

ANNEX A: Test Result

There is more than one Adapter/ USB cable, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 4/ USB cables 1) will be recorded in this report.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

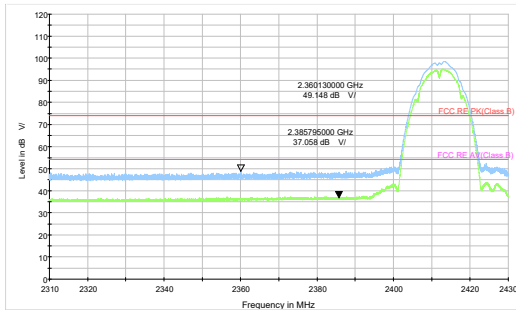
1. Unwanted Emission

1.1. Wi-Fi 2.4GHz

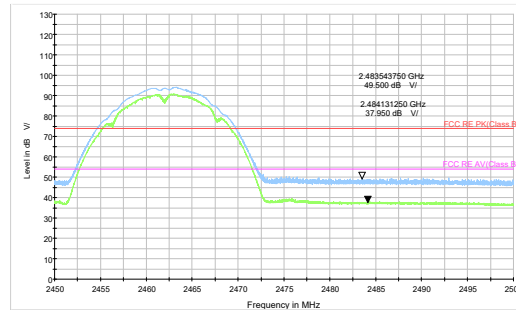
The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means (dB $\mu\text{V/m}$)

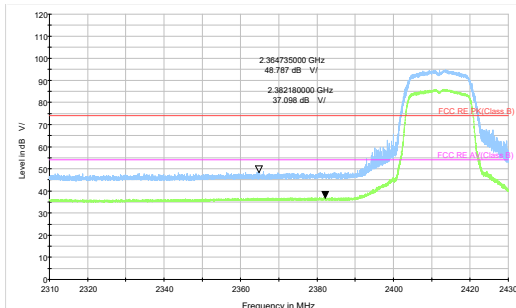
The signal beyond the limit is carrier.



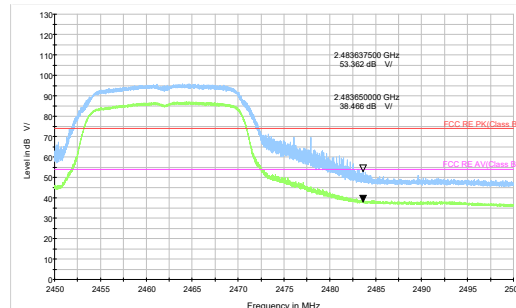
802.11b-Channel 1 Peak+ Average



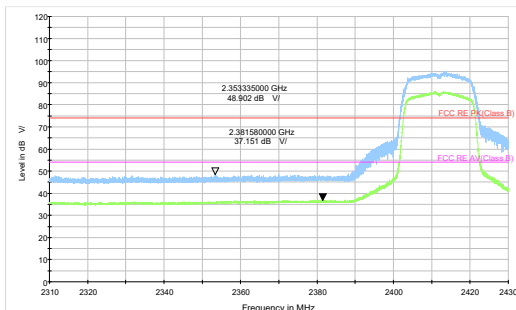
802.11b-Channel 11 Peak+ Average



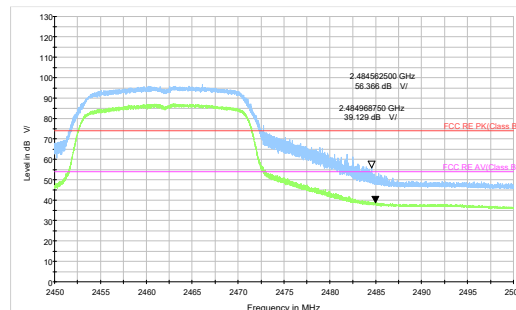
802.11g-Channel 1 Peak+ Average



802.11g-Channel 11 Peak+ Average



802.11n HT20-Channel 1 Peak+ Average



802.11n HT20-Channel 11 Peak+ Average

Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier. The Radiates Emission from 9kHz to 30MHz and 18GHz to 26.5GHz are more than 20dB below the limit are not reported.

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol (dB μ V/m) in the test plot below means (dB μ V/m)**
4. **The following graphs display the maximum values of coaxial and coplanar for 9k-30MHz; horizontal and vertical for above 30MHz by software.**
5. **For below 1GHz**

 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

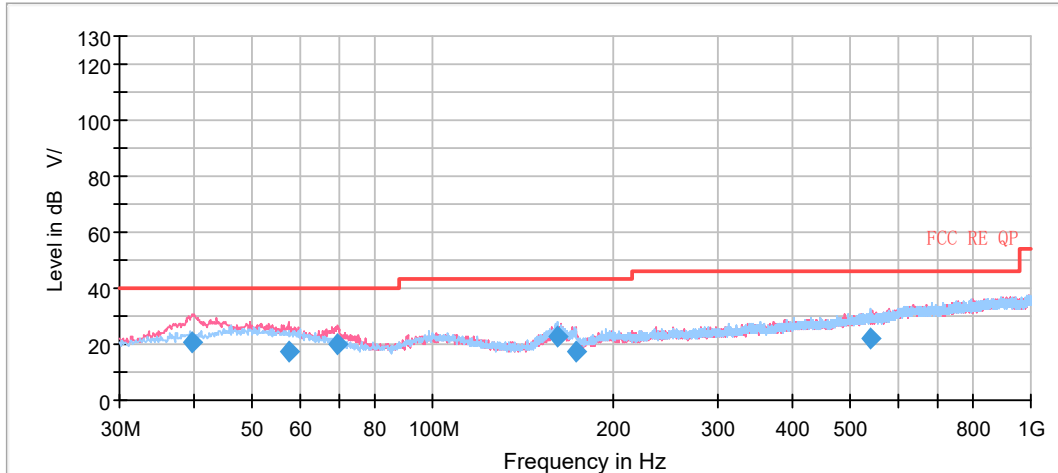
For above 1GHz

 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit

 AVG Level @Spectrum Overview H
  AVG Level @Spectrum Overview V
  AVG Level @Final Results
  AVG Limit

Continuous TX mode:

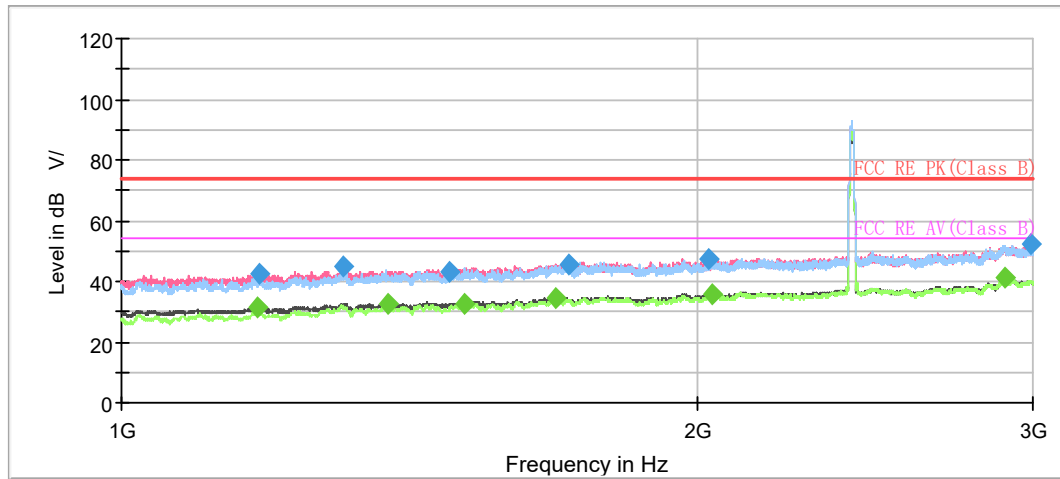
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, the test data of the worst-case condition (802.11b CH6) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.821250	20.71	40.00	19.29	115.0	V	1.0	19.9
57.523750	17.05	40.00	22.95	117.0	V	8.0	20.3
69.648750	20.23	40.00	19.77	101.0	V	204.0	16.7
161.677500	22.68	43.50	20.82	177.0	H	78.0	16.3
173.681250	17.35	43.50	26.15	101.0	V	237.0	19.9
539.856250	22.12	46.00	23.88	125.0	H	124.0	26.1

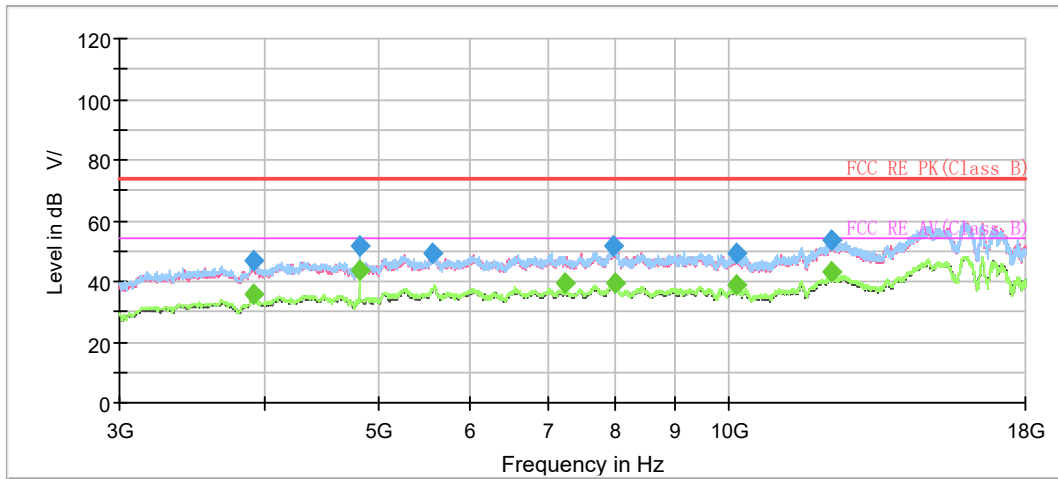
802.11b CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

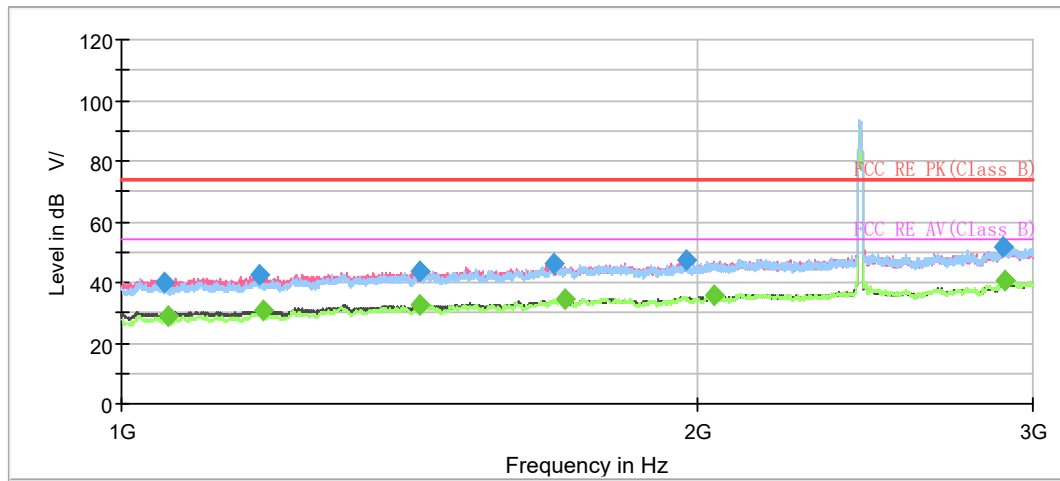
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.000000	---	31.22	54.00	22.78	500.0	200.0	V	110.0	-4.1
1180.250000	42.43	---	74.00	31.57	500.0	200.0	V	0.0	-4.0
1306.250000	44.87	---	74.00	29.13	500.0	200.0	V	318.0	-2.2
1379.500000	---	32.70	54.00	21.30	500.0	200.0	V	246.0	-2.3
1484.750000	42.79	---	74.00	31.21	500.0	200.0	V	147.0	-1.8
1511.250000	---	32.53	54.00	21.47	500.0	200.0	V	0.0	-1.3
1687.500000	---	34.60	54.00	19.40	500.0	200.0	H	66.0	0.4
1714.250000	45.63	---	74.00	28.37	500.0	200.0	V	160.0	0.3
2031.000000	47.31	---	74.00	26.69	500.0	200.0	V	330.0	2.2
2038.000000	---	35.71	54.00	18.29	500.0	200.0	V	354.0	2.4
2899.250000	---	41.15	54.00	12.85	500.0	100.0	H	277.0	8.6
2991.000000	52.03	---	74.00	21.97	500.0	100.0	H	337.0	8.1



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	46.68	---	74.00	27.32	500.0	200.0	V	300.0	3.6
3909.375000	---	35.64	54.00	18.36	500.0	100.0	H	110.0	3.7
4822.500000	---	43.48	54.00	10.52	500.0	100.0	H	68.0	2.7
4822.500000	51.49	---	74.00	22.51	500.0	100.0	H	68.0	2.7
5576.250000	49.53	---	74.00	24.47	500.0	200.0	H	154.0	7.3
7237.500000	---	39.36	54.00	14.64	500.0	200.0	V	83.0	7.0
7978.125000	51.51	---	74.00	22.49	500.0	200.0	V	328.0	9.9
7996.875000	---	39.62	54.00	14.38	500.0	200.0	H	0.0	9.9
10155.000000	49.40	---	74.00	24.60	500.0	100.0	H	151.0	9.3
10155.000000	---	38.51	54.00	15.49	500.0	100.0	H	151.0	9.3
12273.750000	53.84	---	74.00	20.16	500.0	100.0	H	96.0	14.6
12279.375000	---	42.82	54.00	11.18	500.0	100.0	H	356.0	14.5

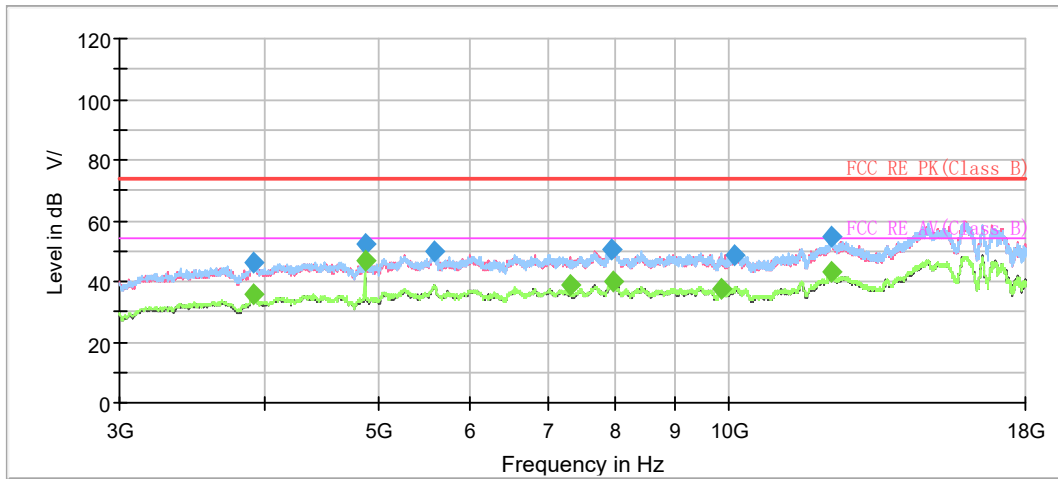
802.11b CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

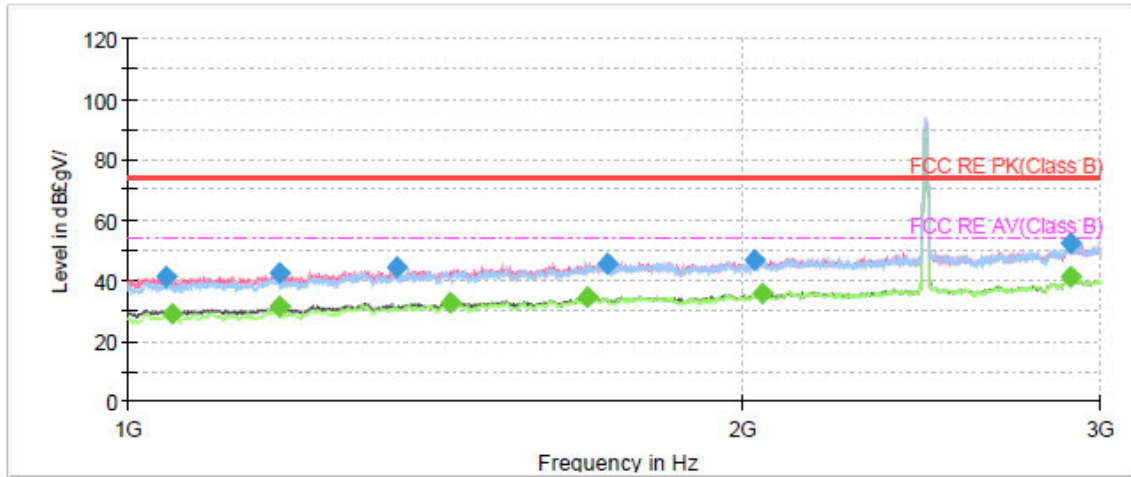
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1052.750000	39.79	---	74.00	34.21	500.0	200.0	V	310.0	-6.2
1057.750000	---	28.98	54.00	25.02	500.0	200.0	V	14.0	-6.0
1180.500000	42.17	---	74.00	31.83	500.0	200.0	V	180.0	-4.0
1185.250000	---	30.92	54.00	23.08	500.0	200.0	V	137.0	-3.9
1431.500000	43.54	---	74.00	30.46	500.0	100.0	V	0.0	-1.9
1432.750000	---	32.44	54.00	21.56	500.0	200.0	V	75.0	-1.9
1685.250000	45.90	---	74.00	28.10	500.0	200.0	H	78.0	0.4
1708.500000	---	34.34	54.00	19.66	500.0	200.0	V	0.0	0.5
1973.750000	47.10	---	74.00	26.90	500.0	200.0	V	227.0	2.1
2044.000000	---	35.39	54.00	18.61	500.0	200.0	H	43.0	2.5
2893.250000	51.85	---	74.00	22.15	500.0	100.0	H	132.0	8.1
2900.000000	---	40.85	54.00	13.15	500.0	100.0	H	204.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	---	35.64	54.00	18.36	500.0	100.0	H	125.0	3.7
3913.125000	46.34	---	74.00	27.66	500.0	200.0	V	0.0	3.4
4873.125000	---	46.67	54.00	7.33	500.0	100.0	H	68.0	3.1
4873.125000	52.20	---	74.00	21.80	500.0	100.0	H	68.0	3.1
5600.625000	49.63	---	74.00	24.37	500.0	100.0	V	76.0	7.6
7312.500000	---	38.93	54.00	15.07	500.0	200.0	V	80.0	6.0
7940.625000	50.32	---	74.00	23.68	500.0	200.0	H	21.0	9.9
7974.375000	---	39.83	54.00	14.17	500.0	100.0	H	125.0	9.9
9881.250000	---	37.51	54.00	16.49	500.0	100.0	V	320.0	9.1
10138.125000	48.67	---	74.00	25.33	500.0	100.0	V	103.0	9.0
12279.375000	54.72	---	74.00	19.28	500.0	100.0	H	289.0	14.5
12283.125000	---	43.35	54.00	10.65	500.0	100.0	V	117.0	14.5

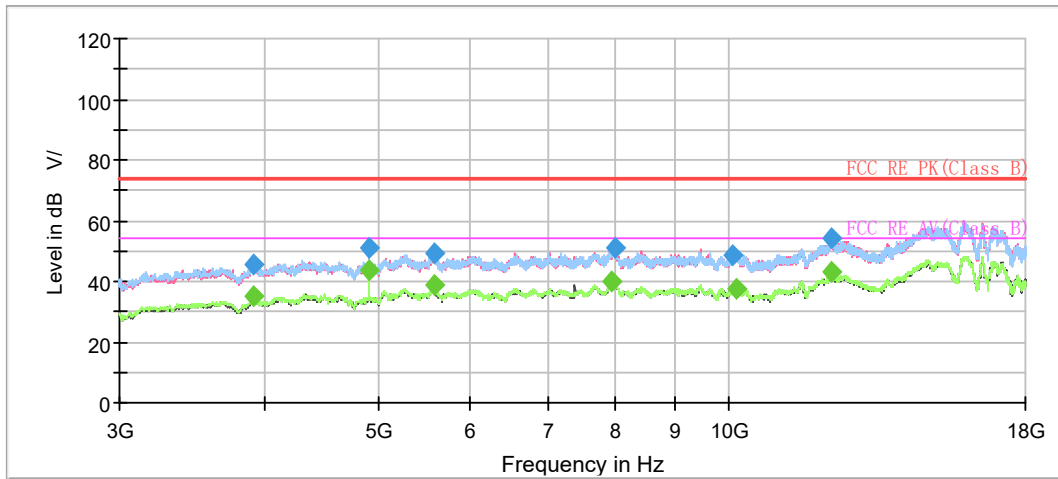
802.11b CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

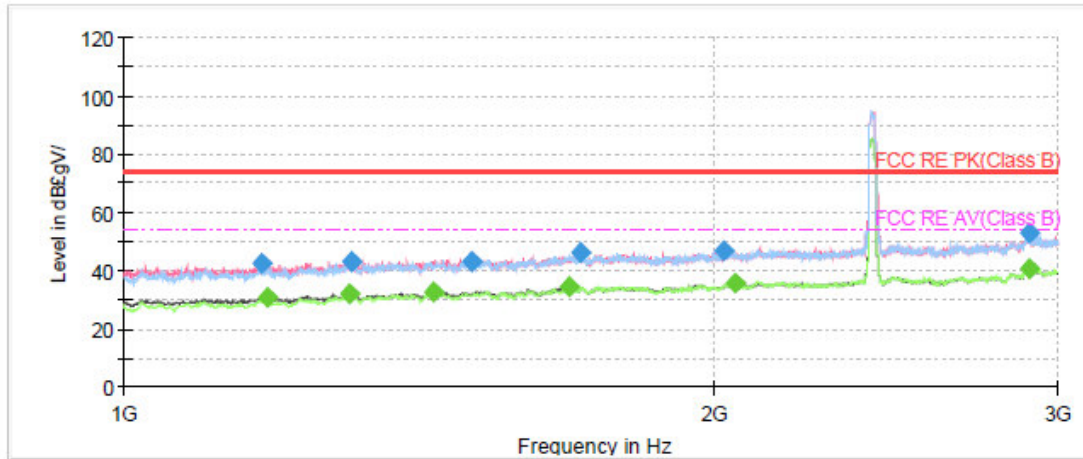
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1044.750000	41.36	---	74.00	32.64	500.0	200.0	V	297.0	-5.8
1050.000000	---	29.17	54.00	24.83	500.0	200.0	V	261.0	-6.2
1186.250000	42.24	---	74.00	31.76	500.0	200.0	V	0.0	-4.0
1186.750000	---	31.16	54.00	22.84	500.0	200.0	V	248.0	-4.0
1354.000000	44.25	---	74.00	29.75	500.0	200.0	V	356.0	-2.8
1439.500000	---	32.54	54.00	21.46	500.0	200.0	V	0.0	-1.7
1679.000000	---	34.32	54.00	19.68	500.0	200.0	V	101.0	0.4
1717.750000	45.61	---	74.00	28.39	500.0	100.0	H	313.0	0.1
2027.500000	46.83	---	74.00	27.17	500.0	200.0	H	44.0	2.1
2047.500000	---	35.42	54.00	18.58	500.0	100.0	V	75.0	2.6
2898.750000	52.33	---	74.00	21.67	500.0	100.0	H	230.0	8.5
2901.500000	---	40.99	54.00	13.01	500.0	100.0	H	169.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	---	35.27	54.00	18.73	500.0	100.0	H	181.0	3.6
3915.000000	45.78	---	74.00	28.22	500.0	200.0	H	0.0	3.3
4923.750000	---	43.66	54.00	10.35	500.0	100.0	H	123.0	3.0
4923.750000	50.81	---	74.00	23.19	500.0	100.0	H	123.0	3.0
5593.125000	---	38.50	54.00	15.50	500.0	100.0	H	318.0	8.1
5593.125000	49.26	---	74.00	24.74	500.0	200.0	H	347.0	8.1
7953.750000	---	39.75	54.00	14.25	500.0	200.0	H	30.0	9.9
7996.875000	51.10	---	74.00	22.90	500.0	100.0	H	344.0	9.9
10096.875000	48.67	---	74.00	25.33	500.0	100.0	H	0.0	8.5
10173.750000	---	37.80	54.00	16.20	500.0	100.0	V	0.0	9.1
12262.500000	54.01	---	74.00	19.99	500.0	200.0	H	0.0	14.4
12281.250000	---	42.82	54.00	11.18	500.0	100.0	H	12.0	14.5

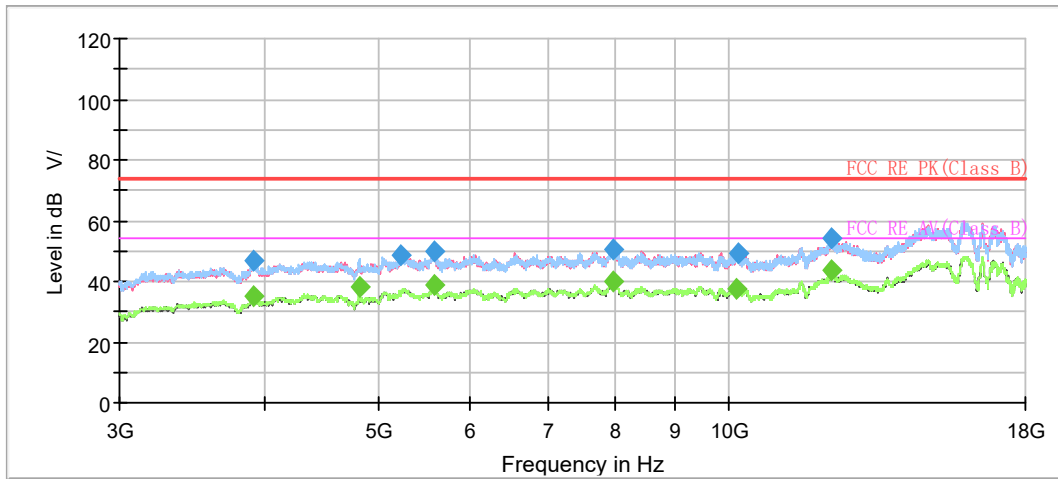
802.11g CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

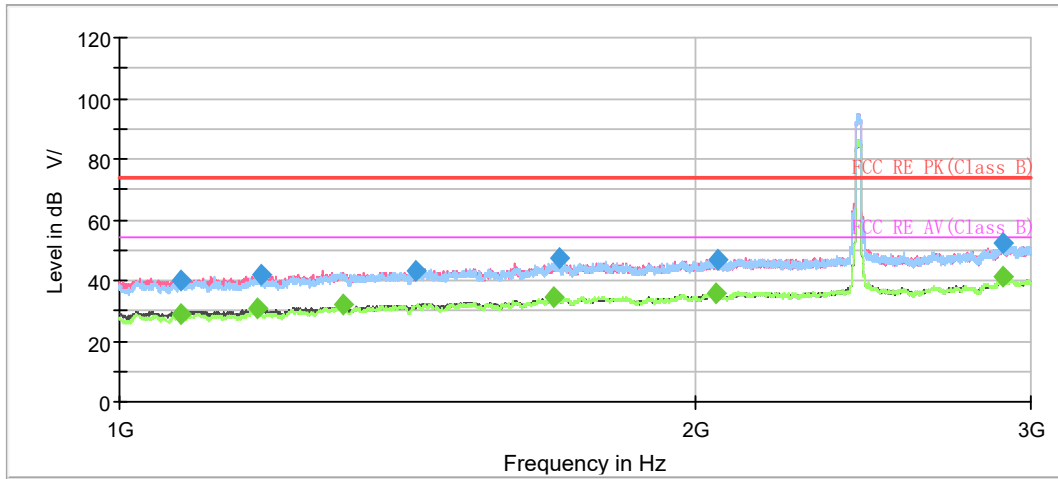
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1175.250000	42.57	---	74.00	31.43	500.0	200.0	V	297.0	-4.2
1183.500000	---	30.77	54.00	23.23	500.0	200.0	V	0.0	-3.9
1303.250000	---	32.24	54.00	21.76	500.0	200.0	H	0.0	-2.5
1305.250000	43.33	---	74.00	30.67	500.0	200.0	H	0.0	-2.3
1440.000000	---	32.31	54.00	21.69	500.0	200.0	V	109.0	-1.7
1504.500000	43.26	---	74.00	30.74	500.0	200.0	V	333.0	-1.5
1688.250000	---	34.20	54.00	19.80	500.0	200.0	H	20.0	0.4
1711.500000	46.34	---	74.00	27.66	500.0	200.0	V	211.0	0.5
2026.500000	46.95	---	74.00	27.05	500.0	200.0	V	236.0	2.1
2053.750000	---	35.63	54.00	18.37	500.0	200.0	V	247.0	2.4
2898.000000	53.17	---	74.00	20.83	500.0	100.0	H	0.0	8.5
2902.000000	---	40.85	54.00	13.15	500.0	100.0	H	137.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3905.625000	---	35.37	54.00	18.63	500.0	100.0	H	287.0	3.5
3911.250000	46.54	---	74.00	27.46	500.0	200.0	H	28.0	3.5
4822.500000	---	38.36	54.00	15.64	500.0	100.0	H	54.0	2.7
5229.375000	48.31	---	74.00	25.69	500.0	100.0	H	328.0	5.4
5583.750000	49.60	---	74.00	24.40	500.0	100.0	V	10.0	7.7
5585.625000	---	38.73	54.00	15.27	500.0	200.0	H	15.0	7.8
7965.000000	---	39.75	54.00	14.25	500.0	100.0	V	0.0	9.9
7981.875000	50.51	---	74.00	23.49	500.0	100.0	H	205.0	9.9
10168.125000	---	37.83	54.00	16.17	500.0	100.0	V	130.0	9.2
10200.000000	49.27	---	74.00	24.73	500.0	100.0	H	1.0	8.7
12273.750000	---	43.40	54.00	10.60	500.0	100.0	V	116.0	14.6
12277.500000	54.17	---	74.00	19.83	500.0	100.0	V	74.0	14.6

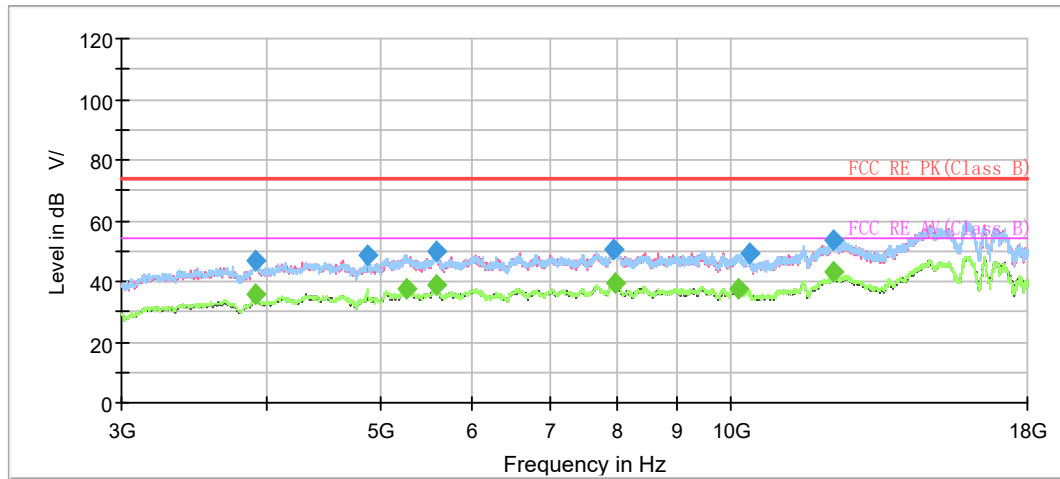
802.11g CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

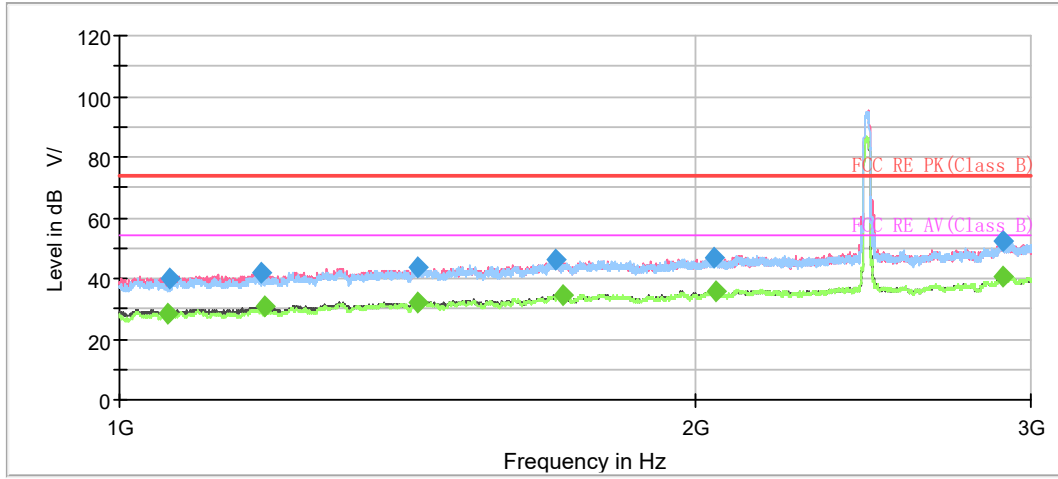
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1076.000000	---	29.08	54.00	24.92	500.0	200.0	V	283.0	-5.5
1077.000000	39.97	---	74.00	34.03	500.0	200.0	H	71.0	-5.5
1181.000000	---	30.47	54.00	23.53	500.0	200.0	V	338.0	-4.0
1187.250000	41.56	---	74.00	32.44	500.0	200.0	V	0.0	-4.0
1308.000000	---	31.99	54.00	22.01	500.0	200.0	V	61.0	-2.0
1430.750000	43.14	---	74.00	30.86	500.0	100.0	V	11.0	-2.0
1688.500000	---	34.35	54.00	19.65	500.0	200.0	H	358.0	0.4
1698.500000	47.48	---	74.00	26.52	500.0	100.0	V	96.0	0.4
2053.000000	---	35.49	54.00	18.51	500.0	200.0	H	71.0	2.4
2056.500000	47.04	---	74.00	26.96	500.0	200.0	H	212.0	2.4
2899.250000	52.31	---	74.00	21.69	500.0	100.0	H	336.0	8.6
2901.000000	---	41.29	54.00	12.71	500.0	100.0	H	0.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	46.71	---	74.00	27.29	500.0	100.0	H	225.0	3.6
3907.500000	---	35.85	54.00	18.15	500.0	200.0	H	133.0	3.6
4878.750000	48.52	---	74.00	25.48	500.0	100.0	H	117.0	3.1
5272.500000	---	37.80	54.00	16.20	500.0	200.0	H	14.0	6.5
5585.625000	---	38.60	54.00	15.40	500.0	200.0	H	284.0	7.8
5593.125000	49.56	---	74.00	24.44	500.0	100.0	V	0.0	8.1
7951.875000	50.69	---	74.00	23.31	500.0	200.0	H	174.0	9.9
7959.375000	---	39.58	54.00	14.42	500.0	200.0	V	0.0	9.9
10170.000000	---	37.80	54.00	16.20	500.0	100.0	V	278.0	9.2
10383.750000	49.09	---	74.00	24.91	500.0	100.0	V	278.0	8.0
12279.375000	---	43.12	54.00	10.88	500.0	100.0	V	349.0	14.5
12288.750000	53.65	---	74.00	20.35	500.0	200.0	H	41.0	14.4

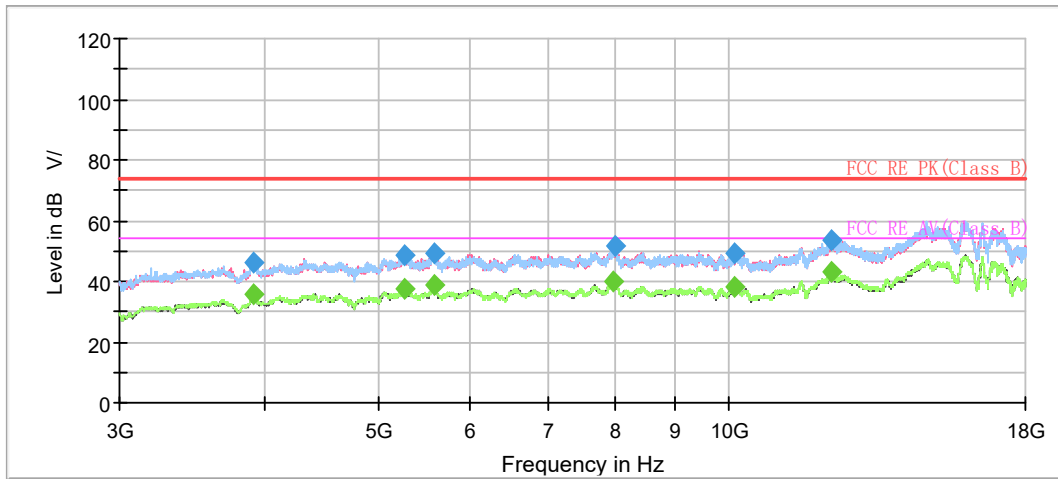
802.11g CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

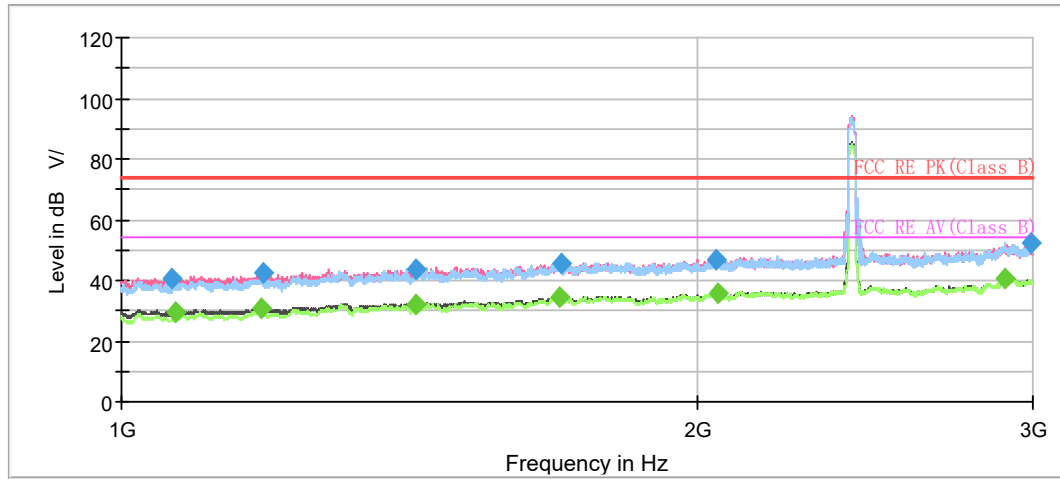
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1060.000000	---	28.58	54.00	25.42	500.0	200.0	V	150.0	-5.9
1061.500000	39.83	---	74.00	34.17	500.0	200.0	V	325.0	-5.9
1186.250000	41.56	---	74.00	32.44	500.0	200.0	V	125.0	-4.0
1190.750000	---	30.55	54.00	23.45	500.0	200.0	V	174.0	-4.2
1431.500000	---	32.28	54.00	21.72	500.0	100.0	H	291.0	-1.9
1431.500000	43.47	---	74.00	30.53	500.0	100.0	V	84.0	-1.9
1692.750000	46.18	---	74.00	27.82	500.0	100.0	V	11.0	0.3
1708.250000	---	34.26	54.00	19.74	500.0	100.0	H	279.0	0.5
2048.250000	47.03	---	74.00	26.97	500.0	100.0	V	1.0	2.5
2052.000000	---	35.48	54.00	18.52	500.0	100.0	V	72.0	2.5
2898.000000	52.30	---	74.00	21.70	500.0	200.0	H	96.0	8.5
2900.000000	---	40.77	54.00	13.23	500.0	200.0	H	131.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	---	35.59	54.00	18.41	500.0	100.0	H	270.0	3.6
3913.125000	46.25	---	74.00	27.75	500.0	100.0	H	0.0	3.4
5266.875000	---	37.38	54.00	16.62	500.0	200.0	H	304.0	6.5
5280.000000	48.49	---	74.00	25.51	500.0	100.0	H	169.0	6.4
5591.250000	---	38.85	54.00	15.15	500.0	200.0	H	24.0	8.1
5593.125000	49.02	---	74.00	24.98	500.0	200.0	H	194.0	8.1
7976.250000	---	39.81	54.00	14.19	500.0	100.0	V	26.0	9.9
8000.625000	51.38	---	74.00	22.62	500.0	100.0	V	209.0	9.9
10143.750000	49.32	---	74.00	24.68	500.0	200.0	V	97.0	9.1
10145.625000	---	38.13	54.00	15.87	500.0	100.0	V	0.0	9.1
12258.750000	53.43	---	74.00	20.57	500.0	200.0	H	0.0	14.3
12262.500000	---	42.99	54.00	11.01	500.0	100.0	H	169.0	14.4

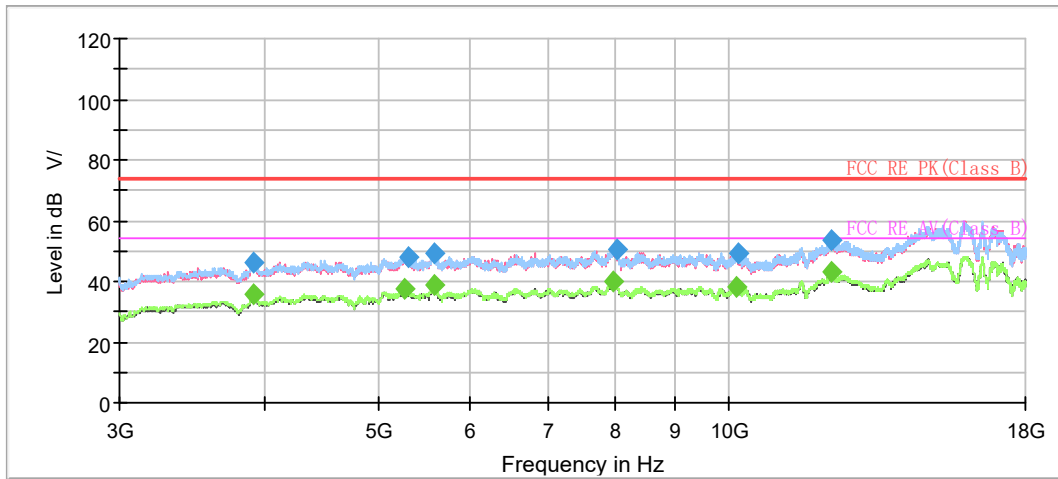
802.11n (HT20) CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

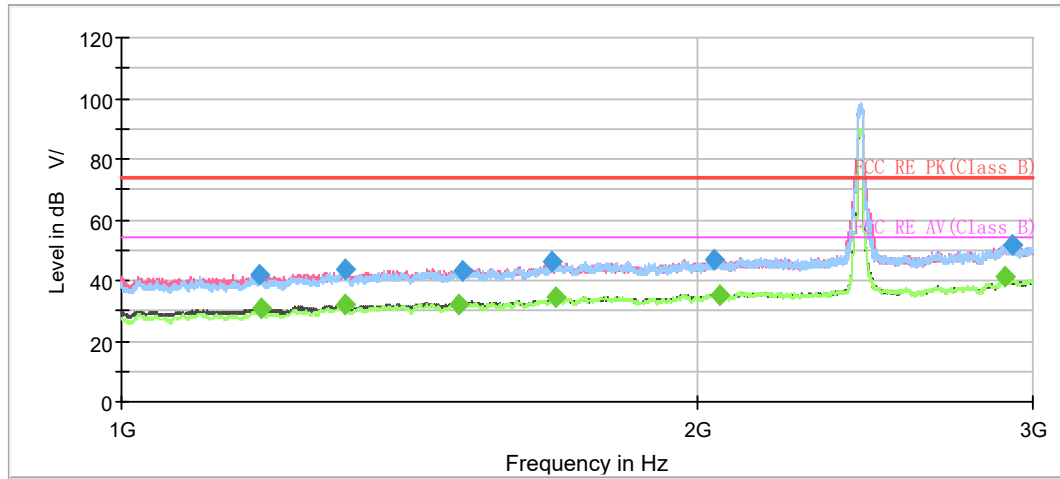
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1061.750000	40.56	---	74.00	33.44	500.0	200.0	V	199.0	-5.9
1066.500000	---	29.55	54.00	24.46	500.0	200.0	V	0.0	-5.7
1183.500000	---	30.72	54.00	23.28	500.0	200.0	V	162.0	-3.9
1186.500000	42.19	---	74.00	31.81	500.0	200.0	V	0.0	-4.0
1426.000000	43.76	---	74.00	30.24	500.0	200.0	H	213.0	-2.2
1427.250000	---	32.19	54.00	21.81	500.0	200.0	V	211.0	-2.2
1697.000000	---	34.40	54.00	19.60	500.0	100.0	V	92.0	0.4
1700.750000	45.59	---	74.00	28.41	500.0	200.0	H	1.0	0.4
2049.500000	47.05	---	74.00	26.95	500.0	200.0	H	58.0	2.5
2053.000000	---	35.66	54.00	18.34	500.0	100.0	V	115.0	2.4
2903.750000	---	40.79	54.00	13.21	500.0	100.0	V	164.0	8.5
2990.000000	52.11	---	74.00	21.89	500.0	200.0	H	10.0	8.2



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	---	35.72	54.00	18.28	500.0	100.0	H	151.0	3.7
3911.250000	46.16	---	74.00	27.84	500.0	200.0	H	184.0	3.5
5270.625000	---	37.61	54.00	16.39	500.0	200.0	H	0.0	6.5
5304.375000	48.17	---	74.00	25.83	500.0	100.0	V	113.0	6.0
5587.500000	49.54	---	74.00	24.46	500.0	100.0	H	164.0	7.9
5595.000000	---	38.98	54.00	15.02	500.0	100.0	H	231.0	8.0
7963.125000	---	39.96	54.00	14.04	500.0	100.0	H	164.0	9.9
8028.750000	50.46	---	74.00	23.54	500.0	100.0	H	110.0	8.8
10166.250000	---	38.01	54.00	15.99	500.0	100.0	V	8.0	9.2
10188.750000	49.04	---	74.00	24.96	500.0	100.0	H	315.0	8.9
12251.250000	---	42.81	54.00	11.19	500.0	100.0	H	245.0	14.1
12275.625000	53.66	---	74.00	20.34	500.0	100.0	H	327.0	14.6

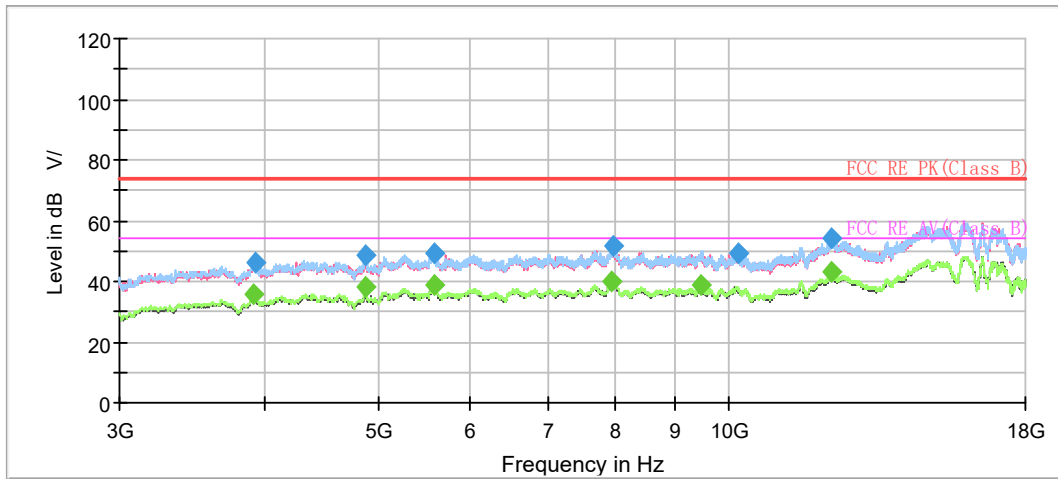
802.11n (HT20) CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

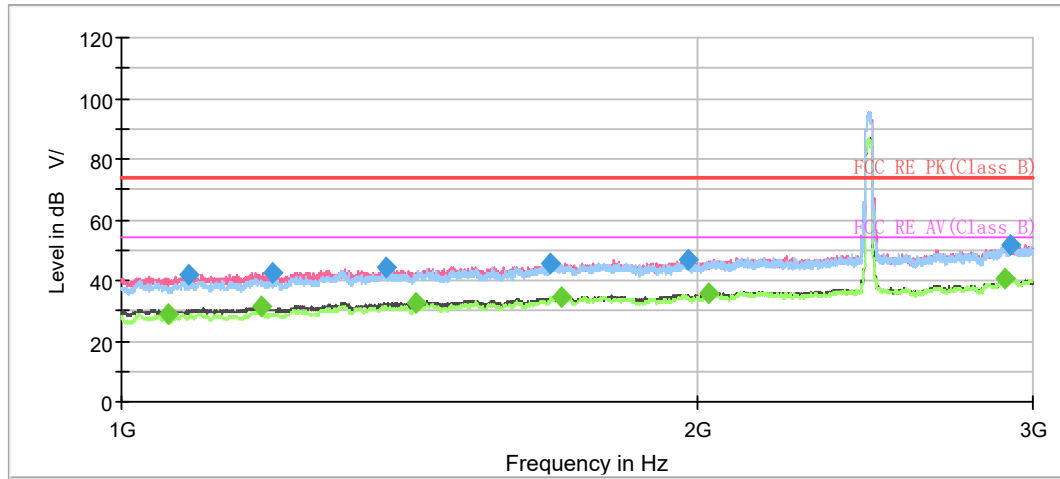
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1180.750000	42.01	---	74.00	31.99	500.0	200.0	V	357.0	-4.0
1183.500000	---	30.86	54.00	23.14	500.0	200.0	V	251.0	-3.9
1309.250000	43.81	---	74.00	30.19	500.0	200.0	V	0.0	-2.2
1309.500000	---	32.26	54.00	21.74	500.0	200.0	V	357.0	-2.2
1501.000000	---	32.13	54.00	21.87	500.0	200.0	V	0.0	-1.5
1507.750000	43.21	---	74.00	30.79	500.0	200.0	V	125.0	-1.4
1681.000000	46.07	---	74.00	27.93	500.0	200.0	V	263.0	0.4
1686.500000	---	34.27	54.00	19.73	500.0	200.0	H	283.0	0.4
2044.750000	46.78	---	74.00	27.22	500.0	200.0	H	0.0	2.5
2057.500000	---	35.37	54.00	18.63	500.0	100.0	H	187.0	2.3
2899.250000	---	41.26	54.00	12.74	500.0	100.0	H	210.0	8.6
2928.500000	51.97	---	74.00	22.03	500.0	200.0	V	148.0	8.1



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	---	35.56	54.00	18.44	500.0	100.0	H	327.0	3.7
3926.250000	46.19	---	74.00	27.81	500.0	100.0	V	275.0	2.6
4878.750000	---	38.32	54.00	15.68	500.0	100.0	H	123.0	3.1
4878.750000	48.88	---	74.00	25.12	500.0	100.0	H	123.0	3.1
5593.125000	---	38.92	54.00	15.08	500.0	100.0	H	93.0	8.1
5596.875000	49.08	---	74.00	24.92	500.0	100.0	V	0.0	7.9
7942.500000	---	39.72	54.00	14.28	500.0	100.0	H	288.0	9.9
7963.125000	51.95	---	74.00	22.05	500.0	100.0	H	313.0	9.9
9474.375000	---	38.59	54.00	15.41	500.0	100.0	V	0.0	9.5
10188.750000	49.39	---	74.00	24.61	500.0	100.0	H	301.0	8.9
12273.750000	54.20	---	74.00	19.80	500.0	100.0	V	132.0	14.6
12283.125000	---	42.94	54.00	11.06	500.0	100.0	H	275.0	14.5

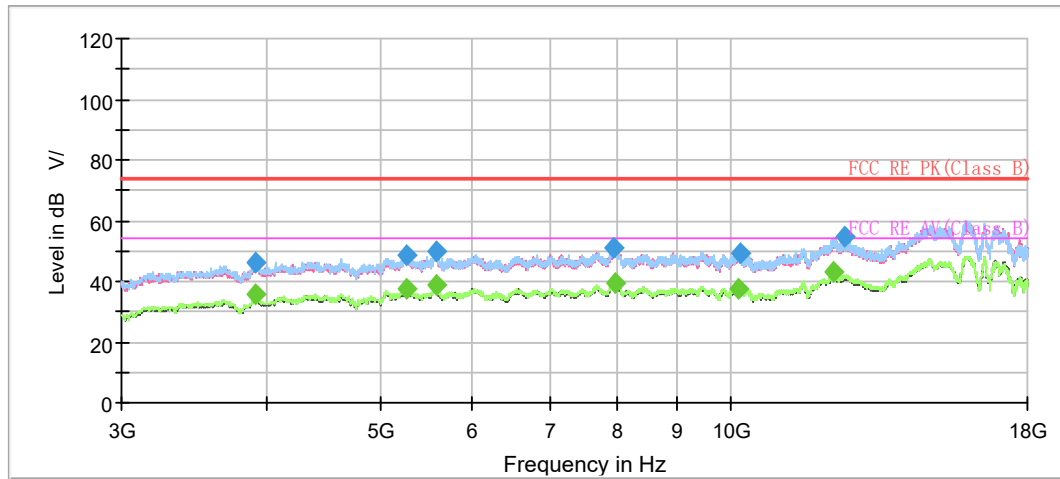
802.11n (HT20) CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1058.500000	---	29.16	54.00	24.84	500.0	200.0	V	308.0	-6.0
1085.000000	41.88	---	74.00	32.12	500.0	100.0	V	286.0	-5.5
1183.000000	---	31.28	54.00	22.72	500.0	200.0	V	356.0	-3.9
1200.500000	42.39	---	74.00	31.61	500.0	200.0	V	356.0	-4.5
1374.750000	44.26	---	74.00	29.74	500.0	200.0	V	186.0	-2.3
1426.250000	---	32.60	54.00	21.40	500.0	200.0	V	13.0	-2.2
1675.750000	45.49	---	74.00	28.51	500.0	200.0	V	356.0	0.4
1700.750000	---	34.56	54.00	19.44	500.0	200.0	V	236.0	0.4
1980.500000	47.00	---	74.00	27.00	500.0	200.0	V	333.0	1.8
2031.500000	---	35.74	54.00	18.26	500.0	200.0	V	175.0	2.2
2899.250000	---	40.91	54.00	13.09	500.0	100.0	H	122.0	8.6
2922.250000	51.75	---	74.00	22.25	500.0	200.0	V	345.0	8.2



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	46.42	---	74.00	27.58	500.0	200.0	V	237.0	3.6
3909.375000	---	35.57	54.00	18.43	500.0	200.0	H	0.0	3.7
5268.750000	48.47	---	74.00	25.54	500.0	100.0	H	297.0	6.6
5276.250000	---	37.45	54.00	16.55	500.0	100.0	H	337.0	6.4
5595.000000	---	38.67	54.00	15.33	500.0	100.0	H	189.0	8.0
5596.875000	50.06	---	74.00	23.94	500.0	200.0	H	133.0	7.9
7925.625000	51.01	---	74.00	22.99	500.0	100.0	H	297.0	9.9
7968.750000	---	39.55	54.00	14.45	500.0	100.0	H	95.0	9.9
10147.500000	---	37.79	54.00	16.21	500.0	100.0	V	2.0	9.2
10188.750000	49.00	---	74.00	25.00	500.0	100.0	V	233.0	8.9
12273.750000	---	42.84	54.00	11.16	500.0	100.0	H	297.0	14.6
12556.875000	54.49	---	74.00	19.51	500.0	100.0	H	189.0	13.6

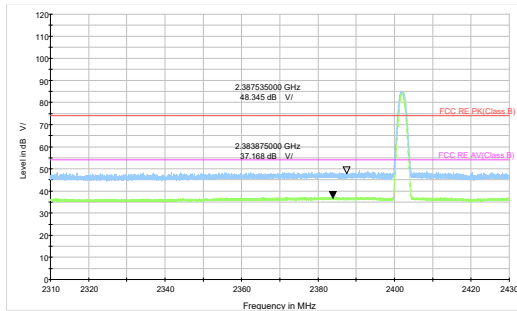
1.2. Bluetooth LE

The following graphs display the maximum values of horizontal and vertical by software. Blue trace uses the peak detection, Green trace uses the average detection.

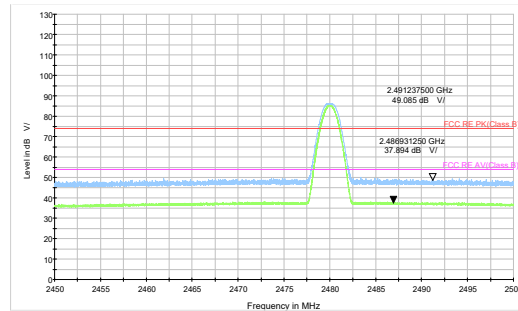
A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)

The signal beyond the limit is carrier.

After the pretest, Bluetooth LE(1M) was selected as the worst Mode for Bluetooth LE.



Bluetooth LE Channel 0 Peak+ Average



Bluetooth LE Channel 39 Peak+Average

Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier. The Radiates Emission from 9kHz to 30MHz and 18GHz to 26.5GHz are more than 20dB below the limit are not reported.

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)**
4. **The following graphs display the maximum values of coaxial and coplanar for 9k-30MHz; horizontal and vertical for above 30MHz by software.**
5. **For below 1GHz**

 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

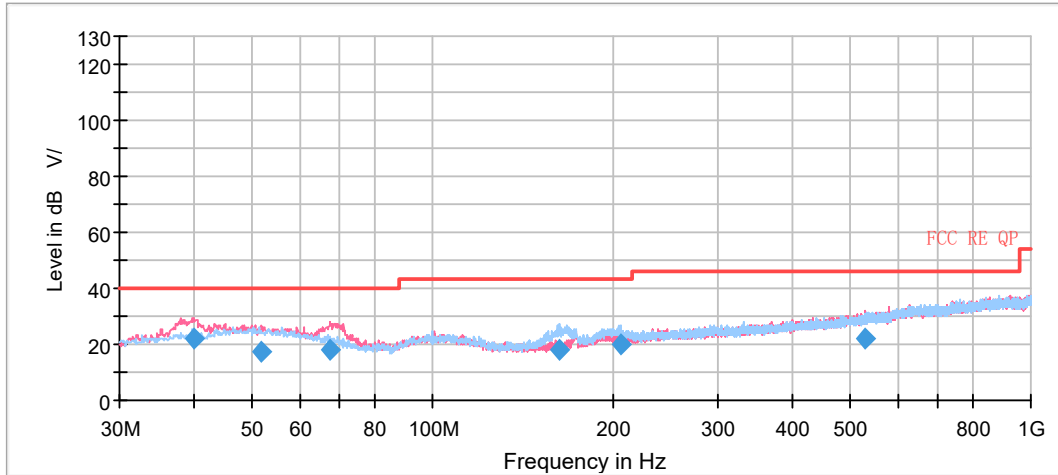
For above 1GHz

 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit
 AVG Level @Spectrum Overview H
  AVG Level @Spectrum Overview V
  AVG Level @Final Results
  AVG Limit

After the pretest, Bluetooth LE was selected as the worst Mode for Bluetooth LE.

Continuous TX mode:

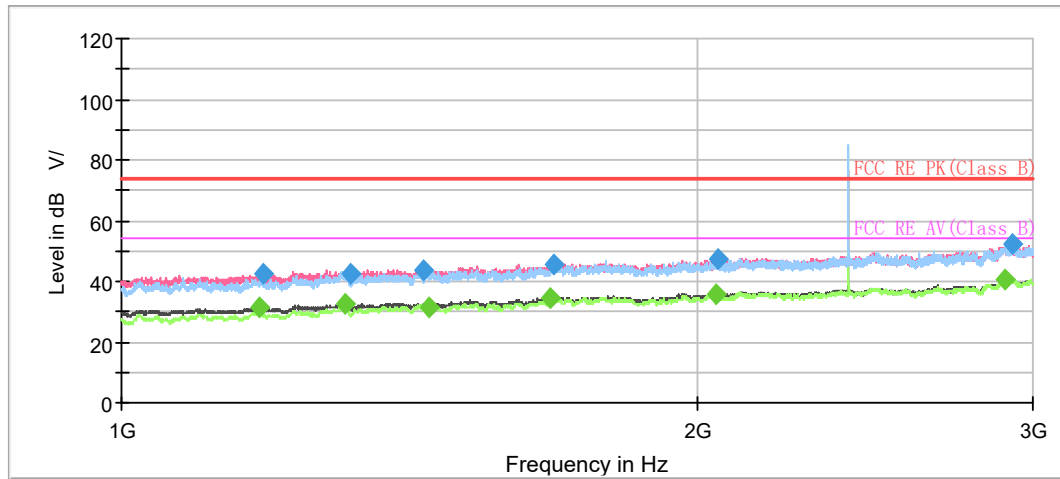
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 19) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.942500	21.69	40.00	18.31	112.0	V	0.0	19.9
51.825000	17.27	40.00	22.73	105.0	V	340.0	21.1
67.466250	18.27	40.00	21.73	107.0	V	0.0	17.4
162.890000	18.07	43.50	25.43	188.0	H	268.0	16.4
206.782500	19.71	43.50	23.79	121.0	H	236.0	18.6
527.973750	22.14	46.00	23.86	100.0	V	155.0	26.0

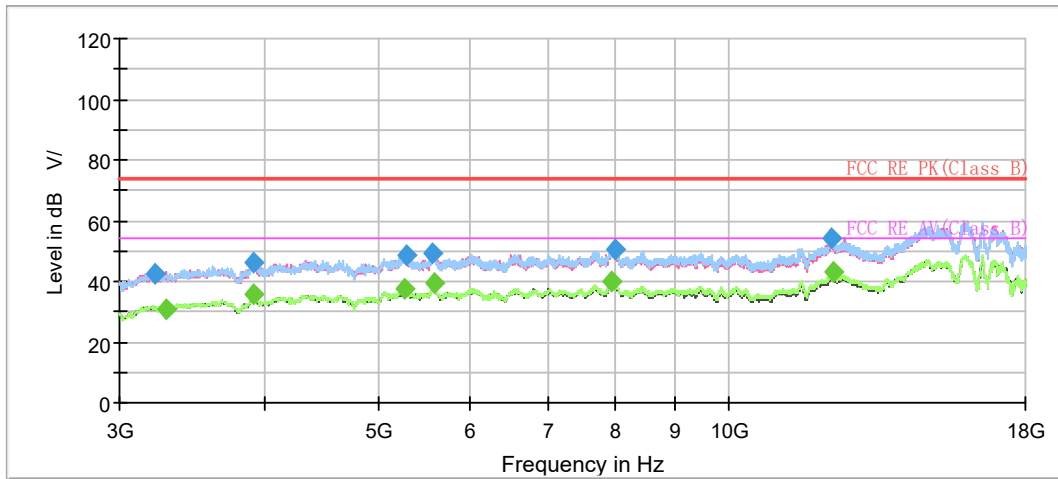
Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

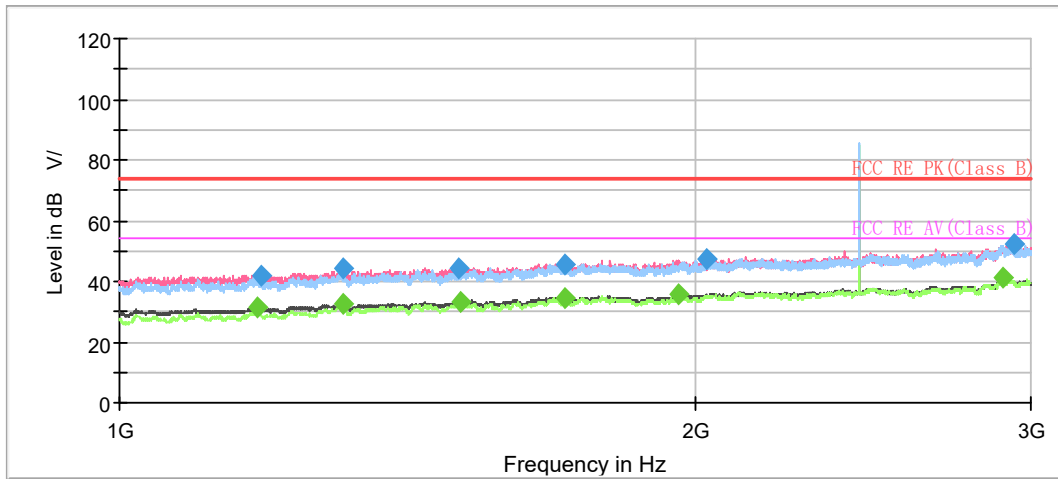
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1181.000000	---	31.23	54.00	22.77	500.0	200.0	V	158.0	-4.0
1187.500000	42.33	---	74.00	31.67	500.0	100.0	V	21.0	-4.1
1310.250000	---	32.75	54.00	21.25	500.0	200.0	V	122.0	-2.3
1317.750000	42.28	---	74.00	31.72	500.0	200.0	V	0.0	-3.2
1440.250000	43.92	---	74.00	30.08	500.0	200.0	V	0.0	-1.7
1448.500000	---	31.46	54.00	22.54	500.0	100.0	H	216.0	-1.6
1678.000000	---	34.67	54.00	19.33	500.0	200.0	V	279.0	0.4
1685.250000	45.74	---	74.00	28.26	500.0	100.0	H	240.0	0.4
2045.500000	---	35.82	54.00	18.18	500.0	200.0	V	290.0	2.5
2053.500000	47.32	---	74.00	26.68	500.0	100.0	H	358.0	2.4
2900.750000	---	40.86	54.00	13.14	500.0	100.0	H	1.0	8.6
2928.000000	52.52	---	74.00	21.48	500.0	100.0	H	276.0	8.1



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3221.250000	42.52	---	74.00	31.48	500.0	100.0	V	152.0	-1.1
3294.375000	---	30.90	54.00	23.10	500.0	100.0	V	178.0	-0.8
3905.625000	46.36	---	74.00	27.64	500.0	100.0	H	239.0	3.5
3913.125000	---	35.46	54.00	18.54	500.0	100.0	H	34.0	3.4
5268.750000	---	37.48	54.00	16.52	500.0	200.0	V	186.0	6.6
5285.625000	48.53	---	74.00	25.47	500.0	100.0	H	130.0	6.3
5580.000000	48.94	---	74.00	25.06	500.0	200.0	V	348.0	7.5
5593.125000	---	39.35	54.00	14.65	500.0	100.0	H	0.0	8.1
7953.750000	---	39.77	54.00	14.23	500.0	100.0	H	48.0	9.9
8000.625000	50.56	---	74.00	23.44	500.0	100.0	H	21.0	9.9
12255.000000	53.99	---	74.00	20.01	500.0	100.0	V	0.0	14.2
12292.500000	---	42.81	54.00	11.19	500.0	100.0	H	62.0	14.3

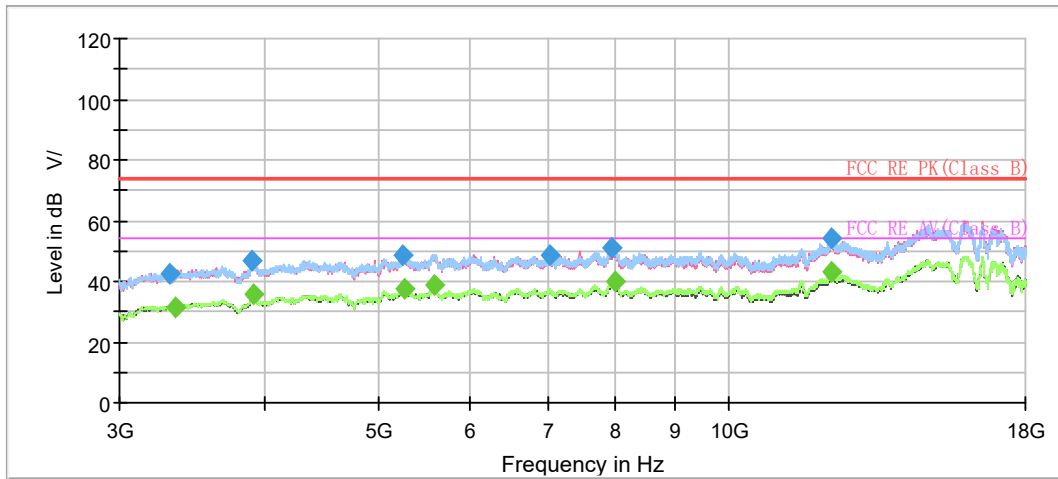
Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

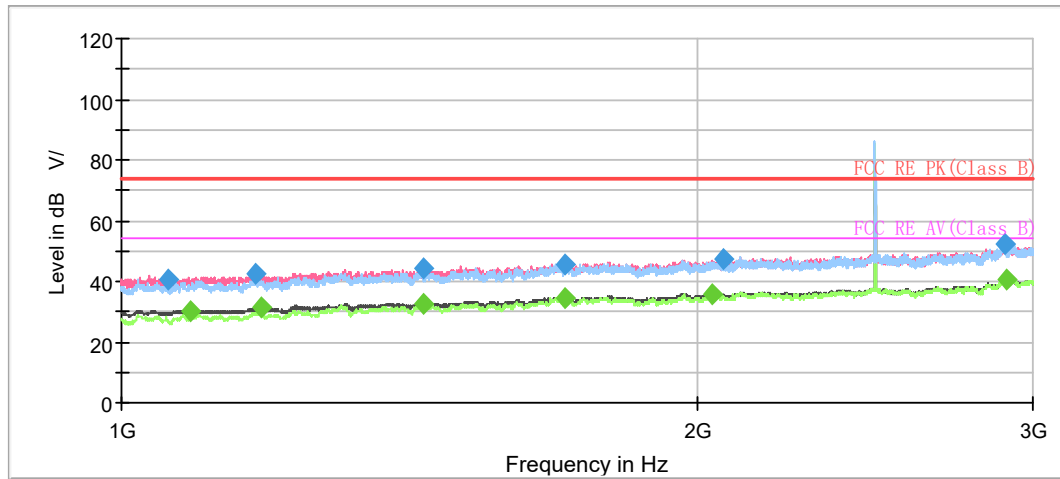
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1181.250000	---	31.47	54.00	22.53	500.0	200.0	V	61.0	-4.0
1185.250000	42.08	---	74.00	31.92	500.0	200.0	V	278.0	-3.9
1309.000000	---	32.91	54.00	21.09	500.0	200.0	V	0.0	-2.1
1310.750000	44.09	---	74.00	29.91	500.0	200.0	V	291.0	-2.3
1504.000000	44.11	---	74.00	29.89	500.0	200.0	V	342.0	-1.5
1508.250000	---	33.05	54.00	20.95	500.0	200.0	V	37.0	-1.4
1710.750000	45.83	---	74.00	28.17	500.0	200.0	V	37.0	0.5
1712.500000	---	34.51	54.00	19.49	500.0	200.0	V	315.0	0.4
1962.000000	---	35.87	54.00	18.13	500.0	200.0	V	315.0	2.0
2028.000000	47.42	---	74.00	26.58	500.0	100.0	H	227.0	2.2
2899.000000	---	40.93	54.00	13.07	500.0	100.0	H	323.0	8.5
2937.500000	52.10	---	74.00	21.90	500.0	200.0	H	215.0	7.7



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3315.000000	42.40	---	74.00	31.60	500.0	200.0	H	260.0	-0.9
3354.375000	---	31.64	54.00	22.36	500.0	100.0	V	286.0	-0.3
3900.000000	46.58	---	74.00	27.42	500.0	100.0	V	0.0	3.0
3905.625000	---	35.51	54.00	18.49	500.0	200.0	H	272.0	3.5
5259.375000	48.74	---	74.00	25.26	500.0	200.0	H	1.0	6.3
5270.625000	---	37.60	54.00	16.40	500.0	100.0	H	33.0	6.5
5593.125000	---	38.83	54.00	15.17	500.0	100.0	H	112.0	8.1
7018.125000	48.91	---	74.00	25.09	500.0	200.0	H	246.0	6.9
7953.750000	50.90	---	74.00	23.10	500.0	200.0	H	246.0	9.9
7998.750000	---	39.82	54.00	14.18	500.0	100.0	H	45.0	9.9
12256.875000	---	43.00	54.00	11.00	500.0	100.0	H	181.0	14.2
12286.875000	54.39	---	74.00	19.61	500.0	200.0	H	312.0	14.4

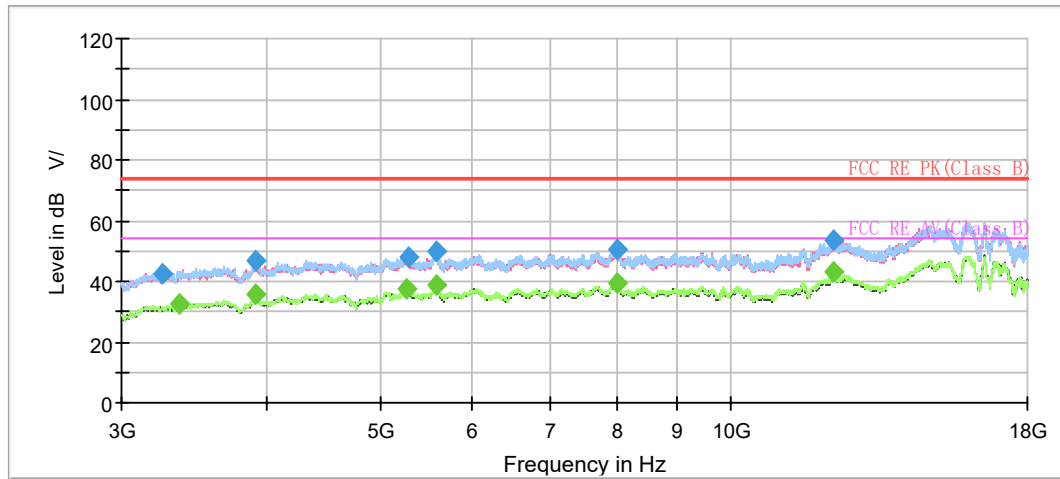
Bluetooth LE-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1056.750000	40.85	---	74.00	33.15	500.0	200.0	V	232.0	-6.1
1087.000000	---	30.32	54.00	23.68	500.0	200.0	V	268.0	-5.4
1176.250000	42.37	---	74.00	31.63	500.0	200.0	V	340.0	-4.2
1183.750000	---	31.18	54.00	22.82	500.0	200.0	V	304.0	-3.9
1437.500000	44.15	---	74.00	29.85	500.0	100.0	V	357.0	-1.8
1440.500000	---	32.77	54.00	21.23	500.0	200.0	V	340.0	-1.7
1705.500000	---	34.63	54.00	19.37	500.0	200.0	V	293.0	0.4
1706.750000	45.74	---	74.00	28.26	500.0	200.0	V	136.0	0.5
2039.000000	---	35.75	54.00	18.25	500.0	200.0	V	352.0	2.4
2064.250000	47.19	---	74.00	26.81	500.0	200.0	V	219.0	2.2
2899.000000	52.11	---	74.00	21.89	500.0	100.0	H	25.0	8.5
2904.250000	---	40.90	54.00	13.10	500.0	200.0	H	118.0	8.5



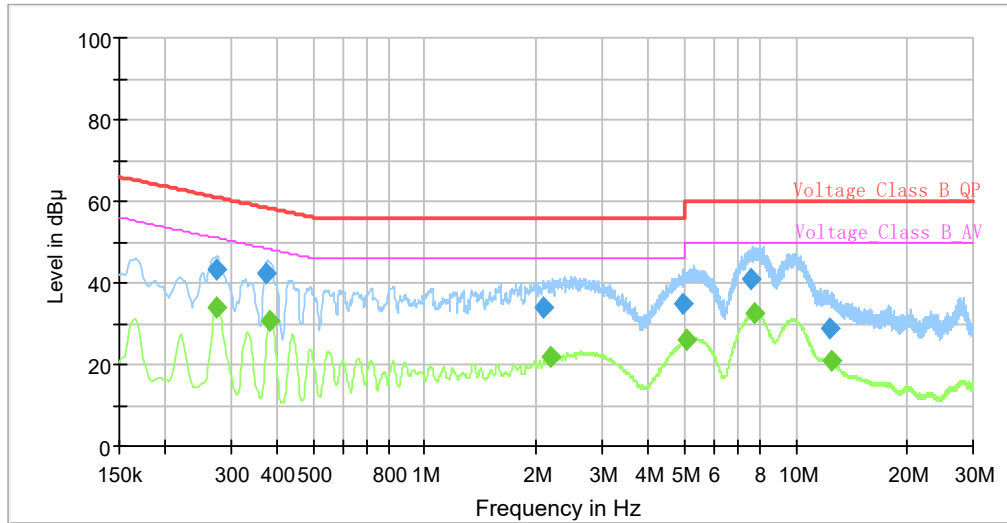
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3256.875000	42.50	---	74.00	31.50	500.0	100.0	H	0.0	-1.2
3361.875000	---	32.48	54.00	21.52	500.0	200.0	V	222.0	0.0
3907.500000	---	35.54	54.00	18.46	500.0	200.0	H	141.0	3.6
3909.375000	46.53	---	74.00	27.47	500.0	100.0	H	303.0	3.7
5270.625000	---	37.55	54.00	16.45	500.0	100.0	H	14.0	6.5
5298.750000	48.28	---	74.00	25.72	500.0	200.0	H	0.0	6.1
5591.250000	49.54	---	74.00	24.46	500.0	200.0	H	290.0	8.1
5595.000000	---	38.72	54.00	15.28	500.0	100.0	V	353.0	8.0
7989.375000	50.46	---	74.00	23.54	500.0	200.0	H	250.0	9.9
8002.500000	---	39.63	54.00	14.37	500.0	200.0	H	250.0	9.8
12273.750000	---	42.85	54.00	11.15	500.0	100.0	H	0.0	14.6
12275.625000	53.70	---	74.00	20.30	500.0	200.0	H	343.0	14.6

2. Conducted Emission

2.1. Wi-Fi 2.4GHz

During the test, the Conducted Emission was performed in all modes with all channel. The test data of the worst-case condition (802.11b CH6) was recorded in this report.

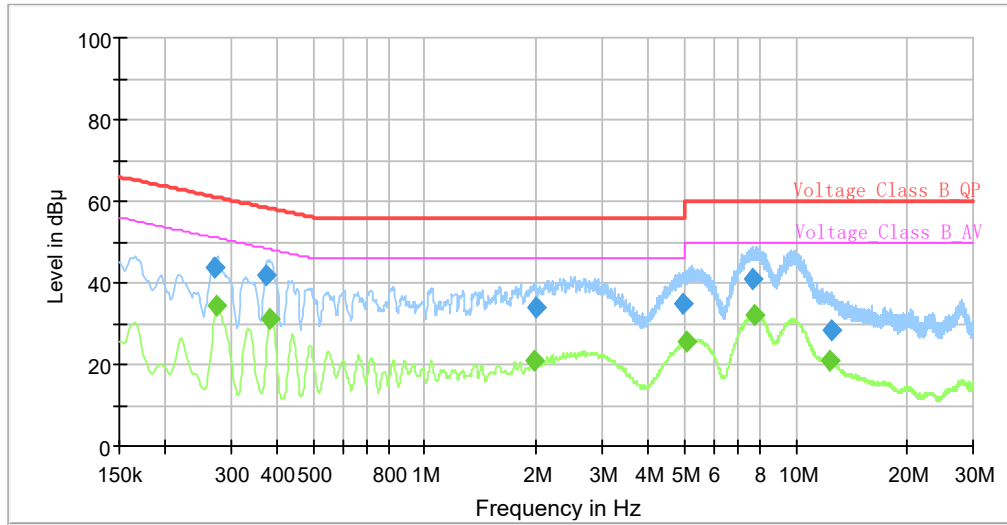


Final Result

Frequency (MHz)	QuasiPeak (dBμ I V)	Average (dBμ I V)	Limit (dBμ I V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.274000	43.36	---	61.00	17.63	1000.0	9.000	L1	ON	21.0
0.275750	---	33.96	50.94	16.99	1000.0	9.000	L1	ON	21.0
0.375250	42.53	---	58.38	15.86	1000.0	9.000	L1	ON	20.9
0.382000	---	30.66	48.24	17.57	1000.0	9.000	L1	ON	20.9
2.092000	33.82	---	56.00	22.18	1000.0	9.000	L1	ON	19.6
2.189000	---	21.76	46.00	24.24	1000.0	9.000	L1	ON	19.6
4.964500	34.66	---	56.00	21.34	1000.0	9.000	L1	ON	19.4
5.057500	---	25.96	50.00	24.04	1000.0	9.000	L1	ON	19.4
7.591000	40.84	---	60.00	19.16	1000.0	9.000	L1	ON	19.4
7.723750	---	32.35	50.00	17.65	1000.0	9.000	L1	ON	19.4
12.369250	28.80	---	60.00	31.20	1000.0	9.000	L1	ON	19.4
12.418250	---	20.72	50.00	29.28	1000.0	9.000	L1	ON	19.4

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Final Result

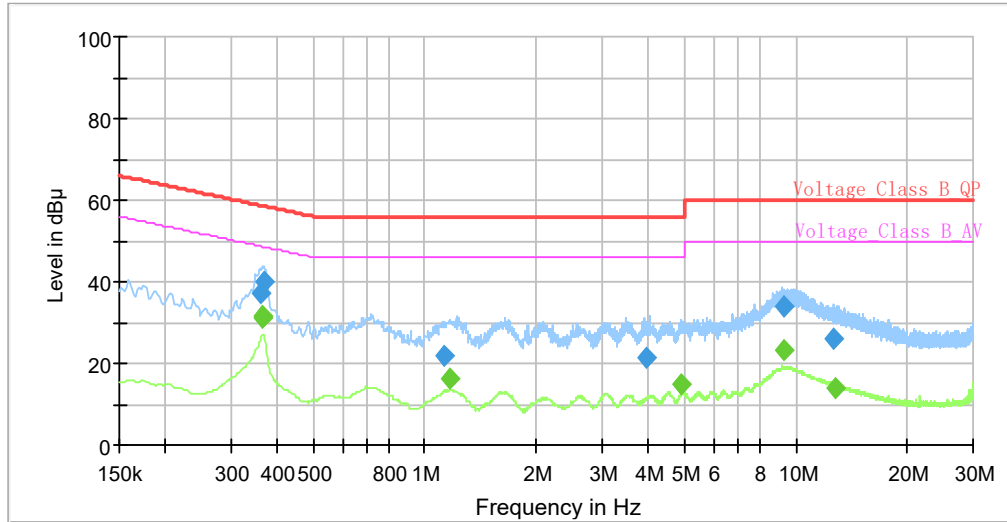
Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.271750	43.80	---	61.06	17.26	1000.0	9.000	N	ON	21.0
0.275750	---	34.32	50.94	16.62	1000.0	9.000	N	ON	21.0
0.375250	41.81	---	58.38	16.58	1000.0	9.000	N	ON	20.9
0.382000	---	31.11	48.24	17.12	1000.0	9.000	N	ON	20.9
1.972750	---	20.84	46.00	25.16	1000.0	9.000	N	ON	19.7
1.982250	34.10	---	56.00	21.90	1000.0	9.000	N	ON	19.7
4.955750	34.66	---	56.00	21.34	1000.0	9.000	N	ON	19.4
5.061500	---	25.66	50.00	24.34	1000.0	9.000	N	ON	19.4
7.651250	40.92	---	60.00	19.08	1000.0	9.000	N	ON	19.4
7.742250	---	32.01	50.00	17.99	1000.0	9.000	N	ON	19.4
12.344750	---	20.89	50.00	29.11	1000.0	9.000	N	ON	19.5
12.540750	28.59	---	60.00	31.41	1000.0	9.000	N	ON	19.5

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

2.2. Bluetooth LE

During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 19) was recorded in this report.

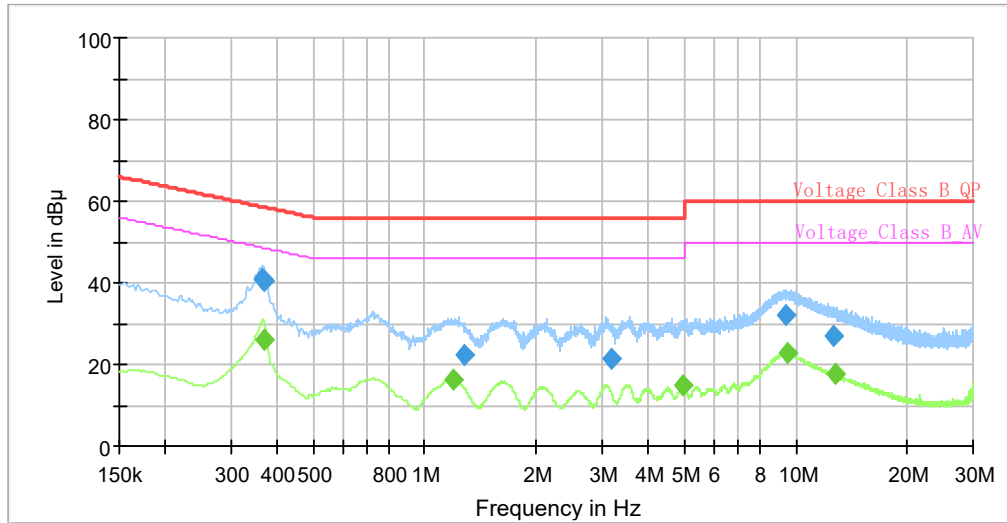


Final Result

Frequency (MHz)	QuasiPeak (dB; I V)	Average (dB; I V)	Limit (dB; I V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.361750	37.36	---	58.69	21.33	1000.0	9.000	L1	ON	20.9
0.364000	---	31.10	48.64	17.53	1000.0	9.000	L1	ON	20.9
0.365750	---	31.44	48.60	17.16	1000.0	9.000	L1	ON	20.9
0.367500	39.89	---	58.56	18.67	1000.0	9.000	L1	ON	20.9
1.123750	22.00	---	56.00	34.00	1000.0	9.000	L1	ON	20.1
1.167500	---	16.37	46.00	29.63	1000.0	9.000	L1	ON	20.0
3.963250	21.53	---	56.00	34.47	1000.0	9.000	L1	ON	19.4
4.905250	---	14.77	46.00	31.23	1000.0	9.000	L1	ON	19.4
9.254500	---	23.32	50.00	26.68	1000.0	9.000	L1	ON	19.4
9.305000	33.77	---	60.00	26.23	1000.0	9.000	L1	ON	19.4
12.611500	25.99	---	60.00	34.01	1000.0	9.000	L1	ON	19.4
12.765500	---	13.93	50.00	36.07	1000.0	9.000	L1	ON	19.4

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.365000	40.90	---	58.61	17.71	1000.0	9.000	N	ON	20.9
0.368000	40.34	---	58.55	18.20	1000.0	9.000	N	ON	20.9
0.368000	---	26.07	48.55	22.47	1000.0	9.000	N	ON	20.9
1.195000	---	16.32	46.00	29.68	1000.0	9.000	N	ON	20.0
1.272750	22.11	---	56.00	33.89	1000.0	9.000	N	ON	20.0
3.161750	21.34	---	56.00	34.66	1000.0	9.000	N	ON	19.5
4.962500	---	14.80	46.00	31.20	1000.0	9.000	N	ON	19.4
9.393750	32.05	---	60.00	27.95	1000.0	9.000	N	ON	19.4
9.539500	---	22.87	50.00	27.13	1000.0	9.000	N	ON	19.4
12.623000	27.09	---	60.00	32.91	1000.0	9.000	N	ON	19.5
12.717500	---	17.89	50.00	32.11	1000.0	9.000	N	ON	19.5

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz