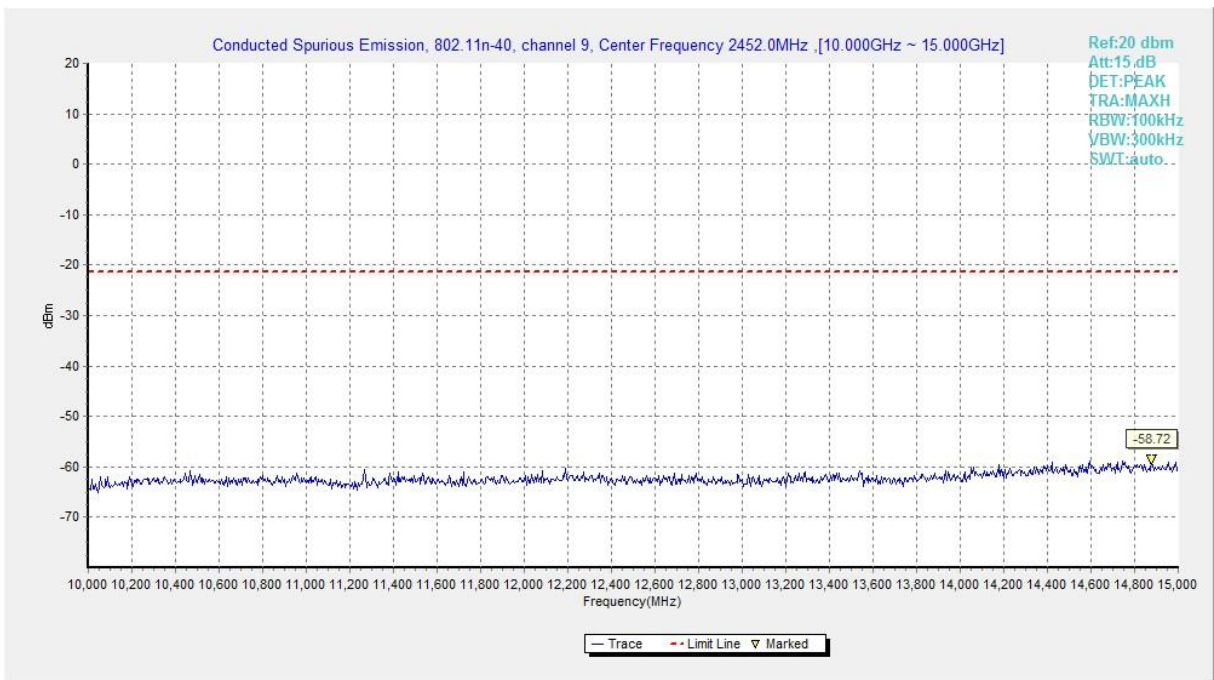
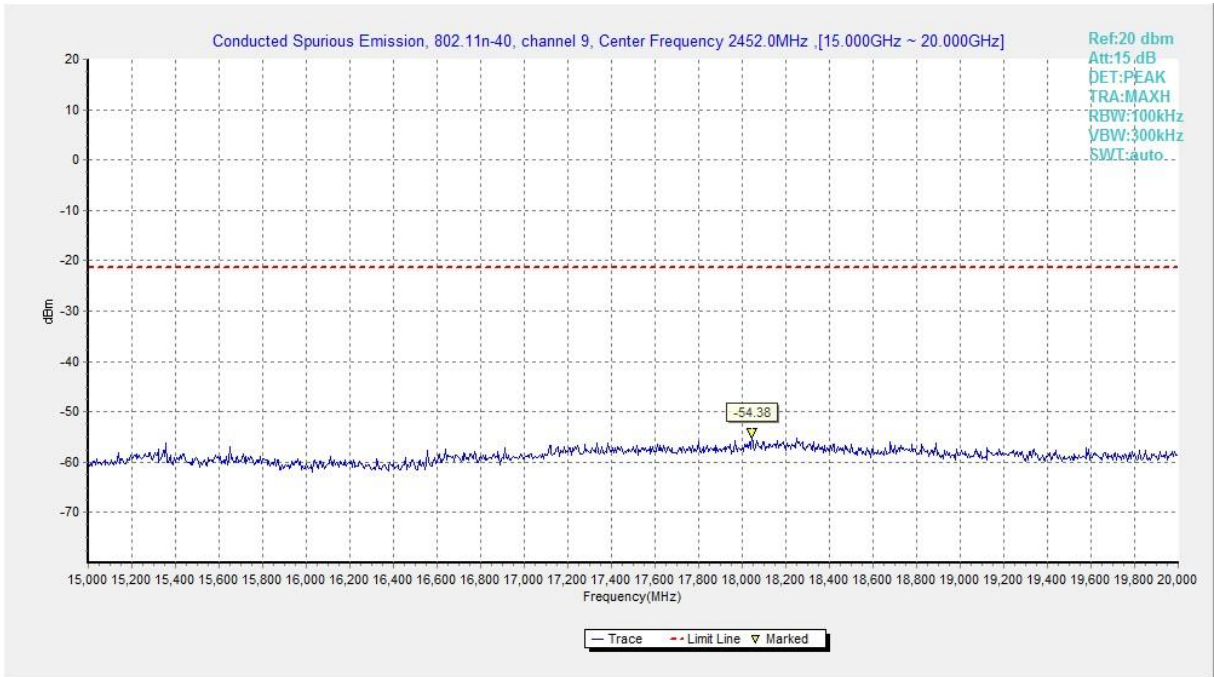


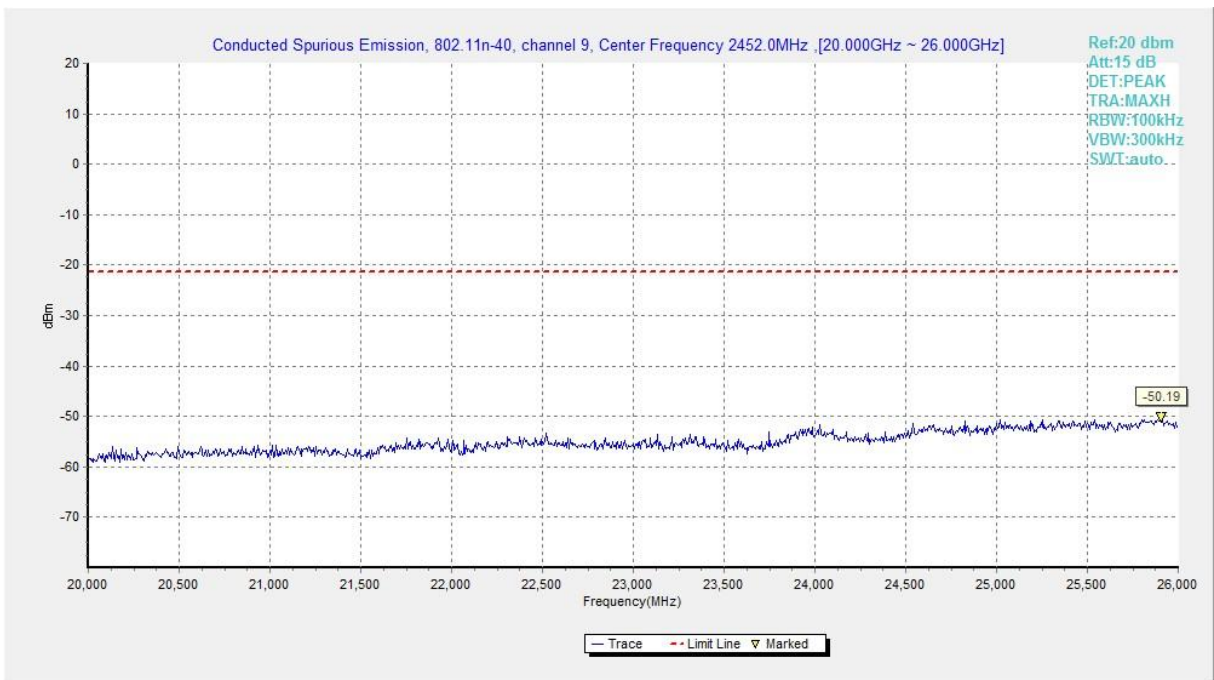
**Fig.B.6.1.93 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)**



**Fig.B.6.1.94 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 10 GHz-15 GHz)**



**Fig.B.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)**



**Fig.B.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)**

**B.6.2 Transmitter Spurious Emission - Radiated**

**Method of Measurement:** See ANSI C63.10-2013-clause 6.4 & 6.5 & 6.6

**Measurement Limit:**

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

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(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Frequency (MHz)	Field strength(µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

**Test Condition**

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**EUT ID: EUT1**

**Measurement Results:**

**802.11b mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.31GHz ~2.43GHz	Fig.B.6.2.1	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.2	<b>P</b>

**802.11g mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.31GHz ~2.43GHz	Fig.B.6.2.3	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.4	<b>P</b>

**802.11n-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.31GHz ~2.43GHz	Fig.B.6.2.5	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.6	<b>P</b>

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.31GHz ~2.43GHz	Fig.B.6.2.7	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.8	<b>P</b>

**Conclusion: Pass**

**Measurement Results by EUT5:**

**802.11b mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.31GHz ~2.43GHz	Fig.B.6.2.9	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.10	<b>P</b>

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.31GHz ~2.43GHz	Fig.B.6.2.11	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.B.6.2.12	<b>P</b>

**Conclusion: Pass**

**Note:**

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

$P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

**Average Measurement results**

**802.11b**

Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	49.5	-36.4	34.3	51.6	H	54	4.5
5759.5	47.8	-36.4	34.3	49.9	H	54	6.2
17944.5	46.8	-25.5	46.7	25.6	V	54	7.2
17963	46.8	-25.5	46.7	25.6	H	54	7.2
17998	46.7	-25.5	46.7	25.5	V	54	7.3
2385	42.5	-14.2	28.1	28.6	V	54	11.5

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17942	46.8	-25.5	46.7	25.6	V	54	7.2
17946	46.8	-25.5	46.7	25.6	H	54	7.2
17971	46.8	-25.5	46.7	25.6	V	54	7.2
17987	46.8	-25.5	46.7	25.6	V	54	7.2
17960.5	46.7	-25.5	46.7	25.5	V	54	7.3
17964.5	46.6	-25.5	46.7	25.4	H	54	7.4

Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	48.1	-36.4	34.3	50.2	H	54	5.9
17990.5	47.1	-25.5	46.7	25.9	H	54	6.9
17964.5	46.7	-25.5	46.7	25.5	V	54	7.3
17970.5	46.7	-25.5	46.7	25.5	V	54	7.3
17995	46.7	-25.5	46.7	25.5	H	54	7.3
2487.4	42.6	-14.2	28.3	28.5	V	54	11.4

**802.11g**

Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
5760	49.8	-36.4	34.3	51.9	H	54	4.2
5759.5	48.1	-36.4	34.3	50.2	H	54	5.9
17998	47	-25.5	46.7	25.8	H	54	7
17986	46.8	-25.5	46.7	25.6	H	54	7.2
17985	46.7	-25.5	46.7	25.5	H	54	7.3
2389.8	45.3	-14.2	28.1	31.4	V	54	8.7

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
5760	47.4	-36.4	34.3	49.5	H	54	6.6
17965	47	-25.5	46.7	25.8	H	54	7
17961.5	46.9	-25.5	46.7	25.7	H	54	7.1
17944	46.8	-25.5	46.7	25.6	H	54	7.2
17962.5	46.8	-25.5	46.7	25.6	V	54	7.2
17967	46.8	-25.5	46.7	25.6	H	54	7.2

Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
5760	47.9	-36.4	34.3	50	H	54	6.1
17996.5	46.8	-25.5	46.7	25.6	H	54	7.2
17957	46.7	-25.5	46.7	25.5	H	54	7.3
17970	46.7	-25.5	46.7	25.5	V	54	7.3
17953.5	46.6	-25.5	46.7	25.4	V	54	7.4
2485	42.7	-14.2	28.3	28.6	V	54	11.3

802.11n-HT20

Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	49.9	-36.4	34.3	52	H	54	4.1
5759.5	48.1	-36.4	34.3	50.2	H	54	5.9
17991	47.1	-25.5	46.7	25.9	V	54	6.9
17972	47	-25.5	46.7	25.8	H	54	7
17996.5	46.8	-25.5	46.7	25.6	V	54	7.2
2389.5	43.1	-14.2	28.1	29.2	V	54	10.9

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	47.5	-36.4	34.3	49.6	H	54	6.5
17968	46.7	-25.5	46.7	25.5	V	54	7.3
17990	46.7	-25.5	46.7	25.5	H	54	7.3
17956	46.6	-25.5	46.7	25.4	V	54	7.4
17960.5	46.6	-25.5	46.7	25.4	H	54	7.4
17965	46.6	-25.5	46.7	25.4	H	54	7.4

Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	47.7	-36.4	34.3	49.8	H	54	6.3
17963	47.1	-25.5	46.7	25.9	V	54	6.9
17951	46.9	-25.5	46.7	25.7	H	54	7.1
17971	46.7	-25.5	46.7	25.5	H	54	7.3
17897.5	46.6	-25.5	46.7	25.4	V	54	7.4
2485	43.1	-14.2	28.3	29	V	54	10.9



**802.11n-HT40**

Ch3

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	49.5	-36.4	34.3	51.6	H	54	4.5
5759.5	47.7	-36.4	34.3	49.8	H	54	6.3
17949.5	47.2	-25.5	46.7	26	V	54	6.8
17969	46.9	-25.5	46.7	25.7	V	54	7.1
17965.5	46.8	-25.5	46.7	25.6	V	54	7.2
2389.9	50.3	-14.2	28.1	36.4	V	54	3.7

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	50.2	-36.4	34.3	52.3	H	54	3.8
5759.5	48.2	-36.4	34.3	50.3	H	54	5.8
17970	47.3	-25.5	46.7	26.1	H	54	6.7
17955.5	46.9	-25.5	46.7	25.7	V	54	7.1
17961	46.8	-25.5	46.7	25.6	H	54	7.2
17964.5	46.8	-25.5	46.7	25.6	V	54	7.2

Ch9

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
5760	50.1	-36.4	34.3	52.2	H	54	3.9
5759.5	48.1	-36.4	34.3	50.2	H	54	5.9
17977.5	46.9	-25.5	46.7	25.7	V	54	7.1
17956	46.8	-25.5	46.7	25.6	H	54	7.2
17967	46.8	-25.5	46.7	25.6	H	54	7.2
2485	52.1	-14.2	28.3	38	V	54	1.9



**Peak Measurement results**

**802.11b**

Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17905.5	58.6	-25.5	46.7	37.4	V	74	15.4
17943.5	58.2	-25.5	46.7	37	V	74	15.8
17991.5	58.2	-25.5	46.7	37	V	74	15.8
17932.5	58.1	-25.5	46.7	36.9	H	74	15.9
17953	57.9	-25.5	46.7	36.7	H	74	16.1
2339.1	56	-14.6	28	42.6	H	74	18

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17993.5	58.3	-25.5	46.7	37.1	H	74	15.7
17949	58	-25.5	46.7	36.8	H	74	16
17950	58	-25.5	46.7	36.8	H	74	16
17938	57.7	-25.5	46.7	36.5	H	74	16.3
17982	57.5	-25.5	46.7	36.3	H	74	16.5
17991.5	57.5	-25.5	46.7	36.3	V	74	16.5

Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17965.5	58.1	-25.5	46.7	36.9	V	74	15.9
17842.5	57.8	-25.5	46.7	36.6	H	74	16.2
17985.5	57.8	-25.5	46.7	36.6	V	74	16.2
17818.5	57.5	-25.5	46.7	36.3	V	74	16.5
17980.5	57.5	-25.5	46.7	36.3	V	74	16.5
2491.2	55.6	-14.2	28.3	41.5	V	74	18.4

**802.11g**

## Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17986.5	58.2	-25.5	46.7	37	V	74	15.8
17993.5	58.1	-25.5	46.7	36.9	V	74	15.9
17984.5	57.8	-25.5	46.7	36.6	H	74	16.2
17802	57.5	-25.5	46.7	36.3	V	74	16.5
17941	57.5	-25.5	46.7	36.3	V	74	16.5
2389.6	57.4	-14.2	28.1	43.5	V	74	16.6

## Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17959	58.6	-25.5	46.7	37.4	H	74	15.4
17922	58.2	-25.5	46.7	37	V	74	15.8
17999	58.1	-25.5	46.7	36.9	V	74	15.9
17974	57.9	-25.5	46.7	36.7	H	74	16.1
17981.5	57.8	-25.5	46.7	36.6	V	74	16.2
17828	57.7	-25.5	46.7	36.5	H	74	16.3

## Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17766.5	58.6	-25.5	46.7	37.4	V	74	15.4
17967.5	58.4	-25.5	46.7	37.2	V	74	15.6
17984.5	58.1	-25.5	46.7	36.9	V	74	15.9
17931.5	57.8	-25.5	46.7	36.6	V	74	16.2
17576.5	57.7	-25.7	46	37.5	V	74	16.3
2486.1	56.7	-14.2	28.3	42.6	V	74	17.3

**802.11n-HT20**

Ch1

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17980	59.1	-25.5	46.7	37.9	V	74	14.9
17962.5	58.2	-25.5	46.7	37	V	74	15.8
17987.5	58.1	-25.5	46.7	36.9	V	74	15.9
17947	58	-25.5	46.7	36.8	V	74	16
17988.5	58	-25.5	46.7	36.8	V	74	16
2385.2	55.7	-14.2	28.1	41.8	V	74	18.3

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17891.5	58.7	-25.5	46.7	37.5	H	74	15.3
17935.5	58.2	-25.5	46.7	37	H	74	15.8
17939	57.8	-25.5	46.7	36.6	V	74	16.2
17967	57.8	-25.5	46.7	36.6	H	74	16.2
17861.5	57.7	-25.5	46.7	36.5	H	74	16.3
17960.5	57.7	-25.5	46.7	36.5	H	74	16.3

Ch11

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17955	58.4	-25.5	46.7	37.2	V	74	15.6
17996	58	-25.5	46.7	36.8	H	74	16
17879	57.9	-25.5	46.7	36.7	V	74	16.1
17755.5	57.8	-25.5	46.7	36.6	V	74	16.2
17863	57.8	-25.5	46.7	36.6	H	74	16.2
2487.2	55.7	-14.2	28.3	41.6	V	74	18.3

**802.11n-HT40**

Ch3

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17965	58.2	-25.5	46.7	37	V	74	15.8
17995	58.1	-25.5	46.7	36.9	H	74	15.9
17936	58	-25.5	46.7	36.8	V	74	16
17883.5	57.9	-25.5	46.7	36.7	V	74	16.1
17993	57.7	-25.5	46.7	36.5	H	74	16.3
2389.4	61.6	-14.2	28.1	47.7	V	74	12.4

Ch6

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17940	58.3	-25.5	46.7	37.1	H	74	15.7
17877	58.1	-25.5	46.7	36.9	V	74	15.9
17922	58.1	-25.5	46.7	36.9	V	74	15.9
17973.5	57.9	-25.5	46.7	36.7	V	74	16.1
17846	57.8	-25.5	46.7	36.6	V	74	16.2
17978.5	57.6	-25.5	46.7	36.4	V	74	16.4

Ch9

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization	Limit (dBuV/m)	Margin (dBuV/m)
17952.5	59	-25.5	46.7	37.8	V	74	15
17925	58.6	-25.5	46.7	37.4	V	74	15.4
17995	58.4	-25.5	46.7	37.2	V	74	15.6
17976	58.2	-25.5	46.7	37	V	74	15.8
17903	58.1	-25.5	46.7	36.9	H	74	15.9
2485.1	65.3	-14.2	28.3	51.2	V	74	8.7

**Measurement results by EUT5**

**Average Measurement results**

**802.11b**

Ch1

Frequency (MHz)	Result (dB $\mu$ V/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17599	42.85	-25.7	46	22.65	54	11.15	V
13593.5	39.48	-29.5	40.4	28.58	54	14.52	V
12878	38.01	-30.7	39.1	29.51	54	15.99	H
8992	35.85	-33.3	38.2	30.95	54	18.15	V
7972.5	34.42	-34.8	37.1	32.12	54	19.58	H
2390	43.67	-20	28.1	35.67	54	10.33	H

Ch6

Frequency (MHz)	Result (dB $\mu$ V/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17899	42.76	-25.5	46.7	21.56	54	11.24	H
14176.5	39.42	-29	42	26.42	54	14.58	H
12873	37.74	-30.7	39.1	29.24	54	16.26	V
9199.5	35.61	-33.7	38	31.31	54	18.39	H
7876.5	34.47	-34.9	37.1	32.27	54	19.53	H
4975	29.55	-36.6	33.4	32.75	54	24.45	H

Ch11

Frequency (MHz)	Result (dB $\mu$ V/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17591.5	42.77	-25.7	46	22.57	54	11.23	H
13695.5	39.51	-29.1	40.9	27.71	54	14.49	V
12358	37.74	-31.1	38.9	29.94	54	16.26	V
9695	35.55	-33	38	30.55	54	18.45	H
7984	34.35	-34.8	37.1	32.05	54	19.65	V
2486.8	44.27	-20	28.3	35.97	54	9.73	H

**802.11n-HT40**

Ch3

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17991	42.99	-25.5	46.7	21.79	54	11.01	H
14177	39.6	-29	42	26.6	54	14.4	V
12855	37.91	-30.7	39.1	29.41	54	16.09	H
9766.5	35.5	-33.5	38	31	54	18.5	V
7876.5	34.25	-34.9	37.1	32.05	54	19.75	V
2389.9	50.78	-20	28.1	42.78	54	3.22	H

Ch6

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17924	42.8	-25.5	46.7	21.6	54	11.2	V
14174	39.51	-29	42	26.51	54	14.49	H
12889.5	37.86	-30.7	39.1	29.36	54	16.14	V
9409.5	35.56	-32.9	37.9	30.56	54	18.44	H
7960	34.53	-34.8	37.1	32.23	54	19.47	V
4767.5	29.64	-37.3	33	33.94	54	24.36	H

Ch9

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17998	42.98	-25.5	46.7	21.78	54	11.02	V
13789.5	39.52	-29.1	40.9	27.72	54	14.48	H
12791	38.01	-30.7	39.1	29.51	54	15.99	V
9012	35.58	-33.3	38.2	30.68	54	18.42	H
7980	34.39	-34.8	37.1	32.09	54	19.61	V
2485.1	53.69	-20	28.3	45.39	54	0.31	H

**Peak Measurement results**

**802.11b**

Ch1

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17746	54.93	-25.5	46.7	33.73	74	19.07	V
13797	51.34	-29.1	40.9	39.54	74	22.66	H
12907	49.68	-30.5	39.2	40.98	74	24.32	V
9547.5	47.11	-33.2	37.9	42.41	74	26.89	V
7874.5	45.91	-34.9	37.1	43.71	74	28.09	H
2388.4	58.19	-20	28.1	50.19	74	15.81	H

Ch6

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17952.5	54.8	-25.5	46.7	33.6	74	19.2	H
13329.5	51.1	-29.5	39.7	40.9	74	22.9	V
12853.5	49.03	-30.7	39.1	40.53	74	24.97	V
9225	47.38	-33.7	38	43.08	74	26.62	H
7899	46.56	-34.9	37.1	44.36	74	27.44	H
4937	42	-37.1	33.3	45.8	74	32	V

Ch11

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17598.5	54.38	-25.7	46	34.18	74	19.62	V
13492.5	51.17	-29.6	40	40.77	74	22.83	H
11802	49.96	-31.8	39	42.76	74	24.04	H
9163	46.98	-33.8	38.1	42.78	74	27.02	V
7815.5	45.51	-35.1	37	43.61	74	28.49	H
2486.8	57.24	-20	28.3	48.94	74	16.76	H



**802.11n-HT40**

Ch3

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17780.5	54.68	-25.5	46.7	33.48	74	19.32	H
14067.5	50.83	-29.4	41.7	38.63	74	23.17	V
12434.5	49.44	-31.2	38.9	41.74	74	24.56	H
9492	47.23	-33.2	37.9	42.53	74	26.77	H
7846	45.76	-34.9	37.1	43.56	74	28.24	H
2389.3	62.46	-20	28.1	54.46	74	11.54	H

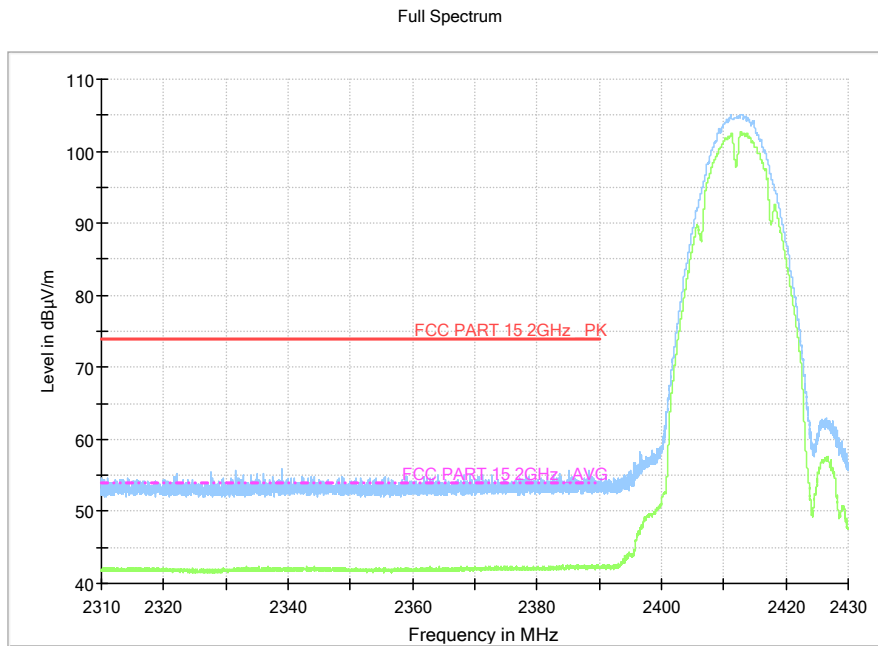
Ch6

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17390.5	54.53	-26.9	45.2	36.13	74	19.47	V
14172.5	51.6	-29	42	38.6	74	22.4	H
11793.5	49.33	-32	39	42.33	74	24.67	V
8667	47.36	-34.4	38	43.76	74	26.64	H
7316.5	45.89	-35.1	36.6	44.39	74	28.11	H
4953	41.15	-37.1	33.3	44.95	74	32.85	V

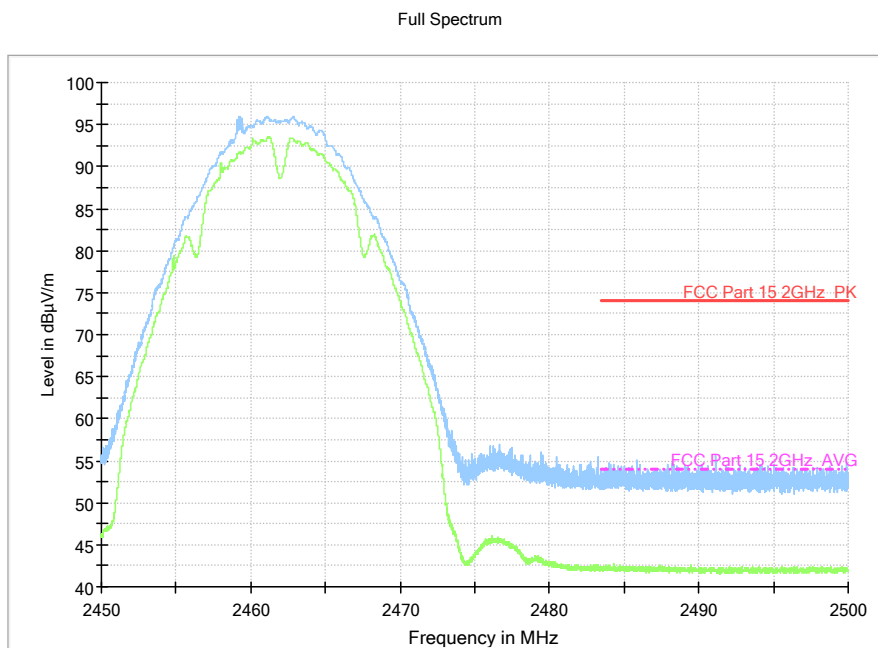
Ch9

Frequency (MHz)	Result (dBμV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	P <sub>Mea</sub> (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17983	54.66	-25.5	46.7	33.46	74	19.34	V
13499.5	50.81	-29.6	40	40.41	74	23.19	H
12865	49.18	-30.7	39.1	40.68	74	24.82	H
9084.5	47.11	-33.8	38.1	42.71	74	26.89	V
7887.5	46.11	-34.9	37.1	43.91	74	27.89	H
2485.1	67.02	-20	28.3	58.72	74	6.98	H

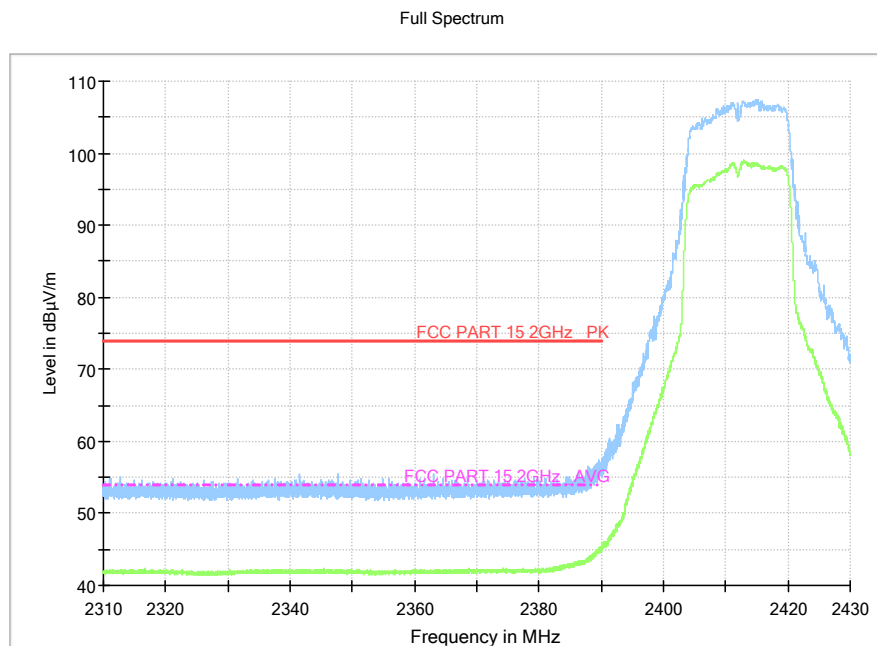
**Test graphs as below:**



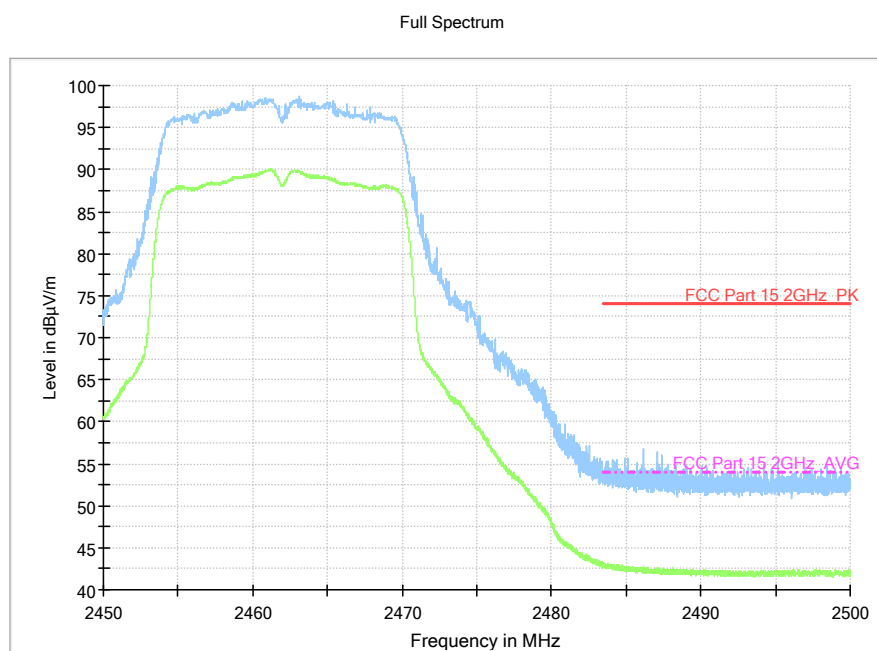
**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.43GHz**



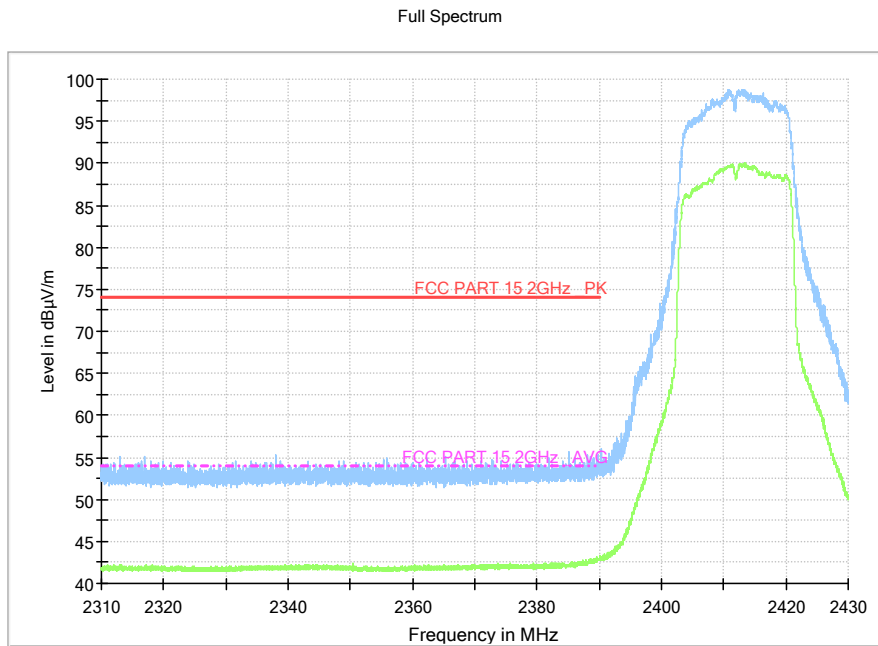
**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



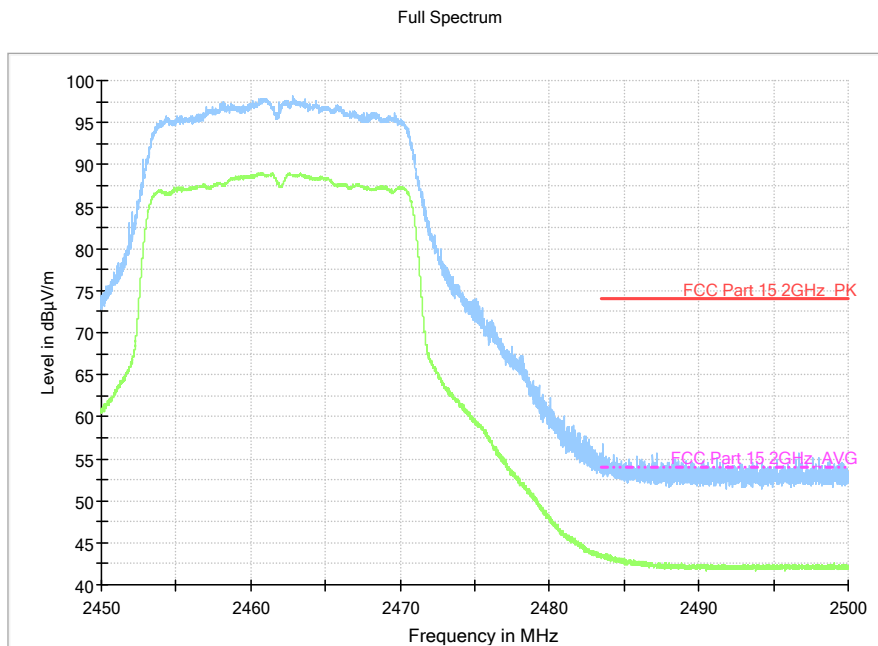
**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31GHz - 2.43GHz**



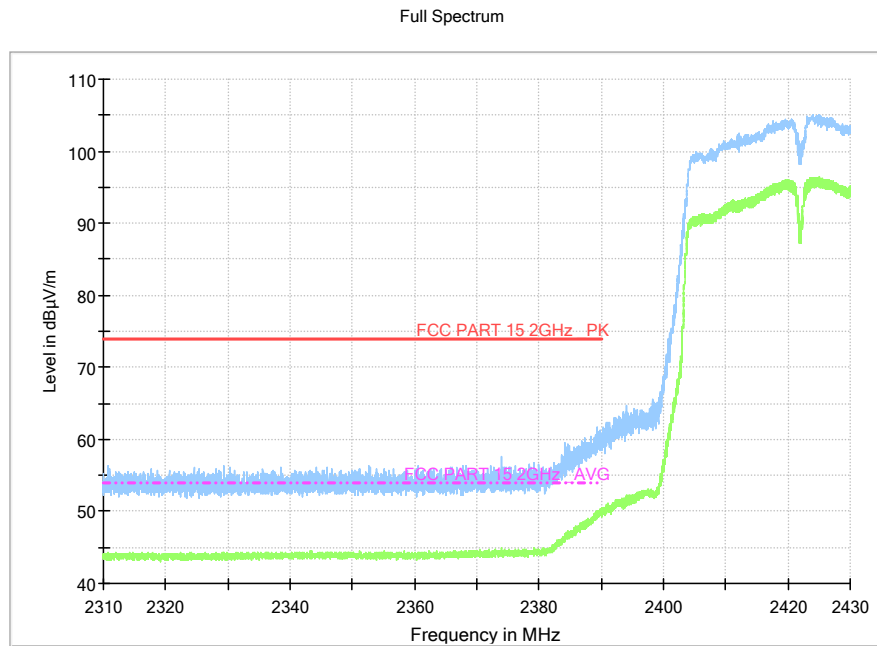
**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**



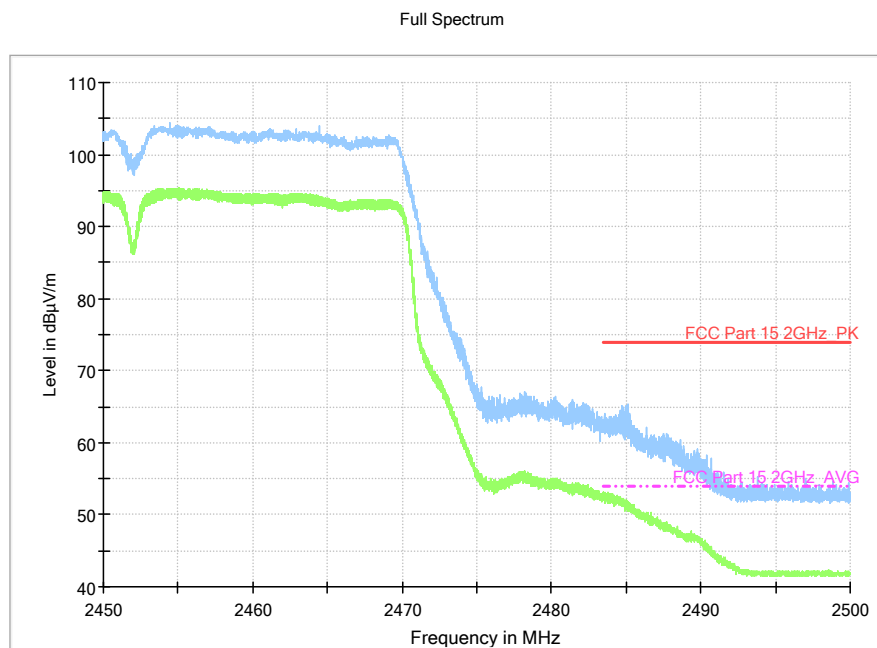
**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz**



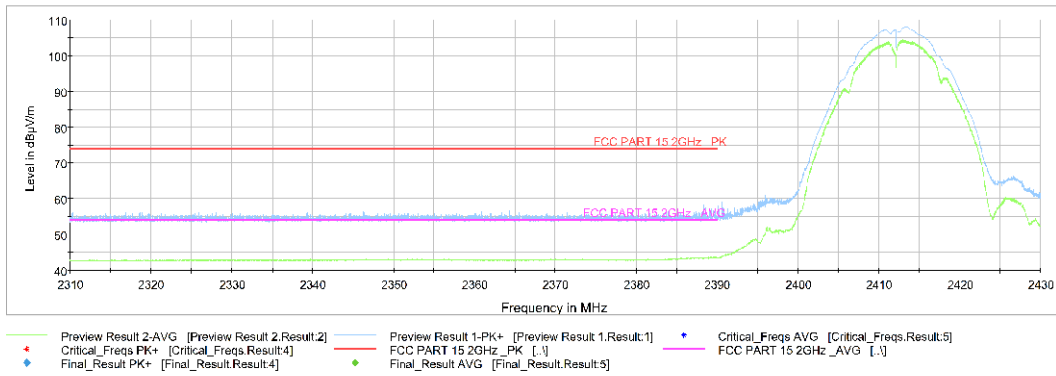
**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**



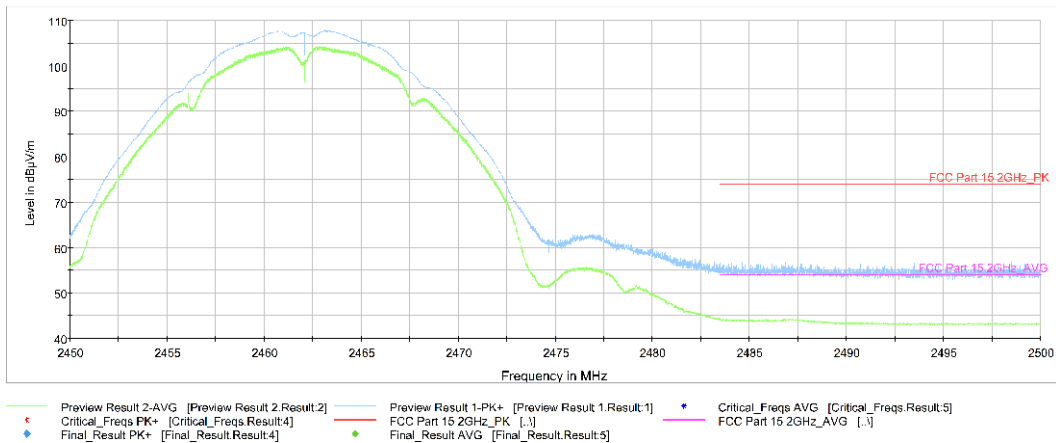
**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.43GHz**



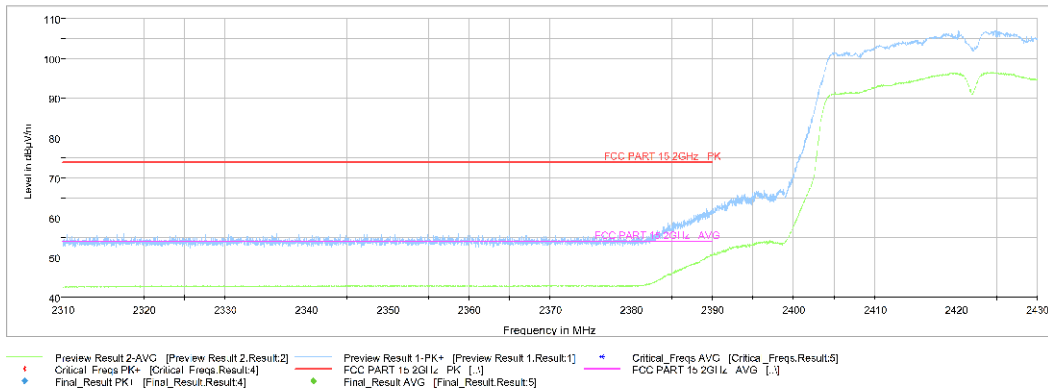
**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz**



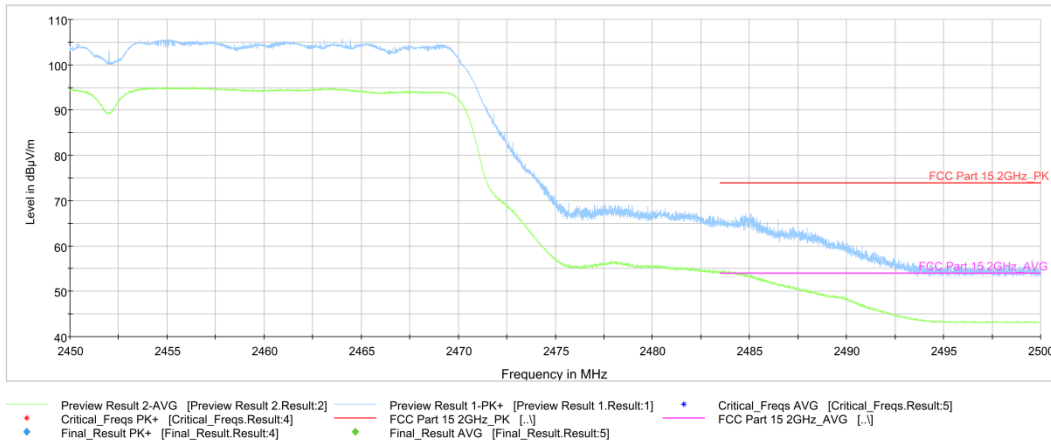
**Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.43GHz BY EUT5**



**Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz BY EUT5**



**Fig.A.6.2.11 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.43GHz BY EUT5**



**Fig.A.6.2.12 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz BY EUT5**



**B.7. AC Power-line Conducted Emission**

**Method of Measurement: See ANSI C63.10-2013-clause 6.2**

- 1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- 3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- 4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
- 5 If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.<sup>36</sup> Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

**Test Condition:**

Voltage (V)	Frequency (Hz)
120	60

**Measurement Result and limit:**

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.B.7.1	Fig.B.7.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note: The measurement results showed here are worst cases of the combinations of different chargers and cables.

**Conclusion: Pass**

**Measurement Result and limit BY EUT5:**

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
		With charger	
		<b>802.11b</b>	
0.15 to 0.5	67 to 56	Fig.A.7.3	<b>P</b>
0.5 to 5	56		
5 to 30	60		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

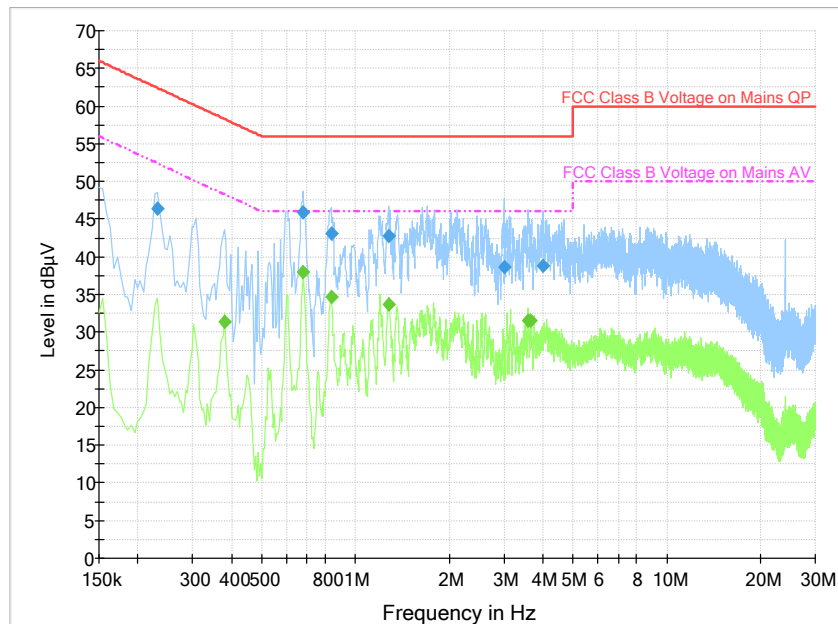
WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
		With charger	
		<b>802.11b</b>	
0.15 to 0.5	56 to 46	Fig.A.7.3	<b>P</b>
0.5 to 5	46		
5 to 30	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note: The measurement results showed here are worst cases of the combinations of different chargers and cables.

**Test graphs as below:**



**Fig.A.7.1 AC Powerline Conducted Emission-802.11b**

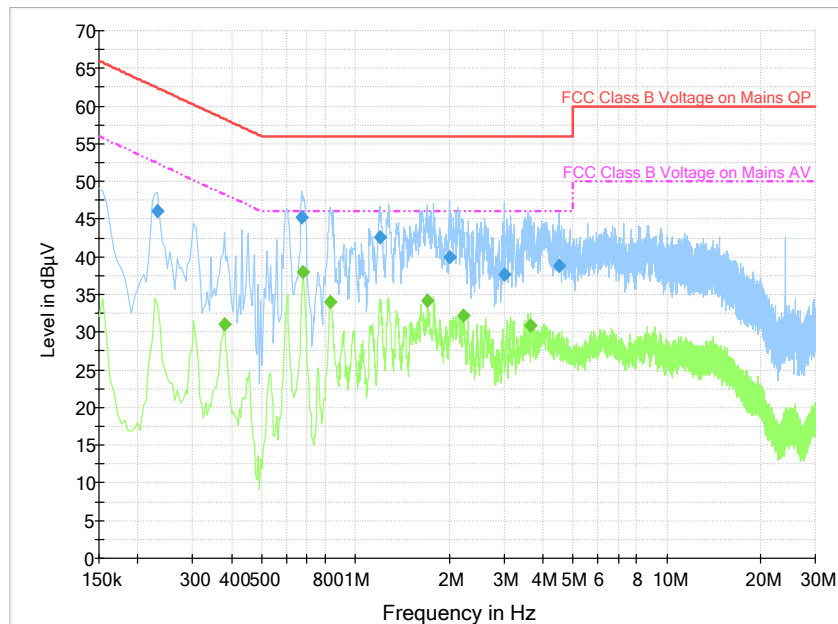
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

Frequency(MHz)	QuasiPeak(dBµV)	Line	Margin(dB)	Limit(dBµV)
0.231000	46.3	L1	16.1	62.4
0.681000	45.9	L1	10.1	56.0
0.834000	43.1	L1	12.9	56.0
1.275000	42.7	L1	13.3	56.0
2.998500	38.7	L1	17.3	56.0
3.988500	38.8	L1	17.2	56.0

**Final Result 2**

Frequency(MHz)	Average(dBµV)	Line	Margin(dB)	Limit(dBµV)
0.379500	31.3	L1	17.0	48.3
0.681000	38.0	L1	8.0	46.0
0.834000	34.6	L1	11.4	46.0
1.275000	33.8	L1	12.2	46.0
3.583500	31.6	L1	14.4	46.0
3.664500	31.5	L1	14.5	46.0



**Fig.A.7.2 AC Powerline Conducted Emission-Iidle**

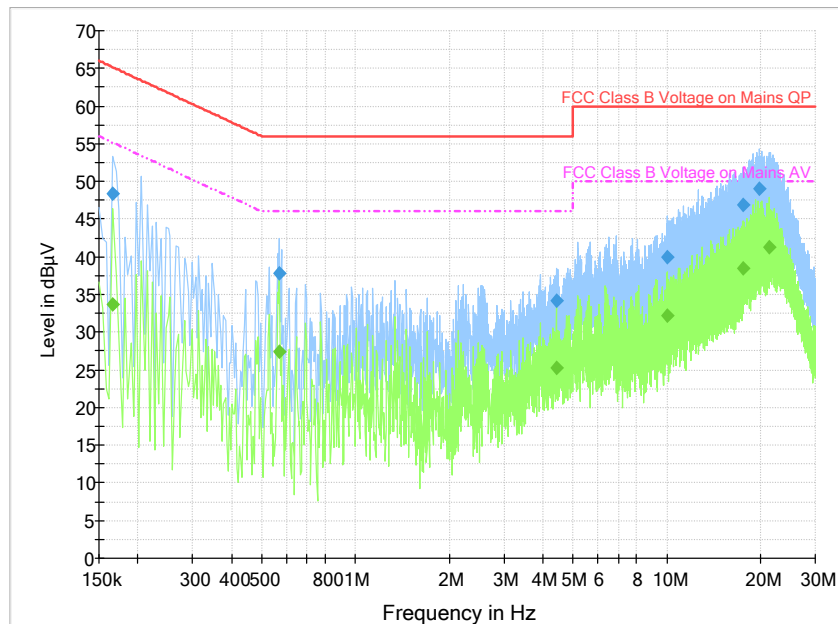
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

Frequency(MHz)	QuasiPeak(dBµV)	Line	Margin(dB)	Limit(dBµV)
0.231000	46.1	N	16.3	62.4
0.672000	45.2	L1	10.8	56.0
1.194000	42.5	L1	13.5	56.0
1.999500	40.0	L1	16.0	56.0
3.003000	37.6	L1	18.4	56.0
4.519500	38.7	L1	17.3	56.0

**Final Result 2**

Frequency(MHz)	Average(dBµV)	Line	Margin(dB)	Limit(dBµV)
0.379500	31.1	L1	17.2	48.3
0.681000	37.9	L1	8.1	46.0
0.829500	34.0	L1	12.0	46.0
1.707000	34.2	L1	11.8	46.0
2.224500	32.3	L1	13.7	46.0
3.660000	30.9	L1	15.1	46.0



**Fig.A.7.3 AC Powerline Conducted Emission-802.11b BY EUT5**

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	48.3	2000.0	9.000	On	L1	20.0	16.8	65.2
0.570000	37.9	2000.0	9.000	On	N	19.9	18.1	56.0
4.410000	34.3	2000.0	9.000	On	L1	19.6	21.7	56.0
10.038000	40.0	2000.0	9.000	On	L1	19.7	20.0	60.0
17.638000	46.9	2000.0	9.000	On	L1	19.9	13.1	60.0
19.922000	49.0	2000.0	9.000	On	L1	19.9	11.0	60.0

**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	33.6	2000.0	9.000	On	L1	20.0	21.5	55.2
0.570000	27.3	2000.0	9.000	On	N	19.9	18.7	46.0
4.410000	25.3	2000.0	9.000	On	L1	19.6	20.7	46.0
10.038000	32.1	2000.0	9.000	On	L1	19.7	17.9	50.0
17.606000	38.4	2000.0	9.000	On	L1	19.9	11.6	50.0
21.382000	41.4	2000.0	9.000	On	L1	19.9	8.6	50.0

## ANNEX C: EUT parameters

Disclaimer: The worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

## ANNEX D: Accreditation Certificate

<b>United States Department of Commerce National Institute of Standards and Technology</b>	
	
<hr/> <b>Certificate of Accreditation to ISO/IEC 17025:2017</b> <hr/>	
NVLAP LAB CODE: 600118-0	
<b>Telecommunication Technology Labs, CAICT</b> Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
<b>Electromagnetic Compatibility &amp; Telecommunications</b>	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i>	
<hr/> 2021-09-29 through 2022-09-30 Effective Dates	 For the National Voluntary Laboratory Accreditation Program

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