

ANNEX A: Test Result

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 (Y axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

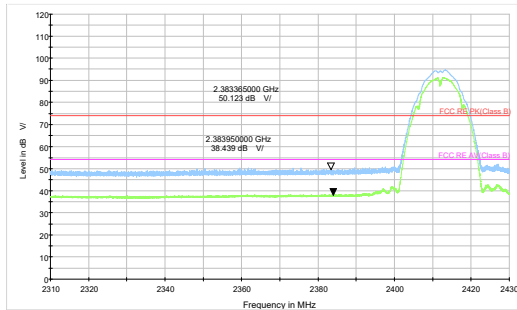
1. Unwanted Emission

1.1. Wi-Fi 2.4GHz

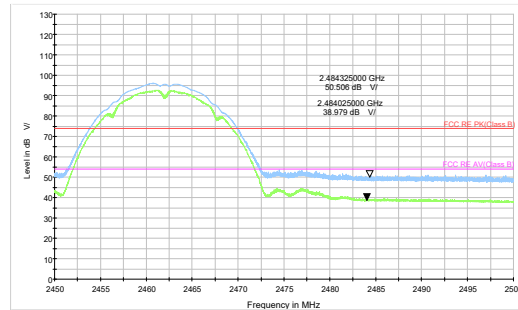
The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

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

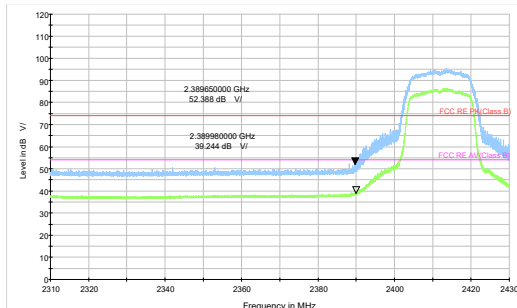
The signal beyond the limit is carrier.



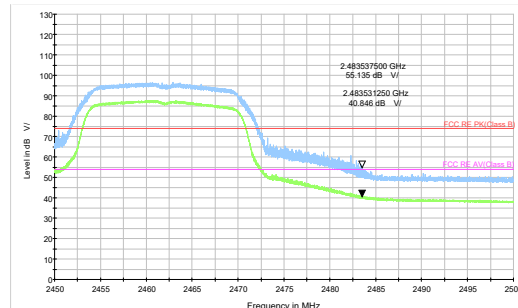
802.11b-Channel 1 Peak+ Average



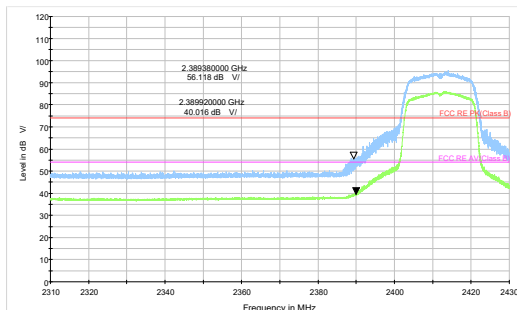
802.11b-Channel 11 Peak+ Average



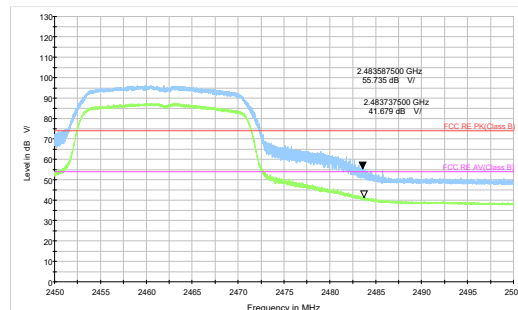
802.11g-Channel 1 Peak+ Average



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 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)**
A symbol (dB μ V) 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**

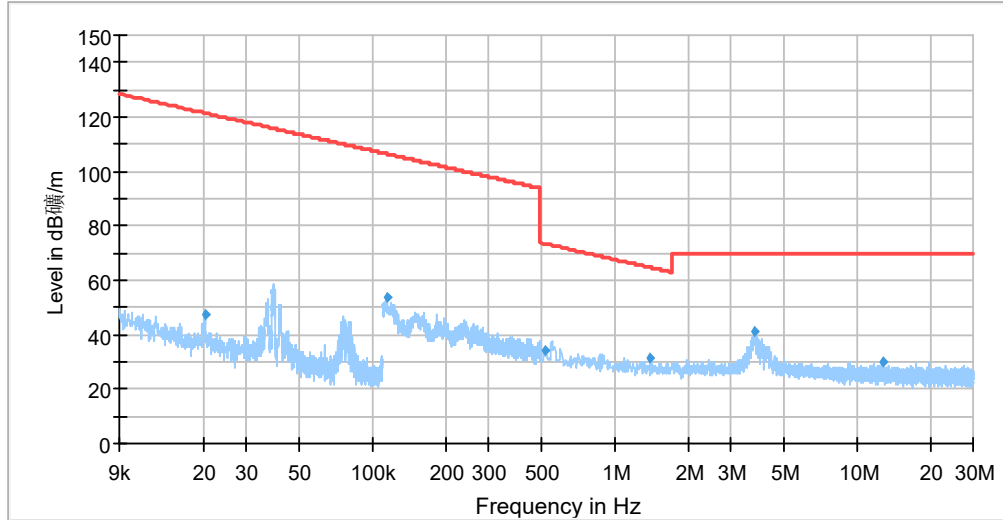
 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

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

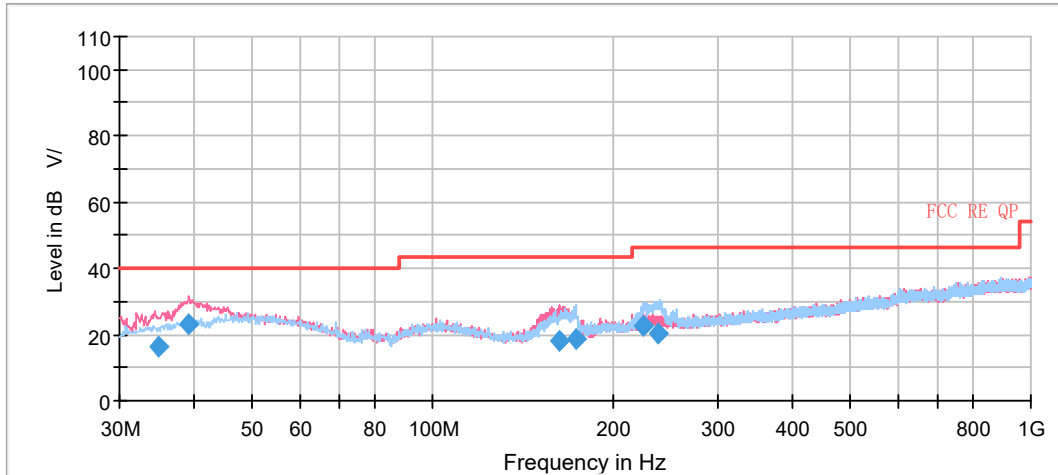
Continuous TX mode:

During the test, the Radiates Emission from 9kHz 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 9kHz to 30MHz

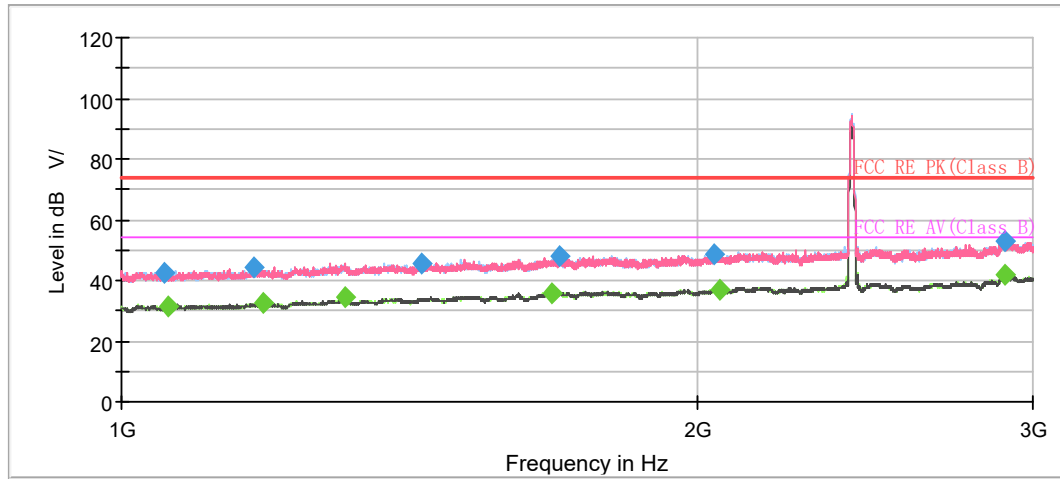
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Azimuth (deg)	Correct Factor (dB)
0.02	47.77	121.45	73.68	500.00	321.00	17
0.11	53.88	106.44	52.57	150.00	108.00	17
0.52	34.05	73.29	39.24	150.00	76.00	17
1.40	31.30	64.67	33.37	150.00	103.00	17
3.78	41.11	69.50	28.39	150.00	354.00	17
12.65	30.28	69.50	39.22	150.00	287.00	17



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
34.925000	16.40	40.00	23.60	1000.0	100.0	V	290.0	18.3
39.055000	23.29	40.00	16.71	1000.0	101.0	V	294.0	19.6
163.170000	17.99	43.50	25.51	1000.0	115.0	V	214.0	16.4
174.005000	18.39	43.50	25.11	1000.0	196.0	H	162.0	20.2
225.376250	22.63	46.00	23.37	1000.0	116.0	H	322.0	19.3
239.000000	20.53	46.00	25.47	1000.0	119.0	H	331.0	20.0

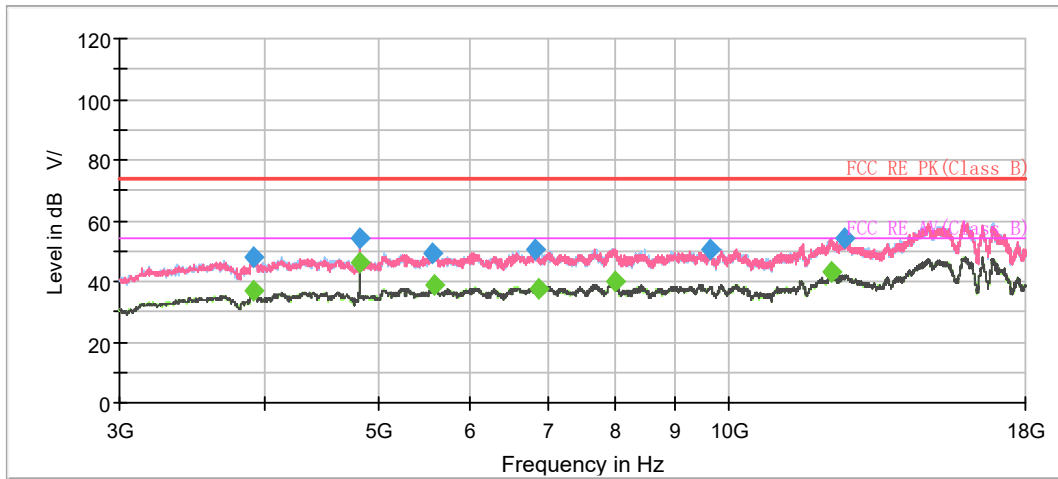
802.11b CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

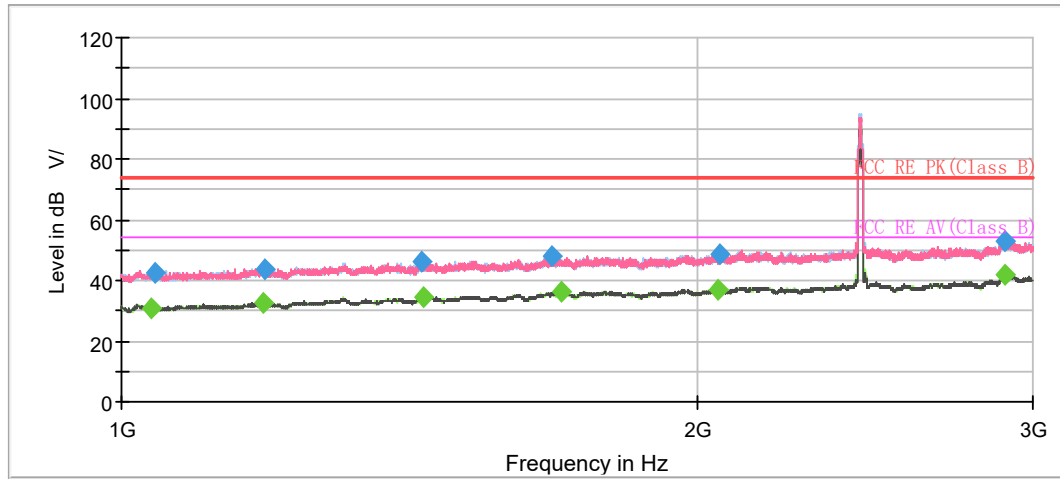
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1052.750000	42.21	---	74.00	31.79	500.0	100.0	V	308.0	-6.2
1057.250000	---	31.10	54.00	22.90	500.0	200.0	H	9.0	-6.0
1172.250000	44.29	---	74.00	29.71	500.0	200.0	H	3.0	-4.3
1185.500000	---	32.31	54.00	21.69	500.0	100.0	V	112.0	-3.9
1308.000000	---	34.62	54.00	19.38	500.0	200.0	H	51.0	-2.0
1437.250000	45.73	---	74.00	28.27	500.0	100.0	H	267.0	-1.8
1678.750000	---	35.91	54.00	18.09	500.0	100.0	H	291.0	0.4
1697.000000	48.03	---	74.00	25.97	500.0	100.0	V	181.0	0.4
2042.750000	48.50	---	74.00	25.50	500.0	100.0	H	322.0	2.5
2056.500000	---	37.08	54.00	16.92	500.0	200.0	H	70.0	2.4
2898.500000	52.77	---	74.00	21.23	500.0	100.0	H	229.0	8.5
2901.000000	---	42.00	54.00	12.00	500.0	100.0	V	261.0	8.6



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)
3909.375000	---	36.74	54.00	17.26	500.0	200.0	V	296.0	3.7
3916.875000	47.72	---	74.00	26.28	500.0	100.0	V	105.0	3.2
4822.500000	---	46.28	54.00	7.72	500.0	100.0	V	85.0	2.7
4822.500000	54.22	---	74.00	19.78	500.0	100.0	V	85.0	2.7
5572.500000	49.21	---	74.00	24.79	500.0	100.0	H	0.0	7.2
5598.750000	---	39.07	54.00	14.93	500.0	200.0	H	0.0	7.8
6832.500000	50.35	---	74.00	23.65	500.0	100.0	V	23.0	6.8
6881.250000	---	37.64	54.00	16.36	500.0	200.0	H	187.0	6.0
7991.250000	---	39.78	54.00	14.22	500.0	100.0	V	85.0	9.9
9669.375000	50.75	---	74.00	23.25	500.0	200.0	H	201.0	8.4
12283.125000	---	42.98	54.00	11.02	500.0	100.0	V	71.0	14.5
12586.875000	54.24	---	74.00	19.76	500.0	200.0	H	0.0	13.4

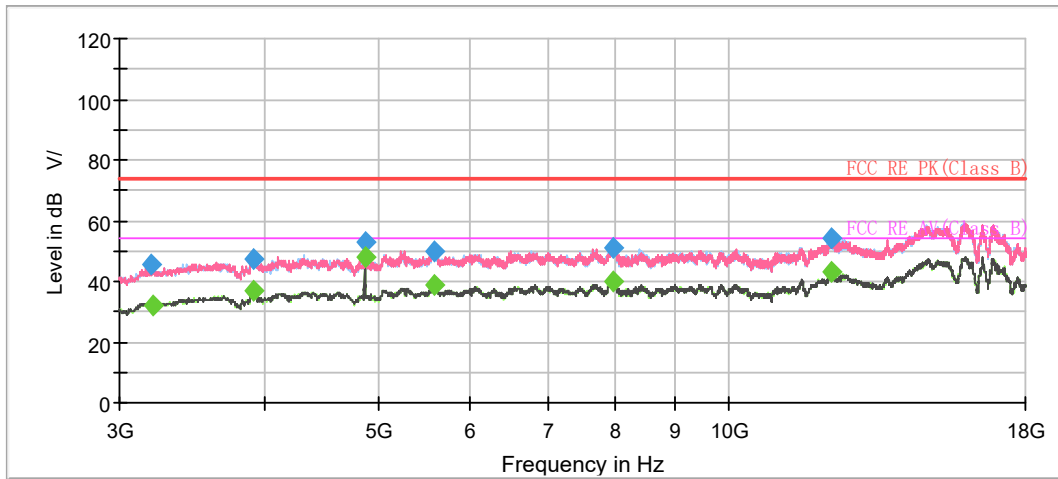
802.11b CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

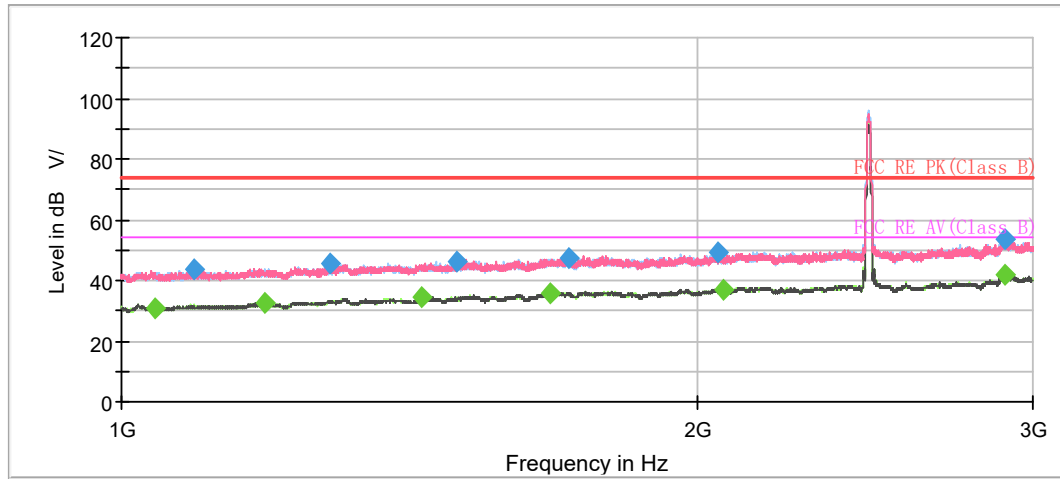
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1037.500000	---	30.82	54.00	23.18	500.0	200.0	H	337.0	-5.6
1041.750000	42.46	---	74.00	31.54	500.0	100.0	V	0.0	-5.6
1186.250000	---	32.63	54.00	21.37	500.0	100.0	H	68.0	-4.0
1189.250000	43.93	---	74.00	30.07	500.0	100.0	H	229.0	-4.2
1436.250000	46.44	---	74.00	27.56	500.0	100.0	V	43.0	-1.8
1438.000000	---	34.34	54.00	19.66	500.0	100.0	V	270.0	-1.7
1678.750000	47.90	---	74.00	26.10	500.0	100.0	V	123.0	0.4
1697.500000	---	36.08	54.00	17.92	500.0	200.0	H	59.0	0.4
2050.500000	---	36.98	54.00	17.02	500.0	200.0	H	90.0	2.5
2058.250000	48.64	---	74.00	25.36	500.0	200.0	V	53.0	2.3
2900.500000	53.17	---	74.00	20.83	500.0	200.0	V	91.0	8.6
2901.750000	---	41.85	54.00	12.15	500.0	100.0	H	285.0	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)
3193.125000	45.38	---	74.00	28.62	500.0	100.0	H	0.0	-0.8
3210.000000	---	32.31	54.00	21.69	500.0	100.0	H	318.0	-0.9
3907.500000	47.47	---	74.00	26.53	500.0	100.0	V	47.0	3.6
3911.250000	---	36.70	54.00	17.30	500.0	100.0	V	47.0	3.5
4873.125000	---	47.88	54.00	6.12	500.0	100.0	H	142.0	3.1
4873.125000	52.68	---	74.00	21.32	500.0	100.0	H	142.0	3.1
5595.000000	49.92	---	74.00	24.08	500.0	200.0	V	182.0	8.0
5598.750000	---	39.01	54.00	14.99	500.0	200.0	H	6.0	7.8
7955.625000	---	39.87	54.00	14.13	500.0	200.0	V	257.0	9.9
7974.375000	51.05	---	74.00	22.95	500.0	200.0	H	94.0	9.9
12271.875000	---	43.00	54.00	11.00	500.0	200.0	H	0.0	14.6
12275.625000	54.44	---	74.00	19.56	500.0	100.0	V	324.0	14.6

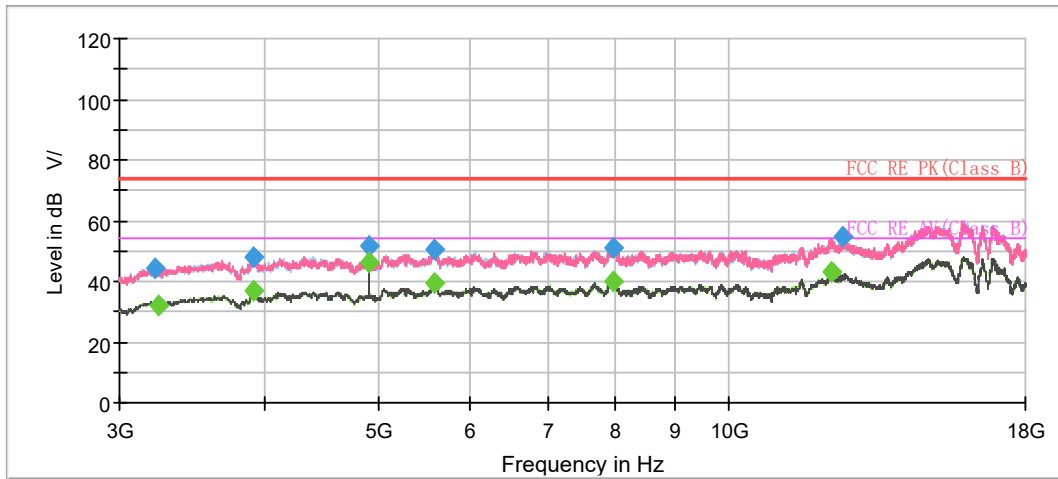
802.11b CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

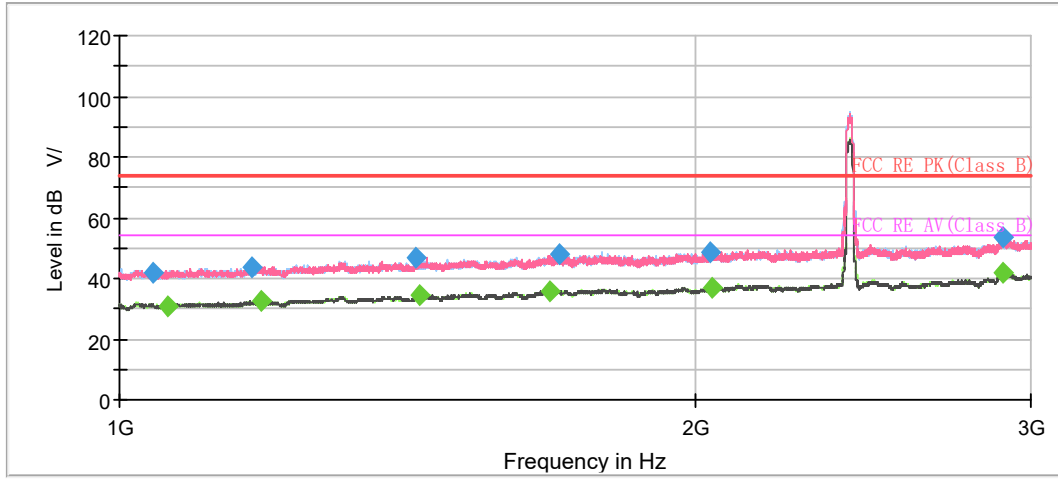
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1040.250000	---	30.98	54.00	23.02	500.0	200.0	H	70.0	-5.5
1090.750000	43.97	---	74.00	30.03	500.0	200.0	V	213.0	-5.2
1188.250000	---	32.47	54.00	21.53	500.0	200.0	V	205.0	-4.1
1287.250000	45.64	---	74.00	28.36	500.0	200.0	V	244.0	-3.1
1435.500000	---	34.61	54.00	19.39	500.0	200.0	H	14.0	-1.8
1499.750000	45.91	---	74.00	28.09	500.0	200.0	H	113.0	-1.6
1677.750000	---	35.87	54.00	18.13	500.0	200.0	V	198.0	0.4
1713.000000	47.13	---	74.00	26.87	500.0	100.0	V	0.0	0.4
2053.500000	49.11	---	74.00	24.89	500.0	100.0	V	5.0	2.4
2065.750000	---	37.06	54.00	16.94	500.0	200.0	H	57.0	2.1
2900.250000	---	41.99	54.00	12.01	500.0	200.0	H	139.0	8.6
2900.500000	53.39	---	74.00	20.61	500.0	200.0	V	205.0	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)
3211.875000	44.23	---	74.00	29.77	500.0	100.0	V	213.0	-0.9
3243.750000	---	31.91	54.00	22.09	500.0	100.0	H	0.0	-1.3
3911.250000	---	36.74	54.00	17.26	500.0	200.0	V	193.0	3.5
3915.000000	48.19	---	74.00	25.81	500.0	100.0	V	277.0	3.3
4923.750000	---	46.00	54.00	8.00	500.0	200.0	H	154.0	3.0
4923.750000	51.70	---	74.00	22.30	500.0	200.0	H	154.0	3.0
5593.125000	50.28	---	74.00	23.72	500.0	200.0	V	286.0	8.1
5596.875000	---	39.38	54.00	14.62	500.0	200.0	V	166.0	7.9
7957.500000	---	39.73	54.00	14.27	500.0	200.0	V	140.0	9.9
7978.125000	50.80	---	74.00	23.20	500.0	100.0	V	150.0	9.9
12273.750000	---	43.13	54.00	10.87	500.0	200.0	H	85.0	14.6
12523.125000	54.66	---	74.00	19.34	500.0	100.0	V	170.0	13.9

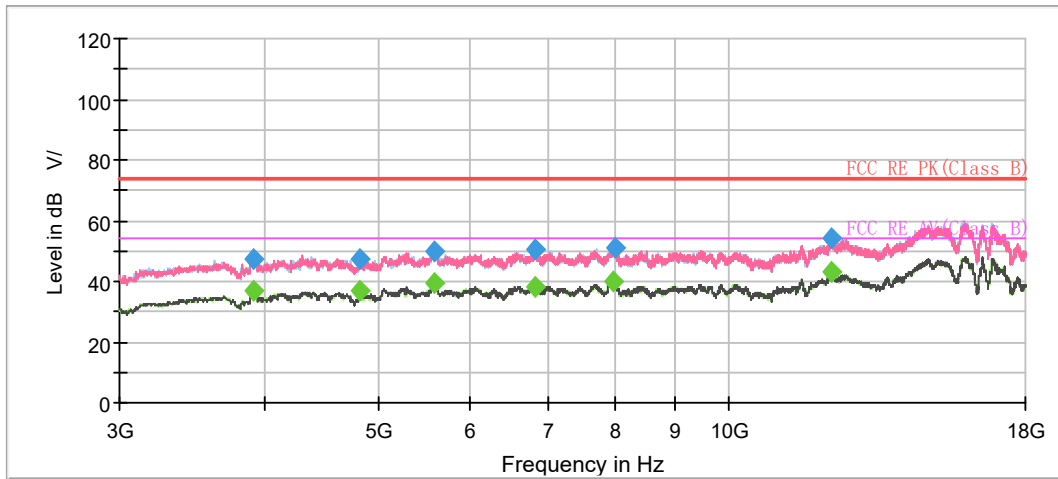
802.11g CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

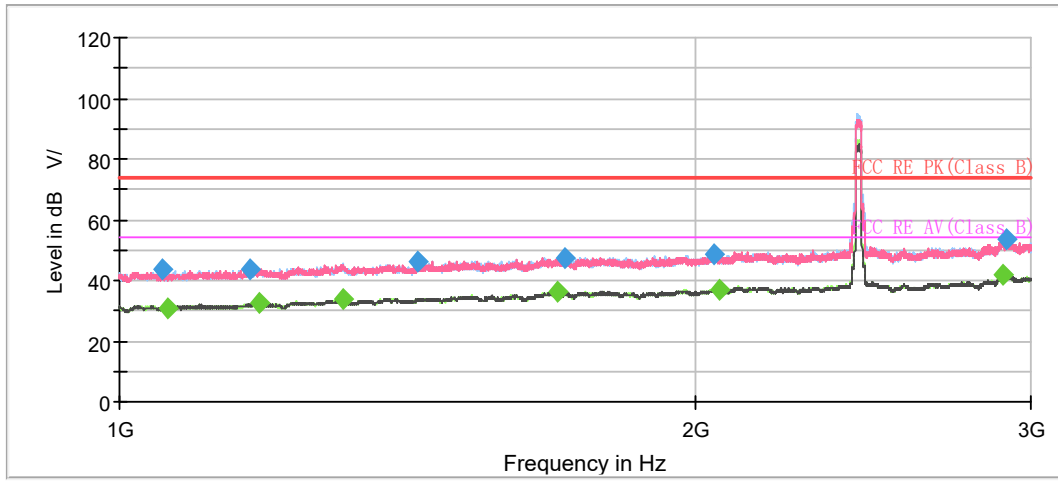
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1042.250000	41.88	---	74.00	32.12	500.0	100.0	H	79.0	-5.6
1060.500000	---	30.74	54.00	23.26	500.0	200.0	H	0.0	-5.9
1172.000000	43.90	---	74.00	30.10	500.0	200.0	V	5.0	-4.3
1185.250000	---	32.45	54.00	21.55	500.0	100.0	V	304.0	-3.9
1428.500000	46.63	---	74.00	27.37	500.0	100.0	V	358.0	-2.1
1435.250000	---	34.28	54.00	19.72	500.0	100.0	V	186.0	-1.8
1679.500000	---	35.98	54.00	18.02	500.0	100.0	H	5.0	0.4
1699.750000	47.84	---	74.00	26.16	500.0	100.0	V	143.0	0.4
2039.000000	48.40	---	74.00	25.60	500.0	200.0	V	55.0	2.4
2042.250000	---	37.05	54.00	16.95	500.0	100.0	H	73.0	2.5
2899.500000	---	41.78	54.00	12.22	500.0	100.0	H	229.0	8.6
2901.250000	53.54	---	74.00	20.46	500.0	200.0	H	279.0	8.6



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)
3913.125000	---	36.76	54.00	17.24	500.0	200.0	V	204.0	3.4
3918.750000	47.35	---	74.00	26.65	500.0	100.0	V	104.0	3.1
4820.625000	---	36.91	54.00	17.09	500.0	100.0	V	71.0	2.7
4830.000000	47.18	---	74.00	26.82	500.0	200.0	H	142.0	2.8
5593.125000	---	39.42	54.00	14.58	500.0	100.0	H	347.0	8.1
5602.500000	49.66	---	74.00	24.34	500.0	100.0	H	259.0	7.5
6813.750000	---	38.31	54.00	15.69	500.0	200.0	V	300.0	6.9
6825.000000	50.24	---	74.00	23.76	500.0	200.0	H	156.0	6.9
7959.375000	---	39.77	54.00	14.23	500.0	200.0	V	259.0	9.9
8000.625000	50.92	---	74.00	23.08	500.0	200.0	V	239.0	9.9
12273.750000	---	42.93	54.00	11.07	500.0	200.0	H	169.0	14.6
12273.750000	54.07	---	74.00	19.93	500.0	200.0	V	100.0	14.6

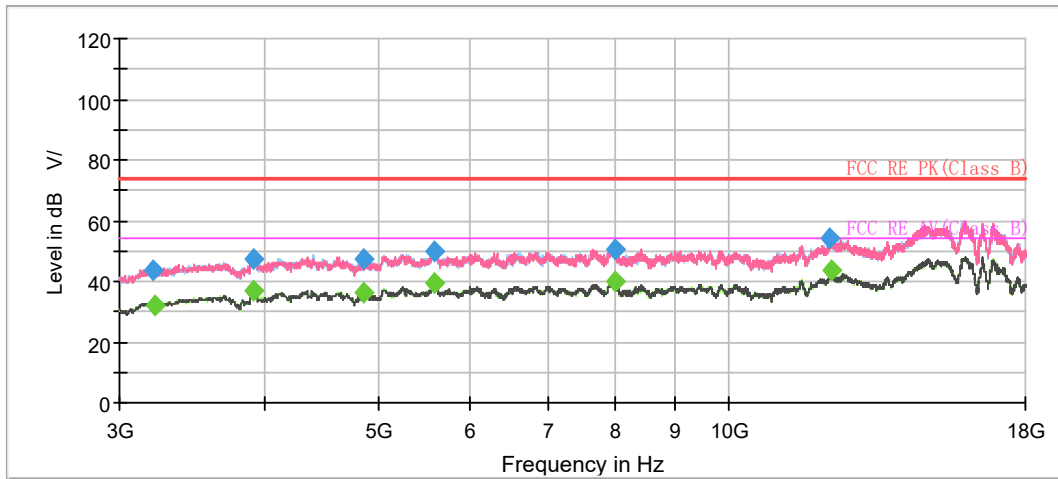
802.11g CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

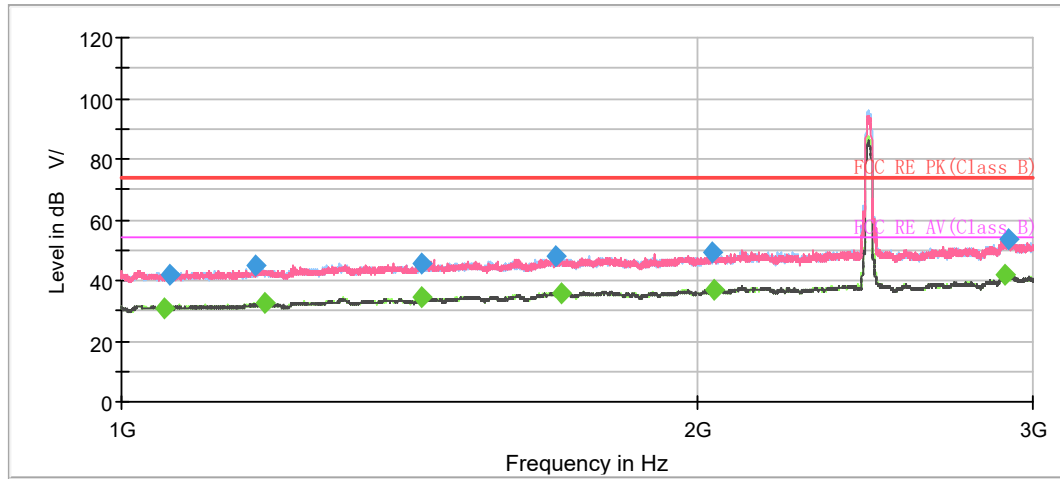
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1052.750000	43.54	---	74.00	30.46	500.0	100.0	H	184.0	-6.2
1060.000000	---	30.55	54.00	23.45	500.0	100.0	H	178.0	-5.9
1169.250000	43.99	---	74.00	30.01	500.0	100.0	H	346.0	-4.4
1184.500000	---	32.61	54.00	21.39	500.0	100.0	H	117.0	-3.9
1308.250000	---	34.07	54.00	19.93	500.0	200.0	V	271.0	-2.0
1433.500000	45.87	---	74.00	28.13	500.0	200.0	V	29.0	-1.9
1697.250000	---	36.13	54.00	17.87	500.0	200.0	H	0.0	0.4
1710.000000	47.26	---	74.00	26.74	500.0	200.0	V	246.0	0.5
2046.250000	48.73	---	74.00	25.27	500.0	200.0	V	278.0	2.6
2059.500000	---	37.00	54.00	17.00	500.0	100.0	V	85.0	2.3
2900.500000	---	41.79	54.00	12.21	500.0	100.0	H	40.0	8.6
2913.250000	53.53	---	74.00	20.47	500.0	100.0	V	275.0	8.3



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)
3200.625000	43.91	---	74.00	30.09	500.0	100.0	V	124.0	-0.8
3221.250000	---	32.18	54.00	21.82	500.0	200.0	H	135.0	-1.1
3907.500000	---	36.85	54.00	17.15	500.0	200.0	V	205.0	3.6
3913.125000	47.35	---	74.00	26.65	500.0	100.0	V	132.0	3.4
4858.125000	47.24	---	74.00	26.76	500.0	100.0	V	221.0	3.0
4871.250000	---	36.58	54.00	17.42	500.0	100.0	V	56.0	3.1
5595.000000	50.00	---	74.00	24.00	500.0	100.0	V	236.0	8.0
5596.875000	---	39.38	54.00	14.62	500.0	200.0	H	135.0	7.9
7987.500000	50.75	---	74.00	23.25	500.0	200.0	H	224.0	9.9
7993.125000	---	40.06	54.00	13.94	500.0	100.0	H	273.0	9.9
12240.000000	54.27	---	74.00	19.73	500.0	100.0	H	313.0	13.9
12277.500000	---	43.39	54.00	10.61	500.0	100.0	H	334.0	14.6

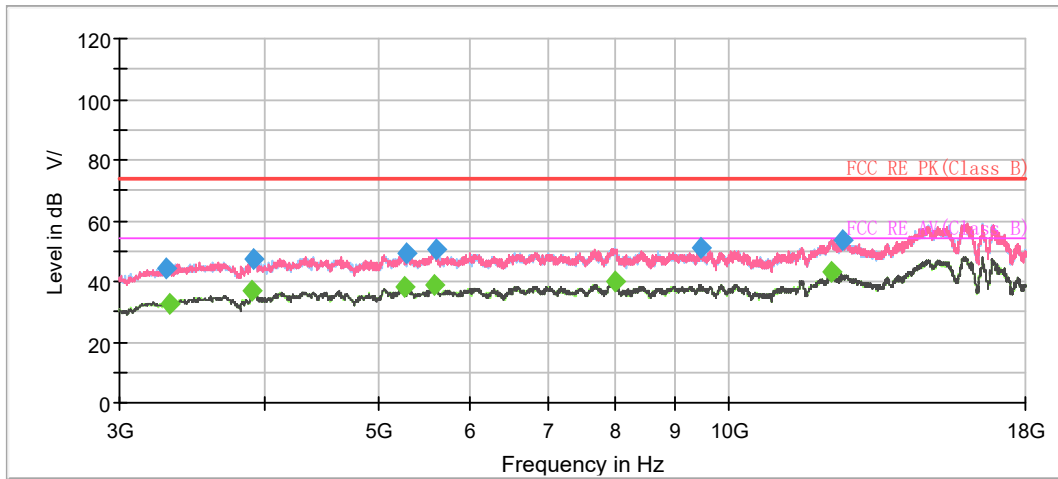
802.11g CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

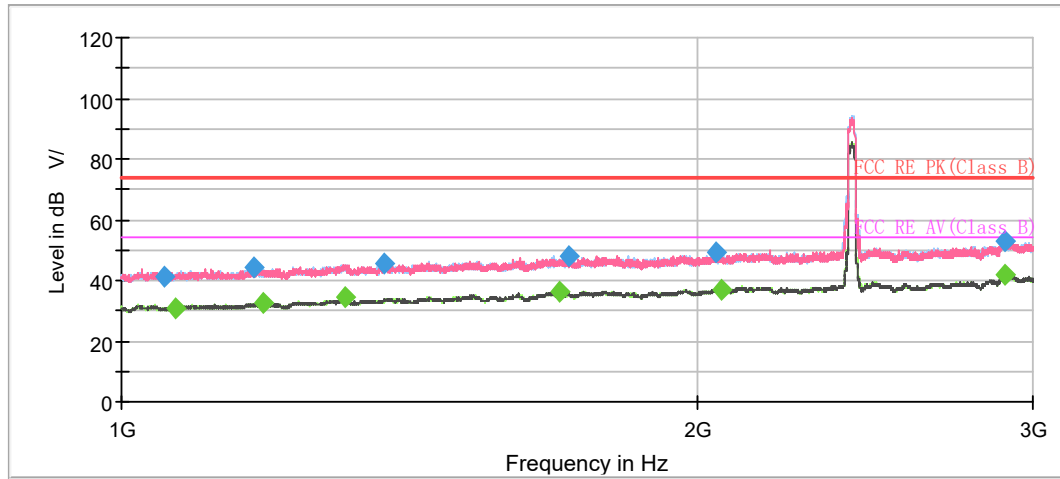
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1052.750000	---	30.67	54.00	23.33	500.0	100.0	H	48.0	-6.2
1059.250000	41.89	---	74.00	32.11	500.0	100.0	H	159.0	-6.0
1176.250000	44.73	---	74.00	29.27	500.0	100.0	V	281.0	-4.2
1190.000000	---	32.52	54.00	21.48	500.0	200.0	V	30.0	-4.2
1434.750000	45.54	---	74.00	28.46	500.0	200.0	V	36.0	-1.8
1437.250000	---	34.33	54.00	19.67	500.0	200.0	V	61.0	-1.8
1689.500000	47.80	---	74.00	26.20	500.0	200.0	H	282.0	0.4
1698.000000	---	35.98	54.00	18.02	500.0	200.0	H	147.0	0.4
2039.250000	49.40	---	74.00	24.61	500.0	100.0	V	178.0	2.4
2043.250000	---	37.08	54.00	16.92	500.0	100.0	H	159.0	2.5
2901.500000	---	41.68	54.00	12.32	500.0	100.0	V	110.0	8.6
2913.250000	53.53	---	74.00	20.47	500.0	100.0	H	288.0	8.3



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)
3294.375000	44.01	---	74.00	29.99	500.0	100.0	V	72.0	-0.8
3318.750000	---	32.32	54.00	21.68	500.0	200.0	H	68.0	-1.0
3901.875000	---	36.63	54.00	17.37	500.0	200.0	H	153.0	3.1
3911.250000	47.52	---	74.00	26.48	500.0	200.0	V	316.0	3.5
5268.750000	---	38.32	54.00	15.68	500.0	100.0	V	38.0	6.6
5295.000000	49.08	---	74.00	24.92	500.0	200.0	H	207.0	6.1
5596.875000	---	39.07	54.00	14.93	500.0	100.0	H	313.0	7.9
5606.250000	50.35	---	74.00	23.65	500.0	200.0	V	269.0	7.3
7989.375000	---	39.88	54.00	14.12	500.0	200.0	V	133.0	9.9
9466.875000	50.98	---	74.00	23.02	500.0	200.0	H	207.0	9.4
12281.250000	---	43.12	54.00	10.88	500.0	100.0	H	210.0	14.5
12556.875000	53.54	---	74.00	20.46	500.0	200.0	V	316.0	13.6

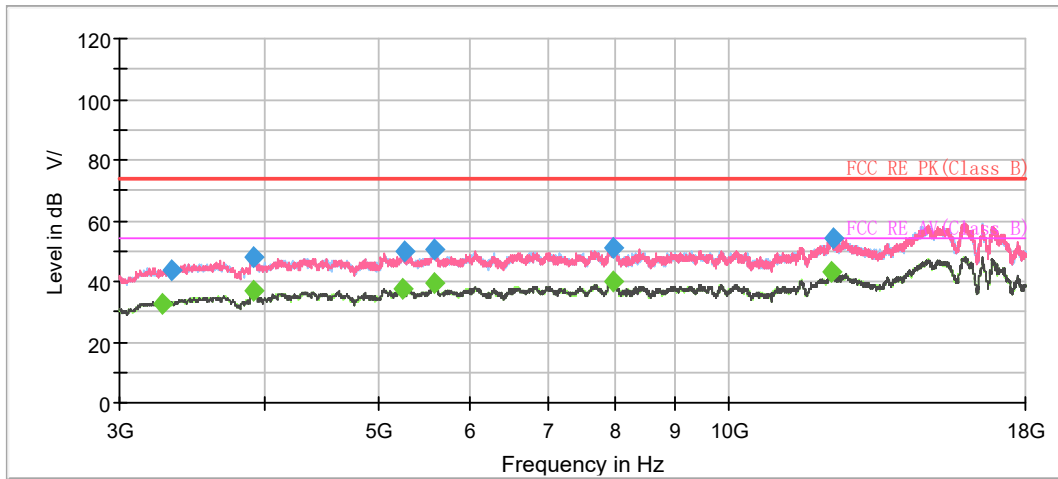
802.11n (HT20) CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

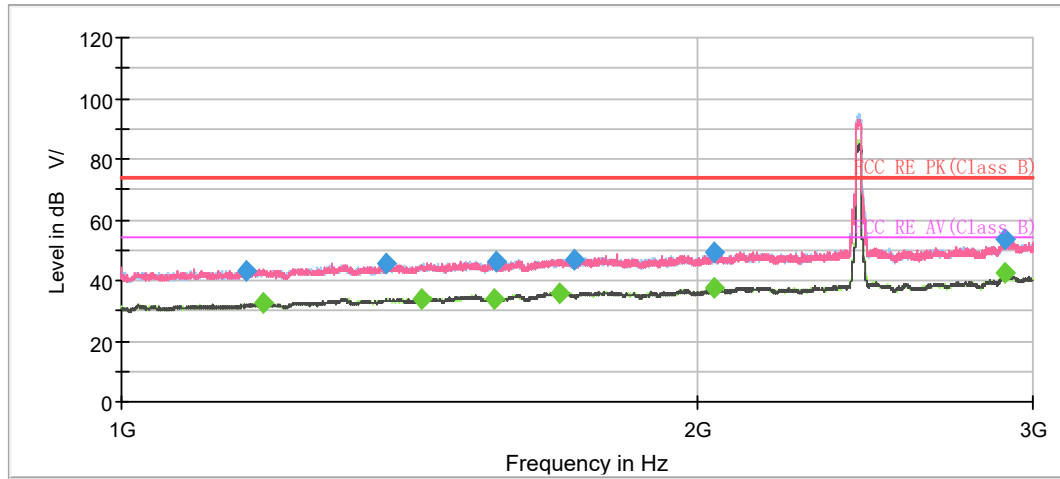
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1053.500000	41.30	---	74.00	32.70	500.0	200.0	H	227.0	-6.2
1066.750000	---	30.56	54.00	23.44	500.0	200.0	H	202.0	-5.7
1173.500000	44.60	---	74.00	29.40	500.0	200.0	H	306.0	-4.3
1185.250000	---	32.49	54.00	21.51	500.0	200.0	H	130.0	-3.9
1308.250000	---	34.34	54.00	19.66	500.0	100.0	V	91.0	-2.0
1372.000000	45.53	---	74.00	28.47	500.0	200.0	V	252.0	-2.4
1695.500000	---	36.14	54.00	17.86	500.0	200.0	V	165.0	0.3
1713.250000	48.14	---	74.00	25.86	500.0	100.0	H	199.0	0.4
2046.250000	49.10	---	74.00	24.90	500.0	200.0	V	222.0	2.6
2060.250000	---	37.13	54.00	16.87	500.0	200.0	H	306.0	2.3
2901.250000	---	41.83	54.00	12.17	500.0	200.0	V	0.0	8.6
2902.000000	53.01	---	74.00	20.99	500.0	100.0	H	100.0	8.6



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)
3270.000000	---	32.65	54.00	21.35	500.0	100.0	H	0.0	-1.1
3322.500000	43.75	---	74.00	30.25	500.0	100.0	V	146.0	-1.0
3907.500000	47.91	---	74.00	26.09	500.0	100.0	H	0.0	3.6
3909.375000	---	36.83	54.00	17.17	500.0	200.0	H	37.0	3.7
5250.000000	---	37.79	54.00	16.21	500.0	100.0	H	293.0	6.0
5274.375000	49.93	---	74.00	24.07	500.0	200.0	H	92.0	6.5
5595.000000	50.15	---	74.00	23.85	500.0	200.0	V	147.0	8.0
5598.750000	---	39.11	54.00	14.89	500.0	200.0	H	51.0	7.8
7959.375000	---	39.82	54.00	14.18	500.0	100.0	H	279.0	9.9
7968.750000	51.26	---	74.00	22.74	500.0	100.0	V	324.0	9.9
12270.000000	---	42.97	54.00	11.03	500.0	100.0	V	139.0	14.5
12316.875000	54.02	---	74.00	19.98	500.0	100.0	H	231.0	13.9

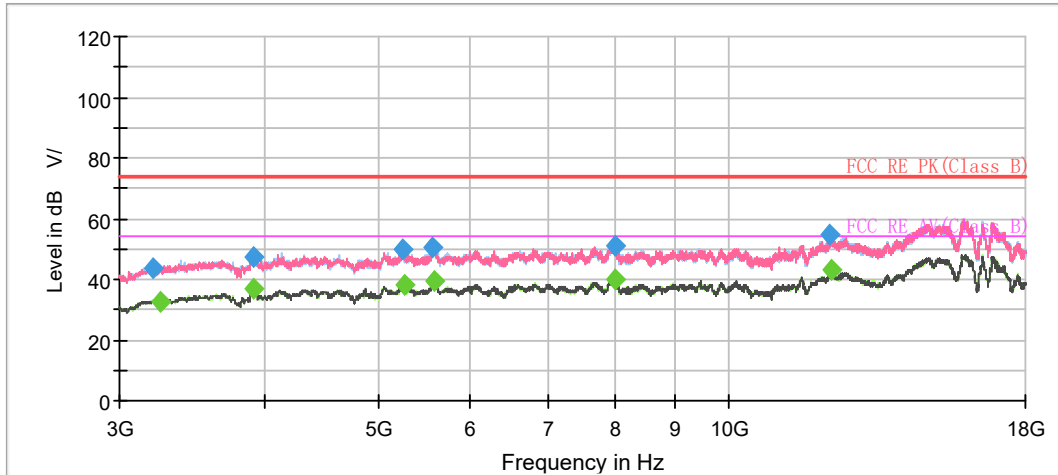
802.11n (HT20) CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

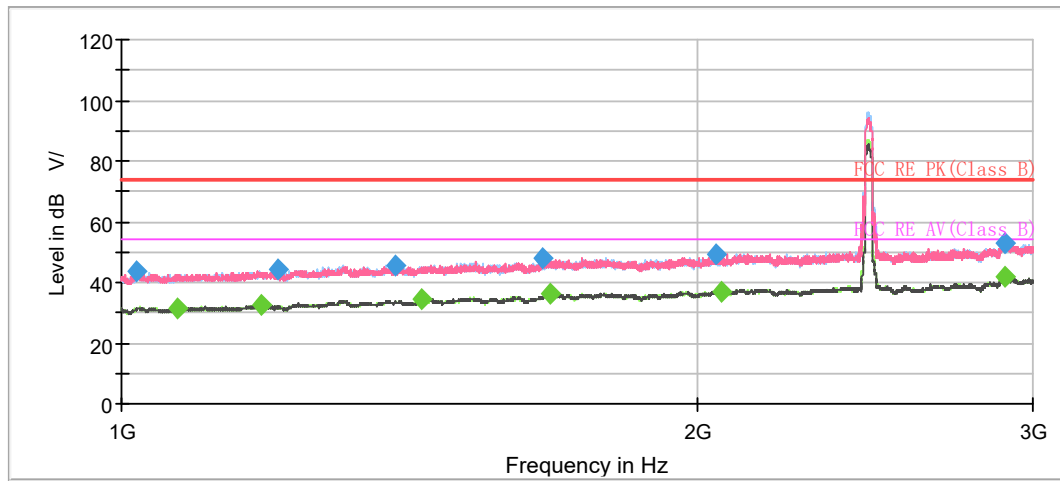
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1162.000000	43.24	---	74.00	30.76	500.0	200.0	H	316.0	-4.7
1185.250000	---	32.56	54.00	21.44	500.0	100.0	H	0.0	-3.9
1377.250000	45.47	---	74.00	28.53	500.0	100.0	H	83.0	-2.3
1436.250000	---	34.04	54.00	19.96	500.0	200.0	H	304.0	-1.8
1567.500000	---	33.94	54.00	20.06	500.0	200.0	H	217.0	-1.1
1570.500000	46.20	---	74.00	27.80	500.0	200.0	H	354.0	-1.3
1696.750000	---	35.92	54.00	18.08	500.0	100.0	H	114.0	0.3
1725.500000	47.01	---	74.00	26.99	500.0	100.0	H	53.0	-0.4
2042.000000	---	37.26	54.00	16.74	500.0	200.0	H	0.0	2.5
2043.000000	48.97	---	74.00	25.03	500.0	200.0	H	329.0	2.5
2898.000000	53.24	---	74.00	20.76	500.0	200.0	H	335.0	8.5
2902.750000	---	42.26	54.00	11.74	500.0	200.0	H	347.0	8.6



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)
3210.000000	43.67	---	74.00	30.33	500.0	200.0	H	117.0	-0.9
3256.875000	---	32.69	54.00	21.31	500.0	100.0	V	0.0	-1.2
3913.125000	---	36.73	54.00	17.27	500.0	100.0	H	352.0	3.4
3915.000000	47.69	---	74.00	26.31	500.0	100.0	V	61.0	3.3
5257.500000	49.67	---	74.00	24.33	500.0	200.0	V	262.0	6.2
5274.375000	---	37.91	54.00	16.09	500.0	200.0	V	269.0	6.5
5581.875000	50.21	---	74.00	23.79	500.0	100.0	H	255.0	7.6
5596.875000	---	39.22	54.00	14.78	500.0	100.0	H	269.0	7.9
7991.250000	---	39.76	54.00	14.24	500.0	100.0	V	0.0	9.9
8002.500000	50.88	---	74.00	23.12	500.0	200.0	H	82.0	9.8
12223.125000	55.02	---	74.00	18.98	500.0	100.0	V	109.0	13.5
12279.375000	---	43.11	54.00	10.89	500.0	100.0	V	190.0	14.5

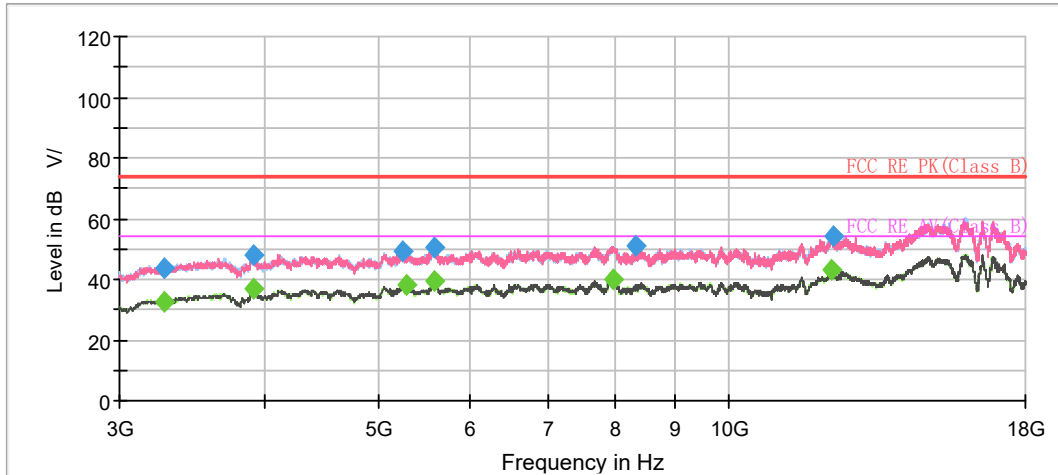
802.11n (HT20) CH11



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)
1018.000000	43.92	---	74.00	30.08	500.0	100.0	H	121.0	-5.7
1070.250000	---	31.68	54.00	22.32	500.0	200.0	V	145.0	-5.5
1183.000000	---	32.68	54.00	21.32	500.0	100.0	H	182.0	-3.9
1207.500000	44.11	---	74.00	29.89	500.0	200.0	V	41.0	-4.4
1391.750000	45.53	---	74.00	28.47	500.0	200.0	V	0.0	-2.4
1435.500000	---	34.22	54.00	19.78	500.0	200.0	H	138.0	-1.8
1662.750000	47.74	---	74.00	26.26	500.0	200.0	V	67.0	-0.1
1678.000000	---	36.25	54.00	17.75	500.0	100.0	V	180.0	0.4
2045.750000	49.07	---	74.00	24.93	500.0	100.0	V	223.0	2.5
2063.000000	---	37.00	54.00	17.00	500.0	100.0	H	95.0	2.2
2899.750000	---	41.90	54.00	12.10	500.0	200.0	V	41.0	8.6
2903.750000	53.17	---	74.00	20.83	500.0	100.0	H	258.0	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)
3279.375000	43.66	---	74.00	30.34	500.0	200.0	H	234.0	-1.0
3281.250000	---	32.76	54.00	21.24	500.0	100.0	H	159.0	-1.0
3909.375000	---	36.89	54.00	17.11	500.0	100.0	H	0.0	3.7
3911.250000	47.85	---	74.00	26.15	500.0	100.0	V	0.0	3.5
5255.625000	49.41	---	74.00	24.59	500.0	100.0	H	201.0	6.2
5300.625000	---	37.91	54.00	16.09	500.0	200.0	V	20.0	6.0
5595.000000	---	39.27	54.00	14.73	500.0	200.0	V	300.0	8.0
5602.500000	50.18	---	74.00	23.82	500.0	200.0	H	290.0	7.5
7965.000000	---	39.91	54.00	14.09	500.0	100.0	V	63.0	9.9
8319.375000	51.07	---	74.00	22.93	500.0	100.0	H	110.0	8.4
12275.625000	---	43.11	54.00	10.89	500.0	100.0	H	27.0	14.6
12309.375000	54.14	---	74.00	19.86	500.0	200.0	V	199.0	14.0

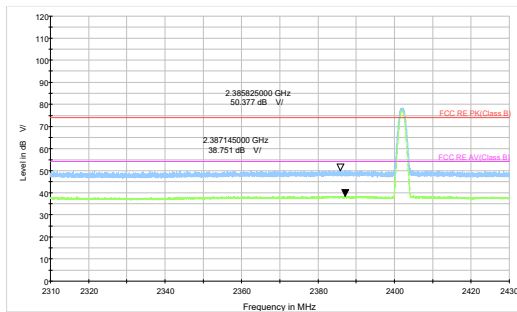
1.2. Bluetooth LE

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.

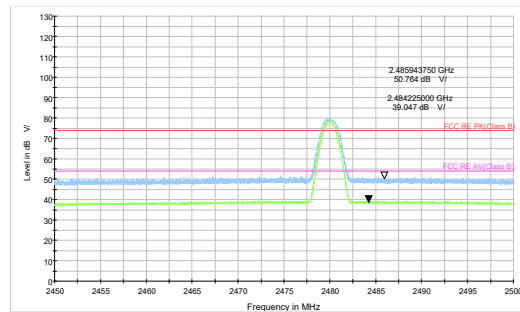
A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means (dB $\mu\text{V/m}$)

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 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)**
A symbol (dB μ V) 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**

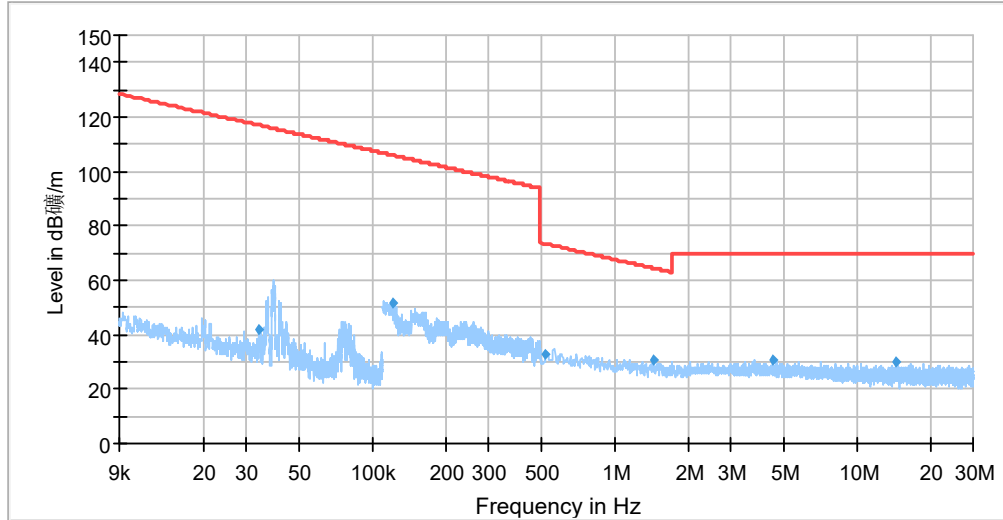
 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

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

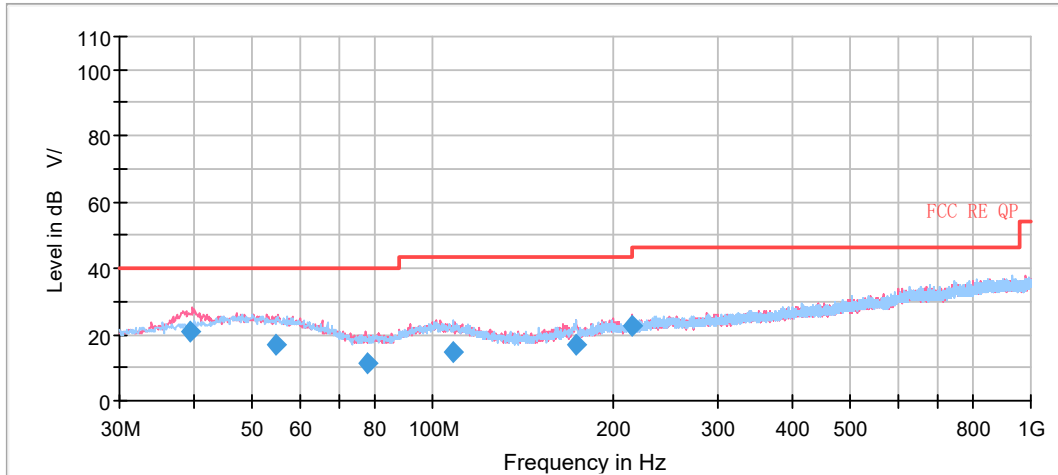
Continuous TX mode:

During the test, the Radiates Emission from 9kHz 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 9kHz to 30MHz

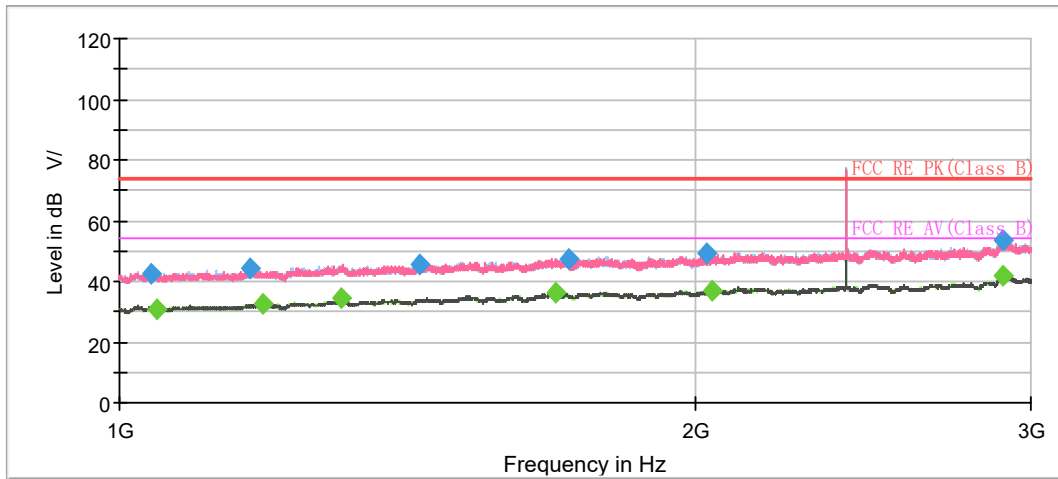
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Azimuth (deg)	Correct Factor (dB)
0.03	42.20	117.03	74.82	500.00	121.00	17
0.12	51.91	105.98	54.07	150.00	126.00	17
0.52	32.80	73.29	40.49	150.00	104.00	17
1.45	30.68	64.37	33.70	150.00	130.00	17
4.45	30.38	69.50	39.12	150.00	357.00	17
14.38	29.71	69.50	39.79	150.00	51.00	17



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.381250	20.89	40.00	19.11	1000.0	100.0	V	343.0	19.7
54.941250	16.65	40.00	23.35	1000.0	100.0	V	22.0	20.7
77.968750	11.48	40.00	28.52	1000.0	217.0	V	38.0	15.4
108.368750	14.56	43.50	28.94	1000.0	200.0	H	250.0	18.9
174.001250	16.64	43.50	26.86	1000.0	178.0	V	155.0	20.2
215.997500	22.48	43.50	21.02	1000.0	100.0	V	197.0	18.6

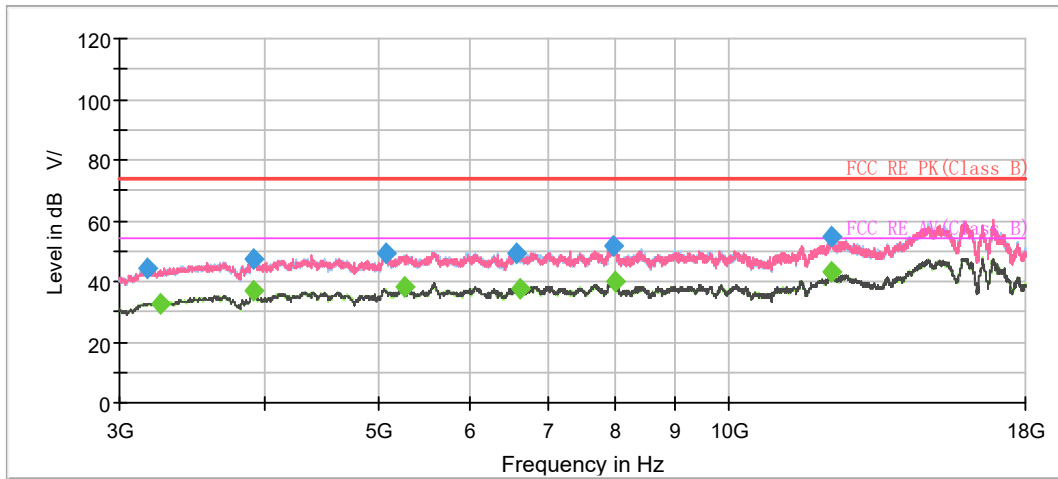
Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

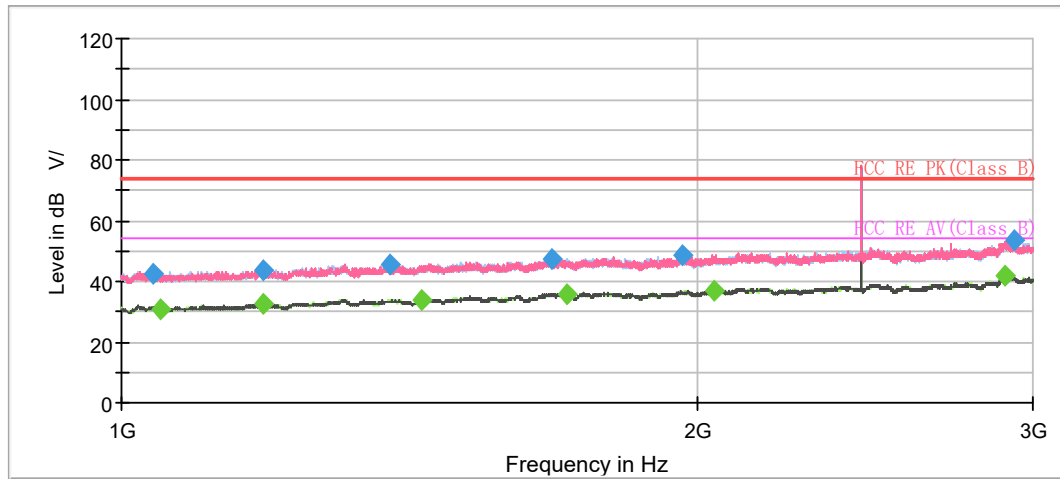
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1038.750000	42.71	---	74.00	31.29	500.0	200.0	V	20.0	-5.6
1047.000000	---	30.50	54.00	23.50	500.0	100.0	H	122.0	-6.0
1170.750000	44.29	---	74.00	29.71	500.0	100.0	V	0.0	-4.4
1188.750000	---	32.38	54.00	21.62	500.0	200.0	V	64.0	-4.1
1307.500000	---	34.21	54.00	19.79	500.0	200.0	H	343.0	-2.1
1435.750000	45.55	---	74.00	28.45	500.0	200.0	V	27.0	-1.8
1693.500000	---	36.05	54.00	17.95	500.0	200.0	V	45.0	0.3
1718.000000	47.42	---	74.00	26.58	500.0	100.0	V	322.0	0.1
2027.500000	49.03	---	74.00	24.97	500.0	100.0	H	195.0	2.1
2045.250000	---	36.97	54.00	17.03	500.0	200.0	V	3.0	2.5
2899.750000	53.38	---	74.00	20.62	500.0	200.0	V	64.0	8.6
2901.750000	---	41.79	54.00	12.21	500.0	100.0	V	226.0	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)
3166.875000	44.52	---	74.00	29.48	500.0	100.0	H	219.0	-1.0
3253.125000	---	32.76	54.00	21.24	500.0	200.0	V	312.0	-1.2
3913.125000	47.27	---	74.00	26.73	500.0	200.0	H	179.0	3.4
3916.875000	---	36.67	54.00	17.33	500.0	200.0	V	60.0	3.2
5075.625000	49.11	---	74.00	24.89	500.0	200.0	V	347.0	5.1
5270.625000	---	37.91	54.00	16.09	500.0	200.0	V	211.0	6.5
6577.500000	49.29	---	74.00	24.71	500.0	200.0	H	157.0	6.6
6624.375000	---	37.32	54.00	16.68	500.0	100.0	H	142.0	5.8
7966.875000	51.82	---	74.00	22.18	500.0	200.0	H	33.0	9.9
7989.375000	---	39.69	54.00	14.31	500.0	200.0	H	102.0	9.9
12281.250000	54.48	---	74.00	19.52	500.0	100.0	H	213.0	14.5
12283.125000	---	42.97	54.00	11.03	500.0	100.0	V	3.0	14.5

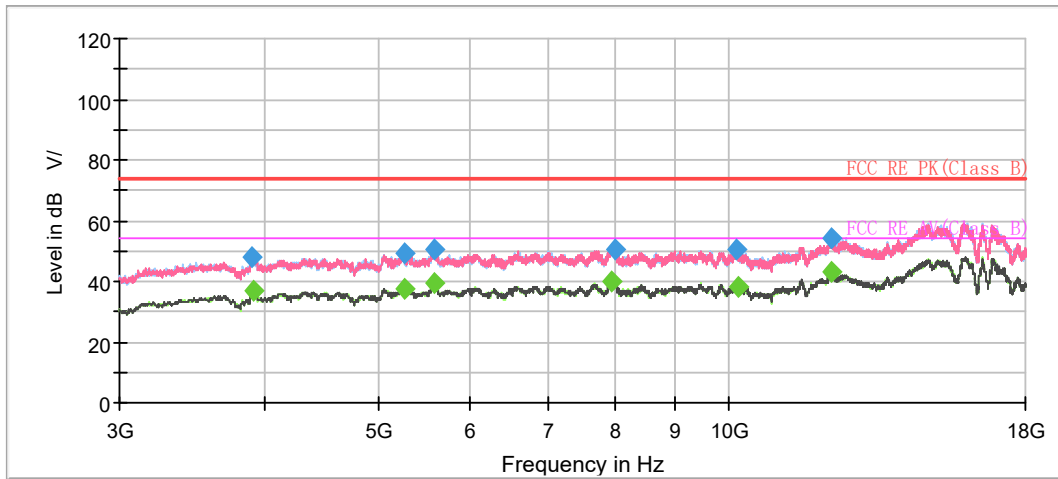
Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

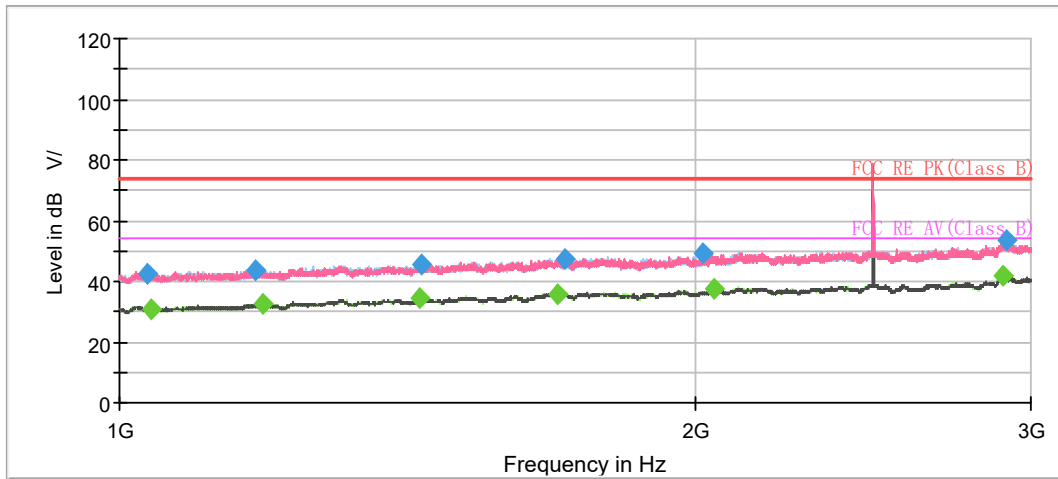
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1039.500000	42.68	---	74.00	31.32	500.0	100.0	H	148.0	-5.5
1048.500000	---	30.88	54.00	23.12	500.0	200.0	H	253.0	-6.1
1185.250000	---	32.35	54.00	21.65	500.0	200.0	H	116.0	-3.9
1185.250000	43.71	---	74.00	30.29	500.0	200.0	H	116.0	-3.9
1382.000000	45.64	---	74.00	28.36	500.0	100.0	H	234.0	-2.3
1435.750000	---	34.11	54.00	19.89	500.0	100.0	H	0.0	-1.8
1680.000000	47.58	---	74.00	26.42	500.0	100.0	V	306.0	0.4
1711.500000	---	35.82	54.00	18.18	500.0	100.0	V	151.0	0.5
1966.750000	48.79	---	74.00	25.21	500.0	200.0	V	215.0	2.3
2045.250000	---	37.17	54.00	16.83	500.0	100.0	V	354.0	2.5
2900.250000	---	42.05	54.00	11.95	500.0	200.0	H	326.0	8.6
2931.250000	53.69	---	74.00	20.31	500.0	200.0	V	70.0	8.0



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)
3903.750000	48.22	---	74.00	25.78	500.0	100.0	V	16.0	3.3
3909.375000	---	36.76	54.00	17.24	500.0	200.0	H	125.0	3.7
5270.625000	---	37.78	54.00	16.22	500.0	200.0	H	248.0	6.5
5270.625000	49.33	---	74.00	24.67	500.0	200.0	V	315.0	6.5
5583.750000	50.56	---	74.00	23.44	500.0	200.0	V	198.0	7.7
5595.000000	---	39.20	54.00	14.80	500.0	200.0	V	288.0	8.0
7942.500000	---	39.74	54.00	14.26	500.0	100.0	H	226.0	9.9
7996.875000	50.73	---	74.00	23.27	500.0	200.0	V	308.0	9.9
10168.125000	50.69	---	74.00	23.31	500.0	200.0	H	10.0	9.2
10211.250000	---	38.09	54.00	15.91	500.0	200.0	H	23.0	8.5
12273.750000	54.13	---	74.00	19.87	500.0	100.0	H	147.0	14.6
12279.375000	---	43.12	54.00	10.88	500.0	100.0	V	129.0	14.5

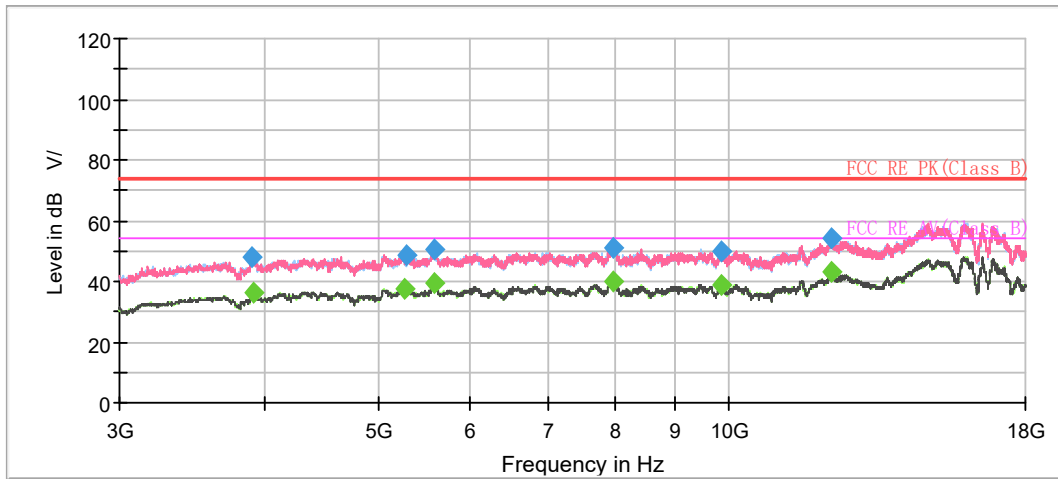
Bluetooth LE-Channel 39



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)
1034.500000	42.72	---	74.00	31.28	500.0	200.0	H	50.0	-5.8
1040.000000	---	30.93	54.00	23.07	500.0	200.0	H	31.0	-5.5
1179.250000	43.57	---	74.00	30.43	500.0	100.0	V	9.0	-4.1
1188.000000	---	32.83	54.00	21.17	500.0	200.0	H	62.0	-4.1
1434.250000	---	34.20	54.00	19.80	500.0	100.0	V	39.0	-1.9
1437.500000	45.54	---	74.00	28.46	500.0	100.0	V	94.0	-1.8
1695.000000	---	35.82	54.00	18.18	500.0	200.0	V	338.0	0.3
1711.500000	47.24	---	74.00	26.76	500.0	100.0	V	118.0	0.5
2018.000000	49.03	---	74.00	24.97	500.0	200.0	V	8.0	1.9
2045.500000	---	37.28	54.00	16.72	500.0	100.0	V	290.0	2.5
2902.250000	---	41.86	54.00	12.14	500.0	100.0	V	0.0	8.6
2914.000000	53.50	---	74.00	20.50	500.0	100.0	H	0.0	8.3



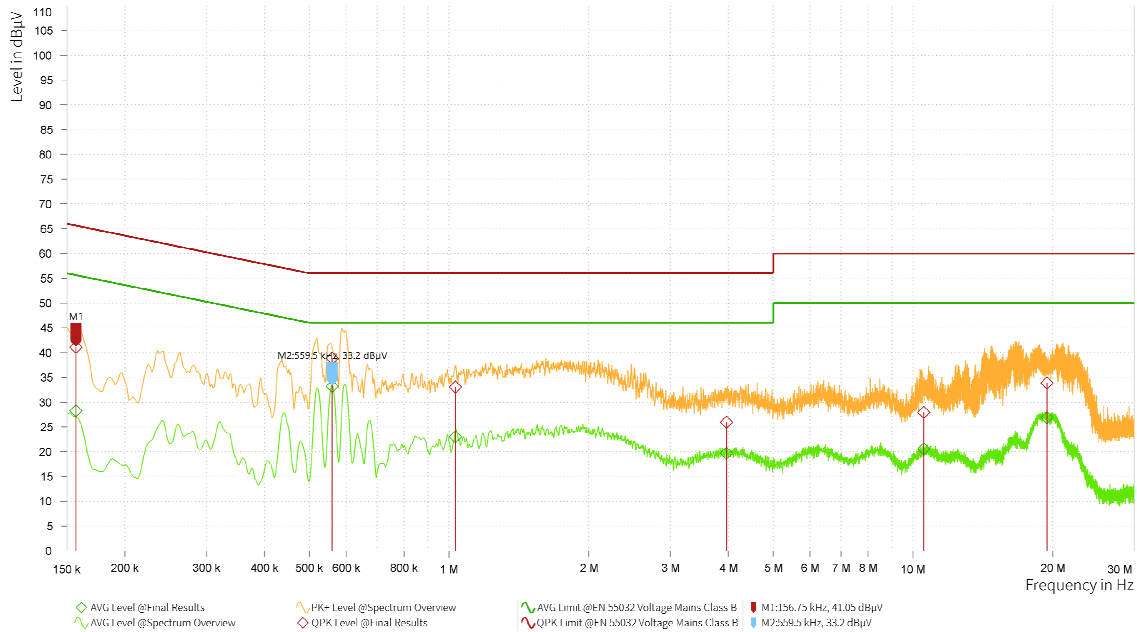
Radiates Emission from 3GHz to 18GHz

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)
3900.000000	48.11	---	74.00	25.89	500.0	100.0	H	177.0	3.0
3909.375000	---	36.57	54.00	17.43	500.0	100.0	V	11.0	3.7
5270.625000	---	37.85	54.00	16.15	500.0	200.0	V	291.0	6.5
5293.125000	48.55	---	74.00	25.45	500.0	200.0	H	324.0	6.2
5596.875000	50.23	---	74.00	23.77	500.0	100.0	V	18.0	7.9
5598.750000	---	39.26	54.00	14.74	500.0	100.0	H	232.0	7.8
7957.500000	---	39.82	54.00	14.18	500.0	100.0	H	177.0	9.9
7961.250000	51.15	---	74.00	22.85	500.0	100.0	H	287.0	9.9
9851.250000	---	38.66	54.00	15.34	500.0	100.0	H	225.0	9.4
9866.250000	50.13	---	74.00	23.87	500.0	100.0	H	106.0	9.5
12273.750000	53.88	---	74.00	20.12	500.0	200.0	H	119.0	14.6
12275.625000	---	43.06	54.00	10.94	500.0	100.0	H	184.0	14.6

2. Conducted Emission

2.1. Wi-Fi 2.4GHz

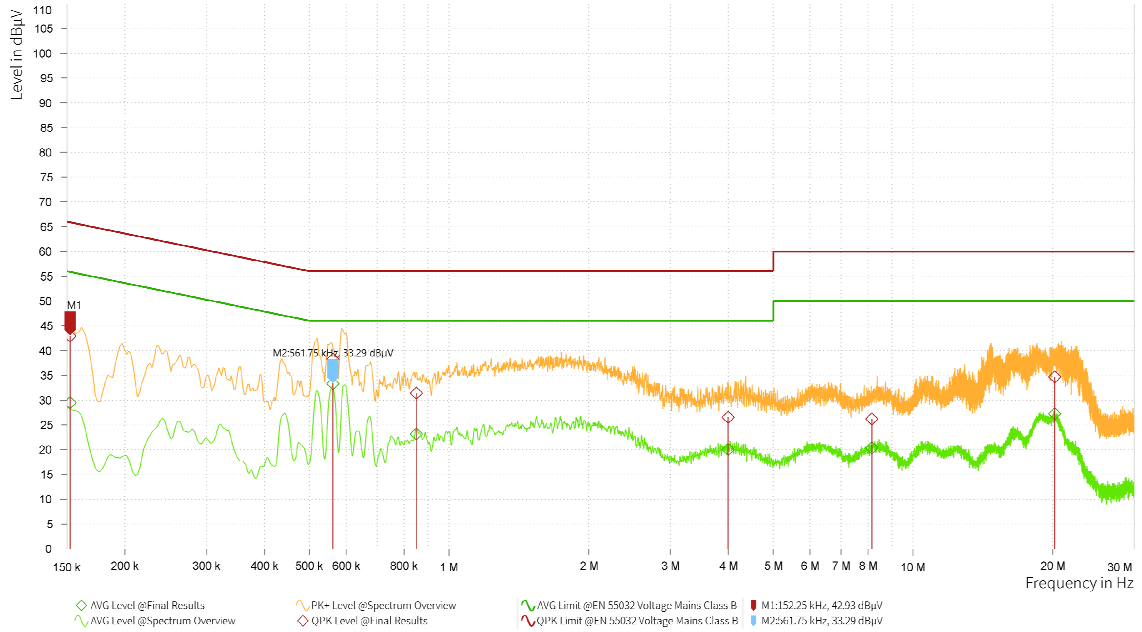
During the test, the Conducted Emission was performed in all modes with all channel. The test data of the worst-case condition (802.11b CH6) was recorded in this report.



Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.157	41.05	65.63	24.58	28.26	55.63	27.38	20.90	L1	9.000	1.000
0.560	38.87	56.00	17.13	33.20	46.00	12.80	20.72	L1	9.000	1.000
1.032	33.07	56.00	22.93	23.01	46.00	22.99	20.14	L1	9.000	1.000
3.962	25.93	56.00	30.07	19.67	46.00	26.33	19.43	L1	9.000	1.000
10.550	27.94	60.00	32.06	20.59	50.00	29.41	19.42	L1	9.000	1.000
19.453	33.87	60.00	26.13	26.90	50.00	23.10	19.64	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



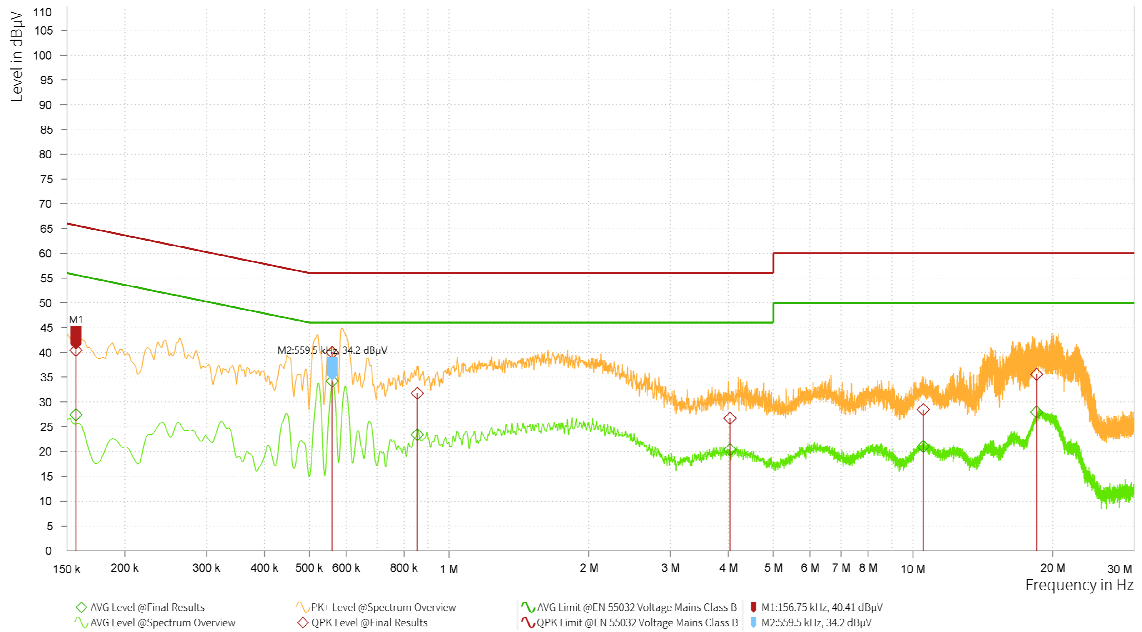
Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.152	42.93	65.88	22.95	29.44	55.88	26.43	20.91	N	9.000	1.000
0.562	38.21	56.00	17.79	33.29	46.00	12.71	20.72	N	9.000	1.000
0.850	31.40	56.00	24.60	23.14	46.00	22.86	20.29	N	9.000	1.000
3.998	26.52	56.00	29.48	20.01	46.00	25.99	19.44	N	9.000	1.000
8.151	26.19	60.00	33.81	20.34	50.00	29.66	19.42	N	9.000	1.000
20.225	34.69	60.00	25.31	27.21	50.00	22.79	19.72	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

2.2. Bluetooth LE

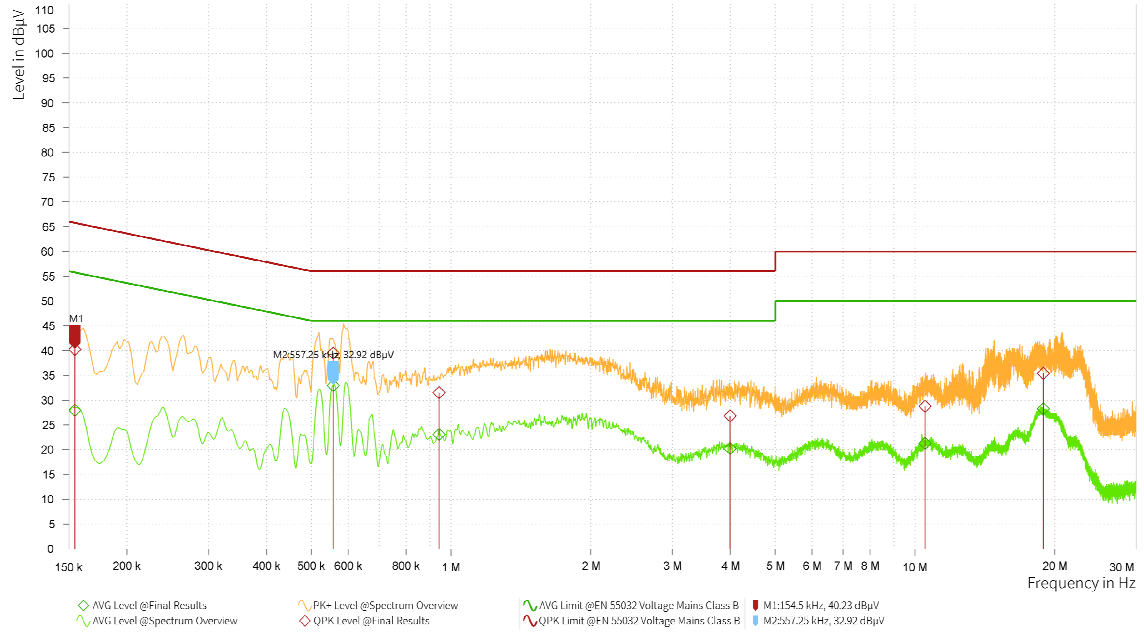
During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 19) was recorded in this report.



Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.157	40.41	65.63	25.22	27.43	55.63	28.21	20.90	L1	9.000	1.000
0.560	39.99	56.00	16.01	34.20	46.00	11.80	20.72	L1	9.000	1.000
0.854	31.73	56.00	24.27	23.39	46.00	22.61	20.28	L1	9.000	1.000
4.031	26.72	56.00	29.28	20.39	46.00	25.61	19.43	L1	9.000	1.000
10.525	28.48	60.00	31.52	21.01	50.00	28.99	19.43	L1	9.000	1.000
18.488	35.58	60.00	24.42	27.92	50.00	22.08	19.61	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.155	40.23	65.75	25.52	27.95	55.75	27.81	20.91	N	9.000	1.000
0.557	39.44	56.00	16.56	32.92	46.00	13.08	20.73	N	9.000	1.000
0.942	31.48	56.00	24.52	23.07	46.00	22.93	20.22	N	9.000	1.000
3.995	26.78	56.00	29.22	20.21	46.00	25.79	19.44	N	9.000	1.000
10.518	28.74	60.00	31.26	21.24	50.00	28.76	19.45	N	9.000	1.000
18.920	35.39	60.00	24.61	28.20	50.00	21.80	19.67	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz