



PSD NVNT a 5180MHz Ant1



PSD NVNT a 5220MHz Ant1



PSD NVNT a 5240MHz Ant1



PSD NVNT a 5260MHz Ant1



PSD NVNT a 5300MHz Ant1



PSD NVNT a 5320MHz Ant1



PSD NVNT a 5500MHz Ant1



PSD NVNT a 5580MHz Ant1



PSD NVNT a 5720MHz Ant1



PSD NVNT a 5745MHz Ant1



PSD NVNT a 5785MHz Ant1



PSD NVNT a 5825MHz Ant1



PSD NVNT n20 5180MHz Ant1



PSD NVNT n20 5220MHz Ant1



PSD NVNT n20 5240MHz Ant1



PSD NVNT n20 5260MHz Ant1



PSD NVNT n20 5300MHz Ant1



PSD NVNT n20 5320MHz Ant1



PSD NVNT n20 5500MHz Ant1



PSD NVNT n20 5580MHz Ant1



PSD NVNT n20 5720MHz Ant1



PSD NVNT n20 5745MHz Ant1



PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5825MHz Ant1



PSD NVNT n40 5190MHz Ant1



PSD NVNT n40 5230MHz Ant1



PSD NVNT n40 5270MHz Ant1



PSD NVNT n40 5310MHz Ant1



PSD NVNT n40 5510MHz Ant1



PSD NVNT n40 5550MHz Ant1



PSD NVNT n40 5710MHz Ant1



PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5795MHz Ant1



PSD NVNT ac20 5180MHz Ant1



PSD NVNT ac20 5220MHz Ant1



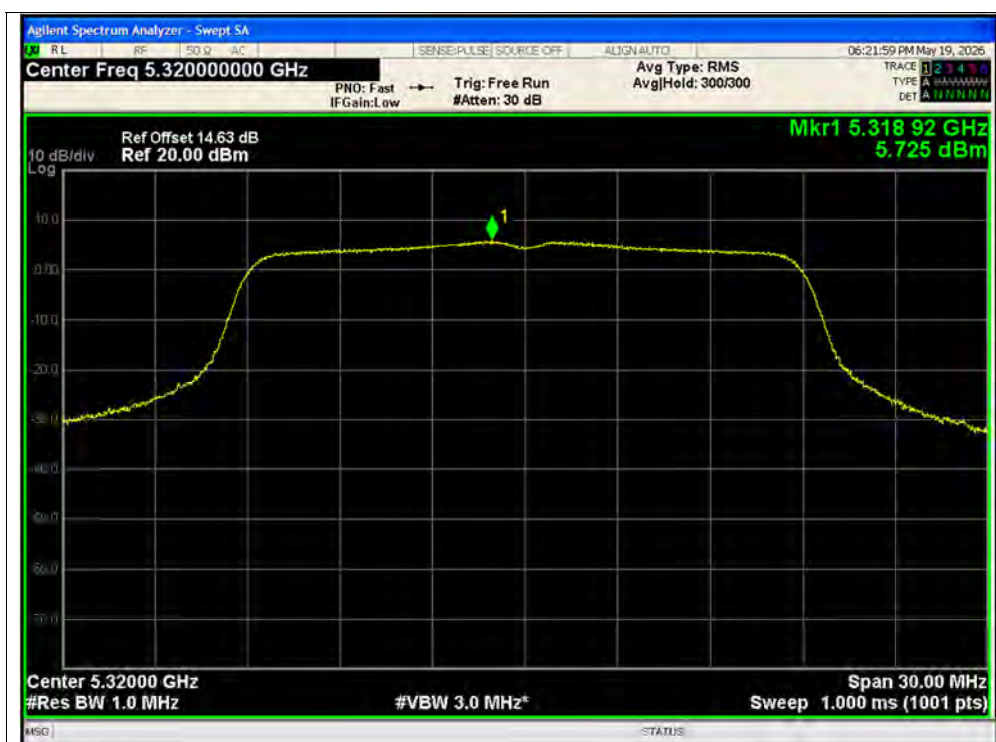
PSD NVNT ac20 5240MHz Ant1



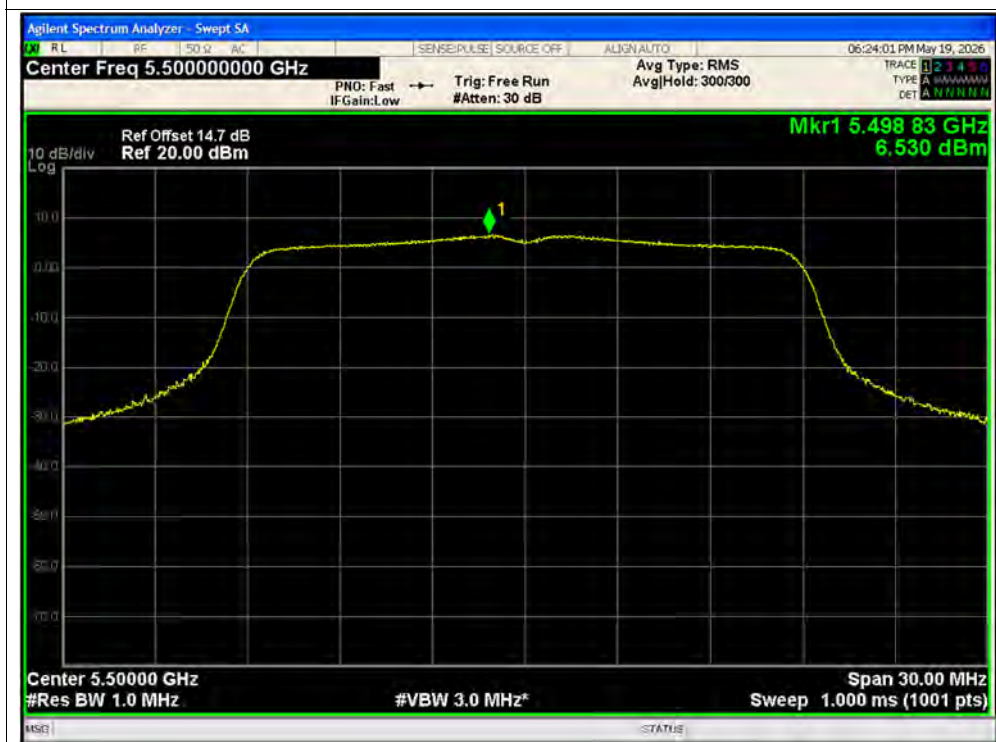
PSD NVNT ac20 5260MHz Ant1



PSD NVNT ac20 5300MHz Ant1



PSD NVNT ac20 5320MHz Ant1

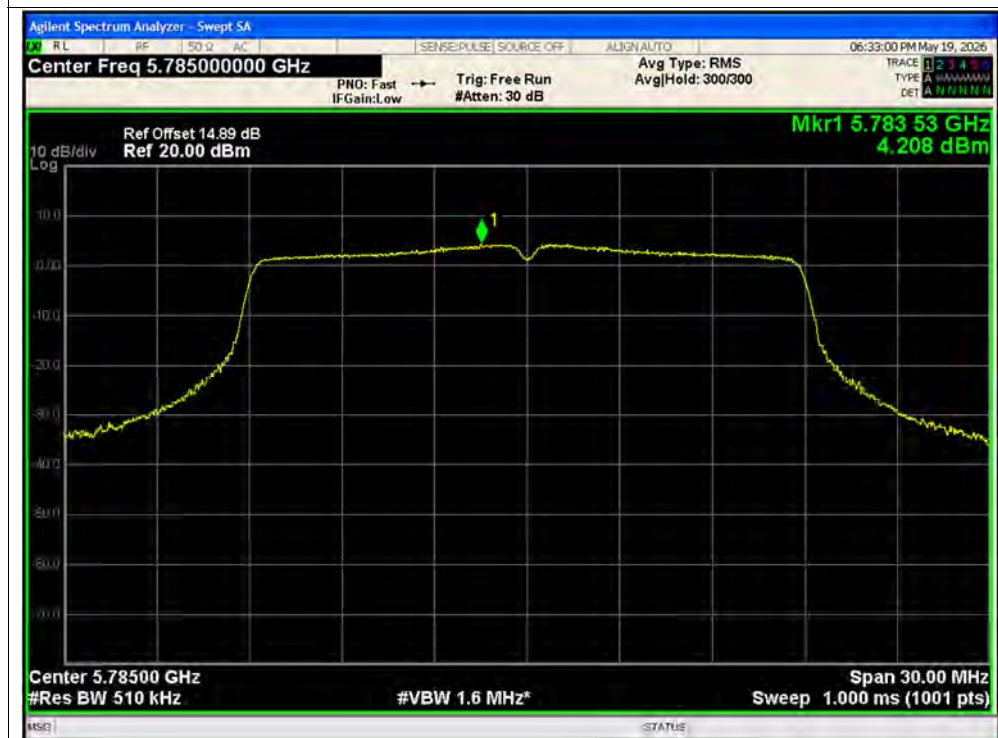


PSD NVNT ac20 5500MHz Ant1





PSD NVNT ac20 5745MHz Ant1



PSD NVNT ac20 5785MHz Ant1



PSD NVNT ac20 5825MHz Ant1



PSD NVNT ac40 5190MHz Ant1



PSD NVNT ac40 5230MHz Ant1



PSD NVNT ac40 5270MHz Ant1



PSD NVNT ac40 5310MHz Ant1



PSD NVNT ac40 5510MHz Ant1



PSD NVNT ac40 5550MHz Ant1



PSD NVNT ac40 5710MHz Ant1



PSD NVNT ac40 5755MHz Ant1



PSD NVNT ac40 5795MHz Ant1



PSD NVNT ac80 5210MHz Ant1



PSD NVNT ac80 5290MHz Ant1



PSD NVNT ac80 5530MHz Ant1



PSD NVNT ac80 5610MHz Ant1



PSD NVNT ac80 5690MHz Ant1



PSD NVNT ac80 5775MHz Ant1

**A.5. Frequency Stability**

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 3.6V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
20C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
20C 4.45V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
-10C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
0C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
10C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
30C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
40C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
45C 3.86V	CW	5180	Ant1	5180.003	3000	0.58	25	Pass
20C 3.6V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
20C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
20C 4.45V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
-10C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
0C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
10C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
30C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
40C 3.86V	CW	5260	Ant1	5260.001	1000	0.19	25	Pass
45C 3.86V	CW	5260	Ant1	5260	0	0	25	Pass
20C 3.6V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
20C 3.86V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
20C 4.45V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
-10C 3.86V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
0C 3.86V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
10C 3.86V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
30C 3.86V	CW	5500	Ant1	5499.999	-1000	-0.18	25	Pass
40C 3.86V	CW	5500	Ant1	5499.998	-2000	-0.36	25	Pass
45C 3.86V	CW	5500	Ant1	5499.998	-2000	-0.36	25	Pass
20C 3.6V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
20C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
20C 4.45V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
-10C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
0C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
10C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
30C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass



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40C 3.86V	CW	5745	Ant1	5744.998	-2000	-0.35	25	Pass
45C 3.86V	CW	5745	Ant1	5744.997	-3000	-0.52	25	Pass



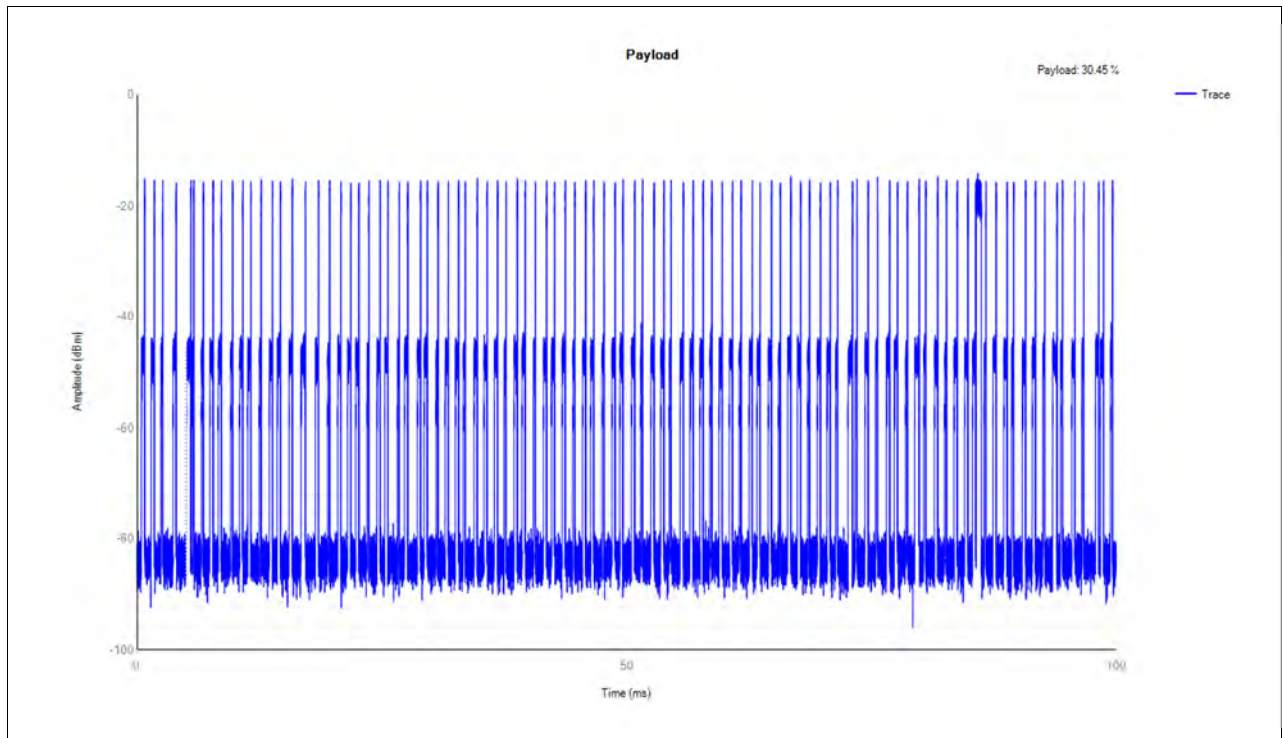


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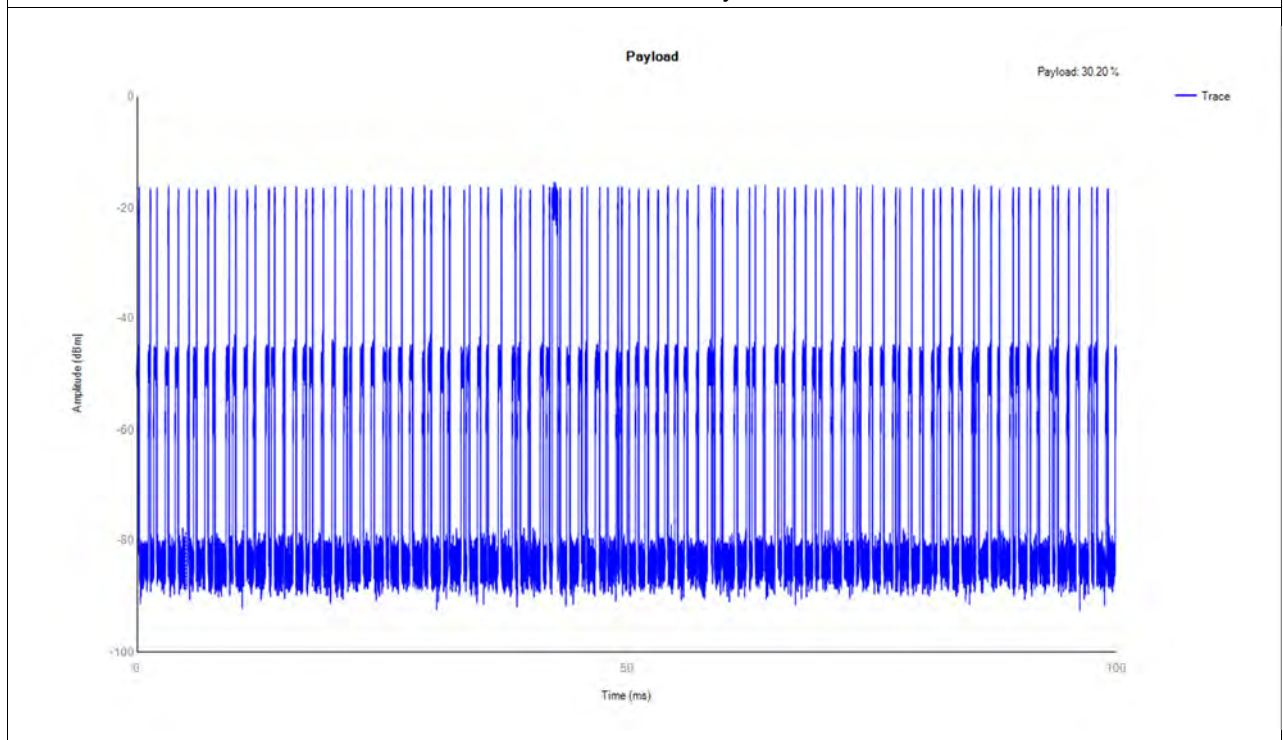
A.6. Dynamic Frequency Selection

Payload

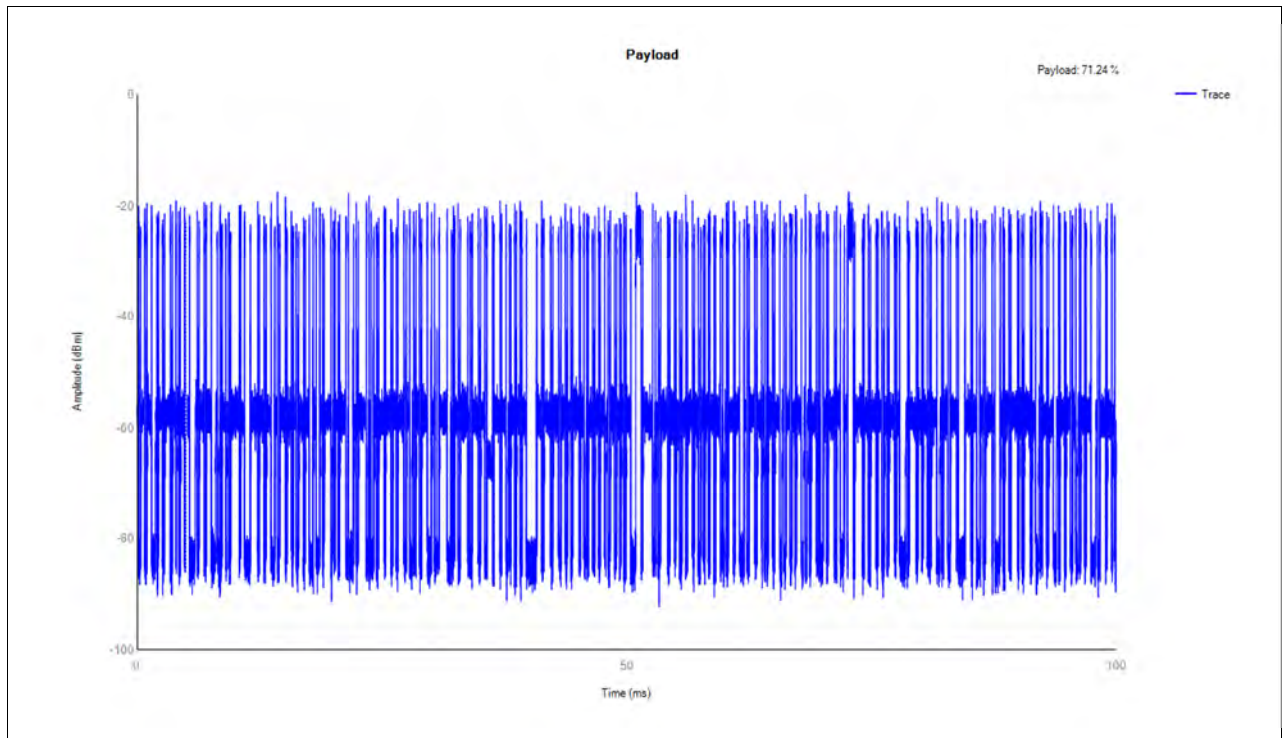
Mode	Frequency (MHz)	Result	Verdict
ac20	5320	30.45	Pass
ac20	5500	30.2	Pass
ac80	5290	71.24	Pass
ac80	5530	74.21	Pass



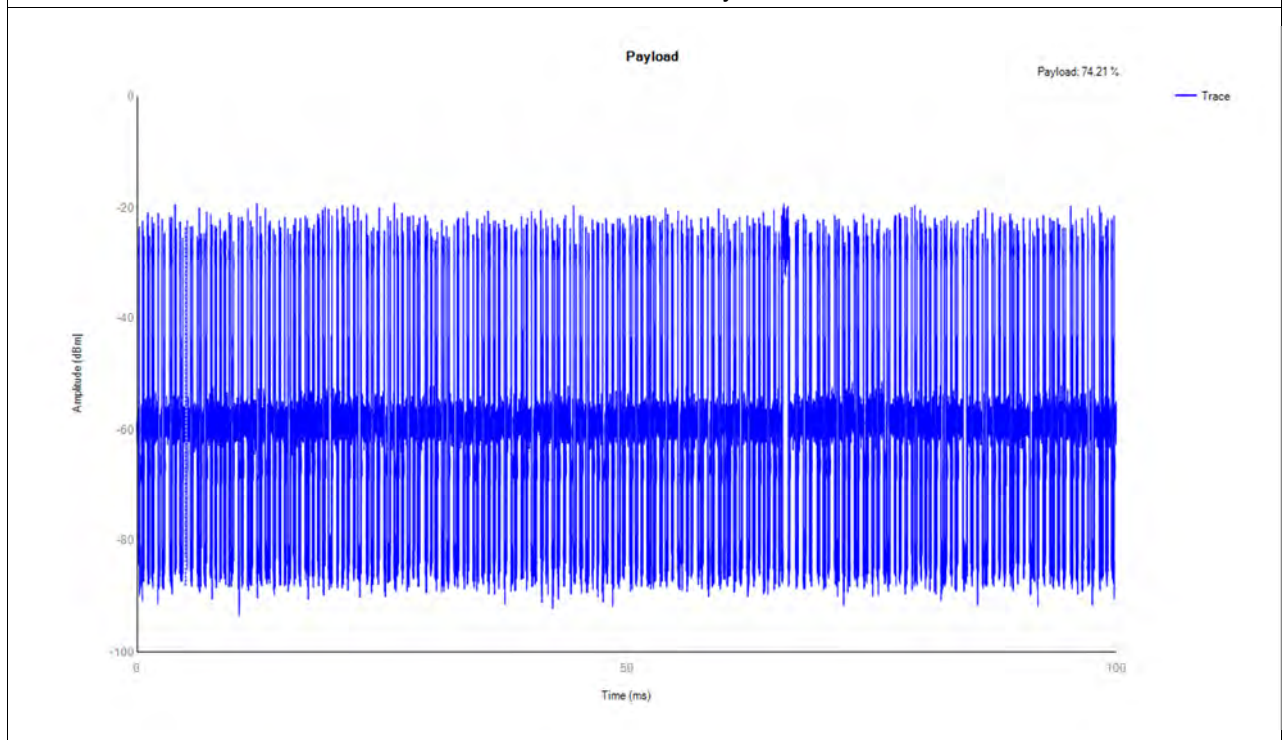
ac20 5320MHz Payload



ac20 5500MHz Payload



ac80 5290MHz Payload



ac80 5530MHz Payload



Detection Thresholds

Mode	Frequency (MHz)	Type	Result	Verdict
ac20	5320	DFS_FCC_T0	See test Graph	Pass
ac20	5500	DFS_FCC_T0	See test Graph	Pass
ac80	5290	DFS_FCC_T0	See test Graph	Pass
ac80	5530	DFS_FCC_T0	See test Graph	Pass

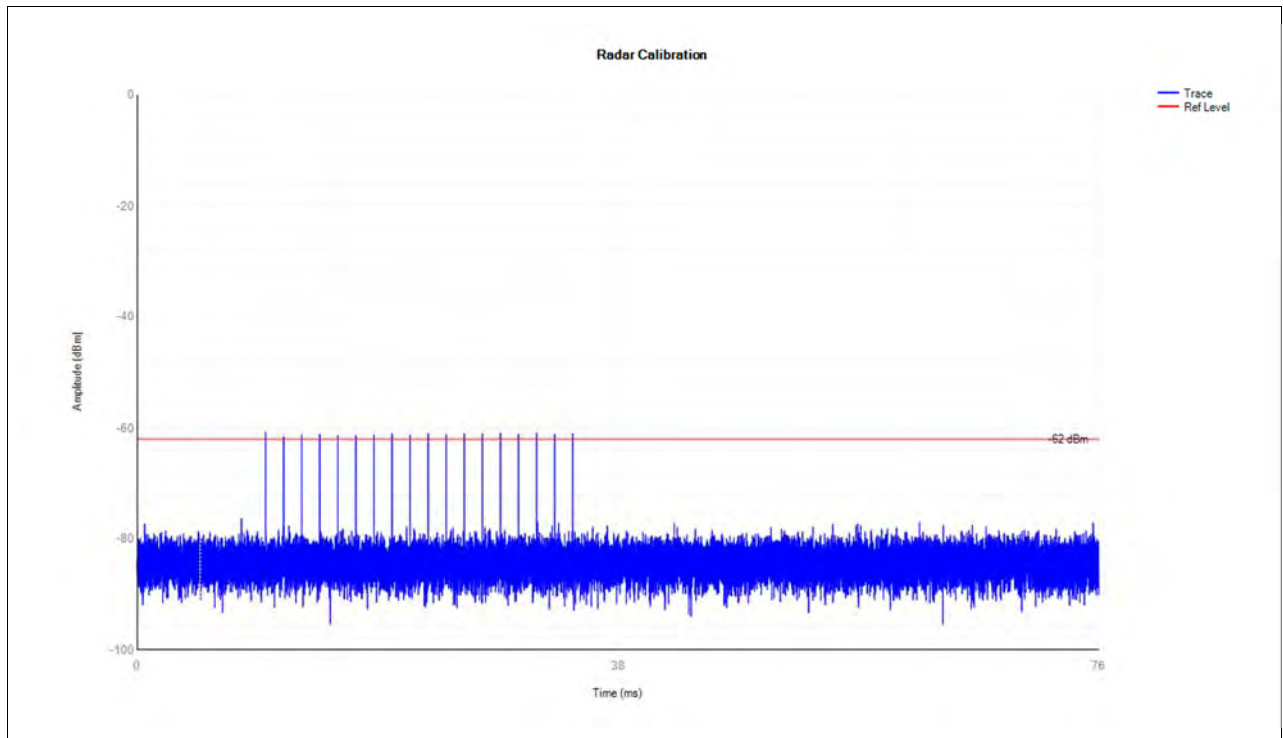
Spectrum analyzer settings:

Span: Zero

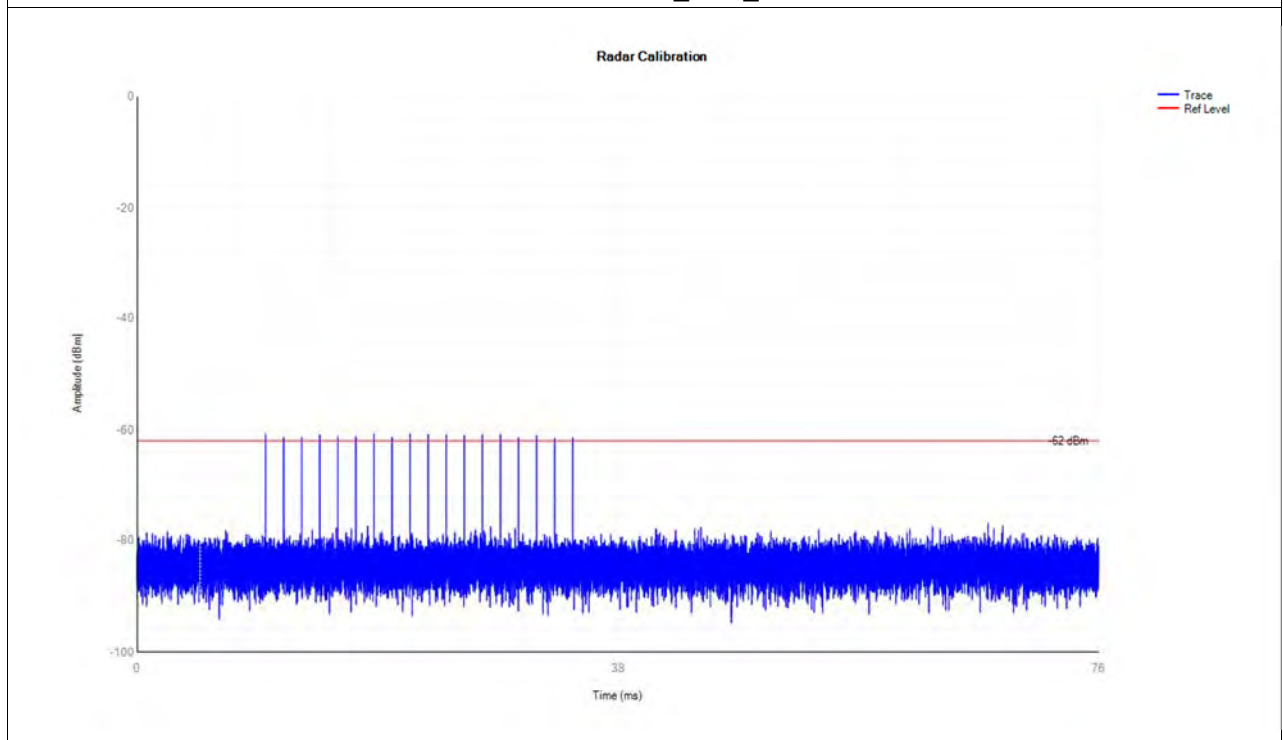
Detector Type: Peak

RBW: 3MHz

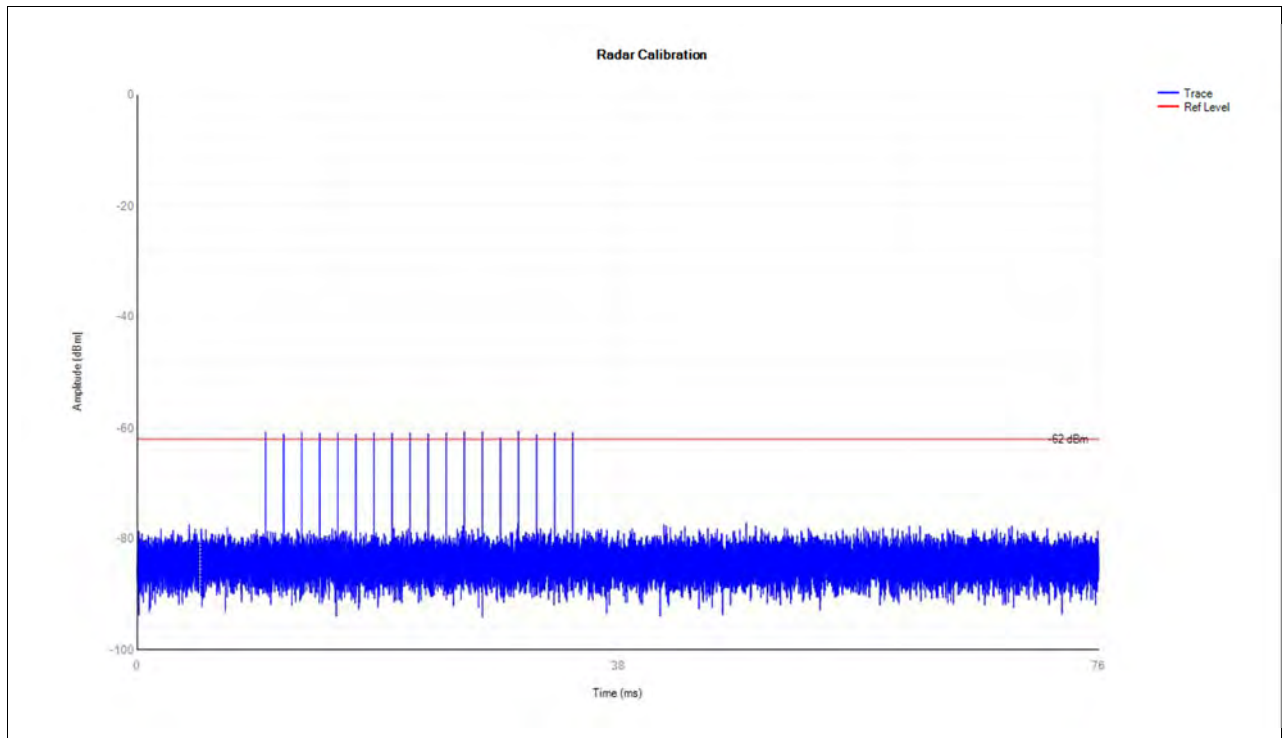
VBW: 3MHz



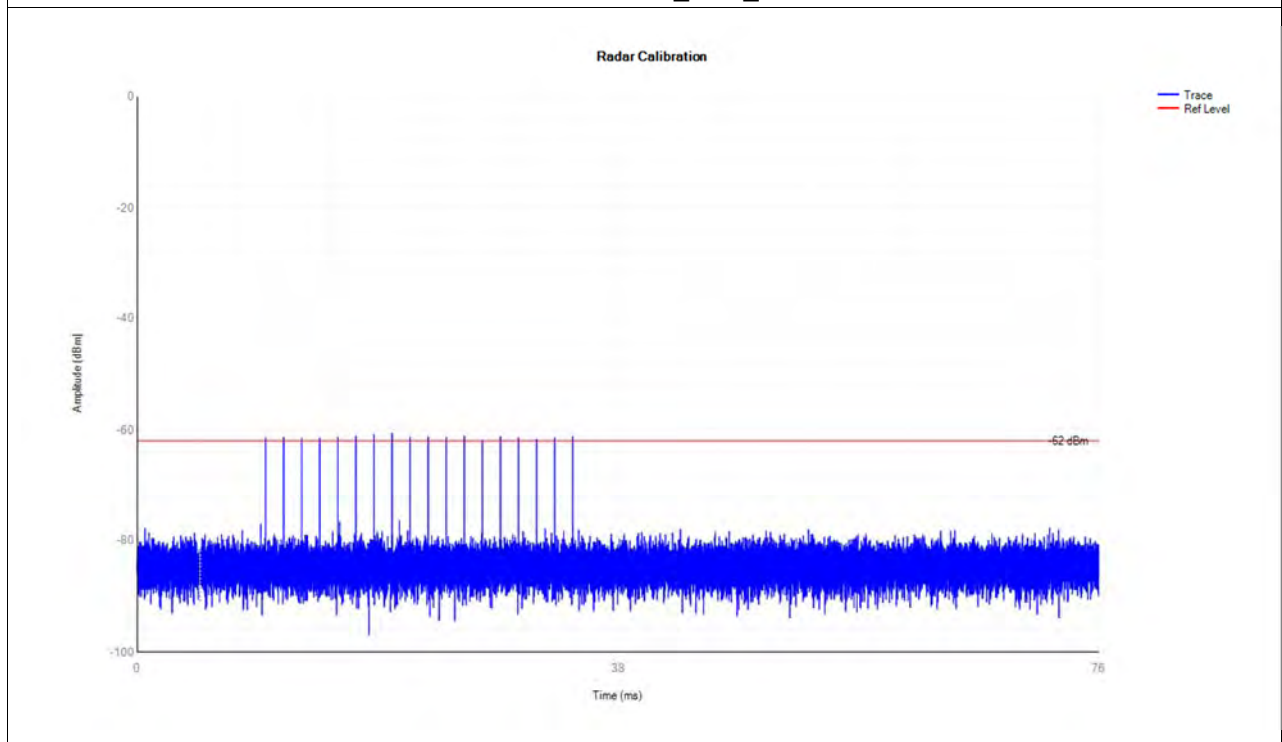
5320MHz DFS_FCC_T0



5500MHz DFS_FCC_T0



5290MHz DFS_FCC_T0



5530MHz DFS_FCC_T0



Channel Move Time and Channel Closing Transmission Time

Mode	Frequency (MHz)	Channel Move Time (s)	Limit Channel Move Time (s)	Close Transmission Time (s)	Limit Close Transmission Time (s)	Close Transmission Time after 200ms(s)	Limit Close Transmission Time after 200ms (s)	Verdict
ac20	5320	0.908	10	0.042	0.26	0.011	0.06	Pass
ac20	5500	0.893	10	0.03	0.26	0.009	0.06	Pass
ac80	5290	0.75	10	0.011	0.26	0.007	0.06	Pass
ac80	5530	0.743	10	0.013	0.26	0.007	0.06	Pass

Spectrum analyzer settings:

Span: Zero

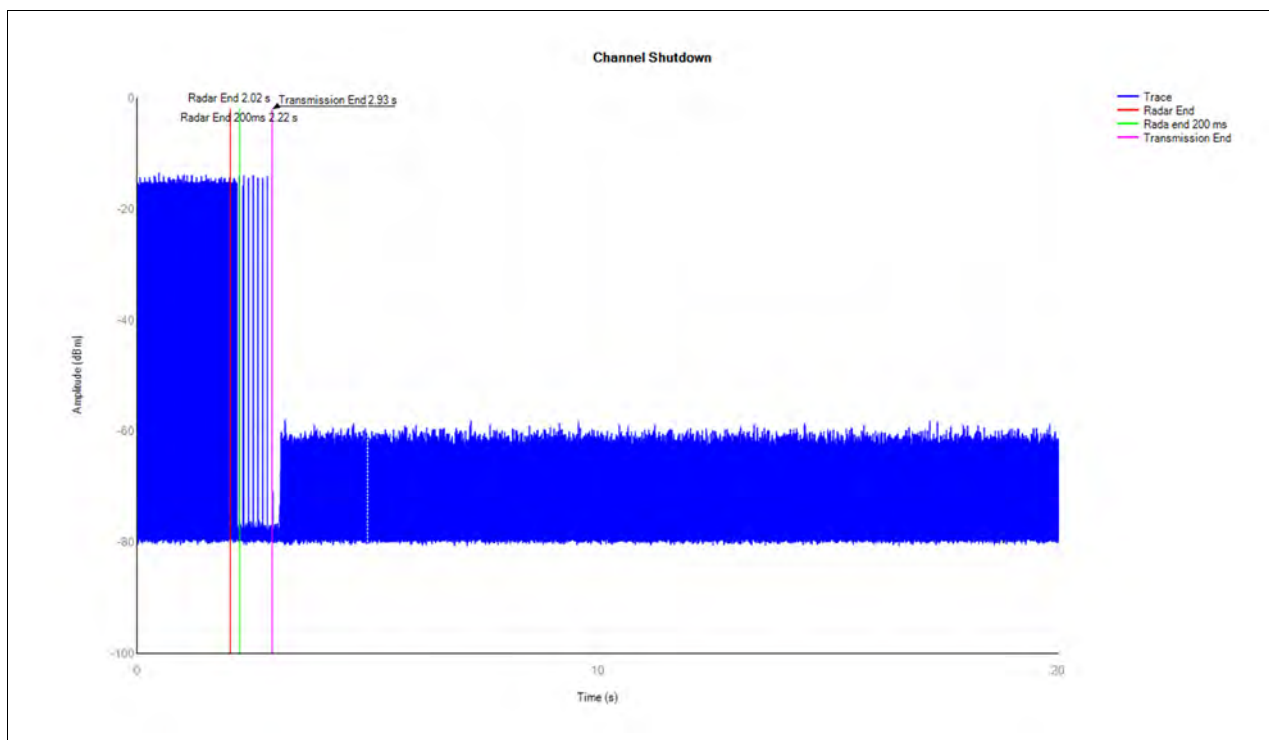
Detector type: Peak

RBW: 3MHz

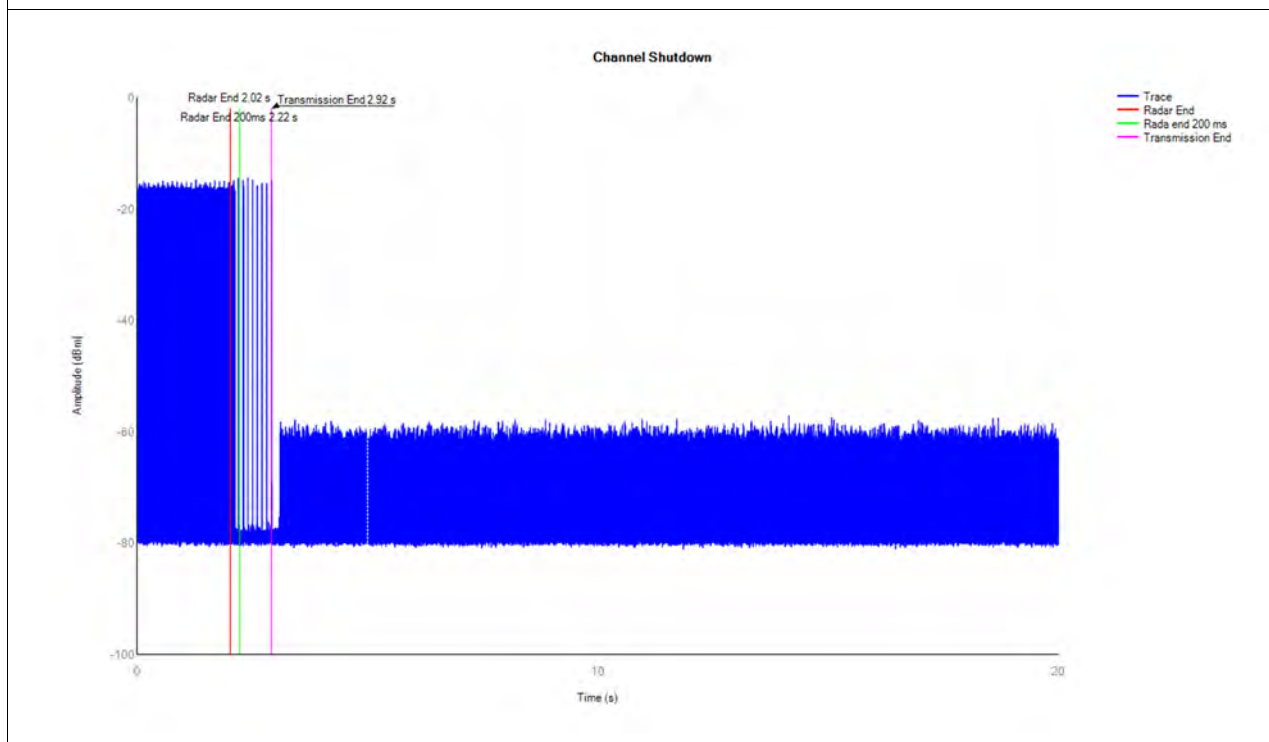
VBW: 3MHz

Sweep time: 20s

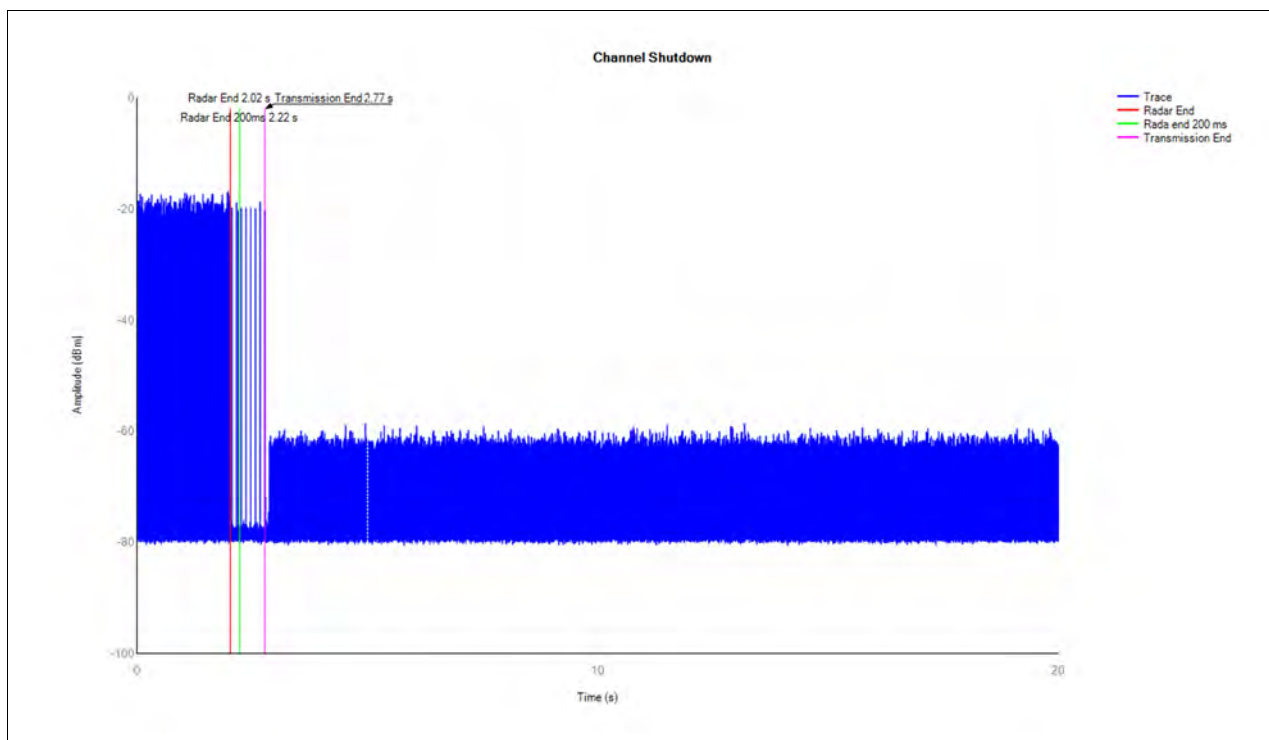




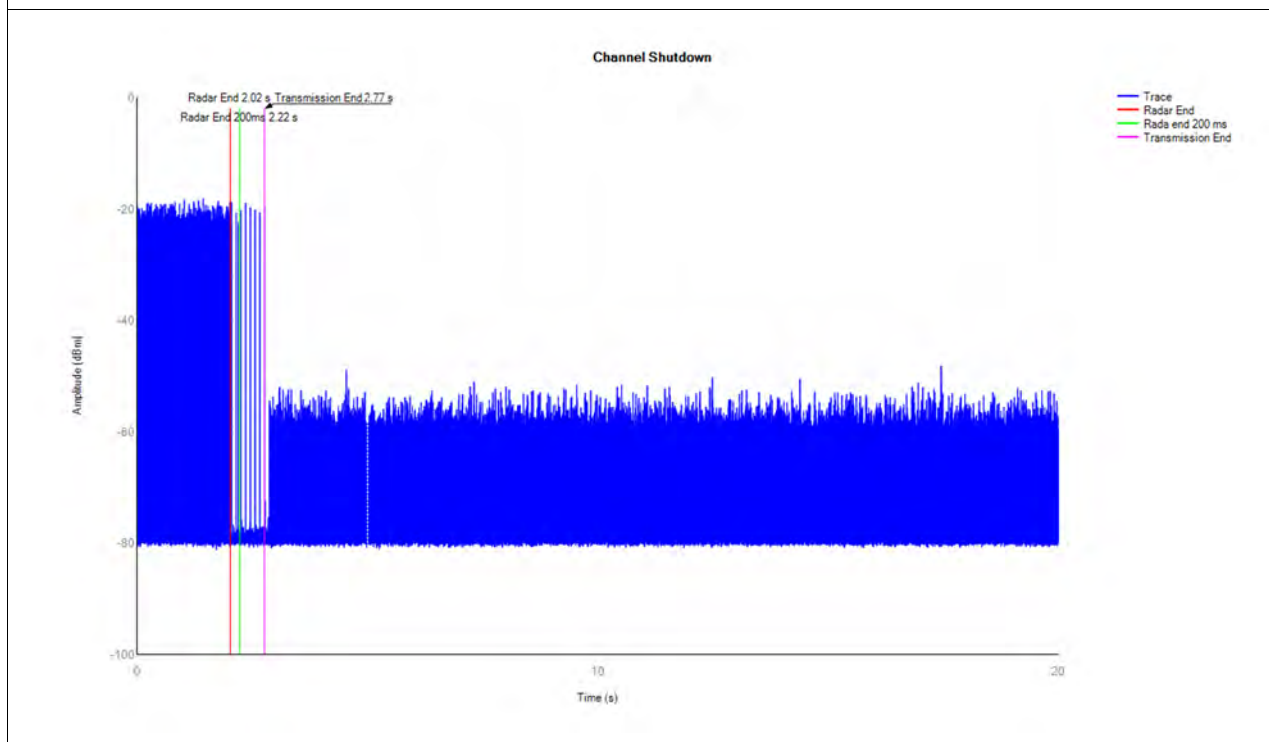
ac20 5320MHz Shutdown



ac20 5500MHz Shutdown



ac80 5290MHz Shutdown



ac80 5530MHz Shutdown

Note: The signal above the noise floor after the radar signal ends is the signal which leaked from other channels that have been moved following the Master device.



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Non-Occupancy Period

Mode	Frequency (MHz)	Result	Verdict
ac20	5320	See test Graph	Pass
ac20	5500	See test Graph	Pass

Spectrum analyzer settings:

Span: Zero

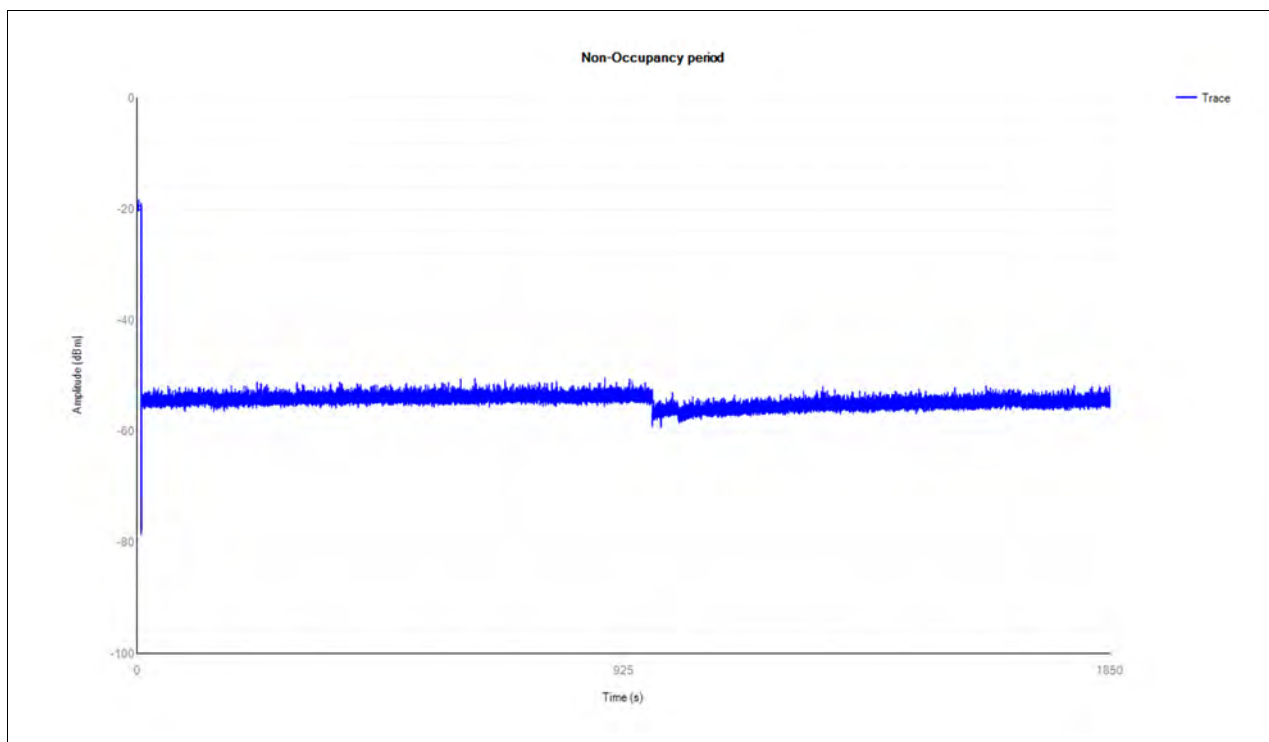
Detector type: Peak

RBW: 3MHz

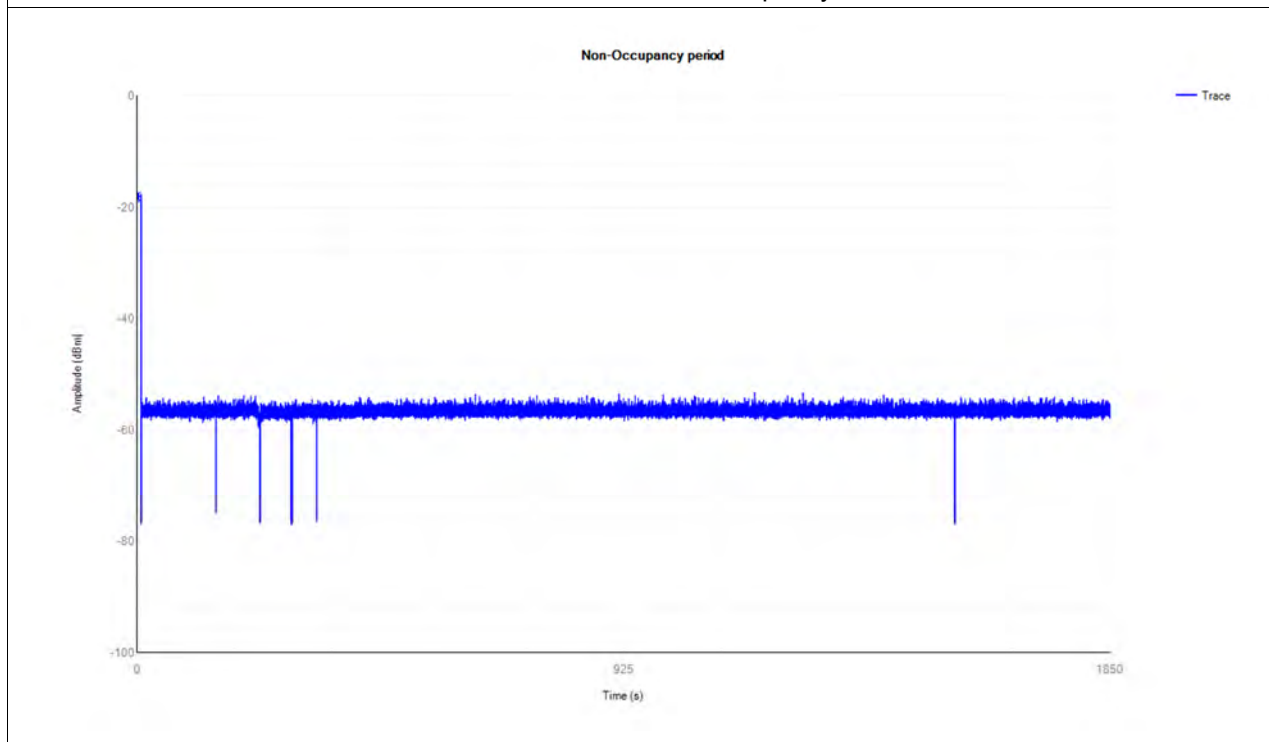
VBW: 3MHz

Sweep time: 1850s





ac20 5320MHz Non-Occupancy



ac20 5500MHz Non-Occupancy



A.7. 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+Earphone+WIFI TX

Test voltage: AC 120V/60Hz

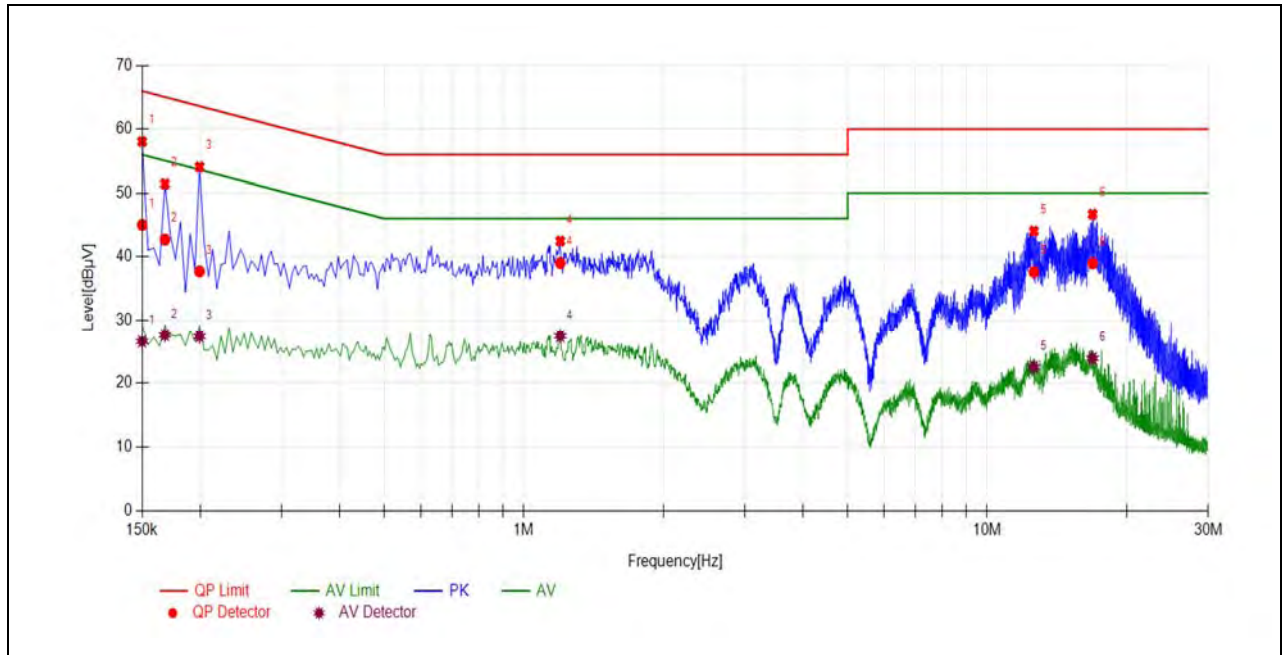
The measurement results are obtained as below:

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

U_R : Receiver Reading

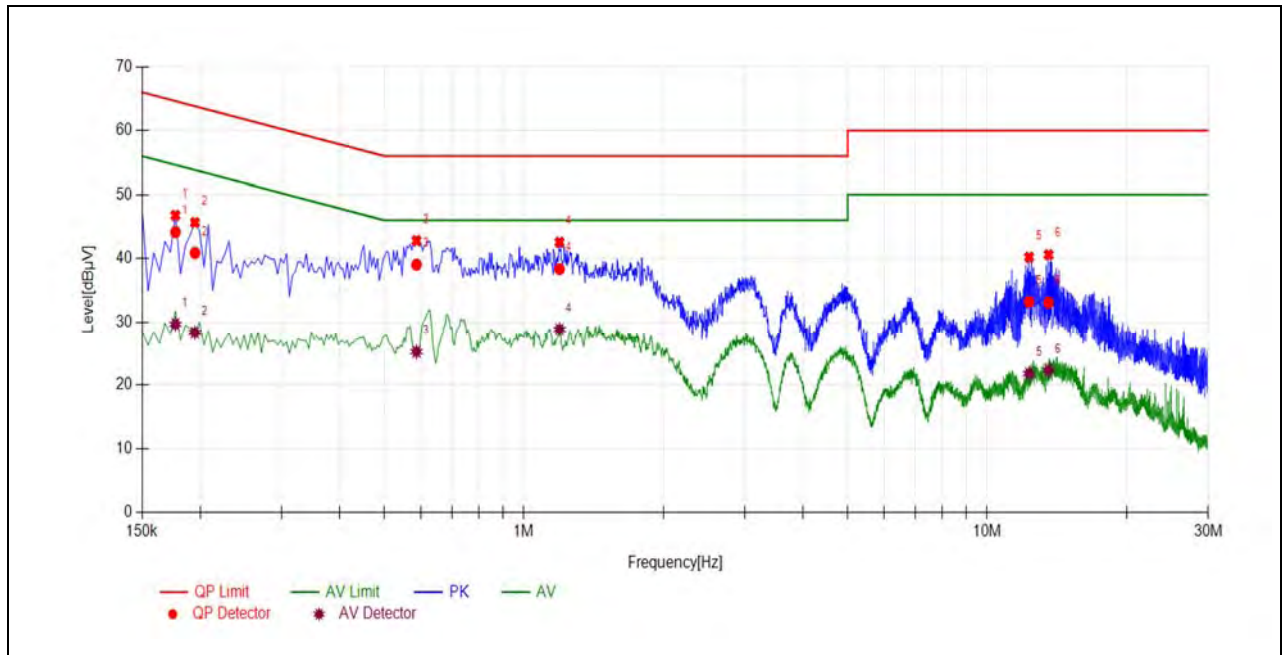
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1500	45.02	26.55	66.00	56.00	Line	PASS
2	0.1680	42.71	27.56	65.06	55.06		PASS
3	0.1995	37.69	27.34	63.63	53.63		PASS
4	1.1984	39.02	27.41	56.00	46.00		PASS
5	12.6104	37.60	22.49	60.00	50.00		PASS
6	16.8917	38.98	23.88	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	0.1770	44.15	29.68	64.62	54.62	Neutral	PASS
2	0.1950	40.89	28.30	63.82	53.82		PASS
3	0.5865	39.04	25.23	56.00	46.00		PASS
4	1.1940	38.35	28.84	56.00	46.00		PASS
5	12.3188	33.20	21.79	60.00	50.00		PASS
6	13.5732	33.08	22.31	60.00	50.00		PASS

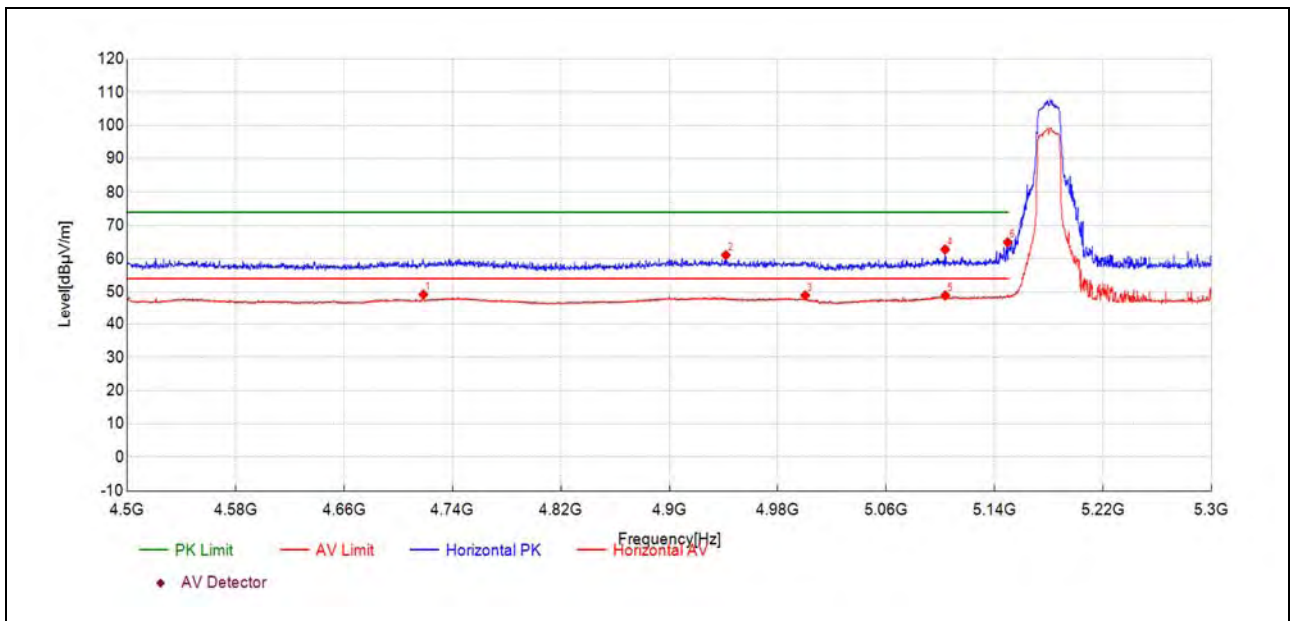
A.8. Restricted Frequency Bands

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

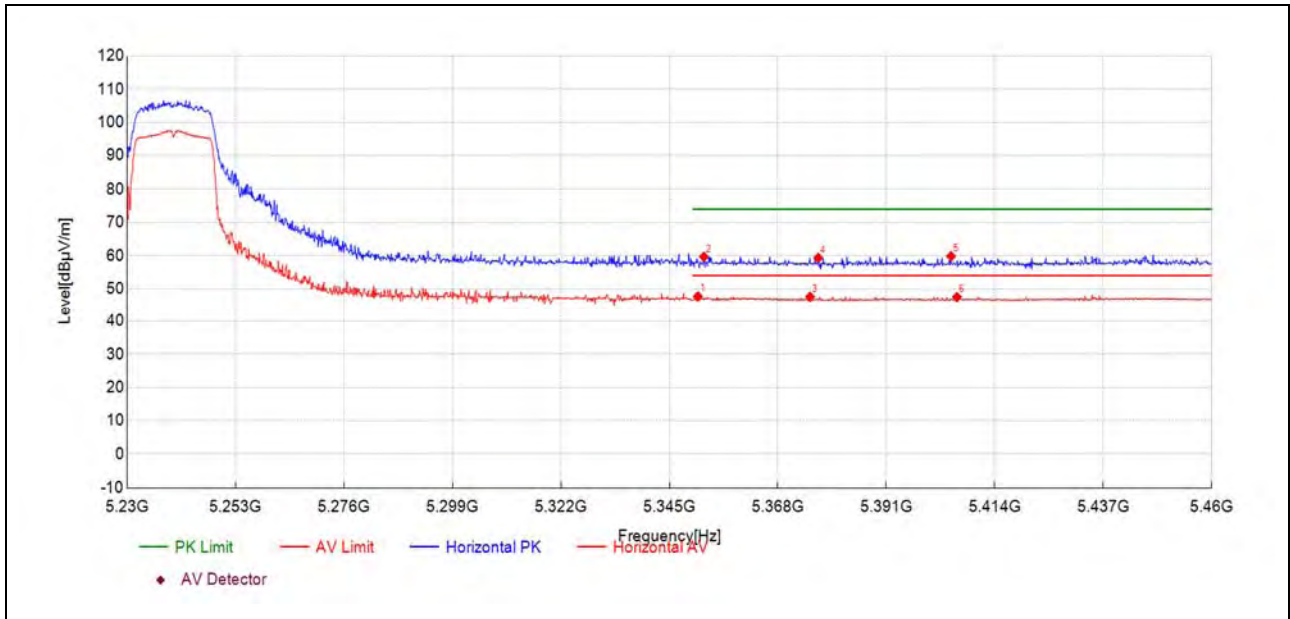
802.11a Mode

Plot for Channel 36



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4718.57	28.9	49.18	20.300	54.00	4.82	165	256	AV	PASS
4941.64	41.2	61.07	19.900	74.00	12.93	165	56	PK	PASS
5000.16	29.1	48.94	19.880	54.00	5.06	165	16	AV	PASS
5103.44	42.3	62.77	20.500	74.00	11.23	165	330	PK	PASS
5103.44	28.4	48.91	20.500	54.00	5.09	165	330	AV	PASS
5149.45	44.6	64.94	20.320	74.00	9.06	165	35	PK	PASS

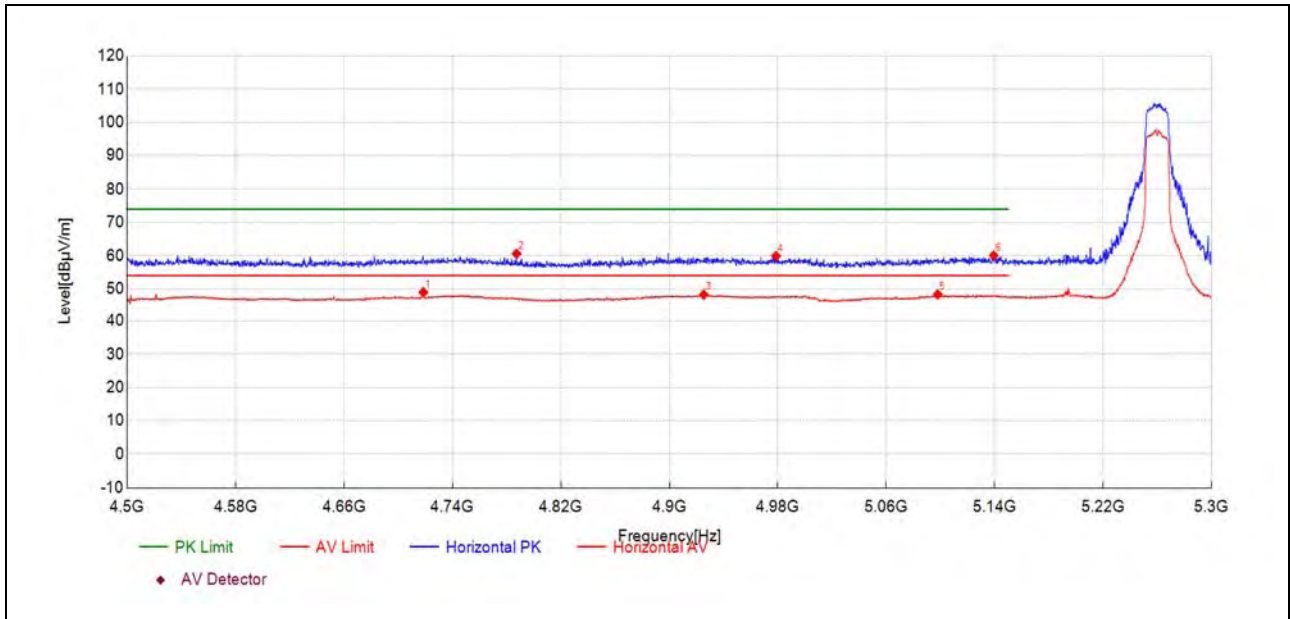
Plot for Channel 48



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5351.07	27.8	47.69	19.940	54.00	6.31	165	189	AV	PASS
5352.32	39.7	59.65	19.940	74.00	14.35	165	3	PK	PASS
5374.83	27.7	47.57	19.890	54.00	6.43	165	138	AV	PASS
5376.58	39.5	59.33	19.880	74.00	14.67	165	9	PK	PASS
5404.72	39.9	59.82	19.890	74.00	14.18	165	360	PK	PASS
5405.97	27.6	47.50	19.900	54.00	6.50	165	359	AV	PASS



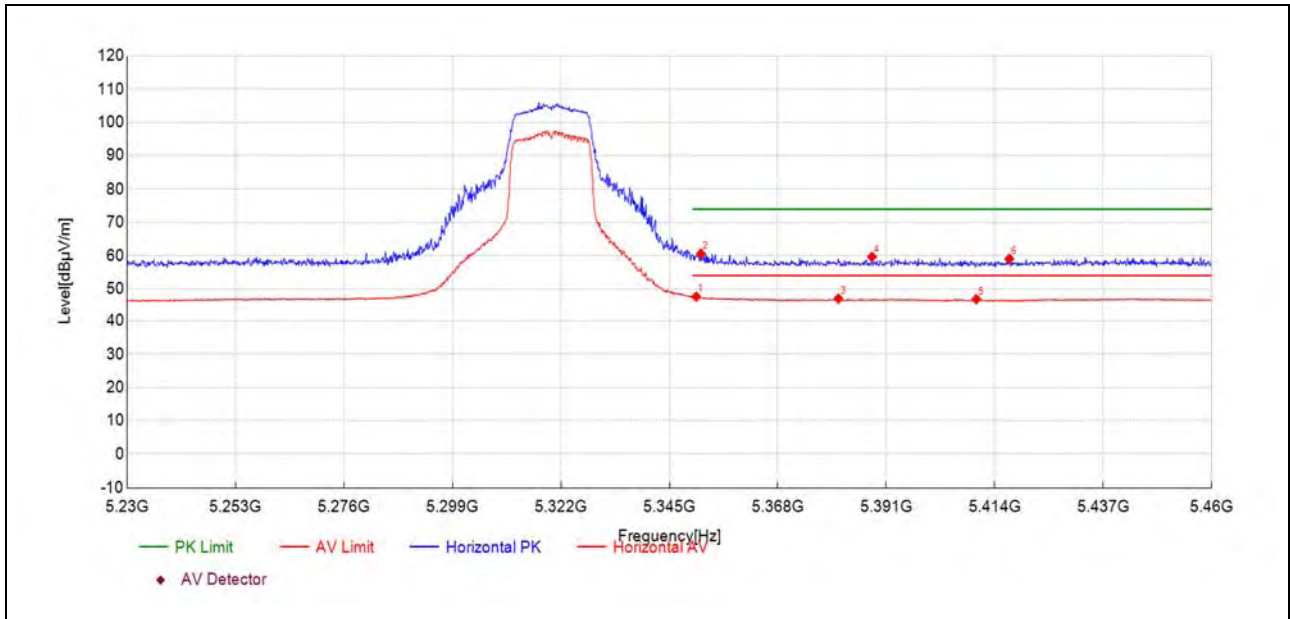
Plot for Channel 52



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4718.57	28.7	48.95	20.300	54.00	5.05	165	58	AV	PASS
4787.34	40.9	60.59	19.670	74.00	13.41	165	1	PK	PASS
4925.38	28.2	48.23	20.050	54.00	5.77	165	10	AV	PASS
4978.65	40.0	59.88	19.860	74.00	14.12	165	101	PK	PASS
5097.94	27.8	48.31	20.510	54.00	5.69	165	36	AV	PASS
5139.20	39.7	60.03	20.360	74.00	13.97	165	221	PK	PASS

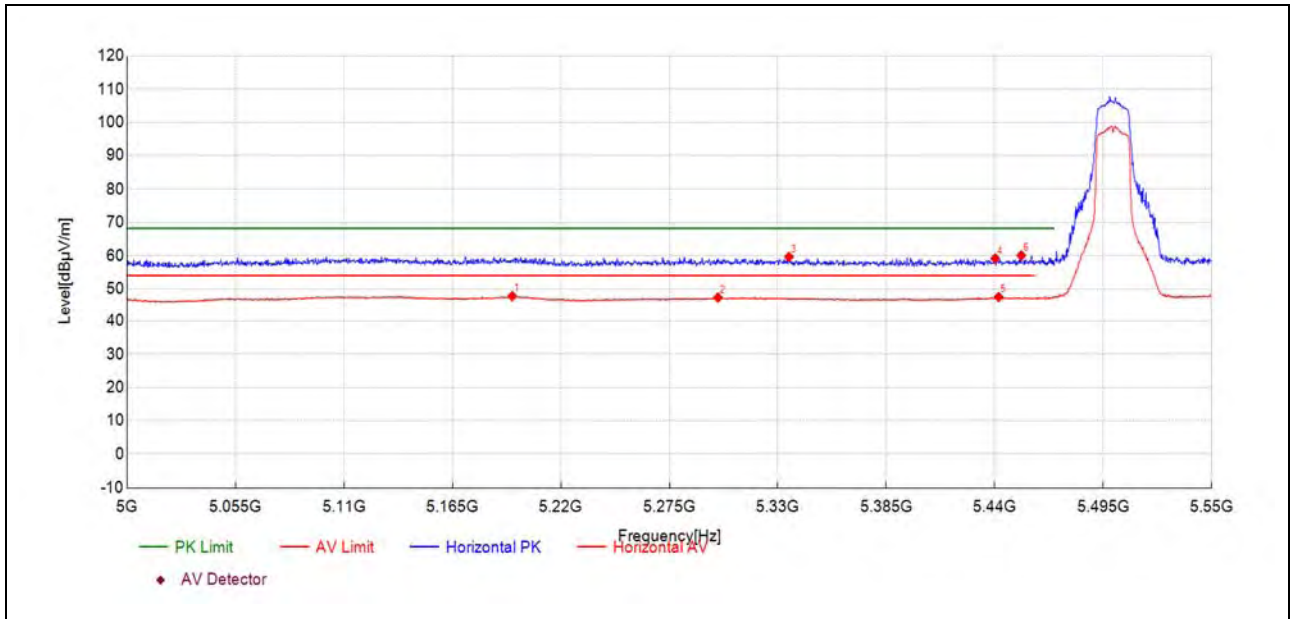


Plot for Channel 64



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5350.69	27.7	47.64	19.940	54.00	6.36	165	61	AV	PASS
5351.69	40.7	60.59	19.940	74.00	13.41	165	314	PK	PASS
5380.83	27.2	47.03	19.870	54.00	6.97	165	11	AV	PASS
5387.96	39.8	59.64	19.850	74.00	14.36	165	354	PK	PASS
5410.10	26.9	46.88	19.960	54.00	7.12	165	22	AV	PASS
5417.10	39.0	59.04	20.050	74.00	14.96	165	163	PK	PASS

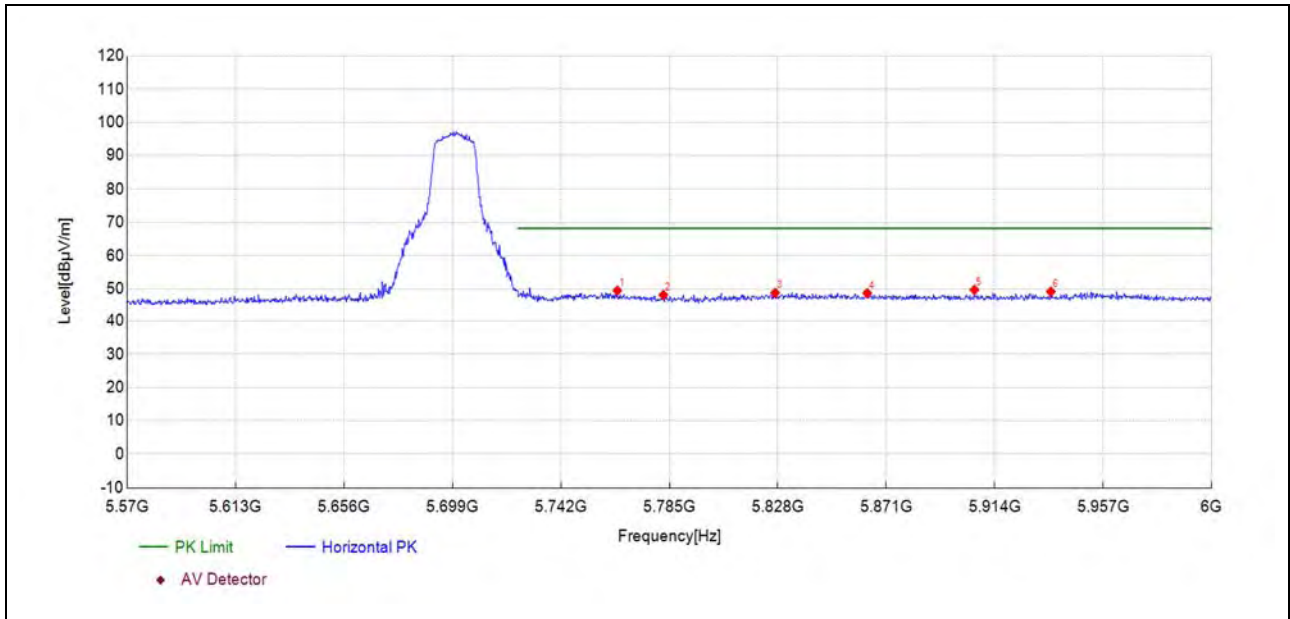
Plot for Channel 100



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5195.34	27.4	47.77	20.410	54.00	6.23	165	4	AV	PASS
5299.64	27.1	47.34	20.250	54.00	6.66	165	358	AV	PASS
5335.65	39.6	59.61	20.030	68.23	8.62	165	256	PK	PASS
5440.20	38.8	59.14	20.340	68.23	9.09	165	20	PK	PASS
5441.95	27.2	47.54	20.360	54.00	6.46	165	360	AV	PASS
5453.46	39.6	60.05	20.450	68.23	8.18	165	82	PK	PASS

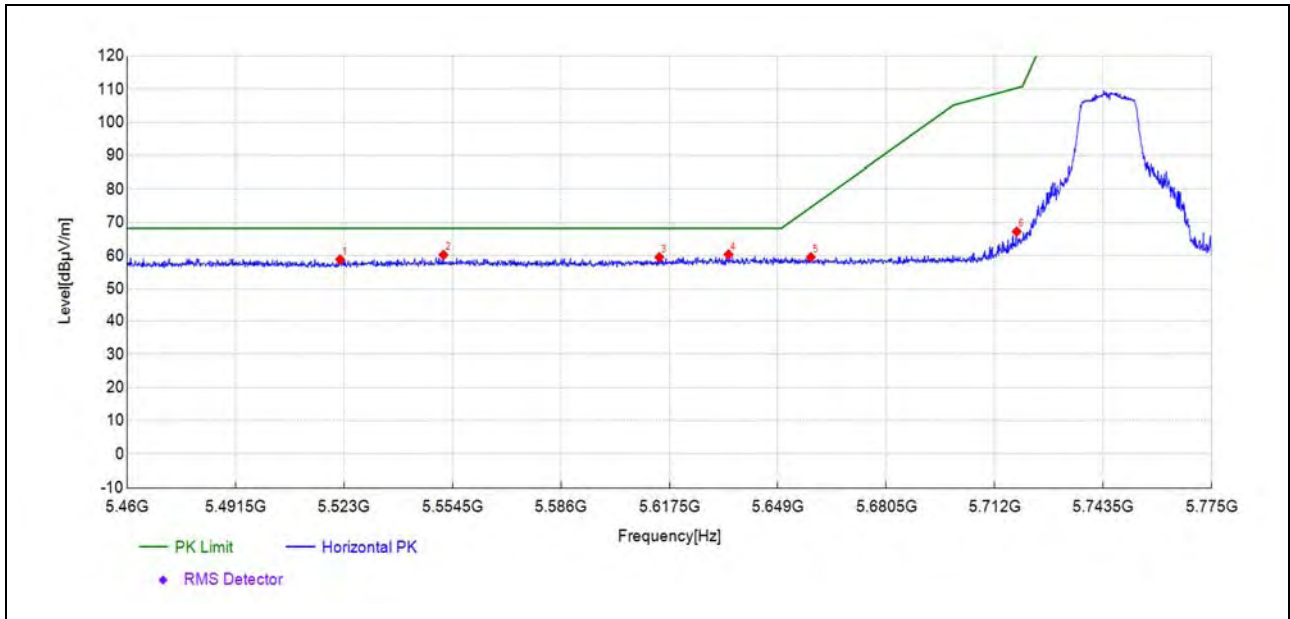


Plot for Channel 140



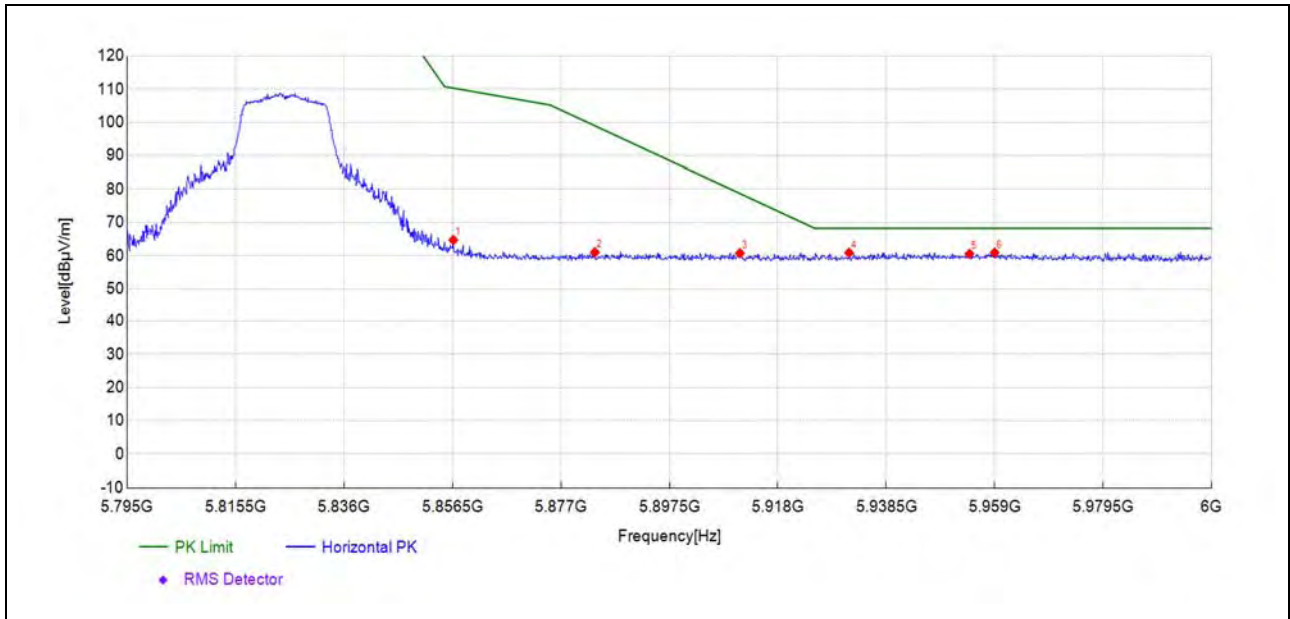
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5764.36	39.8	49.44	9.660	68.23	18.79	165	280	PK	PASS
5782.62	38.5	48.15	9.680	68.23	20.08	165	222	PK	PASS
5826.90	38.6	48.74	10.110	68.23	19.49	165	360	PK	PASS
5863.42	38.4	48.68	10.260	68.23	19.55	165	66	PK	PASS
5905.95	39.9	49.67	9.770	68.23	18.56	165	186	PK	PASS
5936.21	39.1	49.14	10.010	68.23	19.09	165	357	PK	PASS

Plot for Channel 149



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5521.90	38.6	58.83	20.230	68.23	9.40	165	53	PK	PASS
5551.91	39.9	60.21	20.270	68.23	8.02	165	341	PK	PASS
5614.56	39.1	59.49	20.380	68.23	8.74	165	111	PK	PASS
5634.69	39.6	60.36	20.740	68.23	7.87	165	62	PK	PASS
5658.58	38.5	59.52	20.990	74.58	15.06	165	92	PK	PASS
5718.35	46.1	67.23	21.160	110.37	43.14	165	53	PK	PASS

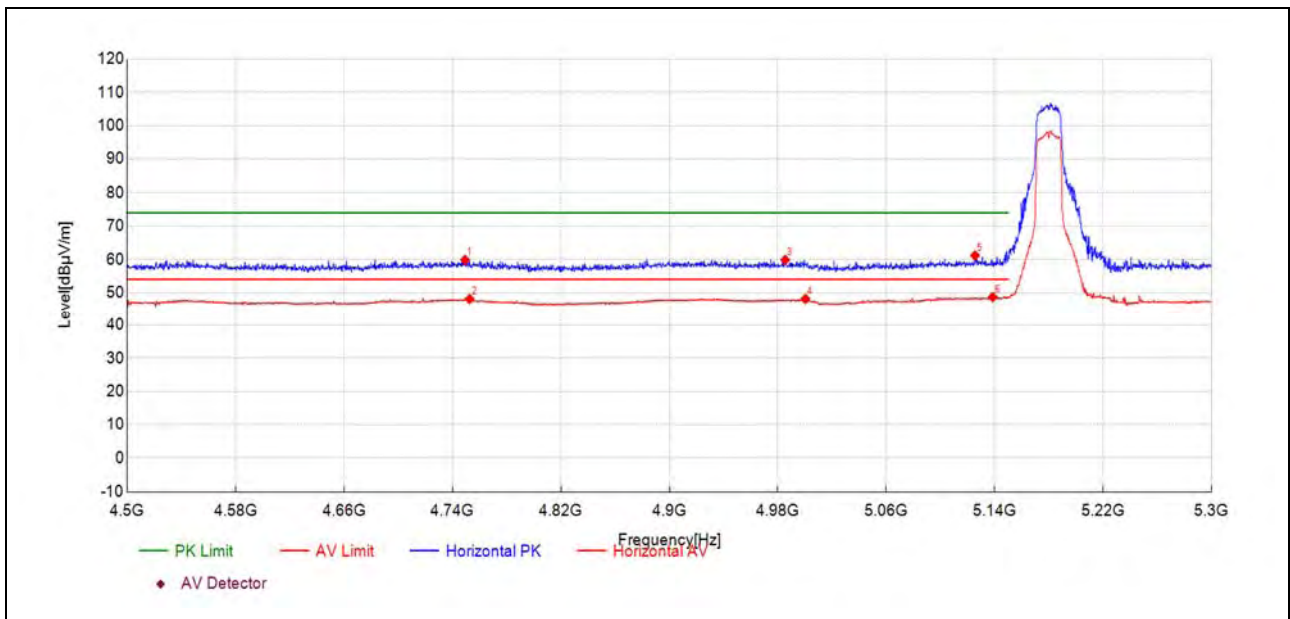
Plot for Channel 165



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5856.66	42.3	64.68	22.360	110.36	45.68	165	140	PK	PASS
5883.43	39.0	60.99	21.960	98.99	38.00	165	85	PK	PASS
5910.82	39.0	60.75	21.800	78.72	17.97	165	357	PK	PASS
5931.46	38.9	60.84	21.970	68.23	7.39	165	85	PK	PASS
5954.22	38.5	60.54	22.090	68.23	7.69	165	196	PK	PASS
5958.97	38.9	60.90	22.050	68.23	7.33	165	85	PK	PASS

**802.11n (HT40) Mode**

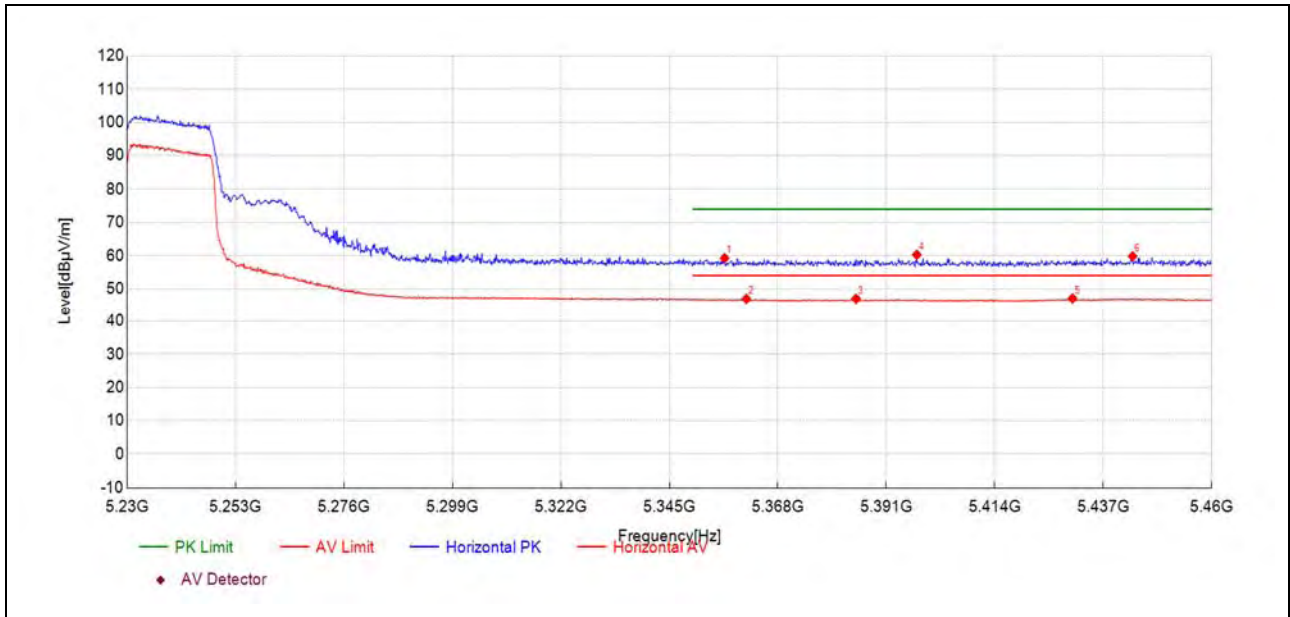
Plot for Channel 38



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4749.33	39.5	59.83	20.310	74.00	14.17	165	0	PK	PASS
4752.58	27.8	48.10	20.270	54.00	5.90	165	187	AV	PASS
4985.40	40.0	59.85	19.860	74.00	14.15	165	89	PK	PASS
5000.41	28.3	48.13	19.880	54.00	5.87	165	0	AV	PASS
5125.45	40.7	61.16	20.420	74.00	12.84	165	9	PK	PASS
5138.45	28.3	48.68	20.360	54.00	5.32	165	1	AV	PASS



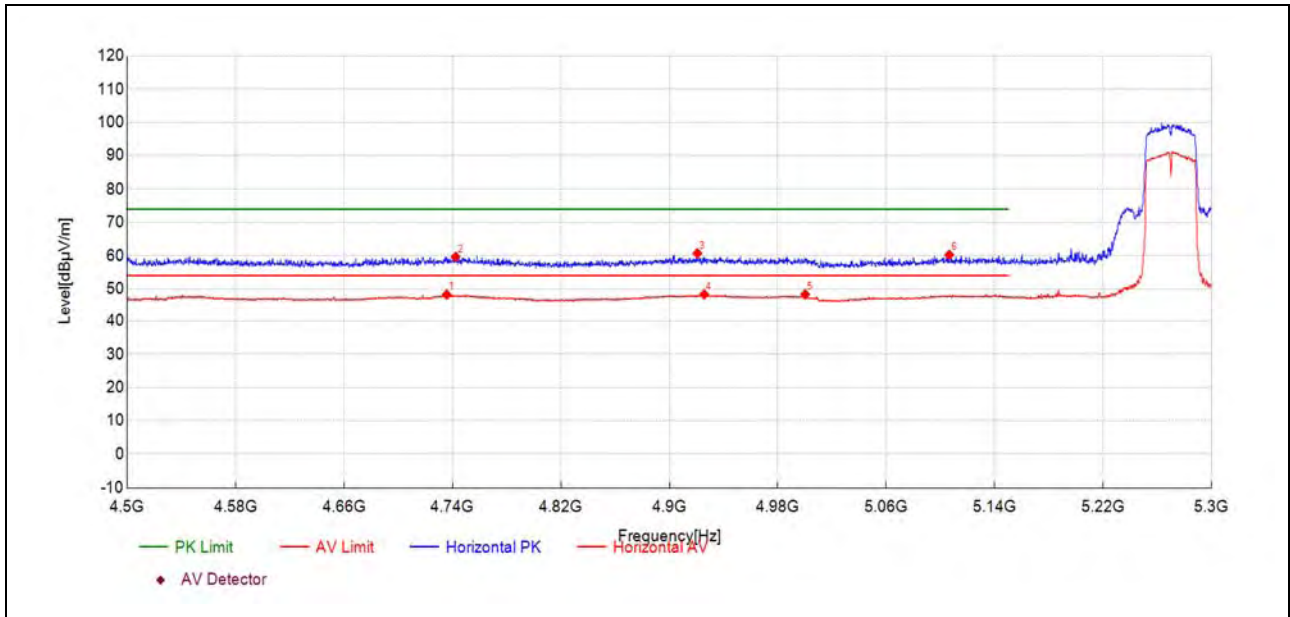
Plot for Channel 46



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5356.69	39.3	59.22	19.930	74.00	14.78	165	163	PK	PASS
5361.32	27.0	46.94	19.920	54.00	7.06	165	284	AV	PASS
5384.58	27.1	46.98	19.860	54.00	7.02	165	360	AV	PASS
5397.47	40.4	60.26	19.840	74.00	13.74	165	213	PK	PASS
5430.48	26.9	47.08	20.220	54.00	6.92	165	360	AV	PASS
5443.24	39.4	59.81	20.380	74.00	14.19	165	4	PK	PASS



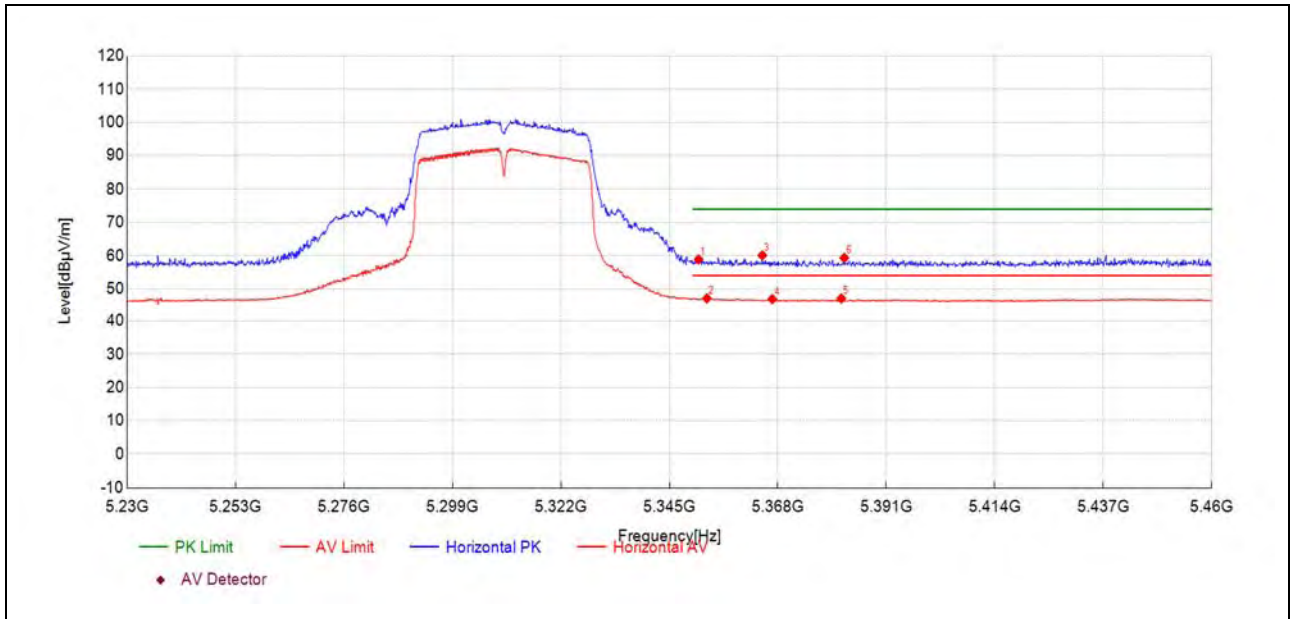
Plot for Channel 54



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4735.82	27.9	48.24	20.310	54.00	5.76	165	360	AV	PASS
4742.33	39.3	59.61	20.320	74.00	14.39	165	270	PK	PASS
4920.63	40.6	60.69	20.080	74.00	13.31	165	239	PK	PASS
4925.63	28.3	48.30	20.040	54.00	5.70	165	3	AV	PASS
5000.16	28.4	48.30	19.880	54.00	5.70	165	351	AV	PASS
5106.44	39.7	60.22	20.500	74.00	13.78	165	11	PK	PASS

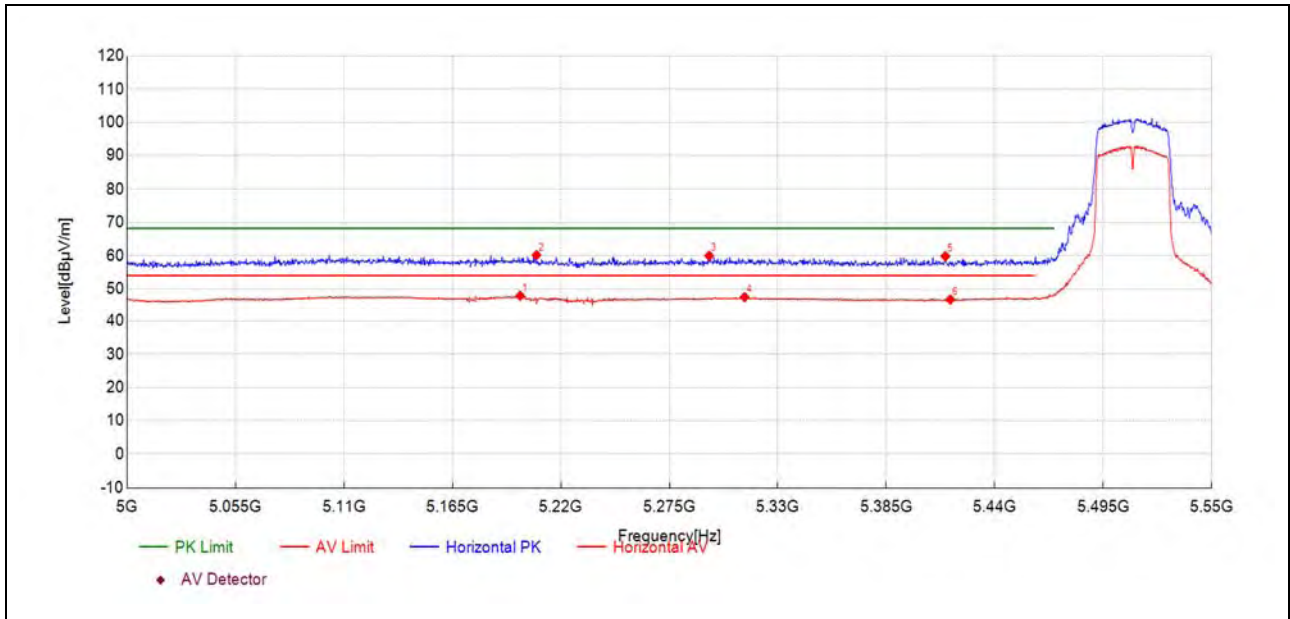


Plot for Channel 62



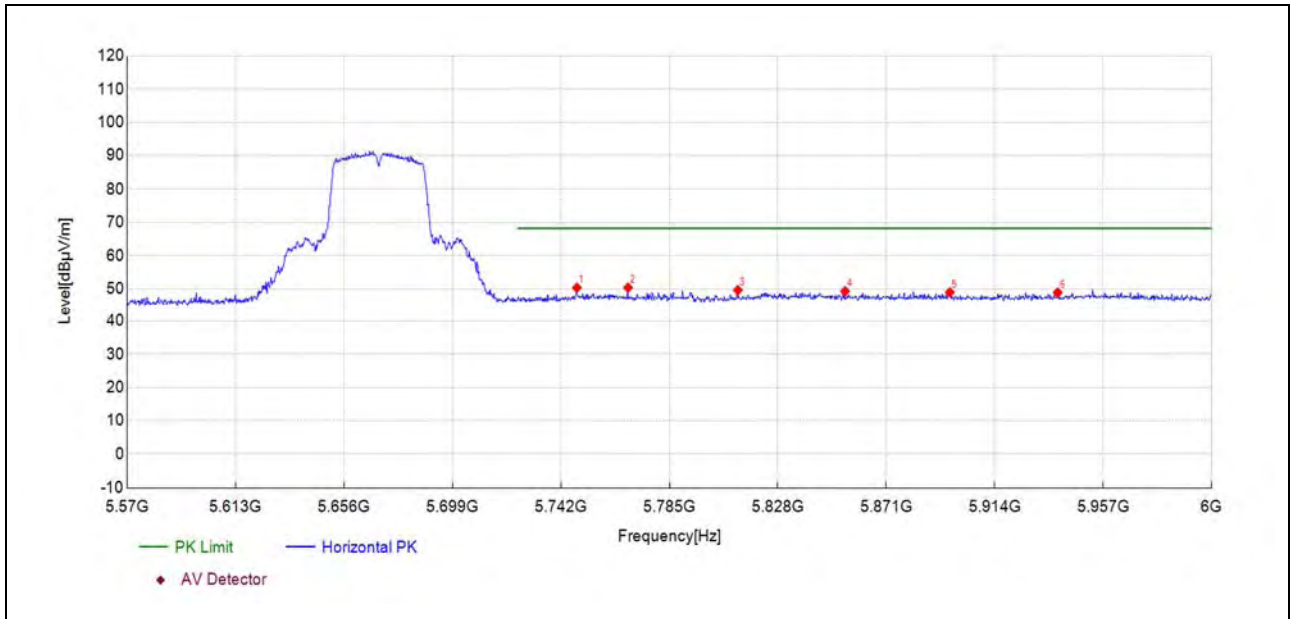
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5351.19	38.9	58.85	19.940	74.00	15.15	165	356	PK	PASS
5352.94	27.2	47.09	19.930	54.00	6.91	165	0	AV	PASS
5364.70	40.2	60.08	19.910	74.00	13.92	165	310	PK	PASS
5366.82	27.0	46.89	19.910	54.00	7.11	165	356	AV	PASS
5381.46	27.2	47.08	19.870	54.00	6.92	165	24	AV	PASS
5382.08	39.4	59.30	19.870	74.00	14.70	165	279	PK	PASS

Plot for Channel 102



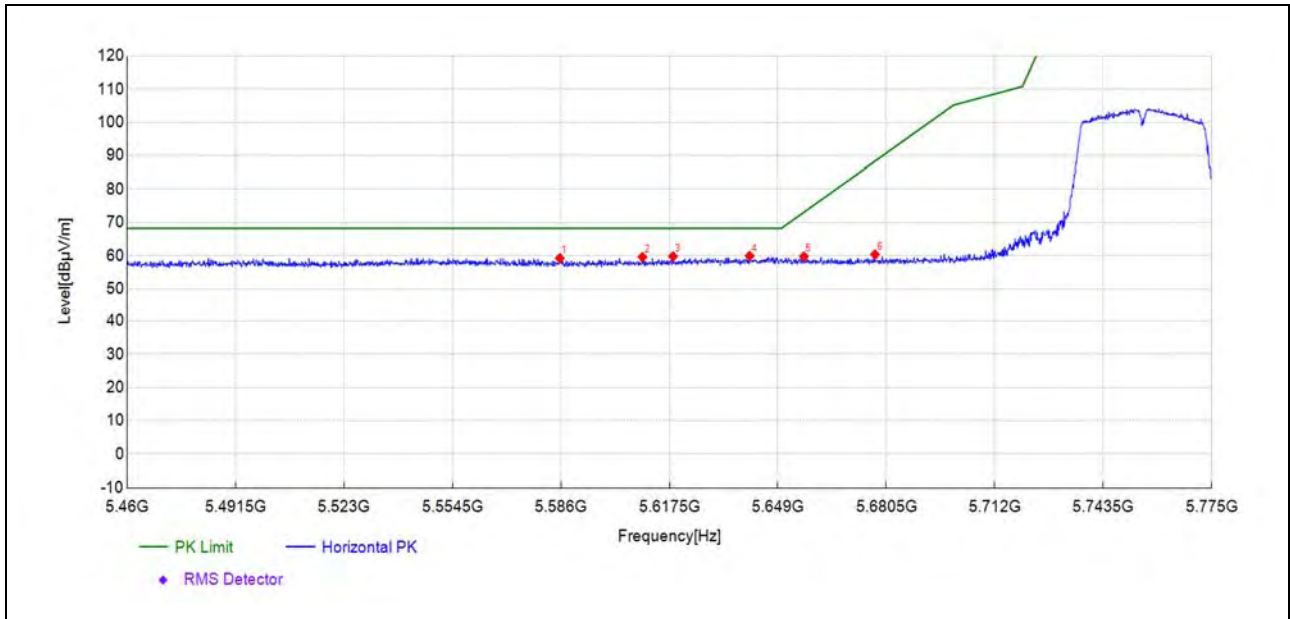
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5199.34	27.5	47.87	20.420	54.00	6.13	165	31	AV	PASS
5207.59	39.8	60.16	20.330	68.23	8.07	165	269	PK	PASS
5295.13	39.8	59.96	20.210	68.23	8.27	165	93	PK	PASS
5313.14	27.3	47.48	20.170	54.00	6.52	165	103	AV	PASS
5414.94	39.8	59.82	20.020	68.23	8.41	165	11	PK	PASS
5417.44	26.7	46.76	20.050	54.00	7.24	165	258	AV	PASS

Plot for Channel 134



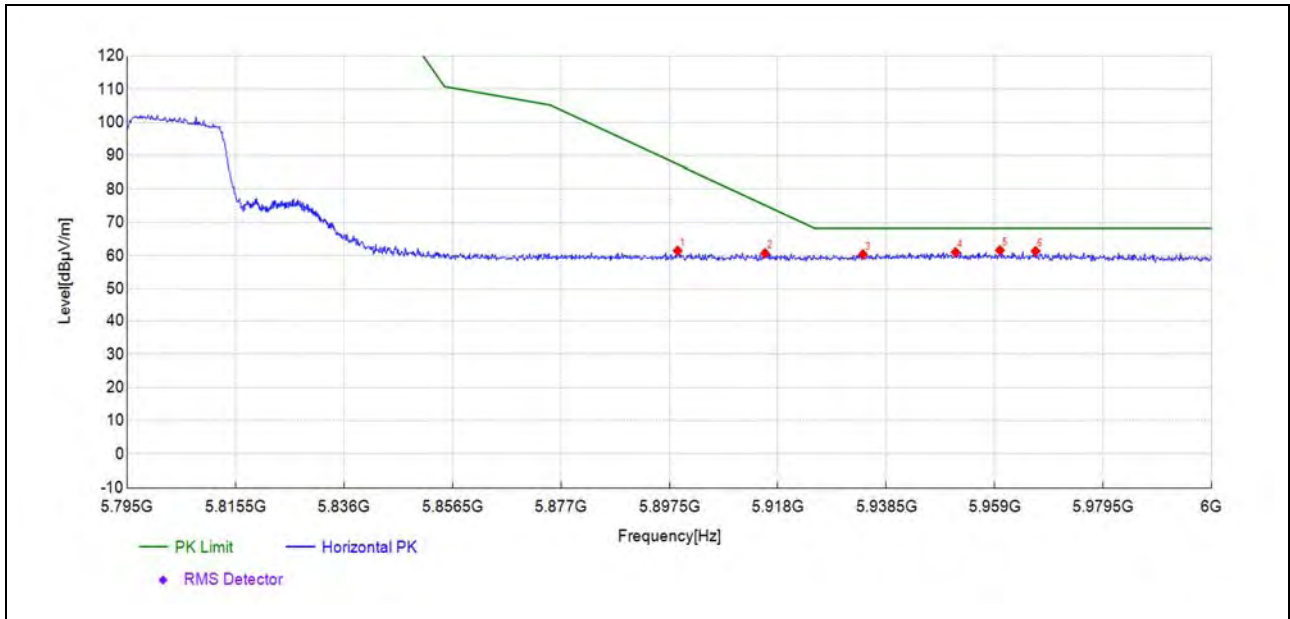
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5748.35	40.7	50.31	9.620	68.23	17.92	165	342	PK	PASS
5768.62	40.7	50.31	9.660	68.23	17.92	165	357	PK	PASS
5812.14	39.7	49.59	9.880	68.23	18.64	165	60	PK	PASS
5854.67	38.9	49.25	10.390	68.23	18.98	165	315	PK	PASS
5896.19	39.2	48.93	9.770	68.23	19.30	165	357	PK	PASS
5938.96	38.8	48.84	10.030	68.23	19.39	165	60	PK	PASS

Plot for Channel 151



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5585.67	39.0	59.21	20.170	68.23	9.02	165	48	PK	PASS
5609.68	39.2	59.54	20.300	68.23	8.69	165	296	PK	PASS
5618.56	39.3	59.76	20.450	68.23	8.47	165	115	PK	PASS
5640.82	39.1	59.91	20.840	68.23	8.32	165	38	PK	PASS
5656.58	38.8	59.75	20.990	73.10	13.35	165	4	PK	PASS
5677.21	39.4	60.33	20.940	88.37	28.04	165	38	PK	PASS

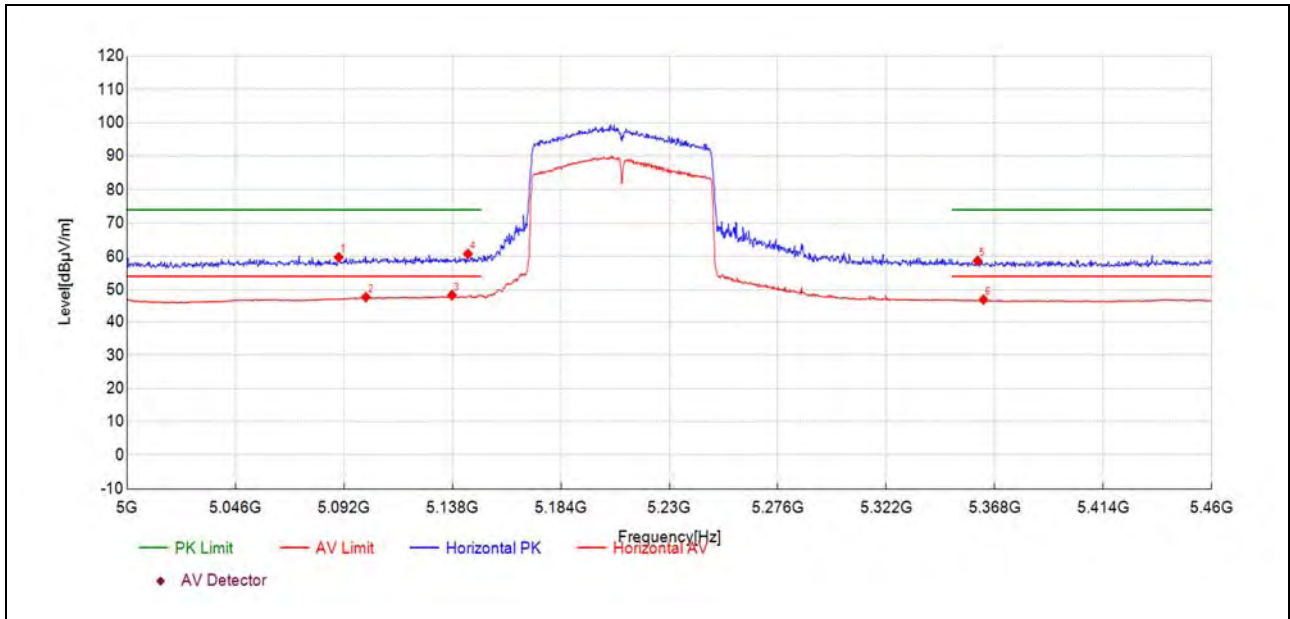
Plot for Channel 159



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5899.06	39.7	61.47	21.730	87.42	25.95	165	268	PK	PASS
5915.57	38.9	60.72	21.840	75.21	14.49	165	286	PK	PASS
5934.08	38.4	60.40	21.990	68.23	7.83	165	43	PK	PASS
5951.60	38.9	61.02	22.100	68.23	7.21	165	239	PK	PASS
5959.98	39.6	61.60	22.040	68.23	6.63	165	231	PK	PASS
5966.73	39.4	61.35	21.980	68.23	6.88	165	357	PK	PASS

**802.11ac (VHT80) Mode**

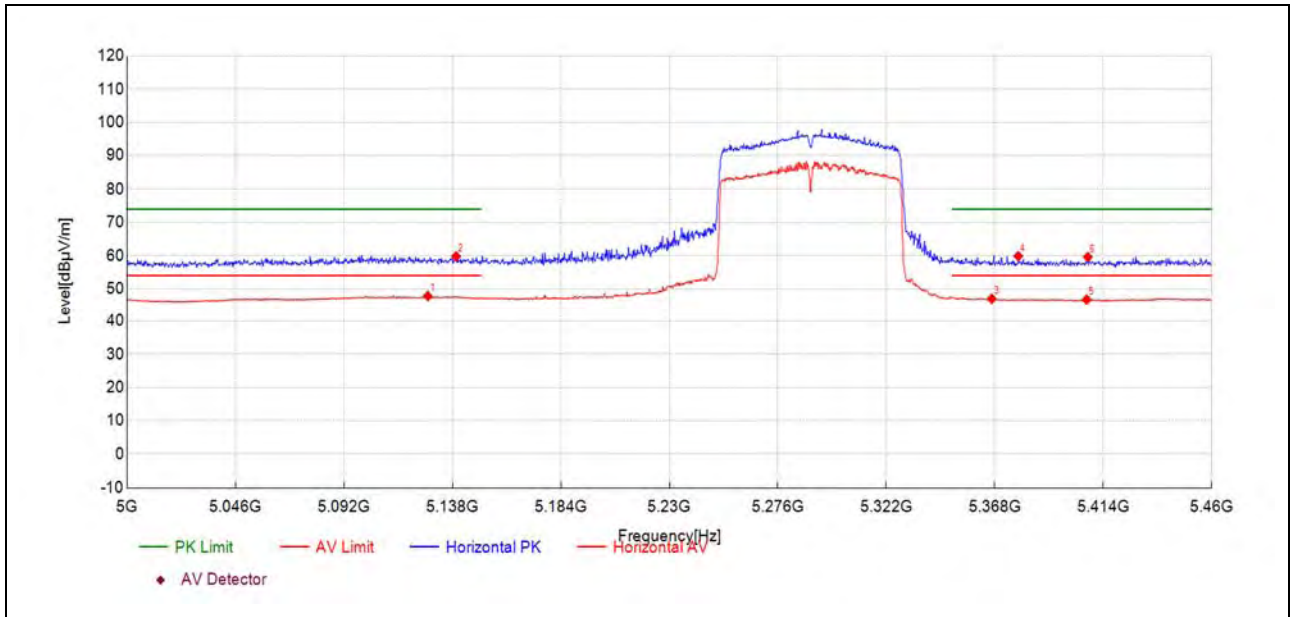
Plot for Channel 42



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5089.80	39.3	59.74	20.460	74.00	14.26	165	360	PK	PASS
5101.31	27.2	47.74	20.520	54.00	6.26	165	360	AV	PASS
5137.82	28.0	48.35	20.360	54.00	5.65	165	360	AV	PASS
5144.58	40.4	60.75	20.340	74.00	13.25	165	354	PK	PASS
5360.70	38.8	58.67	19.920	74.00	15.33	165	294	PK	PASS
5363.20	27.1	47.00	19.910	54.00	7.00	165	4	AV	PASS

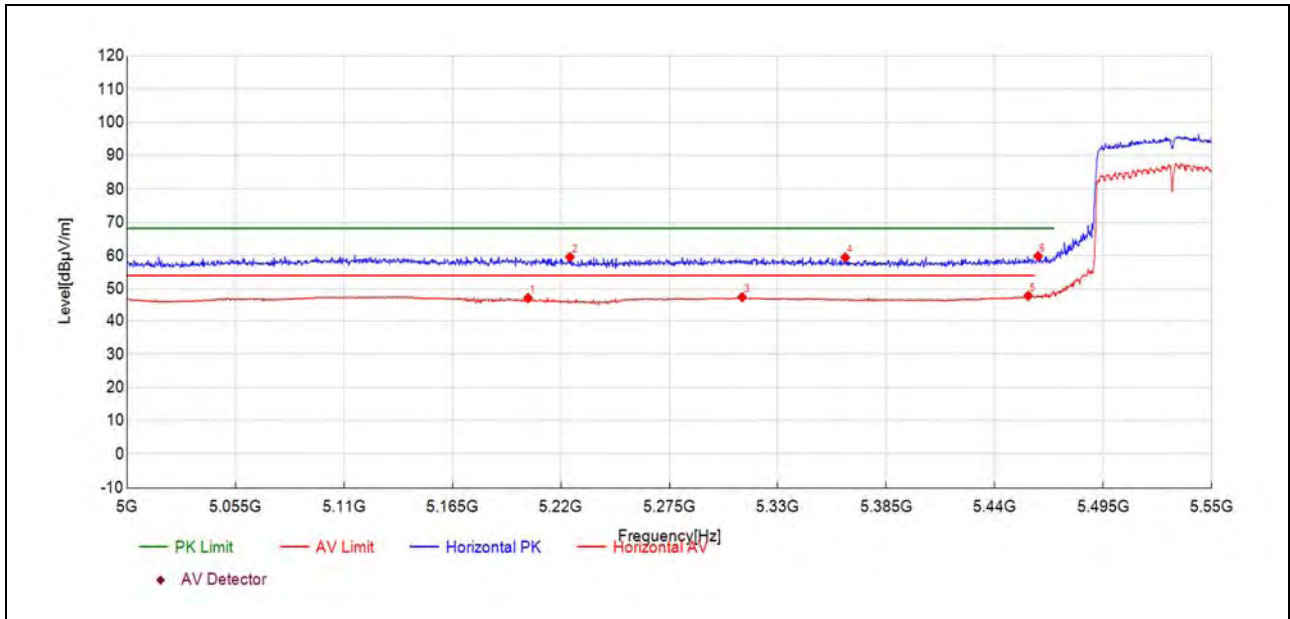


Plot for Channel 58



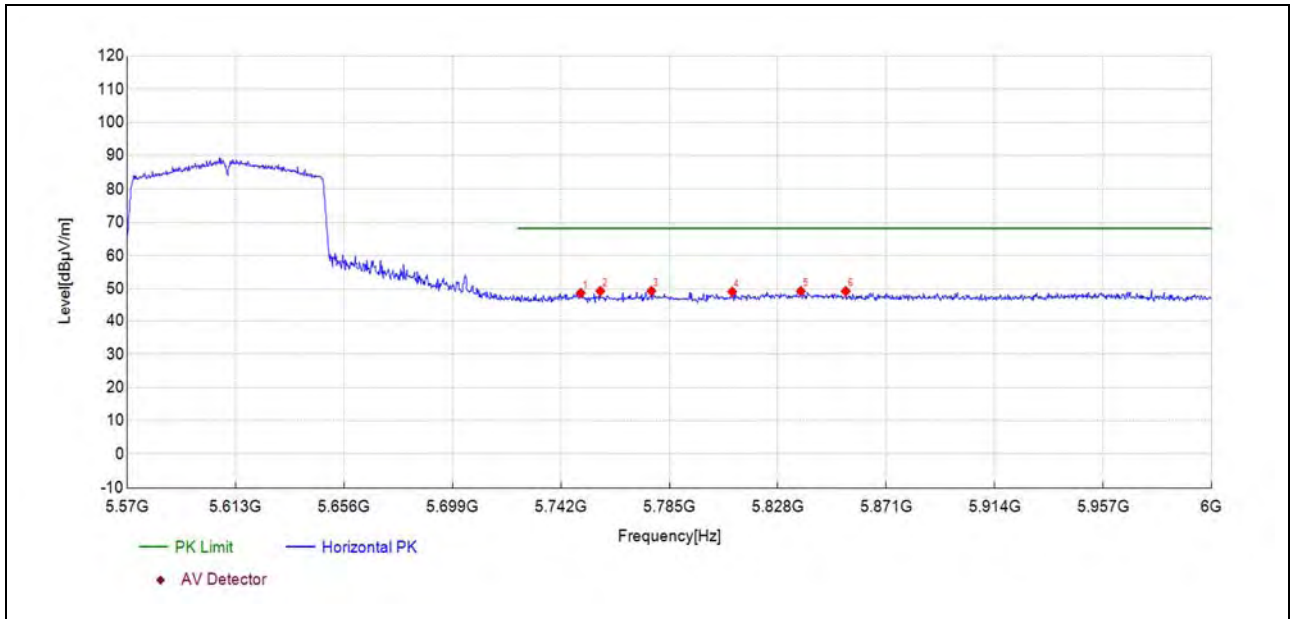
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5127.57	27.4	47.80	20.400	54.00	6.20	165	357	AV	PASS
5139.58	39.4	59.78	20.360	74.00	14.22	165	357	PK	PASS
5366.70	27.1	46.98	19.910	54.00	7.02	165	13	AV	PASS
5377.96	40.0	59.83	19.870	74.00	14.17	165	322	PK	PASS
5406.97	26.8	46.72	19.920	54.00	7.28	165	47	AV	PASS
5407.47	39.7	59.58	19.930	74.00	14.42	165	109	PK	PASS

Plot for Channel 106



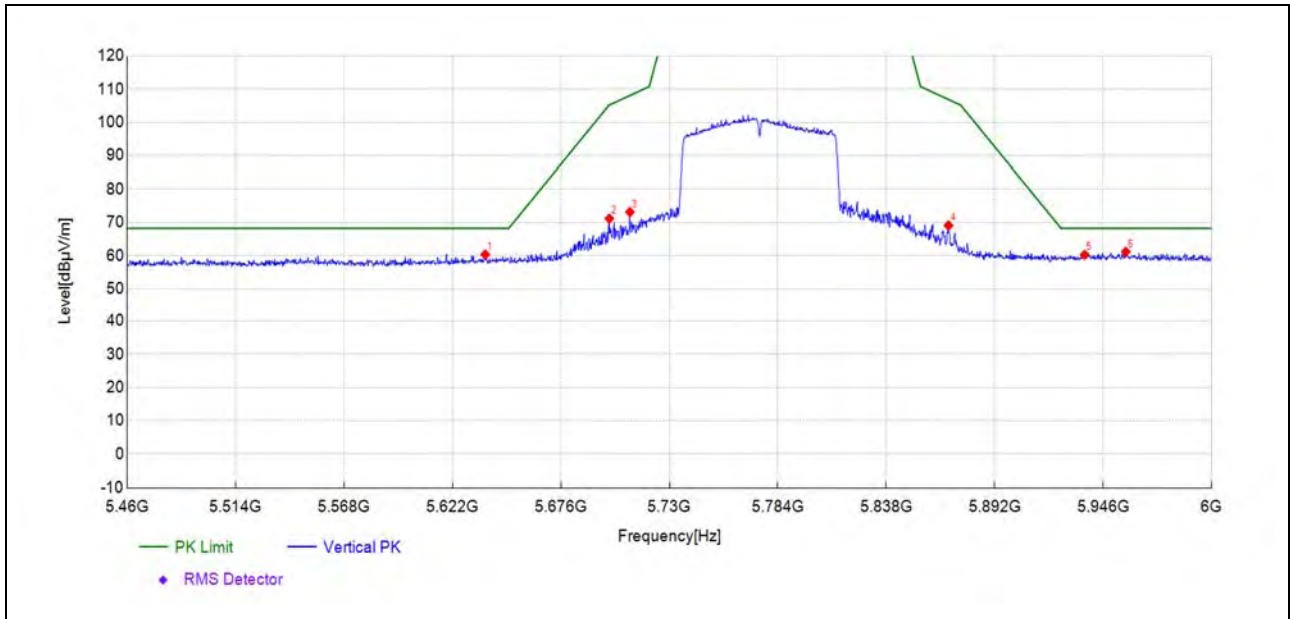
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5203.34	26.8	47.18	20.380	54.00	6.82	165	114	AV	PASS
5224.60	39.4	59.55	20.130	68.23	8.68	165	360	PK	PASS
5311.89	27.3	47.46	20.180	54.00	6.54	165	239	AV	PASS
5364.17	39.5	59.41	19.910	68.23	8.82	165	359	PK	PASS
5456.96	27.4	47.87	20.440	54.00	6.13	165	41	AV	PASS
5461.96	39.4	59.84	20.410	68.23	8.39	165	360	PK	PASS

Plot for Channel 122



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5749.85	39.1	48.71	9.640	68.23	19.52	165	287	PK	PASS
5757.61	39.7	49.30	9.650	68.23	18.93	165	249	PK	PASS
5777.87	39.7	49.32	9.670	68.23	18.91	165	202	PK	PASS
5809.89	39.3	49.11	9.850	68.23	19.12	165	268	PK	PASS
5837.16	39.0	49.27	10.260	68.23	18.96	165	1	PK	PASS
5854.92	38.9	49.28	10.390	68.23	18.95	165	249	PK	PASS

Plot for Channel 155



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5638.33	39.5	60.32	20.800	68.23	7.91	165	293	PK	PASS
5700.11	50.3	71.16	20.880	105.26	34.10	165	29	PK	PASS
5710.37	52.1	73.18	21.040	108.13	34.95	165	10	PK	PASS
5868.94	46.9	69.11	22.170	106.93	37.82	165	19	PK	PASS
5936.72	38.2	60.25	22.010	68.23	7.98	165	4	PK	PASS
5957.23	39.1	61.15	22.060	68.23	7.08	165	29	PK	PASS



A.9. 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.

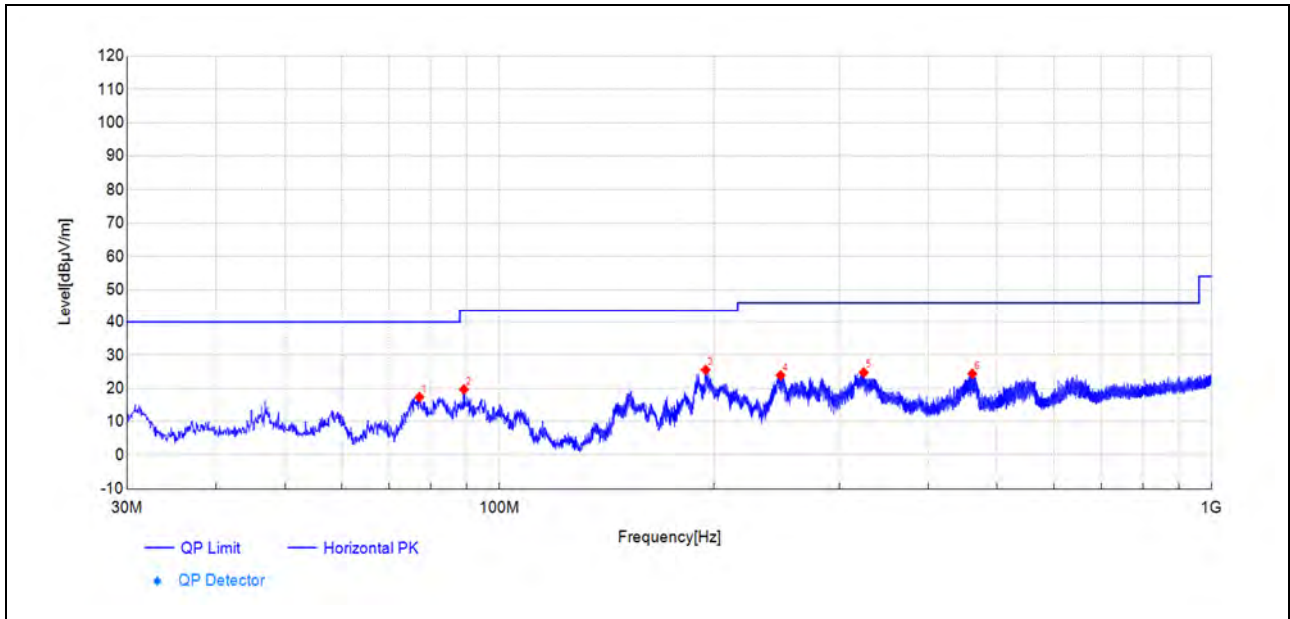
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 18GHz to 40GHz, 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.

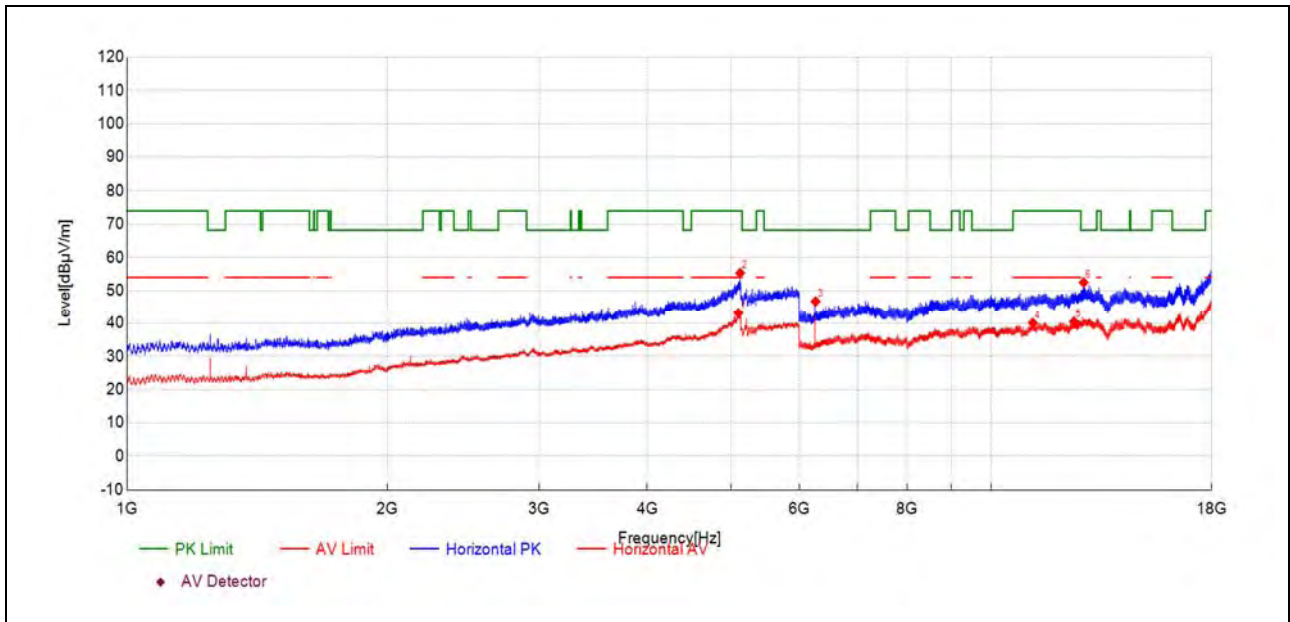
**802.11a Mode**

Plot for Channel 44



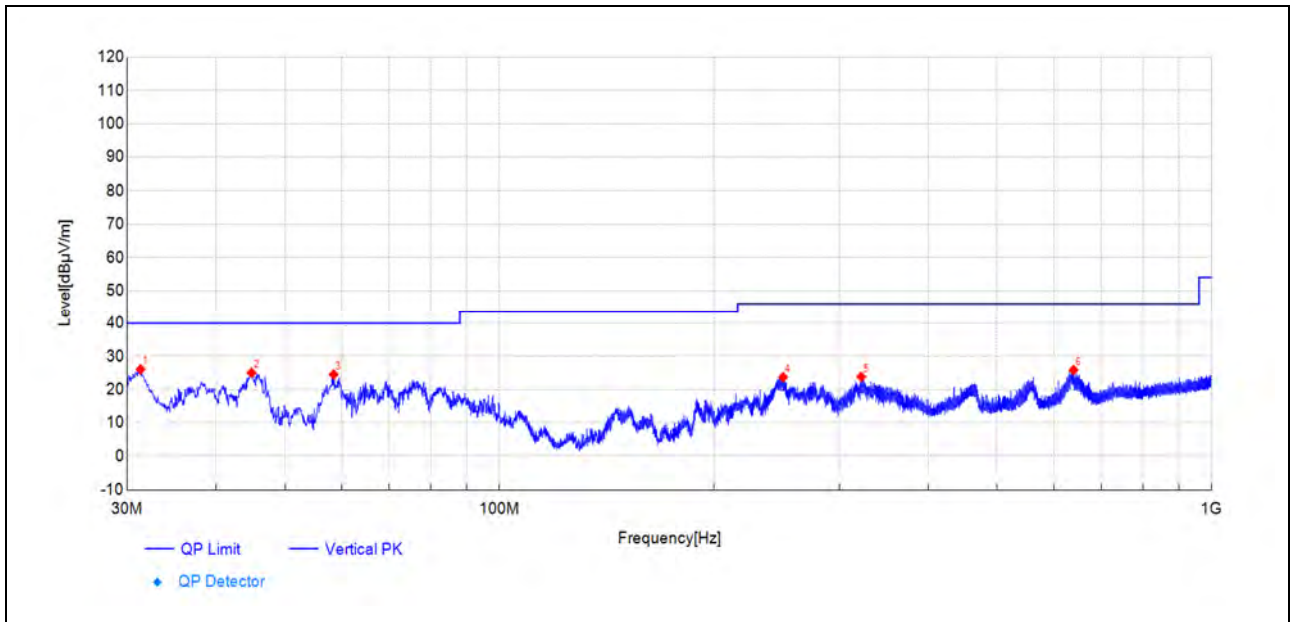
(Antenna Horizontal, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
77.21	52.7	17.41	-35.310	40.00	22.59	165	287	PK	PASS
89.14	52.0	19.70	-32.260	43.50	23.80	165	312	PK	PASS
194.73	55.2	25.58	-29.580	43.50	17.92	165	225	PK	PASS
248.18	52.1	23.95	-28.180	46.00	22.05	165	250	PK	PASS
324.60	50.9	24.78	-26.160	46.00	21.22	165	61	PK	PASS
461.24	47.2	24.42	-22.790	46.00	21.58	165	287	PK	PASS



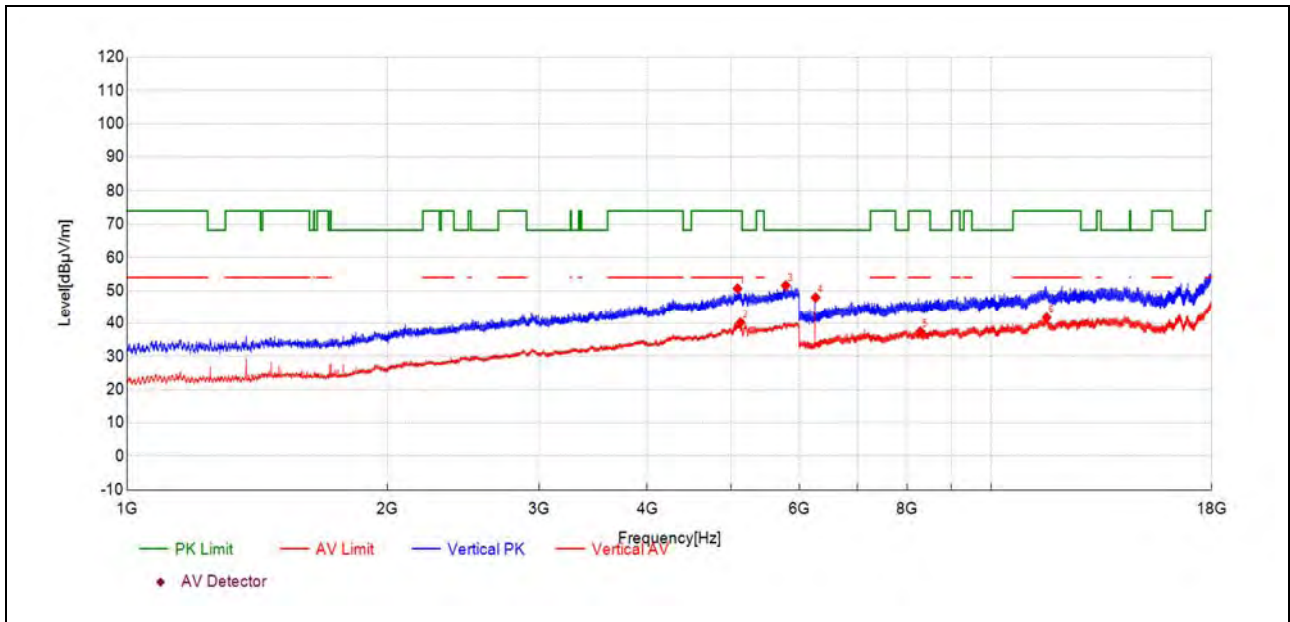
(Antenna Horizontal, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5099.06	33.1	43.13	10.080	54.00	10.87	165	1	AV	PASS
5123.33	45.3	55.32	10.070	74.00	18.68	165	0	PK	PASS
6263.96	53.0	46.75	-6.210	68.23	21.48	165	66	PK	PASS
11173.02	38.9	40.08	1.230	54.00	13.92	165	25	AV	PASS
12471.38	37.0	40.51	3.480	54.00	13.49	165	105	AV	PASS
12796.60	48.4	52.48	4.060	68.23	15.75	165	348	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

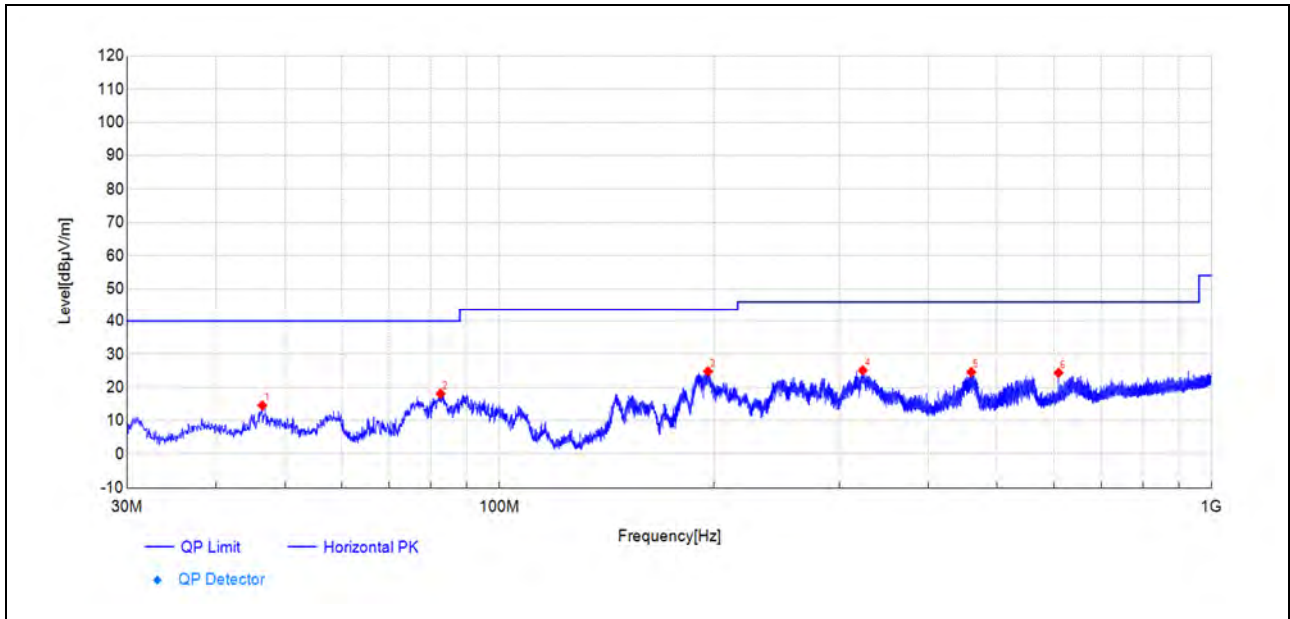
Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
31.35	58.9	26.07	-32.780	40.00	13.93	165	173	PK	PASS
44.87	53.4	25.04	-28.330	40.00	14.96	165	212	PK	PASS
58.51	55.0	24.52	-30.430	40.00	15.48	165	212	PK	PASS
250.17	51.9	23.73	-28.120	46.00	22.27	165	150	PK	PASS
322.13	50.1	23.83	-26.260	46.00	22.17	165	86	PK	PASS
639.67	44.8	25.87	-18.970	46.00	20.13	165	262	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

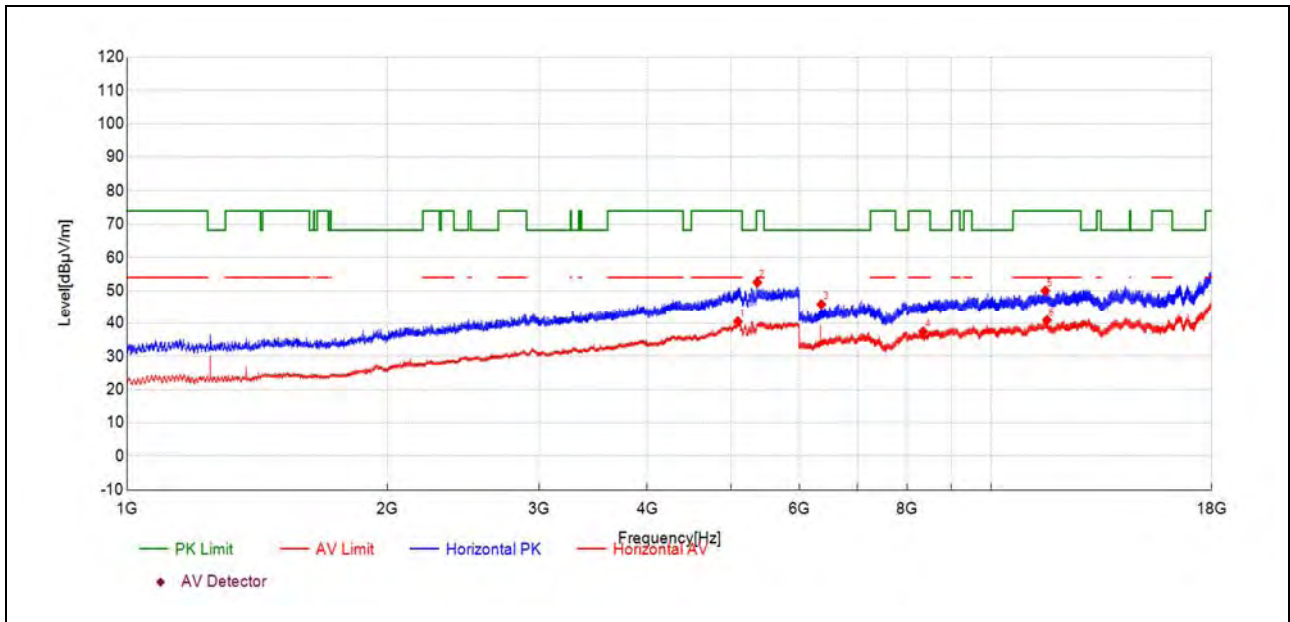
Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5087.17	40.7	50.64	9.970	74.00	23.36	165	257	PK	PASS
5129.27	30.1	40.19	10.070	54.00	13.81	165	257	AV	PASS
5785.04	39.5	51.57	12.040	68.23	16.66	165	299	PK	PASS
6263.46	54.2	47.94	-6.210	68.23	20.29	165	46	PK	PASS
8279.98	40.7	37.47	-3.230	54.00	16.53	165	7	AV	PASS
11594.85	38.5	41.69	3.150	54.00	12.31	165	212	AV	PASS

Plot for Channel 60



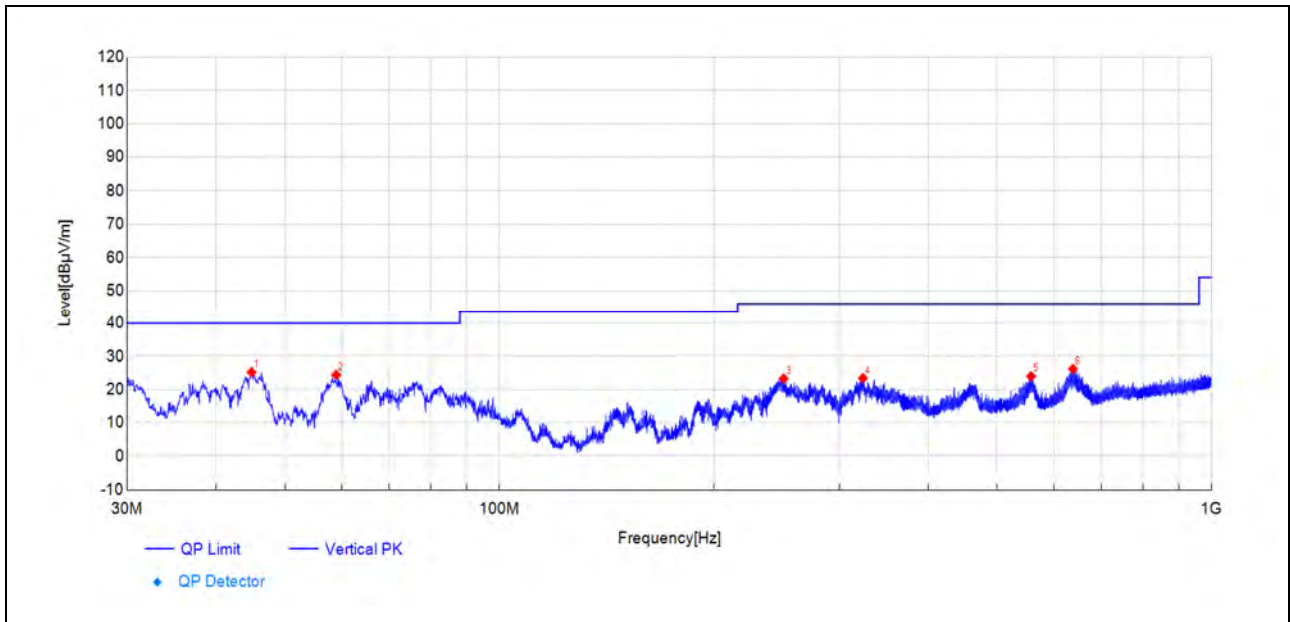
(Antenna Horizontal, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
46.46	42.9	14.59	-28.310	40.00	25.41	165	237	PK	PASS
82.68	52.8	18.16	-34.680	40.00	21.84	165	287	PK	PASS
196.26	54.5	24.83	-29.650	43.50	18.67	165	250	PK	PASS
323.66	51.4	25.15	-26.200	46.00	20.85	165	262	PK	PASS
459.47	47.4	24.61	-22.830	46.00	21.39	165	287	PK	PASS
609.39	44.0	24.41	-19.630	46.00	21.59	165	312	PK	PASS



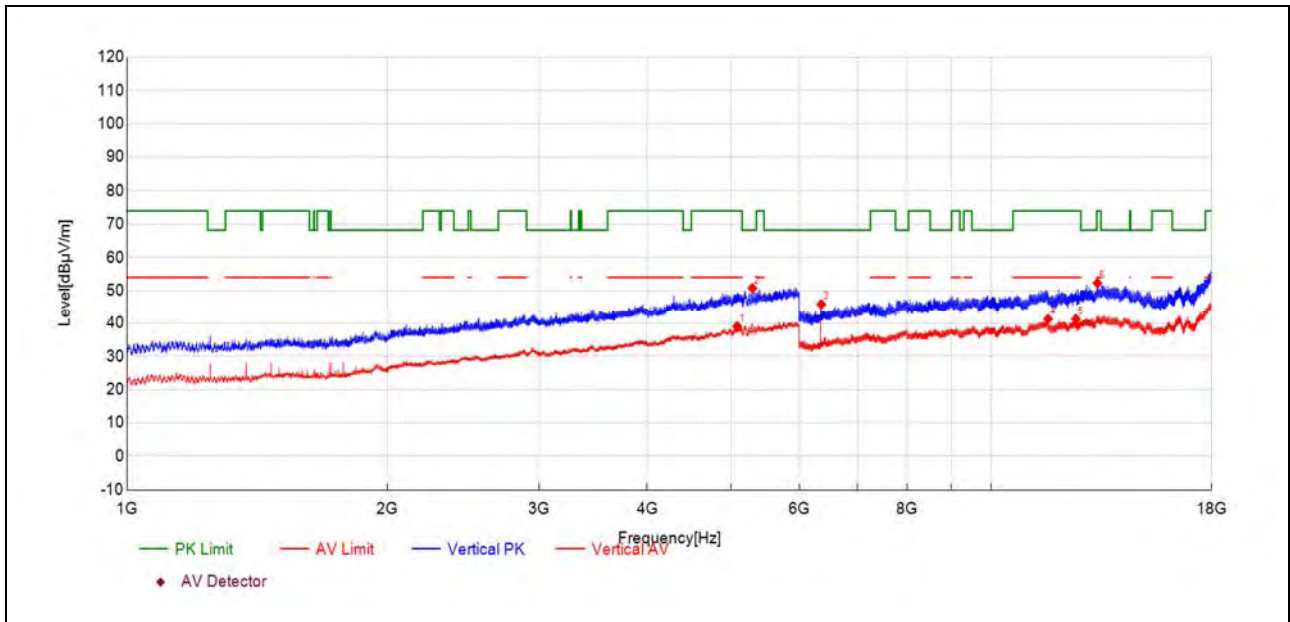
(Antenna Horizontal, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5092.12	30.5	40.50	10.010	54.00	13.50	165	360	AV	PASS
5363.05	42.5	52.51	10.060	74.00	21.49	165	360	PK	PASS
6360.07	51.5	45.88	-5.620	68.23	22.35	165	11	PK	PASS
8344.22	40.8	37.43	-3.340	54.00	16.57	165	128	AV	PASS
11555.51	47.2	50.00	2.830	74.00	24.00	165	251	PK	PASS
11606.31	37.8	40.87	3.090	54.00	13.13	165	189	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
44.87	53.6	25.22	-28.330	40.00	14.78	165	249	PK	PASS
58.98	55.0	24.42	-30.610	40.00	15.58	165	198	PK	PASS
250.64	51.4	23.29	-28.110	46.00	22.71	165	148	PK	PASS
323.78	49.6	23.39	-26.200	46.00	22.61	165	61	PK	PASS
557.65	44.9	23.96	-20.890	46.00	22.04	165	187	PK	PASS
638.55	45.2	26.22	-19.000	46.00	19.78	165	273	PK	PASS

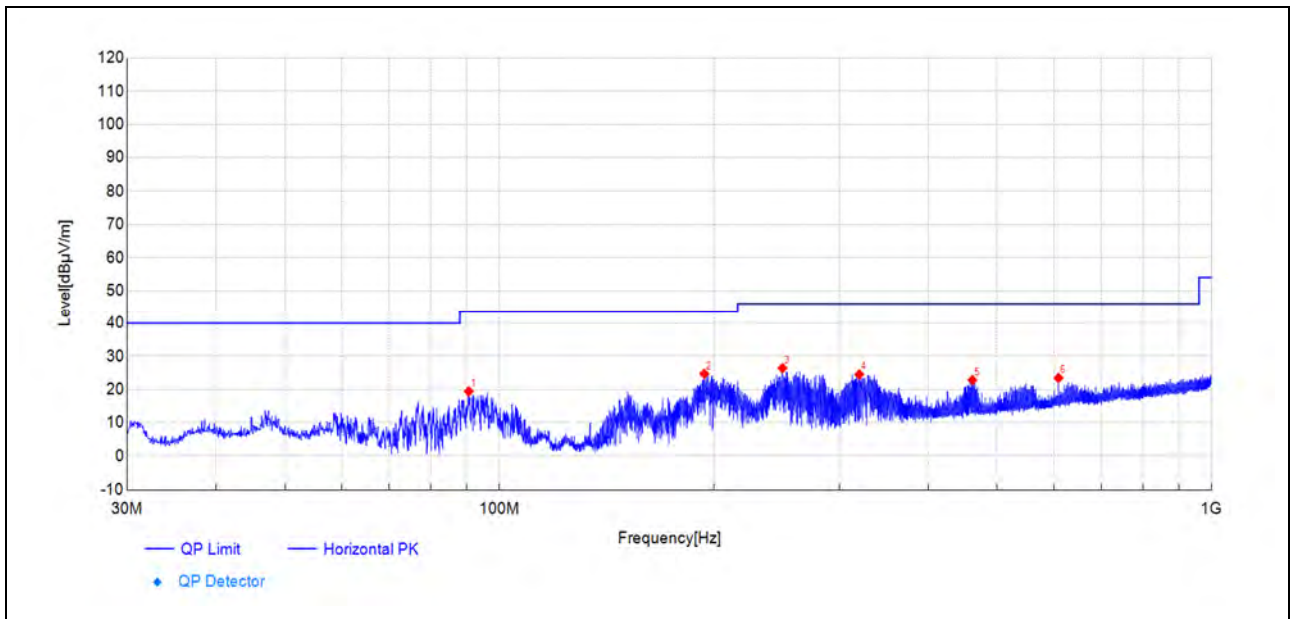


(Antenna Vertical, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5084.20	29.1	39.03	9.950	54.00	14.97	165	252	AV	PASS
5294.21	40.5	50.75	10.230	68.23	17.48	165	355	PK	PASS
6359.58	51.5	45.86	-5.620	68.23	22.37	165	50	PK	NA
11635.69	38.7	41.25	2.600	54.00	12.75	165	1	AV	PASS
12536.13	37.8	41.25	3.440	54.00	12.75	165	50	AV	PASS
13276.20	47.0	52.28	5.330	74.00	21.72	165	171	PK	PASS

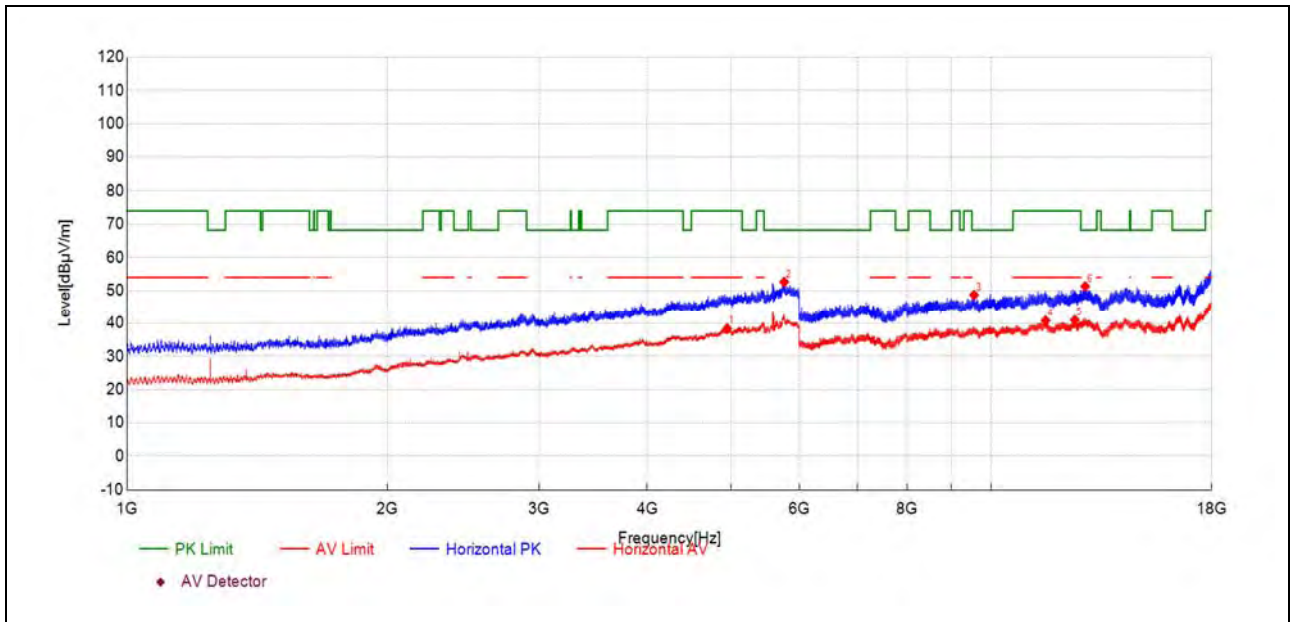


Plot for Channel 120



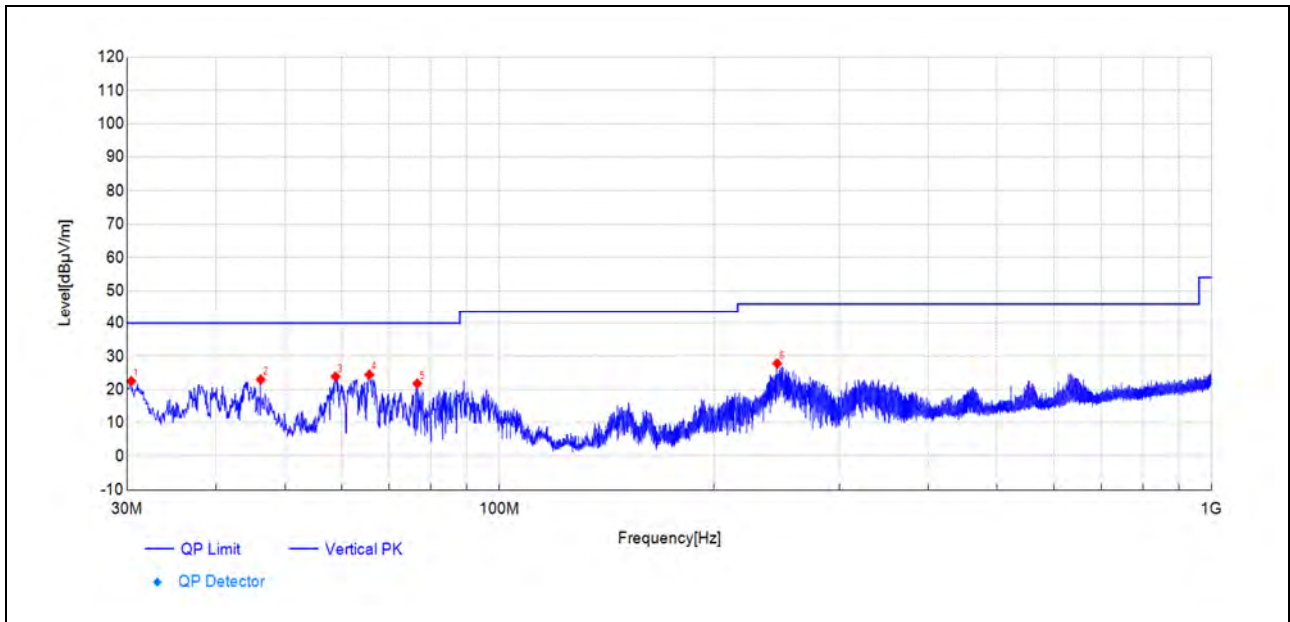
(Antenna Horizontal, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
90.56	51.2	19.44	-31.780	43.50	24.06	165	312	PK	PASS
193.91	54.2	24.71	-29.520	43.50	18.79	165	237	PK	PASS
249.70	54.6	26.43	-28.130	46.00	19.57	165	237	PK	PASS
320.02	50.9	24.52	-26.370	46.00	21.48	165	249	PK	PASS
461.35	45.6	22.86	-22.770	46.00	23.14	165	275	PK	PASS
609.39	43.1	23.46	-19.630	46.00	22.54	165	287	PK	PASS



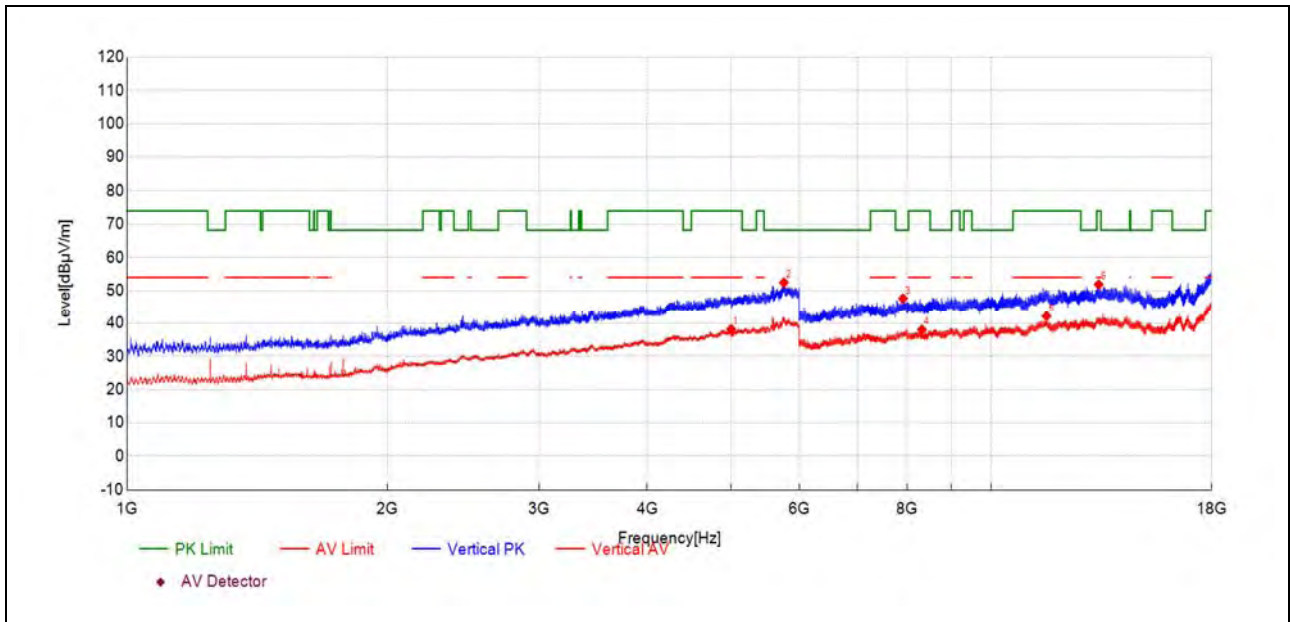
(Antenna Horizontal, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4949.98	29.5	38.40	8.870	54.00	15.60	165	1	AV	PASS
5760.77	39.9	52.62	12.690	68.23	15.61	165	60	PK	PASS
9555.43	49.8	48.68	-1.120	68.23	19.55	165	46	PK	PASS
11561.49	38.0	40.83	2.880	54.00	13.17	165	67	AV	PASS
12495.79	37.4	40.99	3.570	54.00	13.01	165	269	AV	PASS
12848.89	47.3	51.30	4.050	68.23	16.93	165	269	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

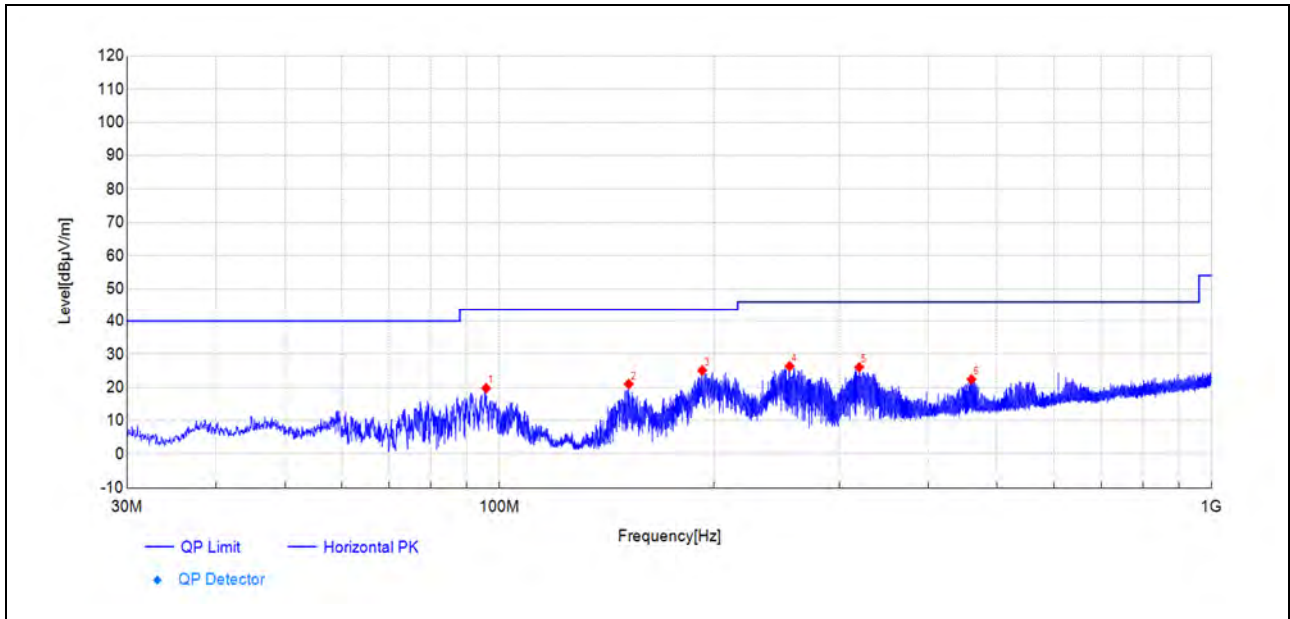
Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
30.41	55.5	22.52	-32.990	40.00	17.48	165	122	PK	PASS
46.23	51.3	23.01	-28.310	40.00	16.99	165	324	PK	PASS
58.87	54.5	23.90	-30.570	40.00	16.10	165	196	PK	PASS
65.69	57.4	24.48	-32.900	40.00	15.52	165	122	PK	PASS
76.68	57.1	21.80	-35.290	40.00	18.20	165	35	PK	PASS
245.47	56.1	27.80	-28.250	46.00	18.20	165	184	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

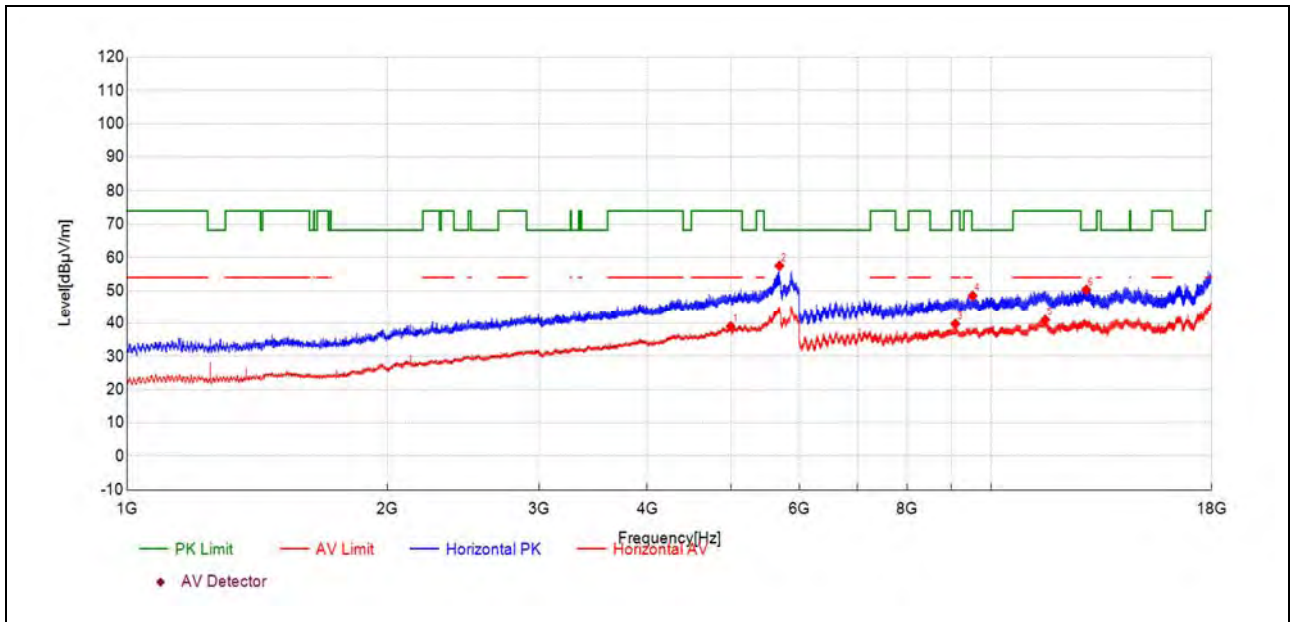
Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5001.98	29.1	38.18	9.100	54.00	15.82	165	173	AV	PASS
5756.32	39.7	52.43	12.730	68.23	15.80	165	11	PK	PASS
7907.95	50.6	47.62	-2.970	68.23	20.61	165	188	PK	PASS
8316.33	41.3	38.05	-3.200	54.00	15.95	165	228	AV	PASS
11590.37	39.0	42.15	3.110	54.00	11.85	165	330	AV	PASS
13321.52	46.5	51.87	5.360	74.00	22.13	165	330	PK	PASS

Plot for Channel 157



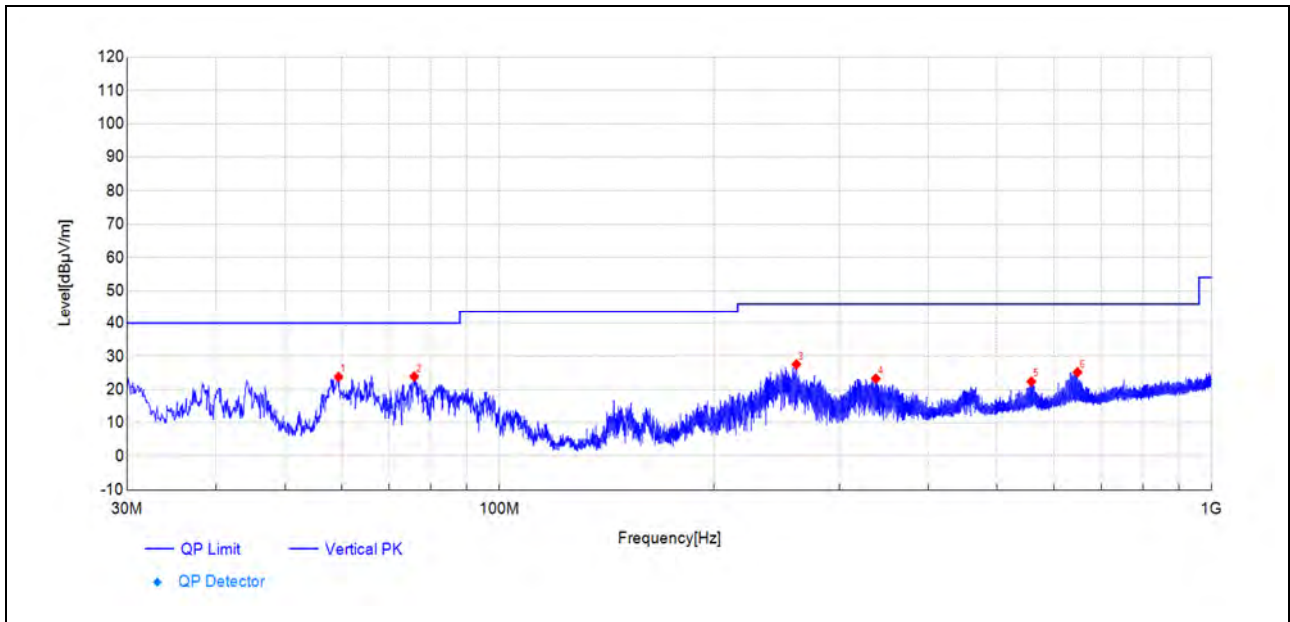
(Antenna Horizontal, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
95.79	50.3	19.79	-30.550	43.50	23.71	165	312	PK	PASS
151.87	54.3	21.04	-33.260	43.50	22.46	165	249	PK	PASS
192.62	54.7	25.10	-29.600	43.50	18.40	165	224	PK	PASS
255.47	54.4	26.40	-27.990	46.00	19.60	165	224	PK	PASS
320.02	52.5	26.12	-26.370	46.00	19.88	165	249	PK	PASS
459.94	45.3	22.45	-22.810	46.00	23.55	165	287	PK	PASS



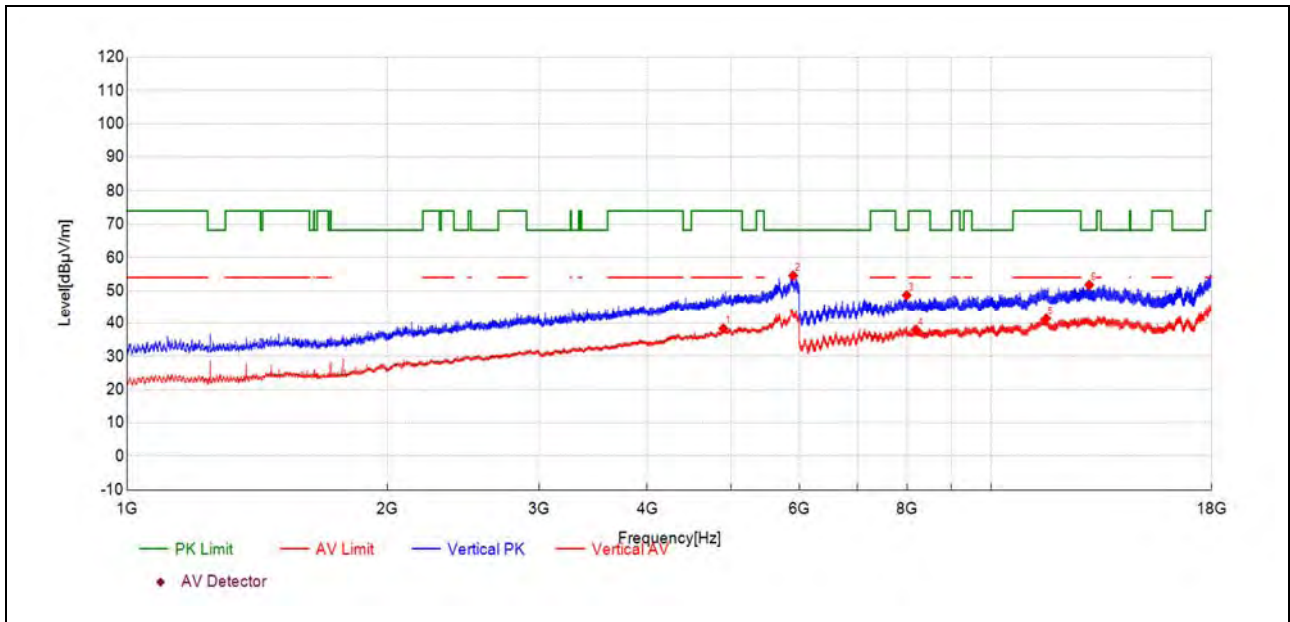
(Antenna Horizontal, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4994.55	29.6	39.02	9.400	54.00	14.98	165	0	AV	PASS
5689.45	45.6	57.50	11.920	68.23	10.73	165	77	PK	PASS
9089.77	41.7	39.76	-1.970	54.00	14.24	165	106	AV	PASS
9518.07	49.9	48.47	-1.390	68.23	19.76	165	287	PK	PASS
11552.02	38.1	40.98	2.930	54.00	13.02	165	188	AV	PASS
12885.74	46.2	50.27	4.100	68.23	17.96	165	126	PK	NA



(Antenna Vertical, 30MHz to 1GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
59.45	54.6	23.79	-30.760	40.00	16.21	165	173	PK	PASS
75.92	59.1	23.91	-35.220	40.00	16.09	165	10	PK	PASS
261.17	55.5	27.58	-27.950	46.00	18.42	165	147	PK	PASS
337.60	48.5	23.28	-25.230	46.00	22.72	165	173	PK	PASS
558.18	43.3	22.39	-20.880	46.00	23.61	165	212	PK	PASS
648.02	44.0	25.22	-18.800	46.00	20.78	165	273	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4898.96	28.9	38.33	9.390	54.00	15.67	165	233	AV	PASS
5900.45	41.6	54.54	12.940	68.23	13.69	165	12	PK	PASS
7984.64	51.0	48.63	-2.370	68.23	19.60	165	46	PK	PASS
8180.87	40.6	38.01	-2.570	54.00	15.99	165	288	AV	NA
11583.40	38.4	41.40	2.980	54.00	12.60	165	147	AV	PASS
12986.84	47.6	51.74	4.160	68.23	16.49	165	360	PK	PASS



Notes

1. The report shall have report stamp or our company stamp.
2. The report shall be invalid without all the signatures of the editor and approver.
3. The report shall not be changed.
4. Any objections must be raised to Morlab within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.
5. Conformity declaration:
 - ☒ Morlab issues a statement of conformity based on the corresponding standards (default)
 - ☐ Morlab issues a statement of conformity based on the applicant requirement
6. Use of uncertainty of measurement for decisions on conformity (decision rule):

No decision rule is specified by the testing standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule).

————— END OF REPORT —————

