Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1] 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

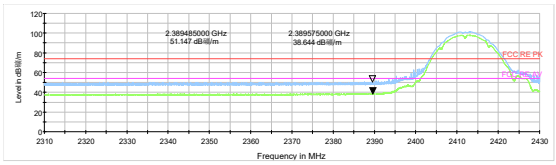
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

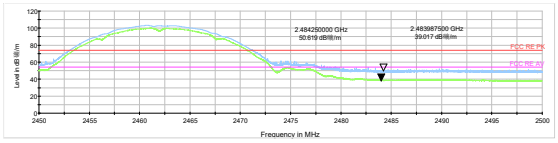
Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

Test Results:

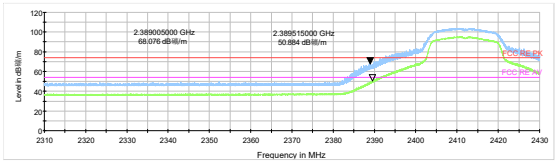
A symbol (dB礦/m) in the test plot below means (dBμV/m)



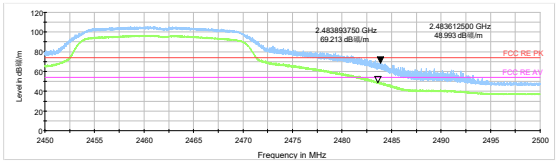
802.11b-Channel 1 Peak+ Average



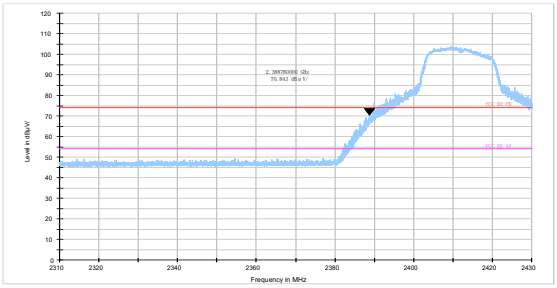
802.11b-Channel 11 Peak+ Average



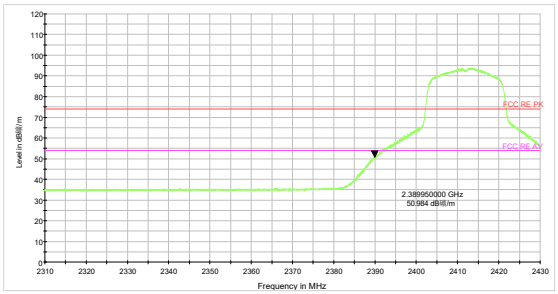
802.11g-Channel 1 Peak+ Average



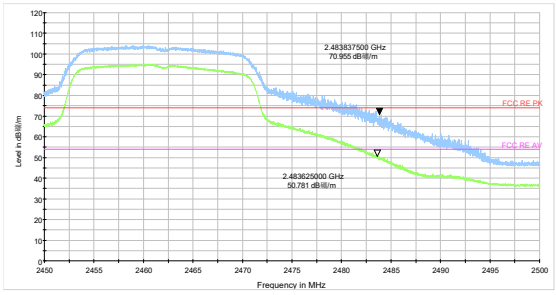
802.11g-Channel 11 Peak+ Average



802.11n HT20-Channel 1 Peak

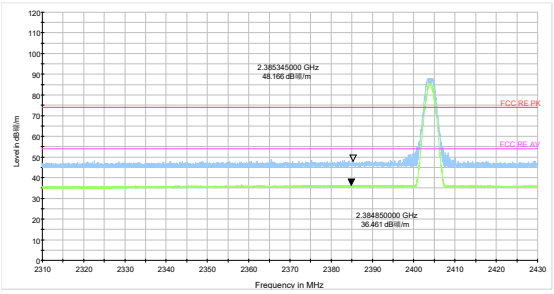
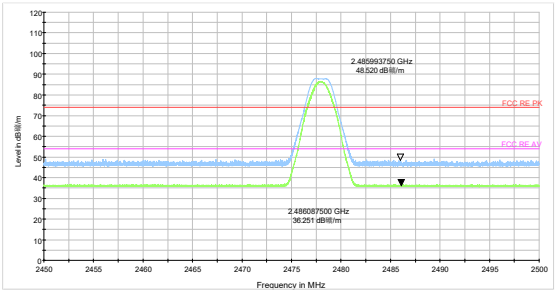


802.11n HT20-Channel 1 Average



802.11n HT20-Channel 11 Peak+ Average

After the pretest, Bluetooth LE (2M) was selected as the worst Mode for Bluetooth LE.

	
Bluetooth LE Channel 1 Peak+ Average	Bluetooth LE Channel 38 Peak+Average

Result of RE

Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz is more than 20dB below the limit are not reported.

The following graphs display the maximum values of horizontal and vertical by software.
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

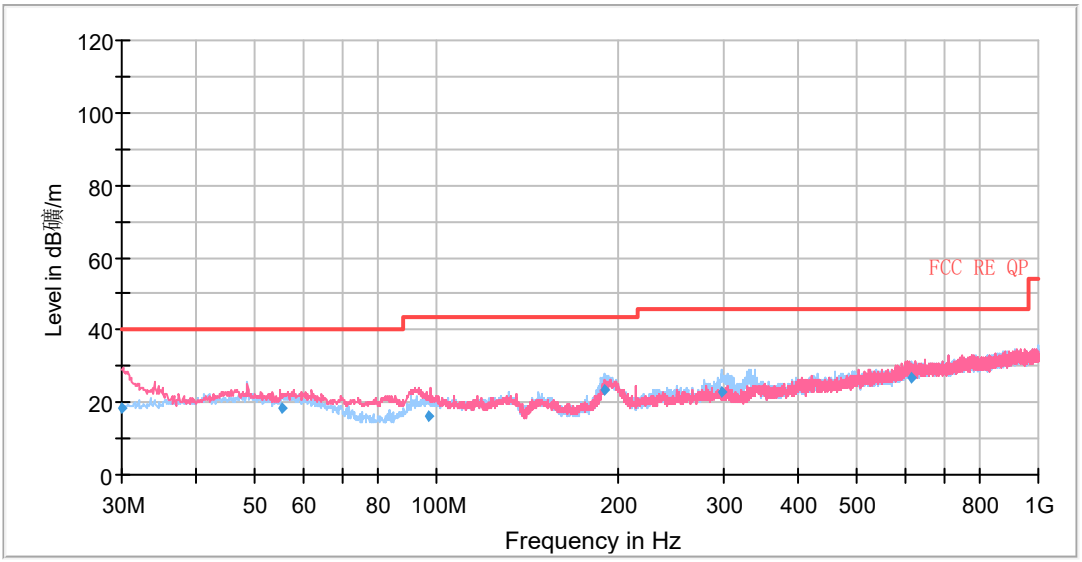
Continuous TX mode:

Wi-Fi 2.4G

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11n (HT20) CH11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

A symbol (dB礦/m) in the test plot below means (dBμV/m)

A symbol (dB V/) in the test plot below means (dBμV/m)



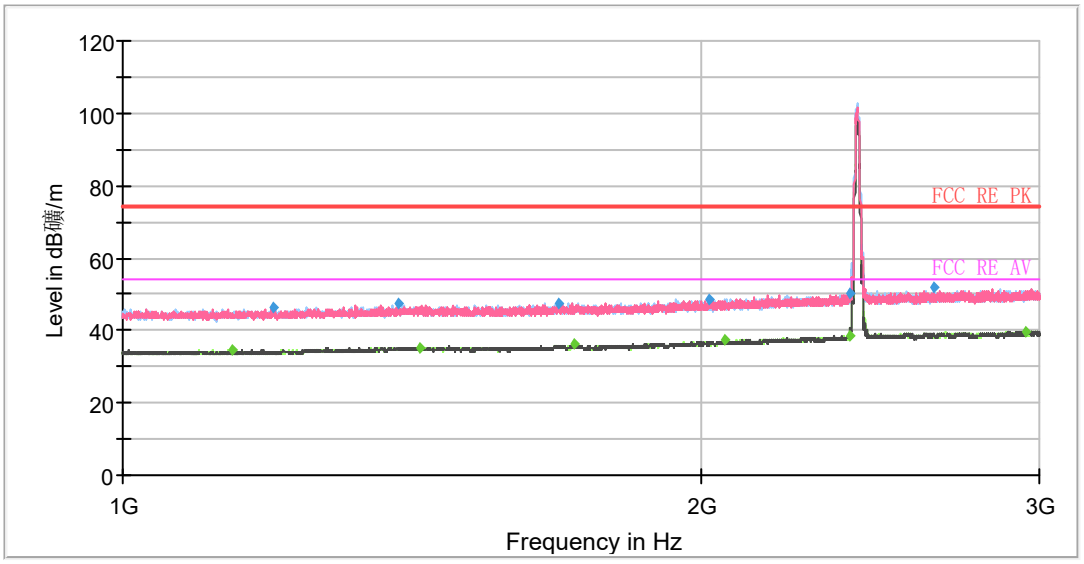
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
30.00	18.57	40.00	21.43	103.0	V	102.00	13
55.54	18.52	40.00	21.48	102.0	V	326.00	14
96.94	16.46	43.50	27.04	104.0	V	262.00	13
189.65	23.20	43.50	20.30	123.0	H	97.00	13
298.81	22.94	46.00	23.06	123.0	H	265.00	15
614.79	26.82	46.00	19.18	211.0	H	0.00	22

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

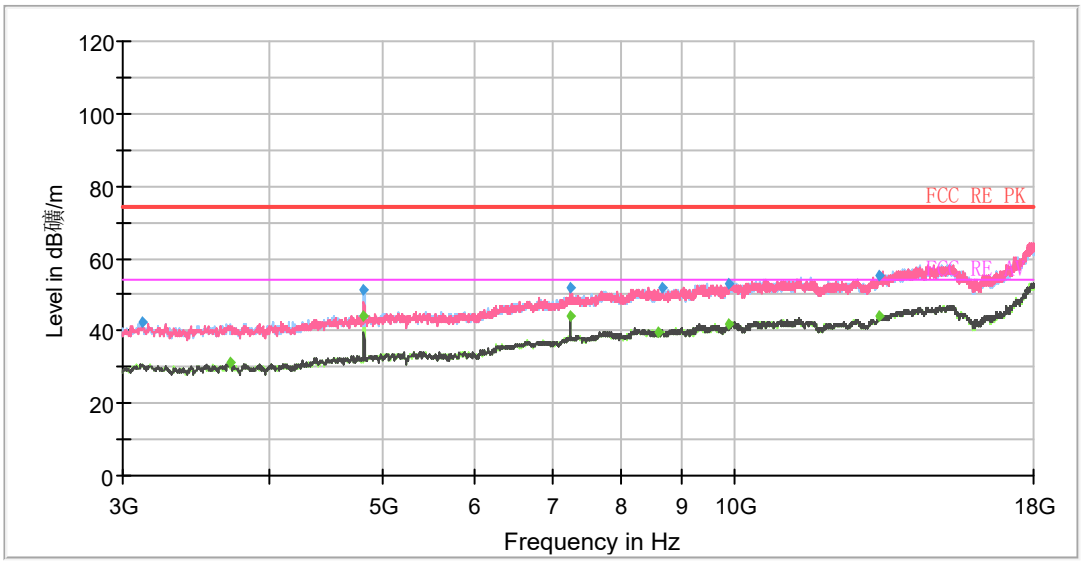
2. Margin = Limit – Quasi-Peak

802.11b CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

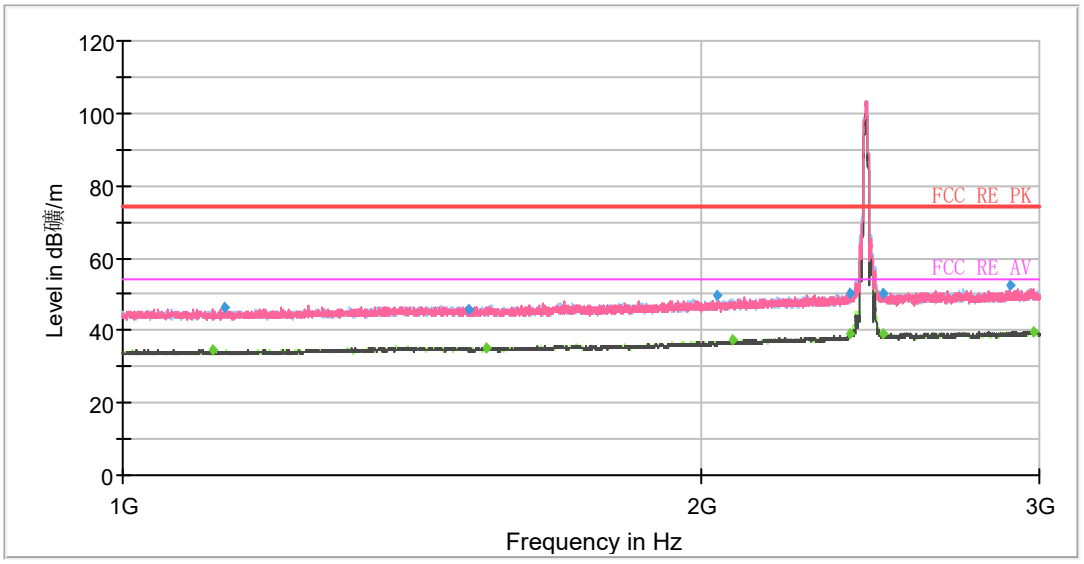


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1139.75	---	34.51	54.00	19.49	500.00	200.0	V	46.00	-11
1196.75	46.09	---	74.00	27.91	500.00	200.0	V	46.00	-11
1390.25	47.59	---	74.00	26.41	500.00	200.0	V	240.00	-9
1428.00	---	35.37	54.00	18.63	500.00	200.0	H	75.00	-9
1686.00	47.57	---	74.00	26.43	500.00	200.0	H	81.00	-8
1719.75	---	36.02	54.00	17.98	500.00	100.0	H	268.00	-8
2021.50	48.80	---	74.00	25.20	500.00	200.0	V	357.00	-8
2055.75	---	37.24	54.00	16.76	500.00	200.0	V	339.00	-8
2389.00	50.35	---	74.00	23.65	500.00	100.0	V	228.00	-6
2389.50	---	38.59	54.00	15.41	500.00	100.0	V	215.00	-6
2645.50	51.69	---	74.00	22.31	500.00	100.0	H	280.00	-5
2954.25	---	39.71	54.00	14.29	500.00	200.0	V	170.00	-5
7235.63	---	44.27	54.00	9.73	500.00	200.0	H	326.00	-2
13286.25	---	44.15	54.00	9.85	500.00	200.0	V	4.00	4

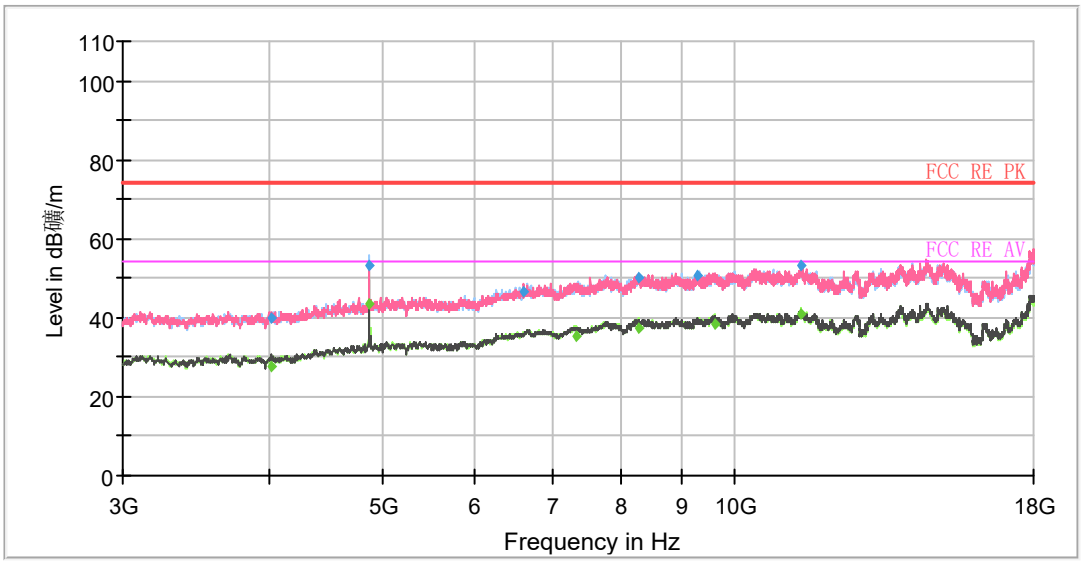
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

802.11b CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



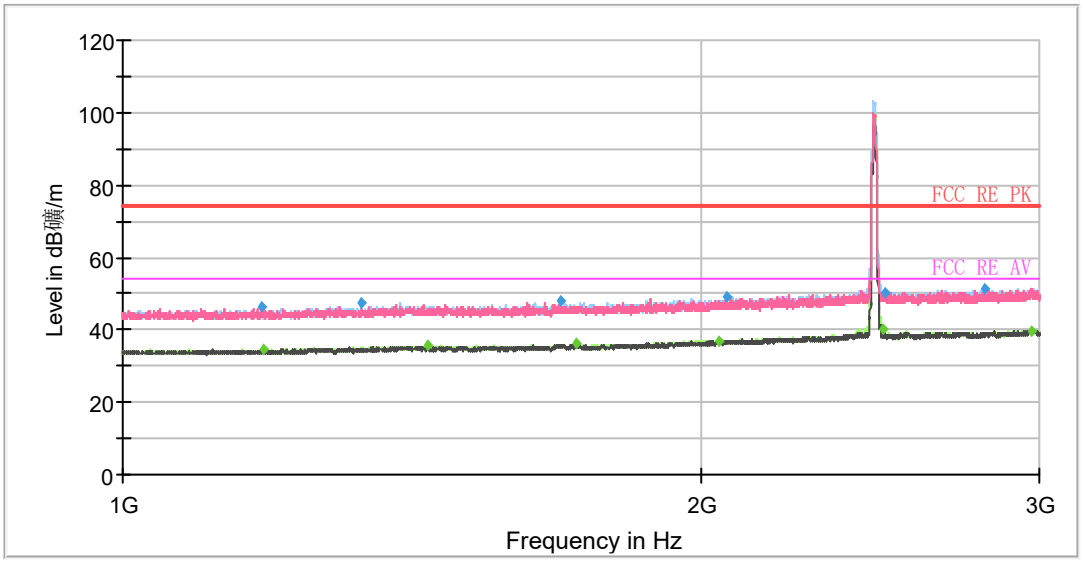
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1114.50	---	34.68	54.00	19.32	500.00	100.0	H	300.00	-11
1129.50	46.14	---	74.00	27.86	500.00	100.0	V	295.00	-11
1512.25	46.03	---	74.00	27.97	500.00	100.0	H	357.00	-9
1545.25	---	35.39	54.00	18.61	500.00	100.0	H	332.00	-9
2040.25	49.75	---	74.00	24.25	500.00	200.0	H	254.00	-8
2077.00	---	37.15	54.00	16.85	500.00	100.0	H	165.00	-7
2387.50	50.01	---	74.00	23.99	500.00	200.0	H	24.00	-6
2389.00	---	38.92	54.00	15.08	500.00	200.0	V	52.00	-6
2485.25	50.30	---	74.00	23.70	500.00	100.0	H	0.00	-6
2490.00	---	38.98	54.00	15.02	500.00	100.0	H	356.00	-6
2898.25	52.19	---	74.00	21.81	500.00	200.0	H	119.00	-5
2980.25	---	39.74	54.00	14.26	500.00	200.0	V	317.00	-4
4873.13	---	43.57	74.00	10.43	1000.00	193.0	H	319.00	-9

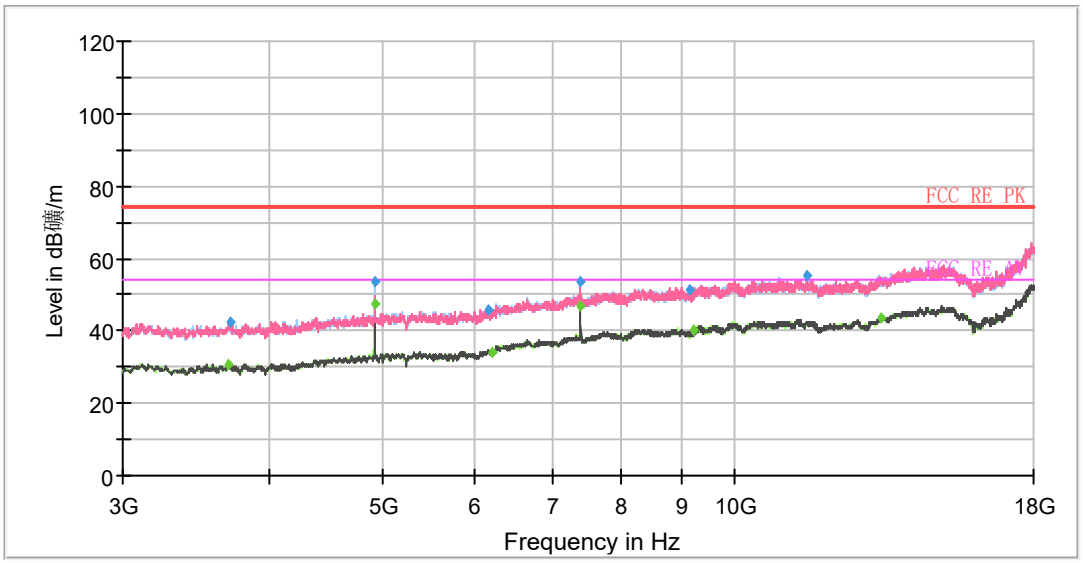
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average

802.11b CH11



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

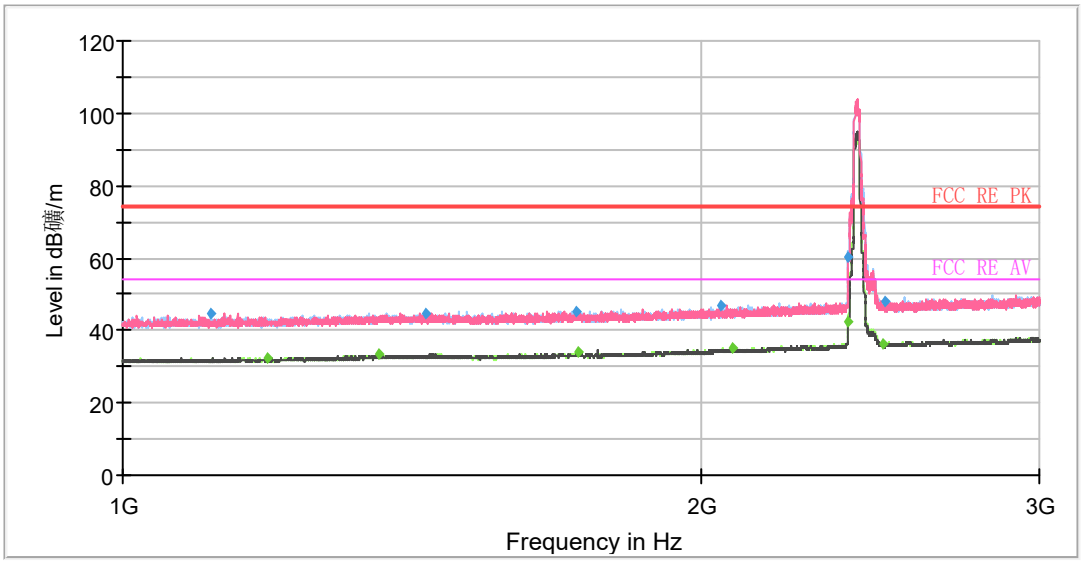


Radiates Emission from 3GHz to 18GHz

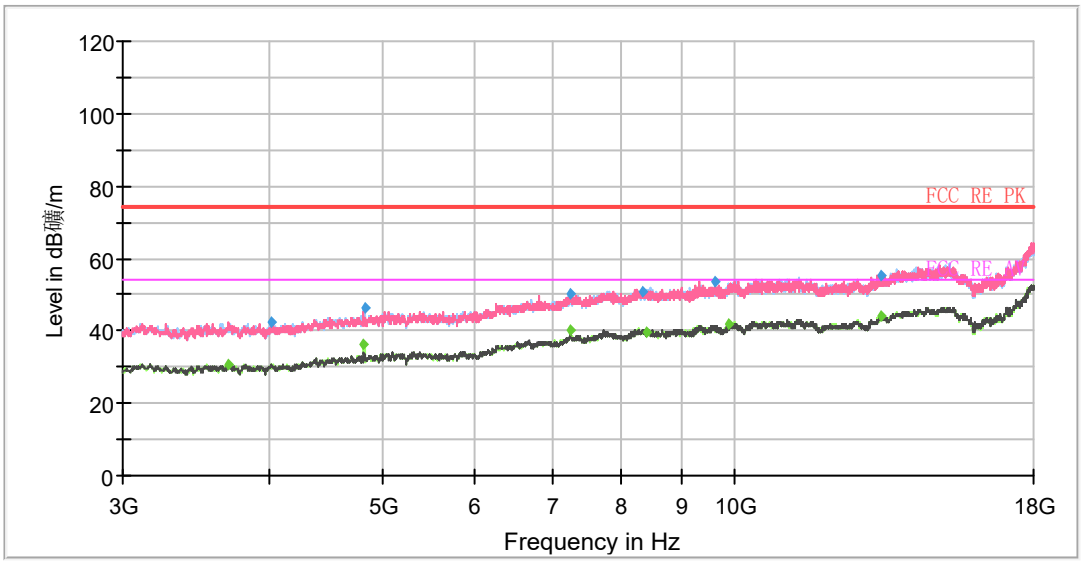
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1180.00	46.27	---	74.00	27.73	500.00	100.0	V	143.00	-11
1183.25	---	34.56	54.00	19.44	500.00	100.0	V	41.00	-11
1329.50	47.43	---	74.00	26.57	500.00	100.0	H	190.00	-10
1440.25	---	35.45	54.00	18.55	500.00	100.0	H	356.00	-9
1690.75	47.75	---	74.00	26.25	500.00	200.0	H	49.00	-8
1723.00	---	36.18	54.00	17.82	500.00	200.0	H	262.00	-8
2042.00	---	37.10	54.00	16.90	500.00	200.0	H	159.00	-8
2061.75	49.02	---	74.00	24.98	500.00	200.0	H	288.00	-8
2490.25	---	40.11	54.00	13.89	500.00	100.0	H	357.00	-6
2491.75	50.24	---	74.00	23.76	500.00	200.0	H	36.00	-6
2808.00	51.44	---	74.00	22.56	500.00	100.0	V	252.00	-5
2974.50	---	39.81	54.00	14.19	500.00	100.0	H	359.00	-4
4923.75	---	47.70	54.00	6.30	500.00	200.0	H	324.00	-9
7383.75	---	46.63	54.00	7.37	500.00	200.0	H	324.00	-2
13323.75	---	43.56	54.00	10.44	500.00	200.0	V	65.00	4

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

802.11g CH1



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



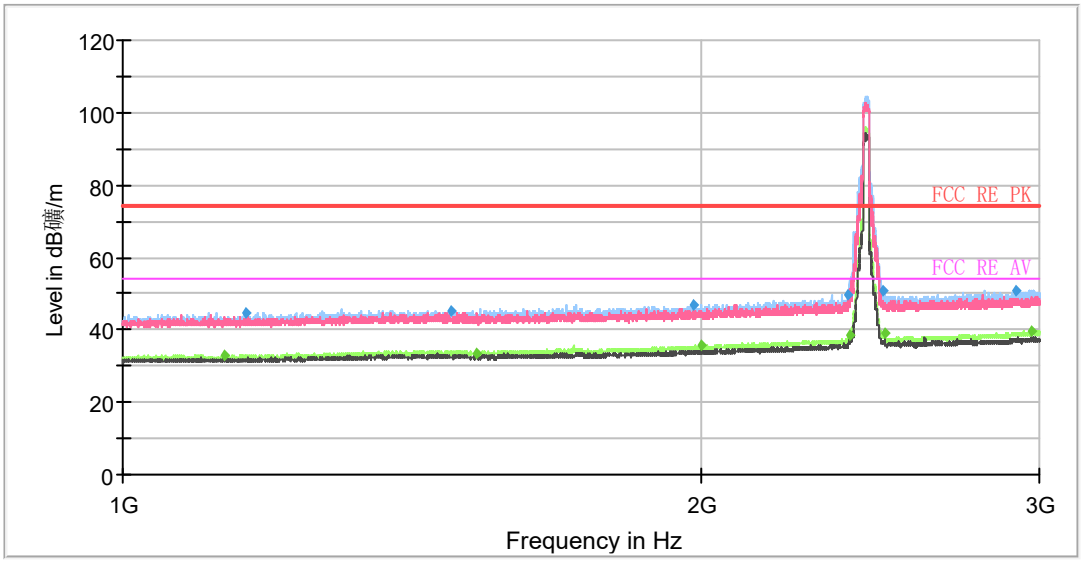
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1112.00	44.48	---	74.00	29.52	500.00	100.0	H	260.00	-3
1189.25	---	32.61	54.00	21.39	500.00	200.0	V	86.00	-2
1358.25	---	33.29	54.00	20.71	500.00	200.0	H	1.00	-1
1437.75	44.71	---	74.00	29.29	500.00	100.0	V	192.00	-1
1720.25	45.38	---	74.00	28.62	500.00	200.0	V	267.00	0
1724.50	---	33.86	54.00	20.14	500.00	100.0	H	314.00	0
2045.75	46.92	---	74.00	27.08	500.00	200.0	V	328.00	1
2079.25	---	34.92	54.00	19.08	500.00	100.0	V	172.00	1
2385.25	60.03	---	74.00	13.97	500.00	100.0	H	194.00	3
2386.00	---	42.53	54.00	11.47	500.00	200.0	H	18.00	3
2490.25	---	36.29	54.00	17.71	500.00	200.0	V	260.00	3
2491.00	48.04	---	74.00	25.96	500.00	200.0	V	309.00	3
13336.88	---	43.83	54.00	10.17	500.00	200.0	H	272.00	5

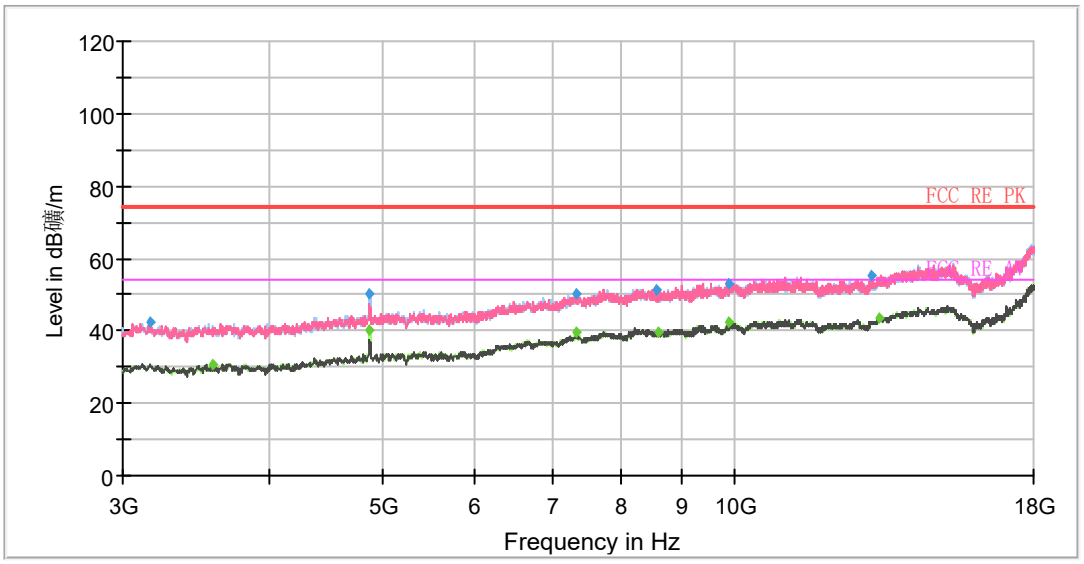
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average

802.11g CH6



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



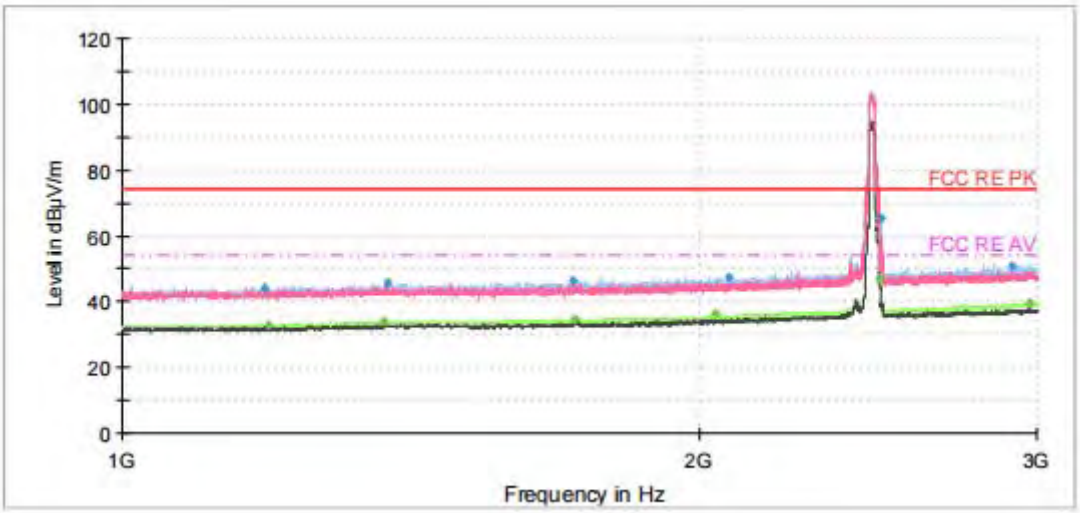
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1130.25	---	33.17	54.00	20.83	500.00	100.0	H	322.00	-2
1157.75	44.58	---	74.00	29.42	500.00	100.0	H	232.00	-2
1481.50	45.12	---	74.00	28.88	500.00	100.0	H	214.00	-1
1527.50	---	33.67	54.00	20.33	500.00	100.0	H	0.00	-1
1981.50	46.97	---	74.00	27.03	500.00	100.0	H	346.00	1
2000.00	---	35.82	54.00	18.18	500.00	100.0	H	350.00	1
2386.75	49.43	---	74.00	24.57	500.00	200.0	H	18.00	3
2387.50	---	38.34	54.00	15.66	500.00	200.0	H	6.00	3
2490.00	50.70	---	74.00	23.30	500.00	100.0	H	12.00	3
2491.25	---	38.91	54.00	15.09	500.00	200.0	H	6.00	3
2914.00	51.00	---	74.00	23.00	500.00	100.0	H	78.00	4
2970.50	---	39.73	54.00	14.27	500.00	100.0	H	53.00	5
13308.75	---	43.70	54.00	10.30	500.00	100.0	V	100.00	4

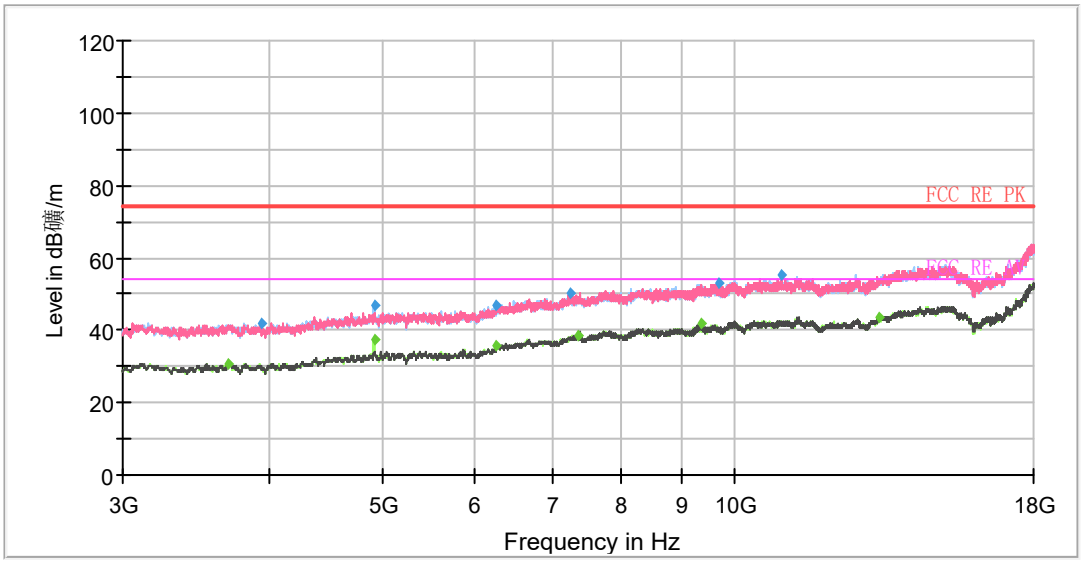
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average

802.11g CH11



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

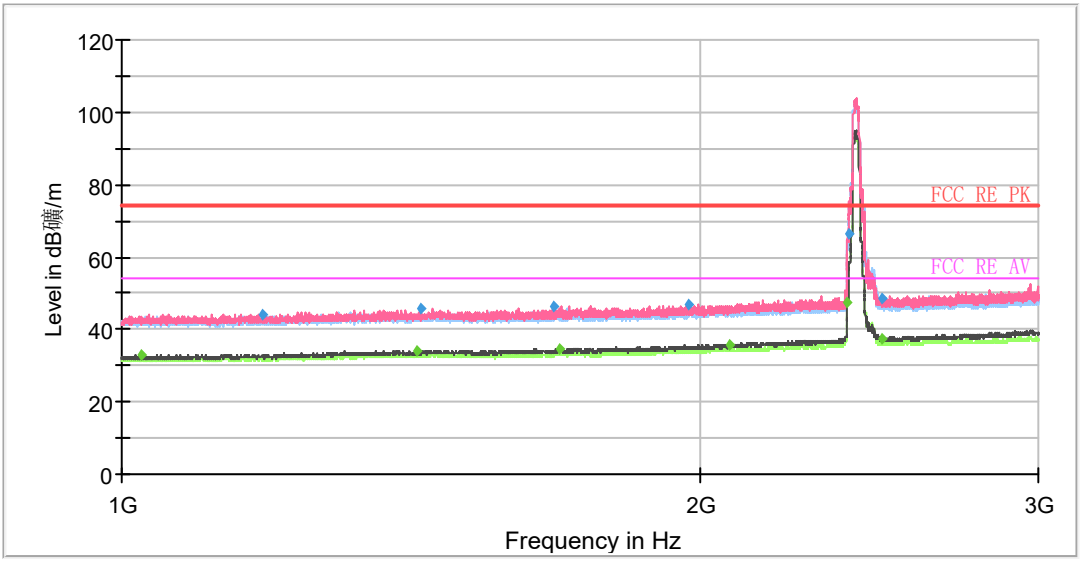


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1187.50	44.21	---	74.00	29.79	500.00	100.0	H	323.00	-2
1191.25	---	33.13	54.00	20.87	500.00	100.0	H	358.00	-2
1368.75	---	34.11	54.00	19.89	500.00	100.0	H	336.00	-1
1376.25	45.52	---	74.00	28.48	500.00	100.0	H	133.00	-1
1718.00	46.35	---	74.00	27.65	500.00	100.0	H	0.00	0
1721.75	---	34.76	54.00	19.24	500.00	100.0	H	246.00	0
2037.00	---	36.02	54.00	17.98	500.00	100.0	H	239.00	1
2073.75	47.41	---	74.00	26.59	500.00	100.0	H	285.00	1
2484.00	---	47.03	54.00	6.97	500.00	100.0	H	0.00	3
2489.00	65.06	---	74.00	8.94	500.00	200.0	H	0.00	3
2907.25	50.90	---	74.00	23.10	500.00	100.0	H	0.00	4
2969.25	---	39.69	54.00	14.31	500.00	100.0	H	357.00	5
13282.50	---	43.58	54.00	10.42	500.00	100.0	H	1.00	4

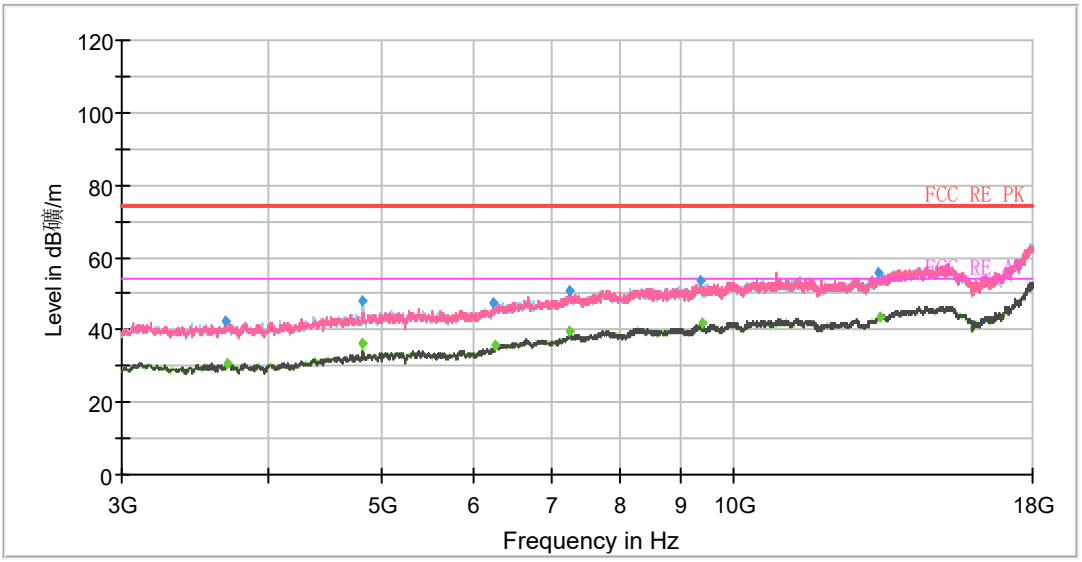
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

802.11n (HT20) CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

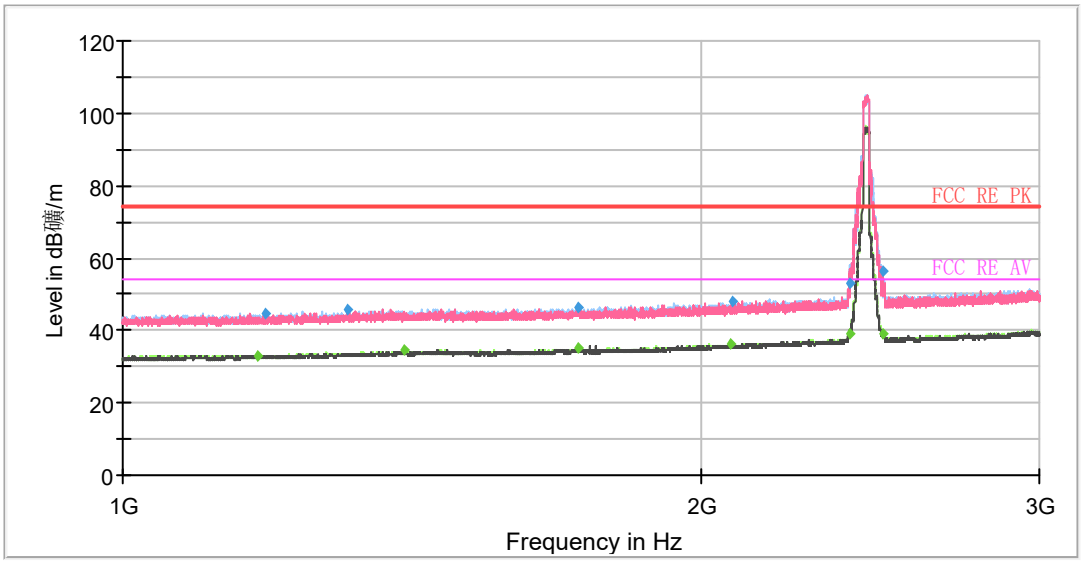


Radiates Emission from 3GHz to 18GHz

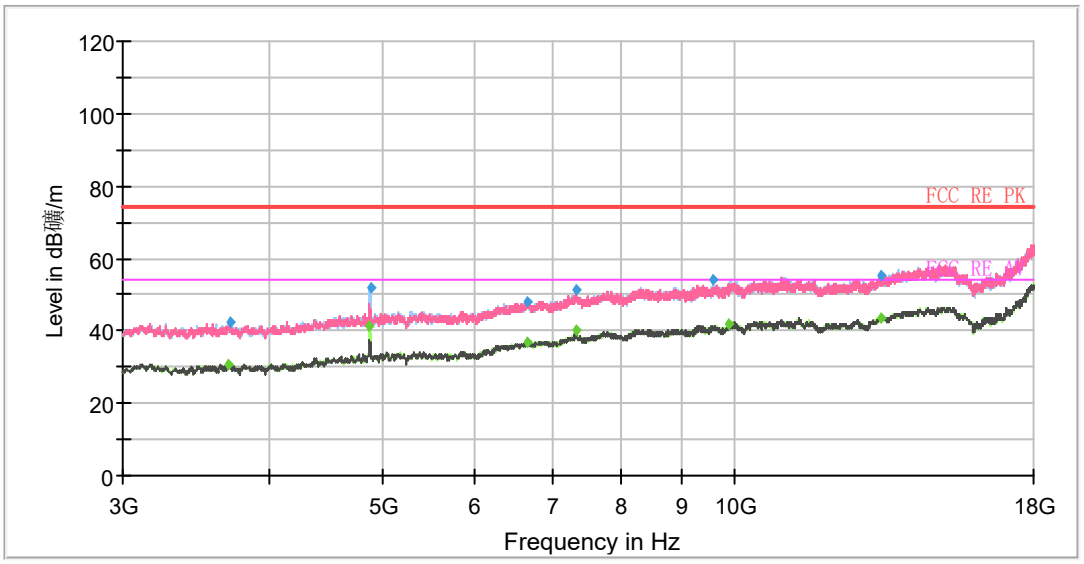
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1022.75	---	33.13	54.00	20.87	500.00	200.0	V	263.00	-3
1184.50	44.26	---	74.00	29.74	500.00	200.0	V	276.00	-2
1425.25	---	34.28	54.00	19.72	500.00	200.0	V	257.00	-1
1431.00	45.49	---	74.00	28.51	500.00	200.0	V	0.00	-1
1678.50	46.49	---	74.00	27.51	500.00	200.0	V	325.00	0
1690.00	---	34.70	54.00	19.30	500.00	200.0	V	250.00	0
1974.00	46.97	---	74.00	27.03	500.00	200.0	V	276.00	1
2071.50	---	35.83	54.00	18.17	500.00	200.0	V	237.00	1
2387.25	---	47.20	54.00	6.80	500.00	200.0	H	12.00	3
2387.50	66.61	---	74.00	7.39	500.00	200.0	V	38.00	3
2489.00	48.36	---	74.00	25.64	500.00	200.0	V	312.00	3
2489.50	---	37.35	54.00	16.65	500.00	200.0	V	343.00	3
13323.75	---	43.68	54.00	10.32	500.00	100.0	V	308.00	4

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

802.11n (HT20) CH6



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

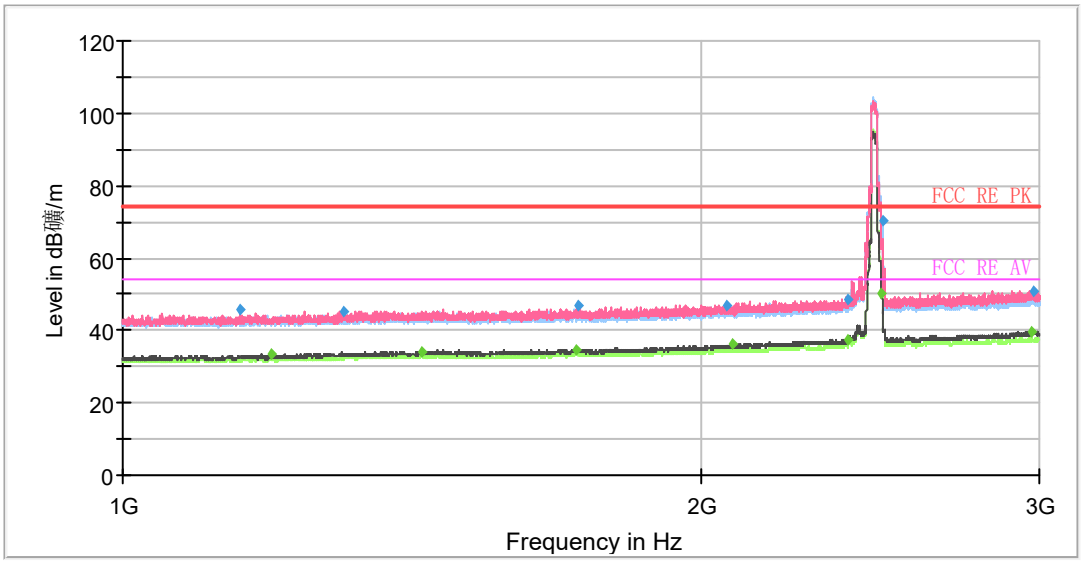


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1175.00	---	33.19	54.00	20.81	500.00	200.0	H	159.00	-2
1185.75	44.84	---	74.00	29.16	500.00	200.0	H	68.00	-2
1310.25	45.84	---	74.00	28.16	500.00	200.0	H	0.00	-1
1399.75	---	34.50	54.00	19.50	500.00	200.0	V	337.00	-1
1725.25	46.49	---	74.00	27.51	500.00	200.0	H	29.00	0
1726.25	---	34.97	54.00	19.03	500.00	100.0	H	341.00	0
2072.25	---	36.17	54.00	17.83	500.00	100.0	H	291.00	1
2076.75	47.73	---	74.00	26.27	500.00	200.0	V	348.00	1
2387.50	53.28	---	74.00	20.72	500.00	200.0	V	143.00	3
2387.50	---	39.05	54.00	14.95	500.00	200.0	H	2.00	3
2488.75	56.32	---	74.00	17.68	500.00	100.0	H	356.00	3
2489.75	---	39.02	54.00	14.98	500.00	200.0	V	266.00	3
13338.75	---	43.56	54.00	10.44	500.00	200.0	H	325.00	5

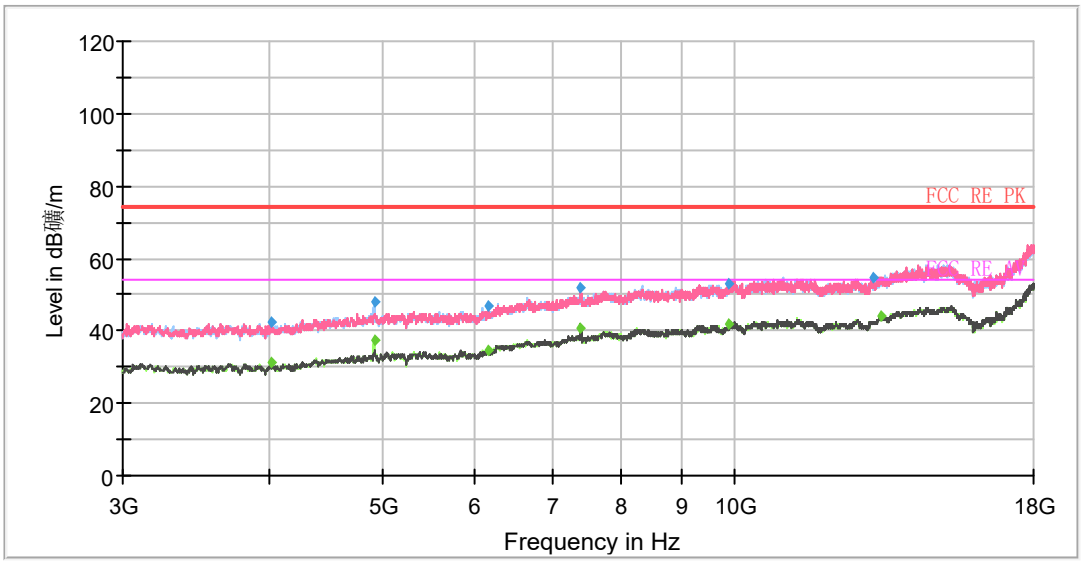
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

802.11n (HT20) CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

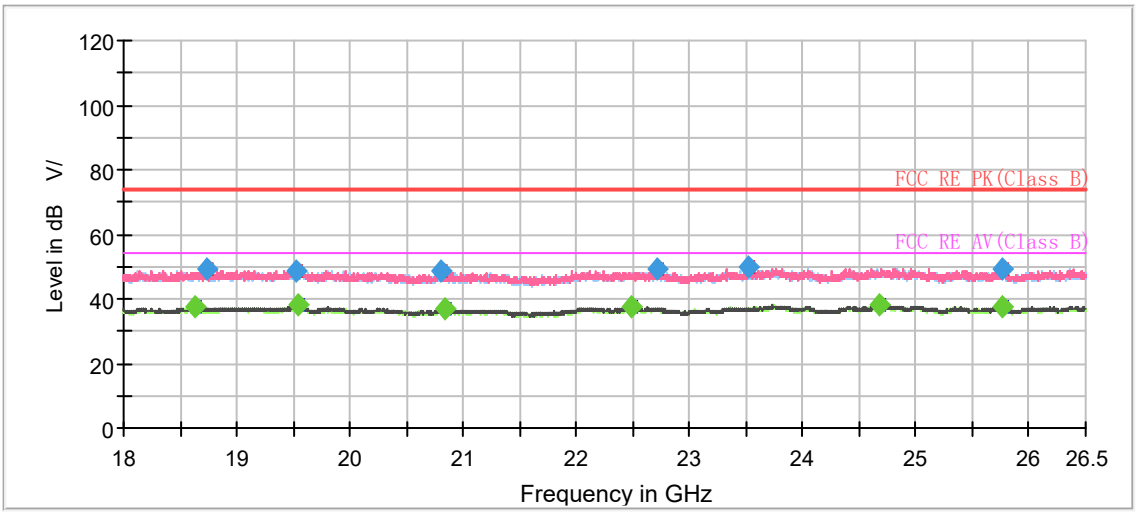


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1151.00	45.60	---	74.00	28.40	500.00	200.0	V	284.00	-2
1195.75	---	33.28	54.00	20.72	500.00	200.0	V	253.00	-2
1301.75	45.42	---	74.00	28.58	500.00	200.0	V	0.00	-1
1429.75	---	34.18	54.00	19.82	500.00	200.0	V	159.00	-1
1720.50	---	34.78	54.00	19.22	500.00	200.0	V	329.00	0
1724.00	46.86	---	74.00	27.14	500.00	200.0	V	350.00	0
2061.50	47.08	---	74.00	26.92	500.00	200.0	V	259.00	1
2078.75	---	36.23	54.00	17.77	500.00	200.0	V	126.00	1
2483.75	---	50.51	54.00	3.49	500.00	200.0	H	0.00	3
2484.75	70.11	---	74.00	3.89	500.00	200.0	H	0.00	3
2973.50	---	39.82	54.00	14.18	500.00	200.0	V	201.00	5
2980.75	51.01	---	74.00	22.99	500.00	200.0	V	290.00	5
13351.88	---	44.10	54.00	9.90	500.00	200.0	H	238.00	5

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

During the test, the Radiates Emission from 18GHz to 26.5GHz was performed in all modes with all channels, 802.11n (HT20) CH11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18637.500000	---	37.29	54.00	16.71	500.0	200.0	V	64.0	-5.6
18729.937500	48.93	---	74.00	25.07	500.0	200.0	H	329.0	-5.5
19518.312500	48.86	---	74.00	25.14	500.0	200.0	V	0.0	-5.3
19548.062500	---	38.06	54.00	15.94	500.0	200.0	V	231.0	-5.3
20811.375000	48.55	---	74.00	25.45	500.0	200.0	V	0.0	-5.1
20839.000000	---	36.90	54.00	17.10	500.0	200.0	V	4.0	-5.1
22491.187500	---	37.40	54.00	16.60	500.0	200.0	V	99.0	-3.9
22722.812500	49.18	---	74.00	24.82	500.0	200.0	V	153.0	-4.0
23522.875000	49.55	---	74.00	24.45	500.0	200.0	V	108.0	-2.9
24672.500000	---	38.12	54.00	15.88	500.0	200.0	V	113.0	-2.2
25757.312500	---	37.72	54.00	16.28	500.0	200.0	V	0.0	-2.6
25763.687500	49.53	---	74.00	24.47	500.0	100.0	H	116.0	-2.6

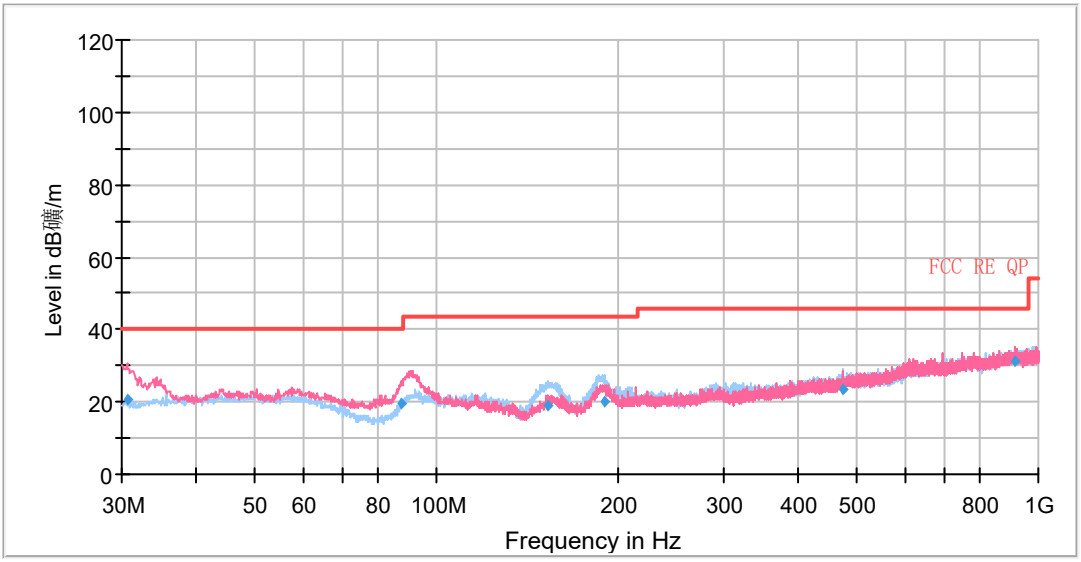
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

Bluetooth LE

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, Bluetooth LE-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

A symbol (dB礦/m) in the test plot below means (dBμV/m)

A symbol (dB V/) in the test plot below means (dBμV/m)



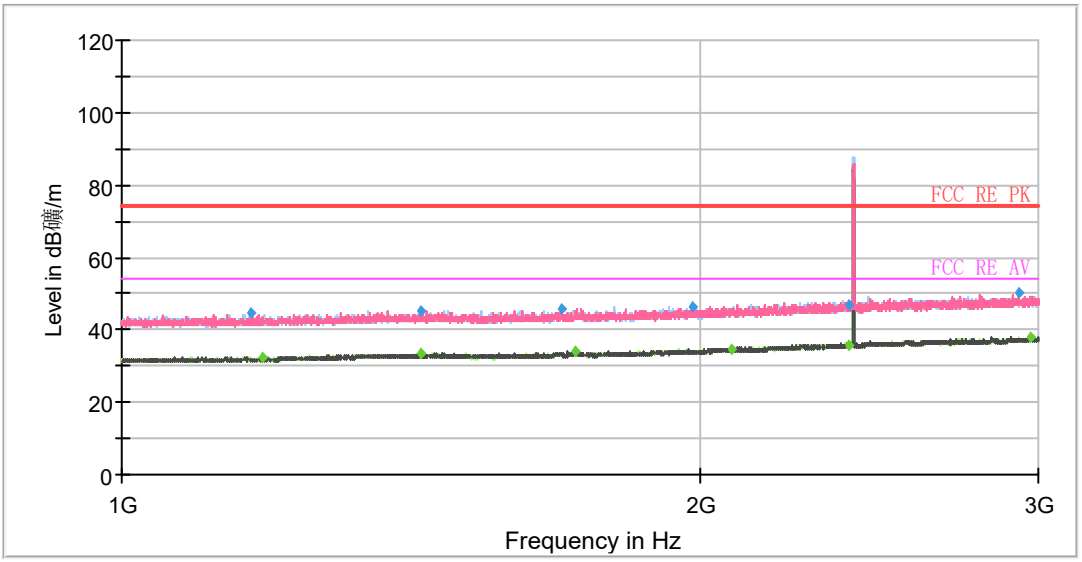
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
30.61	20.62	40.00	19.38	100.0	V	178.00	13
87.71	19.37	40.00	20.63	111.0	V	264.00	11
153.43	18.84	43.50	24.66	197.0	H	120.00	10
190.05	20.23	43.50	23.27	176.0	H	284.00	13
474.27	23.71	46.00	22.29	200.0	H	306.00	19
913.39	31.30	46.00	14.70	186.0	V	324.00	26

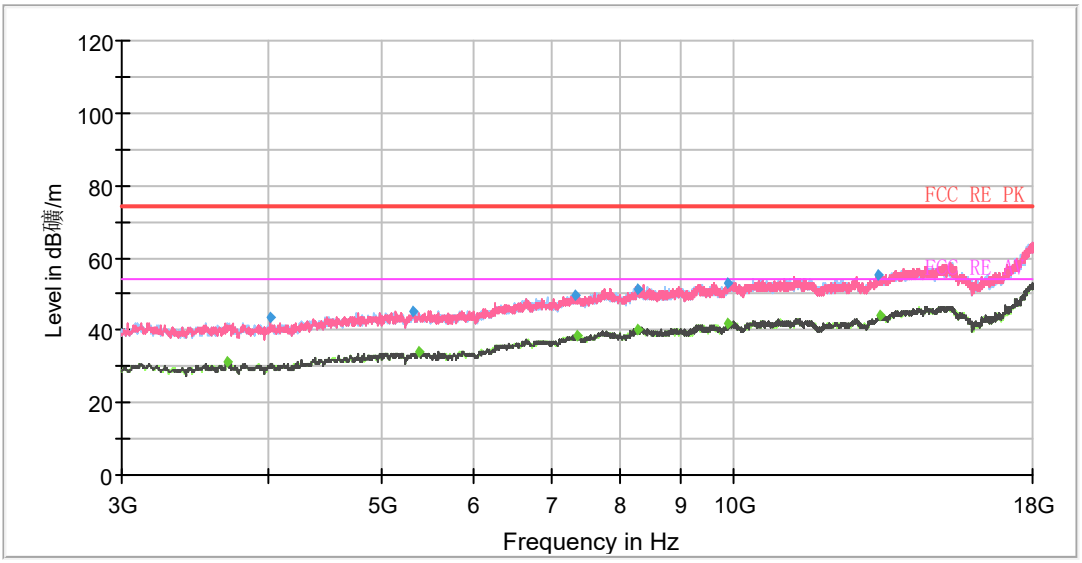
Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit – Quasi-Peak

Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz



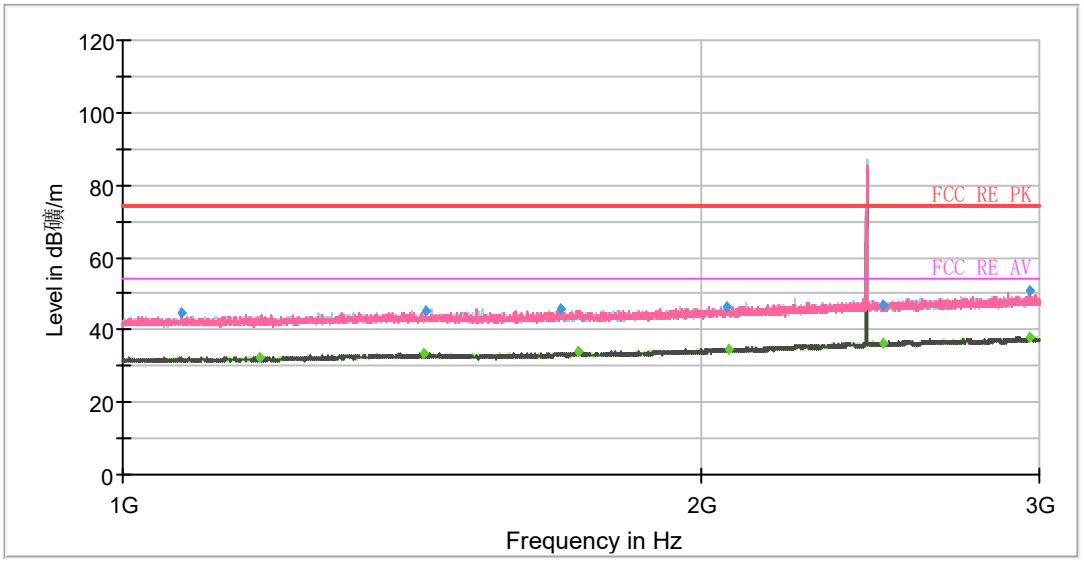
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1168.00	44.62	---	74.00	29.38	500.00	100.0	H	40.00	-2
1184.75	---	32.47	54.00	21.53	500.00	100.0	H	124.00	-2
1431.50	45.41	---	74.00	28.59	500.00	100.0	H	209.00	-1
1432.00	---	33.28	54.00	20.72	500.00	200.0	V	144.00	-1
1694.75	46.02	---	74.00	27.98	500.00	200.0	H	0.00	0
1722.25	---	33.90	54.00	20.10	500.00	200.0	V	31.00	0
1982.75	46.57	---	74.00	27.43	500.00	200.0	H	359.00	1
2076.75	---	34.83	54.00	19.17	500.00	100.0	V	228.00	1
2388.00	---	35.92	54.00	18.08	500.00	200.0	H	0.00	3
2388.25	46.98	---	74.00	27.02	500.00	100.0	V	0.00	3
2931.75	49.98	---	74.00	24.02	500.00	100.0	V	100.00	5
2971.00	---	38.07	54.00	15.93	500.00	200.0	H	351.00	5
13312.50	---	43.84	54.00	10.16	500.00	200.0	H	346.00	4

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

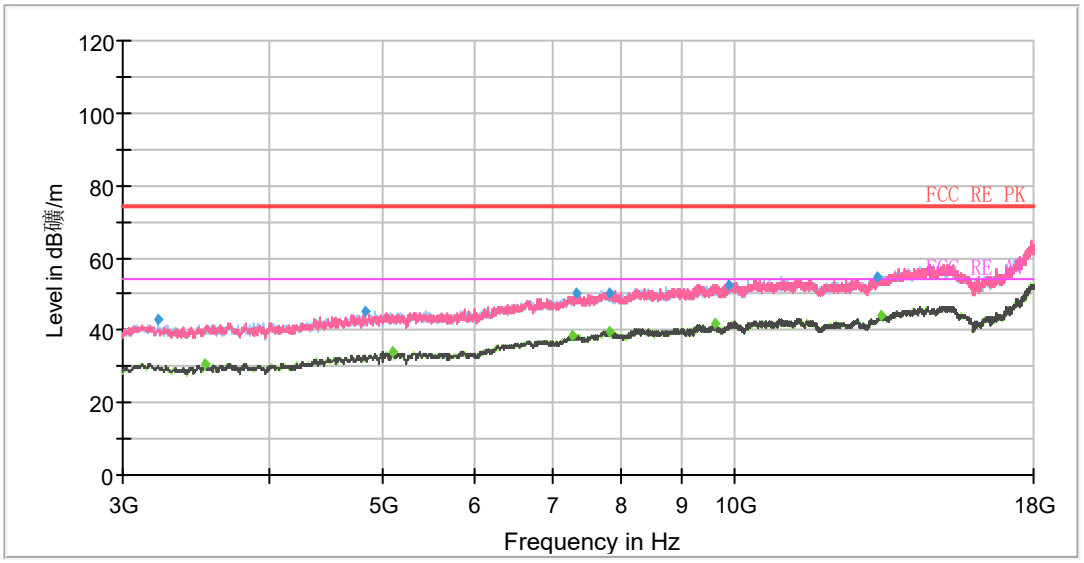
2. Margin = Limit –MAX Peak/ Average

Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

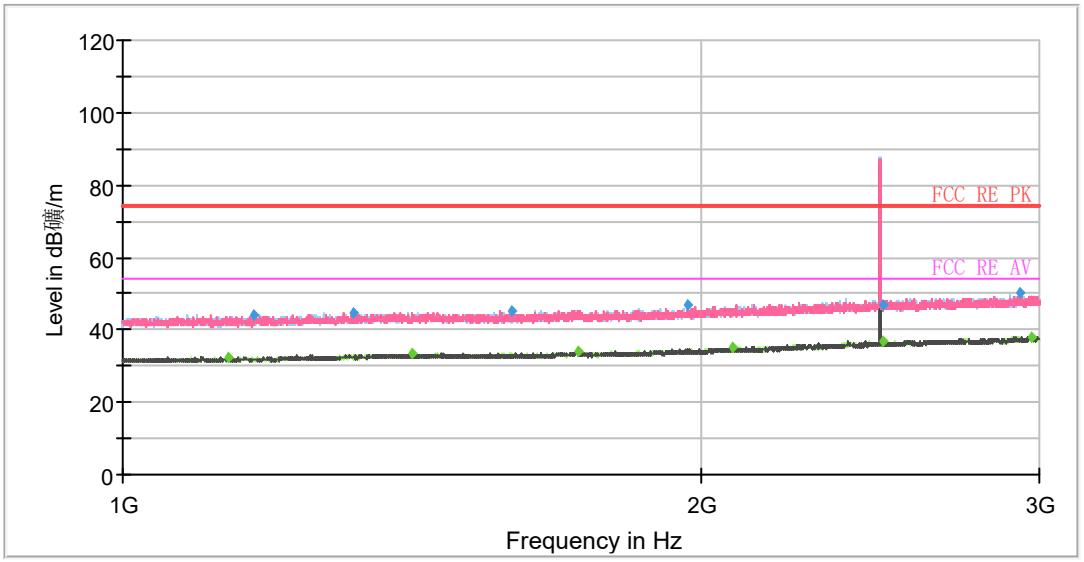


Radiates Emission from 3GHz to 18GHz

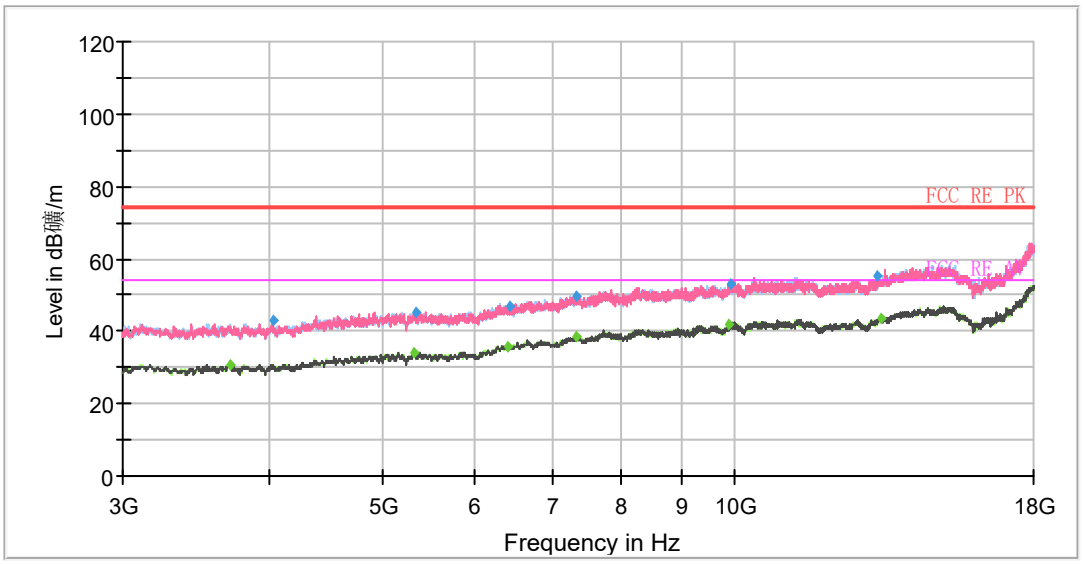
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1074.00	44.62	---	74.00	29.38	500.00	200.0	V	144.00	-3
1179.25	---	32.48	54.00	21.52	500.00	100.0	V	293.00	-2
1435.25	---	33.36	54.00	20.64	500.00	200.0	H	175.00	-1
1438.00	45.39	---	74.00	28.61	500.00	100.0	H	14.00	-1
1691.00	45.71	---	74.00	28.29	500.00	100.0	V	215.00	0
1726.50	---	33.84	54.00	20.16	500.00	200.0	H	352.00	0
2060.25	46.29	---	74.00	27.71	500.00	100.0	H	14.00	1
2066.25	---	34.83	54.00	19.17	500.00	200.0	V	286.00	1
2484.50	47.11	---	74.00	26.89	500.00	100.0	V	124.00	3
2484.75	---	36.14	54.00	17.86	500.00	200.0	H	162.00	3
2963.75	50.59	---	74.00	23.41	500.00	200.0	V	11.00	5
2967.25	---	38.20	54.00	15.80	500.00	100.0	V	332.00	5
13310.63	---	43.82	54.00	10.18	500.00	100.0	H	129.00	4

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

Bluetooth LE-Channel 39



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

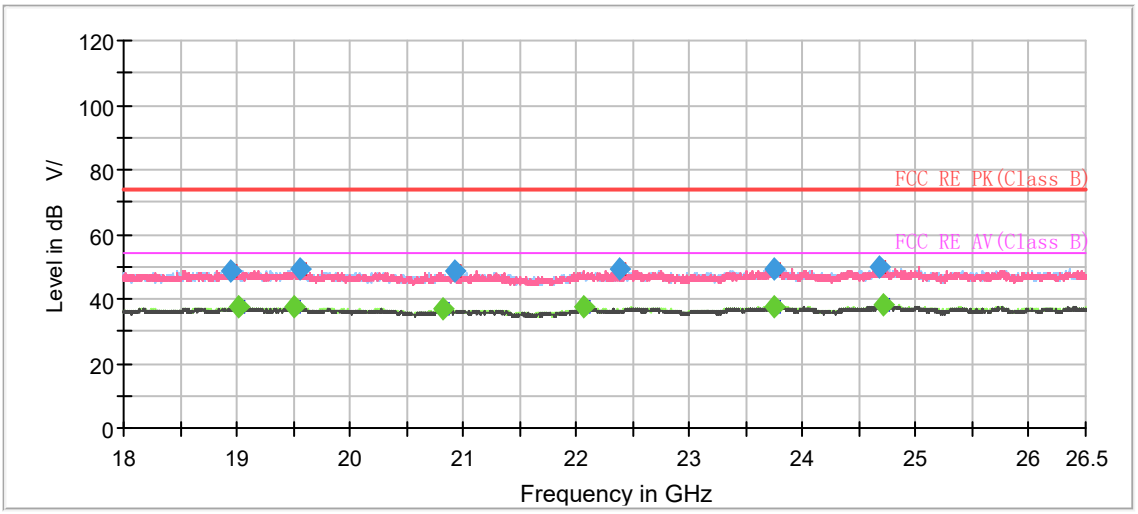


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1135.50	---	32.46	54.00	21.54	500.00	100.0	H	145.00	-2
1169.25	44.20	---	74.00	29.80	500.00	100.0	H	5.00	-2
1319.50	44.87	---	74.00	29.13	500.00	200.0	V	0.00	-1
1413.00	---	33.37	54.00	20.63	500.00	100.0	H	301.00	-1
1593.25	45.30	---	74.00	28.71	500.00	200.0	H	111.00	-1
1724.75	---	33.91	54.00	20.10	500.00	100.0	H	35.00	0
1967.00	46.91	---	74.00	27.09	500.00	200.0	V	25.00	1
2076.50	---	34.94	54.00	19.06	500.00	200.0	V	146.00	1
2485.50	---	36.71	54.00	17.29	500.00	200.0	V	90.00	3
2486.00	46.93	---	74.00	27.07	500.00	200.0	V	126.00	3
2931.75	49.97	---	74.00	24.03	500.00	100.0	H	29.00	5
2972.50	---	38.19	54.00	15.81	500.00	100.0	H	73.00	5
13350.00	---	43.59	54.00	10.41	500.00	100.0	V	276.00	5

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

During the test, the Radiates Emission from 18GHz to 26.5GHz was performed in all modes with all channels, Bluetooth LE-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18950.937500	48.60	---	74.00	25.40	500.0	200.0	V	56.0	-5.6
19010.437500	---	37.38	54.00	16.62	500.0	200.0	H	69.0	-5.6
19515.125000	---	37.40	54.00	16.60	500.0	200.0	V	172.0	-5.3
19552.312500	49.05	---	74.00	24.95	500.0	200.0	H	165.0	-5.3
20819.875000	---	36.85	54.00	17.15	500.0	200.0	H	351.0	-5.1
20922.937500	48.47	---	74.00	25.53	500.0	100.0	V	337.0	-5.1
22066.187500	---	37.35	54.00	16.65	500.0	200.0	V	10.0	-4.2
22386.000000	49.39	---	74.00	24.61	500.0	200.0	H	337.0	-4.0
23741.750000	49.22	---	74.00	24.78	500.0	200.0	H	134.0	-2.4
23741.750000	---	37.78	54.00	16.22	500.0	200.0	H	134.0	-2.4
24670.375000	49.60	---	74.00	24.40	500.0	200.0	V	32.0	-2.2
24713.937500	---	37.87	54.00	16.13	500.0	200.0	V	17.0	-2.1

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit –MAX Peak/ Average

5.7. Conducted Emission

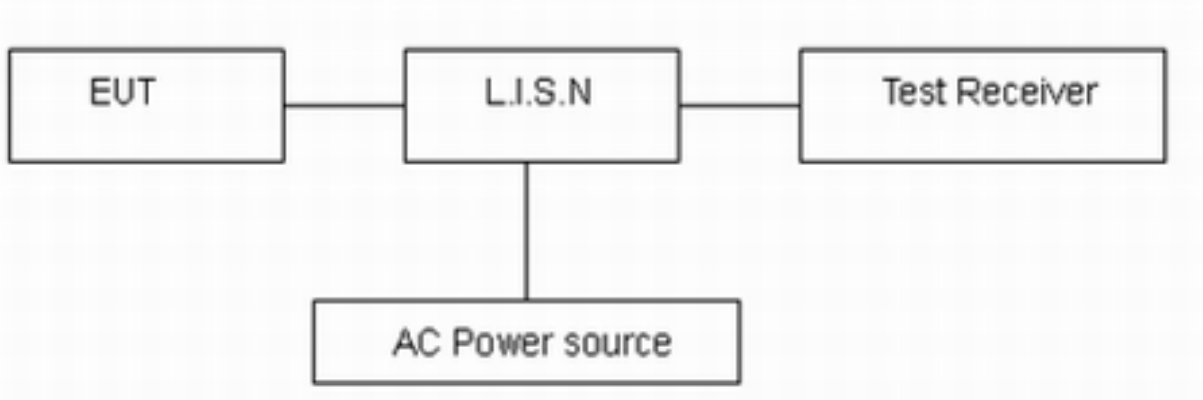
Ambient Condition

Temperature	Relative humidity
20°C ~ 25°C	45% ~ 50%

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz.
The measurement result should include both L line and N line.
The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage 120V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

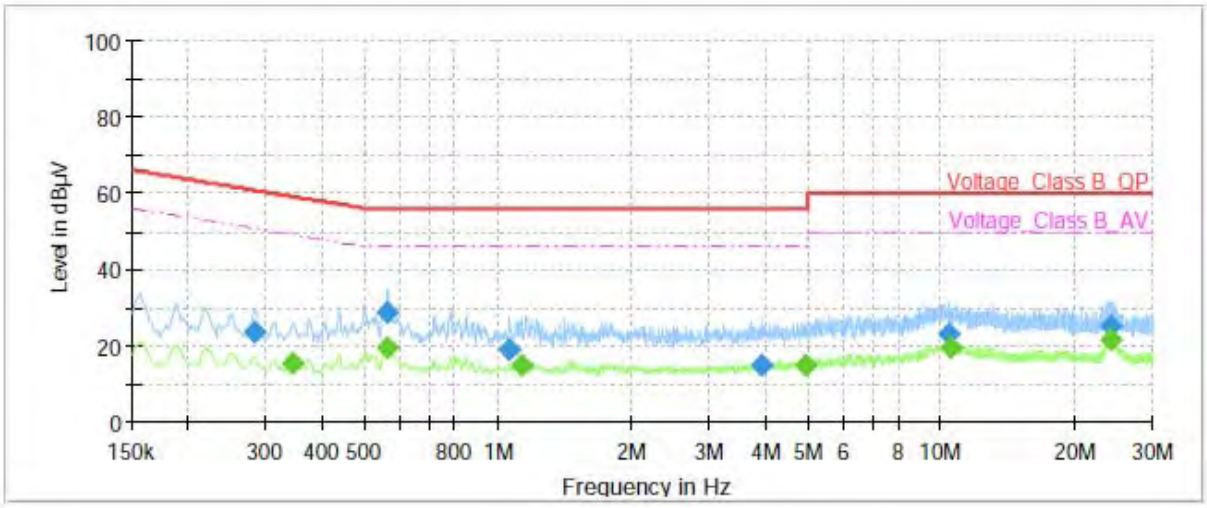
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U= 2.69 dB.

Test Results:

Following plots, Blue trace uses the peak detection and Green trace uses the average detection.

Wi-Fi 2.4G

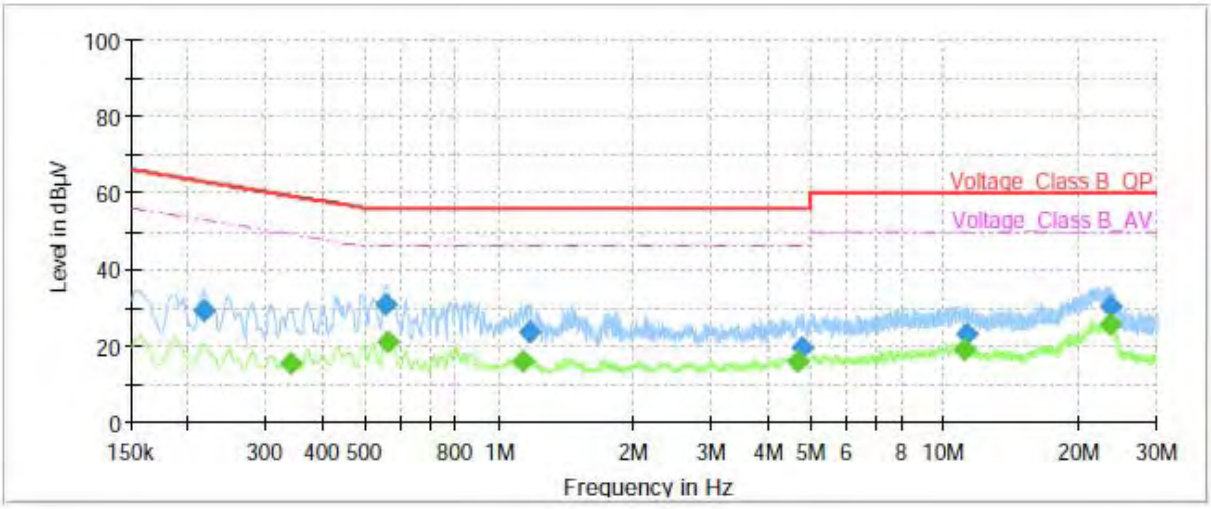
During the test, the Conducted Emission was performed in all modes with all channels, 802.11n (HT20) CH11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.28	23.47	---	60.74	37.27	1000.0	9.000	L1	ON	21.0
0.35	---	15.16	49.06	33.90	1000.0	9.000	L1	ON	21.0
0.56	28.50	---	56.00	27.50	1000.0	9.000	L1	ON	20.8
0.56	---	19.26	46.00	26.74	1000.0	9.000	L1	ON	20.8
1.06	18.90	---	56.00	37.10	1000.0	9.000	L1	ON	20.2
1.13	---	15.00	46.00	31.00	1000.0	9.000	L1	ON	20.1
3.92	15.01	---	56.00	40.99	1000.0	9.000	L1	ON	19.5
4.94	---	14.88	46.00	31.12	1000.0	9.000	L1	ON	19.5
10.37	23.23	---	60.00	36.77	1000.0	9.000	L1	ON	19.6
10.50	---	19.48	50.00	30.52	1000.0	9.000	L1	ON	19.6
24.06	---	21.72	50.00	28.28	1000.0	9.000	L1	ON	19.7
24.23	25.35	---	60.00	34.65	1000.0	9.000	L1	ON	19.7

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 KHz to 30 MHz



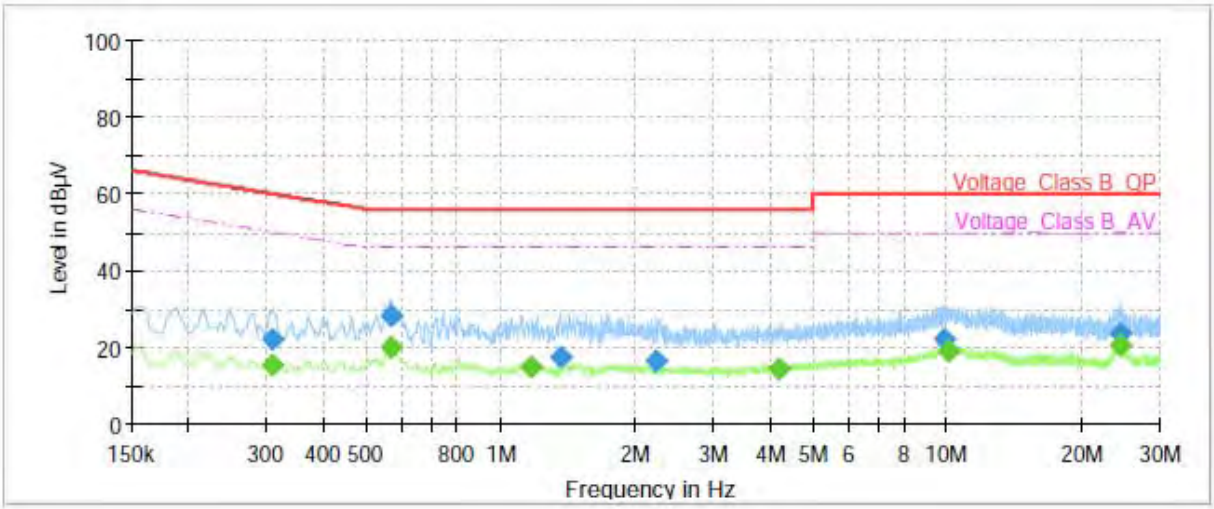
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.22	29.27	---	62.91	33.64	1000.0	9.000	N	ON	21.1
0.34	---	15.39	49.17	33.78	1000.0	9.000	N	ON	21.0
0.56	31.01	---	56.00	24.99	1000.0	9.000	N	ON	20.8
0.56	---	20.80	46.00	25.20	1000.0	9.000	N	ON	20.8
1.13	---	15.80	46.00	30.20	1000.0	9.000	N	ON	20.1
1.16	23.42	---	56.00	32.58	1000.0	9.000	N	ON	20.1
4.67	---	15.96	46.00	30.04	1000.0	9.000	N	ON	19.5
4.81	19.38	---	56.00	36.62	1000.0	9.000	N	ON	19.5
11.15	---	19.05	50.00	30.95	1000.0	9.000	N	ON	19.6
11.19	22.83	---	60.00	37.17	1000.0	9.000	N	ON	19.6
23.63	---	25.79	50.00	24.21	1000.0	9.000	N	ON	19.8
23.66	30.21	---	60.00	29.79	1000.0	9.000	N	ON	19.8

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz

Bluetooth LE

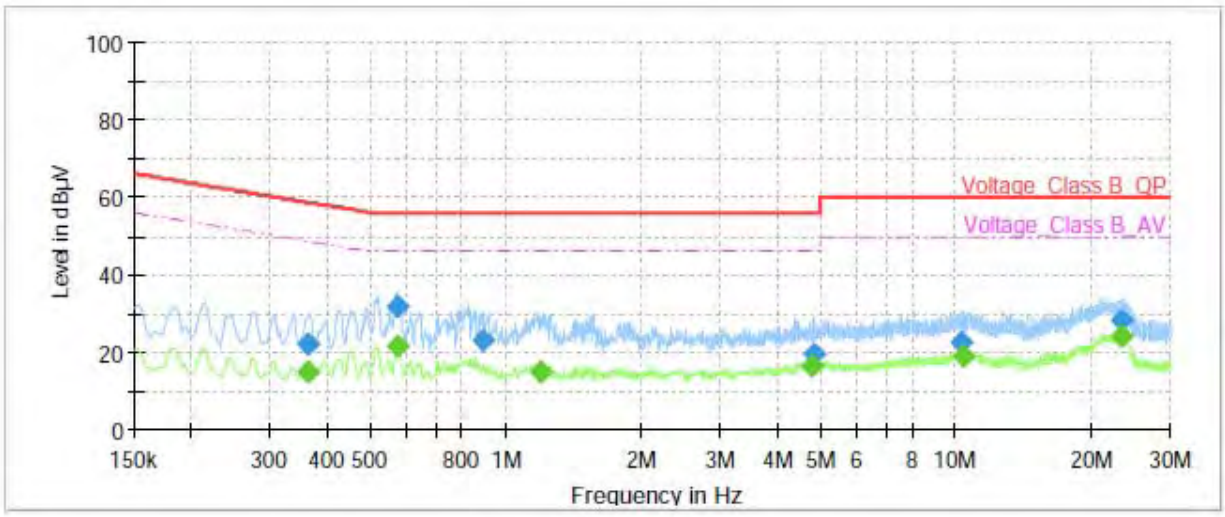
During the test, the Conducted Emission was performed in all modes with all channels, Bluetooth LE-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.31	22.01	---	60.04	38.03	1000.0	9.000	L1	ON	21.0
0.31	---	15.50	49.98	34.48	1000.0	9.000	L1	ON	21.0
0.57	---	19.96	46.00	26.04	1000.0	9.000	L1	ON	20.8
0.57	28.32	---	56.00	27.68	1000.0	9.000	L1	ON	20.8
1.17	---	15.06	46.00	30.94	1000.0	9.000	L1	ON	20.1
1.36	17.63	---	56.00	38.37	1000.0	9.000	L1	ON	20.0
2.23	16.26	---	56.00	39.74	1000.0	9.000	L1	ON	19.7
4.18	---	14.44	46.00	31.56	1000.0	9.000	L1	ON	19.5
9.81	22.30	---	60.00	37.70	1000.0	9.000	L1	ON	19.6
10.02	---	19.17	50.00	30.83	1000.0	9.000	L1	ON	19.6
24.25	23.65	---	60.00	36.35	1000.0	9.000	L1	ON	19.7
24.25	---	20.32	50.00	29.68	1000.0	9.000	L1	ON	19.7

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 KHz to 30 MHz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.36	22.28	---	58.69	36.42	1000.0	9.000	N	ON	21.0
0.36	---	14.84	48.69	36.41	1000.0	9.000	N	ON	21.0
0.57	31.57	---	56.00	24.43	1000.0	9.000	N	ON	20.8
0.57	---	21.77	46.00	24.23	1000.0	9.000	N	ON	20.8
0.89	23.25	---	56.00	32.75	1000.0	9.000	N	ON	20.3
1.19	---	15.08	46.00	30.92	1000.0	9.000	N	ON	20.1
4.80	---	16.31	46.00	29.69	1000.0	9.000	N	ON	19.5
4.82	19.26	---	56.00	36.74	1000.0	9.000	N	ON	19.5
10.25	22.44	---	60.00	37.56	1000.0	9.000	N	ON	19.6
10.35	---	18.78	50.00	31.22	1000.0	9.000	N	ON	19.6
23.32	---	24.32	50.00	25.68	1000.0	9.000	N	ON	19.8
23.32	28.26	---	60.00	31.74	1000.0	9.000	N	ON	19.8

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Power Sensor	R&S	NRP18S	101954	2023-05-12	2024-05-11
Spectrum Analyzer	KEYSIGHT	N9020A	MY51330870	2023-05-12	2024-05-11
Radiated Emission					
EMI Test Receiver	R&S	ESCI3	100948	2023-05-12	2024-05-11
Spectrum Analyzer	R&S	FSV40	101298	2023-05-12	2024-05-11
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	01111	2022-10-25	2025-10-24
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
Horn Antenna	R&S	HF907	102723	2021-07-24	2024-07-23
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Software	R&S	EMC32	9.26.01	/	/
Conducted Emission					
Artificial main network	R&S	ENV216	102191	2022-12-13	2024-12-09
EMI Test Receiver	R&S	ESR	101667	2023-05-12	2024-05-11
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

ANNEX C: Product Change Description

The Product Change Description are submitted separately.

******** END OF REPORT ********