

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.

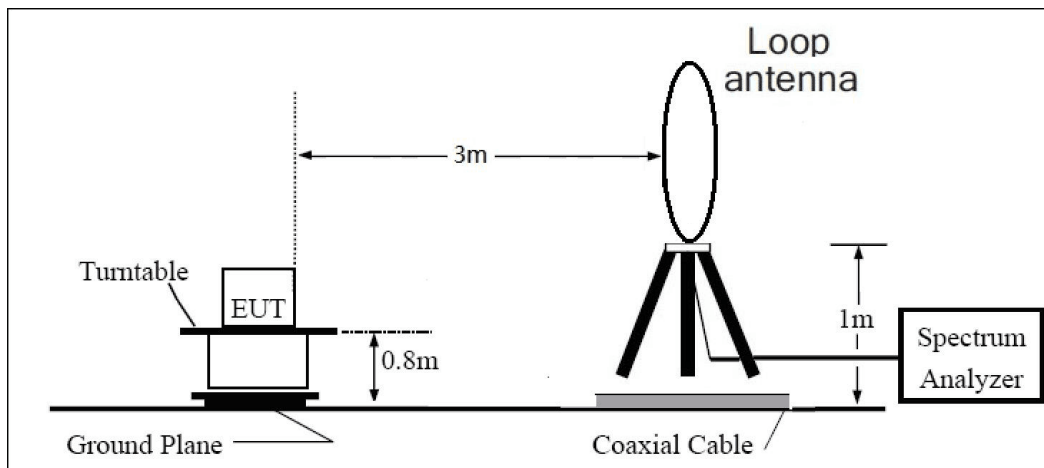
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

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.

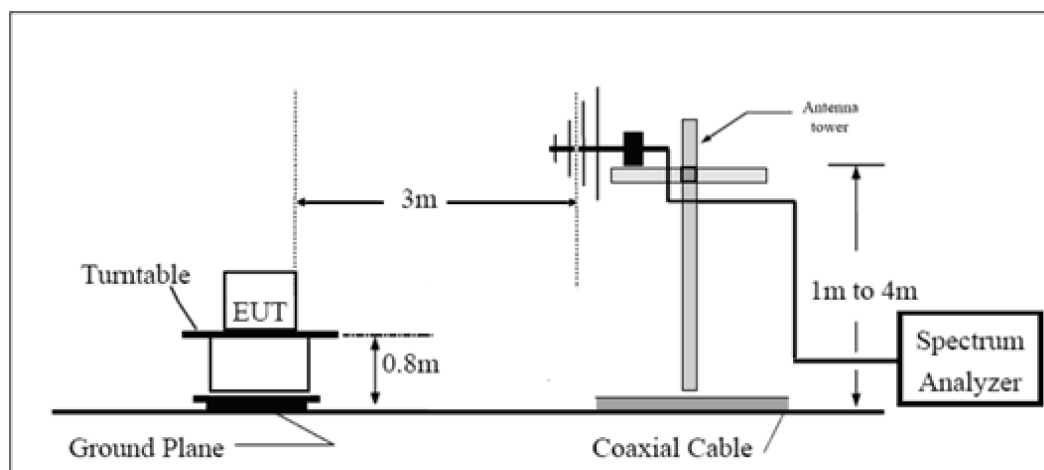
The test is in transmitting mode.

Test Setup

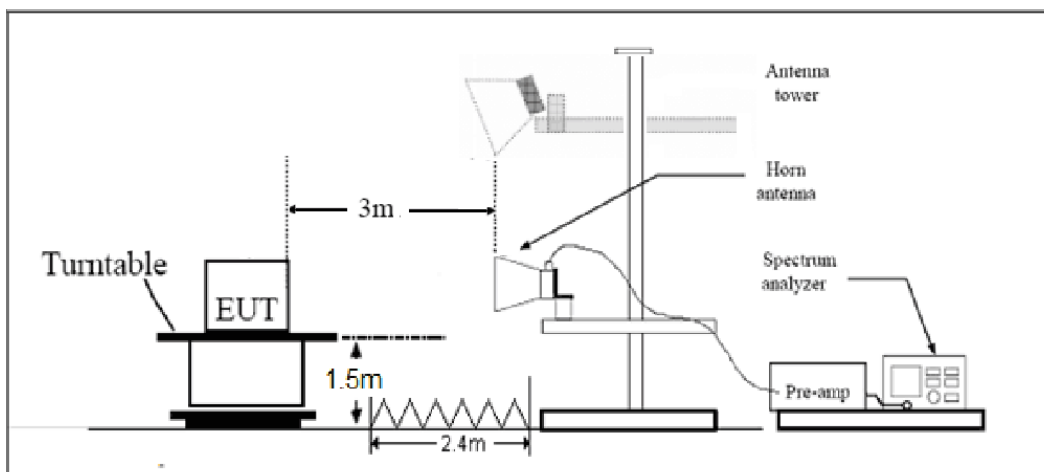
9kHz~ 30MHz



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($\mu\text{V/m}$)	Field strength($\text{dB}\mu\text{V/m}$)
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 $\text{dB}\mu\text{V/m}$

Average Limit=54 $\text{dB}\mu\text{V/m}$

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:

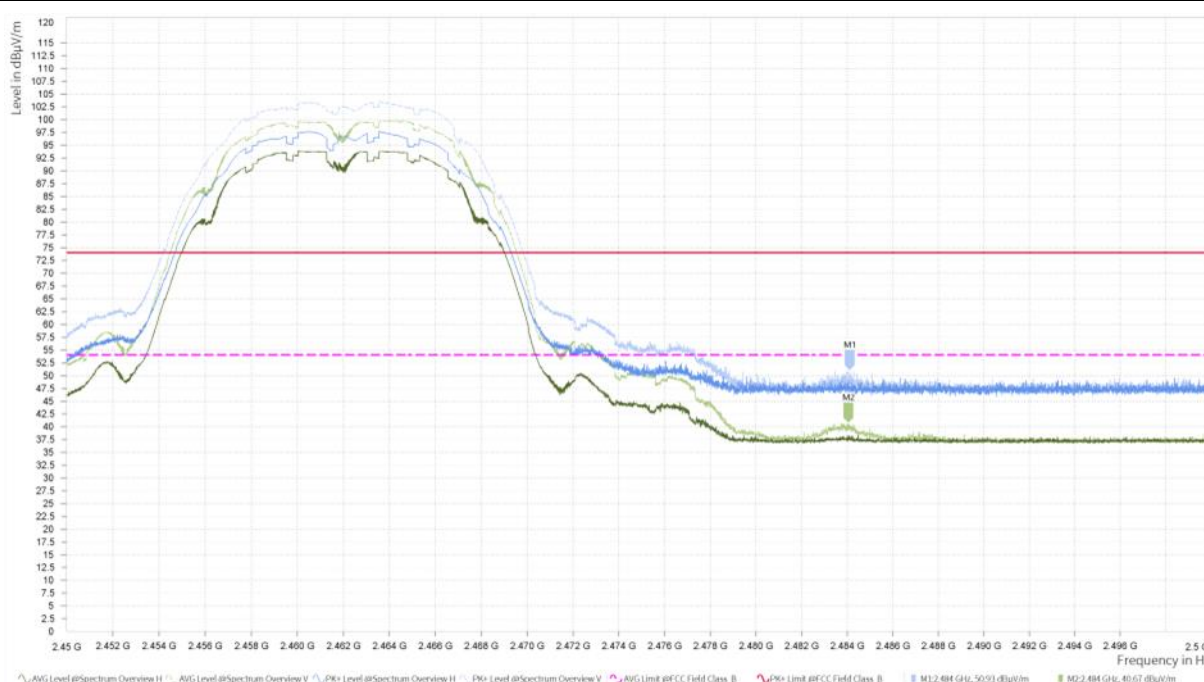
The following graphs display the maximum values of horizontal and vertical by software.

SU Mode

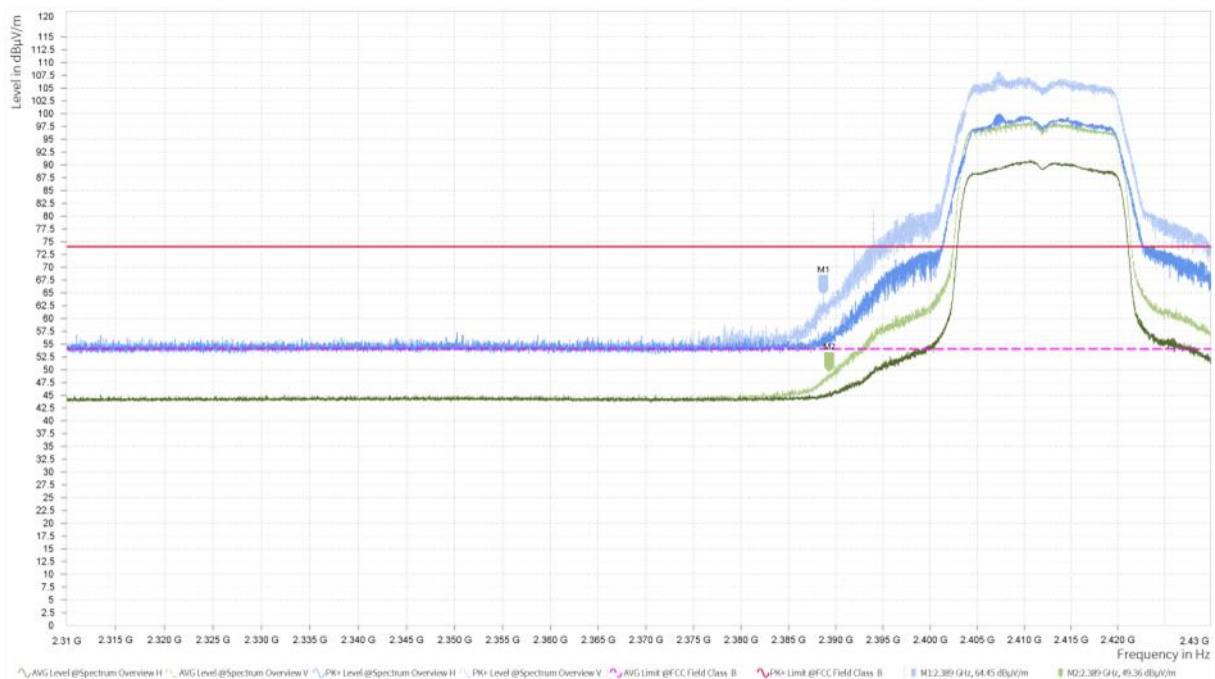
802.11b-Channel 1 Peak+ Average



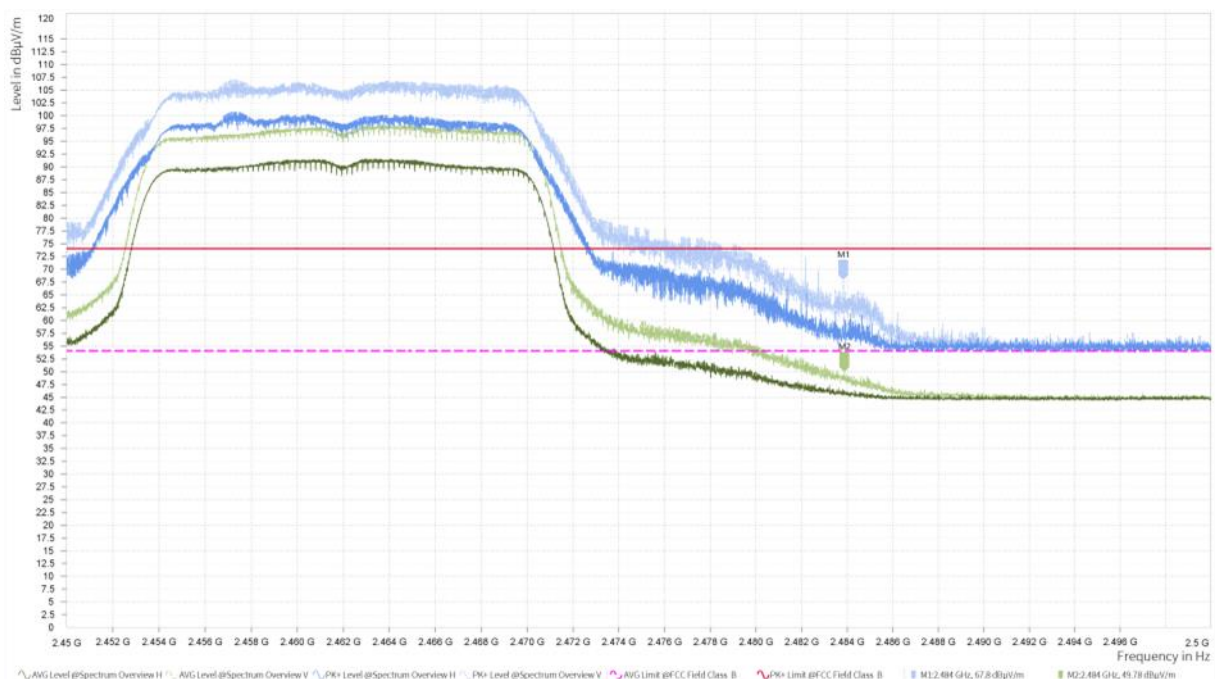
802.11b-Channel 11 Peak+ Average



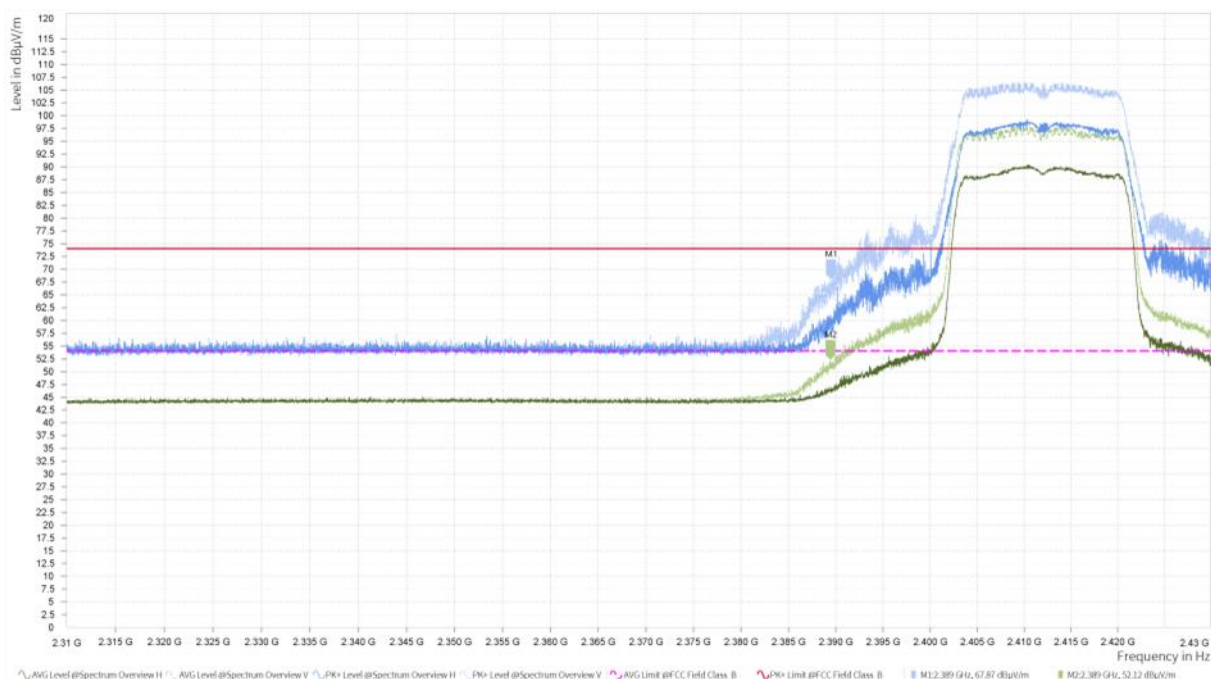
802.11g-Channel 1 Peak+ Average



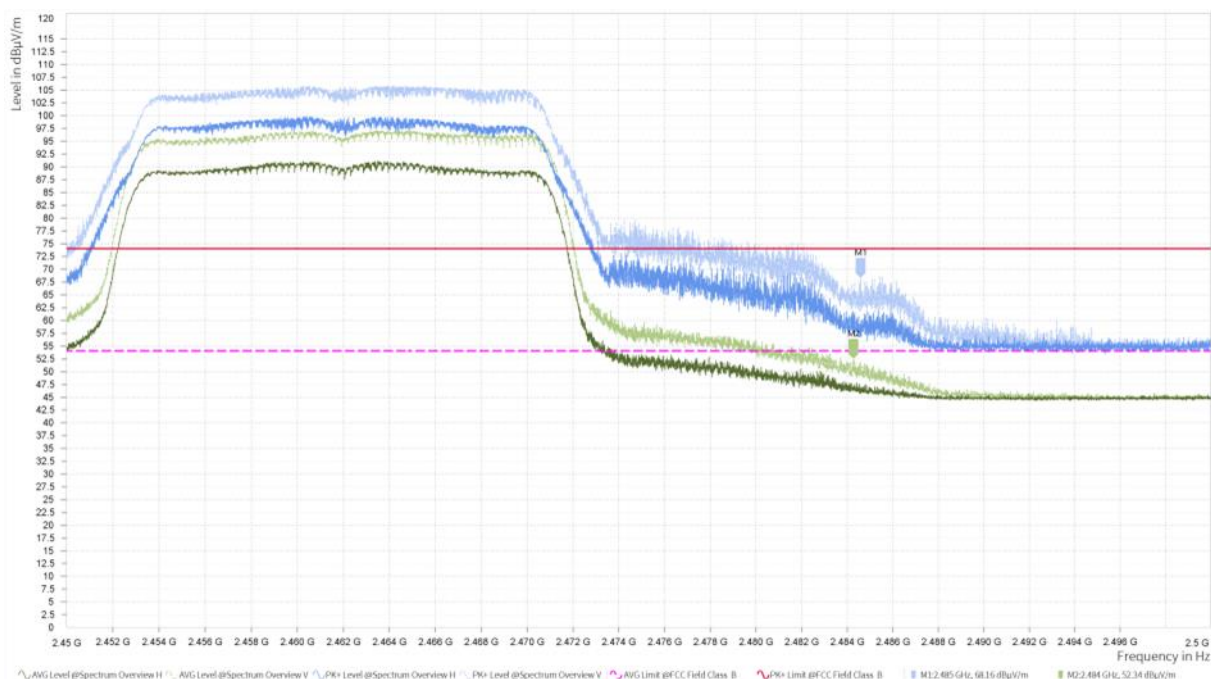
802.11g-Channel 11 Peak+ Average



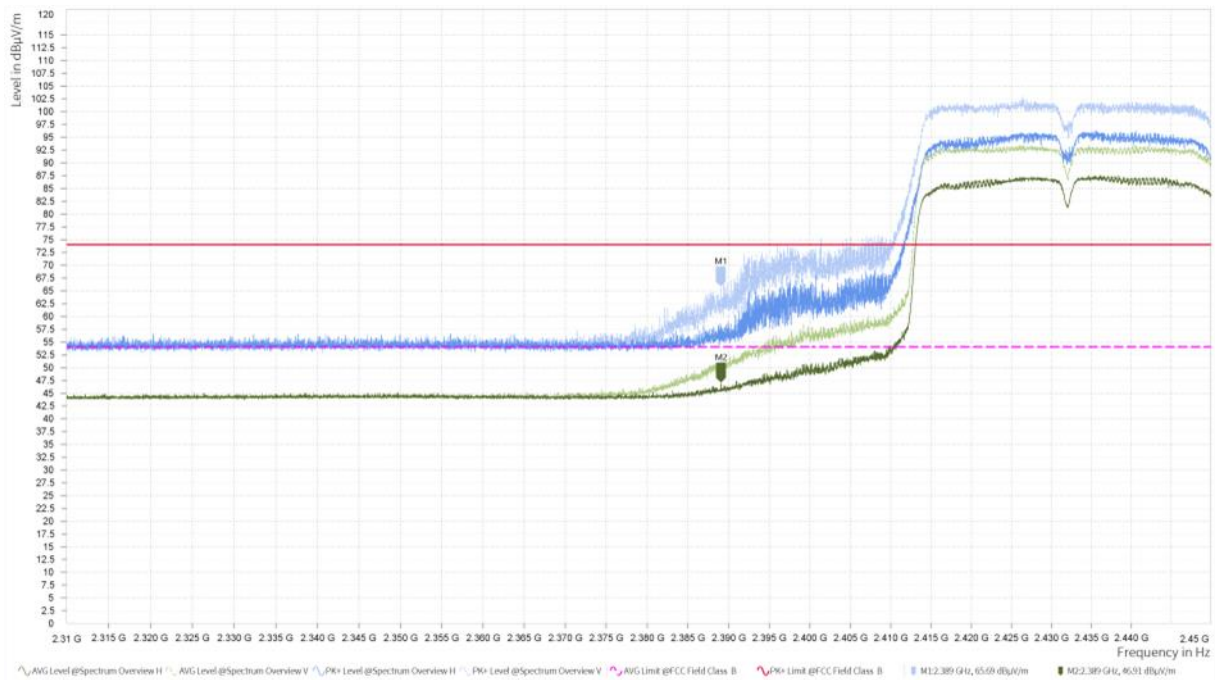
802.11n HT20-Channel 1 Peak+ Average



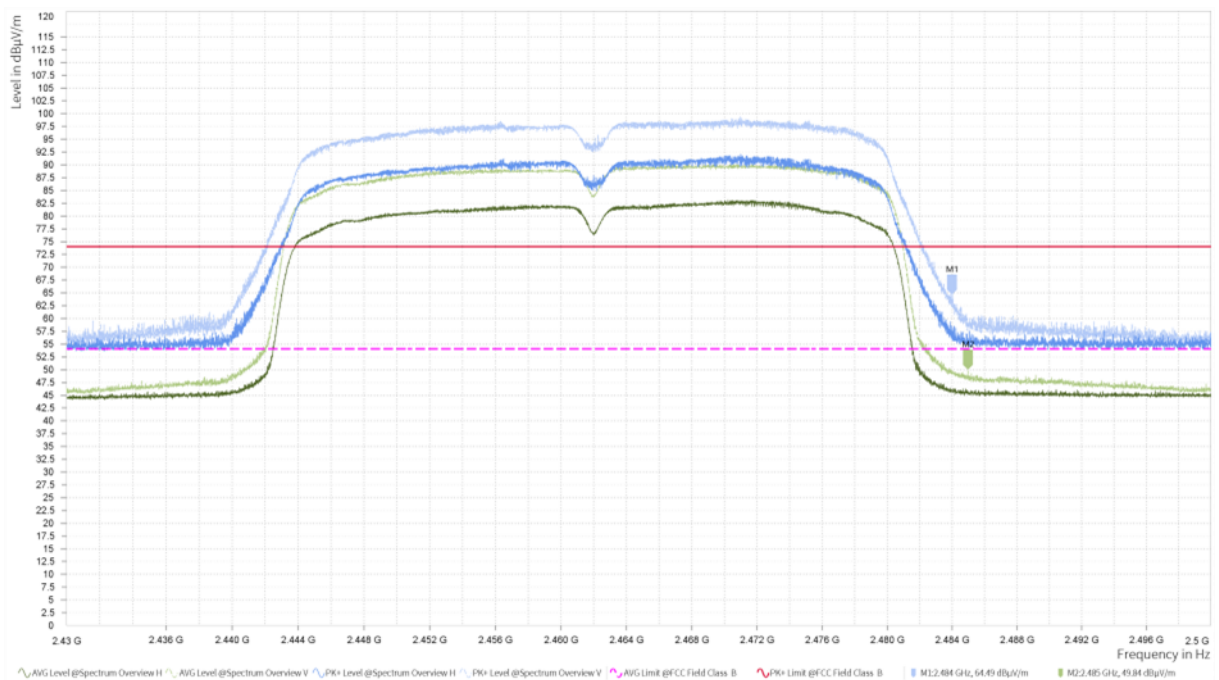
802.11n HT20-Channel 11 Peak+ Average



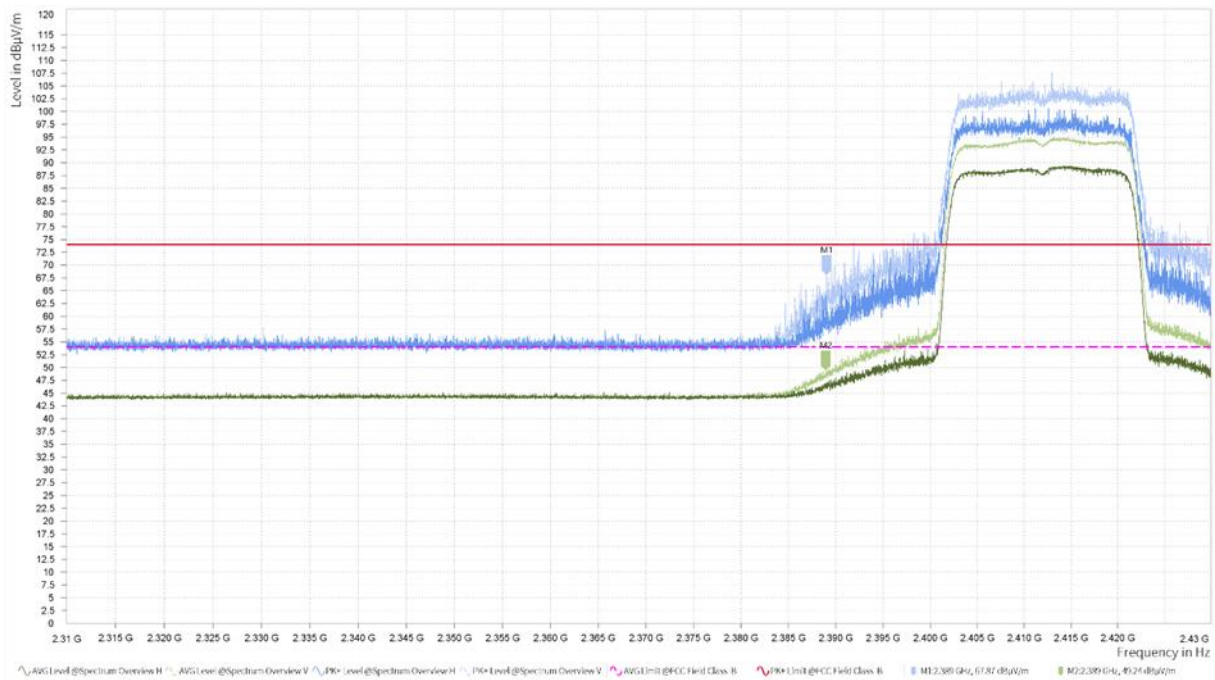
802.11n HT40-Channel 3 Peak+ Average



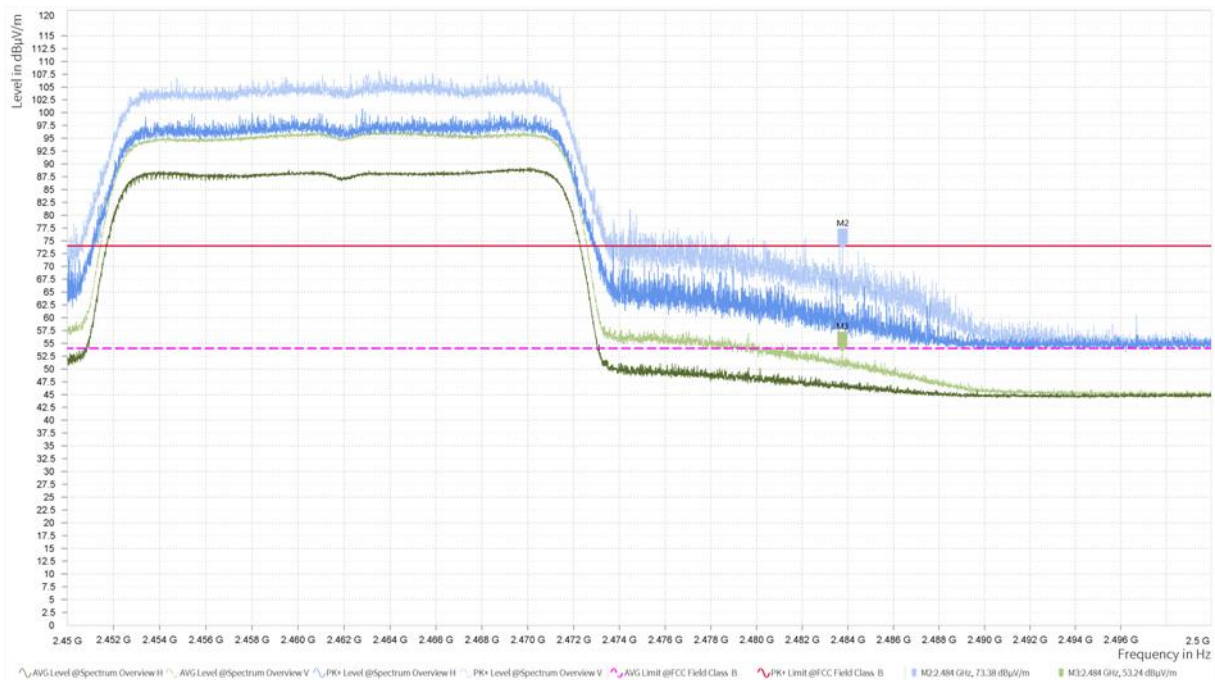
802.11n HT40-Channel 9 Peak+ Average



802.11ax HE20-Channel 1 Peak+ Average

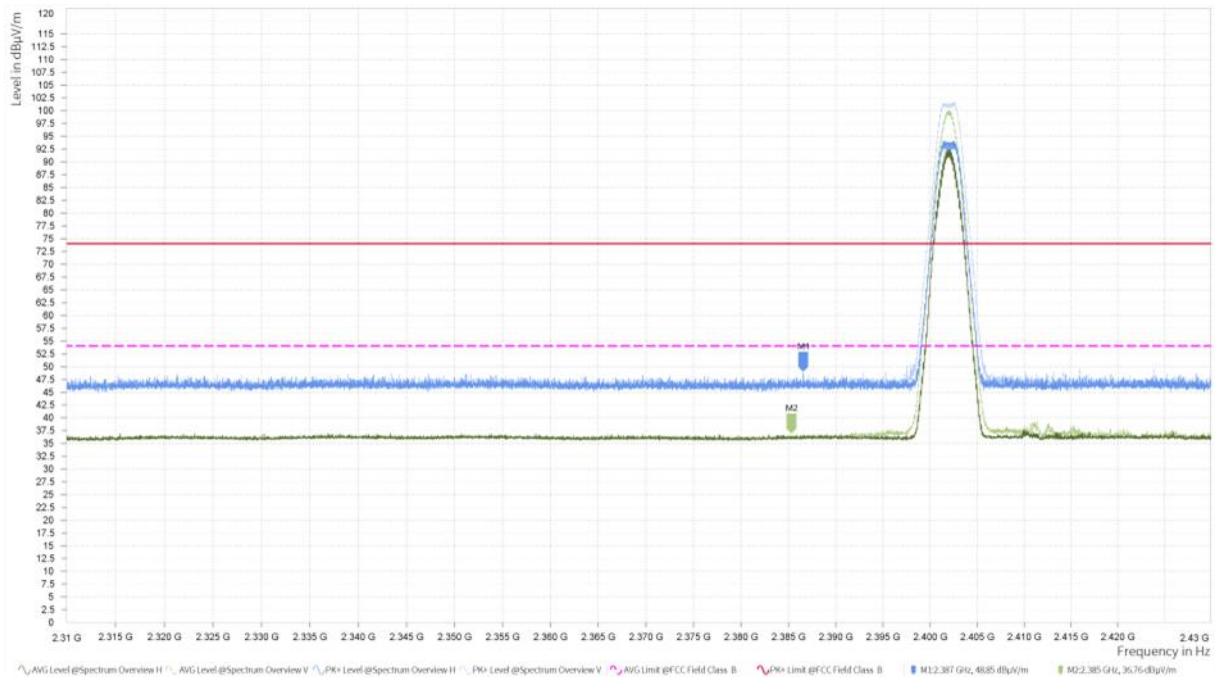


802.11ax HE20-Channel 11 Peak+ Average

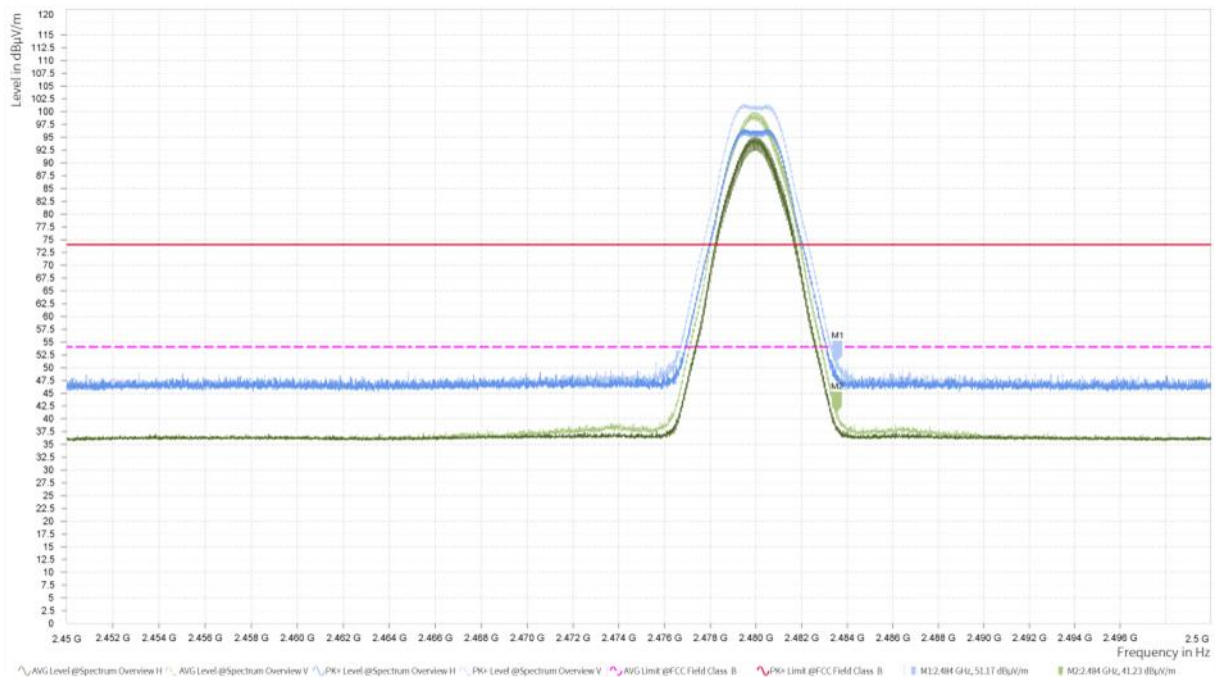


After the pretest, Bluetooth LE (2M) was selected as the worst Mode for Bluetooth LE.

Bluetooth LE (1M) Channel 0 Peak+ Average

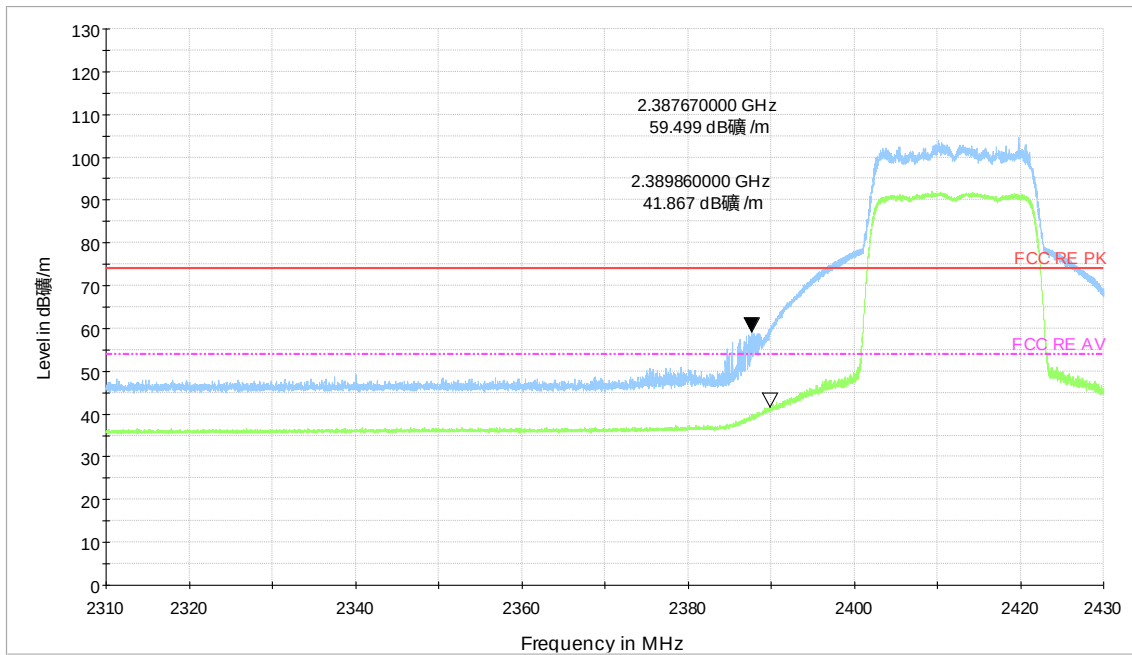


Bluetooth LE (1M) Channel 39 Peak+Average

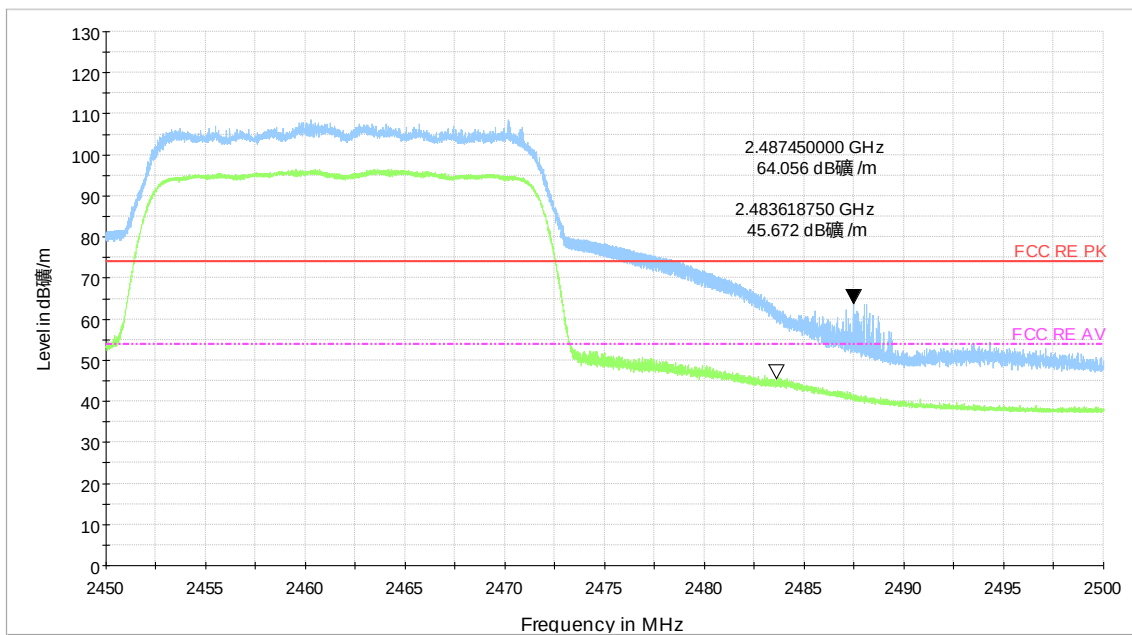


RU Mode

802.11ax HE20-Channel 1 Peak+ Average



802.11ax HE20-Channel 11 Peak+ Average



Result of RE

Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 18GHz-26.5GHz are more than 20dB below the limit are not reported.

The following graphs display the maximum values of horizontal and vertical by software.
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

Continuous TX mode:

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **For below 1GHz**

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

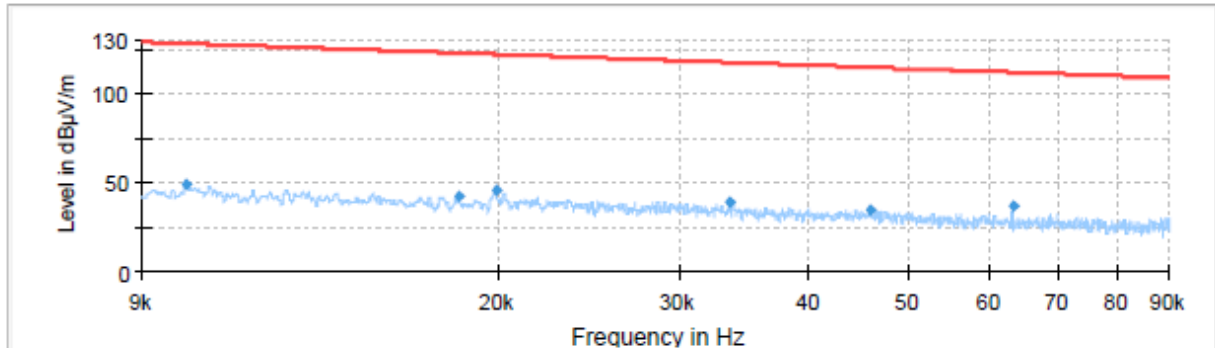
For above 1GHz

 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

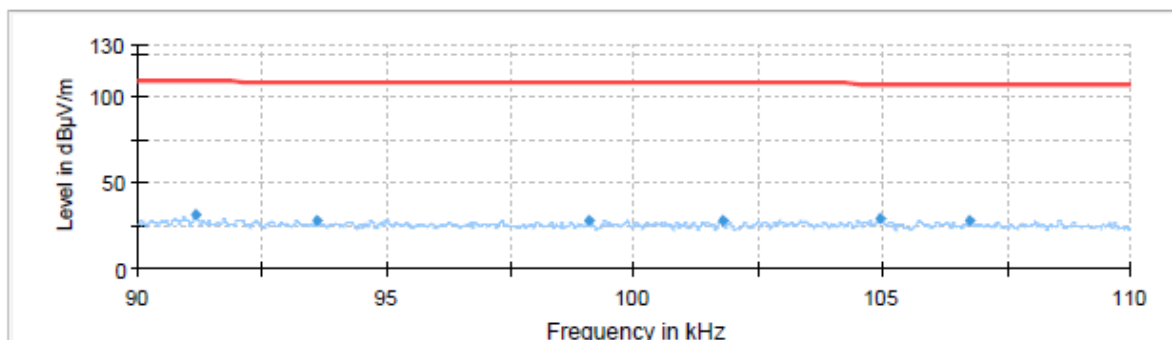
Wi-Fi 2.4GHz

SU Mode

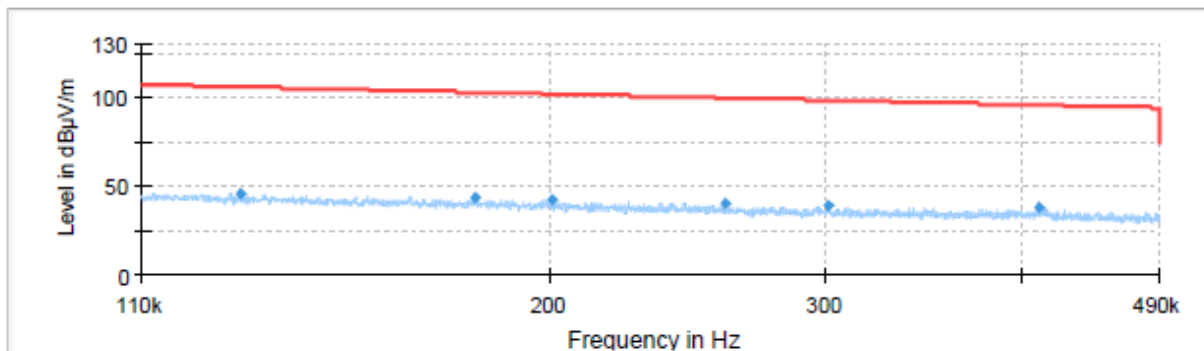
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11n (HT40) CH3 are selected as the worst condition. The test data of the worst-case



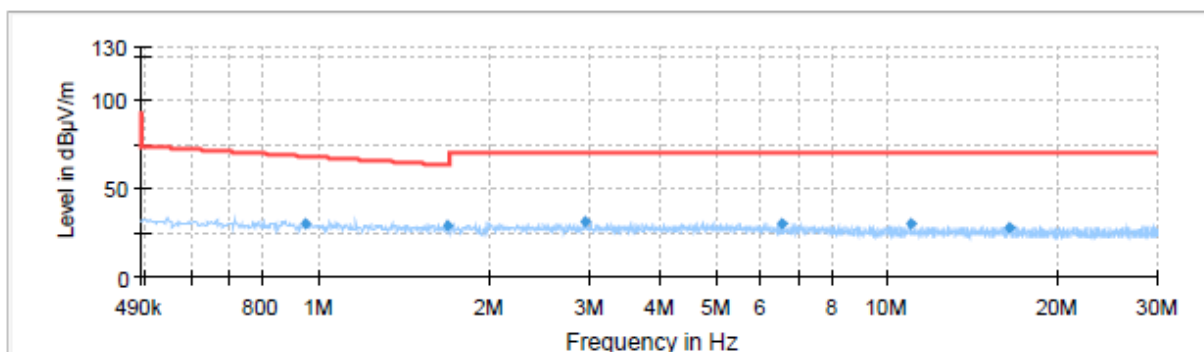
Radiates Emission from 9kHz to 90kHz



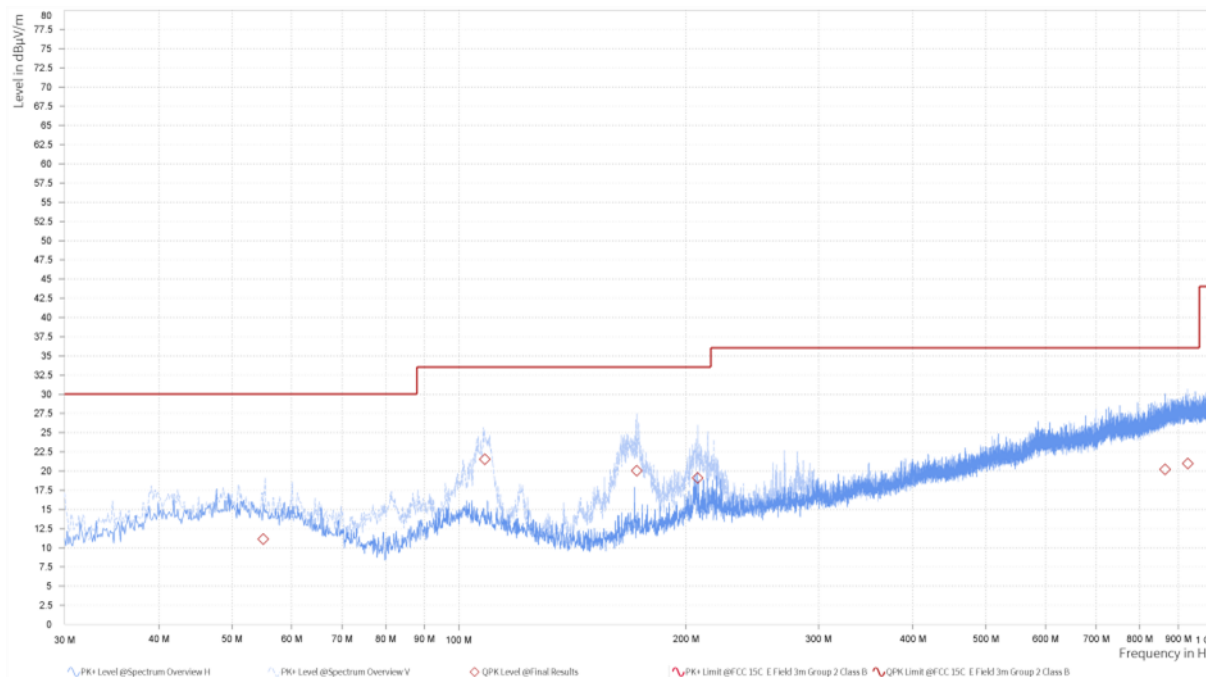
Radiates Emission from 90kHz to 110kHz



Radiates Emission from 110kHz to 490kHz



Radiates Emission from 490kHz to 30MHz



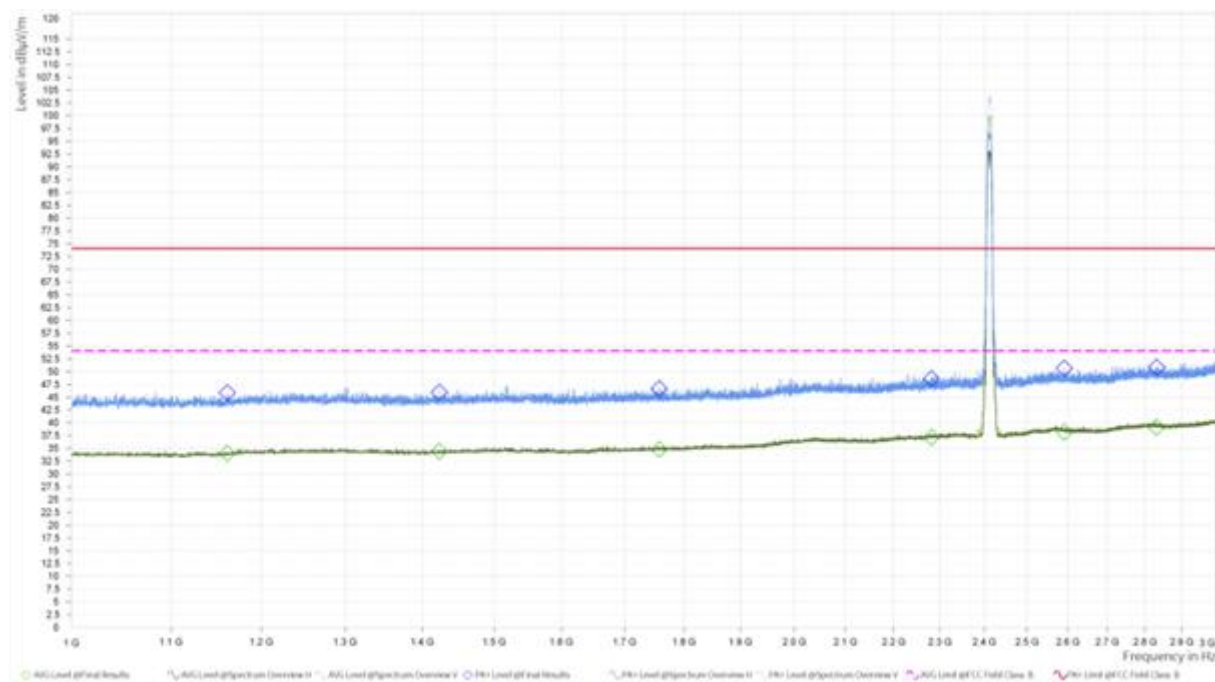
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (m)	Polarization	Azimuth (deg)	Correct Factor (dB)
55.022	11.08	30.00	18.92	1.14	V	41.7	-8.94
108.221	21.50	33.50	12.00	1.75	V	7.7	-10.38
172.149	19.99	33.50	13.51	1.23	V	63.5	-12.02
207.283	19.05	33.50	14.45	1.00	V	146.7	-9.69
864.159	20.17	36.00	15.83	1.07	H	15.5	2.04
925.967	20.94	36.00	15.06	2.17	V	43.1	2.74

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit – Quasi-Peak

802.11b CH1



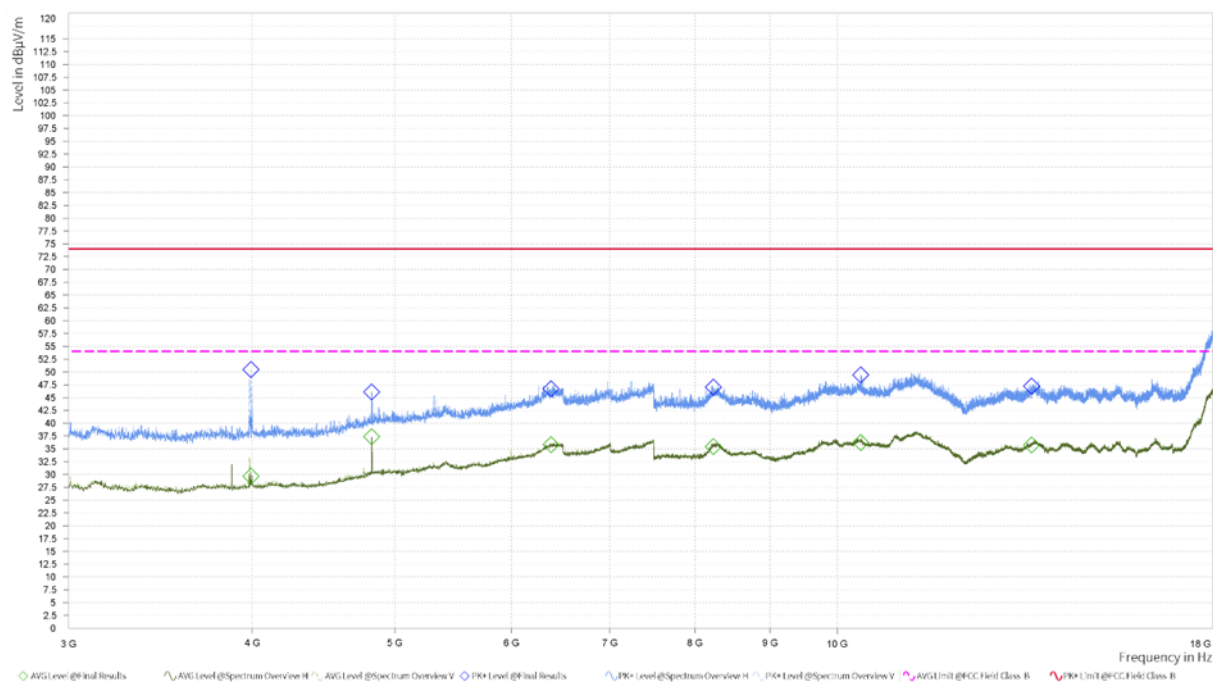
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,161.000	45.82	74.00	28.18	33.98	54.00	20.02	-5.27	H	126.5	2.00	1.000
1,422.750	45.89	74.00	28.11	34.40	54.00	19.60	-4.34	V	286.7	2.00	1.000
1,757.250	46.57	74.00	27.43	34.73	54.00	19.27	-3.58	H	46.5	2.00	1.000
2,281.500	48.56	74.00	25.44	37.10	54.00	16.90	-0.73	H	61	2.00	1.000
2,591.750	50.59	74.00	23.41	38.07	54.00	15.93	0.55	H	331	2.00	1.000
2,831.250	50.80	74.00	23.20	39.09	54.00	14.91	1.49	H	3.7	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



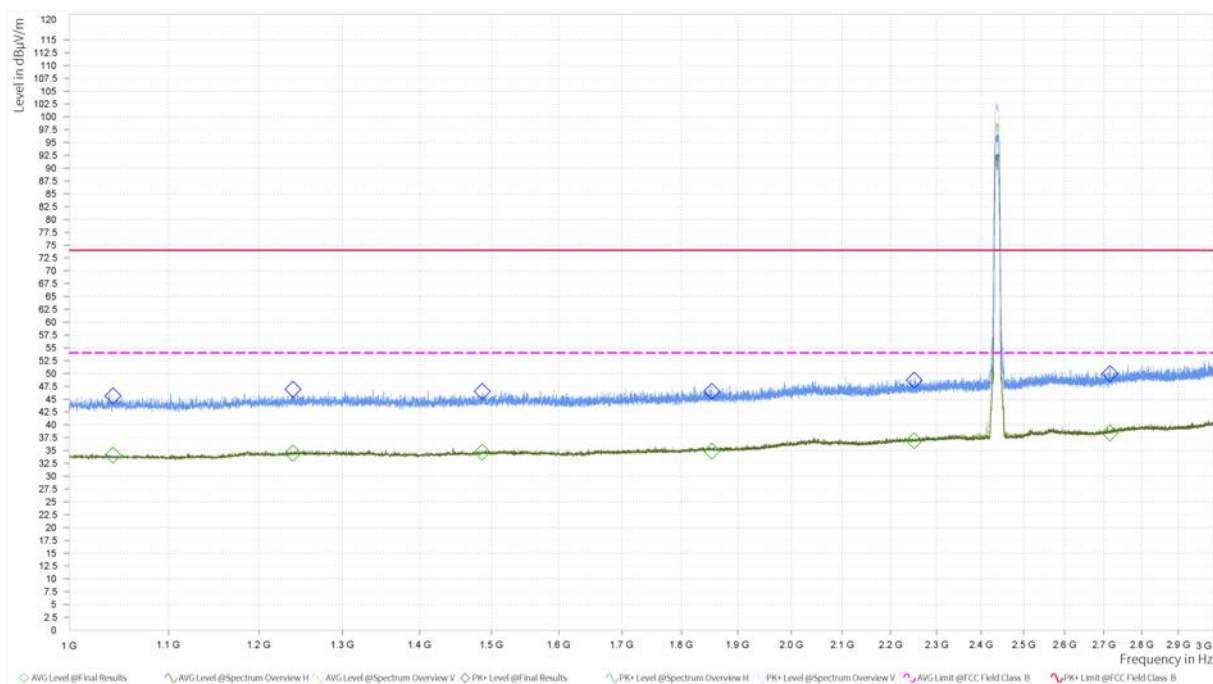
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,991.875	50.48	74.00	23.52	29.63	54.00	24.37	-5.20	V	185.4	1.00	0.000
4,822.500	46.08	74.00	27.92	37.34	54.00	16.66	-1.76	H	8.2	1.00	0.000
6,386.250	46.70	74.00	27.30	35.77	54.00	18.23	3.40	H	120.2	1.00	0.000
8,233.125	47.02	74.00	26.98	35.45	54.00	18.55	8.26	V	90.2	1.00	0.000
10,370.625	49.43	74.00	24.57	36.22	54.00	17.78	5.72	H	121.6	2.00	0.000
13,554.375	47.21	74.00	26.79	35.74	54.00	18.26	6.15	H	256.2	2.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11b CH6



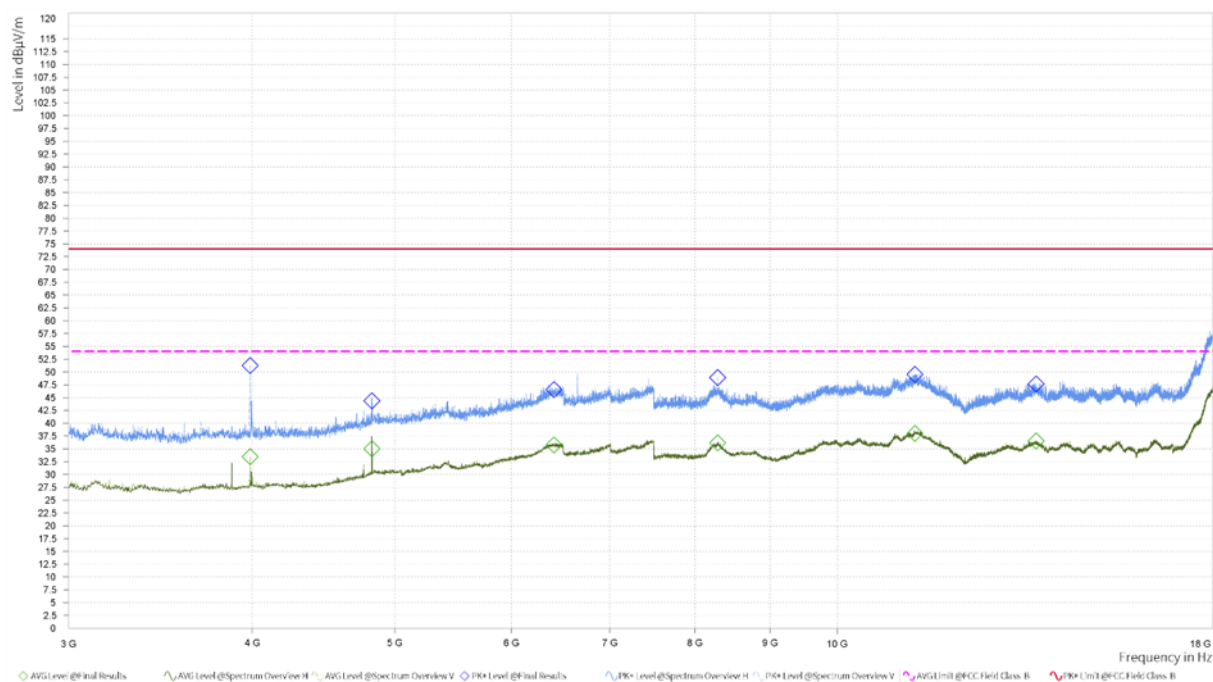
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,043.000	45.62	74.00	28.38	34.08	54.00	19.92	-5.80	V	172.2	2.00	1.000
1,239.500	46.91	74.00	27.09	34.44	54.00	19.56	-4.34	H	0	2.00	1.000
1,486.750	46.47	74.00	27.53	34.65	54.00	19.35	-3.90	H	22.3	2.00	1.000
1,853.250	46.48	74.00	27.52	34.86	54.00	19.14	-3.13	H	2.8	2.00	1.000
2,250.750	48.67	74.00	25.33	36.91	54.00	17.09	-0.96	V	354.8	2.00	1.000
2,716.000	49.91	74.00	24.09	38.38	54.00	15.62	0.74	H	103.1	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



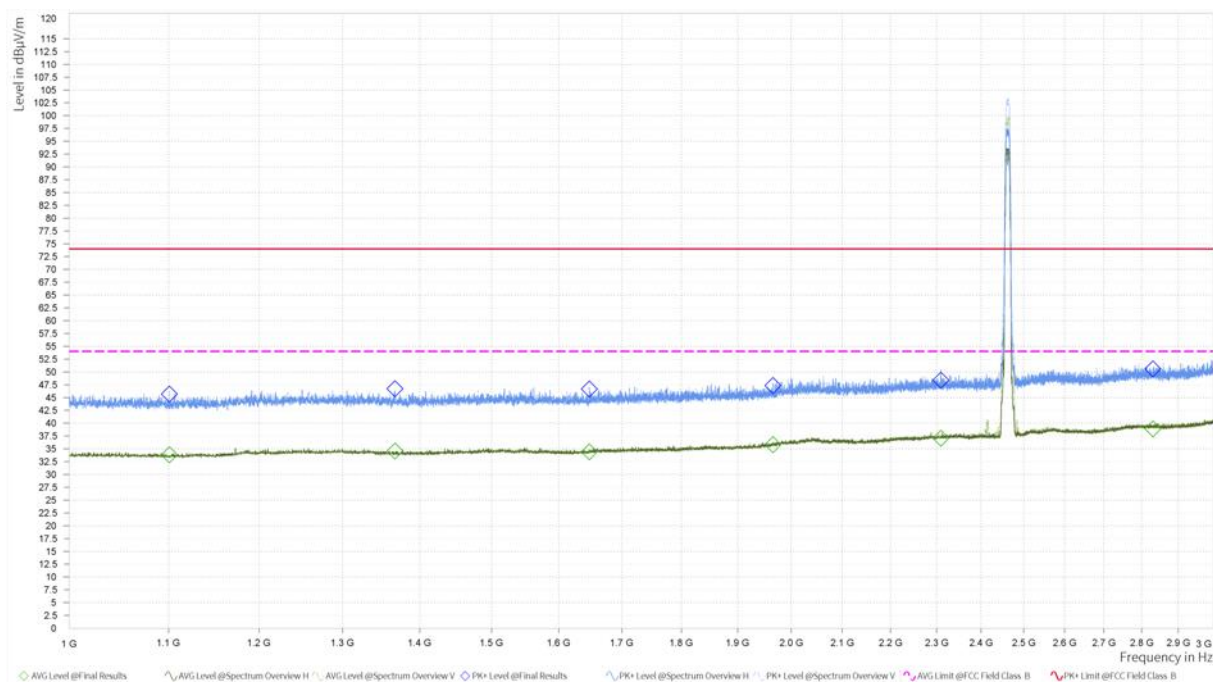
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,986.250	51.25	74.00	22.75	33.42	54.00	20.58	-5.24	V	192.8	1.00	0.000
4,824.375	44.33	74.00	29.67	35.03	54.00	18.97	-1.75	H	16.9	1.00	0.000
6,414.375	46.53	74.00	27.47	35.74	54.00	18.26	3.44	H	153.6	1.00	0.000
8,289.375	48.88	74.00	25.12	36.16	54.00	17.84	8.82	V	9.3	1.00	0.000
11,289.375	49.53	74.00	24.47	38.00	54.00	16.00	7.37	H	145.3	2.00	0.000
13,646.250	47.63	74.00	26.37	36.51	54.00	17.49	6.24	V	17.3	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11b CH11



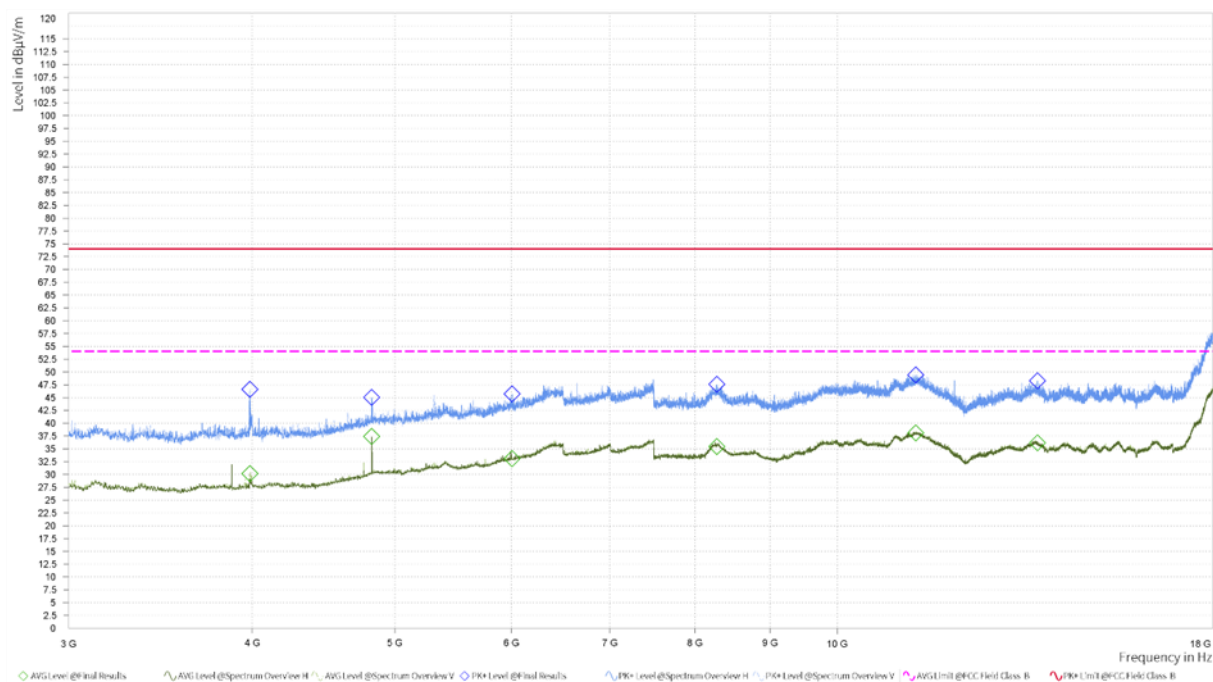
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,101.000	45.63	74.00	28.37	33.83	54.00	20.17	-5.62	V	51	2.00	1.000
1,367.000	46.72	74.00	27.28	34.52	54.00	19.48	-4.46	H	9.5	2.00	1.000
1,647.750	46.65	74.00	27.35	34.37	54.00	19.63	-4.14	H	162.7	2.00	1.000
1,965.250	47.33	74.00	26.67	35.81	54.00	18.19	-2.21	H	31.2	2.00	1.000
2,309.000	48.35	74.00	25.65	37.04	54.00	16.96	-0.66	H	357	2.00	1.000
2,830.750	50.57	74.00	23.43	38.87	54.00	15.13	1.49	V	189.5	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average



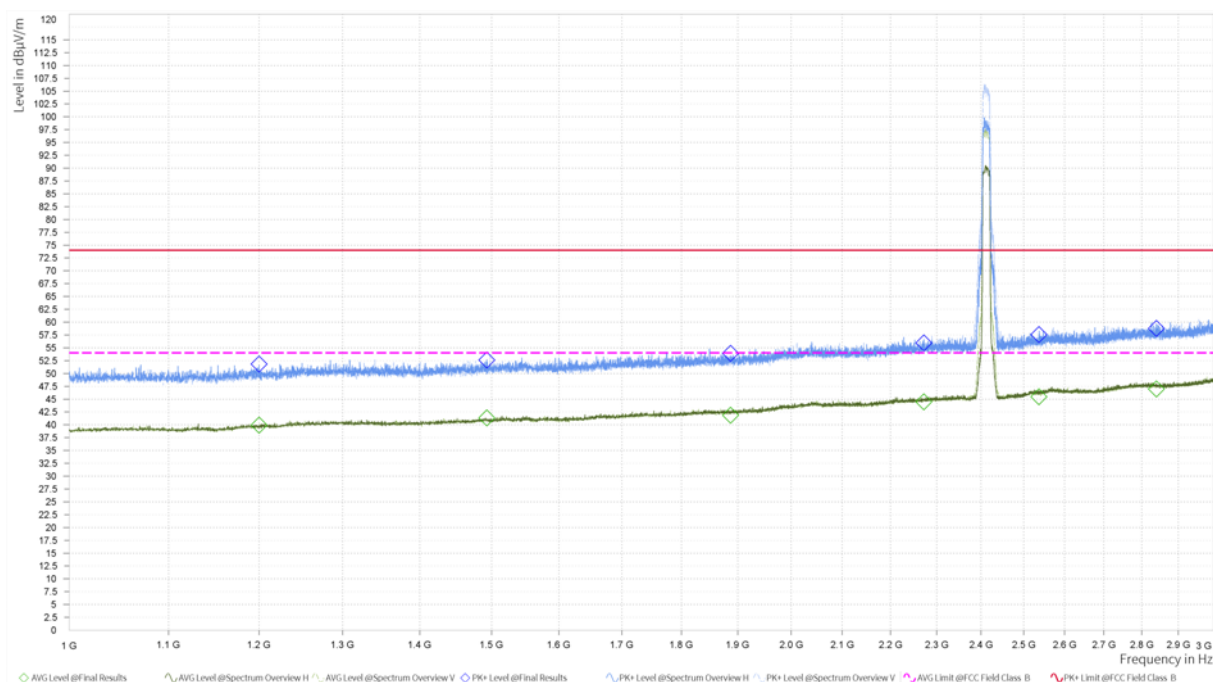
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,984.375	46.60	74.00	27.40	30.18	54.00	23.82	-5.25	V	113.5	1.00	0.000
4,822.500	45.04	74.00	28.96	37.40	54.00	16.60	-1.76	H	8.5	1.00	0.000
6,007.500	45.68	74.00	28.32	33.08	54.00	20.92	1.13	H	360	1.00	0.000
8,280.000	47.58	74.00	26.42	35.43	54.00	18.57	8.73	H	136.4	2.00	0.000
11,302.500	49.41	74.00	24.59	38.09	54.00	15.91	7.38	H	120.5	2.00	0.000
13,674.375	48.29	74.00	25.71	36.17	54.00	17.83	6.21	H	335.4	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11g CH1



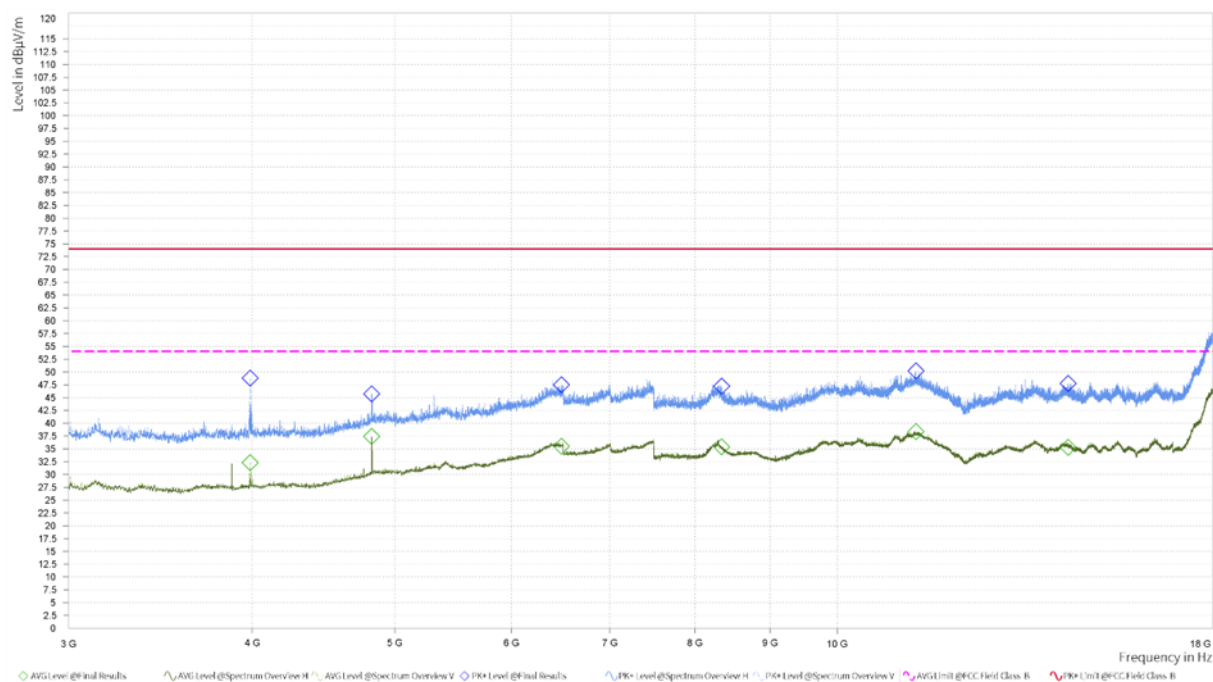
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,200.000	51.81	74.00	22.19	39.90	54.00	14.10	-4.70	H	173.6	2.00	1.000
1,493.000	52.61	74.00	21.39	41.32	54.00	12.68	-3.93	H	84	2.00	1.000
1,886.750	53.87	74.00	20.13	41.85	54.00	12.15	-3.05	H	91.7	2.00	1.000
2,271.500	55.95	74.00	18.05	44.44	54.00	9.56	-0.82	H	285	2.00	1.000
2,536.750	57.54	74.00	16.46	45.46	54.00	8.54	0.31	H	0	2.00	1.000
2,840.000	58.75	74.00	15.25	46.95	54.00	7.05	1.47	H	84	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



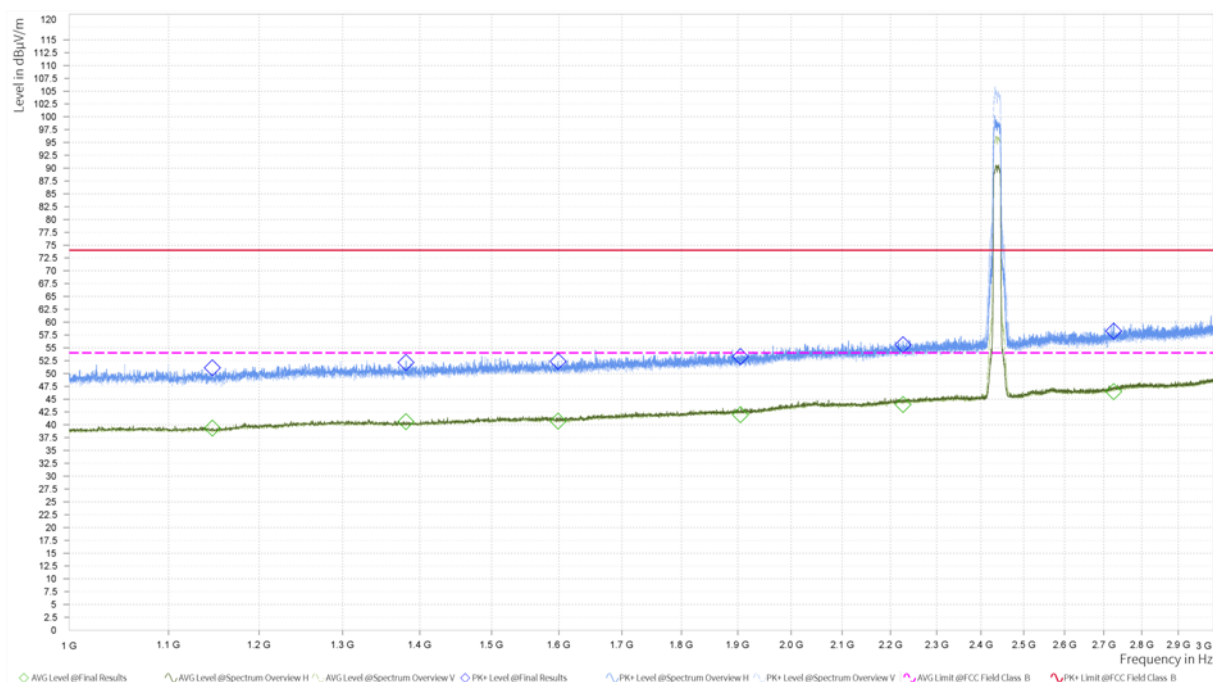
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,986.250	48.77	74.00	25.23	32.29	54.00	21.71	-5.24	V	31.7	2.00	0.000
4,822.500	45.72	74.00	28.28	37.41	54.00	16.59	-1.76	H	16.3	1.00	0.000
6,489.375	47.47	74.00	26.53	35.48	54.00	18.52	3.11	H	103.3	1.00	0.000
8,340.000	47.24	74.00	26.76	35.40	54.00	18.60	8.11	H	111.5	1.00	0.000
11,308.125	50.21	74.00	23.79	38.33	54.00	15.67	7.39	V	76.9	1.00	0.000
14,353.125	47.71	74.00	26.29	35.26	54.00	18.74	6.42	H	103.3	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11g CH6



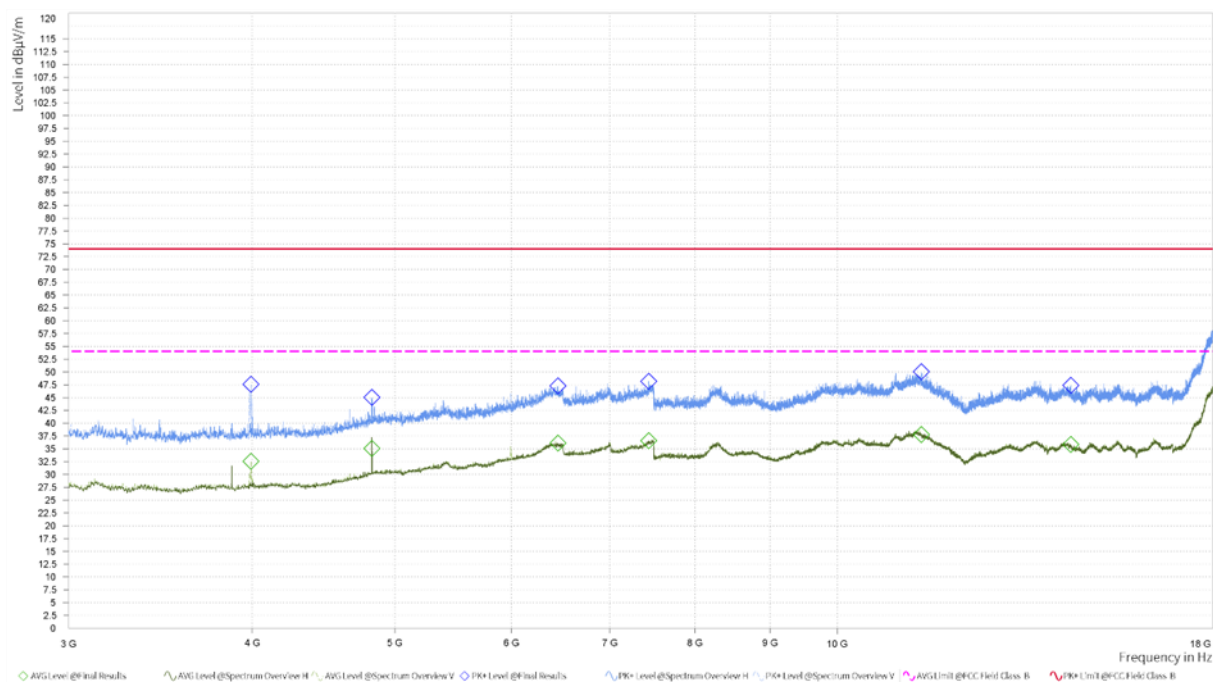
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,147.250	51.10	74.00	22.90	39.33	54.00	14.67	-5.45	V	274.8	2.00	1.000
1,381.750	52.11	74.00	21.89	40.58	54.00	13.42	-4.46	H	115.1	2.00	1.000
1,598.750	52.32	74.00	21.68	40.69	54.00	13.31	-4.21	H	188.8	2.00	1.000
1,904.750	53.29	74.00	20.71	41.93	54.00	12.07	-2.92	V	348.6	2.00	1.000
2,226.750	55.55	74.00	18.45	43.95	54.00	10.05	-1.02	H	100.3	2.00	1.000
2,725.750	58.25	74.00	15.75	46.41	54.00	7.59	0.85	H	211.2	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



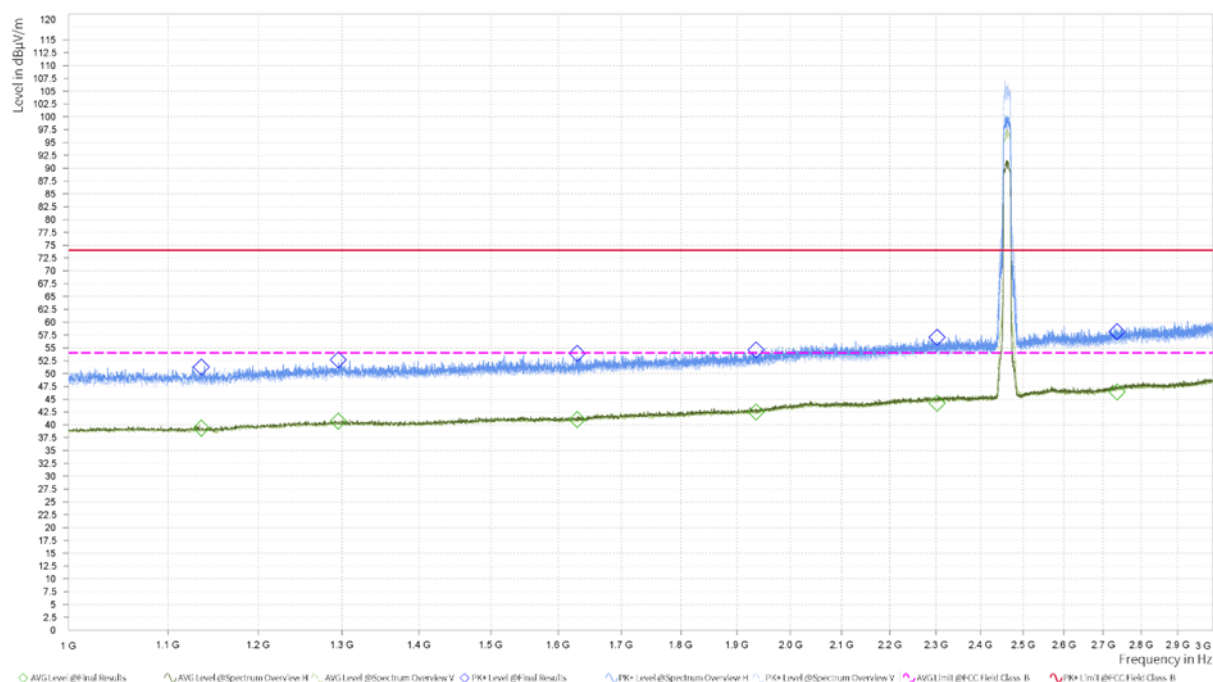
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,991.875	47.57	74.00	26.43	32.53	54.00	21.47	-5.20	V	191.4	1.00	0.000
4,824.375	45.02	74.00	28.98	35.06	54.00	18.94	-1.75	H	16.7	1.00	0.000
6,455.625	47.25	74.00	26.75	36.11	54.00	17.89	3.23	H	47.3	2.00	0.000
7,441.875	48.17	74.00	25.83	36.59	54.00	17.41	3.81	H	199.5	1.00	0.000
11,401.875	50.06	74.00	23.94	37.78	54.00	16.22	7.47	V	248.1	1.00	0.000
14,411.250	47.35	74.00	26.65	35.82	54.00	18.18	6.21	H	256.2	2.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11g CH11



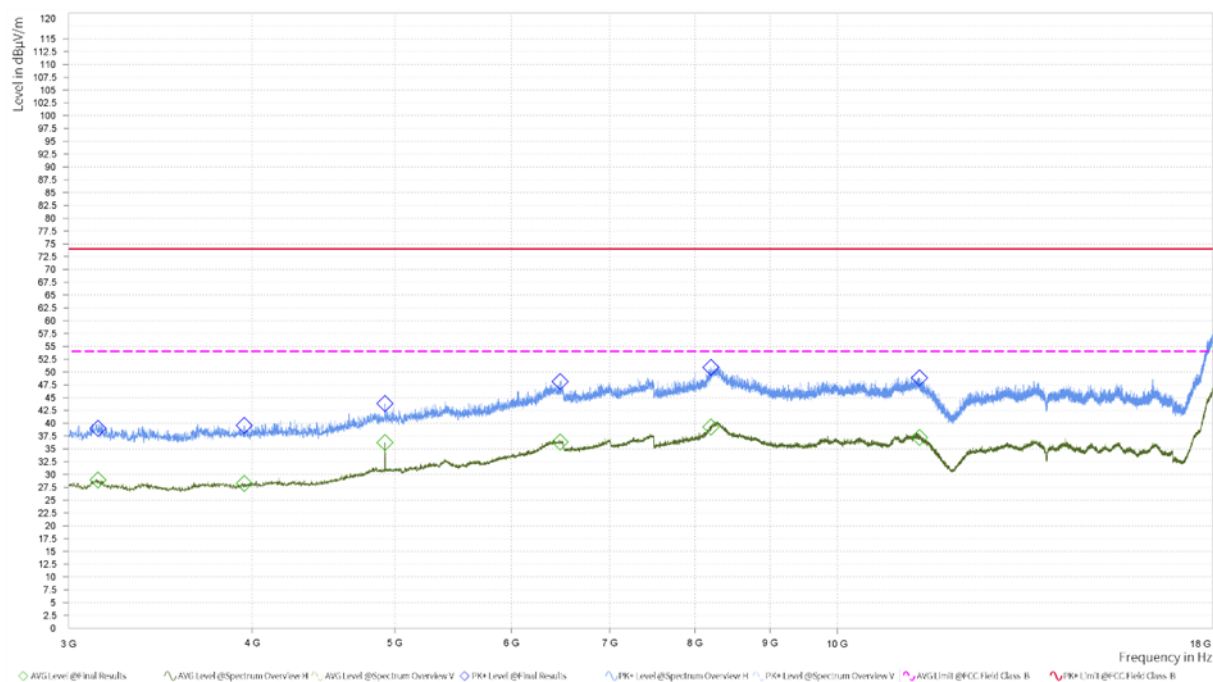
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,135.750	51.24	74.00	22.76	39.34	54.00	14.66	-5.35	H	197.8	2.00	1.000
1,295.500	52.64	74.00	21.36	40.69	54.00	13.31	-4.16	H	21.4	2.00	1.000
1,629.750	53.87	74.00	20.13	41.01	54.00	12.99	-4.22	H	58.2	2.00	1.000
1,934.750	54.59	74.00	19.41	42.44	54.00	11.56	-2.67	H	36	2.00	1.000
2,302.250	57.03	74.00	16.97	44.18	54.00	9.82	-0.71	H	28.6	2.00	1.000
2,736.000	58.10	74.00	15.90	46.40	54.00	7.60	0.97	V	270.2	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



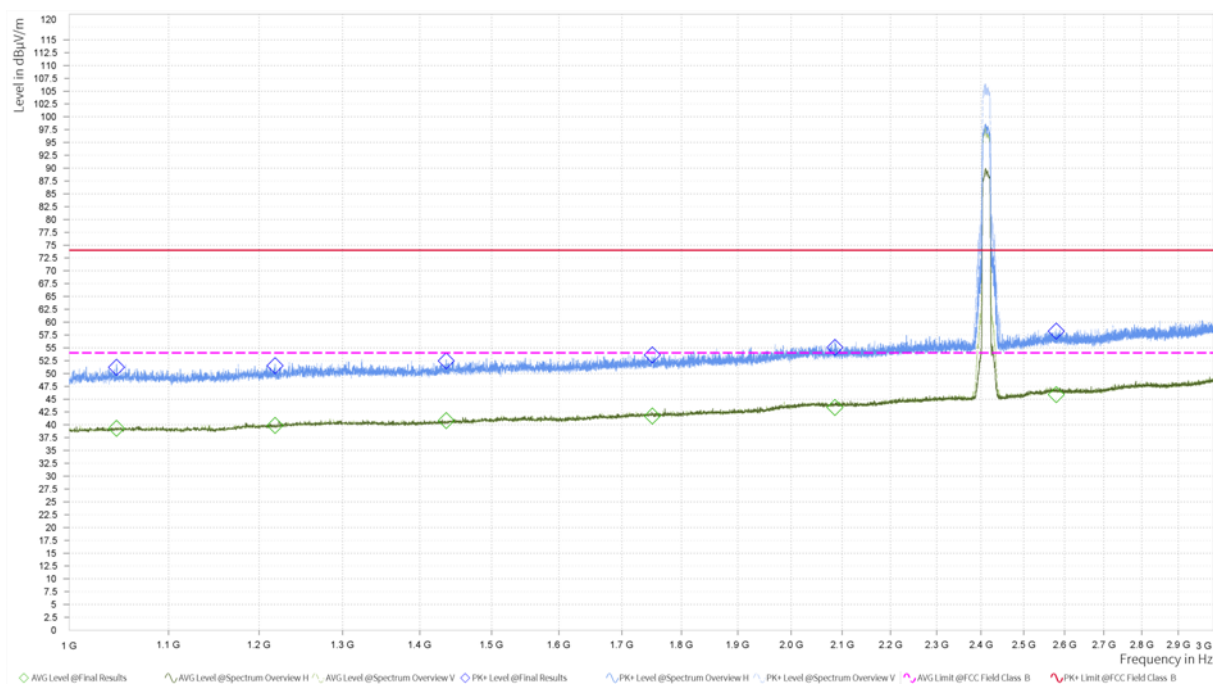
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,140.625	38.98	74.00	35.02	28.88	54.00	25.12	-6.71	H	23.2	2.00	0.000
3,950.625	39.57	74.00	34.43	28.25	54.00	25.75	-5.22	H	200.3	2.00	0.000
4,923.750	43.85	74.00	30.15	36.22	54.00	17.78	-1.62	H	330.4	2.00	0.000
6,478.125	48.08	74.00	25.92	36.32	54.00	17.68	3.14	H	192.6	2.00	0.000
8,201.250	50.88	74.00	23.12	39.22	54.00	14.78	7.81	H	261.6	2.00	0.000
11,368.125	48.83	74.00	25.17	37.19	54.00	16.81	7.46	H	246.5	2.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT20) CH1



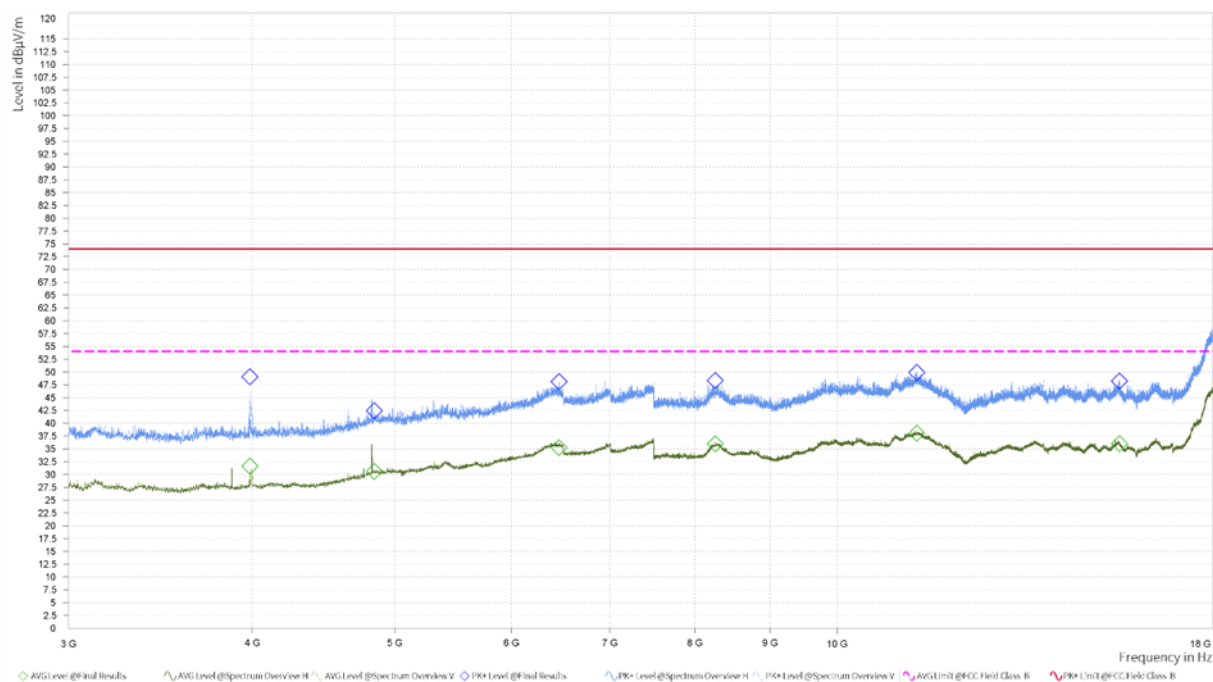
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,046.500	51.19	74.00	22.81	39.27	54.00	14.73	-5.77	H	313.5	2.00	1.000
1,218.500	51.48	74.00	22.52	39.88	54.00	14.12	-4.65	H	179.1	2.00	1.000
1,436.000	52.41	74.00	21.59	40.81	54.00	13.19	-4.27	H	156.9	2.00	1.000
1,750.500	53.56	74.00	20.44	41.66	54.00	12.34	-3.58	V	202.5	2.00	1.000
2,085.750	55.03	74.00	18.97	43.34	54.00	10.66	-1.49	H	15.2	2.00	1.000
2,579.750	58.24	74.00	15.76	45.86	54.00	8.14	0.71	H	30	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



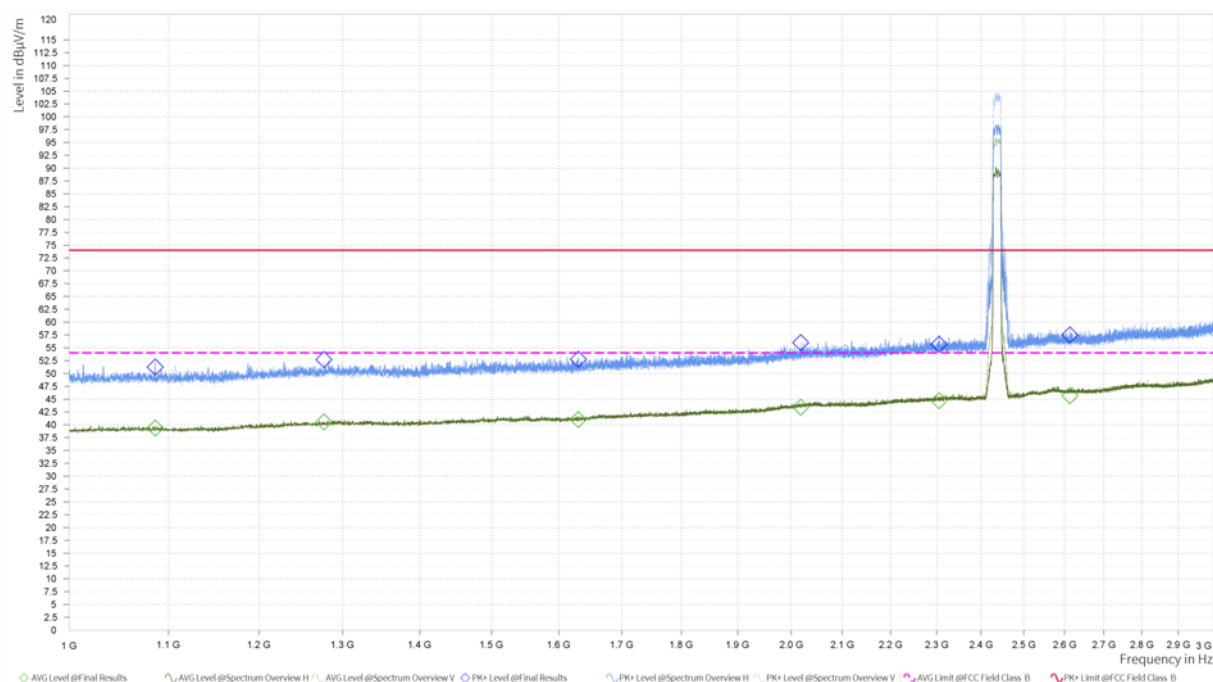
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,984.375	49.03	74.00	24.97	31.61	54.00	22.39	-5.25	V	103.2	1.00	1.000
4,841.250	42.39	74.00	31.61	30.57	54.00	23.43	-1.59	V	64.6	1.00	1.000
6,466.875	48.09	74.00	25.91	35.19	54.00	18.81	3.17	H	72.8	2.00	1.000
8,257.500	48.32	74.00	25.68	35.93	54.00	18.07	8.51	H	236	2.00	1.000
11,323.125	49.87	74.00	24.13	38.04	54.00	15.96	7.41	V	149.3	1.00	1.000
15,553.125	48.18	74.00	25.82	36.02	54.00	17.98	5.70	H	72.8	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT20) CH6



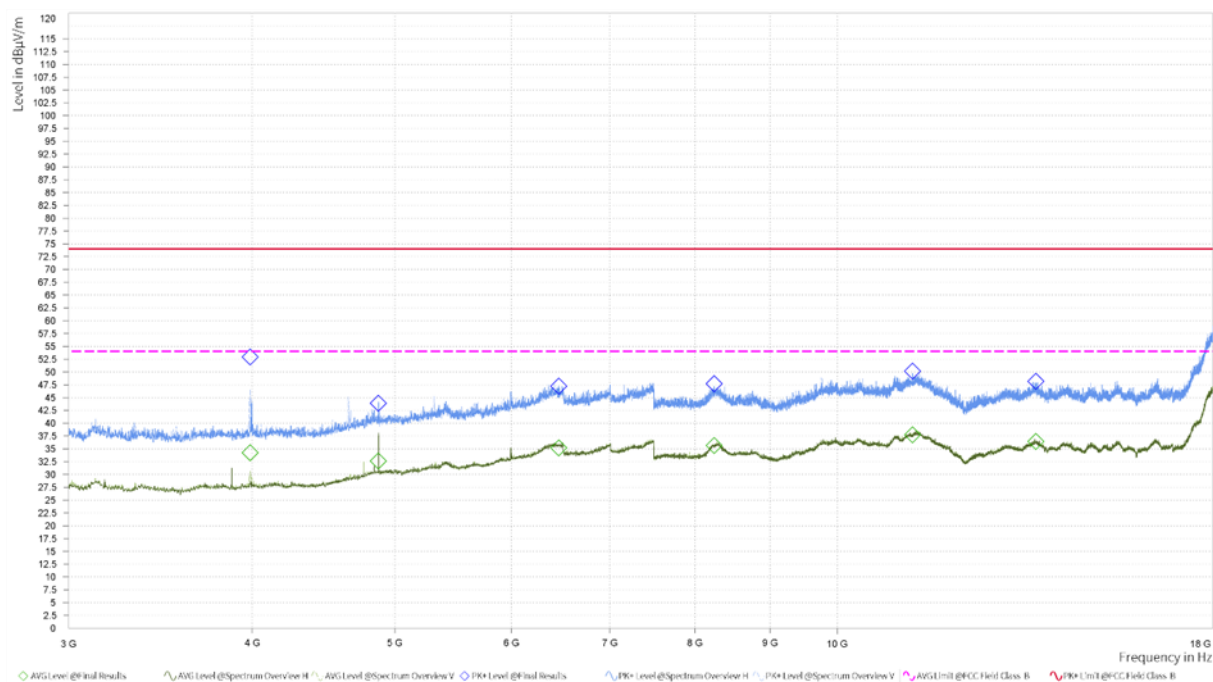
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,086.000	51.24	74.00	22.76	39.36	54.00	14.64	-5.61	H	35.1	2.00	1.000
1,277.000	52.68	74.00	21.32	40.52	54.00	13.48	-4.25	V	190.1	2.00	1.000
1,630.250	52.77	74.00	21.23	41.03	54.00	12.97	-4.22	H	5.5	2.00	1.000
2,018.250	55.99	74.00	18.01	43.43	54.00	10.57	-1.53	V	360	2.00	1.000
2,305.250	55.65	74.00	18.35	44.65	54.00	9.35	-0.69	H	35.1	2.00	1.000
2,613.500	57.47	74.00	16.53	45.67	54.00	8.33	0.48	V	280.2	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



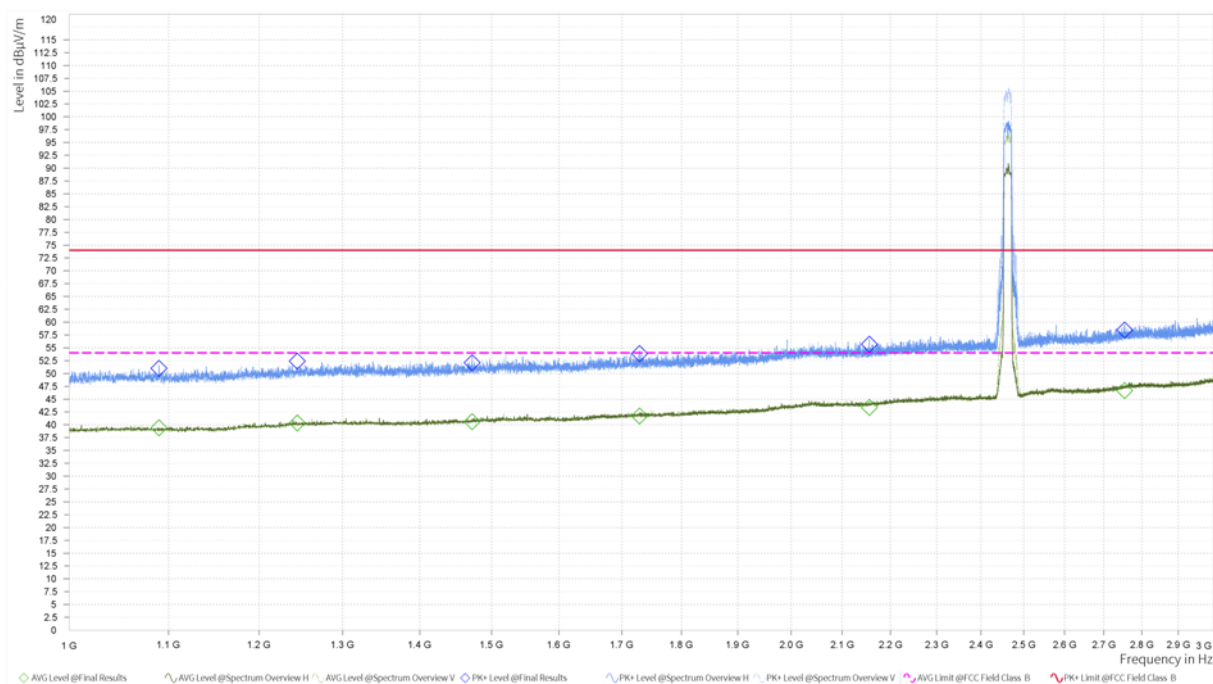
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,986.250	52.91	74.00	21.09	34.22	54.00	19.78	-5.24	V	189.9	1.00	1.000
4,873.125	43.88	74.00	30.12	32.63	54.00	21.37	-1.61	H	358.7	1.00	1.000
6,463.125	47.22	74.00	26.78	35.18	54.00	18.82	3.19	H	235.3	2.00	1.000
8,242.500	47.69	74.00	26.31	35.65	54.00	18.35	8.36	H	150.6	2.00	1.000
11,248.125	50.12	74.00	23.88	37.73	54.00	16.27	7.28	H	0	2.00	1.000
13,642.500	48.13	74.00	25.87	36.39	54.00	17.61	6.24	V	358.8	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT20) CH11



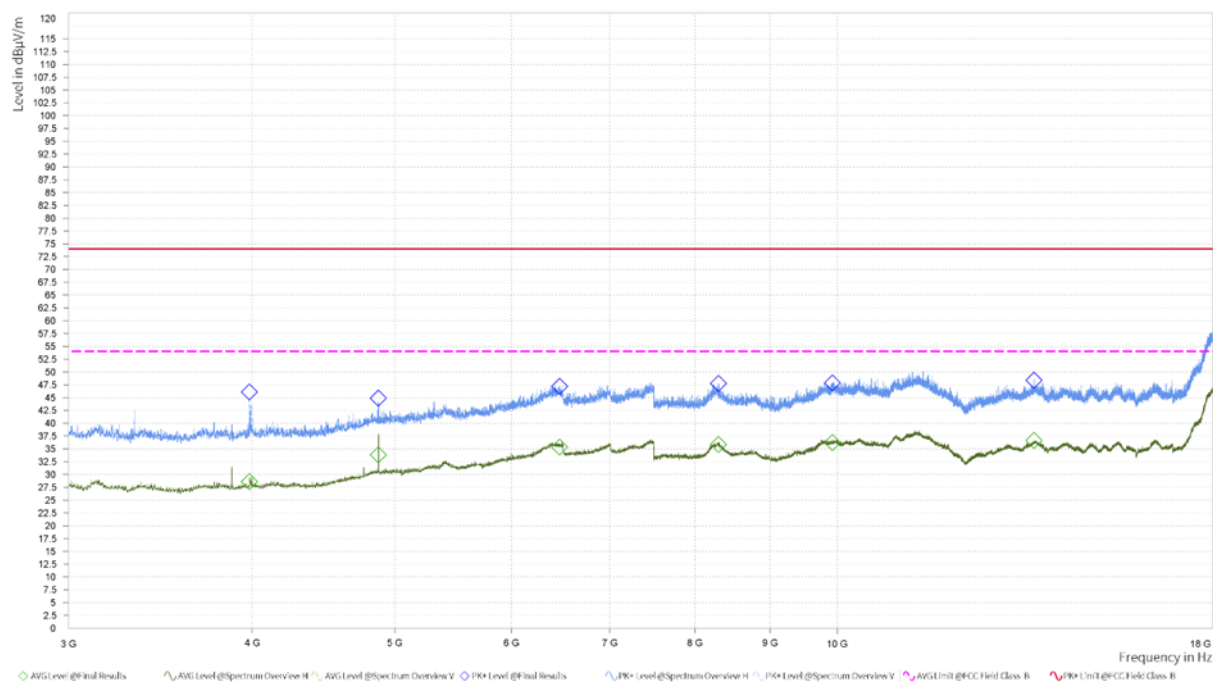
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,090.000	50.97	74.00	23.03	39.41	54.00	14.59	-5.61	H	283.9	2.00	1.000
1,244.750	52.38	74.00	21.62	40.35	54.00	13.65	-4.30	H	0	2.00	1.000
1,472.250	52.05	74.00	21.95	40.61	54.00	13.39	-4.16	H	4.9	2.00	1.000
1,729.000	53.83	74.00	20.17	41.69	54.00	12.31	-3.65	H	19.6	2.00	1.000
2,155.750	55.65	74.00	18.35	43.34	54.00	10.66	-1.67	H	50	2.00	1.000
2,754.250	58.44	74.00	15.56	46.66	54.00	7.34	1.18	H	0	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



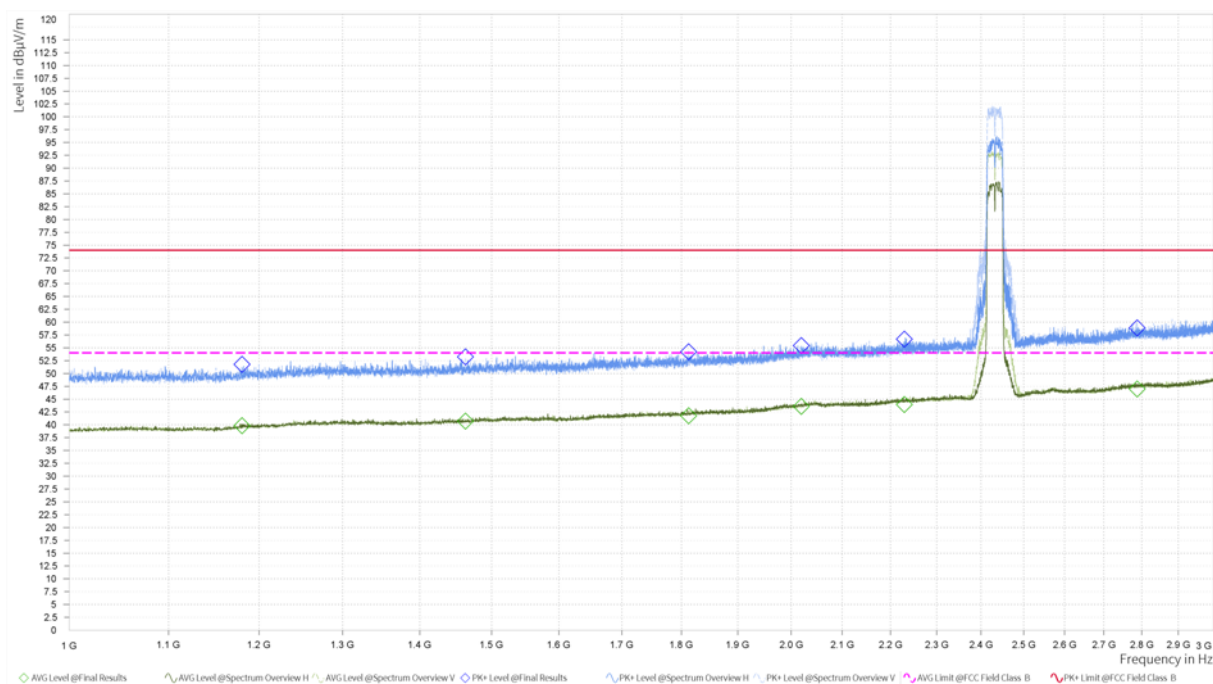
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,980.625	46.08	74.00	27.92	28.62	54.00	25.38	-5.28	V	195.6	1.00	1.000
4,873.125	44.85	74.00	29.15	33.80	54.00	20.20	-1.61	H	24.1	1.00	1.000
6,470.625	47.15	74.00	26.85	35.32	54.00	18.68	3.15	V	86.2	2.00	1.000
8,300.625	47.74	74.00	26.26	35.83	54.00	18.17	8.78	H	211.7	2.00	1.000
9,922.500	47.83	74.00	26.17	36.22	54.00	17.78	5.45	V	250.5	2.00	1.000
13,601.250	48.35	74.00	25.65	36.64	54.00	17.36	6.21	V	25.3	1.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT40) CH3



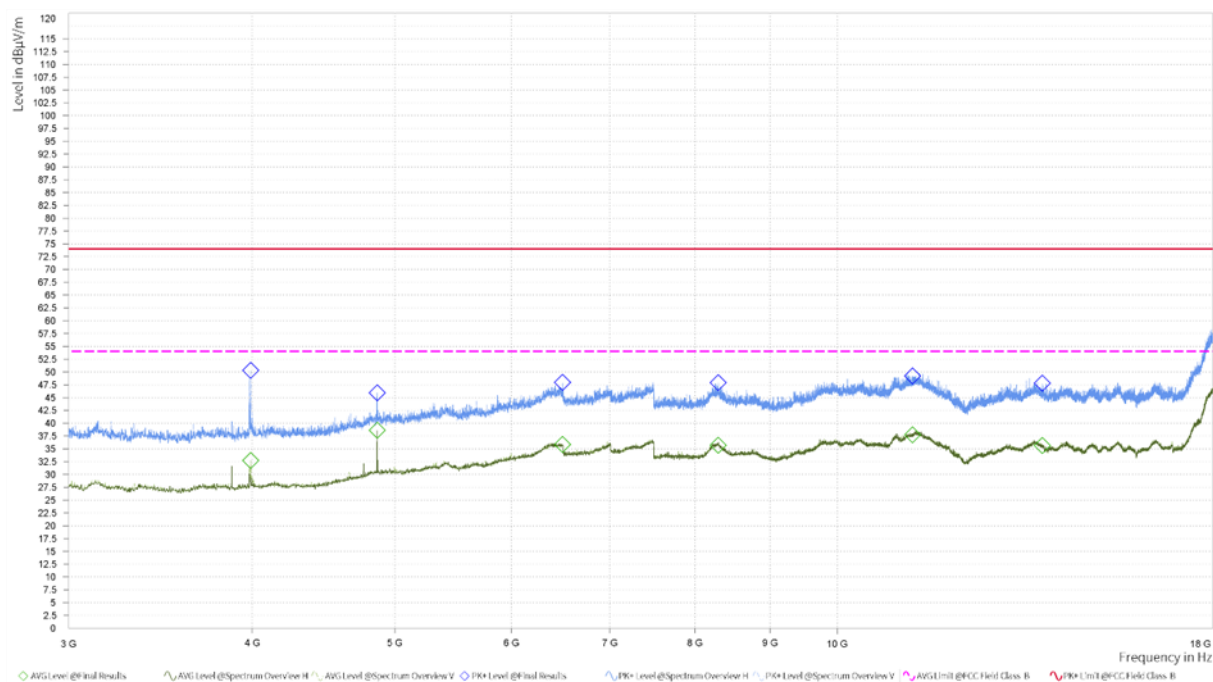
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,180.500	51.74	74.00	22.26	39.83	54.00	14.17	-4.79	H	163	2.00	1.000
1,462.750	53.21	74.00	20.79	40.71	54.00	13.29	-4.17	V	311.2	2.00	1.000
1,812.250	54.18	74.00	19.82	41.72	54.00	12.28	-3.36	V	311.2	2.00	1.000
2,019.250	55.41	74.00	18.59	43.56	54.00	10.44	-1.52	V	280.6	2.00	1.000
2,229.250	56.65	74.00	17.35	43.94	54.00	10.06	-1.01	H	163	2.00	1.000
2,787.750	58.85	74.00	15.15	46.95	54.00	7.05	1.40	V	360	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



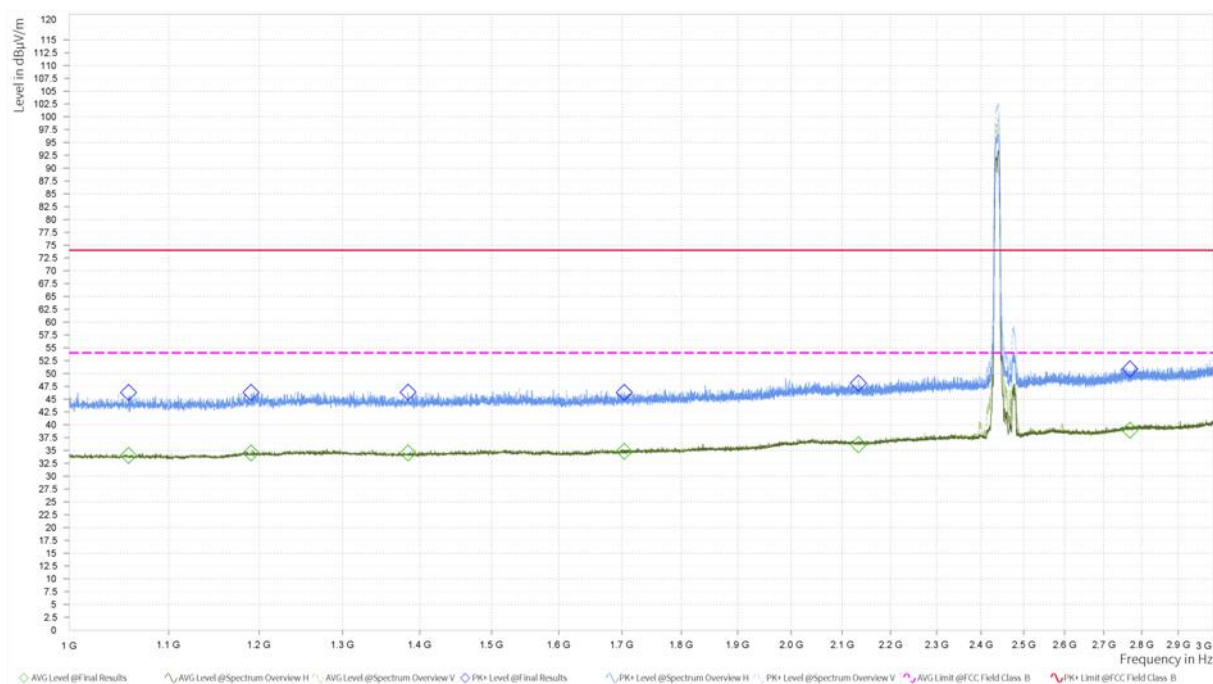
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,990.000	50.30	74.00	23.70	32.72	54.00	21.28	-5.21	V	242.3	1.00	0.000
4,863.750	45.93	74.00	28.07	38.61	54.00	15.39	-1.56	H	23.8	1.00	0.000
6,502.500	47.97	74.00	26.03	35.83	54.00	18.17	3.08	V	280	2.00	0.000
8,295.000	47.90	74.00	26.10	35.69	54.00	18.31	8.87	V	234.6	1.00	0.000
11,246.250	49.18	74.00	24.82	37.74	54.00	16.26	7.28	H	266.4	2.00	0.000
13,781.250	47.81	74.00	26.19	35.61	54.00	18.39	6.09	V	63.4	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT40) CH6



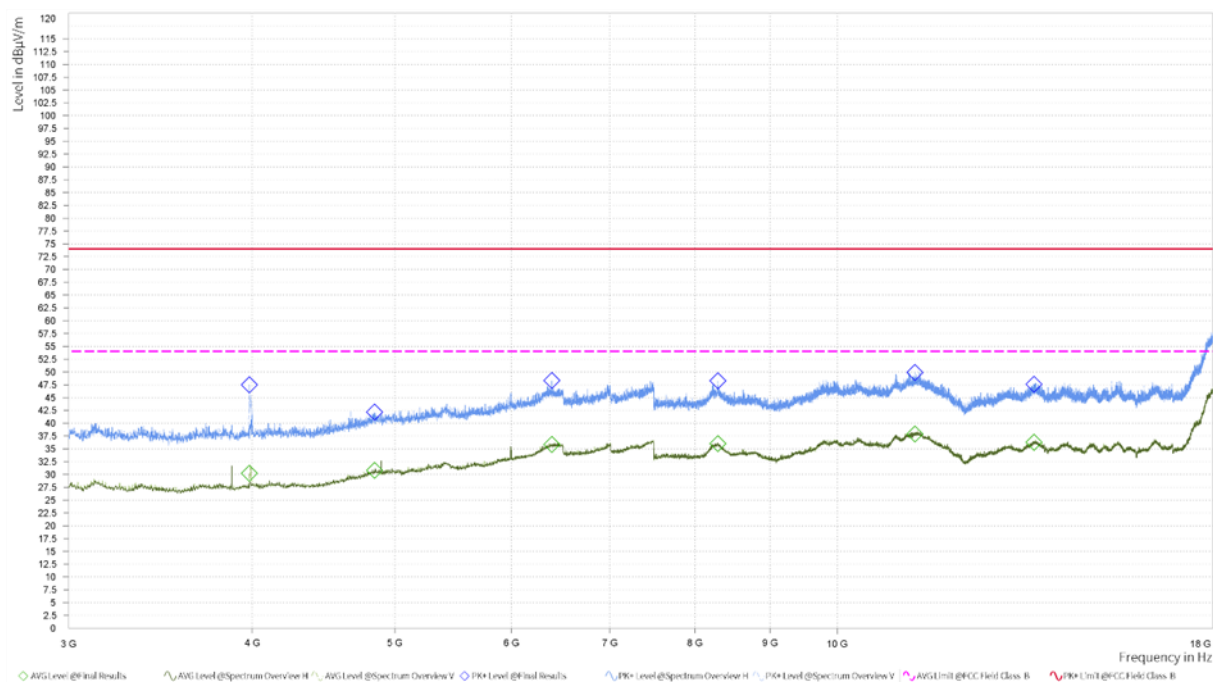
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,058.500	46.27	74.00	27.73	34.04	54.00	19.96	-5.69	H	43	2.00	1.000
1,190.750	46.29	74.00	27.71	34.49	54.00	19.51	-4.73	H	5.8	2.00	1.000
1,384.500	46.31	74.00	27.69	34.48	54.00	19.52	-4.46	H	102.4	2.00	1.000
1,703.750	46.28	74.00	27.72	34.78	54.00	19.22	-3.81	H	57.6	2.00	1.000
2,133.500	48.11	74.00	25.89	36.09	54.00	17.91	-1.69	H	177.4	2.00	1.000
2,769.000	50.85	74.00	23.15	38.91	54.00	15.09	1.27	V	232.3	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



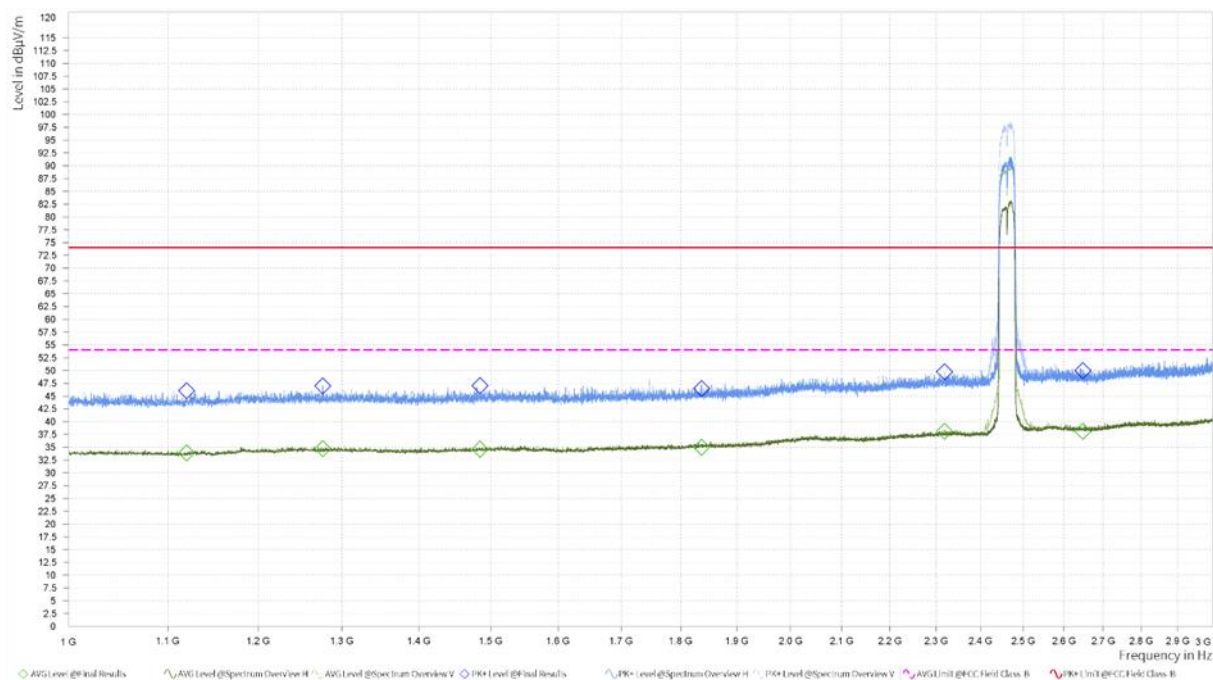
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,980.625	47.50	74.00	26.50	30.18	54.00	23.82	-5.28	V	194	1.00	0.000
4,843.125	42.15	74.00	31.85	30.77	54.00	23.23	-1.57	H	282.6	1.00	0.000
6,393.750	48.31	74.00	25.69	35.85	54.00	18.15	3.43	H	85.2	2.00	0.000
8,293.125	48.24	74.00	25.76	36.01	54.00	17.99	8.86	V	174.4	2.00	0.000
11,291.250	49.89	74.00	24.11	37.86	54.00	16.14	7.37	V	178.4	1.00	0.000
13,603.125	47.57	74.00	26.43	36.27	54.00	17.73	6.22	H	313.2	2.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11n (HT40) CH9



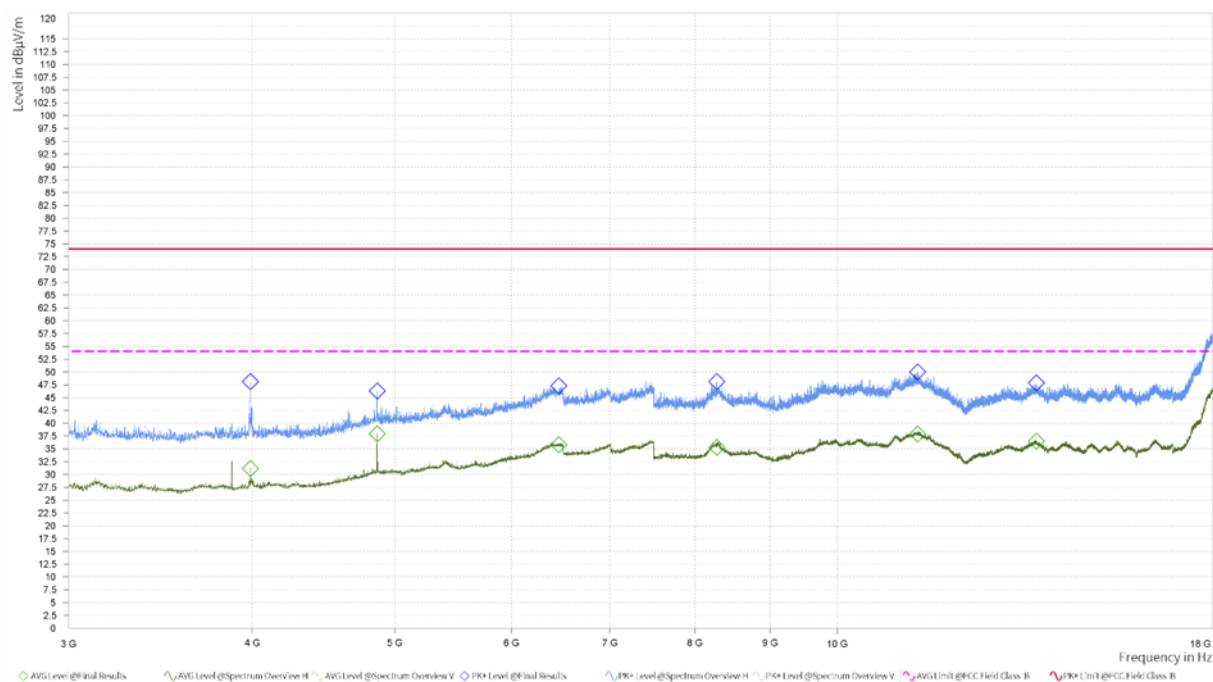
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,120.000	46.02	74.00	27.98	33.84	54.00	20.16	-5.53	H	30.3	2.00	1.000
1,276.500	46.96	74.00	27.04	34.69	54.00	19.31	-4.26	H	30.3	2.00	1.000
1,484.500	47.00	74.00	27.00	34.58	54.00	19.42	-3.95	H	38.8	2.00	1.000
1,836.250	46.44	74.00	27.56	34.95	54.00	19.05	-3.23	V	250.9	2.00	1.000
2,318.750	49.70	74.00	24.30	38.07	54.00	15.93	-0.59	V	356.9	2.00	1.000
2,647.750	49.92	74.00	24.08	38.11	54.00	15.89	0.47	H	131.7	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



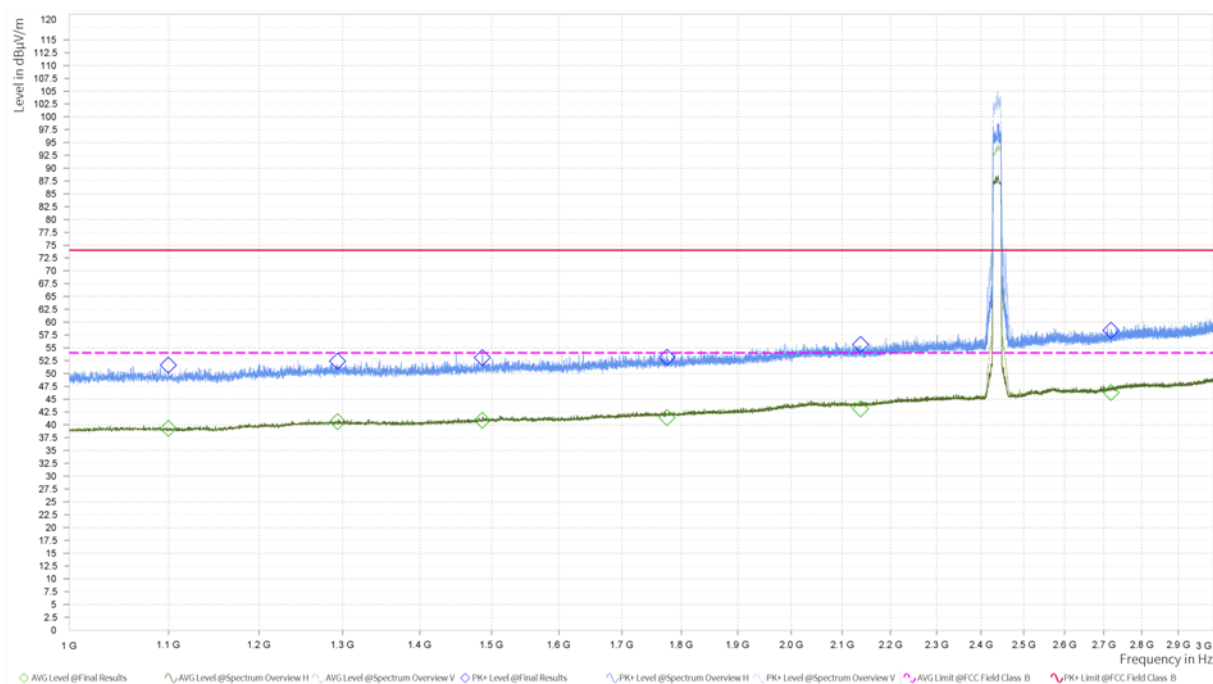
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,988.125	48.10	74.00	25.90	31.16	54.00	22.84	-5.22	V	179.9	1.00	0.000
4,863.750	46.28	74.00	27.72	37.93	54.00	16.07	-1.56	H	360	1.00	0.000
6,463.125	47.26	74.00	26.74	35.78	54.00	18.22	3.19	V	356.8	1.00	0.000
8,278.125	48.09	74.00	25.91	35.26	54.00	18.74	8.71	H	251.2	1.00	0.000
11,338.125	49.97	74.00	24.03	37.90	54.00	16.10	7.42	H	0	2.00	0.000
13,655.625	47.83	74.00	26.17	36.49	54.00	17.51	6.23	V	296.8	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit -MAX Peak/ Average

802.11ax HE20 CH 1



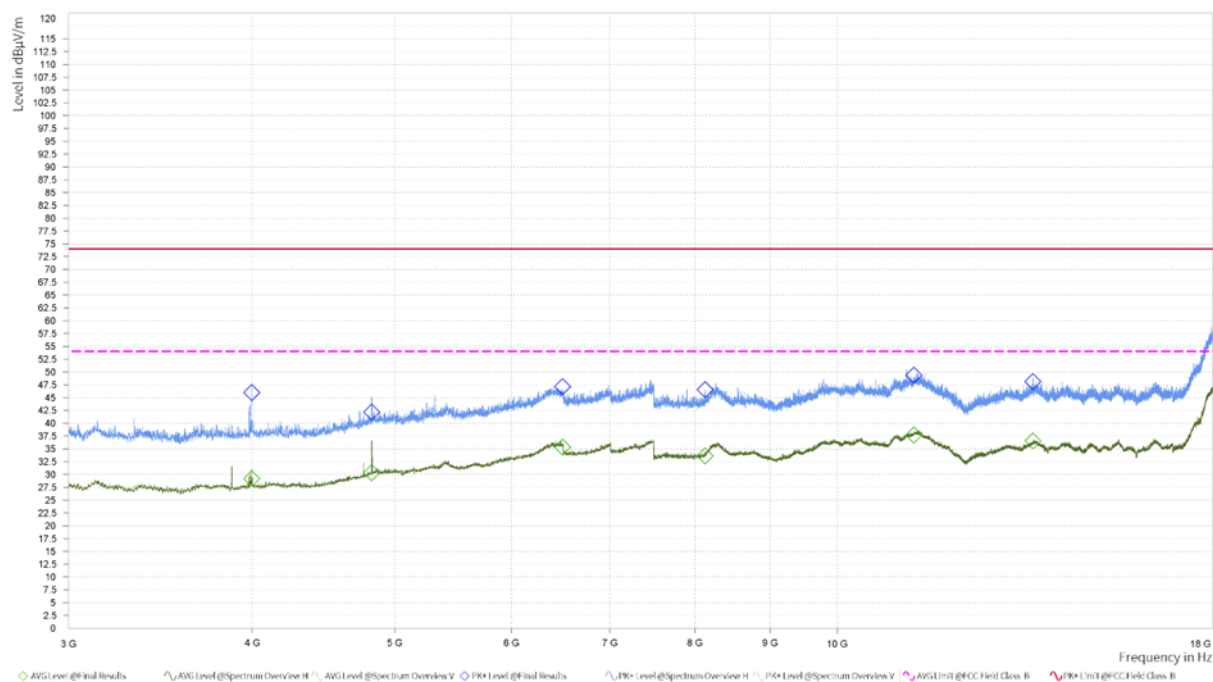
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,099.750	51.62	74.00	22.38	39.30	54.00	14.70	-5.62	H	98.4	2.00	1.000
1,293.750	52.40	74.00	21.60	40.60	54.00	13.40	-4.16	H	258.2	2.00	1.000
1,486.750	53.04	74.00	20.96	40.84	54.00	13.16	-3.90	H	163.8	2.00	1.000
1,775.000	53.12	74.00	20.88	41.37	54.00	12.63	-3.52	H	83.9	2.00	1.000
2,137.750	55.64	74.00	18.36	43.12	54.00	10.88	-1.70	H	40.6	2.00	1.000
2,718.500	58.36	74.00	15.64	46.28	54.00	7.72	0.77	H	0	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



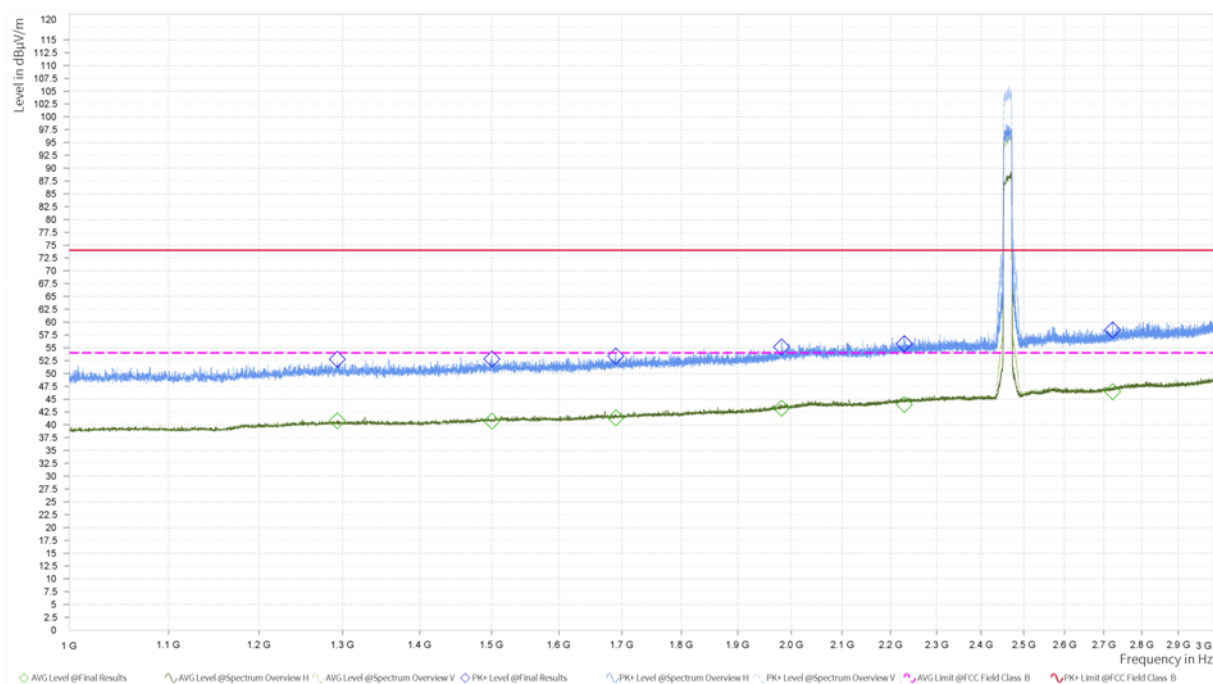
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,995.625	45.98	74.00	28.02	29.19	54.00	24.81	-5.17	V	252.4	1.00	1.000
4,822.500	42.14	74.00	31.86	30.30	54.00	23.70	-1.76	H	332.1	1.00	1.000
6,502.500	47.10	74.00	26.90	35.32	54.00	18.68	3.08	V	81.8	1.00	1.000
8,126.250	46.52	74.00	27.48	33.59	54.00	20.41	6.24	H	275	2.00	1.000
11,268.750	49.34	74.00	24.66	37.67	54.00	16.33	7.33	H	255.7	1.00	1.000
13,578.750	48.12	74.00	25.88	36.54	54.00	17.46	6.18	H	112.5	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11ax HE20 CH6



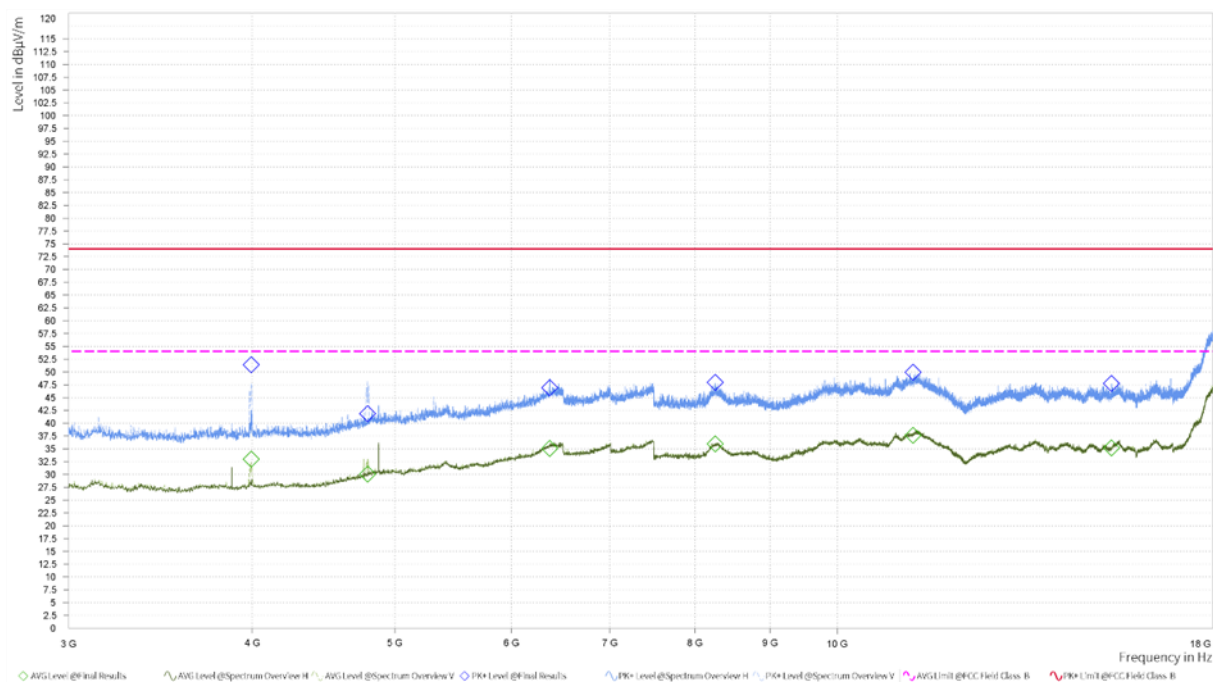
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,293.500	52.73	74.00	21.27	40.75	54.00	13.25	-4.16	H	73.1	2.00	1.000
1,500.500	52.78	74.00	21.22	40.69	54.00	13.31	-4.00	H	80.3	2.00	1.000
1,690.000	53.39	74.00	20.61	41.30	54.00	12.70	-3.91	H	247.9	2.00	1.000
1,981.750	55.14	74.00	18.86	43.21	54.00	10.79	-1.86	H	131.2	2.00	1.000
2,229.250	55.78	74.00	18.22	43.92	54.00	10.08	-1.01	H	80.3	2.00	1.000
2,723.000	58.42	74.00	15.58	46.44	54.00	7.56	0.82	H	3.1	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit –MAX Peak/ Average



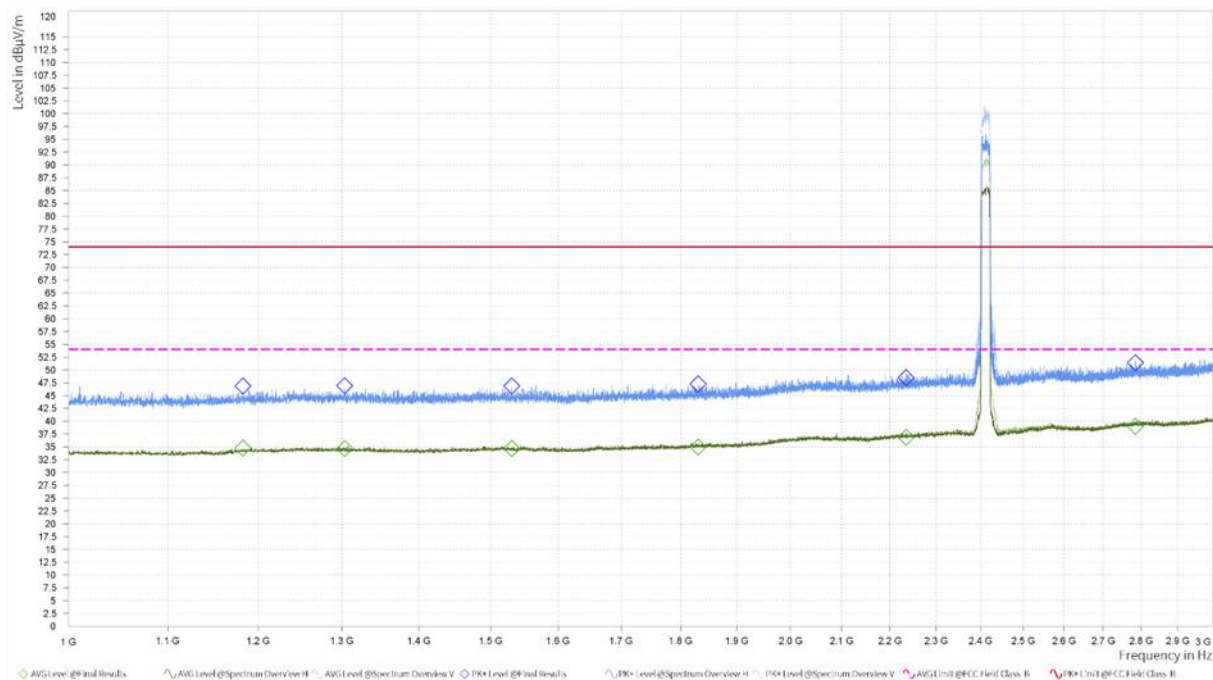
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,993.750	51.38	74.00	22.62	32.96	54.00	21.04	-5.18	V	244.3	1.00	1.000
4,790.625	41.85	74.00	32.15	30.03	54.00	23.97	-2.10	V	38.8	2.00	1.000
6,373.125	46.89	74.00	27.11	35.08	54.00	18.92	3.35	H	232.5	1.00	1.000
8,257.500	47.97	74.00	26.03	35.95	54.00	18.05	8.51	H	310.1	1.00	1.000
11,255.625	49.91	74.00	24.09	37.62	54.00	16.38	7.30	H	244.7	2.00	1.000
15,358.125	47.71	74.00	26.29	35.18	54.00	18.82	4.81	H	1.4	1.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

802.11ax HE20 CH11



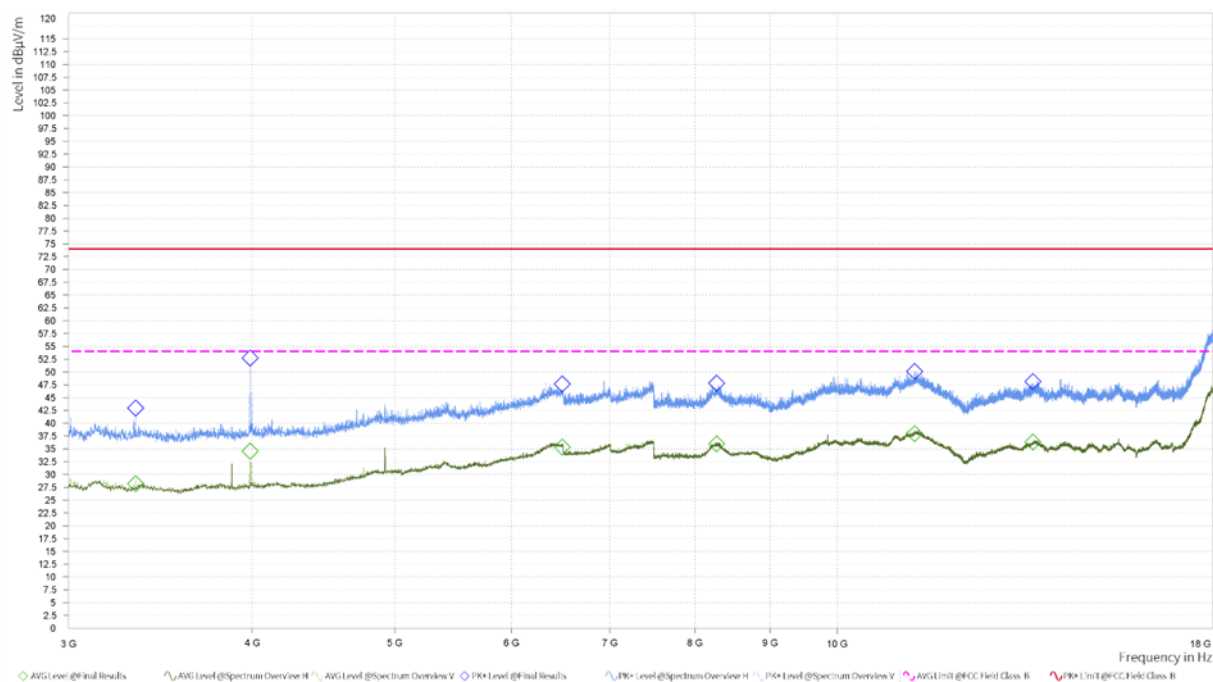
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,182.250	46.85	74.00	27.15	34.75	54.00	19.25	-4.74	V	91.5	2.00	1.000
1,303.500	46.88	74.00	27.12	34.66	54.00	19.34	-4.23	H	151.7	2.00	1.000
1,530.250	46.86	74.00	27.14	34.65	54.00	19.35	-3.95	H	0	2.00	1.000
1,830.250	47.28	74.00	26.72	34.98	54.00	19.02	-3.27	V	155.2	2.00	1.000
2,234.500	48.48	74.00	25.52	36.83	54.00	17.17	-0.99	H	3.4	2.00	1.000
2,785.000	51.40	74.00	22.60	38.99	54.00	15.01	1.38	H	30.3	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average



Radiates Emission from 3GHz to 18GHz

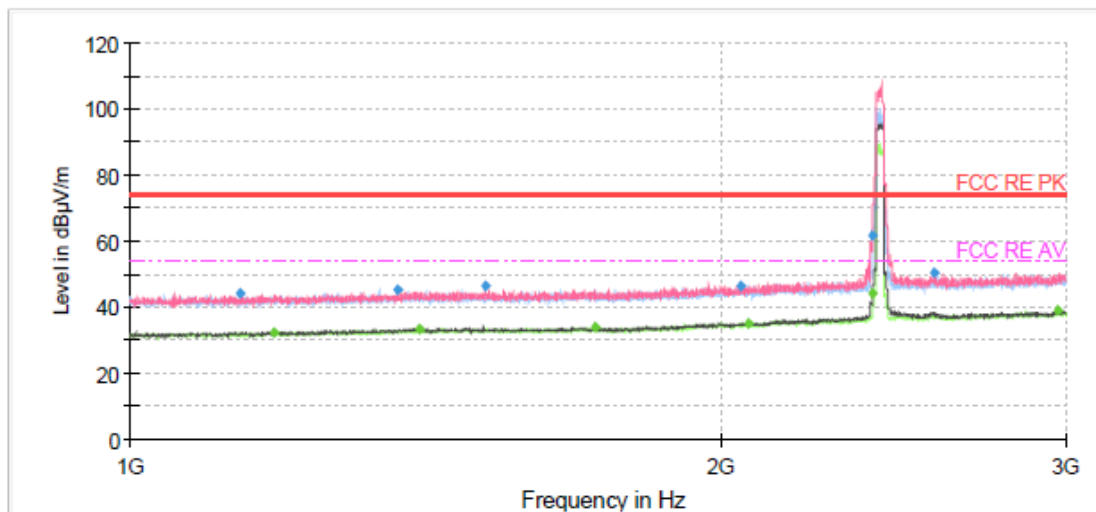
Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,331.875	42.94	74.00	31.06	28.17	54.00	25.83	-6.69	V	267.2	1.00	1.000
3,986.250	52.69	74.00	21.31	34.55	54.00	19.45	-5.24	V	190.6	1.00	1.000
6,498.750	47.66	74.00	26.34	35.31	54.00	18.69	3.09	H	15.6	2.00	1.000
8,274.375	47.77	74.00	26.23	35.92	54.00	18.08	8.67	V	185	2.00	1.000
11,285.625	50.10	74.00	23.90	37.91	54.00	16.09	7.36	H	0	2.00	1.000
13,578.750	48.09	74.00	25.91	36.34	54.00	17.66	6.18	H	230.6	2.00	1.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

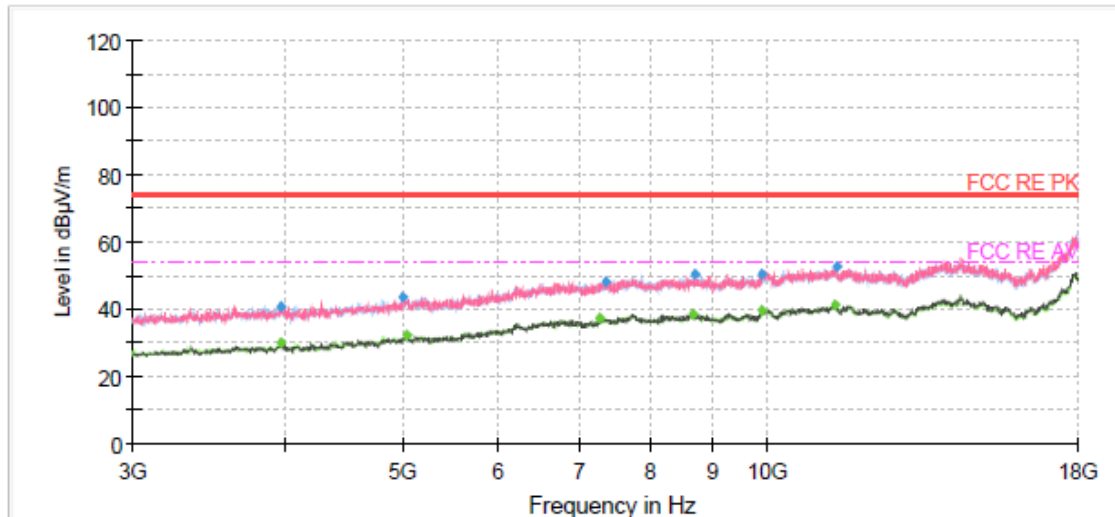
RU Mode

802.11ax HE20 CH1



Final Result

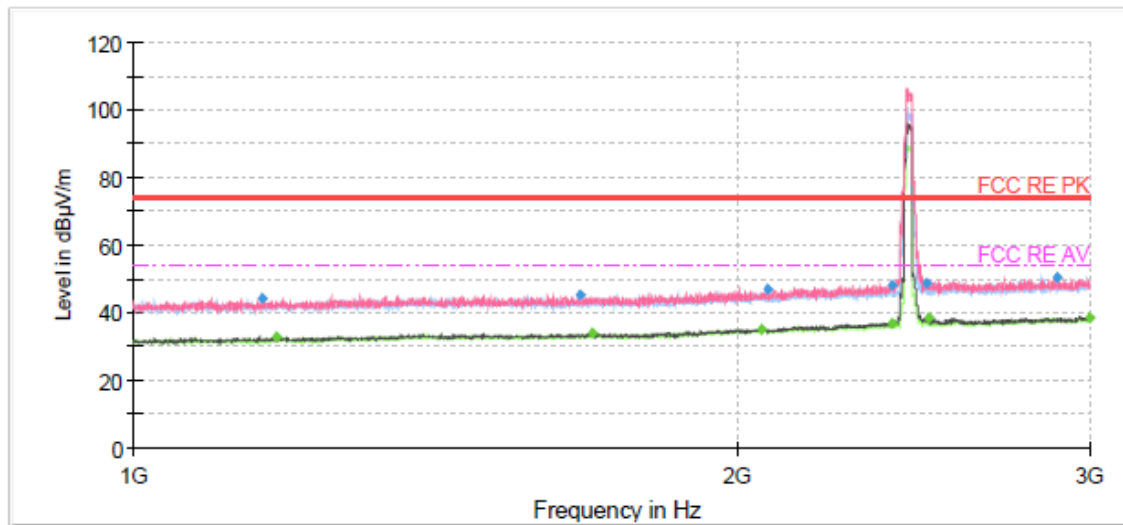
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1137.50	44.07	---	74.00	29.93	500.00	200.0	V	182.00	-5
1183.00	---	32.48	54.00	21.52	500.00	100.0	V	357.00	-4
1368.25	45.45	---	74.00	28.55	500.00	200.0	V	338.00	-3
1404.50	---	33.60	54.00	20.40	500.00	100.0	V	0.00	-3
1517.25	46.26	---	74.00	27.74	500.00	200.0	V	338.00	-3
1724.75	---	33.90	54.00	20.10	500.00	200.0	V	185.00	-2
2048.75	46.38	---	74.00	27.62	500.00	100.0	V	351.00	0
2067.00	---	35.34	54.00	18.66	500.00	100.0	V	343.00	0
2389.75	61.68	---	74.00	12.32	500.00	100.0	V	357.00	2
2390.00	---	44.41	54.00	9.59	500.00	100.0	V	180.00	2
2568.25	50.26	---	74.00	23.74	500.00	200.0	V	184.00	3
2970.75	---	38.95	54.00	15.05	500.00	100.0	V	354.00	3



Final Result

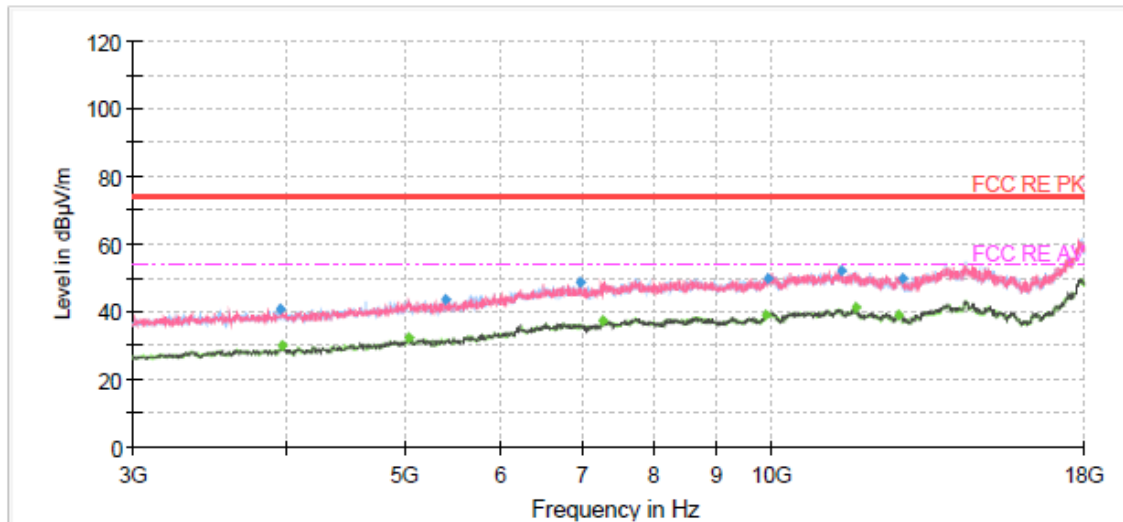
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3967.50	---	30.10	54.00	23.90	500.00	100.0	V	278.00	-3
3969.38	40.66	---	74.00	33.34	500.00	100.0	H	180.00	-3
5011.88	43.49	---	74.00	30.51	500.00	100.0	V	358.00	0
5038.13	---	32.27	54.00	21.73	500.00	100.0	V	345.00	0
7275.00	---	37.63	54.00	16.37	500.00	100.0	V	0.00	6
7344.38	47.92	---	74.00	26.08	500.00	200.0	H	316.00	6
8653.13	---	38.36	54.00	15.64	500.00	200.0	H	353.00	7
8707.50	50.14	---	74.00	23.86	500.00	100.0	V	269.00	7
9888.75	50.63	---	74.00	23.37	500.00	200.0	V	180.00	7
9896.25	---	39.46	54.00	14.54	500.00	200.0	H	287.00	7
11343.75	---	41.27	54.00	12.73	500.00	100.0	V	358.00	9
11383.13	52.42	---	74.00	21.58	500.00	200.0	V	189.00	9

802.11ax HE20 CH6



Final Result

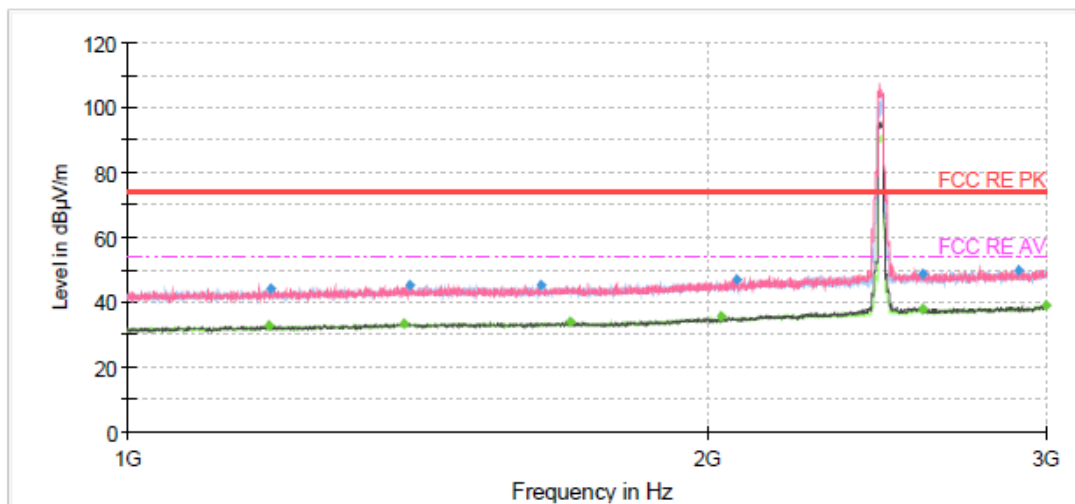
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1160.25	43.96	---	74.00	30.04	500.00	100.0	H	184.00	-5
1178.00	---	32.74	54.00	21.26	500.00	100.0	V	355.00	-4
1669.00	45.54	---	74.00	28.46	500.00	200.0	V	182.00	-2
1693.00	---	34.11	54.00	19.89	500.00	100.0	H	184.00	-2
2056.00	---	35.35	54.00	18.65	500.00	200.0	V	346.00	0
2074.00	46.70	---	74.00	27.30	500.00	100.0	H	186.00	0
2389.00	---	36.98	54.00	17.02	500.00	100.0	V	180.00	2
2390.00	48.05	---	74.00	25.95	500.00	100.0	V	180.00	2
2487.25	48.63	---	74.00	25.37	500.00	100.0	V	359.00	2
2491.00	---	38.45	54.00	15.55	500.00	100.0	V	354.00	2
2888.25	50.12	---	74.00	23.88	500.00	200.0	V	278.00	3
3000.00	---	38.70	54.00	15.30	500.00	200.0	V	180.00	3



Final Result

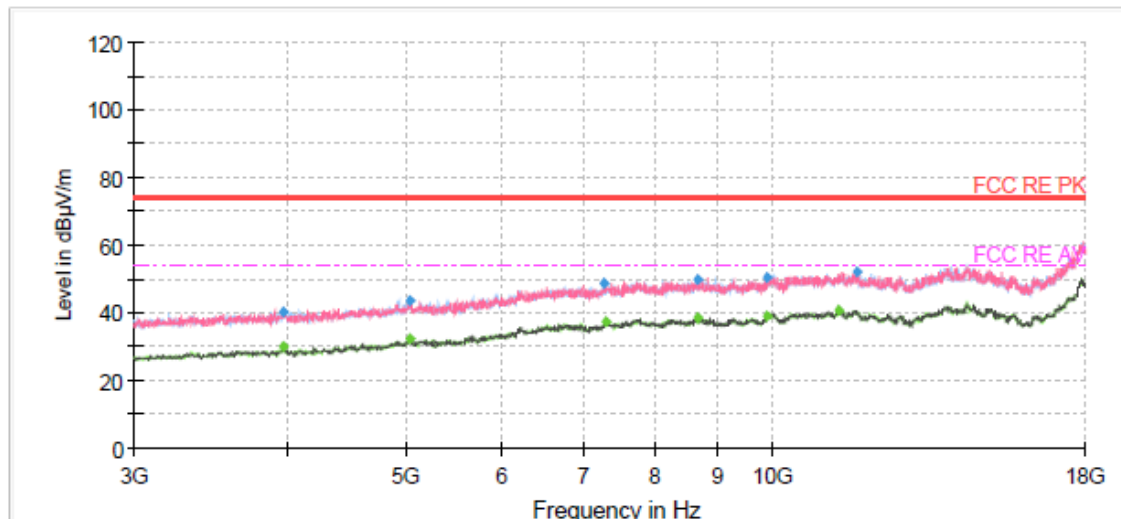
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3961.88	40.94	---	74.00	33.06	500.00	100.0	H	183.00	-4
3965.63	---	29.95	54.00	24.05	500.00	200.0	H	0.00	-3
5038.13	---	32.19	54.00	21.81	500.00	100.0	H	180.00	0
5409.38	43.54	---	74.00	30.46	500.00	200.0	V	291.00	0
6975.00	48.92	---	74.00	25.08	500.00	200.0	V	301.00	4
7273.13	---	37.48	54.00	16.52	500.00	100.0	H	182.00	6
9896.25	---	39.08	54.00	14.92	500.00	100.0	V	0.00	7
9900.00	49.91	---	74.00	24.09	500.00	100.0	V	234.00	7
11377.50	52.12	---	74.00	21.88	500.00	100.0	H	221.00	9
11707.50	---	41.06	54.00	12.94	500.00	200.0	V	184.00	9
12703.13	---	38.90	54.00	15.10	500.00	200.0	H	271.00	9
12787.50	49.80	---	74.00	24.20	500.00	200.0	V	281.00	9

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)
1182.75	---	32.66	54.00	21.34	500.00	100.0	H	253.00	-4
1187.50	44.19	---	74.00	29.81	500.00	200.0	H	359.00	-4
1391.50	---	33.41	54.00	20.59	500.00	200.0	H	298.00	-3
1401.25	45.25	---	74.00	28.75	500.00	100.0	H	185.00	-3
1640.50	45.50	---	74.00	28.50	500.00	100.0	H	180.00	-2
1698.50	---	33.96	54.00	20.04	500.00	100.0	H	188.00	-2
2035.25	---	35.55	54.00	18.45	500.00	100.0	V	353.00	0
2073.75	46.76	---	74.00	27.24	500.00	100.0	V	219.00	0
2588.50	---	38.10	54.00	15.90	500.00	100.0	V	245.00	2
2589.25	48.59	---	74.00	25.41	500.00	200.0	V	186.00	2
2901.50	50.00	---	74.00	24.00	500.00	200.0	V	329.00	3
2999.50	---	38.86	54.00	15.14	500.00	200.0	H	0.00	3

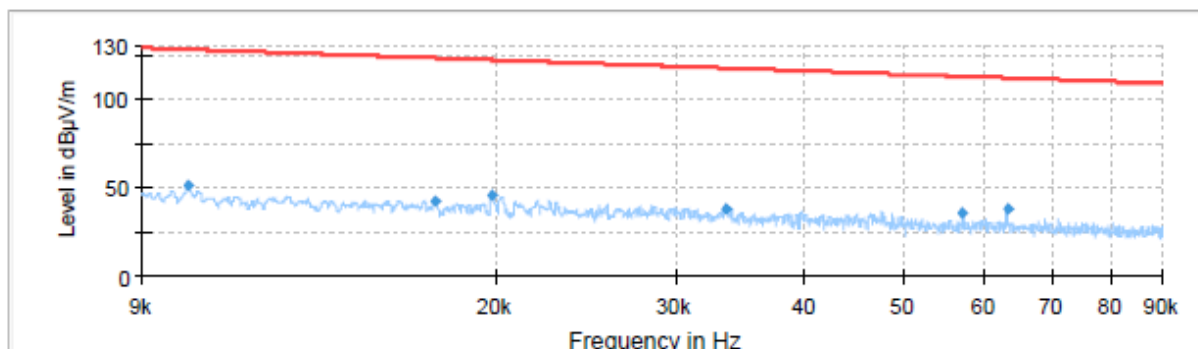


Final Result

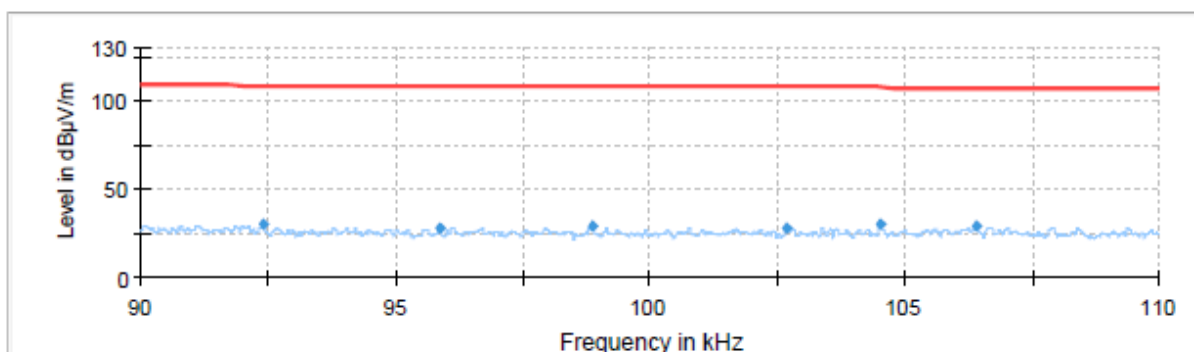
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3967.50	---	30.20	54.00	23.80	500.00	200.0	H	342.00	-3
3973.13	40.43	---	74.00	33.57	500.00	200.0	V	246.00	-3
5034.38	---	32.29	54.00	21.71	500.00	200.0	H	347.00	0
5041.88	43.46	---	74.00	30.54	500.00	200.0	V	180.00	1
7273.13	48.49	---	74.00	25.51	500.00	100.0	H	188.00	6
7278.75	---	37.23	54.00	16.77	500.00	200.0	H	275.00	6
8658.75	---	38.50	54.00	15.50	500.00	100.0	V	348.00	7
8660.63	49.61	---	74.00	24.39	500.00	200.0	H	220.00	7
9886.88	---	38.99	54.00	15.01	500.00	200.0	H	356.00	7
9896.25	50.49	---	74.00	23.51	500.00	100.0	H	236.00	7
11315.63	---	40.80	54.00	13.20	500.00	200.0	V	183.00	9
11716.88	52.20	---	74.00	21.80	500.00	100.0	V	0.00	9

Bluetooth LE

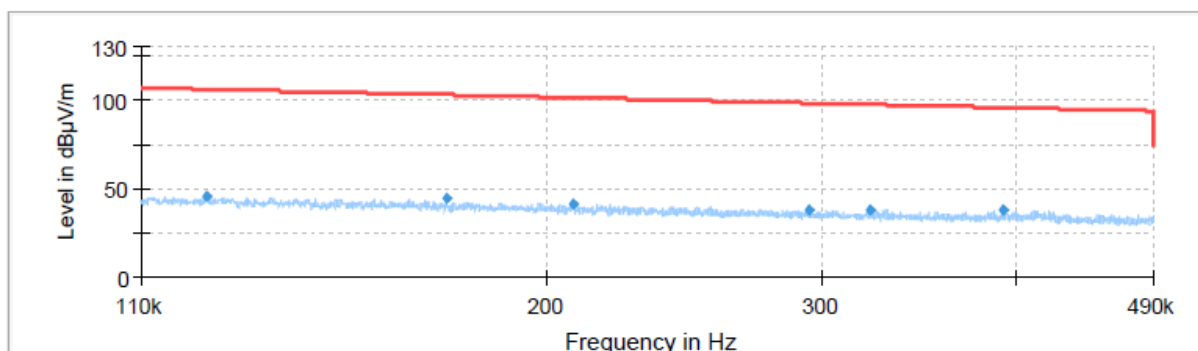
During the test, the Radiates Emission from 9kHz to 1GHz was performed in all modes with all channels, Bluetooth LE-Channel 39 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



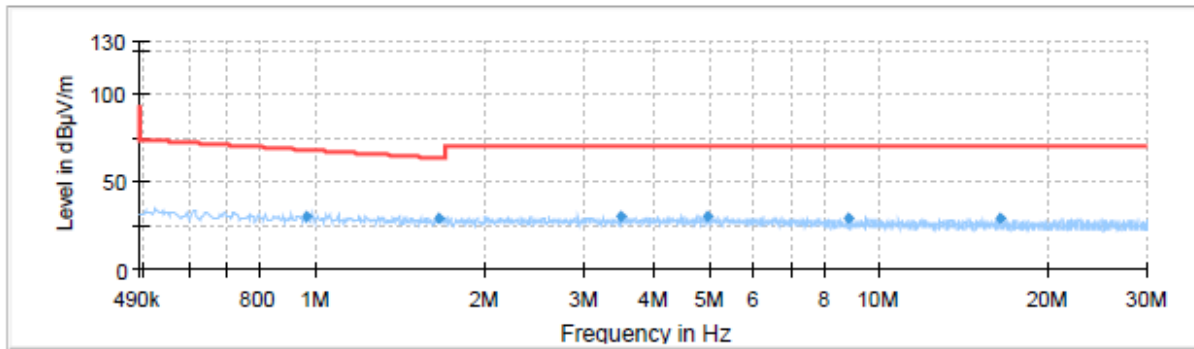
Radiates Emission from 9kHz to 90kHz



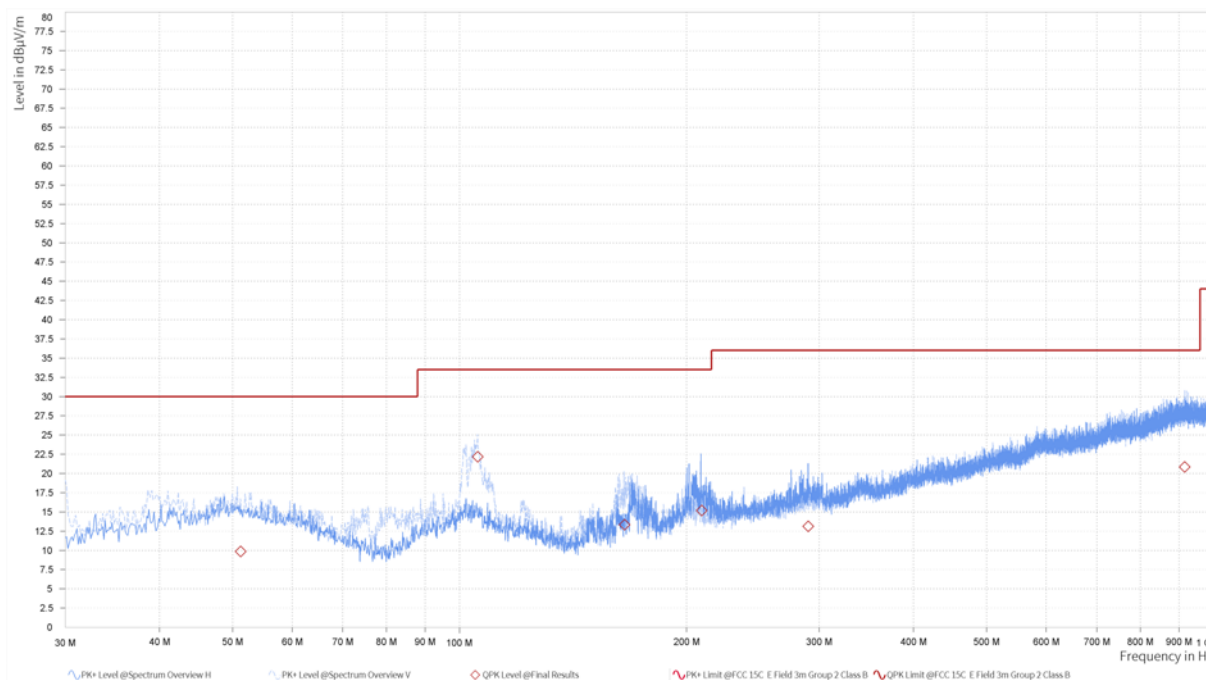
Radiates Emission from 90kHz to 110kHz



Radiates Emission from 110kHz to 490kHz



Radiates Emission from 490kHz to 30MHz



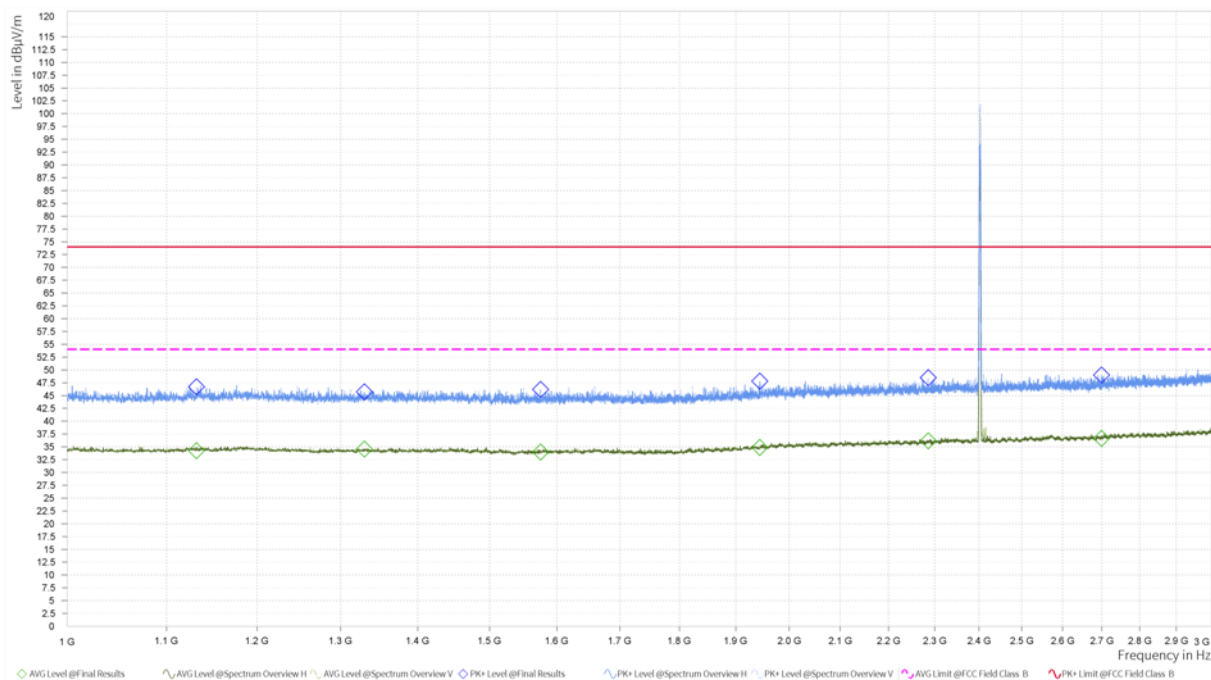
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (m)	Polarization	Azimuth (deg)	Correct Factor (dB)
51.236	9.83	30.00	20.17	1.04	V	147.5	-8.47
105.717	22.14	33.50	11.36	1.00	V	274.6	-10.14
165.582	13.33	33.50	20.17	1.00	V	237.6	-12.34
209.493	15.15	33.50	18.35	2.04	H	89.6	-9.68
289.965	13.12	36.00	22.88	2.20	H	13.1	-7.63
915.841	20.82	36.00	15.18	1.89	V	116.7	2.74

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit – Quasi-Peak

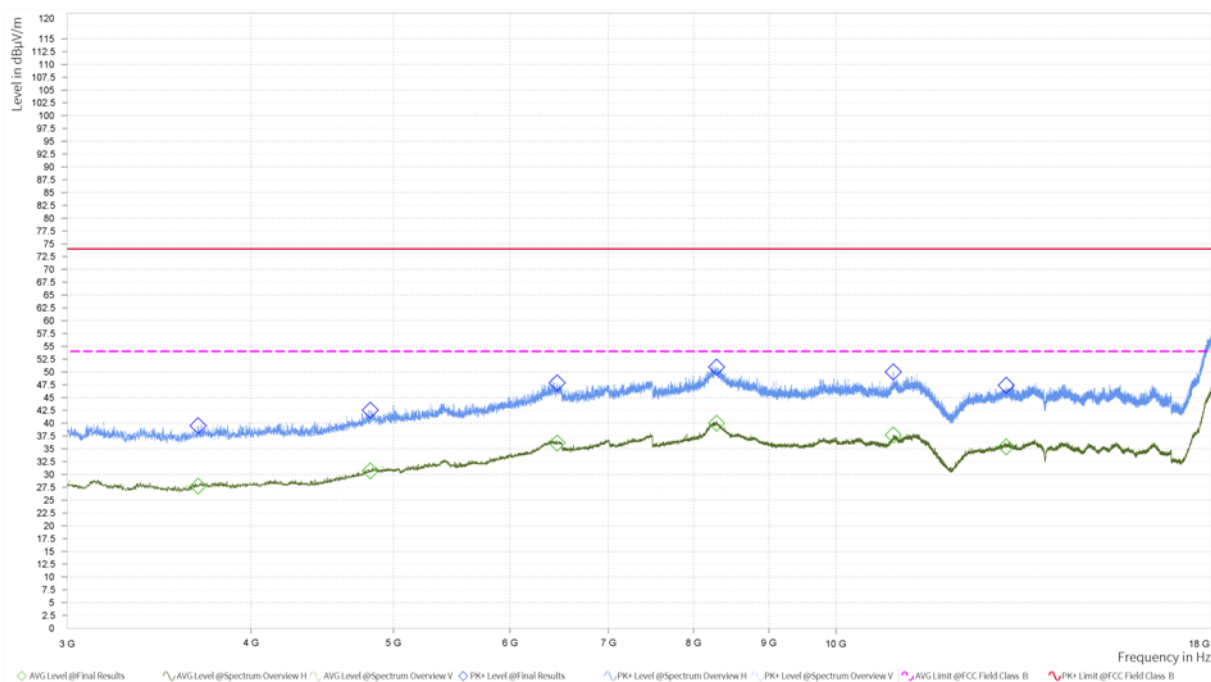
Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,132.000	46.70	74.00	27.30	34.23	54.00	19.77	-3.98	V	247.7	1.00	0.000
1,330.000	45.70	74.00	28.30	34.51	54.00	19.49	-3.40	H	216.9	1.00	0.000
1,575.250	46.20	74.00	27.80	33.96	54.00	20.04	-3.10	H	122.6	2.00	0.000
1,944.250	47.81	74.00	26.19	34.83	54.00	19.17	-1.41	H	234.7	2.00	0.000
2,285.750	48.49	74.00	25.51	36.18	54.00	17.82	0.12	V	2.8	1.00	0.000
2,699.250	48.99	74.00	25.01	36.64	54.00	17.36	1.69	H	339.8	2.00	0.000



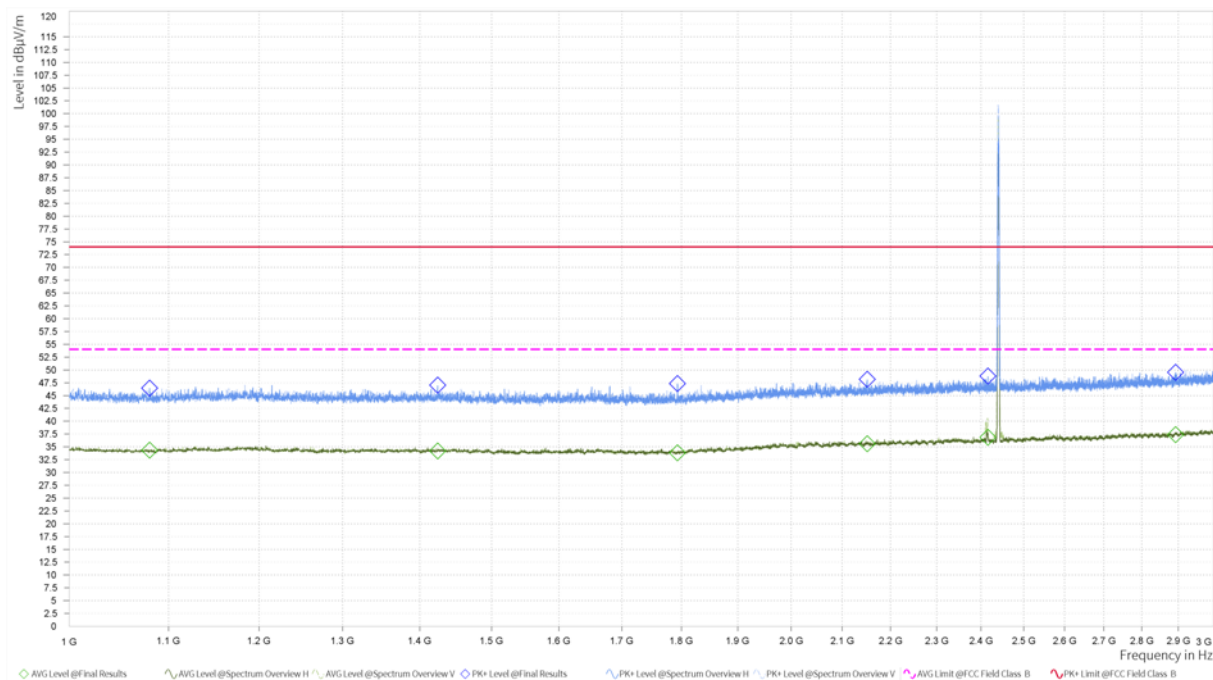
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,682.500	39.52	74.00	34.48	27.69	54.00	26.31	-6.07	H	283.3	2.00	0.000
4,820.625	42.51	74.00	31.49	30.68	54.00	23.32	-1.78	V	321.4	2.00	0.000
6,461.250	47.82	74.00	26.18	36.12	54.00	17.88	3.20	H	253.2	2.00	0.000
8,291.250	50.95	74.00	23.05	39.96	54.00	14.04	8.84	V	0	2.00	0.000
10,936.875	50.00	74.00	24.00	37.68	54.00	16.32	6.46	H	77	2.00	0.000
13,051.875	47.38	74.00	26.62	35.39	54.00	18.61	5.84	V	92.3	2.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit -MAX Peak/ Average

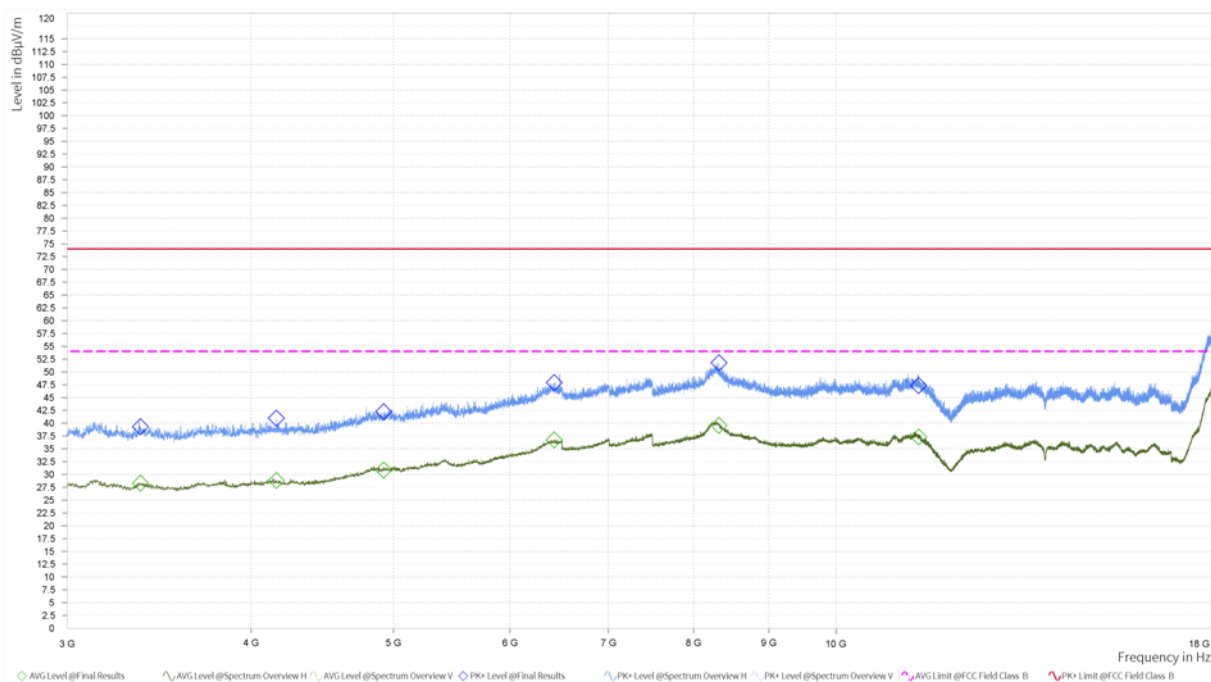
Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,080.250	46.46	74.00	27.54	34.33	54.00	19.67	-4.40	H	163	2.00	0.000
1,424.250	47.01	74.00	26.99	34.15	54.00	19.85	-3.25	H	198.4	2.00	0.000
1,793.250	47.33	74.00	26.67	33.79	54.00	20.21	-2.76	H	0.5	2.00	0.000
2,151.250	48.13	74.00	25.87	35.56	54.00	18.44	-0.43	H	297.3	2.00	0.000
2,415.750	48.77	74.00	25.23	36.82	54.00	17.18	0.56	H	2.9	1.00	0.000
2,893.000	49.53	74.00	24.47	37.34	54.00	16.66	2.67	H	170.1	2.00	0.000



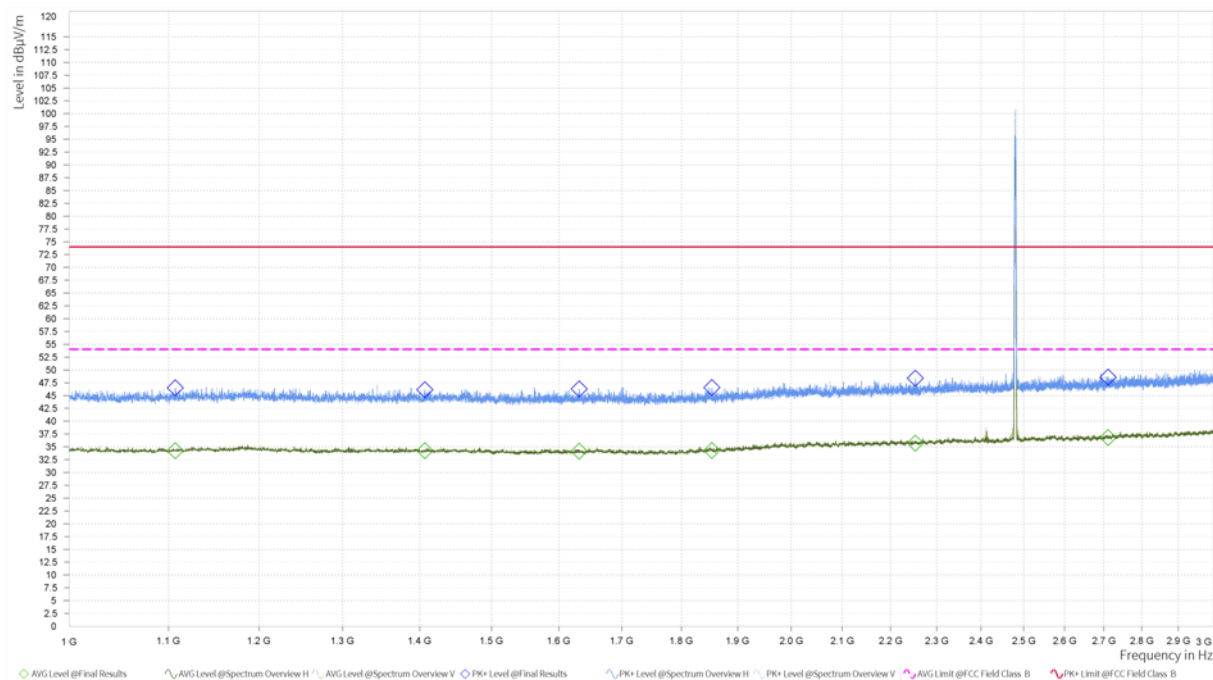
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,363.750	39.31	74.00	34.69	28.29	54.00	25.71	-6.50	H	62.5	2.00	0.000
4,162.500	40.98	74.00	33.02	28.79	54.00	25.21	-4.62	V	145.7	1.00	0.000
4,923.750	42.19	74.00	31.81	30.85	54.00	23.15	-1.62	H	0	2.00	0.000
6,431.250	47.90	74.00	26.10	36.74	54.00	17.26	3.35	H	266.5	1.00	0.000
8,323.125	51.76	74.00	22.24	39.56	54.00	14.44	8.39	V	0	1.00	0.000
11,377.500	47.30	74.00	26.70	37.32	54.00	16.68	7.47	H	360	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

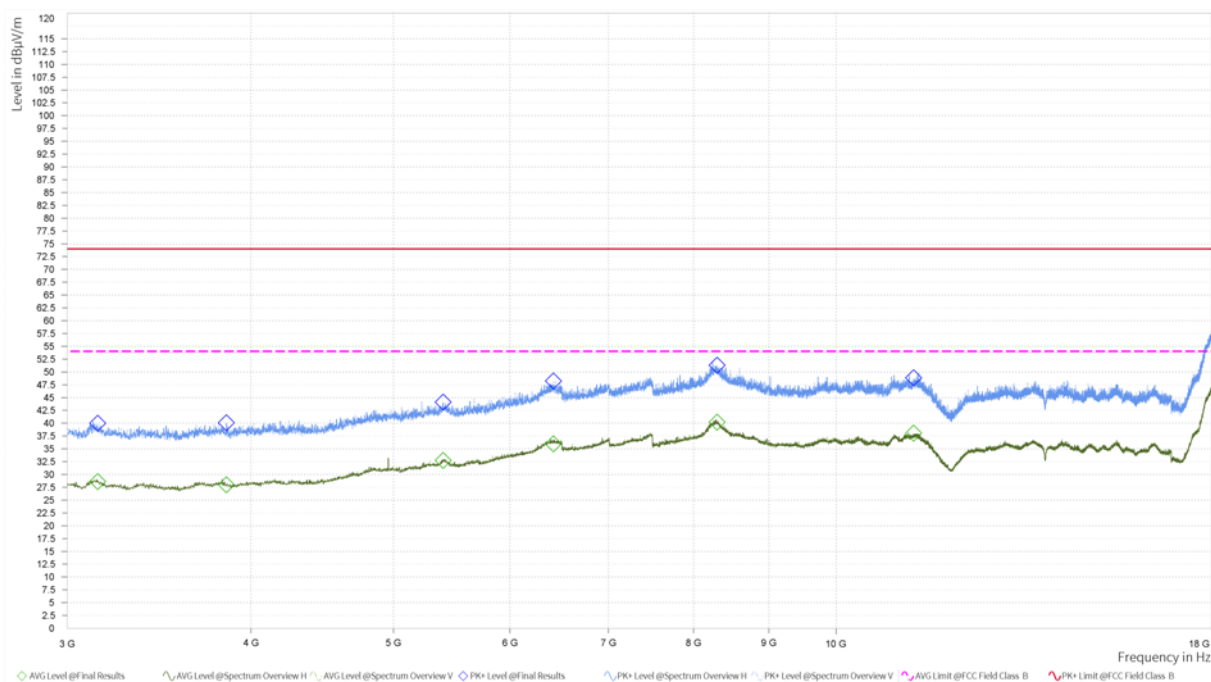
Bluetooth LE-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
1,107.250	46.48	74.00	27.52	34.22	54.00	19.78	-4.26	H	313.3	1.00	0.000
1,407.000	46.13	74.00	27.87	34.21	54.00	19.79	-3.32	H	360	2.00	0.000
1,631.500	46.28	74.00	27.72	34.14	54.00	19.86	-3.02	H	270.6	1.00	0.000
1,853.500	46.53	74.00	27.47	34.27	54.00	19.73	-2.18	H	48.5	2.00	0.000
2,253.250	48.34	74.00	25.66	35.71	54.00	18.29	-0.05	H	254.4	2.00	0.000
2,711.250	48.57	74.00	25.43	36.80	54.00	17.20	1.78	H	48.5	2.00	0.000



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	MaxPeak Limit (dBμV/m)	MaxPeak Margin (dB)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Corr. (dB/m)	Pol	Azimuth (deg)	Height (m)	Meas. Time (s)
3,146.250	39.95	74.00	34.05	28.59	54.00	25.41	-6.75	V	215.7	1.00	0.000
3,849.375	40.05	74.00	33.95	27.98	54.00	26.02	-5.51	H	313.8	2.00	0.000
5,403.750	44.06	74.00	29.94	32.73	54.00	21.27	-0.04	H	328.1	1.00	0.000
6,423.750	48.20	74.00	25.80	35.96	54.00	18.04	3.39	V	344.7	1.00	0.000
8,298.750	51.31	74.00	22.69	40.17	54.00	13.83	8.81	V	55.4	1.00	0.000
11,289.375	48.81	74.00	25.19	38.05	54.00	15.95	7.37	V	9.9	1.00	0.000

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Margin = Limit - MAX Peak/ Average

5.7. Conducted Emission

Ambient Condition

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

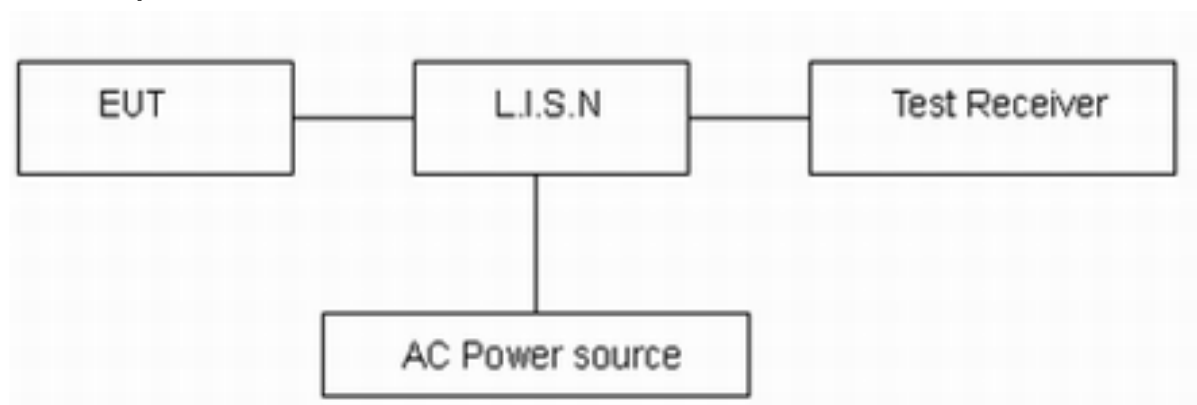
Methods of Measurement

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 120V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	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

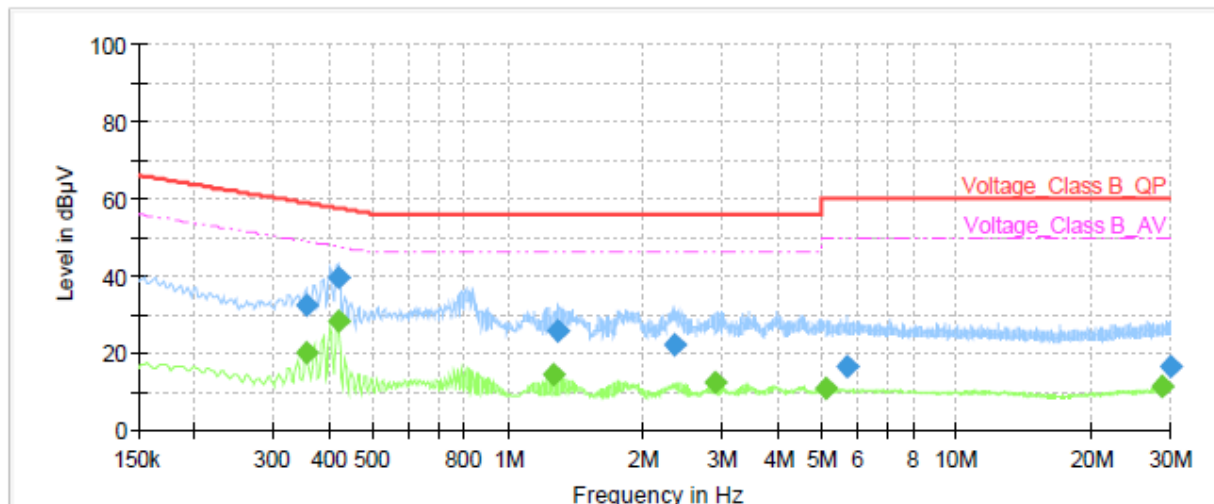
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 2.69$ dB.

Test Results:

Following plots, Blue trace uses the peak detection and Green trace uses the average detection.

Wi-Fi 2.4GHz

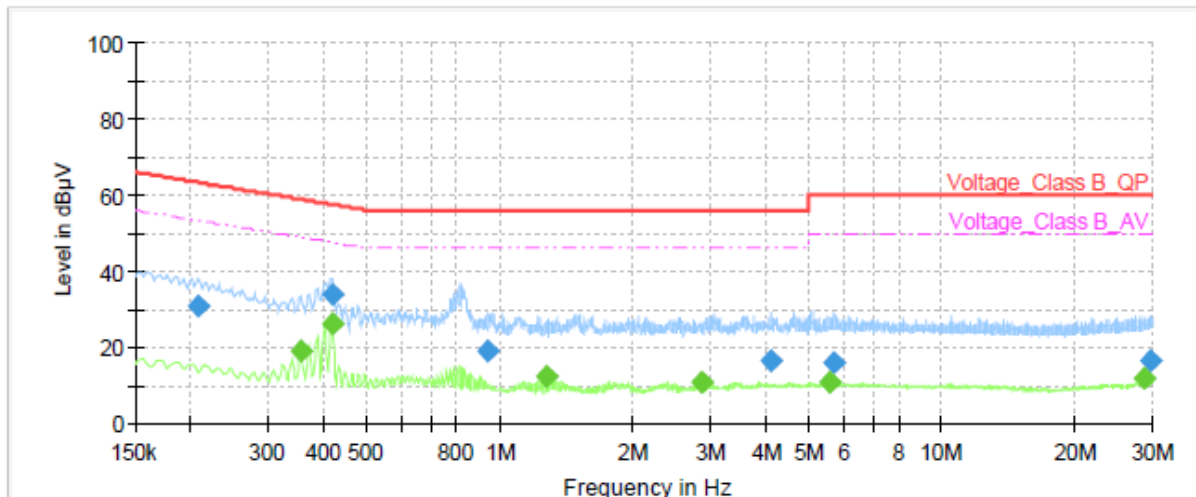
During the test, the Conducted Emission was performed in all modes with all channels, 802.11n (HT40) CH3 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.35	---	20.18	48.85	28.67	1000.0	9.000	L1	ON	20.9
0.35	32.36	---	58.85	26.49	1000.0	9.000	L1	ON	20.9
0.42	---	28.04	47.49	19.46	1000.0	9.000	L1	ON	20.9
0.42	39.35	---	57.49	18.14	1000.0	9.000	L1	ON	20.9
1.27	---	14.36	46.00	31.64	1000.0	9.000	L1	ON	20.0
1.30	25.42	---	56.00	30.58	1000.0	9.000	L1	ON	20.0
2.36	21.82	---	56.00	34.18	1000.0	9.000	L1	ON	19.6
2.90	---	12.37	46.00	33.63	1000.0	9.000	L1	ON	19.5
5.13	---	10.68	50.00	39.32	1000.0	9.000	L1	ON	19.4
5.67	16.54	---	60.00	43.46	1000.0	9.000	L1	ON	19.4
28.64	---	11.33	50.00	38.67	1000.0	9.000	L1	ON	19.8
29.97	16.32	---	60.00	43.68	1000.0	9.000	L1	ON	19.8

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



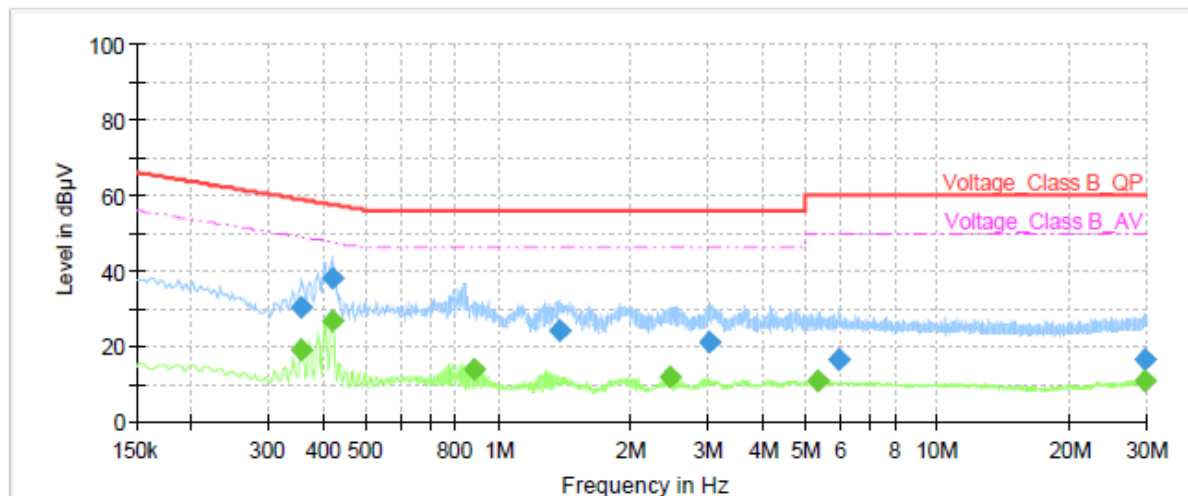
Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.21	30.71	---	63.27	32.56	1000.0	9.000	N	ON	21.0
0.35	---	18.85	48.85	30.00	1000.0	9.000	N	ON	20.9
0.42	---	26.04	47.49	21.45	1000.0	9.000	N	ON	20.9
0.42	33.81	---	57.49	23.68	1000.0	9.000	N	ON	20.9
0.94	19.02	---	56.00	36.98	1000.0	9.000	N	ON	20.2
1.28	---	12.52	46.00	33.48	1000.0	9.000	N	ON	20.0
2.87	---	10.81	46.00	35.19	1000.0	9.000	N	ON	19.5
4.13	16.48	---	56.00	39.52	1000.0	9.000	N	ON	19.4
5.55	---	10.58	50.00	39.42	1000.0	9.000	N	ON	19.4
5.73	16.05	---	60.00	43.95	1000.0	9.000	N	ON	19.4
28.64	---	11.63	50.00	38.37	1000.0	9.000	N	ON	19.9
29.67	16.36	---	60.00	43.64	1000.0	9.000	N	ON	19.9

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

Bluetooth LE

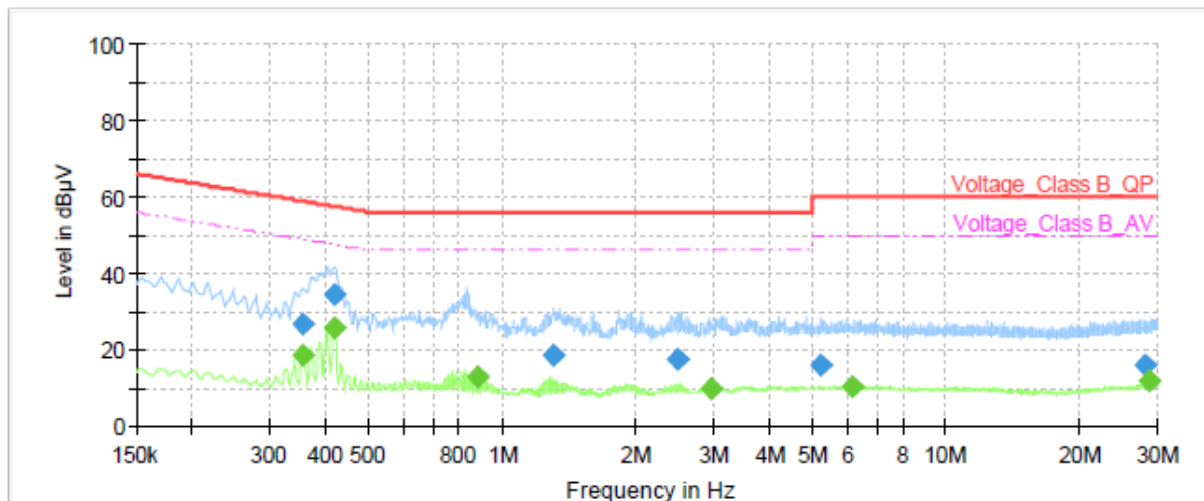
During the test, the Conducted Emission was performed in all modes with all channels, Bluetooth LE-Channel 39 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.36	---	18.95	48.80	29.85	1000.0	9.000	L1	ON	20.9
0.36	30.05	---	58.80	28.75	1000.0	9.000	L1	ON	20.9
0.42	---	26.83	47.49	20.66	1000.0	9.000	L1	ON	20.9
0.42	37.74	---	57.49	19.76	1000.0	9.000	L1	ON	20.9
0.88	---	13.88	46.00	32.12	1000.0	9.000	L1	ON	20.3
1.38	24.08	---	56.00	31.92	1000.0	9.000	L1	ON	19.9
2.47	---	12.04	46.00	33.96	1000.0	9.000	L1	ON	19.5
3.04	20.98	---	56.00	35.02	1000.0	9.000	L1	ON	19.5
5.33	---	10.65	50.00	39.35	1000.0	9.000	L1	ON	19.4
5.97	16.41	---	60.00	43.59	1000.0	9.000	L1	ON	19.4
29.63	16.22	---	60.00	43.78	1000.0	9.000	L1	ON	19.8
29.76	---	10.86	50.00	39.14	1000.0	9.000	L1	ON	19.8

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.36	---	18.52	48.80	30.28	1000.0	9.000	N	ON	20.9
0.36	26.77	---	58.80	32.03	1000.0	9.000	N	ON	20.9
0.42	---	25.52	47.49	21.97	1000.0	9.000	N	ON	20.9
0.42	34.58	---	57.49	22.91	1000.0	9.000	N	ON	20.9
0.88	---	12.79	46.00	33.21	1000.0	9.000	N	ON	20.3
1.30	18.47	---	56.00	37.53	1000.0	9.000	N	ON	20.0
2.48	17.52	---	56.00	38.48	1000.0	9.000	N	ON	19.6
2.96	---	9.83	46.00	36.17	1000.0	9.000	N	ON	19.5
5.24	15.75	---	60.00	44.25	1000.0	9.000	N	ON	19.4
6.17	---	10.09	50.00	39.91	1000.0	9.000	N	ON	19.4
28.10	16.06	---	60.00	43.94	1000.0	9.000	N	ON	19.9
28.64	---	11.73	50.00	38.27	1000.0	9.000	N	ON	19.9

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Power Sensor	R&S	NRP18S	101954	2024-05-07	2025-05-06
Signal Analyzer	KEYSIGHT	N9020A	MY51330870	2024-05-07	2025-05-06
DC Power Supply	UNI-T	UTP1306S+	2205D0517426	2024-12-02	2026-12-01
Radiated Emission					
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
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-01020 0G40	YQ2103039B0 1	2024-05-07	2025-05-06
Software	R&S	EMC32	9.26.01	/	/
Conducted Emission					
Artificial main network	R&S	ENV216	102191	2024-12-02	2026-12-01
EMI Test Receiver	R&S	ESR	101667	2024-05-07	2025-05-06
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 *****