



PSD NVNT ax20 106@1 5825MHz Ant1 SISO



PSD NVNT ax20 106@1 5745MHz Ant2 SISO

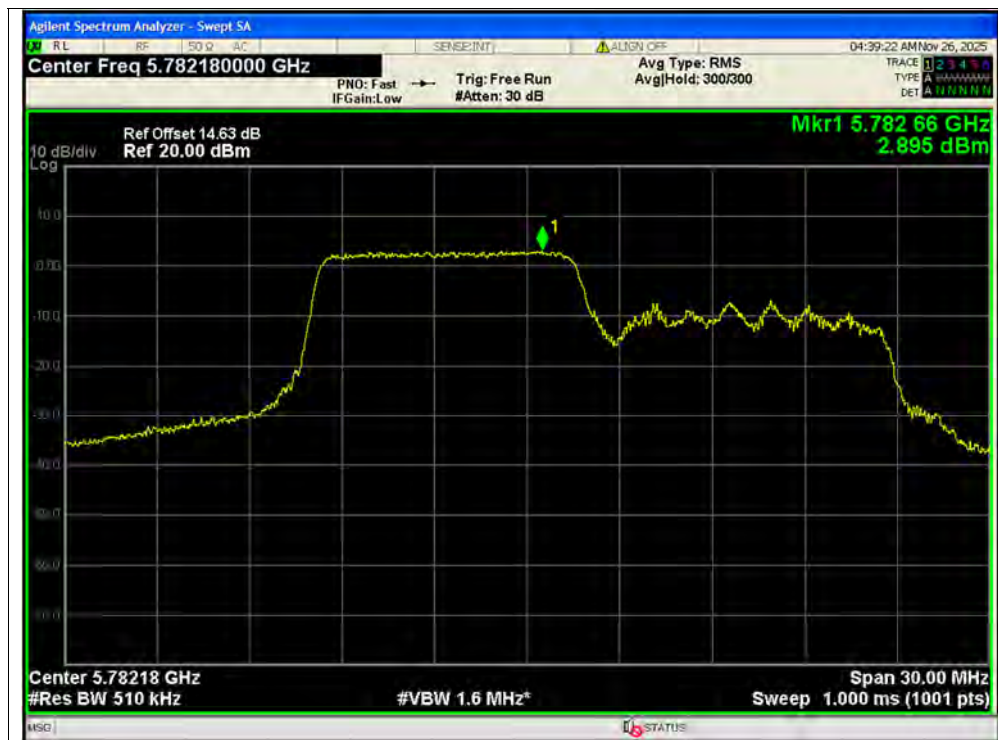


PSD NVNT ax20 106@1 5785MHz Ant2 SISO



PSD NVNT ax20 106@1 5825MHz Ant2 SISO



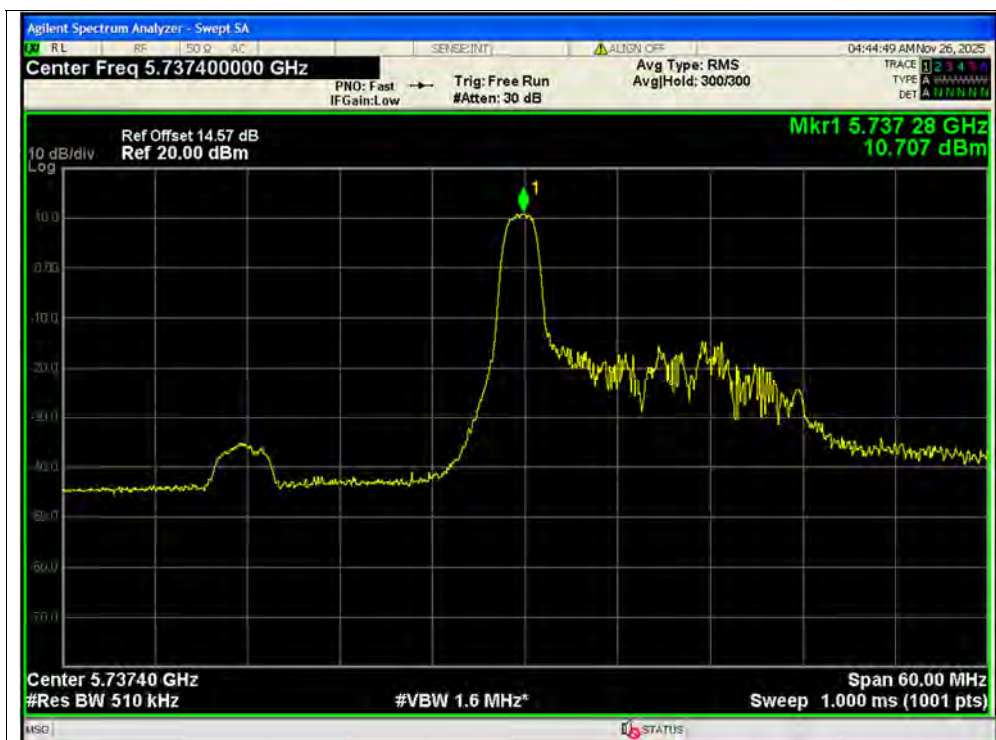


PSD NVNT ax20 106@1 5785MHz Ant1 MIMO



PSD NVNT ax20 106@1 5785MHz Ant2 MIMO





PSD NVNT ax40 26@1 5755MHz Ant1 SISO



PSD NVNT ax40 26@1 5755MHz Ant2 SISO



PSD NVNT ax40 26@1 5755MHz Ant1 MIMO



PSD NVNT ax40 26@1 5755MHz Ant2 MIMO



PSD NVNT ax40 52@1 5755MHz Ant1 SISO



PSD NVNT ax40 52@1 5755MHz Ant2 SISO





PSD NVNT ax40 106@1 5755MHz Ant1 SISO



PSD NVNT ax40 106@1 5755MHz Ant2 SISO



PSD NVNT ax40 106@1 5755MHz Ant1 MIMO



PSD NVNT ax40 106@1 5755MHz Ant2 MIMO



PSD NVNT ax40 242@1 5755MHz Ant1 SISO



PSD NVNT ax40 242@1 5755MHz Ant2 SISO



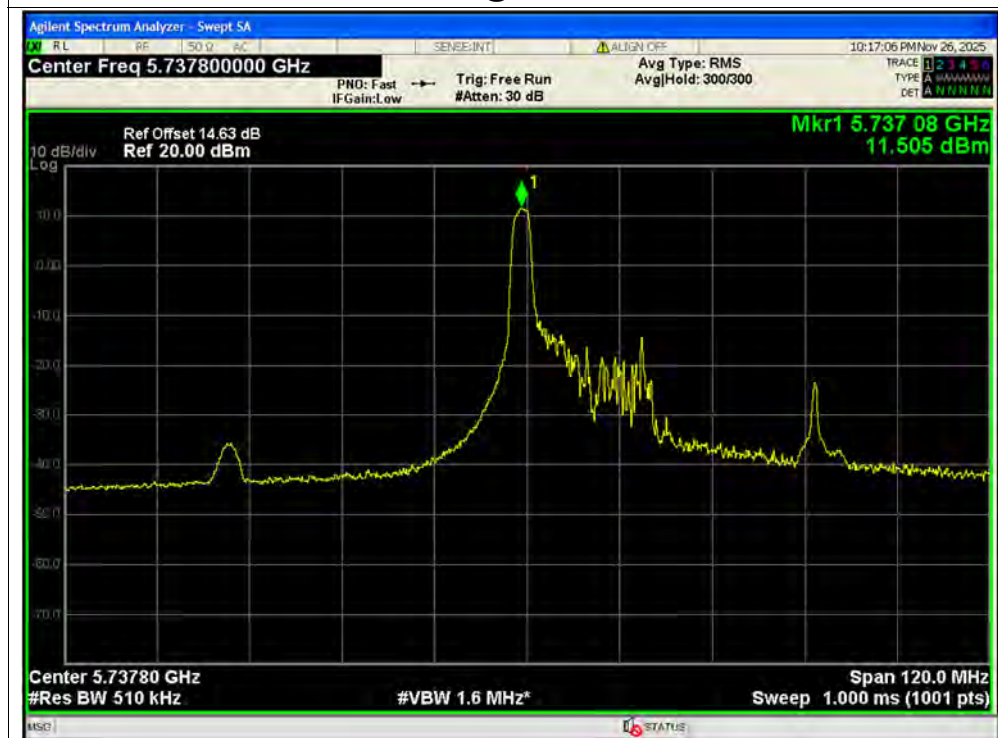
PSD NVNT ax40 242@1 5755MHz Ant1 MIMO



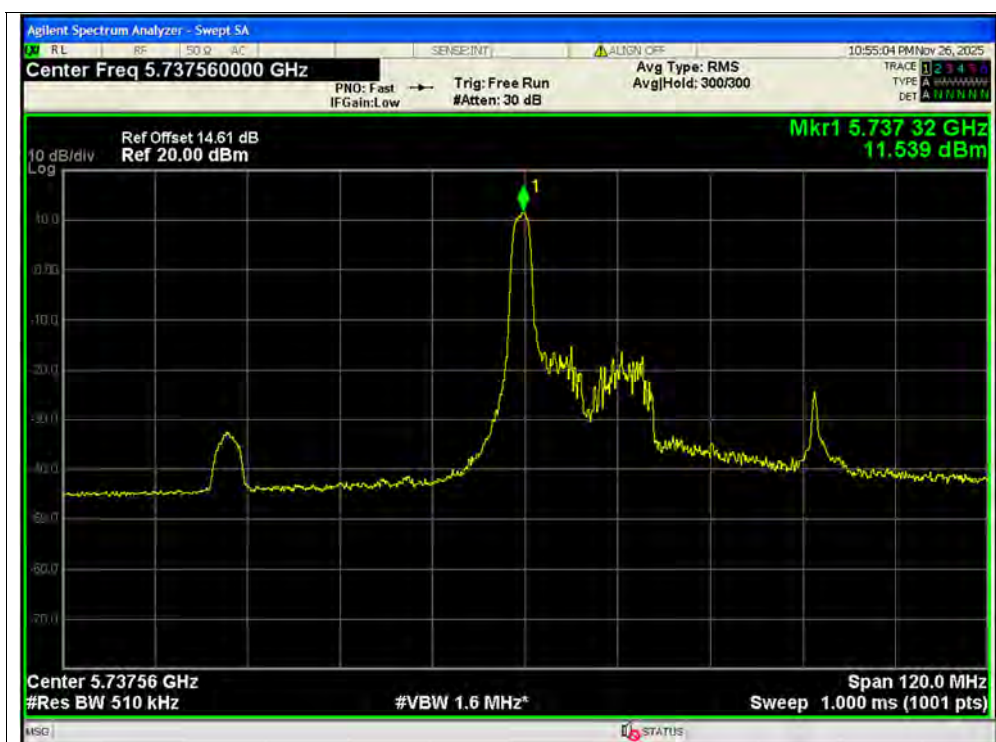
PSD NVNT ax40 242@1 5755MHz Ant2 MIMO



PSD NVNT ax80 26@1 5775MHz Ant1 SISO



PSD NVNT ax80 26@1 5775MHz Ant2 SISO



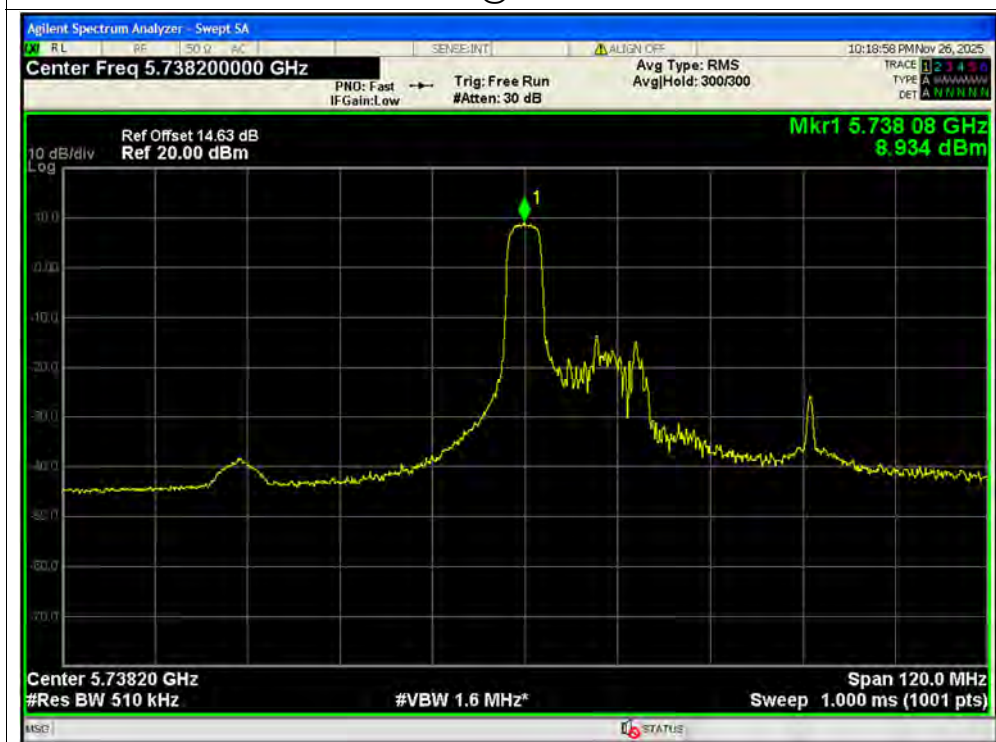
PSD NVNT ax80 26@1 5775MHz Ant1 MIMO



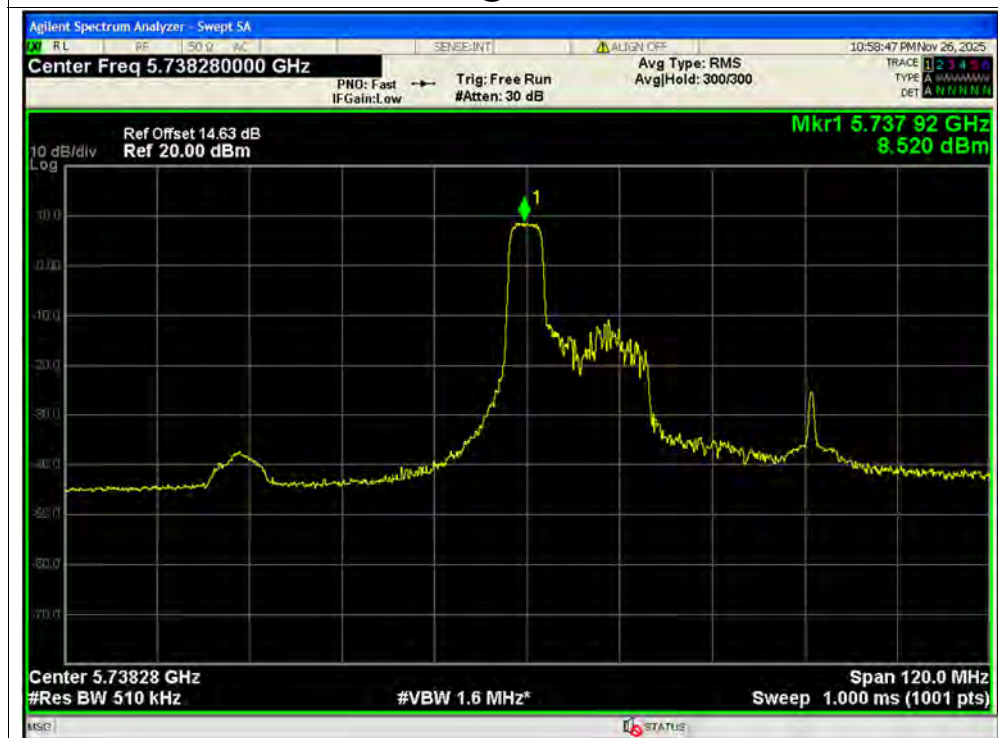
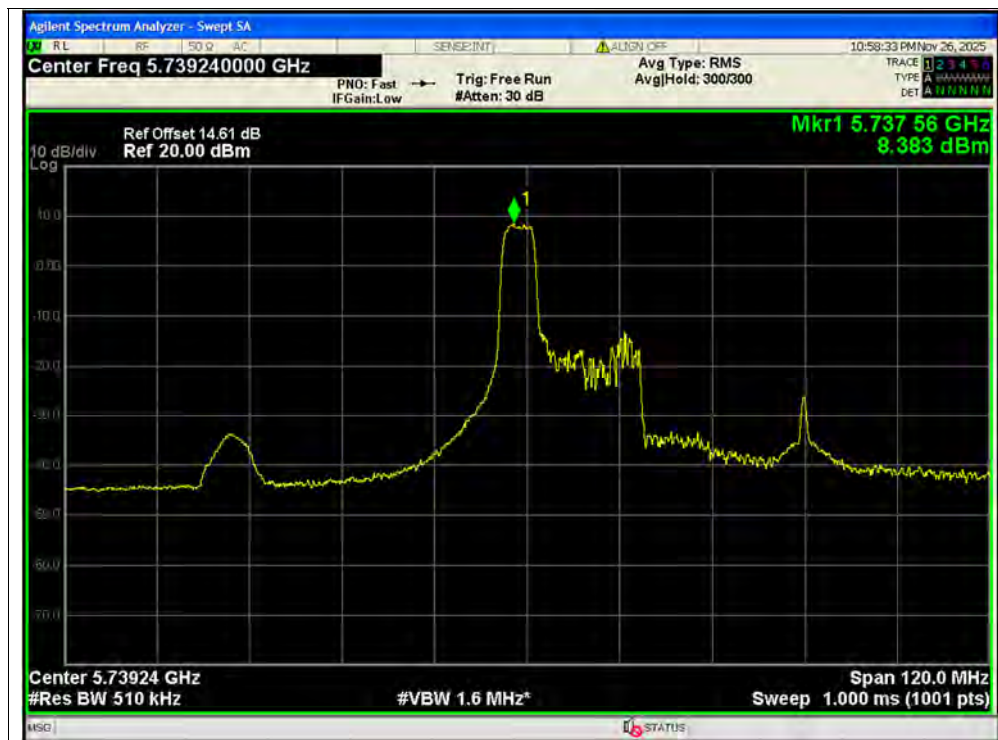
PSD NVNT ax80 26@1 5775MHz Ant2 MIMO



PSD NVNT ax80 52@1 5775MHz Ant1 SISO



PSD NVNT ax80 52@1 5775MHz Ant2 SISO





PSD NVNT ax80 106@1 5775MHz Ant1 SISO



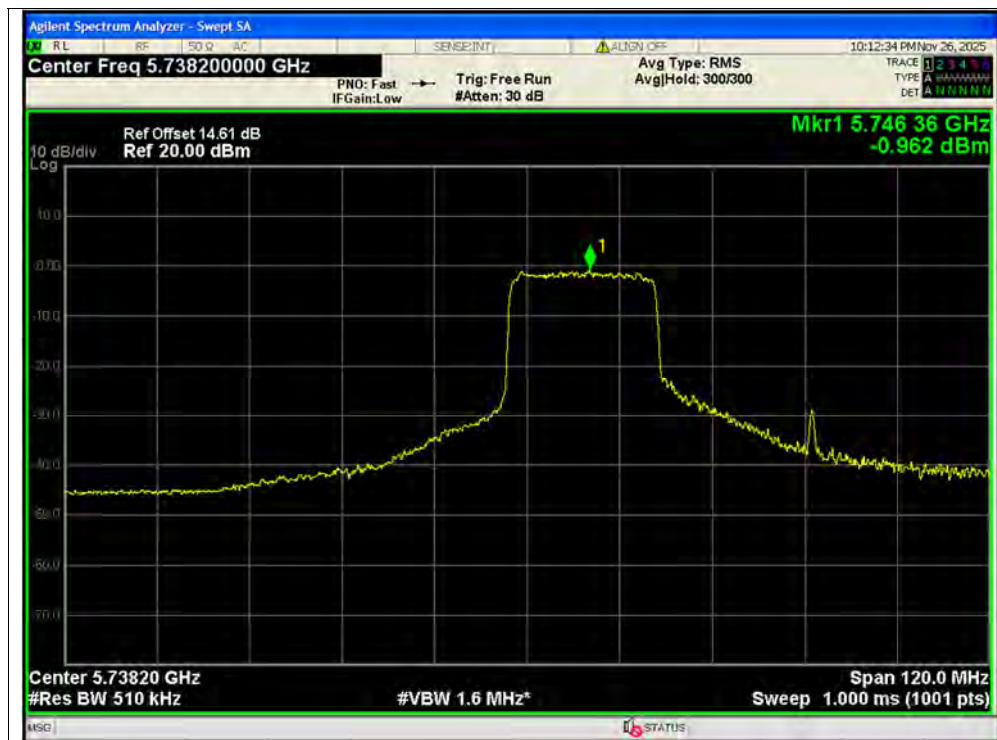
PSD NVNT ax80 106@1 5775MHz Ant2 SISO



PSD NVNT ax80 106@1 5775MHz Ant1 MIMO



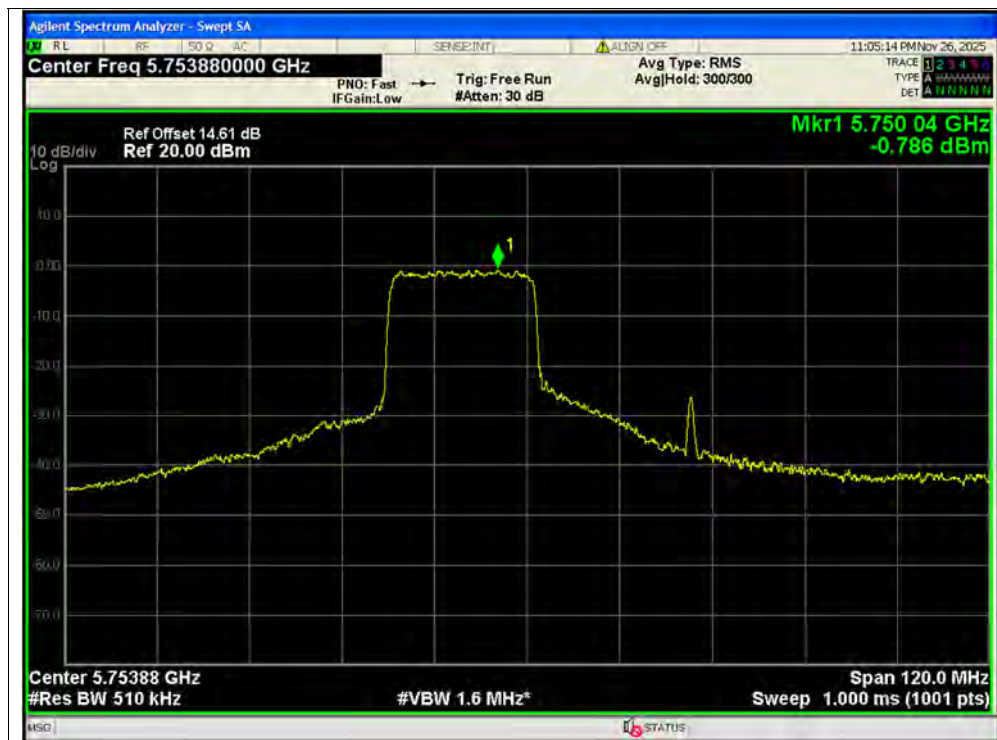
PSD NVNT ax80 106@1 5775MHz Ant2 MIMO



PSD NVNT ax80 242@1 5775MHz Ant1 SISO



PSD NVNT ax80 242@1 5775MHz Ant2 SISO



PSD NVNT ax80 242@1 5775MHz Ant1 MIMO



PSD NVNT ax80 242@1 5775MHz Ant2 MIMO



PSD NVNT ax80 484@1 5775MHz Ant1 SISO



PSD NVNT ax80 484@1 5775MHz Ant2 SISO



PSD NVNT ax80 484@1 5775MHz Ant1 MIMO



PSD NVNT ax80 484@1 5775MHz Ant2 MIMO

**A.5. Frequency Stability**

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 10V	CW SISO	5745	Ant1	5745	0	0	25	Pass
20C 14.4V	CW SISO	5745	Ant1	5745	0	0	25	Pass
20C 16.8V	CW SISO	5745	Ant1	5745	0	0	25	Pass
0C 14.4V	CW SISO	5745	Ant1	5744.98	-20000	-3.48	25	Pass
10C 14.4V	CW SISO	5745	Ant1	5745	0	0	25	Pass
30C 14.4V	CW SISO	5745	Ant1	5745	0	0	25	Pass
40C 14.4V	CW SISO	5745	Ant1	5745	0	0	25	Pass



A.6. 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+PC+Hub1+Hub2+RJ45 cable+WIFI TX

Test voltage: AC 120V/60Hz

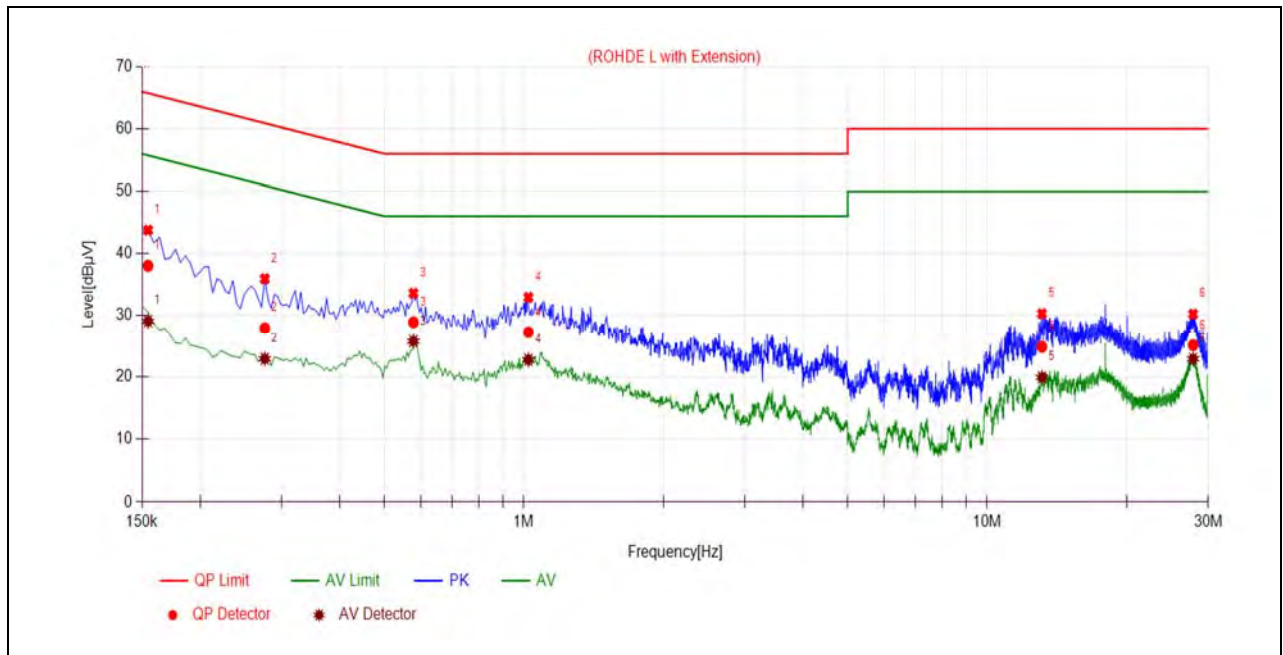
The measurement results are obtained as below:

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

U_R : Receiver Reading

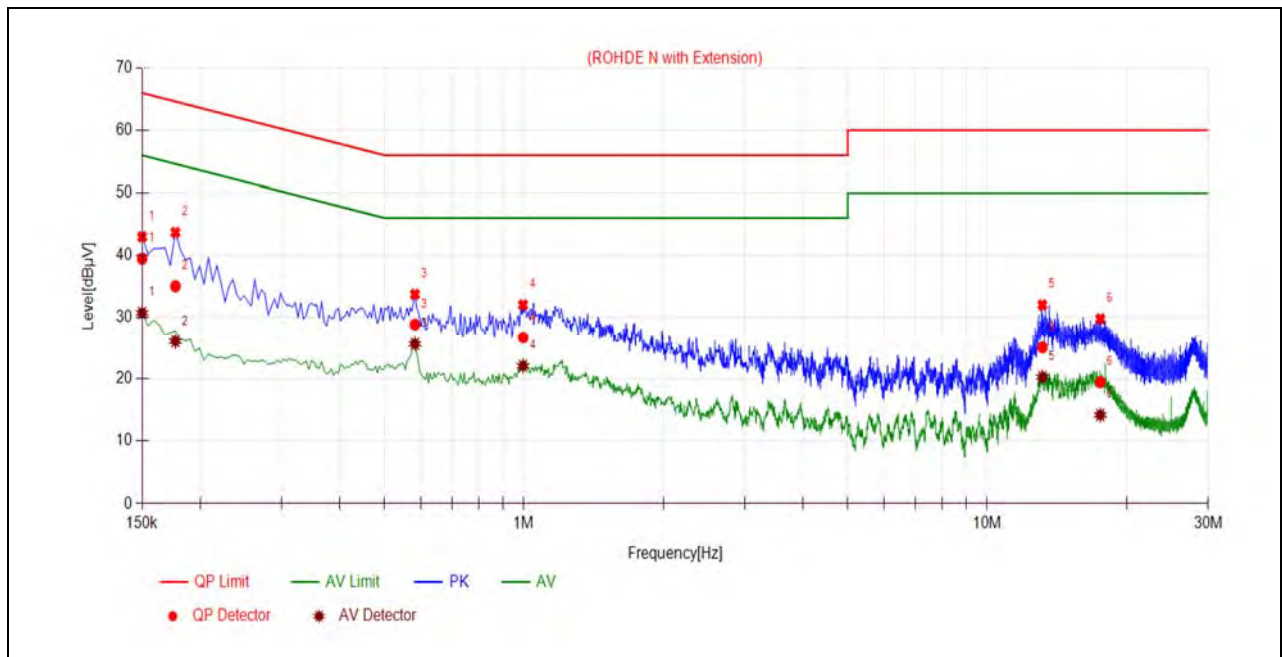
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1545	38.05	29.09	65.75	55.75	Line	PASS
2	0.2760	27.95	22.94	60.93	50.93		PASS
3	0.5775	28.92	25.78	56.00	46.00		PASS
4	1.0229	27.27	22.79	56.00	46.00		PASS
5	13.1270	24.89	19.95	60.00	50.00		PASS
6	27.8365	25.14	22.94	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	0.1500	39.50	30.77	66.00	56.00	Neutral	PASS
2	0.1770	35.06	26.11	64.63	54.63		PASS
3	0.5820	28.88	25.67	56.00	46.00		PASS
4	0.9961	26.74	22.09	56.00	46.00		PASS
5	13.1583	25.12	20.31	60.00	50.00		PASS
6	17.5485	19.47	14.20	60.00	50.00		PASS

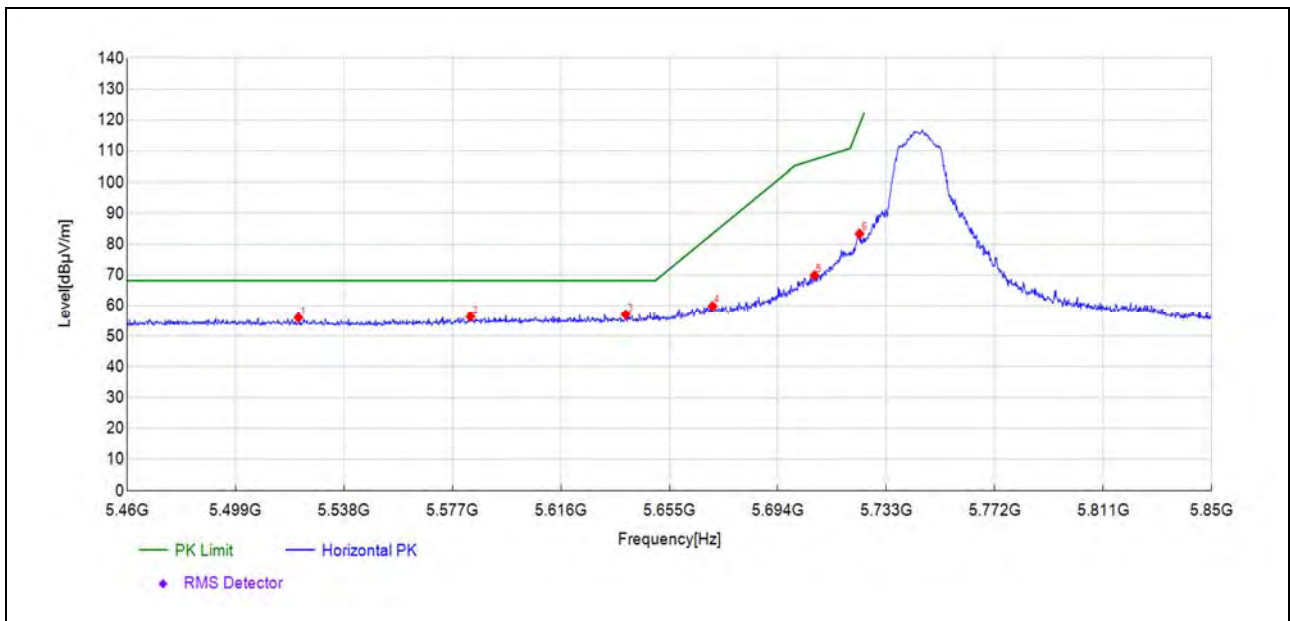
A.7. Restricted Frequency Bands

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition 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.

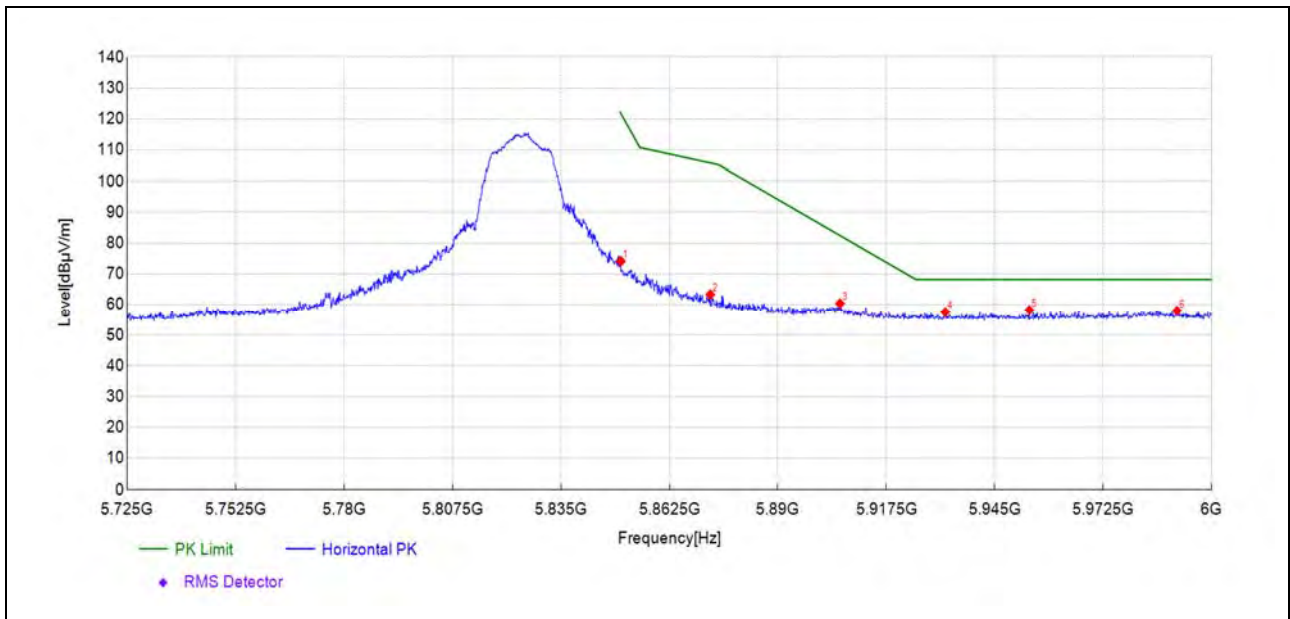
802.11a Mode

Plot for Channel 149



Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
5521.65	40.9	56.01	15.120	68.23	12.22	267	PK	Horizontal	PASS
5583.50	40.8	56.35	15.590	68.23	11.88	134	PK	Horizontal	PASS
5639.29	41.2	57.05	15.820	68.23	11.18	28	PK	Horizontal	PASS
5670.51	43.9	59.86	15.960	83.41	23.55	62	PK	Horizontal	PASS
5707.19	53.7	69.92	16.220	107.24	37.32	58	PK	Horizontal	PASS
5723.38	67.1	83.36	16.240	118.54	35.18	58	PK	Horizontal	PASS

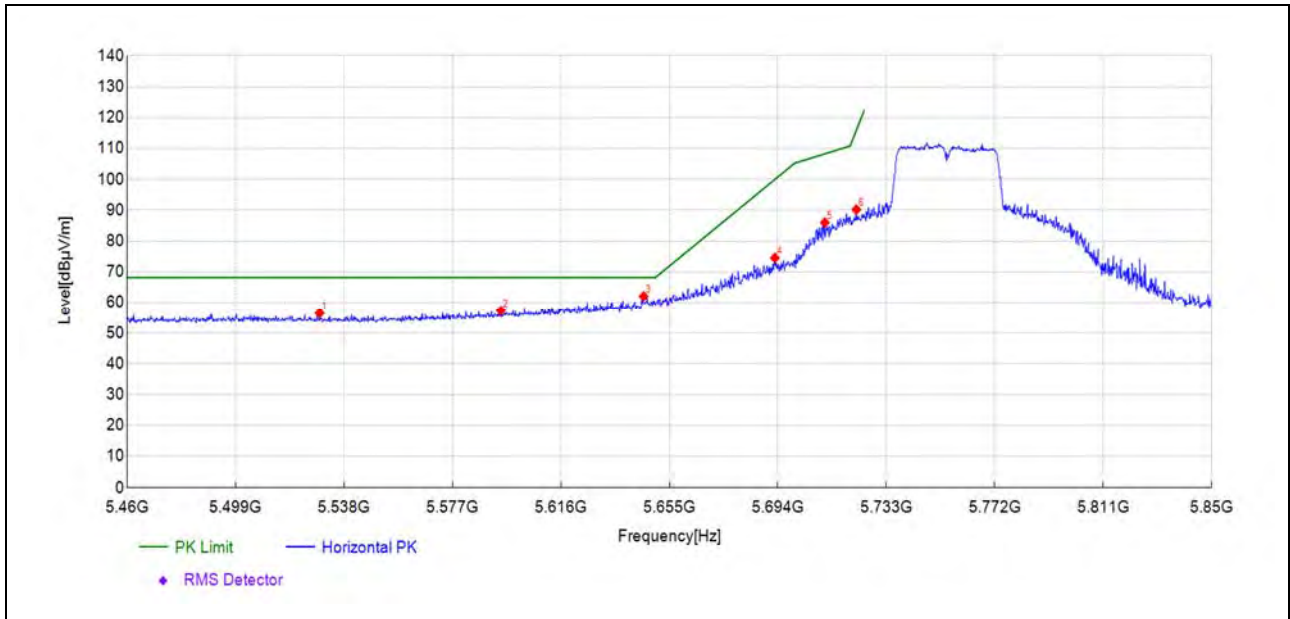
Plot for Channel 165



Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
5850.19	58.2	74.17	15.970	121.80	47.63	64	PK	Horizontal	PASS
5872.89	47.3	63.32	16.050	105.82	42.50	77	PK	Horizontal	PASS
5905.77	44.2	60.41	16.190	82.46	22.05	60	PK	Horizontal	PASS
5932.45	41.1	57.51	16.400	68.23	10.72	60	PK	Horizontal	PASS
5953.78	41.6	58.19	16.600	68.23	10.04	31	PK	Horizontal	PASS
5991.20	40.9	57.94	17.040	68.23	10.29	64	PK	Horizontal	PASS

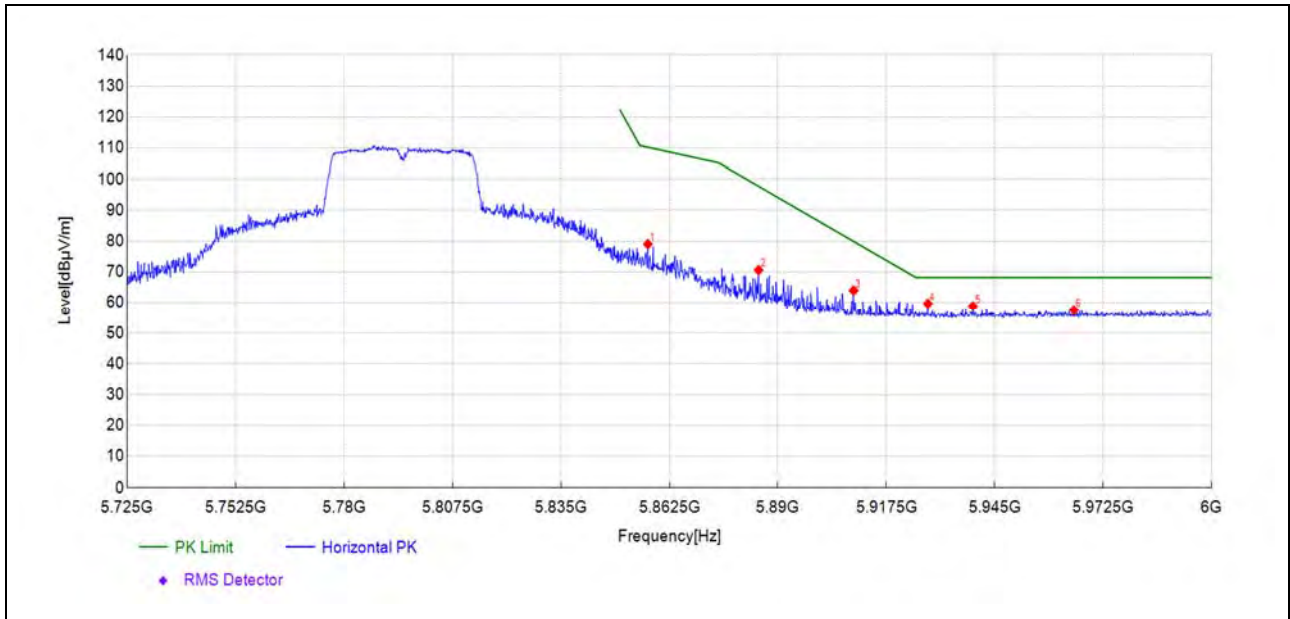
**802.11n(HT40) Mode**

Plot for Channel 151



Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
5529.26	41.4	56.46	15.070	68.23	11.77	103	PK	Horizontal	PASS
5594.42	41.5	57.29	15.800	68.23	10.94	103	PK	Horizontal	PASS
5645.73	46.3	62.13	15.820	68.23	6.10	111	PK	Horizontal	PASS
5692.95	58.4	74.58	16.150	100.01	25.43	65	PK	Horizontal	PASS
5710.90	69.8	86.03	16.220	108.28	22.25	115	PK	Horizontal	PASS
5722.21	74.0	90.23	16.250	115.87	25.64	124	PK	Horizontal	PASS

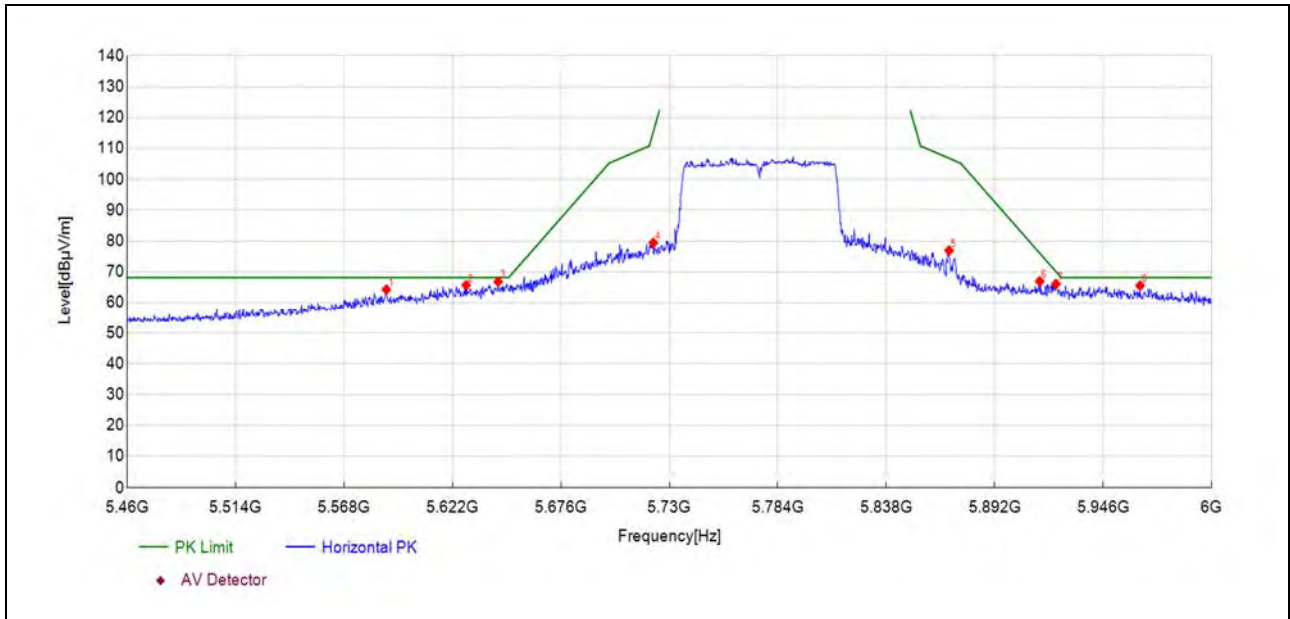
Plot for Channel 159



Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
5857.07	63.1	79.06	16.000	110.25	31.19	84	PK	Horizontal	PASS
5885.13	54.6	70.65	16.100	97.73	27.08	80	PK	Horizontal	PASS
5909.20	47.8	63.99	16.230	79.92	15.93	84	PK	Horizontal	PASS
5928.05	43.3	59.70	16.380	68.23	8.53	80	PK	Horizontal	PASS
5939.47	42.4	58.82	16.470	68.23	9.41	76	PK	Horizontal	PASS
5965.06	40.8	57.50	16.730	68.23	10.73	156	PK	Horizontal	PASS

**802.11ac (VHT80) Mode**

Plot for Channel 155



Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
5589.12	48.6	64.30	15.690	68.23	3.93	67	PK	Horizontal	PASS
5628.83	49.9	65.72	15.840	68.23	2.51	55	PK	Horizontal	PASS
5644.77	51.1	66.89	15.820	68.23	1.34	67	PK	Horizontal	PASS
5722.03	63.2	79.43	16.250	115.46	36.03	50	PK	Horizontal	PASS
5869.25	61.0	76.99	16.040	106.84	29.85	76	PK	Horizontal	PASS
5914.37	50.7	66.99	16.270	76.10	9.11	71	PK	Horizontal	PASS
5922.47	49.8	66.14	16.320	70.10	3.96	67	PK	Horizontal	PASS
5964.34	48.9	65.58	16.720	68.23	2.65	71	PK	Horizontal	PASS



A.8. 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 40GHz 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 for each bandwidth.

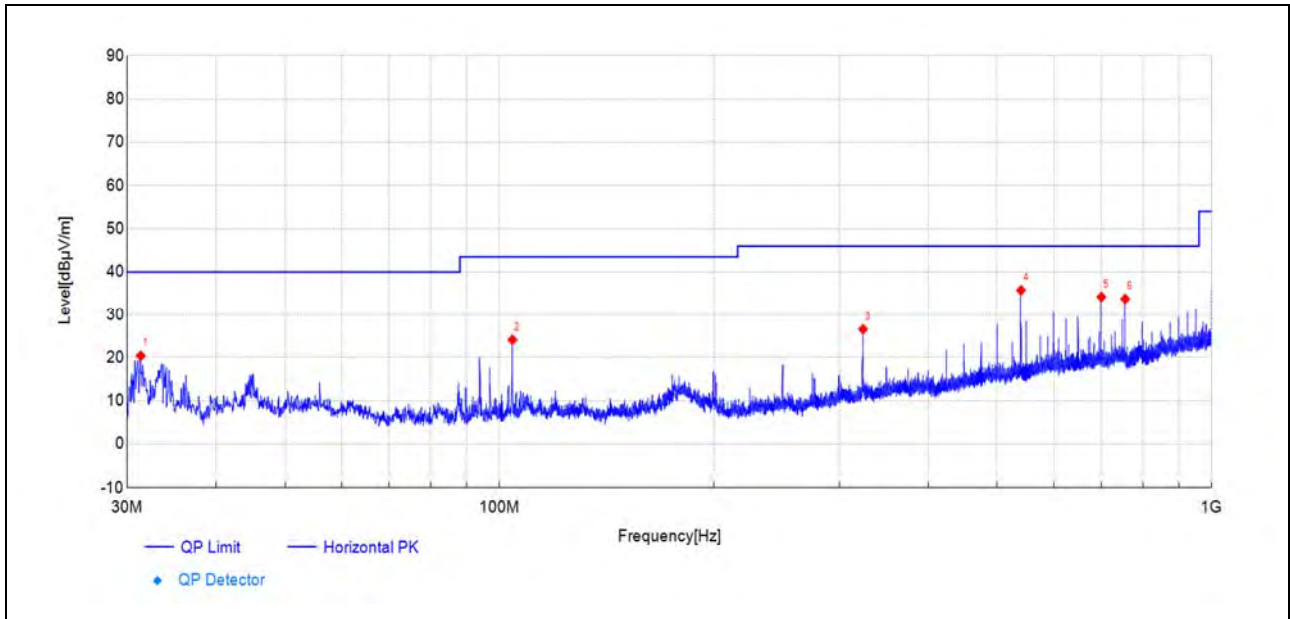
Field strength of fundamental:

Frequency [MHz]	Reading [dB μ V]	Level [dB μ V/m]	Factor [dB/m]	Limit [dB μ V/m]	Detector	Polarity
5824.22	86.7	102.69	15.980	74.00	PK	Horizontal

The field strength (the lowest) of fundamenta is more than 20dB higher than the unwanted emissions, in accordance with FCC part 15.215(b).

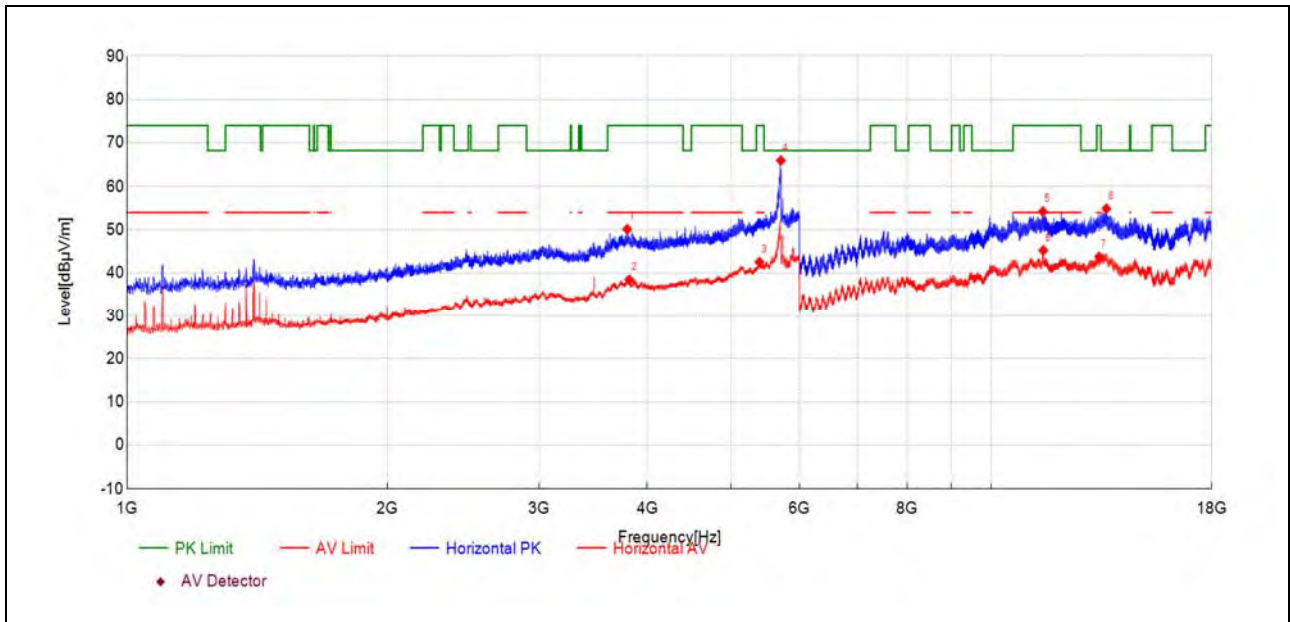
**802.11a Mode**

Plot for Channel 149



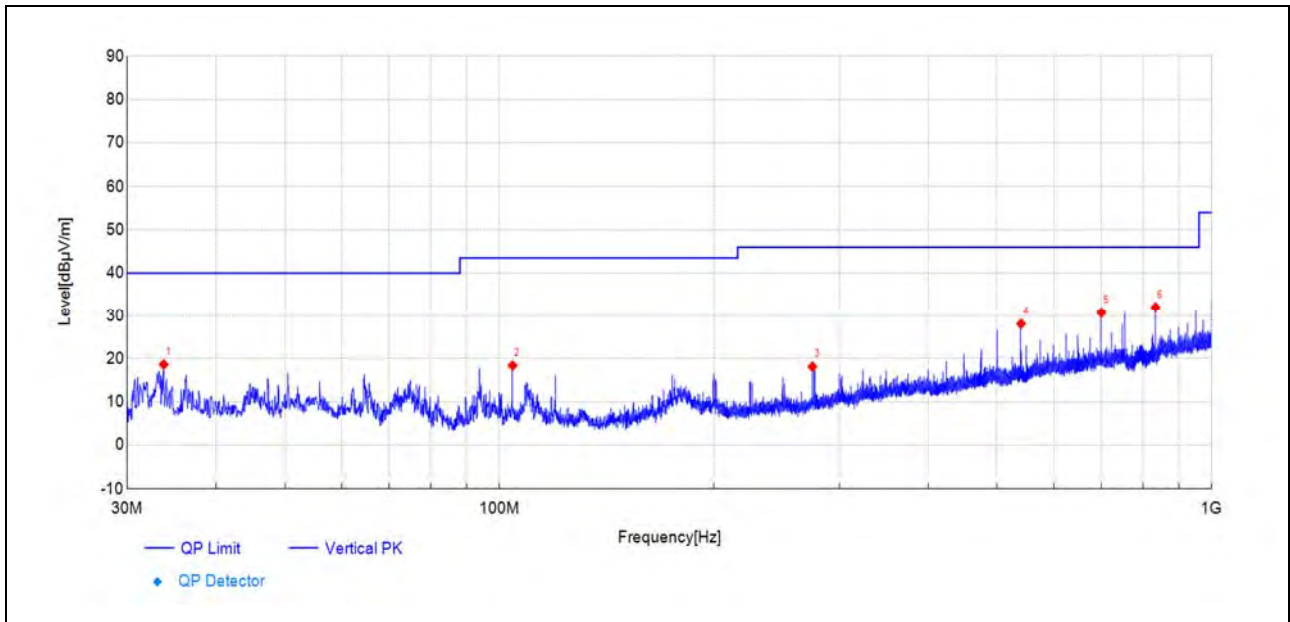
(Antenna Horizontal, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
31.36	51.0	20.38	-30.630	40.00	19.62	233	PK	Horizontal	PASS
104.31	53.6	24.11	-29.520	43.50	19.39	80	PK	Horizontal	PASS
324.02	51.3	26.54	-24.720	46.00	19.46	45	PK	Horizontal	PASS
539.86	55.0	35.76	-19.200	46.00	10.24	192	PK	Horizontal	PASS
700.01	49.9	34.21	-15.720	46.00	11.79	14	PK	Horizontal	PASS
755.98	48.9	33.75	-15.170	46.00	12.25	351	PK	Horizontal	PASS



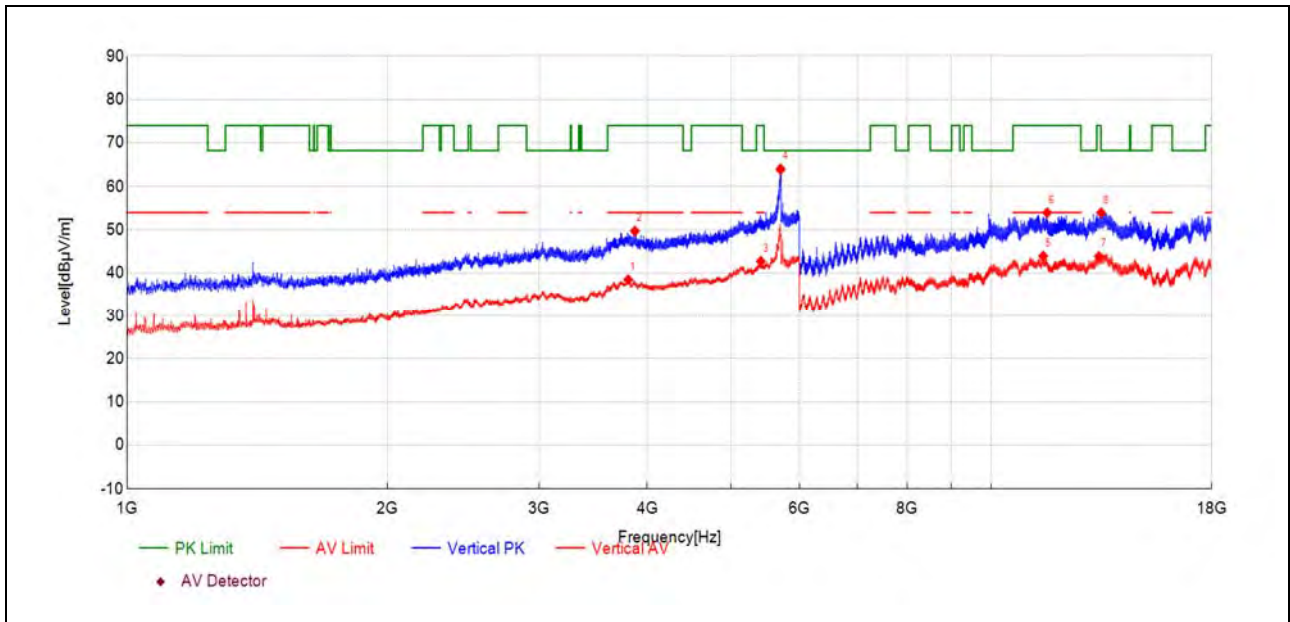
(Antenna Horizontal, 1GHz to 18GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
3791.62	38.5	50.16	11.640	74.00	23.84	282	PK	Horizontal	PASS
3813.89	26.8	38.48	11.660	54.00	15.52	186	AV	Horizontal	PASS
5394.49	24.6	42.55	17.930	54.00	11.45	247	AV	Horizontal	PASS
5709.97	46.4	65.90	19.470	68.23	2.33	60	PK	Horizontal	PASS
11481.34	40.0	54.24	14.250	74.00	19.76	130	PK	Horizontal	PASS
11489.98	31.0	45.25	14.260	54.00	8.75	45	AV	Horizontal	PASS
13337.57	27.3	43.78	16.480	54.00	10.22	45	AV	Horizontal	PASS
13592.46	37.8	54.89	17.110	68.23	13.34	312	PK	Horizontal	PASS



(Anten Vertical, 30MHz to 1GHz)

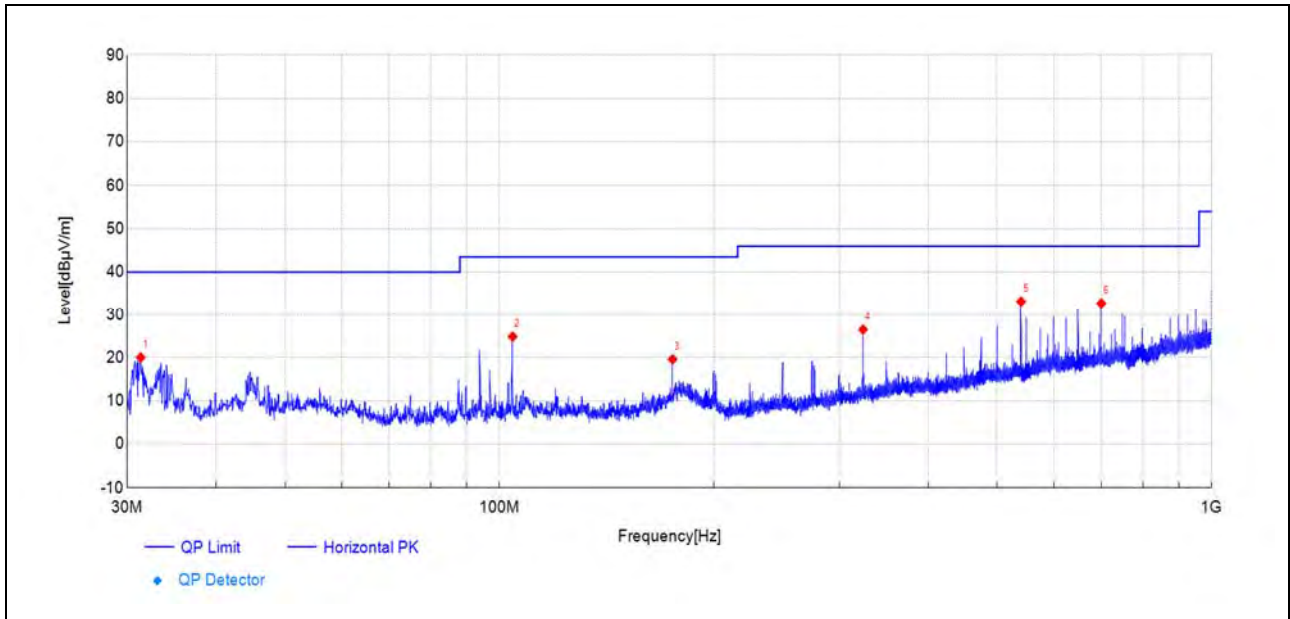
Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
33.78	48.6	18.63	-29.970	40.00	21.37	295	PK	Vertical	PASS
104.35	47.9	18.40	-29.490	43.50	25.10	326	PK	Vertical	PASS
275.13	44.2	18.15	-26.070	46.00	27.85	112	PK	Vertical	PASS
539.95	47.3	28.09	-19.210	46.00	17.91	173	PK	Vertical	PASS
700.01	46.4	30.72	-15.720	46.00	15.28	305	PK	Vertical	PASS
833.73	45.9	32.00	-13.940	46.00	14.00	143	PK	Vertical	PASS



(Anten Vertical, 1GHz to 18GHz)

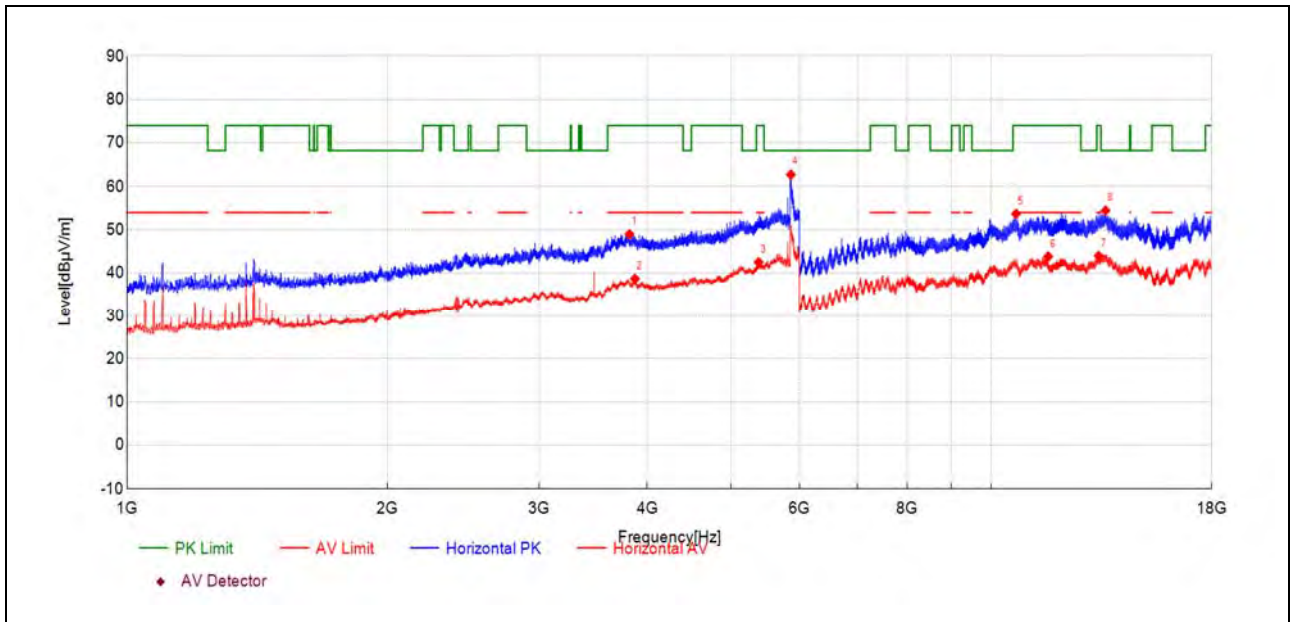
Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
3801.62	26.8	38.49	11.680	54.00	15.51	33	AV	Vertical	PASS
3870.26	38.1	49.75	11.640	74.00	24.25	69	PK	Vertical	PASS
5413.13	24.9	42.74	17.870	54.00	11.26	110	AV	Vertical	PASS
5704.97	44.5	63.98	19.480	68.23	4.25	103	PK	Vertical	PASS
11489.98	29.7	43.96	14.260	54.00	10.04	77	AV	Vertical	PASS
11608.54	39.8	53.98	14.210	74.00	20.02	67	PK	Vertical	PASS
13327.97	27.4	43.88	16.490	54.00	10.12	24	AV	Vertical	PASS
13404.30	37.6	53.99	16.420	68.23	14.24	35	PK	Vertical	PASS

Plot for Channel 165



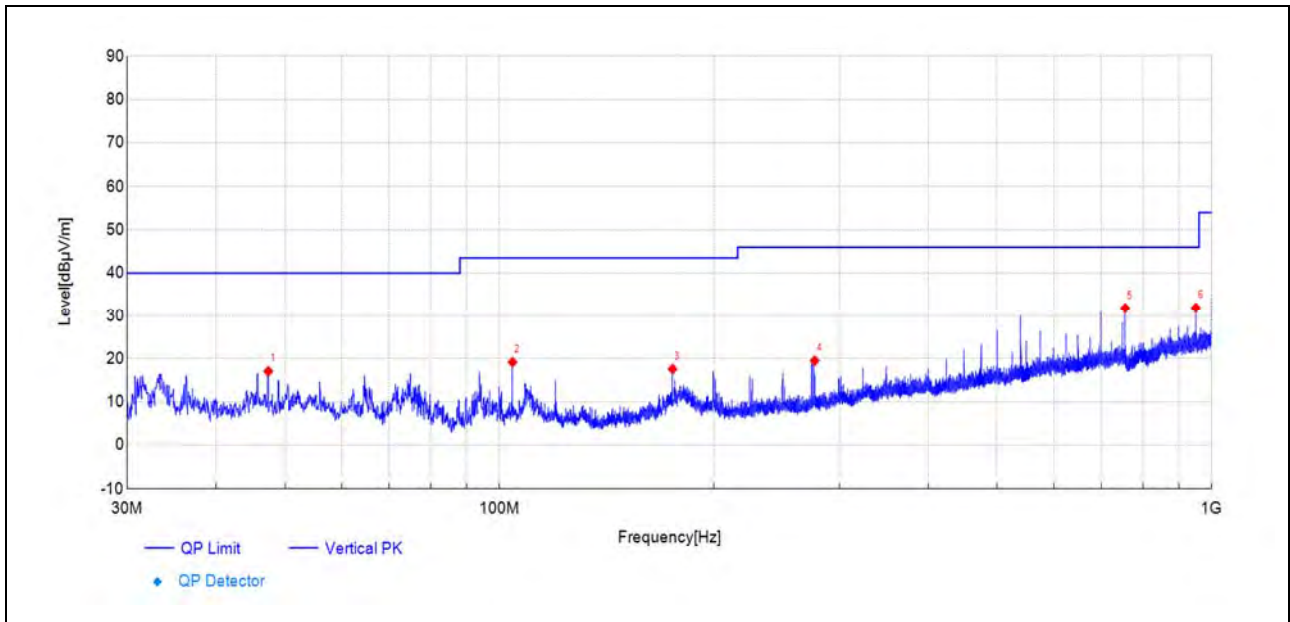
(Antenna Horizontal, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
31.36	50.7	20.04	-30.630	40.00	19.96	117	PK	Horizontal	PASS
104.35	54.3	24.84	-29.490	43.50	18.66	77	PK	Horizontal	PASS
175.02	50.7	19.59	-31.110	43.50	23.91	127	PK	Horizontal	PASS
323.97	51.2	26.48	-24.720	46.00	19.52	1	PK	Horizontal	PASS
539.91	52.4	33.14	-19.210	46.00	12.86	92	PK	Horizontal	PASS
699.96	48.4	32.71	-15.720	46.00	13.29	11	PK	Horizontal	PASS



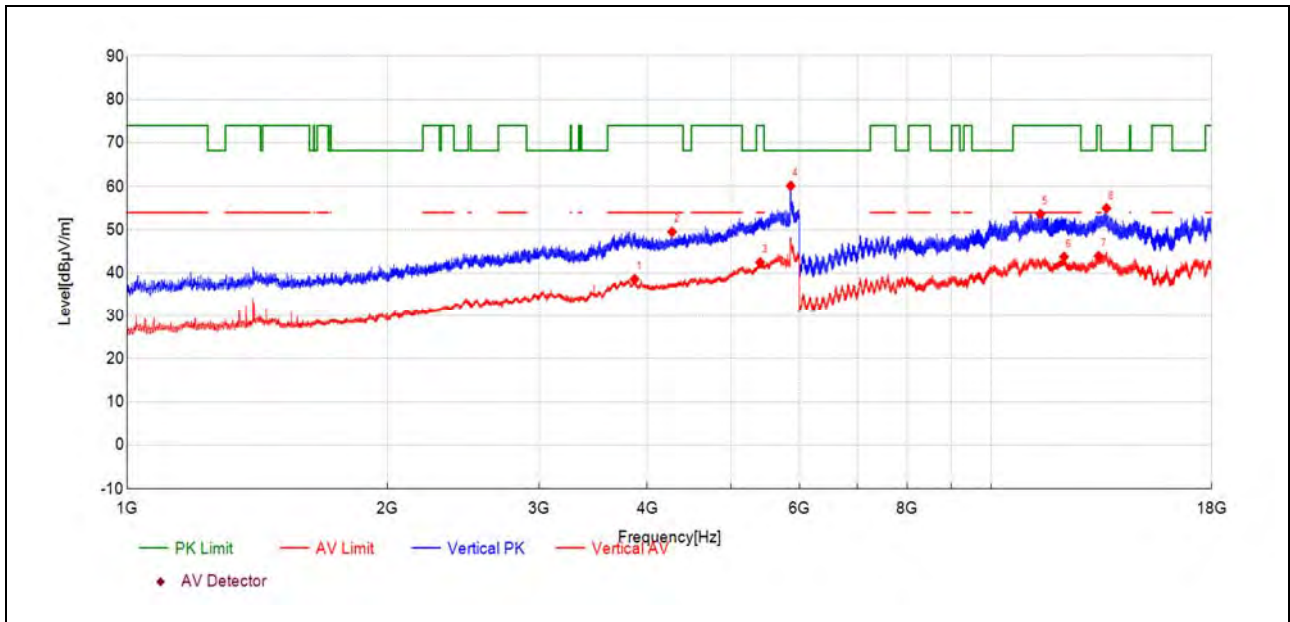
(Antenna Horizontal, 1GHz to 18GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
3814.35	37.3	48.98	11.650	74.00	25.02	47	PK	Horizontal	PASS
3870.26	27.0	38.67	11.640	54.00	15.33	360	AV	Horizontal	PASS
5382.67	24.8	42.52	17.770	54.00	11.48	187	AV	Horizontal	PASS
5864.53	43.9	62.79	18.920	68.23	5.44	75	PK	Horizontal	PASS
10684.51	41.3	53.71	12.440	74.00	20.29	302	PK	Horizontal	PASS
11644.07	29.9	43.84	13.920	54.00	10.16	35	AV	Horizontal	PASS
13317.41	27.5	43.98	16.510	54.00	10.02	270	AV	Horizontal	PASS
13562.22	37.4	54.48	17.100	68.23	13.75	280	PK	Horizontal	PASS



(Anten Vertical, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
47.36	45.5	17.07	-28.410	40.00	22.93	9	PK	Vertical	PASS
104.35	48.7	19.18	-29.490	43.50	24.32	309	PK	Vertical	PASS
175.02	48.7	17.60	-31.110	43.50	25.90	121	PK	Vertical	PASS
277.02	45.7	19.53	-26.180	46.00	26.47	106	PK	Vertical	PASS
755.89	46.9	31.78	-15.150	46.00	14.22	131	PK	Vertical	PASS
949.99	42.8	31.88	-10.910	46.00	14.12	111	PK	Vertical	PASS



(Anten Vertical, 1GHz to 18GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
3867.08	27.0	38.62	11.640	54.00	15.38	26	AV	Vertical	PASS
4272.57	37.2	49.55	12.390	74.00	24.45	264	PK	Vertical	PASS
5402.22	24.5	42.50	17.980	54.00	11.50	109	AV	Vertical	PASS
5861.81	41.3	60.18	18.910	68.23	8.05	103	PK	Vertical	PASS
11401.18	39.5	53.69	14.170	74.00	20.31	334	PK	Vertical	PASS
12144.25	29.1	43.79	14.670	54.00	10.21	270	AV	Vertical	PASS
13316.45	27.4	43.95	16.510	54.00	10.05	174	AV	Vertical	PASS
13598.22	37.9	55.01	17.110	68.23	13.22	216	PK	Vertical	PASS

— END OF REPORT —