

ANNEX A: Test Result

The radiated emission was measured in the following position: EUT horizontal position (X, Y axis). The worst emission was found in horizontal position (X axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

1. Unwanted Emission

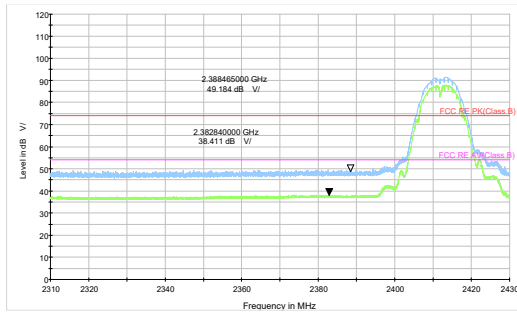
1.1. Wi-Fi 2.4GHz

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

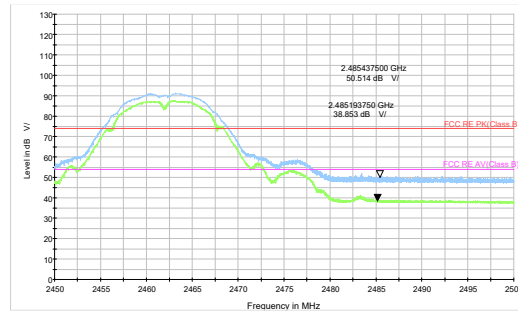
Blue trace uses the peak detection, Green trace uses the average detection.

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

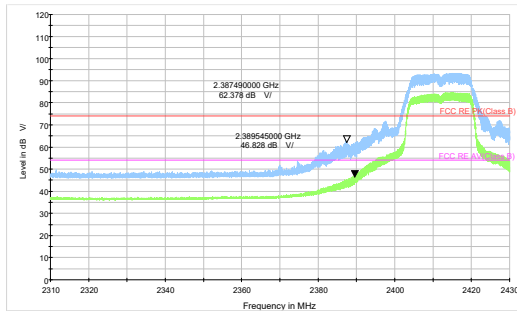
The signal beyond the limit is carrier.



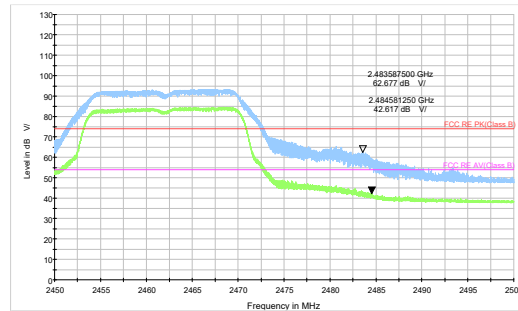
802.11b-Channel 1 Peak+ Average



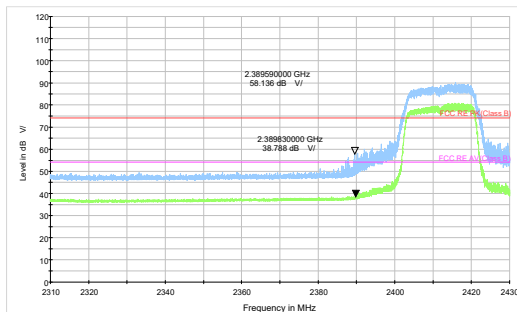
802.11b-Channel 11 Peak+ Average



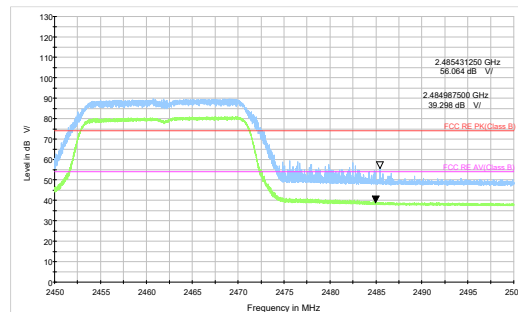
802.11g-Channel 1 Peak+ Average



802.11g-Channel 11 Peak+ Average



802.11n HT20-Channel 1 Peak+ Average



802.11n HT20-Channel 11 Peak+ Average

Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier. The Radiates Emission from 9kHz to 30MHz and 18GHz to 26.5GHz are more than 20dB below the limit are not reported.

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)**
4. **The following graphs display the maximum values of coaxial and coplanar for 9k-30MHz; horizontal and vertical for above 30MHz by software.**
5. **For below 1GHz**

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

For above 1GHz

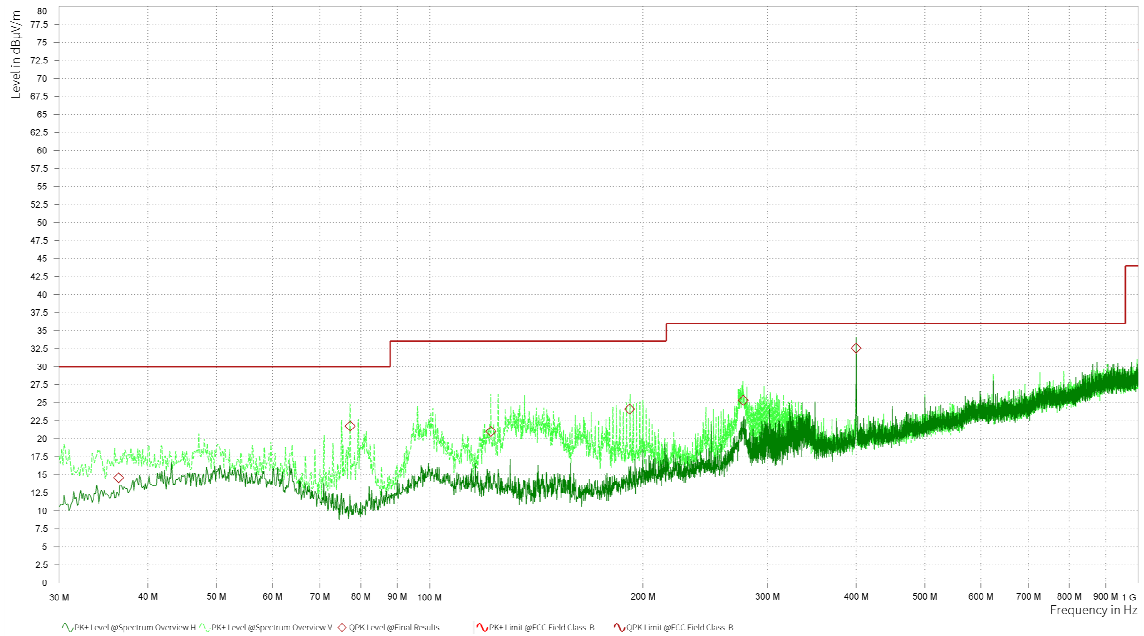
 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit

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

Continuous TX mode:

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

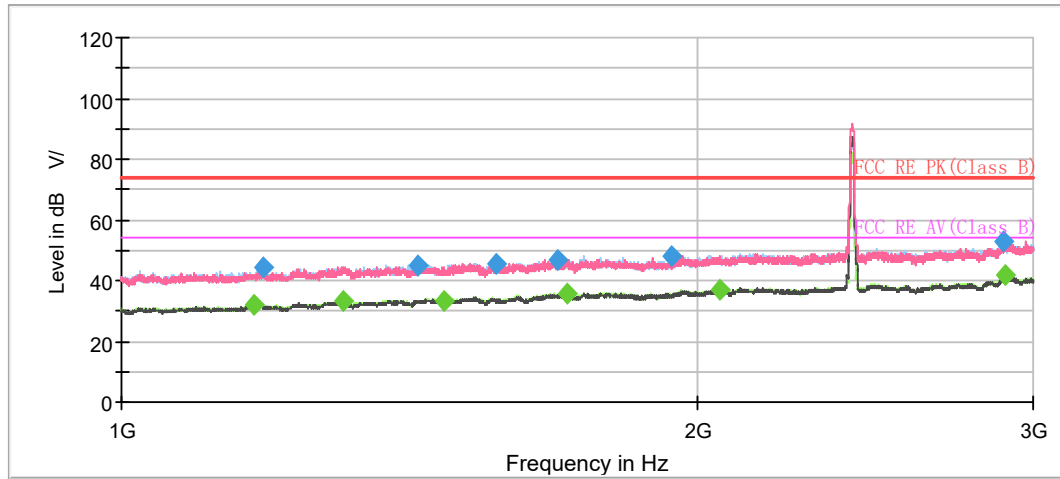
Spectrum Overview H/V



Radiates Emission from 30MHz to 1GHz

Frequency [MHz]	QPK Level [dBμV/m]	QPK Limit [dBμV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Meas. Time [s]
36.405	14.58	30.00	15.42	-10.64	V	142.4	1.03	120.000	1.000
77.223	21.73	30.00	8.27	-13.86	V	93.6	2.25	120.000	1.000
122.065	21.02	33.50	12.48	-11.64	V	217.7	1.78	120.000	1.000
191.606	24.09	33.50	9.41	-10.53	V	262.2	1.00	120.000	1.000
277.171	25.31	36.00	10.69	-7.93	V	348.4	1.00	120.000	1.000
400.021	32.55	36.00	3.45	-4.60	H	184.4	1.24	120.000	1.000

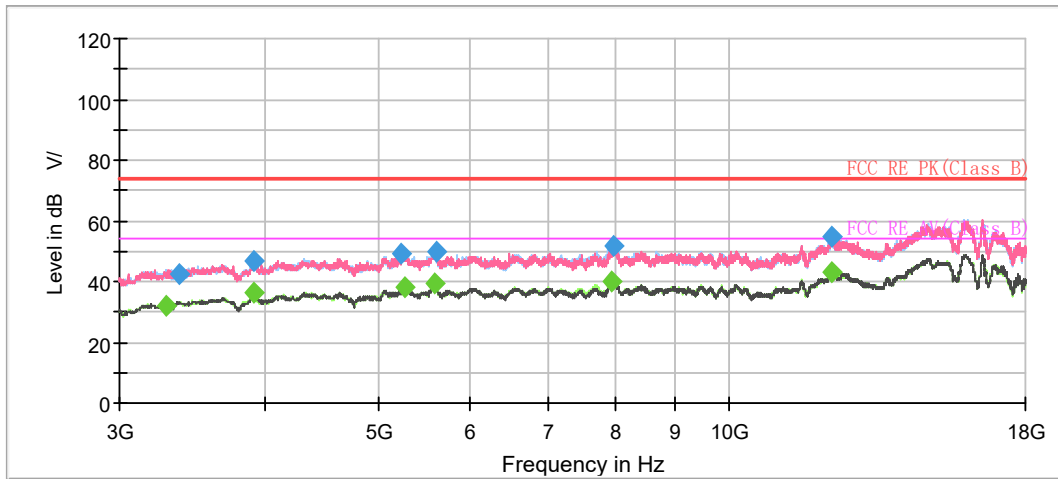
802.11b CH1



Note: The signal beyond the limit is carrier.

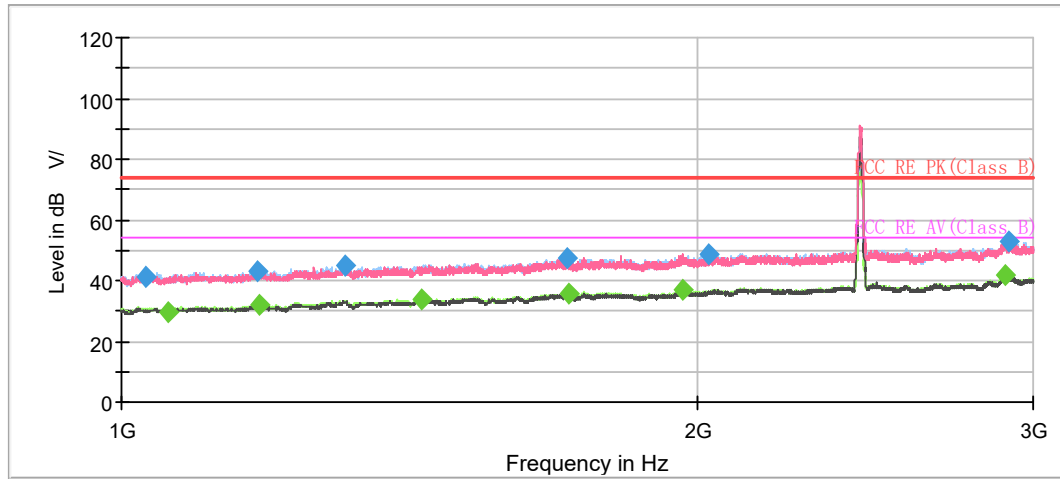
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1171.750000	---	32.04	54.00	21.96	500.0	200.0	H	181.0	-4.3
1187.250000	44.43	---	74.00	29.57	500.0	100.0	H	274.0	-4.0
1307.000000	---	33.51	54.00	20.49	500.0	100.0	H	249.0	-2.1
1428.500000	45.08	---	74.00	28.92	500.0	200.0	V	183.0	-2.1
1474.750000	---	32.95	54.00	21.05	500.0	200.0	V	15.0	-2.2
1571.000000	45.52	---	74.00	28.48	500.0	100.0	V	295.0	-1.3
1692.250000	46.74	---	74.00	27.26	500.0	100.0	H	114.0	0.3
1712.500000	---	35.57	54.00	18.43	500.0	100.0	H	54.0	0.4
1941.500000	48.21	---	74.00	25.79	500.0	200.0	H	96.0	1.0
2056.750000	---	36.68	54.00	17.32	500.0	100.0	H	0.0	2.3
2892.250000	52.96	---	74.00	21.04	500.0	100.0	H	102.0	8.0
2900.500000	---	41.74	54.00	12.26	500.0	100.0	H	114.0	8.6



Radiates Emission from 3GHz to 18GHz

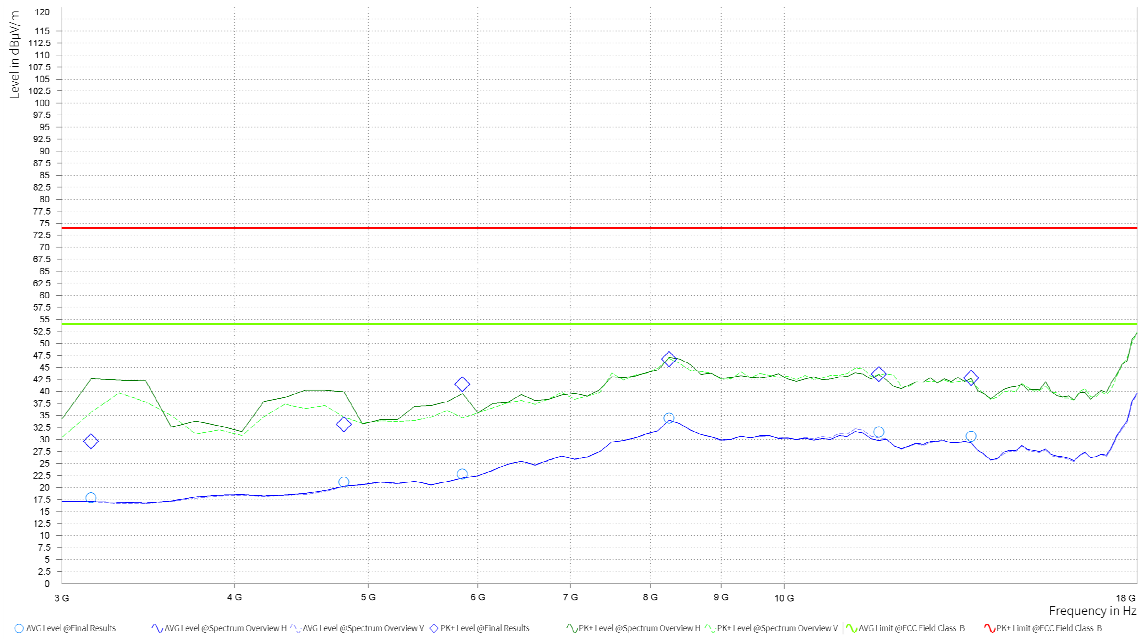
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3294.375000	---	32.15	54.00	21.85	500.0	200.0	H	113.0	-0.8
3371.250000	42.54	---	74.00	31.46	500.0	200.0	H	0.0	0.2
3907.500000	---	36.00	54.00	18.00	500.0	100.0	H	246.0	3.6
3907.500000	46.88	---	74.00	27.12	500.0	200.0	V	0.0	3.6
5242.500000	49.26	---	74.00	24.74	500.0	200.0	V	0.0	5.8
5270.625000	---	38.37	54.00	15.63	500.0	200.0	V	0.0	6.5
5595.000000	---	39.13	54.00	14.87	500.0	100.0	H	0.0	8.0
5608.125000	49.63	---	74.00	24.37	500.0	100.0	H	335.0	7.1
7951.875000	---	40.26	54.00	13.74	500.0	200.0	H	167.0	9.9
7970.625000	51.51	---	74.00	22.49	500.0	200.0	V	13.0	9.9
12253.125000	54.66	---	74.00	19.34	500.0	200.0	H	207.0	14.1
12266.250000	---	43.37	54.00	10.63	500.0	200.0	H	0.0	14.4



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

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1028.500000	41.53	---	74.00	32.47	500.0	100.0	H	46.0	-5.9
1058.500000	---	29.65	54.00	24.35	500.0	200.0	H	306.0	-6.0
1178.250000	42.93	---	74.00	31.07	500.0	100.0	H	287.0	-4.1
1182.000000	---	31.90	54.00	22.10	500.0	100.0	H	105.0	-4.0
1308.500000	45.13	---	74.00	28.87	500.0	200.0	H	197.0	-2.1
1435.500000	---	33.72	54.00	20.28	500.0	100.0	H	0.0	-1.8
1709.000000	47.45	---	74.00	26.55	500.0	100.0	H	202.0	0.5
1714.000000	---	35.71	54.00	18.29	500.0	200.0	H	147.0	0.3
1968.250000	---	36.93	54.00	17.07	500.0	200.0	H	159.0	2.3
2029.250000	48.65	---	74.00	25.35	500.0	100.0	V	278.0	2.2
2901.000000	---	41.78	54.00	12.22	500.0	100.0	H	225.0	8.6
2911.500000	53.03	---	74.00	20.97	500.0	200.0	H	306.0	8.4

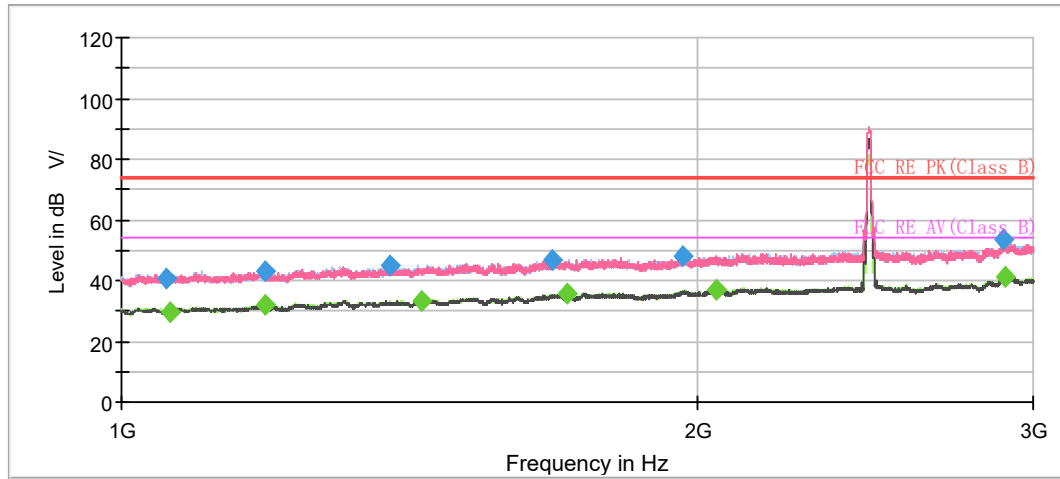
Spectrum Overview H/V



Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,149.071	29.57	74.00	44.43	17.83	54.00	36.17	-13.42	H	333.6	1.00	1.000
4,799.611	33.11	74.00	40.89	21.14	54.00	32.86	-9.87	H	6.6	1.00	1.000
5,846.133	41.49	74.00	32.51	22.80	54.00	31.20	-8.01	H	360	2.00	1.000
8,251.888	46.68	74.00	27.32	34.46	54.00	19.54	1.96	H	81.1	1.00	1.000
11,703.330	43.56	74.00	30.44	31.58	54.00	22.42	0.20	H	88	1.00	1.000
13,650.416	42.78	74.00	31.22	30.70	54.00	23.30	1.41	H	74.1	1.00	1.000

802.11b CH11

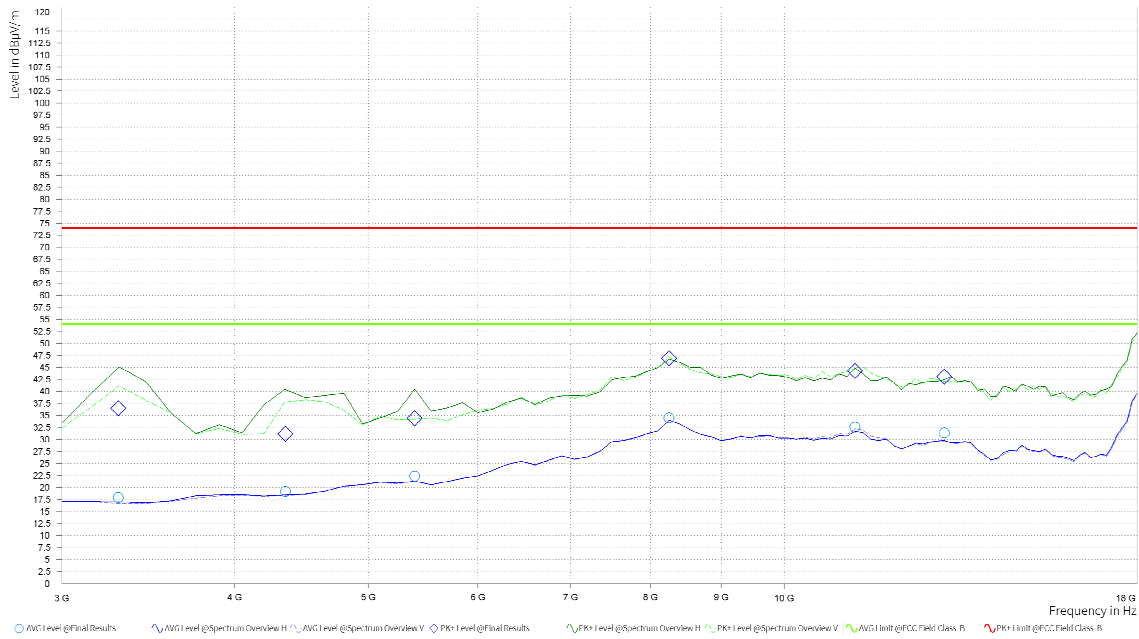


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1054.750000	40.85	---	74.00	33.15	500.0	200.0	V	0.0	-6.1
1060.000000	---	29.83	54.00	24.17	500.0	200.0	H	112.0	-5.9
1188.750000	---	31.93	54.00	22.07	500.0	200.0	V	21.0	-4.1
1189.000000	43.04	---	74.00	30.96	500.0	100.0	H	0.0	-4.1
1381.000000	44.98	---	74.00	29.02	500.0	100.0	H	0.0	-2.3
1434.750000	---	33.45	54.00	20.55	500.0	100.0	H	299.0	-1.8
1679.750000	47.05	---	74.00	26.95	500.0	200.0	V	1.0	0.4
1711.750000	---	35.39	54.00	18.61	500.0	100.0	H	43.0	0.5
1966.250000	48.06	---	74.00	25.94	500.0	100.0	H	7.0	2.3
2047.750000	---	36.85	54.00	17.15	500.0	200.0	H	0.0	2.6
2897.000000	53.36	---	74.00	20.64	500.0	100.0	H	33.0	8.4
2902.250000	---	41.24	54.00	12.76	500.0	100.0	V	315.0	8.6

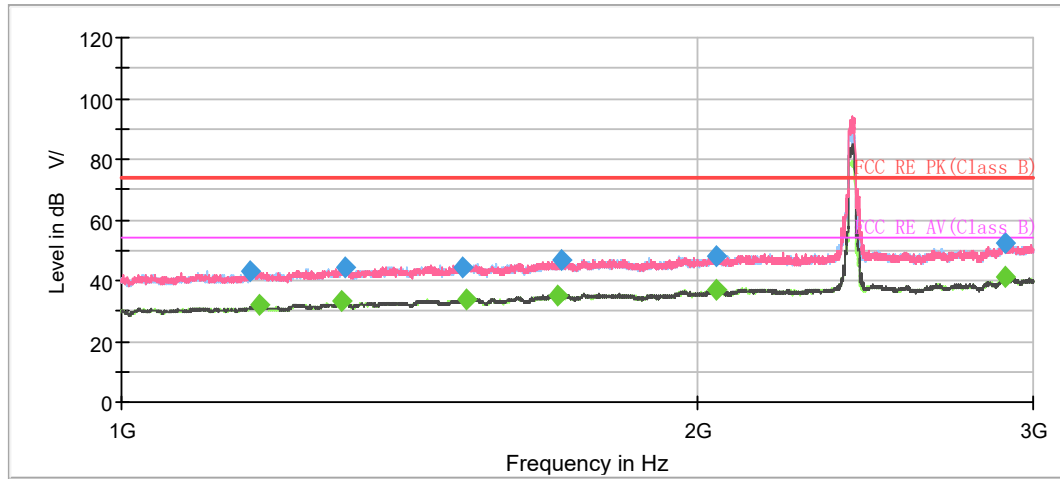
Spectrum Overview H/V



Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,296.375	36.48	74.00	37.52	17.91	54.00	36.09	-13.48	H	17.6	1.00	1.000
4,353.161	31.14	74.00	42.86	19.20	54.00	34.80	-11.42	H	47.2	2.00	1.000
5,400.318	34.39	74.00	39.61	22.39	54.00	31.61	-8.47	H	292	1.00	1.000
8,251.878	46.84	74.00	27.16	34.47	54.00	19.53	1.96	V	258	2.00	1.000
11,246.664	44.27	74.00	29.73	32.55	54.00	21.45	0.49	H	81.6	2.00	1.000
13,049.858	43.06	74.00	30.94	31.35	54.00	22.65	1.67	H	217	1.00	1.000

802.11g CH1

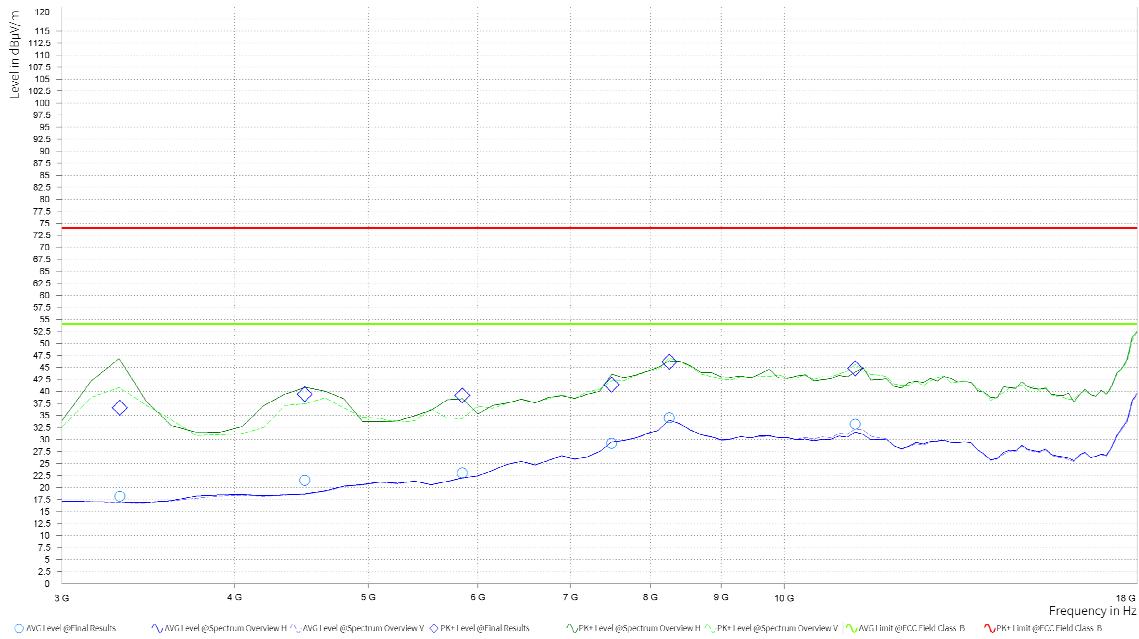


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1168.500000	43.02	---	74.00	30.98	500.0	200.0	H	81.0	-4.5
1180.250000	---	31.79	54.00	22.21	500.0	100.0	H	266.0	-4.0
1304.500000	---	33.24	54.00	20.76	500.0	200.0	V	0.0	-2.4
1310.500000	44.61	---	74.00	29.39	500.0	200.0	V	194.0	-2.3
1509.000000	44.48	---	74.00	29.52	500.0	200.0	H	0.0	-1.4
1514.750000	---	33.63	54.00	20.37	500.0	100.0	H	1.0	-1.2
1690.250000	---	35.37	54.00	18.63	500.0	100.0	V	212.0	0.4
1700.500000	46.69	---	74.00	27.31	500.0	100.0	V	188.0	0.4
2048.500000	---	36.76	54.00	17.24	500.0	100.0	H	293.0	2.5
2049.750000	48.16	---	74.00	25.84	500.0	200.0	H	359.0	2.5
2899.250000	---	41.27	54.00	12.73	500.0	100.0	V	224.0	8.6
2902.000000	52.55	---	74.00	21.45	500.0	100.0	V	40.0	8.6

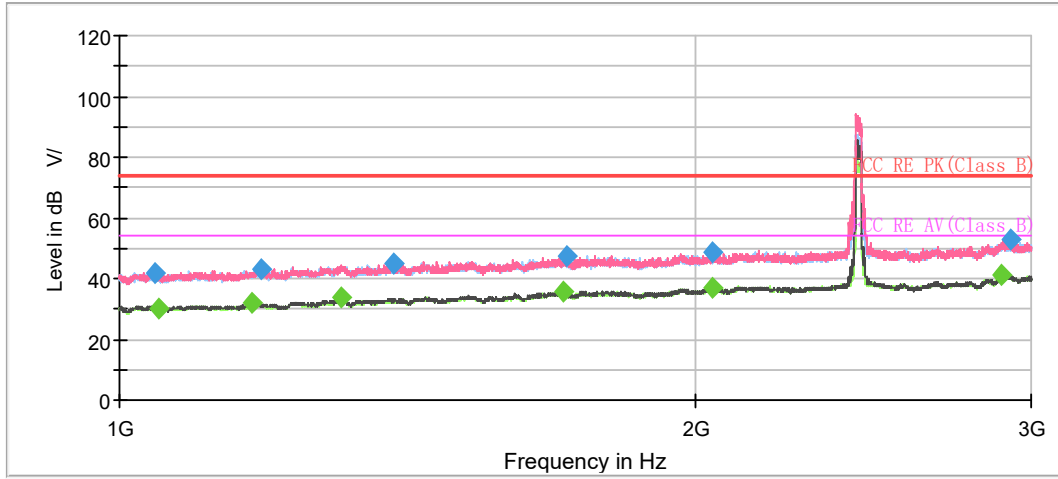
Spectrum Overview H/V



Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,304.275	36.58	74.00	37.42	18.13	54.00	35.87	-13.49	H	313	1.00	1.000
4,496.658	39.39	74.00	34.61	21.49	54.00	32.51	-11.26	H	354.4	2.00	1.000
5,846.230	39.14	74.00	34.86	23.03	54.00	30.97	-8.01	H	360	2.00	1.000
7,497.835	41.36	74.00	32.64	29.22	54.00	24.78	-2.76	H	0.3	1.00	1.000
8,254.496	46.13	74.00	27.87	34.47	54.00	19.53	1.98	V	155.2	2.00	1.000
11,251.989	44.75	74.00	29.25	33.19	54.00	20.81	0.49	V	128	2.00	1.000

802.11g CH6

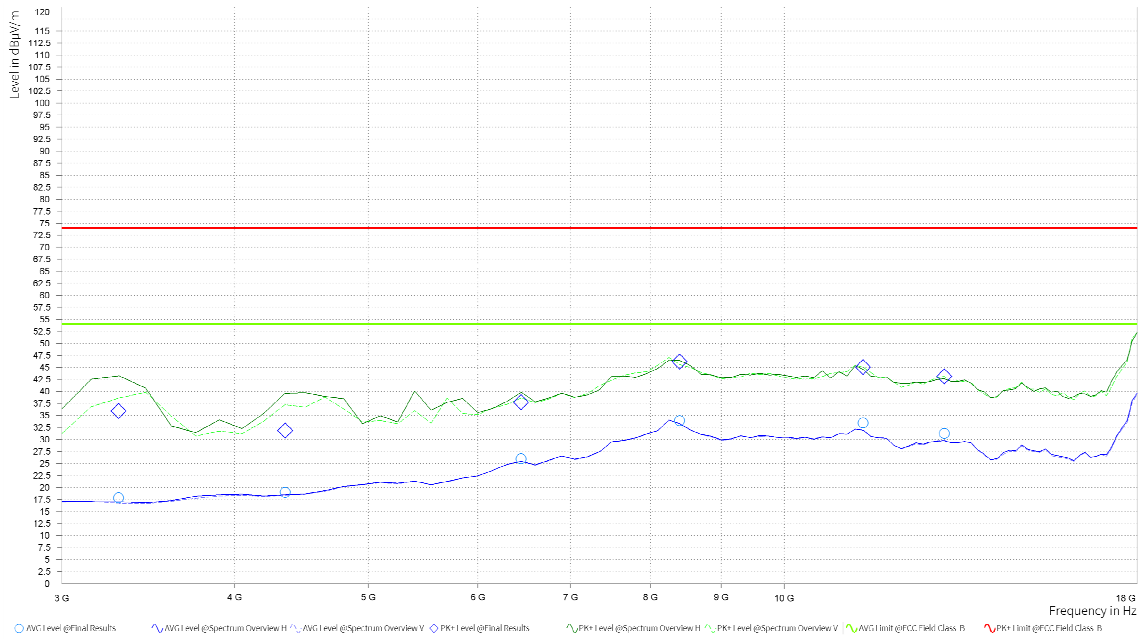


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1044.750000	41.67	---	74.00	32.33	500.0	100.0	H	248.0	-5.8
1047.250000	---	30.29	54.00	23.71	500.0	100.0	V	287.0	-6.0
1171.750000	---	31.99	54.00	22.01	500.0	100.0	V	42.0	-4.3
1185.250000	42.92	---	74.00	31.08	500.0	200.0	V	257.0	-3.9
1307.750000	---	33.73	54.00	20.27	500.0	100.0	V	66.0	-2.1
1390.000000	44.68	---	74.00	29.32	500.0	100.0	V	0.0	-2.4
1708.500000	---	35.40	54.00	18.60	500.0	100.0	V	6.0	0.5
1713.750000	47.17	---	74.00	26.83	500.0	200.0	V	317.0	0.4
2043.500000	---	36.92	54.00	17.08	500.0	100.0	V	29.0	2.5
2044.500000	48.68	---	74.00	25.32	500.0	200.0	V	72.0	2.5
2896.250000	---	41.09	54.00	12.91	500.0	100.0	V	203.0	8.3
2924.500000	52.64	---	74.00	21.36	500.0	100.0	V	42.0	8.1

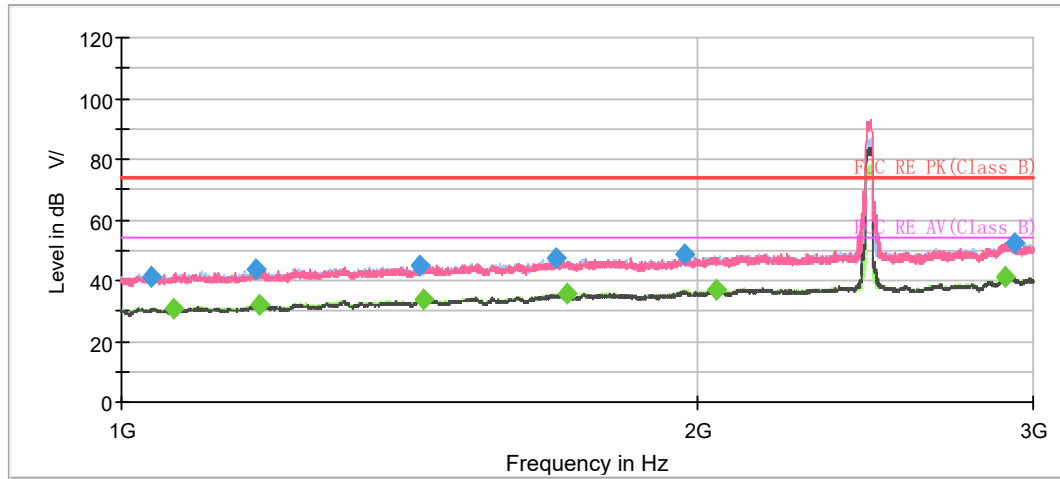
Spectrum Overview H/V



Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,297.004	35.89	74.00	38.11	17.83	54.00	36.17	-13.48	H	312.9	1.00	1.000
4,351.656	31.80	74.00	42.20	19.01	54.00	34.99	-11.43	H	354.2	2.00	1.000
6,448.451	37.71	74.00	36.29	26.00	54.00	28.00	-4.36	H	148.5	1.00	1.000
8,396.080	46.15	74.00	27.85	33.93	54.00	20.07	0.82	H	134.6	1.00	1.000
11,396.249	45.03	74.00	28.97	33.43	54.00	20.57	0.60	V	108.4	2.00	1.000
13,052.884	43.09	74.00	30.91	31.25	54.00	22.75	1.67	V	231.9	1.00	1.000

802.11g CH11

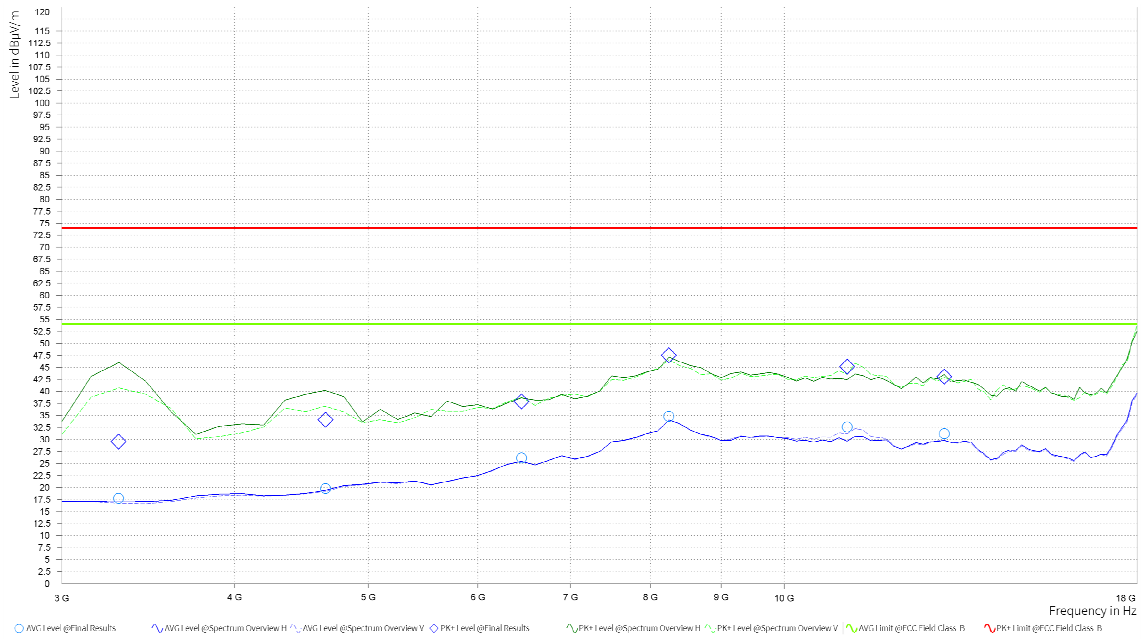


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1035.750000	41.43	---	74.00	32.57	500.0	200.0	H	0.0	-5.7
1066.000000	---	30.73	54.00	23.27	500.0	200.0	H	263.0	-5.7
1174.500000	43.53	---	74.00	30.47	500.0	200.0	H	9.0	-4.2
1181.000000	---	32.20	54.00	21.80	500.0	200.0	H	359.0	-4.0
1433.750000	44.81	---	74.00	29.19	500.0	200.0	V	128.0	-1.9
1439.750000	---	33.69	54.00	20.31	500.0	200.0	H	154.0	-1.7
1688.250000	47.51	---	74.00	26.49	500.0	200.0	H	43.0	0.4
1712.500000	---	35.61	54.00	18.39	500.0	200.0	H	103.0	0.4
1971.000000	48.50	---	74.00	25.50	500.0	200.0	V	248.0	2.2
2045.750000	---	37.01	54.00	16.99	500.0	200.0	H	299.0	2.5
2901.000000	---	41.20	54.00	12.80	500.0	100.0	H	315.0	8.6
2933.500000	52.51	---	74.00	21.49	500.0	200.0	V	0.0	7.9

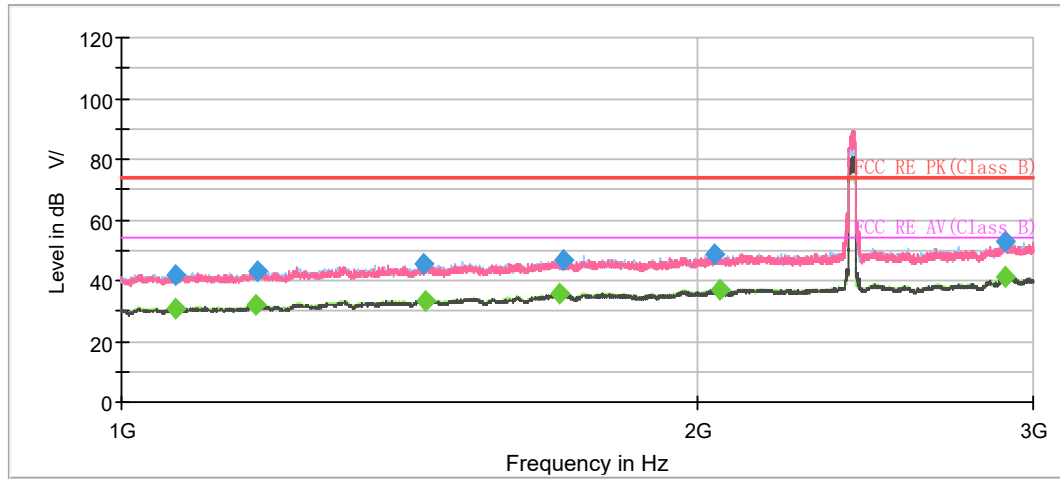
Spectrum Overview H/V



Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,297.650	29.50	74.00	44.50	17.74	54.00	36.26	-13.48	H	360	2.00	1.000
4,654.786	34.08	74.00	39.92	19.78	54.00	34.22	-10.75	H	0	1.00	1.000
6,451.510	37.89	74.00	36.11	26.12	54.00	27.88	-4.37	V	168.6	2.00	1.000
8,246.506	47.49	74.00	26.51	34.77	54.00	19.23	1.92	H	335	2.00	1.000
11,103.610	45.14	74.00	28.86	32.63	54.00	21.37	-0.32	V	155	2.00	1.000
13,050.101	43.04	74.00	30.96	31.21	54.00	22.79	1.67	H	5.5	1.00	1.000

802.11n (HT20) CH1



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1067.750000	---	30.56	54.00	23.44	500.0	100.0	H	10.0	-5.6
1068.500000	41.88	---	74.00	32.12	500.0	200.0	H	314.0	-5.6
1176.500000	---	32.00	54.00	22.00	500.0	100.0	V	359.0	-4.2
1177.750000	43.00	---	74.00	31.00	500.0	200.0	V	106.0	-4.1
1439.250000	45.46	---	74.00	28.54	500.0	100.0	H	34.0	-1.7
1441.250000	---	33.45	54.00	20.56	500.0	200.0	V	188.0	-1.6
1693.750000	---	35.57	54.00	18.43	500.0	100.0	V	218.0	0.3
1704.750000	46.87	---	74.00	27.13	500.0	100.0	H	82.0	0.4
2043.000000	48.35	---	74.00	25.65	500.0	100.0	H	313.0	2.5
2057.000000	---	36.88	54.00	17.12	500.0	200.0	H	1.0	2.3
2900.500000	52.76	---	74.00	21.24	500.0	100.0	V	315.0	8.6
2900.750000	---	41.51	54.00	12.49	500.0	200.0	H	254.0	8.6