

5.6. Unwanted Emission

Ambient Condition

Temperature	Relative humidity
15°C ~ 35°C	20% ~ 80%

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10.

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the Restricted Band and the emissions less than 20 dB below the permissible value are reported.

The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

This method refer to ANSI C63.10.

The procedure for peak unwanted emissions measurements above 1000 MHz is as follows:

Set the spectrum analyzer in the following:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9kHz, VBW=30kHz,/ Sweep=AUTO

Below 1GHz

RBW=100kHz / VBW=300kHz / Sweep=AUTO

a) Peak emission levels are measured by setting the instrument as follows:

Above 1GHz

PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

b) Average emission levels are measured by setting the instrument as follows:

Above 1GHz

AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage

averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of $1 / D$, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is $[10 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

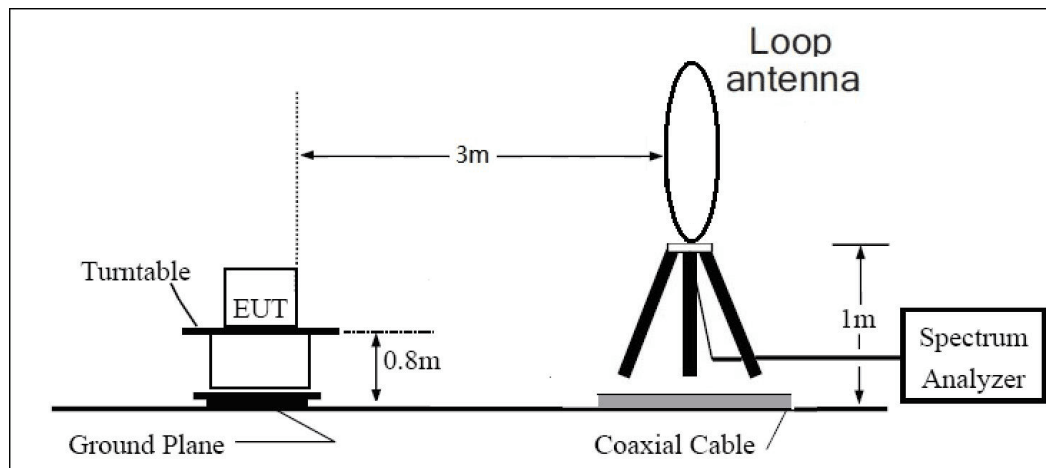
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

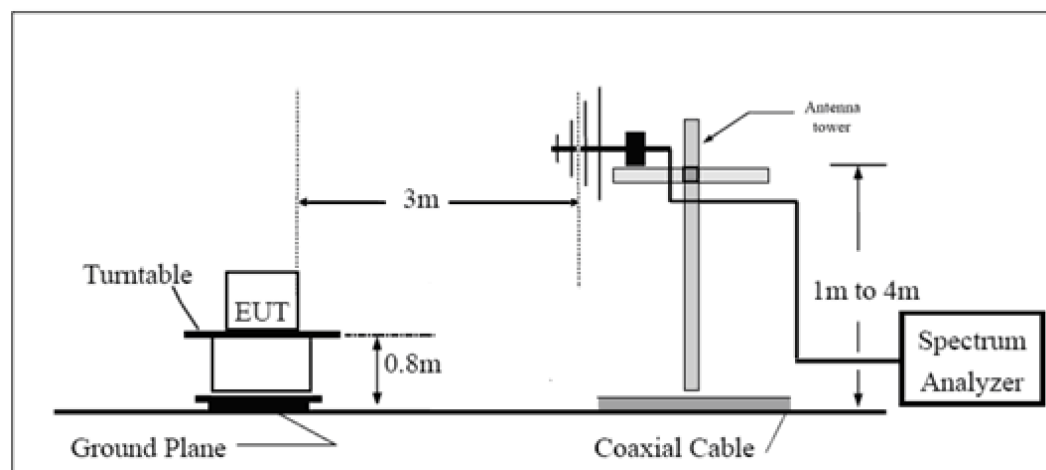
The test is in transmitting mode.

Test Setup

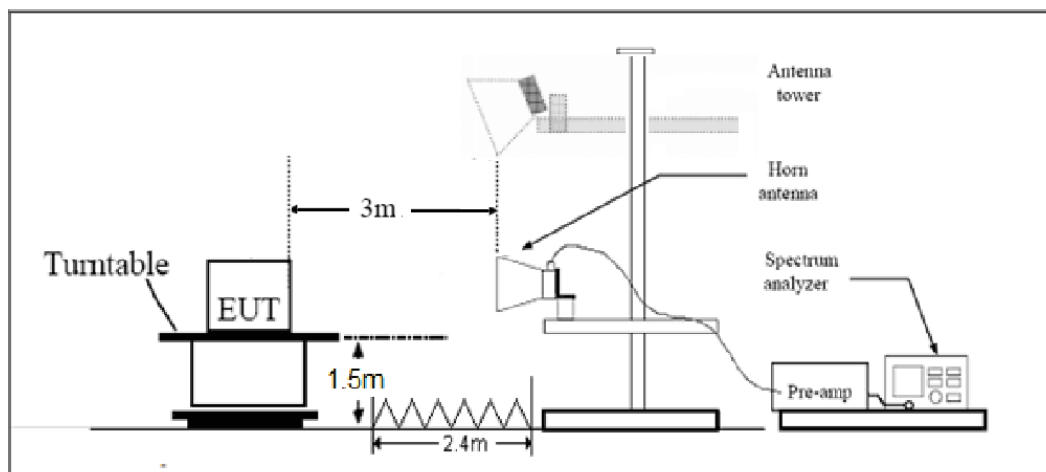
9kHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(μ V/m)	Field strength(dB μ V/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30–88	100	40
88–216	150	43.5
216–960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dB μ V/m

Average Limit=54 dB μ V/m

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

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

Measurement Uncertainty

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

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

Test Results:

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.

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 vertical, the others are vertical and horizontal. and the worst case was recorded.

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.

Result of RE





Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier.





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

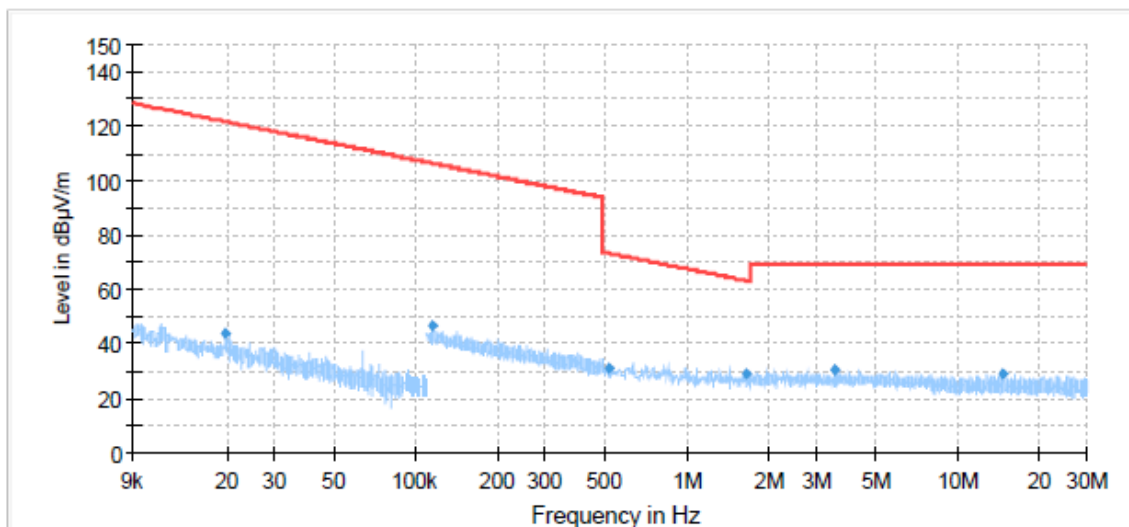
 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit

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

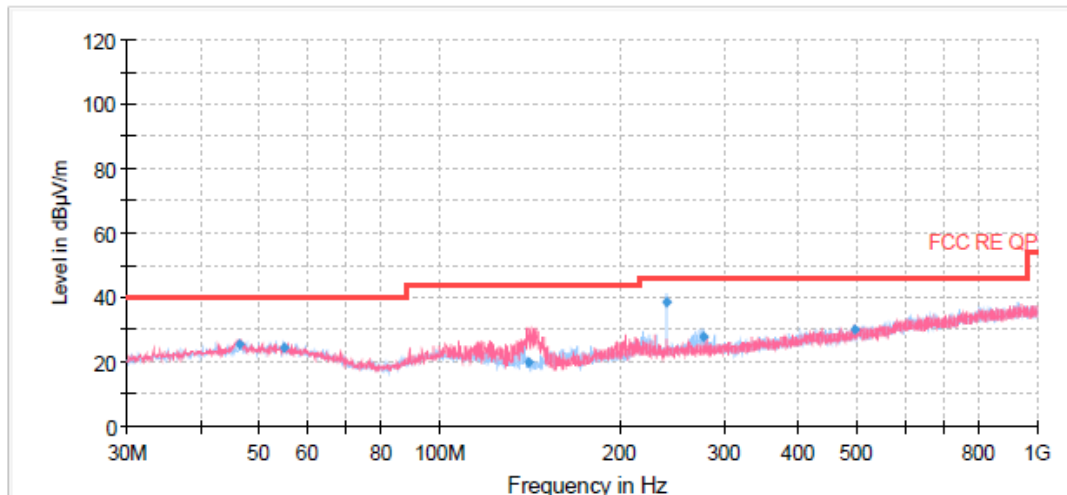
Continuous TX mode:

Wi-Fi 2.4GHz

During the test, the Radiates Emission from 9kHz to 1GHz was performed in all modes with all channels, the test data of the worst-case condition was recorded in this report.



Radiates Emission from 9kHz to 30MHz

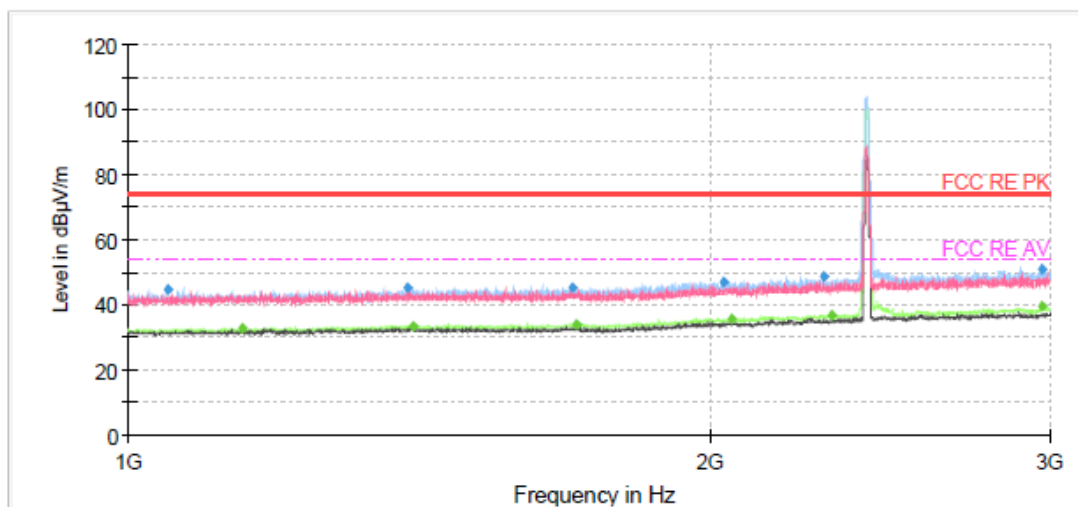


Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
46.37	25.20	40.00	14.80	1000.00	120.000	103.0	V	0.00	20
55.10	24.54	40.00	15.46	1000.00	120.000	104.0	H	209.00	20
140.70	19.66	43.50	23.84	1000.00	120.000	112.0	V	166.00	15
240.01	38.53	46.00	7.47	1000.00	120.000	108.0	H	0.00	20
275.53	27.86	46.00	18.14	1000.00	120.000	106.0	H	359.00	20
495.96	29.85	46.00	16.15	1000.00	120.000	192.0	V	358.00	25

Radiates Emission from 30MHz to 1GHz

802.11b CH1

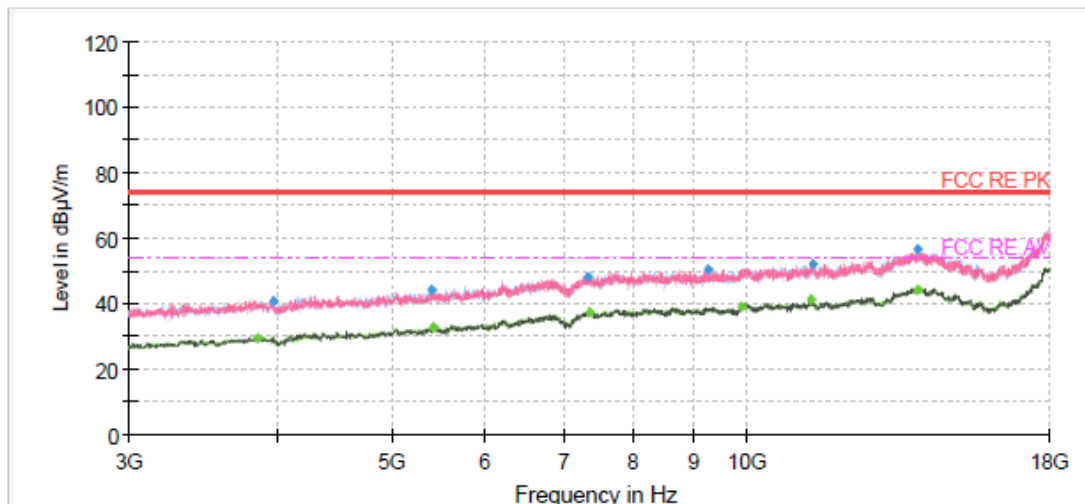


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1048.50	44.61	---	74.00	29.39	500.00	100.0	H	2.00	-5
1146.00	---	32.90	54.00	21.10	500.00	100.0	H	135.00	-4
1395.50	45.30	---	74.00	28.70	500.00	200.0	H	135.00	-3
1405.00	---	33.67	54.00	20.33	500.00	100.0	H	9.00	-3
1698.50	45.47	---	74.00	28.53	500.00	200.0	H	108.00	-2
1704.25	---	34.19	54.00	19.81	500.00	100.0	H	44.00	-2
2035.00	47.19	---	74.00	26.81	500.00	100.0	H	0.00	0
2050.50	---	35.72	54.00	18.28	500.00	100.0	H	0.00	1
2291.75	48.81	---	74.00	25.19	500.00	200.0	H	287.00	2
2314.25	---	36.84	54.00	17.16	500.00	200.0	H	6.00	2
2968.75	50.67	---	74.00	23.33	500.00	100.0	H	5.00	4
2975.00	---	39.37	54.00	14.63	500.00	100.0	H	28.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

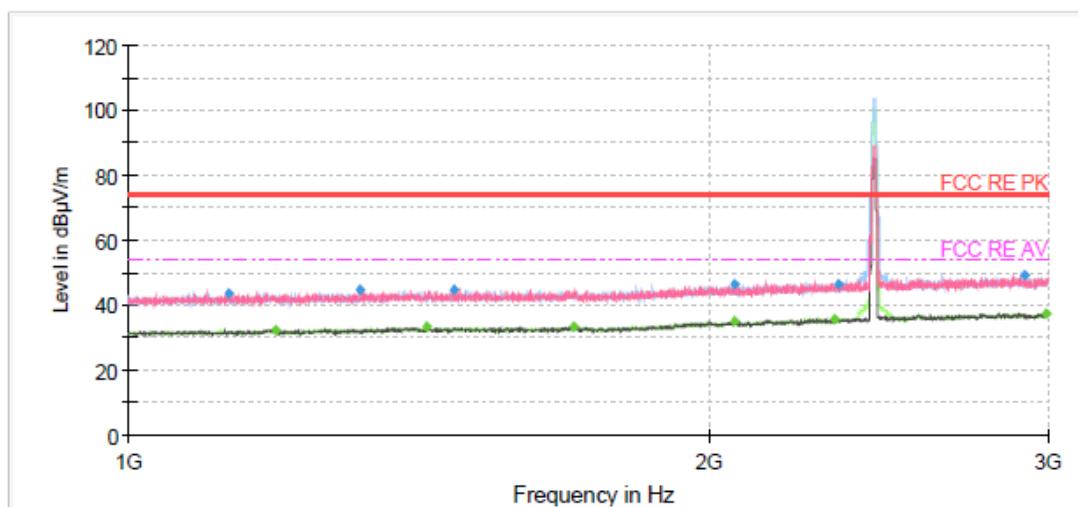


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3851.25	---	29.58	54.00	24.42	500.00	100.0	H	21.00	-4
3975.00	40.95	---	74.00	33.05	500.00	100.0	H	325.00	-4
5409.38	44.20	---	74.00	29.80	500.00	200.0	V	269.00	0
5418.75	---	32.73	54.00	21.27	500.00	100.0	V	284.00	0
7323.75	48.03	---	74.00	25.97	500.00	200.0	V	0.00	5
7340.63	---	37.41	54.00	16.59	500.00	100.0	H	113.00	5
9264.38	50.18	---	74.00	23.82	500.00	200.0	H	5.00	7
9890.63	---	39.23	54.00	14.77	500.00	100.0	H	56.00	7
11315.63	---	41.06	54.00	12.94	500.00	200.0	V	327.00	9
11353.13	51.93	---	74.00	22.07	500.00	100.0	V	351.00	9
13914.38	---	44.35	54.00	9.65	500.00	100.0	V	269.00	12
13927.50	56.38	---	74.00	17.62	500.00	100.0	H	0.00	12

Radiates Emission from 3GHz to 18GHz

802.11b CH6

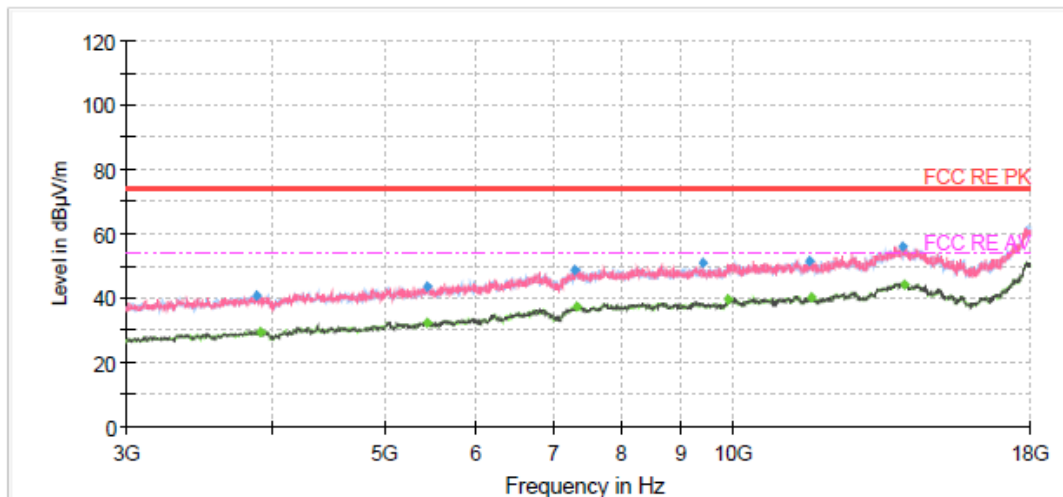


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1125.75	43.42	---	74.00	30.58	500.00	100.0	H	2.00	-4
1193.00	---	32.51	54.00	21.49	500.00	100.0	H	125.00	-4
1318.50	44.67	---	74.00	29.33	500.00	200.0	V	353.00	-3
1429.25	---	33.11	54.00	20.89	500.00	100.0	V	110.00	-3
1475.25	44.78	---	74.00	29.22	500.00	200.0	V	193.00	-3
1703.00	---	33.60	54.00	20.40	500.00	100.0	V	359.00	-2
2062.00	---	34.95	54.00	19.05	500.00	100.0	H	0.00	1
2063.00	46.69	---	74.00	27.31	500.00	100.0	H	0.00	1
2323.00	---	35.73	54.00	18.27	500.00	200.0	H	1.00	2
2335.00	46.69	---	74.00	27.31	500.00	200.0	V	110.00	2
2913.50	49.21	---	74.00	24.79	500.00	100.0	H	14.00	3
2993.50	---	37.59	54.00	16.41	500.00	100.0	V	138.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

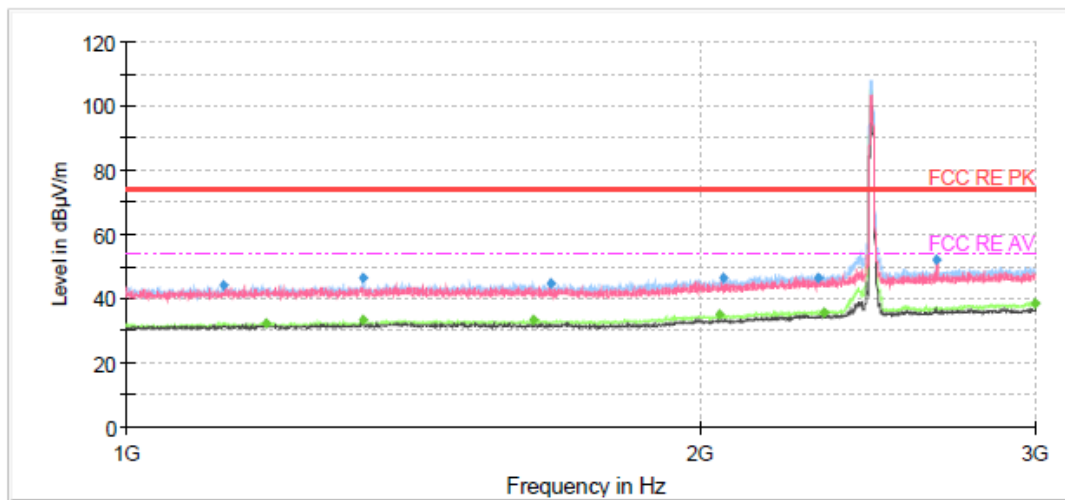


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3877.50	40.75	---	74.00	33.25	500.00	100.0	H	15.00	-4
3905.63	---	29.68	54.00	24.32	500.00	100.0	H	236.00	-4
5441.25	43.83	---	74.00	30.17	500.00	100.0	H	3.00	0
5446.88	---	32.44	54.00	21.56	500.00	100.0	V	0.00	0
7303.13	48.42	---	74.00	25.58	500.00	100.0	H	112.00	6
7308.75	---	37.53	54.00	16.47	500.00	100.0	H	97.00	5
9390.00	50.97	---	74.00	23.03	500.00	100.0	V	345.00	7
9892.50	---	39.50	54.00	14.50	500.00	100.0	V	358.00	7
11610.00	51.63	---	74.00	22.37	500.00	100.0	V	232.00	9
11641.88	---	40.34	54.00	13.66	500.00	100.0	H	11.00	9
13940.63	56.30	---	74.00	17.70	500.00	100.0	V	358.00	12
14010.00	---	44.36	54.00	9.64	500.00	100.0	H	46.00	12

Radiates Emission from 3GHz to 18GHz

802.11b CH11

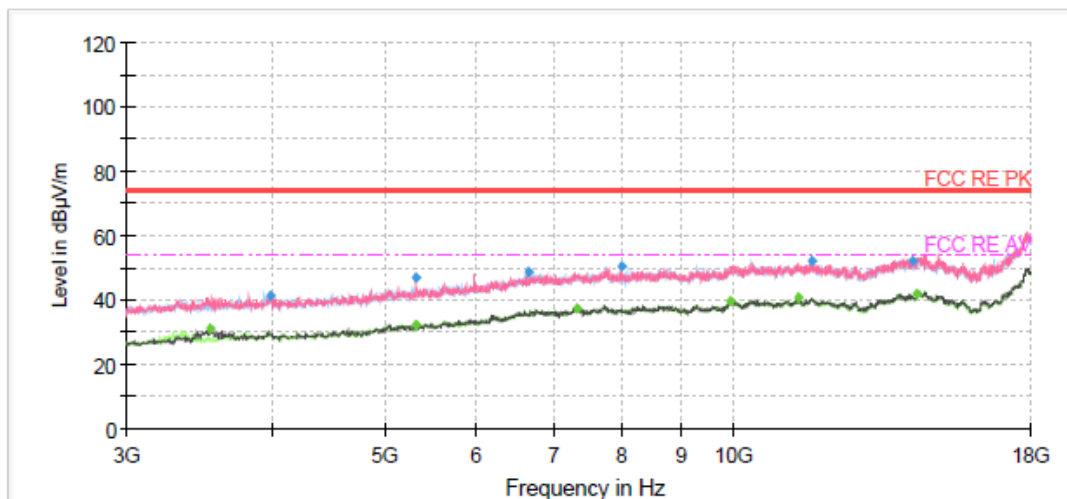


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1123.50	44.41	---	74.00	29.59	500.00	200.0	H	256.00	-5
1184.25	---	32.53	54.00	21.47	500.00	200.0	H	307.00	-4
1329.50	46.19	---	74.00	27.81	500.00	100.0	H	130.00	-3
1329.75	---	33.59	54.00	20.41	500.00	100.0	H	130.00	-3
1634.00	---	33.30	54.00	20.70	500.00	200.0	H	345.00	-2
1670.00	44.89	---	74.00	29.11	500.00	100.0	H	6.00	-2
2050.00	---	34.89	54.00	19.11	500.00	100.0	H	270.00	0
2055.25	46.18	---	74.00	27.82	500.00	200.0	H	352.00	0
2306.50	46.35	---	74.00	27.65	500.00	100.0	H	6.00	1
2325.50	---	35.54	54.00	18.46	500.00	100.0	H	229.00	1
2662.75	51.83	---	74.00	22.17	500.00	200.0	V	190.00	2
2999.25	---	38.56	54.00	15.44	500.00	200.0	H	345.00	3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

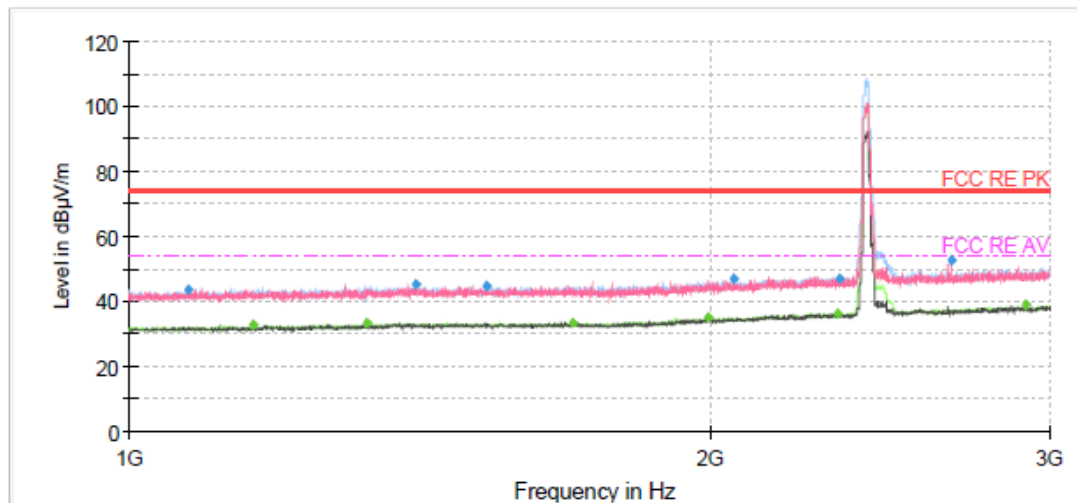


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3536.25	---	31.33	54.00	22.67	500.00	100.0	V	158.00	-6
3986.25	41.35	---	74.00	32.65	500.00	100.0	V	126.00	-4
5325.00	---	32.45	54.00	21.55	500.00	100.0	V	280.00	0
5325.00	46.97	---	74.00	27.03	500.00	100.0	V	280.00	0
6652.50	48.67	---	74.00	25.33	500.00	200.0	H	12.00	4
7329.38	---	37.48	54.00	16.52	500.00	100.0	V	280.00	6
7987.50	50.63	---	74.00	23.37	500.00	100.0	V	249.00	6
9900.00	---	39.58	54.00	14.42	500.00	100.0	V	350.00	7
11347.50	---	40.49	54.00	13.51	500.00	200.0	H	144.00	9
11649.38	52.22	---	74.00	21.78	500.00	200.0	H	354.00	9
14233.13	52.24	---	74.00	21.76	500.00	100.0	H	168.00	11
14353.13	---	41.93	54.00	12.07	500.00	100.0	H	168.00	11

Radiates Emission from 3GHz to 18GHz

802.11g CH1

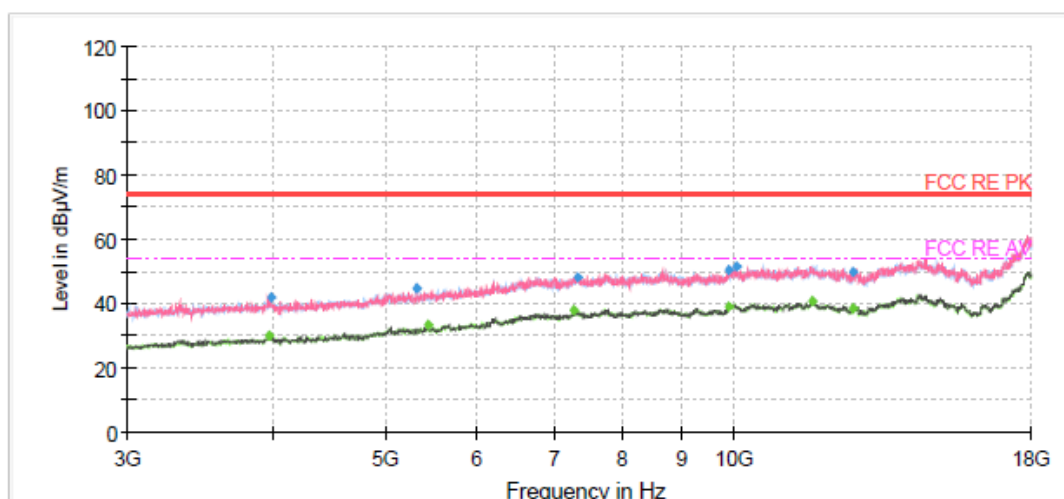


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1073.00	43.69	---	74.00	30.31	500.00	100.0	H	4.00	-5
1159.50	---	32.58	54.00	21.42	500.00	200.0	H	285.00	-5
1328.25	---	33.50	54.00	20.50	500.00	100.0	H	138.00	-3
1407.00	45.07	---	74.00	28.93	500.00	200.0	H	155.00	-3
1532.25	44.68	---	74.00	29.32	500.00	100.0	H	23.00	-3
1697.00	---	33.51	54.00	20.49	500.00	100.0	H	3.00	-2
1997.25	---	35.24	54.00	18.76	500.00	100.0	V	296.00	0
2057.75	47.23	---	74.00	26.77	500.00	200.0	H	317.00	0
2331.00	---	36.21	54.00	17.79	500.00	100.0	H	13.00	1
2333.25	46.95	---	74.00	27.05	500.00	100.0	V	358.00	1
2666.25	52.91	---	74.00	21.09	500.00	200.0	V	33.00	2
2917.25	---	38.82	54.00	15.18	500.00	200.0	H	333.00	3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

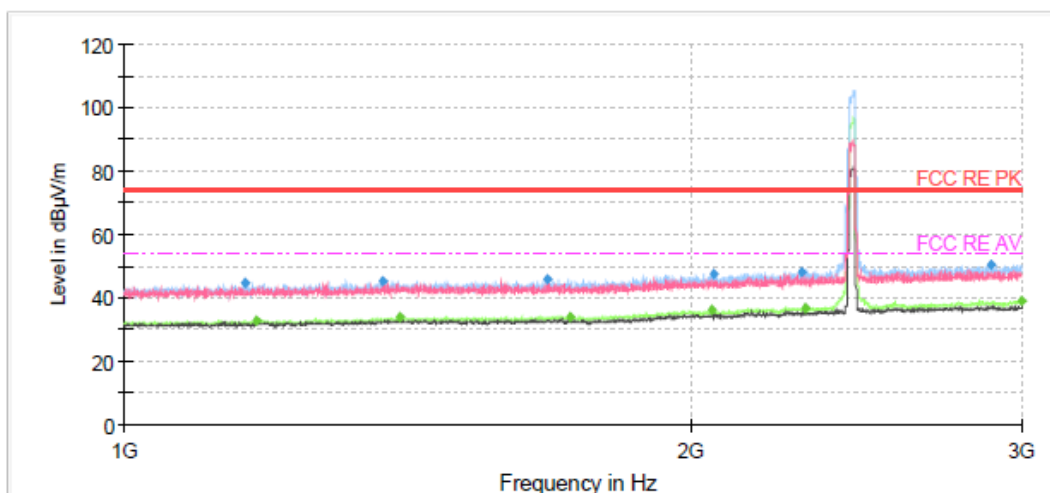


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3969.38	---	30.03	54.00	23.97	500.00	200.0	V	15.00	-3
3986.25	42.12	---	74.00	31.88	500.00	200.0	V	150.00	-4
5321.25	44.63	---	74.00	29.37	500.00	100.0	V	238.00	0
5435.63	---	33.14	54.00	20.86	500.00	100.0	H	216.00	0
7273.13	---	37.72	54.00	16.28	500.00	100.0	H	65.00	6
7331.25	48.23	---	74.00	25.77	500.00	100.0	H	156.00	6
9888.75	50.15	---	74.00	23.85	500.00	200.0	H	308.00	7
9888.75	---	38.79	54.00	15.21	500.00	200.0	V	260.00	7
10016.25	51.64	---	74.00	22.36	500.00	100.0	V	0.00	8
11636.25	---	40.64	54.00	13.36	500.00	200.0	H	336.00	9
12645.00	---	38.71	54.00	15.29	500.00	100.0	V	207.00	9
12645.00	49.65	---	74.00	24.35	500.00	100.0	V	207.00	9

Radiates Emission from 3GHz to 18GHz

802.11g CH6

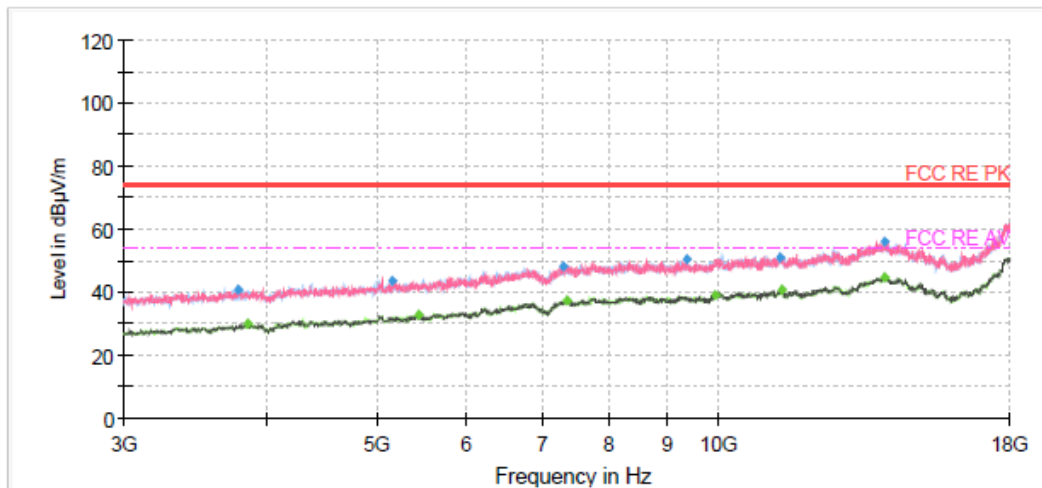


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1158.50	44.67	---	74.00	29.33	500.00	100.0	H	0.00	-4
1175.75	---	32.95	54.00	21.05	500.00	100.0	H	68.00	-4
1373.25	45.52	---	74.00	28.48	500.00	100.0	H	0.00	-3
1402.25	---	33.82	54.00	20.18	500.00	100.0	H	23.00	-3
1677.50	45.87	---	74.00	28.13	500.00	100.0	H	315.00	-2
1727.00	---	34.16	54.00	19.84	500.00	100.0	H	243.00	-2
2055.00	---	36.06	54.00	17.94	500.00	100.0	H	203.00	1
2056.25	47.36	---	74.00	26.64	500.00	100.0	H	106.00	1
2291.75	48.17	---	74.00	25.83	500.00	100.0	H	12.00	2
2302.75	---	36.75	54.00	17.25	500.00	100.0	H	37.00	2
2889.75	50.61	---	74.00	23.39	500.00	100.0	H	37.00	3
2999.75	---	39.23	54.00	14.77	500.00	100.0	H	37.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

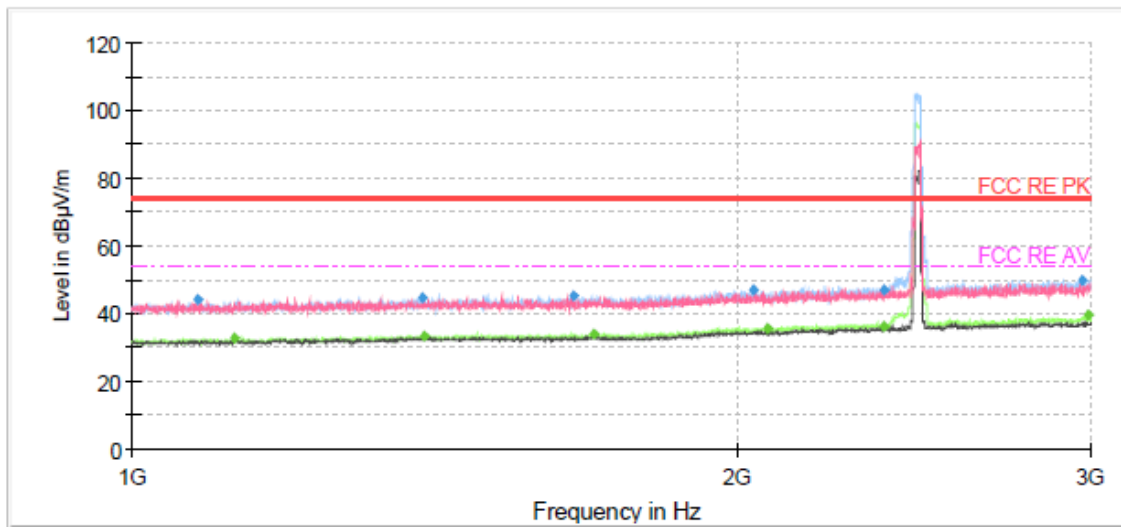


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3785.63	40.85	---	74.00	33.15	500.00	100.0	H	2.00	-5
3851.25	---	29.88	54.00	24.12	500.00	100.0	V	217.00	-4
5163.75	43.69	---	74.00	30.31	500.00	100.0	H	112.00	0
5443.13	---	32.56	54.00	21.44	500.00	100.0	H	0.00	0
7293.75	48.13	---	74.00	25.87	500.00	100.0	H	36.00	6
7340.63	---	37.42	54.00	16.58	500.00	100.0	H	1.00	5
9371.25	50.13	---	74.00	23.87	500.00	100.0	V	340.00	7
9905.63	---	39.26	54.00	14.74	500.00	100.0	H	234.00	7
11283.75	51.02	---	74.00	22.98	500.00	100.0	V	78.00	9
11326.88	---	40.52	54.00	13.48	500.00	100.0	H	16.00	9
13953.75	56.10	---	74.00	17.90	500.00	100.0	V	203.00	12
13957.50	---	44.96	54.00	9.04	500.00	100.0	V	217.00	12

Radiates Emission from 3GHz to 18GHz

802.11g CH11

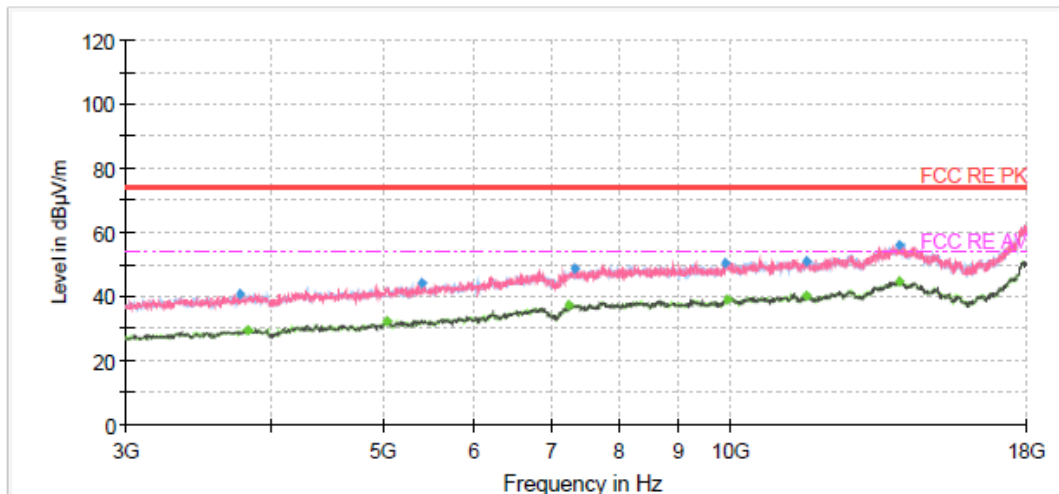


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1077.25	44.04	---	74.00	29.96	500.00	100.0	H	0.00	-5
1125.25	---	32.85	54.00	21.15	500.00	100.0	H	8.00	-4
1394.50	44.46	---	74.00	29.54	500.00	200.0	V	0.00	-3
1396.50	---	33.65	54.00	20.35	500.00	100.0	H	0.00	-3
1659.50	45.37	---	74.00	28.63	500.00	200.0	H	0.00	-2
1698.50	---	34.12	54.00	19.88	500.00	100.0	H	0.00	-2
2038.00	47.25	---	74.00	26.75	500.00	100.0	H	6.00	0
2070.50	---	35.79	54.00	18.21	500.00	200.0	H	3.00	1
2366.25	---	36.46	54.00	17.54	500.00	100.0	H	8.00	2
2366.50	46.88	---	74.00	27.12	500.00	200.0	V	358.00	2
2974.25	49.99	---	74.00	24.01	500.00	100.0	H	6.00	4
2993.25	---	39.37	54.00	14.63	500.00	100.0	H	4.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

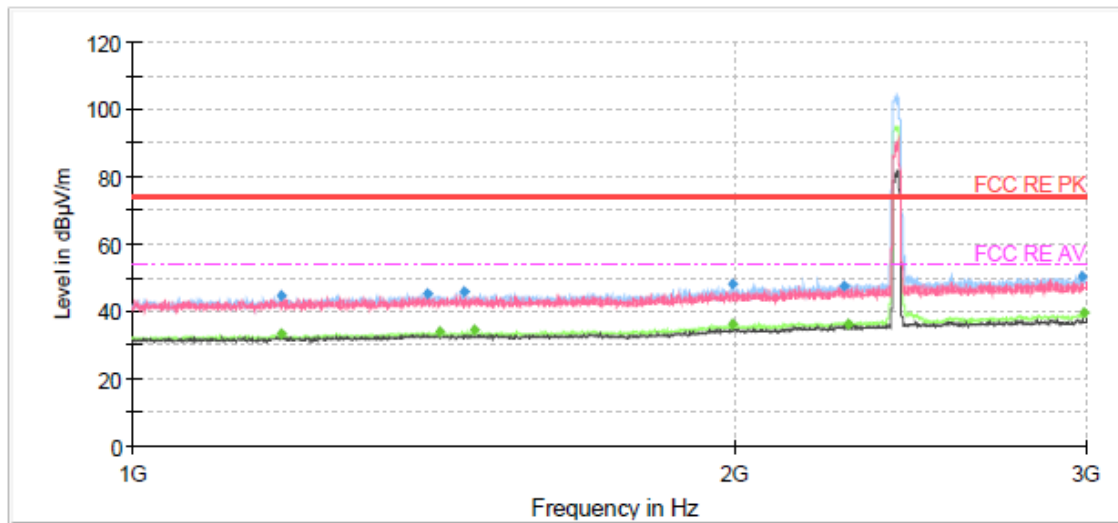


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3761.25	40.64	---	74.00	33.36	500.00	100.0	V	230.00	-5
3823.13	---	29.69	54.00	24.31	500.00	200.0	H	0.00	-5
5036.25	---	32.46	54.00	21.54	500.00	100.0	H	5.00	0
5411.25	44.08	---	74.00	29.92	500.00	100.0	V	0.00	0
7248.75	---	37.27	54.00	16.73	500.00	200.0	H	3.00	5
7327.50	48.44	---	74.00	25.56	500.00	200.0	V	354.00	5
9898.13	50.33	---	74.00	23.67	500.00	100.0	V	338.00	7
9900.00	---	39.25	54.00	14.75	500.00	100.0	H	280.00	7
11608.13	51.17	---	74.00	22.83	500.00	100.0	V	359.00	9
11630.63	---	40.34	54.00	13.66	500.00	200.0	V	184.00	9
13950.00	55.83	---	74.00	18.17	500.00	200.0	V	302.00	12
13983.75	---	44.49	54.00	9.51	500.00	100.0	H	45.00	12

Radiates Emission from 3GHz to 18GHz

802.11n (HT20) CH1

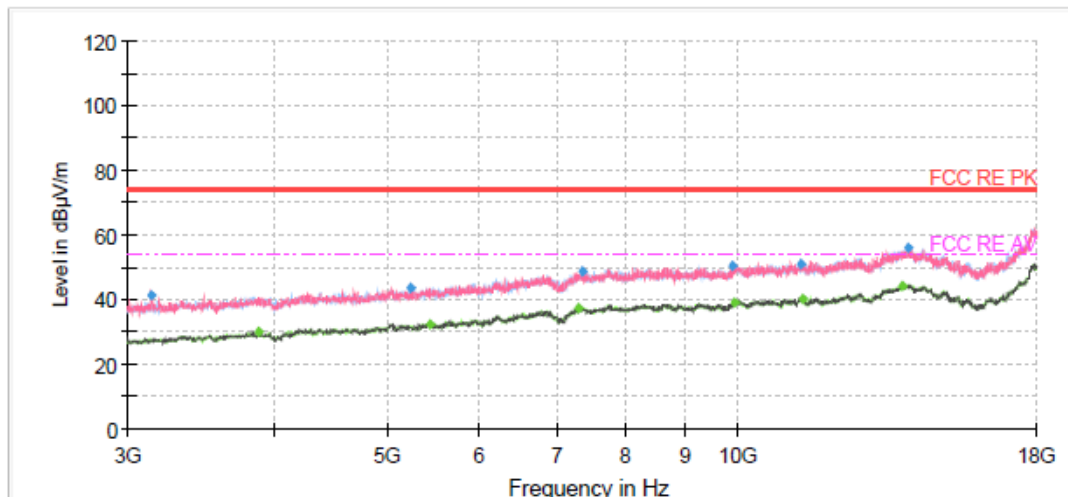


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1186.50	---	33.27	54.00	20.73	500.00	100.0	H	12.00	-4
1187.00	44.46	---	74.00	29.54	500.00	100.0	H	0.00	-4
1405.00	45.04	---	74.00	28.96	500.00	200.0	H	16.00	-3
1425.50	---	33.93	54.00	20.07	500.00	200.0	H	2.00	-3
1463.75	46.09	---	74.00	27.91	500.00	100.0	H	117.00	-3
1480.50	---	34.59	54.00	19.41	500.00	100.0	H	199.00	-2
1994.00	47.84	---	74.00	26.16	500.00	200.0	H	1.00	1
1997.75	---	36.27	54.00	17.73	500.00	100.0	H	255.00	1
2270.25	47.73	---	74.00	26.27	500.00	100.0	H	0.00	2
2282.25	---	36.30	54.00	17.70	500.00	100.0	H	2.00	2
2986.75	50.41	---	74.00	23.59	500.00	200.0	H	328.00	4
2994.50	---	39.43	54.00	14.57	500.00	100.0	H	227.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

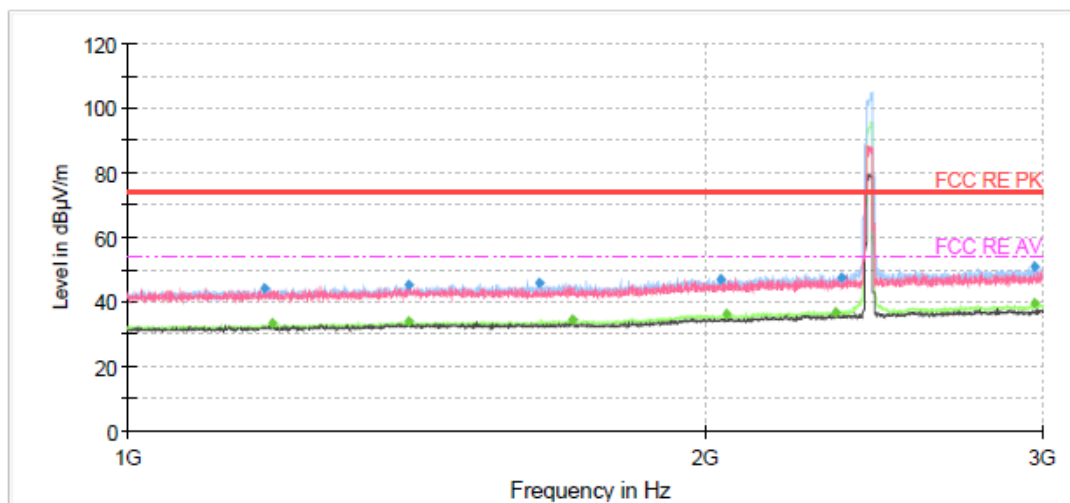


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3146.25	41.45	---	74.00	32.55	500.00	100.0	V	183.00	-6
3885.00	---	29.80	54.00	24.20	500.00	100.0	V	349.00	-4
5236.88	43.53	---	74.00	30.47	500.00	200.0	V	12.00	-1
5441.25	---	32.51	54.00	21.49	500.00	200.0	V	323.00	0
7295.63	---	37.33	54.00	16.67	500.00	100.0	V	288.00	6
7338.75	48.57	---	74.00	25.43	500.00	200.0	H	28.00	5
9885.00	50.28	---	74.00	23.72	500.00	100.0	V	0.00	7
9901.88	---	39.07	54.00	14.93	500.00	100.0	V	229.00	7
11317.50	51.14	---	74.00	22.86	500.00	200.0	H	282.00	9
11347.50	---	40.38	54.00	13.62	500.00	100.0	H	69.00	9
13790.63	---	44.37	54.00	9.63	500.00	100.0	H	1.00	12
13944.38	55.89	---	74.00	18.11	500.00	200.0	H	1.00	12

Radiates Emission from 3GHz to 18GHz

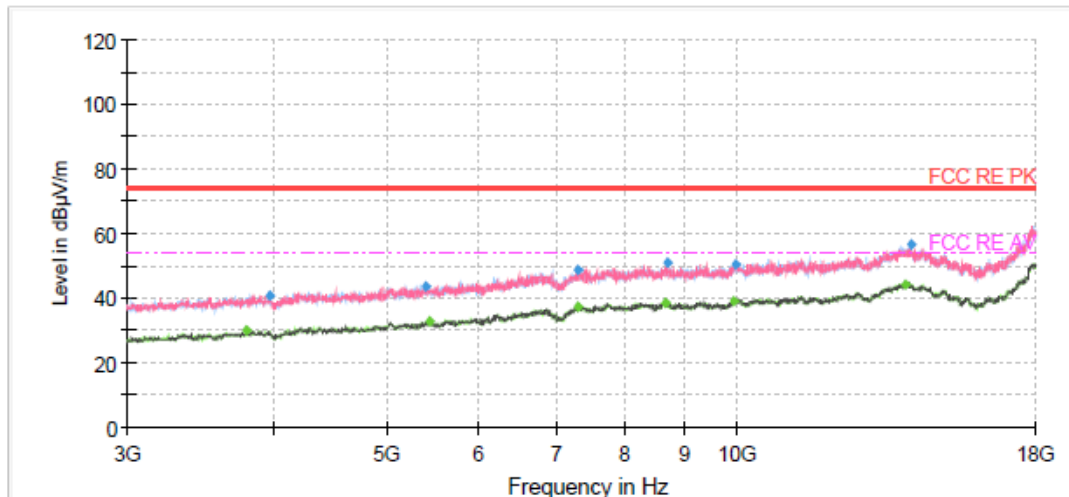
802.11n (HT20) CH6



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)
1178.75	44.40	---	74.00	29.60	500.00	200.0	H	8.00	-4
1189.00	---	33.21	54.00	20.79	500.00	100.0	H	20.00	-4
1401.00	45.26	---	74.00	28.74	500.00	100.0	H	41.00	-3
1401.50	---	33.77	54.00	20.23	500.00	100.0	H	25.00	-3
1640.50	45.68	---	74.00	28.32	500.00	100.0	H	15.00	-2
1706.50	---	34.36	54.00	19.64	500.00	200.0	H	196.00	-2
2037.25	47.18	---	74.00	26.82	500.00	200.0	H	0.00	0
2051.75	---	36.08	54.00	17.92	500.00	100.0	H	0.00	1
2338.25	---	36.92	54.00	17.08	500.00	100.0	H	61.00	2
2354.50	47.32	---	74.00	26.68	500.00	200.0	H	0.00	2
2970.50	---	39.34	54.00	14.66	500.00	100.0	H	6.00	4
2971.75	51.13	---	74.00	22.87	500.00	100.0	H	6.00	4

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

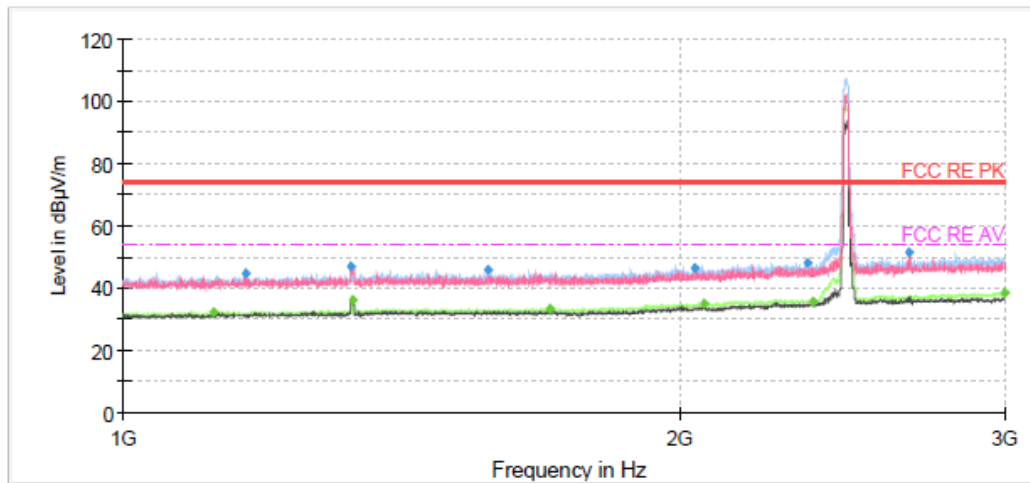


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3793.13	---	29.90	54.00	24.10	500.00	100.0	V	186.00	-5
3971.25	40.79	---	74.00	33.21	500.00	200.0	V	355.00	-4
5409.38	43.47	---	74.00	30.53	500.00	100.0	H	5.00	0
5441.25	---	32.65	54.00	21.35	500.00	100.0	H	22.00	0
7295.63	48.85	---	74.00	25.15	500.00	100.0	V	355.00	6
7299.38	---	37.57	54.00	16.43	500.00	200.0	V	1.00	6
8656.88	---	38.38	54.00	15.62	500.00	100.0	V	290.00	7
8696.25	50.81	---	74.00	23.19	500.00	200.0	H	174.00	7
9905.63	---	39.11	54.00	14.89	500.00	100.0	H	84.00	7
9956.25	50.46	---	74.00	23.54	500.00	100.0	V	262.00	7
13910.63	---	44.40	54.00	9.60	500.00	200.0	V	339.00	12
14066.25	56.72	---	74.00	17.28	500.00	100.0	H	8.00	12

Radiates Emission from 3GHz to 18GHz

802.11n (HT20) CH11

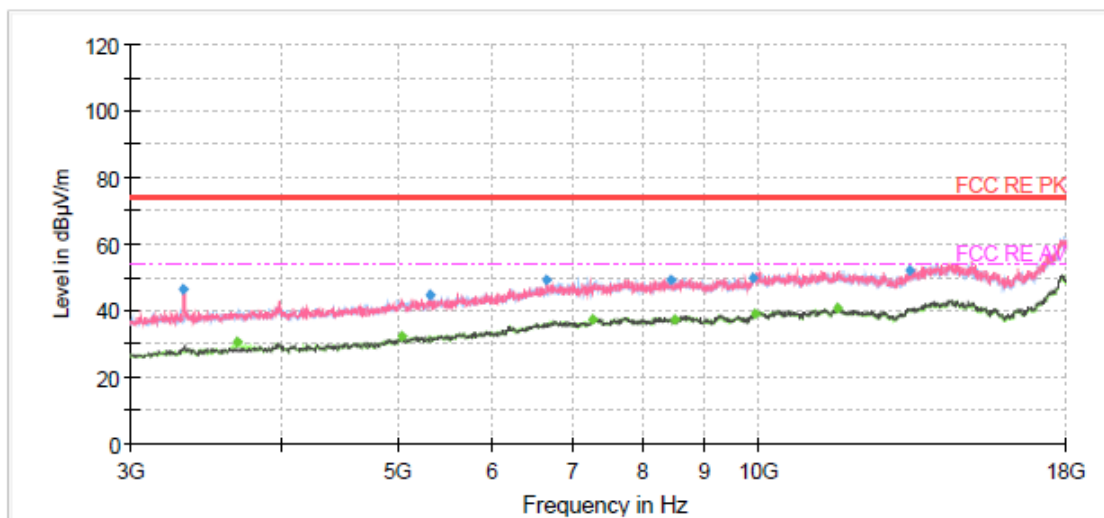


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1118.00	---	32.44	54.00	21.56	500.00	200.0	H	330.00	-5
1163.25	44.81	---	74.00	29.19	500.00	200.0	H	202.00	-5
1328.00	47.13	---	74.00	26.87	500.00	200.0	V	147.00	-3
1330.25	---	35.95	54.00	18.05	500.00	200.0	V	147.00	-3
1574.00	45.98	---	74.00	28.02	500.00	200.0	H	321.00	-2
1703.00	---	33.55	54.00	20.45	500.00	100.0	H	0.00	-2
2036.50	46.54	---	74.00	27.46	500.00	100.0	H	193.00	0
2061.00	---	35.21	54.00	18.79	500.00	100.0	H	108.00	0
2348.00	48.09	---	74.00	25.91	500.00	200.0	H	350.00	1
2361.25	---	35.60	54.00	18.40	500.00	200.0	H	353.00	1
2665.00	51.45	---	74.00	22.55	500.00	200.0	V	19.00	2
2996.75	---	38.60	54.00	15.40	500.00	100.0	H	30.00	3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

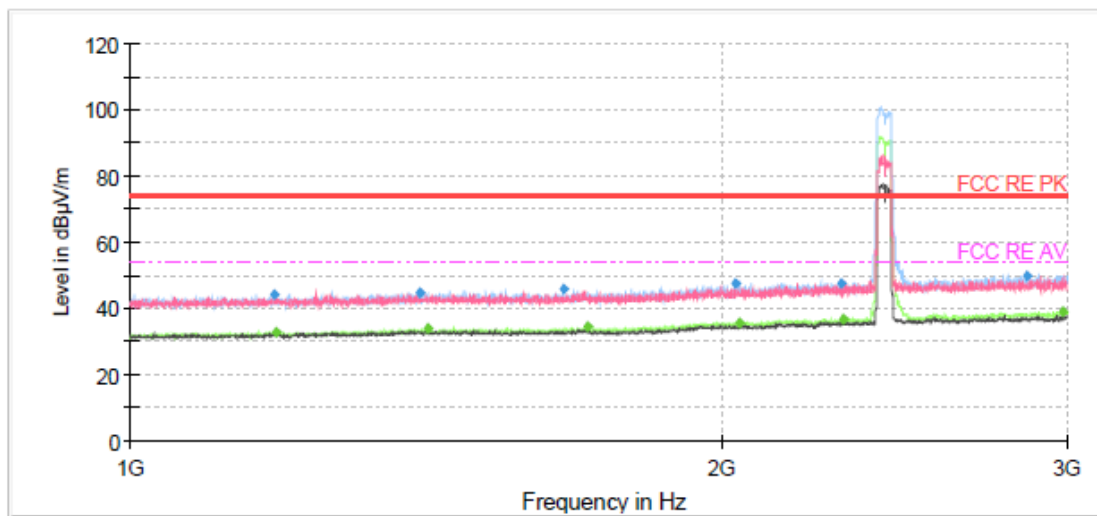


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3316.88	46.18	---	74.00	27.82	500.00	100.0	V	156.00	-6
3680.63	---	30.42	54.00	23.58	500.00	200.0	H	201.00	-5
5041.88	---	32.48	54.00	21.52	500.00	100.0	H	70.00	1
5325.00	44.83	---	74.00	29.17	500.00	200.0	V	130.00	0
6643.13	49.22	---	74.00	24.78	500.00	100.0	V	353.00	4
7275.00	---	37.53	54.00	16.47	500.00	100.0	H	2.00	6
8445.00	49.48	---	74.00	24.52	500.00	100.0	H	0.00	6
8506.88	---	37.47	54.00	16.53	500.00	200.0	H	344.00	6
9885.00	50.02	---	74.00	23.98	500.00	100.0	V	217.00	7
9901.88	---	39.22	54.00	14.78	500.00	200.0	V	130.00	8
11626.88	---	40.92	54.00	13.08	500.00	200.0	V	297.00	9
13338.75	52.19	---	74.00	21.81	500.00	100.0	H	99.00	9

Radiates Emission from 3GHz to 18GHz

802.11n (HT40) CH3

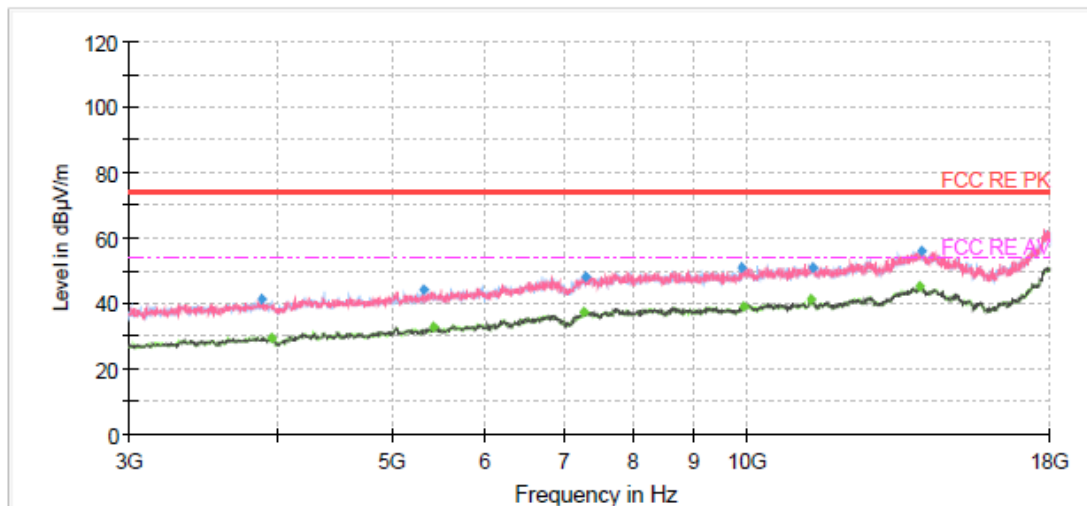


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1184.75	44.01	---	74.00	29.99	500.00	100.0	V	277.00	-4
1185.50	---	33.03	54.00	20.97	500.00	200.0	H	12.00	-4
1406.00	44.99	---	74.00	29.01	500.00	100.0	H	12.00	-3
1416.25	---	33.82	54.00	20.18	500.00	100.0	H	2.00	-3
1662.25	45.69	---	74.00	28.31	500.00	200.0	H	22.00	-2
1708.50	---	34.52	54.00	19.48	500.00	200.0	H	0.00	-2
2035.00	47.41	---	74.00	26.59	500.00	100.0	H	2.00	0
2042.00	---	35.87	54.00	18.13	500.00	100.0	H	22.00	0
2304.25	47.82	---	74.00	26.18	500.00	200.0	H	0.00	2
2306.50	---	36.53	54.00	17.47	500.00	100.0	H	0.00	2
2862.00	49.95	---	74.00	24.05	500.00	200.0	H	2.00	3
2988.00	---	39.21	54.00	14.79	500.00	100.0	H	0.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

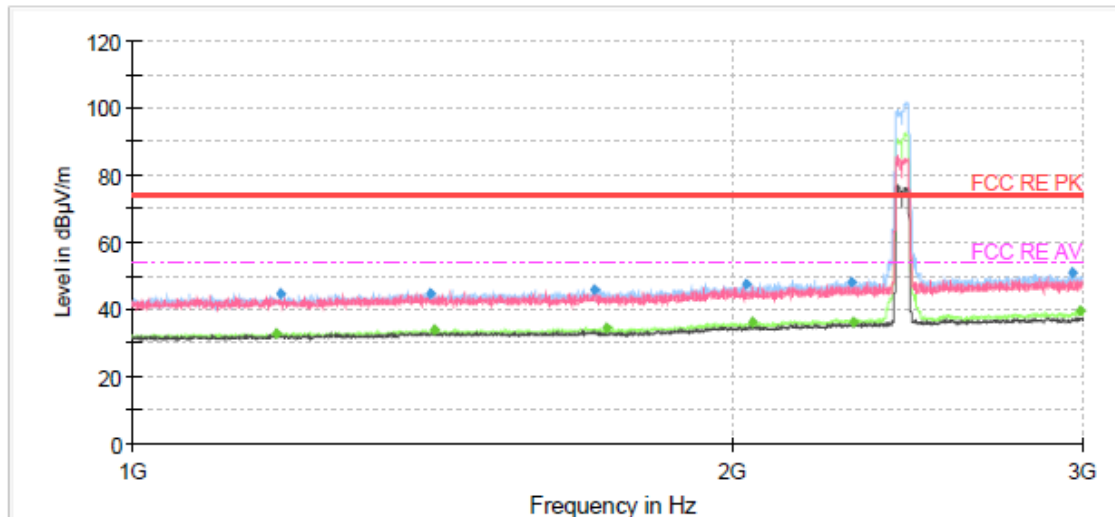


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3879.38	41.16	---	74.00	32.84	500.00	100.0	H	6.00	-4
3963.75	---	29.71	54.00	24.29	500.00	100.0	V	326.00	-4
5317.50	44.20	---	74.00	29.80	500.00	200.0	V	64.00	0
5424.38	---	32.57	54.00	21.43	500.00	100.0	V	295.00	0
7263.75	---	37.57	54.00	16.43	500.00	100.0	V	353.00	5
7299.38	48.37	---	74.00	25.63	500.00	200.0	V	222.00	6
9898.13	50.84	---	74.00	23.16	500.00	100.0	H	80.00	7
9900.00	---	39.16	54.00	14.84	500.00	100.0	H	141.00	7
11308.13	---	41.06	54.00	12.94	500.00	100.0	H	2.00	9
11345.63	51.02	---	74.00	22.98	500.00	200.0	H	8.00	9
13980.00	---	45.02	54.00	8.98	500.00	200.0	V	186.00	12
14028.75	56.06	---	74.00	17.94	500.00	100.0	H	263.00	12

Radiates Emission from 3GHz to 18GHz

802.11n (HT40) CH6

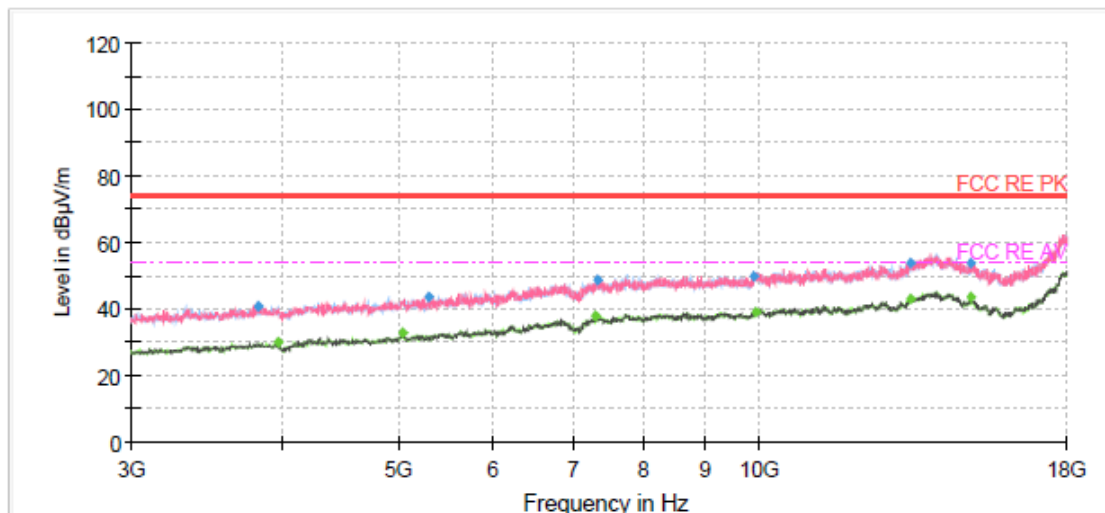


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.75	---	33.02	54.00	20.98	500.00	200.0	H	201.00	-4
1187.75	44.60	---	74.00	29.40	500.00	100.0	H	189.00	-4
1410.75	44.97	---	74.00	29.03	500.00	100.0	H	119.00	-3
1419.00	---	34.04	54.00	19.96	500.00	100.0	H	119.00	-3
1707.00	45.97	---	74.00	28.03	500.00	200.0	H	284.00	-2
1728.75	---	34.44	54.00	19.56	500.00	100.0	H	54.00	-2
2032.75	47.80	---	74.00	26.20	500.00	100.0	H	242.00	0
2046.00	---	36.29	54.00	17.71	500.00	200.0	H	0.00	1
2298.50	48.30	---	74.00	25.70	500.00	200.0	H	6.00	2
2303.75	---	36.47	54.00	17.53	500.00	100.0	H	216.00	2
2965.50	50.83	---	74.00	23.17	500.00	100.0	H	229.00	3
2994.00	---	39.66	54.00	14.34	500.00	200.0	H	134.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

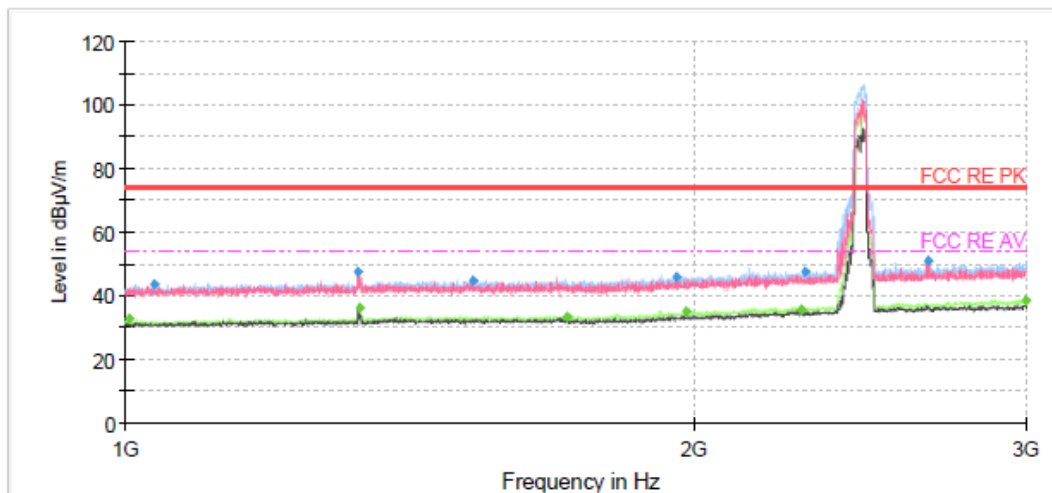


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3825.00	40.61	---	74.00	33.39	500.00	100.0	H	172.00	-5
3967.50	---	29.72	54.00	24.28	500.00	100.0	V	156.00	-4
5036.25	---	32.69	54.00	21.31	500.00	100.0	H	55.00	0
5295.00	43.47	---	74.00	30.53	500.00	200.0	V	142.00	0
7305.00	---	37.65	54.00	16.35	500.00	100.0	V	0.00	6
7321.88	48.60	---	74.00	25.40	500.00	200.0	V	355.00	5
9866.25	49.71	---	74.00	24.29	500.00	200.0	V	48.00	7
9905.63	---	39.33	54.00	14.67	500.00	100.0	V	292.00	7
13335.00	---	43.04	54.00	10.96	500.00	100.0	H	157.00	11
13336.88	53.82	---	74.00	20.18	500.00	200.0	V	0.00	11
14945.63	---	43.55	54.00	10.45	500.00	100.0	V	345.00	10
14977.50	53.70	---	74.00	20.30	500.00	100.0	H	0.00	10

Radiates Emission from 3GHz to 18GHz

802.11n (HT40) CH9

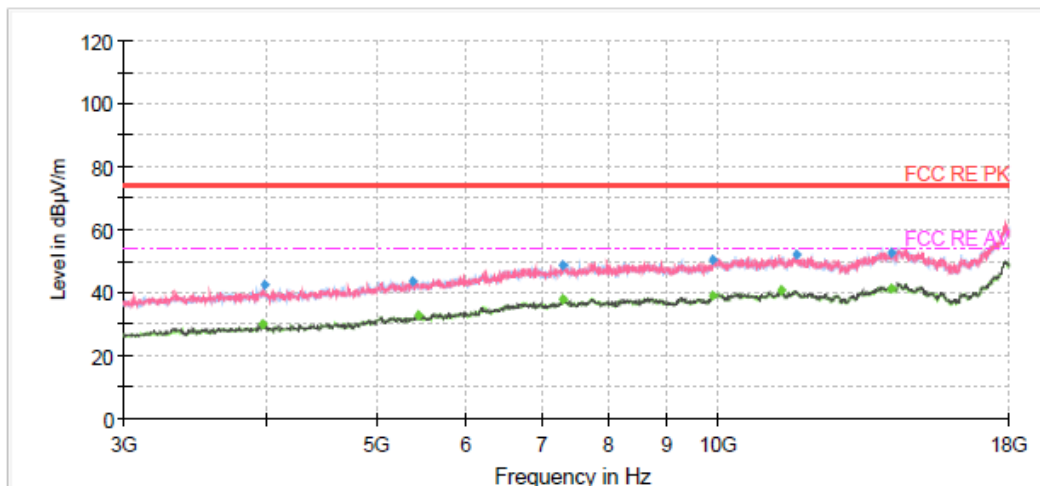


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1005.75	---	33.09	54.00	20.91	500.00	100.0	H	129.00	-5
1034.75	43.77	---	74.00	30.23	500.00	100.0	H	1.00	-5
1328.25	47.48	---	74.00	26.52	500.00	100.0	V	155.00	-3
1331.00	---	36.44	54.00	17.56	500.00	100.0	V	155.00	-3
1528.25	44.97	---	74.00	29.03	500.00	100.0	H	2.00	-3
1713.25	---	33.60	54.00	20.40	500.00	200.0	H	316.00	-2
1961.00	46.05	---	74.00	27.95	500.00	200.0	V	9.00	0
1981.50	---	35.17	54.00	18.83	500.00	100.0	H	0.00	0
2279.75	---	35.69	54.00	18.31	500.00	200.0	H	325.00	1
2289.50	47.58	---	74.00	26.42	500.00	100.0	H	41.00	1
2665.00	50.89	---	74.00	23.11	500.00	100.0	V	196.00	2
2999.00	---	38.54	54.00	15.46	500.00	100.0	H	5.00	3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

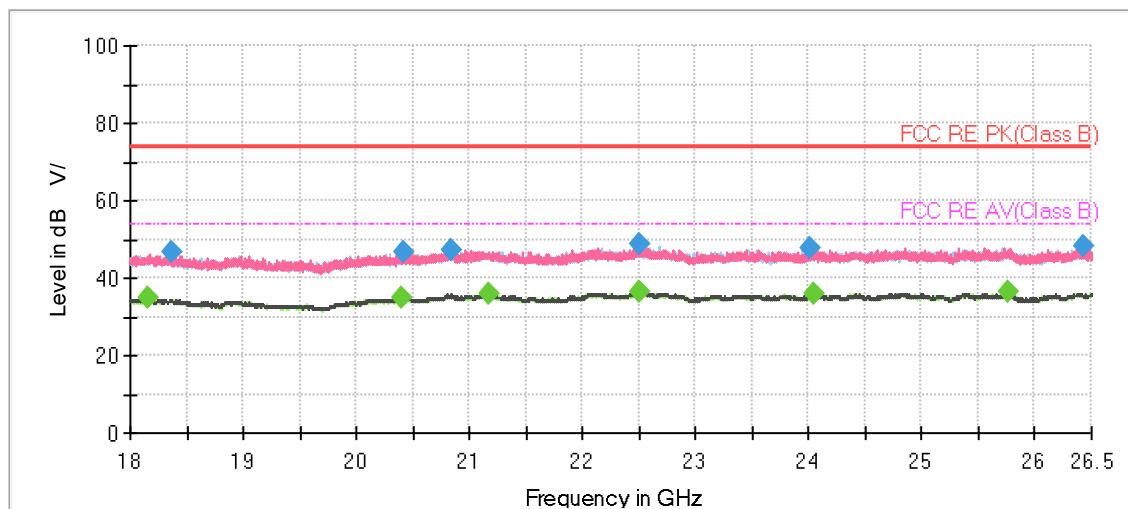


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3965.63	---	30.16	54.00	23.84	500.00	100.0	V	0.00	-3
3980.63	42.55	---	74.00	31.45	500.00	100.0	V	296.00	-3
5386.88	43.55	---	74.00	30.45	500.00	100.0	V	66.00	0
5441.25	---	32.68	54.00	21.32	500.00	100.0	H	324.00	0
7280.63	48.58	---	74.00	25.42	500.00	100.0	H	358.00	6
7282.50	---	37.66	54.00	16.34	500.00	100.0	V	35.00	6
9885.00	50.63	---	74.00	23.37	500.00	100.0	V	296.00	7
9888.75	---	39.00	54.00	15.00	500.00	200.0	V	248.00	7
11347.50	---	40.68	54.00	13.32	500.00	200.0	V	3.00	9
11685.00	52.09	---	74.00	21.91	500.00	200.0	H	12.00	9
14173.13	---	41.08	54.00	12.92	500.00	200.0	H	353.00	11
14180.63	52.75	---	74.00	21.25	500.00	100.0	V	346.00	11

Radiates Emission from 3GHz to 18GHz

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

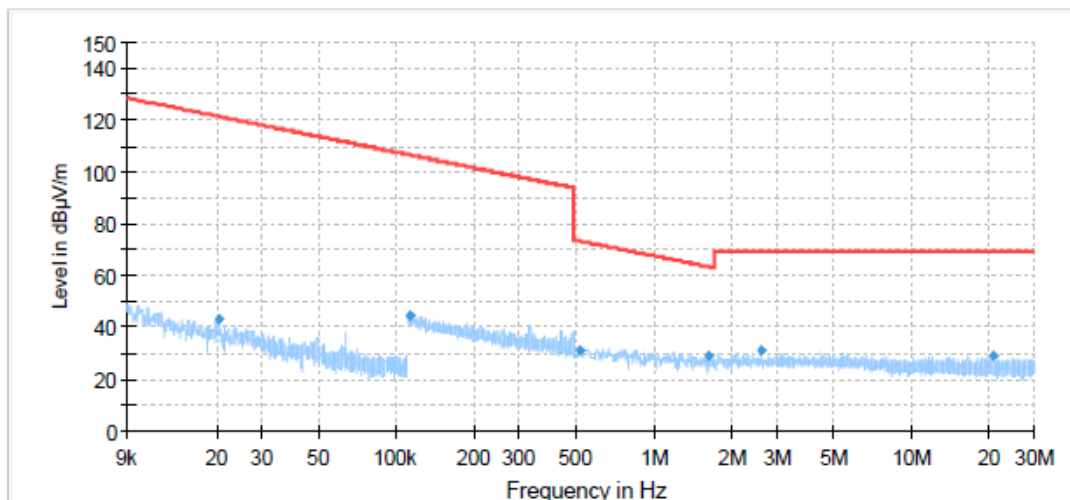


Radiates Emission from 18GHz to 26.5GHz

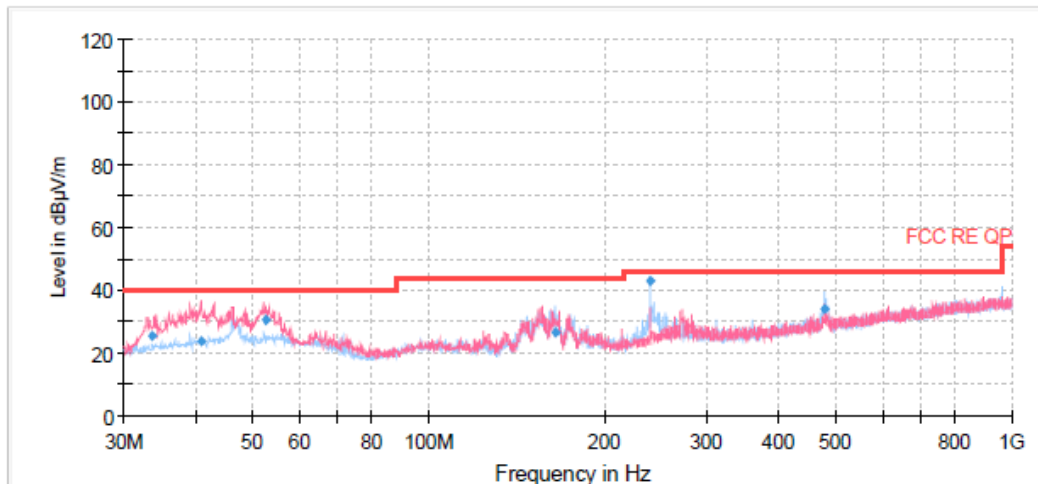
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18154.062500	---	34.67	54.00	19.33	500.0	100.0	H	179.0	-5.8
18369.750000	46.44	---	74.00	27.56	500.0	100.0	H	348.0	-5.9
20394.875000	---	34.96	54.00	19.04	500.0	100.0	H	268.0	-5.2
20410.812500	46.55	---	74.00	27.45	500.0	100.0	V	126.0	-5.1
20833.687500	47.42	---	74.00	26.58	500.0	100.0	H	268.0	-4.7
21164.125000	---	36.02	54.00	17.98	500.0	100.0	V	18.0	-4.2
22497.562500	48.54	---	74.00	25.46	500.0	200.0	H	81.0	-3.4
22499.687500	---	36.54	54.00	17.46	500.0	100.0	V	54.0	-3.4
24012.687500	47.65	---	74.00	26.35	500.0	100.0	V	159.0	-3.3
24041.375000	---	35.98	54.00	18.02	500.0	100.0	V	89.0	-3.2
25765.812500	---	36.62	54.00	17.38	500.0	100.0	V	183.0	-2.4
26423.500000	48.13	---	74.00	25.87	500.0	200.0	H	190.0	-2.1

Bluetooth LE

During the test, the Radiates Emission from 9kHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 9kHz to 30MHz

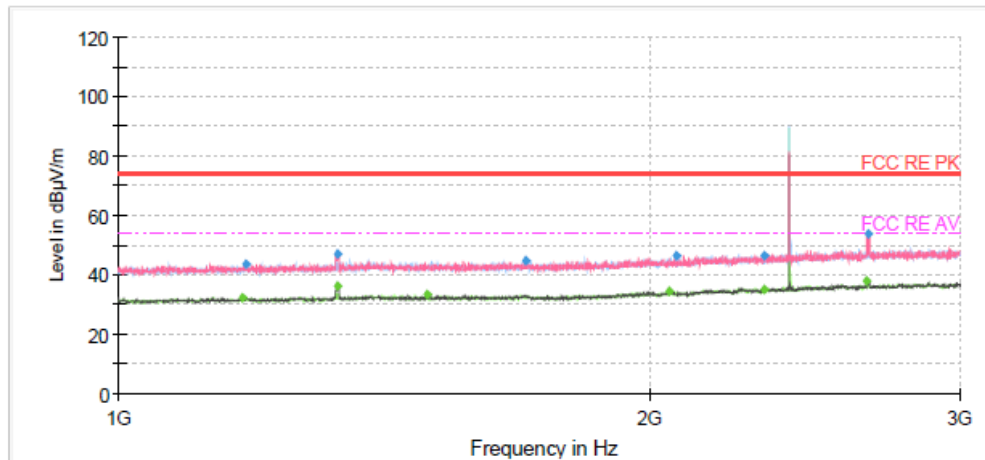


Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
33.52	25.51	40.00	14.49	1000.00	100.0	V	0.00	18
40.87	23.71	40.00	16.29	1000.00	100.0	V	224.00	19
52.67	30.34	40.00	9.66	1000.00	100.0	V	146.00	20
164.75	26.72	43.50	16.78	1000.00	175.0	H	3.00	16
240.01	43.23	46.00	2.77	1000.00	176.0	H	0.00	20
476.19	33.79	46.00	12.21	1000.00	100.0	H	32.00	25

Radiates Emission from 30MHz to 1GHz

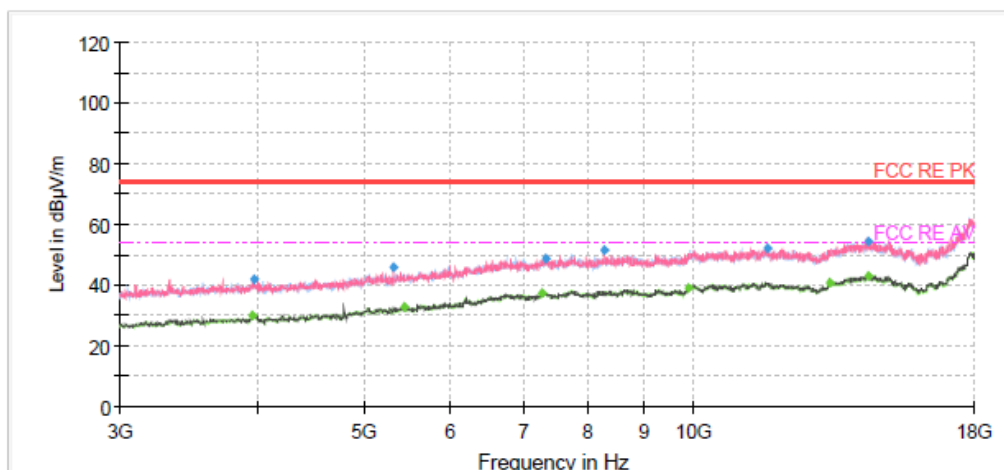
Bluetooth LE-Channel 0



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)
1174.75	---	32.45	54.00	21.55	500.00	100.0	V	195.00	-4
1181.75	43.44	---	74.00	30.56	500.00	100.0	H	140.00	-4
1330.25	47.12	---	74.00	26.88	500.00	200.0	V	129.00	-3
1331.50	---	36.04	54.00	17.96	500.00	200.0	V	129.00	-3
1495.75	---	33.58	54.00	20.42	500.00	100.0	H	36.00	-3
1702.75	44.50	---	74.00	29.50	500.00	200.0	H	322.00	-2
2053.50	---	34.32	54.00	19.68	500.00	200.0	V	0.00	0
2071.75	46.18	---	74.00	27.82	500.00	100.0	V	178.00	0
2322.75	46.19	---	74.00	27.81	500.00	200.0	H	230.00	1
2322.75	---	34.86	54.00	19.14	500.00	200.0	H	230.00	1
2657.50	---	38.15	54.00	15.85	500.00	100.0	V	170.00	2
2659.50	53.85	---	74.00	20.15	500.00	100.0	V	126.00	2

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

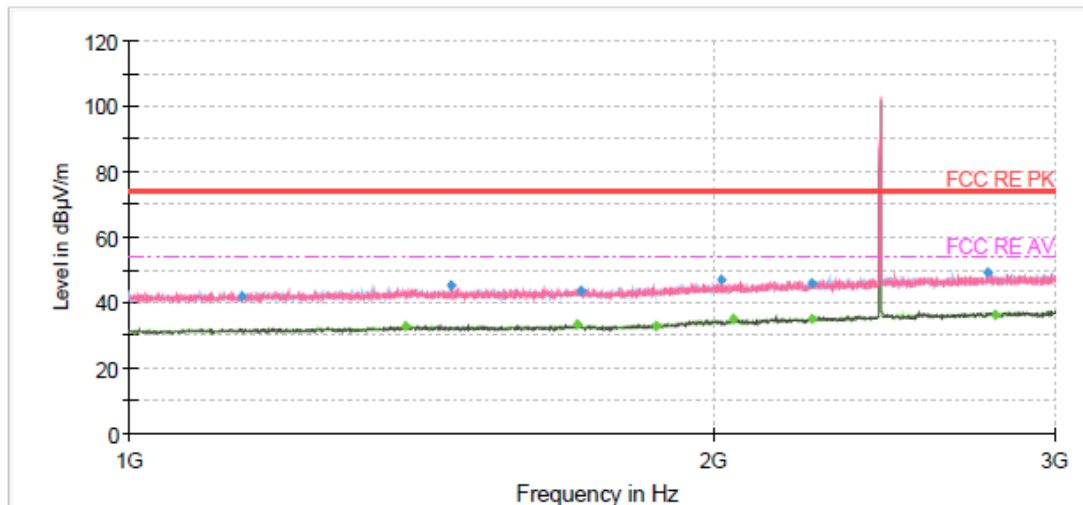


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3963.75	---	30.27	54.00	23.73	500.00	200.0	H	355.00	-4
3969.38	42.11	---	74.00	31.89	500.00	200.0	V	168.00	-3
5325.00	45.76	---	74.00	28.24	500.00	100.0	V	156.00	0
5441.25	---	32.88	54.00	21.13	500.00	200.0	H	180.00	0
7273.13	---	37.41	54.00	16.59	500.00	100.0	V	355.00	6
7318.13	48.71	---	74.00	25.29	500.00	200.0	V	74.00	6
8281.88	51.29	---	74.00	22.71	500.00	100.0	V	72.00	6
9898.13	---	39.07	54.00	14.93	500.00	200.0	H	87.00	7
11670.00	51.96	---	74.00	22.04	500.00	200.0	H	340.00	9
13276.88	---	40.73	54.00	13.27	500.00	200.0	V	11.00	9
14398.13	54.45	---	74.00	19.55	500.00	100.0	V	332.00	11
14409.38	---	43.30	54.00	10.70	500.00	200.0	H	308.00	11

Radiates Emission from 3GHz to 18GHz

Bluetooth LE-Channel 19

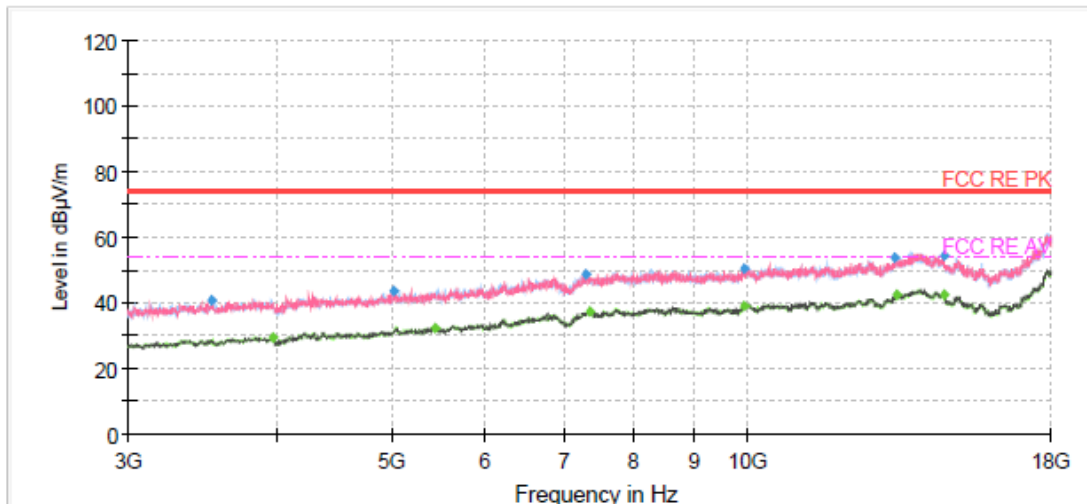


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1142.25	41.66	---	74.00	32.34	500.00	100.0	V	4.00	-4
1388.00	---	32.95	54.00	21.05	500.00	100.0	V	46.00	-3
1463.50	45.17	---	74.00	28.83	500.00	100.0	H	359.00	-3
1702.75	---	33.33	54.00	20.67	500.00	200.0	V	353.00	-2
1709.25	43.52	---	74.00	30.48	500.00	200.0	H	33.00	-2
1870.25	---	32.73	54.00	21.27	500.00	200.0	H	20.00	-1
2019.00	46.99	---	74.00	27.01	500.00	200.0	V	358.00	0
2048.75	---	34.89	54.00	19.11	500.00	100.0	H	209.00	1
2247.50	45.88	---	74.00	28.12	500.00	200.0	V	350.00	1
2250.75	---	35.27	54.00	18.73	500.00	200.0	H	3.00	2
2768.00	49.04	---	74.00	24.96	500.00	200.0	V	158.00	3
2798.25	---	36.44	54.00	17.56	500.00	200.0	H	1.00	3

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

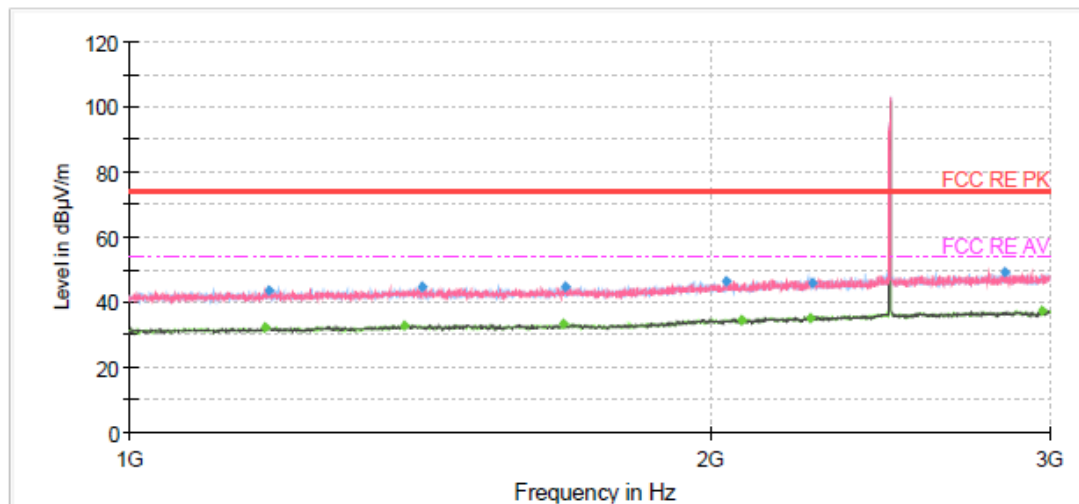


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3526.88	40.64	---	74.00	33.36	500.00	100.0	H	13.00	-5
3965.63	---	29.60	54.00	24.40	500.00	200.0	H	1.00	-4
5019.38	43.57	---	74.00	30.43	500.00	200.0	H	3.00	0
5445.00	---	32.42	54.00	21.58	500.00	100.0	H	157.00	0
7305.00	48.45	---	74.00	25.55	500.00	100.0	H	0.00	6
7342.50	---	37.44	54.00	16.56	500.00	200.0	H	3.00	5
9900.00	---	39.13	54.00	14.87	500.00	200.0	H	32.00	7
9903.75	50.48	---	74.00	23.52	500.00	200.0	H	24.00	7
13293.75	53.57	---	74.00	20.43	500.00	200.0	H	52.00	11
13351.88	---	42.44	54.00	11.56	500.00	100.0	V	91.00	11
14619.38	---	42.31	54.00	11.69	500.00	200.0	V	238.00	10
14619.38	54.32	---	74.00	19.68	500.00	100.0	V	6.00	10

Radiates Emission from 3GHz to 18GHz

Bluetooth LE-Channel 39

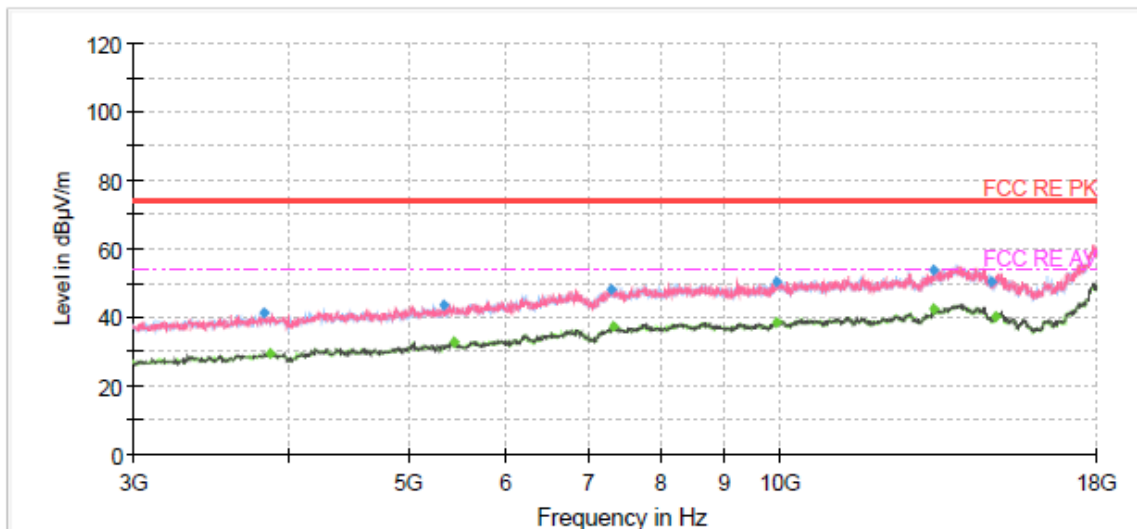


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1176.25	---	32.46	54.00	21.54	500.00	100.0	H	119.00	-4
1180.50	43.83	---	74.00	30.17	500.00	200.0	H	210.00	-4
1389.00	---	32.96	54.00	21.04	500.00	100.0	V	359.00	-3
1419.25	44.59	---	74.00	29.41	500.00	200.0	H	349.00	-3
1677.25	---	33.30	54.00	20.70	500.00	100.0	H	4.00	-2
1684.00	44.57	---	74.00	29.43	500.00	100.0	V	226.00	-2
2037.50	46.69	---	74.00	27.31	500.00	200.0	H	19.00	0
2075.75	---	34.75	54.00	19.25	500.00	200.0	H	238.00	0
2256.50	---	35.34	54.00	18.66	500.00	200.0	H	85.00	2
2261.50	46.07	---	74.00	27.93	500.00	100.0	H	11.00	2
2839.50	49.08	---	74.00	24.92	500.00	200.0	H	0.00	3
2973.50	---	37.53	54.00	16.47	500.00	100.0	V	304.00	4

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

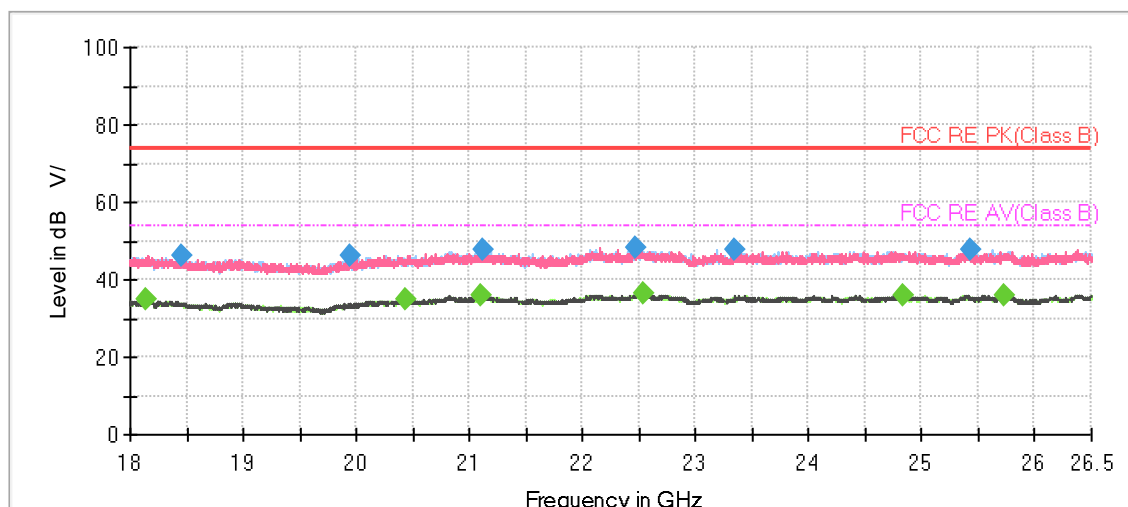


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3817.50	41.15	---	74.00	32.85	500.00	100.0	H	342.00	-5
3873.75	---	29.43	54.00	24.57	500.00	200.0	H	25.00	-4
5330.63	43.38	---	74.00	30.62	500.00	200.0	H	13.00	0
5441.25	---	32.61	54.00	21.39	500.00	100.0	V	223.00	0
7284.38	48.28	---	74.00	25.72	500.00	100.0	H	252.00	6
7312.50	---	37.14	54.00	16.86	500.00	200.0	V	224.00	5
9903.75	50.63	---	74.00	23.37	500.00	100.0	H	342.00	7
9903.75	---	38.66	54.00	15.34	500.00	200.0	H	157.00	7
13271.25	53.66	---	74.00	20.34	500.00	100.0	V	2.00	11
13273.13	---	42.34	54.00	11.66	500.00	200.0	V	330.00	11
14812.50	50.35	---	74.00	23.65	500.00	200.0	V	358.00	10
14923.13	---	40.44	54.00	13.56	500.00	200.0	H	9.00	10

Radiates Emission from 3GHz to 18GHz

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



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18144.500000	---	34.74	54.00	19.26	500.0	100.0	V	18.0	-5.8
18460.062500	46.07	---	74.00	27.93	500.0	100.0	H	213.0	-6.4
19952.875000	46.38	---	74.00	27.62	500.0	100.0	H	161.0	-6.6
20437.375000	---	34.74	54.00	19.26	500.0	100.0	H	139.0	-5.0
21103.562500	---	35.85	54.00	18.15	500.0	100.0	H	185.0	-4.1
21114.187500	47.56	---	74.00	26.44	500.0	100.0	V	147.0	-4.1
22477.375000	48.42	---	74.00	25.58	500.0	200.0	H	8.0	-3.5
22530.500000	---	36.38	54.00	17.62	500.0	200.0	H	286.0	-3.4
23342.250000	47.75	---	74.00	26.25	500.0	100.0	H	272.0	-3.5
24831.875000	---	36.09	54.00	17.91	500.0	100.0	V	32.0	-2.8
25424.750000	47.60	---	74.00	26.40	500.0	100.0	V	0.0	-2.6
25732.875000	---	36.09	54.00	17.91	500.0	100.0	V	284.0	-2.4

5.7. Conducted Emission

Ambient Condition

Temperature	Relative humidity
15°C ~ 35°C	20% ~ 80%

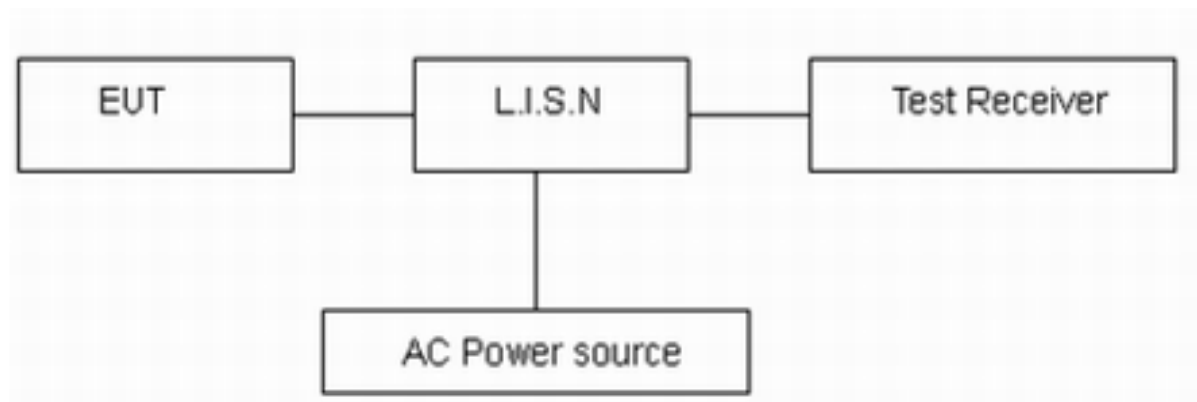
Methods of Measurement

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

The measurement result should include both L line and N line.

The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

Limits

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

Measurement Uncertainty

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

Test Results:

Wi-Fi 2.4GHz

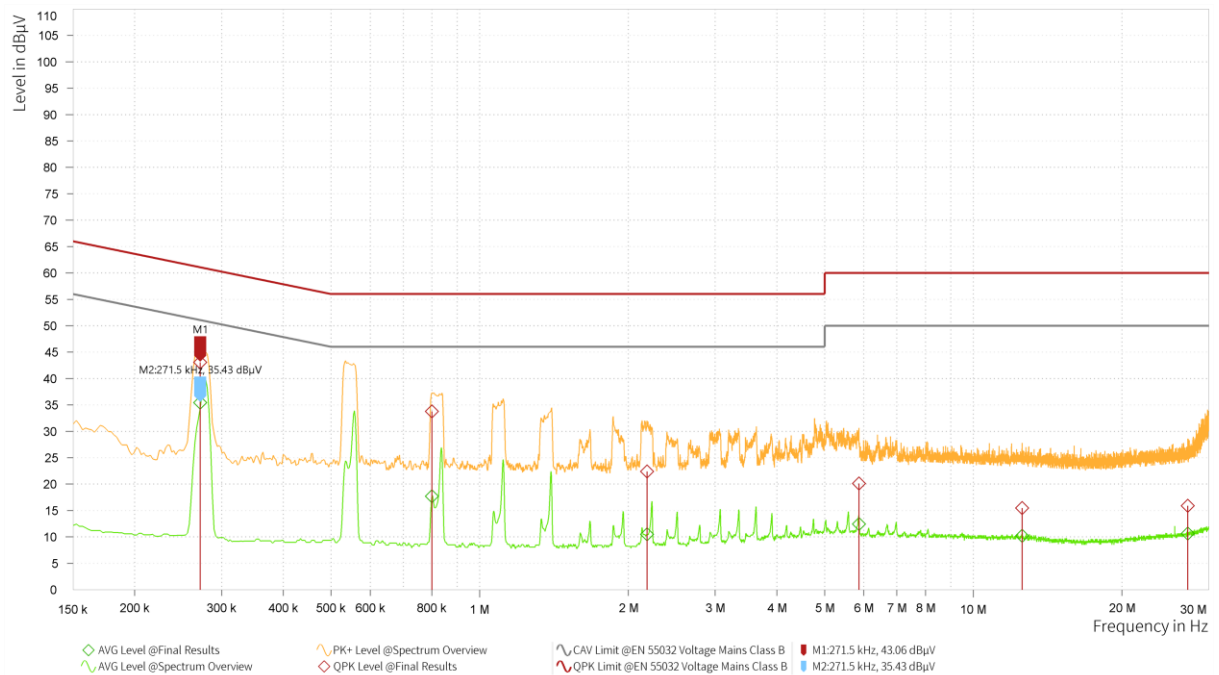
During the test, the Conducted Emission was performed in all modes with all channel. The test data of the worst-case condition was recorded in this report.



Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.281	43.85	60.80	16.95	39.77	50.80	11.04	20.95	L1	9.000	1.000
0.553	40.15	56.00	15.85	26.58	46.00	19.42	20.72	L1	9.000	1.000
1.379	27.53	56.00	28.47	12.70	46.00	33.30	19.91	L1	9.000	1.000
4.508	16.54	56.00	39.46	10.62	46.00	35.38	19.41	L1	9.000	1.000
9.474	15.62	60.00	44.38	10.25	50.00	39.75	19.41	L1	9.000	1.000
19.030	14.41	60.00	45.59	9.24	50.00	40.76	19.63	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: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.272	43.06	61.07	18.02	35.43	51.07	15.64	20.97	N	9.000	1.000
0.800	33.75	56.00	22.25	17.71	46.00	28.29	20.34	N	9.000	1.000
2.182	22.39	56.00	33.61	10.47	46.00	35.53	19.61	N	9.000	1.000
5.865	20.10	60.00	39.90	12.41	50.00	37.59	19.41	N	9.000	1.000
12.559	15.45	60.00	44.55	10.18	50.00	39.82	19.46	N	9.000	1.000
27.211	15.91	60.00	44.09	10.61	50.00	39.39	19.88	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

Bluetooth LE

During the test, the Conducted Emission was performed in all modes with all channels. 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: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.272	43.60	61.07	17.48	39.52	51.07	11.56	20.96	L1	9.000	1.000
0.780	33.78	56.00	22.22	17.43	46.00	28.57	20.35	L1	9.000	1.000
2.105	23.14	56.00	32.86	10.52	46.00	35.48	19.62	L1	9.000	1.000
7.064	15.95	60.00	44.05	10.52	50.00	39.48	19.41	L1	9.000	1.000
14.723	14.79	60.00	45.21	9.39	50.00	40.61	19.50	L1	9.000	1.000
29.501	18.47	60.00	41.53	11.52	50.00	38.48	19.80	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: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.267	42.96	61.21	18.25	37.83	51.21	13.38	20.97	N	9.000	1.000
0.798	32.45	56.00	23.55	16.09	46.00	29.91	20.34	N	9.000	1.000
2.067	22.49	56.00	33.51	10.06	46.00	35.94	19.64	N	9.000	1.000
4.949	20.88	56.00	35.12	11.46	46.00	34.54	19.41	N	9.000	1.000
14.944	14.68	60.00	45.32	9.52	50.00	40.48	19.53	N	9.000	1.000
29.180	18.39	60.00	41.61	11.40	50.00	38.60	19.88	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

6. Main Test Instruments

Date of Testing: April 18, 2025 ~ April 25, 2025

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
EMI Test Receiver	R&S	ESCI3	100948	2024-05-07	2025-05-06
Signal Analyzer	R&S	FSV40	101186	2024-05-07	2025-05-06
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2023-07-14	2026-07-13
Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2024-07-18	2027-07-17
Amplifier	MWPA.CN	MWLA-010 200G40	YQ2103039B01	2024-05-07	2025-05-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2024-09-24	2027-09-23
Amplifier	MicroWave	KLNA-1804 0050	220826001	2024-05-08	2025-05-07
Software	R&S	EMC32	9.26.01	/	/

Date of Testing: May 14, 2025 ~ July 4, 2025

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Power sensor	R&S	NRP18S	101954	2025-05-06	2026-05-05
Spectrum Analyzer	KEYSIGHT	N9020A	MY51330870	2025-05-06	2026-05-05

Date of Testing: August 1, 2025 ~ August 18, 2025

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
EMI Test Receiver	R&S	ESCI3	100948	2025-05-07	2026-05-06
Signal Analyzer	R&S	FSV40	101186	2025-05-06	2026-05-05
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2023-07-14	2026-07-13
Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2024-07-18	2027-07-17
Amplifier	R&S	SCU18F	101022	2025-05-06	2026-05-05
Software	R&S	EMC32	9.26.01	/	/
Artificial main network	R&S	ENV216	102191	2024-12-02	2026-12-01
EMI Test Receiver	R&S	ESR	101667	2025-05-06	2026-05-05
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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