

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

1. Unwanted Emission

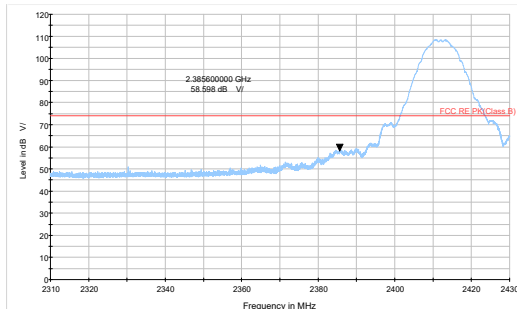
1.1. Wi-Fi 2.4GHz

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.

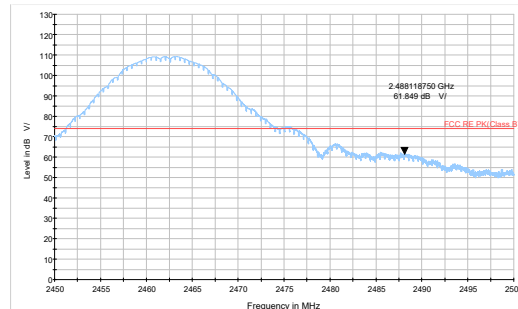
A symbol ($\text{dB } \mu\text{V}$) in the test plot below means (dB $\mu\text{V/m}$)

The modulation and bandwidth are similar for 802.11n mode for 20MHz and 802.11ax mode for 20MHz, therefore investigated worst case to representative mode in test report.

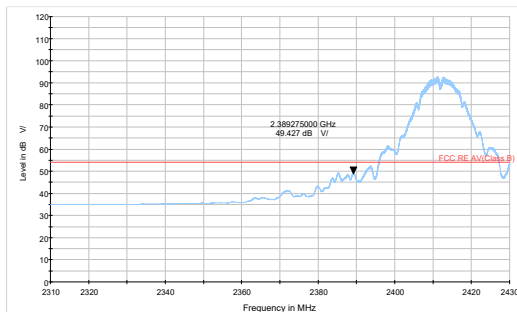
The signal beyond the limit is carrier.



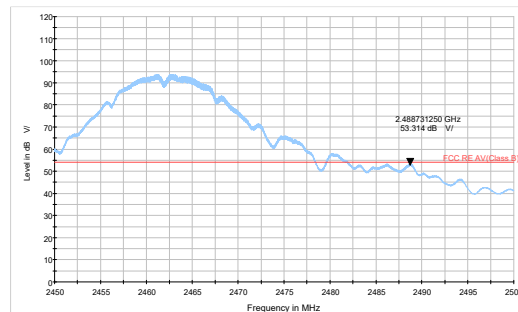
802.11b-Channel 1 Peak



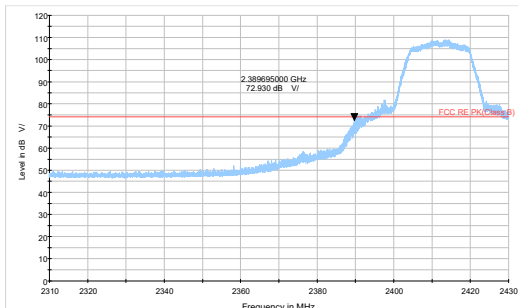
802.11b-Channel 11 Peak



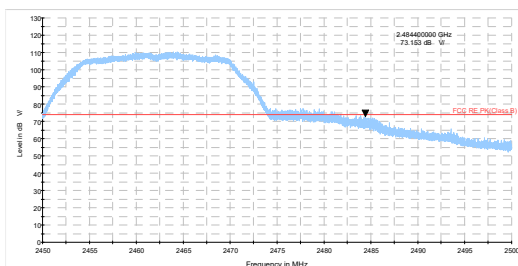
802.11b-Channel 1 Average



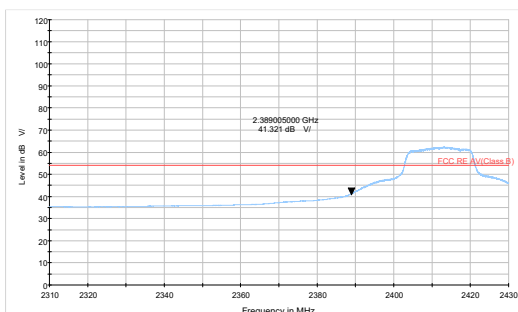
802.11b-Channel 11 Average



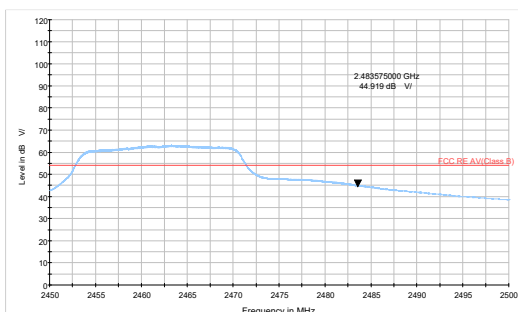
802.11g-Channel 1 Peak



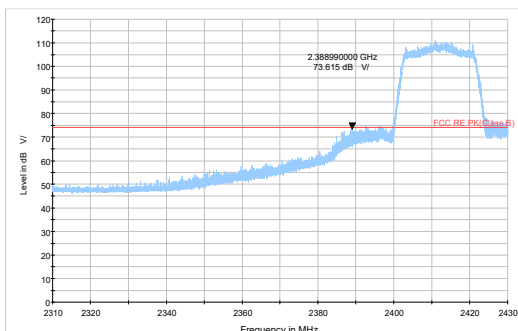
802.11g-Channel 11 Peak



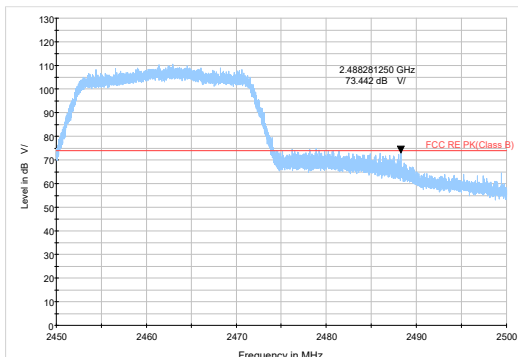
802.11g-Channel 1 Average



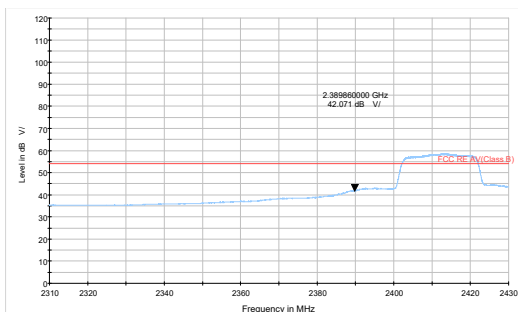
802.11g-Channel 11 Average



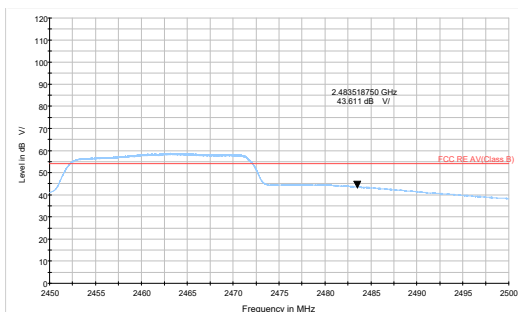
802.11ax HE20-Channel 1 Peak



802.11ax HE20-Channel 11 Peak



802.11ax HE20-Channel 1 Average



802.11ax HE20-Channel 11 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

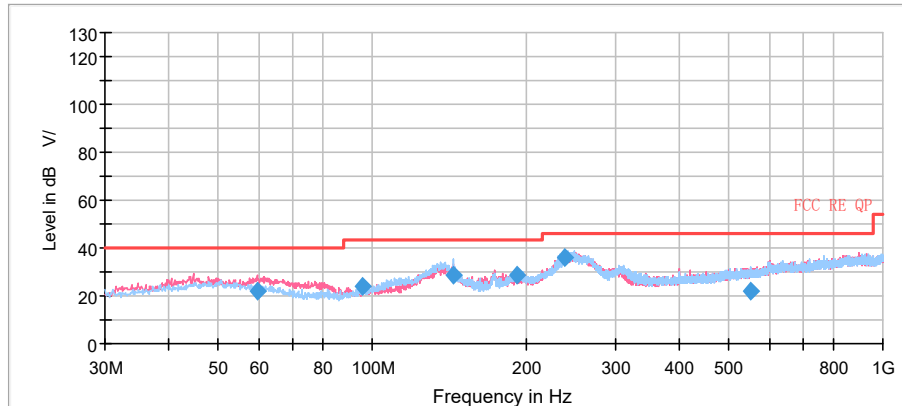
 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

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

Continuous TX mode:

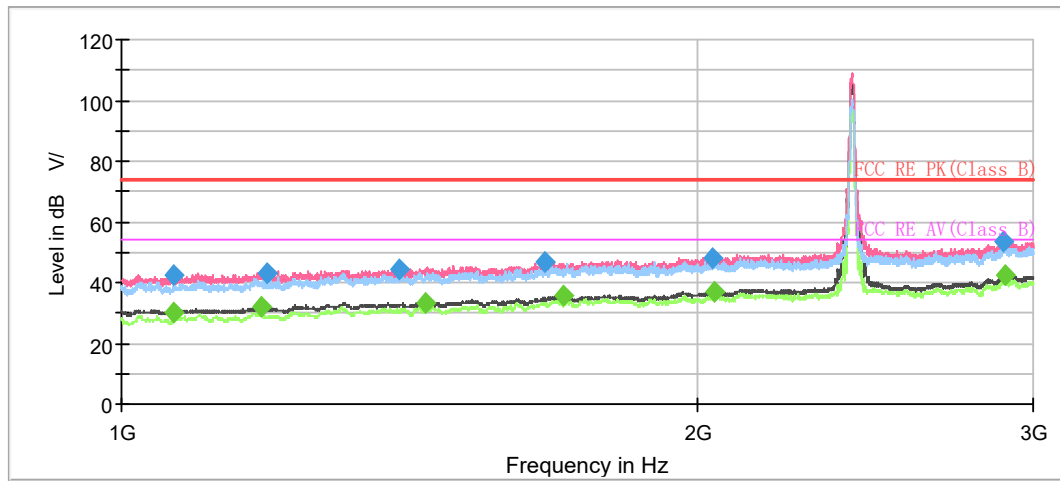
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, the test data of the worst-case condition (**802.11b CH1**) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB $\mu\text{V/m}$)	Limit (dB $\mu\text{V/m}$)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
59.585000	21.72	40.00	18.28	112.0	V	278.0	19.8
95.960000	23.81	43.50	19.69	105.0	V	72.0	18.7
143.975000	28.56	43.50	14.94	185.0	H	165.0	15.6
191.990000	28.54	43.50	14.96	100.0	V	248.0	18.8
238.550000	35.99	46.00	10.01	117.0	H	288.0	20.0
550.526250	22.29	46.00	23.71	212.0	H	348.0	26.2

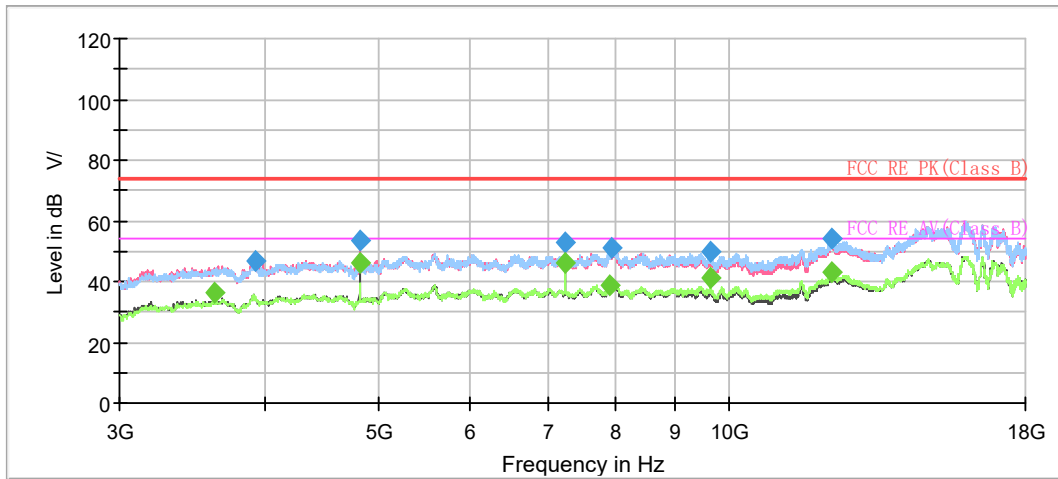
802.11b CH1



Note: The signal beyond the limit is carrier.

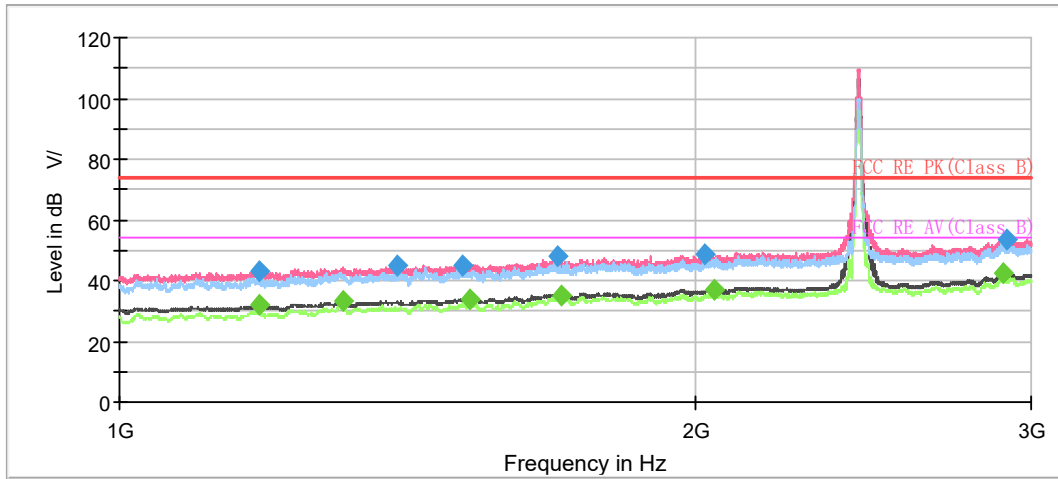
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1064.500000	---	30.41	54.00	23.59	500.0	200.0	V	31.0	-5.8
1066.000000	42.34	---	74.00	31.66	500.0	100.0	V	184.0	-5.7
1184.250000	---	31.96	54.00	22.04	500.0	200.0	V	136.0	-3.9
1190.250000	43.26	---	74.00	30.74	500.0	100.0	V	332.0	-4.2
1398.000000	44.52	---	74.00	29.48	500.0	200.0	V	0.0	-2.3
1441.750000	---	33.36	54.00	20.64	500.0	100.0	V	264.0	-1.6
1663.500000	46.51	---	74.00	27.49	500.0	100.0	V	357.0	0.0
1704.250000	---	35.49	54.00	18.51	500.0	200.0	V	230.0	0.4
2037.750000	48.28	---	74.00	25.72	500.0	100.0	V	0.0	2.4
2042.250000	---	37.13	54.00	16.87	500.0	200.0	V	268.0	2.5
2896.750000	53.65	---	74.00	20.35	500.0	200.0	V	279.0	8.4
2900.000000	---	42.45	54.00	11.55	500.0	200.0	V	142.0	8.6



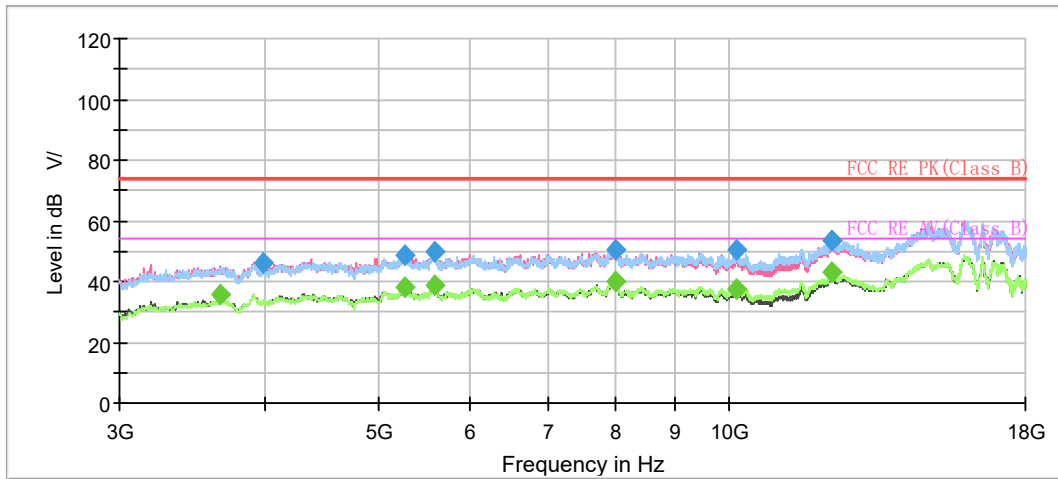
Radiates Emission from 3GHz to 18GHz

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)
3616.875000	---	36.00	54.00	18.00	500.0	100.0	V	328.0	1.2
3926.250000	46.88	---	74.00	27.12	500.0	100.0	H	249.0	2.6
4822.500000	---	45.95	54.00	8.05	500.0	200.0	V	261.0	2.7
4822.500000	53.59	---	74.00	20.41	500.0	200.0	V	261.0	2.7
7235.625000	---	46.14	54.00	7.86	500.0	200.0	H	233.0	7.0
7235.625000	52.82	---	74.00	21.18	500.0	200.0	H	233.0	7.0
7918.125000	---	38.87	54.00	15.13	500.0	100.0	V	328.0	9.7
7953.750000	51.24	---	74.00	22.76	500.0	100.0	V	234.0	9.9
9648.750000	49.88	---	74.00	24.12	500.0	200.0	H	274.0	8.4
9648.750000	---	41.52	54.00	12.48	500.0	200.0	H	274.0	8.4
12262.500000	---	42.90	54.00	11.10	500.0	100.0	H	263.0	14.4
12286.875000	54.32	---	74.00	19.68	500.0	100.0	H	50.0	14.4



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

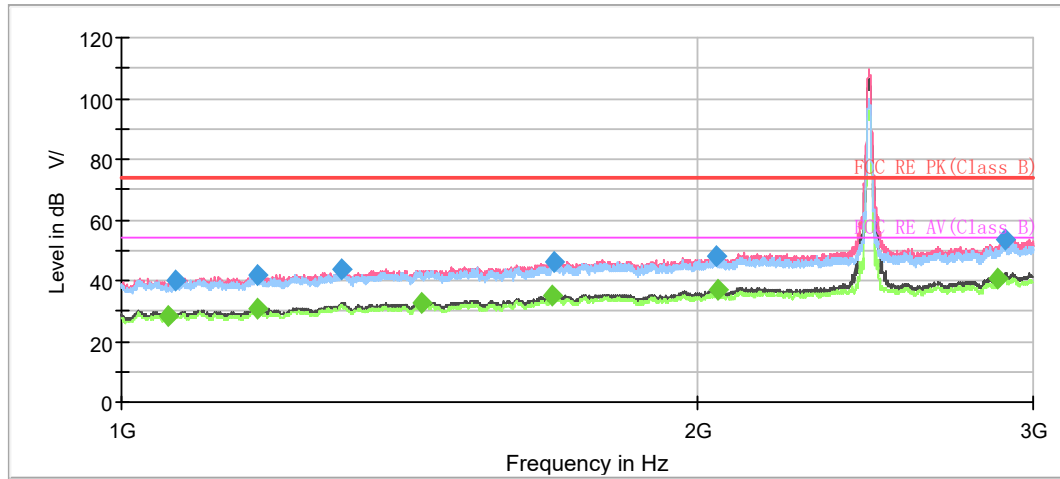
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1182.500000	43.23	---	74.00	30.77	500.0	200.0	V	286.0	-3.9
1184.500000	---	32.19	54.00	21.81	500.0	200.0	V	97.0	-3.9
1310.750000	---	33.32	54.00	20.68	500.0	100.0	V	327.0	-2.3
1399.000000	44.68	---	74.00	29.32	500.0	200.0	V	67.0	-2.3
1511.500000	45.17	---	74.00	28.83	500.0	200.0	V	242.0	-1.3
1524.750000	---	34.01	54.00	19.99	500.0	200.0	V	159.0	-1.0
1695.750000	47.72	---	74.00	26.28	500.0	200.0	V	80.0	0.3
1702.250000	---	35.35	54.00	18.65	500.0	200.0	V	35.0	0.4
2026.000000	48.38	---	74.00	25.62	500.0	100.0	V	216.0	2.1
2048.750000	---	36.90	54.00	17.10	500.0	200.0	V	17.0	2.5
2901.000000	---	42.53	54.00	11.47	500.0	100.0	V	354.0	8.6
2912.250000	53.63	---	74.00	20.37	500.0	200.0	V	97.0	8.4



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)
3654.375000	---	35.73	54.00	18.27	500.0	100.0	V	330.0	1.2
3988.125000	46.22	---	74.00	27.78	500.0	100.0	H	319.0	0.9
5265.000000	48.85	---	74.00	25.15	500.0	100.0	H	182.0	6.5
5268.750000	---	37.99	54.00	16.01	500.0	100.0	V	305.0	6.6
5589.375000	49.92	---	74.00	24.08	500.0	200.0	H	173.0	8.0
5595.000000	---	38.75	54.00	15.25	500.0	100.0	V	1.0	8.0
7985.625000	50.46	---	74.00	23.54	500.0	200.0	H	41.0	9.9
7987.500000	---	39.71	54.00	14.29	500.0	200.0	H	268.0	9.9
10147.500000	---	37.83	54.00	16.17	500.0	200.0	H	359.0	9.2
10171.875000	50.37	---	74.00	23.63	500.0	100.0	H	209.0	9.1
12283.125000	---	42.87	54.00	11.13	500.0	200.0	H	173.0	14.5
12286.875000	53.81	---	74.00	20.19	500.0	200.0	H	295.0	14.4

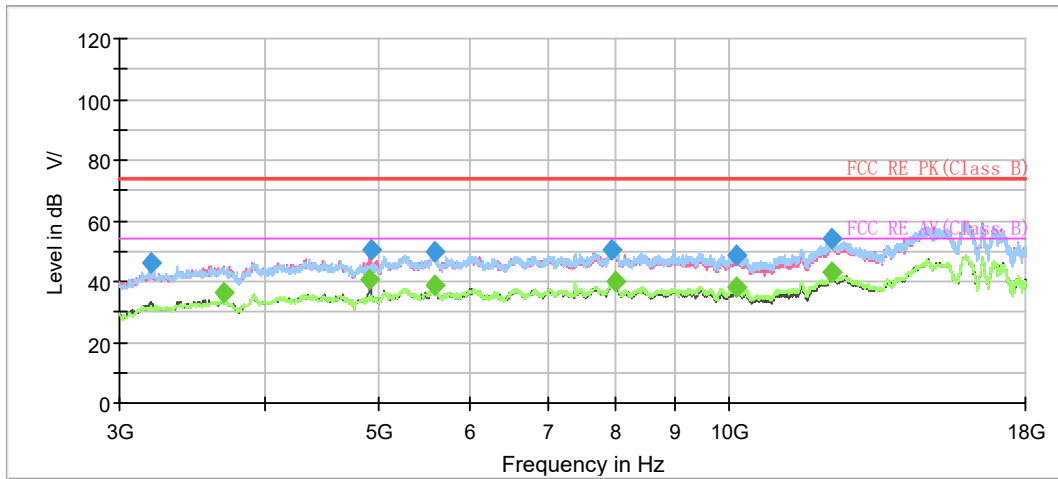
802.11b CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

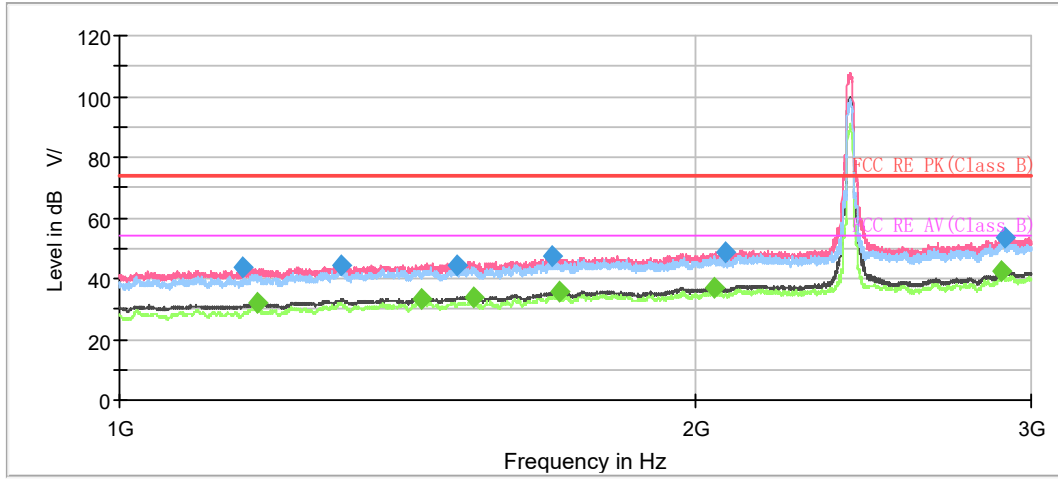
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1057.250000	---	28.18	54.00	25.82	500.0	100.0	V	284.0	-6.0
1068.250000	39.93	---	74.00	34.07	500.0	100.0	V	352.0	-5.6
1178.000000	41.64	---	74.00	32.36	500.0	100.0	V	260.0	-4.1
1179.000000	---	30.57	54.00	23.43	500.0	100.0	V	284.0	-4.1
1304.000000	43.66	---	74.00	30.34	500.0	100.0	H	221.0	-2.4
1434.250000	---	32.82	54.00	21.18	500.0	100.0	V	333.0	-1.9
1679.750000	---	34.84	54.00	19.16	500.0	100.0	V	0.0	0.4
1685.000000	46.39	---	74.00	27.61	500.0	100.0	V	180.0	0.4
2047.750000	48.06	---	74.00	25.94	500.0	100.0	V	321.0	2.6
2052.000000	---	36.67	54.00	17.33	500.0	100.0	V	321.0	2.5
2875.250000	---	40.60	54.00	13.40	500.0	100.0	V	223.0	6.6
2898.750000	53.44	---	74.00	20.56	500.0	200.0	V	132.0	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)
3189.375000	46.19	---	74.00	27.81	500.0	100.0	V	261.0	-0.8
3691.875000	---	36.55	54.00	17.45	500.0	200.0	V	249.0	1.7
4925.625000	---	40.37	54.00	13.63	500.0	200.0	V	263.0	3.0
4929.375000	50.34	---	74.00	23.66	500.0	200.0	V	263.0	3.1
5591.250000	49.93	---	74.00	24.07	500.0	200.0	V	0.0	8.1
5595.000000	---	38.96	54.00	15.04	500.0	200.0	H	223.0	8.0
7948.125000	50.31	---	74.00	23.69	500.0	100.0	H	17.0	9.9
7998.750000	---	40.01	54.00	13.99	500.0	100.0	H	165.0	9.9
10147.500000	48.85	---	74.00	25.15	500.0	100.0	V	192.0	9.2
10156.875000	---	38.27	54.00	15.73	500.0	100.0	H	31.0	9.3
12271.875000	---	43.09	54.00	10.91	500.0	100.0	H	85.0	14.6
12283.125000	54.04	---	74.00	19.97	500.0	200.0	H	278.0	14.5

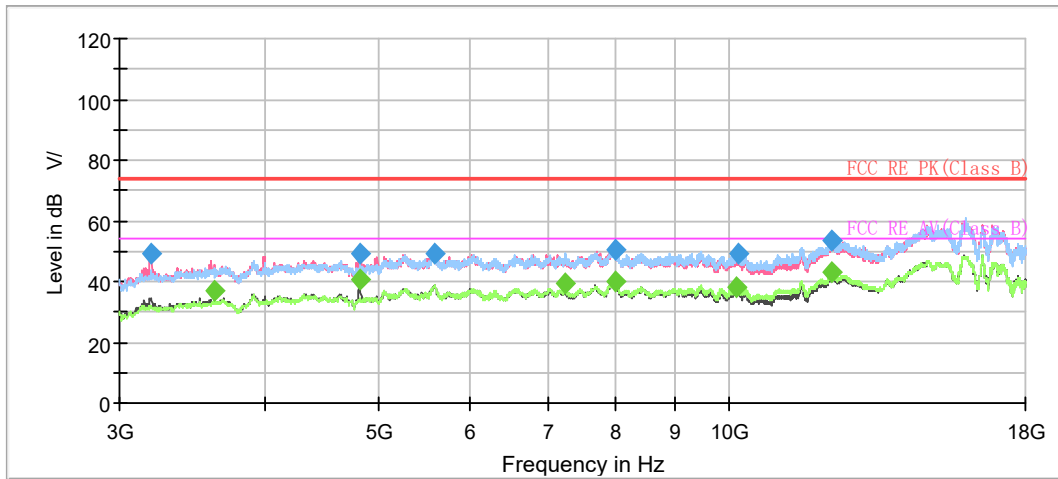
802.11g CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

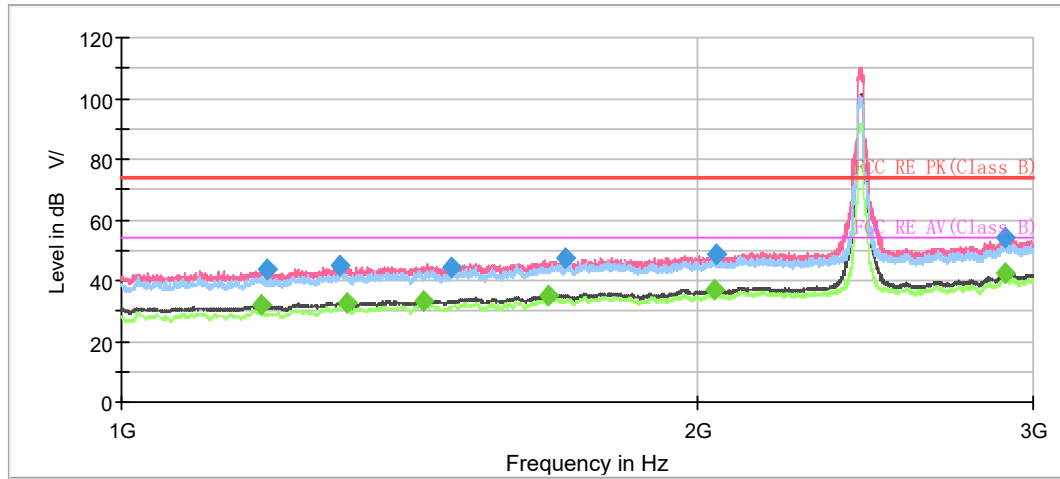
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1160.000000	43.46	---	74.00	30.54	500.0	100.0	V	181.0	-4.8
1182.000000	---	31.99	54.00	22.01	500.0	100.0	V	305.0	-4.0
1307.250000	44.53	---	74.00	29.47	500.0	100.0	V	57.0	-2.1
1439.000000	---	33.27	54.00	20.73	500.0	200.0	V	281.0	-1.7
1501.000000	44.52	---	74.00	29.48	500.0	200.0	V	5.0	-1.5
1534.000000	---	33.58	54.00	20.42	500.0	200.0	V	84.0	-1.0
1684.000000	47.40	---	74.00	26.60	500.0	100.0	V	199.0	0.4
1699.750000	---	35.40	54.00	18.60	500.0	200.0	V	193.0	0.4
2047.250000	---	37.16	54.00	16.84	500.0	200.0	V	41.0	2.6
2075.750000	48.66	---	74.00	25.34	500.0	100.0	V	125.0	2.1
2897.000000	---	42.30	54.00	11.70	500.0	200.0	V	332.0	8.4
2906.000000	53.66	---	74.00	20.34	500.0	100.0	V	57.0	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)
3189.375000	49.10	---	74.00	24.90	500.0	200.0	V	211.0	-0.8
3616.875000	---	36.68	54.00	17.32	500.0	100.0	V	327.0	1.2
4824.375000	49.29	---	74.00	24.71	500.0	200.0	V	225.0	2.7
4826.250000	---	40.36	54.00	13.64	500.0	200.0	V	253.0	2.7
5583.750000	49.47	---	74.00	24.53	500.0	100.0	H	149.0	7.7
7237.500000	---	39.13	54.00	14.87	500.0	200.0	H	223.0	7.0
7987.500000	---	39.69	54.00	14.31	500.0	100.0	V	340.0	9.9
7998.750000	50.58	---	74.00	23.42	500.0	100.0	V	0.0	9.9
10156.875000	---	38.21	54.00	15.79	500.0	100.0	H	231.0	9.3
10213.125000	49.05	---	74.00	24.95	500.0	200.0	H	335.0	8.5
12253.125000	53.70	---	74.00	20.30	500.0	100.0	H	0.0	14.1
12255.000000	---	42.81	54.00	11.19	500.0	200.0	H	279.0	14.2

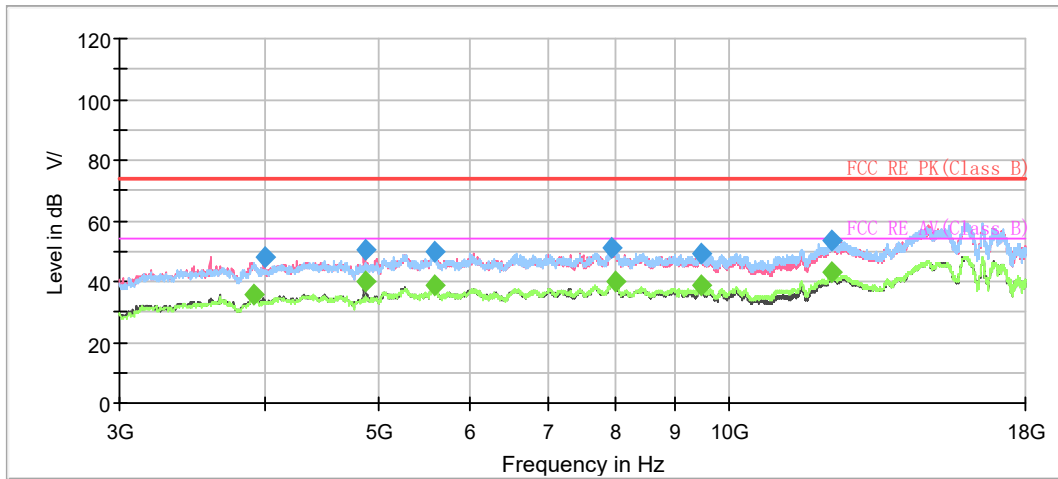
802.11g CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

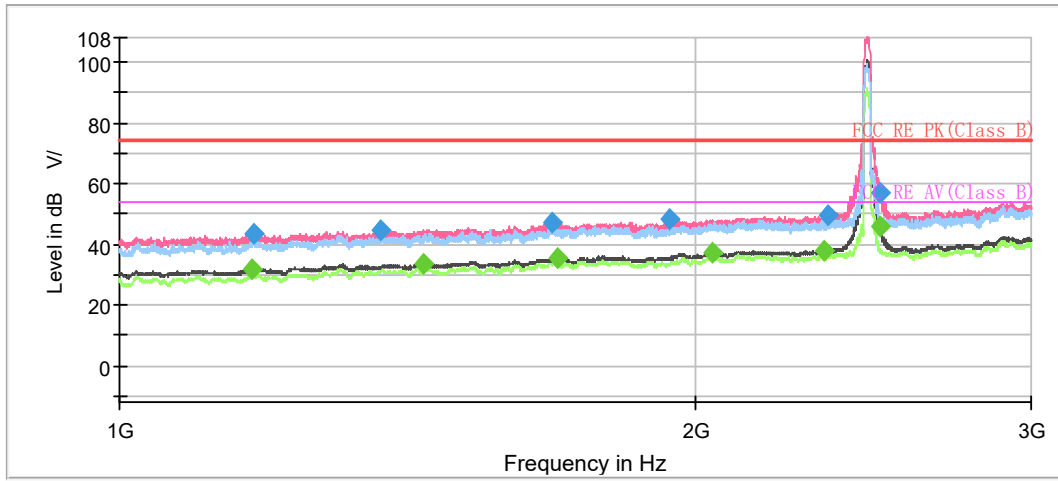
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1184.500000	---	32.00	54.00	22.00	500.0	100.0	V	349.0	-3.9
1190.250000	43.53	---	74.00	30.47	500.0	200.0	V	17.0	-4.2
1300.750000	44.68	---	74.00	29.32	500.0	200.0	V	222.0	-2.7
1312.750000	---	32.56	54.00	21.44	500.0	100.0	V	201.0	-2.6
1439.250000	---	33.40	54.00	20.60	500.0	100.0	V	51.0	-1.7
1488.500000	44.49	---	74.00	29.51	500.0	100.0	V	342.0	-1.7
1674.250000	---	35.37	54.00	18.63	500.0	200.0	V	235.0	0.3
1707.750000	47.15	---	74.00	26.85	500.0	100.0	V	63.0	0.5
2045.000000	---	37.09	54.00	16.91	500.0	200.0	V	47.0	2.5
2049.000000	48.37	---	74.00	25.63	500.0	200.0	V	17.0	2.5
2902.000000	54.14	---	74.00	19.86	500.0	100.0	V	208.0	8.6
2902.250000	---	42.67	54.00	11.33	500.0	200.0	V	336.0	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)
3907.500000	---	35.54	54.00	18.46	500.0	100.0	H	36.0	3.6
3995.625000	48.17	---	74.00	25.83	500.0	200.0	V	291.0	1.0
4873.125000	---	40.00	54.00	14.00	500.0	100.0	V	300.0	3.1
4876.875000	50.70	---	74.00	23.30	500.0	200.0	V	277.0	3.1
5589.375000	49.71	---	74.00	24.29	500.0	100.0	V	191.0	8.0
5593.125000	---	38.78	54.00	15.22	500.0	200.0	H	0.0	8.1
7951.875000	50.79	---	74.00	23.21	500.0	200.0	V	168.0	9.9
7989.375000	---	39.83	54.00	14.17	500.0	100.0	H	130.0	9.9
9476.250000	---	38.55	54.00	15.45	500.0	100.0	H	224.0	9.6
9487.500000	48.93	---	74.00	25.07	500.0	100.0	H	0.0	9.4
12262.500000	---	42.91	54.00	11.09	500.0	100.0	H	144.0	14.4
12264.375000	53.63	---	74.00	20.37	500.0	100.0	H	144.0	14.4

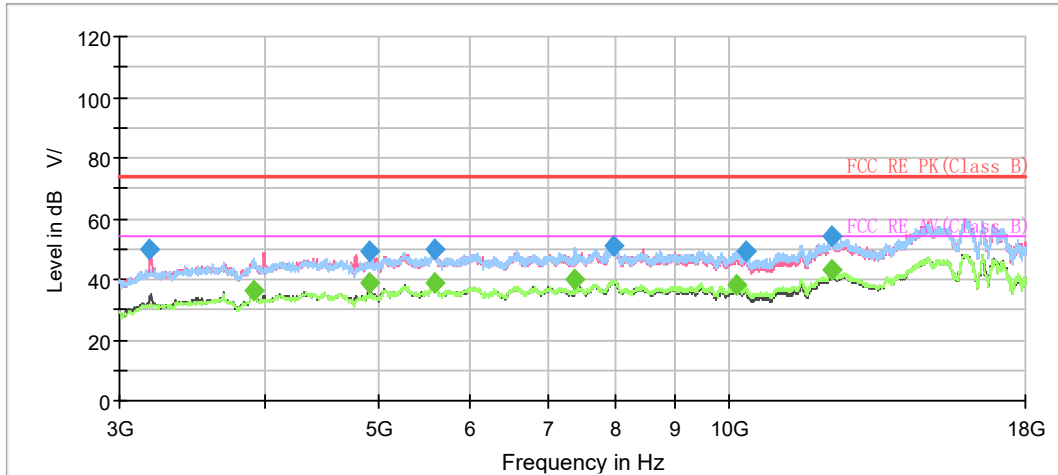
802.11g CH11



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

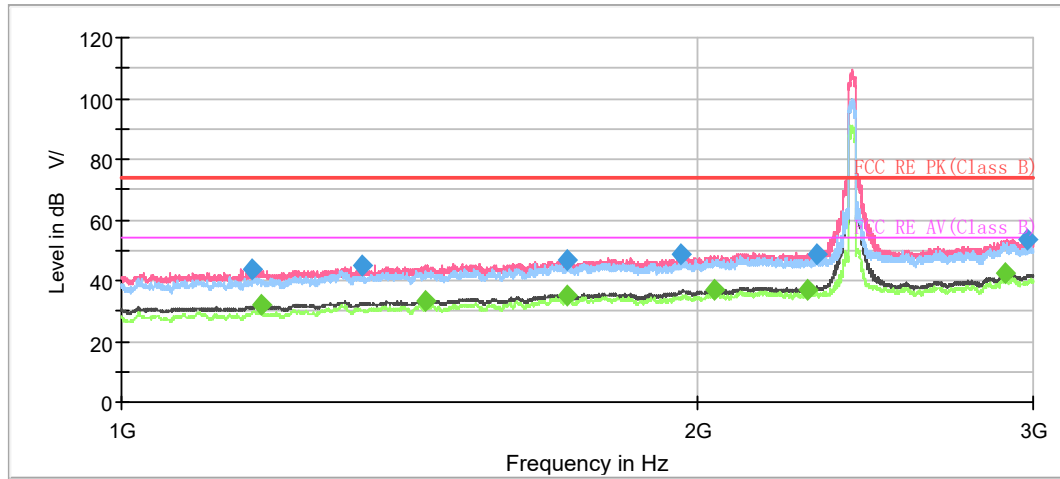
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1173.000000	---	31.76	54.00	22.24	500.0	200.0	V	140.0	-4.3
1176.750000	43.50	---	74.00	30.50	500.0	200.0	V	133.0	-4.2
1368.250000	44.48	---	74.00	29.52	500.0	200.0	V	0.0	-2.6
1442.000000	---	33.41	54.00	20.59	500.0	200.0	V	77.0	-1.6
1682.250000	46.91	---	74.00	27.09	500.0	200.0	V	21.0	0.4
1694.250000	---	35.15	54.00	18.85	500.0	200.0	V	70.0	0.3
1939.000000	48.44	---	74.00	25.56	500.0	200.0	V	140.0	1.0
2045.000000	---	37.27	54.00	16.73	500.0	200.0	V	208.0	2.5
2339.250000	---	37.68	54.00	16.32	500.0	200.0	V	153.0	3.4
2348.500000	49.39	---	74.00	24.61	500.0	200.0	V	121.0	3.6
2498.750000	---	45.62	54.00	8.38	500.0	200.0	V	128.0	4.8
2499.500000	57.05	---	74.00	16.95	500.0	200.0	V	297.0	4.8



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)
3187.500000	50.02	---	74.00	23.98	500.0	100.0	V	204.0	-0.8
3909.375000	---	36.14	54.00	17.86	500.0	200.0	H	246.0	3.7
4920.000000	---	38.90	54.00	15.10	500.0	100.0	V	299.0	3.0
4920.000000	49.42	---	74.00	24.58	500.0	100.0	V	299.0	3.0
5591.250000	49.61	---	74.00	24.39	500.0	100.0	H	76.0	8.1
5591.250000	---	38.89	54.00	15.11	500.0	200.0	V	207.0	8.1
7387.500000	---	39.99	54.00	14.01	500.0	100.0	H	116.0	5.9
7970.625000	50.89	---	74.00	23.11	500.0	200.0	V	0.0	9.9
10156.875000	---	38.30	54.00	15.70	500.0	100.0	H	169.0	9.3
10348.125000	49.35	---	74.00	24.65	500.0	100.0	H	63.0	8.4
12281.250000	---	42.89	54.00	11.11	500.0	200.0	H	178.0	14.5
12288.750000	54.06	---	74.00	19.94	500.0	100.0	H	155.0	14.4

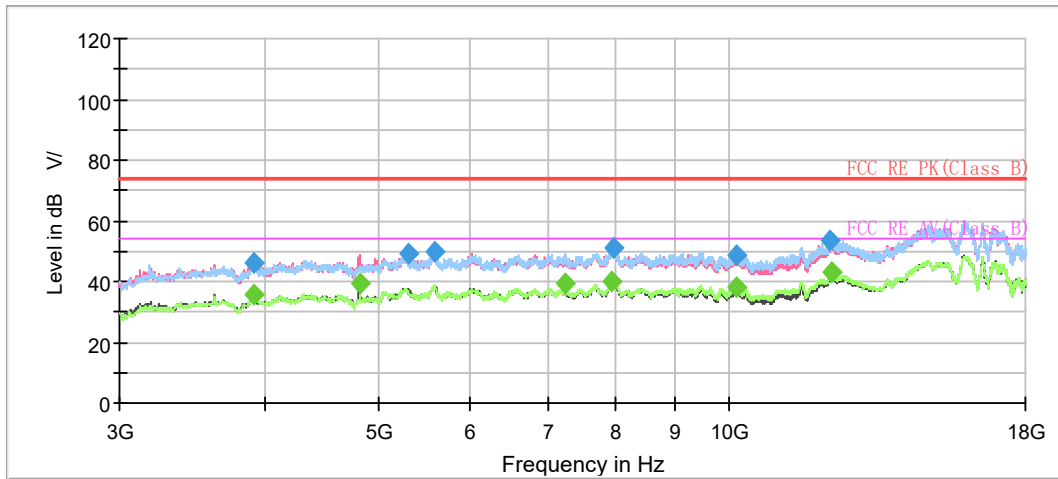
802.11ax HE20 CH 1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

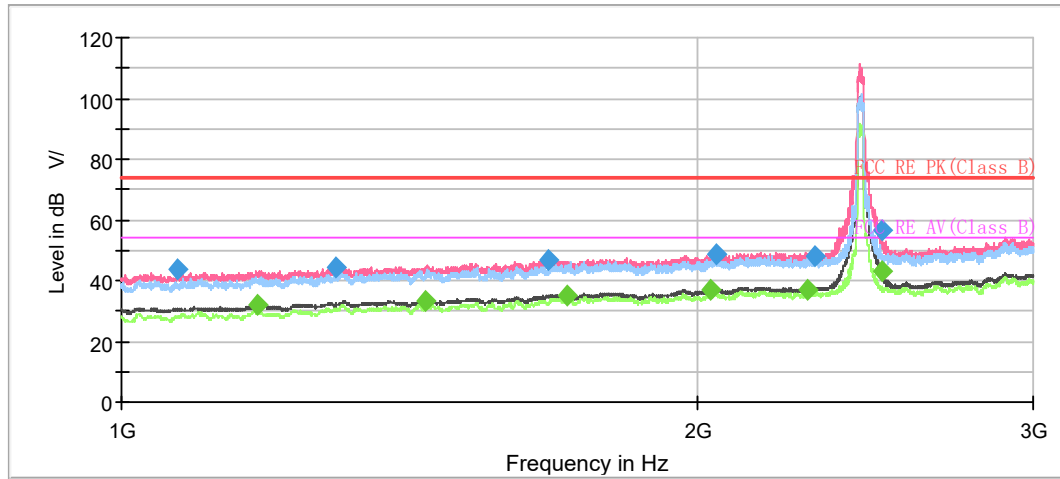
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1171.500000	43.55	---	74.00	30.45	500.0	100.0	V	43.0	-4.4
1182.750000	---	31.82	54.00	22.18	500.0	100.0	V	0.0	-3.9
1335.500000	44.65	---	74.00	29.35	500.0	100.0	V	187.0	-2.8
1441.500000	---	33.51	54.00	20.49	500.0	200.0	V	109.0	-1.6
1711.750000	---	35.23	54.00	18.77	500.0	200.0	V	196.0	0.5
1711.750000	46.61	---	74.00	27.39	500.0	200.0	V	196.0	0.5
1961.500000	48.48	---	74.00	25.52	500.0	200.0	V	0.0	2.0
2042.500000	---	36.95	54.00	17.05	500.0	100.0	V	263.0	2.5
2288.250000	---	37.09	54.00	16.91	500.0	200.0	V	122.0	3.2
2312.500000	48.70	---	74.00	25.30	500.0	200.0	H	147.0	3.4
2900.000000	---	42.17	54.00	11.83	500.0	100.0	V	315.0	8.6
2979.250000	53.45	---	74.00	20.55	500.0	100.0	V	297.0	7.9



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)
3905.625000	---	35.84	54.00	18.16	500.0	100.0	H	156.0	3.5
3907.500000	46.35	---	74.00	27.65	500.0	100.0	H	24.0	3.6
4826.250000	---	39.45	54.00	14.55	500.0	100.0	V	284.0	2.7
5313.750000	49.18	---	74.00	24.82	500.0	100.0	V	41.0	5.8
5593.125000	50.07	---	74.00	23.93	500.0	100.0	H	24.0	8.1
7239.375000	---	39.63	54.00	14.37	500.0	200.0	V	236.0	7.0
7942.500000	---	39.91	54.00	14.09	500.0	200.0	H	355.0	9.9
7955.625000	50.92	---	74.00	23.08	500.0	100.0	H	38.0	9.9
10147.500000	48.90	---	74.00	25.10	500.0	100.0	H	88.0	9.2
10158.750000	---	38.16	54.00	15.84	500.0	100.0	H	38.0	9.3
12243.750000	53.66	---	74.00	20.34	500.0	100.0	H	38.0	13.9
12283.125000	---	42.91	54.00	11.09	500.0	100.0	H	291.0	14.5

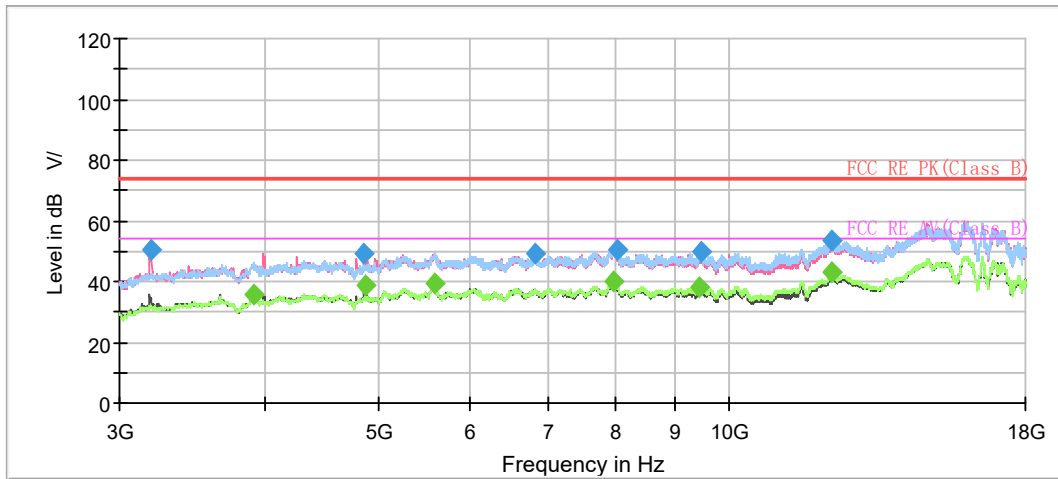
802.11ax HE20 CH6



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

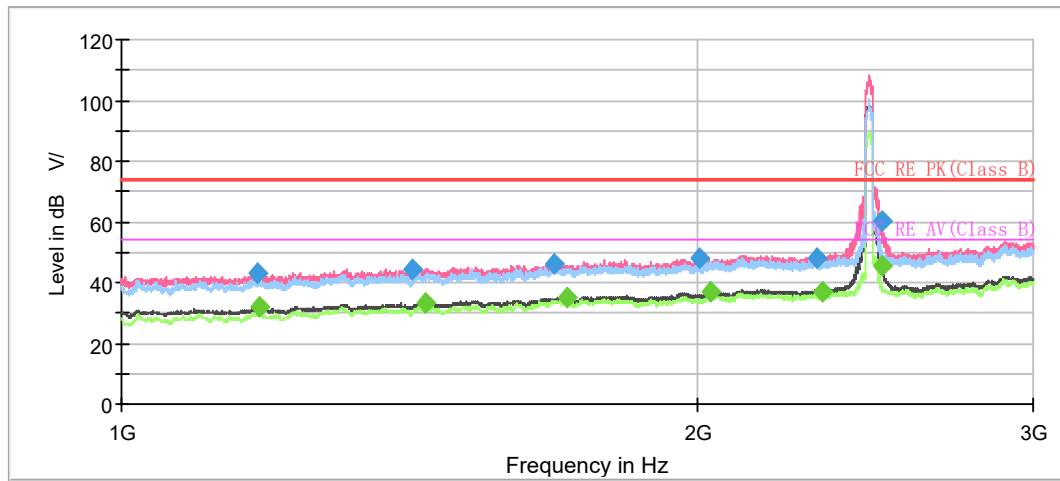
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1070.000000	43.57	---	74.00	30.43	500.0	200.0	V	125.0	-5.6
1179.500000	---	31.96	54.00	22.04	500.0	200.0	V	15.0	-4.0
1294.250000	44.52	---	74.00	29.48	500.0	200.0	V	39.0	-3.2
1441.500000	---	33.41	54.00	20.59	500.0	200.0	V	186.0	-1.6
1672.500000	46.87	---	74.00	27.13	500.0	200.0	V	57.0	0.3
1711.000000	---	35.31	54.00	18.69	500.0	100.0	V	185.0	0.5
2033.250000	---	37.09	54.00	16.91	500.0	200.0	V	100.0	2.3
2048.750000	48.75	---	74.00	25.25	500.0	200.0	V	51.0	2.5
2287.250000	---	37.23	54.00	16.77	500.0	200.0	V	39.0	3.1
2307.250000	47.99	---	74.00	26.01	500.0	200.0	H	267.0	3.5
2498.500000	---	43.10	54.00	10.90	500.0	100.0	V	122.0	4.8
2499.250000	56.69	---	74.00	17.31	500.0	100.0	V	303.0	4.8



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)
3189.375000	50.59	---	74.00	23.41	500.0	200.0	V	222.0	-0.8
3907.500000	---	35.81	54.00	18.19	500.0	100.0	H	119.0	3.6
4863.750000	49.30	---	74.00	24.70	500.0	200.0	V	263.0	3.1
4875.000000	---	38.59	54.00	15.41	500.0	200.0	V	222.0	3.1
5593.125000	---	39.22	54.00	14.78	500.0	100.0	H	1.0	8.1
6813.750000	49.29	---	74.00	24.71	500.0	200.0	H	288.0	6.9
7965.000000	---	39.76	54.00	14.24	500.0	100.0	H	53.0	9.9
8019.375000	50.47	---	74.00	23.53	500.0	200.0	V	0.0	9.2
9455.625000	---	38.28	54.00	15.72	500.0	200.0	H	0.0	9.1
9493.125000	49.67	---	74.00	24.33	500.0	200.0	H	247.0	9.3
12266.250000	53.71	---	74.00	20.29	500.0	200.0	H	96.0	14.4
12271.875000	---	43.15	54.00	10.85	500.0	200.0	H	261.0	14.6

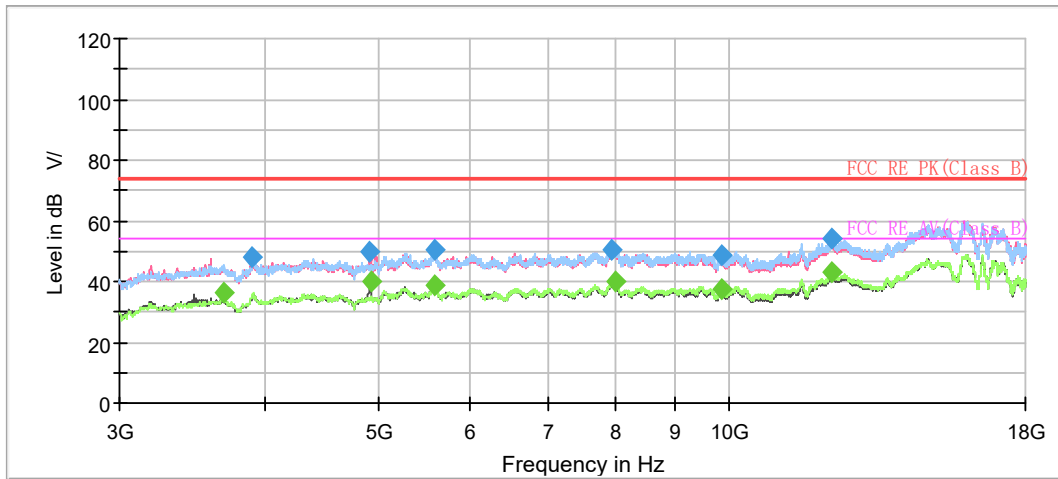
802.11ax HE20 CH11



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)
1179.000000	43.31	---	74.00	30.69	500.0	200.0	V	204.0	-4.1
1181.250000	---	31.86	54.00	22.14	500.0	200.0	V	279.0	-4.0
1421.000000	44.26	---	74.00	29.74	500.0	200.0	V	179.0	-2.5
1441.000000	---	33.20	54.00	20.80	500.0	200.0	V	73.0	-1.7
1682.750000	46.43	---	74.00	27.57	500.0	200.0	V	48.0	0.4
1711.750000	---	35.30	54.00	18.70	500.0	200.0	V	104.0	0.5
2007.750000	47.81	---	74.00	26.19	500.0	100.0	V	343.0	1.7
2034.000000	---	36.71	54.00	17.29	500.0	200.0	V	123.0	2.3
2311.000000	48.10	---	74.00	25.90	500.0	200.0	H	185.0	3.4
2326.000000	---	36.95	54.00	17.05	500.0	200.0	V	61.0	3.3
2498.500000	60.07	---	74.00	13.93	500.0	100.0	V	308.0	4.8
2500.250000	---	45.67	54.00	8.33	500.0	100.0	V	118.0	4.8



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)
3691.875000	---	36.20	54.00	17.80	500.0	100.0	H	93.0	1.7
3900.000000	48.06	---	74.00	25.94	500.0	200.0	V	122.0	3.0
4923.750000	49.65	---	74.00	24.35	500.0	200.0	V	247.0	3.0
4927.500000	---	39.88	54.00	14.12	500.0	200.0	V	288.0	3.0
5593.125000	50.25	---	74.00	23.75	500.0	100.0	H	203.0	8.1
5595.000000	---	38.86	54.00	15.14	500.0	200.0	V	115.0	8.0
7944.375000	50.69	---	74.00	23.31	500.0	100.0	H	134.0	9.9
7996.875000	---	39.96	54.00	14.04	500.0	100.0	H	155.0	9.9
9862.500000	48.65	---	74.00	25.35	500.0	100.0	V	339.0	9.6
9879.375000	---	37.30	54.00	16.70	500.0	100.0	V	199.0	9.1
12256.875000	---	43.02	54.00	10.98	500.0	100.0	H	301.0	14.2
12258.750000	54.10	---	74.00	19.90	500.0	100.0	H	0.0	14.3

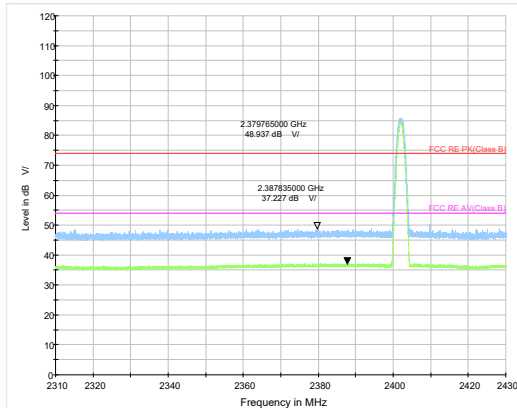
1.2. Bluetooth LE

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.

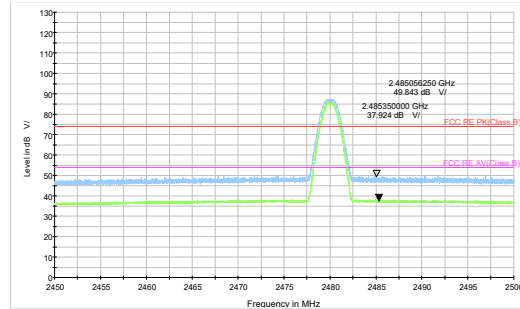
A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)

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

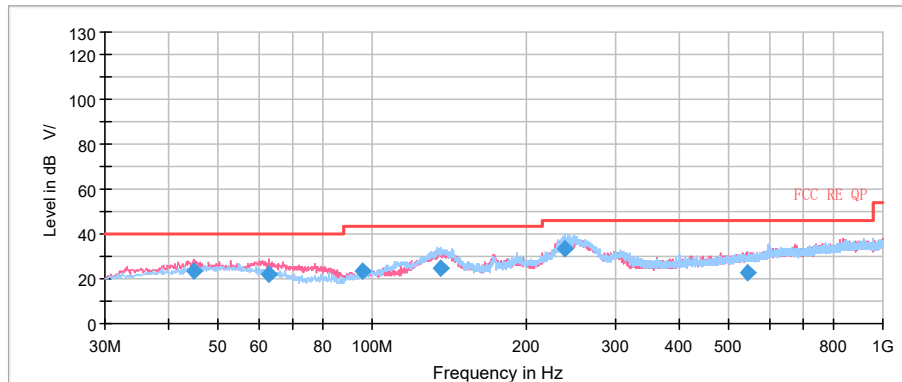
For above 1GHz

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

Continuous TX mode:

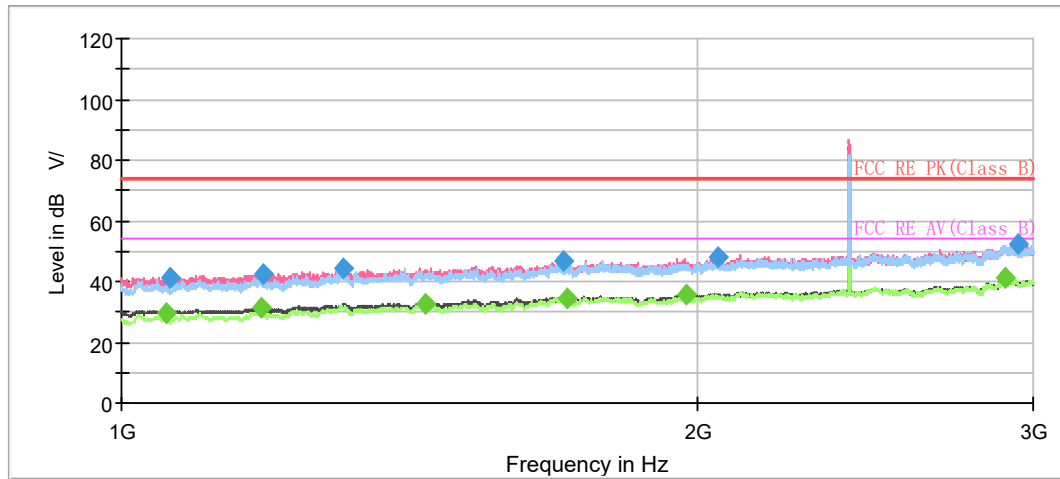
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 39) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak ($\text{dB}\mu\text{V/m}$)	Limit ($\text{dB}\mu\text{V/m}$)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
44.671250	23.20	40.00	16.80	112.0	V	337.0	21.0
62.858750	21.69	40.00	18.31	105.0	V	337.0	18.9
95.960000	23.62	43.50	19.88	100.0	V	67.0	18.7
136.700000	24.74	43.50	18.76	192.0	H	0.0	15.7
238.550000	33.32	46.00	12.68	105.0	H	275.0	20.0
544.100000	22.91	46.00	23.09	100.0	V	0.0	26.1

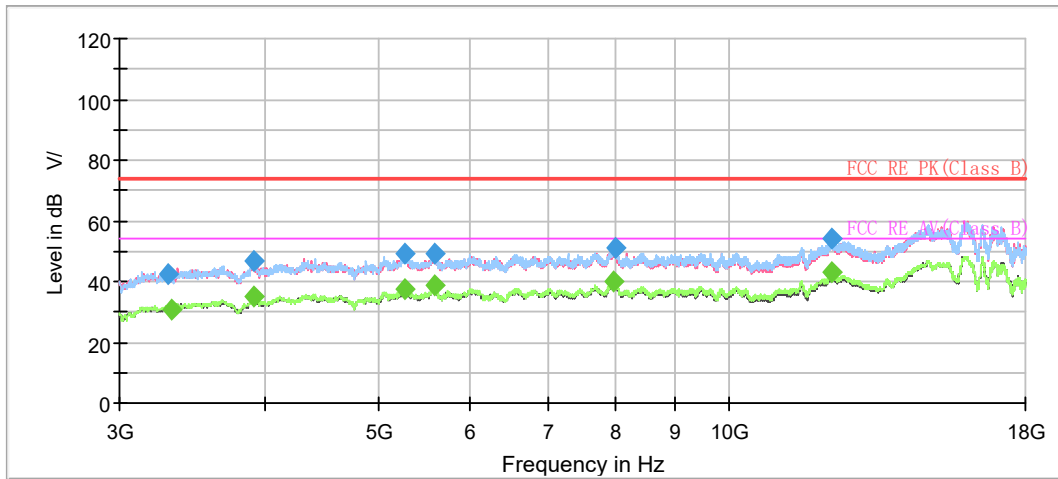
Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

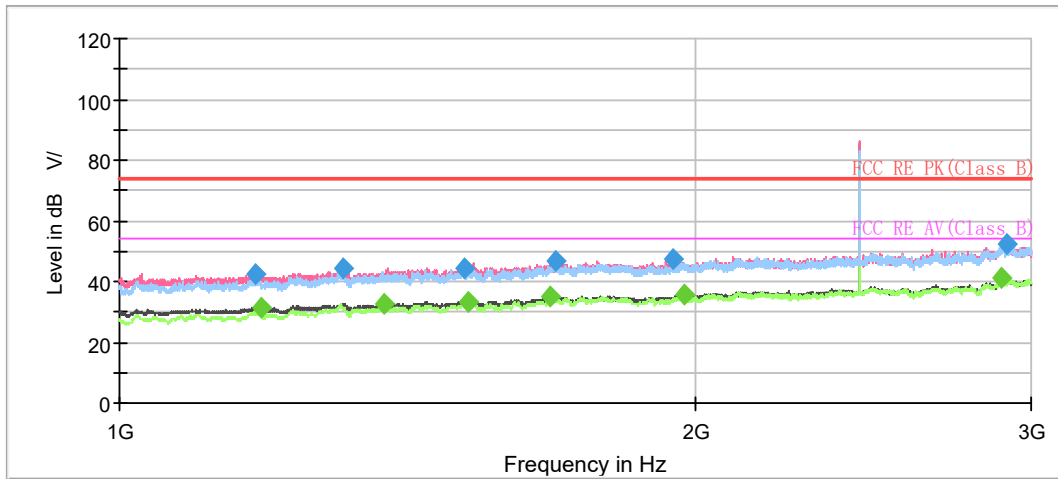
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1055.250000	---	29.30	54.00	24.70	500.0	200.0	V	226.0	-6.1
1061.000000	41.42	---	74.00	32.58	500.0	200.0	V	91.0	-5.9
1184.250000	---	31.36	54.00	22.64	500.0	200.0	V	336.0	-3.9
1186.000000	42.39	---	74.00	31.61	500.0	200.0	V	0.0	-4.0
1307.000000	44.54	---	74.00	29.46	500.0	200.0	V	1.0	-2.1
1441.250000	---	32.69	54.00	21.31	500.0	200.0	V	21.0	-1.6
1701.750000	46.96	---	74.00	27.04	500.0	200.0	V	150.0	0.4
1712.500000	---	34.77	54.00	19.23	500.0	200.0	V	161.0	0.4
1973.750000	---	35.81	54.00	18.19	500.0	200.0	V	91.0	2.1
2050.000000	47.81	---	74.00	26.19	500.0	100.0	H	108.0	2.5
2899.250000	---	41.02	54.00	12.98	500.0	100.0	H	203.0	8.6
2945.500000	52.22	---	74.00	21.78	500.0	200.0	V	32.0	7.5



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)
3296.250000	42.56	---	74.00	31.44	500.0	200.0	V	0.0	-0.8
3326.250000	---	31.01	54.00	22.99	500.0	100.0	H	274.0	-1.0
3907.500000	---	35.37	54.00	18.63	500.0	200.0	H	258.0	3.6
3909.375000	46.75	---	74.00	27.25	500.0	100.0	H	70.0	3.7
5268.750000	49.30	---	74.00	24.70	500.0	100.0	H	97.0	6.6
5280.000000	---	37.55	54.00	16.45	500.0	100.0	H	0.0	6.4
5585.625000	49.35	---	74.00	24.65	500.0	200.0	V	1.0	7.8
5593.125000	---	38.95	54.00	15.05	500.0	200.0	H	150.0	8.1
7966.875000	---	39.80	54.00	14.20	500.0	200.0	H	163.0	9.9
7998.750000	50.81	---	74.00	23.19	500.0	100.0	H	154.0	9.9
12286.875000	53.88	---	74.00	20.12	500.0	100.0	H	84.0	14.4
12288.750000	---	42.91	54.00	11.09	500.0	100.0	H	97.0	14.4

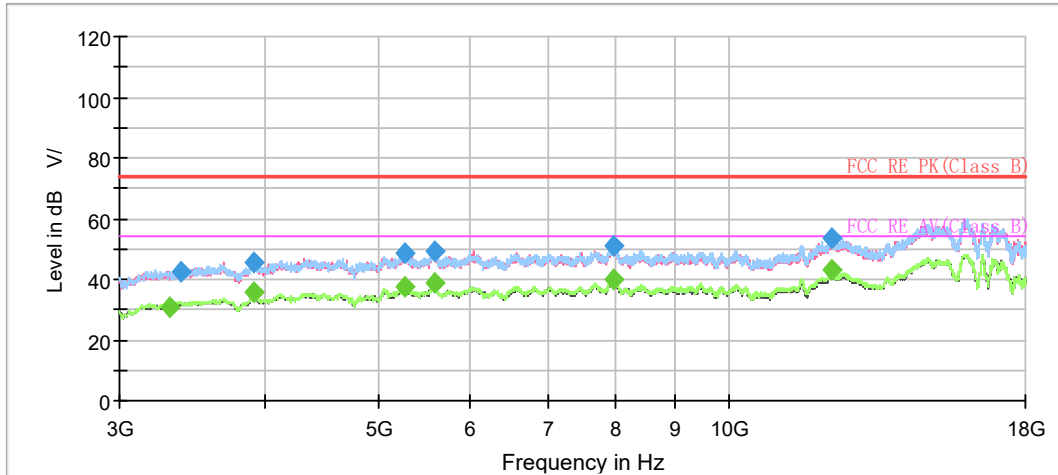
Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

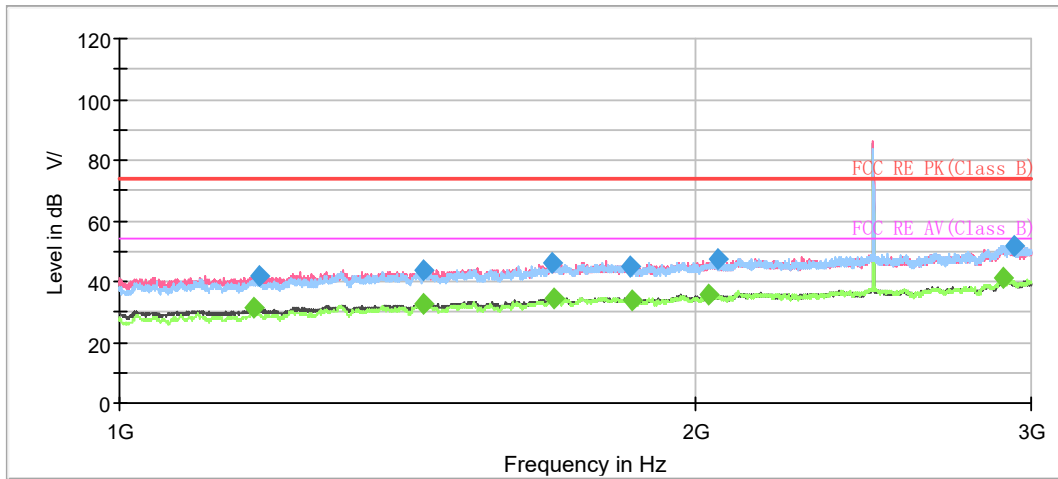
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.500000	42.49	---	74.00	31.51	500.0	200.0	V	76.0	-4.0
1185.500000	---	31.54	54.00	22.46	500.0	200.0	V	160.0	-3.9
1308.500000	44.36	---	74.00	29.64	500.0	200.0	V	256.0	-2.1
1377.000000	---	32.87	54.00	21.13	500.0	200.0	V	136.0	-2.3
1516.250000	44.37	---	74.00	29.63	500.0	200.0	V	208.0	-1.2
1521.000000	---	33.32	54.00	20.68	500.0	200.0	V	28.0	-1.1
1680.250000	---	35.00	54.00	19.00	500.0	200.0	V	28.0	0.4
1693.500000	46.97	---	74.00	27.03	500.0	200.0	V	136.0	0.3
1949.500000	47.20	---	74.00	26.80	500.0	200.0	H	348.0	1.2
1975.250000	---	35.84	54.00	18.16	500.0	200.0	V	160.0	2.0
2896.500000	---	41.14	54.00	12.86	500.0	200.0	H	251.0	8.3
2915.250000	52.32	---	74.00	21.68	500.0	200.0	V	0.0	8.3



Radiates Emission from 3GHz to 18GHz

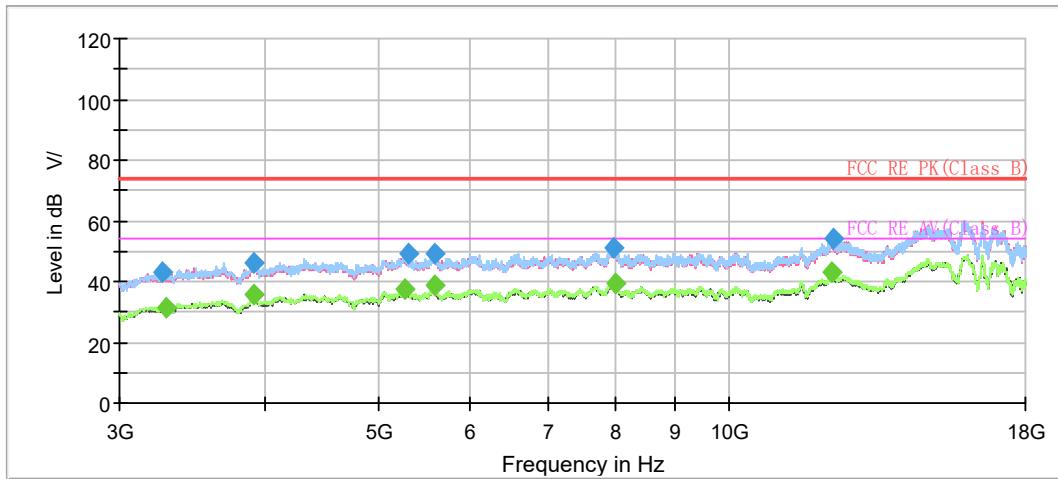
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3309.375000	---	31.03	54.00	22.97	500.0	100.0	V	0.0	-0.9
3393.750000	42.36	---	74.00	31.64	500.0	200.0	V	102.0	-0.1
3907.500000	---	35.65	54.00	18.35	500.0	200.0	H	280.0	3.6
3907.500000	45.78	---	74.00	28.22	500.0	100.0	H	305.0	3.6
5266.875000	---	37.62	54.00	16.38	500.0	200.0	H	0.0	6.5
5274.375000	48.56	---	74.00	25.44	500.0	100.0	H	103.0	6.5
5591.250000	---	38.77	54.00	15.23	500.0	200.0	H	344.0	8.1
5593.125000	49.46	---	74.00	24.54	500.0	100.0	H	130.0	8.1
7974.375000	---	39.71	54.00	14.29	500.0	100.0	H	49.0	9.9
7983.750000	51.14	---	74.00	22.86	500.0	200.0	H	358.0	9.9
12260.625000	53.59	---	74.00	20.41	500.0	200.0	H	292.0	14.3
12264.375000	---	42.91	54.00	11.09	500.0	100.0	H	22.0	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)
1175.750000	---	31.10	54.00	22.90	500.0	200.0	V	79.0	-4.2
1182.750000	41.83	---	74.00	32.17	500.0	200.0	V	54.0	-3.9
1441.500000	---	32.32	54.00	21.68	500.0	200.0	V	90.0	-1.6
1442.000000	43.60	---	74.00	30.40	500.0	200.0	V	176.0	-1.6
1685.000000	46.23	---	74.00	27.77	500.0	200.0	H	0.0	0.4
1686.500000	---	34.28	54.00	19.72	500.0	100.0	H	74.0	0.4
1850.000000	44.98	---	74.00	29.02	500.0	200.0	V	67.0	0.6
1853.000000	---	34.02	54.00	19.98	500.0	200.0	V	102.0	0.6
2031.750000	---	35.73	54.00	18.27	500.0	200.0	V	79.0	2.2
2055.000000	47.24	---	74.00	26.76	500.0	200.0	V	188.0	2.4
2898.750000	---	41.00	54.00	13.00	500.0	100.0	H	0.0	8.5
2942.500000	51.96	---	74.00	22.04	500.0	200.0	H	292.0	7.6



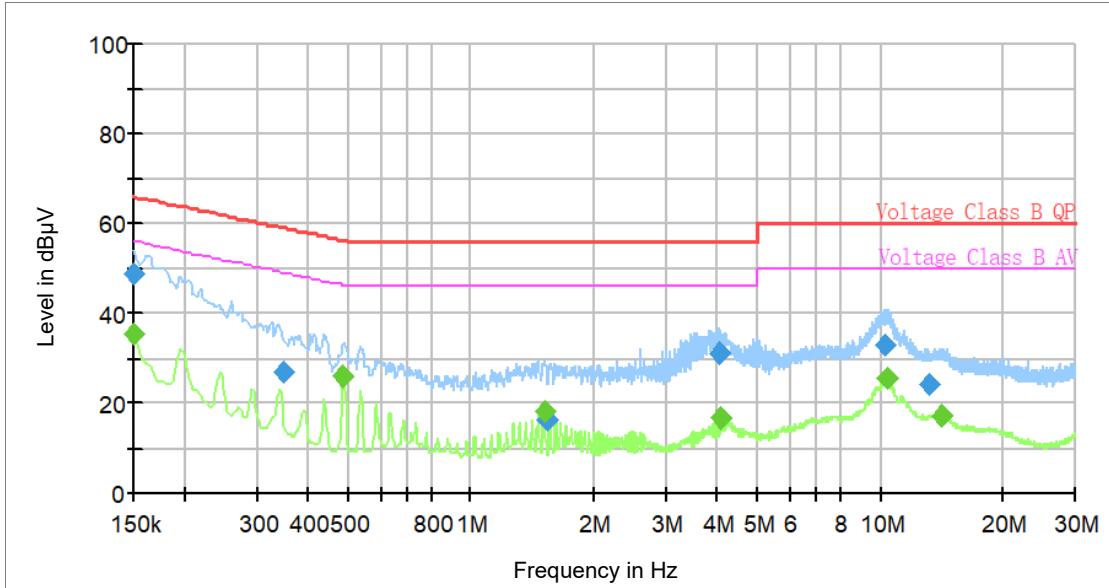
Radiates Emission from 3GHz to 18GHz

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)
3260.625000	43.21	---	74.00	30.79	500.0	100.0	H	0.0	-1.2
3286.875000	---	31.61	54.00	22.39	500.0	200.0	H	0.0	-0.9
3907.500000	---	35.85	54.00	18.15	500.0	100.0	H	278.0	3.6
3907.500000	46.29	---	74.00	27.71	500.0	100.0	H	278.0	3.6
5276.250000	---	37.52	54.00	16.48	500.0	200.0	H	311.0	6.4
5306.250000	49.03	---	74.00	24.97	500.0	200.0	H	285.0	5.9
5591.250000	---	38.72	54.00	15.28	500.0	200.0	H	350.0	8.1
5598.750000	49.46	---	74.00	24.54	500.0	200.0	H	28.0	7.8
7959.375000	51.06	---	74.00	22.94	500.0	200.0	H	338.0	9.9
8002.500000	---	39.62	54.00	14.38	500.0	100.0	H	182.0	9.8
12277.500000	---	42.99	54.00	11.01	500.0	100.0	H	182.0	14.6
12294.375000	54.33	---	74.00	19.67	500.0	100.0	V	230.0	14.3

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 CH1**) was recorded in this report.

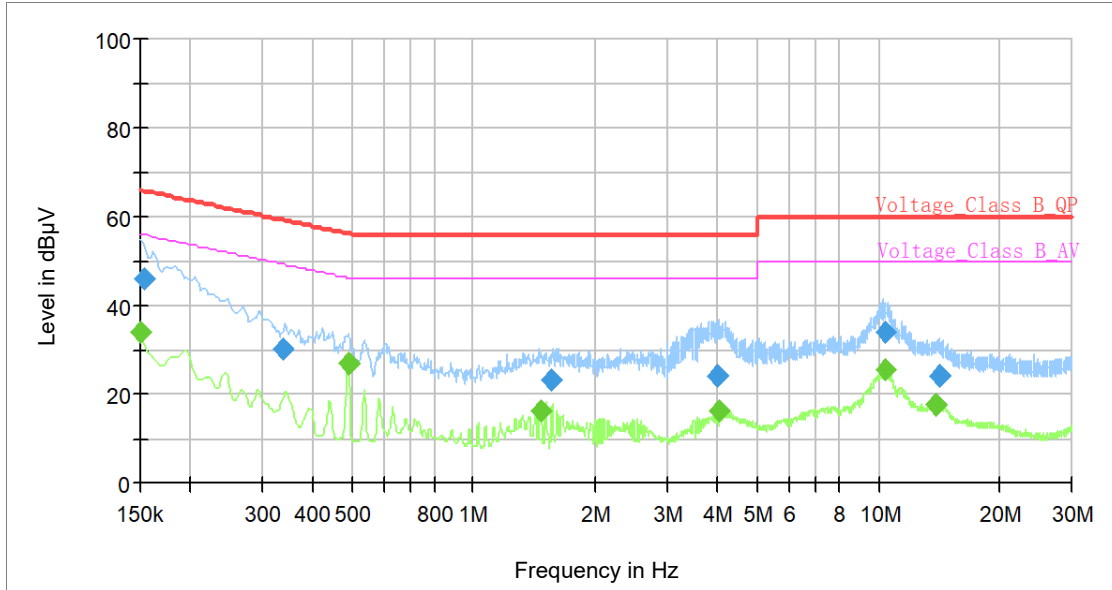


Final Result

Frequency (MHz)	QuasiPeak (dBμ V)	Average (dBμ V)	Limit (dBμ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	---	35.53	56.00	20.47	1000.0	9.000	L1	ON	20.9
0.150000	48.88	---	66.00	17.12	1000.0	9.000	L1	ON	20.9
0.349750	27.15	---	58.97	31.81	1000.0	9.000	L1	ON	20.9
0.485500	---	25.93	46.24	20.31	1000.0	9.000	L1	ON	20.8
1.512250	---	18.37	46.00	27.63	1000.0	9.000	L1	ON	19.8
1.533000	16.36	---	56.00	39.64	1000.0	9.000	L1	ON	19.8
4.043500	31.03	---	56.00	24.97	1000.0	9.000	L1	ON	19.4
4.092250	---	16.67	46.00	29.33	1000.0	9.000	L1	ON	19.4
10.323250	33.00	---	60.00	27.00	1000.0	9.000	L1	ON	19.4
10.340250	---	25.56	50.00	24.44	1000.0	9.000	L1	ON	19.4
13.166250	24.08	---	60.00	35.92	1000.0	9.000	L1	ON	19.5
14.109500	---	17.42	50.00	32.58	1000.0	9.000	L1	ON	19.5

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Final Result

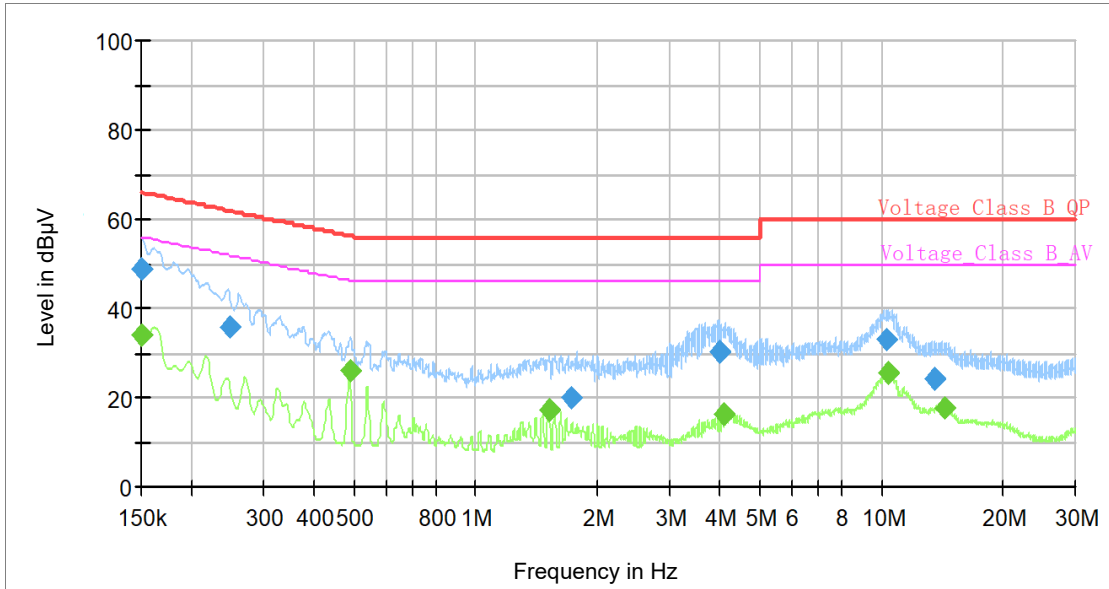
Frequency (MHz)	QuasiPeak (dBμ V)	Average (dBμ V)	Limit (dBμ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	---	33.76	56.00	22.24	1000.0	9.000	N	ON	20.9
0.154000	46.14	---	65.78	19.64	1000.0	9.000	N	ON	20.9
0.338250	30.45	---	59.25	28.80	1000.0	9.000	N	ON	20.9
0.489500	---	27.01	46.18	19.17	1000.0	9.000	N	ON	20.8
1.457250	---	16.18	46.00	29.82	1000.0	9.000	N	ON	19.9
1.556000	23.09	---	56.00	32.91	1000.0	9.000	N	ON	19.8
4.014250	24.16	---	56.00	31.84	1000.0	9.000	N	ON	19.4
4.042250	---	16.16	46.00	29.84	1000.0	9.000	N	ON	19.4
10.356250	---	25.51	50.00	24.49	1000.0	9.000	N	ON	19.4
10.396750	33.82	---	60.00	26.18	1000.0	9.000	N	ON	19.4
13.791250	---	17.51	50.00	32.49	1000.0	9.000	N	ON	19.5
14.214250	24.09	---	60.00	35.91	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 39**) was recorded in this report.

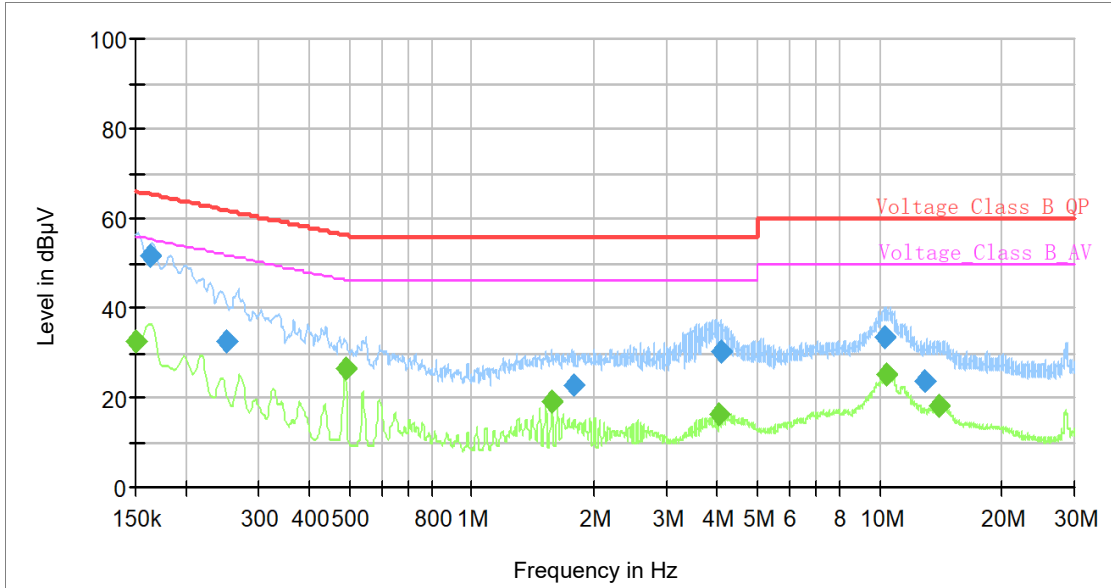


Final Result

Frequency (MHz)	QuasiPeak (dBμ V)	Average (dBμ V)	Limit (dBμ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	---	33.88	56.00	22.12	1000.0	9.000	L1	ON	20.9
0.150000	49.04	---	66.00	16.96	1000.0	9.000	L1	ON	20.9
0.246750	36.03	---	61.87	25.83	1000.0	9.000	L1	ON	21.0
0.489500	---	26.07	46.18	20.10	1000.0	9.000	L1	ON	20.8
1.515500	---	17.35	46.00	28.65	1000.0	9.000	L1	ON	19.8
1.709250	20.01	---	56.00	35.99	1000.0	9.000	L1	ON	19.7
3.984750	30.35	---	56.00	25.65	1000.0	9.000	L1	ON	19.4
4.097000	---	16.13	46.00	29.87	1000.0	9.000	L1	ON	19.4
10.273250	33.03	---	60.00	26.97	1000.0	9.000	L1	ON	19.4
10.370000	---	25.50	50.00	24.50	1000.0	9.000	L1	ON	19.4
13.521250	24.11	---	60.00	35.89	1000.0	9.000	L1	ON	19.5
14.250000	---	17.52	50.00	32.48	1000.0	9.000	L1	ON	19.5

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Final_Result

Frequency (MHz)	QuasiPeak (dBμ V)	Average (dBμ V)	Limit (dBμ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	---	32.48	56.00	23.52	1000.0	9.000	N	ON	20.9
0.162000	51.66	---	65.36	13.70	1000.0	9.000	N	ON	20.9
0.251000	32.37	---	61.72	29.35	1000.0	9.000	N	ON	21.0
0.489500	---	26.72	46.18	19.46	1000.0	9.000	N	ON	20.8
1.567750	---	18.84	46.00	27.16	1000.0	9.000	N	ON	19.8
1.780250	22.81	---	56.00	33.19	1000.0	9.000	N	ON	19.7
4.048000	---	16.46	46.00	29.54	1000.0	9.000	N	ON	19.4
4.103500	30.21	---	56.00	25.79	1000.0	9.000	N	ON	19.4
10.300500	33.35	---	60.00	26.65	1000.0	9.000	N	ON	19.4
10.448000	---	25.26	50.00	24.74	1000.0	9.000	N	ON	19.4
12.871500	23.78	---	60.00	36.22	1000.0	9.000	N	ON	19.5
14.013250	---	17.93	50.00	32.07	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