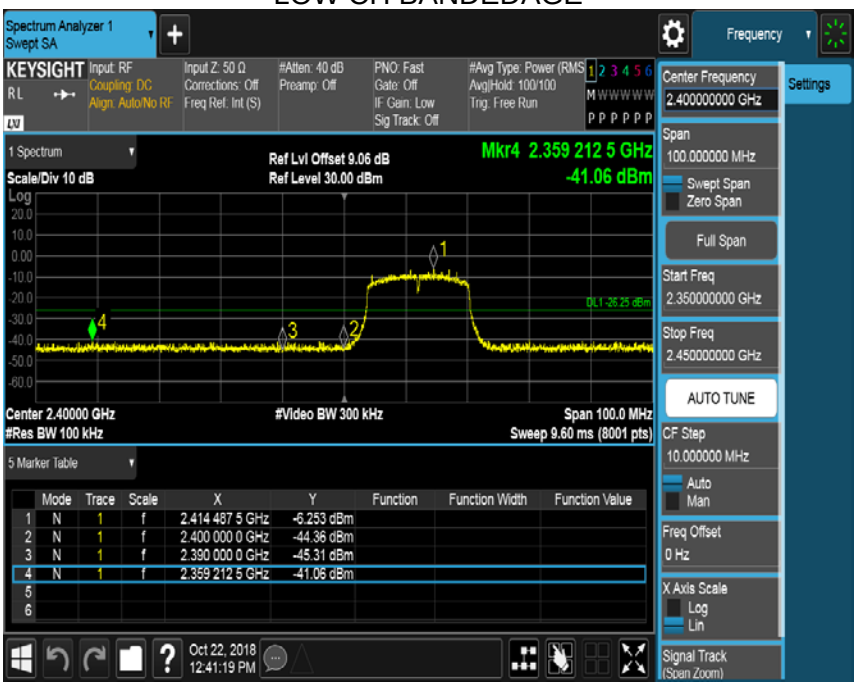
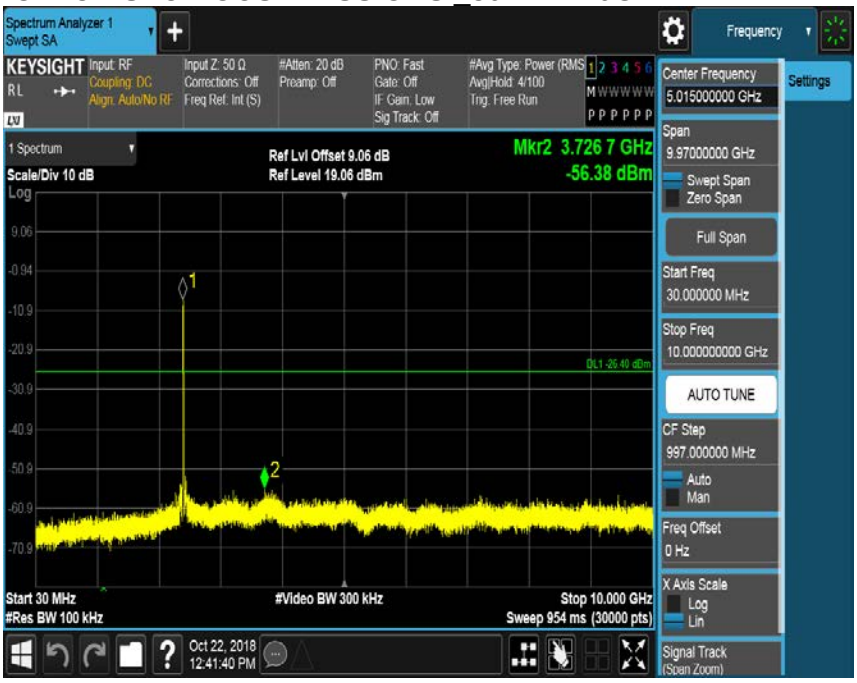
ANTENNA 2

LOW CH BANDEDAGE



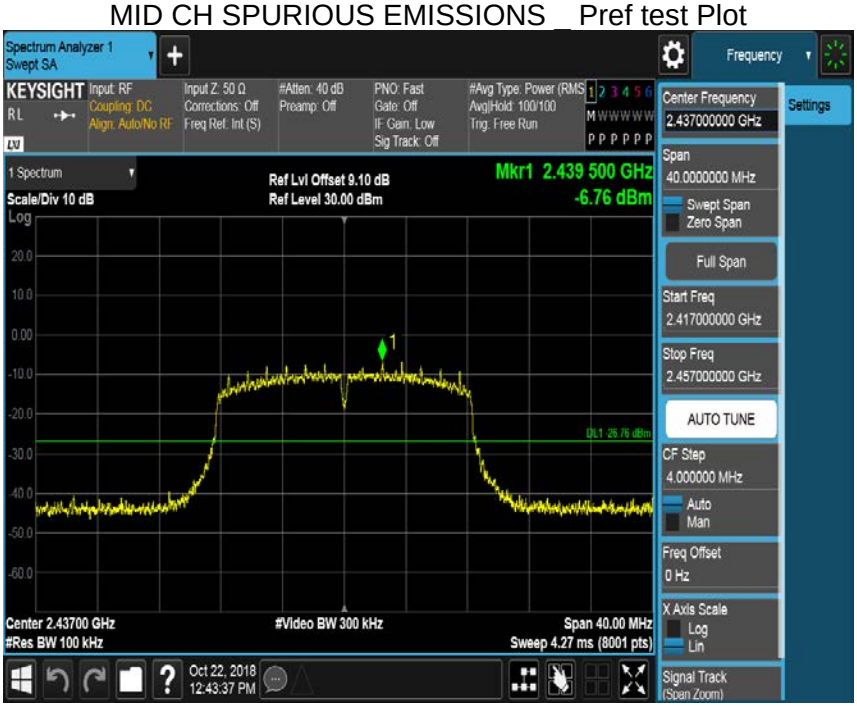
LOW CH SPURIOUS EMISSIONS _ Pref test Plot

LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz

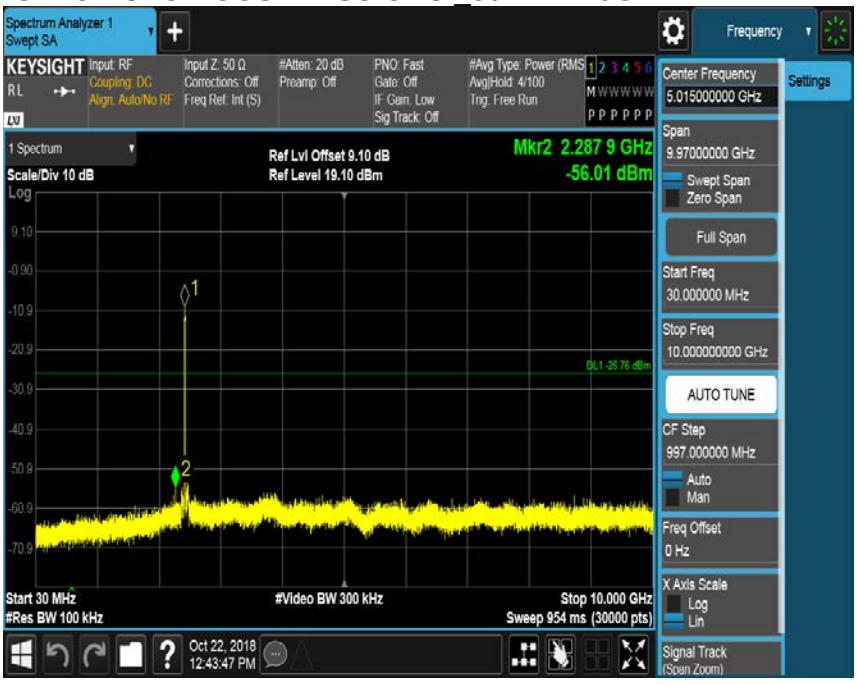


LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

MID CH SPURIOUS EMISSIONS _ Pref test Plot

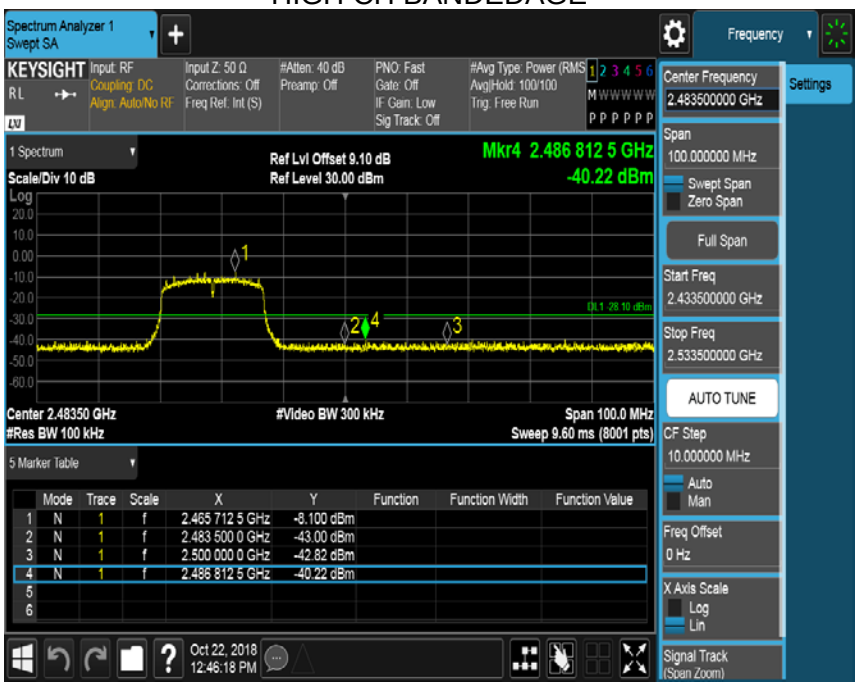


LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz



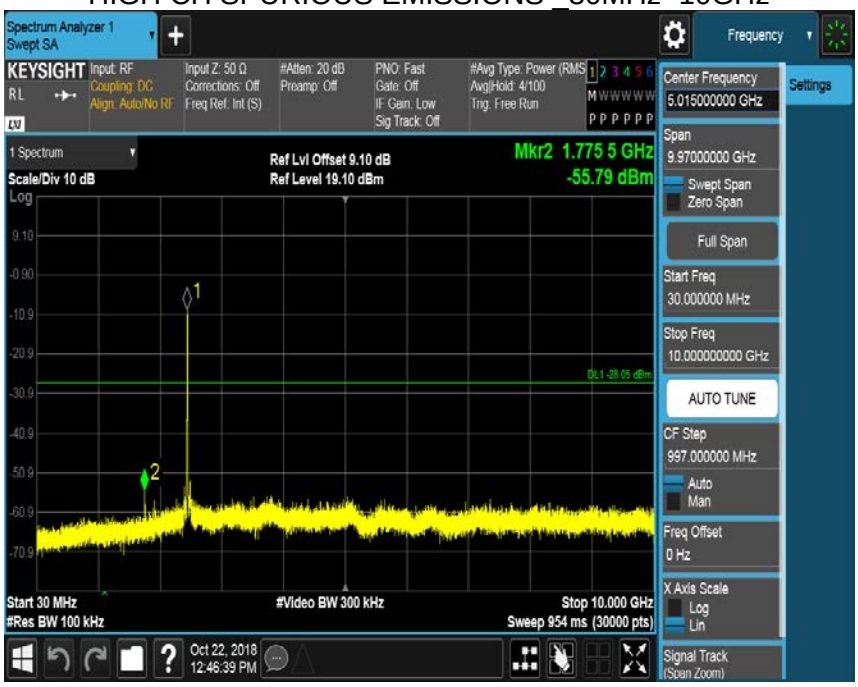
LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

HIGH CH BANDEDAGE



HIGH CH SPURIOUS EMISSIONS _ Pref test Plot

HIGH CH SPURIOUS EMISSIONS _30MHz~10GHz



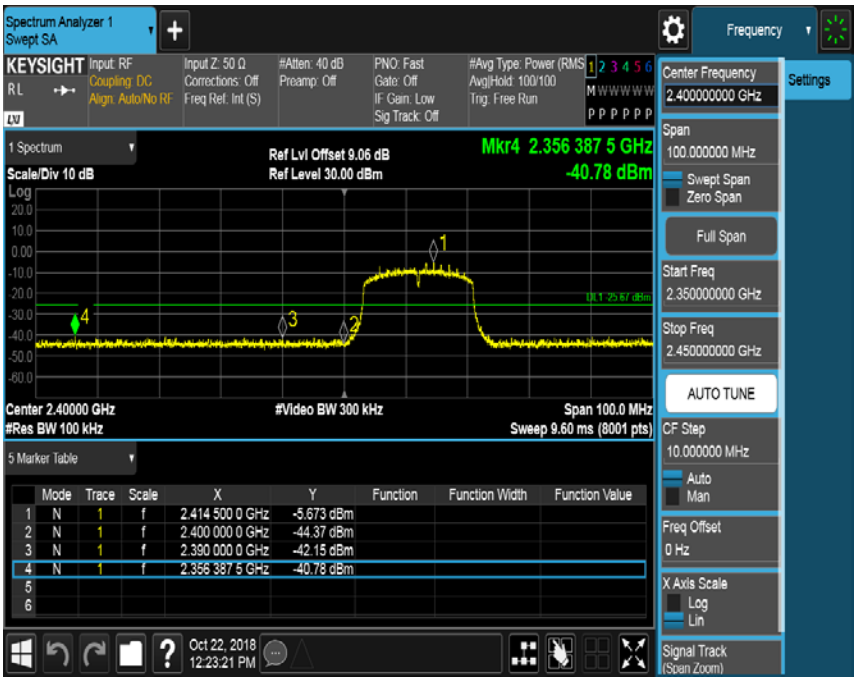
HIGH CH SPURIOUS EMISSIONS _10GHz~26GHz

8.5.1. 802.11n HT20 MODE

MIMO MODE

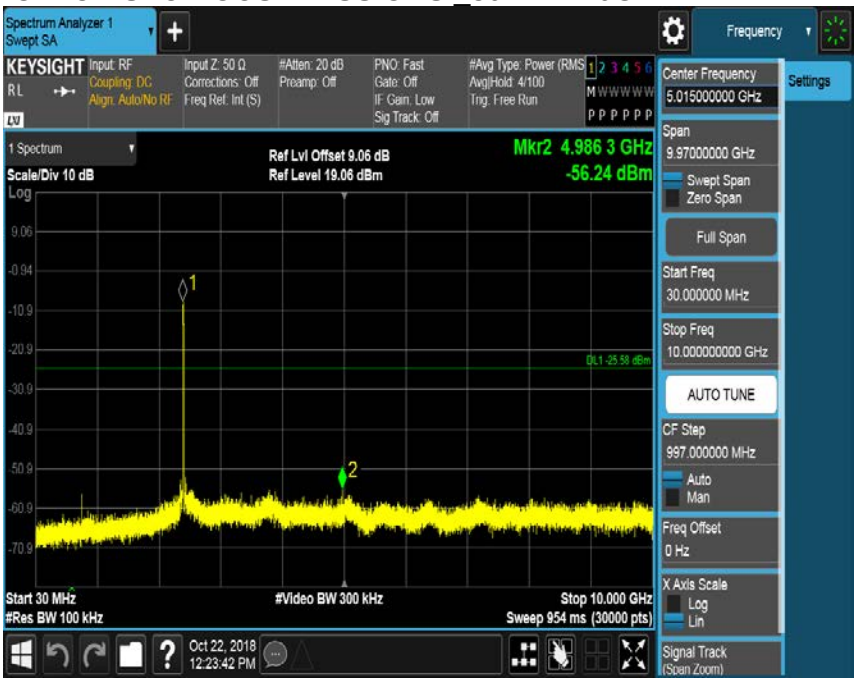
ANTENNA 1

LOW CH BANDEDAGE



LOW CH SPURIOUS EMISSIONS _ Pref test Plot

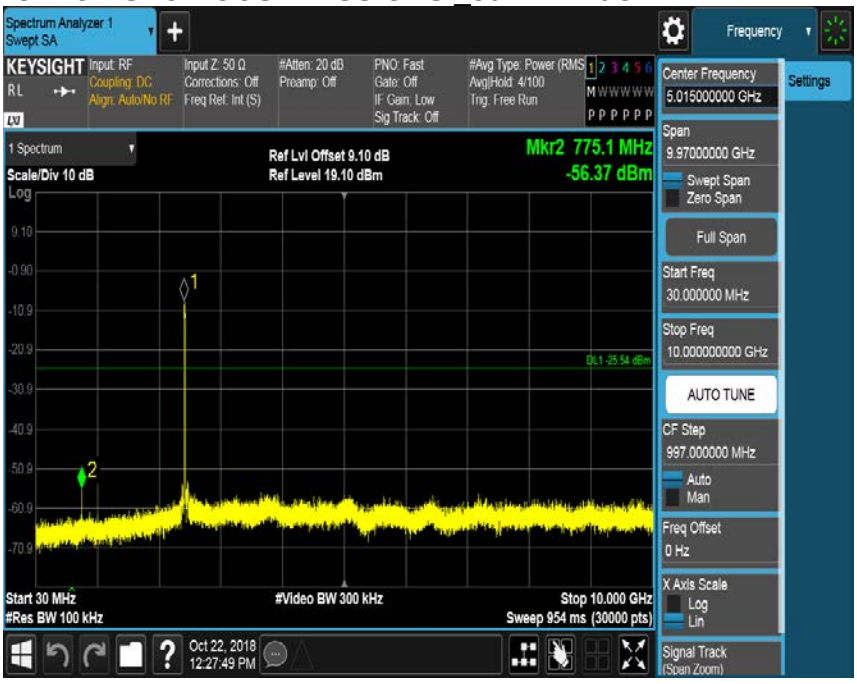
LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz



LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

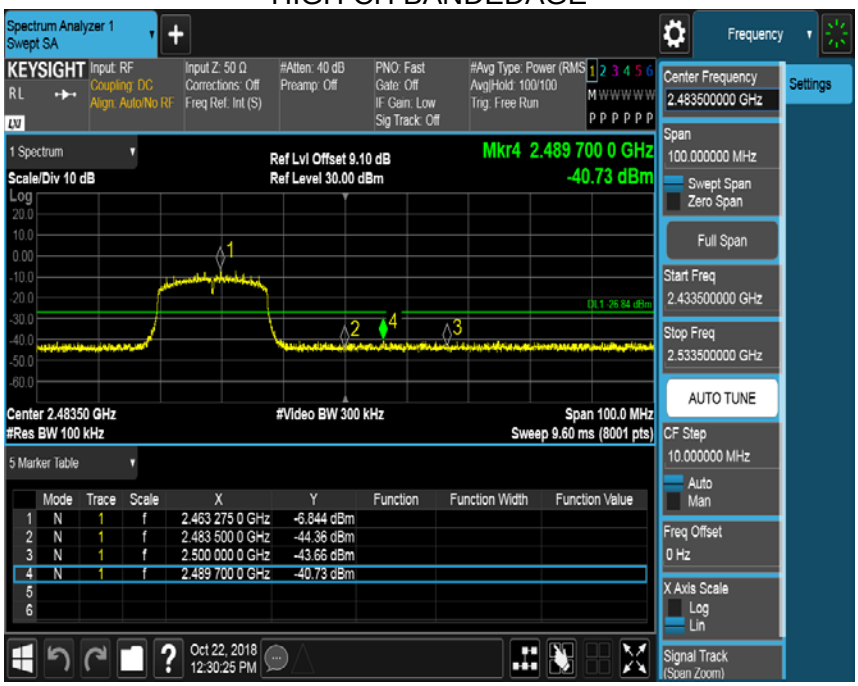
MID CH SPURIOUS EMISSIONS _ Pref test Plot

LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz



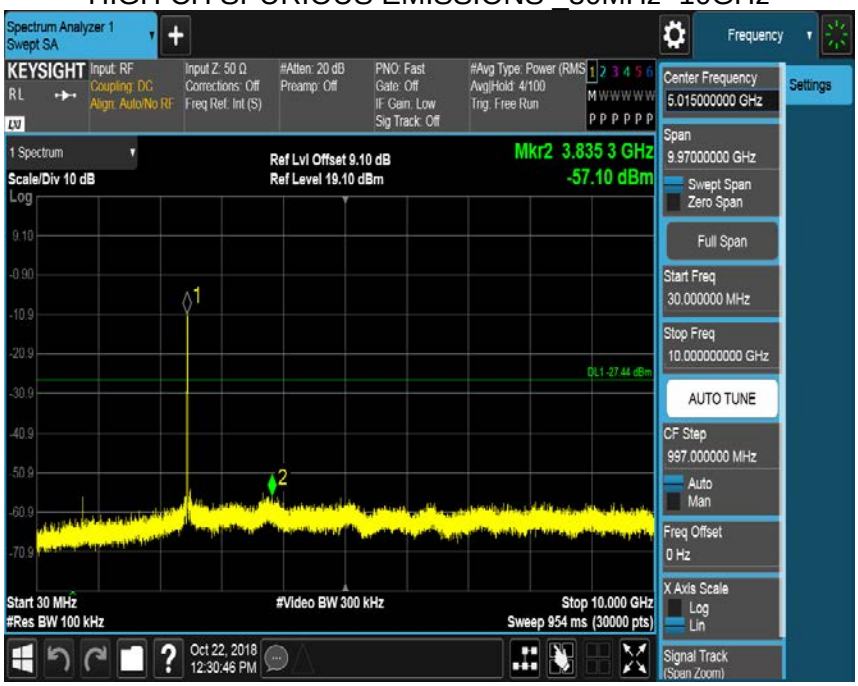
LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

HIGH CH BANDEDAGE

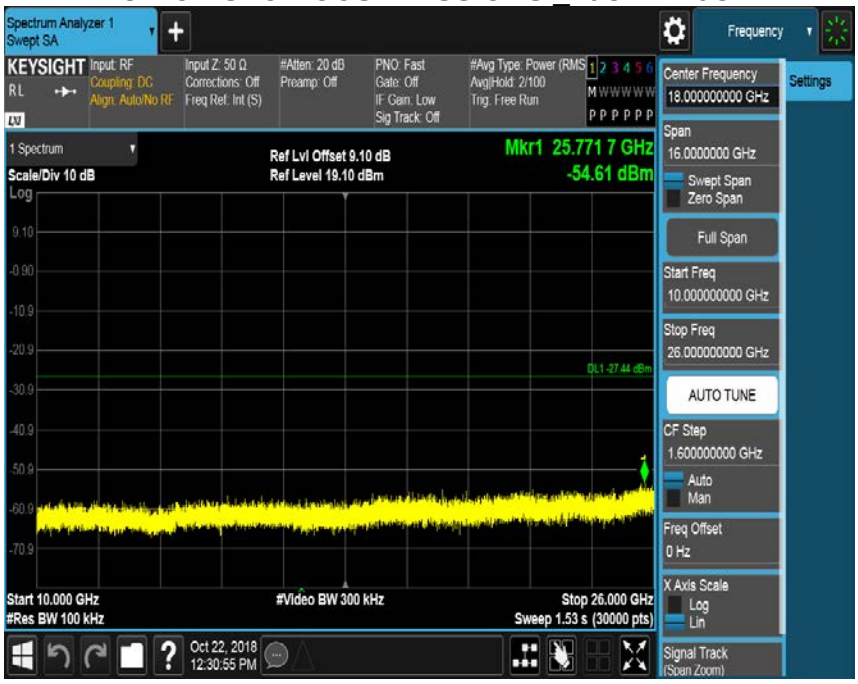


HIGH CH SPURIOUS EMISSIONS _ Pref test Plot

HIGH CH SPURIOUS EMISSIONS _30MHz~10GHz

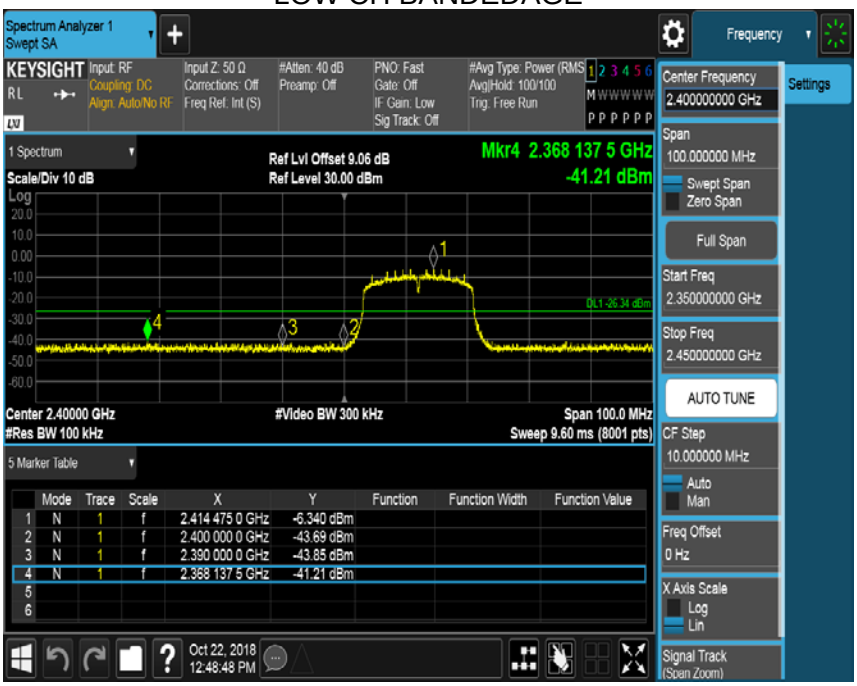


HIGH CH SPURIOUS EMISSIONS _10GHz~26GHz



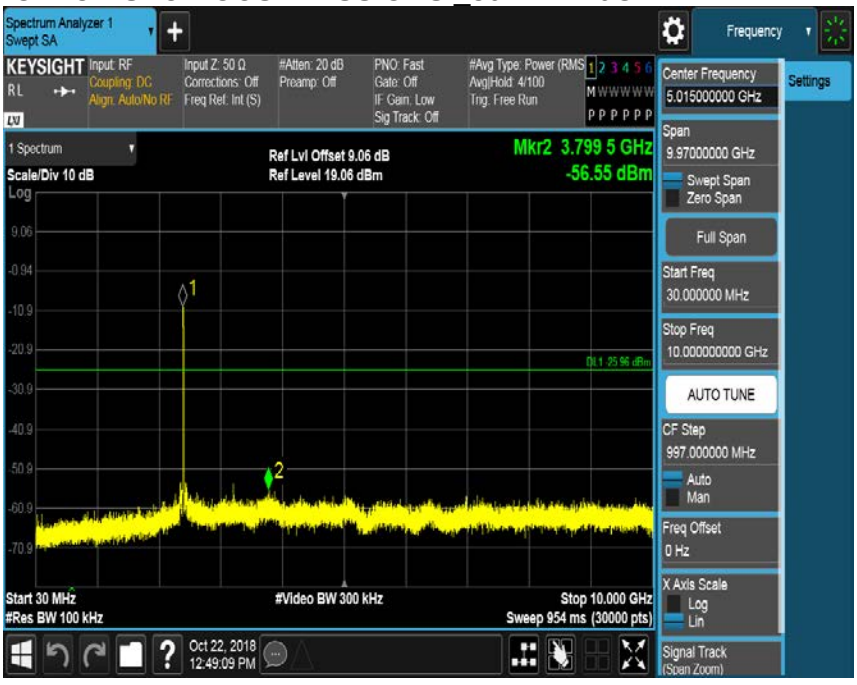
ANTENNA 2

LOW CH BANDEDAGE



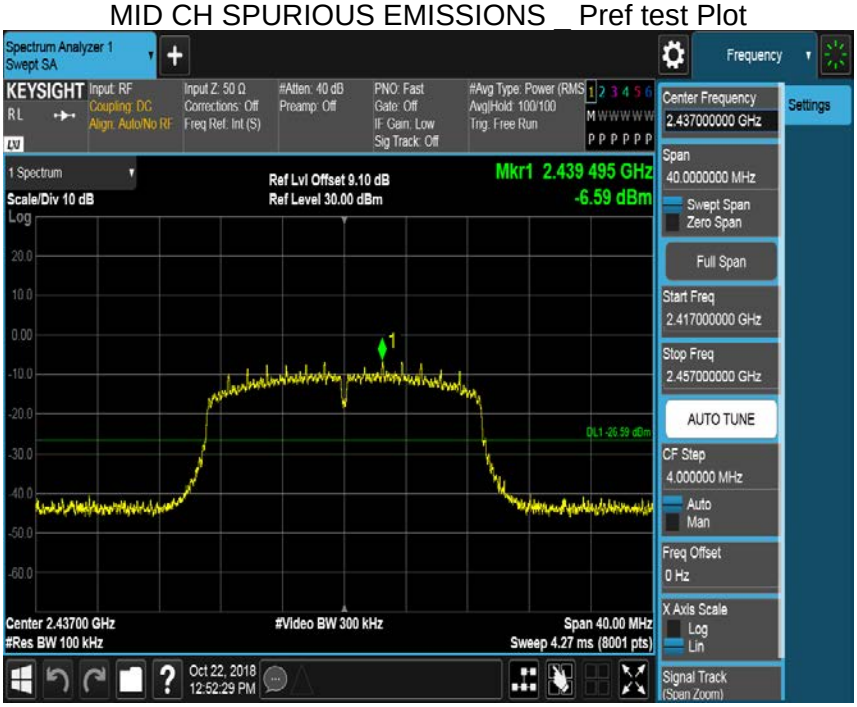
LOW CH SPURIOUS EMISSIONS _ Pref test Plot

LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz

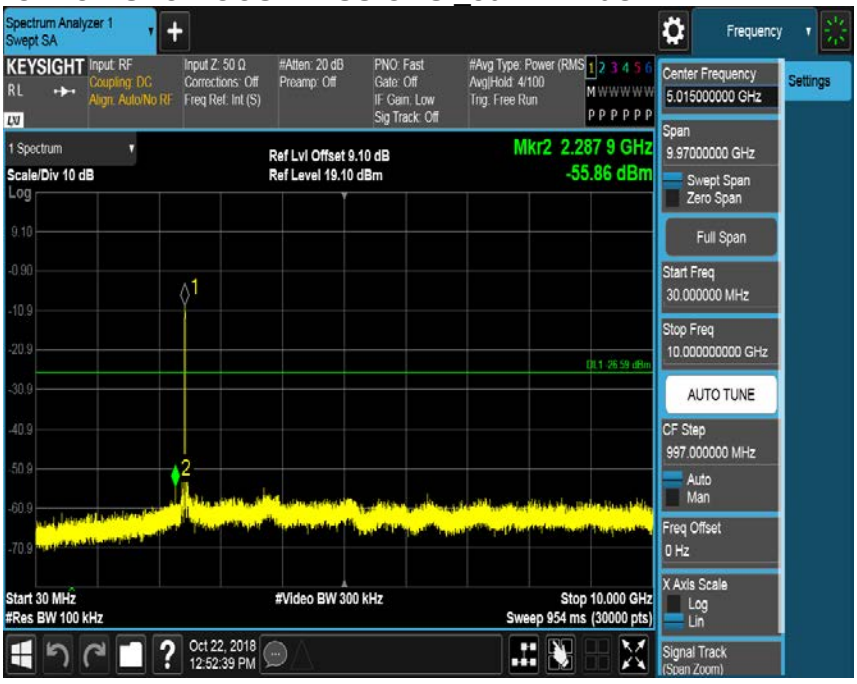


LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

MID CH SPURIOUS EMISSIONS _ Pref test Plot

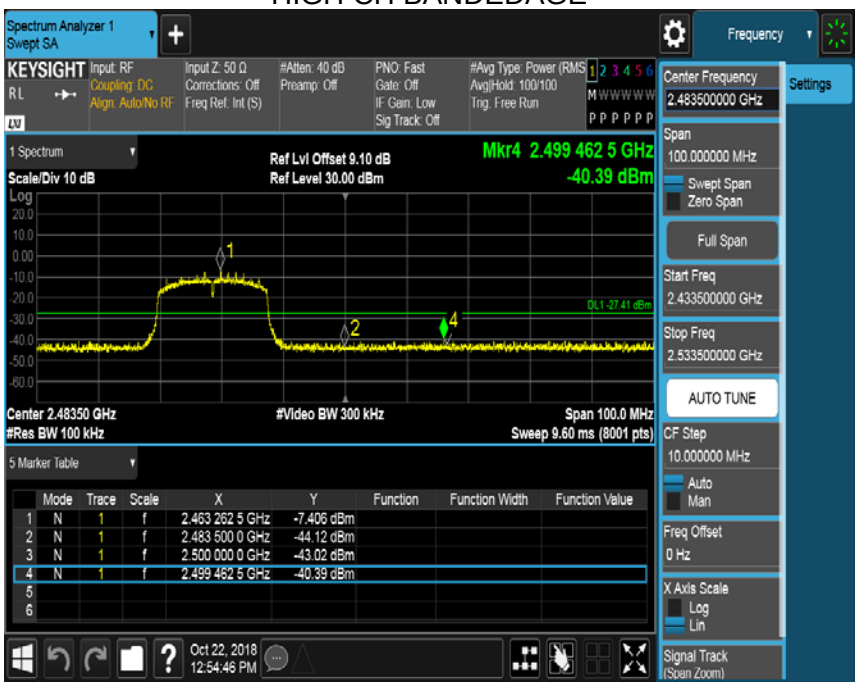


LOW CH SPURIOUS EMISSIONS _ 30MHz~10GHz



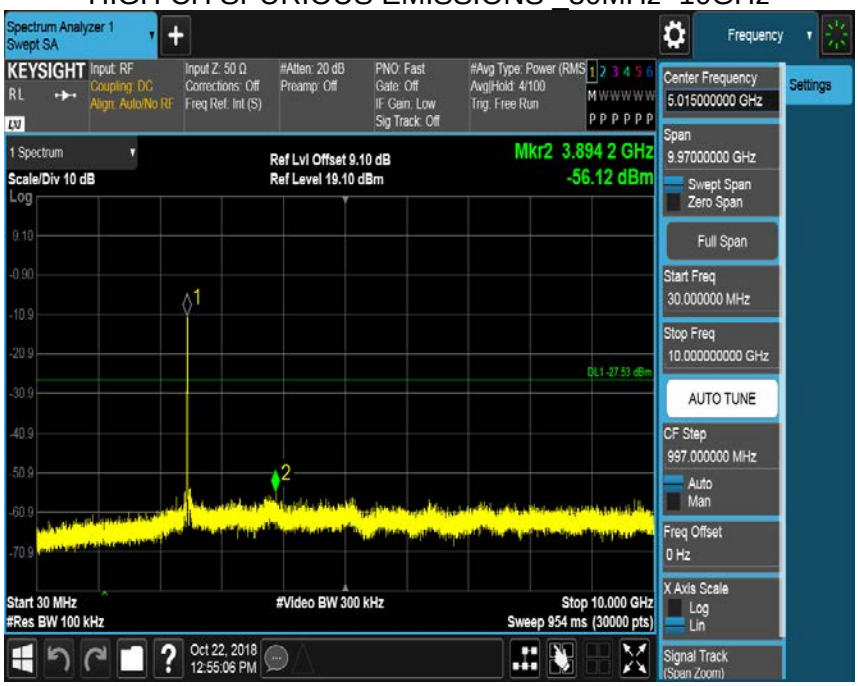
LOW CH SPURIOUS EMISSIONS _10GHz~26GHz

HIGH CH BANDEDAGE

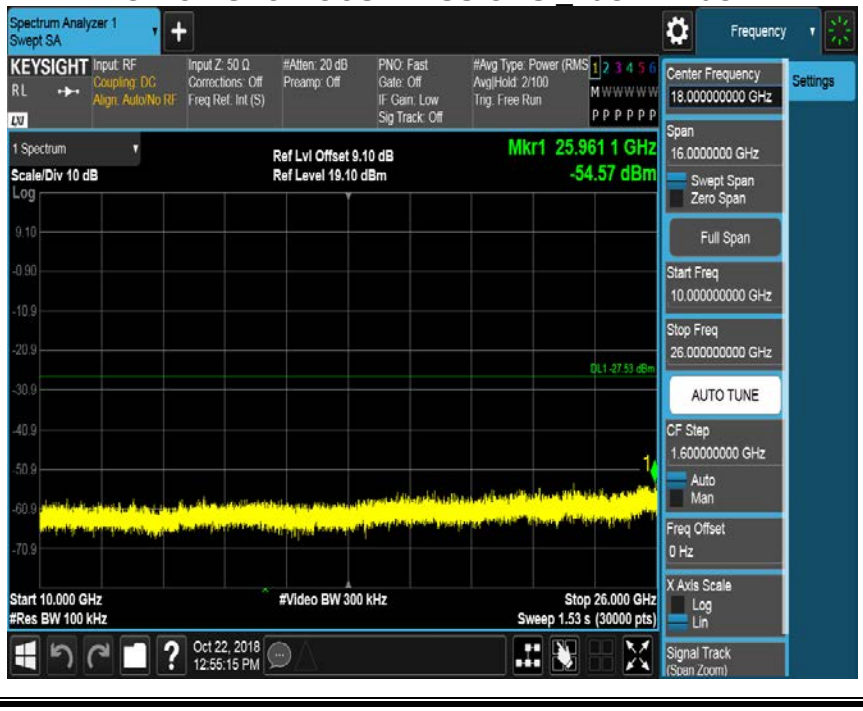


HIGH CH SPURIOUS EMISSIONS _ Pref test Plot

HIGH CH SPURIOUS EMISSIONS _30MHz~10GHz



HIGH CH SPURIOUS EMISSIONS _10GHz~26GHz



9. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

Please refer to ISED RSS-GEN Clause 8.9 (Transmitter)

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

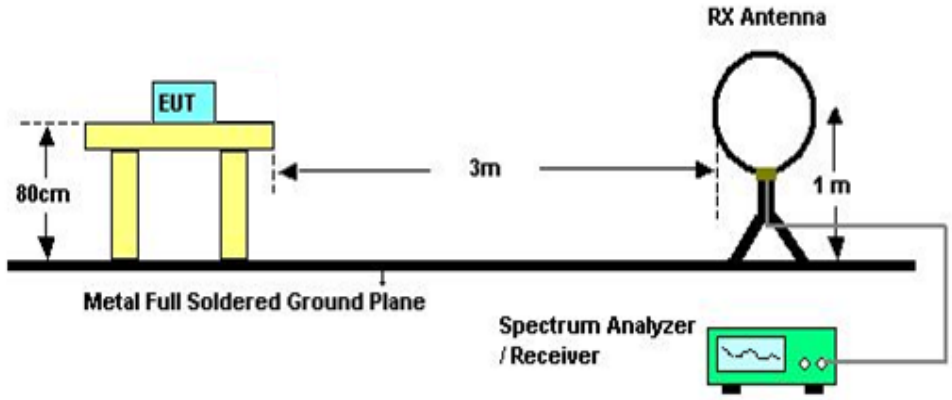
IC Restricted bands please refer to ISED RSS-GEN Clause 8.10
FCC Restricted bands of operation:

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			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 0.8 meter above ground.

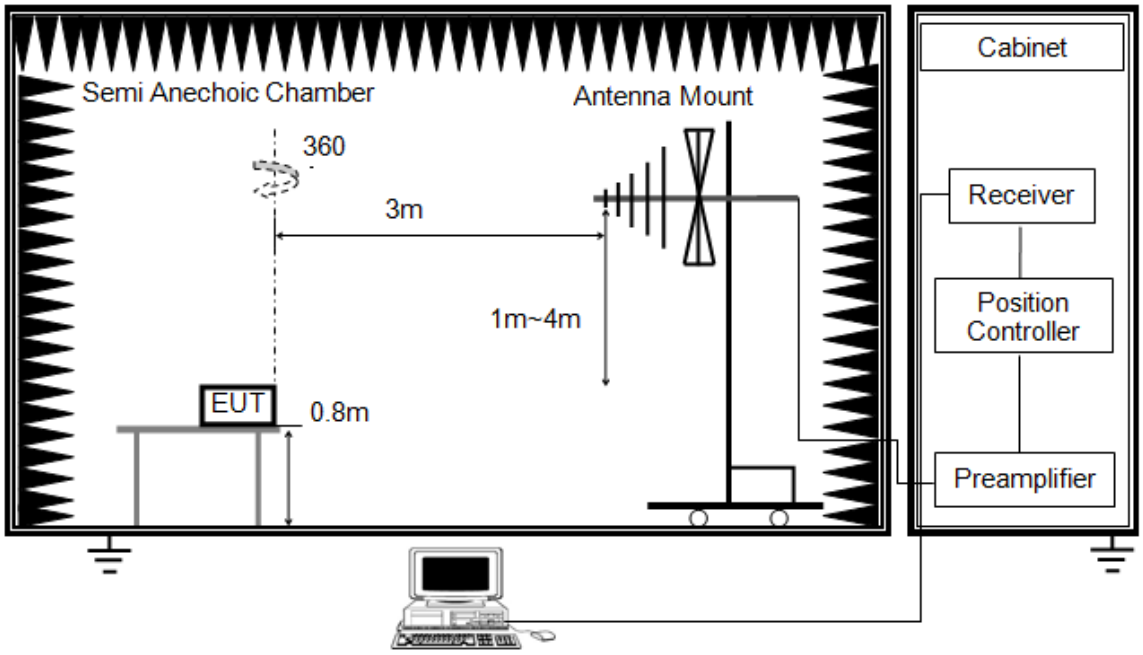
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

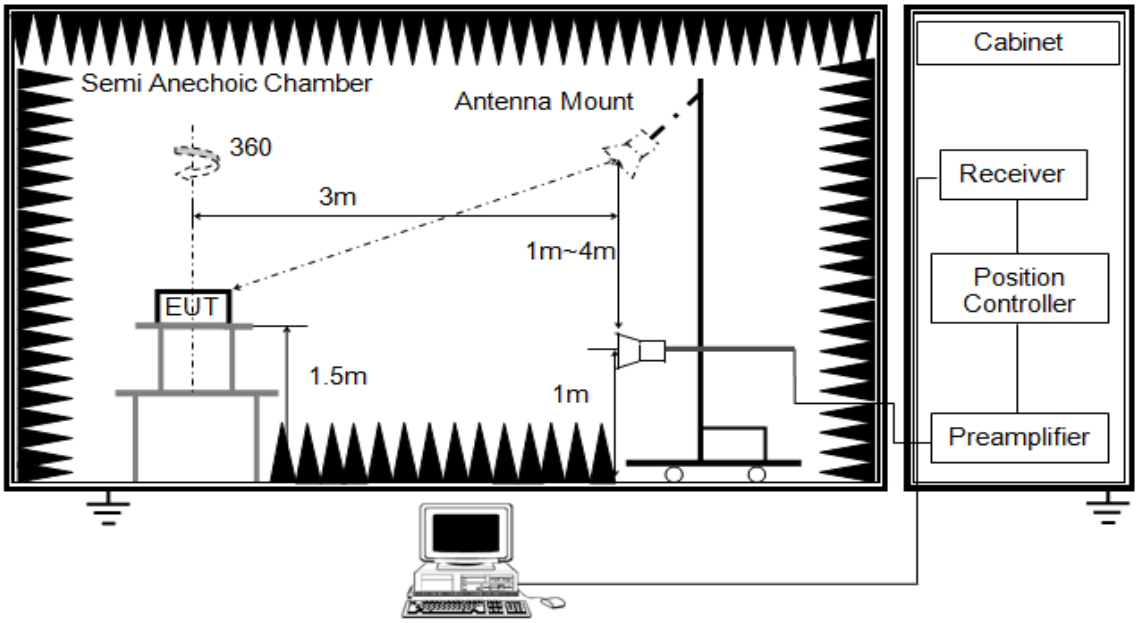
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

ABOVE 1G



The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

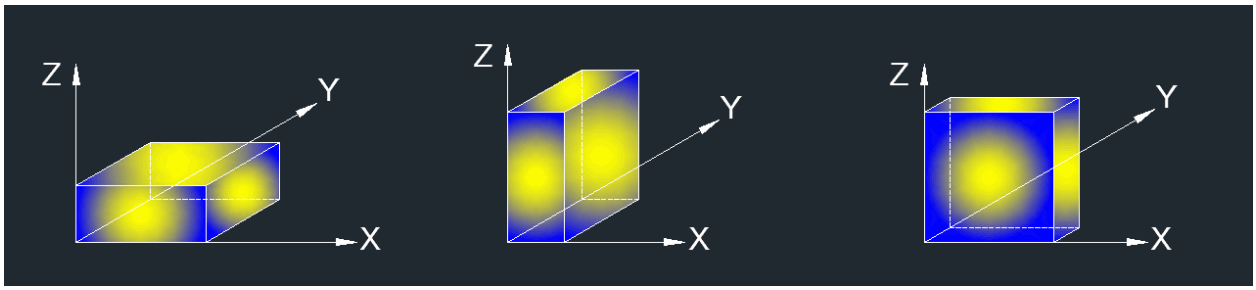
3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	58%
Atmosphere Pressure	101kPa	Test Voltage	DC 12.0V

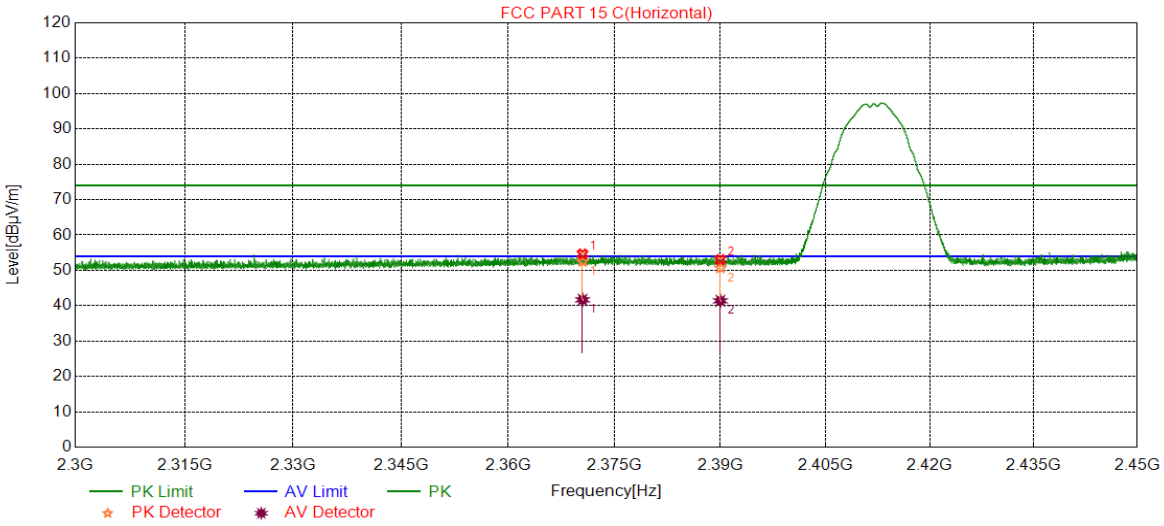
9.1. RESTRICTED BANDEDGE

9.1.1. 802.11b MODE

Antenna1+Antenna2 TX MODE (WORST-CASE CONFIGURATION)

RESTRICTED BANDEDGE (LOW CHANNEL)

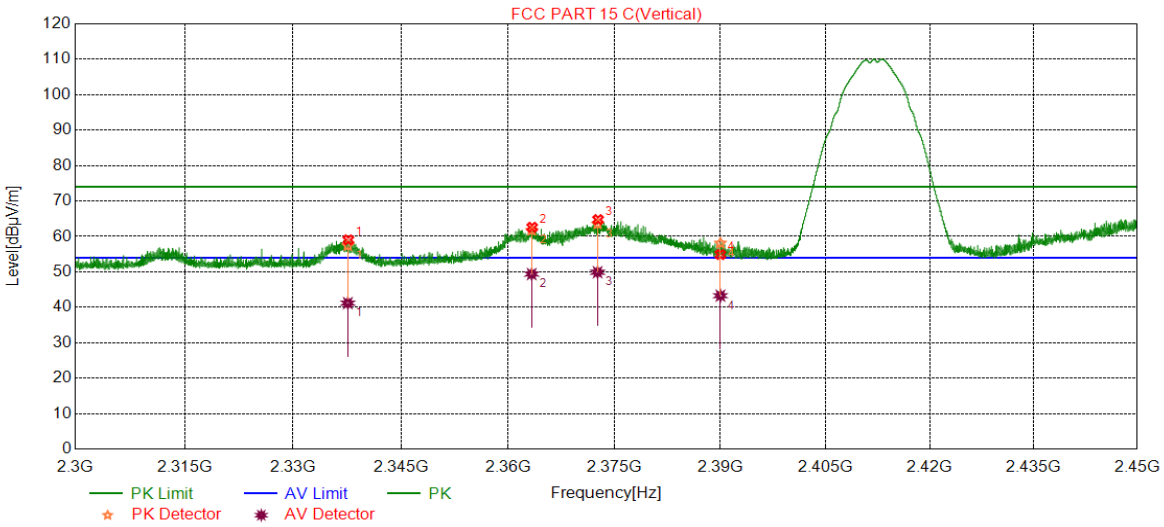
Test Mode	Channel	Polarization	Verdict
11B SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2370.4770	52.50	74.00	-21.50	peak
2	2390.0000	50.71	74.00	-23.29	peak

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11B SISO	LCH	Vertical	PASS

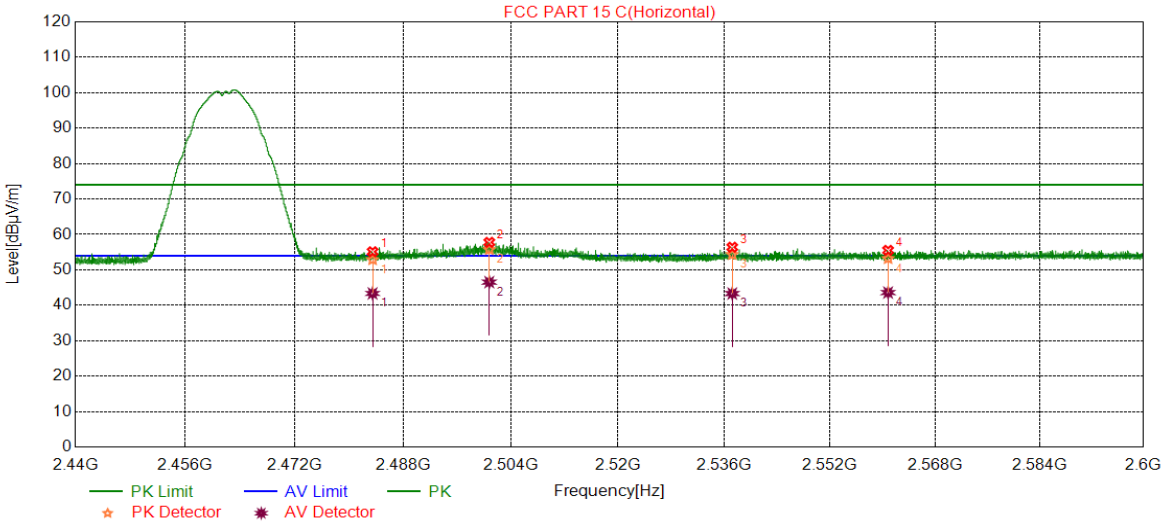


No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2337.5993	57.38	74.00	-16.62	Peak
		41.18	54.00	-12.82	Average
2	2363.3118	61.71	74.00	-12.29	Peak
		49.37	54.00	-4.63	Average
3	2372.5978	63.50	74.00	-10.50	Peak
		49.90	54.00	-4.10	Average
4	2390.0000	58.10	74.00	-15.90	Peak
		43.28	54.00	-10.72	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

RESTRICTED BANDEDGE (HIGH CHANNEL)

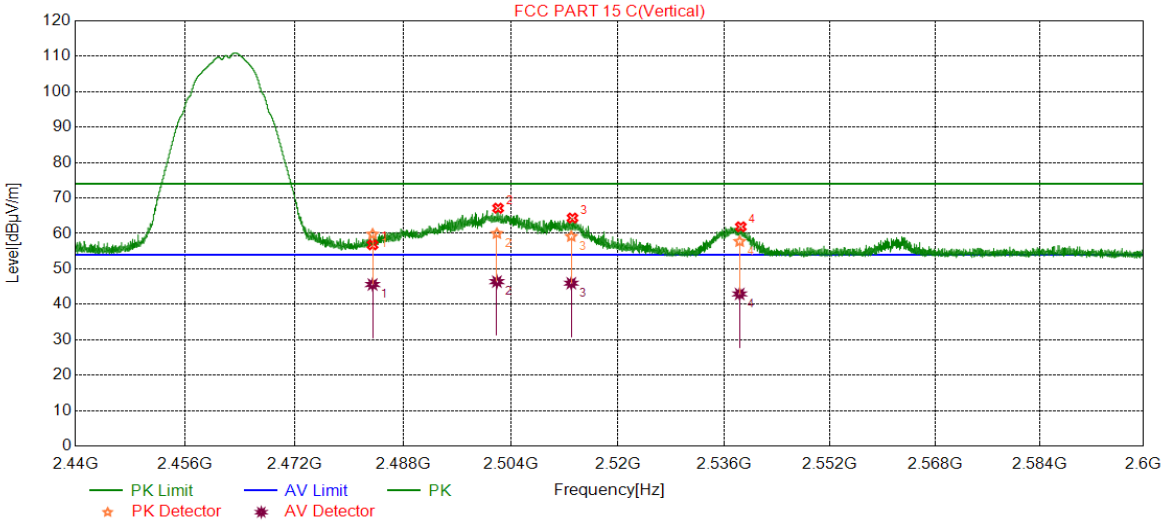
Test Mode	Channel	Polarization	Verdict
11B SISO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	52.87	74.00	-21.13	Peak
		43.35	54.00	-10.65	Average
2	2500.7901	55.72	74.00	-18.28	Peak
		46.54	54.00	-7.46	Average
3	2537.1777	54.32	74.00	-19.68	Peak
		43.32	54.00	-10.68	Average
4	2560.7961	53.18	74.00	-20.82	Peak
		43.60	54.00	-10.40	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11B SISO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	56.78	74.00	-17.22	Peak
		45.59	54.00	-8.41	Average
2	2502.1022	67.12	74.00	-6.88	Peak
		46.39	54.00	-7.61	Average
3	2513.1913	64.35	74.00	-9.65	Peak
		45.95	54.00	-8.05	Average
4	2538.4738	61.87	74.00	-12.13	Peak
		42.92	54.00	-11.08	Average

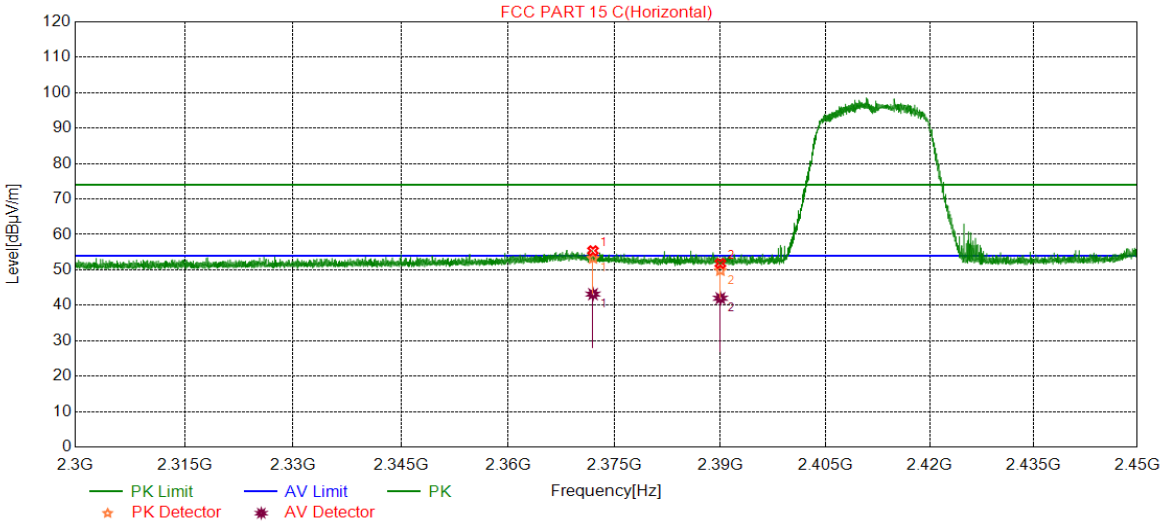
Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

9.1.2. 802.11g MODE

Antenna1+Antenna2 MODE (WORST-CASE CONFIGURATION)

RESTRICTED BANDEDGE (LOW CHANNEL)

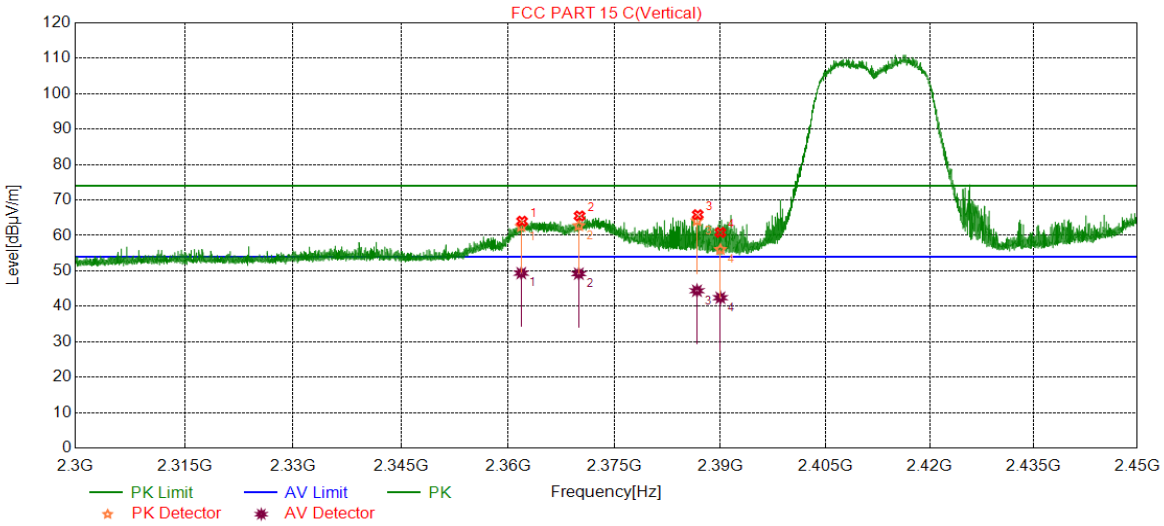
Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.9472	53.23	74.00	-20.77	peak
2	2390.0000	49.80	74.00	-24.20	peak

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Vertical	PASS

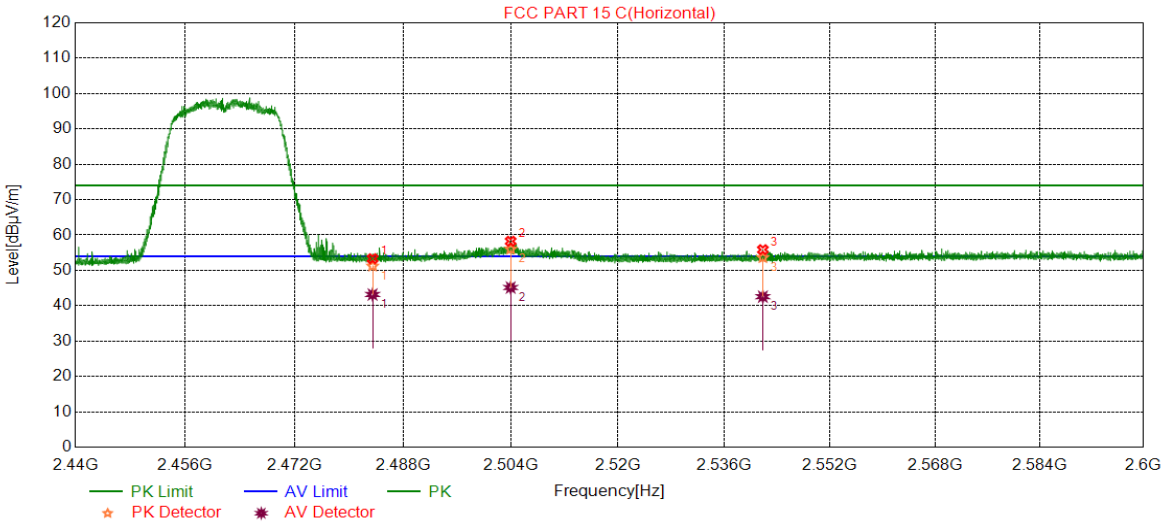


No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2361.8448	62.51	74.00	-11.49	Peak
		49.36	54.00	-4.64	Average
2	2369.9456	62.73	74.00	-11.27	Peak
		49.20	54.00	-4.80	Average
3	2386.6723	64.14	74.00	-9.86	Peak
		44.38	54.00	-9.62	Average
4	2390.0000	56.02	74.00	-17.98	Peak
		42.41	54.00	-11.59	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

RESTRICTED BANDEDGE (HIGH CHANNEL)

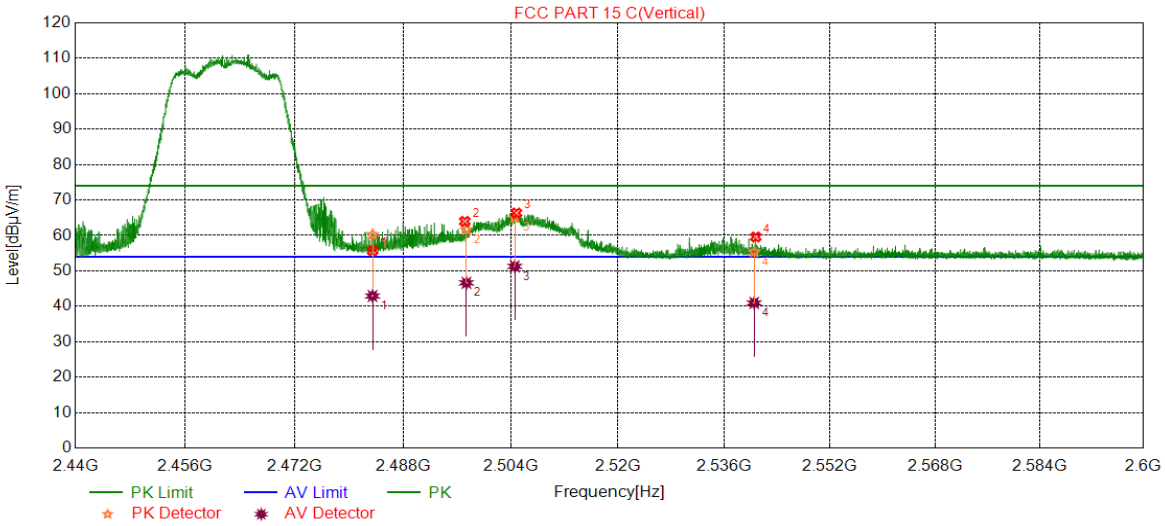
Test Mode	Channel	Polarization	Verdict
11G SISO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	51.20	74.00	-22.80	peak
		43.17	54.00	-10.83	Average
2	2503.9744	56.01	74.00	-17.99	Peak
		45.14	54.00	-8.86	Average
3	2541.8022	53.60	74.00	-20.40	Peak
		42.56	54.00	-11.44	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11G SISO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	60.23	74.00	-13.77	peak
		42.91	54.00	-11.09	Average
2	2497.3936	61.57	74.00	-12.43	Peak
		46.62	54.00	-7.38	Average
3	2504.5823	65.05	74.00	-8.95	Peak
		51.27	54.00	-2.73	Average
4	2540.4899	55.36	74.00	-18.64	Peak
		40.96	54.00	-13.04	Average

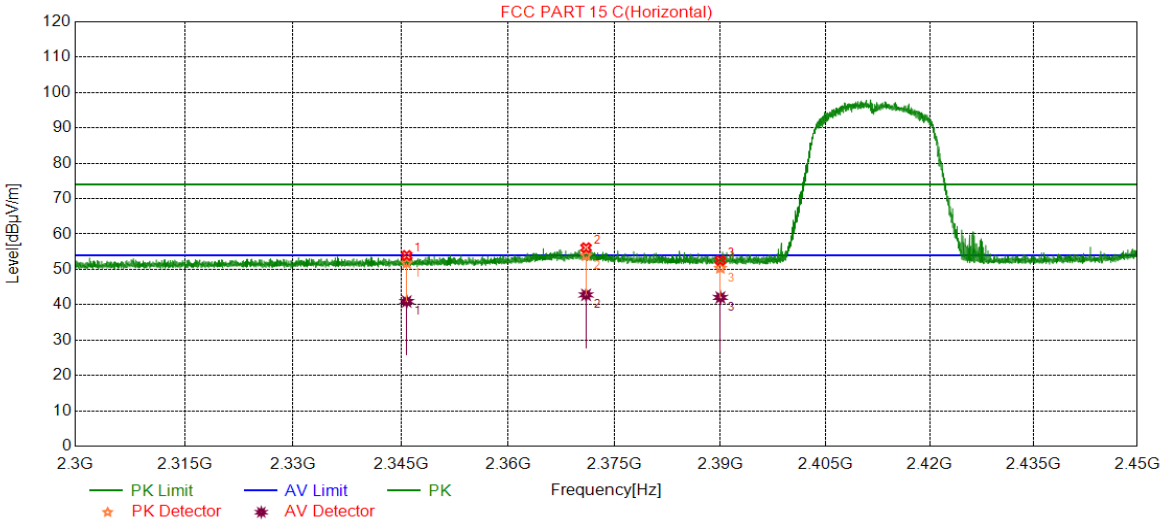
Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

9.1.3. 802.11n HT20 MODE

Antenna1+Antenna2 MODE (WORST-CASE CONFIGURATION)

RESTRICTED BANDEDGE (LOW CHANNEL)

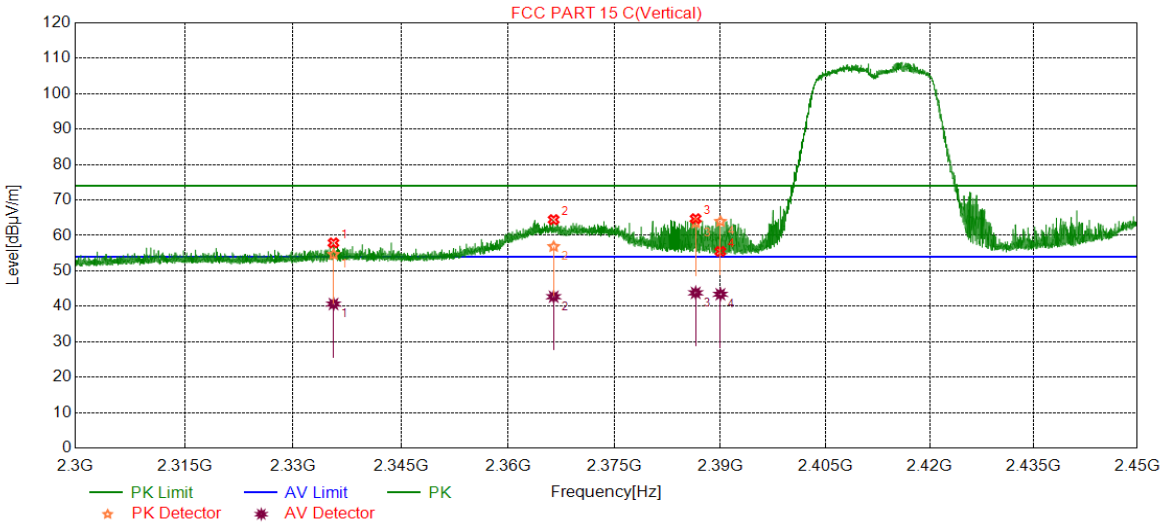
Test Mode	Channel	Polarization	Verdict
11N20MIMO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2345.7996	51.73	74.00	-22.27	peak
2	2370.9721	53.90	74.00	-20.10	peak
3	2390.0000	50.32	74.00	-23.68	peak

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11N20MIMO	LCH	Vertical	PASS

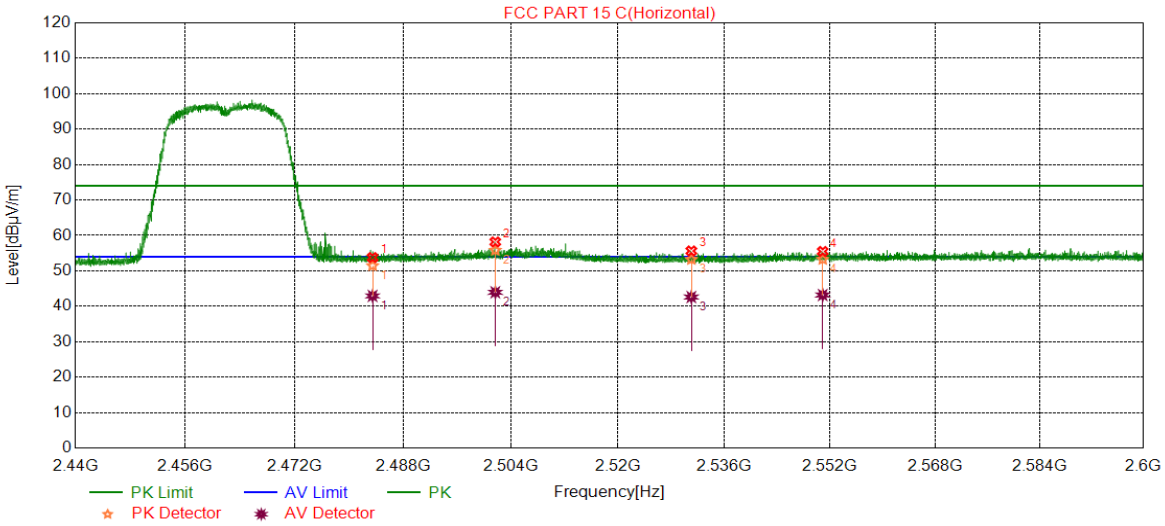


No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2335.6073	54.63	74.00	-19.37	Peak
		40.64	54.00	-13.36	Average
2	2366.4053	56.86	74.00	-17.14	Peak
		42.70	54.00	-11.30	Average
3	2386.4923	63.55	74.00	-10.45	Peak
		43.79	54.00	-10.21	Average
4	2390.0000	63.94	74.00	-10.06	Peak
		43.40	54.00	-10.60	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

RESTRICTED BANDEDGE (HIGH CHANNEL)

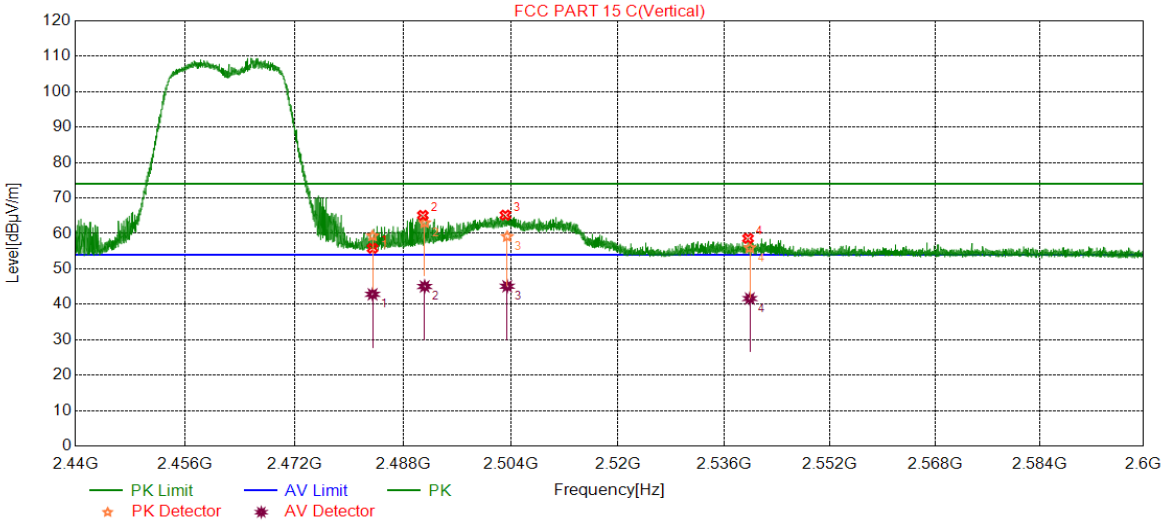
Test Mode	Channel	Polarization	Verdict
11N20MIMO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	51.45	74.00	-22.55	Peak
		42.93	54.00	-11.07	Average
2	2501.6862	55.81	74.00	-18.19	Peak
		43.95	54.00	-10.05	Average
3	2531.0171	53.23	74.00	-20.77	Peak
		42.61	54.00	-11.39	Average
4	2550.8591	53.25	74.00	-20.75	Peak
		43.19	54.00	-10.81	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

Test Mode	Channel	Polarization	Verdict
11N20MIMO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	59.31	74.00	-14.69	Peak
		42.83	54.00	-11.17	Average
2	2491.2023	63.00	74.00	-11.00	Peak
		45.03	54.00	-8.97	Average
3	2503.4595	59.12	74.00	-14.88	Peak
		45.09	54.00	-8.91	Average
4	2539.8312	55.92	74.00	-18.08	Peak
		41.62	54.00	-12.38	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
6. For all the test results have been considered the correct factors.

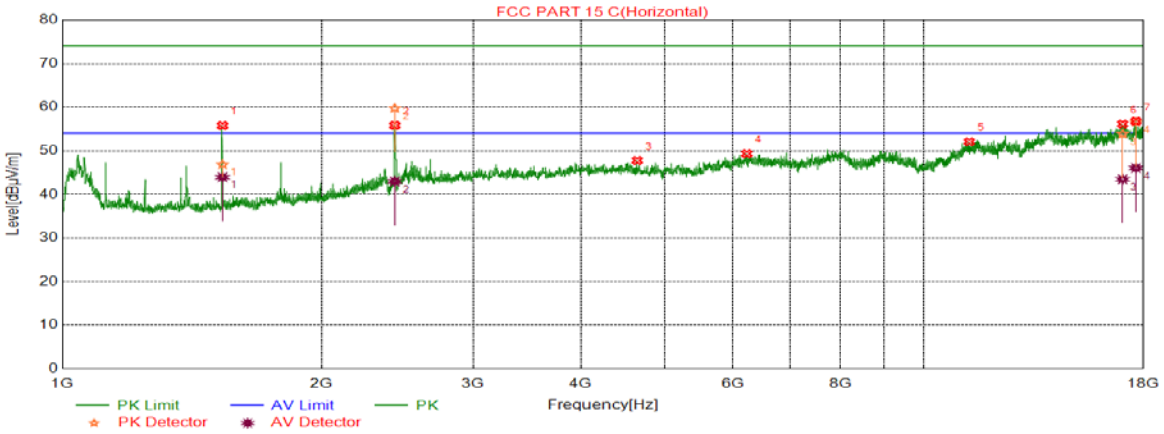
9.2. SPURIOUS EMISSIONS (1~18GHz)

9.2.1. 802.11b MODE

Antenna1+Antenna2 MODE (WORST-CASE CONFIGURATION)

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL)

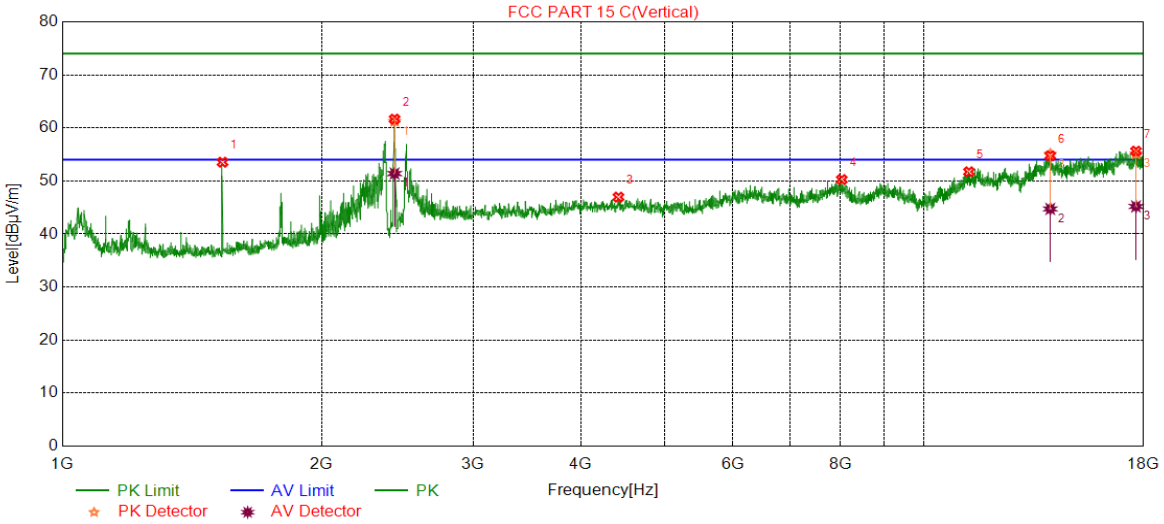
Test Mode	Channel	Polarization	Verdict
11B SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	55.78	74.00	-18.22	--	--	Peak
		43.93	--	--	54.00	-10.07	Average
2	2432.4775	55.83	74.00	-18.17	--	--	Peak
		42.96	--	--	54.00	-11.04	Average
3	4650.2750	47.78	74.00	-26.22	--	--	Peak
4	6233.0388	49.33	74.00	-24.67	--	--	Peak
5	11296.3827	52.06	74.00	-21.94	--	--	Peak
6	17017.3362	56.10	74.00	-17.90	--	--	Peak
		43.46	--	--	54.00	-10.54	Average
7	17634.9392	56.79	74.00	-17.21	--	--	Peak
		46.07	--	--	54.00	-7.93	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11B SISO	LCH	Vertical	PASS

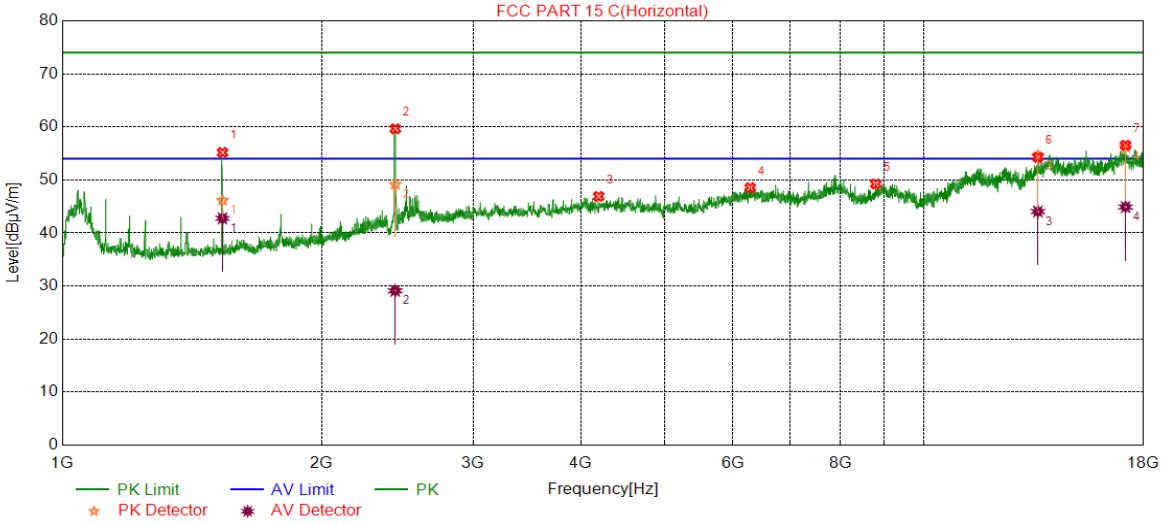


No.	Frequency (MHz)	Result (dBuV /m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	53.53	74.00	-20.47	--	--	Peak
2	2431.1437	61.65	74.00	-12.35	--	--	Peak
		51.39	--	--	54.00	-2.61	Average
3	4422.7371	46.95	74.00	-27.05	--	--	Peak
4	8033.3389	50.26	74.00	-23.74	--	--	Peak
5	11286.3811	51.73	74.00	-22.27	--	--	Peak
6	14024.3374	54.74	74.00	-19.26	--	--	Peak
		44.73	--	--	54.00	-9.27	Average
7	17637.4396	55.62	74.00	-18.38	--	--	Peak
		45.19	--	--	54.00	-8.81	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL)

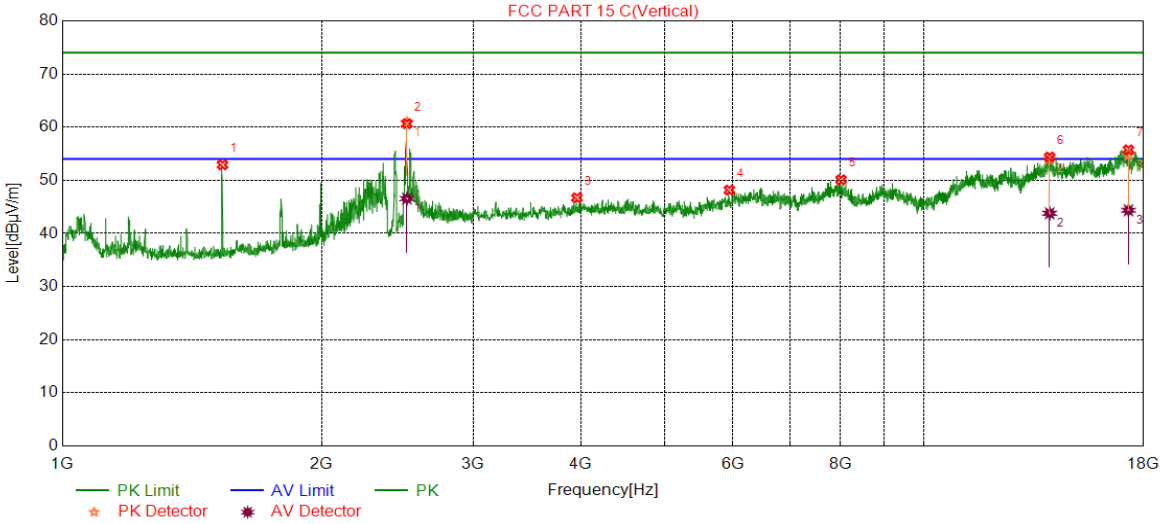
Test Mode	Channel	Polarization	Verdict
11B SISO	MCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	55.18	74.00	-18.82	--	--	peak
		42.76	--	--	54.00	-11.24	Average
2	2435.8119	59.64	74.00	-14.36	--	--	peak
		29.10	--	--	54.00	-24.90	Average
3	4195.1992	46.89	74.00	-27.11	--	--	Peak
4	6290.5484	48.53	74.00	-25.47	--	--	Peak
5	8798.4664	49.25	74.00	-24.75	--	--	Peak
6	13569.2615	54.27	74.00	-19.73	--	--	Peak
		44.05	--	--	54.00	-9.95	Average
7	17149.8583	56.18	74.00	-17.82	--	--	Peak
		44.90	--	--	54.0	-9.10	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11B SISO	MCH	Vertical	PASS

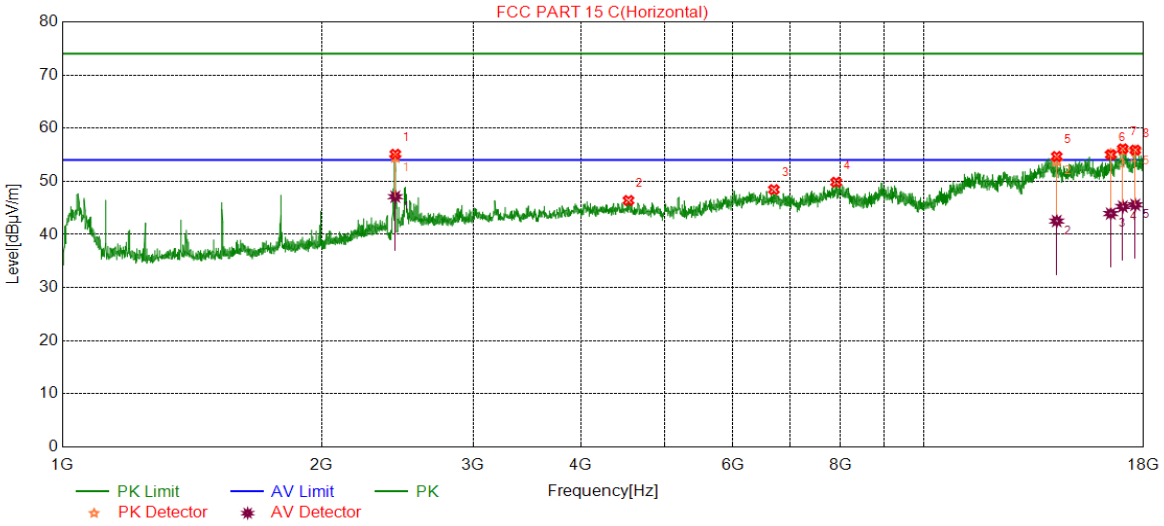


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.91	74.00	-21.09	54.00	-1.09	Peak
2	2512.5042	60.65	74.00	-13.35	--	--	Peak
		46.55	--	--	54.00	-7.45	Average
3	3957.6596	46.71	74.00	-27.29	--	--	Peak
4	5947.9913	48.16	74.00	-25.84	--	--	Peak
5	8018.3364	50.09	74.00	-23.91	--	--	Peak
6	14001.8336	54.37	74.00	-19.63	--	--	Peak
		43.79	--	--	54.00	-10.21	Average
7	17284.8808	54.74	74.00	-19.26	--	--	Peak
		44.36	--	--	54.00	-9.64	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL)

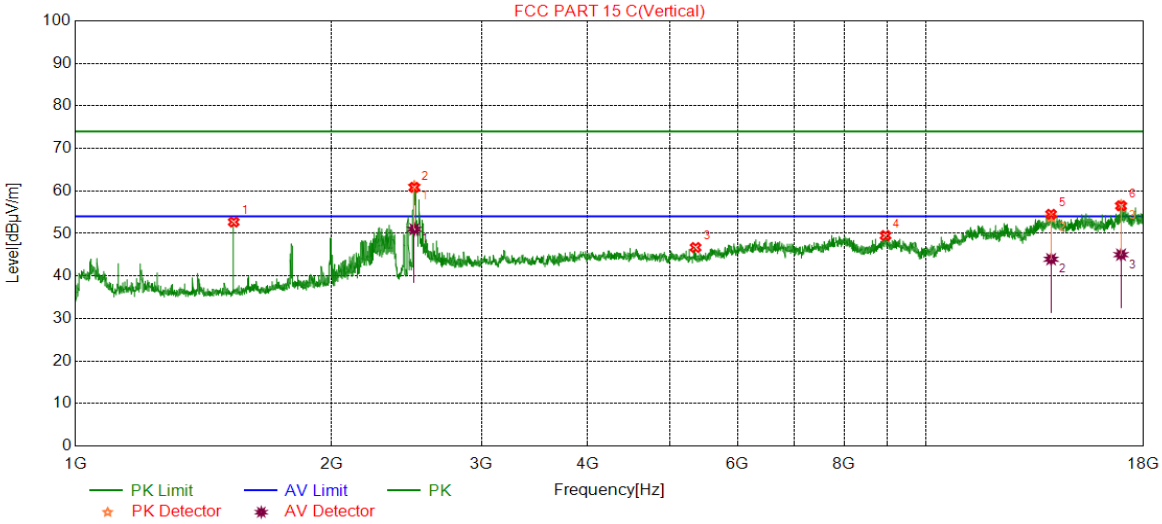
Test Mode	Channel	Polarization	Verdict
11B SISO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	2435.8119	55.10	74.00	-18.90	--	--	Peak
		47.10	--	--	54.00	-6.90	Average
2	4542.7571	46.39	74.00	-27.61	--	--	Peak
3	6700.6168	48.43	74.00	-25.57	--	--	Peak
4	7913.3189	49.83	74.00	-24.17	--	--	Peak
5	14269.3782	54.67	74.00	-19.33	--	--	Peak
		42.51	--	--	54.00	-11.49	Average
6	16487.2479	55.02	74.00	-18.98	--	--	Peak
		43.92	--	--	54.00	-10.08	Average
7	17024.8375	55.11	74.00	-18.89	--	--	Peak
		45.25	--	--	54.00	-8.75	Average
8	17602.4337	55.83	74.00	-18.17	--	--	Peak
		45.57	--	--	54.00	-8.43	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11B SISO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.68	74.00	-21.32	--	--	Peak
2	2501.8339	60.83	74.00	-13.17	--	--	Peak
		50.98	--	--	54.00	-3.02	Average
3	5355.3926	46.69	74.00	-27.31	--	--	Peak
4	8953.4922	49.50	74.00	-24.50	--	--	Peak
5	14014.3357	54.51	74.00	-19.49	--	--	Peak
		43.94	--	--	54.00	-10.06	Average
6	16932.3221	56.50	74.00	-17.50	--	--	Peak
		45.00	--	--	54.00	-9.00	Average

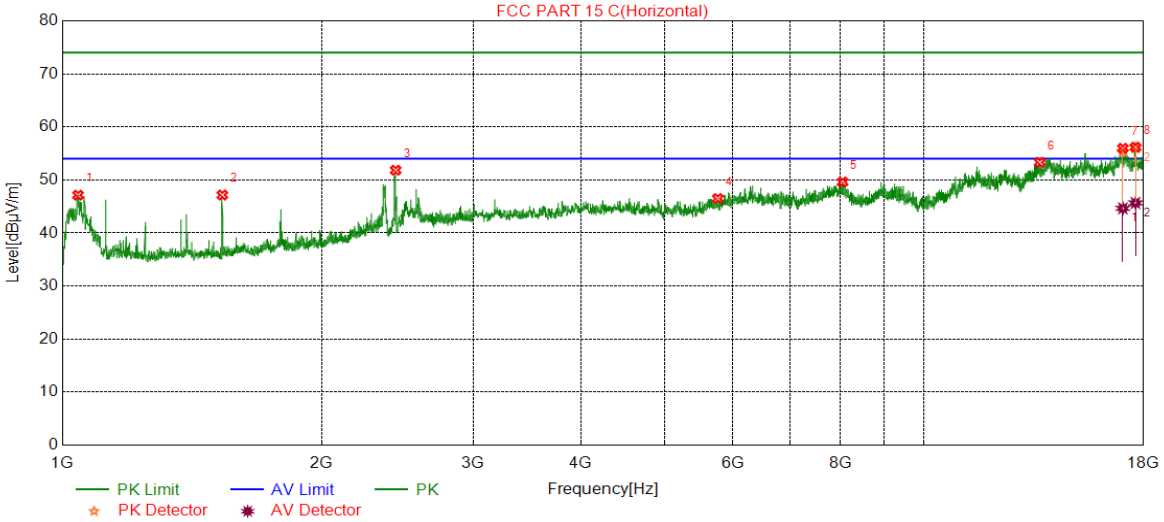
Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.2.2. 802.11g MODE

Antenna1+Antenna2 MODE (WORST-CASE CONFIGURATION)

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL)

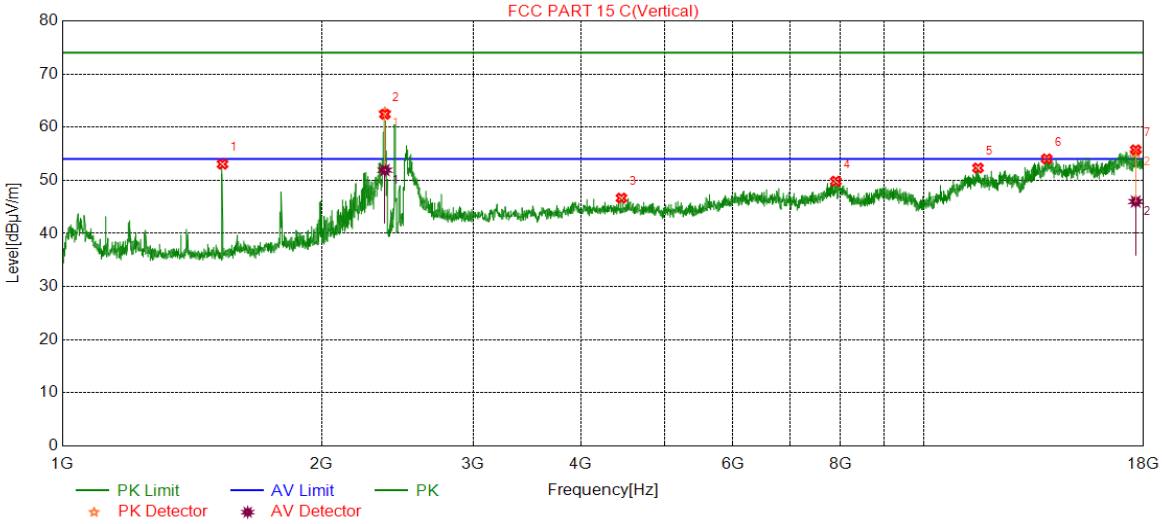
Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1043.3478	47.13	74.00	-26.87	--	--	Peak
2	1534.1781	47.16	74.00	-26.84	--	--	Peak
3	2438.4795	51.83	74.00	-22.17	--	--	Peak
4	5767.9613	46.49	74.00	-27.51	--	--	Peak
5	8050.8418	49.62	74.00	-24.38	--	--	Peak
6	13636.7728	53.32	74.00	-20.68	--	--	Peak
7	17027.3379	55.38	74.00	-18.62	--	--	Peak
		44.65	--	--	54.00	-9.35	Average
8	17612.4354	56.08	74.00	-17.92	--	--	Peak
		45.66	--	--	54.00	-8.34	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Vertical	PASS

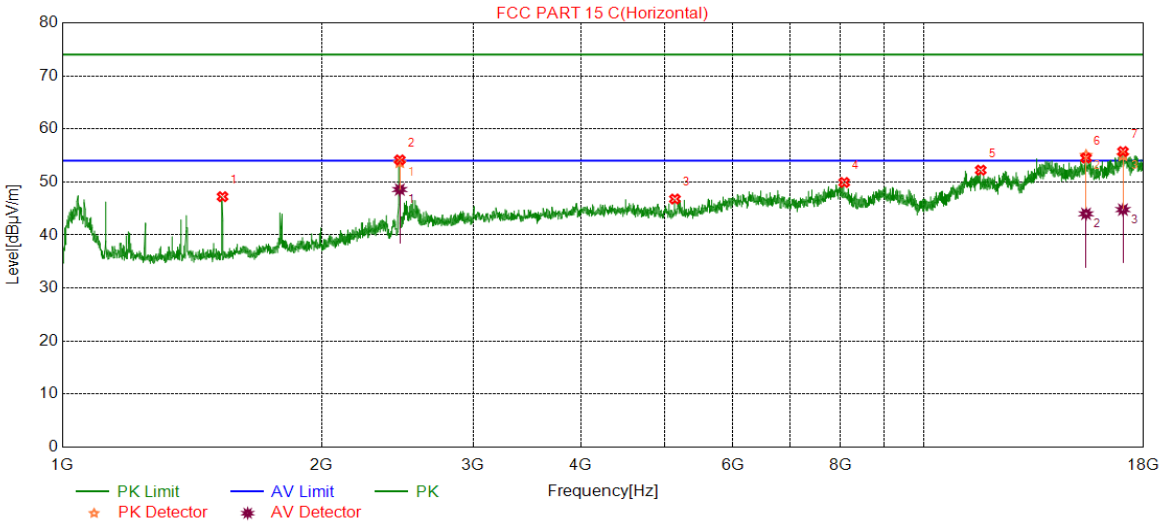


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	53.03	74.00	-20.97	54.00	-0.97	Peak
2	2369.1230	62.42	74.00	-11.58	--	--	Peak
		51.90	--	--	54.00	-2.10	Average
3	4457.7430	46.65	74.00	-27.35	--	--	Peak
4	7905.8176	49.83	74.00	-24.17	--	--	Peak
5	11561.4269	52.31	74.00	-21.69	--	--	Peak
6	13891.8153	53.93	74.00	-20.07	--	--	Peak
7	17624.9375	55.23	74.00	-18.77	--	--	Peak
		46.00	--	--	54.00	-8.00	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL)

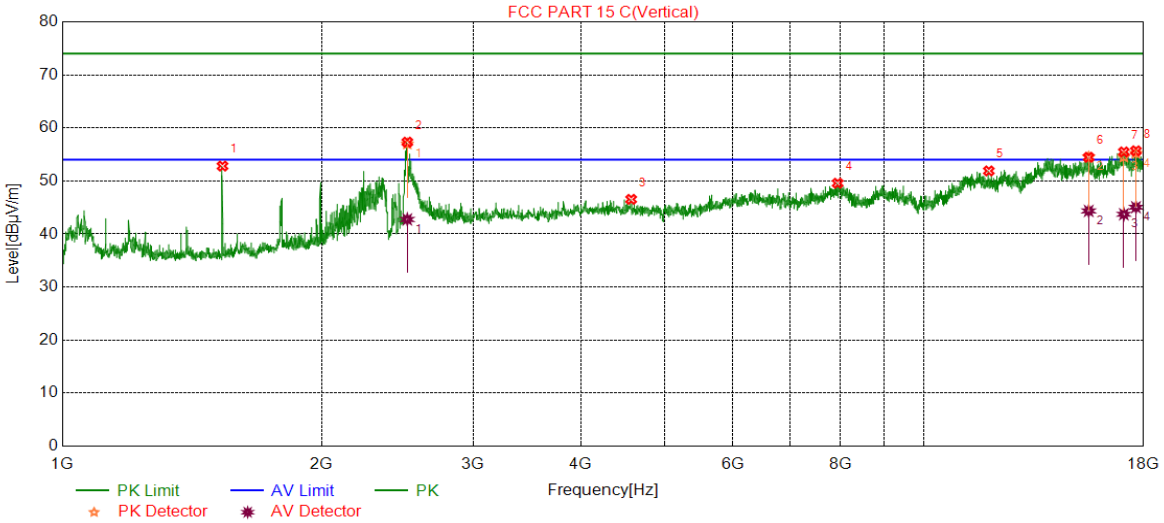
Test Mode	Channel	Polarization	Verdict
11G SISO	MCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	47.22	74.00	-26.78	--	--	Peak
2	2465.1551	54.15	74.00	-19.85	--	--	Peak
		48.56	--	--	54.00	-5.44	Average
3	5142.8571	46.78	74.00	-27.22	--	--	Peak
4	8085.8476	49.90	74.00	-24.10	--	--	Peak
5	11646.4411	52.22	74.00	-21.78	--	--	Peak
6	15432.0720	54.51	74.00	-19.49	--	--	Peak
		43.99	--	--	54.00	-10.01	Average
7	17032.3387	54.92	74.00	-19.08	--	--	Peak
		44.78	--	--	54.00	-9.22	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11G SISO	MCH	Vertical	PASS

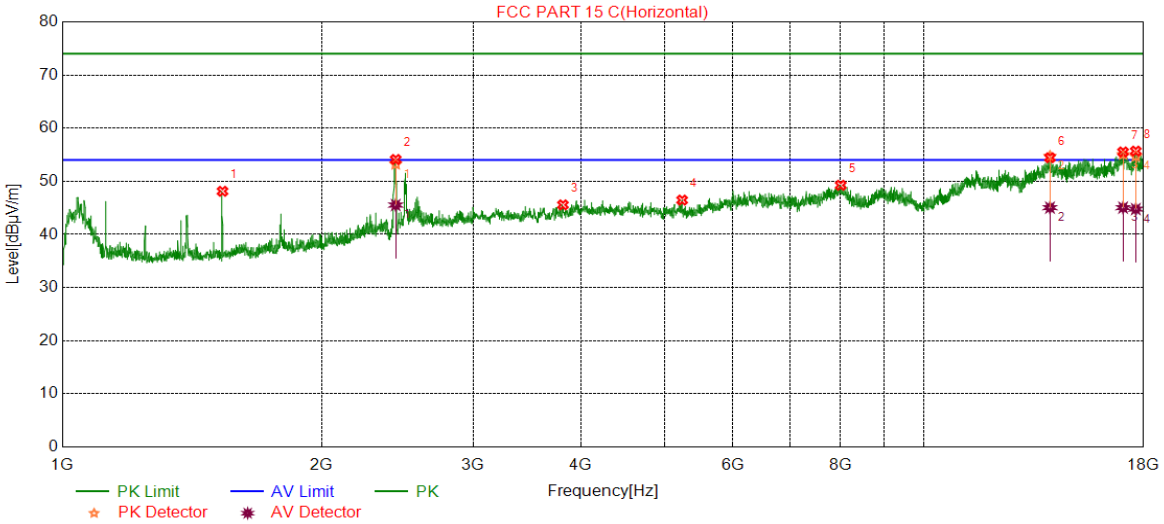


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.80	74.00	-21.20	--	--	Peak
2	2515.1717	57.31	74.00	-16.69	--	--	Peak
		42.74	--	--	54.00	-11.26	Average
3	4575.2625	46.53	74.00	-27.47	--	--	Peak
4	7945.8243	49.57	74.00	-24.43	--	--	Peak
5	11901.4836	51.89	74.00	-22.11	--	--	Peak
6	15542.0903	54.46	74.00	-19.54	--	--	Peak
		44.35	--	--	54.00	-9.65	Average
7	17072.3454	54.51	74.00	-19.49	--	--	Peak
		43.72	--	--	54.00	-10.28	Average
8	17634.9392	55.22	74.00	-18.78	--	--	Peak
		45.04	--	--	54.00	-8.96	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL)

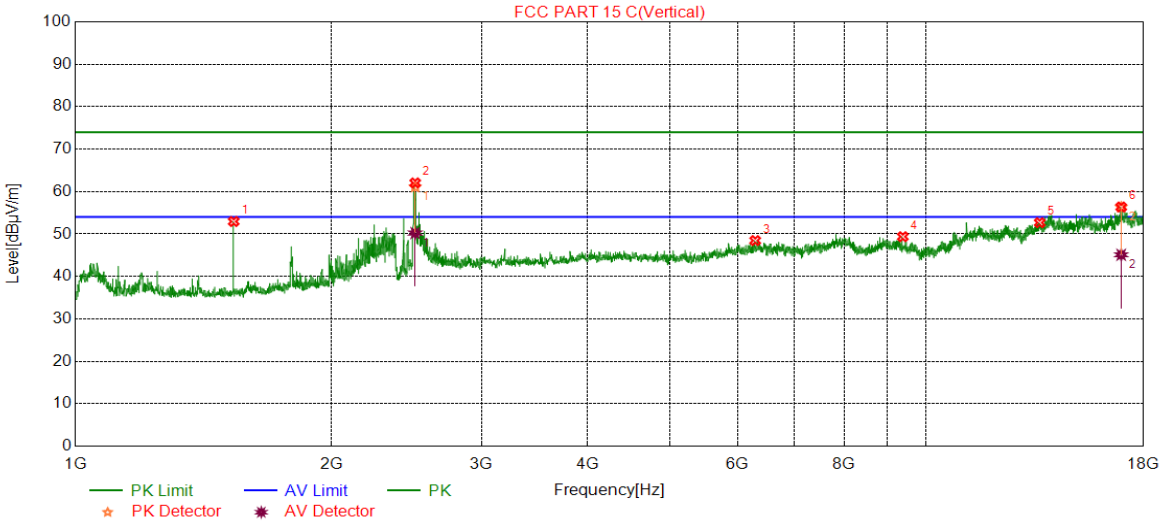
Test Mode	Channel	Polarization	Verdict
11G SISO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	48.12	74.00	-25.88	54.00	-5.88	Peak
2	2438.4795	54.10	74.00	-19.90	--	--	Peak
		45.53	--	--	54.00	-8.47	Average
3	3812.6354	45.56	74.00	-28.44	--	--	Peak
4	5242.8738	46.46	74.00	-27.54	--	--	Peak
5	8010.8351	49.25	74.00	-24.75	--	--	Peak
6	14014.3357	54.43	74.00	-19.57	--	--	Peak
		45.04	--	--	54.00	-8.96	Average
7	17037.3396	55.03	74.00	-18.97	--	--	Peak
		45.04	--	--	54.00	-8.96	Average
8	17627.4379	54.69	74.00	-19.31	--	--	Peak
		44.77	--	--	54.00	-9.23	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11G SISO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.94	74.00	-21.06	--	--	peak
2	2507.8359	62.04	74.00	-11.96	--	--	peak
		50.22	--	--	54.00	-3.78	Average
3	6293.0488	48.45	74.00	-25.55	--	--	peak
4	9383.5639	49.36	74.00	-24.64	--	--	peak
5	13589.2649	52.66	74.00	-21.34	--	--	peak
6	16939.8233	56.36	74.00	-17.64	--	--	peak
		45.10	--	--	54.00	-8.90	Average

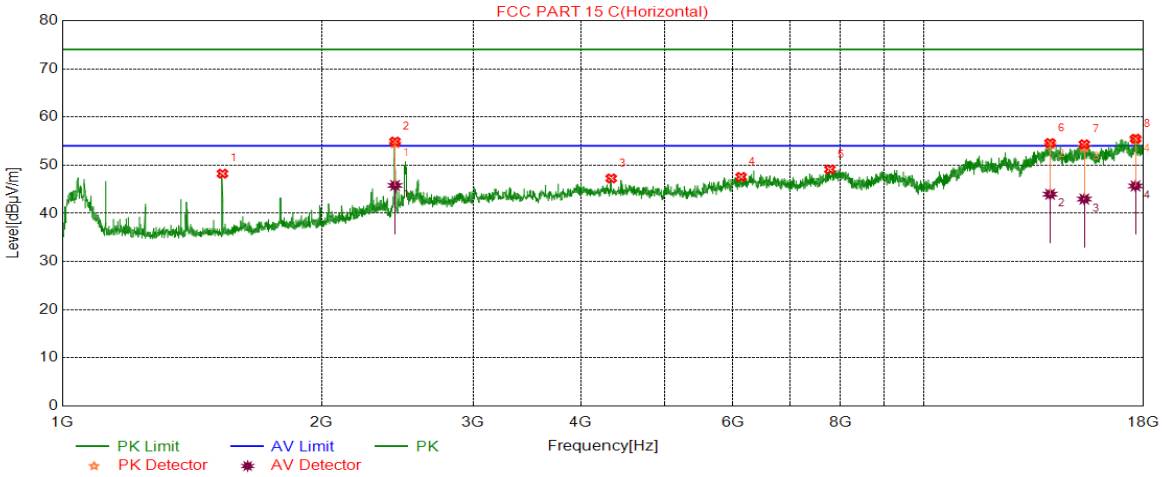
Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.2.3. 802.11n HT20 MODE

Antenna1+Antenna2 TX MODE (WORST-CASE CONFIGURATION)

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL)

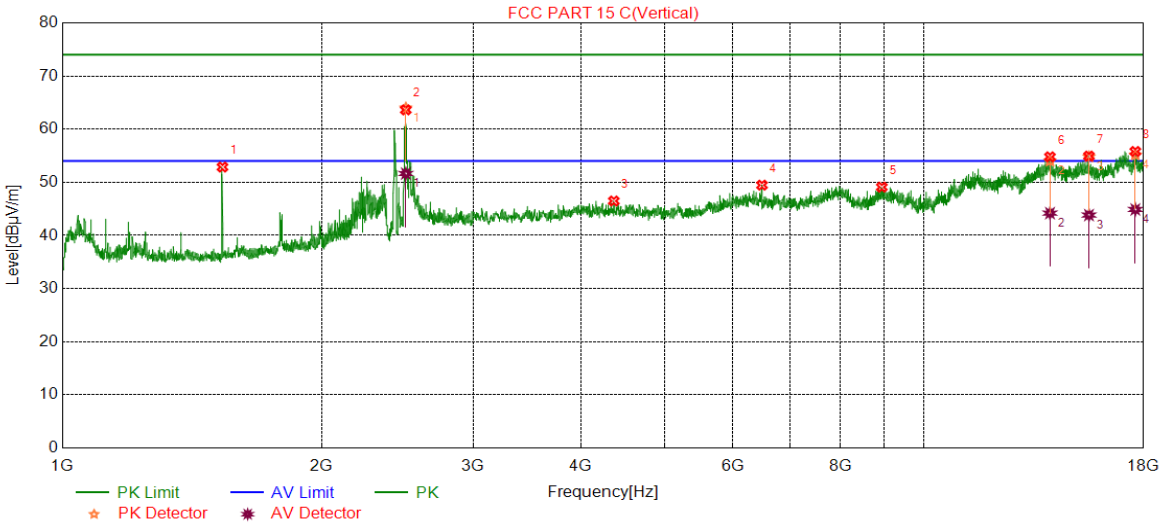
Test Mode	Channel	Polarization	Verdict
11N20MIMO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	48.24	74.00	-25.76	--	--	Peak
2	2433.8113	54.89	74.00	-19.11	--	--	Peak
		45.79	--	--	54.00	-8.21	Average
3	4337.7230	47.25	74.00	-26.75	--	--	Peak
4	6138.0230	47.56	74.00	-26.44	--	--	Peak
5	7783.2972	49.12	74.00	-24.88	--	--	Peak
6	14019.3366	54.60	74.00	-19.40	--	--	Peak
		43.97	--	--	54.00	-10.03	Average
7	15362.0603	53.66	74.00	-20.34	--	--	Peak
		42.96	--	--	54.00	-11.04	Average
8	17614.9358	55.31	74.00	-18.69	--	--	Peak
		45.68	--	--	54.00	-8.32	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11N20MIMO	LCH	Vertical	PASS

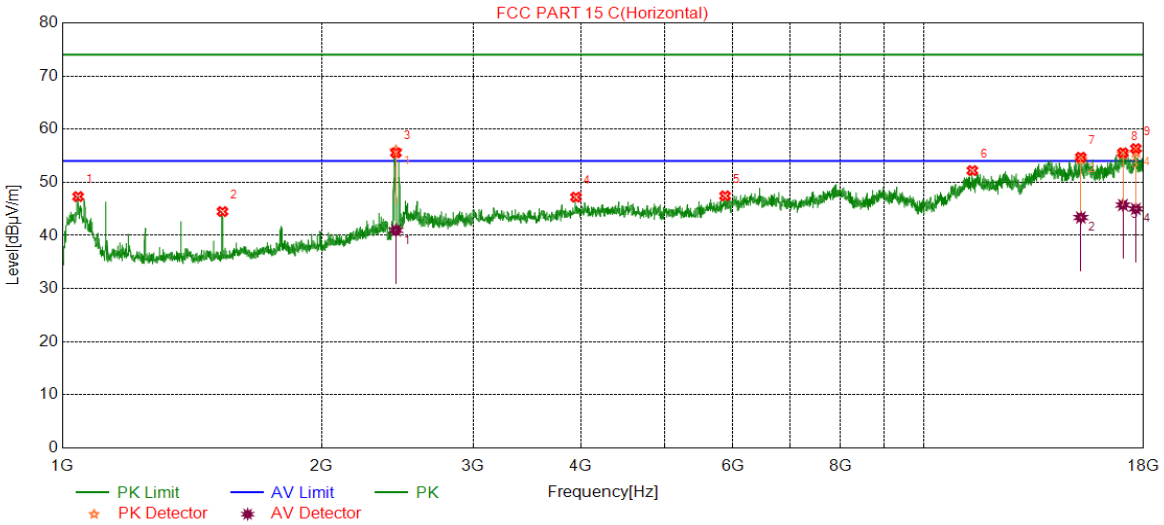


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.86	74.00	-21.14	--	--	Peak
2	2505.1684	63.62	74.00	-10.38	--	--	Peak
		51.64	--	--	54.00	-2.36	Average
3	4367.7280	46.48	74.00	-27.52	--	--	Peak
4	6490.5818	49.46	74.00	-24.54	--	--	Peak
5	8940.9902	49.09	74.00	-24.91	--	--	Peak
6	14014.3357	54.79	74.00	-19.21	--	--	Peak
		44.19	--	--	54.00	-9.81	Average
7	15554.5924	54.78	74.00	-19.22	--	--	Peak
		43.83	--	--	54.00	-10.17	Average
8	17604.9342	55.15	74.00	-18.85	--	--	Peak
		44.88	--	--	54.00	-9.12	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL)

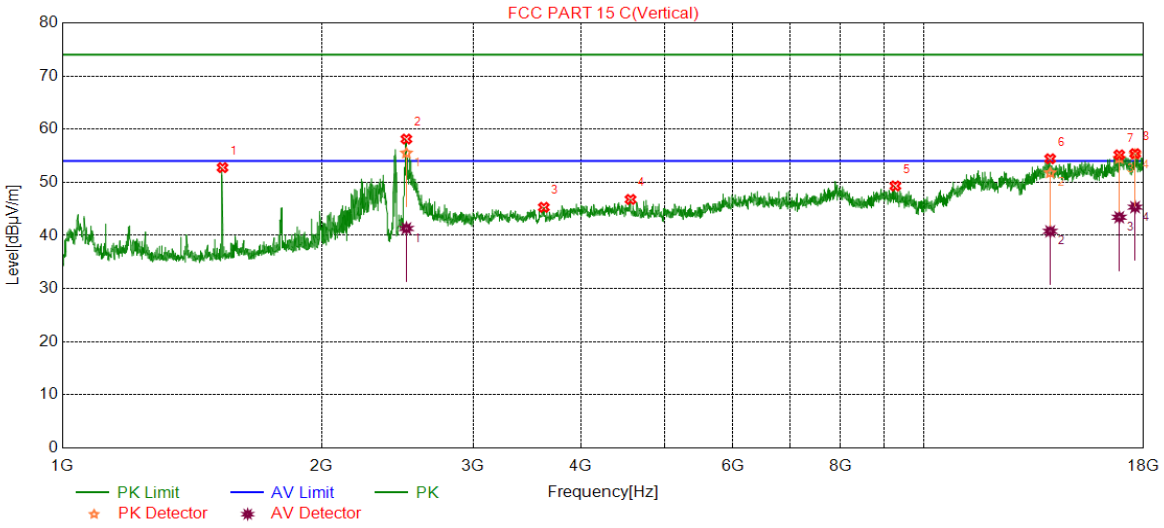
Test Mode	Channel	Polarization	Verdict
11N20MIMO	MCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1043.3478	47.31	74.00	-26.69	--	--	Peak
2	1534.8449	44.49	74.00	-29.51	--	--	Peak
3	2439.8133	55.54	74.00	-18.46	--	--	Peak
		40.95	--	--	54.00	-13.05	Average
4	3947.6579	47.20	74.00	-26.80	--	--	Peak
5	5880.4801	47.44	74.00	-26.56	--	--	Peak
6	11388.8982	52.20	74.00	-21.80	--	--	Peak
7	15219.5366	54.35	74.00	-19.65	--	--	Peak
		43.37	--	--	54.00	-10.63	Average
8	17032.3387	55.31	74.00	-18.69	--	--	Peak
		45.72	--	--	54.00	-8.28	Average
9	17629.9383	55.62	74.00	-18.38	--	--	Peak
		44.99	--	--	54.00	-9.01	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11N20MIMO	MCH	Vertical	PASS

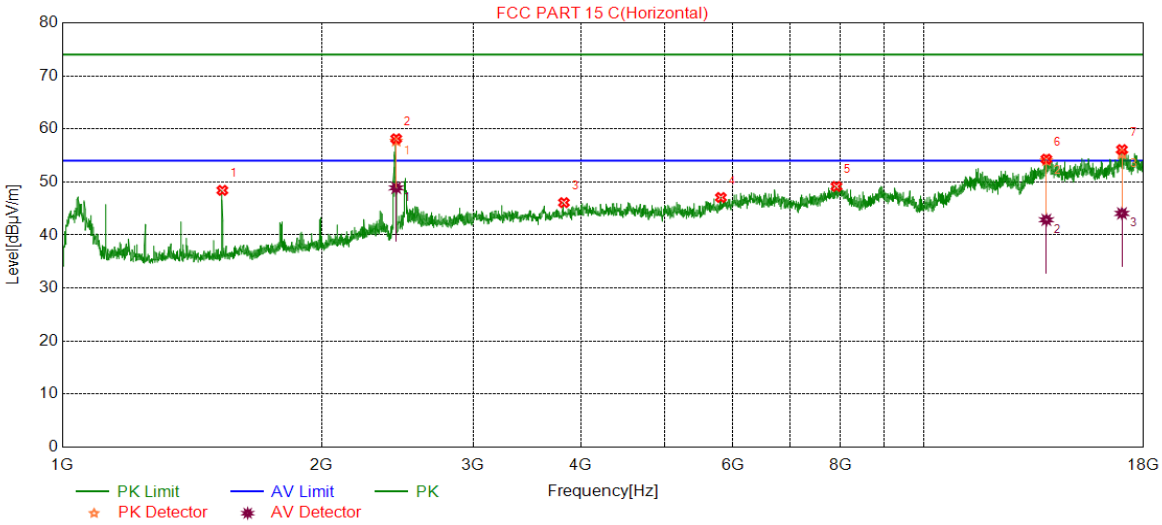


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.76	74.00	-21.24	--	--	Peak
2	2509.1697	58.13	74.00	-15.87	--	--	Peak
		41.31	--	--	54.00	-12.69	Average
3	3622.6038	45.29	74.00	-28.71	--	--	Peak
4	4567.7613	46.77	74.00	-27.23	--	--	Peak
5	9271.0452	49.31	74.00	-24.69	--	--	Peak
6	14021.8370	54.42	74.00	-19.58	--	--	Peak
		40.77	--	--	54.00	-13.23	Average
7	16864.8108	54.49	74.00	-19.51	--	--	Peak
		43.42	--	--	54.00	-10.58	Average
8	17594.9325	55.22	74.00	-18.78	--	--	Peak
		45.32	--	--	54.00	-8.68	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL)

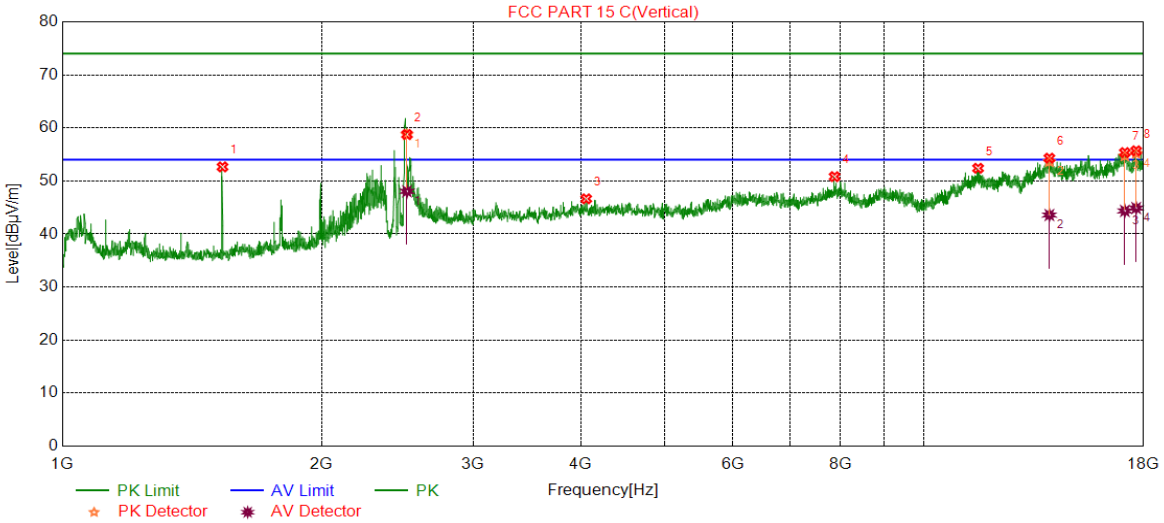
Test Mode	Channel	Polarization	Verdict
11N20MIMO	HCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.1781	48.41	74.00	-25.59	--	--	Peak
2	2441.8139	58.14	74.00	-15.86	--	--	Peak
		48.88	--	--	54.00	-5.12	Average
3	3822.6371	46.10	74.00	-27.90	--	--	Peak
4	5815.4692	47.07	74.00	-26.93	--	--	Peak
5	7920.8201	49.15	74.00	-24.85	--	--	Peak
6	13879.3132	54.30	74.00	-19.70	--	--	Peak
		42.86	--	--	54.00	-11.14	Average
7	16987.3312	55.30	74.00	-18.70	--	--	Peak
		44.07	--	--	54.00	-9.93	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Test Mode	Channel	Polarization	Verdict
11N20MIMO	HCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1534.8449	52.65	74.00	-21.35	--	--	Peak
2	2513.1711	58.76	74.00	-15.24	--	--	Peak
		48.04	--	--	54.00	-5.96	Average
3	4057.6763	46.63	74.00	-27.37	--	--	Peak
4	7880.8135	50.81	74.00	-23.19	--	--	Peak
5	11563.9273	52.39	74.00	-21.61	--	--	Peak
6	13991.8320	54.29	74.00	-19.71	--	--	Peak
		43.58	--	--	54.00	-10.42	Average
7	17117.3529	54.70	74.00	19.30	--	--	Peak
		44.35	--	--	54.00	-9.65	Average
8	17644.9408	55.18	74.00	18.82	--	--	Peak
		44.89	--	--	54.00	-9.11	Average

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=1/Ton where: ton is transmit duration.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical.
5. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
6. Proper operation of the transmitter prior to adding the filter to the measurement chain.

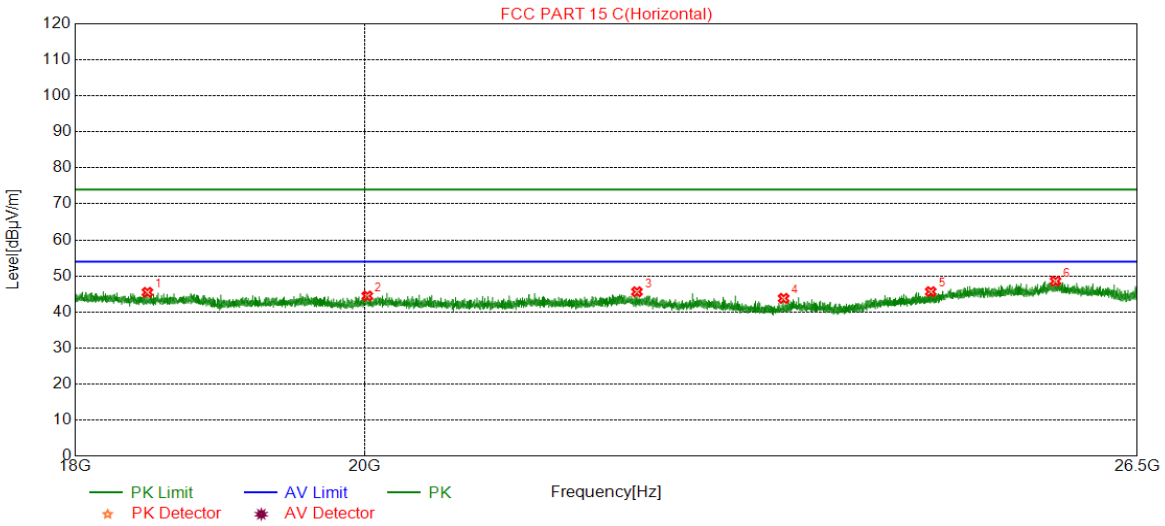
9.3. SPURIOUS EMISSIONS (18~25GHz)

9.3.1. 802.11G MODE

Antenna 1+Antenna 2 MODE (WORST-CASE CONFIGURATION)

SPURIOUS EMISSIONS (LOW CHANNEL)

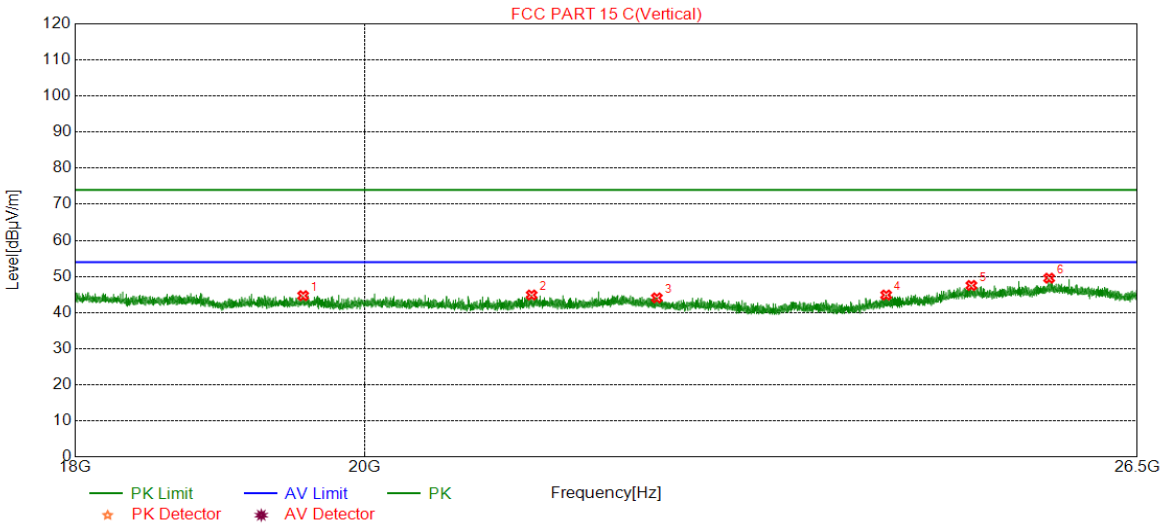
Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	18478.5979	45.47	74.00	-28.53	54.00	-8.53	peak
2	20019.8020	44.45	74.00	-29.55	54.00	-9.55	peak
3	22086.3586	45.62	74.00	-28.38	54.00	-8.38	peak
4	23298.5799	43.78	74.00	-30.22	54.00	-10.22	peak
5	24581.3581	45.65	74.00	-28.35	54.00	-8.35	peak
6	25724.7225	48.56	74.00	-25.44	54.00	-5.44	peak

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Peak: Peak detector.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Test Mode	Channel	Polarization	Verdict
11G SISO	MCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	19557.3557	44.68	74.00	-29.32	54.00	-9.32	peak
2	21254.9755	44.88	74.00	-29.12	54.00	-9.12	peak
3	22247.0247	44.07	74.00	-29.93	54.00	-9.93	peak
4	24185.2185	44.87	74.00	-29.13	54.00	-9.13	peak
5	24947.7448	47.51	74.00	-26.49	54.00	-6.49	peak
6	25664.3664	49.53	74.00	-24.47	54.00	-4.47	peak

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Peak: Peak detector.
4. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

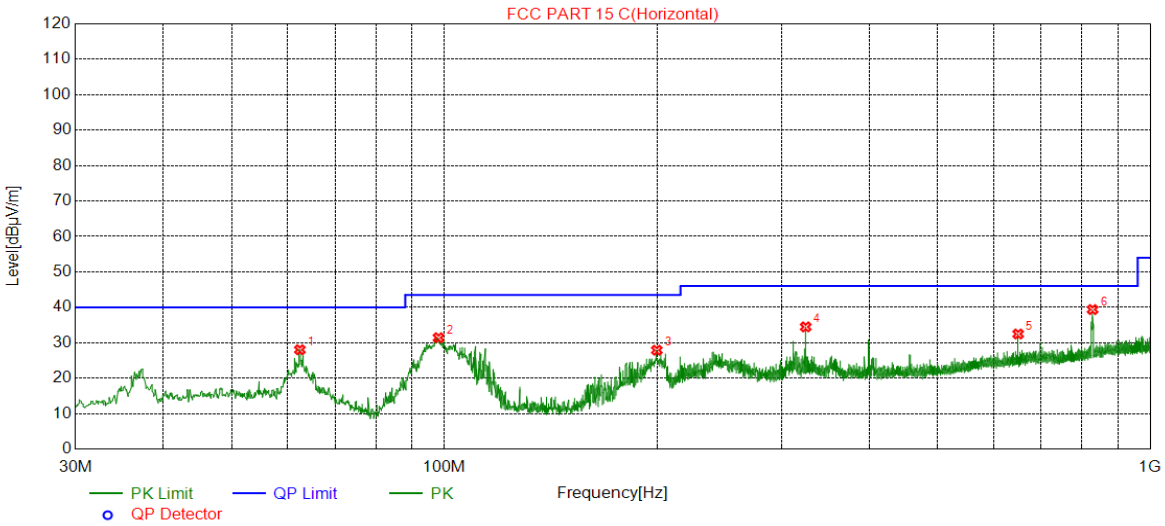
9.4. SPURIOUS EMISSIONS (0.03 ~ 1 GHz)

9.4.1. 802.11G MODE

Antenna 1+Antenna 2 MODE (WORST-CASE CONFIGURATION)

SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

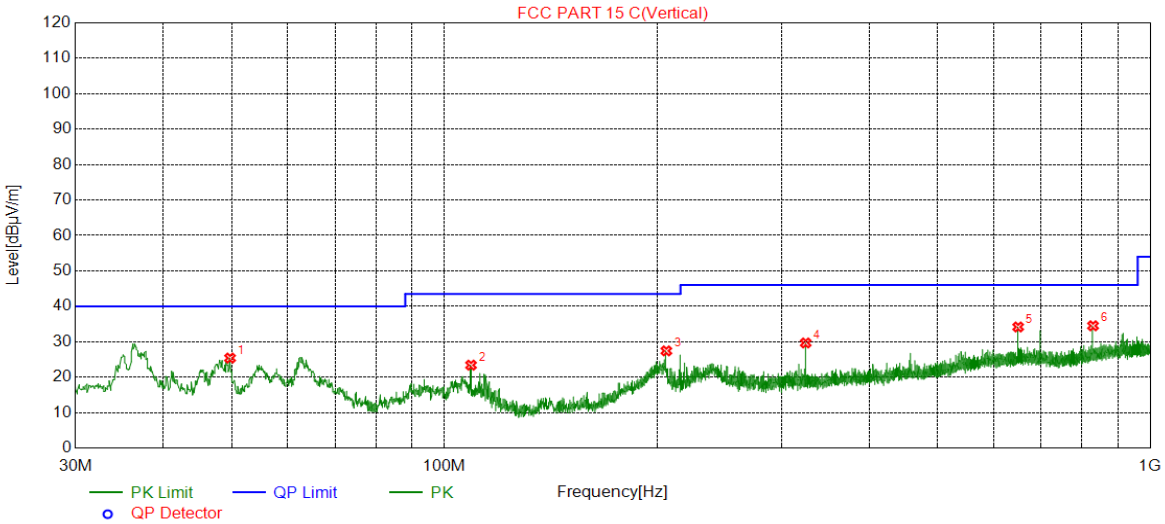
Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Horizontal	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.4012	28.02	40.00	-11.98	QP
2	98.1008	31.41	43.50	-12.09	QP
3	199.9610	27.89	43.50	-15.61	QP
4	325.0065	34.47	46.00	-11.53	QP
5	649.9890	32.47	46.00	-13.53	QP
6	828.5839	39.36	46.00	-6.64	QP

Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Test Mode	Channel	Polarization	Verdict
11G SISO	LCH	Vertical	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	49.6930	25.39	40.00	-14.61	QP
2	109.0629	23.39	43.50	-20.11	QP
3	206.2666	27.42	43.50	-16.08	QP
4	325.0065	29.65	46.00	-16.35	QP
5	649.9890	34.17	46.00	-11.83	QP
6	829.8450	34.50	46.00	-11.50	QP

Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

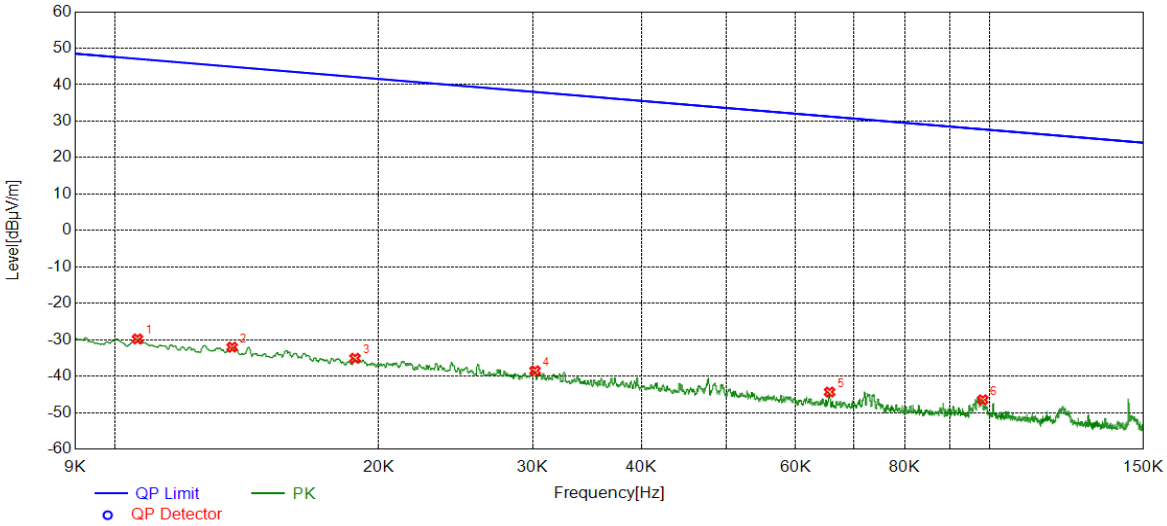
9.5. SPURIOUS EMISSIONS BELOW 30M

9.5.1. 802.11G MODE

Antenna 1+Antenna 2 MODE (WORST-CASE CONFIGURATION)

SPURIOUS EMISSIONS (LOW CHANNEL)

Test Mode	Channel	Frequency Range	Verdict
11G SISO	LCH	9KHz~150KHz	PASS

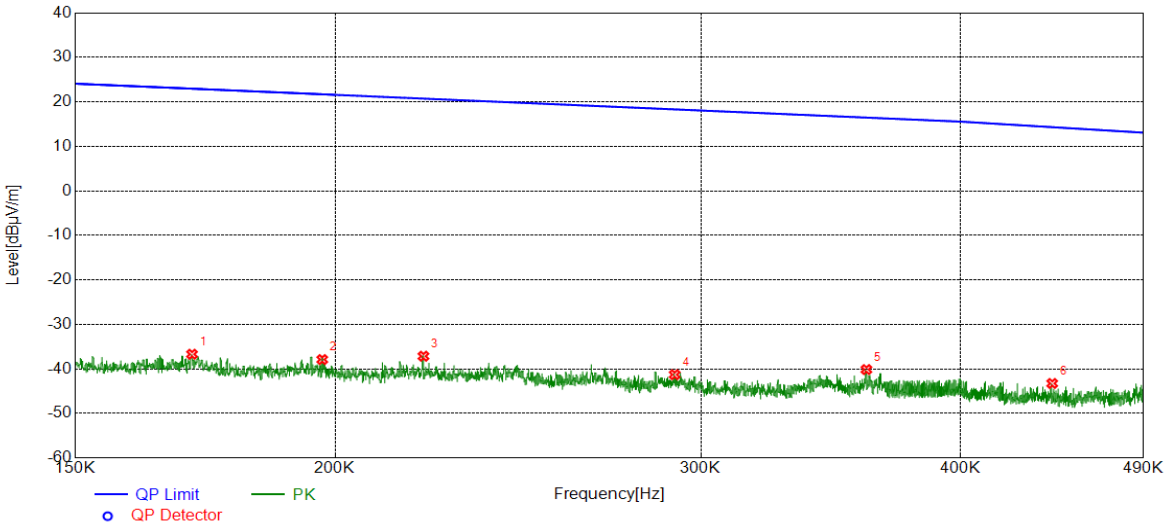


No.	Frequency (KHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0106	-29.78	47.10	-76.88	Peak
2	0.0136	-32.03	44.90	-76.93	Peak
3	0.0188	-35.08	42.12	-77.20	Peak
4	0.0302	-38.52	38.00	-76.52	Peak
5	0.0656	-44.35	31.27	-75.62	Peak
6	0.0982	-46.49	27.76	-74.25	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Test Mode	Channel	Frequency Range	Verdict
11G SISO	LCH	150KHz~490KHz	PASS

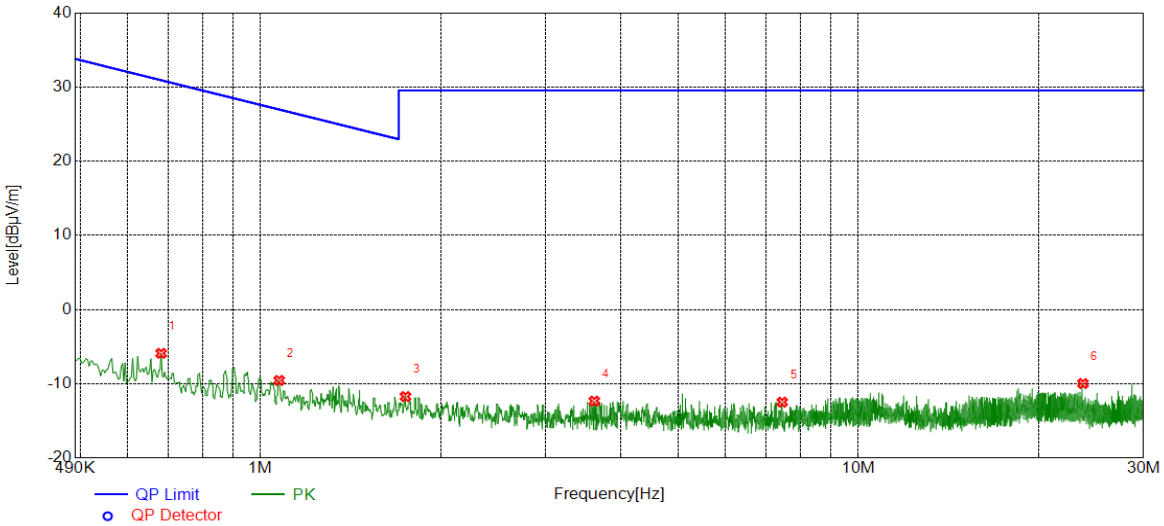


No.	Frequency (KHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1707	-36.69	22.97	-59.66	Peak
2	0.1972	-37.89	21.70	-59.59	Peak
3	0.2206	-37.14	20.73	-57.87	Peak
4	0.2914	-41.29	18.31	-59.60	Peak
5	0.3604	-40.14	16.47	-56.61	Peak
6	0.4428	-43.26	14.32	-57.58	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Test Mode	Channel	Frequency Range	Verdict
11G SISO	LCH	150KHz~490KHz	PASS



No.	Frequency (KHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6818	-5.90	30.93	-36.83	Peak
2	1.0744	-9.55	26.98	-36.53	Peak
3	1.7473	-11.73	29.54	-41.27	Peak
4	3.6154	-12.34	29.54	-41.88	Peak
5	7.4580	-12.48	29.54	-42.02	Peak
6	23.7462	-9.97	29.54	-39.51	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

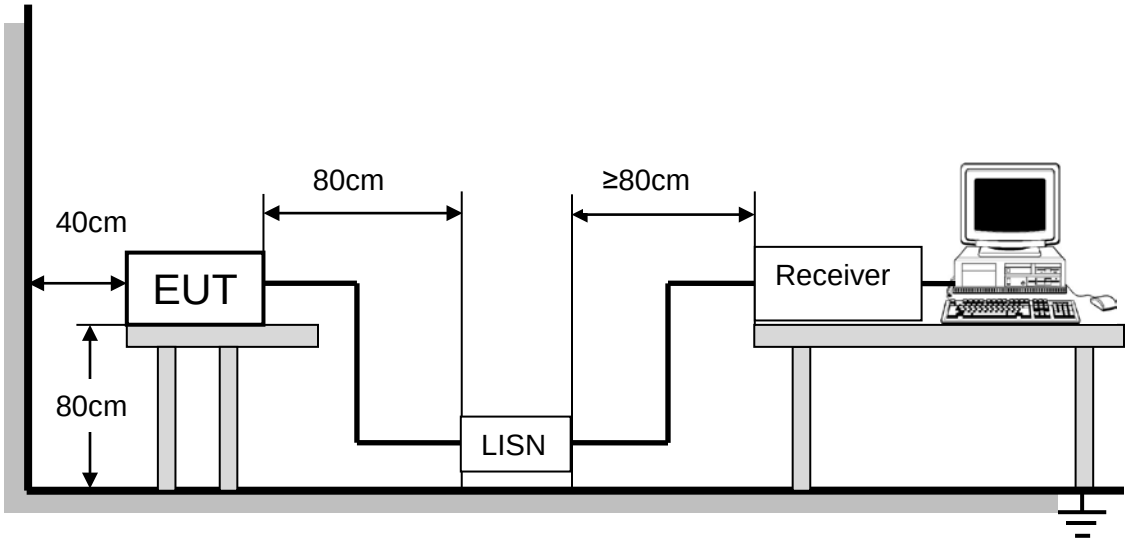
10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST SETUP AND PROCEDURE



The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	58%
Atmosphere Pressure	101kPa	Test Voltage	DC 12.0V

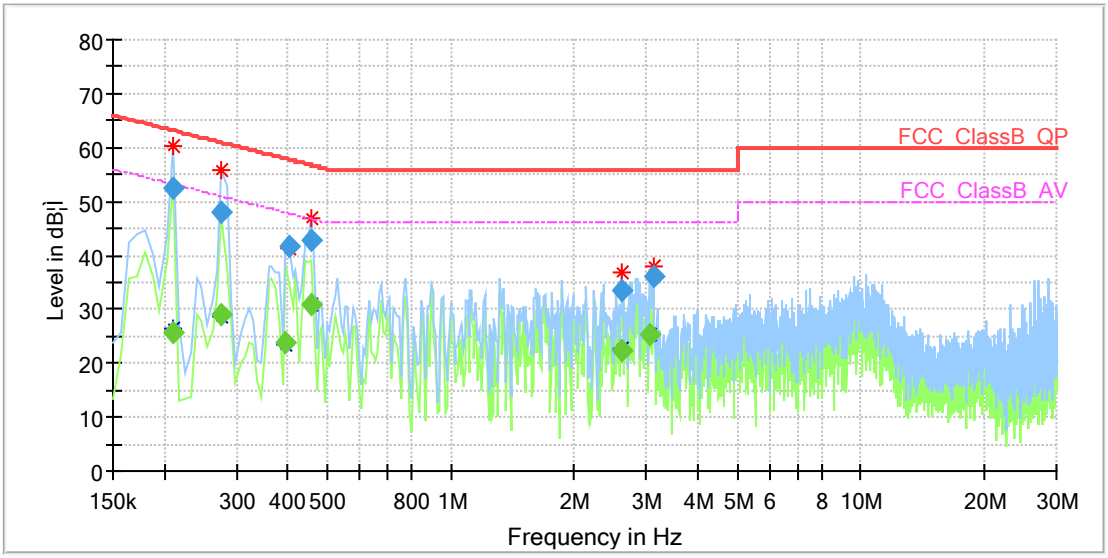
TEST RESULTS

10.1. 802.11G MODE

Antenna1+Antenna2 MODE (WORST-CASE CONFIGURATION)

11G20 SISO	Antenna 1+2	LCH	<Limit	PASS

TEST RESULTS (WORST-CASE CONFIGURATION)



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.209700	52.51	---	63.22	10.70	1000.0	9.000	N	OFF	9.6
0.209700	---	25.74	53.22	27.47	1000.0	9.000	L1	OFF	9.6
0.276863	---	29.02	50.91	21.89	1000.0	9.000	L1	OFF	9.6
0.276863	48.04	---	60.91	12.87	1000.0	9.000	N	OFF	9.6
0.396263	---	23.63	47.93	24.30	1000.0	9.000	L1	OFF	9.6
0.403725	41.59	---	57.78	16.19	1000.0	9.000	L1	OFF	9.6
0.455963	---	31.00	46.77	15.76	1000.0	9.000	L1	OFF	9.6
0.455963	42.84	---	56.77	13.92	1000.0	9.000	L1	OFF	9.6
2.612625	---	22.27	46.00	23.73	1000.0	9.000	L1	OFF	9.7
2.612625	33.58	---	56.00	22.42	1000.0	9.000	L1	OFF	9.7
3.060375	---	25.36	46.00	20.64	1000.0	9.000	L1	OFF	9.7
3.112613	36.20	---	56.00	19.80	1000.0	9.000	L1	OFF	9.7

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.
5. For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, but the ant1 and ant2 can transmitter in the same time under these modes. The 802.11N(HT20) is use both the SISO and MIMO technical. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

11. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

ANTENNA CONNECTOR

EUT has two Dipole Antennas with a Dipole Antenna

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi, but the Directional gain = 10log $[(10^{G1/20} +10^{G2/20})^2/N_{ANT}]$ =8.01＞6dBi,where the N_{ANT} is the numbers of antenna. So the power and power density limit shall be reduced amount in dB that the directional gain of the antenna exceeds 6dBi.

END OF REPORT