

ANNEX A: Test Result

1. Unwanted Emission

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.

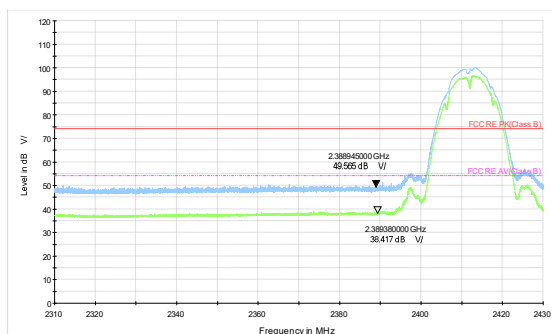
1.1. Wi-Fi 2.4GHz

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.

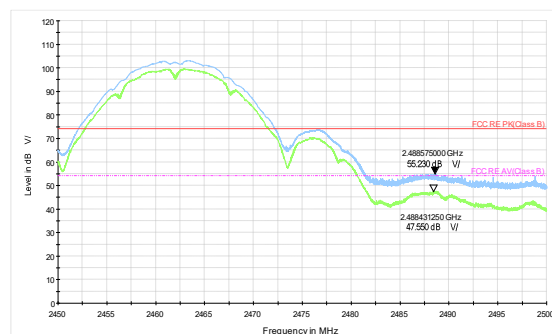
A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means (dB $\mu\text{V/m}$)

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

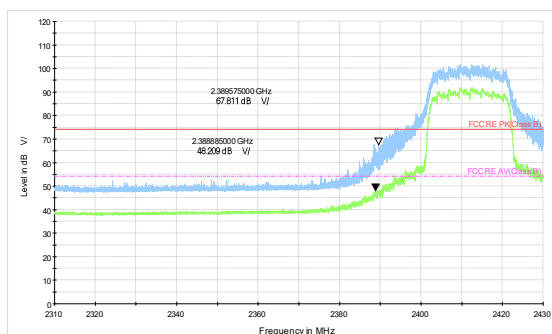
The signal beyond the limit is carrier.



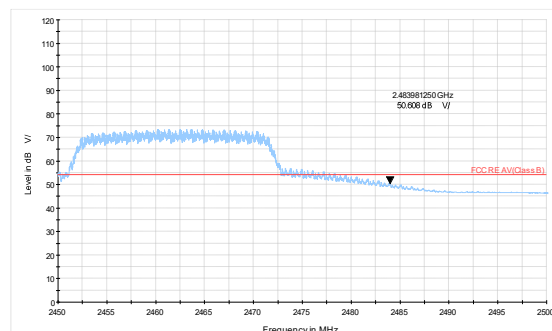
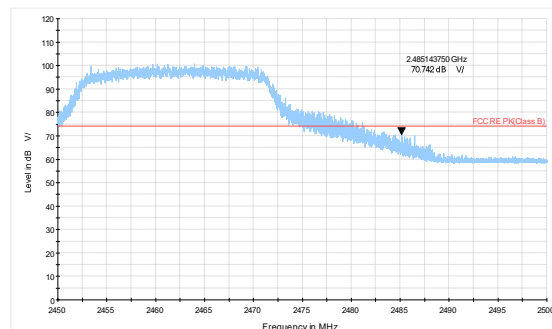
802.11b-Channel 1 Peak+ Average



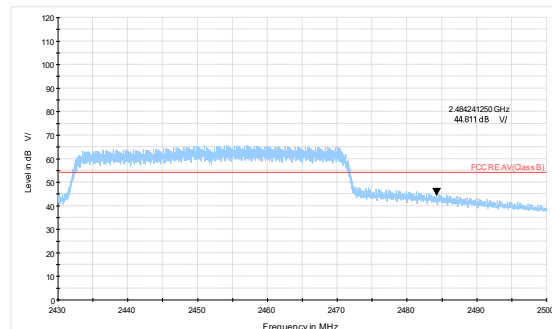
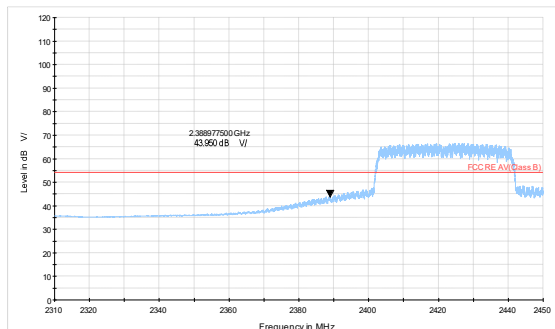
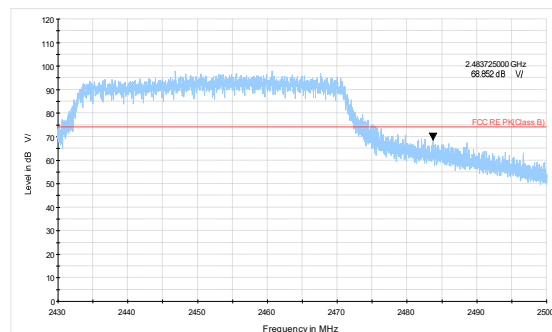
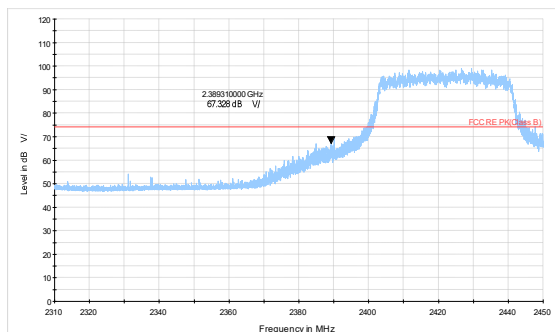
802.11b-Channel 11 Peak+ Average



802.11ax HE20-Channel 1 Peak+ Average



802.11ax HE20-Channel 11 Peak+ Average



802.11ax HE40-Channel 3 Peak+ Average

802.11ax HE40-Channel 9 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 horizontal and vertical by software.**
5. **For below 1GHz**

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

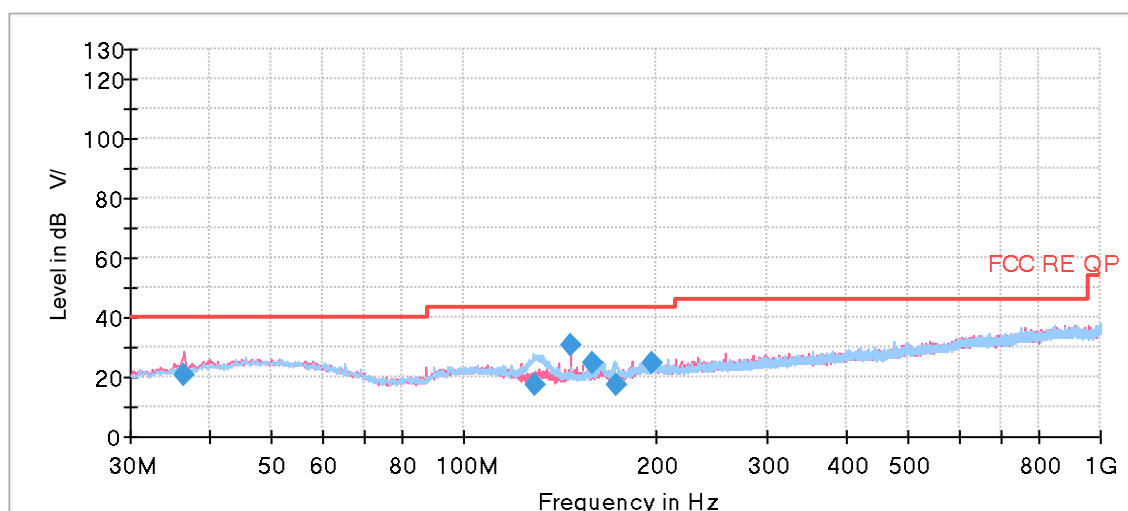
For above 1GHz

~ 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:

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

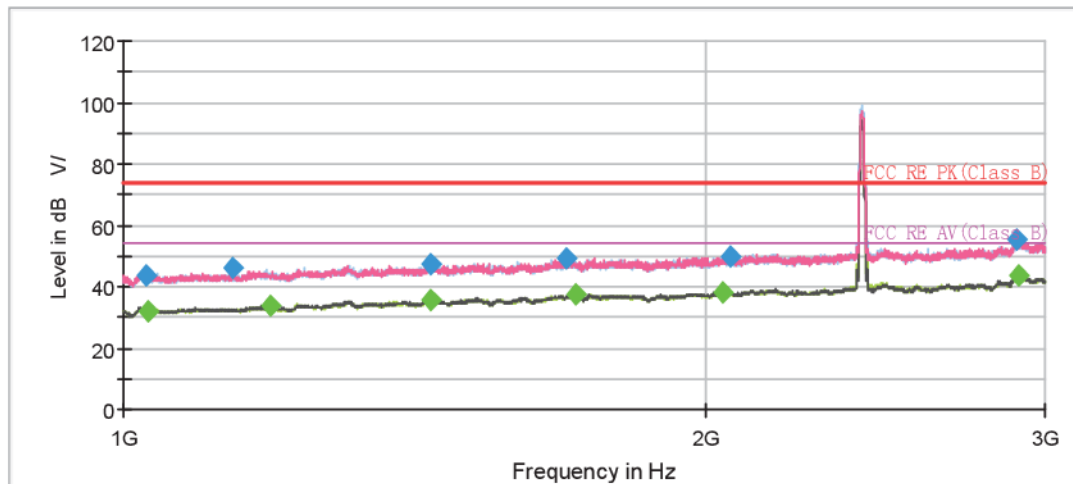
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11b, Channel 11 are selected as the worst condition, the test data of the worst-case condition was recorded in this report.



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)
36.346250	20.76	40.00	19.24	100.0	V	137.0	18.7
129.828750	17.60	43.50	25.90	175.0	H	270.0	16.0
147.451250	30.92	43.50	12.58	100.0	V	54.0	15.6
159.737500	24.96	43.50	18.54	100.0	V	118.0	16.2
173.726250	17.37	43.50	26.13	200.0	H	60.0	19.9
198.011250	24.41	43.50	19.09	100.0	V	252.0	19.0

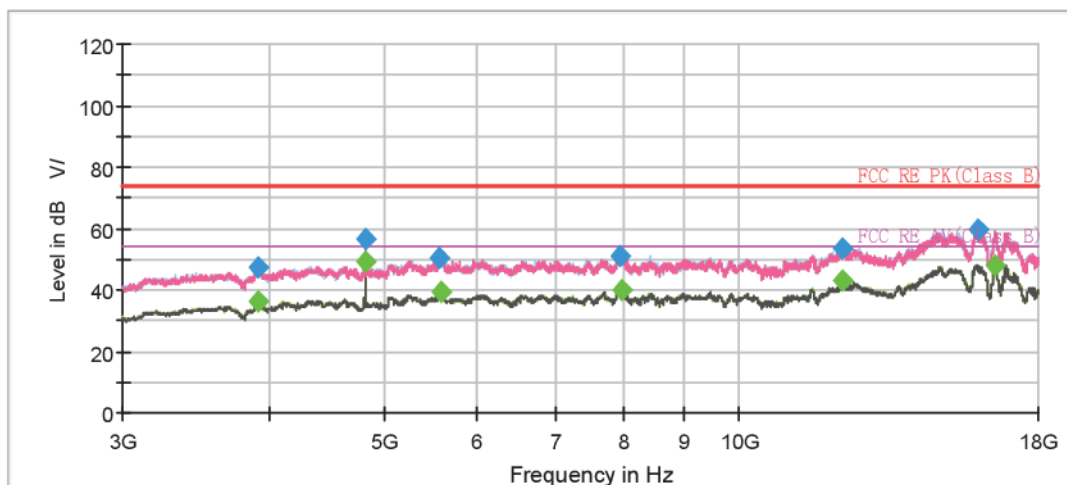
802.11b CH1



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)
1027.250000	43.82	---	74.00	30.18	500.0	200.0	V	114.0	-5.8
1028.500000	---	32.18	54.00	21.82	500.0	200.0	H	222.0	-5.9
1139.250000	46.31	---	74.00	27.69	500.0	100.0	H	307.0	-5.3
1191.250000	---	33.64	54.00	20.36	500.0	200.0	V	144.0	-4.3
1441.250000	47.29	---	74.00	26.71	500.0	200.0	H	89.0	-1.6
1442.000000	---	35.42	54.00	18.58	500.0	100.0	H	23.0	-1.6
1694.000000	49.17	---	74.00	24.83	500.0	200.0	V	267.0	0.3
1716.000000	---	37.40	54.00	16.60	500.0	200.0	V	346.0	0.2
2042.500000	---	38.33	54.00	15.67	500.0	100.0	V	298.0	2.5
2059.500000	49.90	---	74.00	24.10	500.0	200.0	H	3.0	2.3
2903.000000	55.12	---	74.00	18.88	500.0	200.0	V	254.0	8.5
2904.000000	---	43.47	54.00	10.53	500.0	200.0	V	83.0	8.5

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

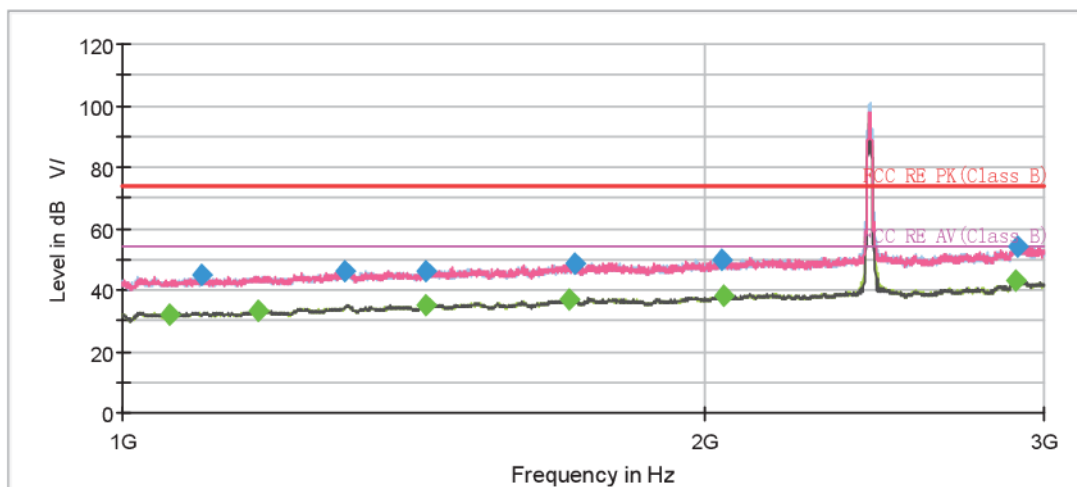


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3915.000000	---	36.43	54.00	17.57	500.0	100.0	V	105.0	3.3
3918.750000	47.65	---	74.00	26.35	500.0	100.0	H	22.0	3.1
4822.500000	---	49.19	54.00	4.81	500.0	100.0	V	31.0	2.7
4822.500000	56.51	---	74.00	17.49	500.0	100.0	V	31.0	2.7
5574.375000	50.76	---	74.00	23.24	500.0	200.0	V	297.0	7.2
5583.750000	---	39.52	54.00	14.48	500.0	100.0	H	304.0	7.7
7933.125000	50.98	---	74.00	23.02	500.0	100.0	H	286.0	9.9
7976.250000	---	40.25	54.00	13.75	500.0	200.0	H	192.0	9.9
12271.875000	53.79	---	74.00	20.21	500.0	100.0	V	163.0	14.6
12286.875000	---	42.85	54.00	11.15	500.0	100.0	H	90.0	14.4
15969.375000	59.45	---	74.00	14.55	500.0	200.0	V	231.0	19.8
16537.500000	---	48.29	54.00	5.71	500.0	200.0	V	128.0	20.5

Radiates Emission from 3GHz to 18GHz

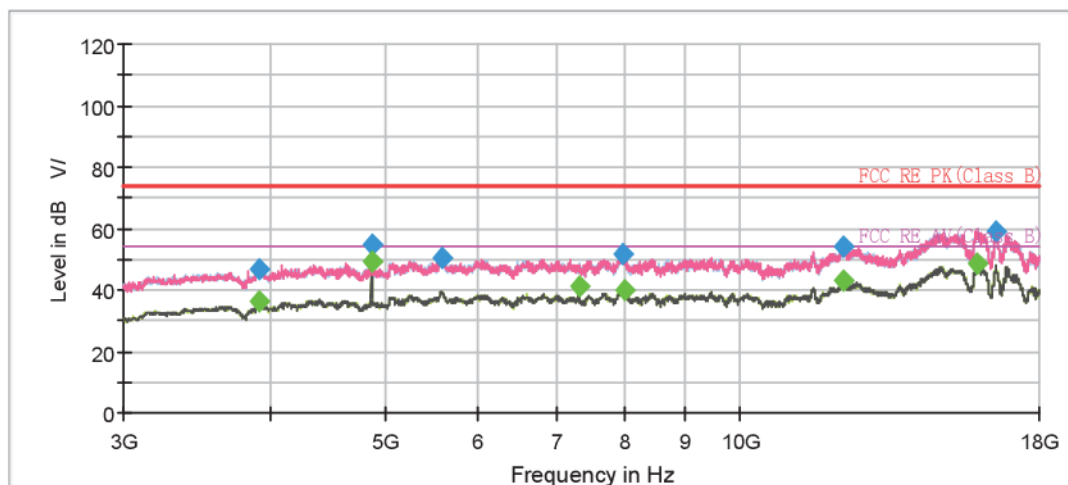
802.11b CH6



Final_Result

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)
1058.000000	---	31.89	54.00	22.11	500.0	100.0	V	46.0	-6.0
1099.250000	44.63	---	74.00	29.37	500.0	200.0	V	68.0	-5.0
1175.250000	---	33.29	54.00	20.71	500.0	100.0	V	253.0	-4.2
1303.500000	45.94	---	74.00	28.06	500.0	200.0	V	257.0	-2.5
1435.750000	---	35.19	54.00	18.81	500.0	200.0	V	196.0	-1.8
1435.750000	46.40	---	74.00	27.60	500.0	100.0	H	233.0	-1.8
1702.000000	---	36.96	54.00	17.04	500.0	200.0	V	134.0	0.4
1712.750000	48.72	---	74.00	25.28	500.0	200.0	H	227.0	0.4
2040.750000	49.77	---	74.00	24.23	500.0	200.0	V	249.0	2.4
2047.250000	---	38.28	54.00	15.72	500.0	200.0	V	340.0	2.6
2900.750000	---	43.36	54.00	10.64	500.0	100.0	V	96.0	8.6
2905.250000	54.42	---	74.00	19.58	500.0	100.0	H	350.0	8.5

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

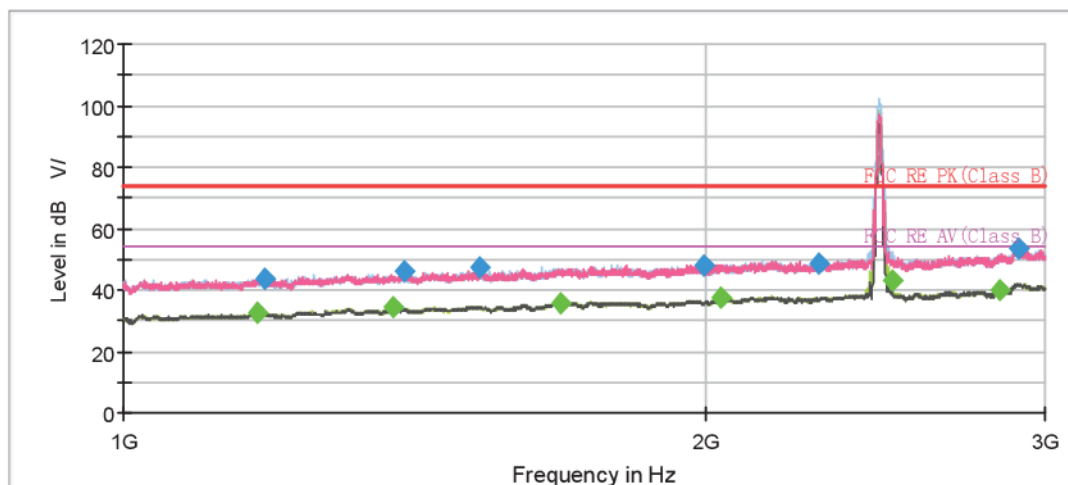


Final_Result

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)
3915.000000	46.83	---	74.00	27.17	500.0	100.0	H	97.0	3.3
3918.750000	---	36.26	54.00	17.74	500.0	100.0	H	193.0	3.1
4873.125000	---	49.52	54.00	4.48	500.0	200.0	H	27.0	3.1
4873.125000	54.61	---	74.00	19.39	500.0	200.0	H	27.0	3.1
5583.750000	50.42	---	74.00	23.58	500.0	100.0	V	286.0	7.7
7308.750000	---	41.41	54.00	12.59	500.0	200.0	H	304.0	6.1
7968.750000	51.49	---	74.00	22.51	500.0	200.0	V	53.0	9.9
7989.375000	---	40.04	54.00	13.96	500.0	100.0	H	174.0	9.9
12260.625000	54.19	---	74.00	19.81	500.0	100.0	H	249.0	14.3
12262.500000	---	42.97	54.00	11.03	500.0	100.0	H	117.0	14.4
15939.375000	---	48.52	54.00	5.48	500.0	100.0	V	333.0	19.5
16535.625000	59.29	---	74.00	14.71	500.0	100.0	V	177.0	20.4

Radiates Emission from 3GHz to 18GHz

802.11b CH11

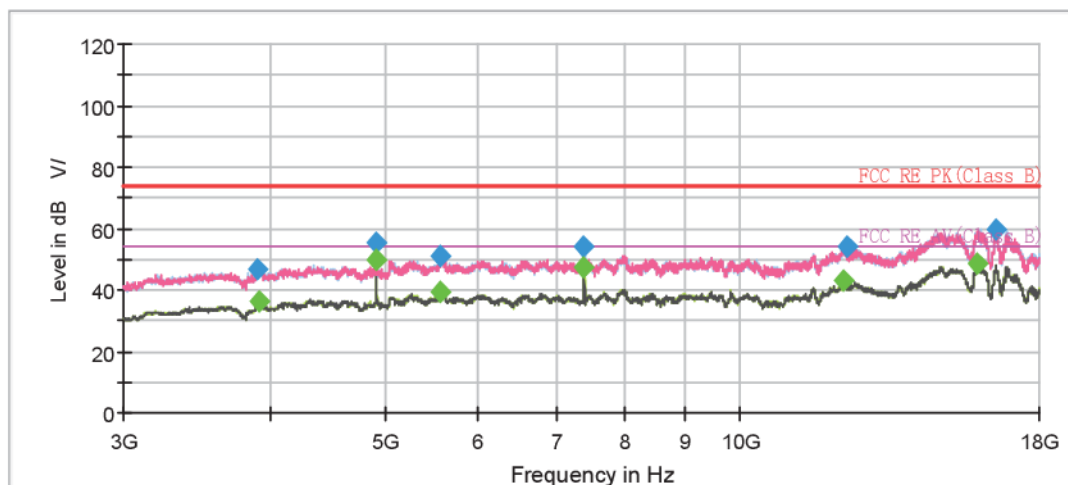


Final_Result

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)
1171.750000	---	32.69	54.00	21.31	500.0	200.0	V	106.0	-4.3
1184.250000	43.75	---	74.00	30.25	500.0	100.0	H	87.0	-3.9
1378.000000	---	34.16	54.00	19.84	500.0	100.0	V	199.0	-2.3
1399.000000	45.95	---	74.00	28.05	500.0	200.0	V	321.0	-2.3
1528.750000	47.19	---	74.00	26.81	500.0	100.0	H	40.0	-1.0
1683.250000	---	35.79	54.00	18.21	500.0	100.0	V	105.0	0.4
1996.000000	48.21	---	74.00	25.79	500.0	200.0	V	90.0	1.6
2038.000000	---	37.25	54.00	16.75	500.0	100.0	H	342.0	2.4
2293.500000	48.61	---	74.00	25.39	500.0	200.0	V	20.0	3.3
2498.250000	---	42.95	54.00	11.05	500.0	100.0	H	73.0	4.8
2841.500000	---	40.17	54.00	13.83	500.0	200.0	H	134.0	6.8
2909.500000	53.63	---	74.00	20.37	500.0	200.0	V	98.0	8.4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

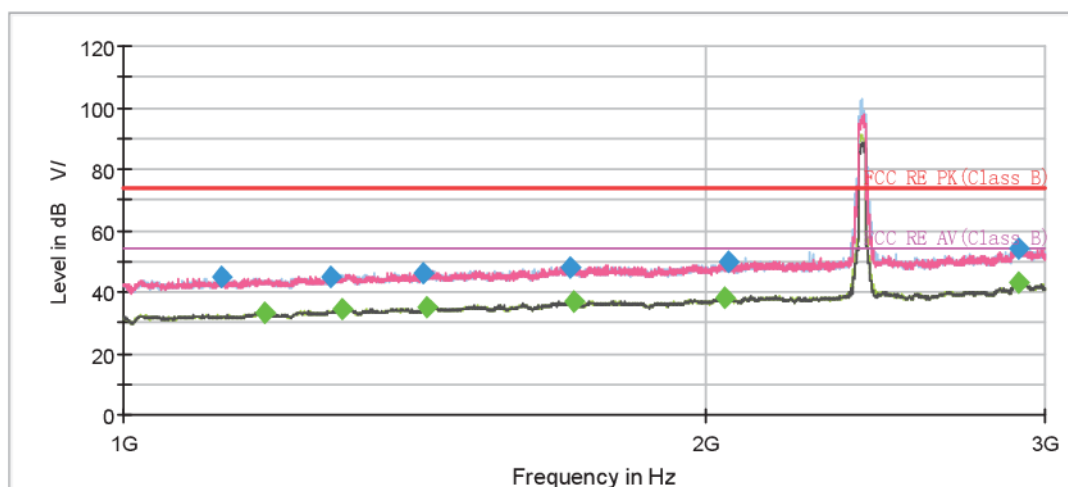


Final_Result

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)
3898.125000	47.01	---	74.00	26.99	500.0	100.0	H	0.0	2.8
3907.500000	---	36.50	54.00	17.50	500.0	200.0	H	357.0	3.6
4923.750000	---	49.92	54.00	4.08	500.0	200.0	H	20.0	3.0
4923.750000	55.20	---	74.00	18.80	500.0	200.0	H	20.0	3.0
5578.125000	51.28	---	74.00	22.72	500.0	100.0	H	164.0	7.4
5581.875000	---	39.47	54.00	14.53	500.0	200.0	H	87.0	7.6
7383.750000	53.89	---	74.00	20.11	500.0	200.0	H	310.0	5.9
7383.750000	---	47.69	54.00	6.31	500.0	200.0	H	310.0	5.9
12286.875000	---	42.94	54.00	11.06	500.0	100.0	H	71.0	14.4
12339.375000	54.38	---	74.00	19.62	500.0	200.0	V	0.0	13.6
15943.125000	---	48.41	54.00	5.59	500.0	100.0	V	19.0	19.5
16539.375000	59.44	---	74.00	14.56	500.0	200.0	V	189.0	20.6

Radiates Emission from 3GHz to 18GHz

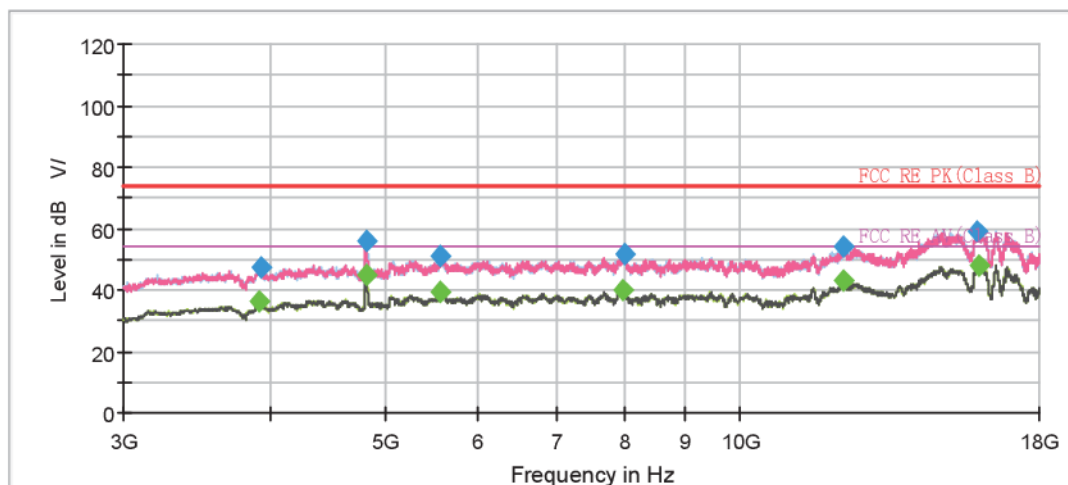
802.11ax HE20 CH 1



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)
1123.500000	44.75	---	74.00	29.25	500.0	100.0	H	98.0	-5.3
1183.000000	---	33.09	54.00	20.91	500.0	100.0	V	303.0	-3.9
1281.500000	44.74	---	74.00	29.26	500.0	100.0	H	175.0	-3.0
1297.500000	---	34.55	54.00	19.45	500.0	100.0	H	197.0	-3.0
1430.750000	46.36	---	74.00	27.64	500.0	100.0	H	98.0	-2.0
1437.000000	---	34.89	54.00	19.11	500.0	200.0	V	197.0	-1.8
1701.500000	48.24	---	74.00	25.76	500.0	200.0	V	312.0	0.4
1711.750000	---	36.70	54.00	17.30	500.0	200.0	H	47.0	0.5
2046.250000	---	38.20	54.00	15.80	500.0	100.0	V	0.0	2.6
2056.000000	49.94	---	74.00	24.07	500.0	100.0	V	34.0	2.4
2904.500000	54.11	---	74.00	19.89	500.0	100.0	V	337.0	8.5
2905.250000	---	42.93	54.00	11.07	500.0	200.0	V	286.0	8.5

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

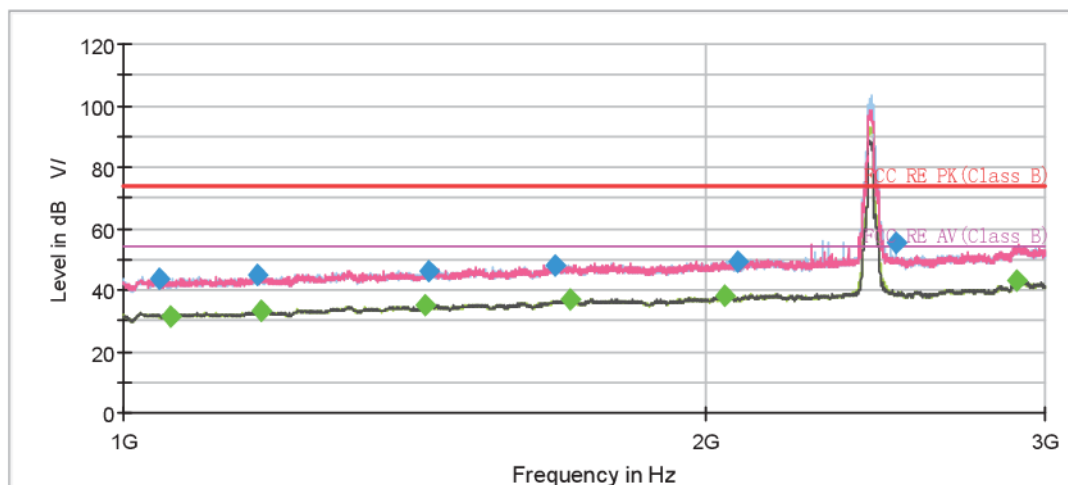


Final_Result

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	---	36.17	54.00	17.83	500.0	200.0	V	0.0	3.7
3920.625000	47.49	---	74.00	26.51	500.0	200.0	V	0.0	2.9
4822.500000	55.85	---	74.00	18.15	500.0	100.0	V	24.0	2.7
4824.375000	---	45.00	54.00	9.00	500.0	100.0	V	24.0	2.7
5566.875000	51.04	---	74.00	22.96	500.0	100.0	V	255.0	6.9
5578.125000	---	39.30	54.00	14.70	500.0	200.0	H	13.0	7.4
7968.750000	---	40.23	54.00	13.77	500.0	200.0	H	259.0	9.9
7993.125000	51.81	---	74.00	22.19	500.0	200.0	H	325.0	9.9
12266.250000	53.94	---	74.00	20.06	500.0	100.0	H	0.0	14.4
12288.750000	---	42.88	54.00	11.12	500.0	100.0	V	228.0	14.4
15939.375000	59.36	---	74.00	14.64	500.0	200.0	H	183.0	19.5
15991.875000	---	48.20	54.00	5.80	500.0	200.0	H	259.0	20.0

Radiates Emission from 3GHz to 18GHz

802.11ax HE20 CH6

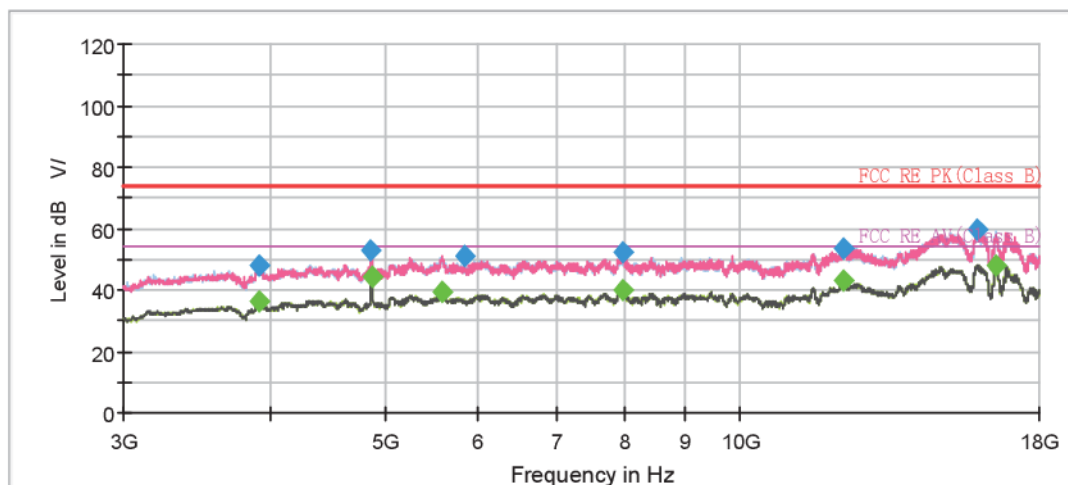


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1043.000000	43.42	---	74.00	30.58	500.0	100.0	V	60.0	-5.7
1058.500000	---	31.39	54.00	22.61	500.0	100.0	H	180.0	-6.0
1174.250000	44.90	---	74.00	29.10	500.0	100.0	V	191.0	-4.2
1177.500000	---	33.23	54.00	20.77	500.0	100.0	V	34.0	-4.1
1432.750000	---	35.10	54.00	18.90	500.0	100.0	H	240.0	-1.9
1438.500000	46.45	---	74.00	27.55	500.0	200.0	V	303.0	-1.7
1672.500000	48.06	---	74.00	25.94	500.0	100.0	V	72.0	0.3
1702.000000	---	36.65	54.00	17.35	500.0	100.0	V	0.0	0.4
2045.500000	---	37.85	54.00	16.15	500.0	100.0	V	144.0	2.5
2078.500000	49.46	---	74.00	24.54	500.0	100.0	H	275.0	2.1
2511.500000	55.47	---	74.00	18.53	500.0	200.0	H	175.0	4.6
2902.000000	---	43.20	54.00	10.80	500.0	100.0	V	4.0	8.6

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

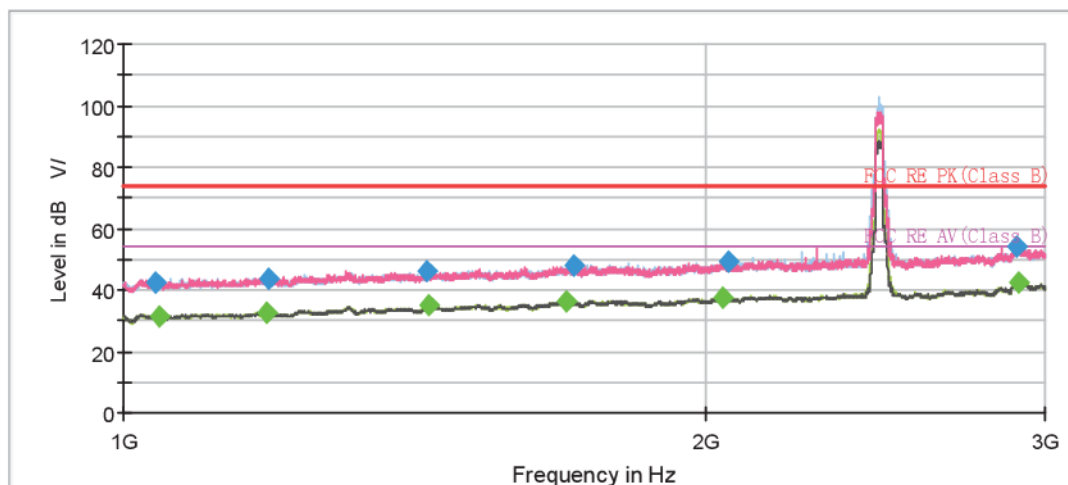


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	---	36.24	54.00	17.76	500.0	100.0	V	223.0	3.7
3918.750000	48.07	---	74.00	25.93	500.0	200.0	H	0.0	3.1
4869.375000	52.95	---	74.00	21.05	500.0	200.0	H	22.0	3.1
4873.125000	---	44.16	54.00	9.84	500.0	100.0	V	27.0	3.1
5583.750000	---	39.39	54.00	14.61	500.0	200.0	H	332.0	7.7
5848.125000	51.28	---	74.00	22.72	500.0	200.0	V	310.0	4.5
7970.625000	---	40.24	54.00	13.76	500.0	200.0	H	19.0	9.9
7976.250000	52.24	---	74.00	21.76	500.0	100.0	V	328.0	9.9
12268.125000	53.65	---	74.00	20.35	500.0	200.0	V	274.0	14.5
12271.875000	---	42.82	54.00	11.18	500.0	100.0	H	316.0	14.6
15935.625000	59.61	---	74.00	14.39	500.0	100.0	V	242.0	19.5
16537.500000	---	48.22	54.00	5.78	500.0	100.0	H	73.0	20.5

Radiates Emission from 3GHz to 18GHz

802.11ax HE20 CH11

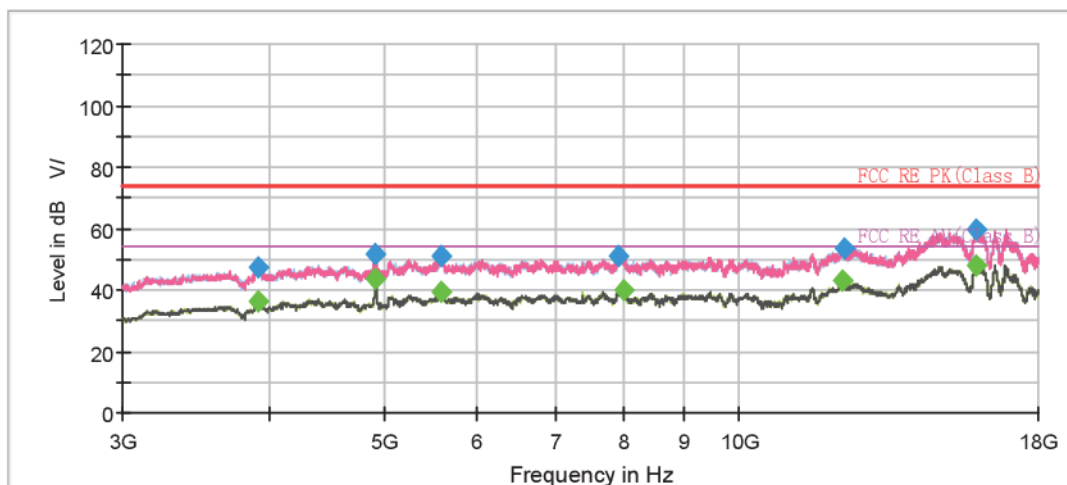


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1039.500000	42.36	---	74.00	31.64	500.0	200.0	H	314.0	-5.5
1043.000000	---	31.15	54.00	22.85	500.0	200.0	H	99.0	-5.7
1187.250000	---	32.68	54.00	21.32	500.0	100.0	H	279.0	-4.0
1187.750000	43.97	---	74.00	30.03	500.0	200.0	V	266.0	-4.1
1434.250000	46.21	---	74.00	27.79	500.0	100.0	V	189.0	-1.9
1439.250000	---	34.79	54.00	19.21	500.0	200.0	H	91.0	-1.7
1695.500000	---	36.21	54.00	17.80	500.0	200.0	V	324.0	0.3
1710.500000	48.03	---	74.00	25.97	500.0	100.0	H	113.0	0.5
2045.000000	---	37.53	54.00	16.47	500.0	100.0	H	266.0	2.5
2057.000000	49.21	---	74.00	24.79	500.0	200.0	V	293.0	2.3
2902.250000	54.11	---	74.00	19.89	500.0	100.0	H	335.0	8.6
2905.000000	---	42.47	54.00	11.53	500.0	200.0	H	48.0	8.5

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

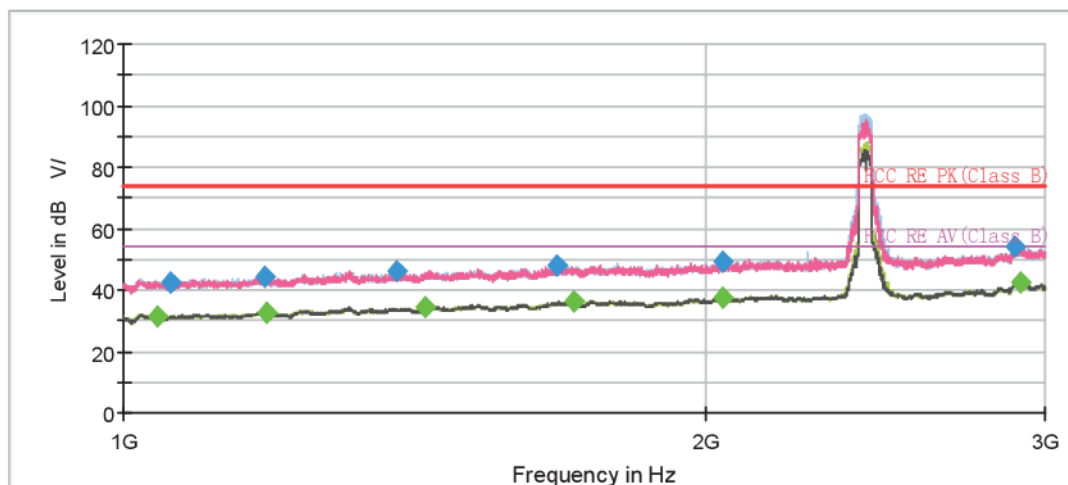


Final_Result

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)
3913.125000	47.34	---	74.00	26.66	500.0	100.0	V	98.0	3.4
3918.750000	---	36.42	54.00	17.58	500.0	200.0	V	2.0	3.1
4923.750000	---	43.76	54.00	10.24	500.0	100.0	V	22.0	3.0
4923.750000	51.67	---	74.00	22.33	500.0	100.0	V	22.0	3.0
5596.875000	---	39.56	54.00	14.44	500.0	100.0	V	238.0	7.9
5600.625000	50.99	---	74.00	23.01	500.0	100.0	H	341.0	7.6
7910.625000	51.25	---	74.00	22.75	500.0	200.0	V	260.0	9.5
7993.125000	---	40.11	54.00	13.89	500.0	100.0	V	337.0	9.9
12279.375000	---	43.07	54.00	10.93	500.0	200.0	V	2.0	14.5
12290.625000	53.76	---	74.00	20.24	500.0	100.0	V	247.0	14.3
15922.500000	---	47.97	54.00	6.03	500.0	100.0	V	0.0	19.4
15958.125000	59.62	---	74.00	14.38	500.0	200.0	V	187.0	19.7

Radiates Emission from 3GHz to 18GHz

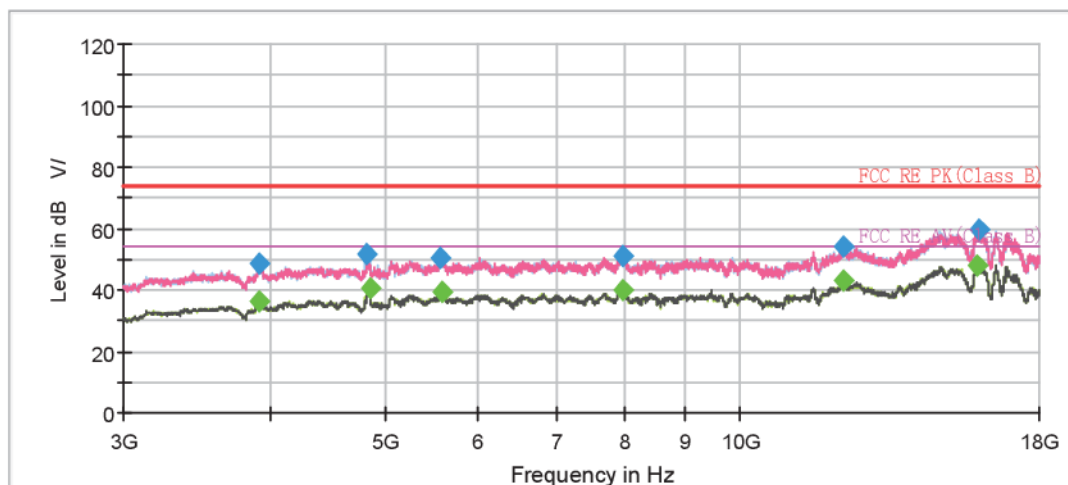
802.11ax HE40 CH3



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)
1041.250000	---	31.48	54.00	22.52	500.0	200.0	V	323.0	-5.5
1057.250000	42.45	---	74.00	31.55	500.0	200.0	H	195.0	-6.0
1182.250000	44.05	---	74.00	29.95	500.0	200.0	V	131.0	-3.9
1185.500000	---	32.70	54.00	21.30	500.0	200.0	V	267.0	-3.9
1385.500000	46.25	---	74.00	27.75	500.0	200.0	H	43.0	-2.4
1433.500000	---	34.45	54.00	19.55	500.0	100.0	H	120.0	-1.9
1678.000000	47.74	---	74.00	26.26	500.0	100.0	V	51.0	0.4
1711.250000	---	36.13	54.00	17.87	500.0	200.0	H	64.0	0.5
2040.750000	---	37.61	54.00	16.39	500.0	200.0	V	245.0	2.4
2042.000000	49.02	---	74.00	24.98	500.0	100.0	V	4.0	2.5
2891.500000	54.08	---	74.00	19.92	500.0	100.0	H	33.0	7.9
2914.250000	---	42.45	54.00	11.55	500.0	200.0	H	137.0	8.3

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

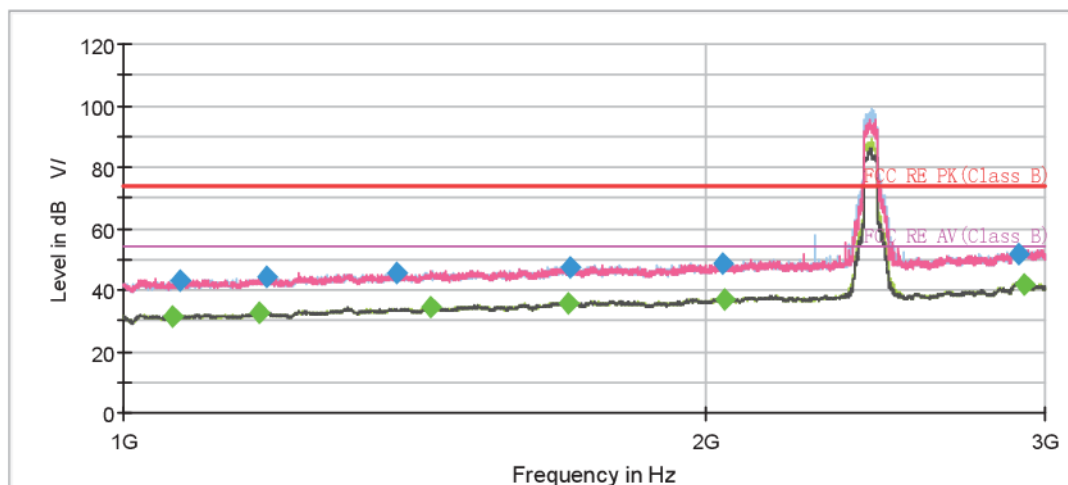


Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3905.625000	48.72	---	74.00	25.28	500.0	200.0	V	255.0	3.5
3918.750000	---	36.49	54.00	17.51	500.0	100.0	V	284.0	3.1
4835.625000	51.40	---	74.00	22.60	500.0	100.0	H	14.0	2.8
4856.250000	---	40.83	54.00	13.17	500.0	200.0	H	9.0	3.0
5572.500000	50.41	---	74.00	23.59	500.0	200.0	H	213.0	7.2
5585.625000	---	39.49	54.00	14.51	500.0	200.0	H	359.0	7.8
7974.375000	51.23	---	74.00	22.77	500.0	200.0	H	240.0	9.9
7978.125000	---	40.26	54.00	13.74	500.0	200.0	H	278.0	9.9
12264.375000	53.85	---	74.00	20.15	500.0	100.0	V	49.0	14.4
12266.250000	---	42.89	54.00	11.11	500.0	200.0	H	258.0	14.4
15946.875000	---	47.98	54.00	6.02	500.0	100.0	V	75.0	19.6
15990.000000	59.41	---	74.00	14.59	500.0	200.0	H	56.0	20.0

Radiates Emission from 3GHz to 18GHz

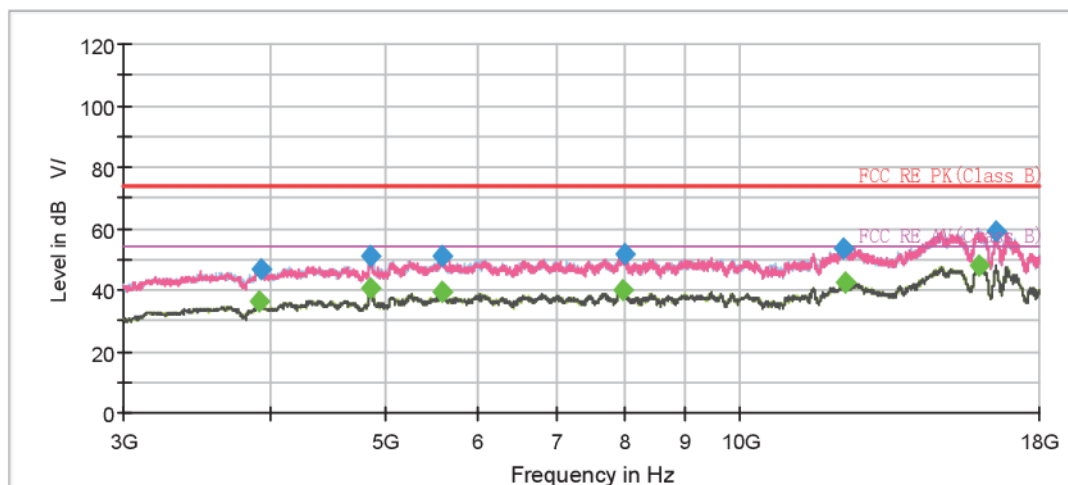
802.11ax HE40 CH6



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)
1059.500000	---	31.52	54.00	22.48	500.0	100.0	H	316.0	-6.0
1070.250000	42.81	---	74.00	31.19	500.0	200.0	V	333.0	-5.5
1175.000000	---	32.73	54.00	21.27	500.0	100.0	V	100.0	-4.2
1187.000000	44.37	---	74.00	29.63	500.0	100.0	V	208.0	-4.0
1386.250000	45.84	---	74.00	28.16	500.0	100.0	H	183.0	-2.4
1441.000000	---	34.46	54.00	19.54	500.0	100.0	H	351.0	-1.7
1698.000000	---	36.00	54.00	18.00	500.0	100.0	H	359.0	0.4
1702.000000	47.54	---	74.00	26.46	500.0	200.0	V	263.0	0.4
2044.250000	48.90	---	74.00	25.10	500.0	200.0	H	156.0	2.5
2047.000000	---	37.16	54.00	16.84	500.0	200.0	V	267.0	2.6
2906.750000	51.66	---	74.00	22.34	500.0	200.0	H	230.0	8.5
2925.750000	---	41.60	54.00	12.40	500.0	100.0	H	264.0	8.1

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

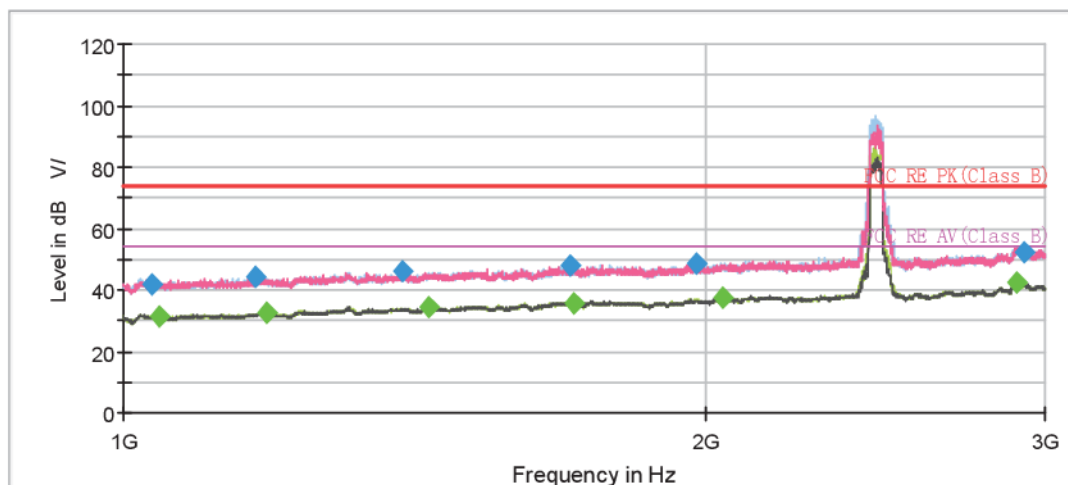


Final_Result

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)
3913.125000	---	36.32	54.00	17.68	500.0	100.0	H	0.0	3.4
3926.250000	46.91	---	74.00	27.09	500.0	200.0	V	333.0	2.6
4854.375000	---	40.92	54.00	13.08	500.0	100.0	V	28.0	3.0
4858.125000	51.00	---	74.00	23.00	500.0	100.0	V	38.0	3.0
5598.750000	---	39.40	54.00	14.60	500.0	100.0	H	63.0	7.8
5600.625000	50.78	---	74.00	23.22	500.0	200.0	H	210.0	7.6
7970.625000	---	40.08	54.00	13.92	500.0	200.0	H	324.0	9.9
7995.000000	51.59	---	74.00	22.41	500.0	200.0	H	277.0	9.9
12286.875000	53.76	---	74.00	20.24	500.0	100.0	V	23.0	14.4
12290.625000	---	42.76	54.00	11.24	500.0	200.0	H	182.0	14.3
15969.375000	---	48.16	54.00	5.84	500.0	200.0	V	333.0	19.8
16545.000000	59.16	---	74.00	14.84	500.0	200.0	H	295.0	20.8

Radiates Emission from 3GHz to 18GHz

802.11ax HE40 CH9

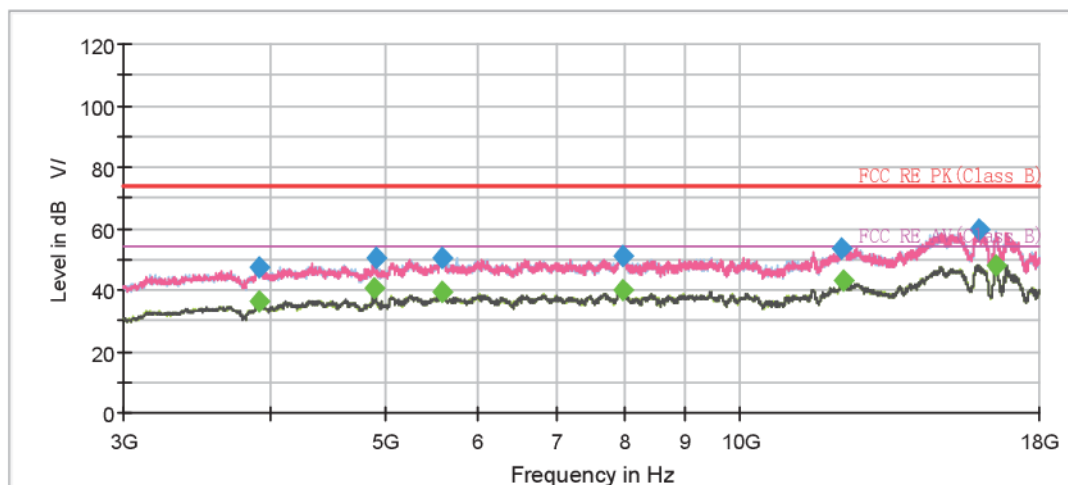


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1033.500000	42.06	---	74.00	31.94	500.0	100.0	H	258.0	-5.9
1044.250000	---	31.19	54.00	22.81	500.0	100.0	H	64.0	-5.8
1170.250000	44.23	---	74.00	29.77	500.0	200.0	V	155.0	-4.4
1187.000000	---	32.58	54.00	21.42	500.0	100.0	V	247.0	-4.0
1393.500000	46.40	---	74.00	27.60	500.0	200.0	V	159.0	-2.4
1439.250000	---	34.32	54.00	19.68	500.0	100.0	H	280.0	-1.7
1702.250000	47.84	---	74.00	26.16	500.0	100.0	H	103.0	0.4
1711.000000	---	35.88	54.00	18.12	500.0	200.0	H	100.0	0.5
1979.500000	48.82	---	74.00	25.18	500.0	100.0	V	303.0	1.8
2043.000000	---	37.58	54.00	16.42	500.0	100.0	H	90.0	2.5
2899.750000	---	42.23	54.00	11.77	500.0	200.0	V	7.0	8.6
2925.250000	52.36	---	74.00	21.64	500.0	200.0	H	186.0	8.1

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3905.625000	47.08	---	74.00	26.92	500.0	200.0	H	271.0	3.5
3913.125000	---	36.32	54.00	17.68	500.0	200.0	V	230.0	3.4
4903.125000	---	40.37	54.00	13.63	500.0	100.0	H	31.0	3.0
4908.750000	50.22	---	74.00	23.78	500.0	100.0	V	20.0	3.0
5583.750000	50.65	---	74.00	23.35	500.0	100.0	H	271.0	7.7
5585.625000	---	39.56	54.00	14.44	500.0	200.0	H	101.0	7.8
7980.000000	---	40.12	54.00	13.88	500.0	200.0	H	57.0	9.9
7981.875000	51.22	---	74.00	22.78	500.0	200.0	V	230.0	9.9
12225.000000	53.80	---	74.00	20.20	500.0	200.0	H	354.0	13.5
12264.375000	---	42.81	54.00	11.19	500.0	100.0	V	0.0	14.4
15993.750000	59.70	---	74.00	14.30	500.0	200.0	V	164.0	20.0
16537.500000	---	48.17	54.00	5.83	500.0	200.0	H	149.0	20.5

Radiates Emission from 3GHz to 18GHz

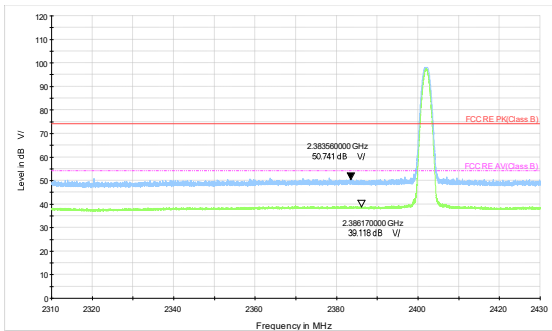
1.2. Bluetooth LE

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.

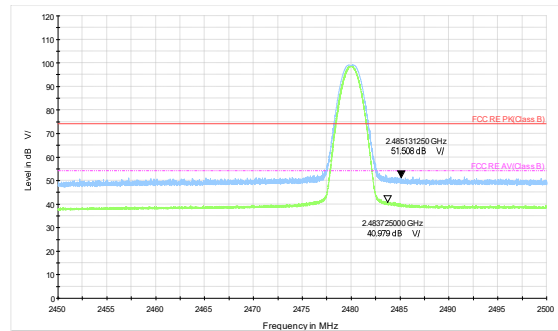
A symbol ($\text{dB } \mu\text{V}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)

The signal beyond the limit is carrier.

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



Bluetooth LE (1M) Channel 0 Peak+ Average



Bluetooth LE (1M) 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 horizontal and vertical by software.**
5. **For below 1GHz**

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

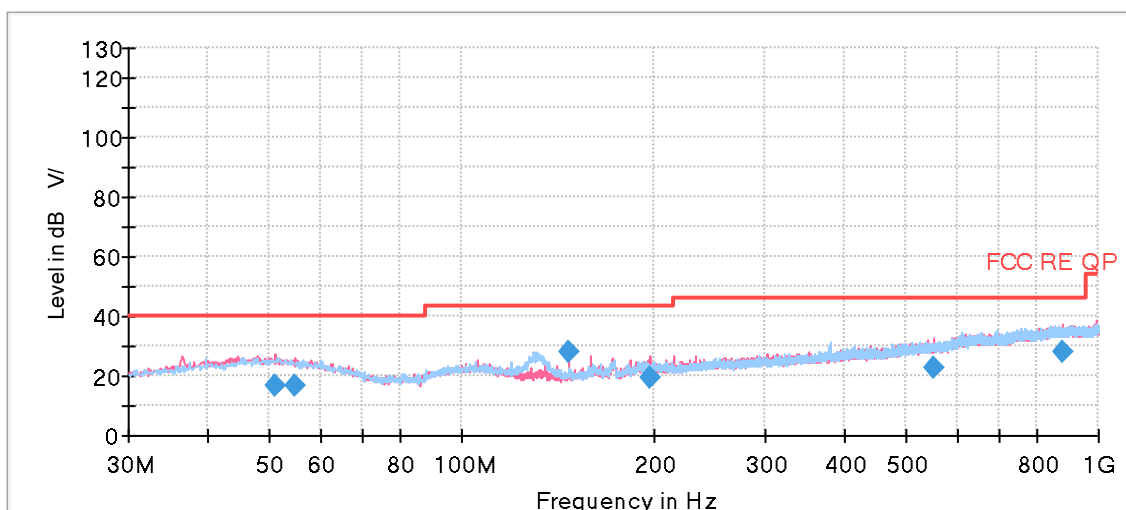
For above 1GHz

 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:

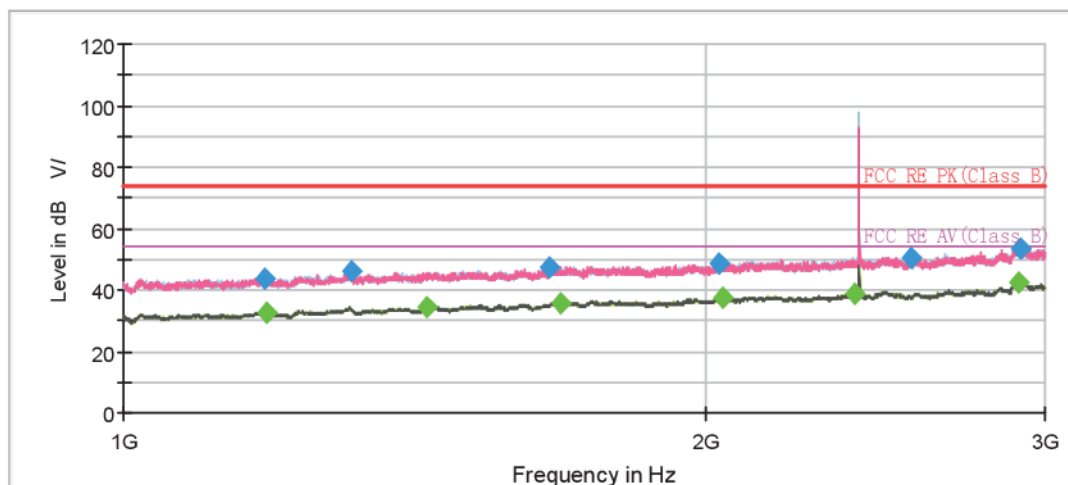
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, Bluetooth LE-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 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)
50.976250	16.95	40.00	23.05	206.0	V	124.0	21.1
54.735000	16.44	40.00	23.56	210.0	V	158.0	20.8
147.491250	27.74	43.50	15.76	100.0	V	13.0	15.6
197.931250	19.16	43.50	24.34	100.0	V	268.0	19.0
551.253750	22.65	46.00	23.35	182.0	V	165.0	26.2
880.690000	27.71	46.00	18.29	202.0	V	0.0	30.7

Bluetooth LE-Channel 0

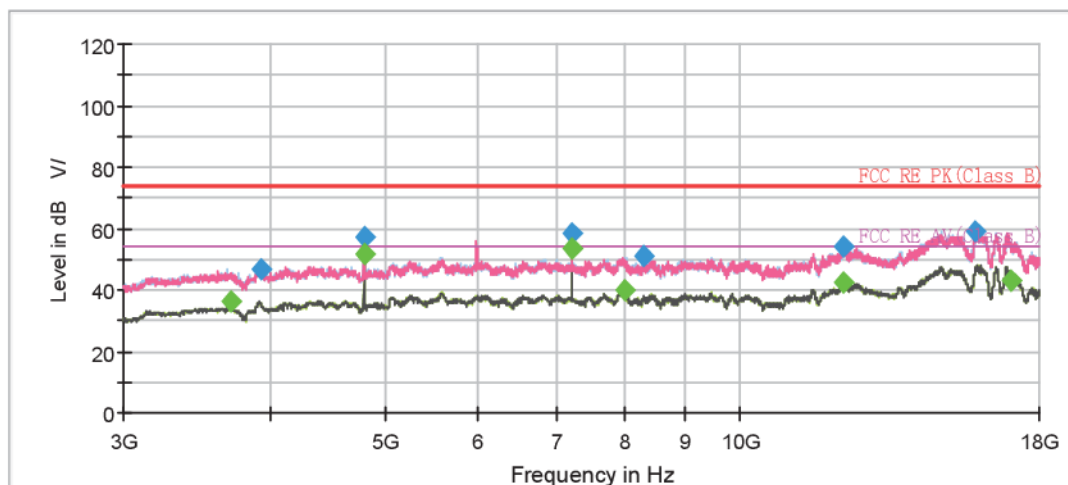


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1182.750000	43.72	---	74.00	30.28	500.0	100.0	V	103.0	-3.9
1186.500000	---	32.61	54.00	21.39	500.0	100.0	H	44.0	-4.0
1311.250000	45.94	---	74.00	28.06	500.0	100.0	H	94.0	-2.4
1435.000000	---	34.47	54.00	19.53	500.0	100.0	H	36.0	-1.8
1663.250000	47.69	---	74.00	26.31	500.0	100.0	V	344.0	-0.1
1684.000000	---	35.98	54.00	18.02	500.0	200.0	H	311.0	0.4
2032.750000	48.81	---	74.00	25.19	500.0	100.0	V	244.0	2.3
2042.000000	---	37.47	54.00	16.53	500.0	100.0	V	295.0	2.5
2390.500000	---	38.57	54.00	15.43	500.0	200.0	H	91.0	4.2
2557.250000	50.52	---	74.00	23.48	500.0	200.0	H	278.0	4.4
2906.750000	---	42.53	54.00	11.47	500.0	200.0	V	324.0	8.5
2916.250000	53.75	---	74.00	20.25	500.0	200.0	H	319.0	8.3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

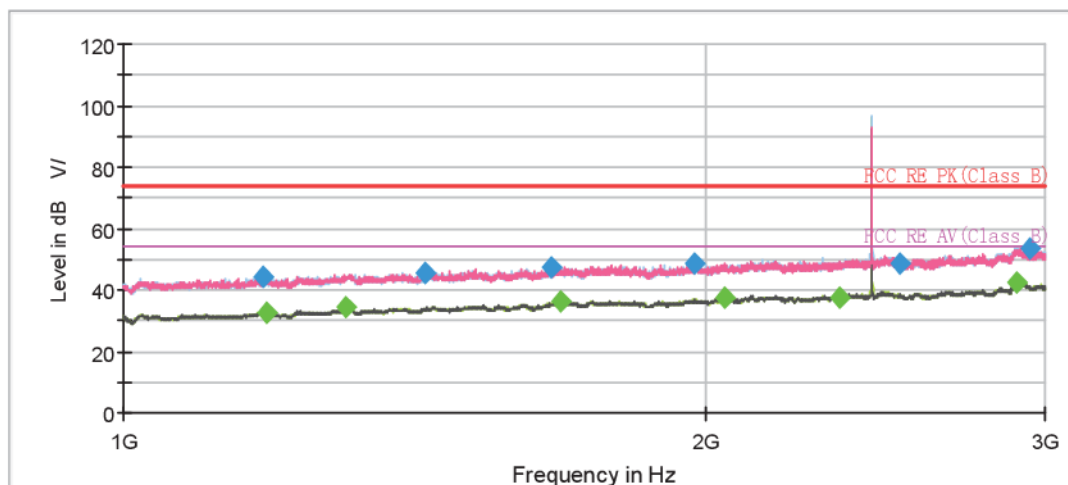


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3695.625000	---	36.20	54.00	17.80	500.0	200.0	H	254.0	1.6
3920.625000	46.73	---	74.00	27.27	500.0	200.0	H	213.0	2.9
4803.750000	---	51.63	54.00	2.37	500.0	200.0	H	100.0	2.2
4803.750000	57.37	---	74.00	16.63	500.0	200.0	H	100.0	2.2
7205.625000	---	53.24	54.00	0.76	500.0	200.0	H	287.0	7.2
7205.625000	58.56	---	74.00	15.44	500.0	200.0	H	287.0	7.2
7993.125000	---	39.70	54.00	14.30	500.0	200.0	V	0.0	9.9
8287.500000	50.78	---	74.00	23.22	500.0	200.0	H	313.0	8.0
12266.250000	54.12	---	74.00	19.88	500.0	200.0	V	277.0	14.4
12268.125000	---	42.62	54.00	11.38	500.0	100.0	V	35.0	14.5
15903.750000	59.10	---	74.00	14.90	500.0	200.0	V	194.0	19.2
17015.625000	---	43.10	54.00	10.90	500.0	200.0	H	81.0	17.6

Radiates Emission from 3GHz to 18GHz

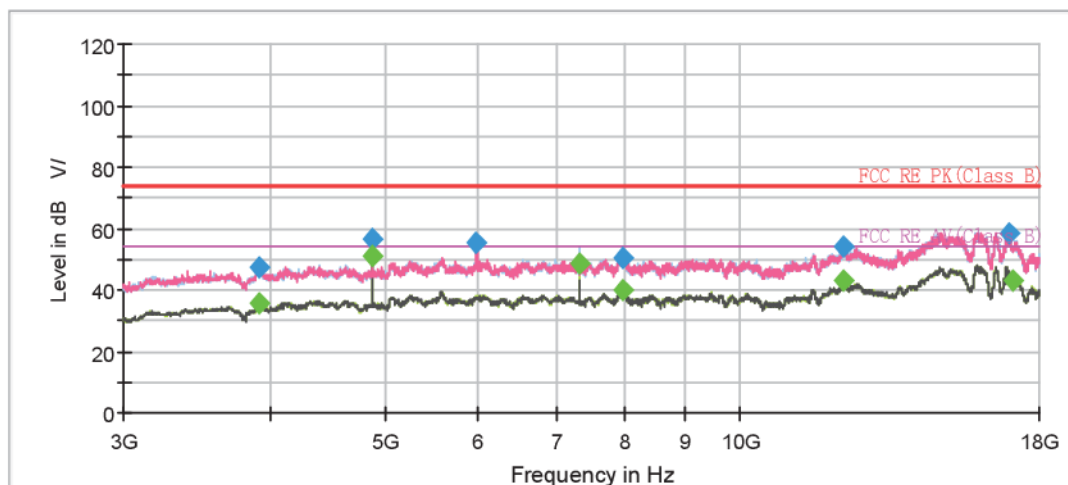
Bluetooth LE-Channel 19



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)
1182.000000	44.02	---	74.00	29.98	500.0	200.0	V	240.0	-4.0
1187.500000	---	32.62	54.00	21.38	500.0	200.0	V	52.0	-4.1
1303.500000	---	34.32	54.00	19.68	500.0	200.0	V	189.0	-2.5
1433.250000	45.34	---	74.00	28.66	500.0	100.0	H	72.0	-1.9
1663.500000	47.39	---	74.00	26.61	500.0	200.0	H	245.0	0.0
1684.000000	---	36.11	54.00	17.89	500.0	200.0	V	198.0	0.4
1974.750000	48.51	---	74.00	25.49	500.0	100.0	V	57.0	2.0
2047.000000	---	37.36	54.00	16.64	500.0	200.0	V	148.0	2.6
2345.750000	---	37.76	54.00	16.24	500.0	200.0	H	295.0	3.5
2526.250000	48.76	---	74.00	25.24	500.0	100.0	H	340.0	4.3
2900.250000	---	42.38	54.00	11.62	500.0	200.0	V	115.0	8.6
2945.500000	53.63	---	74.00	20.37	500.0	200.0	V	223.0	7.5

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

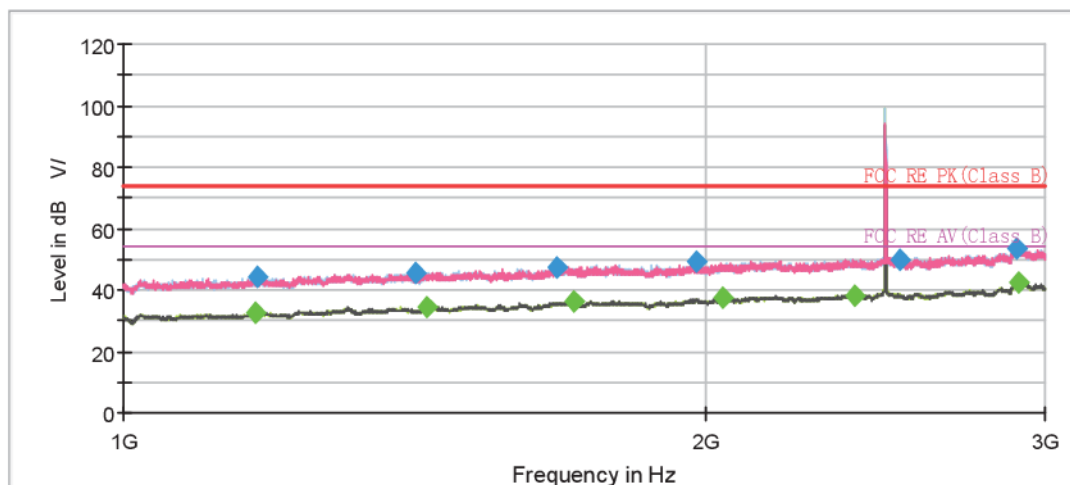


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3909.375000	47.50	---	74.00	26.50	500.0	100.0	V	44.0	3.7
3918.750000	---	35.95	54.00	18.05	500.0	200.0	H	103.0	3.1
4878.750000	---	50.86	54.00	3.14	500.0	200.0	H	103.0	3.1
4878.750000	56.55	---	74.00	17.45	500.0	200.0	H	103.0	3.1
5975.625000	55.49	---	74.00	18.51	500.0	100.0	V	354.0	6.0
7320.000000	---	48.34	54.00	5.66	500.0	200.0	H	284.0	6.0
7976.250000	---	39.86	54.00	14.14	500.0	100.0	H	289.0	9.9
7981.875000	50.70	---	74.00	23.30	500.0	200.0	V	191.0	9.9
12281.250000	53.90	---	74.00	20.10	500.0	200.0	H	311.0	14.5
12286.875000	---	42.84	54.00	11.16	500.0	100.0	H	176.0	14.4
16959.375000	58.65	---	74.00	15.35	500.0	200.0	V	181.0	18.2
17077.500000	---	42.82	54.00	11.18	500.0	200.0	H	103.0	17.4

Radiates Emission from 3GHz to 18GHz

Bluetooth LE-Channel 39

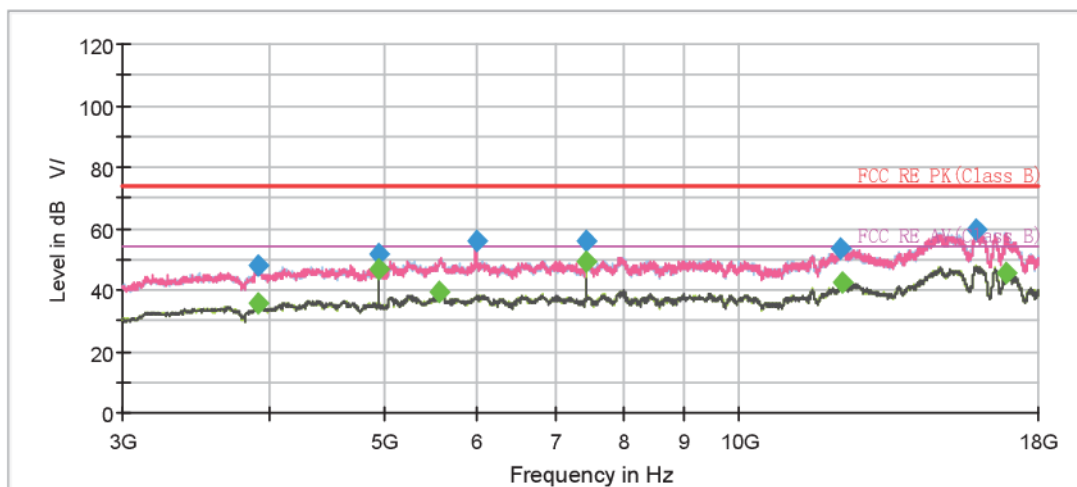


Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1169.500000	---	32.45	54.00	21.55	500.0	200.0	V	309.0	-4.4
1172.000000	44.35	---	74.00	29.65	500.0	100.0	H	33.0	-4.3
1415.000000	45.82	---	74.00	28.18	500.0	100.0	V	292.0	-2.7
1437.250000	---	34.47	54.00	19.53	500.0	100.0	H	175.0	-1.8
1676.750000	47.66	---	74.00	26.34	500.0	100.0	V	0.0	0.4
1711.500000	---	36.42	54.00	17.58	500.0	100.0	H	226.0	0.5
1978.250000	49.01	---	74.00	24.99	500.0	200.0	H	260.0	1.9
2042.750000	---	37.39	54.00	16.61	500.0	200.0	V	183.0	2.5
2389.000000	---	38.17	54.00	15.83	500.0	200.0	H	0.0	4.2
2524.250000	50.10	---	74.00	23.90	500.0	100.0	V	81.0	4.3
2897.500000	53.77	---	74.00	20.23	500.0	200.0	H	336.0	8.4
2906.000000	---	42.39	54.00	11.61	500.0	200.0	V	175.0	8.5

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)
3905.625000	47.83	---	74.00	26.17	500.0	200.0	H	16.0	3.5
3911.250000	---	35.95	54.00	18.05	500.0	200.0	H	175.0	3.5
4959.375000	---	46.54	54.00	7.46	500.0	200.0	H	100.0	3.3
4959.375000	51.73	---	74.00	22.27	500.0	200.0	H	100.0	3.3
5581.875000	---	39.30	54.00	14.70	500.0	100.0	V	179.0	7.6
5992.500000	55.73	---	74.00	18.27	500.0	100.0	V	253.0	6.2
7440.000000	56.12	---	74.00	17.88	500.0	200.0	H	288.0	7.3
7440.000000	---	49.18	54.00	4.82	500.0	200.0	H	288.0	7.3
12223.125000	53.83	---	74.00	20.17	500.0	200.0	V	277.0	13.5
12286.875000	---	42.77	54.00	11.23	500.0	100.0	H	314.0	14.4
15941.250000	59.50	---	74.00	14.50	500.0	100.0	H	79.0	19.5
16935.000000	---	45.24	54.00	8.76	500.0	200.0	V	295.0	18.4

Radiates Emission from 3GHz to 18GHz

2. Conducted Emission

2.1. Wi-Fi 2.4GHz

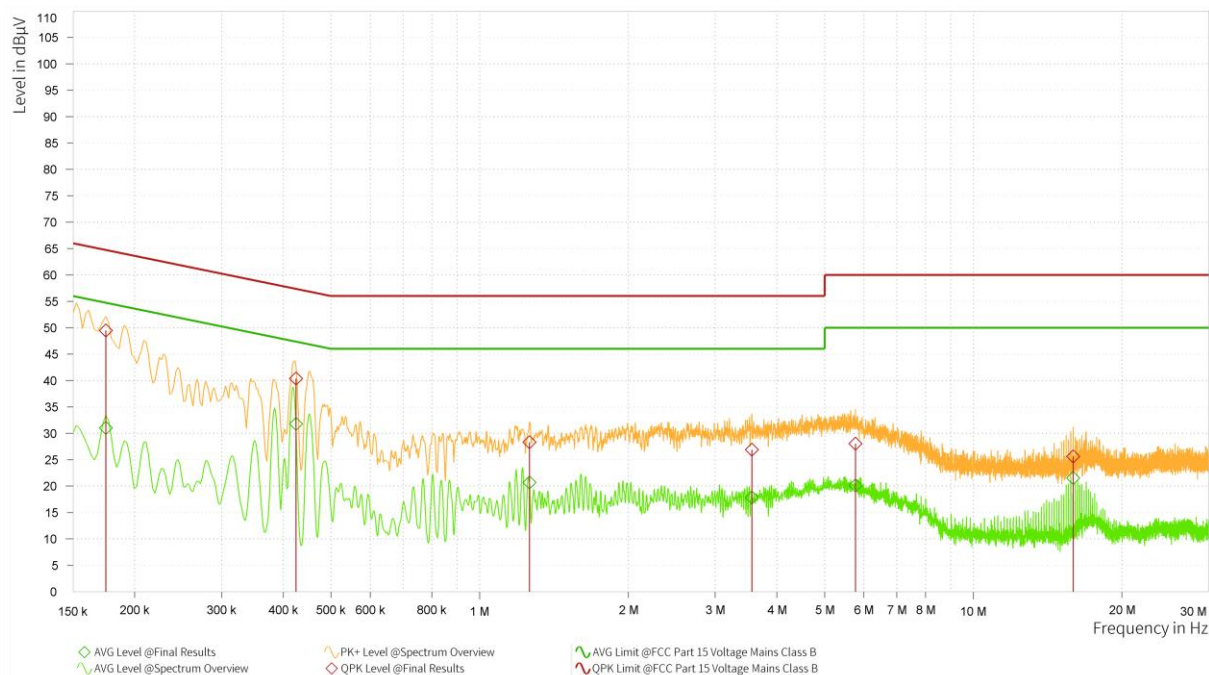
During the test, the Conducted Emission was performed in all modes with all channel, 802.11b, Channel 11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



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]
0.152	51.06	65.88	14.82	32.63	55.88	23.25	20.90	L1	9.000	1.000
0.422	40.06	57.40	17.35	34.27	47.40	13.13	20.85	L1	9.000	1.000
0.904	20.18	56.00	35.82	13.38	46.00	32.62	20.24	L1	9.000	1.000
2.240	20.73	56.00	35.27	12.91	46.00	33.09	19.59	L1	9.000	1.000
6.324	26.59	60.00	33.41	19.30	50.00	30.70	19.40	L1	9.000	1.000
15.950	25.82	60.00	34.18	21.49	50.00	28.51	19.53	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



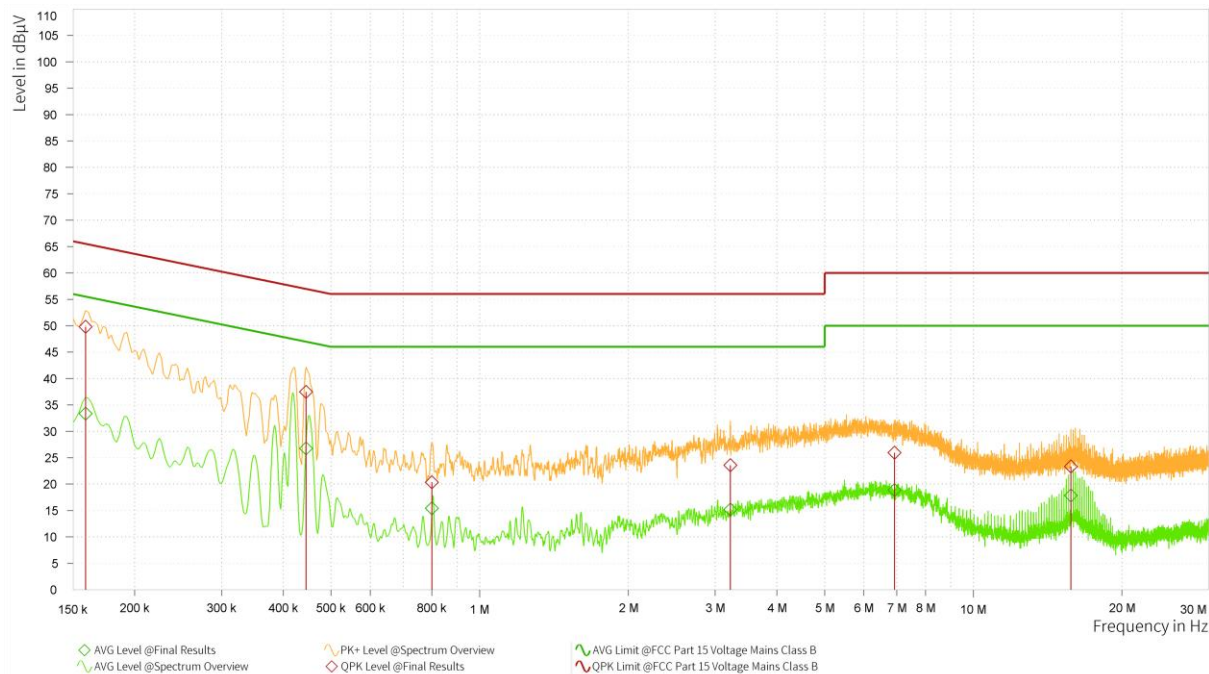
Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.175	49.46	64.73	15.27	31.02	54.73	23.72	21.04	N	9.000	1.000
0.425	40.39	57.36	16.97	31.76	47.36	15.60	20.86	N	9.000	1.000
1.262	28.33	56.00	27.67	20.69	46.00	25.31	19.99	N	9.000	1.000
3.559	26.89	56.00	29.11	17.86	46.00	28.14	19.46	N	9.000	1.000
5.771	28.02	60.00	31.98	20.12	50.00	29.88	19.41	N	9.000	1.000
15.929	25.60	60.00	34.40	21.53	50.00	28.47	19.57	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

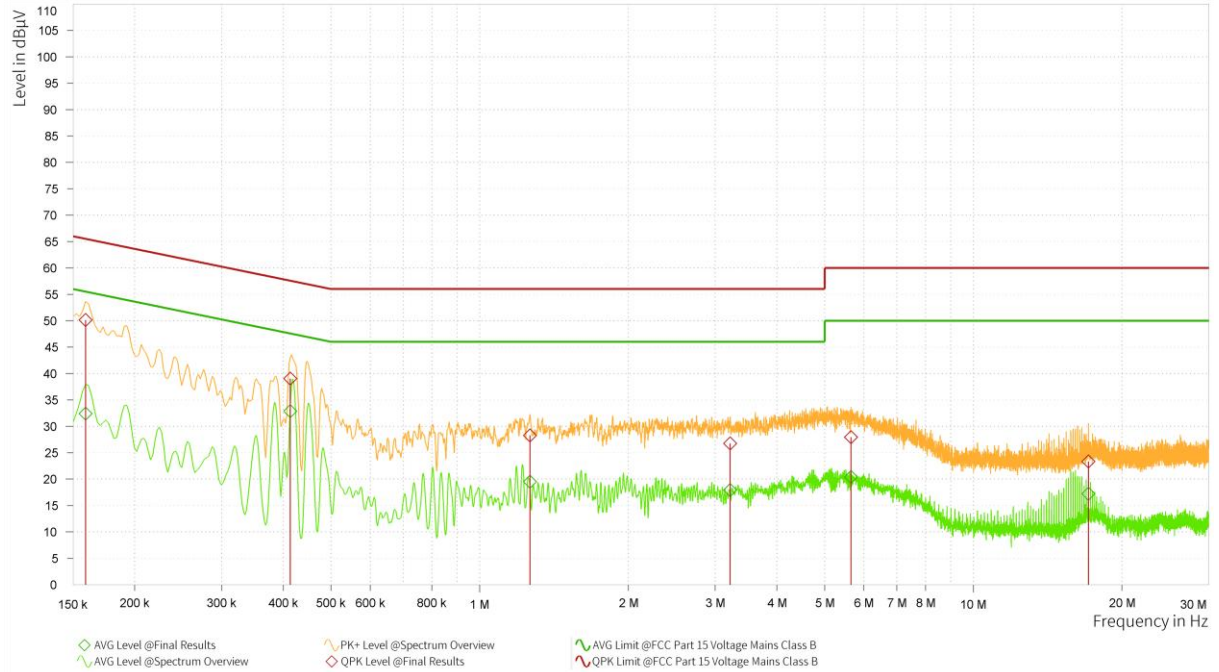
During the test, the Conducted Emission was performed in all modes with all channels, Bluetooth LE-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency [MHz]	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]
0.159	49.83	65.52	15.69	33.36	55.52	22.15	20.90	L1	9.000	1.000
0.445	37.48	56.97	19.50	26.75	46.97	20.22	20.83	L1	9.000	1.000
0.800	20.37	56.00	35.63	15.43	46.00	30.57	20.33	L1	9.000	1.000
3.219	23.56	56.00	32.44	15.17	46.00	30.83	19.47	L1	9.000	1.000
6.927	25.96	60.00	34.04	18.88	50.00	31.12	19.41	L1	9.000	1.000
15.772	23.32	60.00	36.68	17.84	50.00	32.16	19.53	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]
0.159	50.16	65.52	15.36	32.39	55.52	23.12	20.91	N	9.000	1.000
0.413	39.04	57.58	18.54	32.86	47.58	14.73	20.87	N	9.000	1.000
1.264	28.26	56.00	27.74	19.50	46.00	26.50	19.98	N	9.000	1.000
3.217	26.74	56.00	29.26	17.91	46.00	28.09	19.48	N	9.000	1.000
5.651	27.95	60.00	32.05	20.39	50.00	29.61	19.41	N	9.000	1.000
17.108	23.34	60.00	36.66	17.24	50.00	32.76	19.61	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz