

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

1. Unwanted Emission

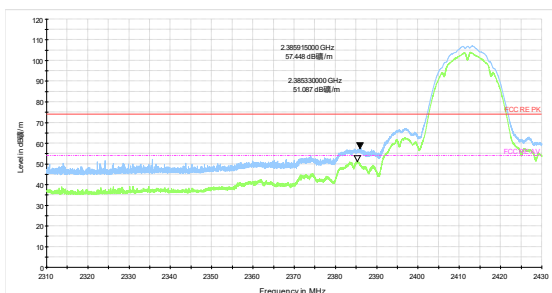
1.1. Wi-Fi 2.4GHz

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.

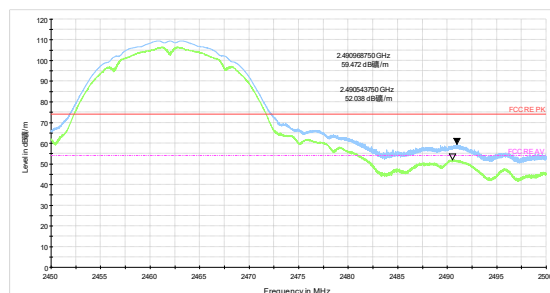
A symbol ($\text{dB}\mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)

The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ax mode for 20MHz/40MHz, therefore investigated worst case to representative mode in test report.

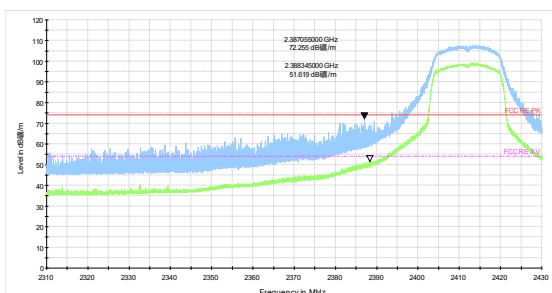
The signal beyond the limit is carrier.



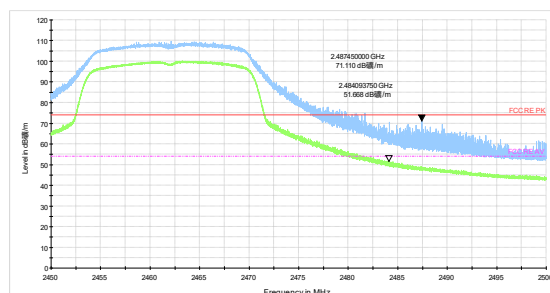
802.11b-Channel 1 Peak+ Average



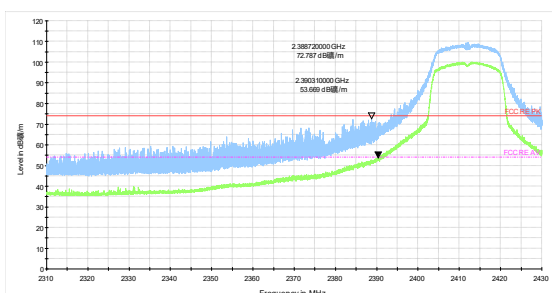
802.11b-Channel 11 Peak+ Average



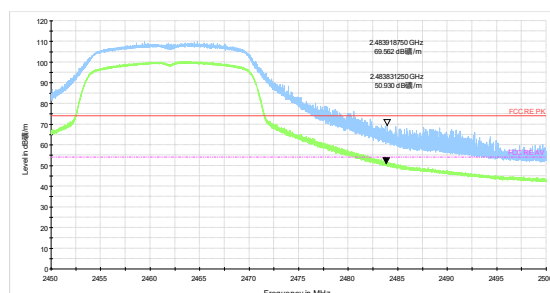
802.11g-Channel 1 Peak+ Average



802.11g-Channel 11 Peak+ Average



802.11n HT20-Channel 1 Peak+ Average



802.11n HT20-Channel 11 Peak+ Average

Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier.
The Radiates Emission from 9kHz to 30MHz and 18GHz to 26.5GHz are more than 20dB below the

Remark:

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

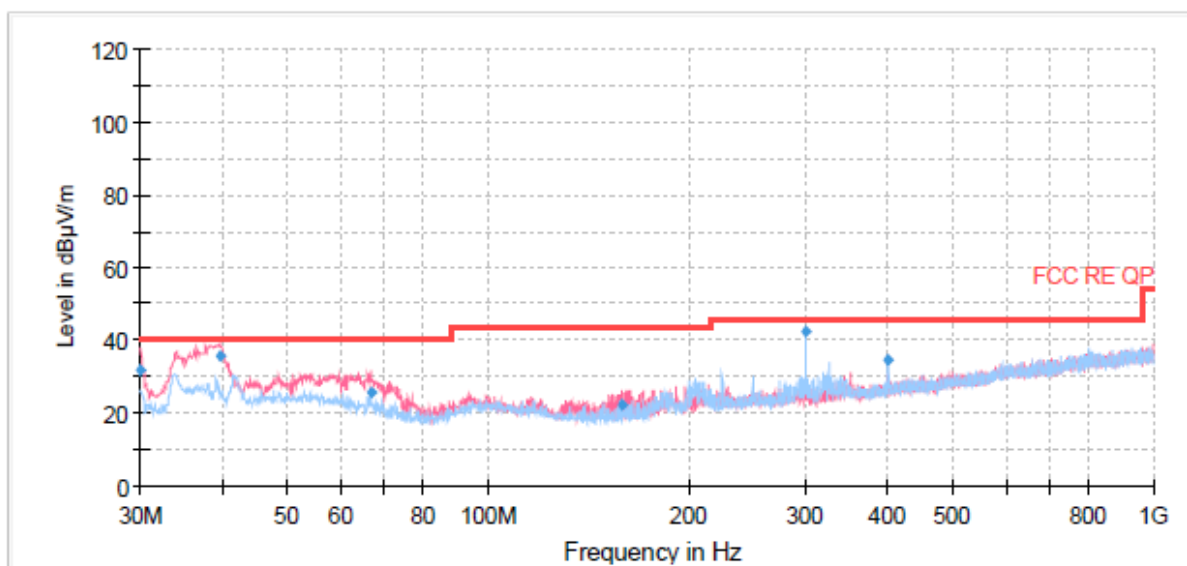
~ QP Level @Spectrum Overview H
 ~ QP Level @Spectrum Overview V
 ◆ QP Level @Final Results
 — QP Limit

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:

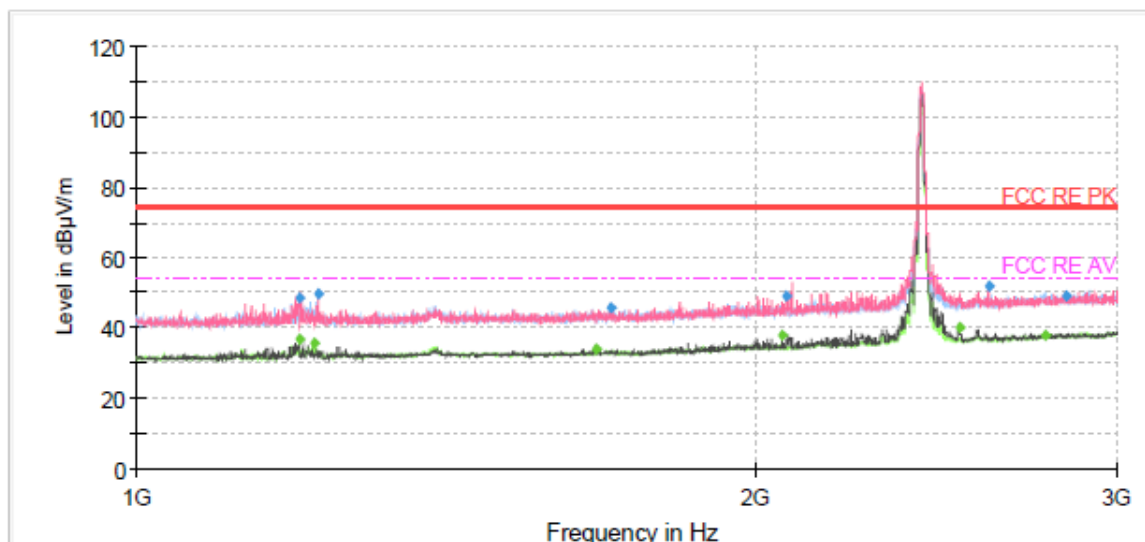
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, the test data of the worst-case condition (802.11g CH11) was recorded in this report.



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	31.64	40.00	8.36	100.0	V	304.00	17
39.46	35.45	40.00	4.55	100.0	V	352.00	19
66.74	25.50	40.00	14.50	100.0	V	352.00	17
158.89	22.10	43.50	21.40	100.0	V	123.00	16
300.02	42.49	46.00	3.51	100.0	H	129.00	21
400.06	34.51	46.00	11.49	100.0	H	161.00	23

802.11b CH1

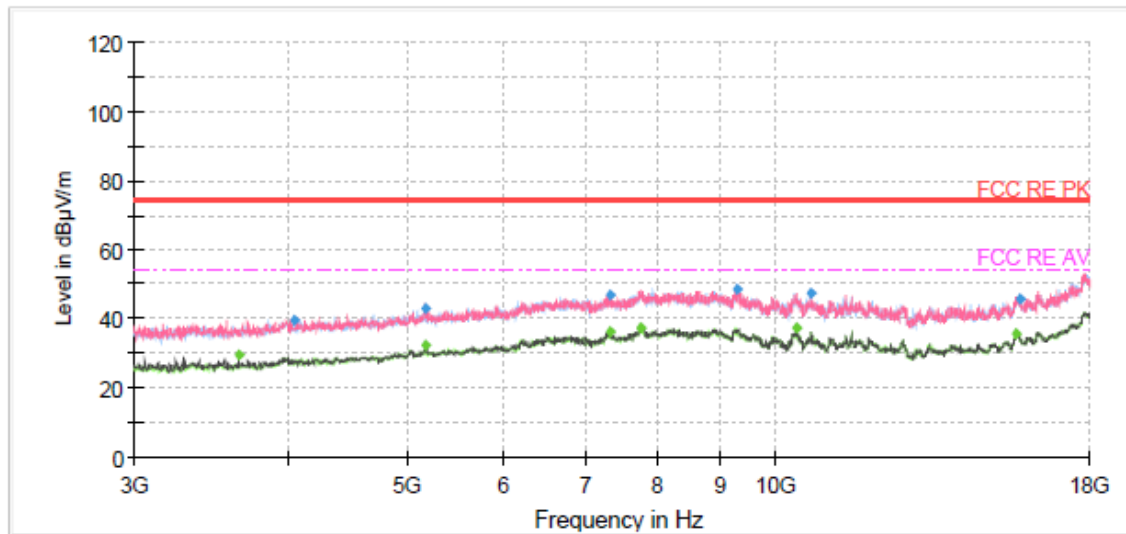


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1199.25	48.39	---	74.00	25.61	500.00	100.0	V	125.00	-12
1199.75	---	36.57	54.00	17.43	500.00	100.0	V	153.00	-12
1220.75	---	35.78	54.00	18.22	500.00	100.0	H	334.00	-12
1226.50	49.72	---	74.00	24.28	500.00	100.0	V	98.00	-12
1674.00	---	34.29	54.00	19.71	500.00	100.0	V	98.00	-10
1701.00	45.67	---	74.00	28.33	500.00	100.0	H	356.00	-10
2061.50	---	37.75	54.00	16.25	500.00	200.0	V	103.00	-8
2071.50	49.08	---	74.00	24.92	500.00	200.0	V	0.00	-8
2516.75	---	40.08	54.00	13.92	500.00	200.0	V	349.00	-6
2597.75	51.64	---	74.00	22.36	500.00	200.0	V	275.00	-6
2771.75	---	37.98	54.00	16.02	500.00	200.0	H	179.00	-5
2839.25	49.00	---	74.00	25.00	500.00	100.0	H	259.00	-5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

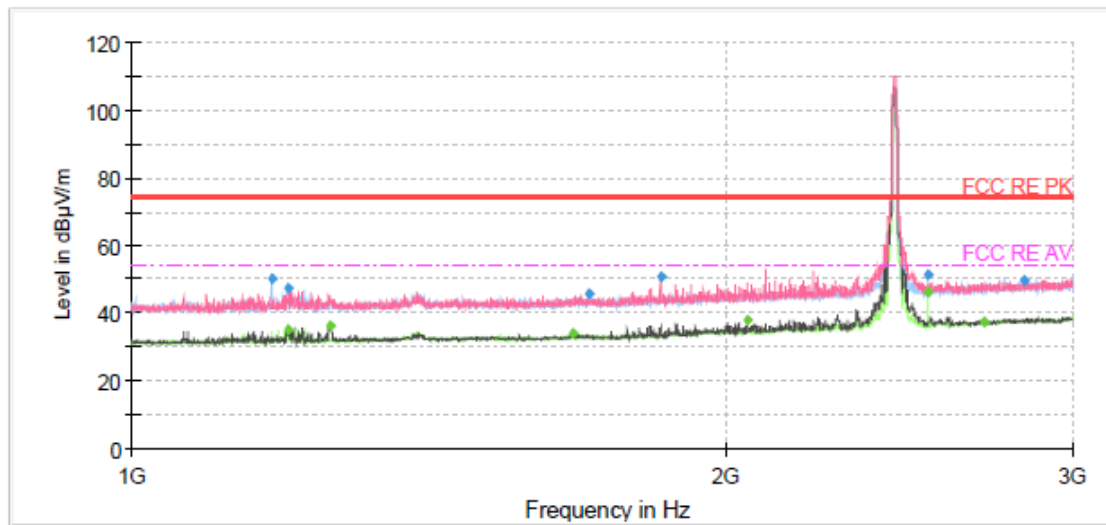


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3654.38	---	29.45	54.00	24.55	500.00	200.0	V	202.00	-13
4042.50	39.46	---	74.00	34.54	500.00	100.0	H	0.00	-12
5186.25	---	32.25	54.00	21.75	500.00	100.0	V	186.00	-8
5188.13	42.94	---	74.00	31.06	500.00	200.0	V	157.00	-8
7310.63	46.95	---	74.00	27.05	500.00	200.0	H	337.00	-1
7310.63	---	36.43	54.00	17.57	500.00	100.0	H	337.00	-1
7740.00	---	37.55	54.00	16.45	500.00	200.0	V	324.00	1
9277.50	48.36	---	74.00	25.64	500.00	100.0	V	263.00	1
10404.38	---	37.42	54.00	16.58	500.00	200.0	V	157.00	2
10672.50	47.50	---	74.00	26.50	500.00	100.0	V	0.00	3
15703.13	---	35.55	54.00	18.45	500.00	200.0	V	0.00	7
15774.38	45.87	---	74.00	28.13	500.00	100.0	H	0.00	7

Radiates Emission from 3GHz to 18GHz

802.11b CH6

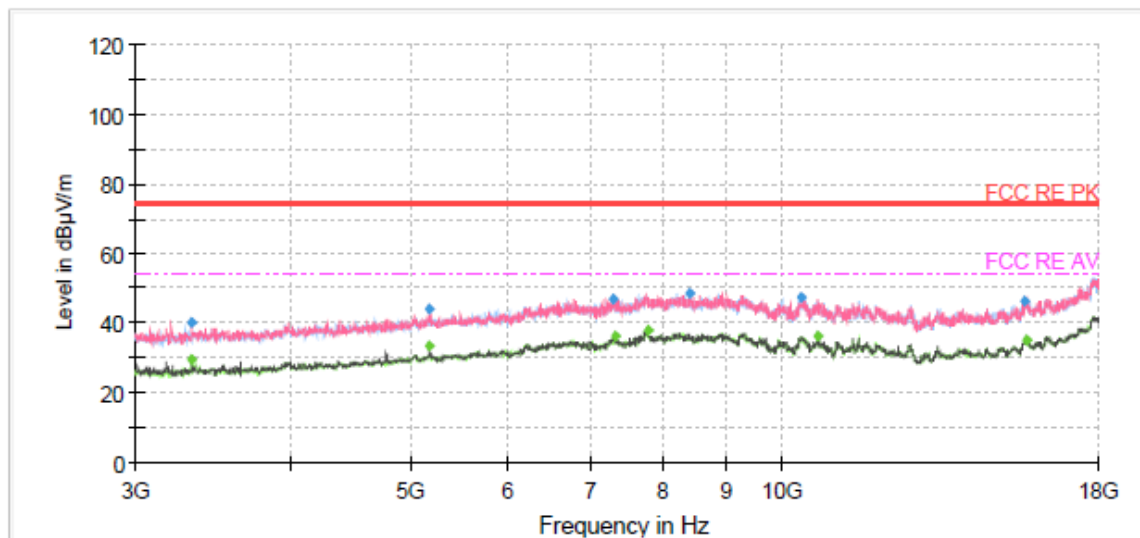


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1177.00	50.06	---	74.00	23.94	500.00	200.0	H	204.00	-12
1199.50	---	35.28	54.00	18.72	500.00	100.0	V	151.00	-12
1201.00	47.16	---	74.00	26.84	500.00	100.0	V	124.00	-12
1260.00	---	36.15	54.00	17.85	500.00	100.0	V	151.00	-11
1674.75	---	33.86	54.00	20.14	500.00	100.0	V	96.00	-10
1706.50	45.50	---	74.00	28.50	500.00	200.0	H	1.00	-10
1854.00	50.74	---	74.00	23.27	500.00	200.0	V	87.00	-9
2054.25	---	38.05	54.00	15.95	500.00	200.0	V	102.00	-8
2533.00	51.32	---	74.00	22.68	500.00	200.0	H	358.00	-6
2533.50	---	46.07	54.00	7.93	500.00	200.0	H	358.00	-6
2704.75	---	37.39	54.00	16.61	500.00	200.0	H	72.00	-5
2834.75	49.48	---	74.00	24.52	500.00	200.0	V	335.00	-5

Note: The signal beyond the limit is carrier.

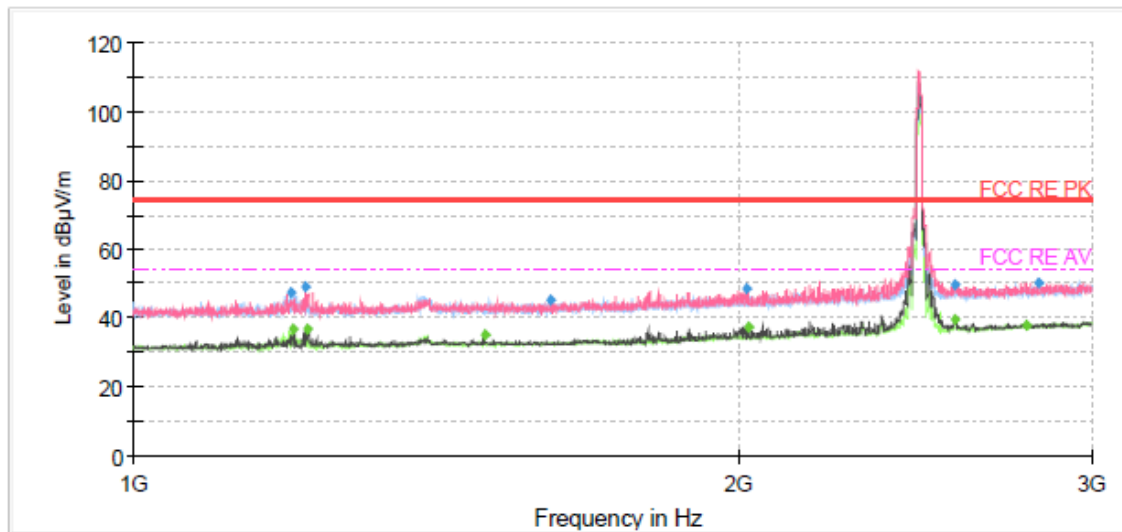
Radiates Emission from 1GHz to 3GHz



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3330.00	40.02	---	74.00	33.98	500.00	200.0	V	353.00	-13
3330.00	---	29.71	54.00	24.29	500.00	100.0	V	353.00	-13
5180.63	43.87	---	74.00	30.13	500.00	100.0	V	249.00	-8
5180.63	---	33.36	54.00	20.64	500.00	200.0	V	249.00	-8
7288.13	47.07	---	74.00	26.93	500.00	200.0	H	3.00	0
7310.63	---	36.37	54.00	17.63	500.00	100.0	H	310.00	-1
7771.88	---	37.79	54.00	16.21	500.00	100.0	V	187.00	1
8405.63	48.56	---	74.00	25.44	500.00	200.0	V	249.00	1
10355.63	47.50	---	74.00	26.50	500.00	100.0	V	278.00	2
10674.38	---	36.23	54.00	17.77	500.00	200.0	V	350.00	3
15678.75	46.15	---	74.00	27.85	500.00	100.0	V	22.00	7
15751.88	---	34.99	54.00	19.01	500.00	100.0	H	5.00	7

Radiates Emission from 3GHz to 18GHz

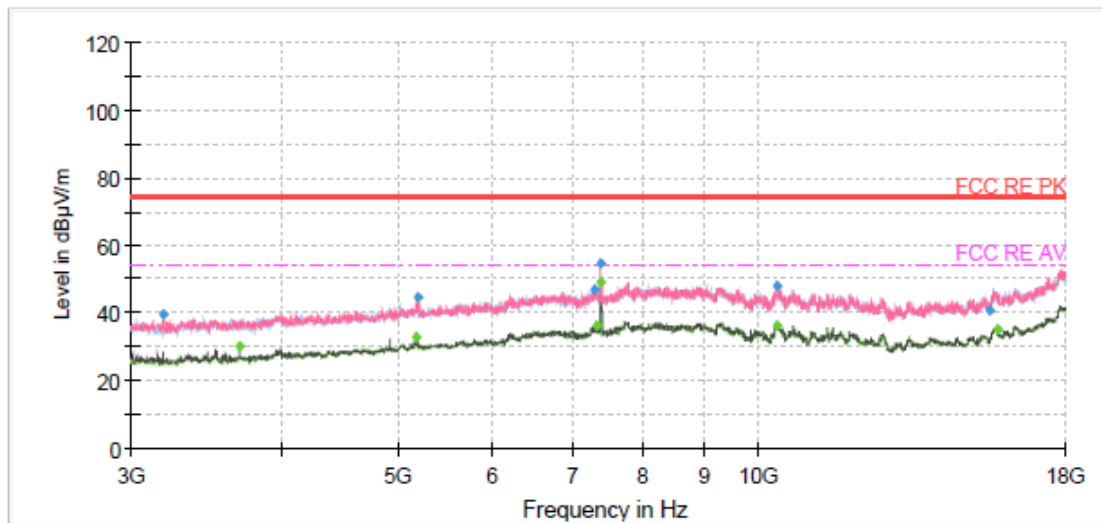


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.75	47.23	---	74.00	26.77	500.00	200.0	H	211.00	-12
1200.75	---	36.81	54.00	17.19	500.00	200.0	H	211.00	-12
1217.00	48.92	---	74.00	25.08	500.00	100.0	V	143.00	-12
1220.25	---	36.84	54.00	17.16	500.00	100.0	V	143.00	-12
1494.50	---	34.93	54.00	19.07	500.00	200.0	V	131.00	-11
1613.75	45.31	---	74.00	28.69	500.00	200.0	H	48.00	-11
2019.25	48.51	---	74.00	25.49	500.00	200.0	V	62.00	-8
2023.00	---	37.60	54.00	16.40	500.00	200.0	V	62.00	-8
2563.00	49.59	---	74.00	24.41	500.00	100.0	V	213.00	-5
2566.75	---	39.88	54.00	14.12	500.00	200.0	V	331.00	-5
2785.00	---	37.88	54.00	16.12	500.00	200.0	H	58.00	-5
2821.50	50.07	---	74.00	23.93	500.00	100.0	V	21.00	-5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

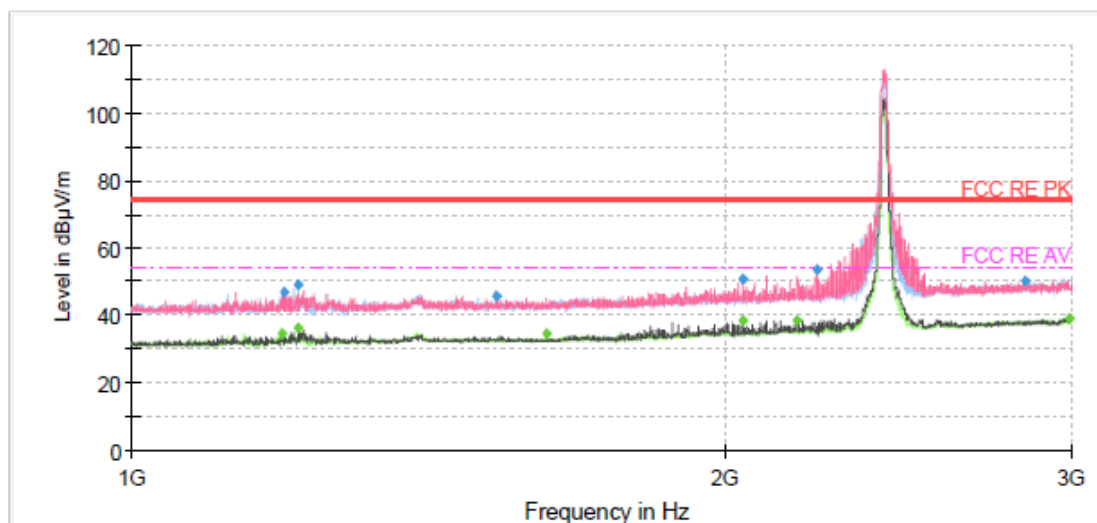


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3187.50	39.44	---	74.00	34.56	500.00	100.0	V	22.00	-14
3691.88	---	29.97	54.00	24.03	500.00	200.0	V	201.00	-13
5186.25	---	32.66	54.00	21.34	500.00	200.0	V	186.00	-8
5197.50	44.67	---	74.00	29.33	500.00	100.0	V	315.00	-8
7293.75	46.65	---	74.00	27.35	500.00	100.0	V	12.00	0
7310.63	---	36.10	54.00	17.90	500.00	200.0	V	157.00	-1
7385.63	---	48.86	54.00	5.14	500.00	100.0	V	172.00	-1
7385.63	54.52	---	74.00	19.48	500.00	200.0	V	172.00	-1
10331.25	47.77	---	74.00	26.23	500.00	100.0	V	186.00	2
10333.13	---	36.53	54.00	17.47	500.00	100.0	V	12.00	2
15558.75	40.59	---	74.00	33.41	500.00	200.0	H	226.00	6
15781.88	---	35.12	54.00	18.88	500.00	100.0	H	47.00	7

Radiates Emission from 3GHz to 18GHz

802.11g CH1

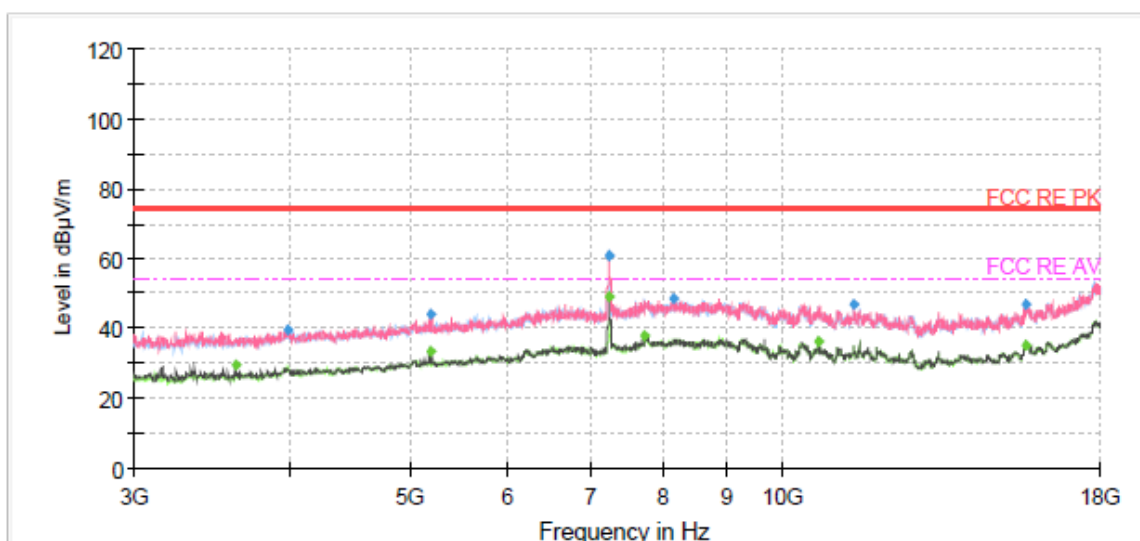


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1192.00	---	34.85	54.00	19.15	500.00	200.0	H	104.00	-12
1195.50	47.12	---	74.00	26.88	500.00	100.0	V	359.00	-12
1213.75	---	36.28	54.00	17.72	500.00	200.0	H	186.00	-12
1213.75	48.99	---	74.00	25.01	500.00	200.0	H	186.00	-12
1533.25	45.71	---	74.00	28.29	500.00	200.0	V	146.00	-11
1623.25	---	34.67	54.00	19.33	500.00	200.0	V	146.00	-10
2042.50	50.97	---	74.00	23.03	500.00	200.0	V	106.00	-8
2043.00	---	38.74	54.00	15.26	500.00	200.0	V	106.00	-8
2177.25	---	38.53	54.00	15.47	500.00	200.0	V	106.00	-7
2230.25	53.84	---	74.00	20.16	500.00	200.0	V	2.00	-7
2841.00	50.14	---	74.00	23.86	500.00	200.0	V	92.00	-5
2991.50	---	39.12	54.00	14.88	500.00	200.0	V	2.00	-4

Note: The signal beyond the limit is carrier.

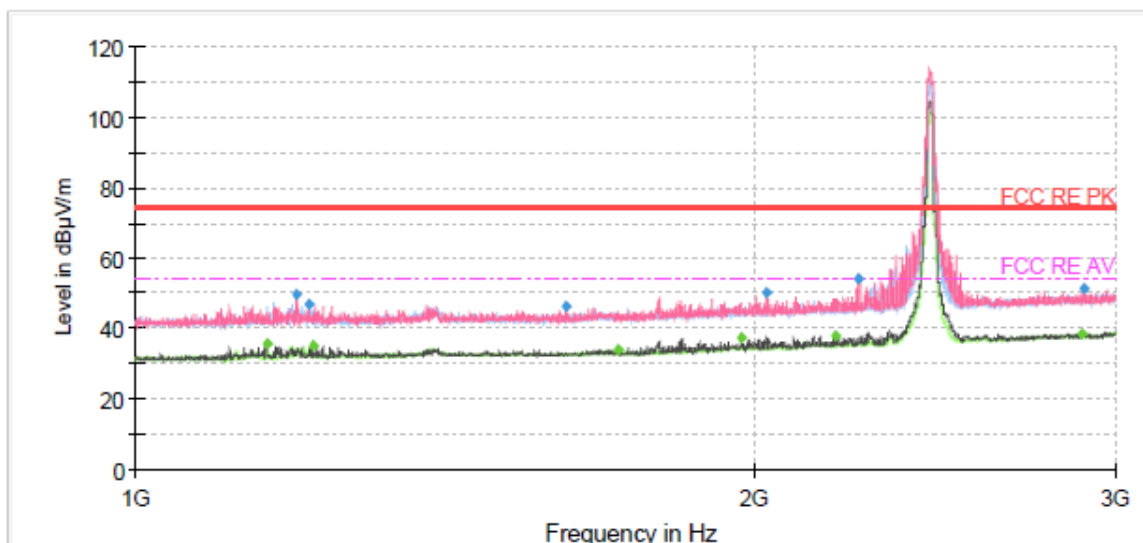
Radiates Emission from 1GHz to 3GHz



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3616.88	---	29.38	54.00	24.62	500.00	100.0	V	259.00	-13
3980.63	39.83	---	74.00	34.17	500.00	200.0	V	348.00	-11
5206.88	44.01	---	74.00	29.99	500.00	100.0	V	139.00	-9
5208.75	---	33.58	54.00	20.42	500.00	200.0	V	139.00	-9
7237.50	---	49.19	54.00	4.81	500.00	200.0	V	244.00	-1
7239.38	60.89	---	74.00	13.11	500.00	100.0	V	288.00	-1
7736.25	---	37.71	54.00	16.29	500.00	100.0	V	124.00	1
8160.00	48.84	---	74.00	25.16	500.00	200.0	V	358.00	1
10672.50	---	36.19	54.00	17.81	500.00	100.0	V	354.00	3
11386.88	47.13	---	74.00	26.87	500.00	100.0	V	0.00	5
15673.13	---	35.21	54.00	18.79	500.00	200.0	V	358.00	7
15697.50	46.78	---	74.00	27.22	500.00	100.0	V	359.00	7

Radiates Emission from 3GHz to 18GHz

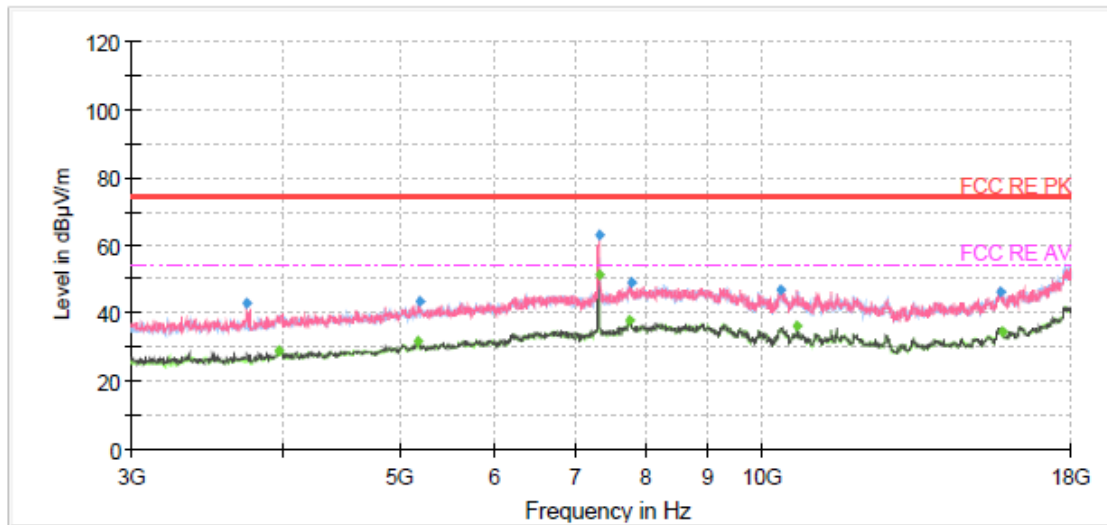


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1159.75	---	35.47	54.00	18.53	500.00	200.0	H	173.00	-12
1199.00	49.65	---	74.00	24.35	500.00	100.0	V	138.00	-12
1215.75	47.03	---	74.00	26.97	500.00	100.0	V	123.00	-12
1219.00	---	35.38	54.00	18.62	500.00	100.0	H	15.00	-12
1622.00	46.16	---	74.00	27.84	500.00	100.0	V	299.00	-10
1717.25	---	34.05	54.00	19.95	500.00	200.0	V	115.00	-10
1971.75	---	37.65	54.00	16.35	500.00	200.0	V	115.00	-8
2030.75	50.27	---	74.00	23.73	500.00	200.0	V	102.00	-8
2190.75	---	37.81	54.00	16.19	500.00	100.0	V	110.00	-7
2248.75	54.33	---	74.00	19.67	500.00	100.0	V	276.00	-7
2888.75	---	38.42	54.00	15.58	500.00	100.0	H	3.00	-5
2894.25	51.08	---	74.00	22.92	500.00	200.0	V	157.00	-5

Note: The signal beyond the limit is carrier.

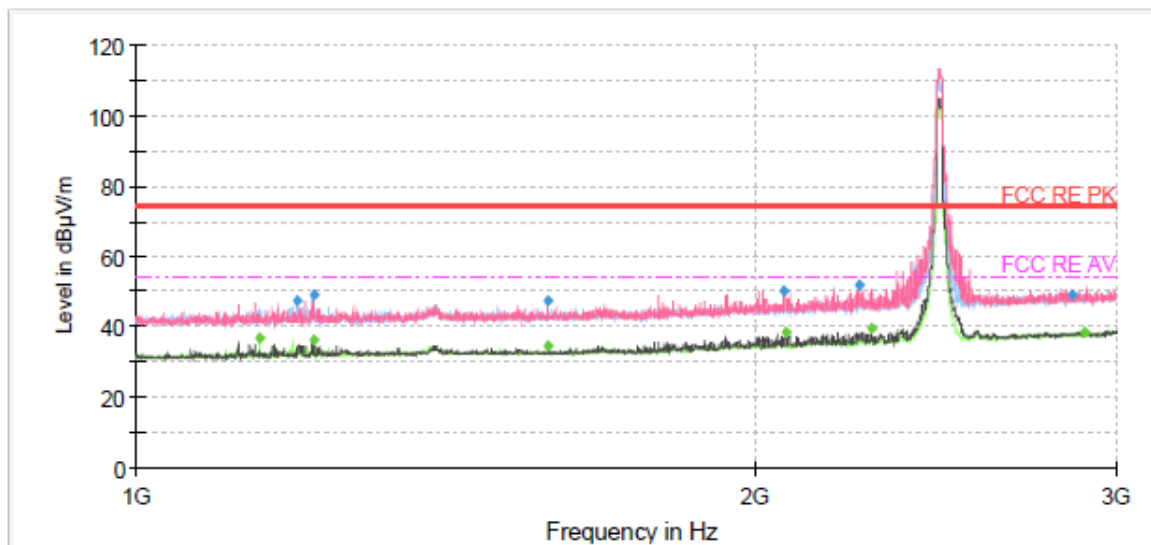
Radiates Emission from 1GHz to 3GHz



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3733.13	42.84	---	74.00	31.16	500.00	200.0	V	82.00	-13
3978.75	---	28.90	54.00	25.10	500.00	200.0	V	111.00	-11
5186.25	---	32.08	54.00	21.92	500.00	100.0	V	188.00	-8
5201.25	43.58	---	74.00	30.42	500.00	100.0	V	96.00	-9
7310.63	---	51.21	54.00	2.79	500.00	200.0	V	293.00	-1
7310.63	63.17	---	74.00	10.83	500.00	100.0	V	293.00	-1
7741.88	---	37.79	54.00	16.21	500.00	100.0	V	234.00	1
7783.13	49.16	---	74.00	24.84	500.00	200.0	V	204.00	1
10335.00	47.03	---	74.00	26.97	500.00	100.0	V	357.00	2
10672.50	---	36.07	54.00	17.93	500.00	100.0	V	325.00	3
15740.63	46.27	---	74.00	27.73	500.00	200.0	H	0.00	7
15787.50	---	34.59	54.00	19.41	500.00	100.0	H	170.00	7

Radiates Emission from 3GHz to 18GHz

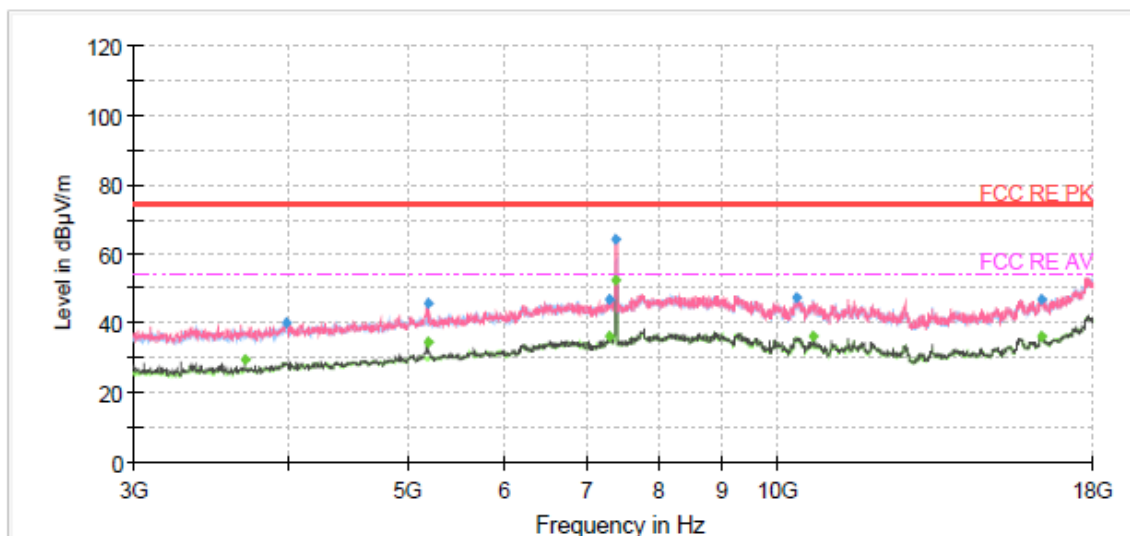


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1148.25	---	36.56	54.00	17.44	500.00	200.0	H	139.00	-12
1197.00	47.54	---	74.00	26.46	500.00	100.0	H	67.00	-12
1219.00	---	36.29	54.00	17.71	500.00	100.0	V	132.00	-12
1221.25	49.07	---	74.00	24.93	500.00	200.0	V	226.00	-12
1587.75	---	34.51	54.00	19.49	500.00	200.0	V	99.00	-11
1587.75	47.36	---	74.00	26.64	500.00	200.0	V	99.00	-11
2069.50	50.33	---	74.00	23.67	500.00	200.0	V	99.00	-8
2071.75	---	38.27	54.00	15.73	500.00	200.0	V	86.00	-8
2248.75	51.79	---	74.00	22.21	500.00	100.0	V	274.00	-7
2281.25	---	39.64	54.00	14.36	500.00	100.0	V	90.00	-7
2858.75	48.86	---	74.00	25.14	500.00	200.0	V	6.00	-5
2893.25	---	38.41	54.00	15.59	500.00	100.0	H	3.00	-5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

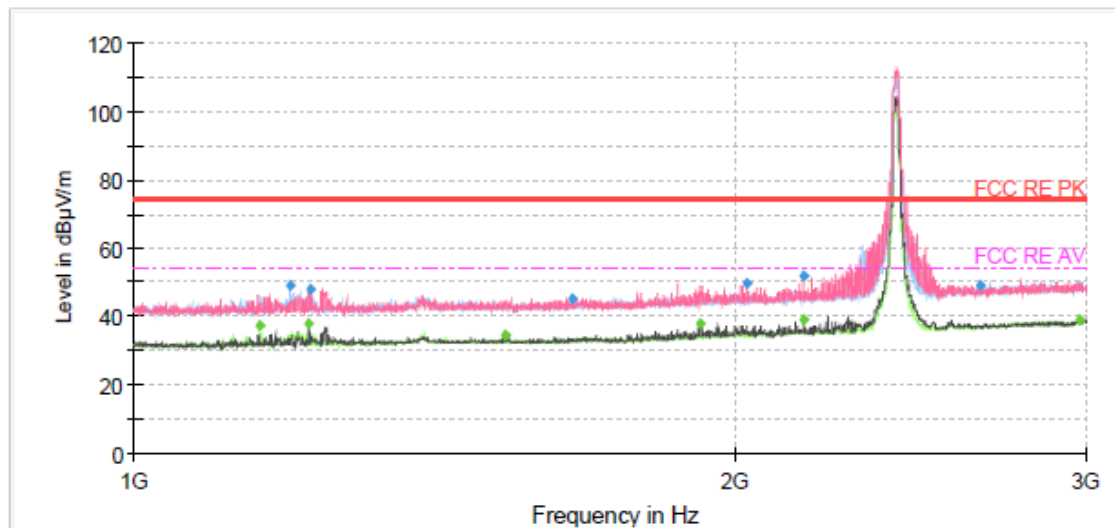


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3691.88	---	29.33	54.00	24.67	500.00	100.0	V	203.00	-13
3980.63	39.99	---	74.00	34.01	500.00	200.0	V	0.00	-11
5190.00	---	34.66	54.00	19.34	500.00	200.0	V	109.00	-8
5191.88	45.55	---	74.00	28.45	500.00	100.0	V	172.00	-8
7284.38	46.96	---	74.00	27.04	500.00	200.0	V	17.00	0
7293.75	---	36.15	54.00	17.85	500.00	200.0	V	94.00	0
7380.00	64.40	---	74.00	9.60	500.00	200.0	V	278.00	-1
7385.63	---	52.72	54.00	1.28	500.00	200.0	V	278.00	-1
10353.75	47.30	---	74.00	26.70	500.00	100.0	V	333.00	2
10676.25	---	36.27	54.00	17.73	500.00	100.0	V	305.00	3
16323.75	---	36.11	54.00	17.89	500.00	200.0	H	202.00	8
16365.00	47.14	---	74.00	26.86	500.00	100.0	H	196.00	8

Radiates Emission from 3GHz to 18GHz

802.11n (HT20) CH1

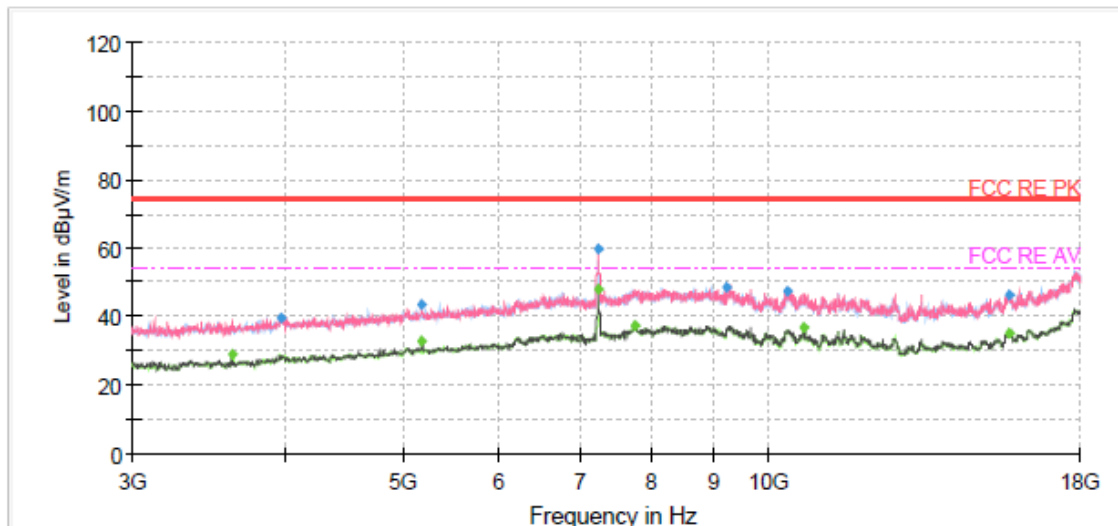


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1157.00	---	37.51	54.00	16.49	500.00	200.0	H	187.00	-12
1198.50	48.91	---	74.00	25.09	500.00	200.0	H	330.00	-12
1224.00	---	37.68	54.00	16.32	500.00	100.0	V	140.00	-12
1224.75	48.19	---	74.00	25.81	500.00	100.0	V	140.00	-12
1535.75	---	34.48	54.00	19.52	500.00	100.0	V	75.00	-11
1659.25	45.39	---	74.00	28.61	500.00	100.0	V	298.00	-10
1923.75	---	37.80	54.00	16.20	500.00	200.0	V	77.00	-9
2027.00	49.59	---	74.00	24.41	500.00	100.0	V	275.00	-8
2166.25	52.18	---	74.00	21.82	500.00	200.0	V	91.00	-7
2166.50	---	39.27	54.00	14.73	500.00	200.0	V	104.00	-7
2655.00	48.90	---	74.00	25.10	500.00	100.0	H	22.00	-5
2976.75	---	38.93	54.00	15.07	500.00	200.0	V	132.00	-4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

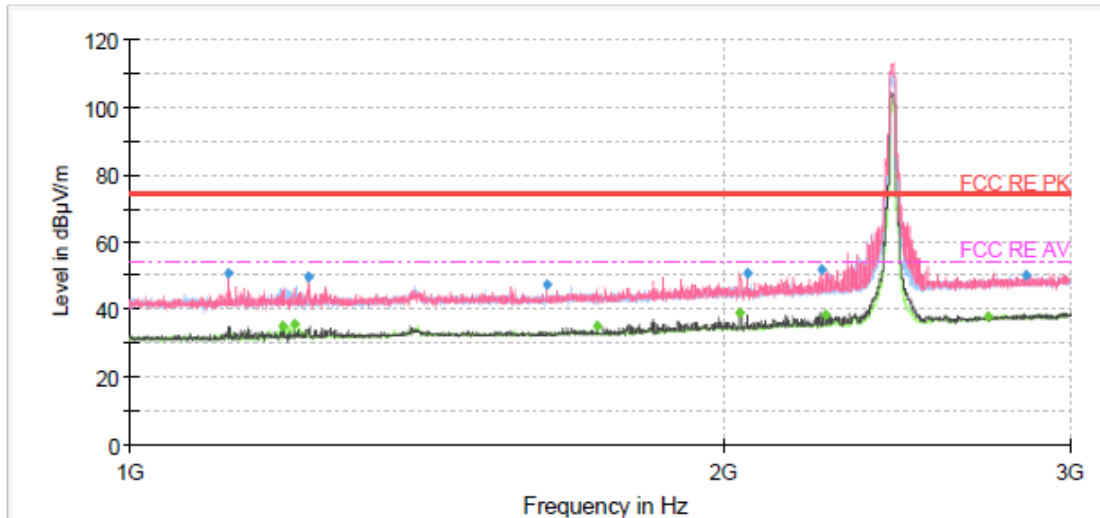


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3616.88	---	28.81	54.00	25.19	500.00	100.0	V	203.00	-13
3965.63	39.76	---	74.00	34.24	500.00	100.0	H	6.00	-11
5184.38	---	32.85	54.00	21.15	500.00	200.0	V	121.00	-8
5184.38	43.40	---	74.00	30.60	500.00	200.0	V	121.00	-8
7237.50	---	47.90	54.00	6.10	500.00	100.0	V	249.00	-1
7237.50	59.57	---	74.00	14.43	500.00	200.0	V	195.00	-1
7741.88	---	37.47	54.00	16.53	500.00	100.0	V	0.00	1
9236.25	48.76	---	74.00	25.24	500.00	200.0	H	176.00	2
10359.38	47.42	---	74.00	26.58	500.00	100.0	V	350.00	2
10672.50	---	36.67	54.00	17.33	500.00	100.0	V	340.00	3
15705.00	46.46	---	74.00	27.54	500.00	100.0	H	135.00	7
15723.75	---	35.28	54.00	18.72	500.00	200.0	H	359.00	7

Radiates Emission from 3GHz to 18GHz

802.11n (HT20) CH6

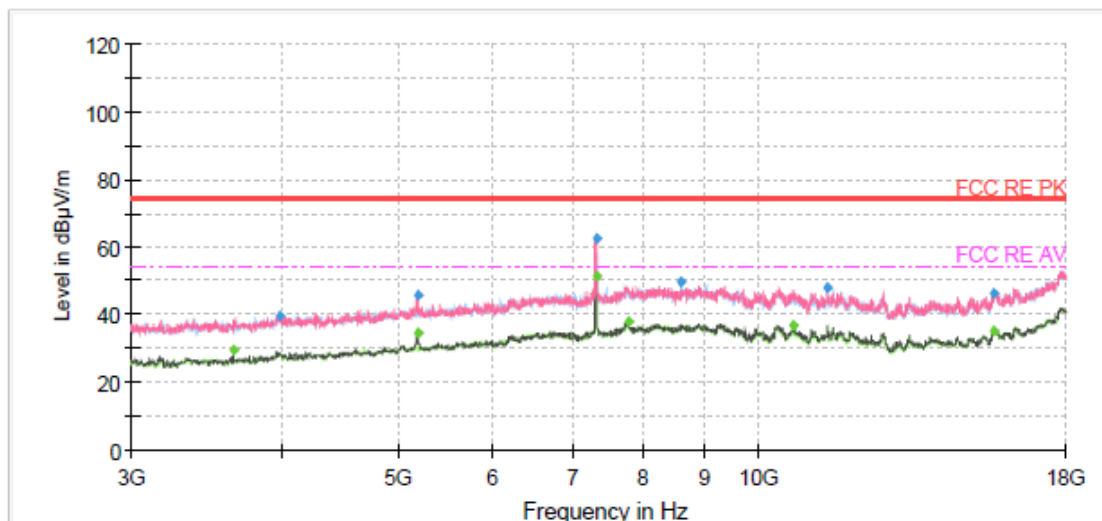


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1122.25	50.99	---	74.00	23.01	500.00	200.0	V	0.00	-12
1196.25	---	35.31	54.00	18.69	500.00	100.0	V	78.00	-12
1212.25	---	35.67	54.00	18.33	500.00	100.0	H	333.00	-12
1233.00	49.51	---	74.00	24.49	500.00	100.0	V	136.00	-12
1627.50	47.59	---	74.00	26.41	500.00	100.0	V	121.00	-10
1725.00	---	34.91	54.00	19.09	500.00	200.0	V	142.00	-10
2040.50	---	38.85	54.00	15.15	500.00	200.0	V	114.00	-8
2056.75	51.01	---	74.00	22.99	500.00	200.0	V	114.00	-8
2245.75	51.86	---	74.00	22.14	500.00	100.0	V	121.00	-7
2252.00	---	38.30	54.00	15.70	500.00	100.0	V	358.00	-7
2722.75	---	37.90	54.00	16.10	500.00	200.0	H	37.00	-5
2851.75	50.21	---	74.00	23.79	500.00	200.0	V	34.00	-5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

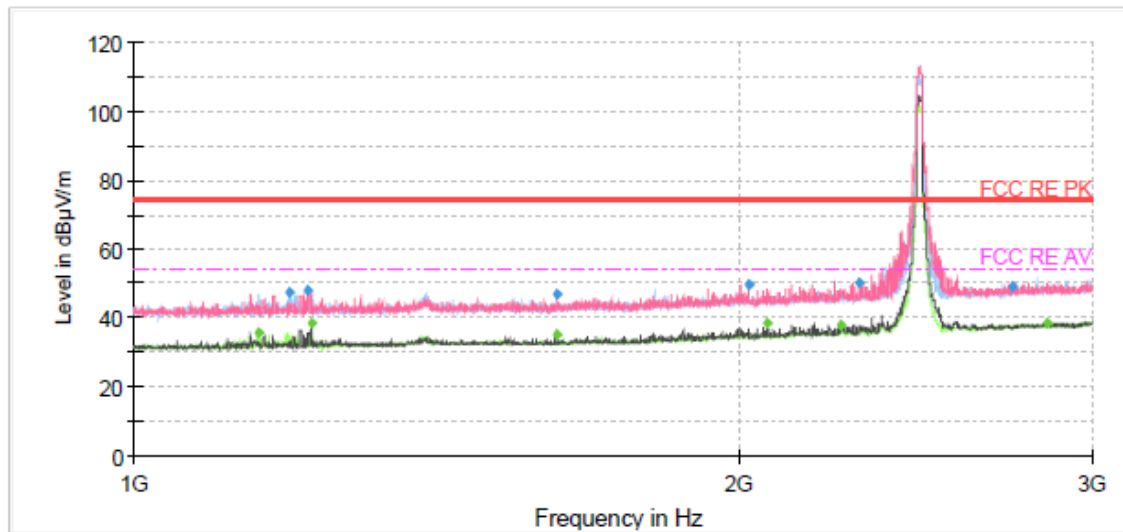


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3654.38	---	29.48	54.00	24.52	500.00	100.0	V	359.00	-13
3993.75	39.75	---	74.00	34.25	500.00	100.0	V	345.00	-11
5193.75	---	34.33	54.00	19.67	500.00	200.0	V	107.00	-8
5193.75	45.77	---	74.00	28.23	500.00	200.0	V	107.00	-8
7308.75	62.40	---	74.00	11.60	500.00	100.0	V	292.00	-1
7312.50	---	51.38	54.00	2.62	500.00	100.0	V	292.00	-1
7775.63	---	37.87	54.00	16.13	500.00	200.0	V	107.00	1
8608.13	49.52	---	74.00	24.48	500.00	200.0	H	303.00	1
10672.50	---	36.84	54.00	17.16	500.00	200.0	V	185.00	3
11381.25	47.74	---	74.00	26.26	500.00	100.0	V	355.00	5
15648.75	46.16	---	74.00	27.84	500.00	200.0	H	246.00	7
15665.63	---	35.19	54.00	18.81	500.00	100.0	H	3.00	7

Radiates Emission from 3GHz to 18GHz

802.11n (HT20) CH11

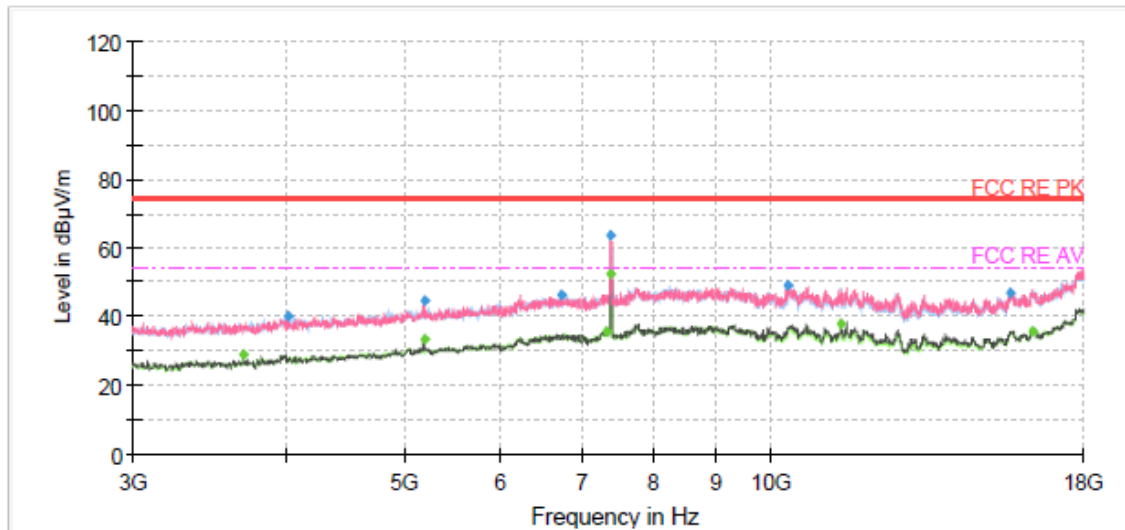


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1153.00	---	35.60	54.00	18.40	500.00	100.0	H	61.00	-12
1195.25	47.42	---	74.00	26.58	500.00	200.0	H	205.00	-12
1221.50	47.91	---	74.00	26.09	500.00	200.0	V	100.00	-12
1224.75	---	38.43	54.00	15.57	500.00	100.0	V	144.00	-12
1622.50	---	35.01	54.00	18.99	500.00	200.0	V	141.00	-10
1622.50	46.71	---	74.00	27.29	500.00	200.0	V	141.00	-10
2023.25	49.89	---	74.00	24.11	500.00	200.0	V	87.00	-8
2067.75	---	38.54	54.00	15.46	500.00	200.0	V	115.00	-8
2250.00	---	38.06	54.00	15.94	500.00	200.0	V	298.00	-7
2299.00	50.33	---	74.00	23.67	500.00	100.0	V	336.00	-7
2736.50	49.23	---	74.00	24.77	500.00	200.0	V	128.00	-5
2848.25	---	38.26	54.00	15.74	500.00	100.0	V	350.00	-5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3691.88	---	28.79	54.00	25.21	500.00	200.0	V	144.00	-13
4023.75	39.93	---	74.00	34.07	500.00	200.0	V	10.00	-12
5191.88	---	33.46	54.00	20.54	500.00	200.0	V	108.00	-8
5199.38	44.54	---	74.00	29.46	500.00	200.0	V	108.00	-9
6736.88	46.47	---	74.00	27.53	500.00	200.0	H	340.00	-2
7312.50	---	35.65	54.00	18.35	500.00	100.0	V	347.00	-1
7385.63	63.39	---	74.00	10.61	500.00	100.0	V	282.00	-1
7387.50	---	52.54	54.00	1.46	500.00	100.0	V	282.00	0
10314.38	48.93	---	74.00	25.07	500.00	200.0	V	3.00	2
11383.13	---	37.81	54.00	16.19	500.00	100.0	V	351.00	5
15671.25	46.94	---	74.00	27.06	500.00	100.0	H	112.00	7
16368.75	---	35.98	54.00	18.02	500.00	100.0	H	15.00	8

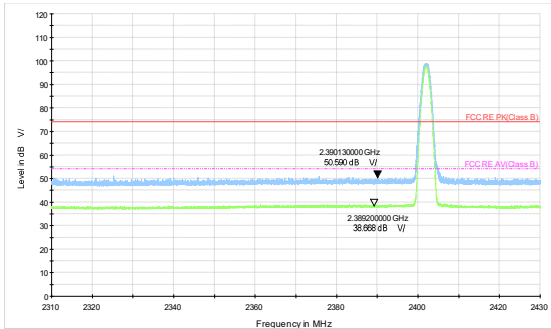
Radiates Emission from 3GHz to 18GHz

1.2. Bluetooth LE

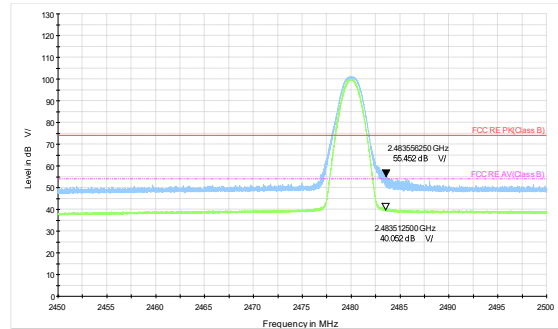
The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

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.



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.

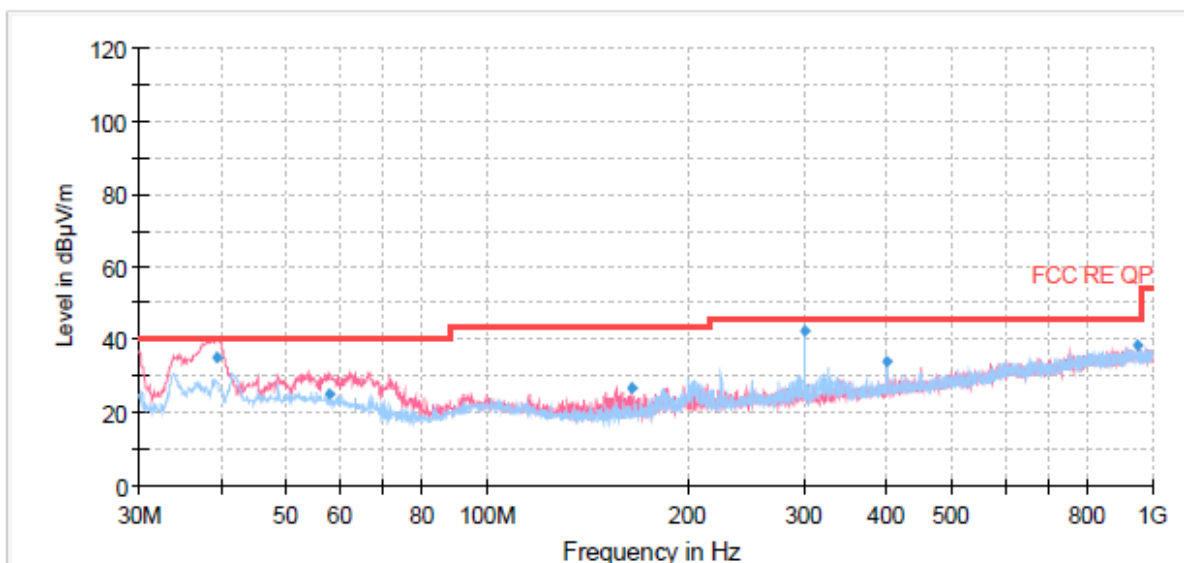
Remark:

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**



Continuous TX mode:

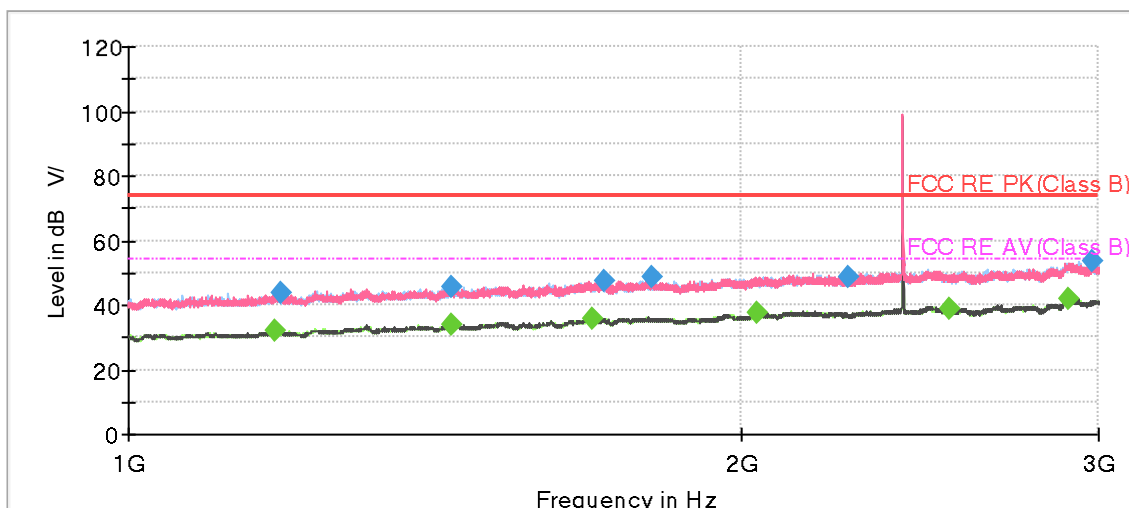
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 39) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.34	35.43	40.00	4.57	100.0	V	4.00	19
58.01	25.37	40.00	14.63	100.0	V	358.00	19
165.44	26.57	43.50	16.93	100.0	V	141.00	16
299.78	42.53	46.00	3.47	100.0	H	347.00	21
400.06	34.04	46.00	11.96	100.0	H	3.00	23
947.74	38.45	46.00	7.55	100.0	H	154.00	32

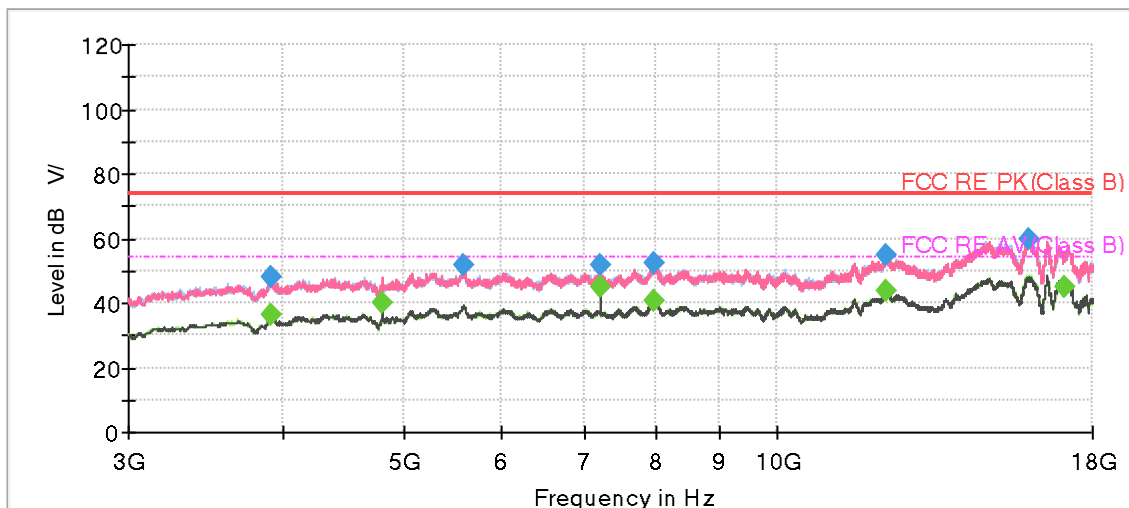
Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

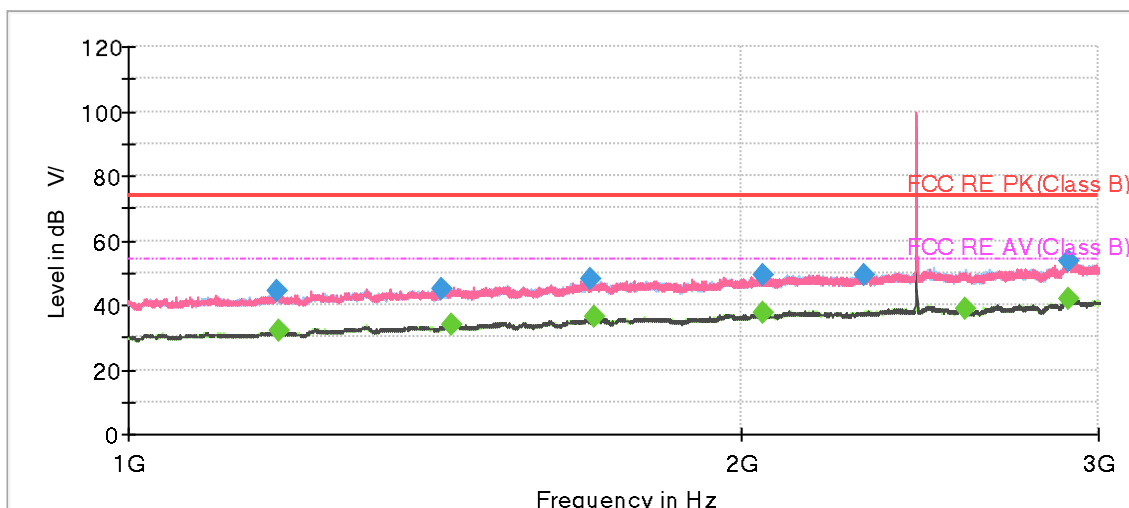
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1180.750000	---	32.11	54.00	21.89	500.0	200.0	H	292.0	-4.0
1189.500000	43.49	---	74.00	30.51	500.0	100.0	H	27.0	-4.2
1440.750000	---	33.73	54.00	20.27	500.0	200.0	H	342.0	-1.7
1442.000000	45.28	---	74.00	28.72	500.0	100.0	H	34.0	-1.6
1693.500000	---	35.77	54.00	18.23	500.0	100.0	V	307.0	0.3
1715.500000	47.41	---	74.00	26.60	500.0	100.0	H	42.0	0.2
1811.250000	48.66	---	74.00	25.34	500.0	200.0	H	327.0	0.8
2036.500000	---	37.46	54.00	16.54	500.0	200.0	V	205.0	2.3
2261.250000	48.41	---	74.00	25.59	500.0	200.0	V	235.0	2.8
2532.000000	---	38.46	54.00	15.54	500.0	100.0	V	254.0	4.2
2899.500000	---	42.10	54.00	11.90	500.0	100.0	H	134.0	8.6
2977.000000	53.75	---	74.00	20.25	500.0	100.0	V	344.0	7.8



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)
3907.500000	---	36.26	54.00	17.74	500.0	200.0	V	143.0	3.6
3907.500000	47.74	---	74.00	26.26	500.0	100.0	H	149.0	3.6
4803.750000	---	39.79	54.00	14.21	500.0	100.0	V	313.0	2.2
5593.125000	51.87	---	74.00	22.13	500.0	100.0	V	173.0	8.1
7205.625000	---	44.66	54.00	9.34	500.0	100.0	V	262.0	7.2
7205.625000	51.48	---	74.00	22.52	500.0	100.0	V	262.0	7.2
7972.500000	---	40.31	54.00	13.69	500.0	200.0	V	0.0	9.9
7980.000000	52.16	---	74.00	21.84	500.0	100.0	H	0.0	9.9
12271.875000	54.85	---	74.00	19.15	500.0	100.0	H	132.0	14.6
12277.500000	---	43.67	54.00	10.33	500.0	200.0	V	50.0	14.6
16006.875000	59.67	---	74.00	14.33	500.0	200.0	H	76.0	20.1
17107.500000	---	44.75	54.00	9.25	500.0	200.0	H	171.0	17.5

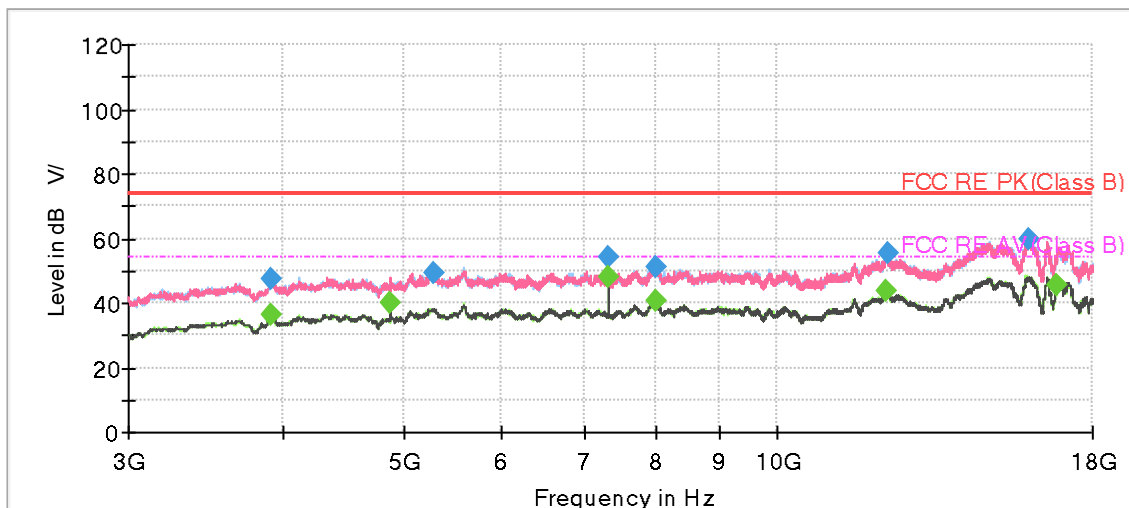
Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

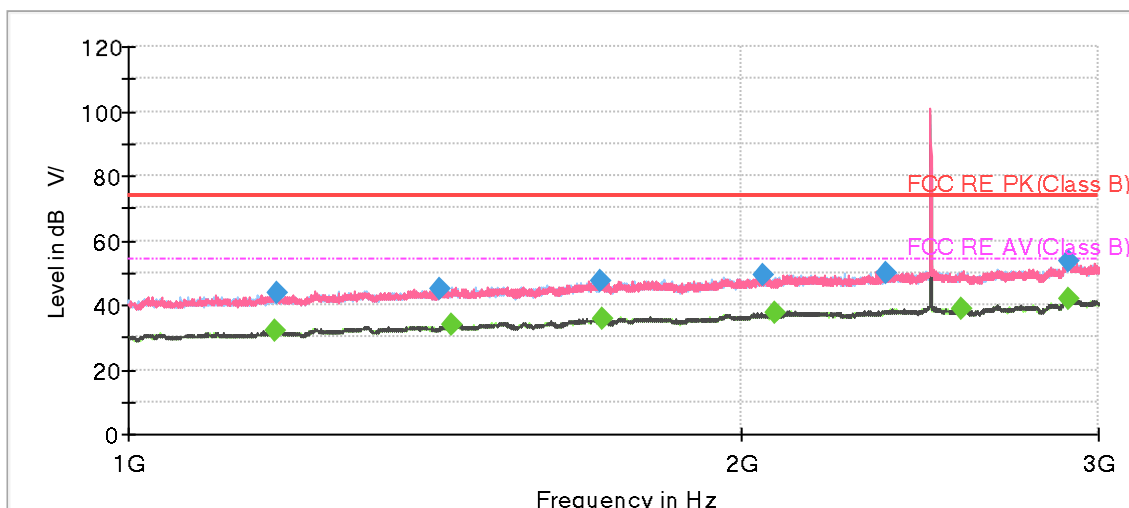
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1182.500000	44.43	---	74.00	29.57	500.0	100.0	H	70.0	-3.9
1185.000000	---	32.04	54.00	21.96	500.0	100.0	V	115.0	-3.9
1425.750000	45.01	---	74.00	28.99	500.0	200.0	H	171.0	-2.3
1441.250000	---	33.97	54.00	20.03	500.0	200.0	H	285.0	-1.6
1688.500000	48.16	---	74.00	25.84	500.0	100.0	V	355.0	0.4
1694.000000	---	36.03	54.00	17.97	500.0	200.0	V	140.0	0.3
2051.000000	---	37.46	54.00	16.54	500.0	200.0	V	0.0	2.5
2054.000000	49.29	---	74.00	24.71	500.0	200.0	H	285.0	2.4
2299.500000	49.09	---	74.00	24.91	500.0	100.0	H	50.0	3.4
2580.000000	---	38.95	54.00	15.05	500.0	200.0	V	66.0	4.8
2897.750000	---	42.10	54.00	11.90	500.0	200.0	V	350.0	8.4
2901.500000	53.63	---	74.00	20.37	500.0	200.0	V	247.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3907.500000	47.16	---	74.00	26.84	500.0	100.0	H	110.0	3.6
3909.375000	---	36.37	54.00	17.63	500.0	200.0	V	19.0	3.7
4878.750000	---	40.19	54.00	13.81	500.0	100.0	V	283.0	3.1
5296.875000	49.26	---	74.00	24.74	500.0	100.0	V	351.0	6.1
7320.000000	54.29	---	74.00	19.71	500.0	200.0	V	248.0	6.0
7320.000000	---	48.01	54.00	5.99	500.0	200.0	V	248.0	6.0
7989.375000	---	40.48	54.00	13.52	500.0	200.0	H	10.0	9.9
7996.875000	51.17	---	74.00	22.83	500.0	200.0	V	154.0	9.9
12270.000000	---	43.87	54.00	10.13	500.0	100.0	H	0.0	14.5
12290.625000	55.11	---	74.00	18.89	500.0	100.0	V	351.0	14.3
15990.000000	59.44	---	74.00	14.56	500.0	100.0	H	41.0	20.0
16837.500000	---	45.72	54.00	8.28	500.0	200.0	V	10.0	17.4

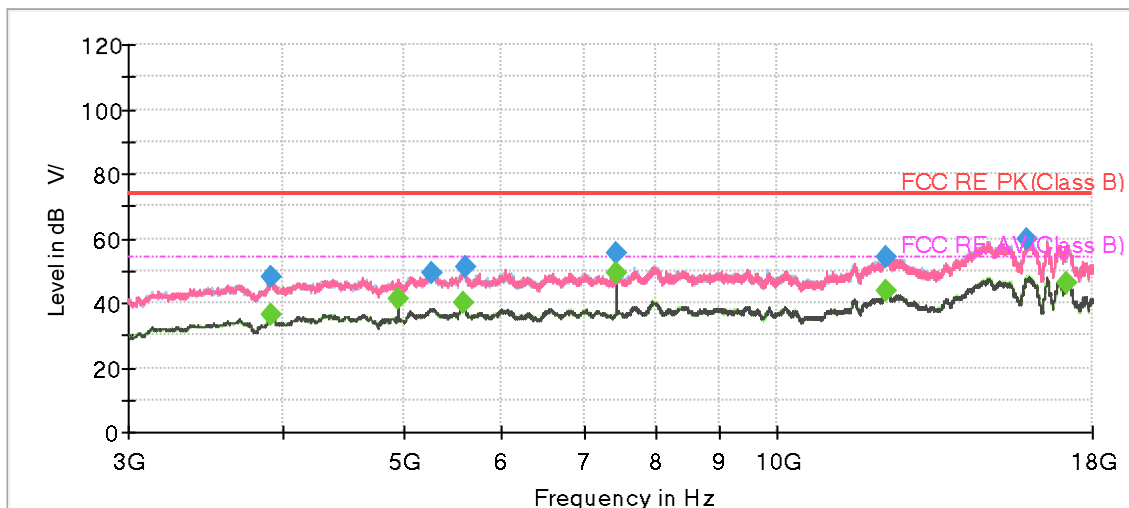
Bluetooth LE-Channel 39



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)
1182.000000	---	32.16	54.00	21.84	500.0	100.0	V	0.0	-4.0
1182.250000	43.54	---	74.00	30.46	500.0	200.0	V	249.0	-3.9
1423.250000	45.05	---	74.00	28.95	500.0	200.0	V	318.0	-2.4
1442.000000	---	33.86	54.00	20.14	500.0	100.0	V	339.0	-1.6
1708.000000	47.28	---	74.00	26.72	500.0	100.0	V	287.0	0.5
1709.750000	---	35.78	54.00	18.22	500.0	200.0	H	243.0	0.5
2050.500000	49.23	---	74.00	24.77	500.0	100.0	H	62.0	2.5
2078.750000	---	37.49	54.00	16.51	500.0	100.0	V	294.0	2.1
2361.000000	49.74	---	74.00	24.26	500.0	200.0	H	334.0	3.8
2569.000000	---	38.95	54.00	15.05	500.0	200.0	V	55.0	4.9
2899.750000	53.32	---	74.00	20.68	500.0	100.0	V	101.0	8.6
2900.000000	---	42.13	54.00	11.87	500.0	100.0	H	99.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	---	36.49	54.00	17.51	500.0	200.0	V	103.0	3.7
3913.125000	48.11	---	74.00	25.89	500.0	100.0	H	116.0	3.4
4959.375000	---	41.02	54.00	12.98	500.0	100.0	V	304.0	3.3
5274.375000	49.13	---	74.00	24.87	500.0	100.0	V	41.0	6.5
5595.000000	---	39.79	54.00	14.21	500.0	100.0	V	179.0	8.0
5604.375000	51.12	---	74.00	22.88	500.0	200.0	V	145.0	7.4
7438.125000	55.08	---	74.00	18.92	500.0	100.0	V	287.0	7.3
7440.000000	---	49.03	54.00	4.97	500.0	100.0	V	287.0	7.3
12271.875000	54.45	---	74.00	19.55	500.0	200.0	H	200.0	14.6
12283.125000	---	43.61	54.00	10.39	500.0	100.0	V	203.0	14.5
15926.250000	59.81	---	74.00	14.19	500.0	100.0	H	230.0	19.4
17176.875000	---	46.01	54.00	7.99	500.0	200.0	V	203.0	17.9

2. Conducted Emission

2.1. Wi-Fi 2.4GHz

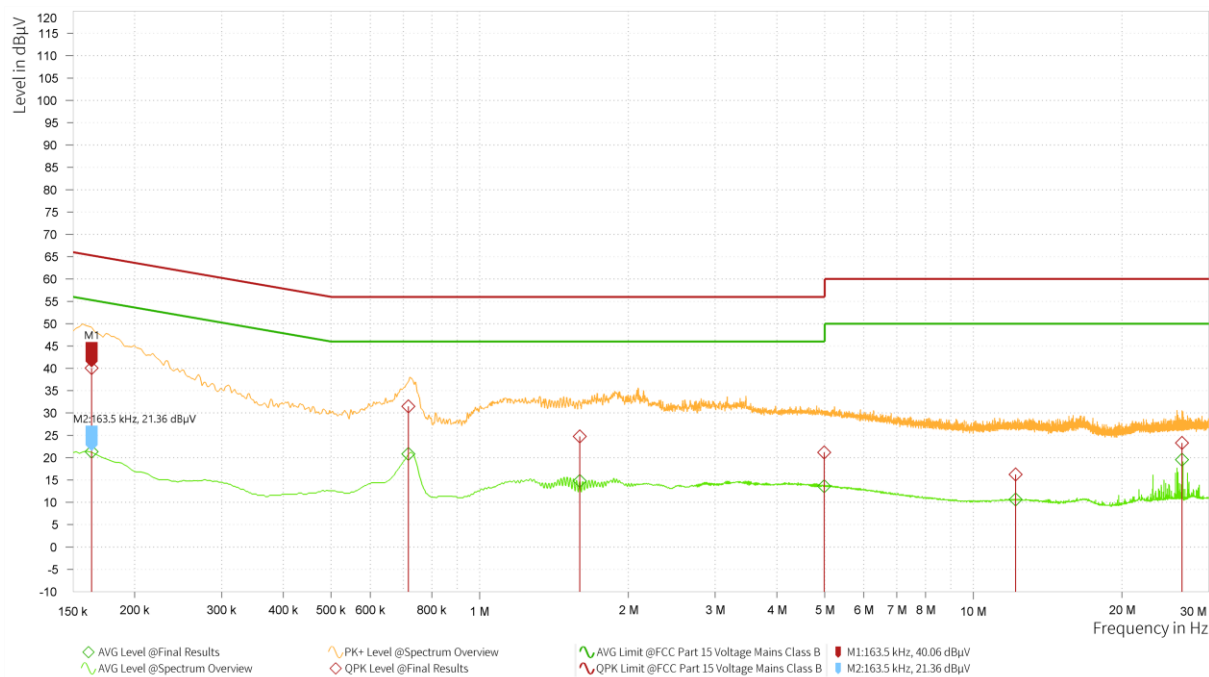
During the test, the Conducted Emission was performed in all modes with all channel. The test data of the worst-case condition (802.11g CH11) was recorded in this report.



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]
0.168	39.31	65.06	25.74	20.81	55.06	34.24	20.89	L1	9.000	1.000
0.719	31.92	56.00	24.08	20.96	46.00	25.04	20.55	L1	9.000	1.000
1.590	23.48	56.00	32.52	14.10	46.00	31.90	19.80	L1	9.000	1.000
4.207	22.09	56.00	33.91	14.19	46.00	31.81	19.42	L1	9.000	1.000
13.360	16.20	60.00	43.80	10.59	50.00	39.41	19.46	L1	9.000	1.000
26.489	22.34	60.00	37.66	18.09	50.00	31.91	19.81	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



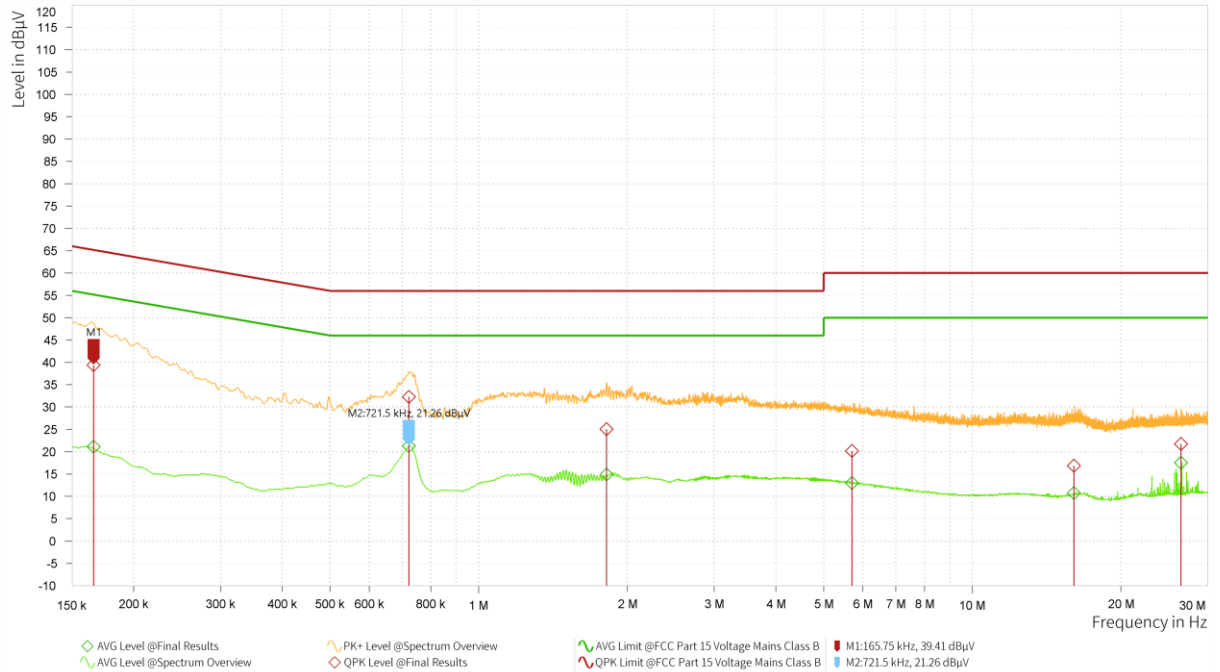
Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.164	40.06	65.28	25.22	21.36	55.28	33.93	20.90	N	9.000	1.000
0.717	31.50	56.00	24.50	20.82	46.00	25.18	20.56	N	9.000	1.000
1.595	24.74	56.00	31.26	14.80	46.00	31.20	19.81	N	9.000	1.000
4.990	21.19	56.00	34.81	13.62	46.00	32.38	19.41	N	9.000	1.000
12.179	16.26	60.00	43.74	10.63	50.00	39.37	19.45	N	9.000	1.000
26.489	23.33	60.00	36.67	19.54	50.00	30.46	19.88	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

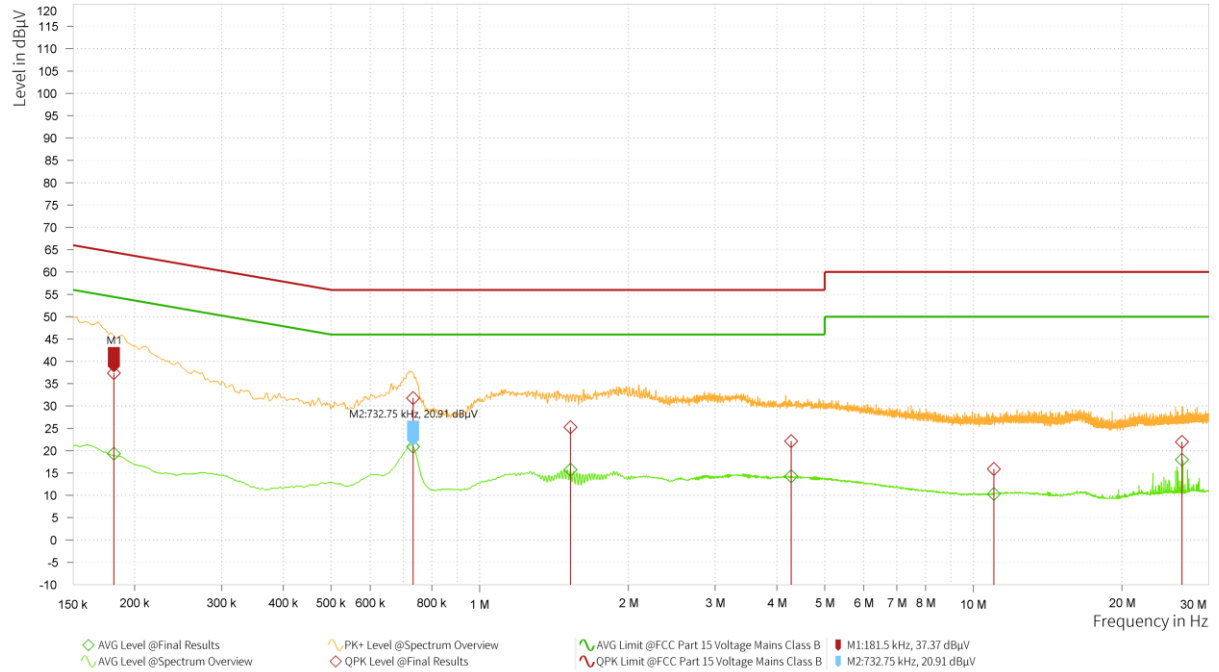
During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition (Bluetooth LE-Channel 39) was recorded in this report.



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]
0.166	39.41	65.17	25.76	21.12	55.17	34.05	20.89	L1	9.000	1.000
0.722	32.28	56.00	23.72	21.26	46.00	24.74	20.54	L1	9.000	1.000
1.815	25.06	56.00	30.94	14.88	46.00	31.12	19.71	L1	9.000	1.000
5.708	20.15	60.00	39.85	12.96	50.00	37.04	19.40	L1	9.000	1.000
16.073	16.85	60.00	43.15	10.74	50.00	39.26	19.54	L1	9.000	1.000
26.489	21.74	60.00	38.26	17.54	50.00	32.46	19.81	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]
0.182	37.37	64.42	27.05	19.32	54.42	35.09	21.04	N	9.000	1.000
0.733	31.75	56.00	24.25	20.91	46.00	25.09	20.40	N	9.000	1.000
1.527	25.27	56.00	30.73	15.76	46.00	30.24	19.84	N	9.000	1.000
4.274	22.11	56.00	33.89	14.28	46.00	31.72	19.43	N	9.000	1.000
11.002	15.88	60.00	44.12	10.32	50.00	39.68	19.43	N	9.000	1.000
26.489	21.97	60.00	38.03	17.98	50.00	32.02	19.88	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz