



was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading

For the Test Antenna:

- (a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- (b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.



2.9.3. Test Result

According to ANSI C63.4 selection 4.2.2, 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 limit, it is unnecessary to perform an quasi-peak measurement.

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.

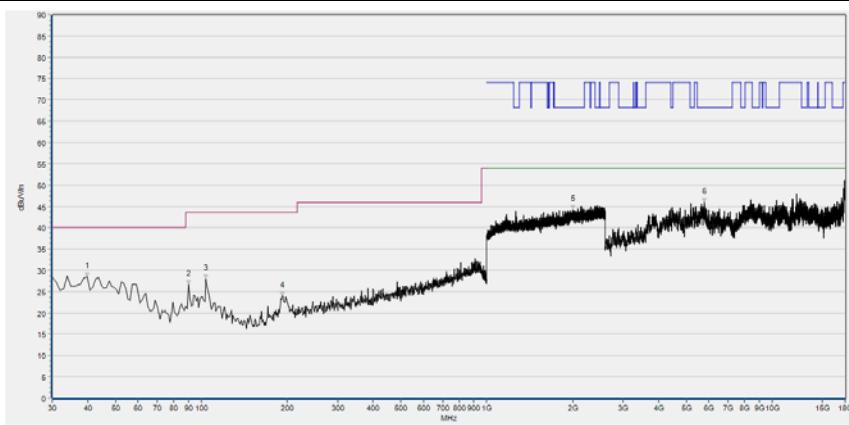
Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note2: For the frequency, which started from 9 kHz 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.

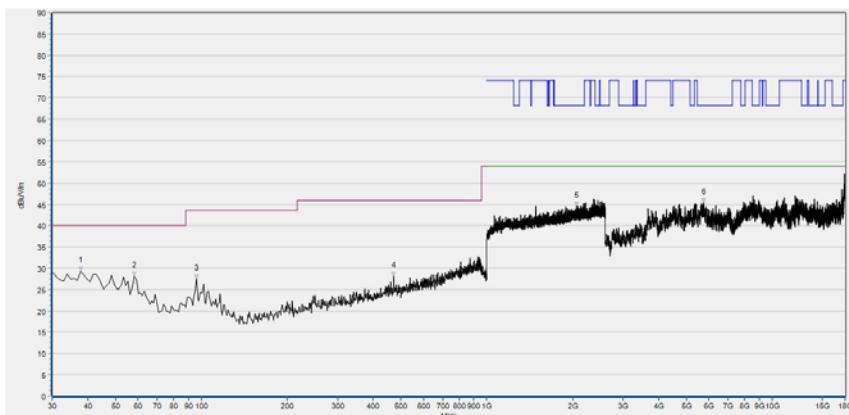
802.11a Test mode

Plots for Channel = 36



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
39.710	28.42	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	26.65	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
103.794	27.97	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
192.152	23.96	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2007.269	44.18	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5776.115	45.93	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

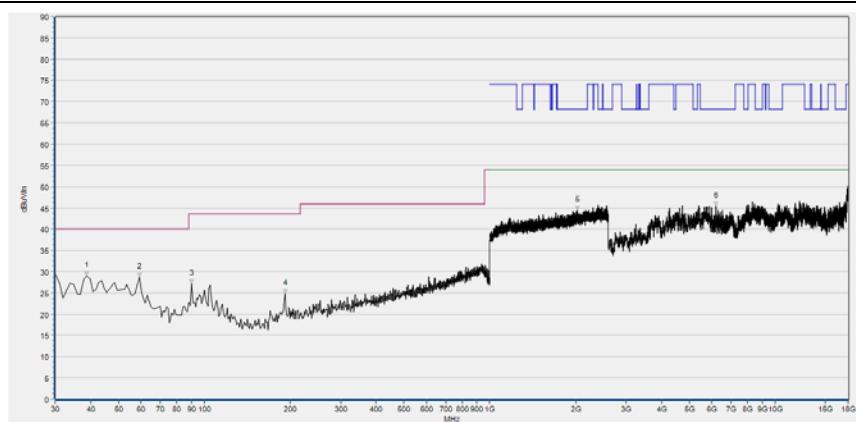
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
37.768	29.35	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
58.158	28.22	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	27.56	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
472.763	28.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2056.886	44.50	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5745.309	45.40	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

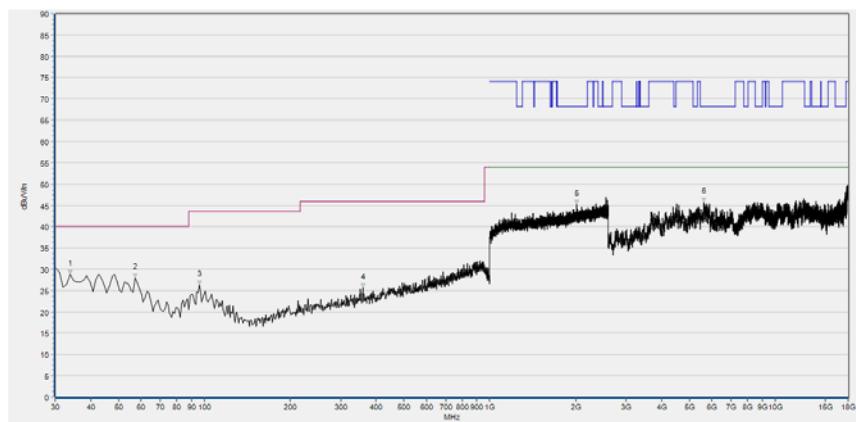
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 44



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	29.00	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
59.129	28.69	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	27.21	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
192.152	24.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2029.677	44.33	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
6204.321	45.44	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

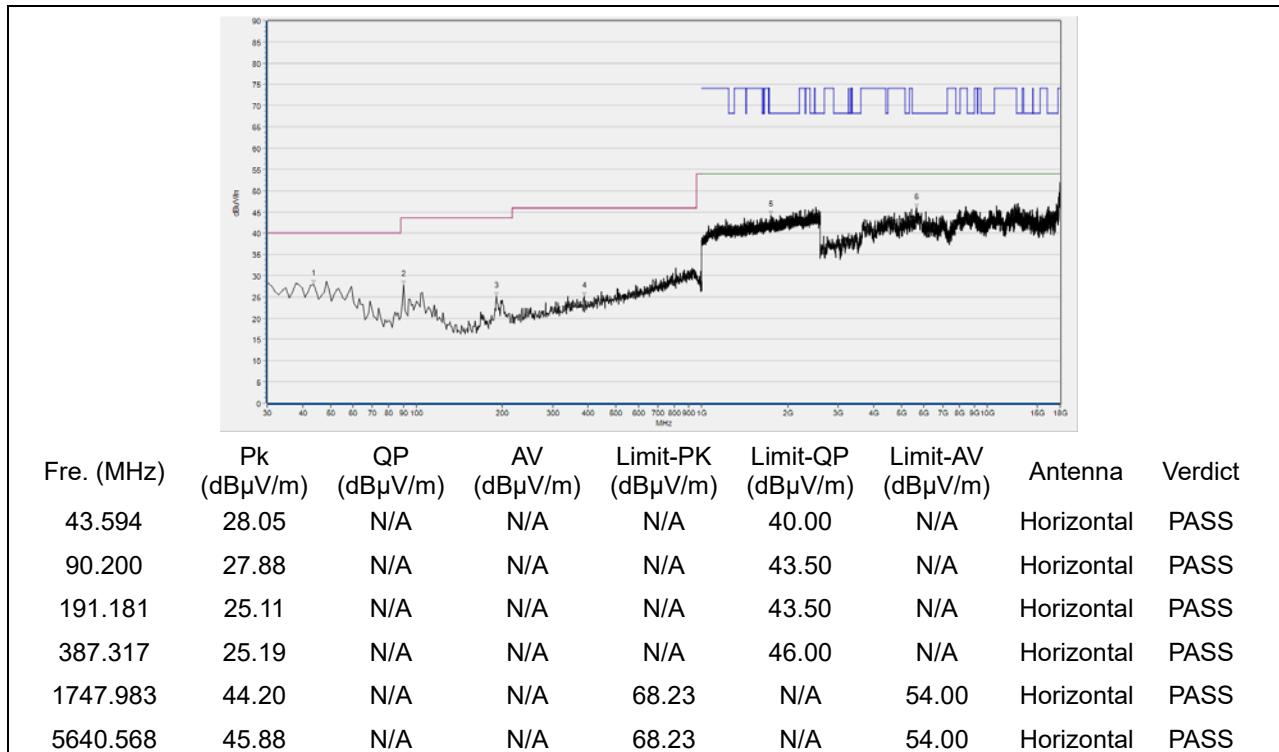
(Antenna Horizontal, 30MHz to 18GHz)



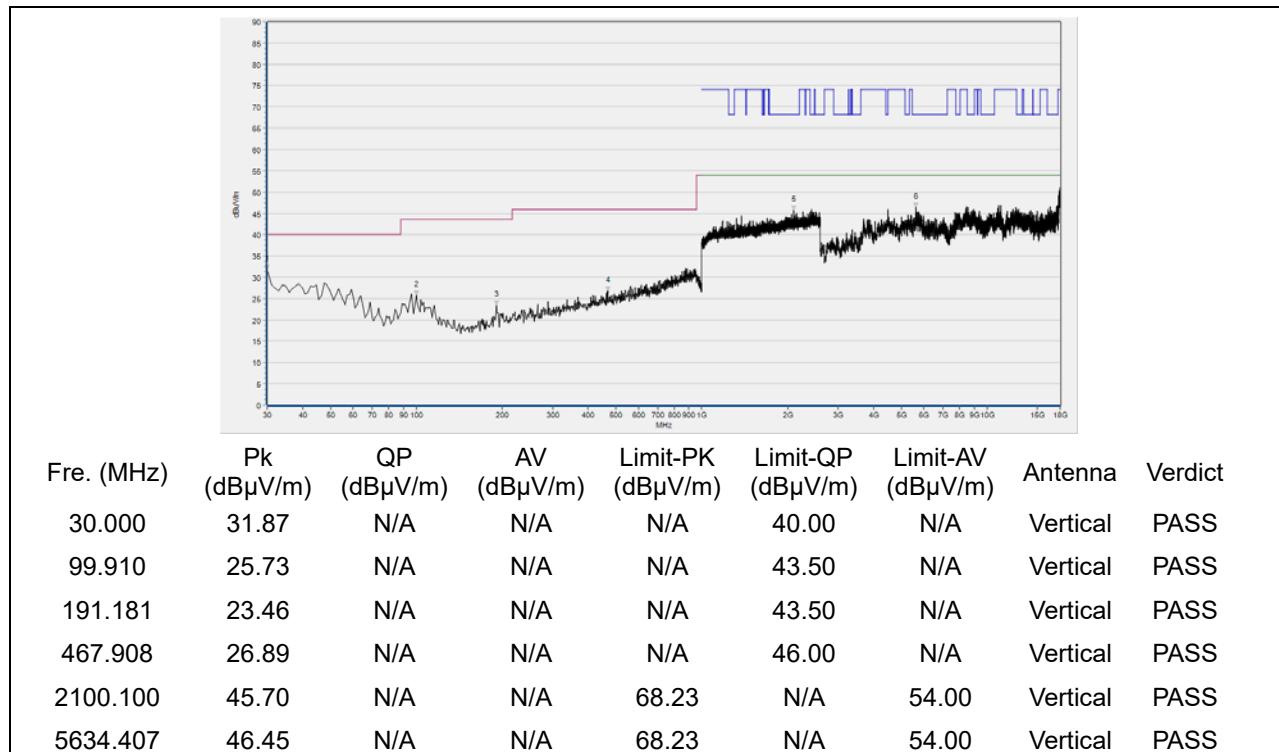
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	28.89	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
57.187	27.93	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	26.38	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
359.159	25.69	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2016.339	45.23	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5625.165	45.74	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 48

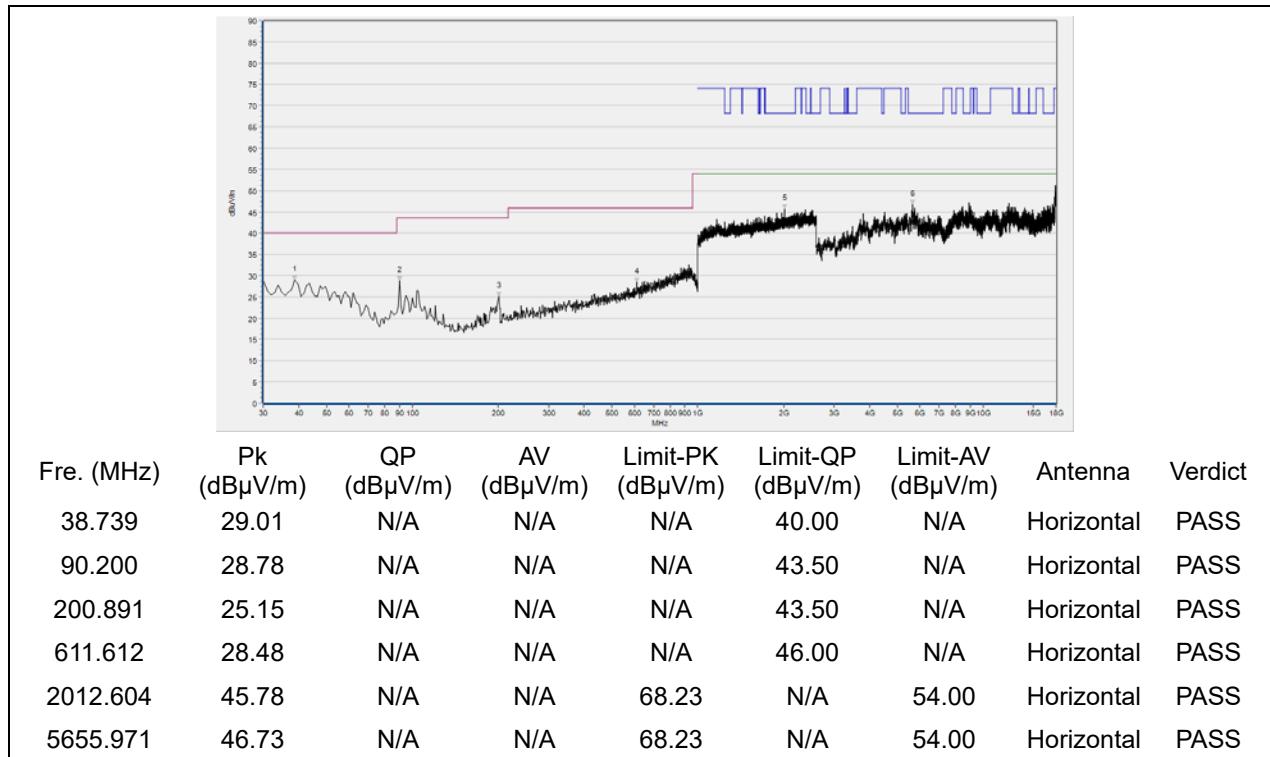


(Antenna Horizontal, 30MHz to 18GHz)

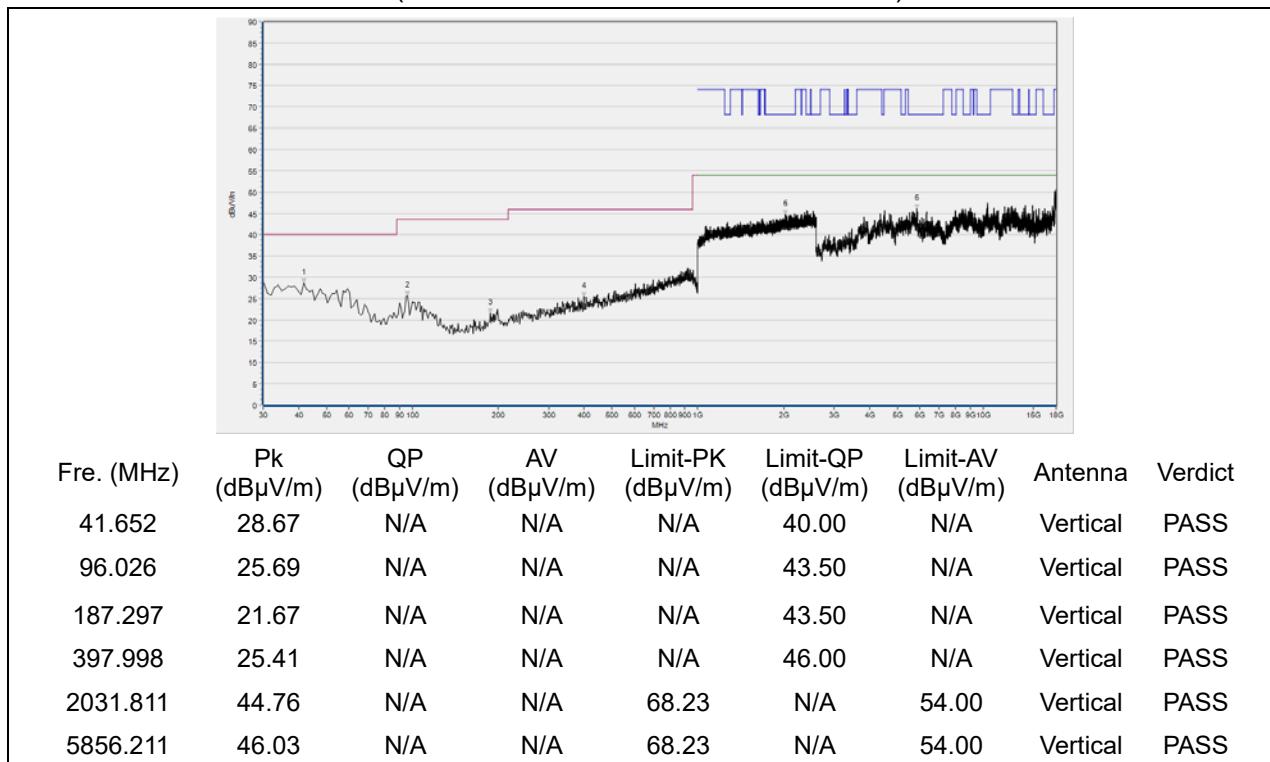


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 52

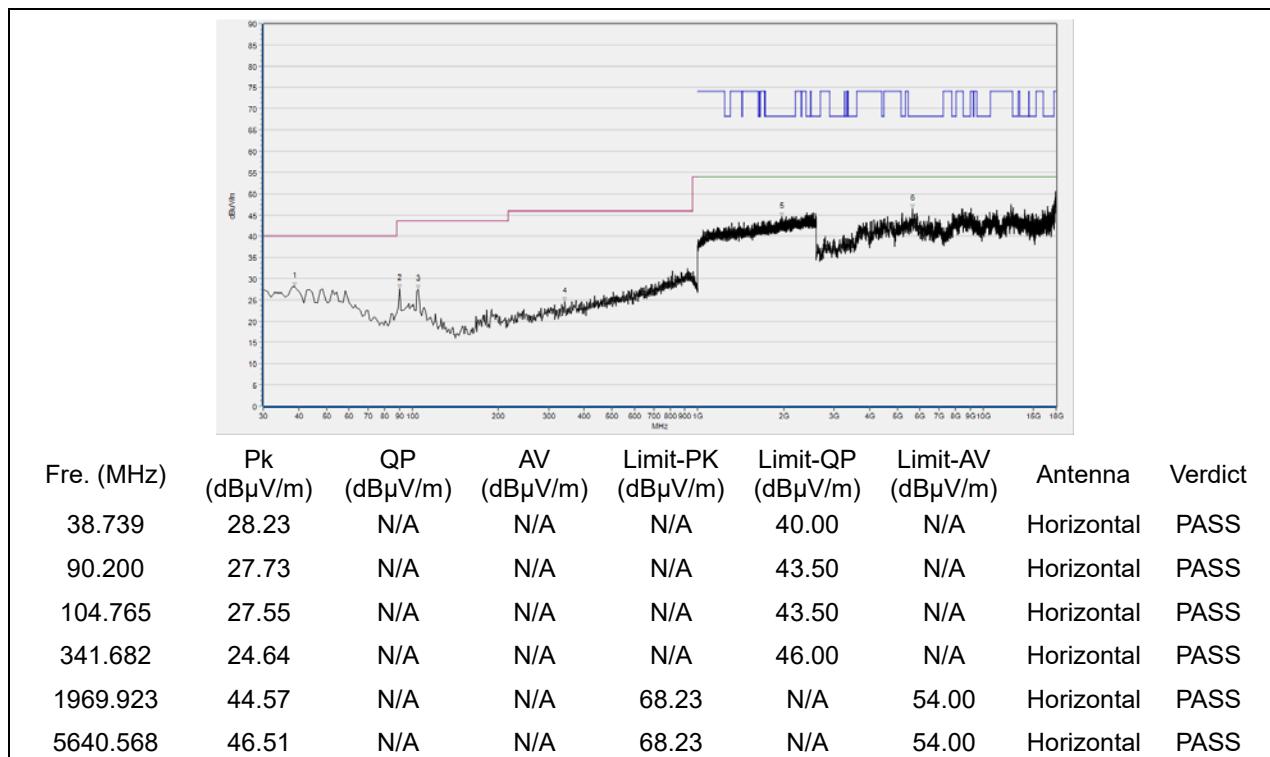


(Antenna Horizontal, 30MHz to 18GHz)

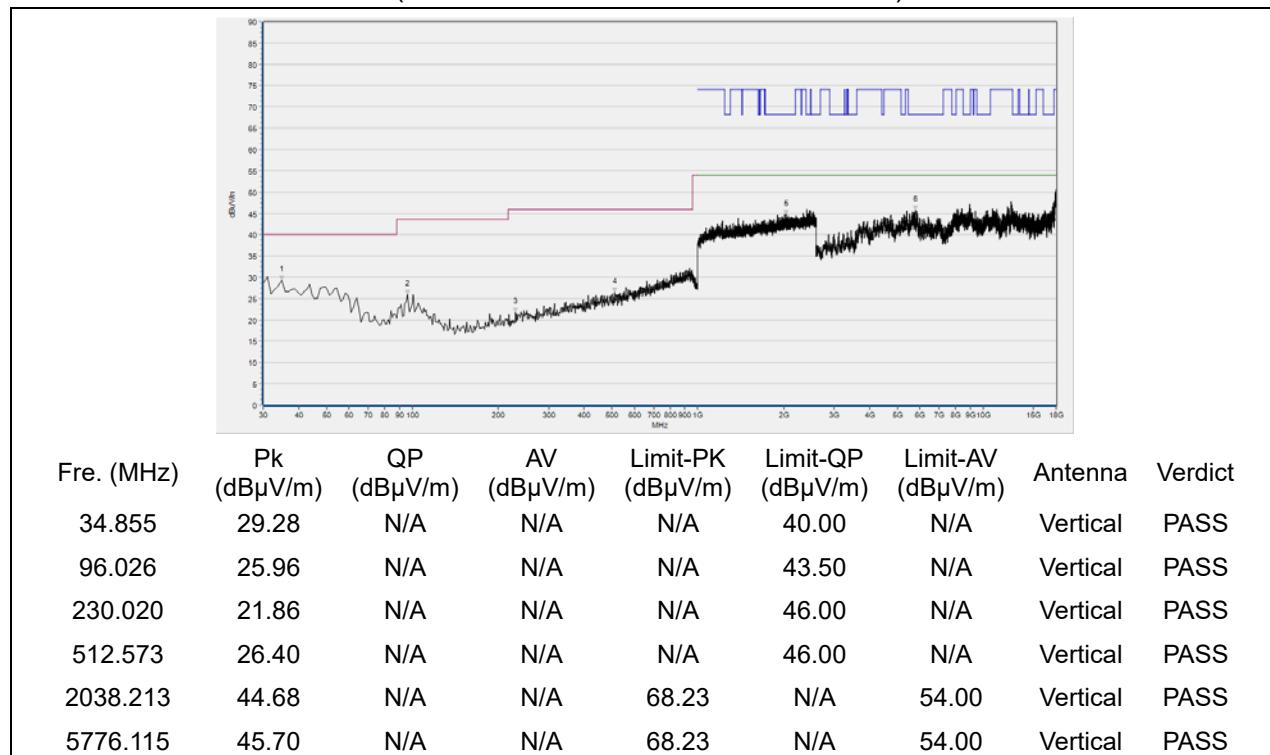


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 60

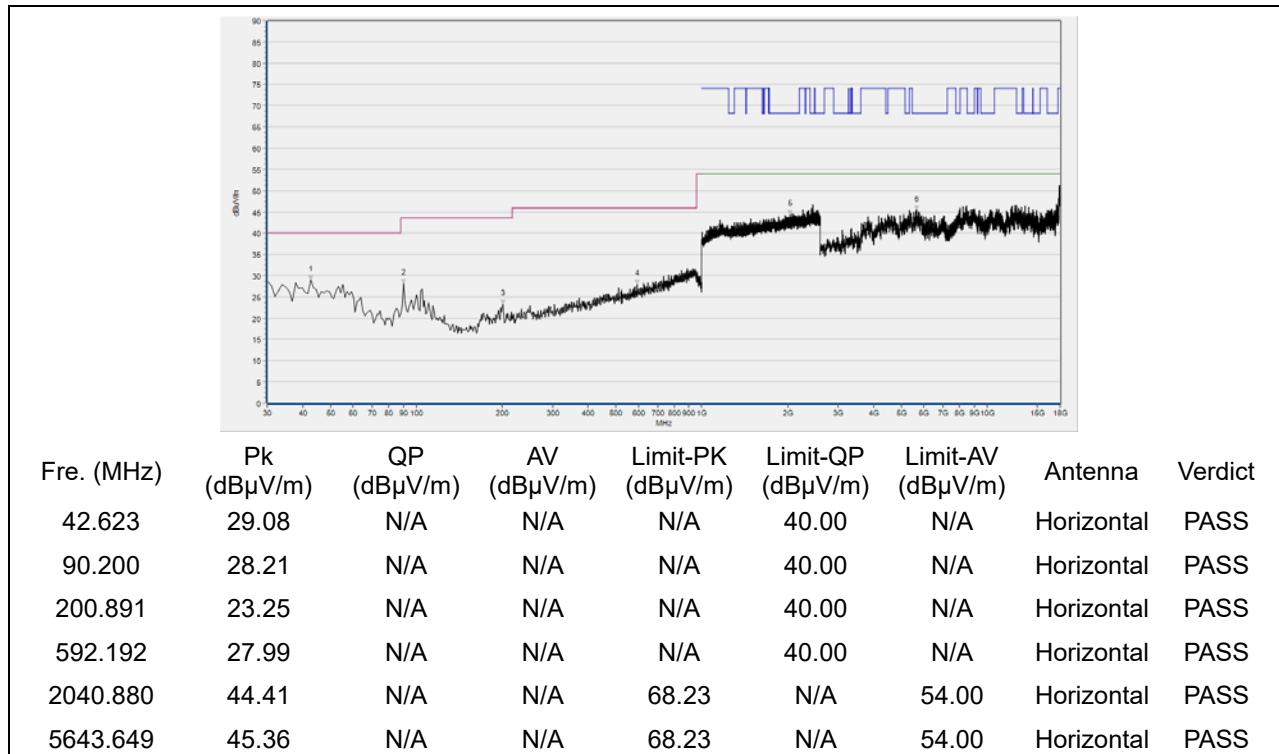


(Antenna Horizontal, 30MHz to 18GHz)

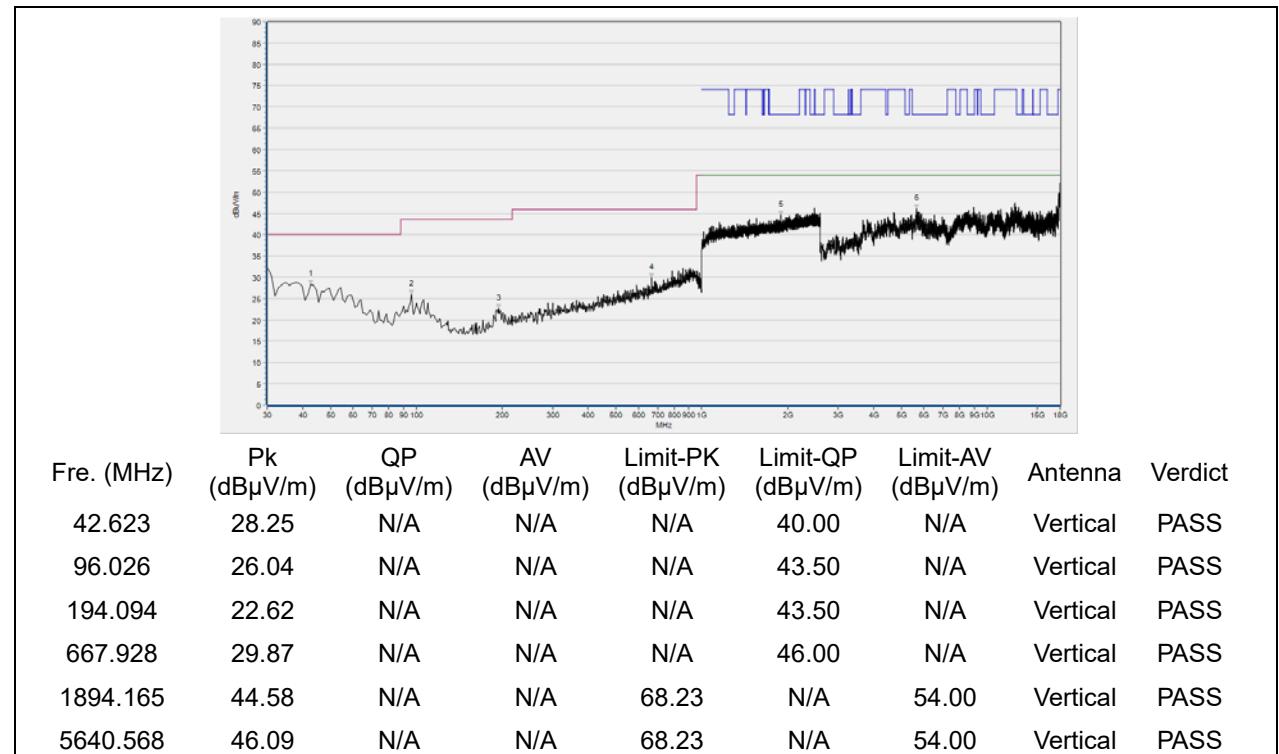


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 64

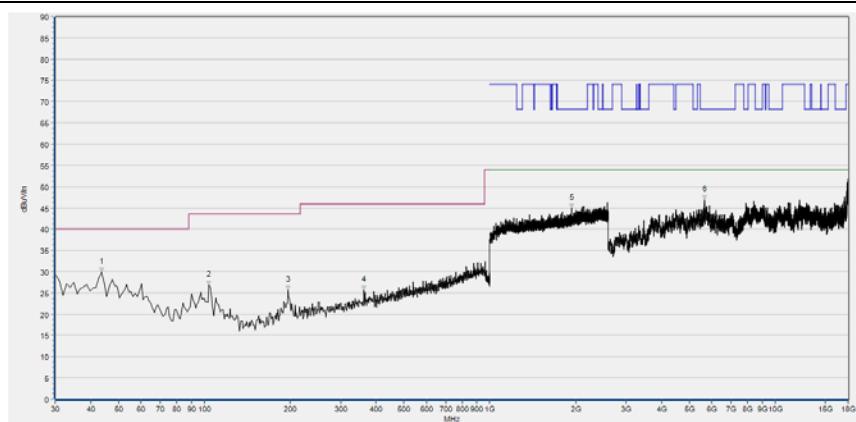


(Antenna Horizontal, 30MHz to 18GHz)



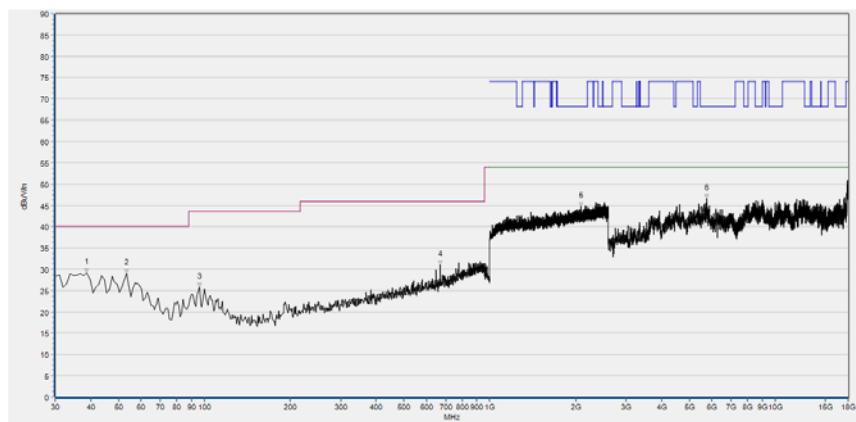
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 100



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	29.81	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
103.794	26.79	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
196.036	25.70	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
362.072	25.67	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1929.910	44.87	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5652.891	46.88	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

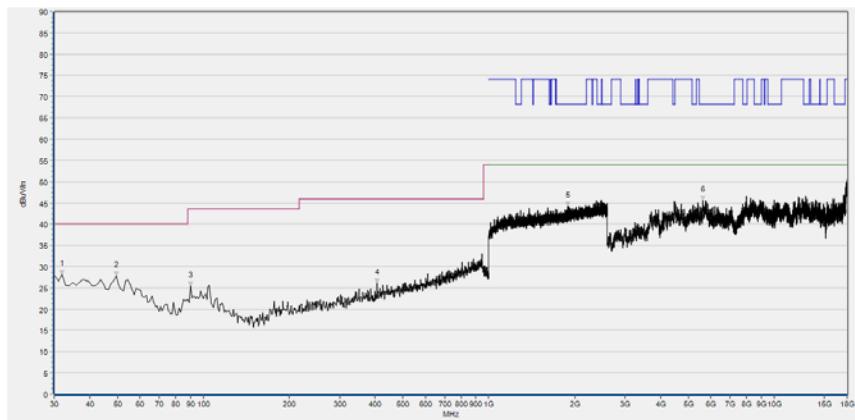
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	29.19	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
53.303	28.91	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	25.76	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
669.870	30.98	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2091.030	44.69	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5766.873	46.61	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

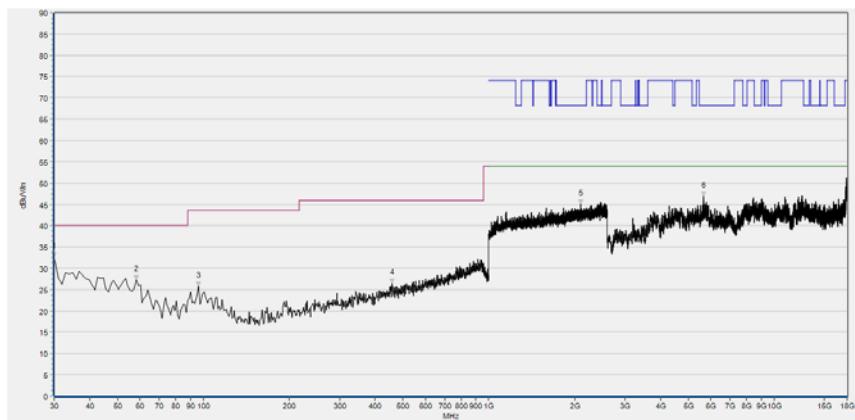
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 120



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
31.942	28.15	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
49.419	27.85	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	25.39	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
405.766	26.13	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1886.162	44.18	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5625.165	45.51	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

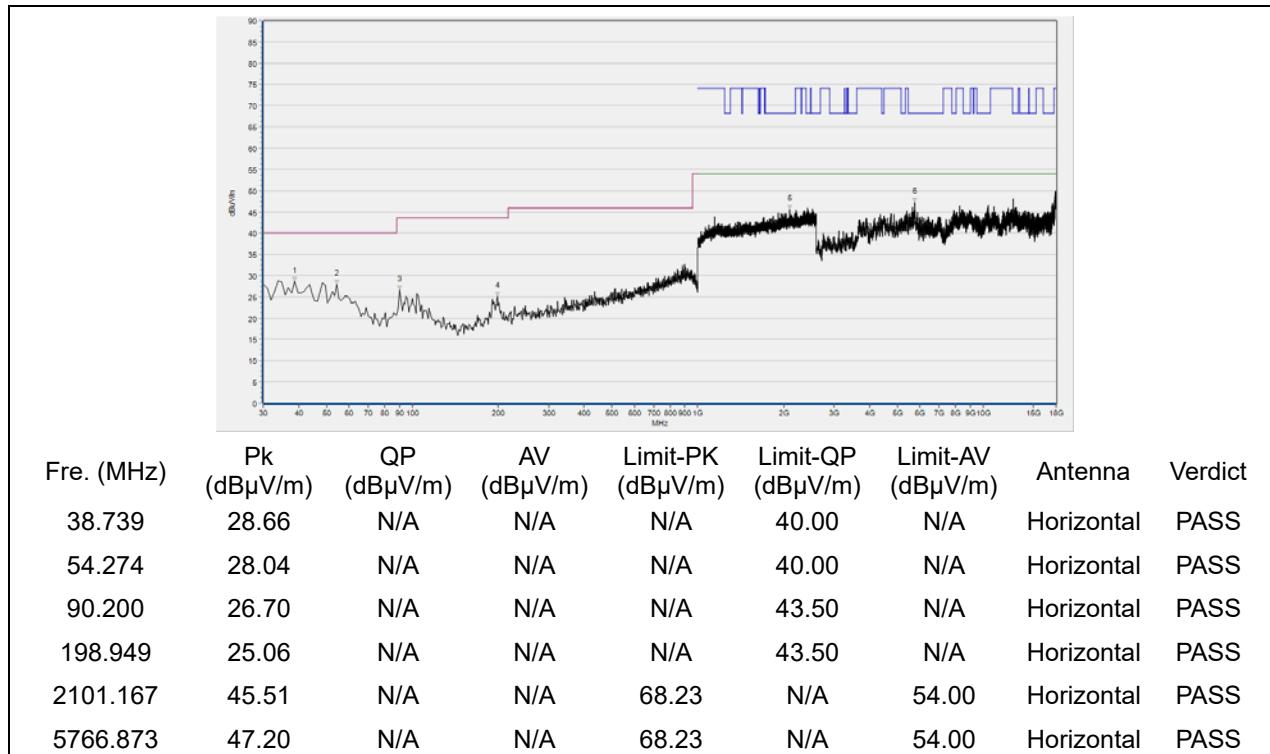
(Antenna Horizontal, 30MHz to 18GHz)



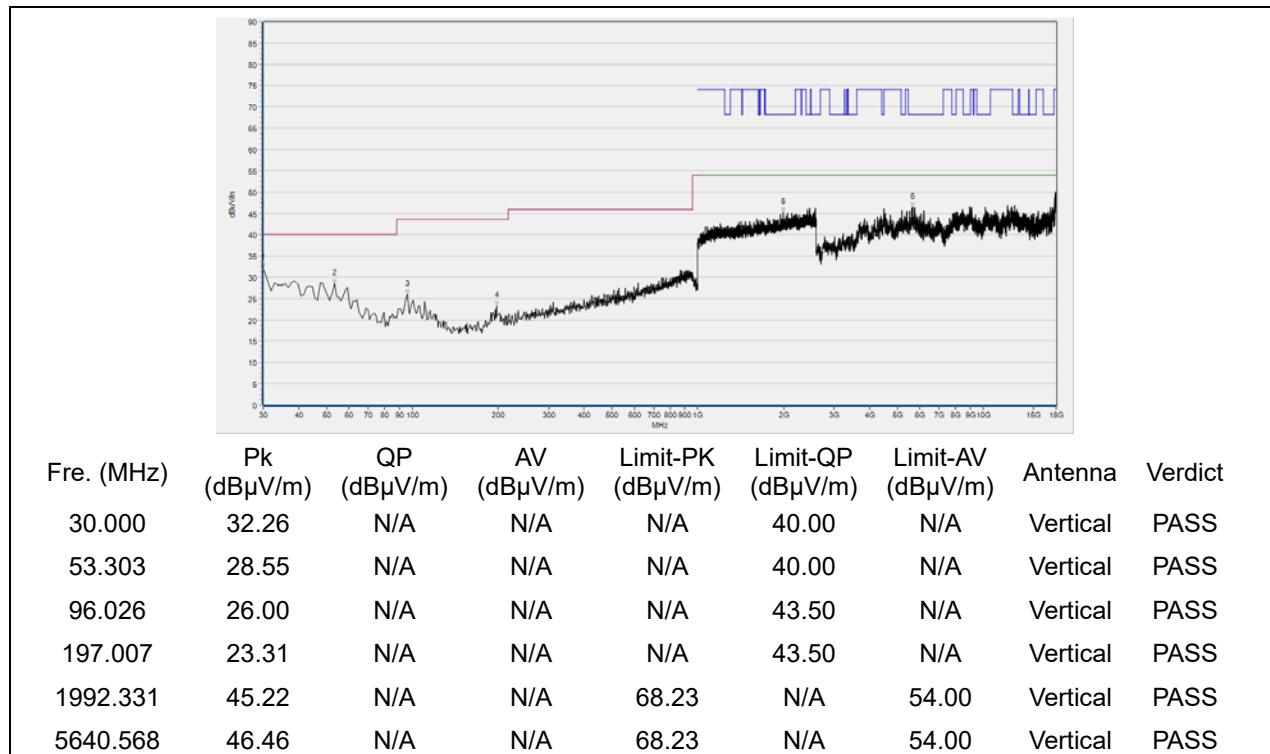
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
30.000	32.61	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
58.158	27.36	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	25.85	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
458.198	26.46	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2100.634	45.05	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5640.568	46.89	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 144

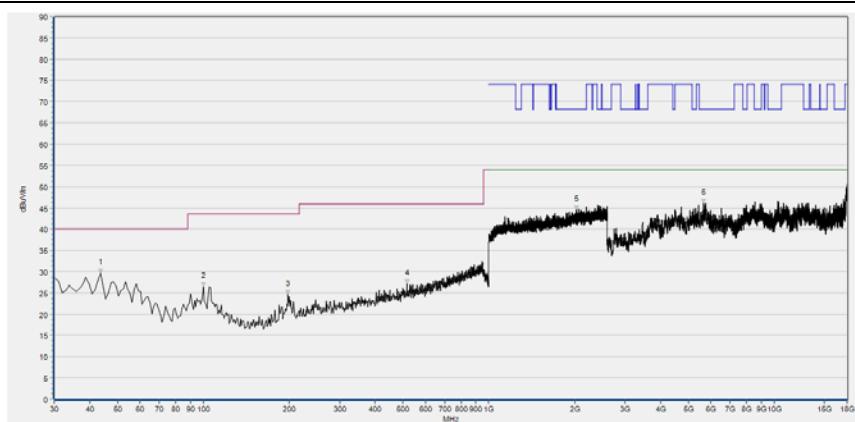


(Antenna Horizontal, 30MHz to 18GHz)



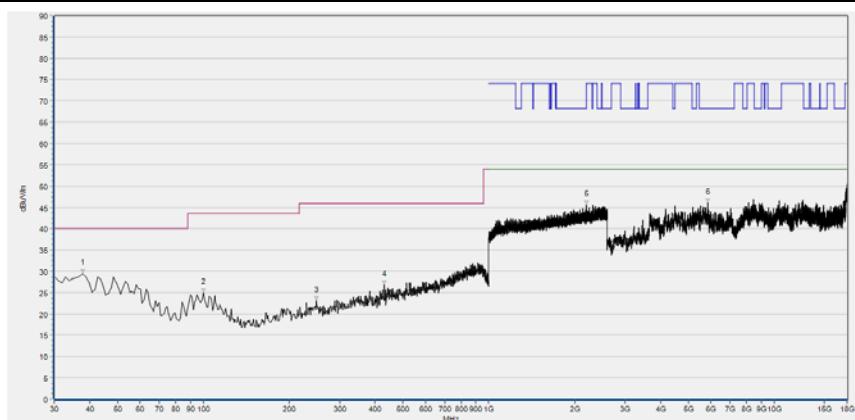
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 149



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	29.59	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
99.910	26.46	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
197.978	24.71	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
516.456	27.21	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2027.009	44.60	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5646.729	46.10	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

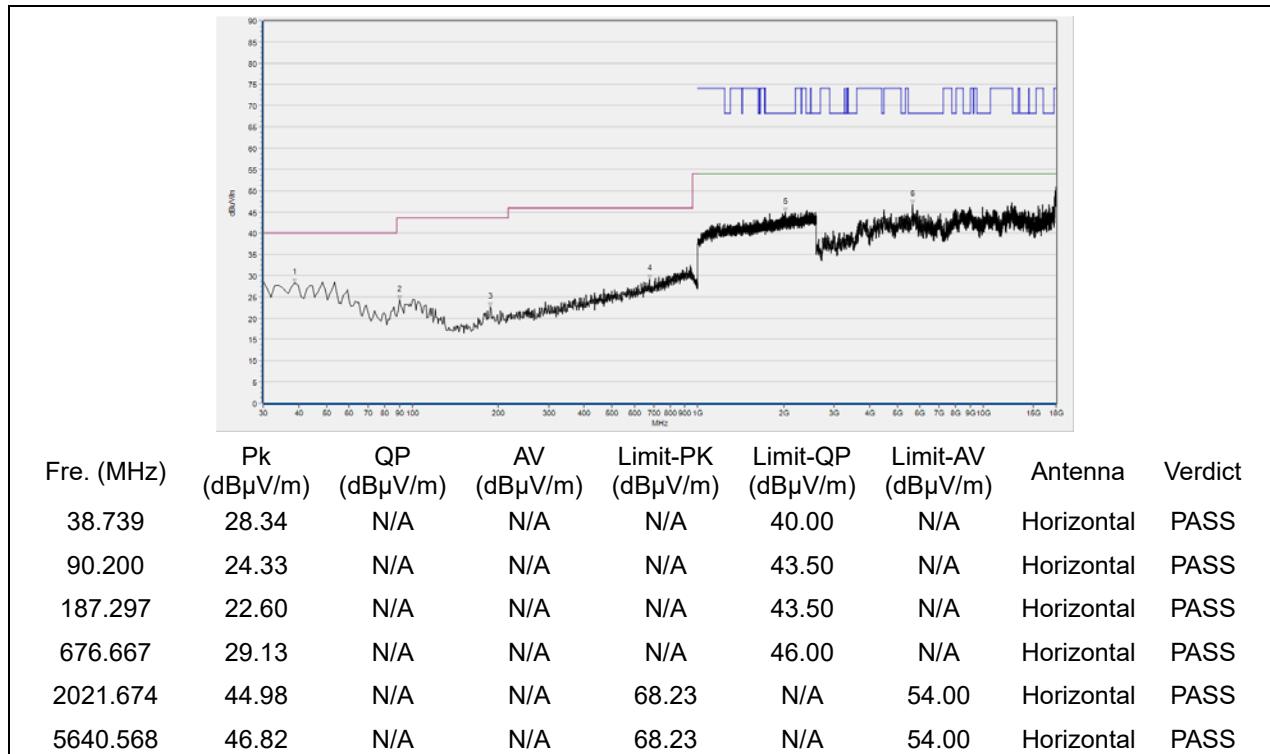
(Antenna Horizontal, 30MHz to 18GHz)



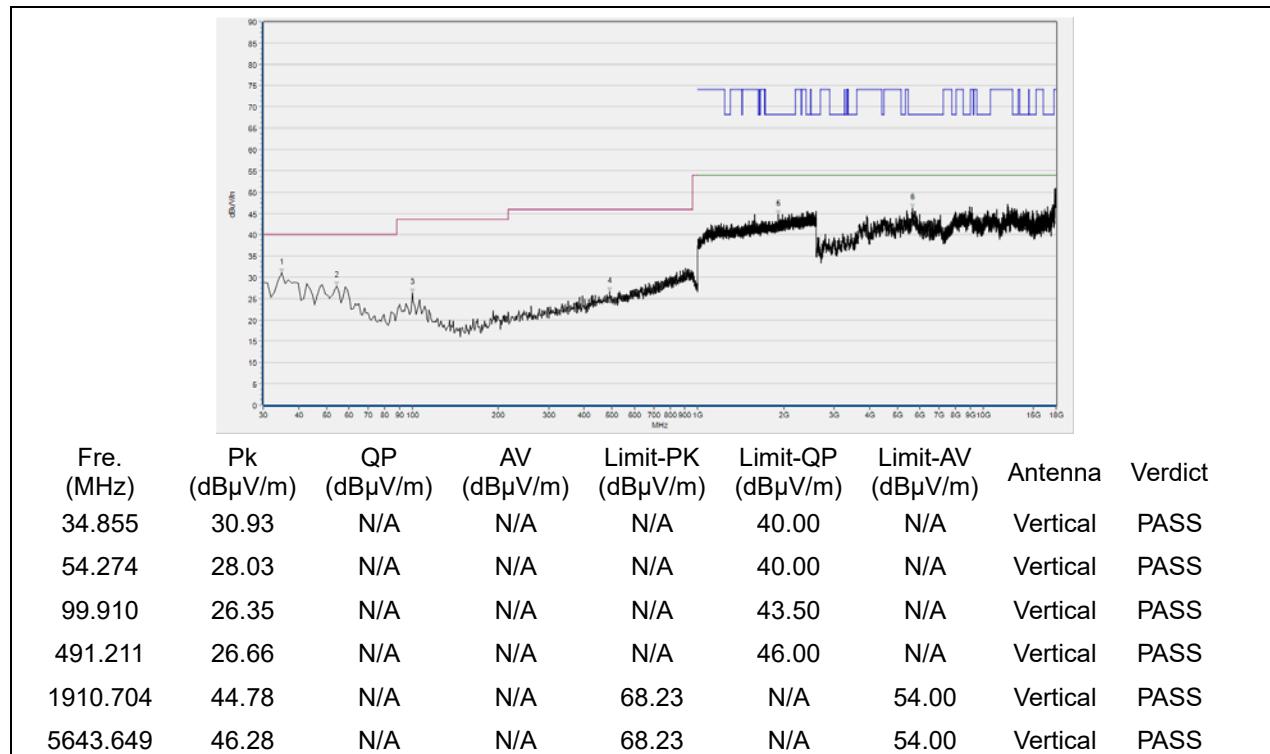
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
37.768	29.46	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.910	25.02	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
248.468	23.21	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
431.011	26.85	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2191.330	45.51	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5846.969	46.13	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 157

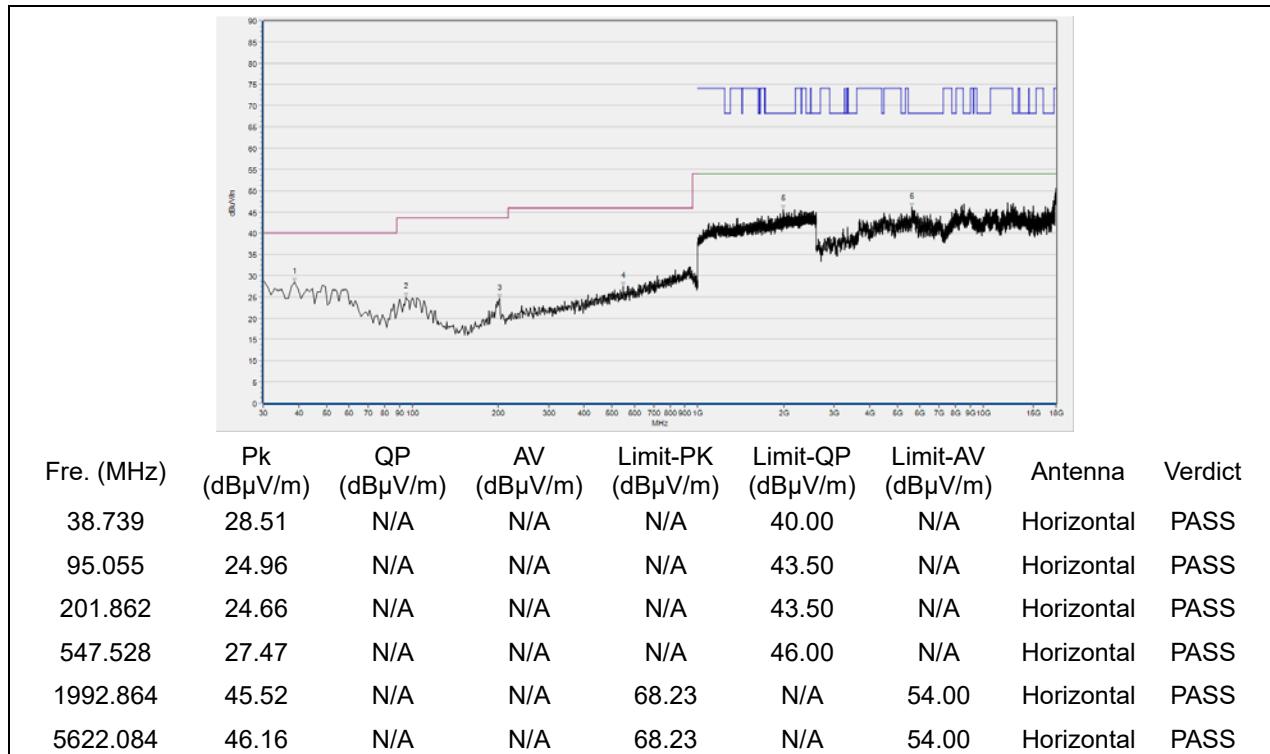


(Antenna Horizontal, 30MHz to 18GHz)

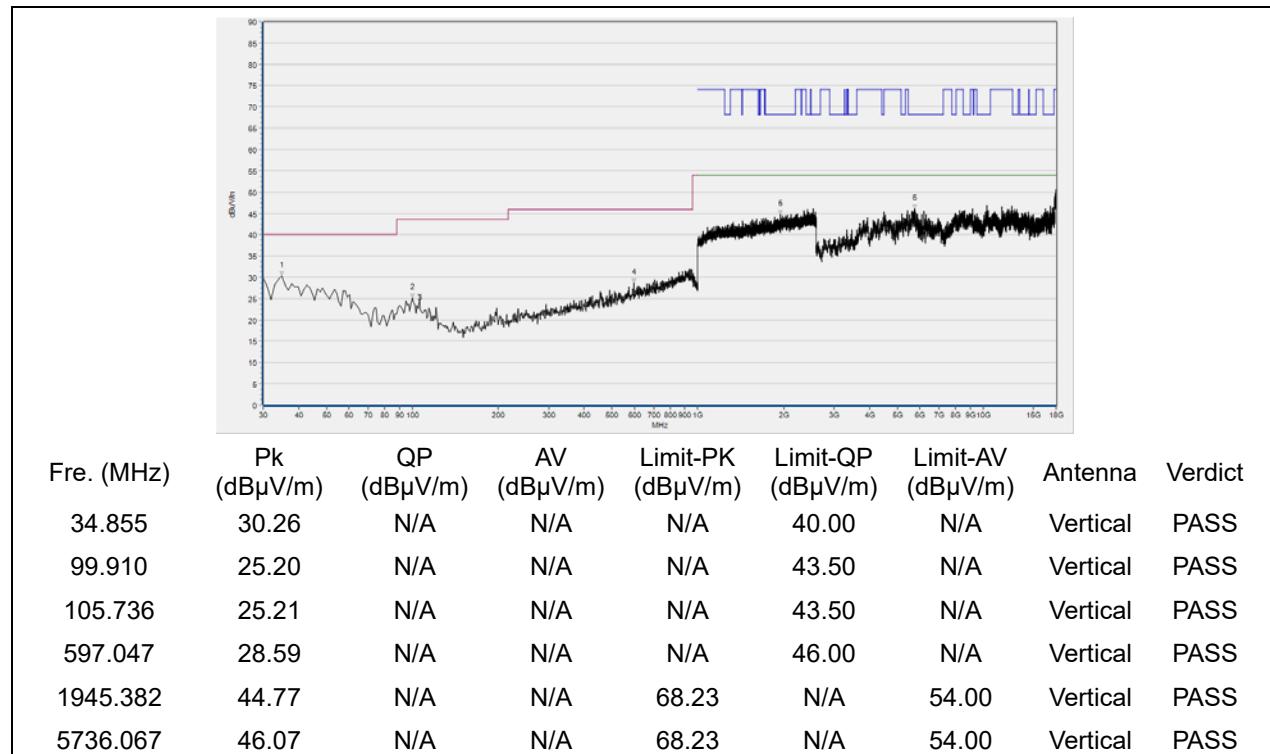


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 165



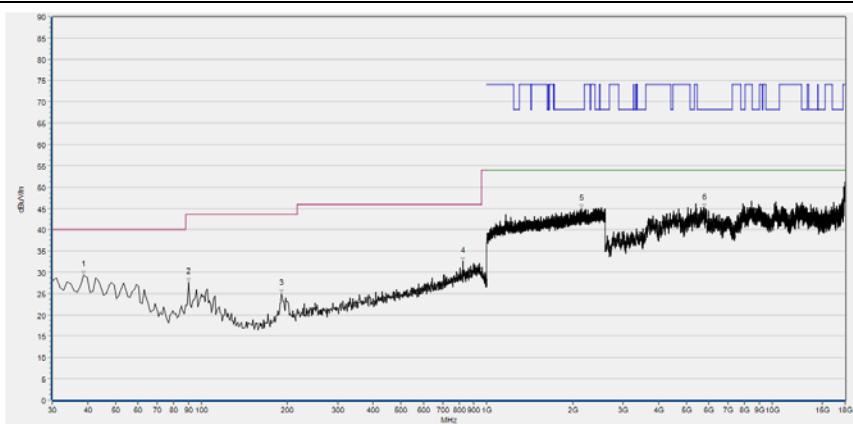
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

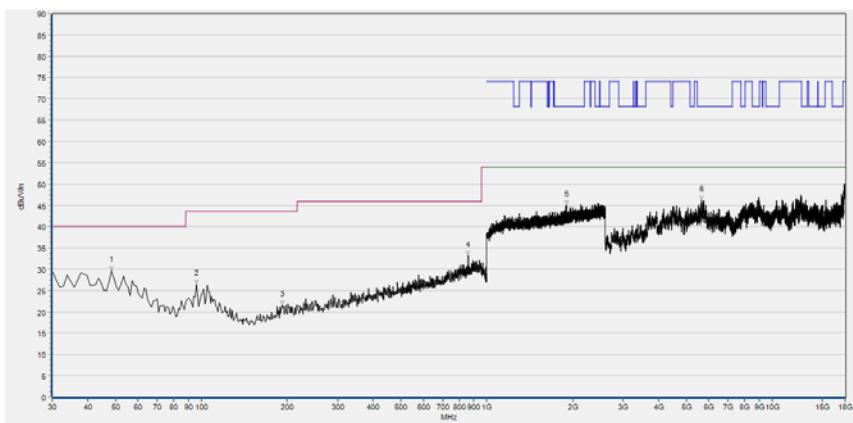
802.11n (HT20) Test mode

Plots for Channel = 36



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	29.35	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	27.64	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
191.181	25.02	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
824.254	32.52	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2141.180	44.85	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5782.276	45.09	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

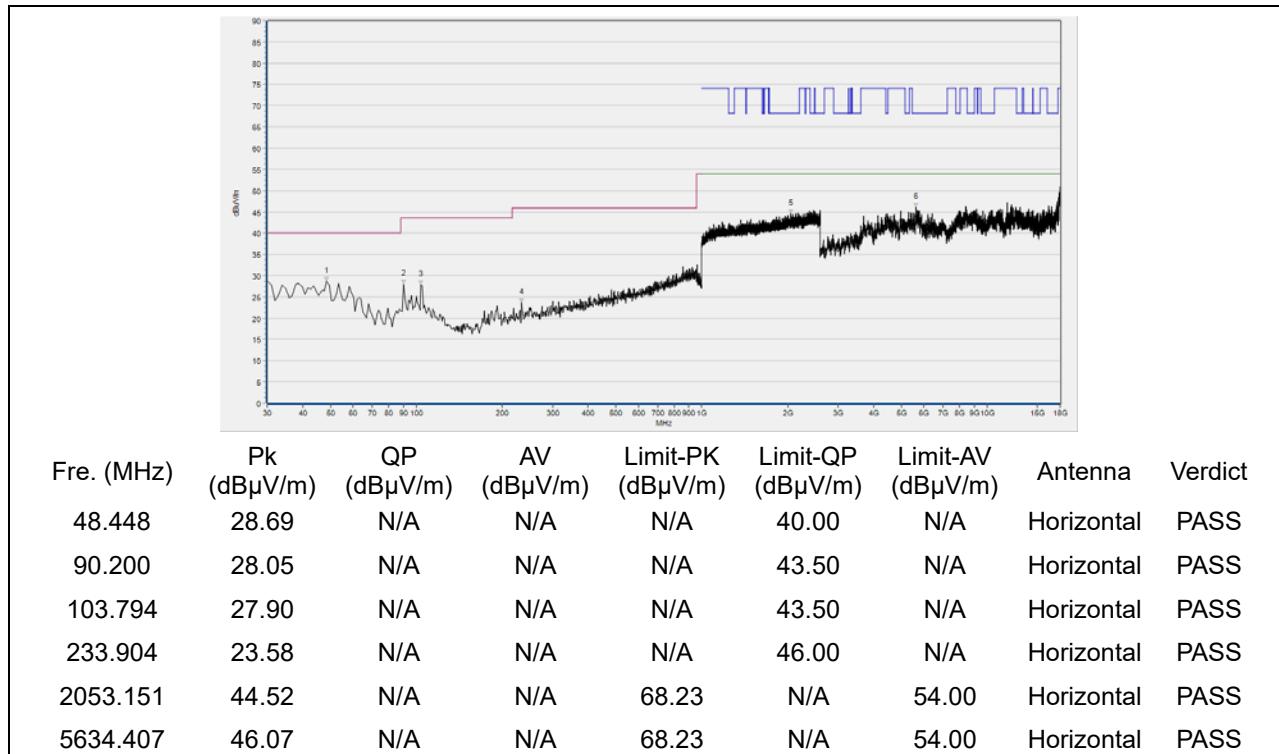
(Antenna Horizontal, 30MHz to 18GHz)



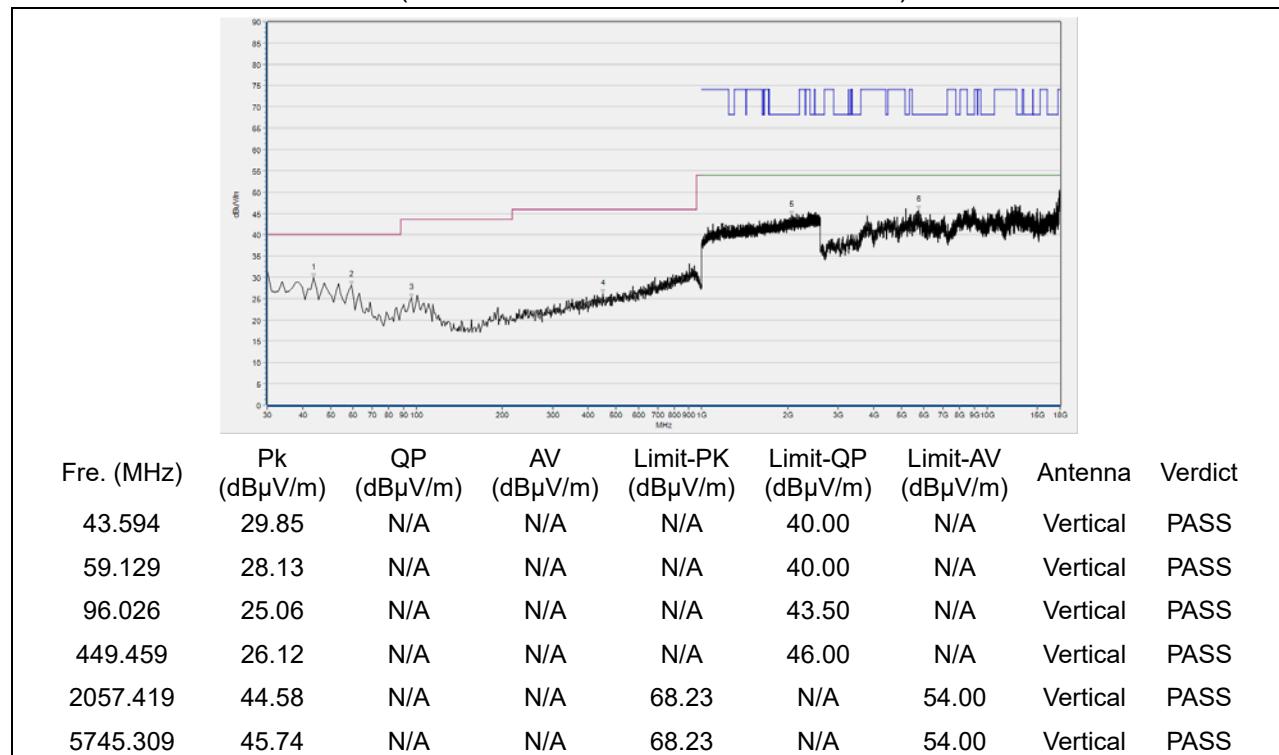
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
48.448	29.71	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	26.51	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
192.152	21.60	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
860.180	33.14	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1901.634	45.09	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5643.649	46.17	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 44

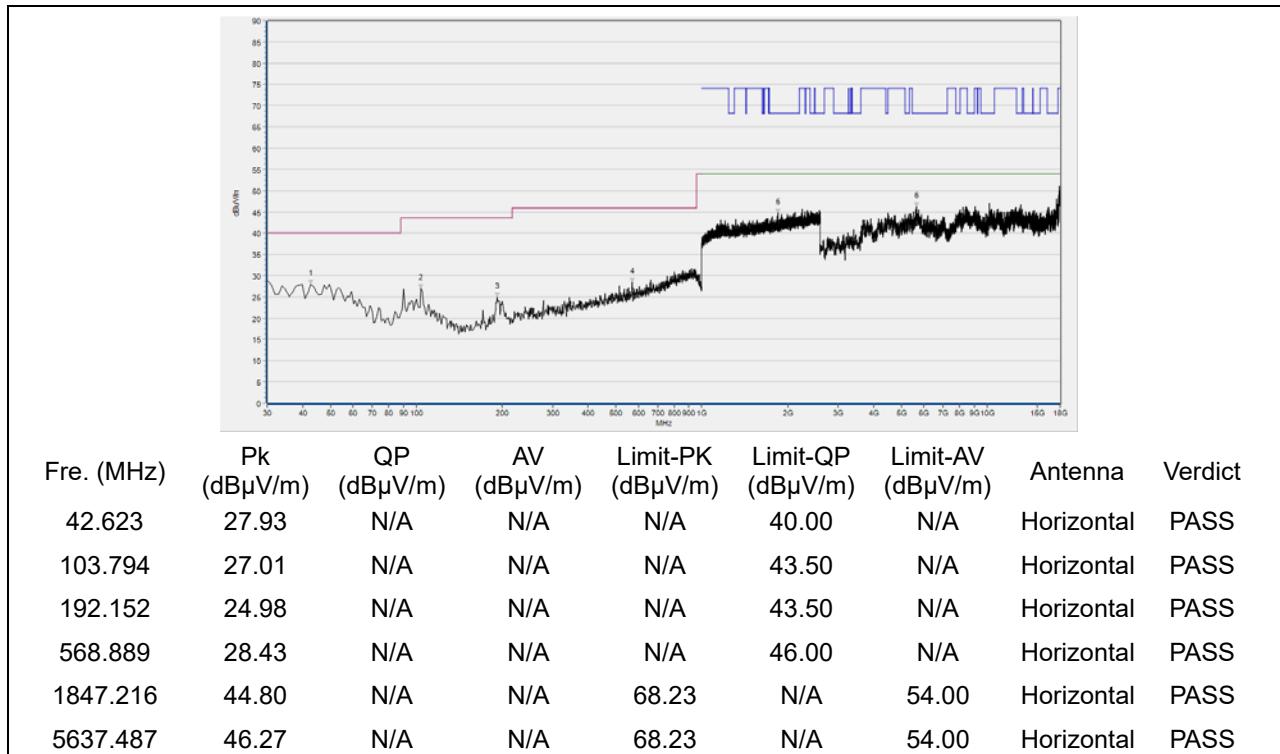


(Antenna Horizontal, 30MHz to 18GHz)

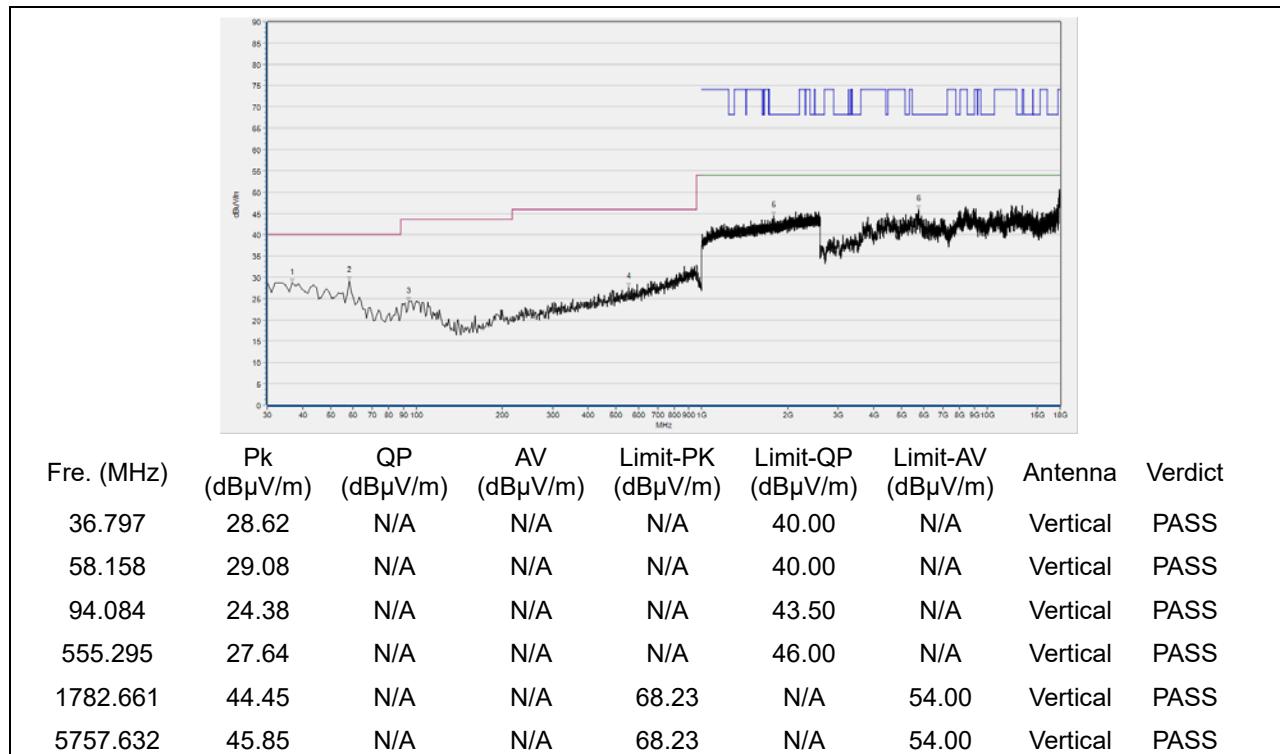


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 48

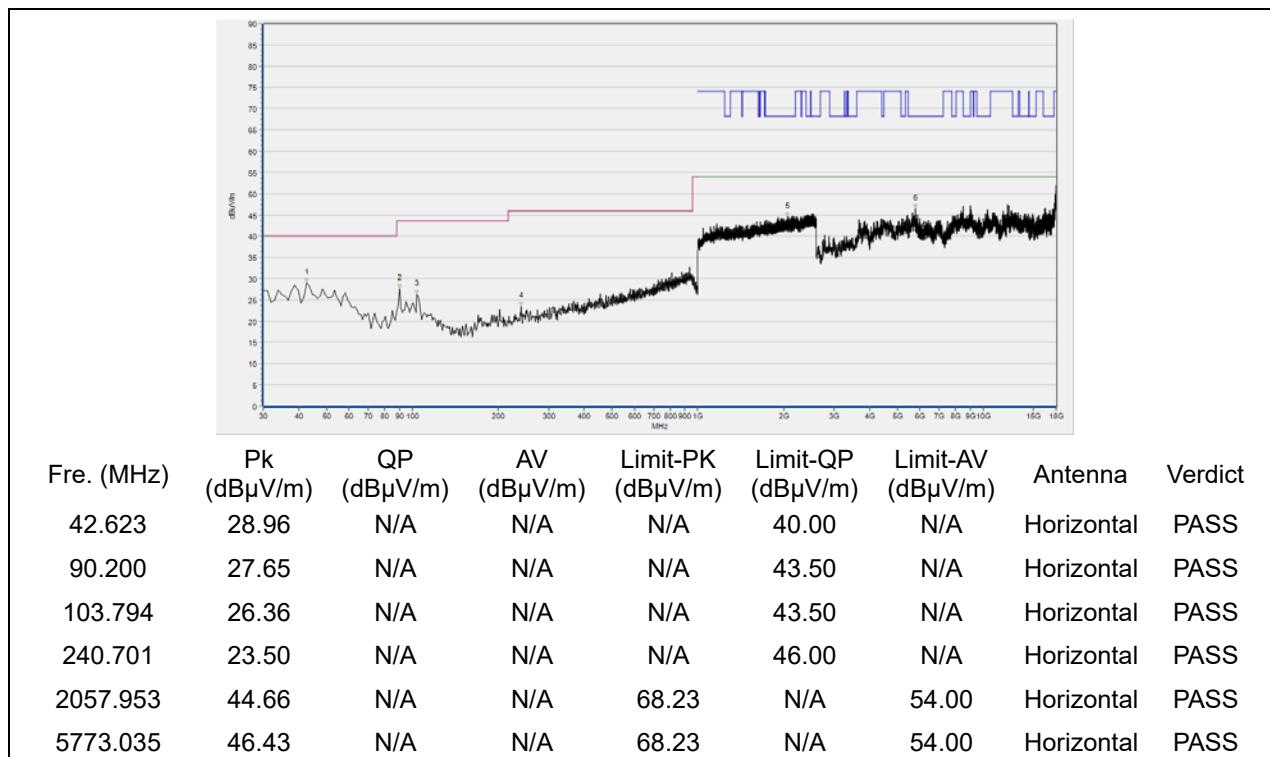


(Antenna Horizontal, 30MHz to 18GHz)

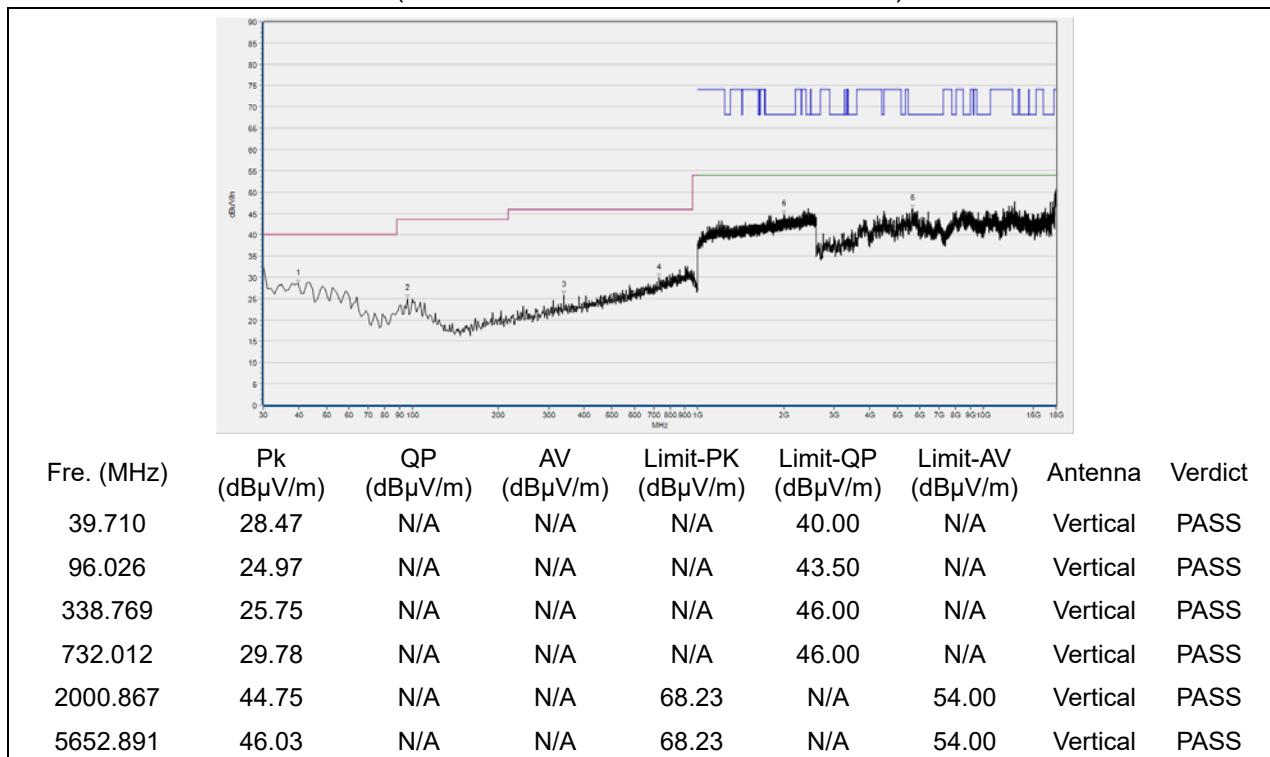


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 52

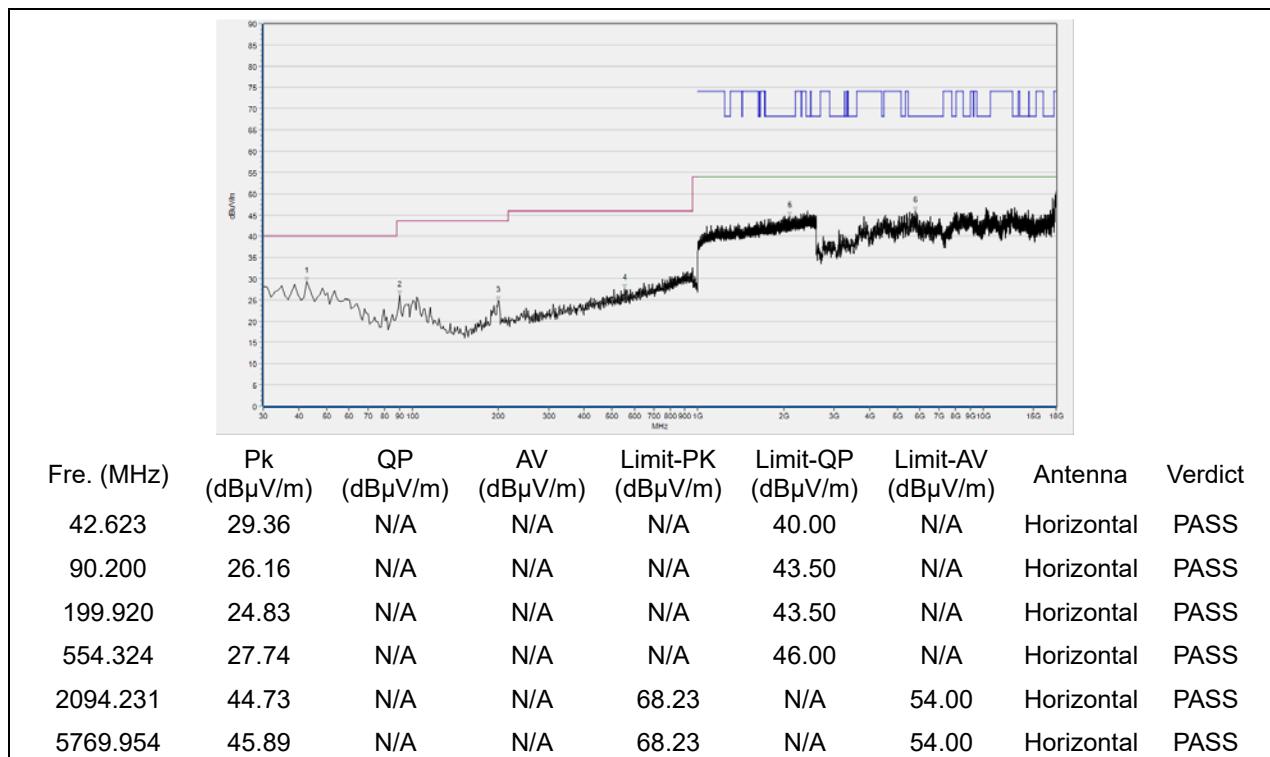


(Antenna Horizontal, 30MHz to 18GHz)

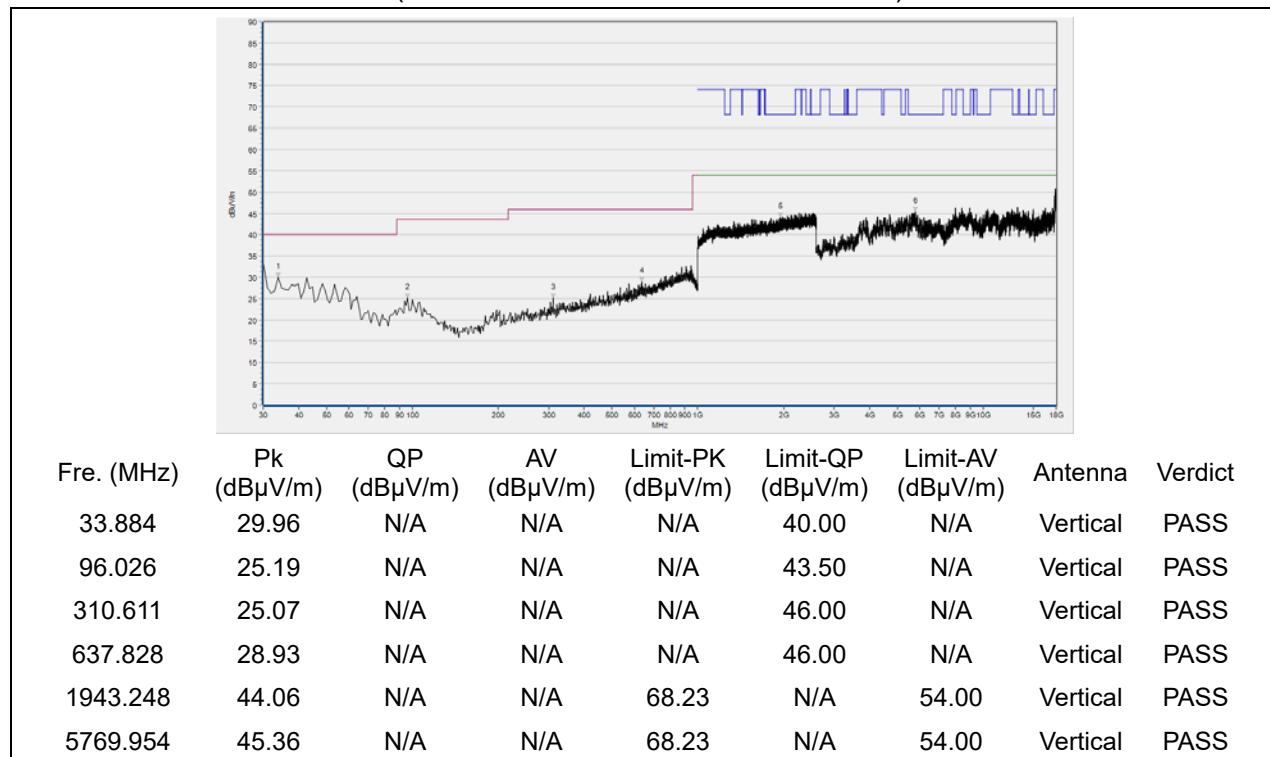


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 60

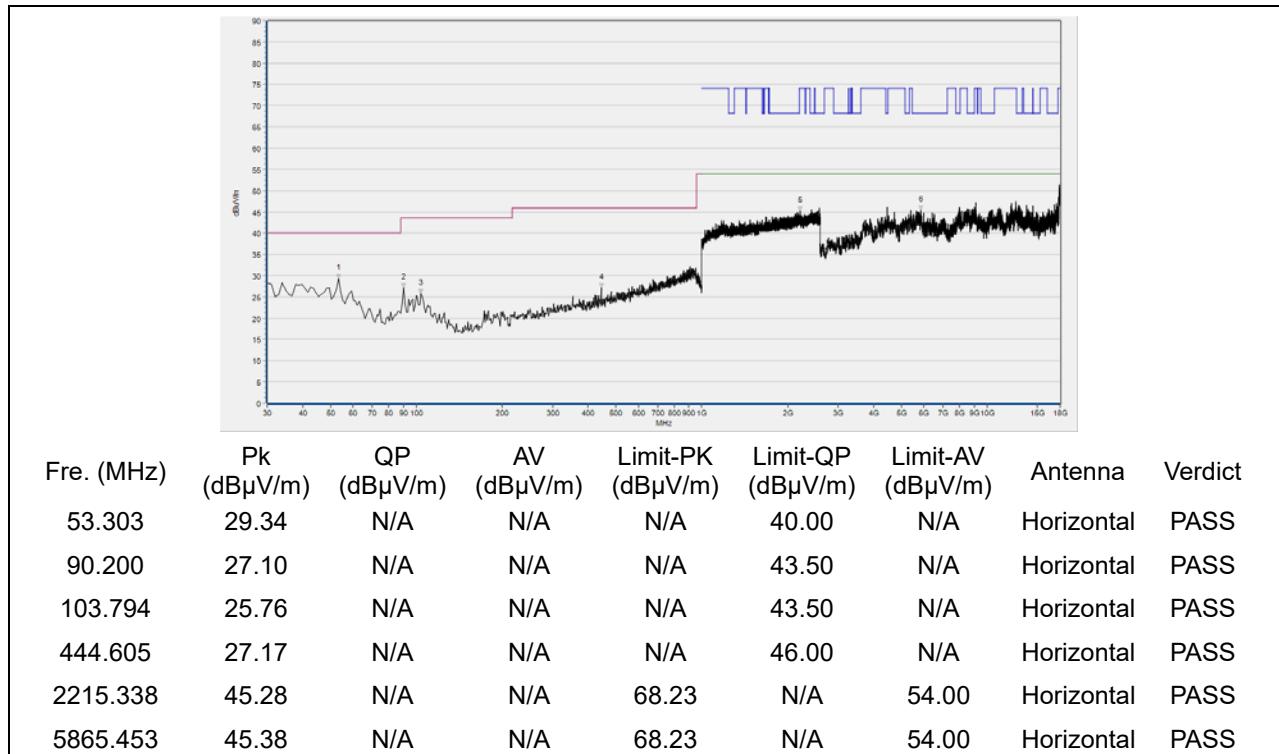


(Antenna Horizontal, 30MHz to 18GHz)

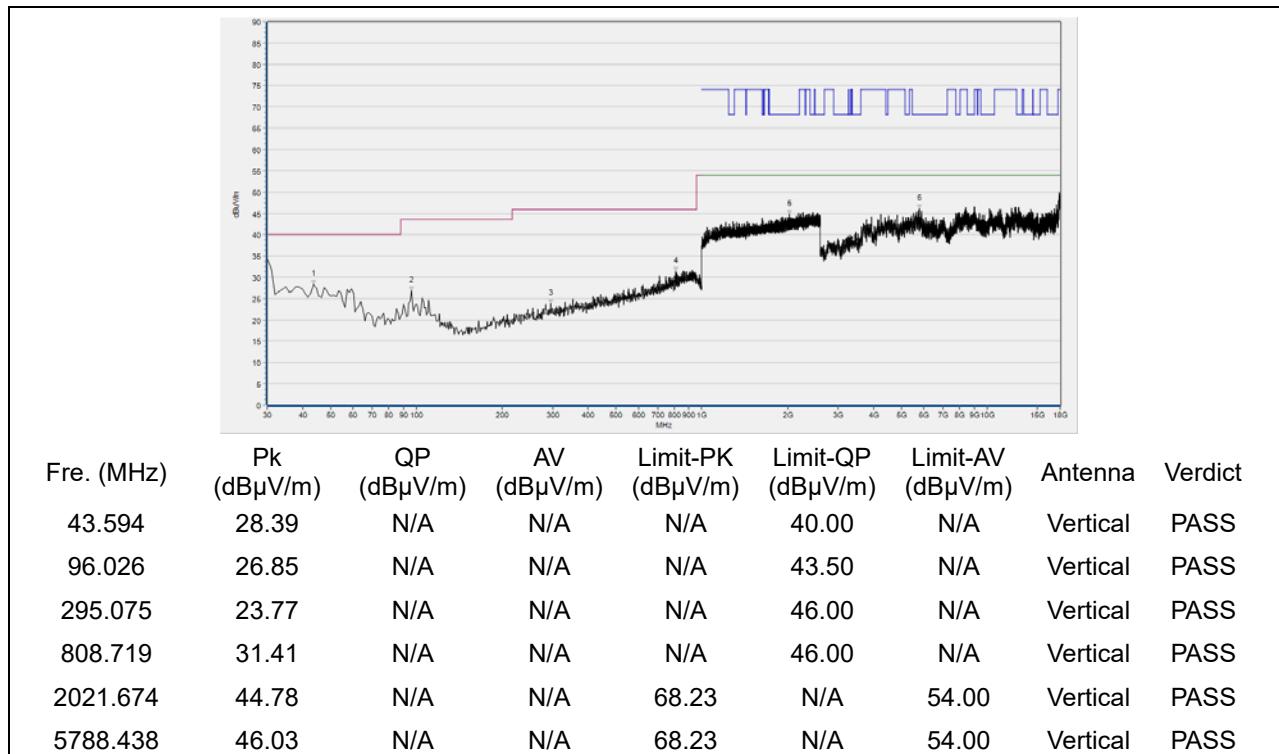


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 64

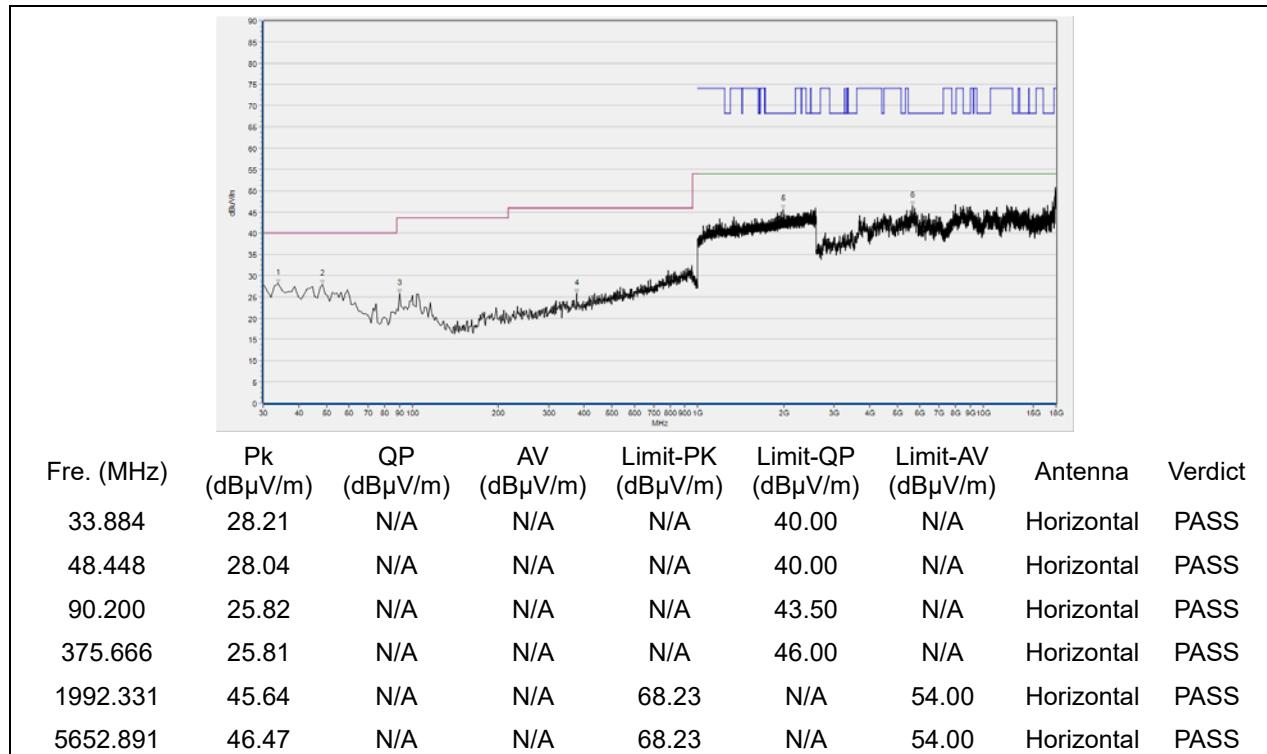


(Antenna Horizontal, 30MHz to 18GHz)

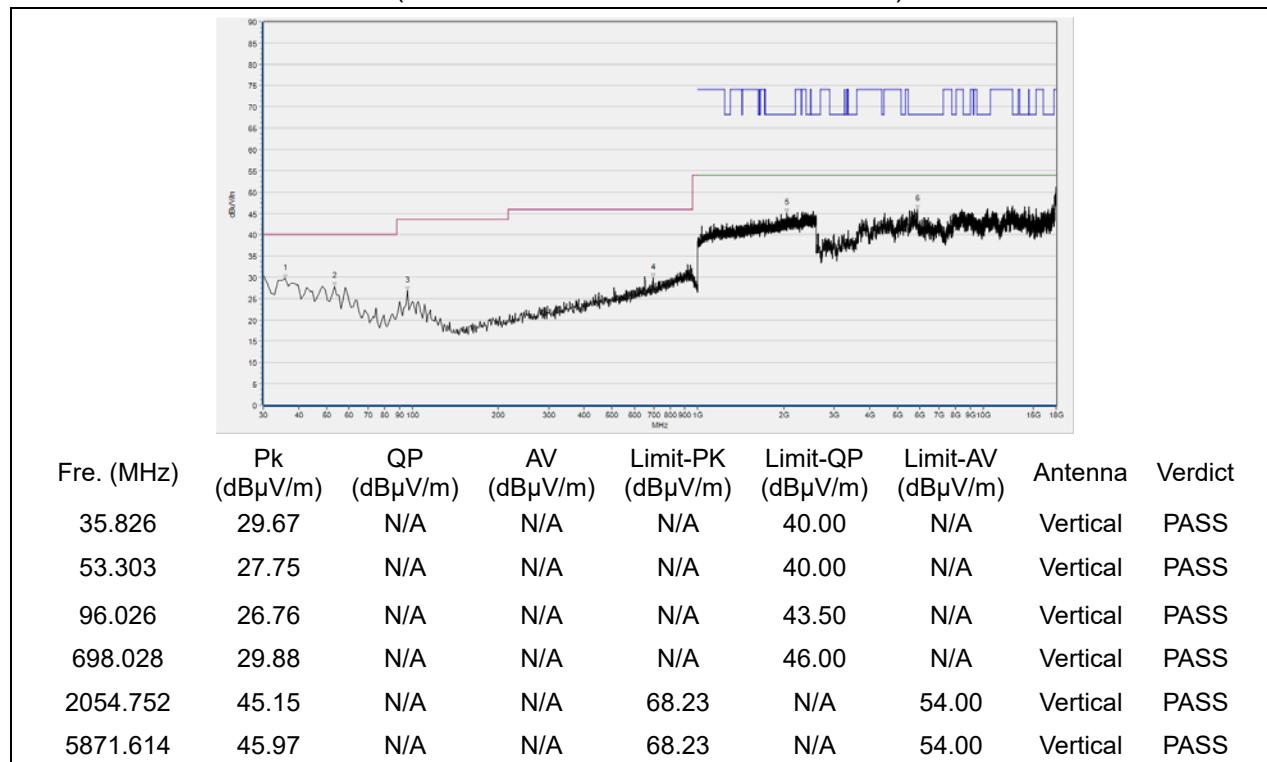


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 100

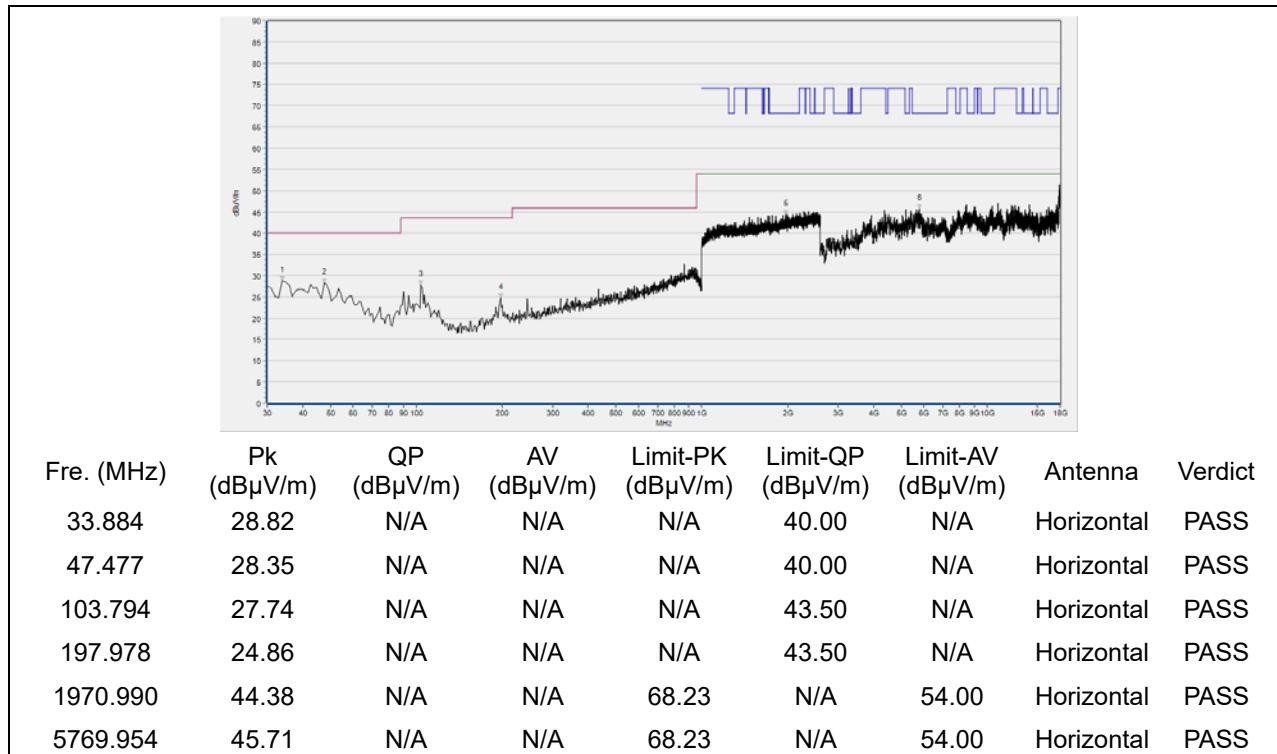


(Antenna Horizontal, 30MHz to 18GHz)

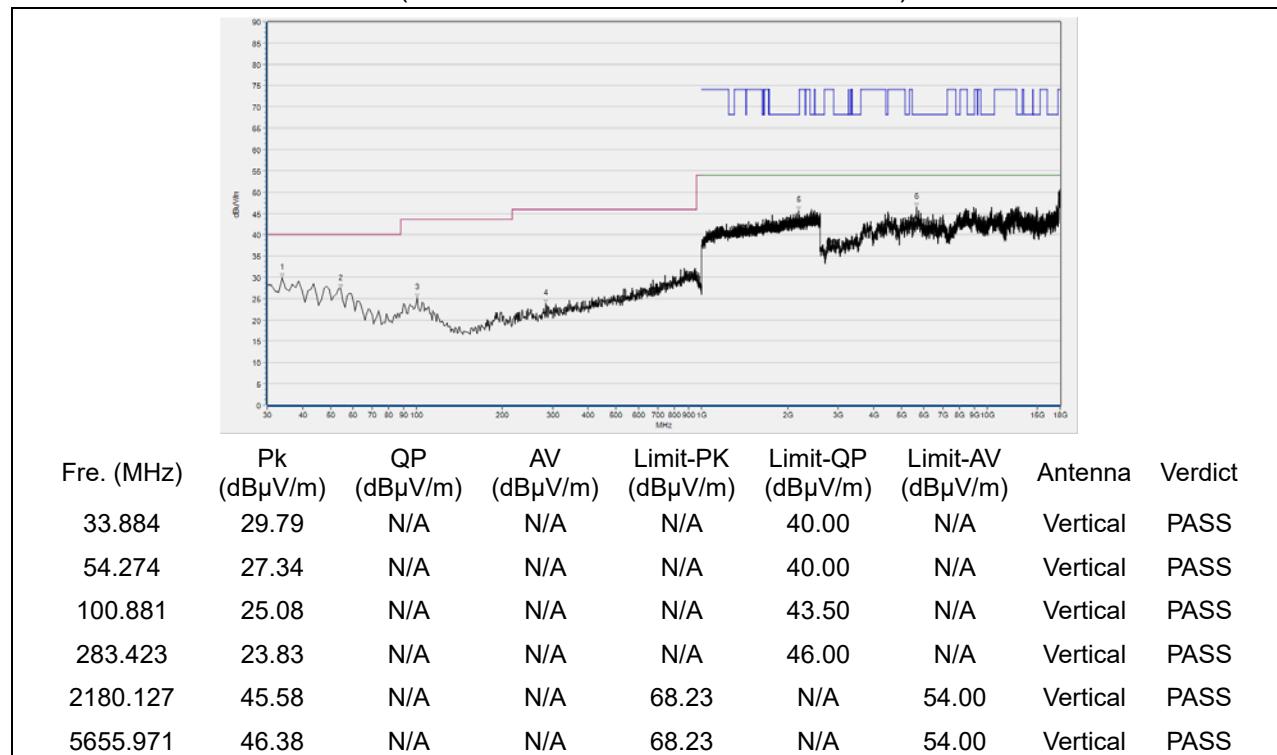


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 120

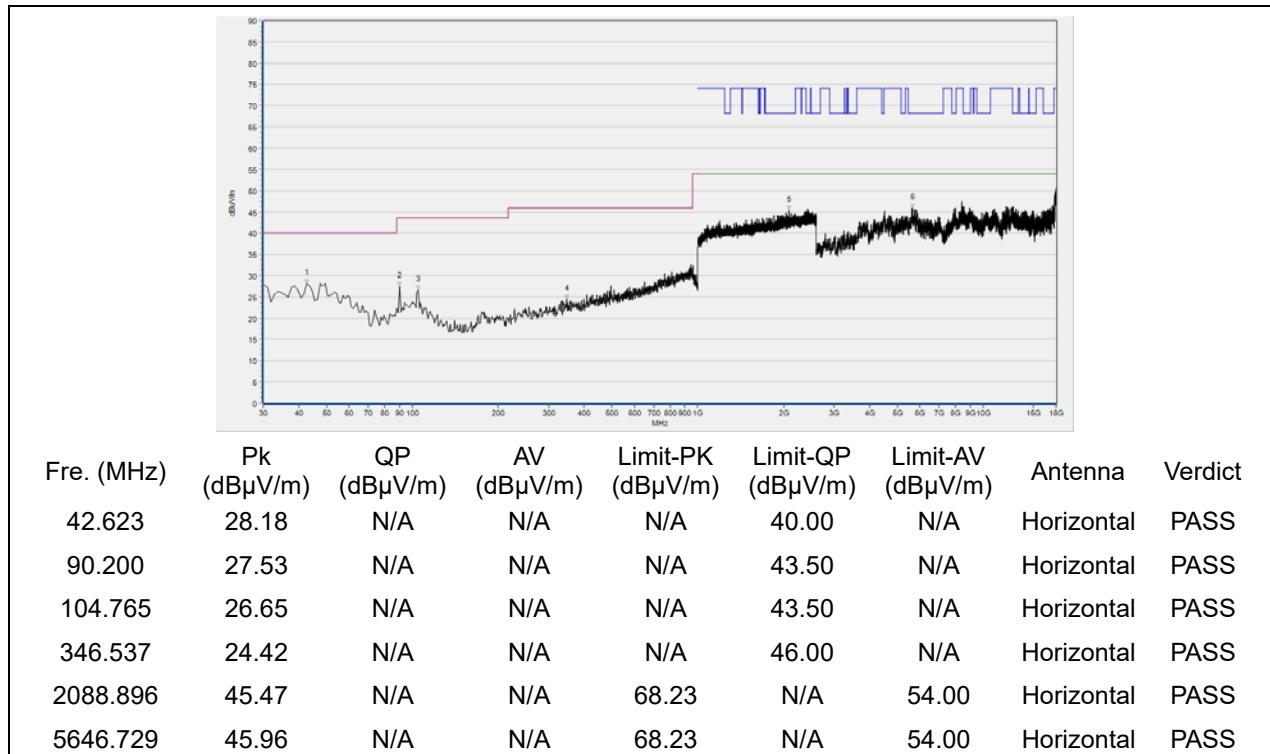


(Antenna Horizontal, 30MHz to 18GHz)

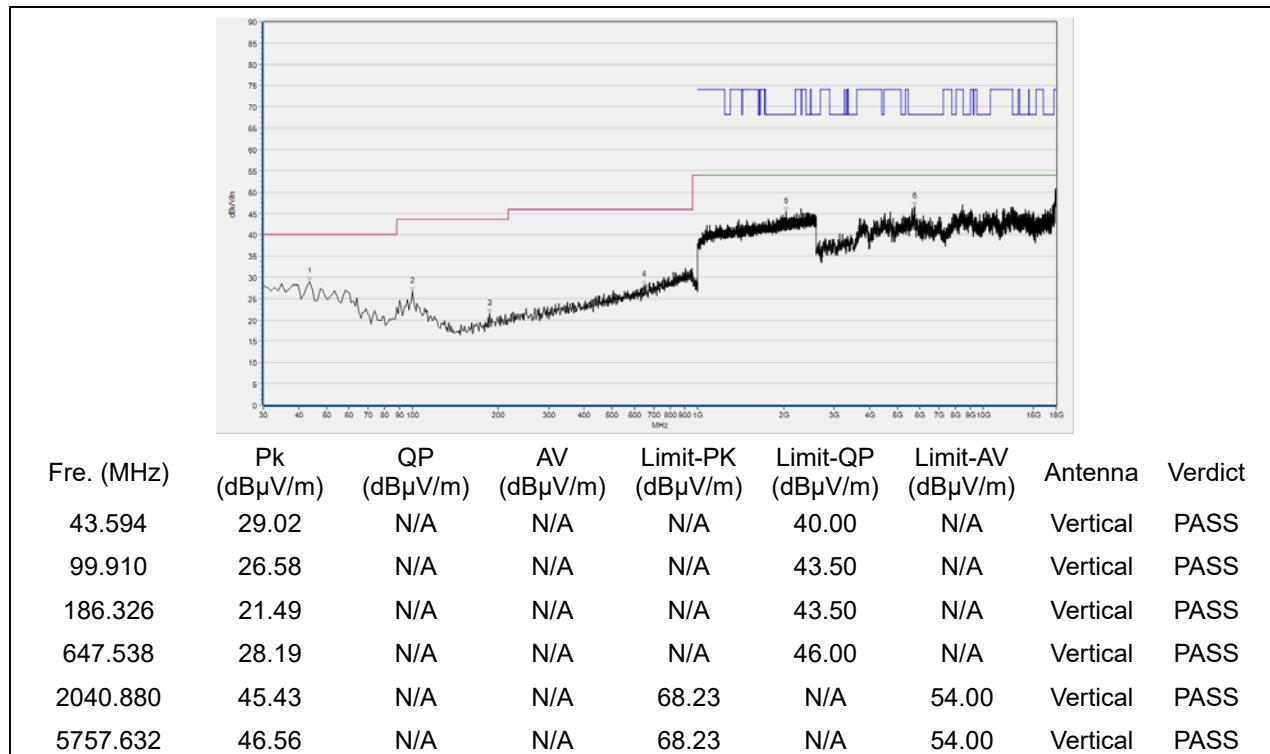


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 144

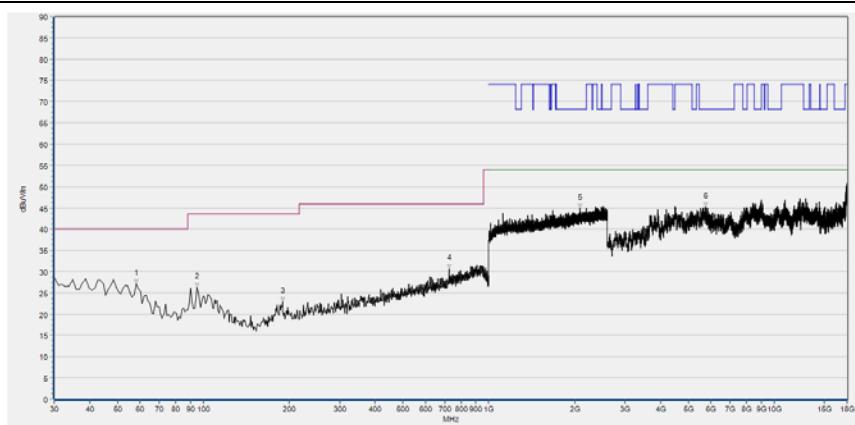


(Antenna Horizontal, 30MHz to 18GHz)



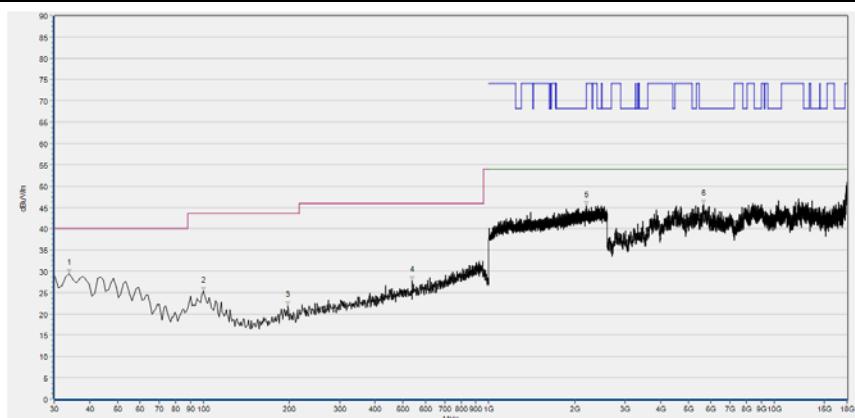
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 149



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
58.158	27.20	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
95.055	26.30	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
189.239	22.88	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
725.215	30.62	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2082.494	44.92	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5742.228	45.31	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

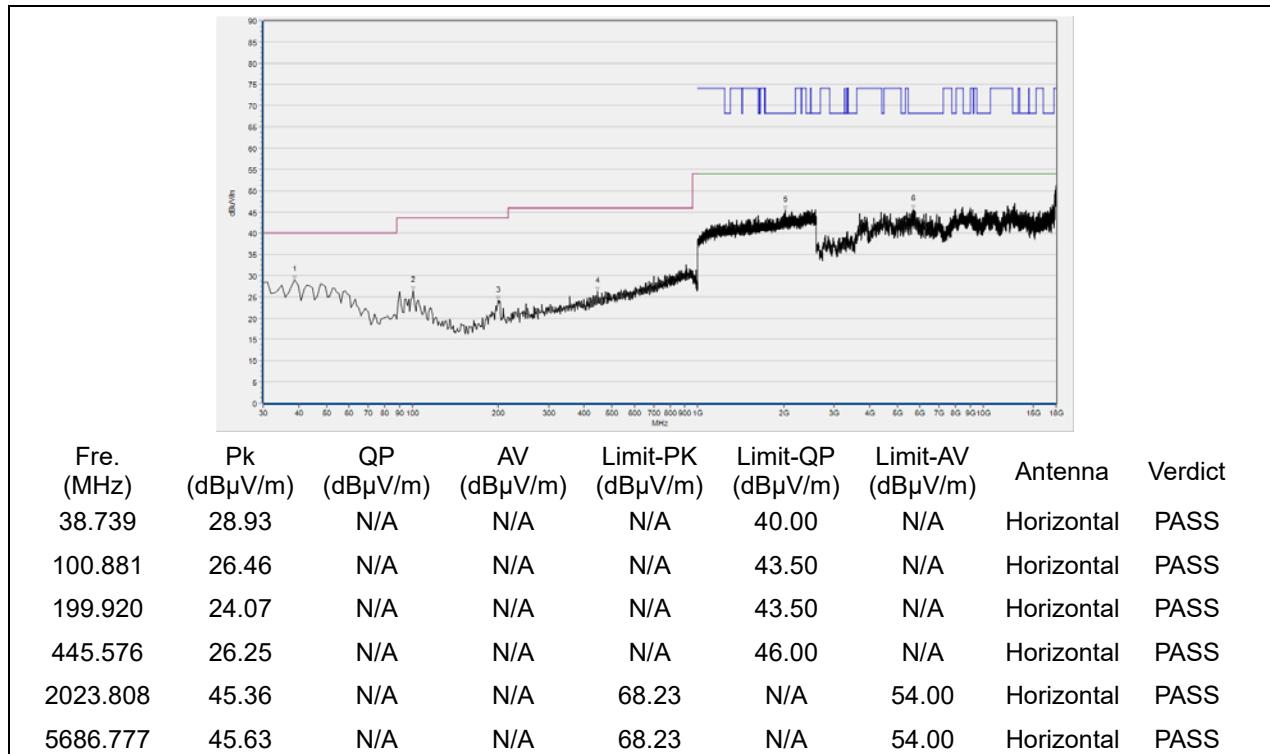
(Antenna Horizontal, 30MHz to 18GHz)



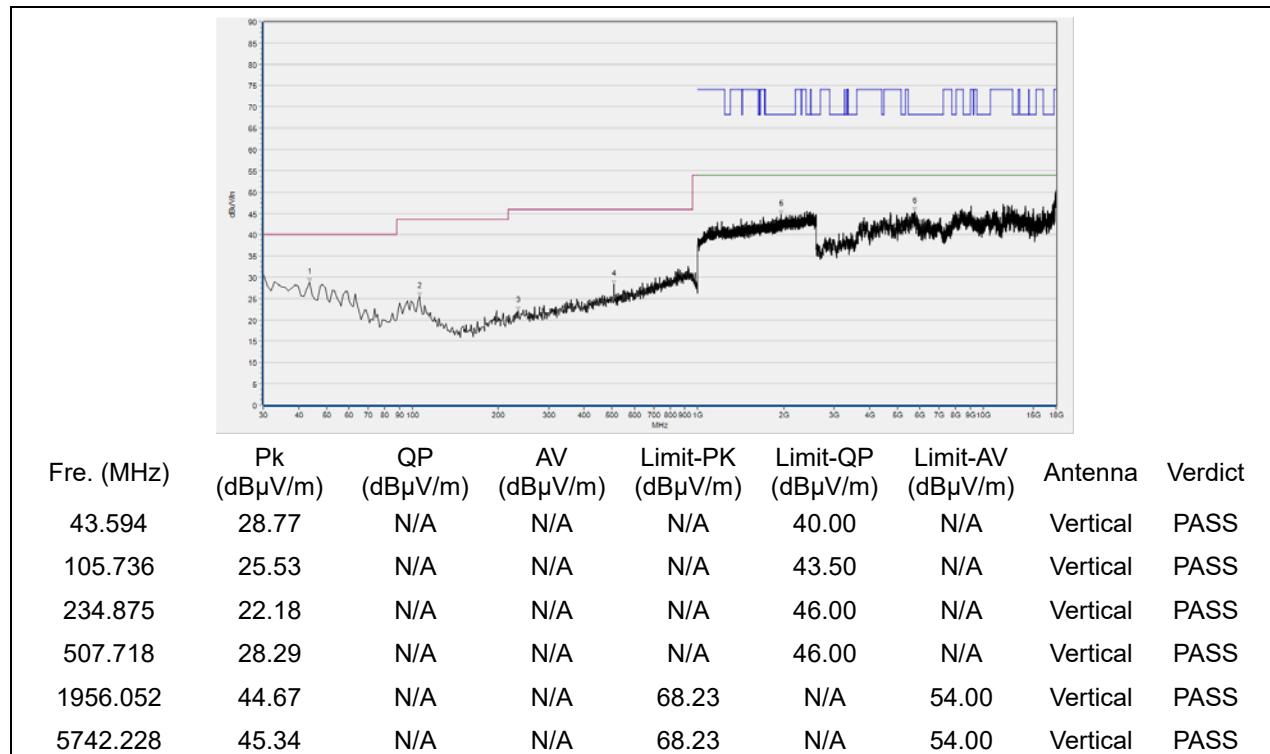
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	29.55	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.910	25.27	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.978	21.90	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
539.760	27.89	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2200.400	45.42	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5652.891	45.68	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 157

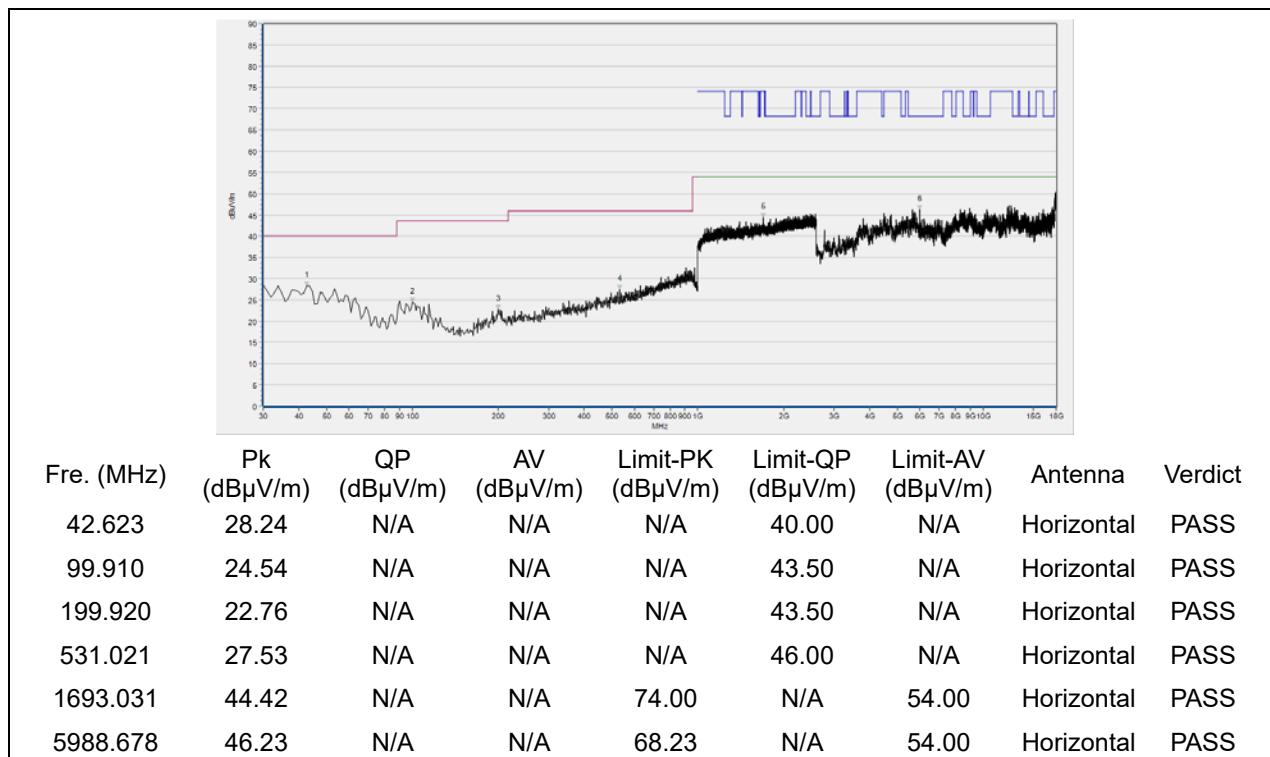


(Antenna Horizontal, 30MHz to 18GHz)

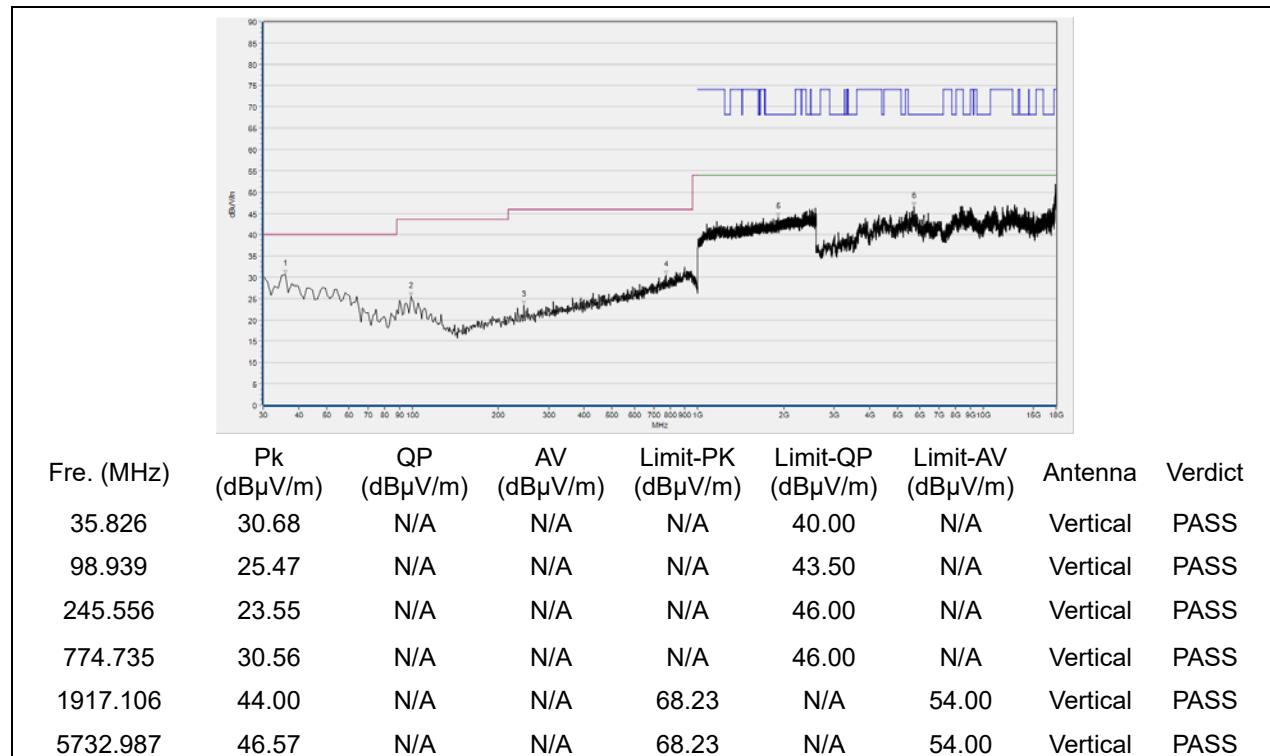


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 165



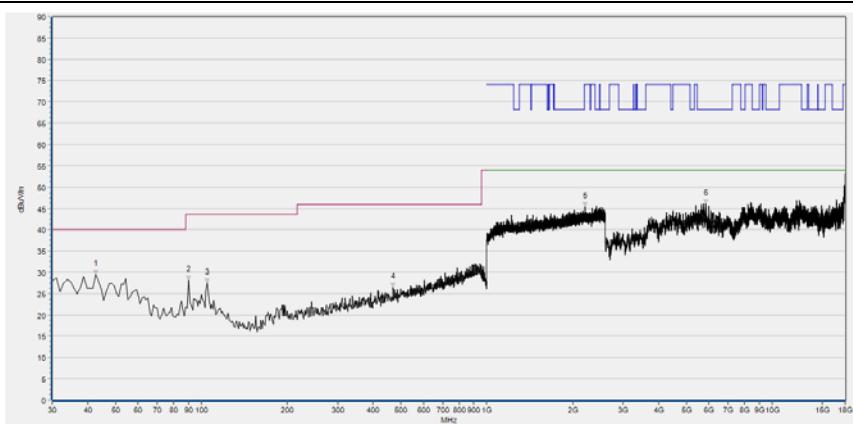
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

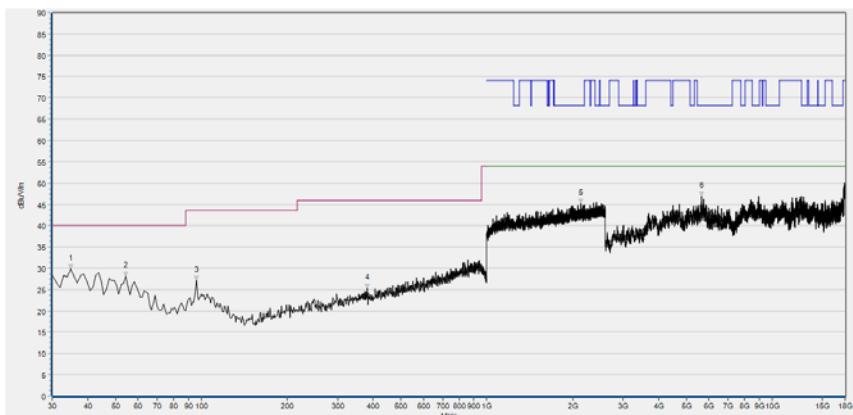
802.11n (HT40) Test mode

Plots for Channel = 38



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	29.44	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	28.11	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
104.765	27.56	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
469.850	26.53	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2205.735	45.47	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5865.453	46.06	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

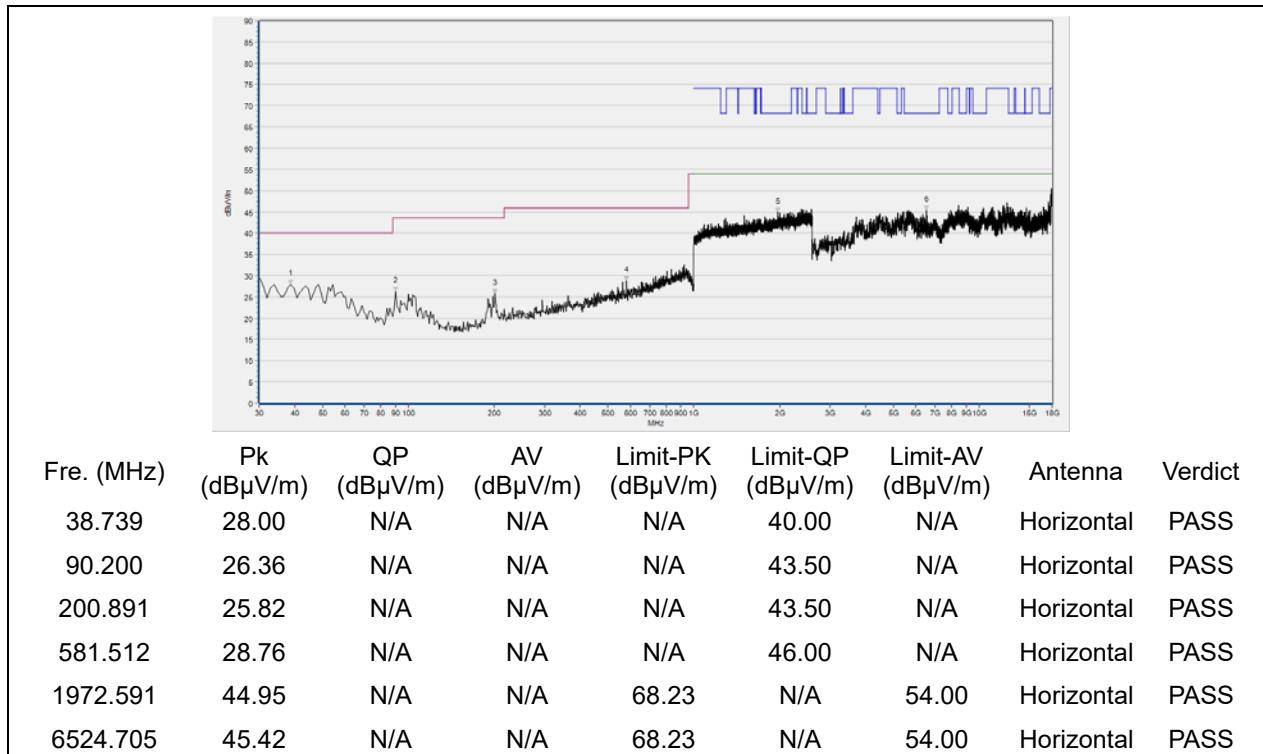
(Antenna Horizontal, 30MHz to 18GHz)



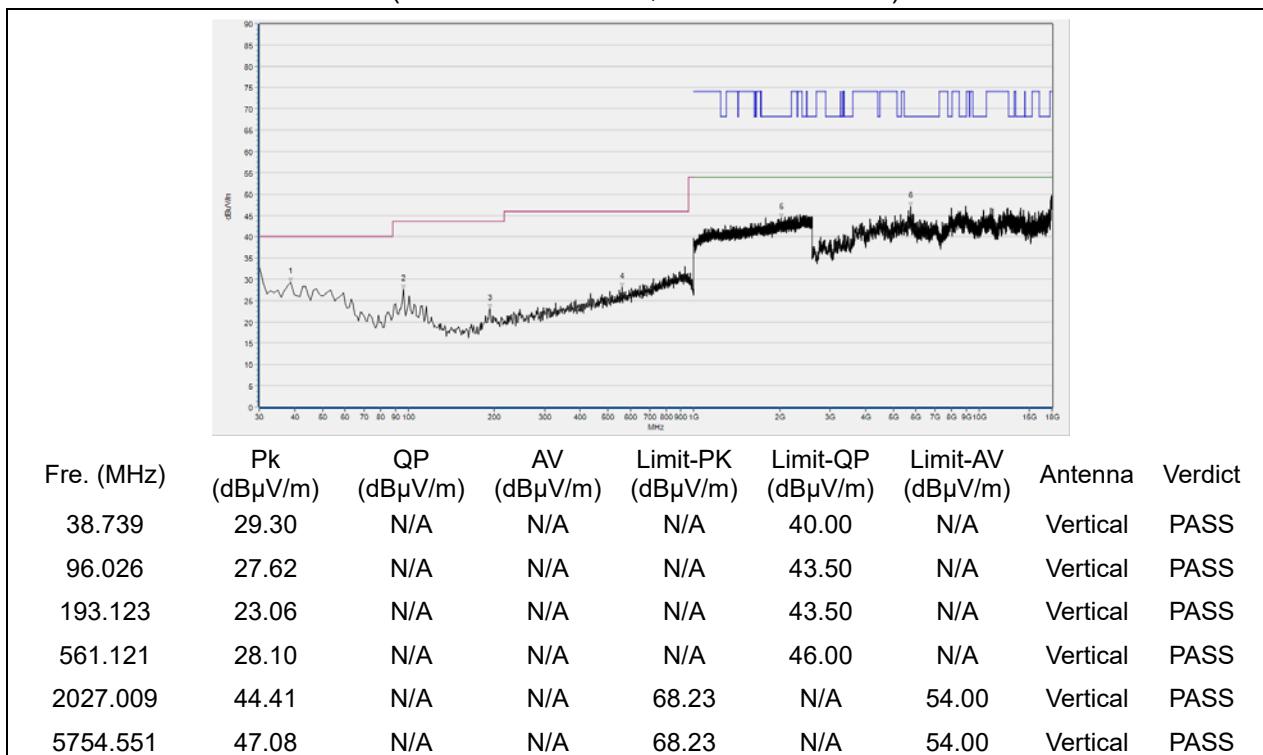
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
34.855	29.87	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
54.274	28.12	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	27.18	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
381.491	25.39	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2135.312	45.18	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5665.213	46.85	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 46

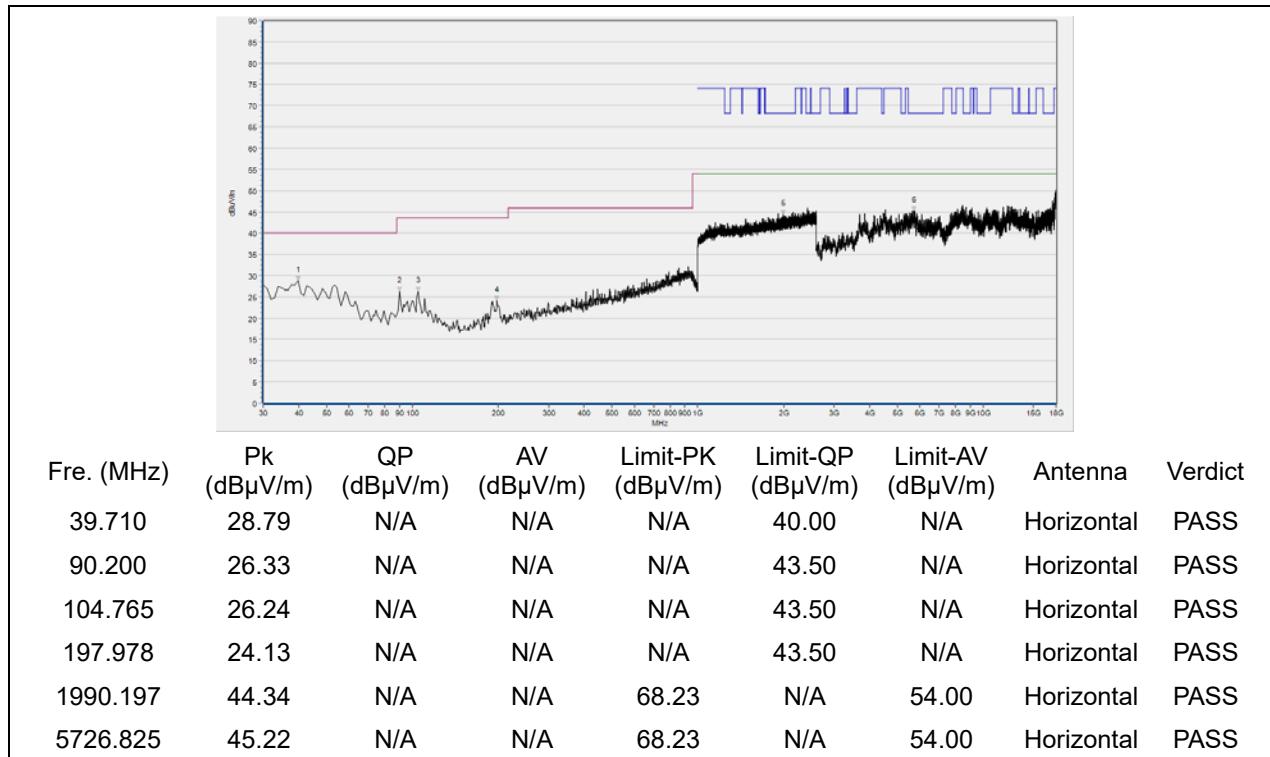


(Antenna Horizontal, 30MHz to 18GHz)

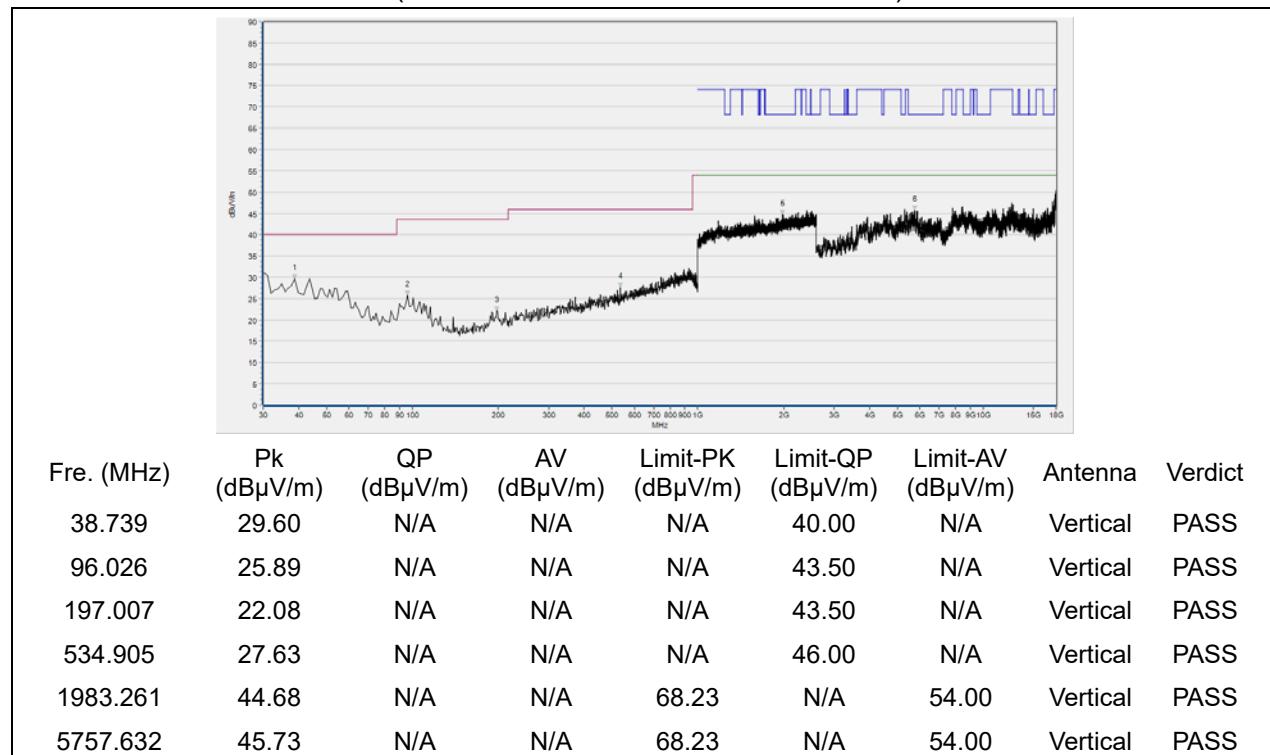


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 54

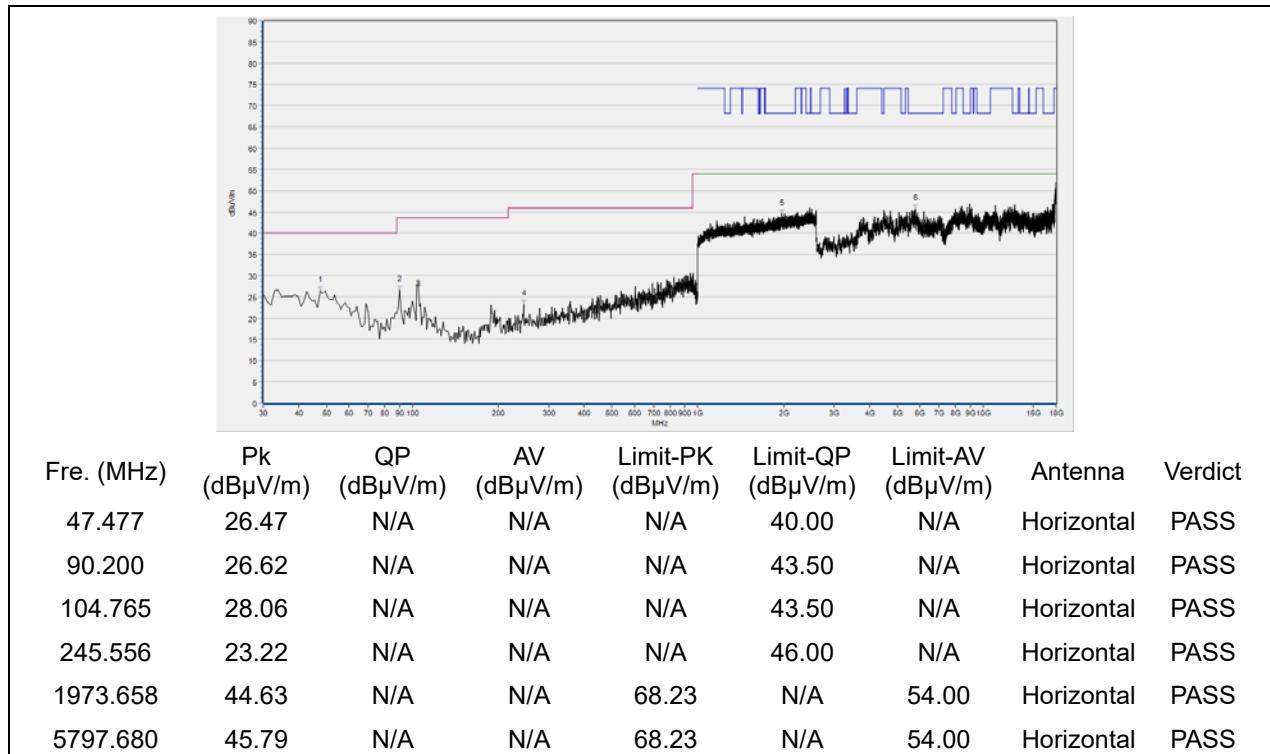


(Antenna Horizontal, 30MHz to 18GHz)

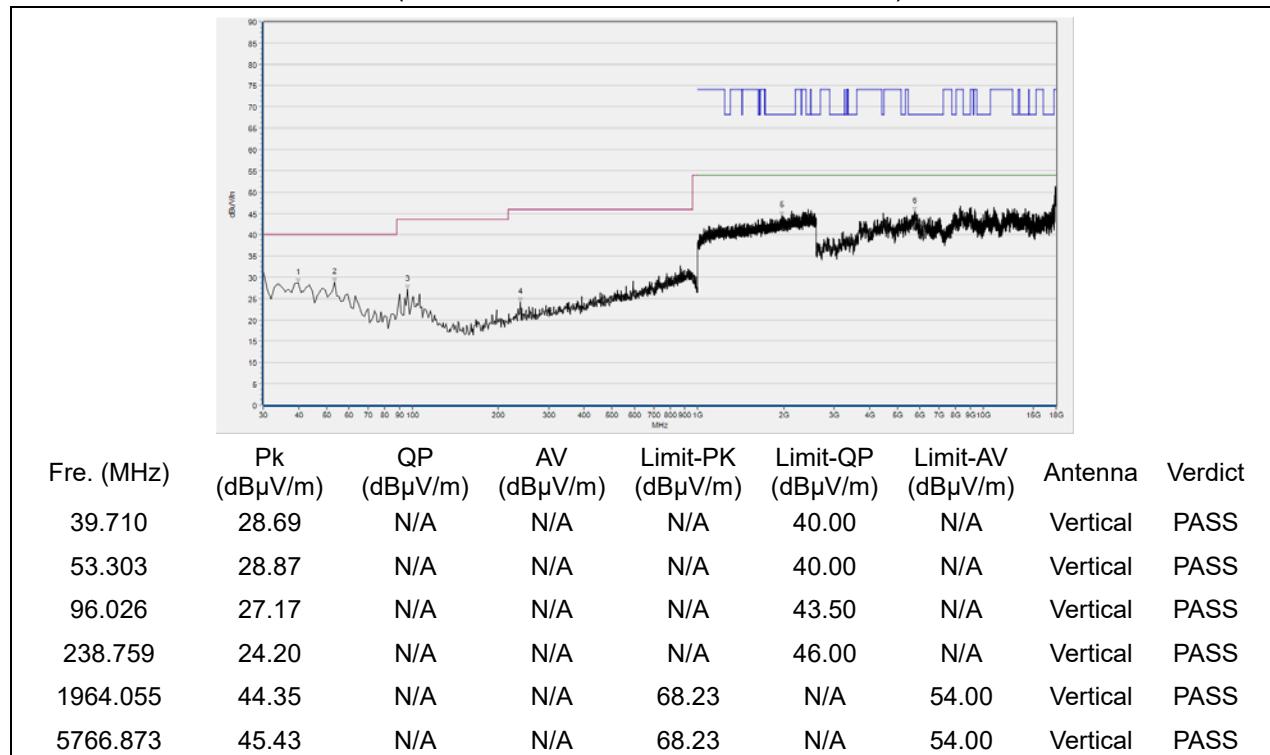


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 62

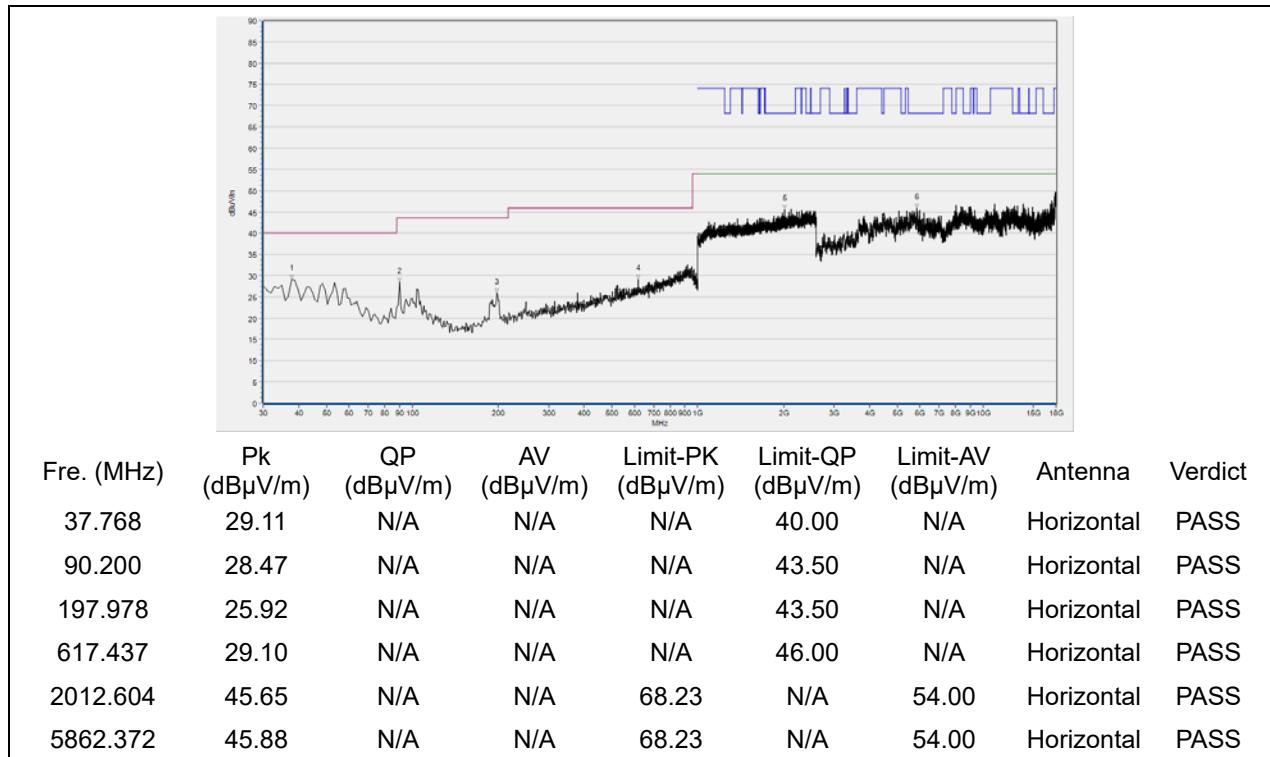


(Antenna Horizontal, 30MHz to 18GHz)

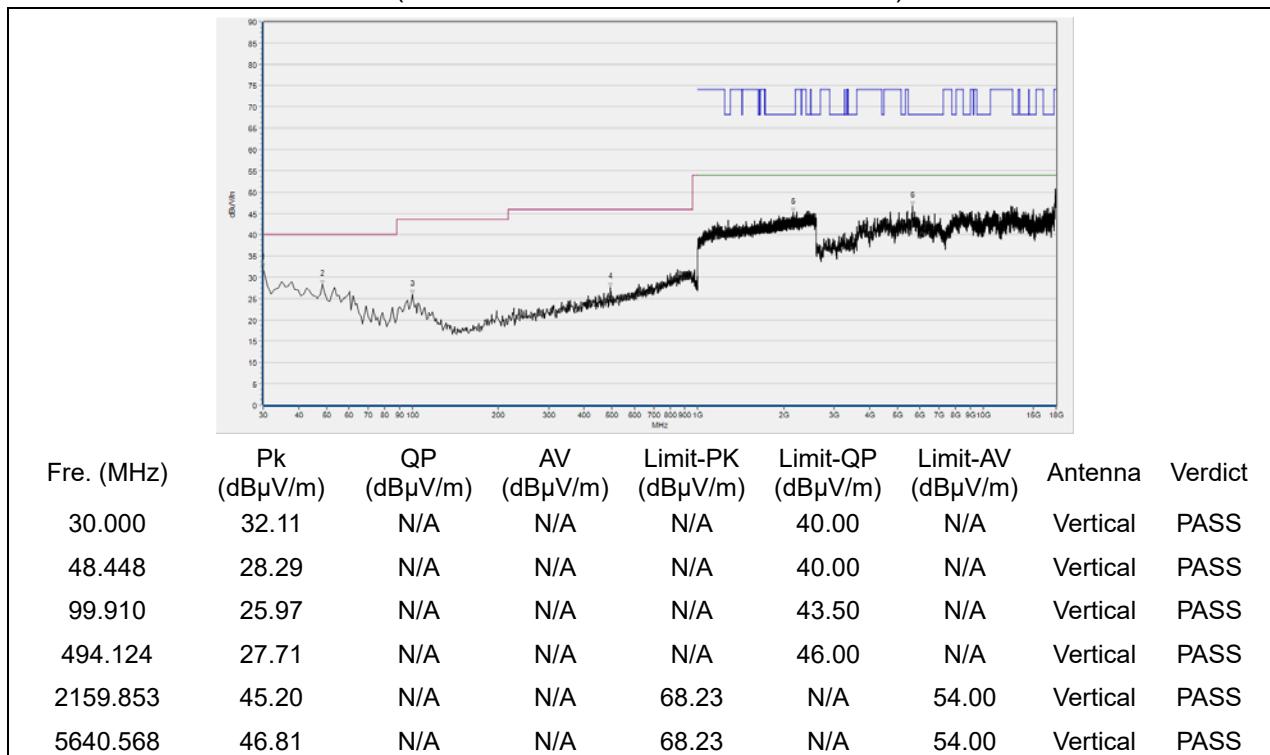


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 102

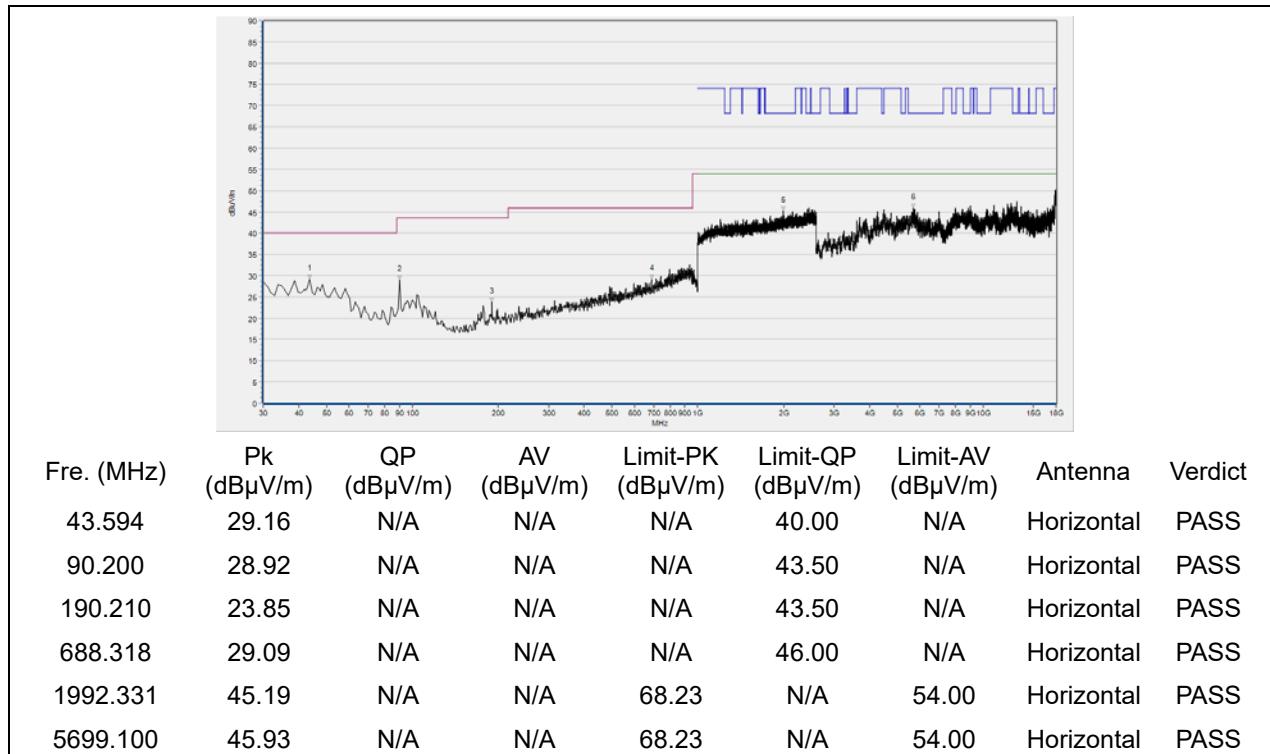


(Antenna Horizontal, 30MHz to 18GHz)

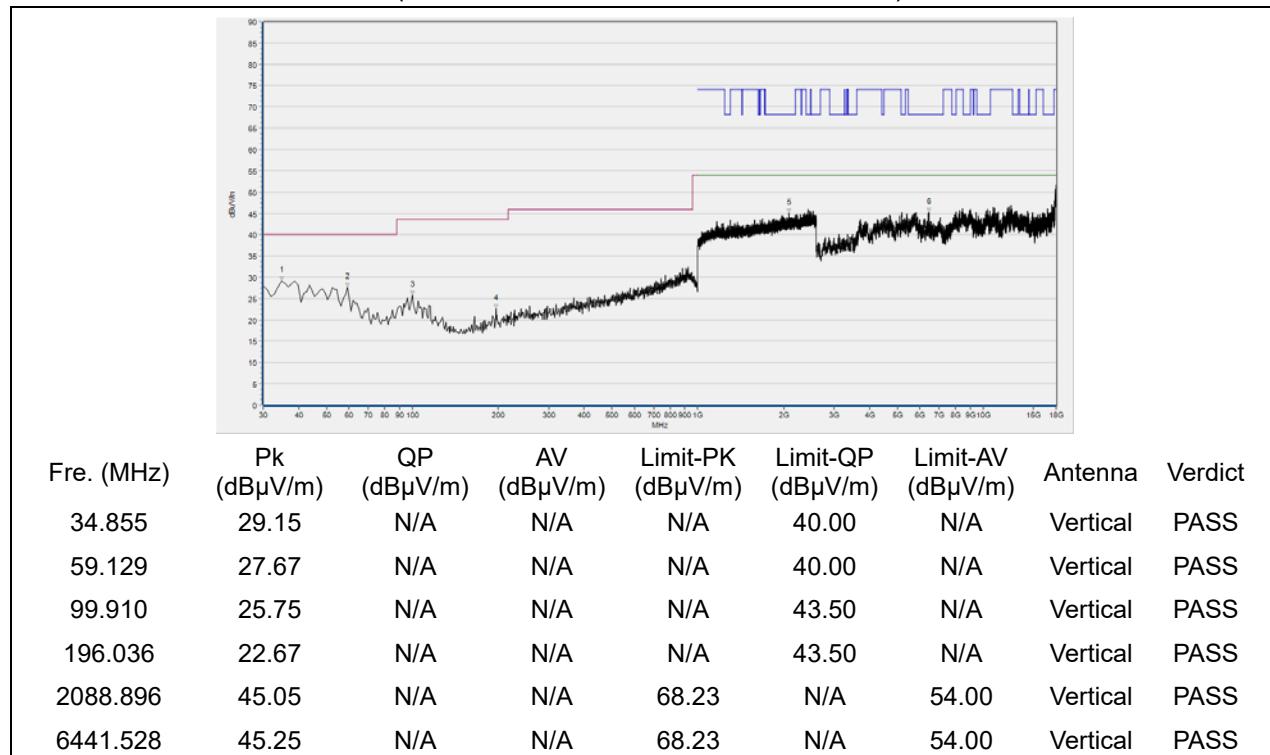


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 126

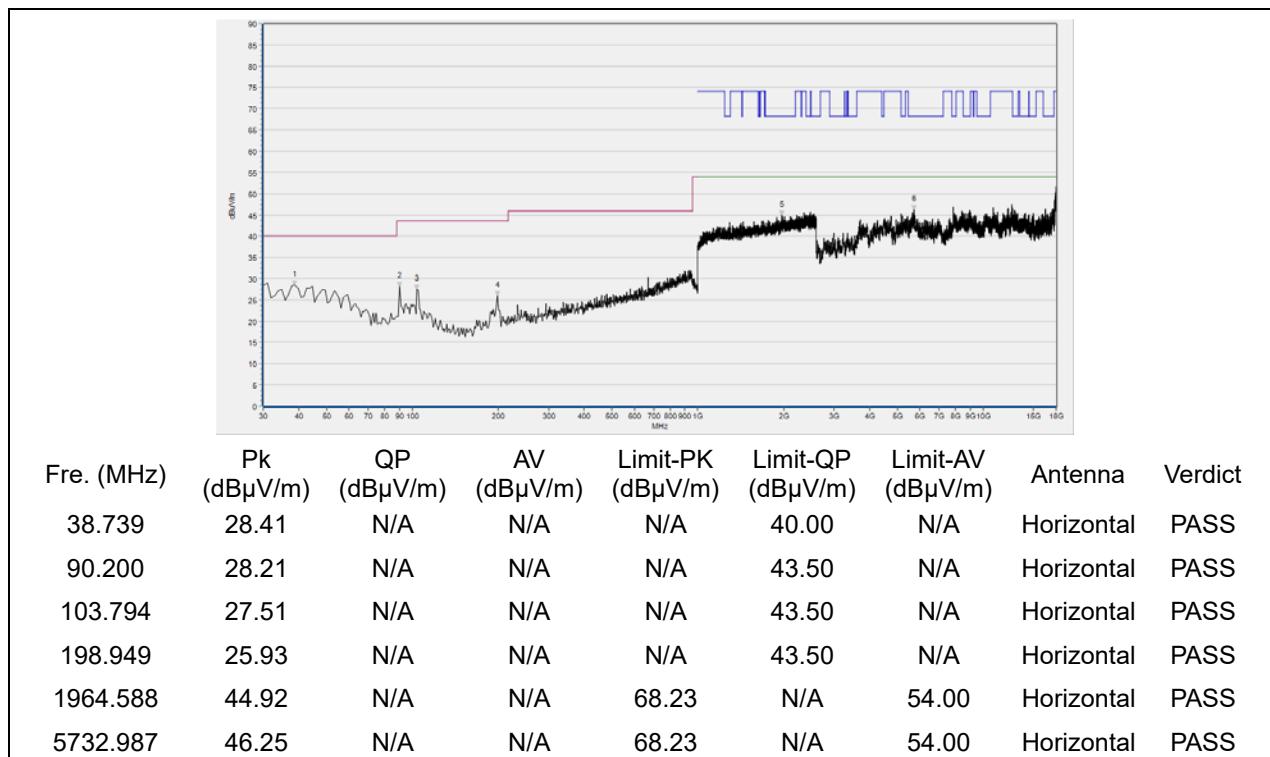


(Antenna Horizontal, 30MHz to 18GHz)

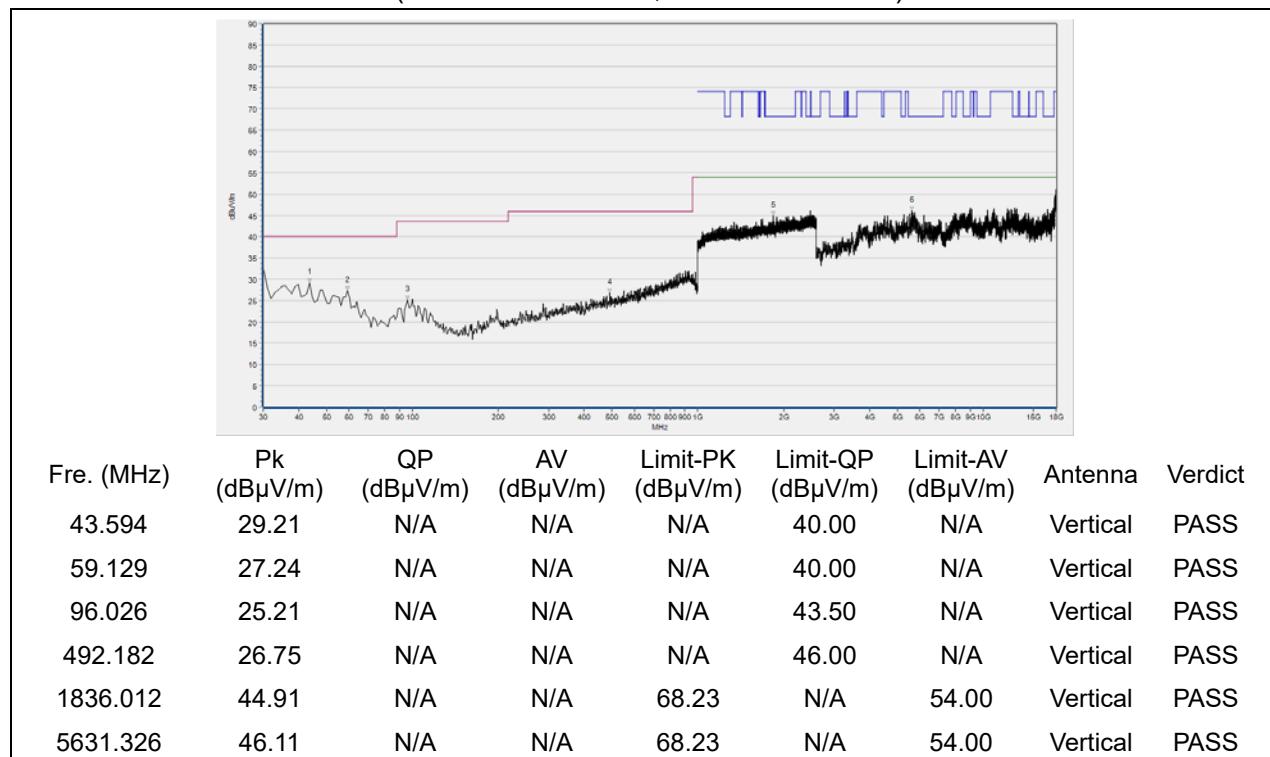


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 142

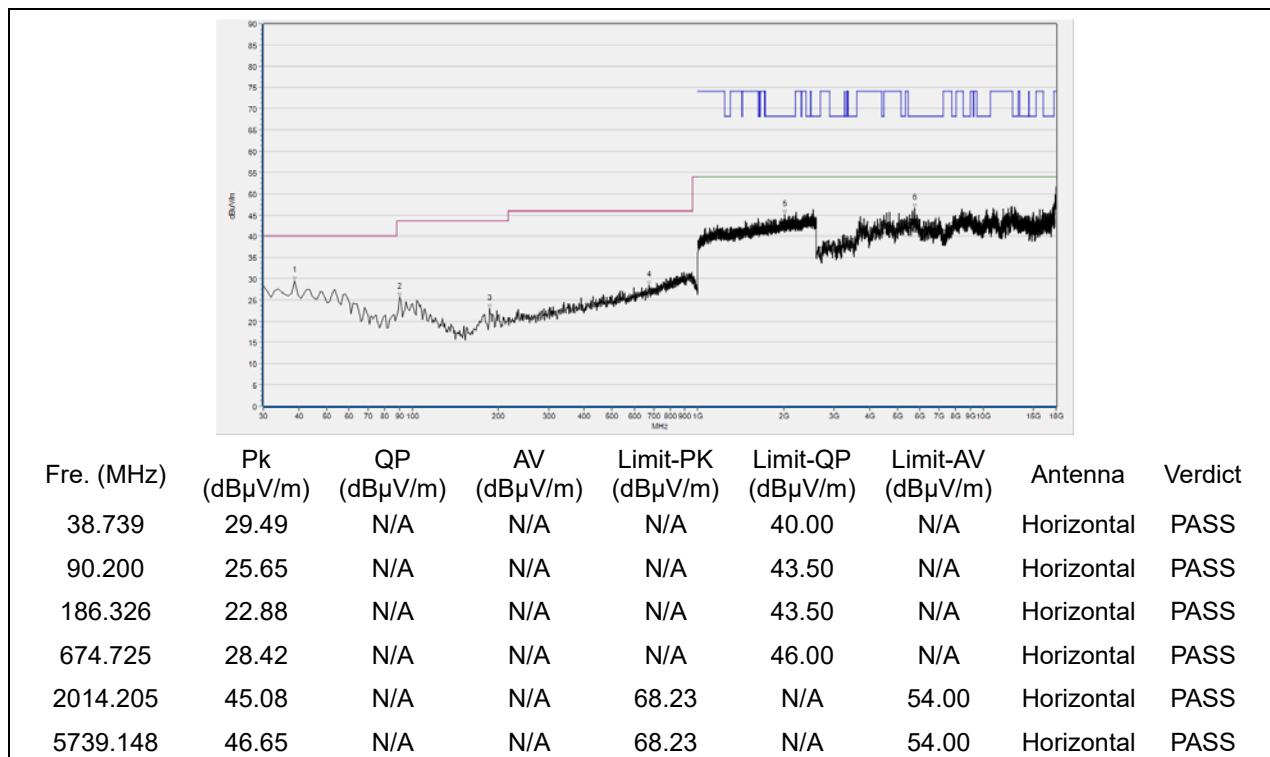


(Antenna Horizontal, 30MHz to 18GHz)

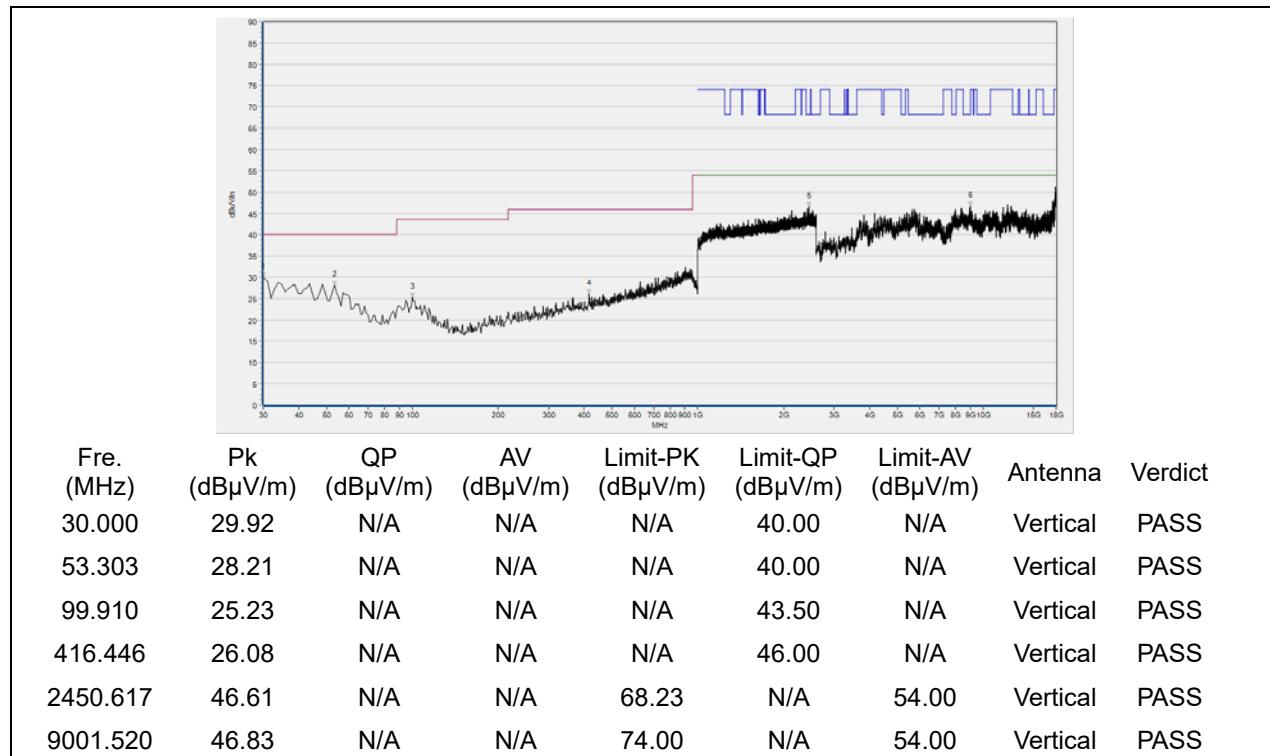


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 151

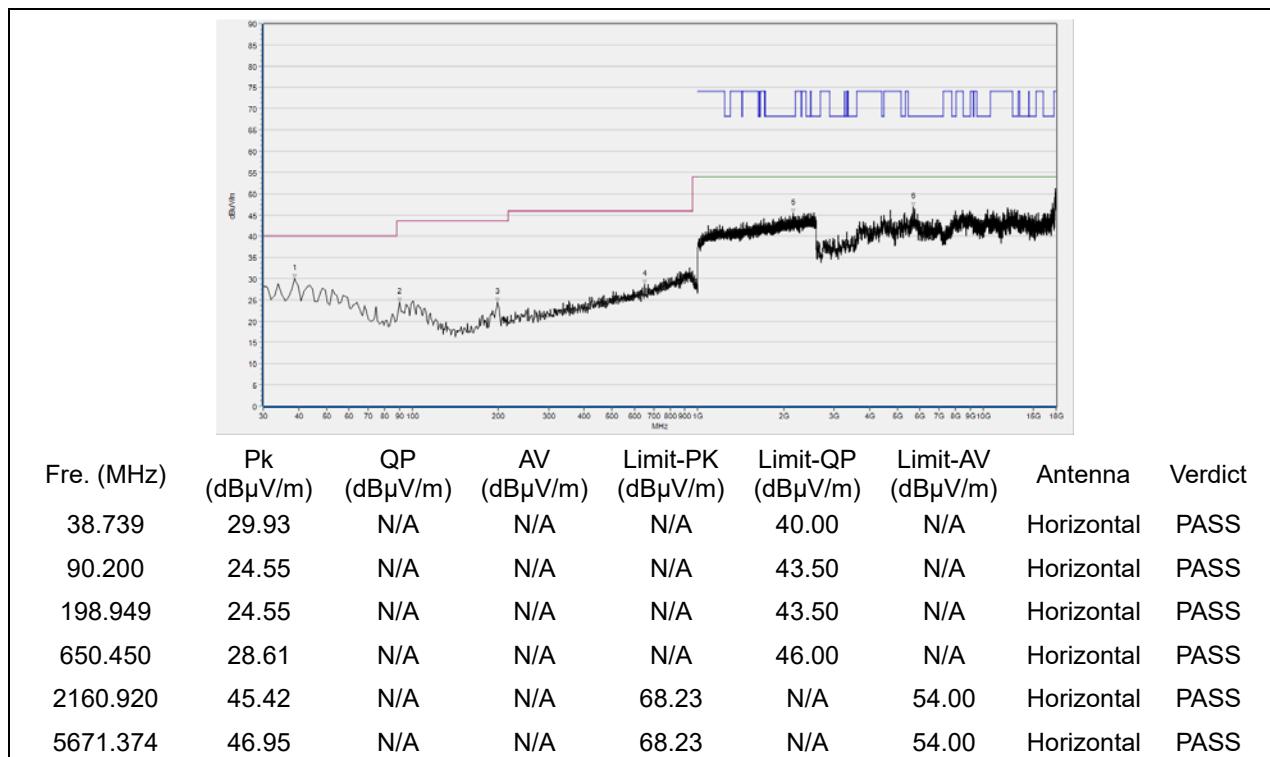


(Antenna Horizontal, 30MHz to 18GHz)

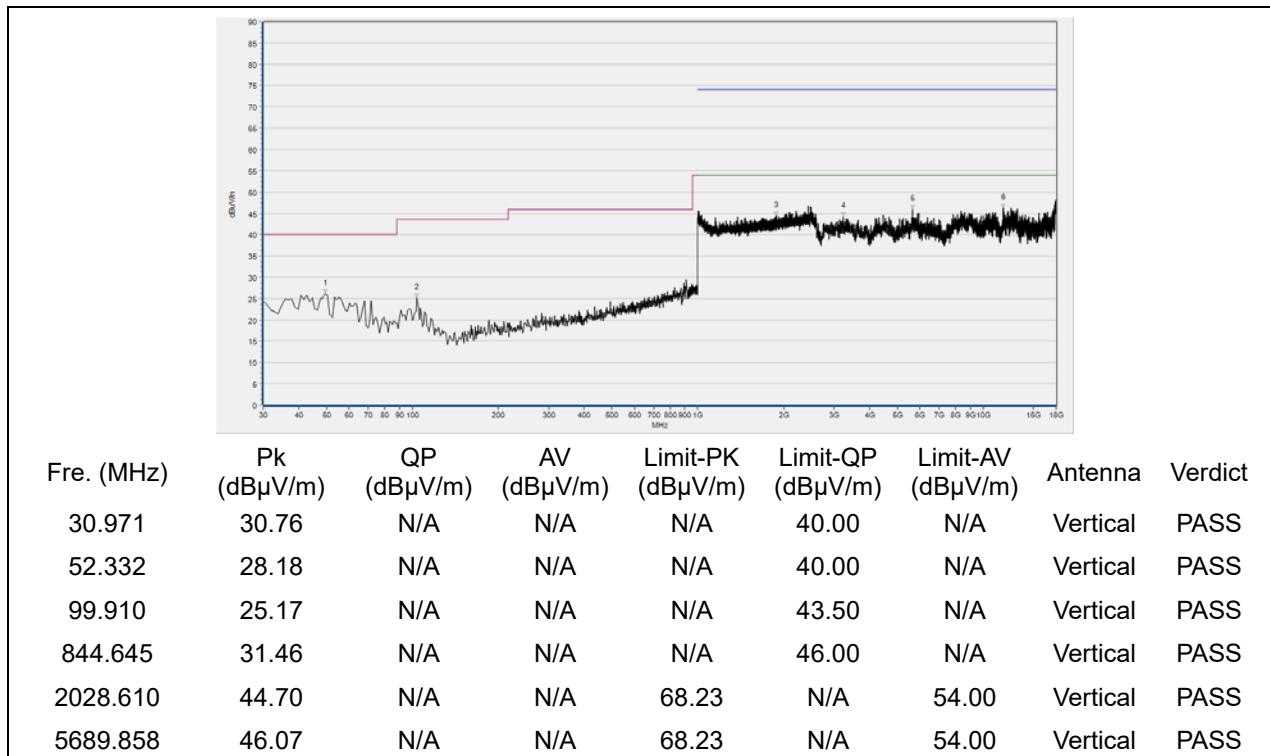


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 159



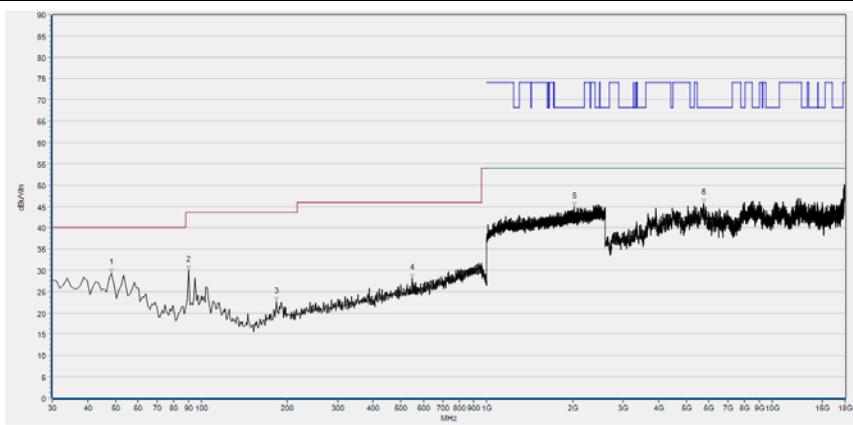
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

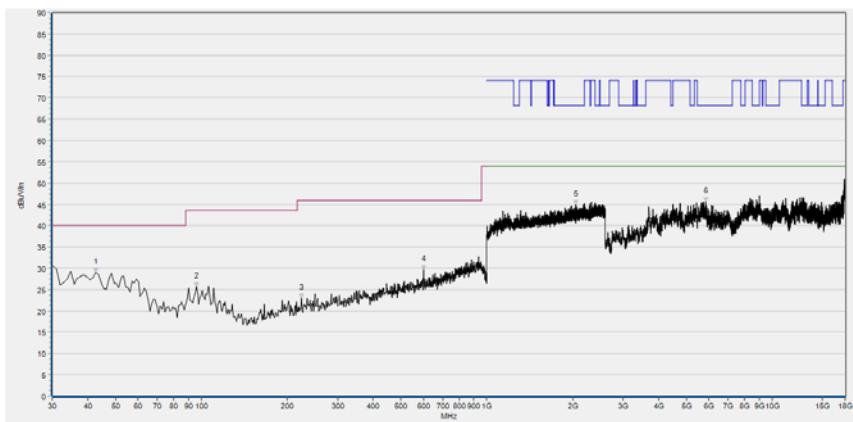
802.11ac (VHT20) Test mode

Plots for Channel = 36



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
48.448	29.26	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	29.93	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
183.413	22.62	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
546.557	28.09	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2028.076	44.85	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5763.793	45.71	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

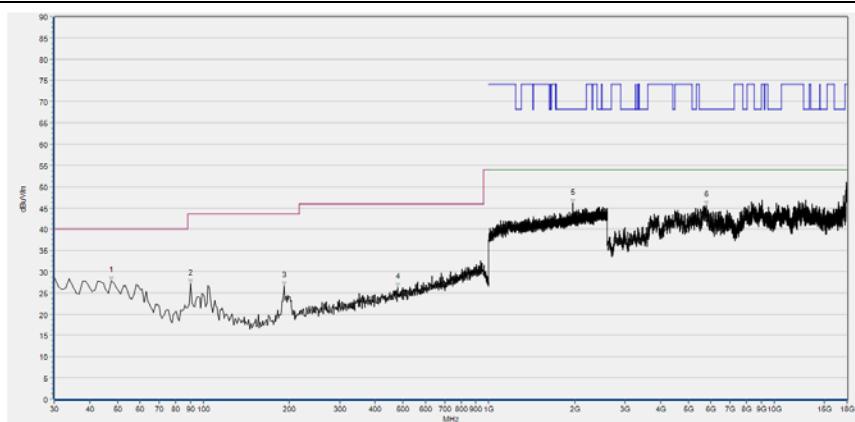
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	28.95	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	25.59	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
224.194	23.01	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
600.931	29.69	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2044.081	44.84	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5862.372	45.53	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

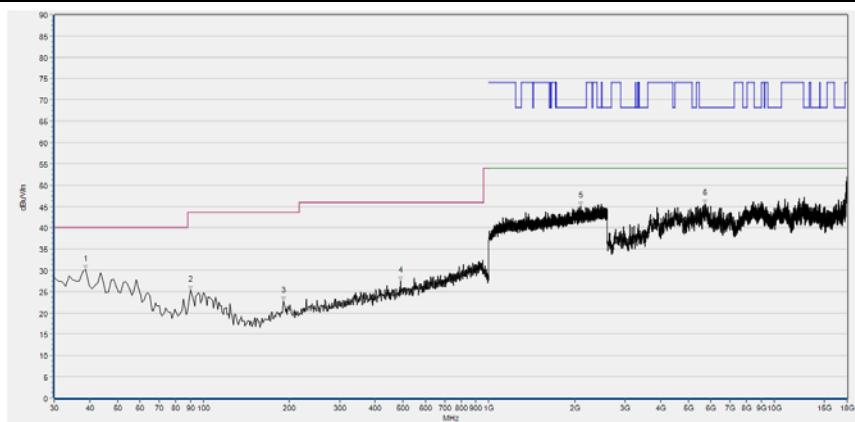
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 44



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
47.477	27.88	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	27.18	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
192.152	26.69	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
479.560	26.33	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1972.057	46.04	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5782.276	45.57	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

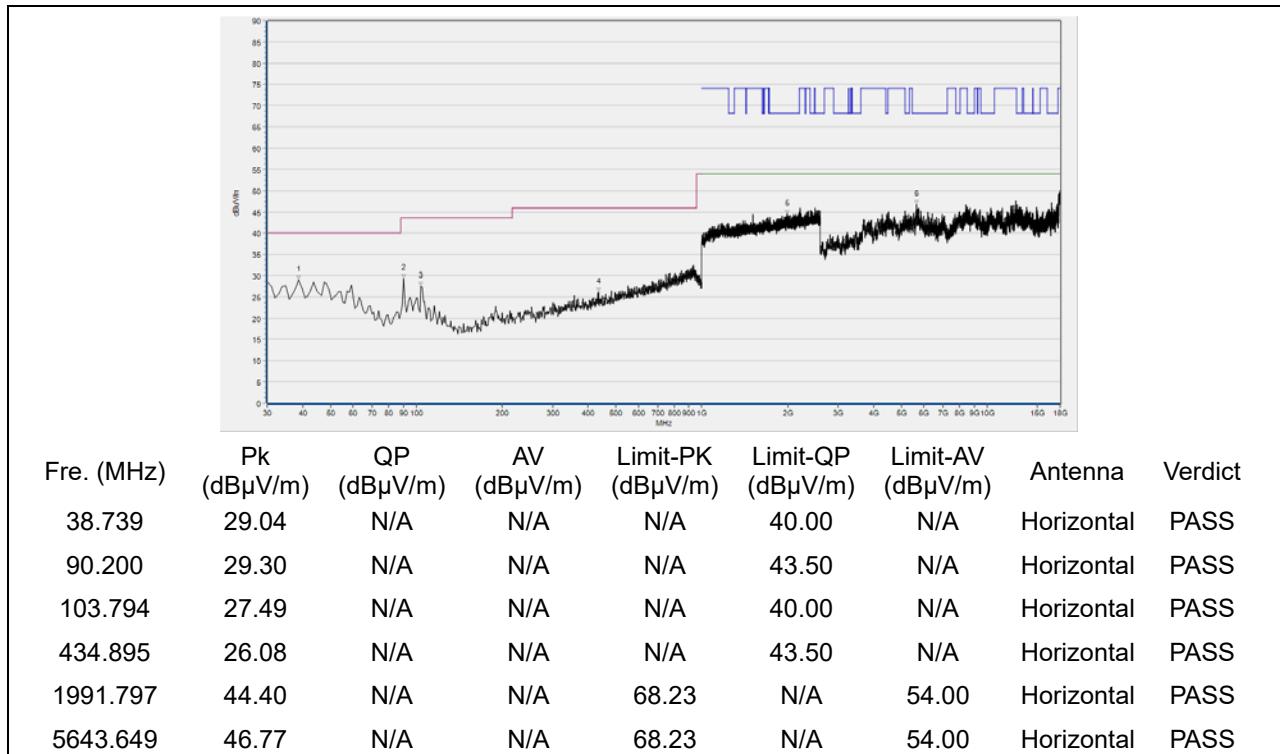
(Antenna Horizontal, 30MHz to 18GHz)



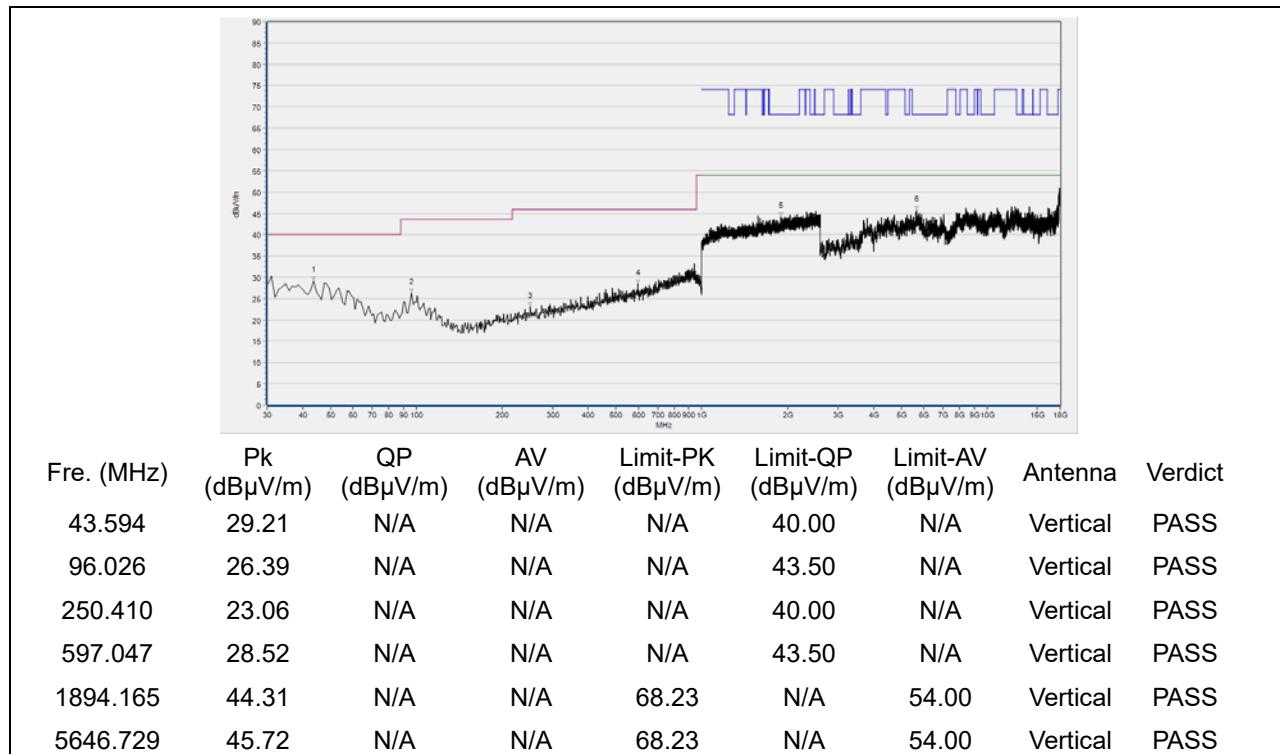
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	30.23	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
90.200	25.23	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
191.181	22.72	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
491.211	27.55	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2096.899	45.01	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5729.906	45.57	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 48

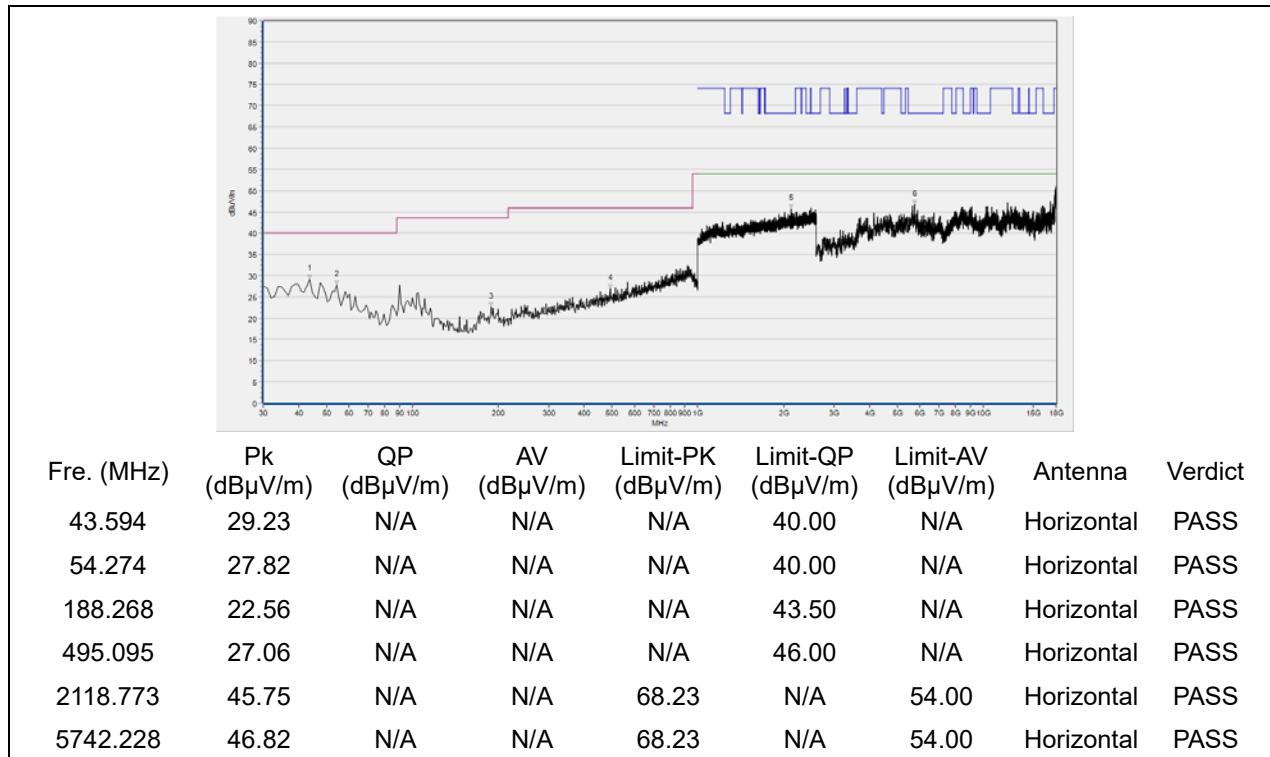


(Antenna Horizontal, 30MHz to 18GHz)

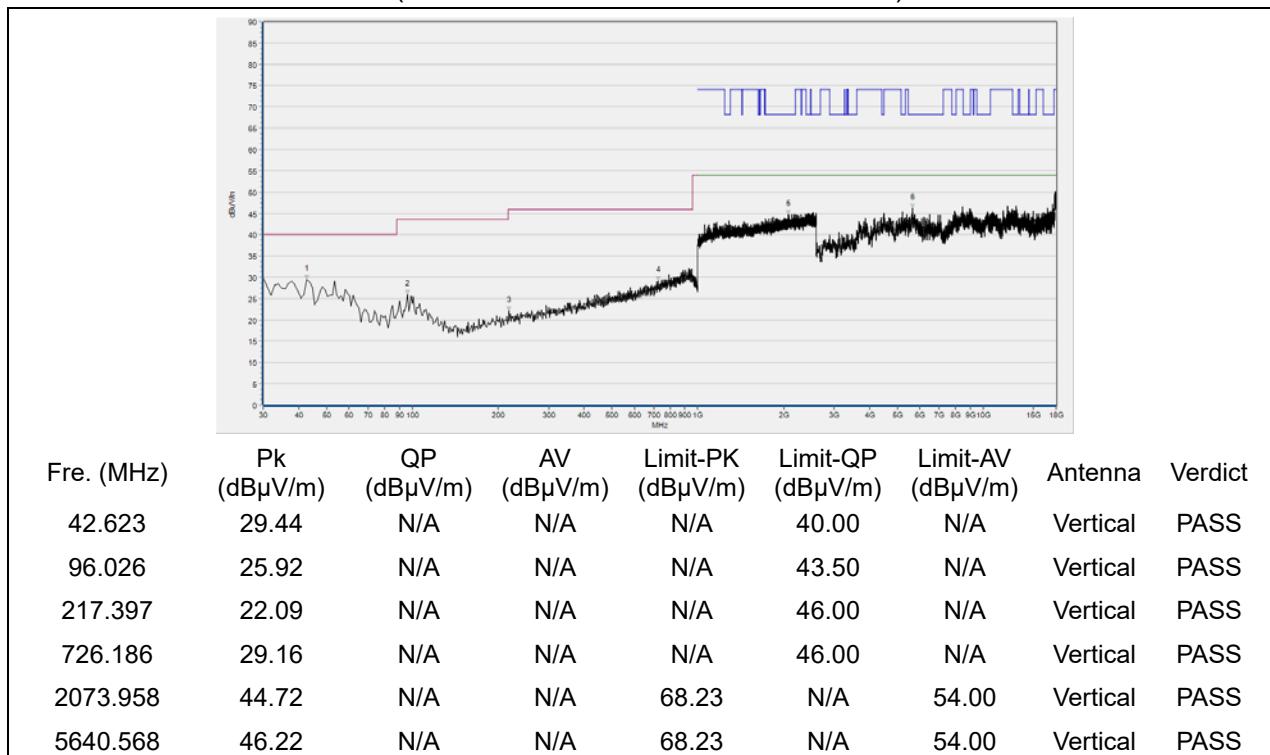


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 52

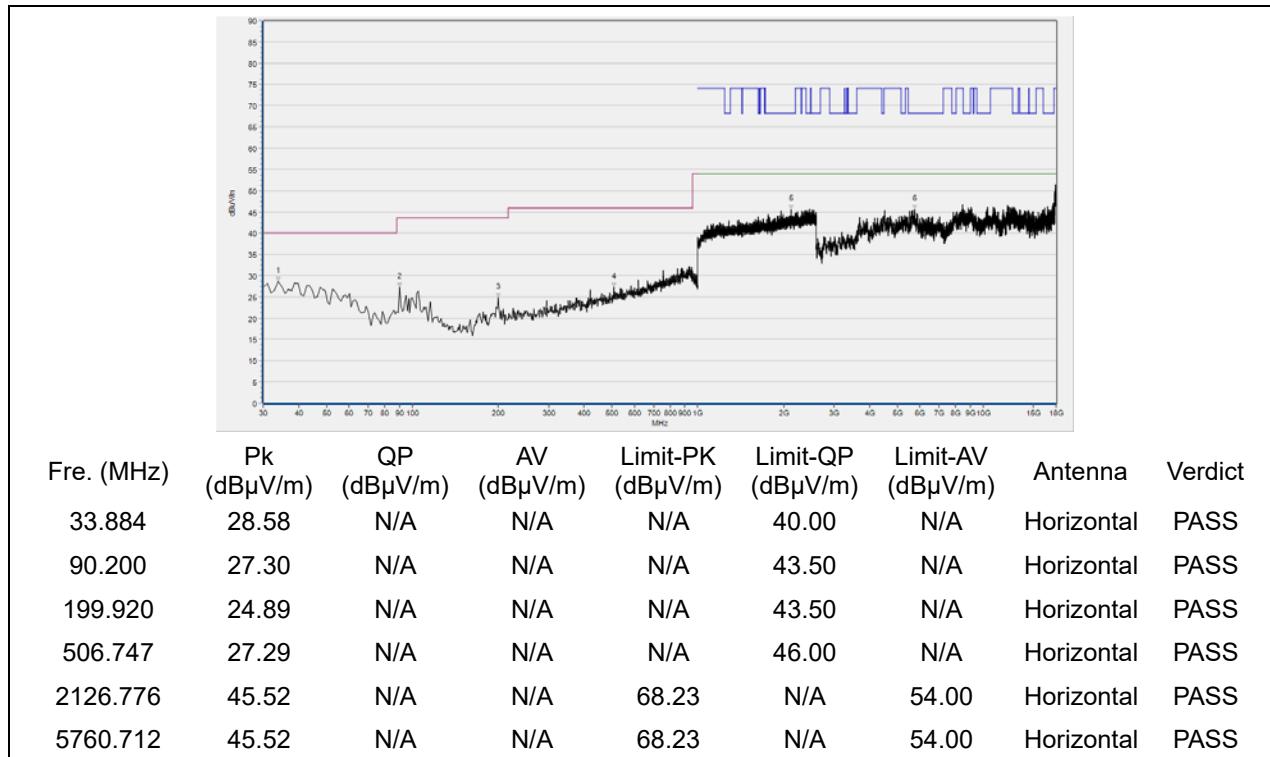


(Antenna Horizontal, 30MHz to 18GHz)

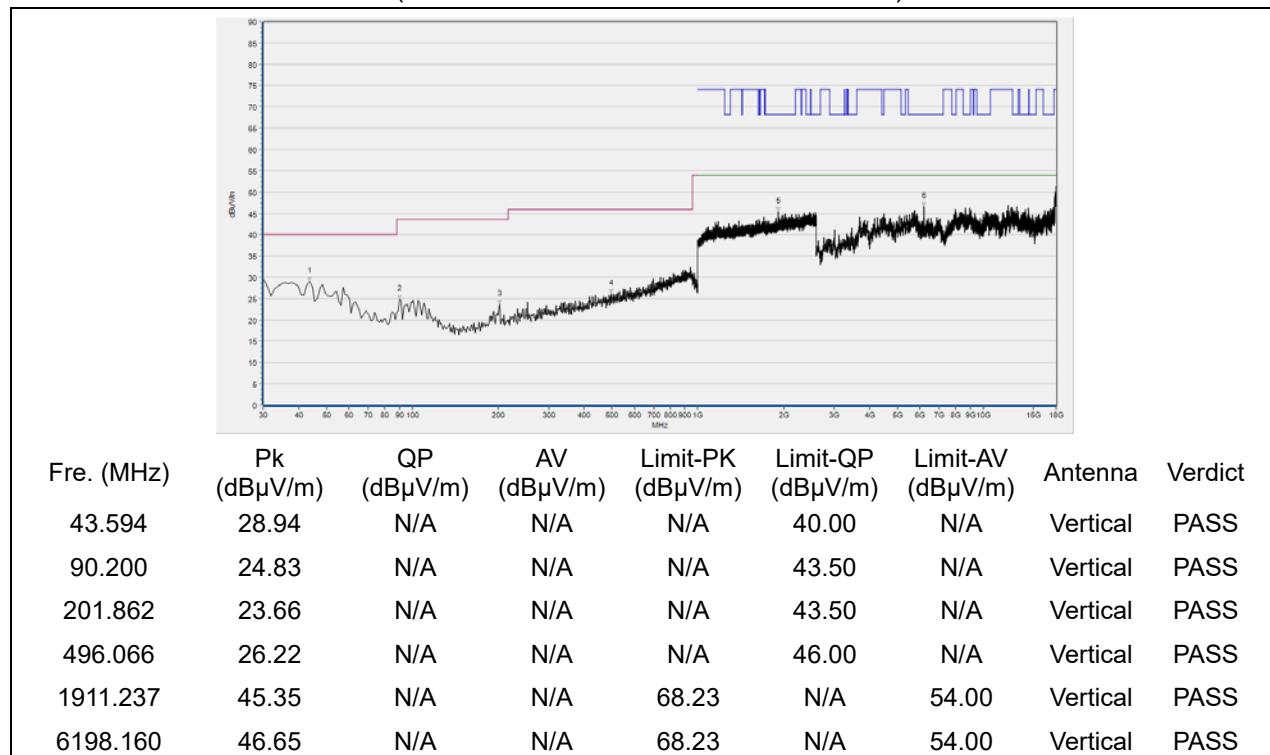


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 60

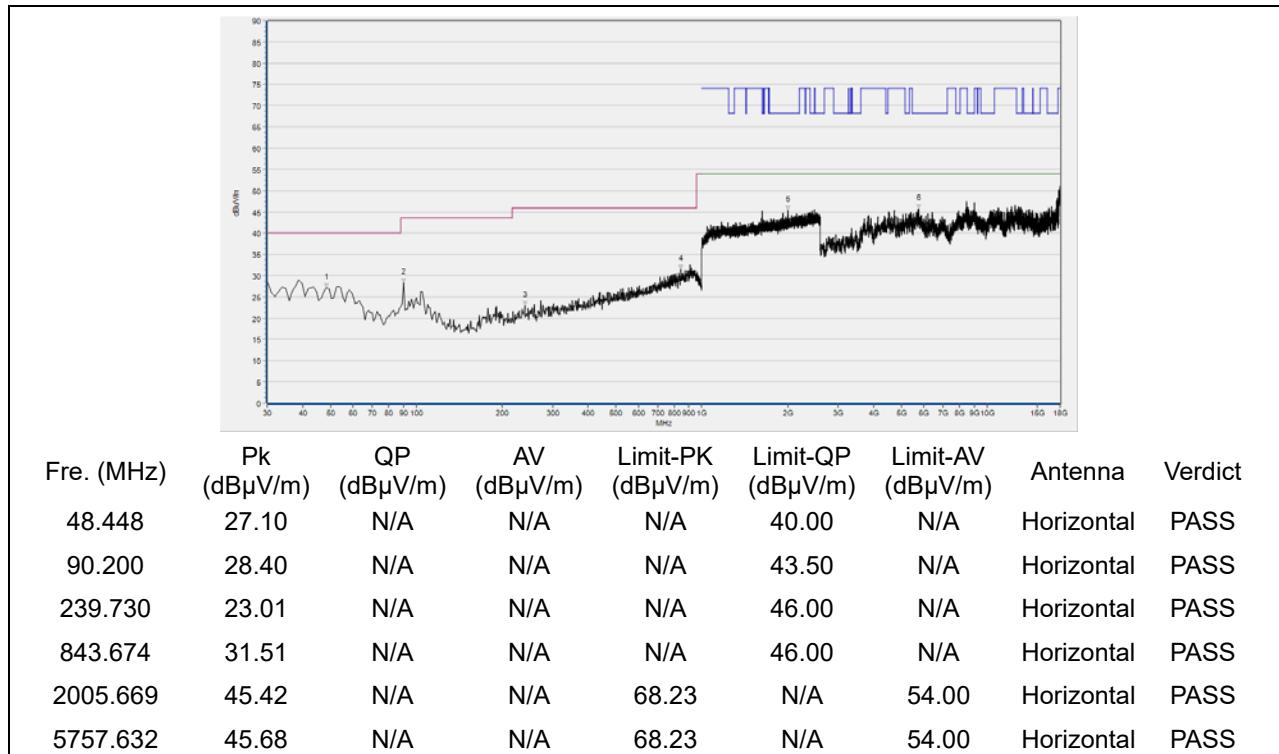


(Antenna Horizontal, 30MHz to 18GHz)

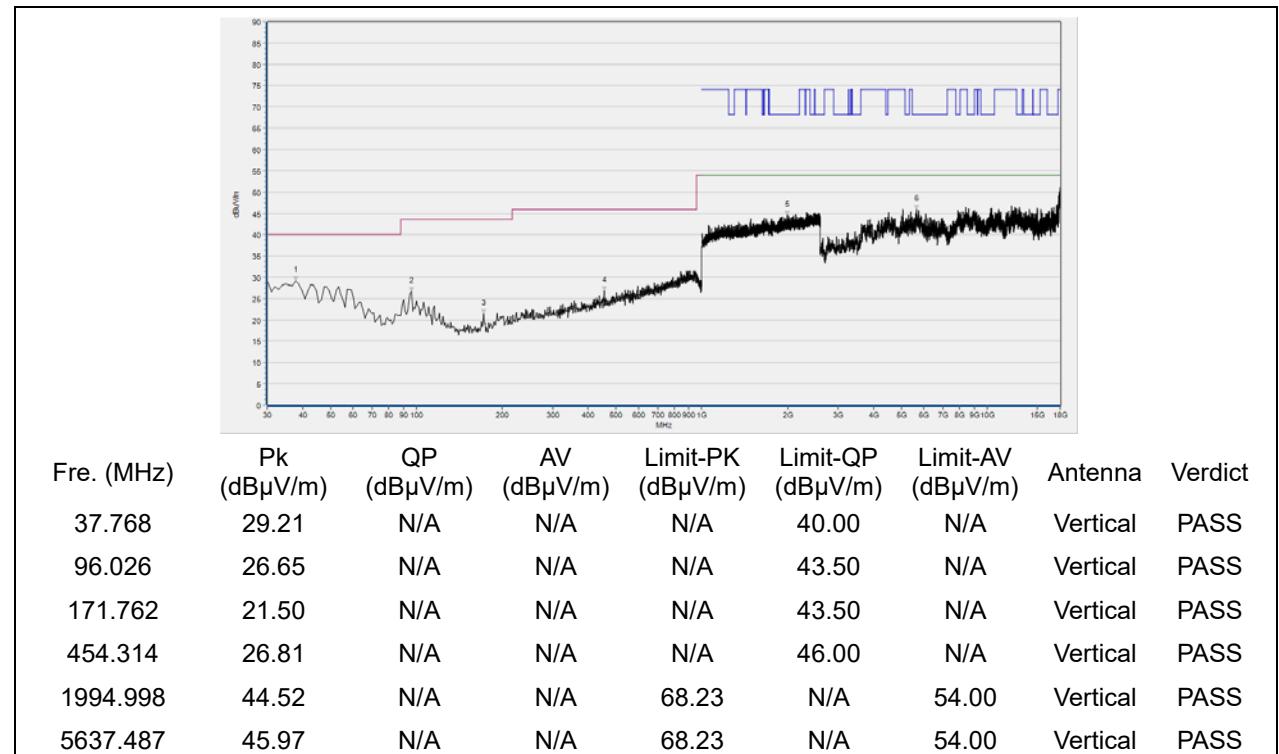


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 64

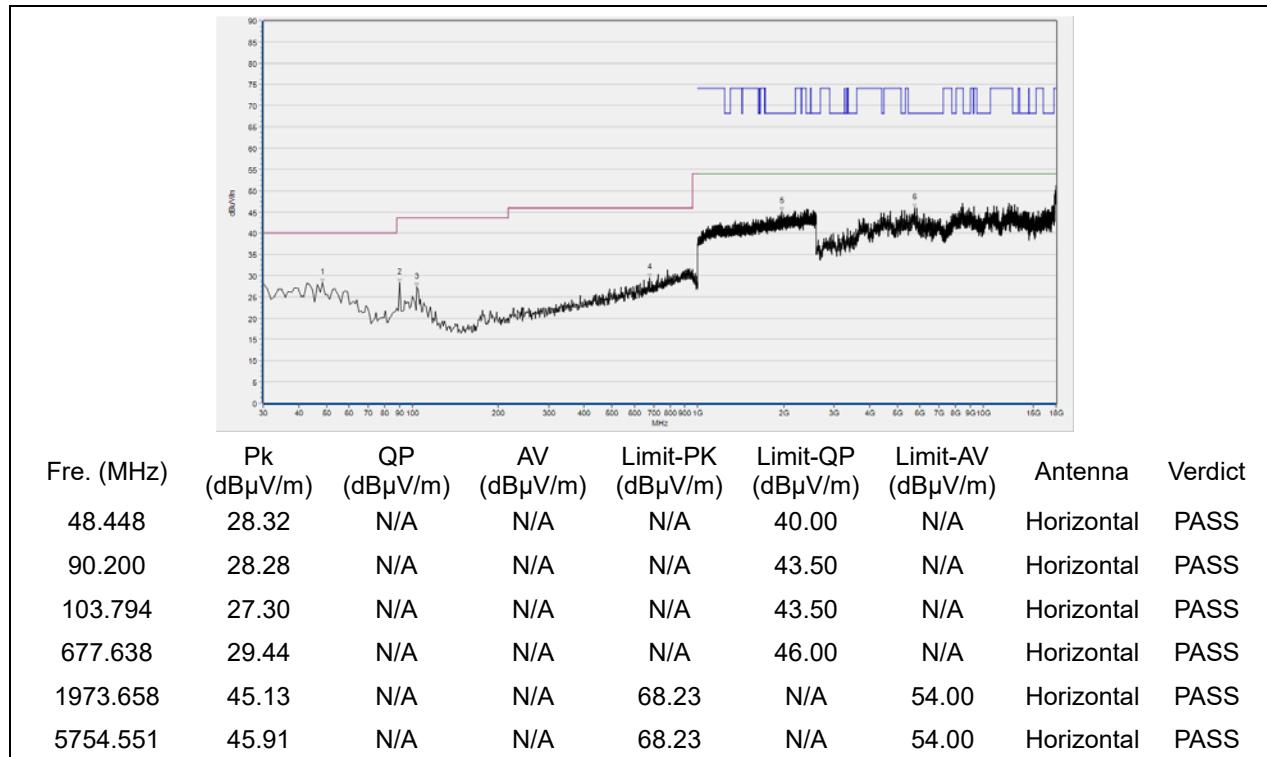


(Antenna Horizontal, 30MHz to 18GHz)

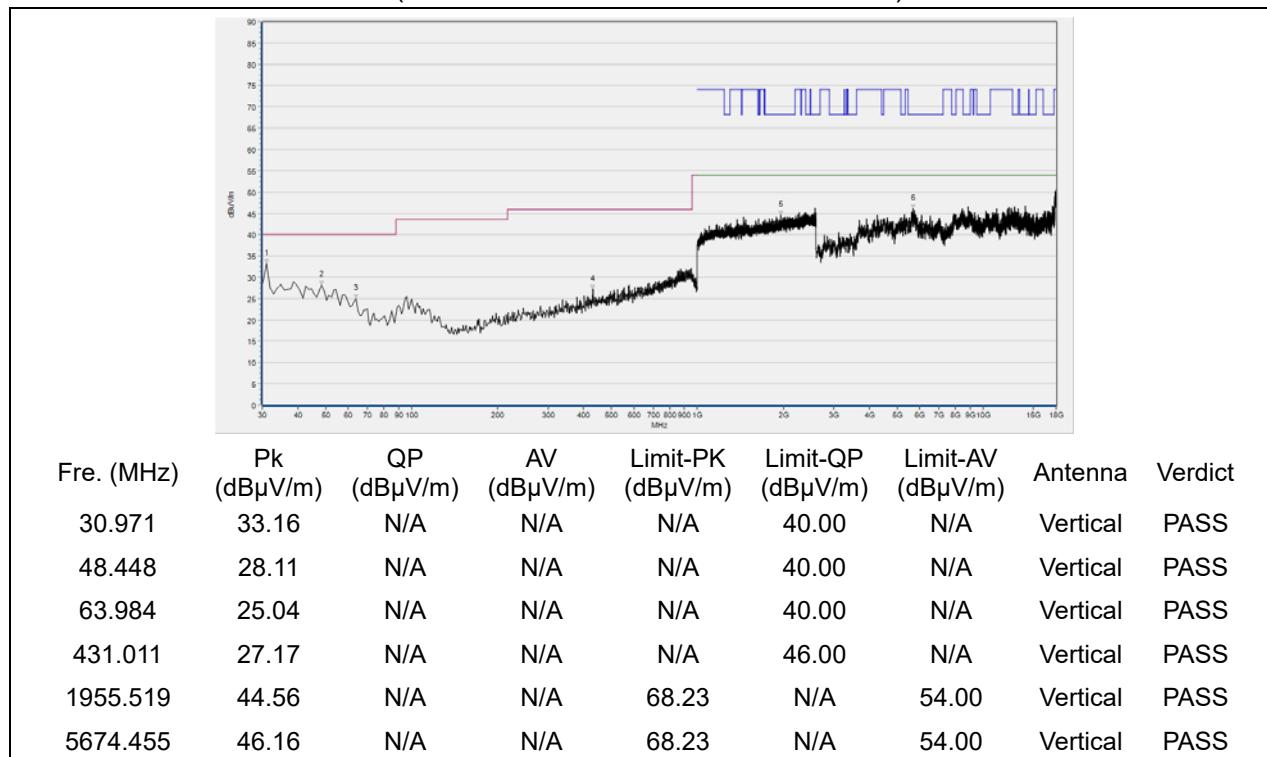


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 100

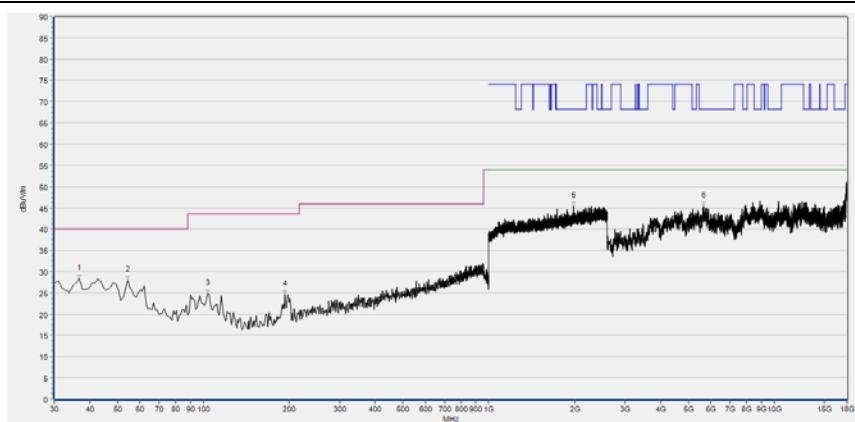


(Antenna Horizontal, 30MHz to 18GHz)



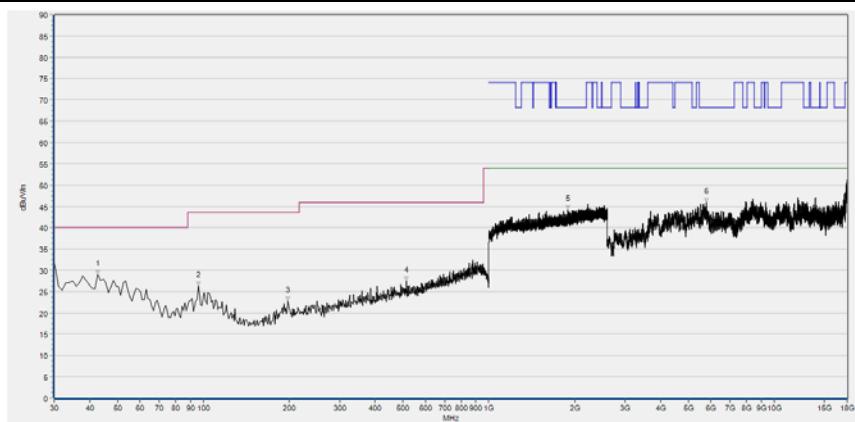
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 120



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
36.797	28.30	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
54.274	27.97	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
103.794	24.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
193.123	24.64	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1978.459	45.48	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5646.729	45.47	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

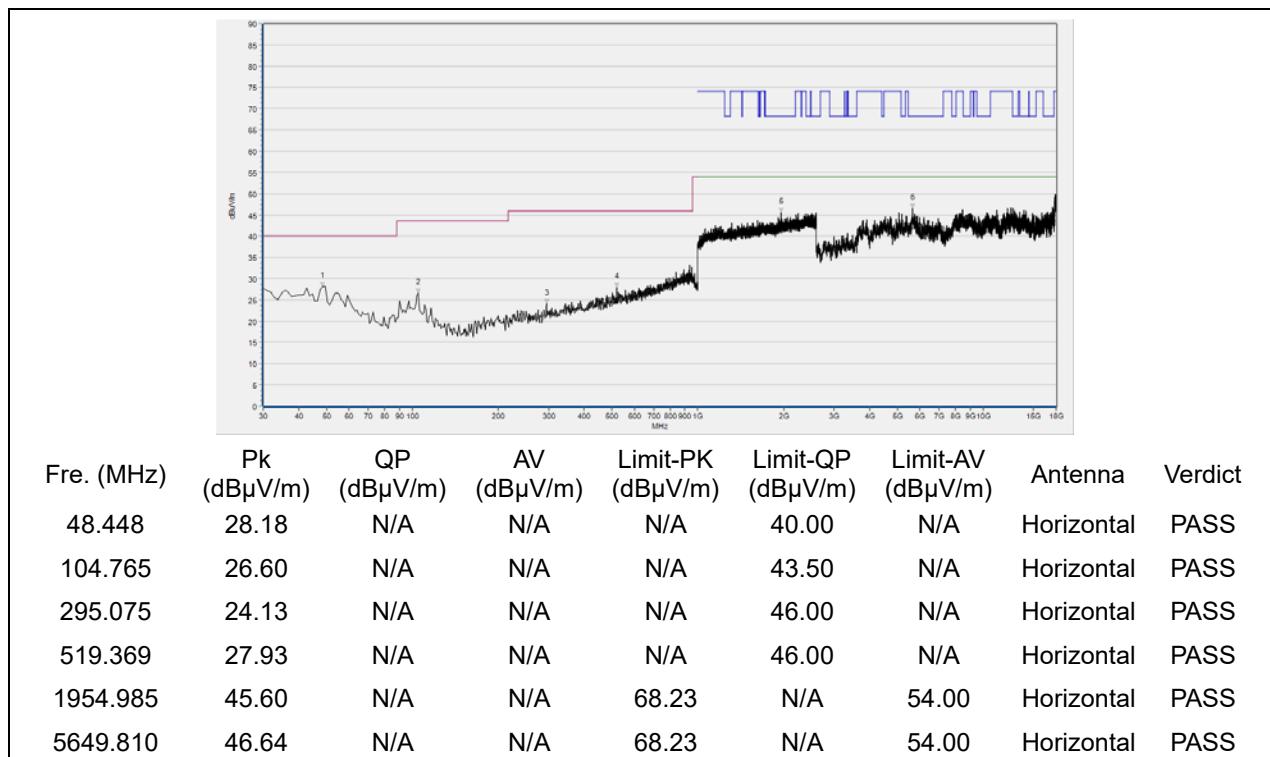
(Antenna Horizontal, 30MHz to 18GHz)



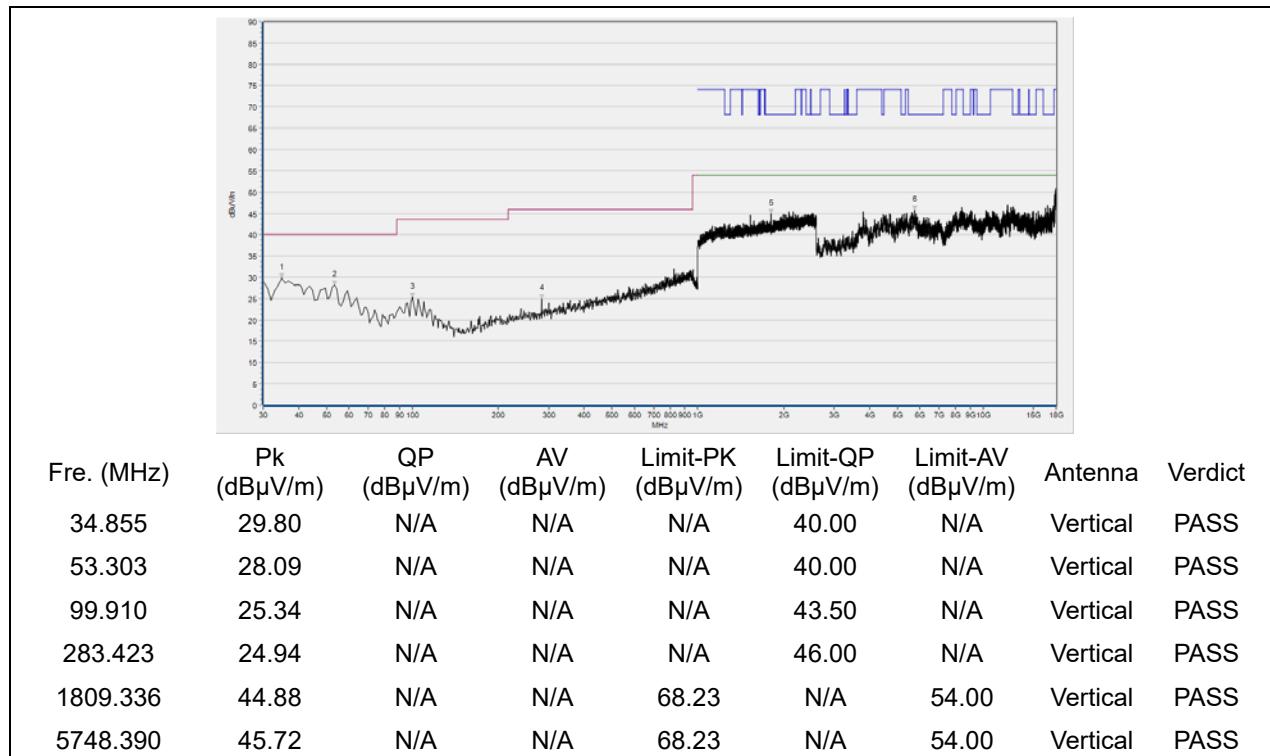
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	29.03	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	26.38	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.978	22.76	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
515.485	27.48	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1894.165	44.19	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5773.035	45.98	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 144

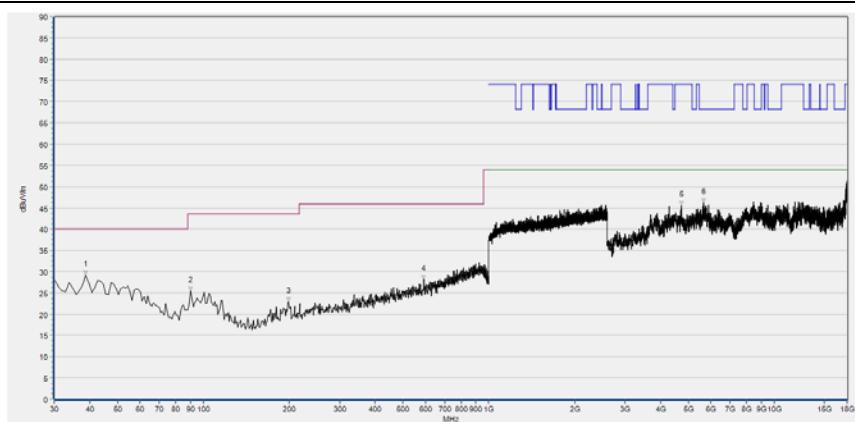


(Antenna Horizontal, 30MHz to 18GHz)



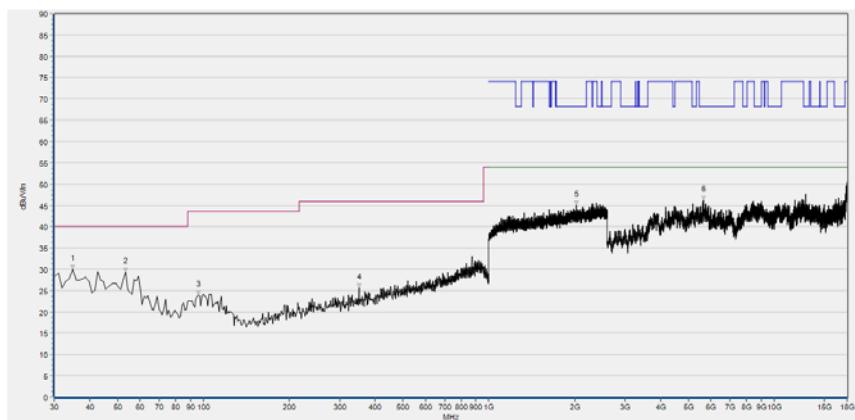
(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 149



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	29.15	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	25.41	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
198.949	22.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
591.221	28.20	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4737.948	45.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5649.810	46.21	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

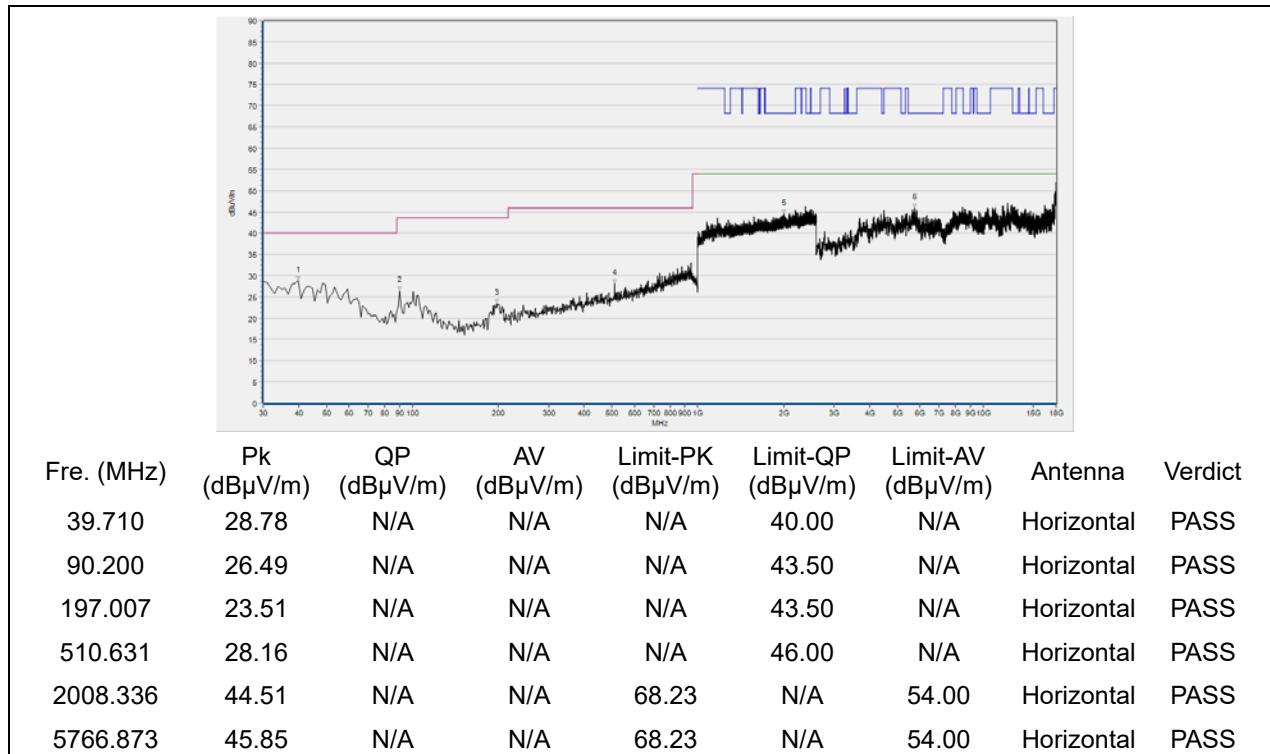
(Antenna Horizontal, 30MHz to 18GHz)



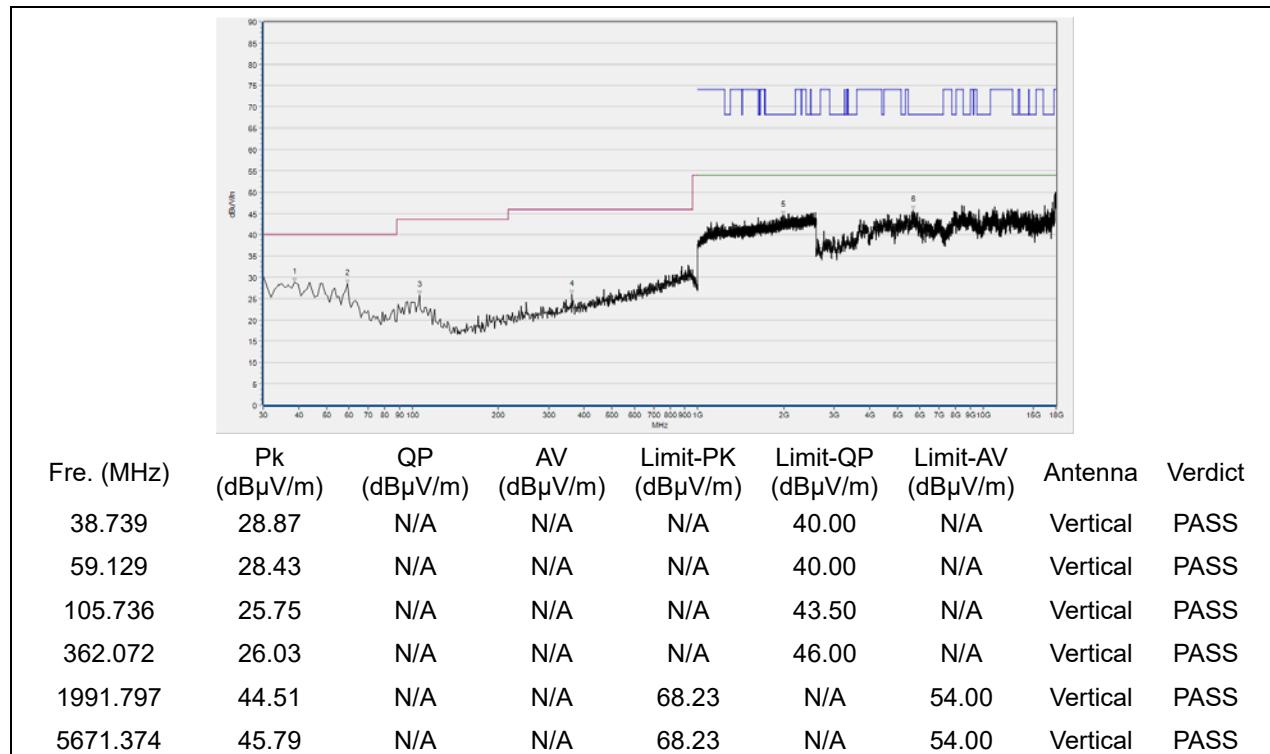
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
34.855	29.98	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
53.303	29.25	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	23.94	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
350.420	25.72	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2029.143	45.06	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5649.810	46.20	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 157

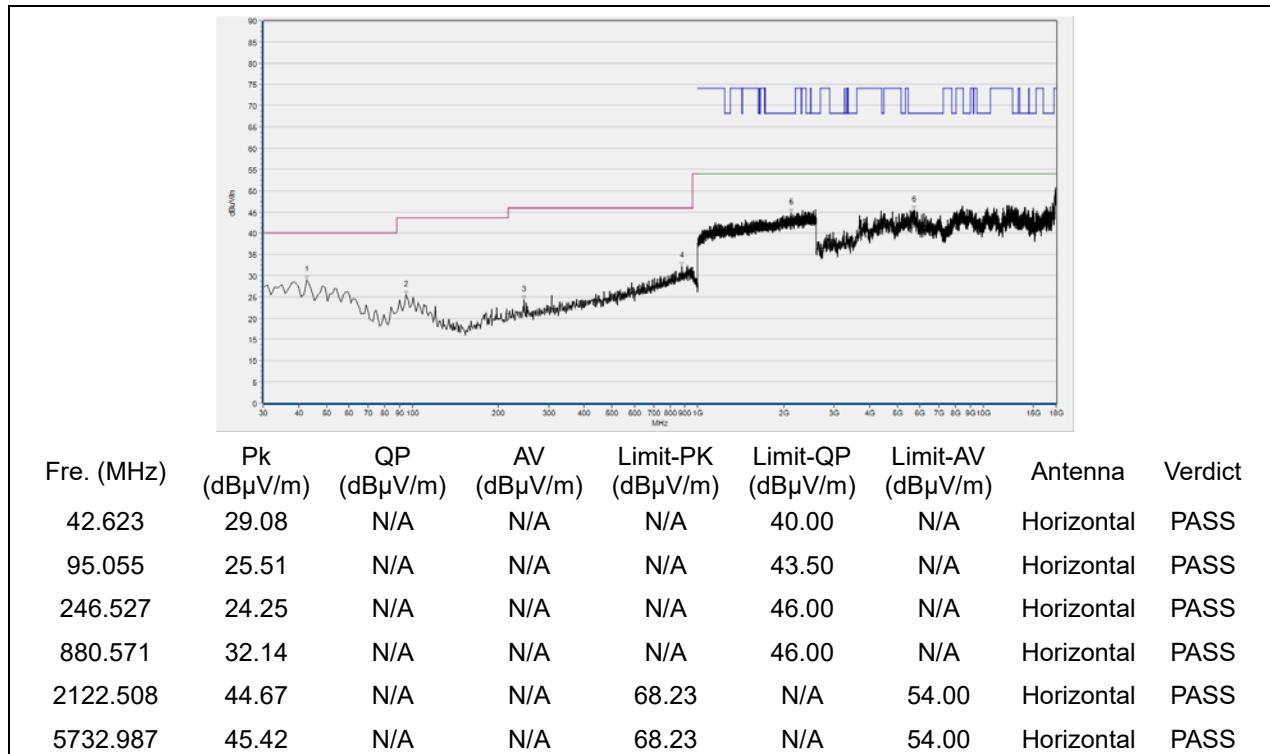


(Antenna Horizontal, 30MHz to 18GHz)

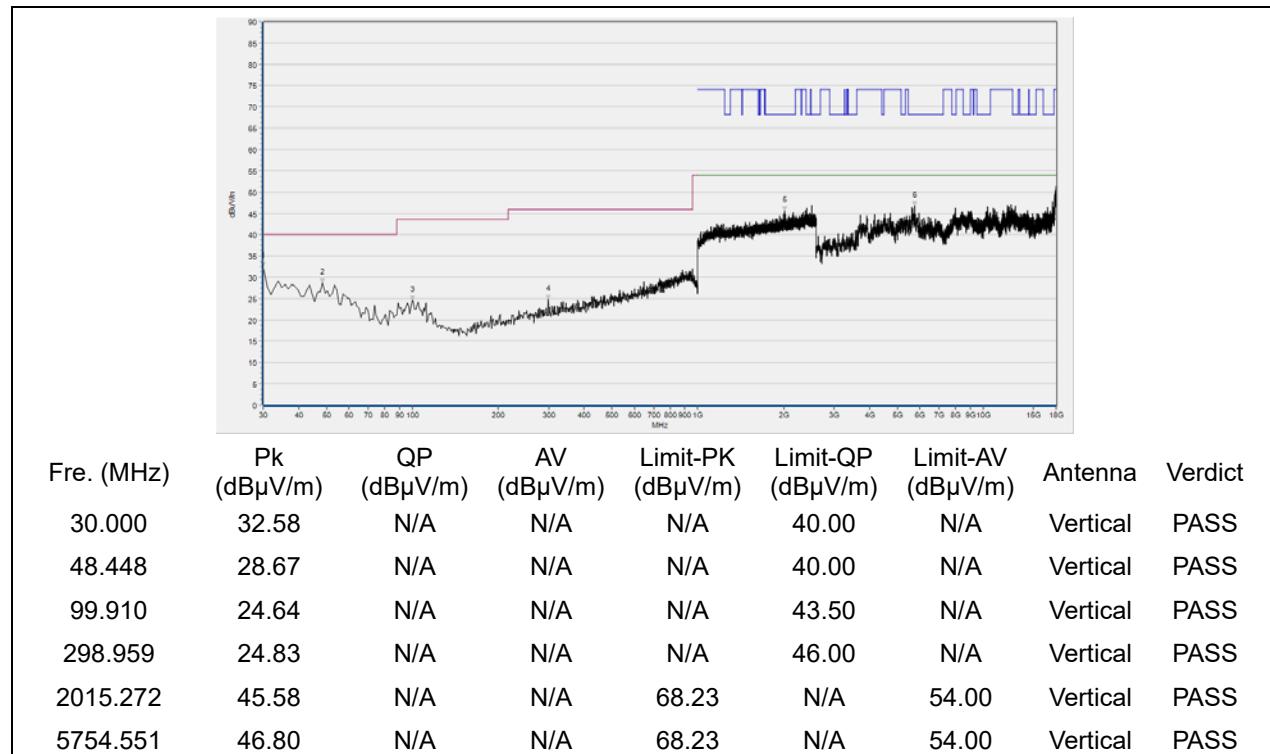


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 165



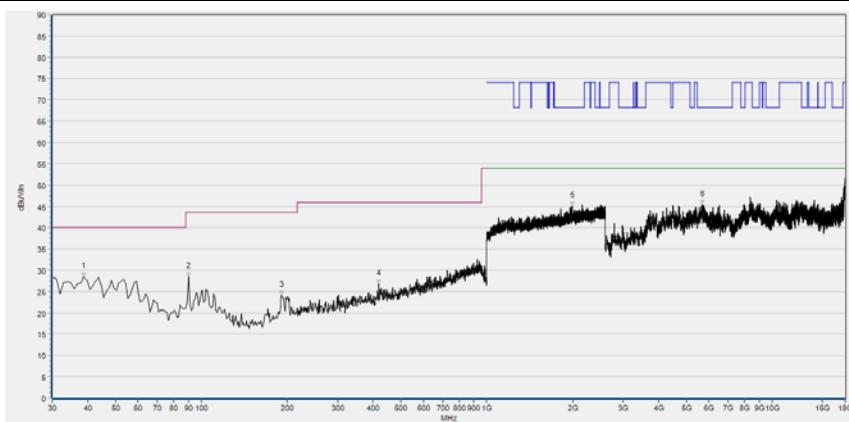
(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)

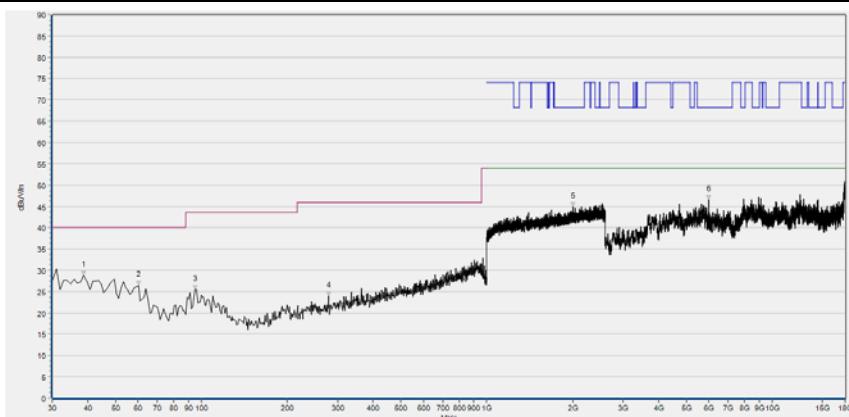
802.11ac (VHT40) Test mode

Plots for Channel = 38



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	28.45	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	28.47	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
191.181	24.11	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
418.388	26.76	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1995.532	45.07	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5686.777	45.37	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

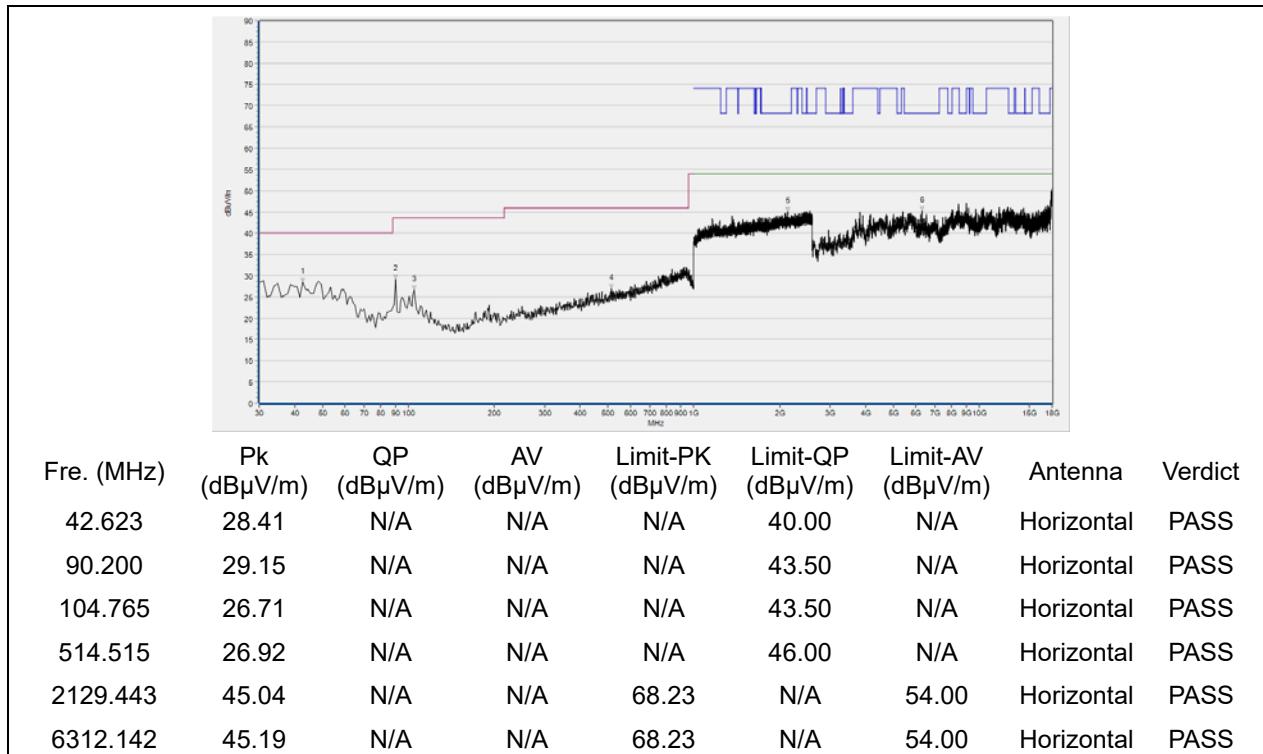
(Antenna Horizontal, 30MHz to 18GHz)



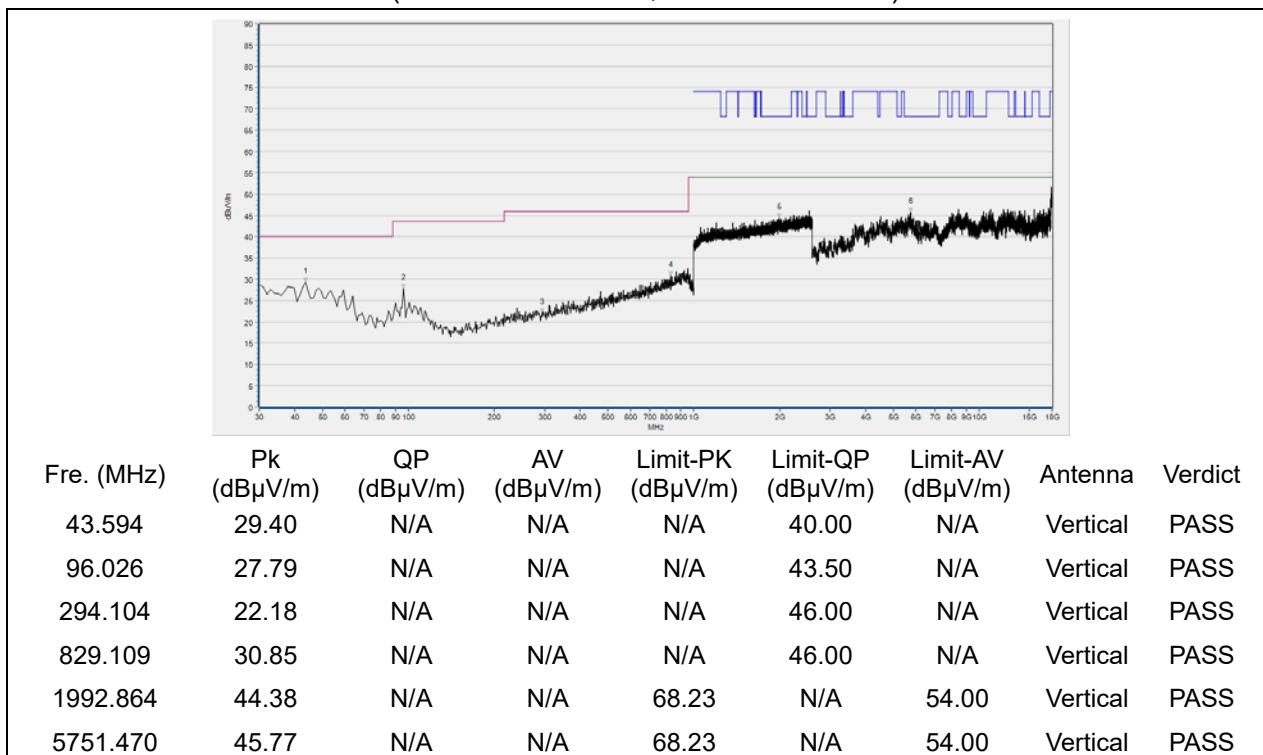
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	28.75	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
60.100	26.46	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
95.055	25.50	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
278.569	24.05	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2002.467	44.84	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5991.758	46.53	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 46

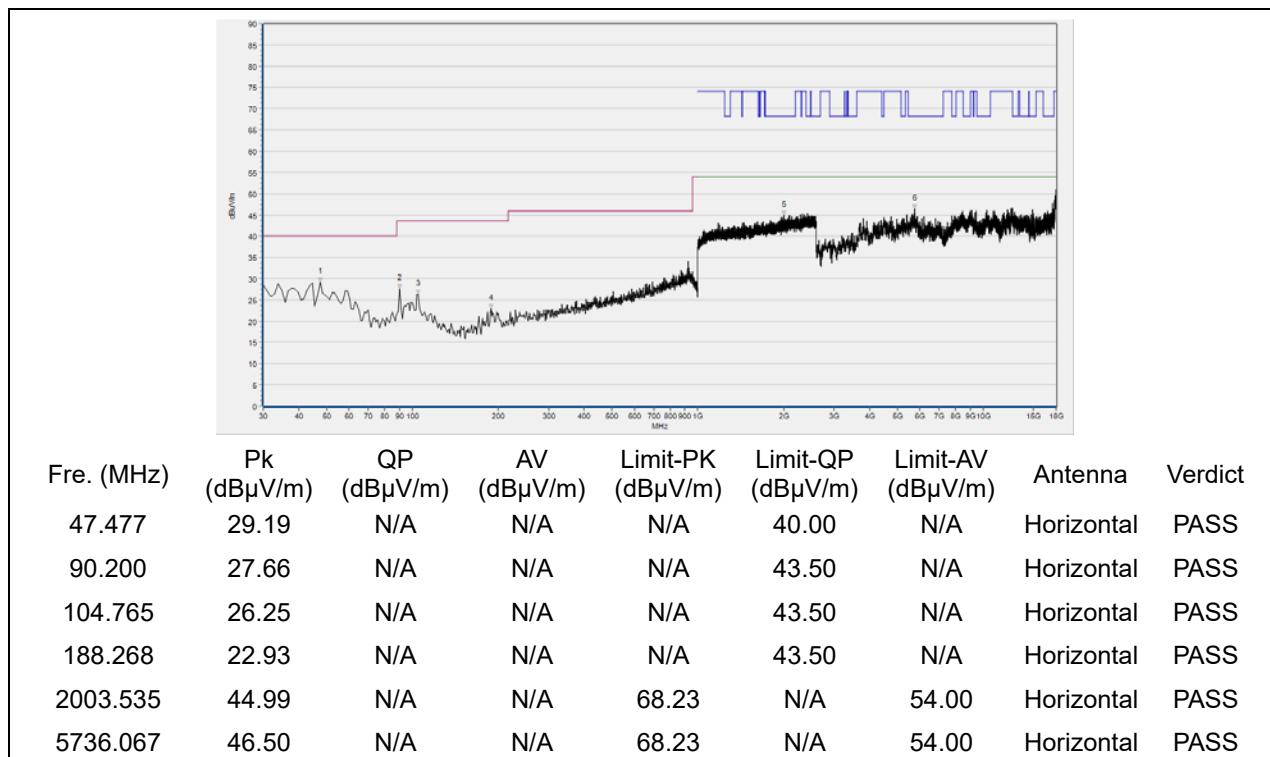


(Antenna Horizontal, 30MHz to 18GHz)

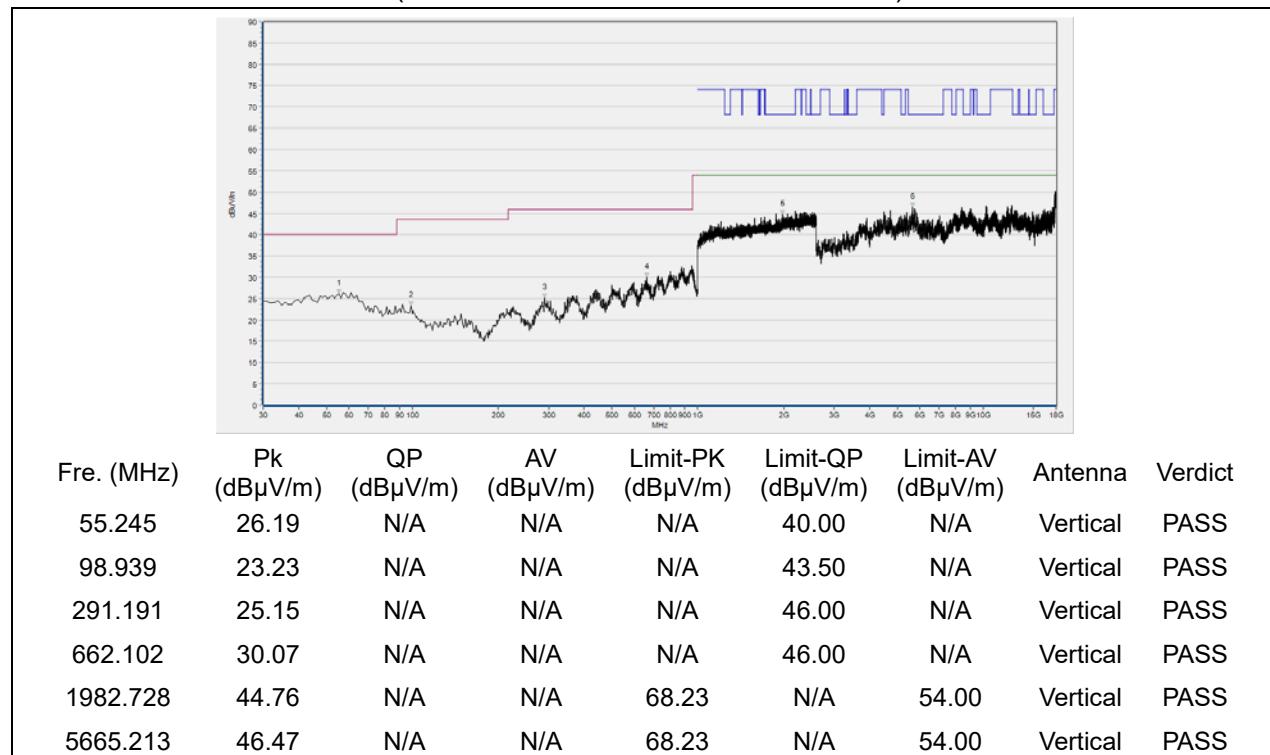


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 54

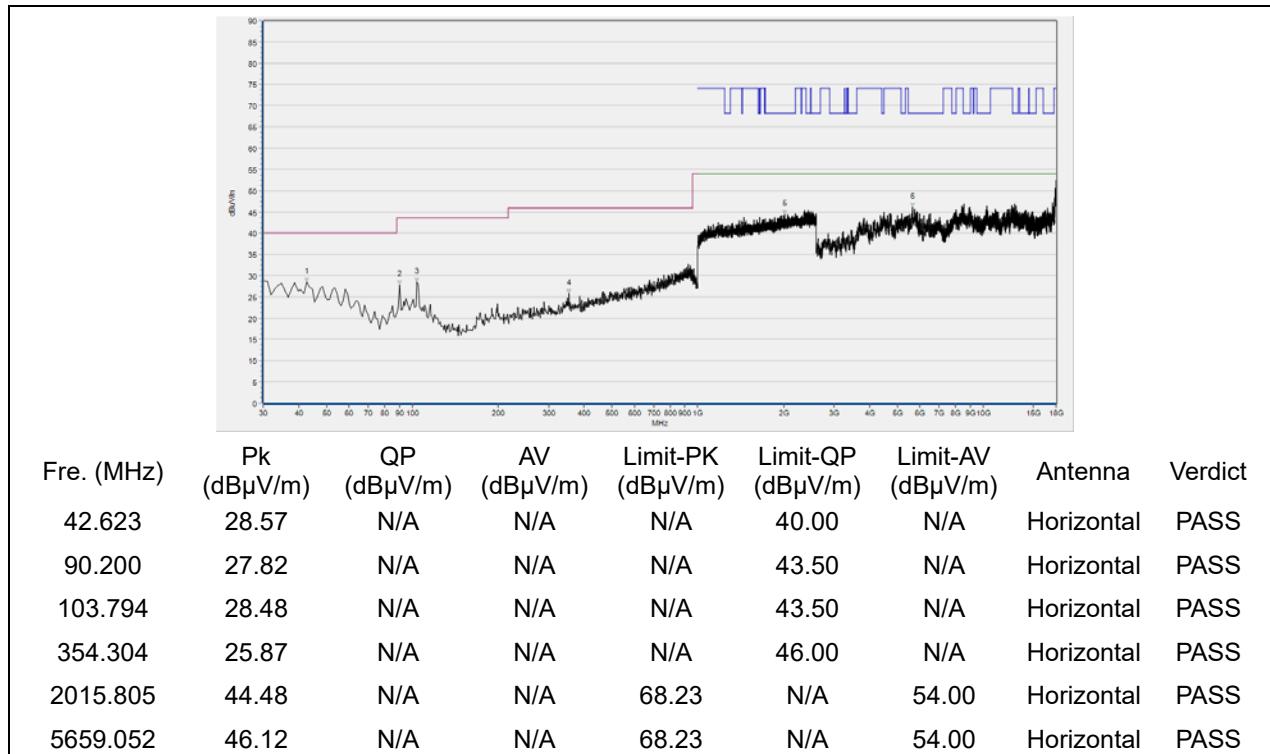


(Antenna Horizontal, 30MHz to 18GHz)

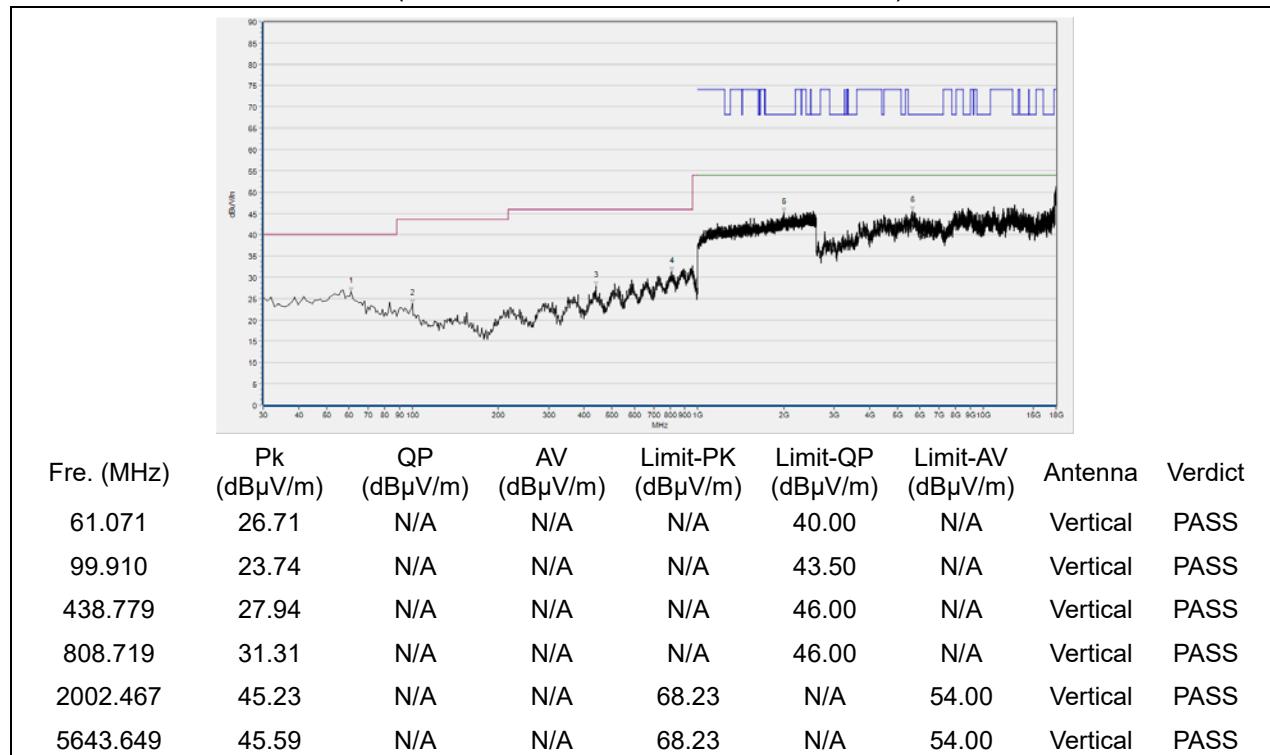


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 62

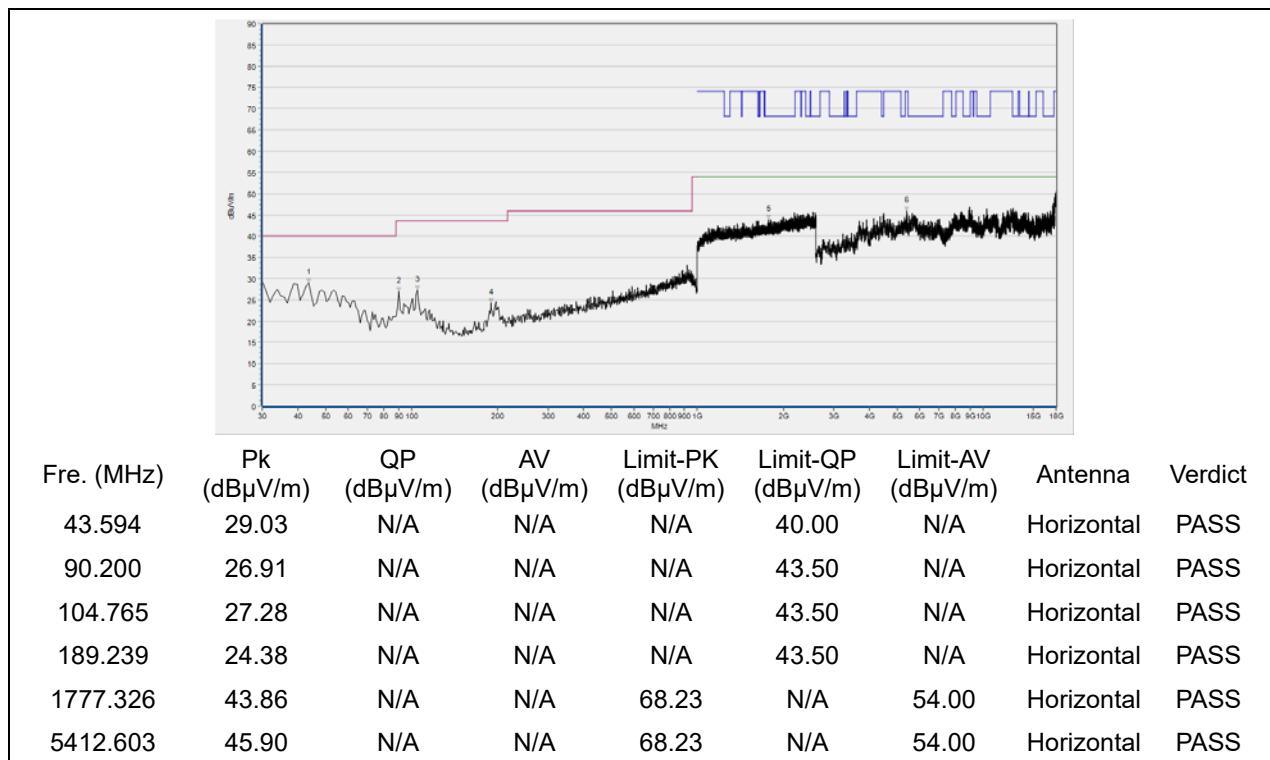


(Antenna Horizontal, 30MHz to 18GHz)

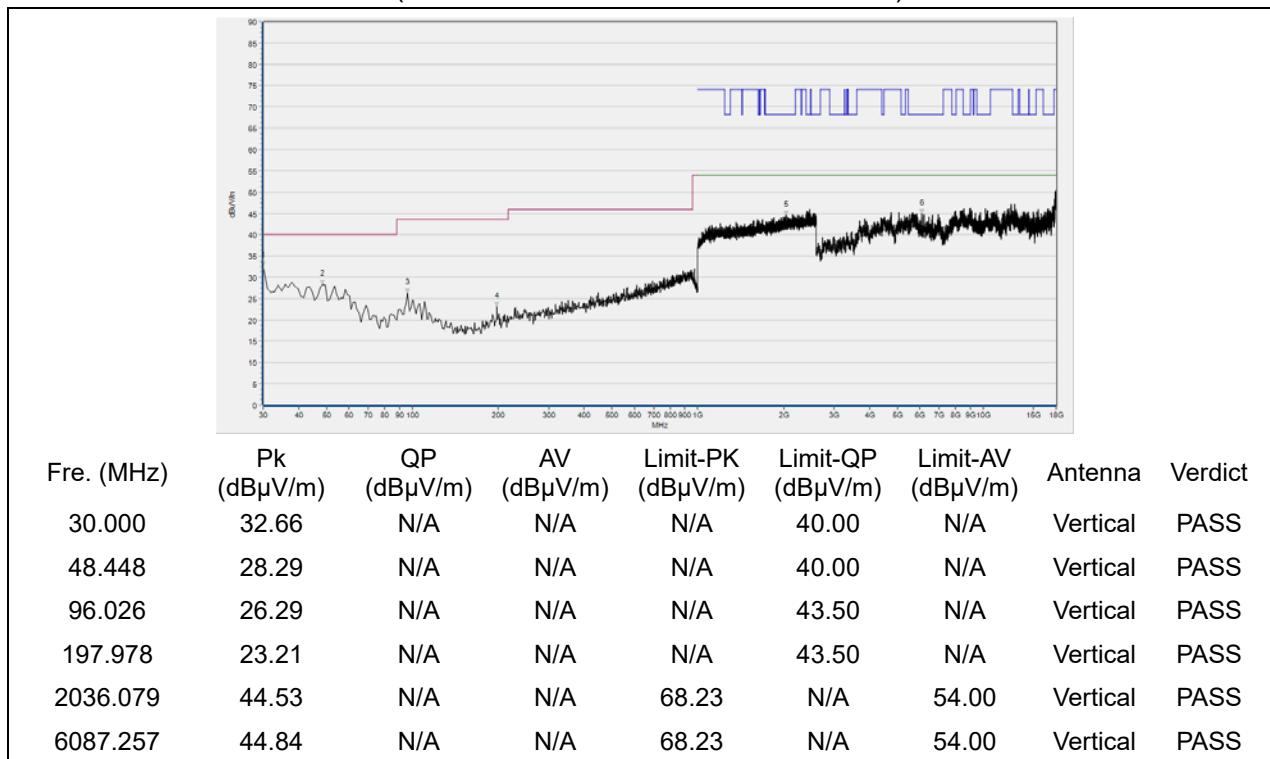


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 102

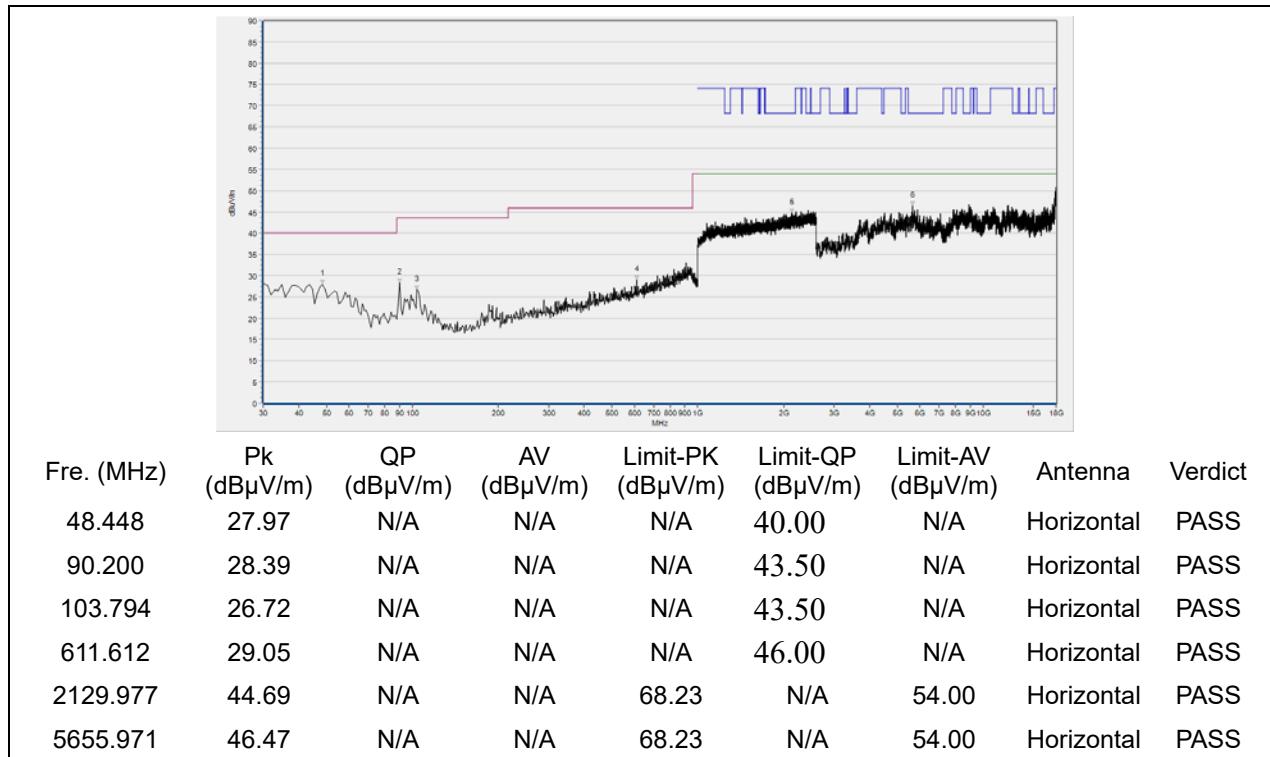


(Antenna Horizontal, 30MHz to 18GHz)

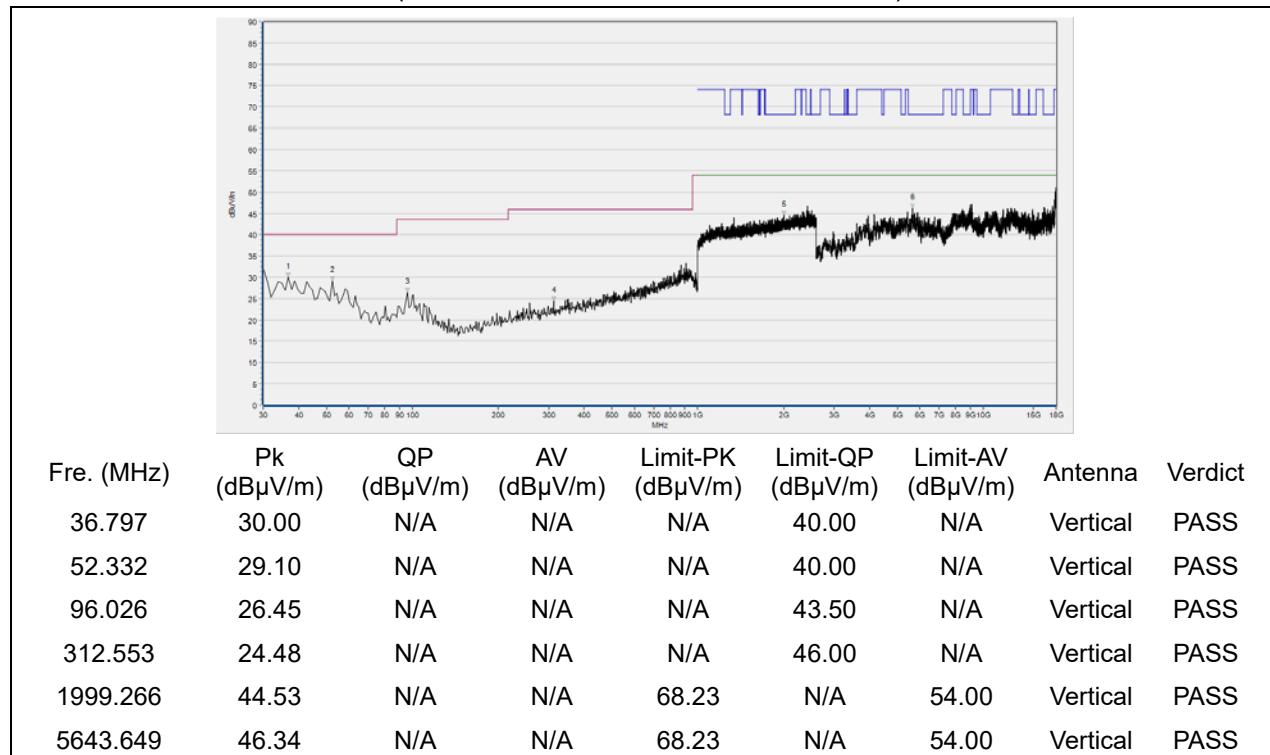


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 126

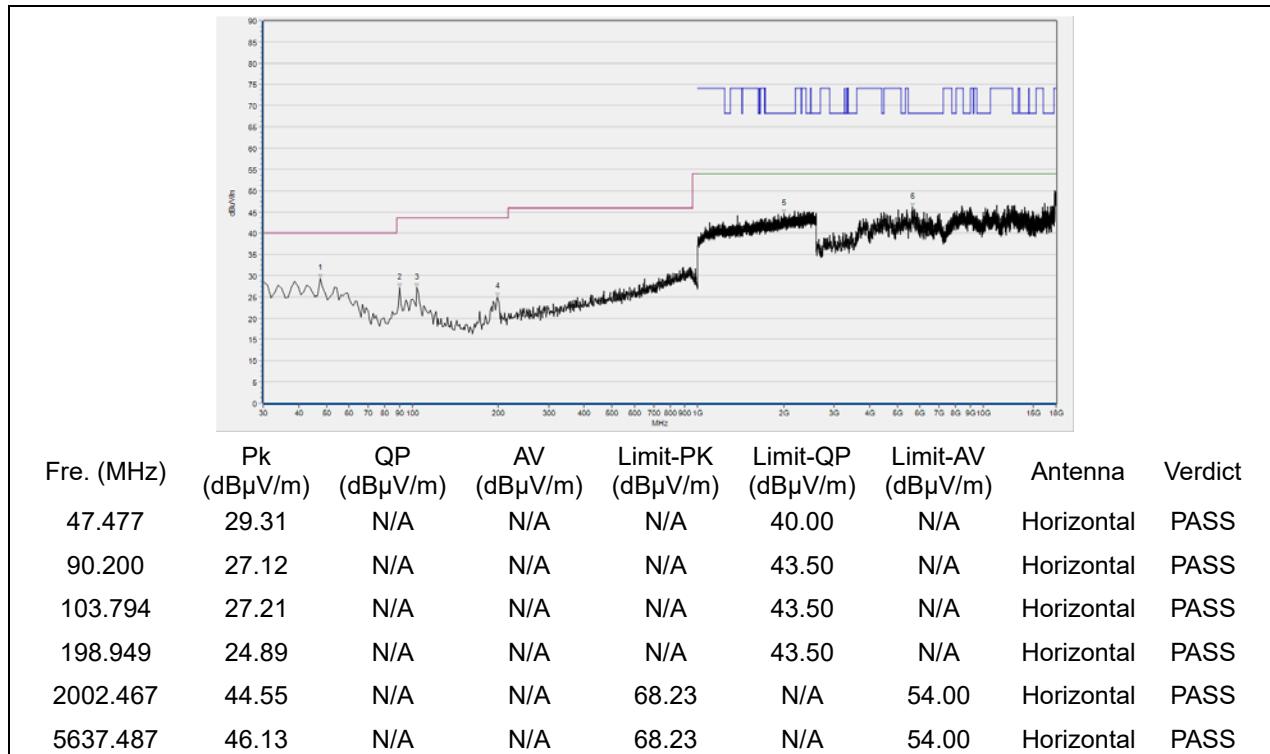


(Antenna Horizontal, 30MHz to 18GHz)

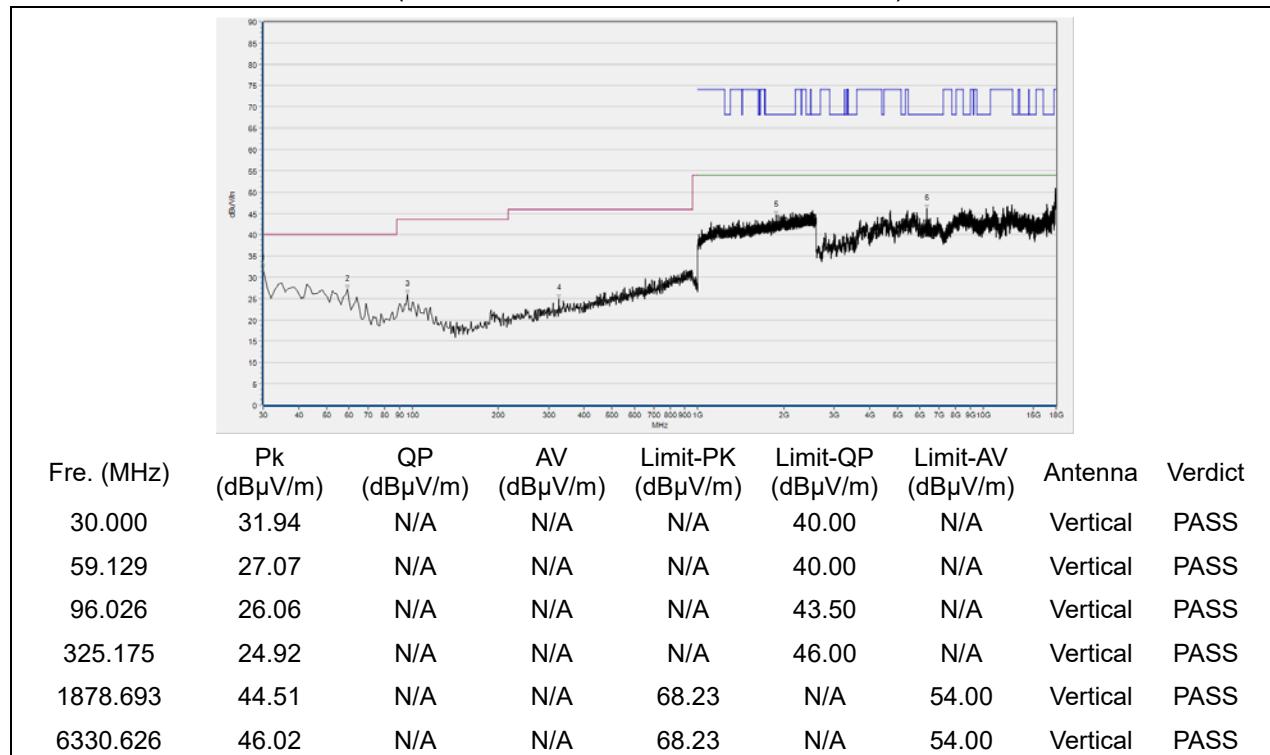


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 142

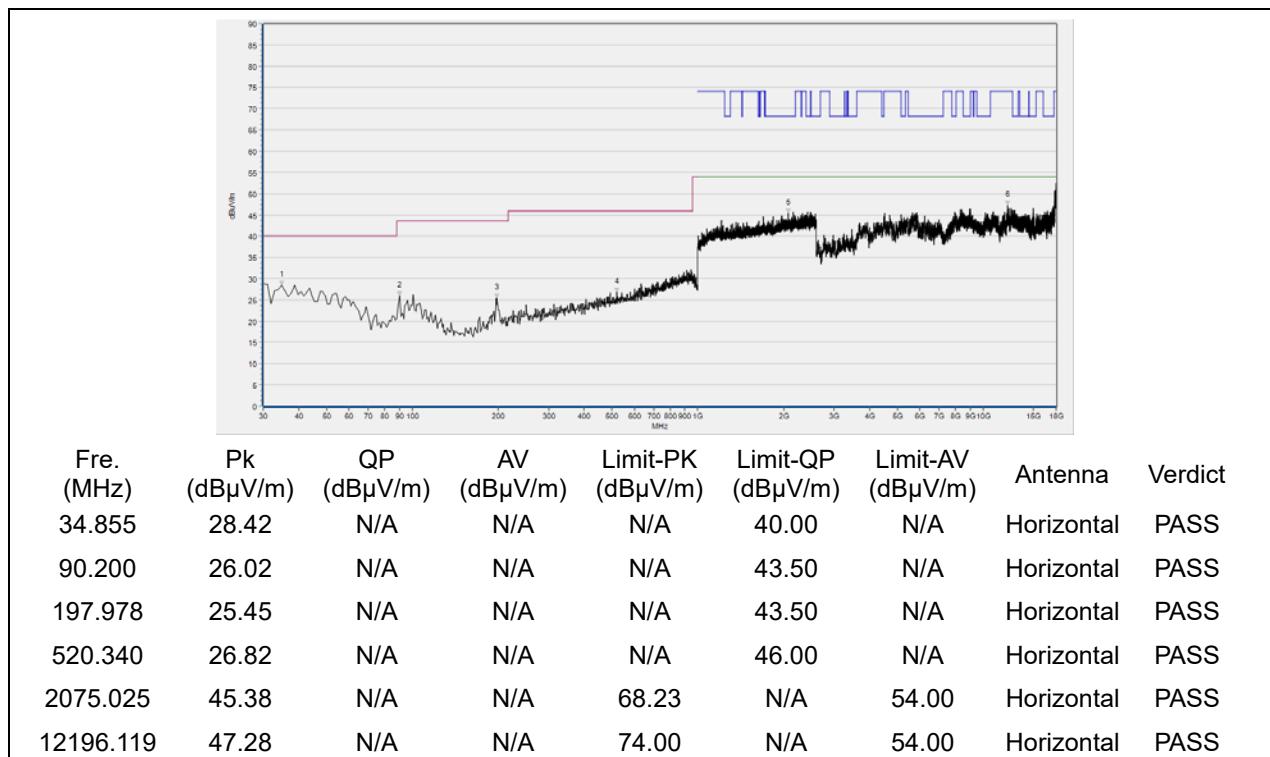


(Antenna Horizontal, 30MHz to 18GHz)

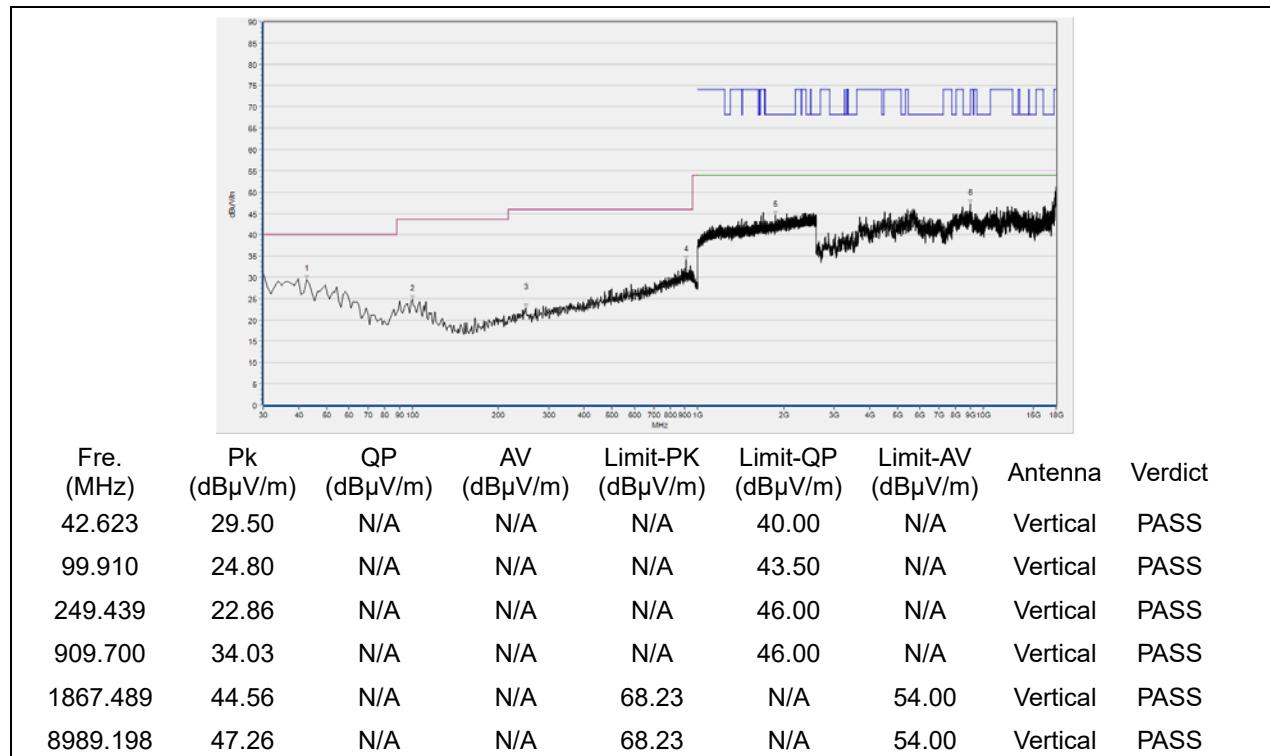


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 151

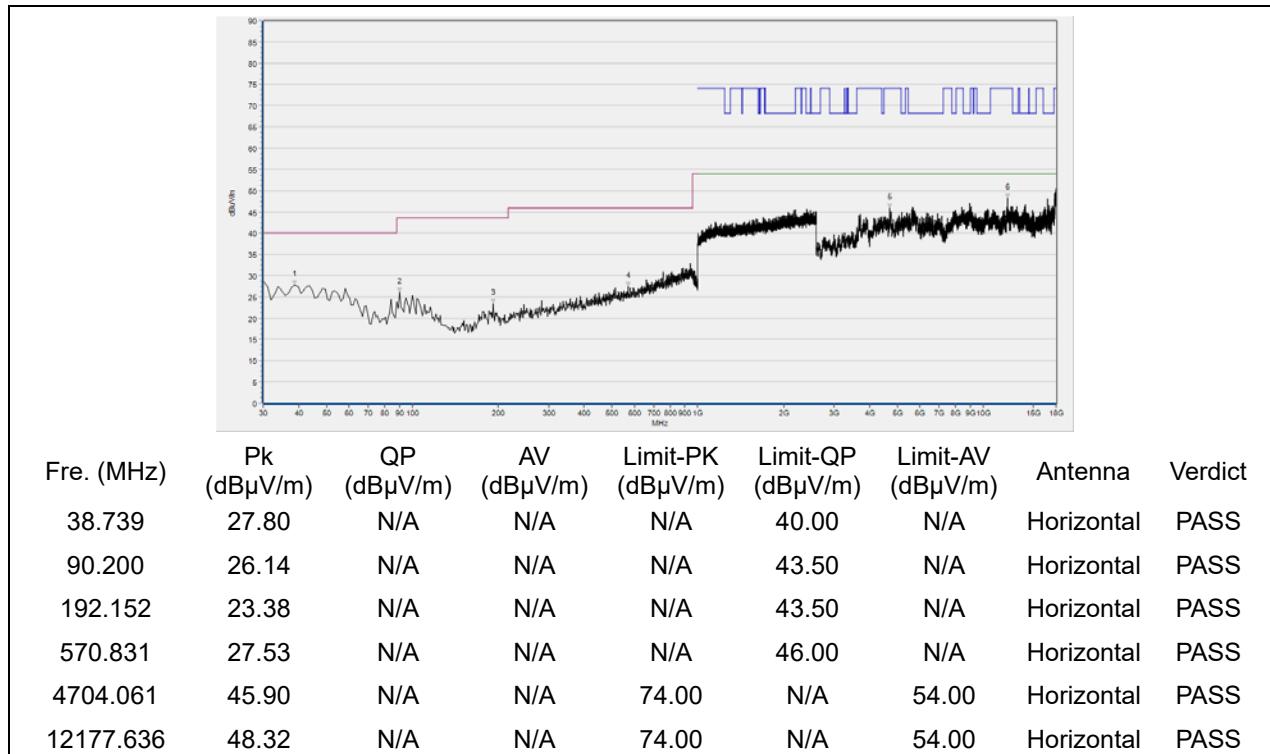


(Antenna Horizontal, 30MHz to 18GHz)

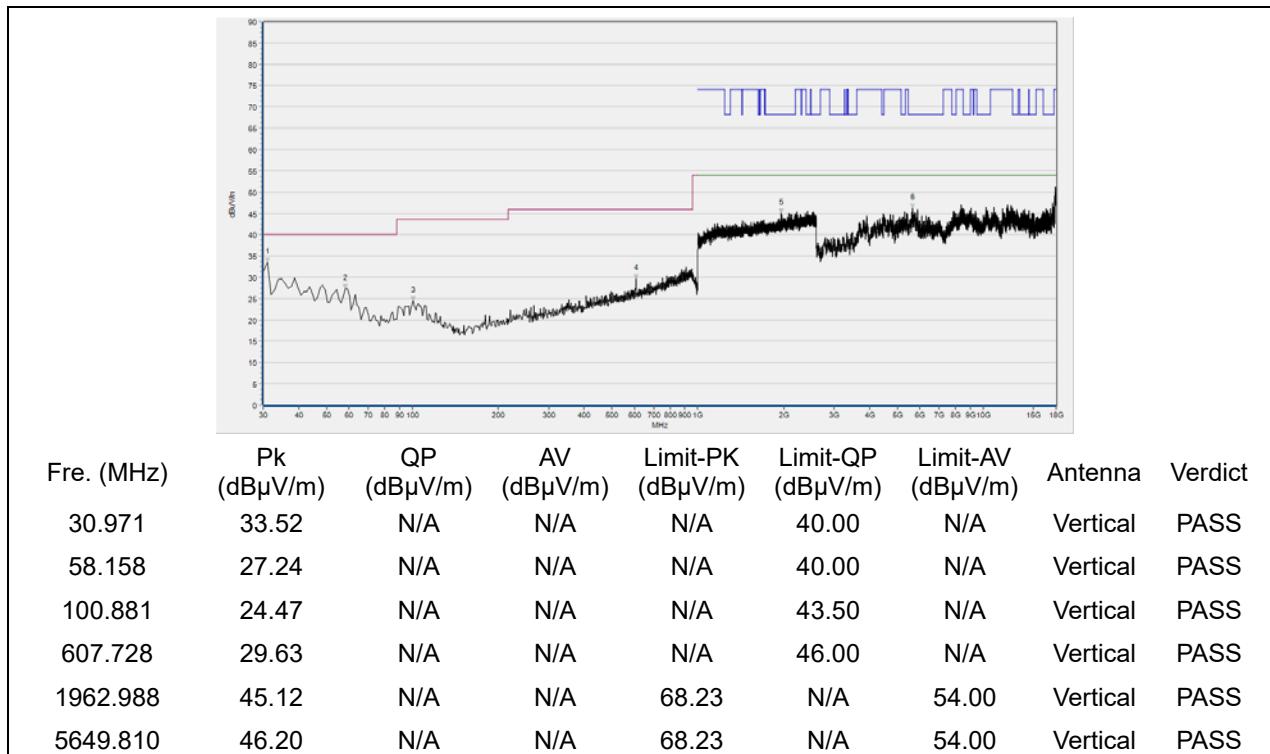


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 159



(Antenna Horizontal, 30MHz to 18GHz)



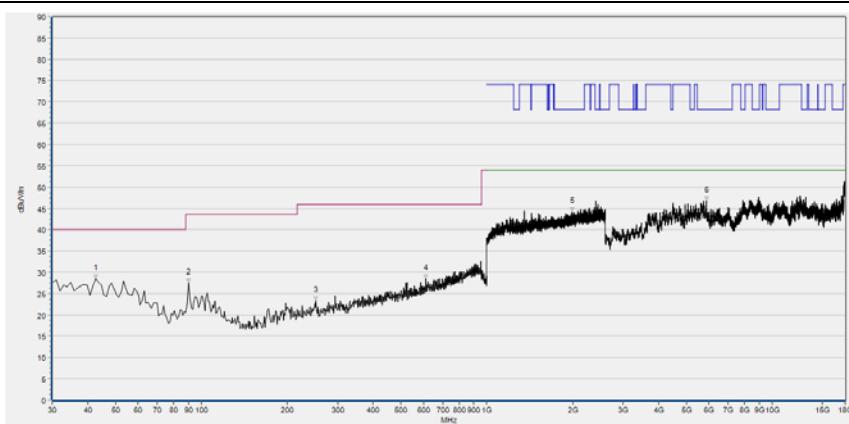
(Antenna Vertical, 30MHz to 18GHz)



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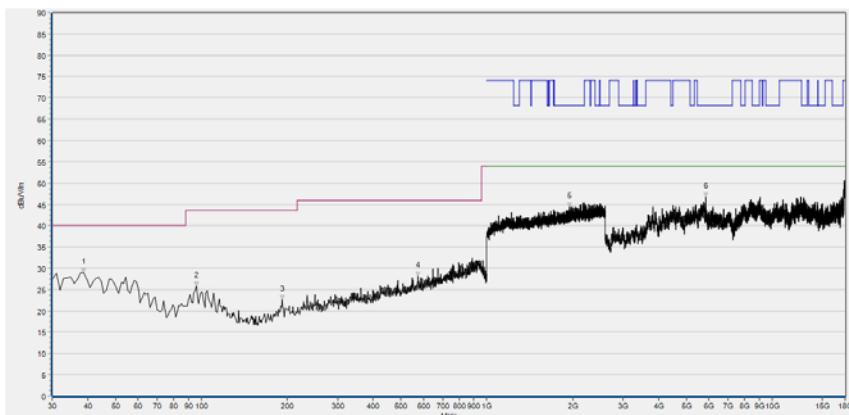
802.11ac (VHT80) Test mode

Plots for Channel = 42



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	28.43	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
90.200	27.51	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
251.381	23.37	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
611.612	28.56	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1992.864	44.28	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS
5868.534	46.71	N/A	N/A	68.23	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

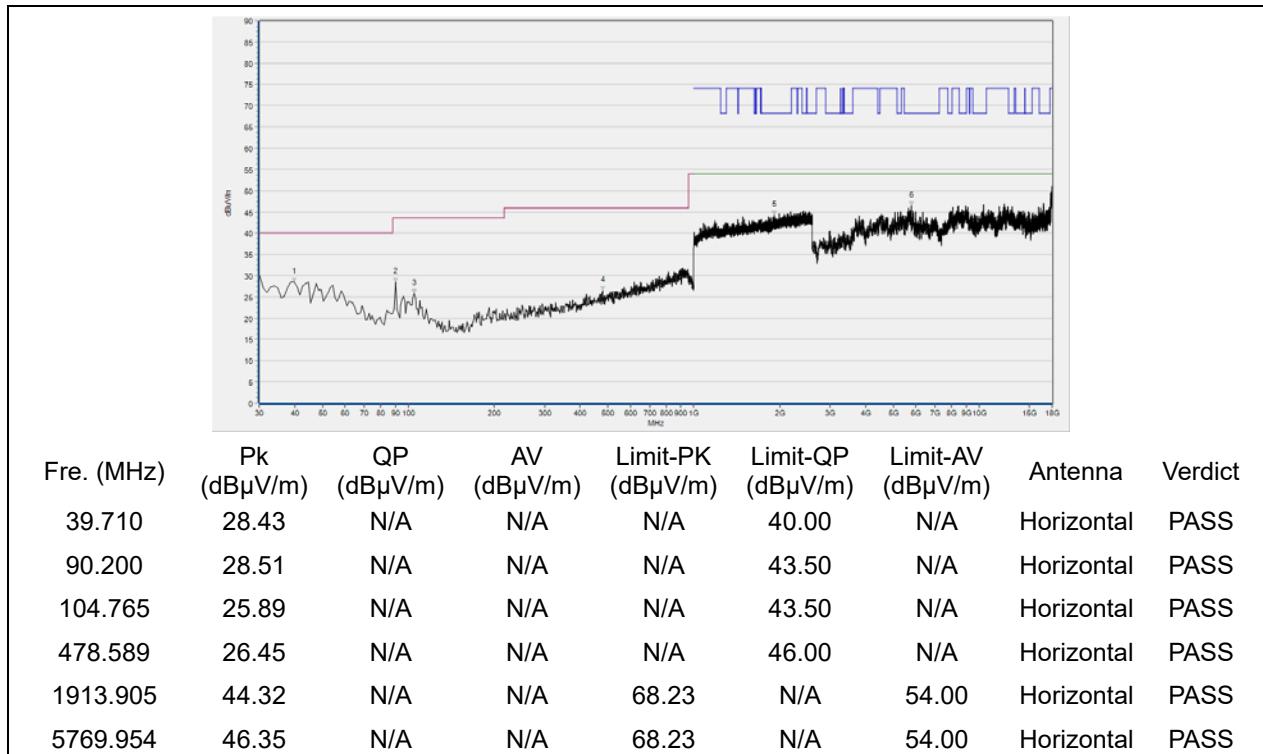


Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
38.739	29.02	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
96.026	25.79	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
192.152	22.64	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
574.715	28.13	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1946.982	44.35	N/A	N/A	68.23	N/A	54.00	Vertical	PASS
5840.808	46.75	N/A	N/A	68.23	N/A	54.00	Vertical	PASS

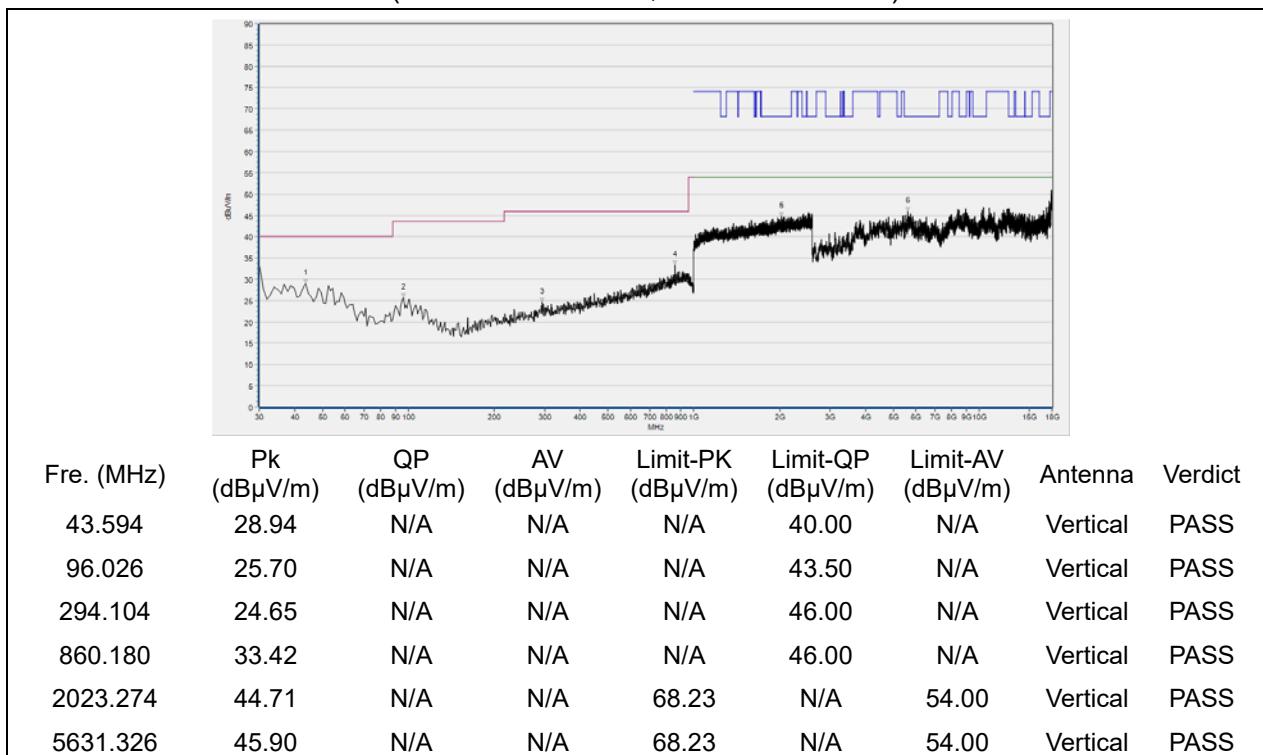
(Antenna Vertical, 30MHz to 18GHz)

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Plot for Channel = 58

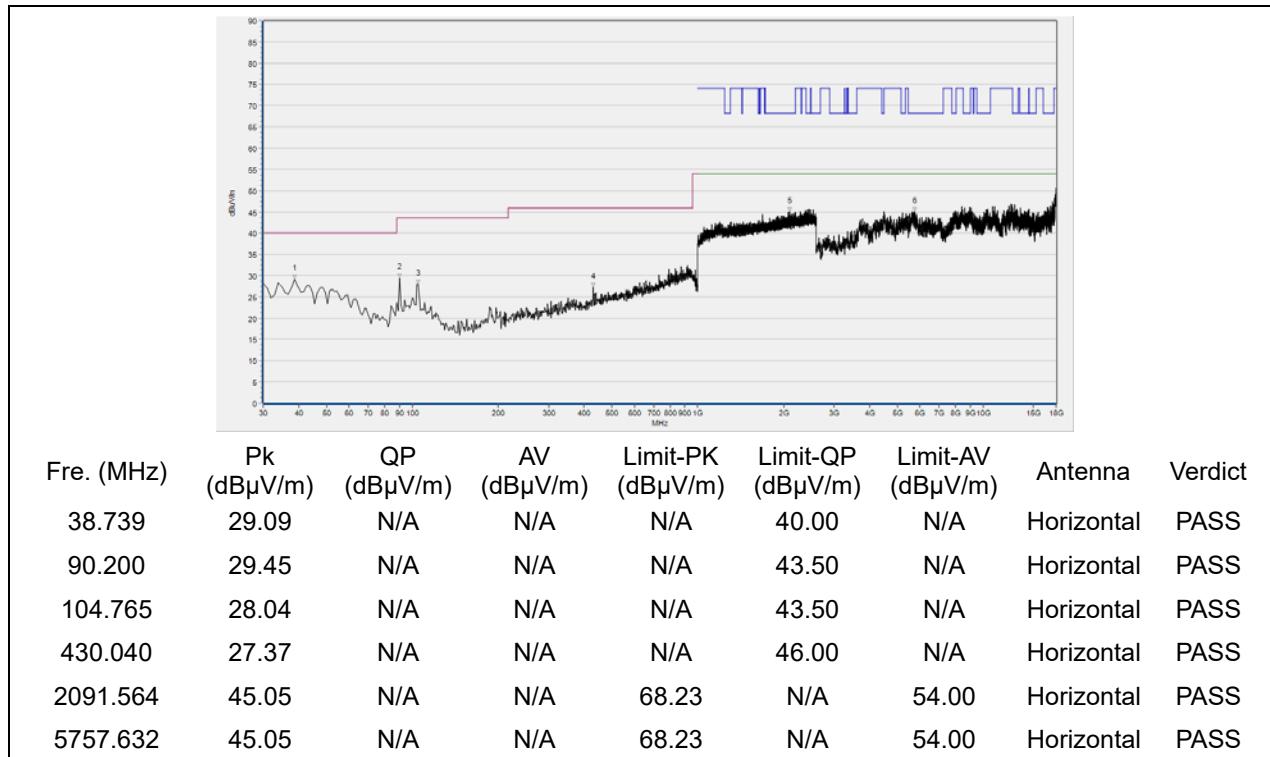


(Antenna Horizontal, 30MHz to 18GHz)

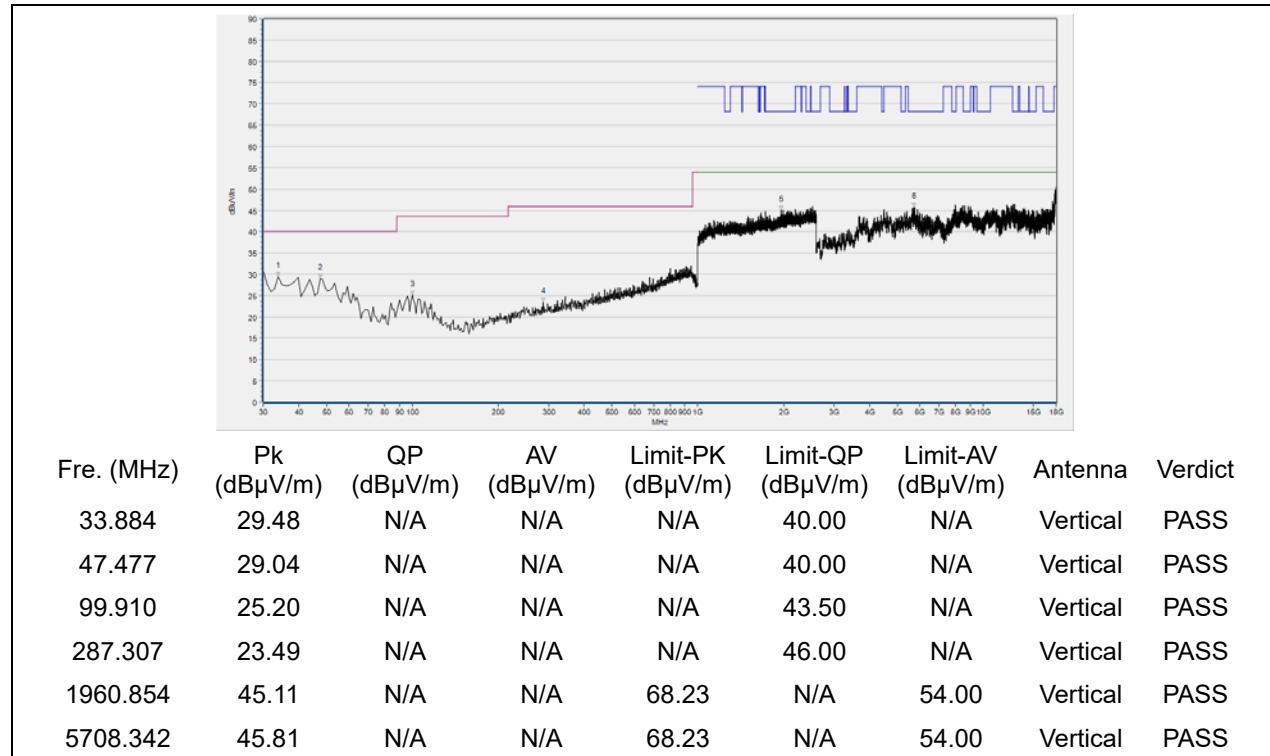


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 106

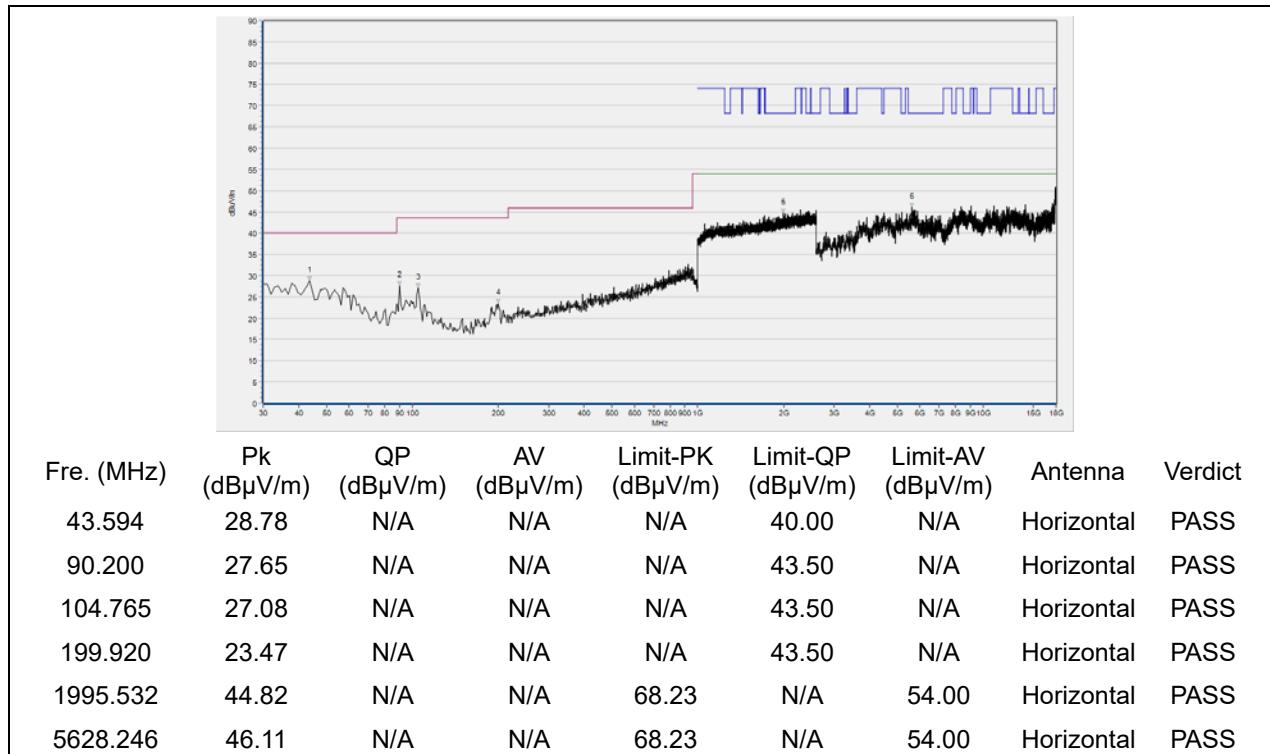


(Antenna Horizontal, 30MHz to 18GHz)

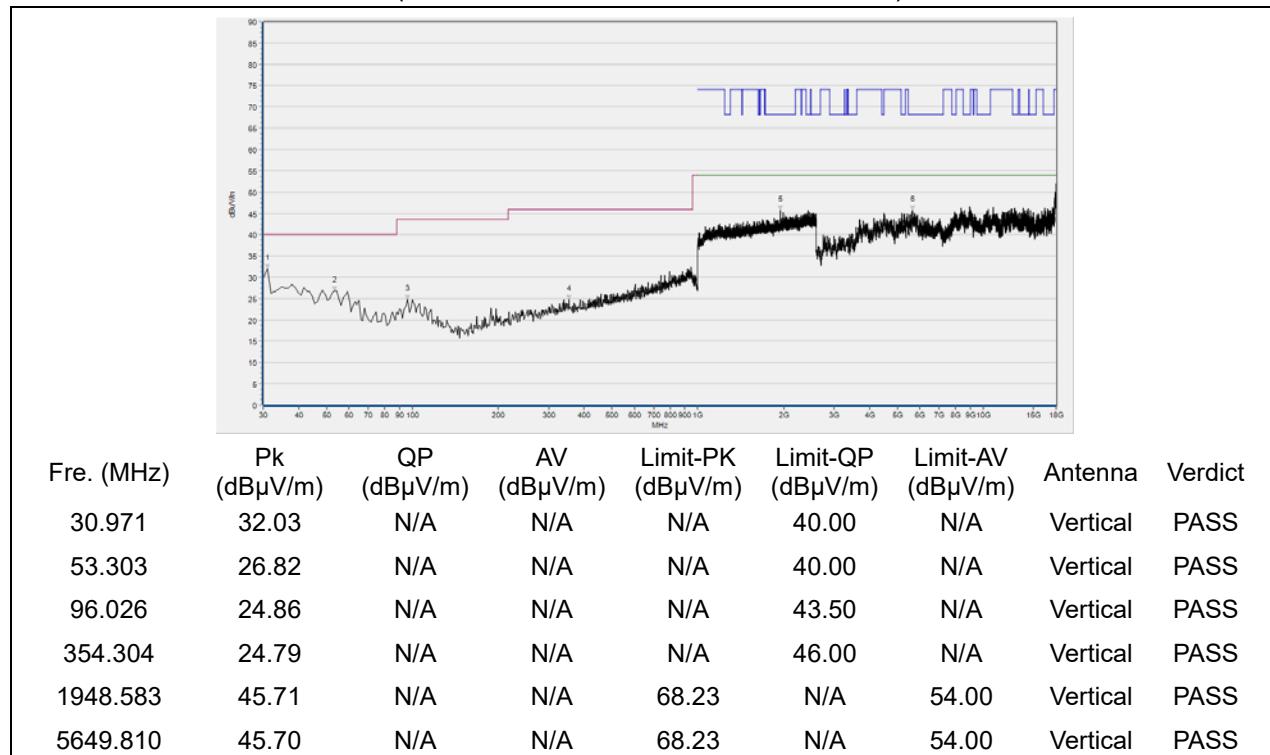


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 122

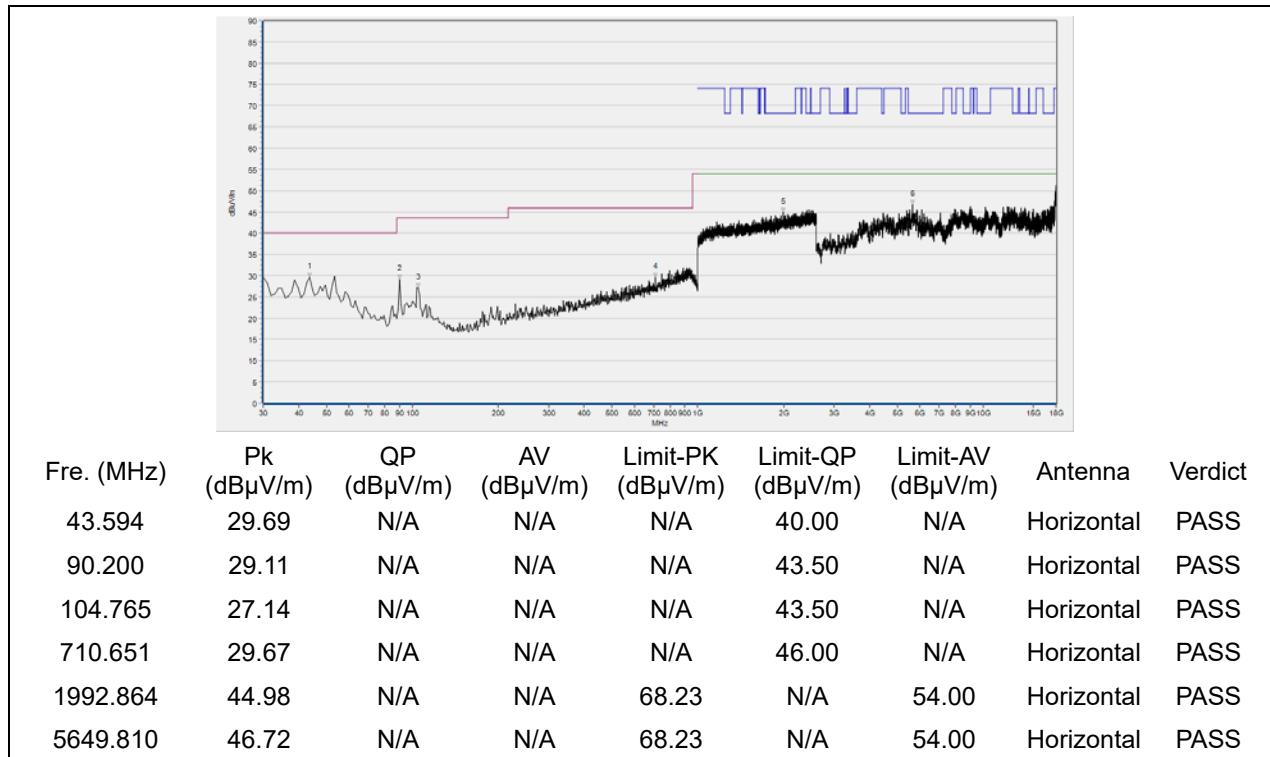


(Antenna Horizontal, 30MHz to 18GHz)

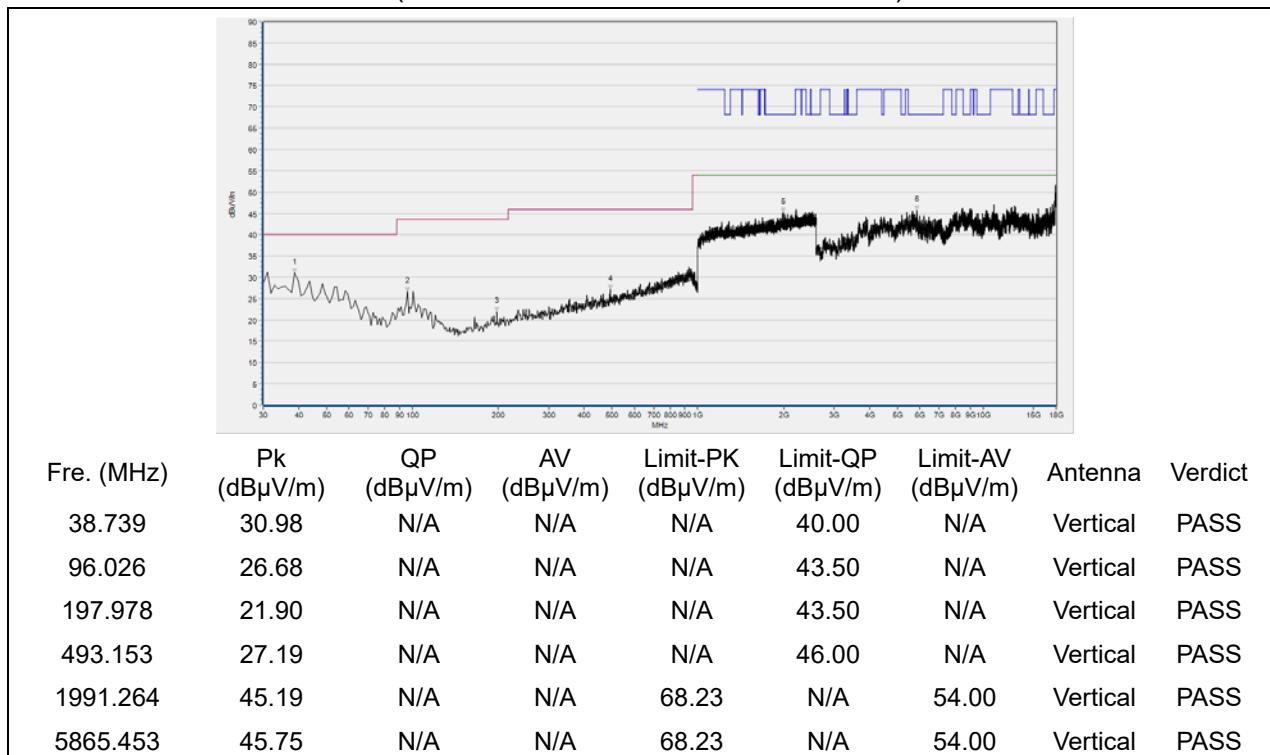


(Antenna Vertical, 30MHz to 18GHz)

Plots for Channel = 138

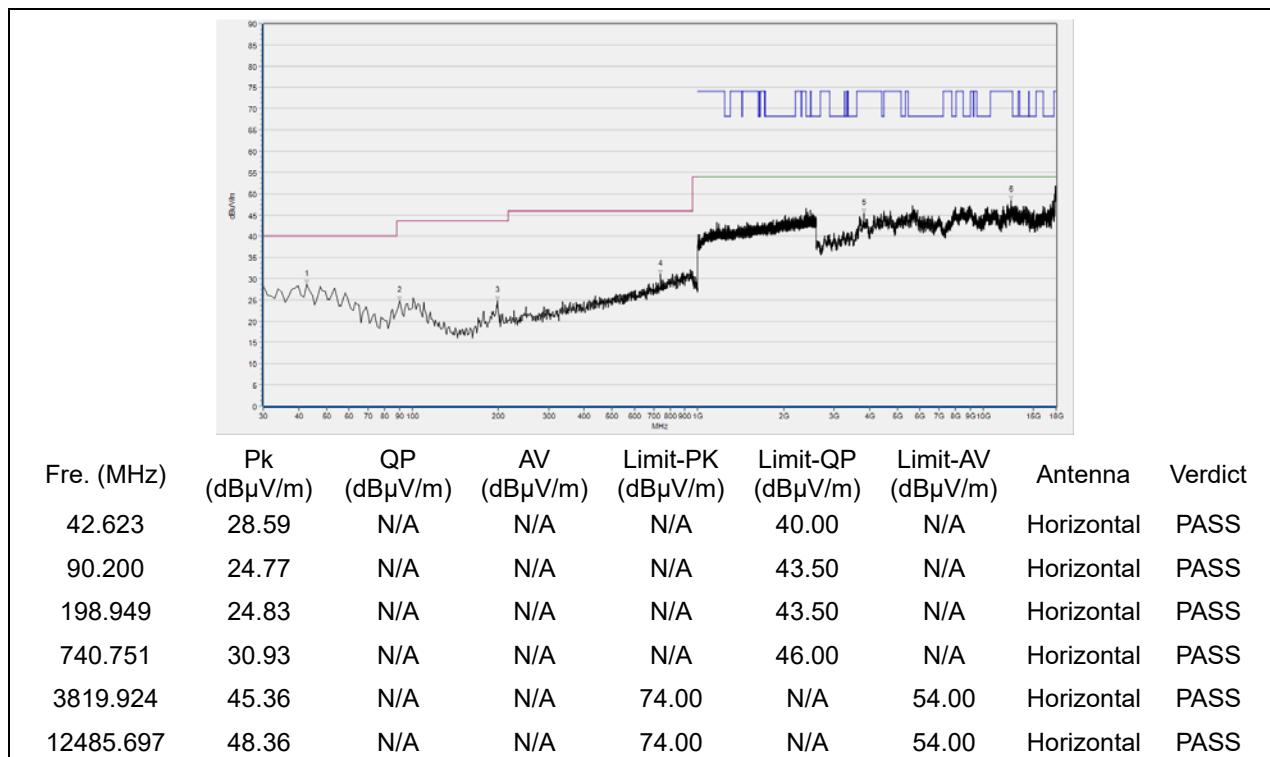


(Antenna Horizontal, 30MHz to 18GHz)

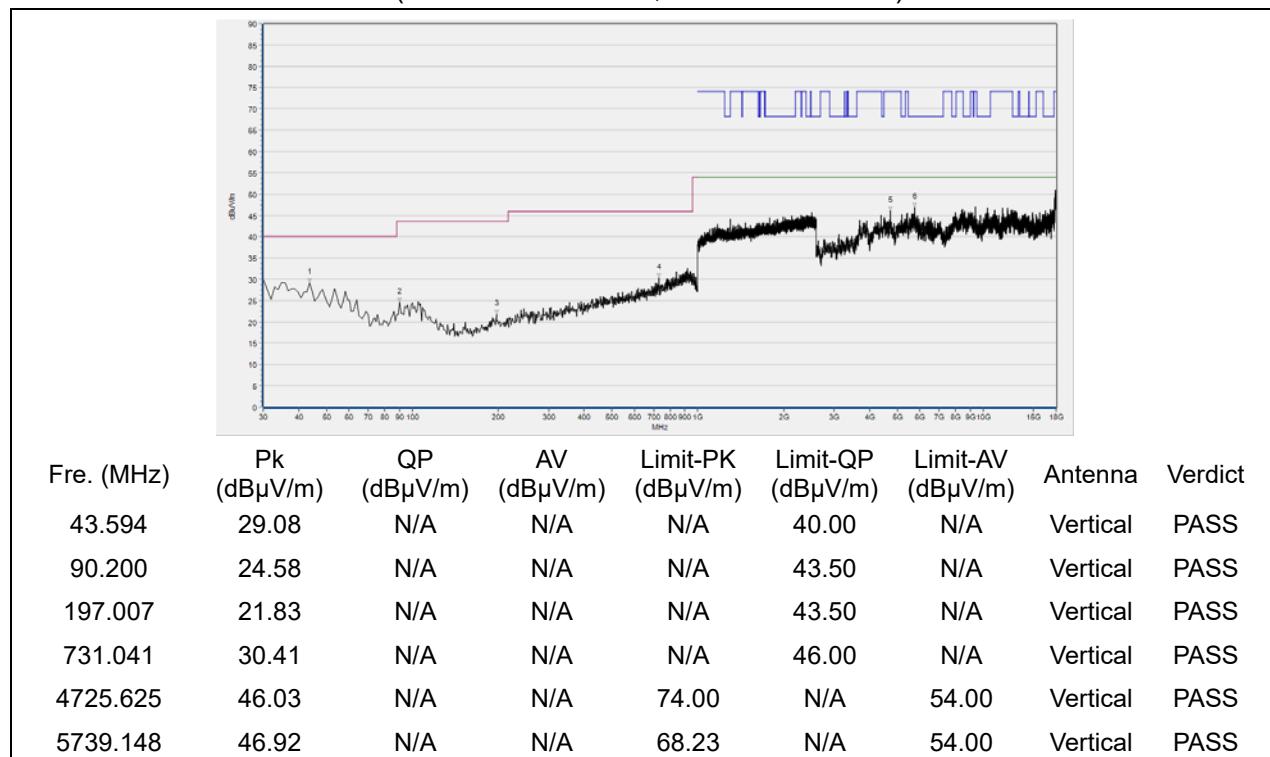


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel = 155



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



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Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Peak Output Power	±2.22dB
Power spectral density (PSD)	±2.22dB
Bandwidth	±5%
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



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4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Attenuator 1	(N/A)	10dB	Resnet	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2019.04.09	2020.04.08
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2019.04.16	2020.04.15
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	YOMA	(N/A)	(N/A)	2019.01.22	2020.01.21
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY56400093	N9038A	KEYSIGHT	2019.05.08	2020.05.09
LISN	812744	NSLK 8127	Schwarzbeck	2019.05.08	2020.05.09
Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2019.05.08	2020.05.09
Coaxial cable(BNC)	CB01	EMC01	Morlab	N/A	N/A

4.3 List of Software Used

Description	Manufacturer	Software Version
Test system	Tonscend	V2.6
Power Panel	Agilent	V3.8
MORLAB EMCR V1.2	MORLAB	V1.0



4.4 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY54130016	N9038A	Agilent	2019.07.26	2020.07.25
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.08	2020.05.09
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.02.15	2020.02.14
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2019.07.26	2020.07.25
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2020.07.25
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.09
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.09
26GHz -40GHz pre-Amplifier	MA05	BBV9721	Rohde& Schwarz	2019.05.08	2020.05.09
Notch Filter	N/A	WRCG-5150-5350	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCG-5470-5725	Wainwright	2019.12.01	2020.11.30
Notch Filter	N/A	WRCG-5725-5850	Wainwright	2019.12.01	2020.11.30



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Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

— END OF REPORT —

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