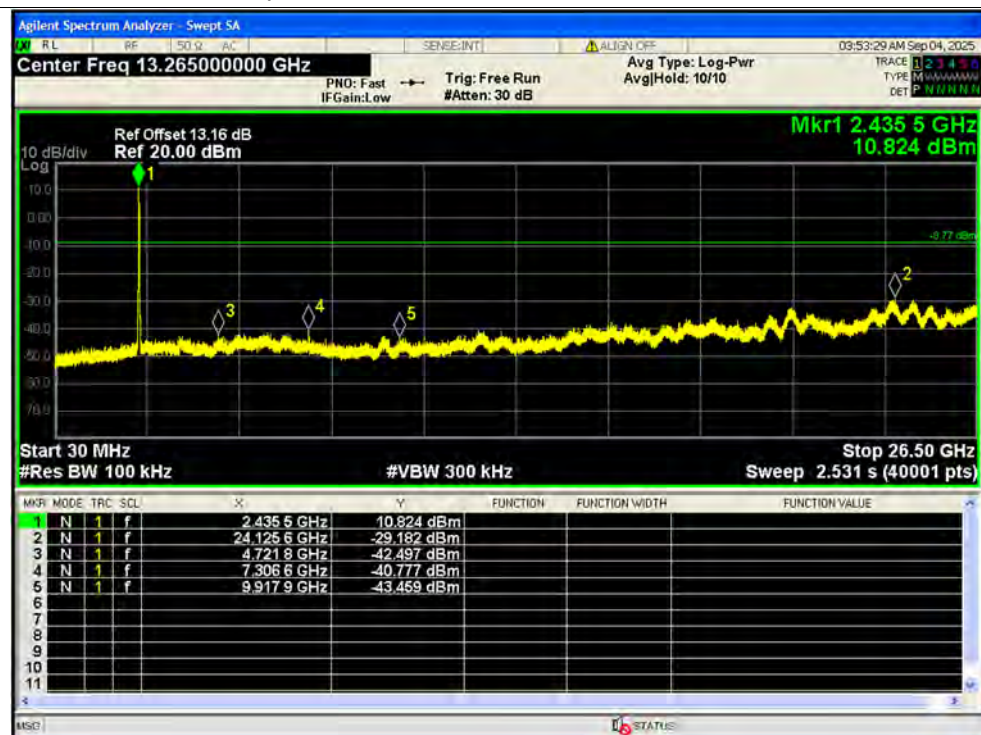
Tx. Spurious NVNT ax20 2412MHz Ant1 Emission



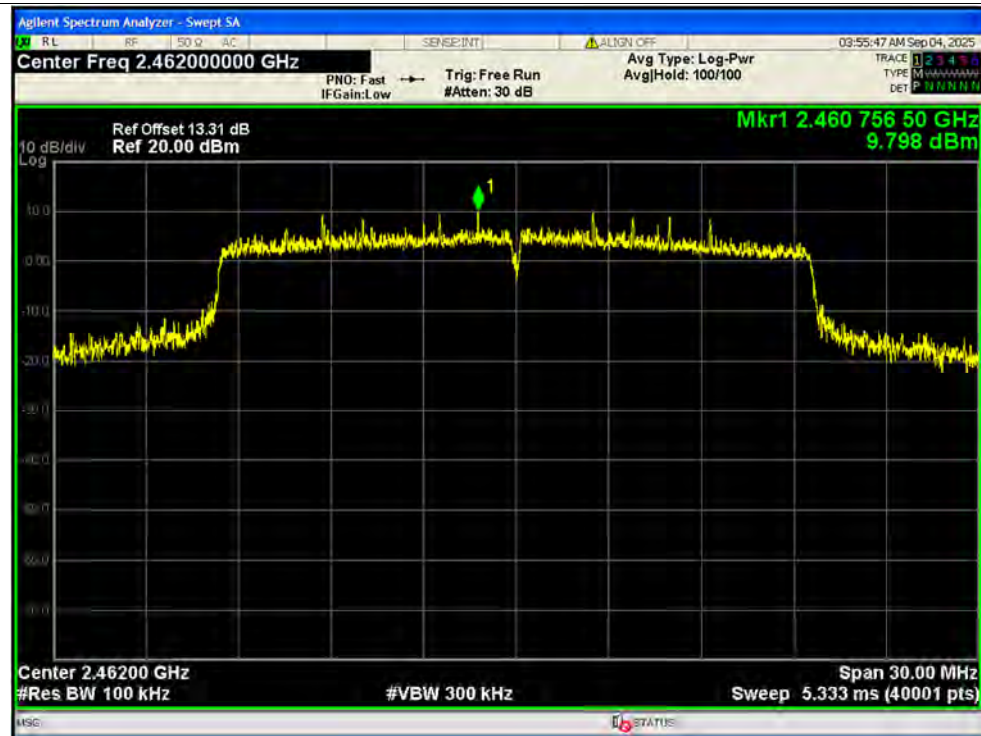
Tx. Spurious NVNT ax20 2437MHz Ant1 Ref



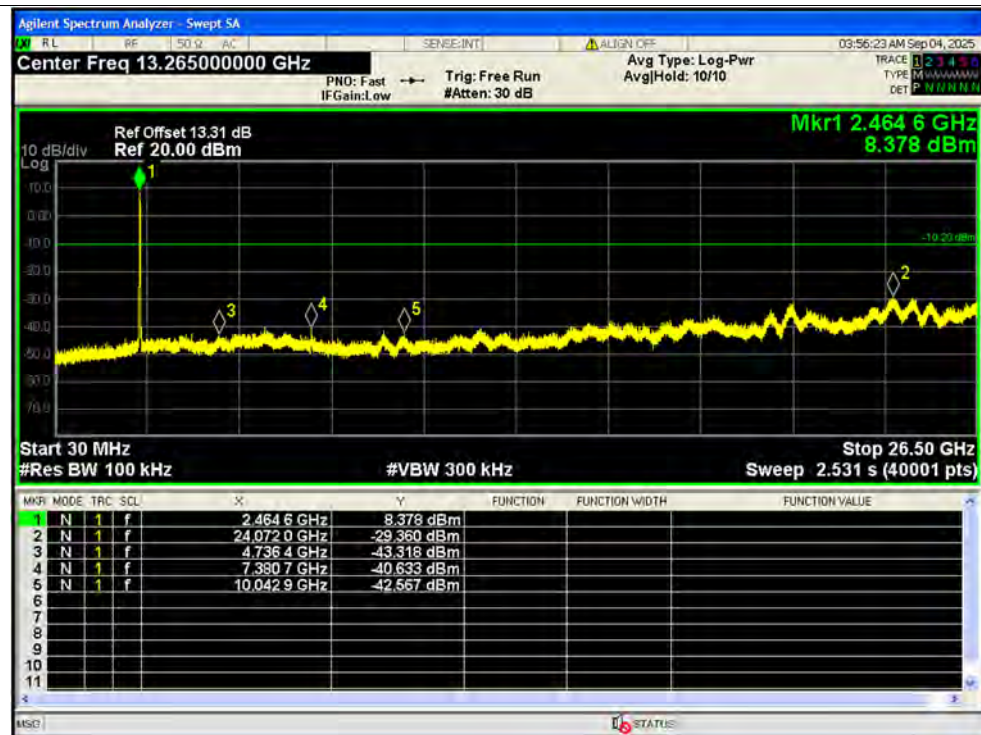
Tx. Spurious NVNT ax20 2437MHz Ant1 Emission



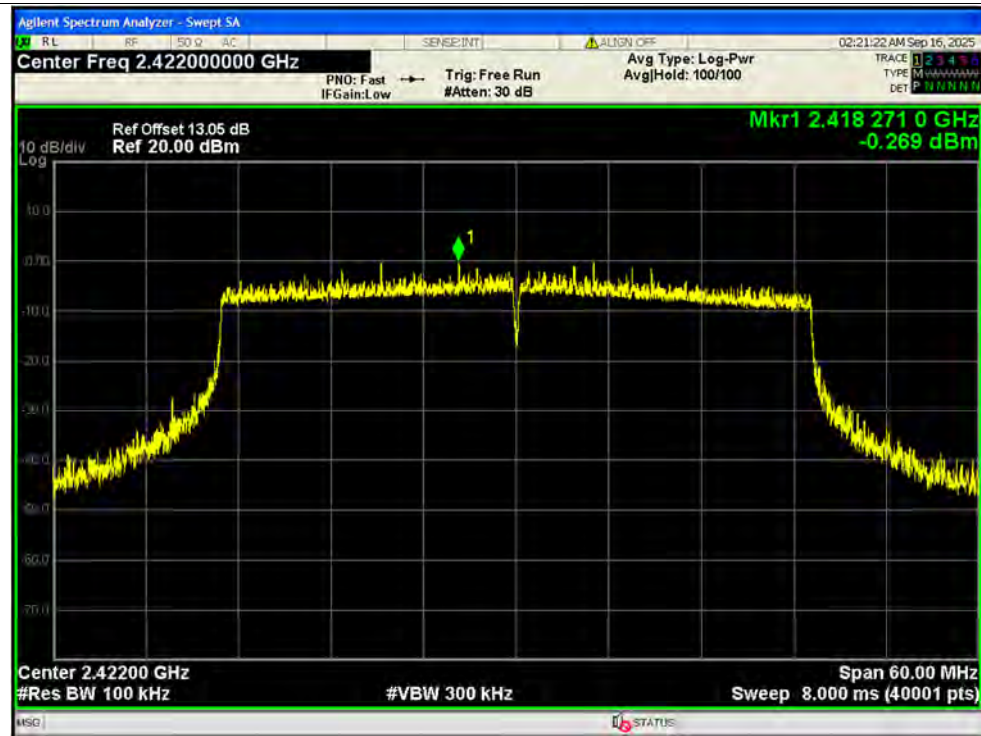
Tx. Spurious NVNT ax20 2462MHz Ant1 Ref



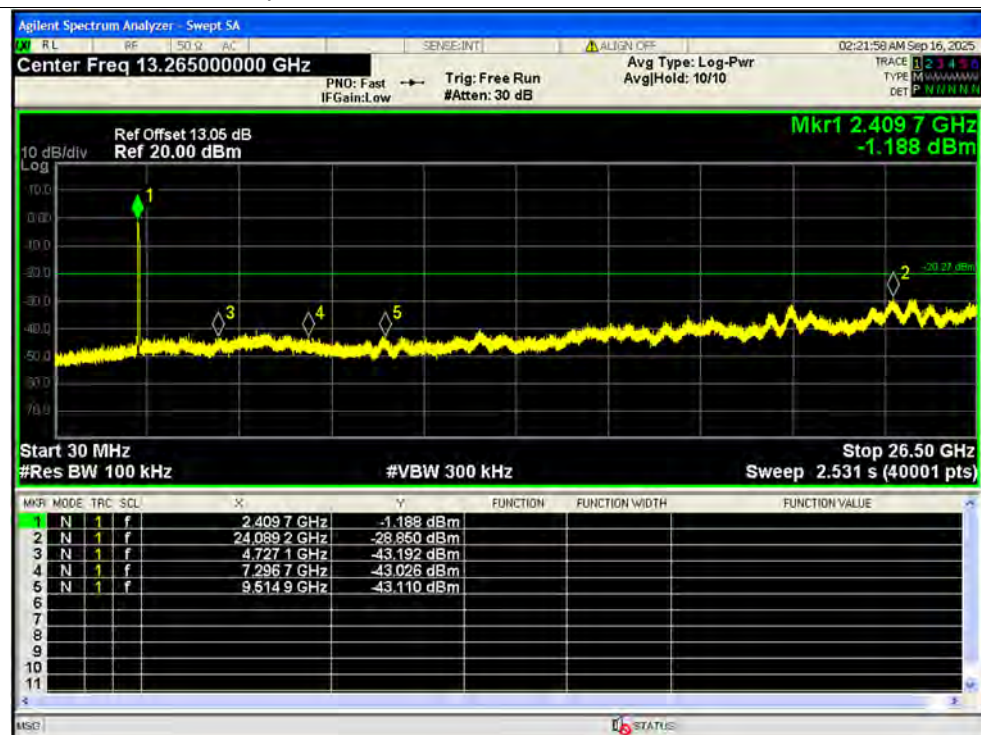
Tx. Spurious NVNT ax20 2462MHz Ant1 Emission



Tx. Spurious NVNT ax40 2422MHz Ant1 Ref



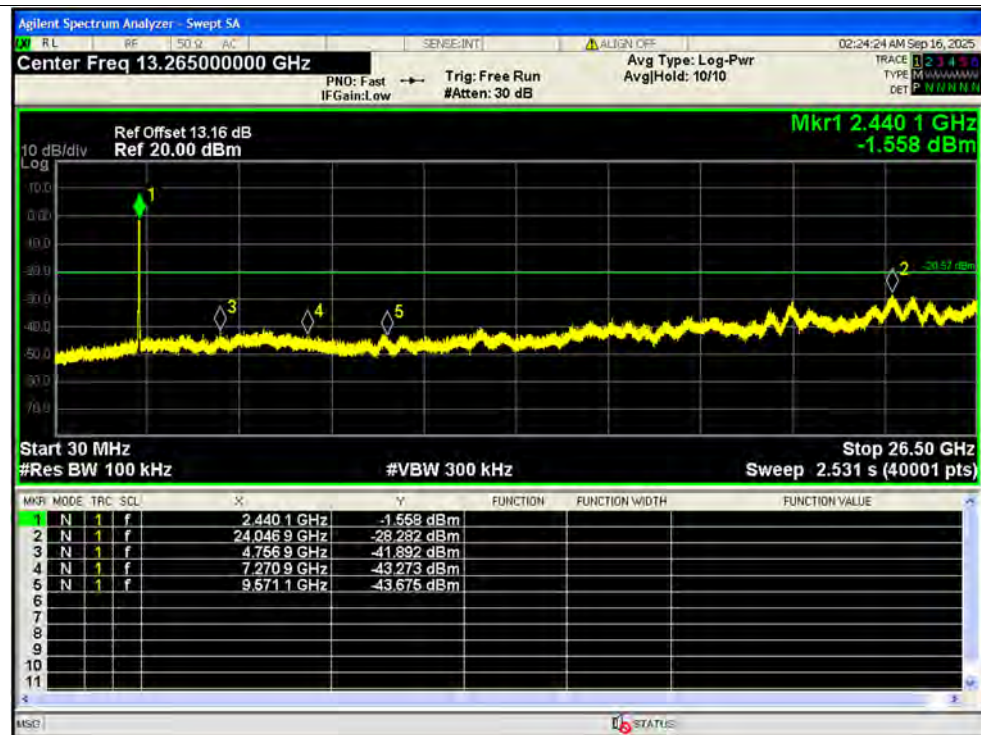
Tx. Spurious NVNT ax40 2422MHz Ant1 Emission



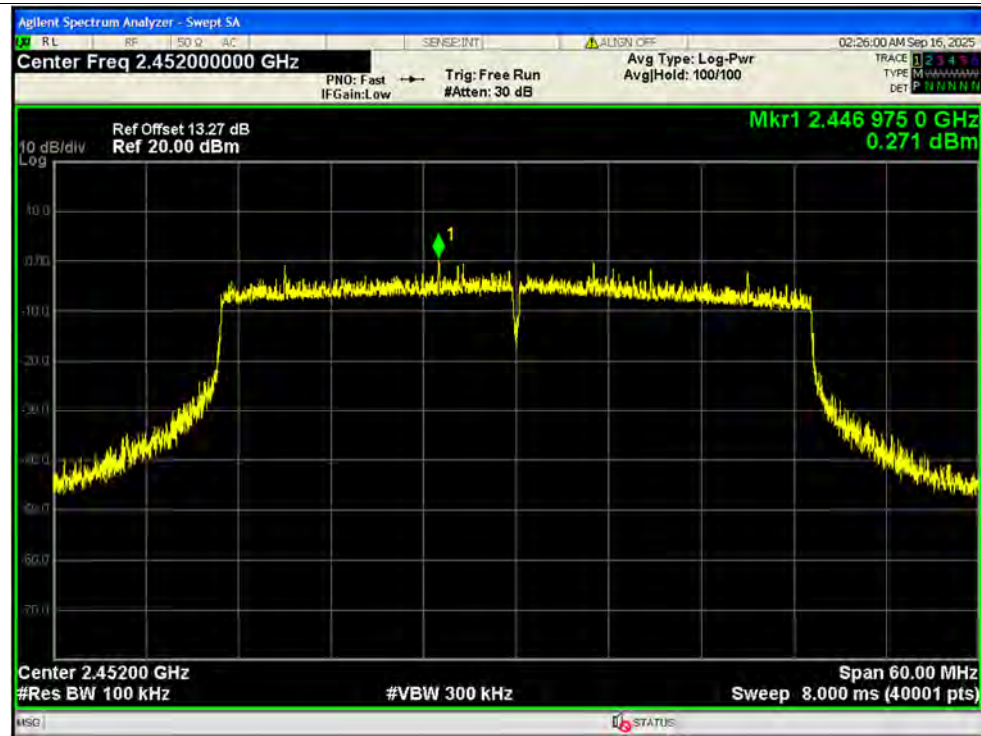
Tx. Spurious NVNT ax40 2437MHz Ant1 Ref



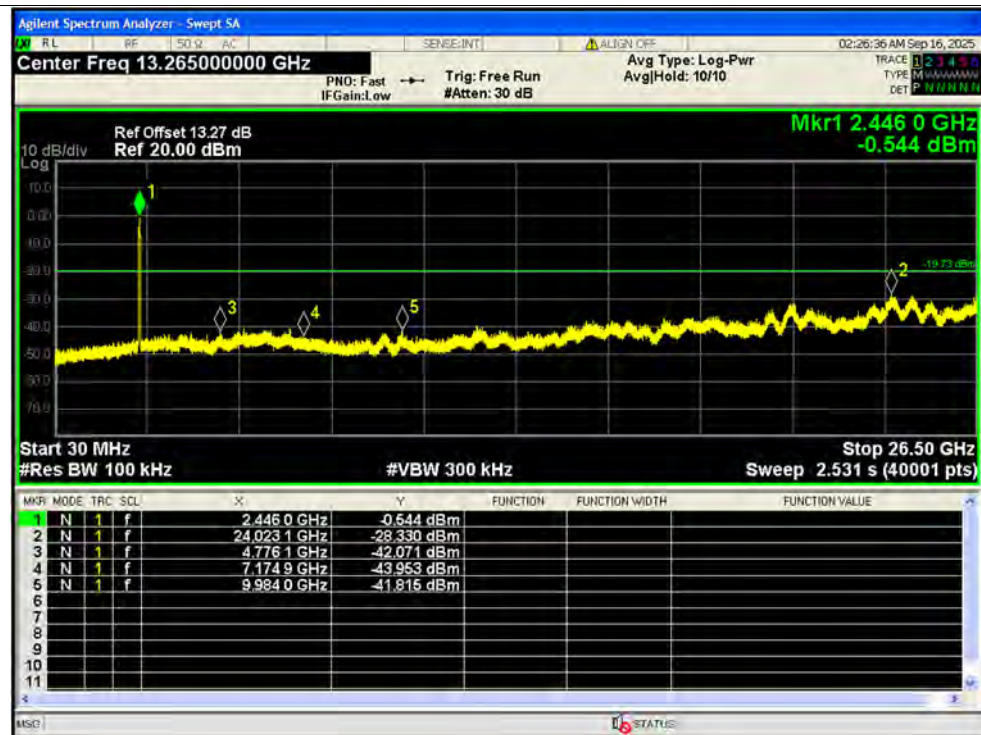
Tx. Spurious NVNT ax40 2437MHz Ant1 Emission



Tx. Spurious NVNT ax40 2452MHz Ant1 Ref



Tx. Spurious NVNT ax40 2452MHz Ant1 Emission



**A.6. Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-38.16	-20	Pass
NVNT	b	2462	Ant1	-56.24	-20	Pass
NVNT	g	2412	Ant1	-23.83	-20	Pass
NVNT	g	2462	Ant1	-38.3	-20	Pass
NVNT	n20	2412	Ant1	-22.66	-20	Pass
NVNT	n20	2462	Ant1	-32.82	-20	Pass
NVNT	n40	2422	Ant1	-23.94	-20	Pass
NVNT	n40	2452	Ant1	-27.23	-20	Pass
NVNT	ax20	2412	Ant1	-24.08	-20	Pass
NVNT	ax20	2462	Ant1	-33.47	-20	Pass
NVNT	ax40	2422	Ant1	-29.77	-20	Pass
NVNT	ax40	2452	Ant1	-40.11	-20	Pass

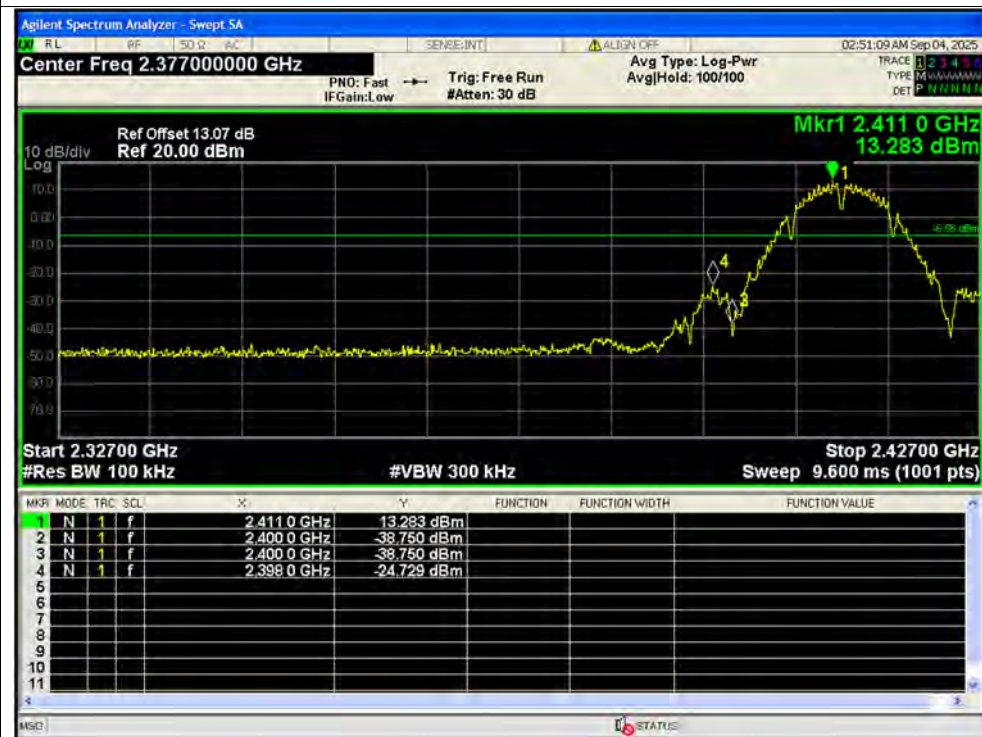


Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission



Band Edge NVNT b 2462MHz Ant1 Ref



Band Edge NVNT b 2462MHz Ant1 Emission



Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission



Band Edge NVNT g 2462MHz Ant1 Ref



Band Edge NVNT g 2462MHz Ant1 Emission



Band Edge NVNT n20 2412MHz Ant1 Ref



Band Edge NVNT n20 2412MHz Ant1 Emission



Band Edge NVNT n20 2462MHz Ant1 Ref



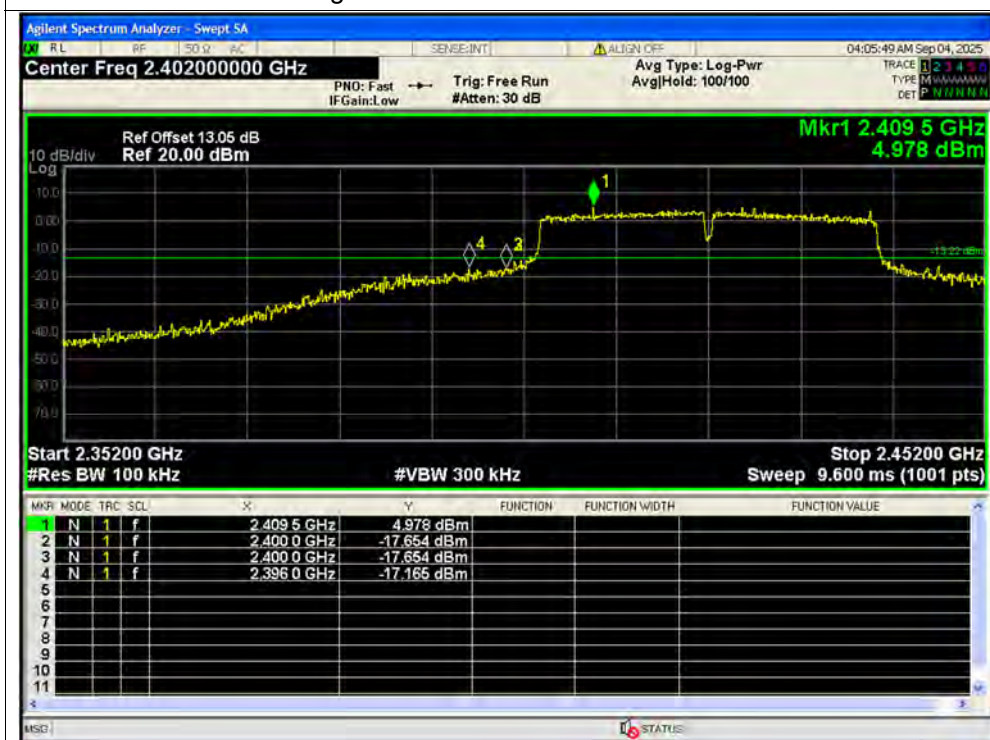
Band Edge NVNT n20 2462MHz Ant1 Emission



Band Edge NVNT n40 2422MHz Ant1 Ref



Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission



Band Edge NVNT ax20 2412MHz Ant1 Ref



Band Edge NVNT ax20 2412MHz Ant1 Emission



Band Edge NVNT ax20 2462MHz Ant1 Ref



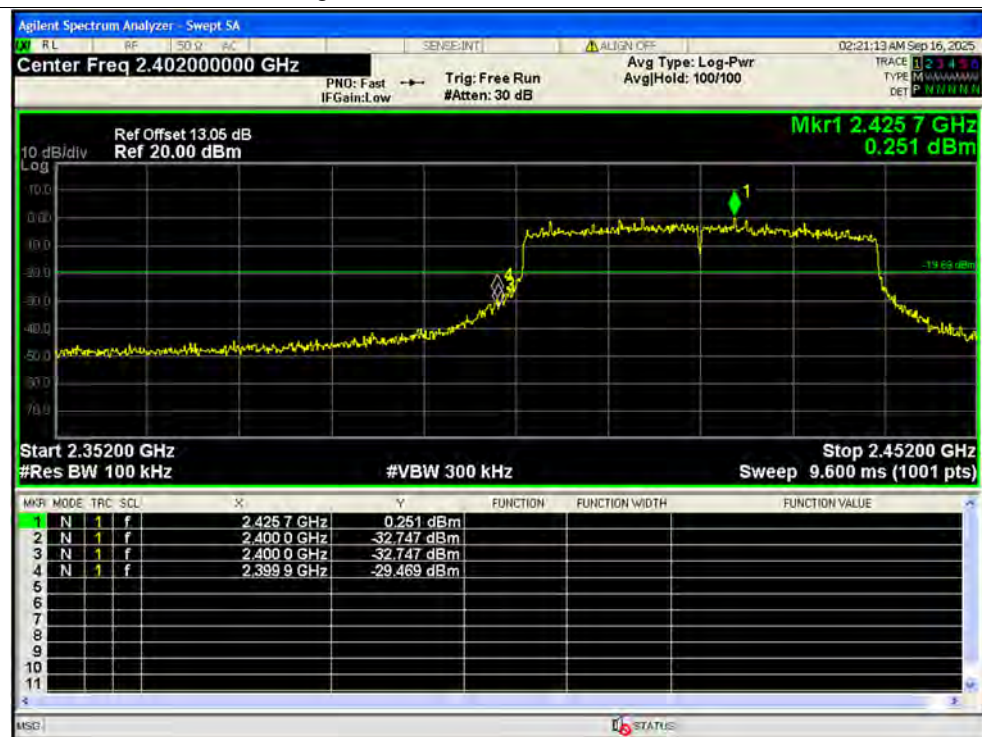
Band Edge NVNT ax20 2462MHz Ant1 Emission



Band Edge NVNT ax40 2422MHz Ant1 Ref



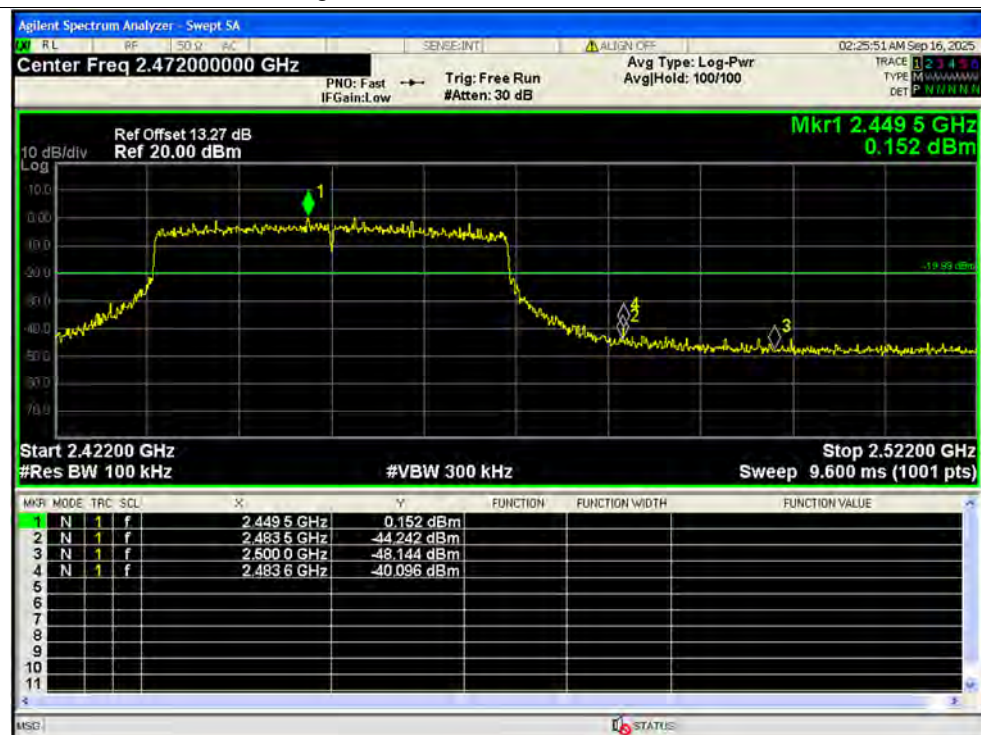
Band Edge NVNT ax40 2422MHz Ant1 Emission



Band Edge NVNT ax40 2452MHz Ant1 Ref



Band Edge NVNT ax40 2452MHz Ant1 Emission



**A.7. Power Spectral Density**

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-4.45	0	-4.45	8	Pass
NVNT	b	2437	Ant1	-3.62	0	-3.62	8	Pass
NVNT	b	2462	Ant1	-3.33	0	-3.33	8	Pass
NVNT	g	2412	Ant1	-8.87	0	-8.87	8	Pass
NVNT	g	2437	Ant1	-7.51	0	-7.51	8	Pass
NVNT	g	2462	Ant1	-8.5	0	-8.5	8	Pass
NVNT	n20	2412	Ant1	-5.34	0	-5.34	8	Pass
NVNT	n20	2437	Ant1	-3.37	0	-3.37	8	Pass
NVNT	n20	2462	Ant1	-12.17	0	-12.17	8	Pass
NVNT	n40	2422	Ant1	-8.6	0	-8.6	8	Pass
NVNT	n40	2437	Ant1	-7.21	0	-7.21	8	Pass
NVNT	n40	2452	Ant1	-6.72	0	-6.72	8	Pass
NVNT	ax20	2412	Ant1	-5.62	0	-5.62	8	Pass
NVNT	ax20	2437	Ant1	-5.12	0	-5.12	8	Pass
NVNT	ax20	2462	Ant1	-5.14	0	-5.14	8	Pass
NVNT	ax40	2422	Ant1	-15.23	0	-15.23	8	Pass
NVNT	ax40	2437	Ant1	-14.27	0	-14.27	8	Pass
NVNT	ax40	2452	Ant1	-15.31	0	-15.31	8	Pass

Test Graphs

PSD NVNT b 2412MHz Ant1



PSD NVNT b 2437MHz Ant1



PSD NVNT b 2462MHz Ant1

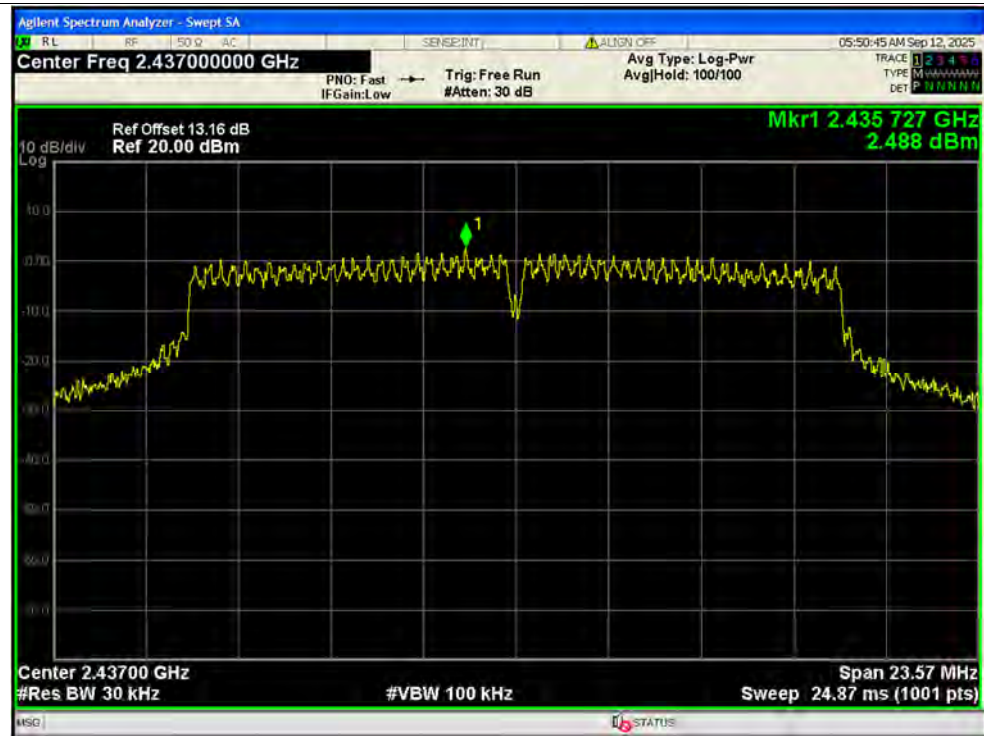


PSD NVNT g 2412MHz Ant1





PSD NVNT g 2437MHz Ant1



PSD NVNT g 2462MHz Ant1



PSD NVNT n20 2412MHz Ant1

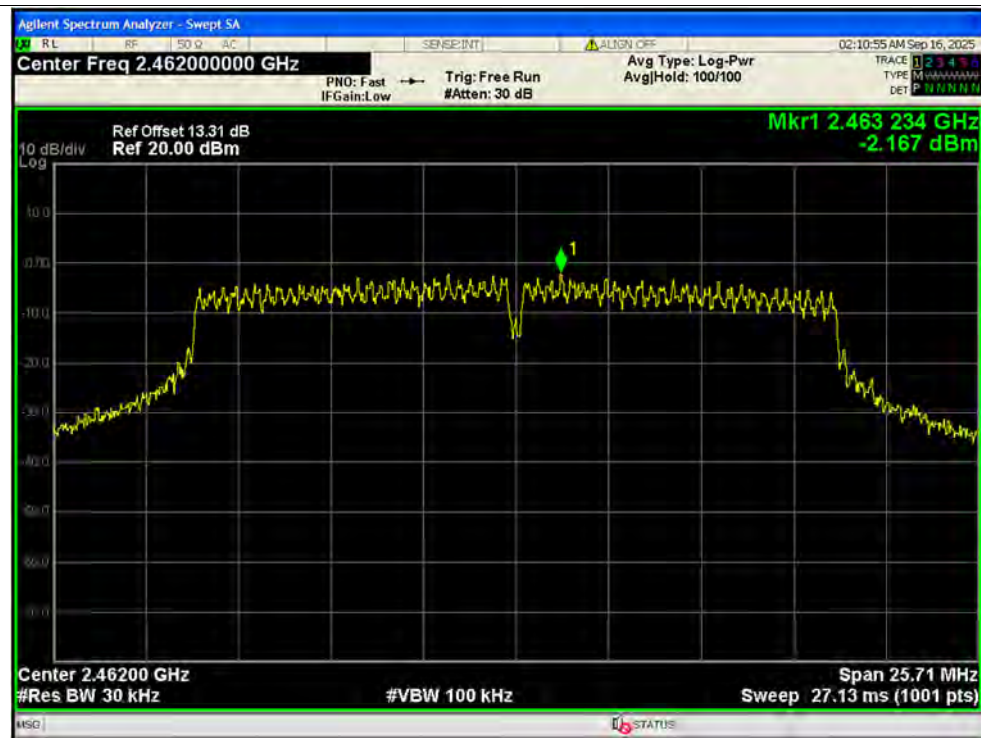


PSD NVNT n20 2437MHz Ant1





PSD NVNT n20 2462MHz Ant1



PSD NVNT n40 2422MHz Ant1





PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1





PSD NVNT ax20 2412MHz Ant1



PSD NVNT ax20 2437MHz Ant1



PSD NVNT ax20 2462MHz Ant1



PSD NVNT ax40 2422MHz Ant1





PSD NVNT ax40 2437MHz Ant1



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 + PC + PC Adapter +WIFI TX

Test voltage: AC 120V/60Hz

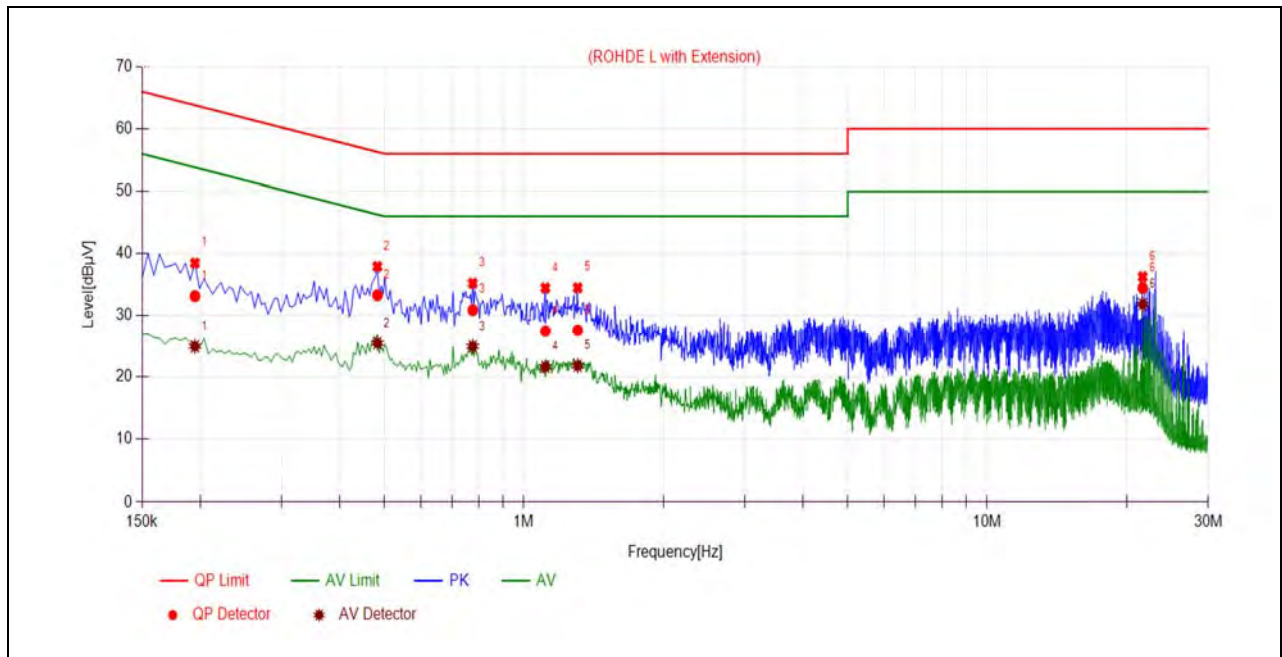
The measurement results are obtained as below:

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

U_R : Receiver Reading

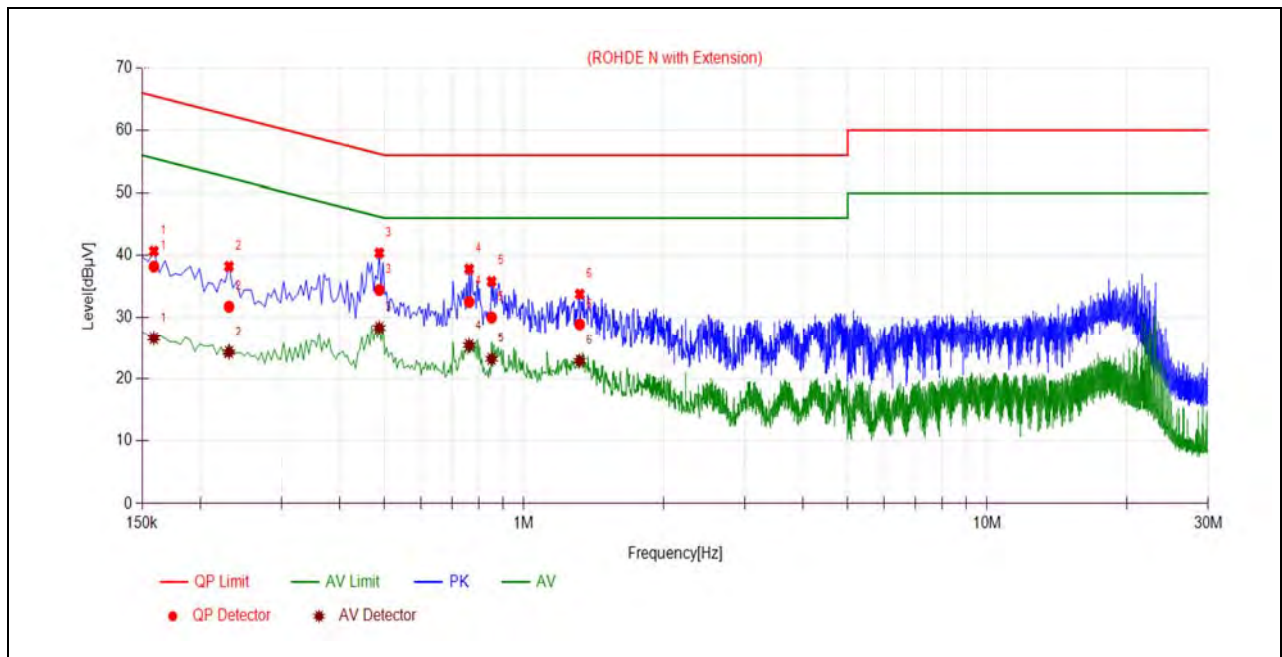
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1950	33.17	24.94	63.82	53.82	Line	PASS
2	0.4830	33.31	25.47	56.29	46.29		PASS
3	0.7755	30.91	24.95	56.00	46.00		PASS
4	1.1129	27.46	21.64	56.00	46.00		PASS
5	1.3065	27.59	21.81	56.00	46.00		PASS
6	21.6630	34.48	31.86	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	0.1590	38.22	26.63	65.52	55.52	Neutral	PASS
2	0.2310	31.77	24.34	62.41	52.41		PASS
3	0.4875	34.46	28.35	56.21	46.21		PASS
4	0.7620	32.54	25.45	56.00	46.00		PASS
5	0.8521	30.05	23.25	56.00	46.00		PASS
6	1.3200	28.91	22.92	56.00	46.00		PASS

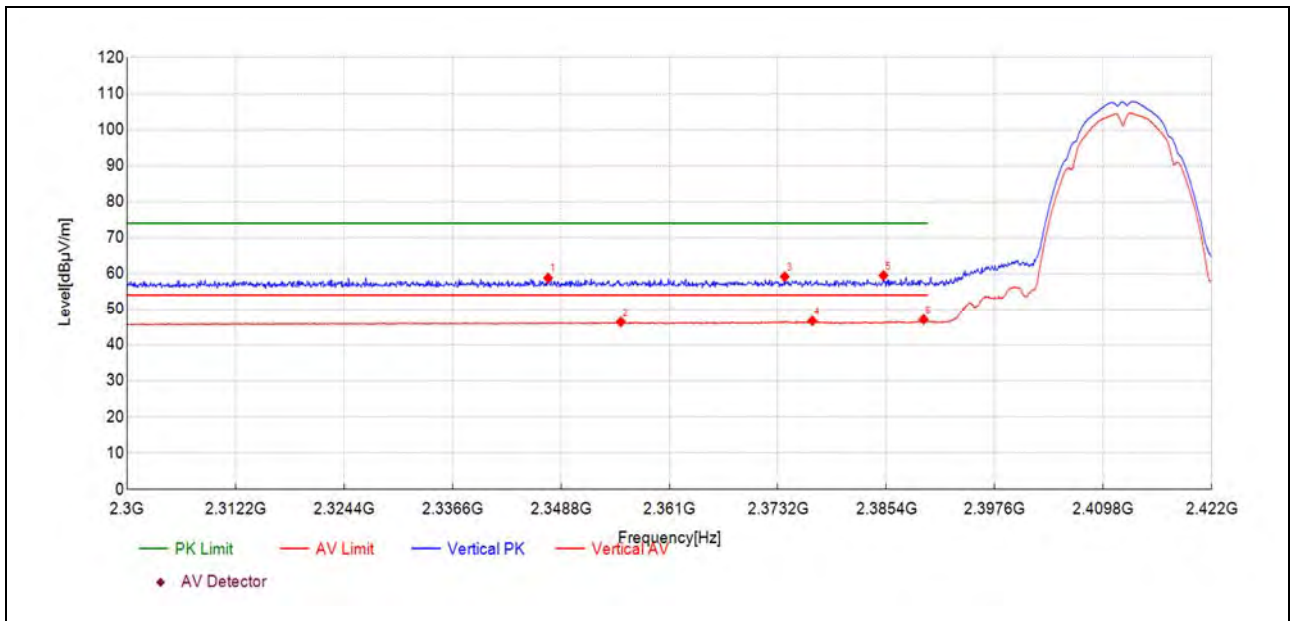
A.9. Restricted Frequency Bands

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.

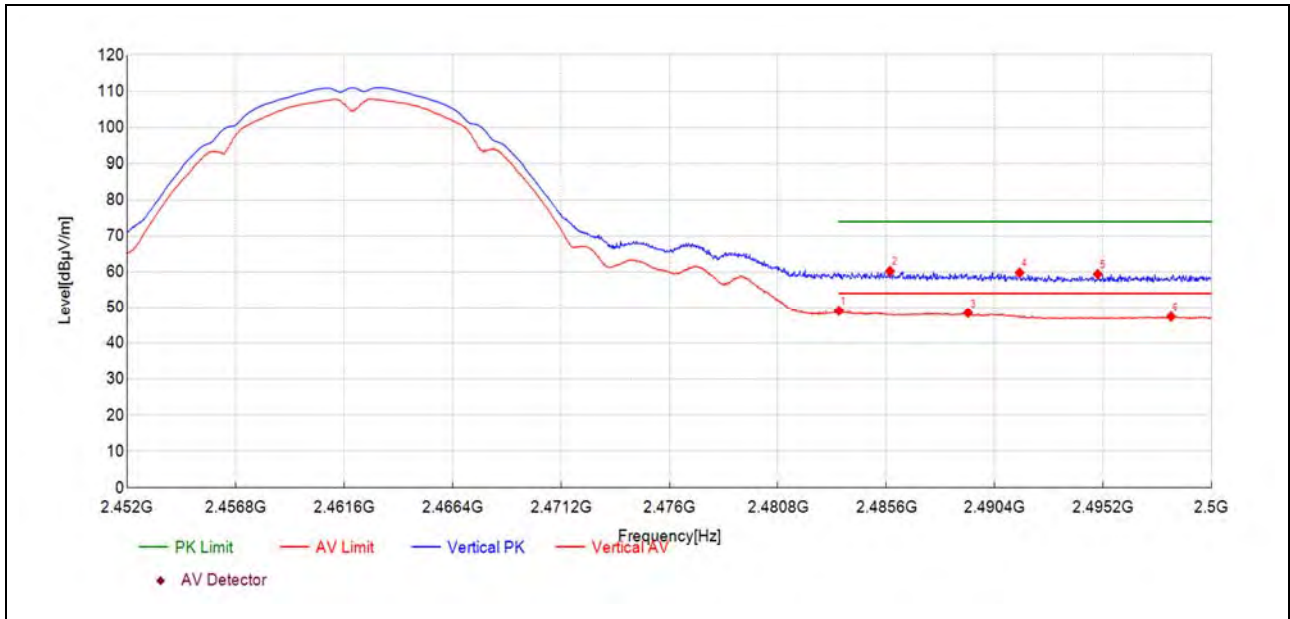
802.11b Mode

Plot for Channel 1



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2347.36	21.4	58.80	37.430	74.00	15.20	341	PK	PASS
2355.54	8.9	46.35	37.460	54.00	7.65	295	AV	PASS
2373.97	21.7	59.18	37.480	74.00	14.82	92	PK	PASS
2377.08	9.2	46.71	37.480	54.00	7.29	1	AV	PASS
2385.08	22.0	59.51	37.490	74.00	14.49	219	PK	PASS
2389.59	9.6	47.07	37.490	54.00	6.93	332	AV	PASS

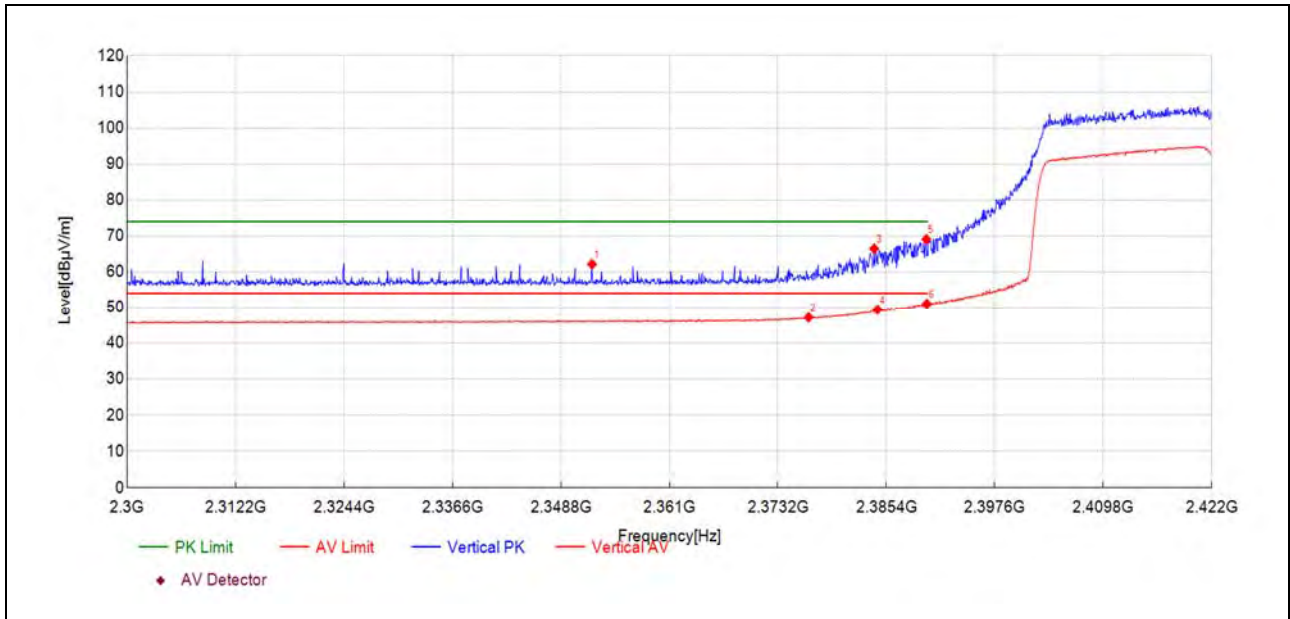
Plot for Channel 11



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2483.50	10.8	49.12	38.280	54.00	4.88	328	AV	PASS
2485.76	22.0	60.27	38.270	74.00	13.73	280	PK	PASS
2489.22	10.2	48.48	38.260	54.00	5.52	323	AV	PASS
2491.50	21.6	59.82	38.260	74.00	14.18	232	PK	PASS
2494.96	21.2	59.42	38.260	74.00	14.58	347	PK	PASS
2498.20	9.1	47.40	38.260	54.00	6.60	347	AV	PASS

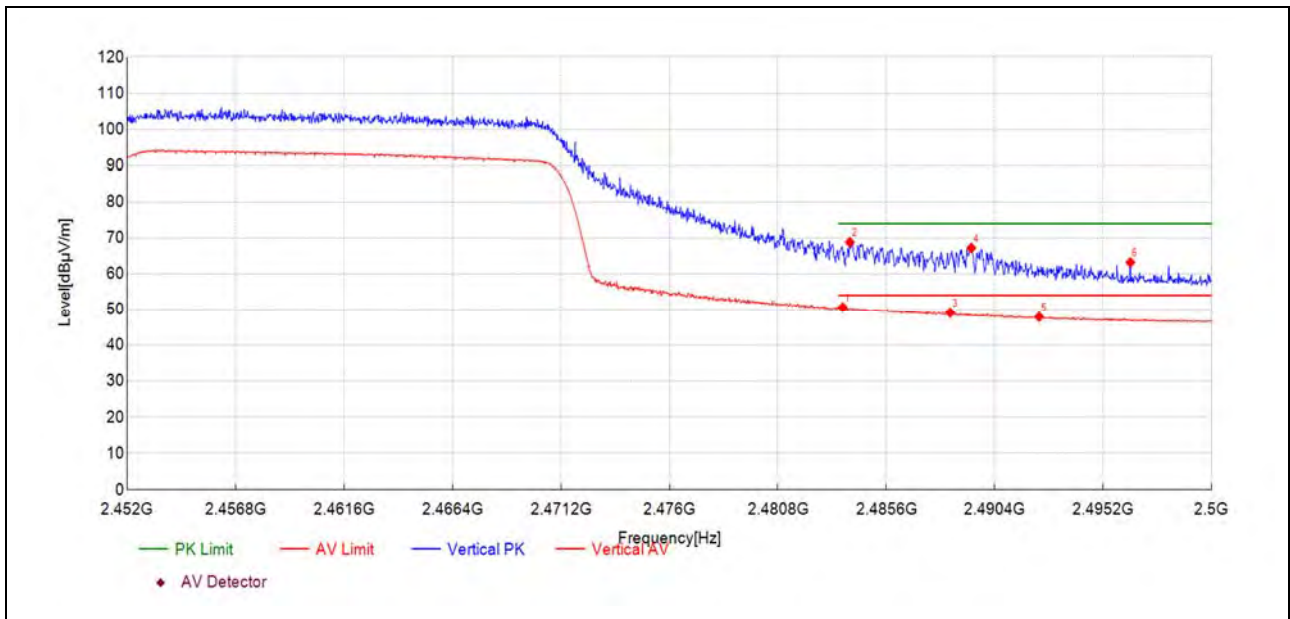
**802.11ax (HEW40) Mode**

Plot for Channel 3



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2352.30	24.7	62.18	37.460	74.00	11.82	332	PK	PASS
2376.65	9.7	47.18	37.480	54.00	6.82	341	AV	PASS
2384.04	29.0	66.46	37.490	74.00	7.54	317	PK	PASS
2384.41	11.9	49.41	37.490	54.00	4.59	341	AV	PASS
2389.90	31.6	69.09	37.490	74.00	4.91	341	PK	PASS
2389.96	13.6	51.10	37.490	54.00	2.90	346	AV	PASS

Plot for Channel 9



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2483.67	12.4	50.65	38.280	54.00	3.35	322	AV	PASS
2483.98	30.6	68.85	38.270	74.00	5.15	346	PK	PASS
2488.43	10.9	49.15	38.270	54.00	4.85	322	AV	PASS
2489.36	29.0	67.25	38.260	74.00	6.75	322	PK	PASS
2492.36	9.7	47.93	38.260	54.00	6.07	322	AV	PASS
2496.40	25.0	63.24	38.250	74.00	10.76	312	PK	PASS



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 test condition was recorded in this test report.

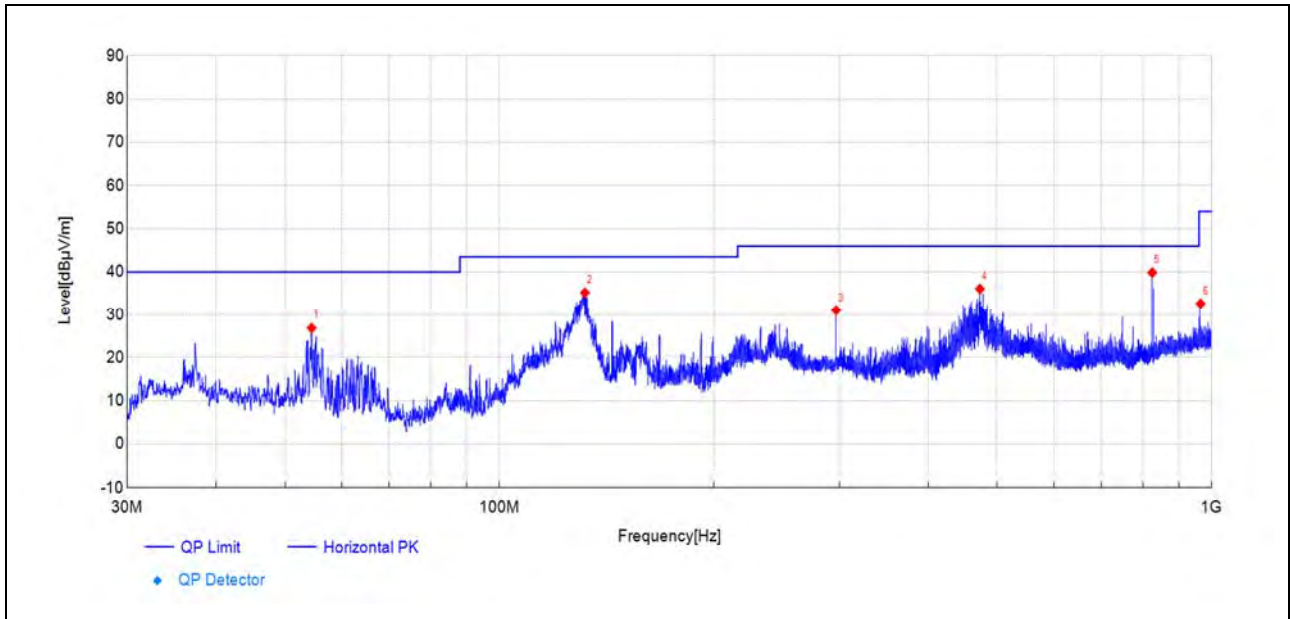
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

Note4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded.

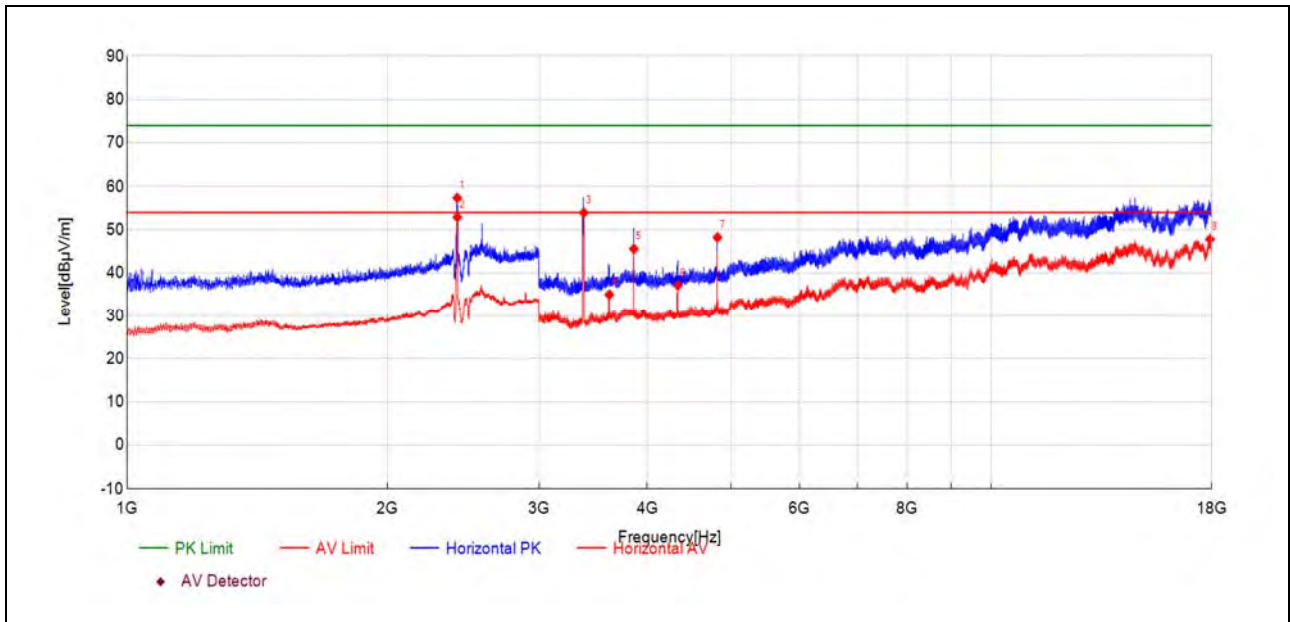
**802.11b Mode**

Plot for Channel 1



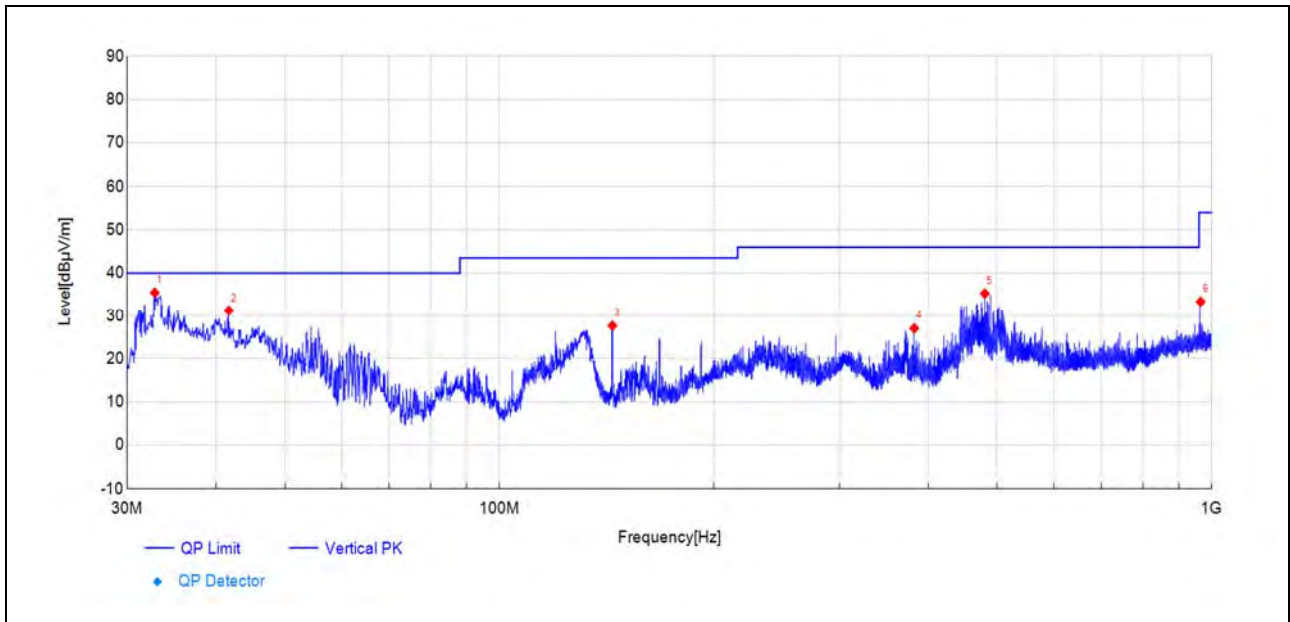
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
54.49	54.5	26.84	-27.660	40.00	13.16	36	PK	PASS
131.86	67.4	35.18	-32.190	43.50	8.32	77	PK	PASS
297.01	56.8	31.03	-25.750	46.00	14.97	98	PK	PASS
472.73	57.1	36.06	-21.080	46.00	9.94	23	PK	PASS
825.15	54.1	39.85	-14.200	46.00	6.15	358	PK	PASS
964.79	43.6	32.63	-11.000	54.00	21.37	207	PK	PASS



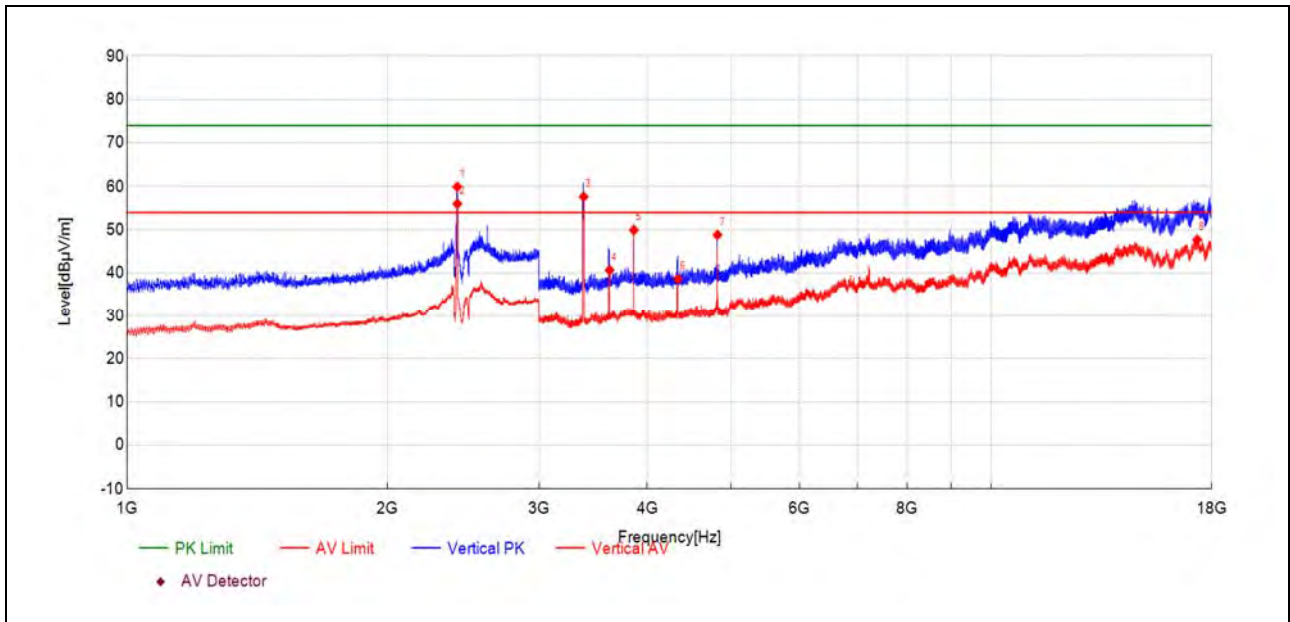
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2410.68	52.0	57.41	5.380	-	-	9	PK	NA
2411.48	47.5	52.93	5.390	-	-	15	AV	NA
3378.44	64.3	53.97	-10.360	-	-	271	AV	NA
3615.87	44.0	34.98	-9.000	54.00	19.02	297	AV	PASS
3859.74	54.0	45.61	-8.360	54.00	8.39	351	AV	PASS
4340.18	44.4	37.12	-7.300	54.00	16.88	56	AV	PASS
4824.05	53.3	48.26	-5.000	74.00	25.74	56	PK	PASS
17918.57	28.6	47.84	19.240	54.00	6.16	191	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

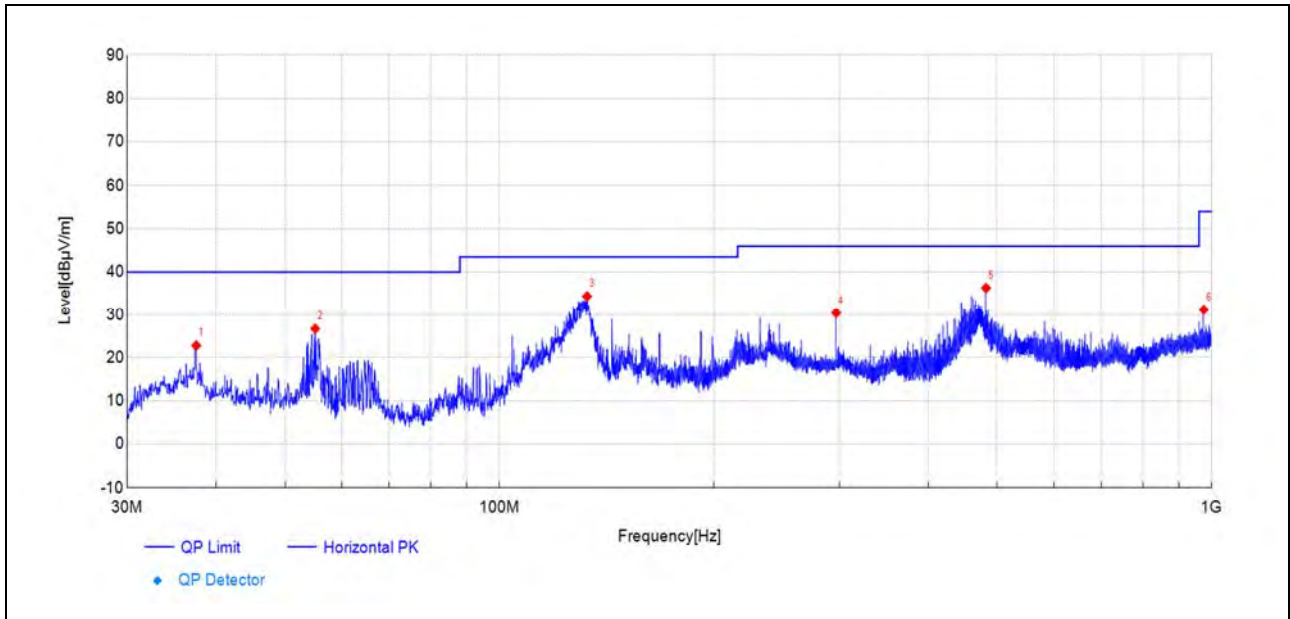
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
32.81	65.9	35.46	-30.460	40.00	4.54	310	PK	PASS
41.69	60.0	31.23	-28.760	40.00	8.77	14	PK	PASS
144.08	58.9	27.64	-31.280	43.50	15.86	83	PK	PASS
382.27	50.0	27.03	-22.970	46.00	18.97	76	PK	PASS
480.25	56.4	35.24	-21.150	46.00	10.76	62	PK	PASS
964.79	44.3	33.33	-11.000	54.00	20.67	49	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

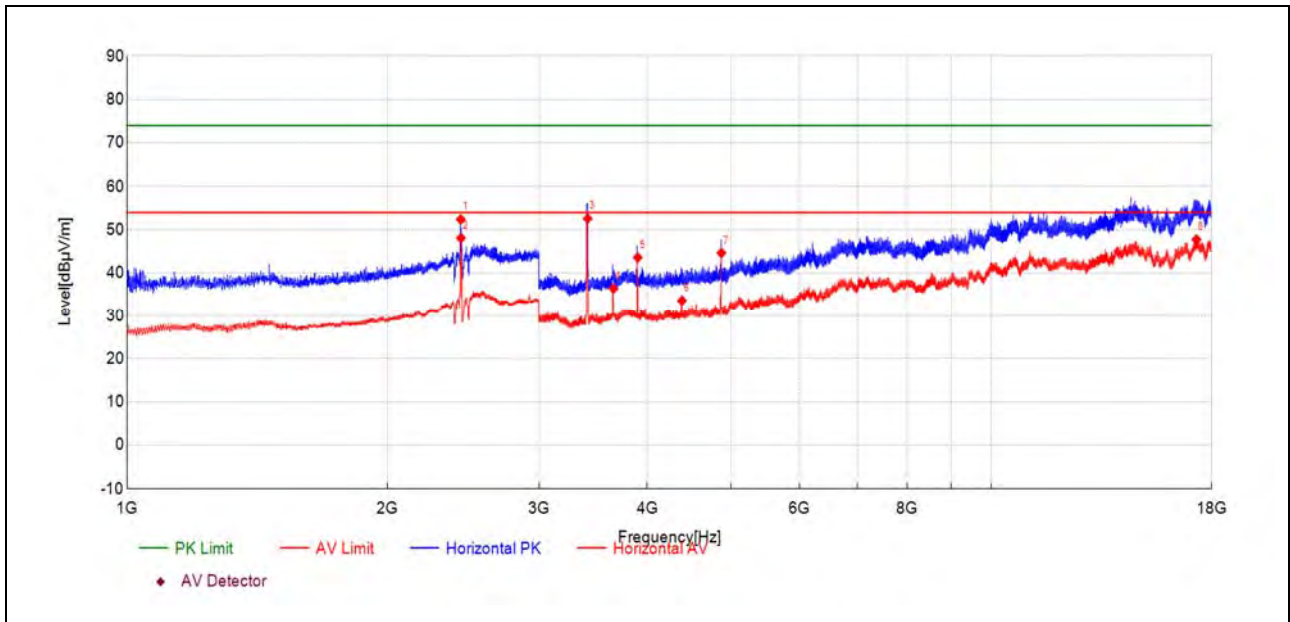
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2411.08	54.6	59.97	5.390	-	-	354	PK	NA
2411.48	50.6	56.03	5.390	-	-	344	AV	NA
3376.30	68.0	57.67	-10.360	-	-	122	AV	NA
3618.45	49.7	40.70	-8.990	54.00	13.30	149	AV	PASS
3859.74	58.3	49.97	-8.360	54.00	4.03	242	AV	PASS
4341.04	46.0	38.65	-7.300	54.00	15.35	70	AV	PASS
4824.05	53.8	48.84	-5.000	74.00	25.16	42	PK	PASS
17315.55	28.7	47.75	19.080	54.00	6.25	336	AV	PASS

Plot for Channel 6



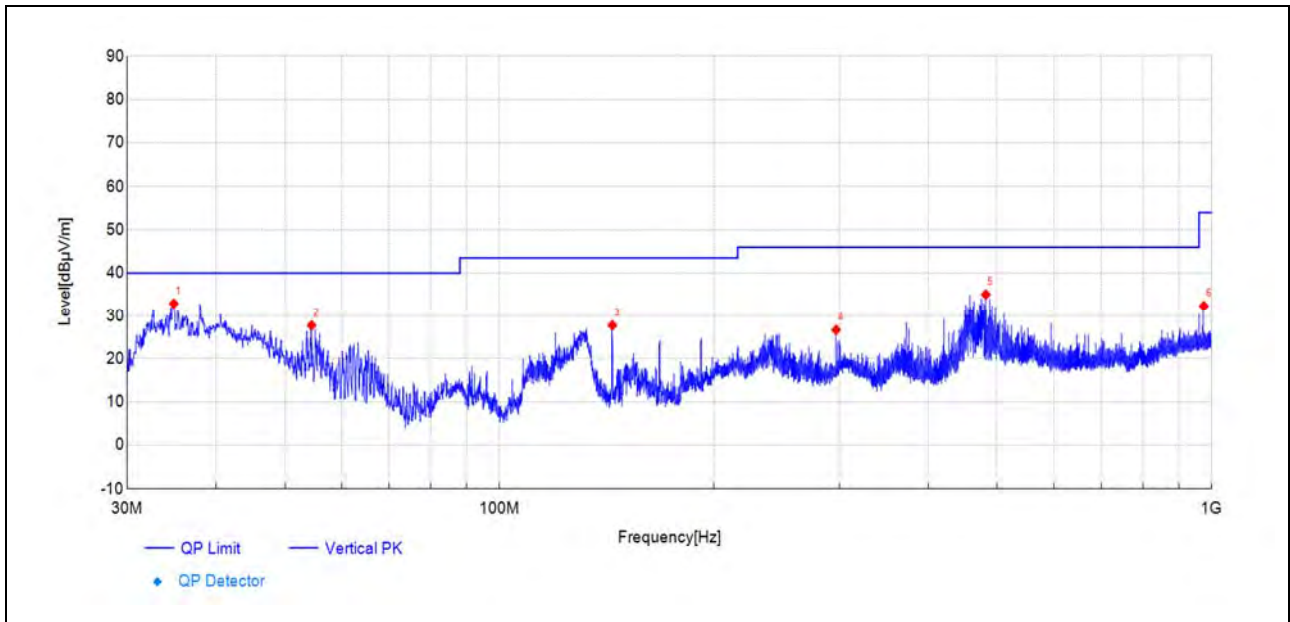
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
37.52	52.2	22.77	-29.420	40.00	17.23	9	PK	PASS
55.12	54.5	26.70	-27.800	40.00	13.30	22	PK	PASS
132.73	66.3	34.34	-31.960	43.50	9.16	111	PK	PASS
296.96	56.1	30.38	-25.750	46.00	15.62	85	PK	PASS
482.19	57.1	36.29	-20.850	46.00	9.71	345	PK	PASS
974.78	42.0	31.19	-10.840	54.00	22.81	139	PK	PASS



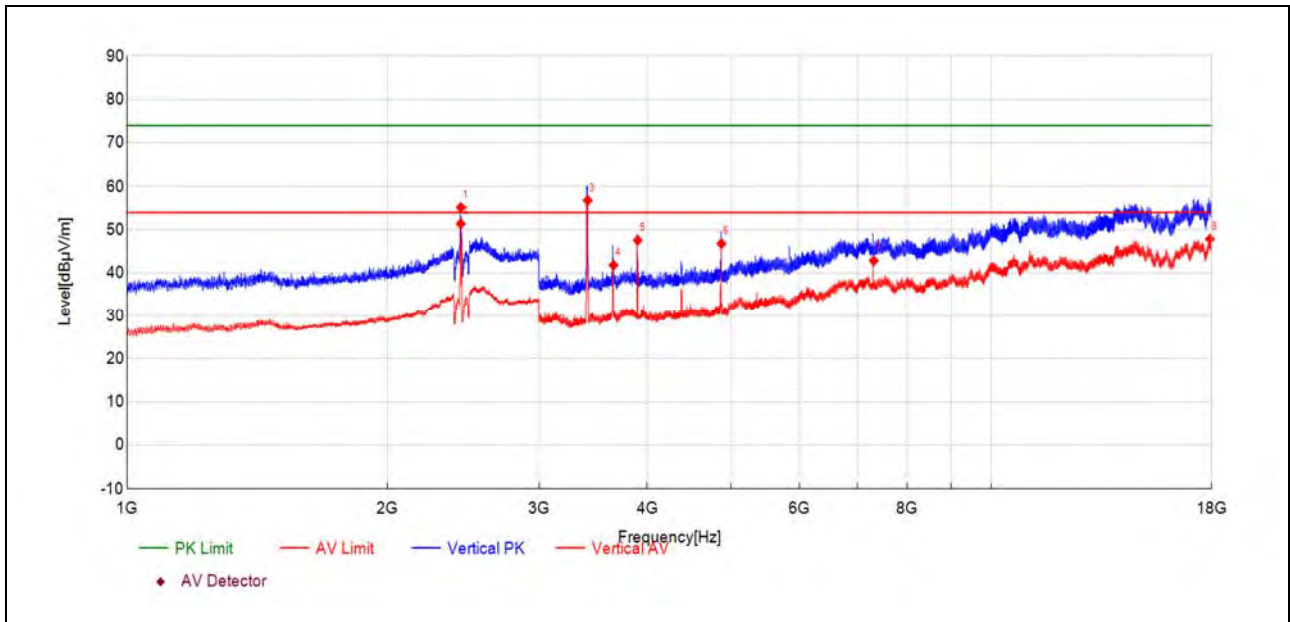
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2433.49	46.7	52.42	5.720	-	-	15	PK	NA
2434.29	42.4	48.11	5.740	-	-	343	AV	NA
3413.15	62.7	52.62	-10.090	-	-	271	AV	NA
3655.73	45.3	36.41	-8.850	54.00	17.59	311	AV	PASS
3899.60	52.0	43.61	-8.370	54.00	10.39	58	AV	PASS
4387.75	40.8	33.60	-7.190	54.00	20.40	58	AV	PASS
4874.20	49.6	44.66	-4.960	54.00	9.34	165	AV	PASS
17281.27	28.7	47.76	19.080	54.00	6.24	271	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
34.90	62.9	32.88	-30.000	40.00	7.12	139	PK	PASS
54.49	55.4	27.74	-27.660	40.00	12.26	126	PK	PASS
144.03	59.0	27.75	-31.270	43.50	15.75	70	PK	PASS
296.96	52.4	26.68	-25.750	46.00	19.32	325	PK	PASS
481.75	55.9	35.01	-20.920	46.00	10.99	105	PK	PASS
974.78	43.2	32.32	-10.840	54.00	21.68	36	PK	PASS

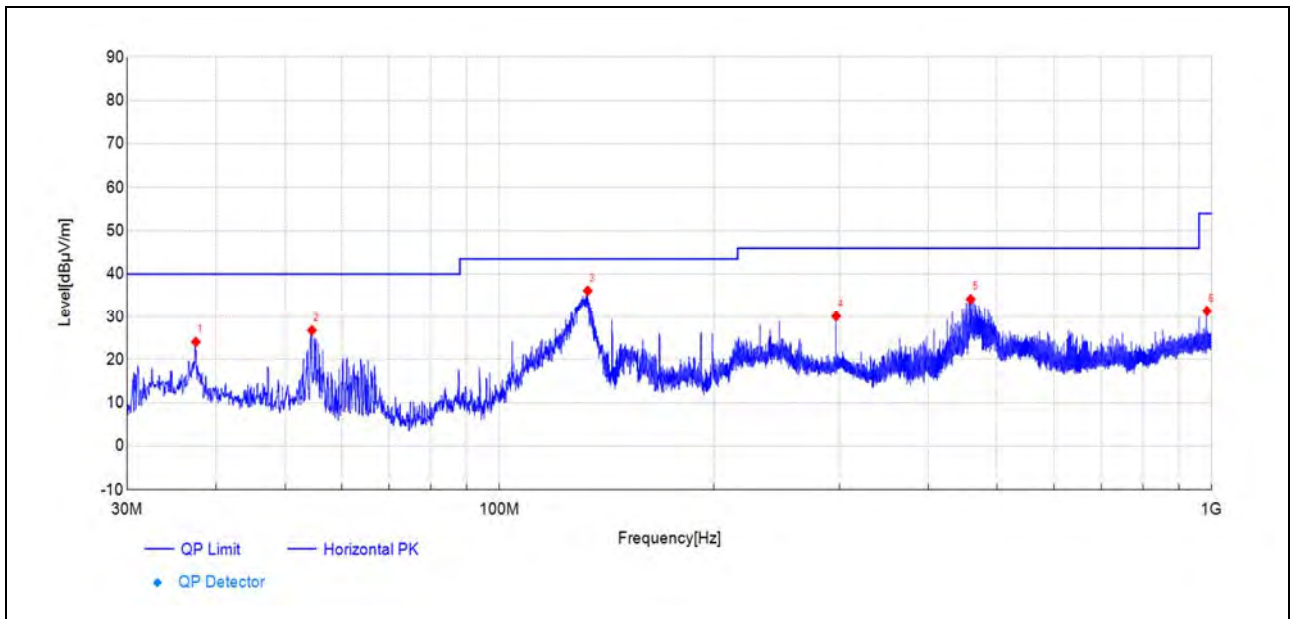


(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2433.89	49.5	55.20	5.720	-	-	326	PK	NA
2433.89	45.7	51.43	5.720	-	-	326	AV	NA
3413.15	66.9	56.82	-10.090	-	-	124	AV	NA
3655.73	50.7	41.84	-8.850	54.00	12.16	136	AV	PASS
3899.60	56.0	47.58	-8.370	54.00	6.42	231	AV	PASS
4874.20	51.8	46.83	-4.960	54.00	7.17	42	AV	PASS
7312.84	38.7	42.87	4.210	54.00	11.13	351	AV	PASS
17915.14	28.6	47.87	19.290	54.00	6.13	191	AV	PASS

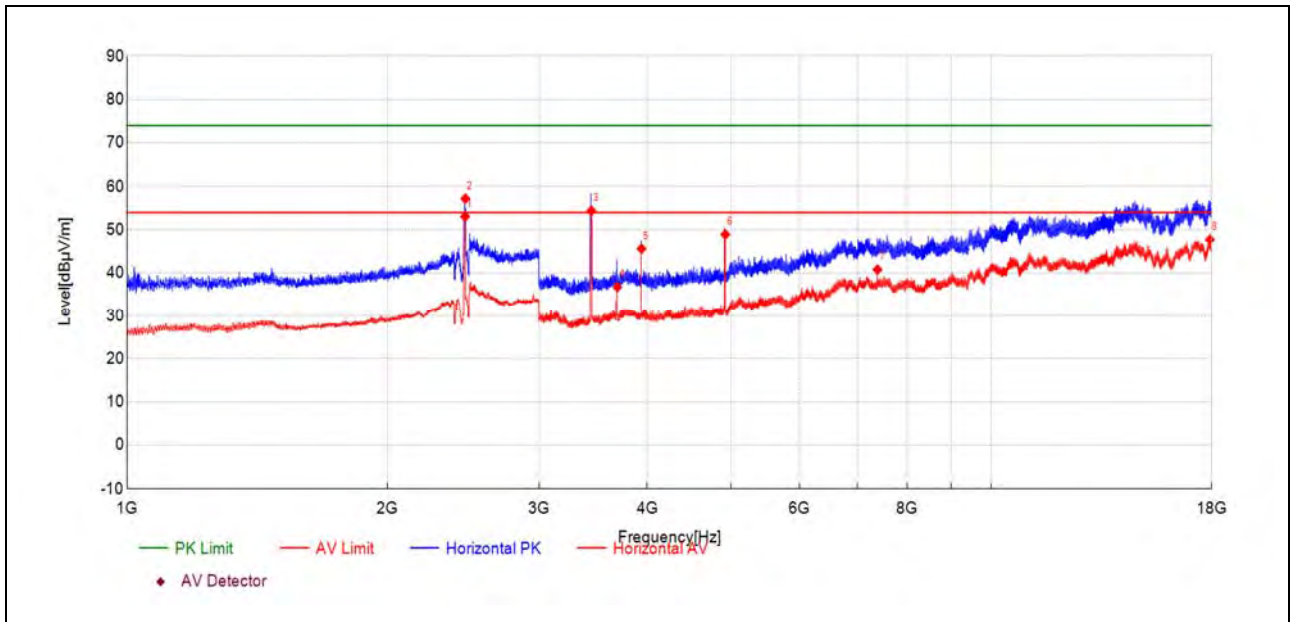


Plot for Channel 11



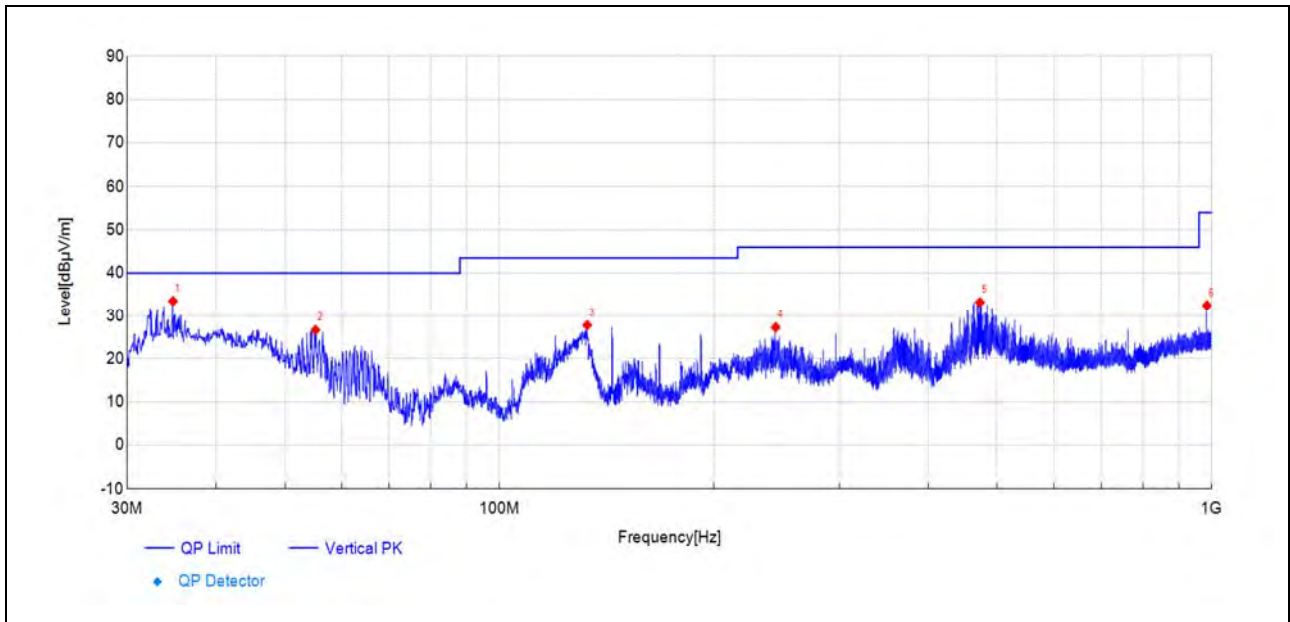
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
37.47	53.5	24.08	-29.400	40.00	15.92	166	PK	PASS
54.54	54.5	26.78	-27.670	40.00	13.22	23	PK	PASS
133.02	68.0	36.11	-31.850	43.50	7.39	92	PK	PASS
297.01	55.8	30.08	-25.750	46.00	15.92	77	PK	PASS
458.81	55.6	34.15	-21.430	46.00	11.85	84	PK	PASS
984.82	42.4	31.33	-11.090	54.00	22.67	132	PK	PASS



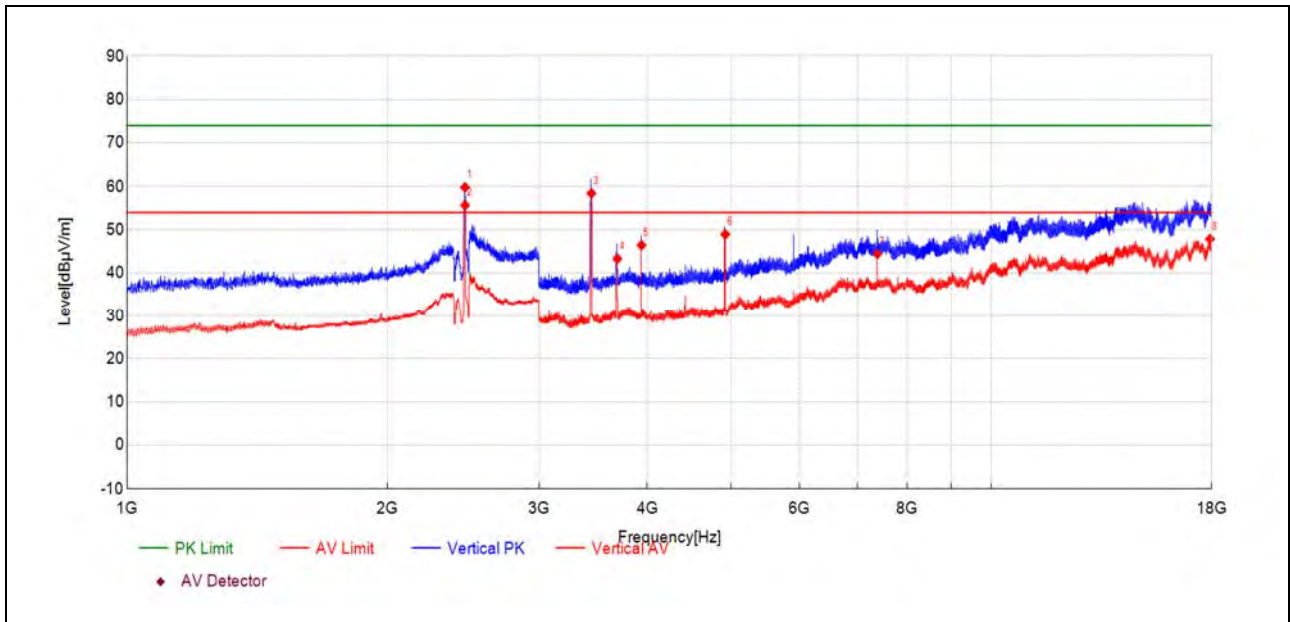
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2461.49	47.2	53.09	5.940	-	-	345	AV	NA
2463.09	51.3	57.23	5.940	-	-	351	PK	NA
3446.16	63.9	54.43	-9.490	-	-	271	AV	NA
3693.45	46.0	36.76	-9.210	54.00	17.24	311	AV	PASS
3939.46	53.5	45.65	-7.880	54.00	8.35	271	AV	PASS
4924.34	53.9	48.94	-4.980	54.00	5.06	191	AV	PASS
7387.41	36.1	40.82	4.680	54.00	13.18	256	AV	PASS
17915.57	28.5	47.74	19.290	54.00	6.26	256	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
34.80	63.4	33.46	-29.980	40.00	6.54	172	PK	PASS
55.17	54.5	26.64	-27.810	40.00	13.36	103	PK	PASS
132.83	59.7	27.77	-31.920	43.50	15.73	96	PK	PASS
244.19	54.8	27.27	-27.510	46.00	18.73	124	PK	PASS
472.73	54.3	33.19	-21.080	46.00	12.81	48	PK	PASS
984.82	43.5	32.45	-11.090	54.00	21.55	42	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2461.09	53.9	59.84	5.950	-	-	342	PK	NA
2461.49	49.8	55.70	5.940	-	-	342	AV	NA
3446.58	67.9	58.45	-9.480	-	-	125	AV	NA
3693.45	52.5	43.32	-9.210	54.00	10.68	138	AV	PASS
3939.46	54.3	46.46	-7.880	54.00	7.54	231	AV	PASS
4924.34	54.0	48.97	-4.980	54.00	5.03	86	AV	PASS
7385.70	39.8	44.43	4.680	54.00	9.57	351	AV	PASS
17919.00	28.7	47.89	19.240	54.00	6.11	324	AV	PASS

— END OF REPORT —