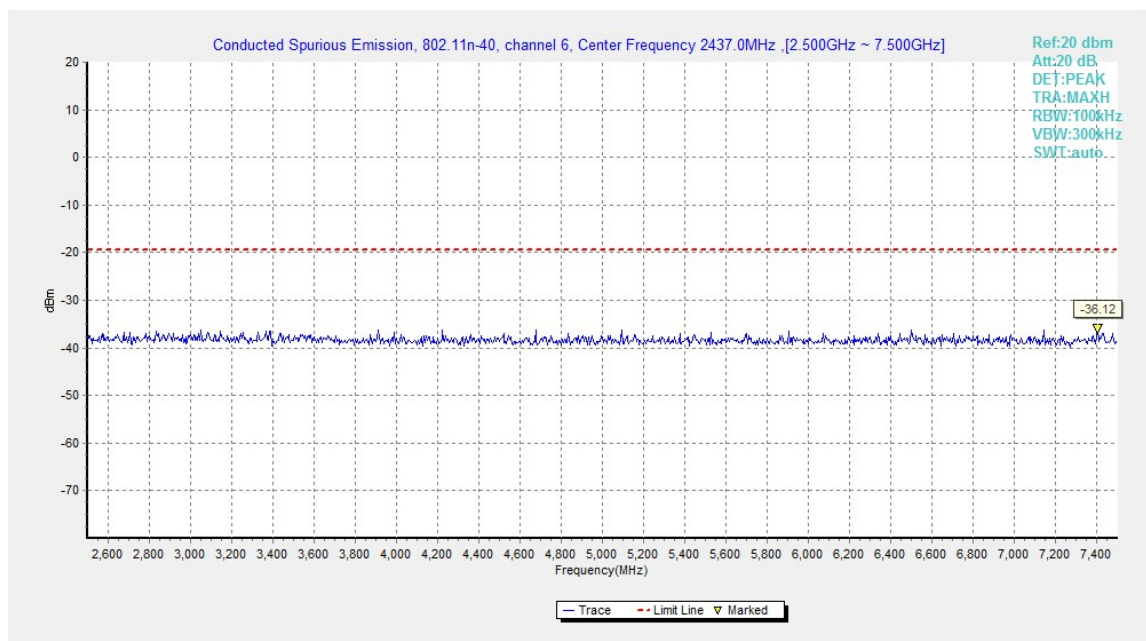
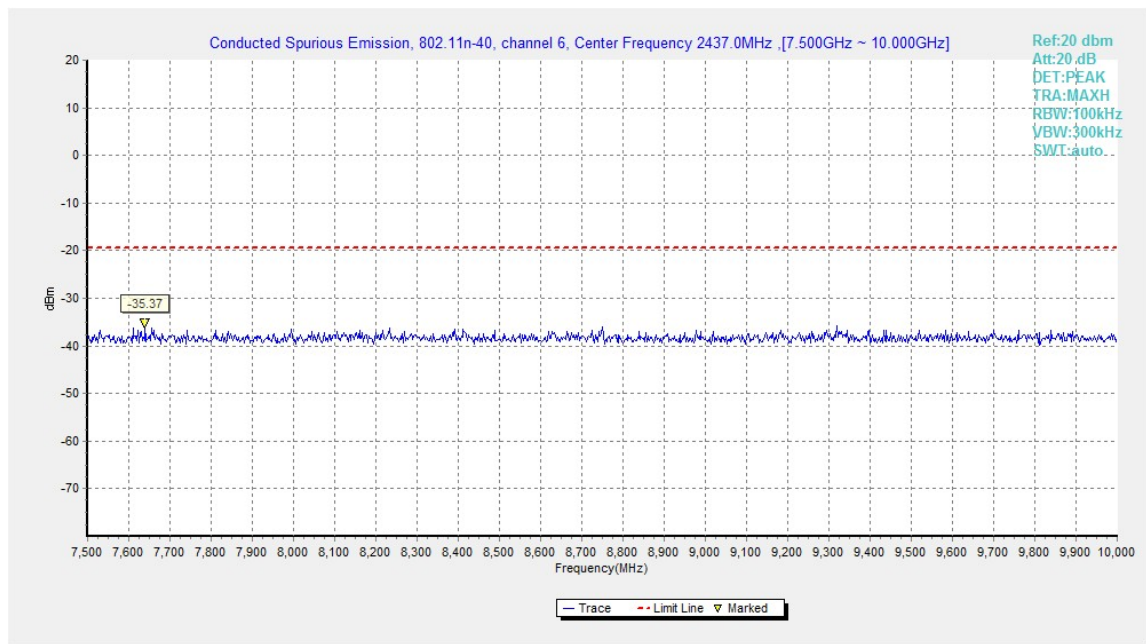


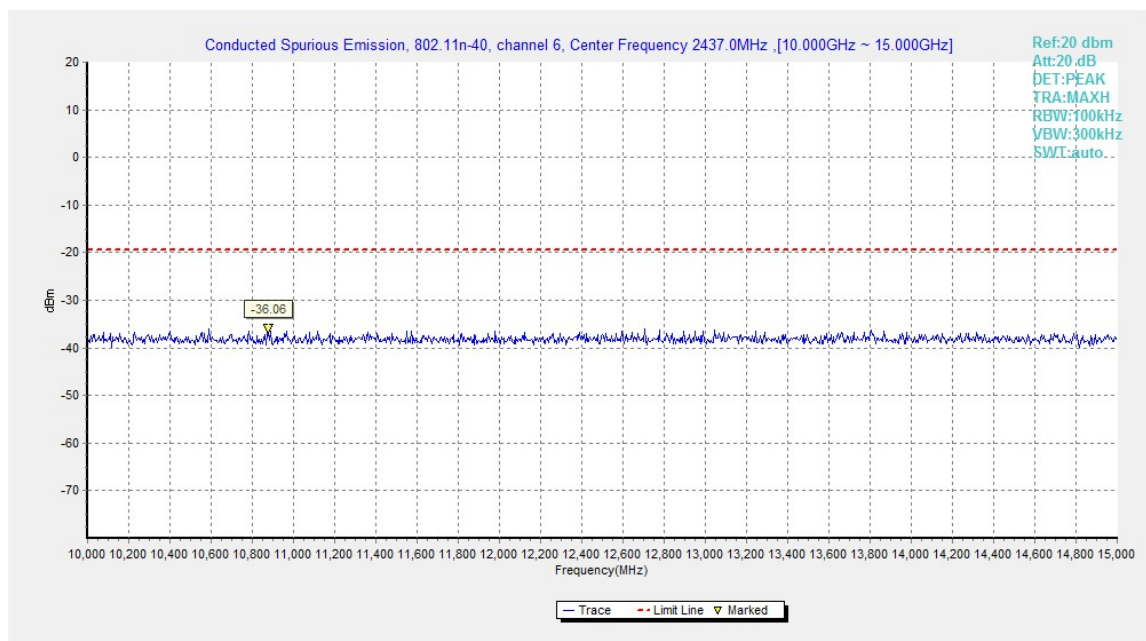
**Fig.A.6.1.83 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)**



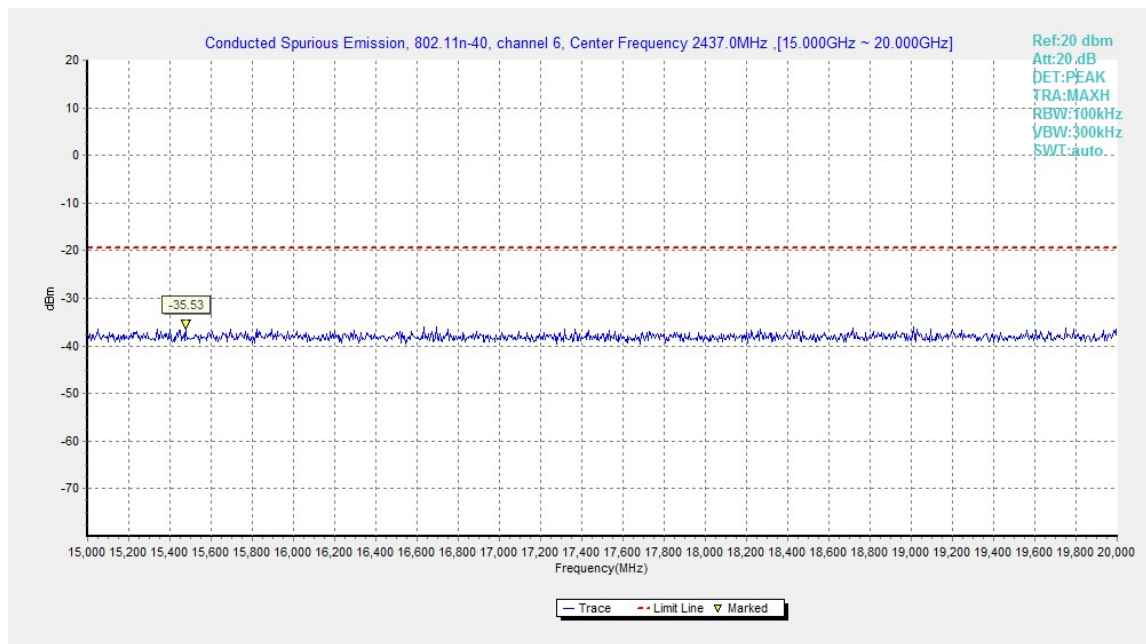
**Fig.A.6.1.84 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)**



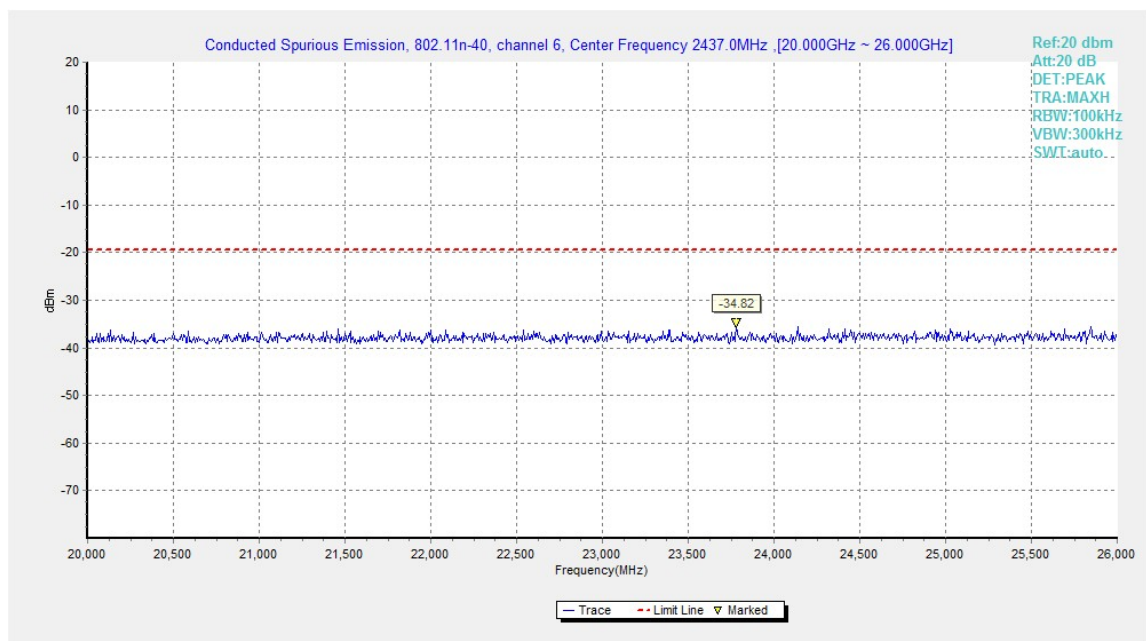
**Fig.A.6.1.85 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)**



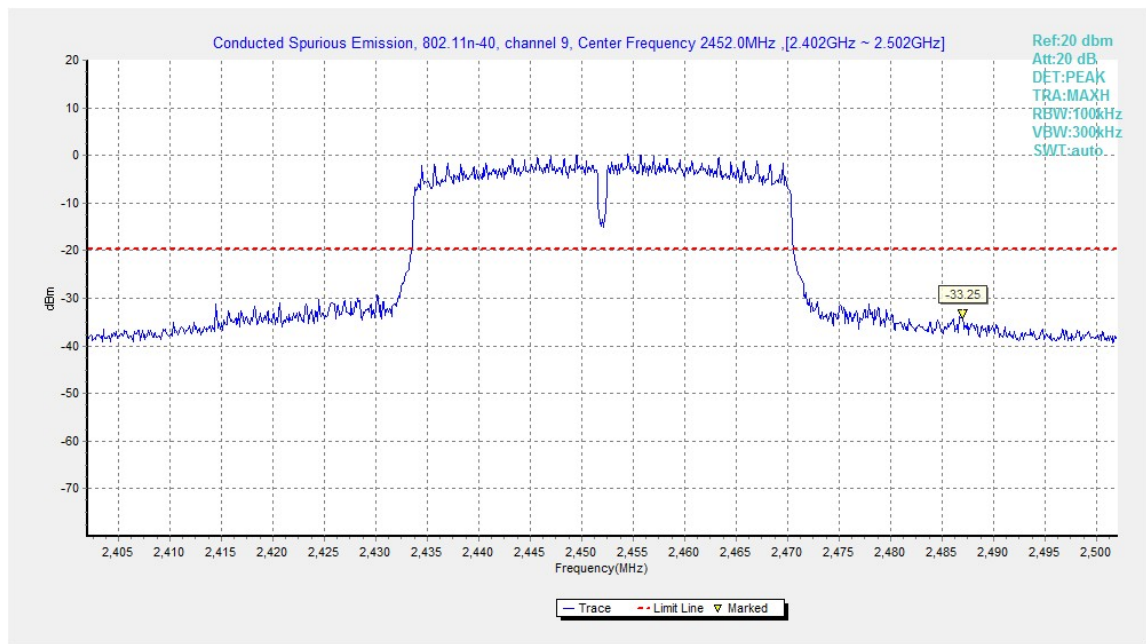
**Fig.A.6.1.86 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 10 GHz-15 GHz)**



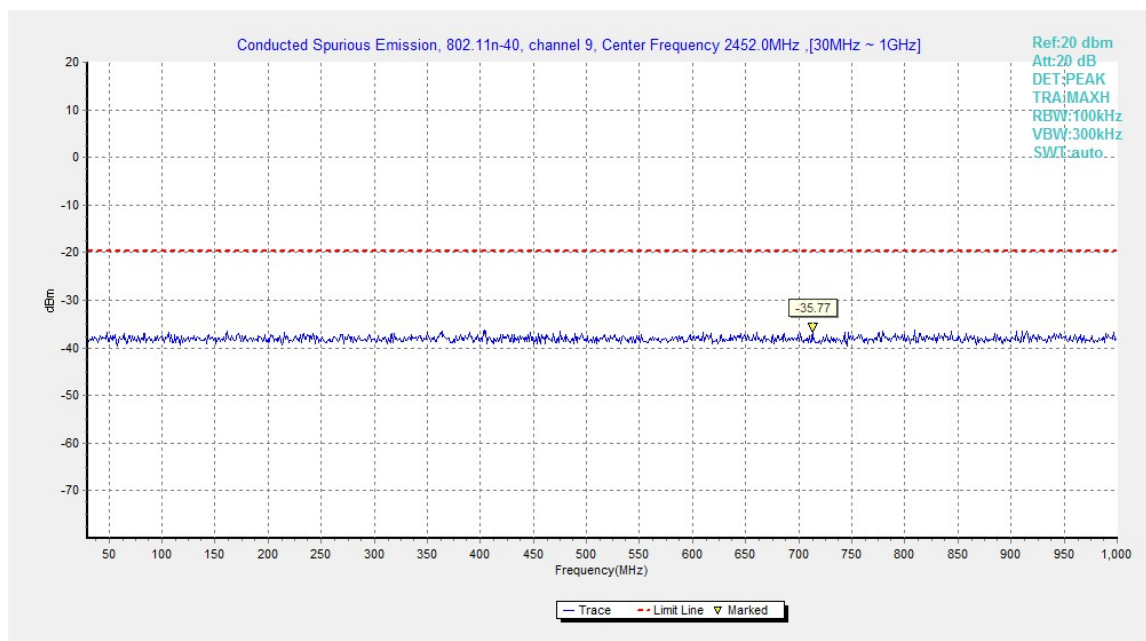
**Fig.A.6.1.87 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 15 GHz-20 GHz)**



**Fig.A.6.1.88 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch6, 20 GHz-26 GHz)**

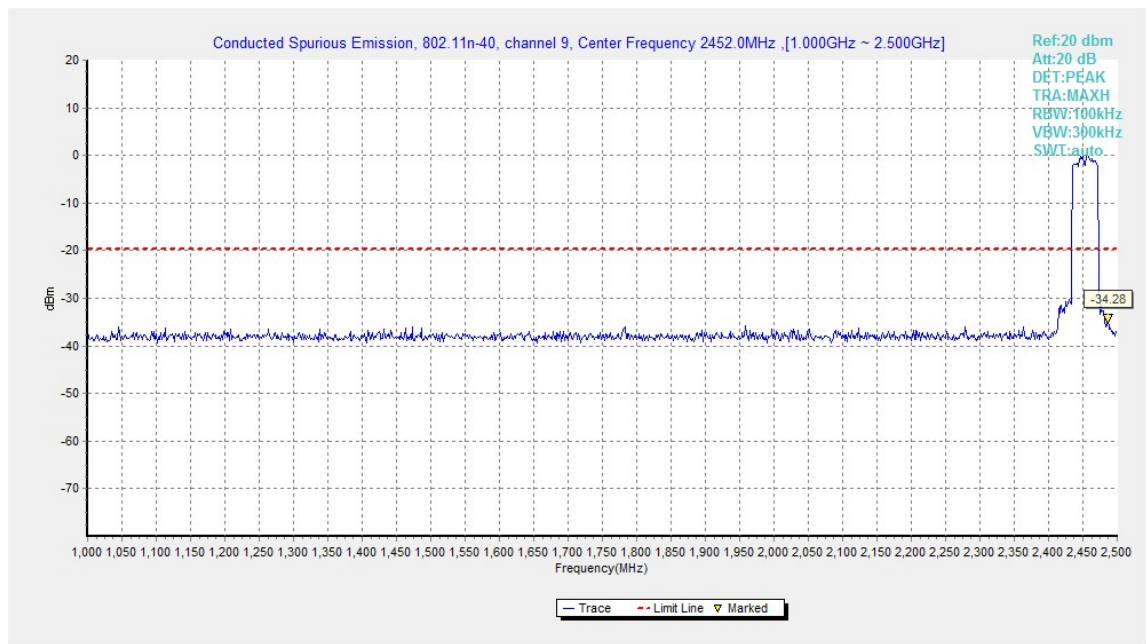


**Fig.A.6.1.89 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, Center Frequency)**

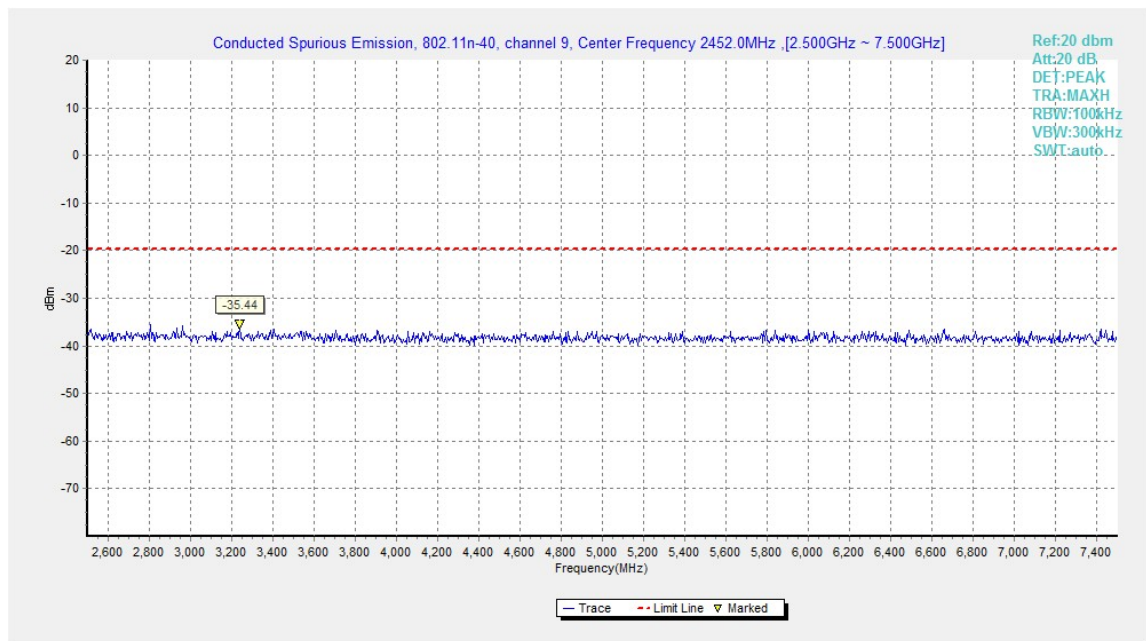


**Fig.A.6.1.90 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 30 MHz-1 GHz)**

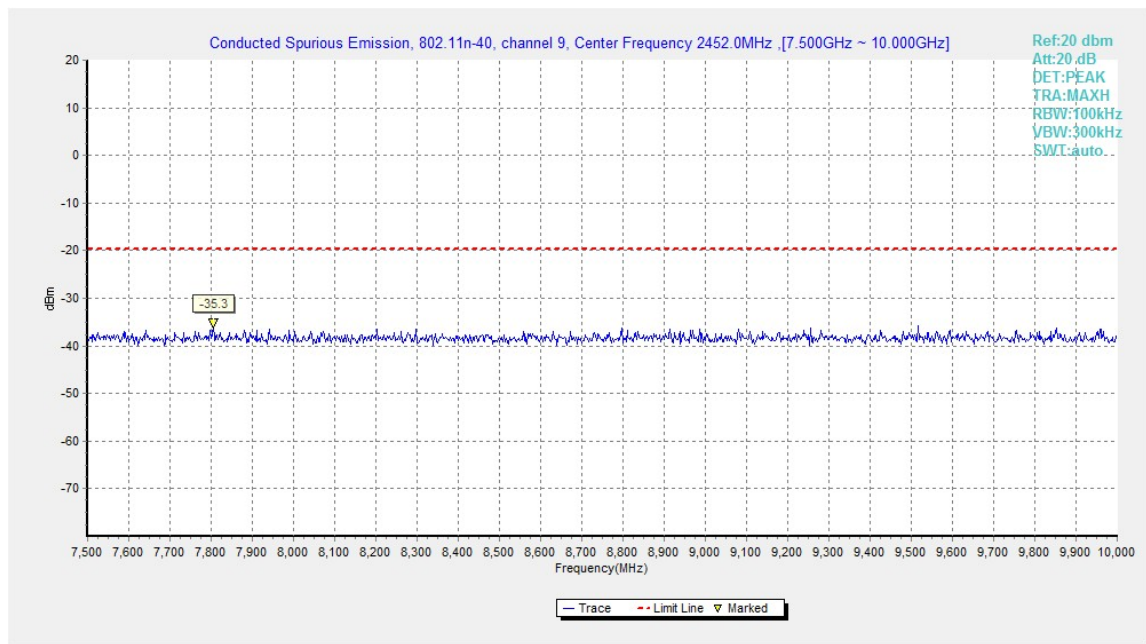




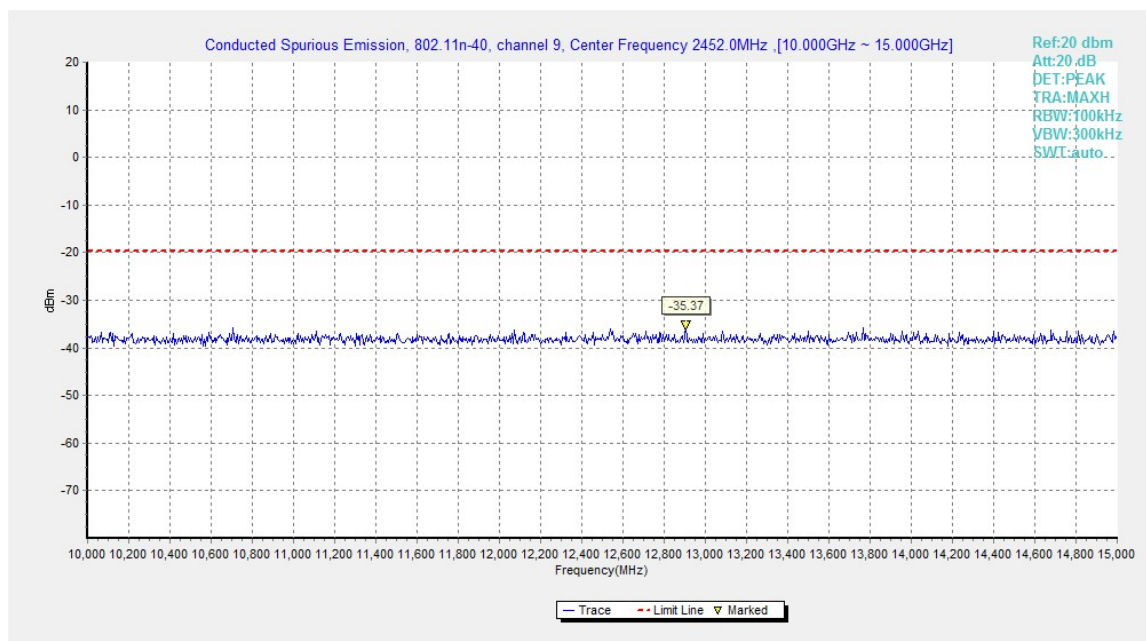
**Fig.A.6.1.91 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)**



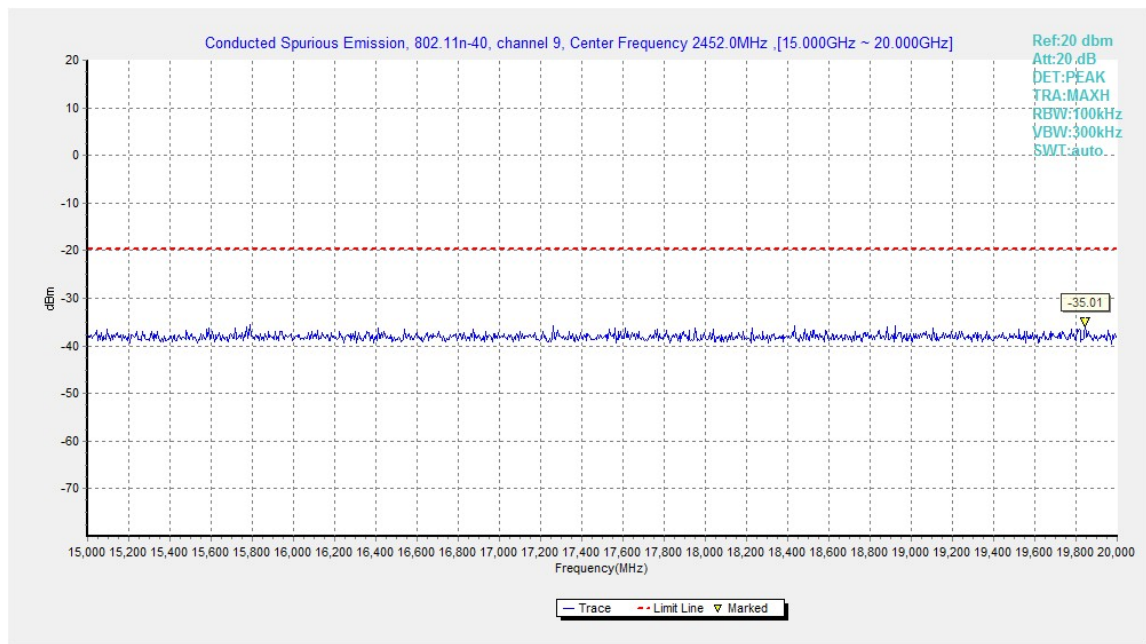
**Fig.A.6.1.92 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)**



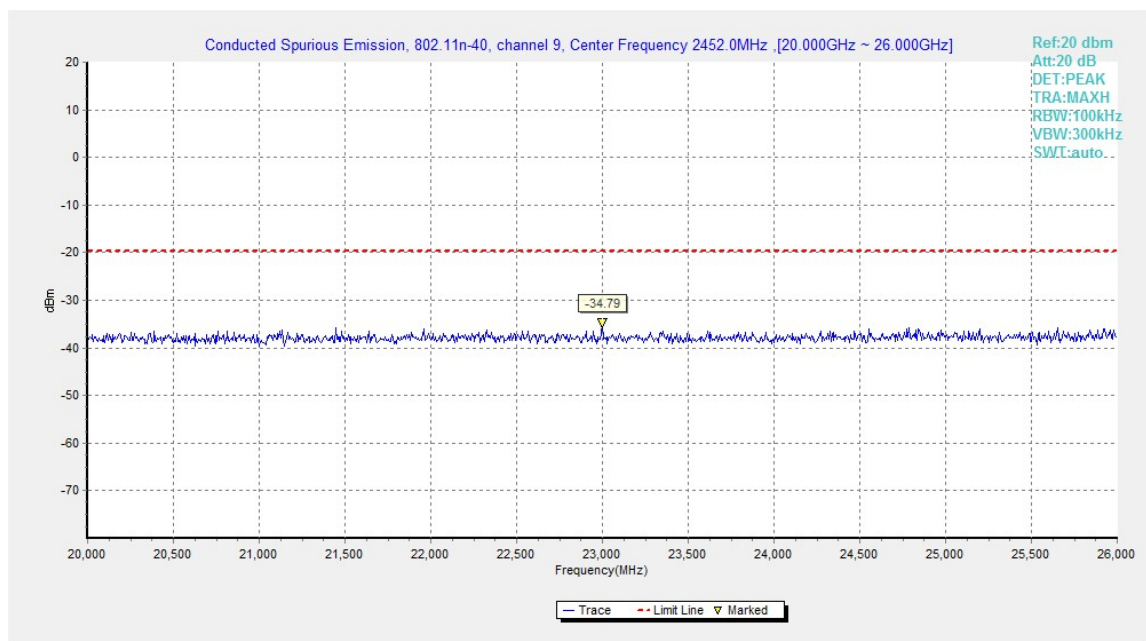
**Fig.A.6.1.93 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)**



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



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



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

## A.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/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

**EUT ID: EUT61**



### Measurement Results:

#### 802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.45GHz	Fig.A.6.2.1	P
	1	1 GHz ~ 3 GHz	Fig.A.6.2.2	P
		3 GHz ~ 18 GHz	Fig.A.6.2.3	P
	6	9 kHz ~30 MHz	Fig.A.6.2.4	P
		30 MHz ~1 GHz	Fig.A.6.2.5	P
		1 GHz ~ 3 GHz	Fig.A.6.2.6	P
		3 GHz ~ 18 GHz	Fig.A.6.2.7	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.8	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.9	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.10	P
		3 GHz ~ 18 GHz	Fig.A.6.2.11	P

#### 802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.38GHz ~2.43GHz	Fig.A.6.2.12	P
	1	1 GHz ~ 3 GHz	Fig.A.6.2.13	P
		3 GHz ~ 18 GHz	Fig.A.6.2.14	P
	6	30 MHz ~1 GHz	Fig.A.6.2.15	P
		1 GHz ~ 3 GHz	Fig.A.6.2.16	P
		3 GHz ~ 18 GHz	Fig.A.6.2.17	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.18	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.19	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.20	P
		3 GHz ~ 18 GHz	Fig.A.6.2.21	P

#### 802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.22	P
	1	1 GHz ~ 3 GHz	Fig.A.6.2.23	P
		3 GHz ~ 18 GHz	Fig.A.6.2.24	P
	6	30 MHz ~1 GHz	Fig.A.6.2.25	P
		1 GHz ~ 3 GHz	Fig.A.6.2.26	P
		3 GHz ~ 18 GHz	Fig.A.6.2.27	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.28	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.29	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.30	P
		3 GHz ~ 18 GHz	Fig.A.6.2.31	P

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.32	<b>P</b>
	3	1 GHz ~ 3 GHz	Fig.A.6.2.33	<b>P</b>
		3 GHz ~ 18 GHz	Fig.A.6.2.34	<b>P</b>
	6	30 MHz ~1 GHz	Fig.A.6.2.35	<b>P</b>
		1 GHz ~ 3 GHz	Fig.A.6.2.36	<b>P</b>
		3 GHz ~ 18 GHz	Fig.A.6.2.37	<b>P</b>
		18 GHz~ 26.5 GHz	Fig.A.6.2.38	<b>P</b>
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.39	<b>P</b>
	9	1 GHz ~ 3 GHz	Fig.A.6.2.40	<b>P</b>
		3 GHz ~ 18 GHz	Fig.A.6.2.41	<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:

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

**802.11b-Average**
**Ch1**

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	$P_{Mea}$ (dBuV/m)	Polarization
2386.055	50.6	-38.8	27.7	61.700	H
17975.500	51.6	-17.7	45.6	23.700	H
17956.500	51.5	-17.7	45.6	23.600	V
17933.000	51.4	-17.7	45.6	23.500	V
17982.000	51.4	-17.7	45.6	23.500	H
17989.000	51.4	-17.7	45.6	23.500	V

**Ch6**

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	$P_{Mea}$ (dBuV/m)	Polarization
17973.500	51.6	-17.7	45.6	23.700	V
17978.500	51.4	-17.7	45.6	23.500	H
17982.000	51.4	-17.7	45.6	23.500	V
17972.000	51.4	-17.7	45.6	23.500	H
17974.500	51.4	-17.7	45.6	23.500	V
17966.500	51.4	-17.7	45.6	23.500	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2486.985	48.6	-38.9	27.7	59.800	V
17984.000	51.4	-17.7	45.6	23.500	H
17985.500	51.4	-17.7	45.6	23.500	V
17988.000	51.3	-17.7	45.6	23.400	H
17995.500	51.3	-17.7	45.6	23.400	V
17930.000	51.3	-17.7	45.6	23.400	H

### 802.11b-Peak

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2386.055	60.5	-38.8	27.7	71.600	H
17973.500	63.5	-17.7	45.6	35.600	H
17954.500	63.3	-17.7	45.6	35.400	V
17914.500	63.1	-17.7	45.6	35.200	V
17994.500	63.0	-17.7	45.6	35.100	V
17933.500	63.0	-17.7	45.6	35.100	H

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17989.500	63.7	-17.7	45.6	35.800	H
17920.500	63.4	-17.7	45.6	35.500	H
17939.500	63.4	-17.7	45.6	35.500	V
17898.000	63.2	-18.5	45.6	36.100	H
17960.500	63.2	-17.7	45.6	35.300	V
17999.500	63.0	-17.7	45.6	35.100	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2486.985	60.6	-38.9	27.7	71.800	H
17970.500	63.0	-17.7	45.6	35.100	H
17908.500	63.0	-18.5	45.6	35.900	V
17971.000	62.8	-17.7	45.6	34.900	H
17893.000	62.7	-18.5	45.6	35.600	H
17989.500	62.6	-17.7	45.6	34.700	H



### 802.11g - Average

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.520	46.4	-38.8	27.7	57.500	V
17997.000	51.0	-17.7	45.6	23.100	H
17897.500	50.3	-18.5	45.6	23.200	V
17907.500	50.4	-18.5	45.6	23.300	H
17974.000	50.8	-17.7	45.6	22.900	H
17958.000	51.1	-17.7	45.6	23.200	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17993.500	51.5	-17.7	45.6	23.6	H
17974.500	51.4	-17.7	45.6	23.5	H
17967.000	51.4	-17.7	45.6	23.5	V
17926.000	51.3	-17.7	45.6	23.4	V
17956.500	51.3	-17.7	45.6	23.4	H
17906.500	51.2	-18.5	45.6	24.1	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.175	49.6	-38.9	27.7	60.800	H
17984.000	51.4	-17.7	45.6	23.500	H
17985.500	51.4	-17.7	45.6	23.500	V
17988.000	51.3	-17.7	45.6	23.400	V
17995.500	51.3	-17.7	45.6	23.400	H
17930.000	51.3	-17.7	45.6	23.400	V

**802.11g - Peak**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.520	57.1	-38.8	27.7	68.200	H
17997.000	63.8	-17.7	45.6	35.900	V
17897.500	63.5	-18.5	45.6	36.400	V
17907.500	63.2	-18.5	45.6	36.100	H
17974.000	63.2	-17.7	45.6	35.300	V
17958.000	63.2	-17.7	45.6	35.300	H

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17772.000	63.4	-18.5	45.6	36.3	H
17983.000	63.1	-17.7	45.6	35.2	H
17932.500	62.8	-17.7	45.6	34.9	V
17900.500	62.8	-18.5	45.6	35.7	V
17869.000	62.7	-18.5	45.6	35.6	V
17948.000	62.7	-17.7	45.6	34.8	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.175	60.8	-38.9	27.7	72.000	H
17970.500	63.0	-17.7	45.6	35.100	H
17908.500	63.0	-18.5	45.6	35.900	V
17971.000	62.8	-17.7	45.6	34.900	V
17893.000	62.7	-18.5	45.6	35.600	V
17989.500	62.6	-17.7	45.6	34.700	H

**802.11n-HT20-Average**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.065	47.1	-38.8	27.7	58.200	V
17994.500	51.4	-17.7	45.6	23.500	H
17971.500	51.4	-17.7	45.6	23.500	H
17976.000	51.3	-17.7	45.6	23.400	H
17973.500	51.3	-17.7	45.6	23.400	V
17901.500	51.2	-18.5	45.6	24.100	H

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17969.500	51.5	-17.7	45.6	23.6	H
17984.500	51.4	-17.7	45.6	23.5	H
17936.000	51.4	-17.7	45.6	23.5	V
17973.000	51.4	-17.7	45.6	23.5	V
17965.000	51.4	-17.7	45.6	23.5	H
17967.000	51.3	-17.7	45.6	23.4	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.060	47.1	-38.9	27.7	58.300	H
17987.000	51.6	-17.7	45.6	23.700	V
17936.000	51.4	-17.7	45.6	23.500	V
17995.500	51.4	-17.7	45.6	23.500	H
17910.000	51.4	-18.5	45.6	24.300	H
17962.500	51.3	-17.7	45.6	23.400	H

**802.11n-HT20-Peak**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.065	59.3	-38.8	27.7	70.400	V
17978.000	63.6	-17.7	45.6	35.700	H
17930.500	63.6	-17.7	45.6	35.700	V
17985.000	63.2	-17.7	45.6	35.300	H
17884.000	62.9	-18.5	45.6	35.800	H
17903.500	62.7	-18.5	45.6	35.600	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17971.000	64.4	-17.7	45.6	36.500	H
17989.000	63.4	-17.7	45.6	35.500	H
17852.500	63.3	-18.5	45.6	36.200	V
17978.500	63.3	-17.7	45.6	35.400	V
17817.500	62.9	-18.5	45.6	35.800	H
17893.000	62.8	-18.5	45.6	35.700	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.060	59.6	-38.9	27.7	70.800	V
17914.000	64.0	-18.5	45.6	36.900	H
17988.500	63.3	-17.7	45.6	35.400	V
17983.000	63.0	-17.7	45.6	35.100	H
17907.000	62.9	-18.5	45.6	35.800	H
17957.000	62.9	-17.7	45.6	35.000	V



### 802.11n-HT40-Average

Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.090	51.1	-38.8	27.7	62.200	V
17959.500	51.6	-17.7	45.6	23.700	V
17987.500	51.6	-17.7	45.6	23.700	V
17971.000	51.5	-17.7	45.6	23.600	H
17984.000	51.5	-17.7	45.6	23.600	H
17981.000	51.5	-17.7	45.6	23.600	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17965.000	51.7	-17.7	45.6	23.8	H
17972.500	51.6	-17.7	45.6	23.7	H
17941.000	51.6	-17.7	45.6	23.7	V
17994.500	51.6	-17.7	45.6	23.7	V
17977.500	51.6	-17.7	45.6	23.7	H
17987.000	51.6	-17.7	45.6	23.7	H

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2484.115	45.4	-38.9	27.7	56.600	V
17984.000	51.7	-17.7	45.6	23.800	H
17986.500	51.6	-17.7	45.6	23.700	V
17987.000	51.6	-17.7	45.6	23.700	H
17992.000	51.5	-17.7	45.6	23.600	V
17969.000	51.5	-17.7	45.6	23.600	H

**802.11n-HT40-Peak**

Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2389.090	68.7	-38.8	27.7	79.800	H
17992.500	63.6	-17.7	45.6	35.700	H
17905.500	63.5	-18.5	45.6	36.400	V
17973.000	63.5	-17.7	45.6	35.600	V
17979.000	63.4	-17.7	45.6	35.500	H
17883.000	63.1	-18.5	45.6	36.000	V

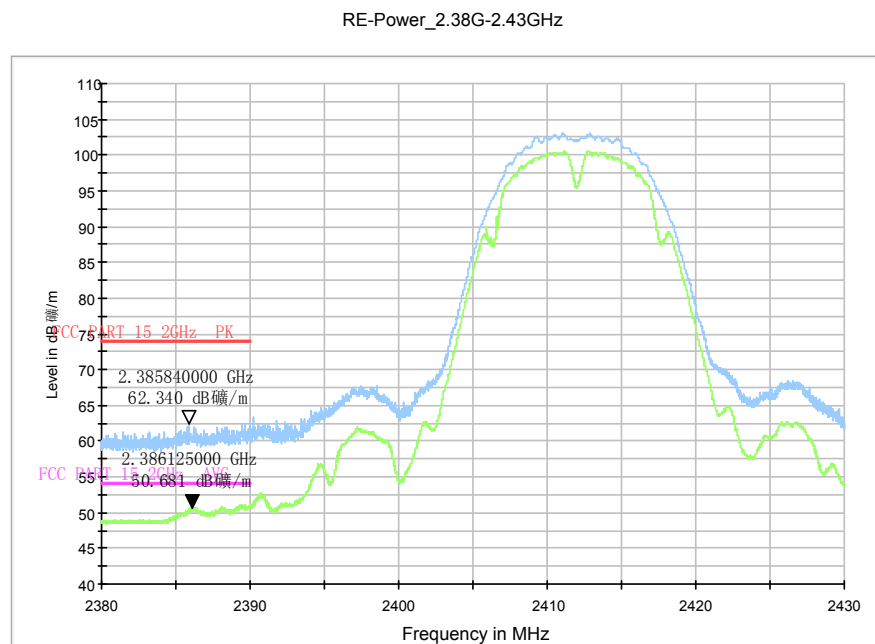
Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17900.000	63.7	-18.5	45.6	36.600	V
17869.500	63.5	-18.5	45.6	36.400	H
17958.000	63.4	-17.7	45.6	35.500	V
17988.000	63.4	-17.7	45.6	35.500	H
17852.500	63.3	-18.5	45.6	36.200	V
17854.500	63.1	-18.5	45.6	36.000	H

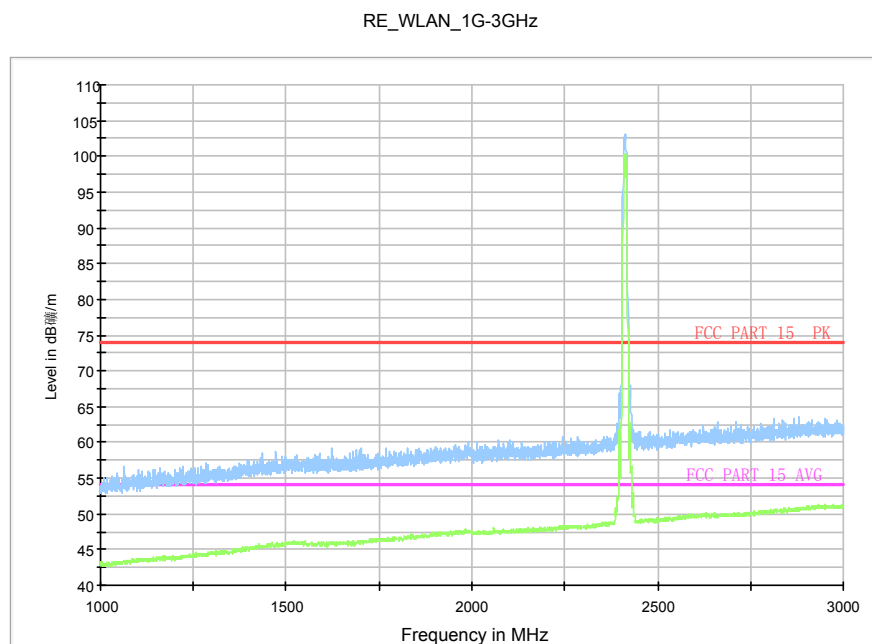
Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2484.115	56.7	-38.9	27.7	67.900	V
17875.500	64.4	-18.5	45.6	37.300	H
17786.000	64.0	-18.5	45.6	36.900	V
17985.000	63.8	-17.7	45.6	35.900	H
17943.000	63.5	-17.7	45.6	35.600	H
17982.000	62.9	-17.7	45.6	35.000	V

Test graphs as below: Test graphs as below:



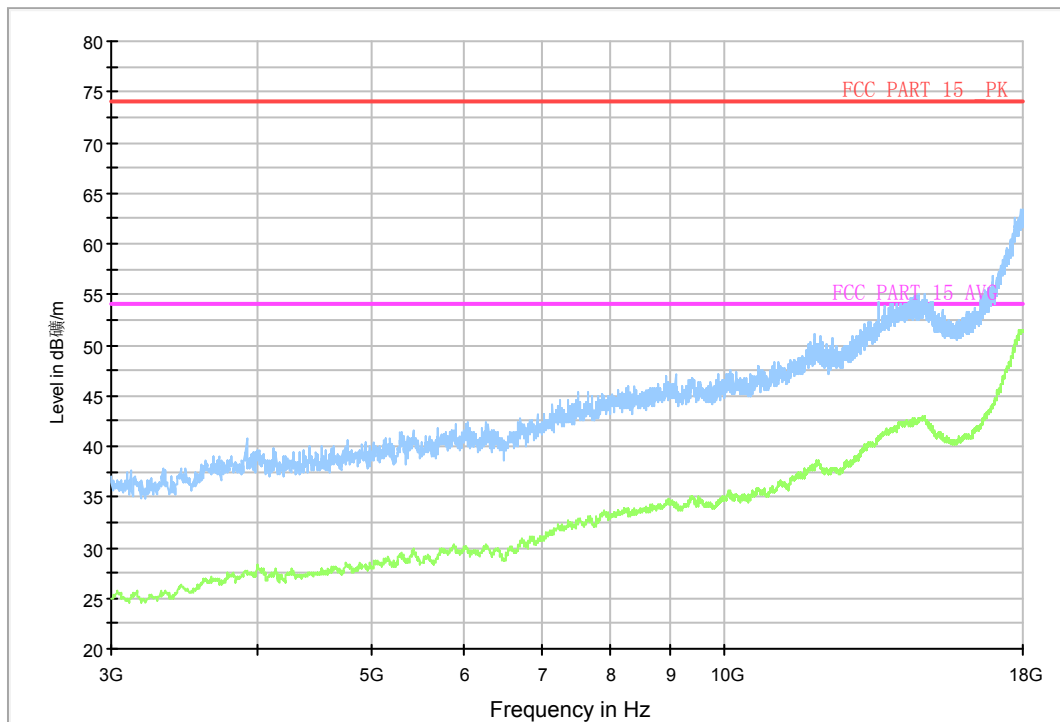
**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.43GHz**



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

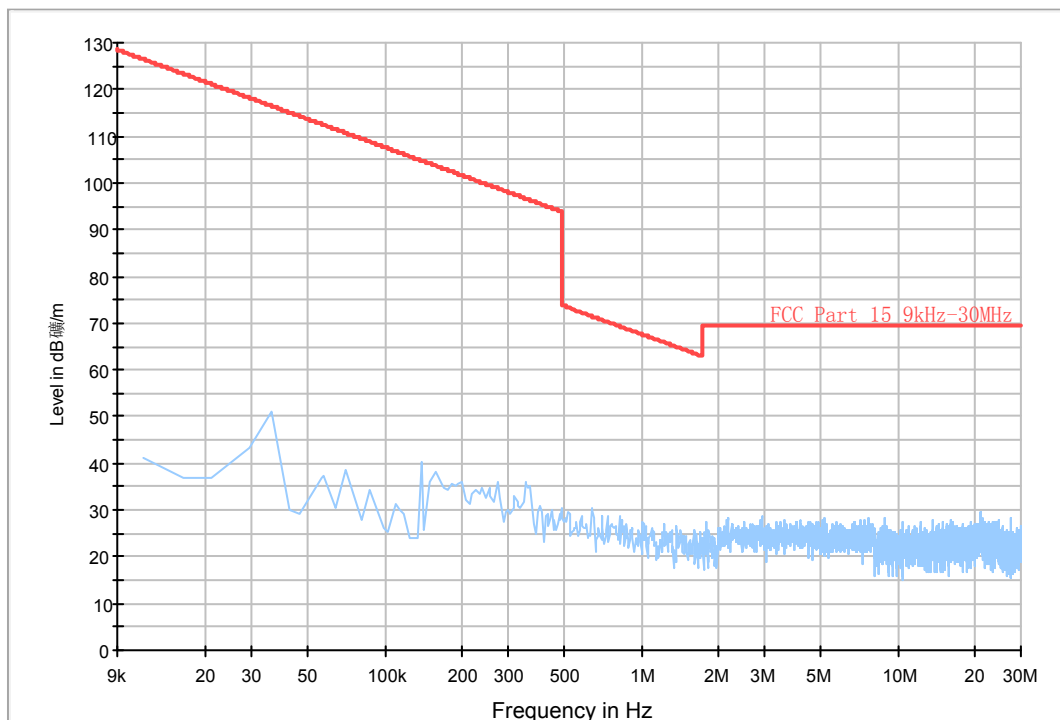
**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (802.11b, Ch1, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter



**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (802.11b, Ch1, 3 GHz-18 GHz)**

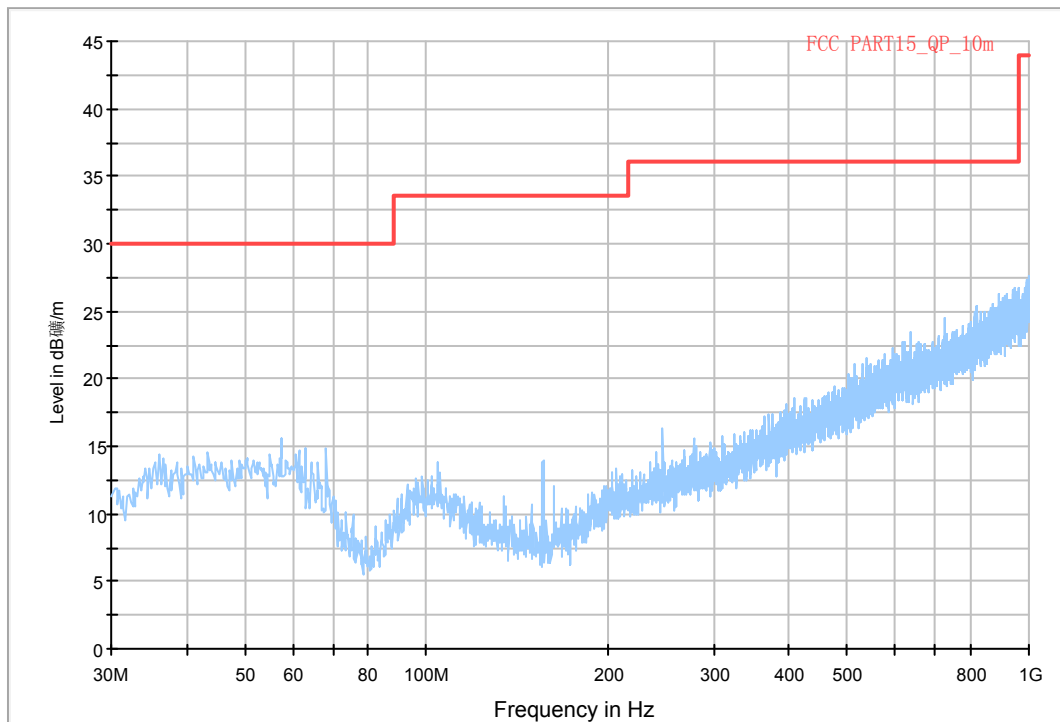
RE\_9kHz-30MHz



**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 9kHz-30 MHz)**

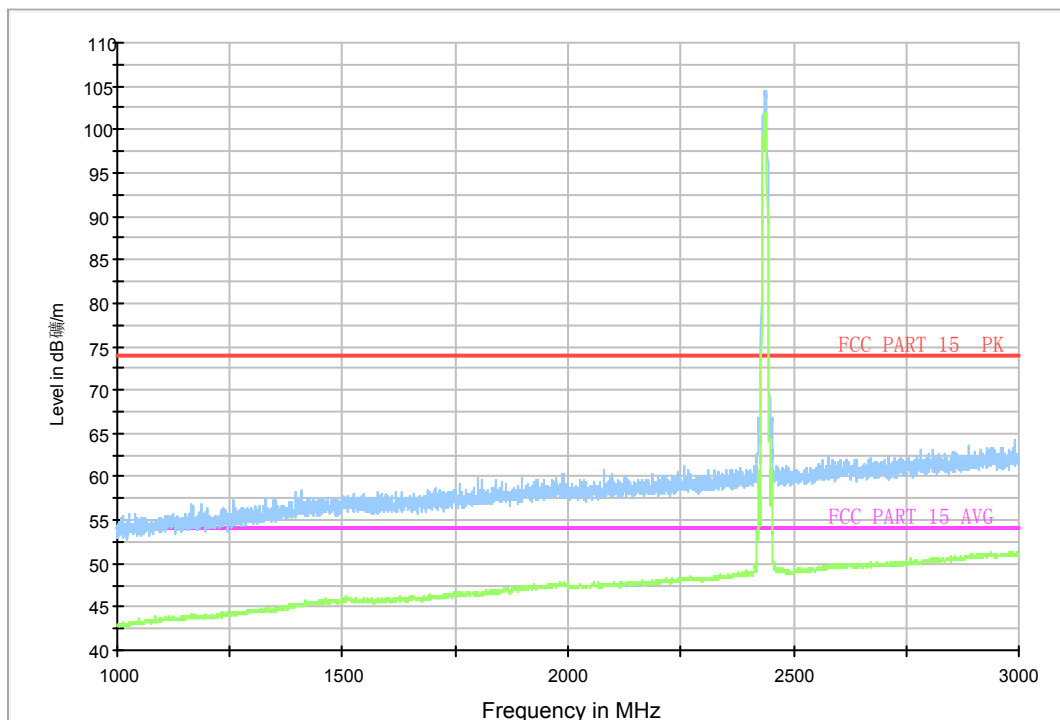


Normal RE\_30M-1GHz\_10m



**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 30 MHz-1 GHz)**

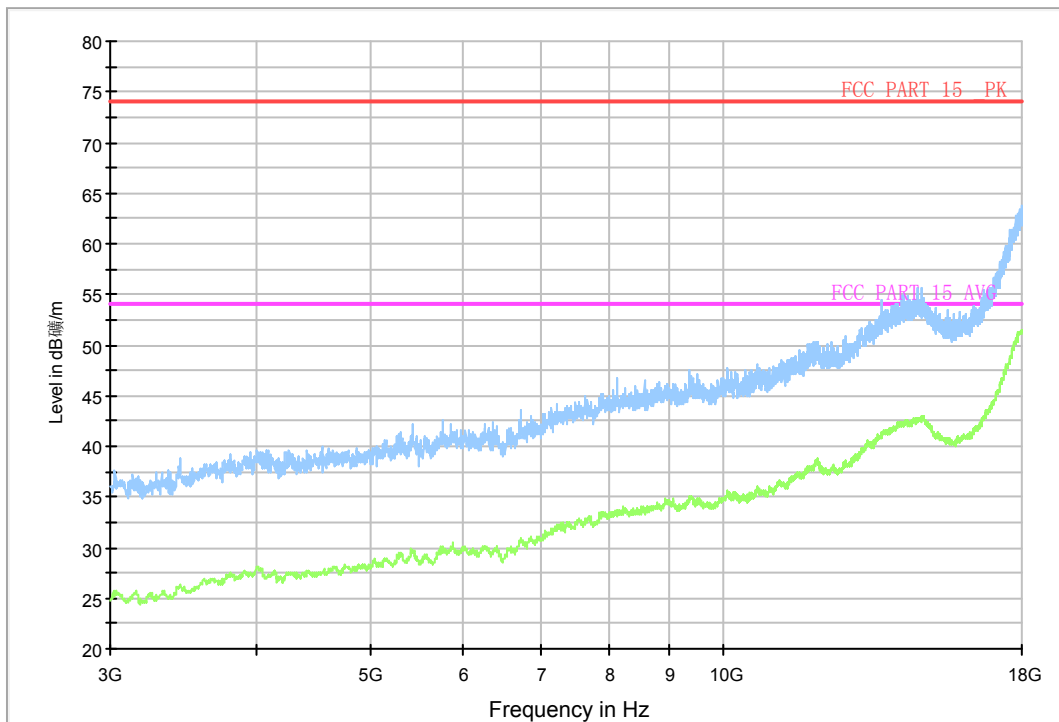
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

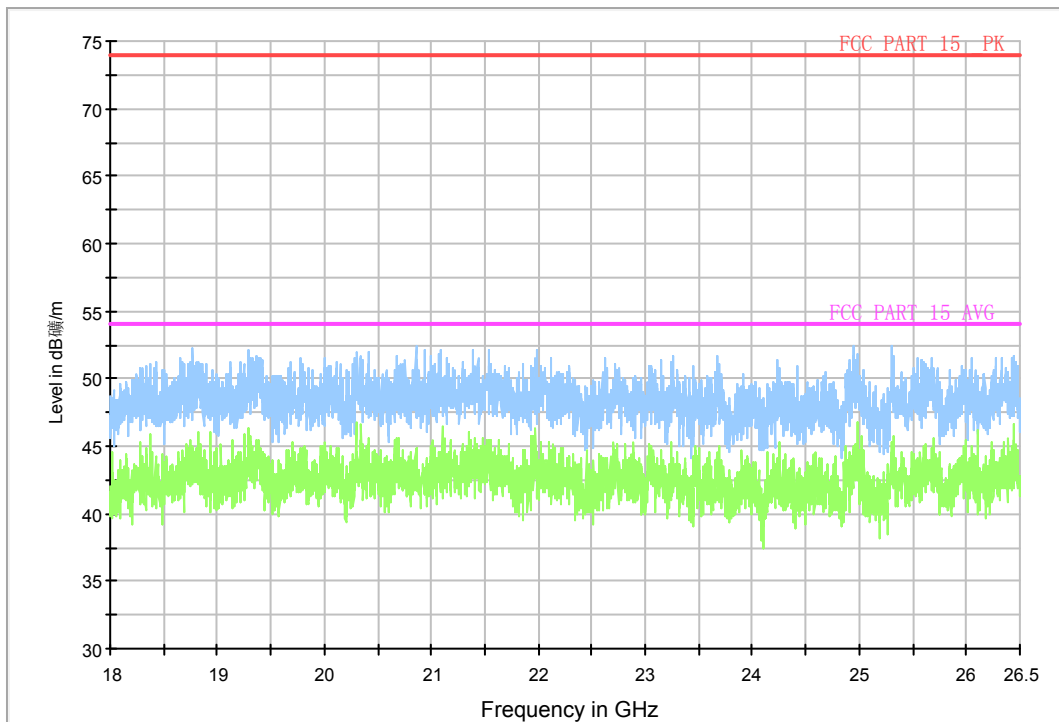
**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter



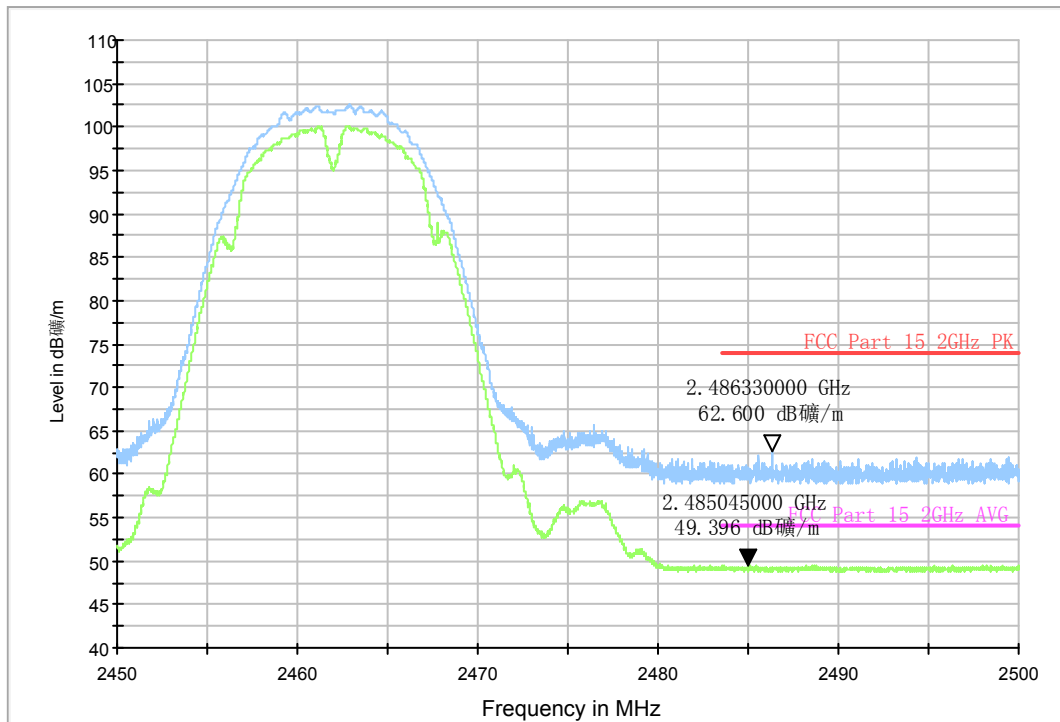
**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 3 GHz-18 GHz)**

Normal RE\_18G-26.5GHz



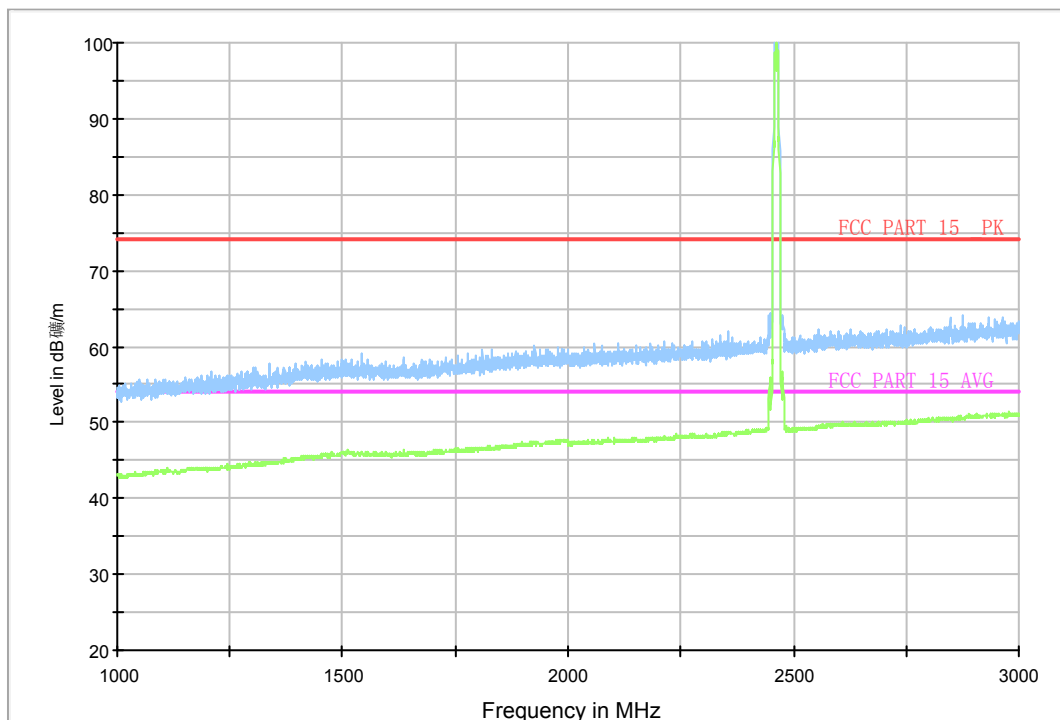
**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 18GHz – 26.5GHz)**

RE-Power\_2.45G-2.5GHz



**Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**

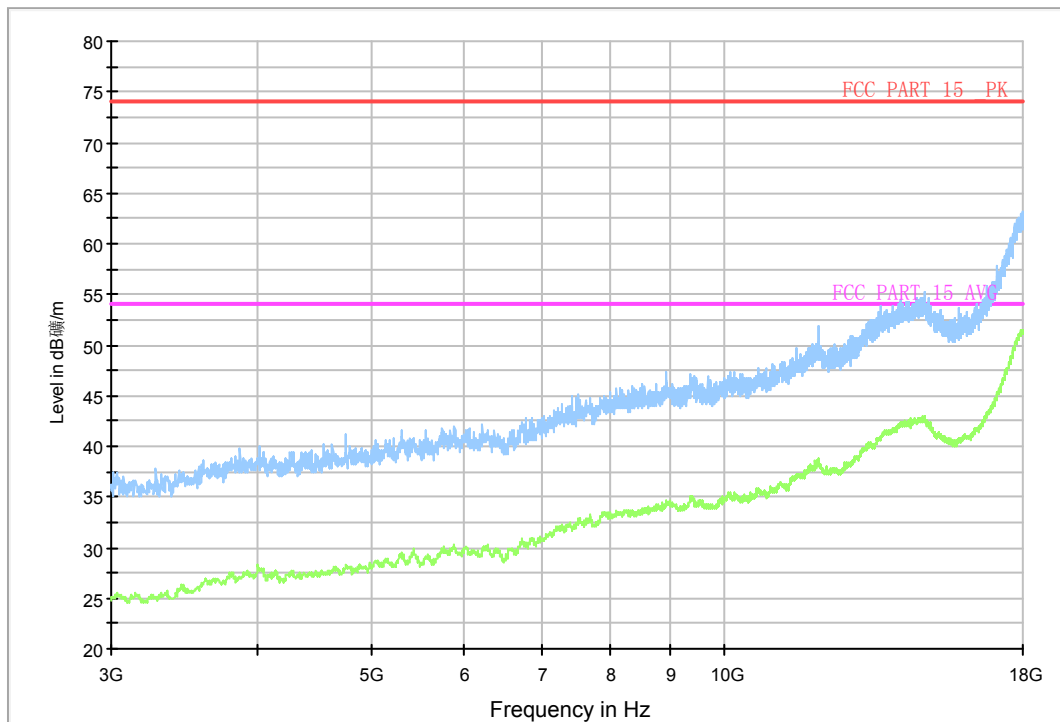
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

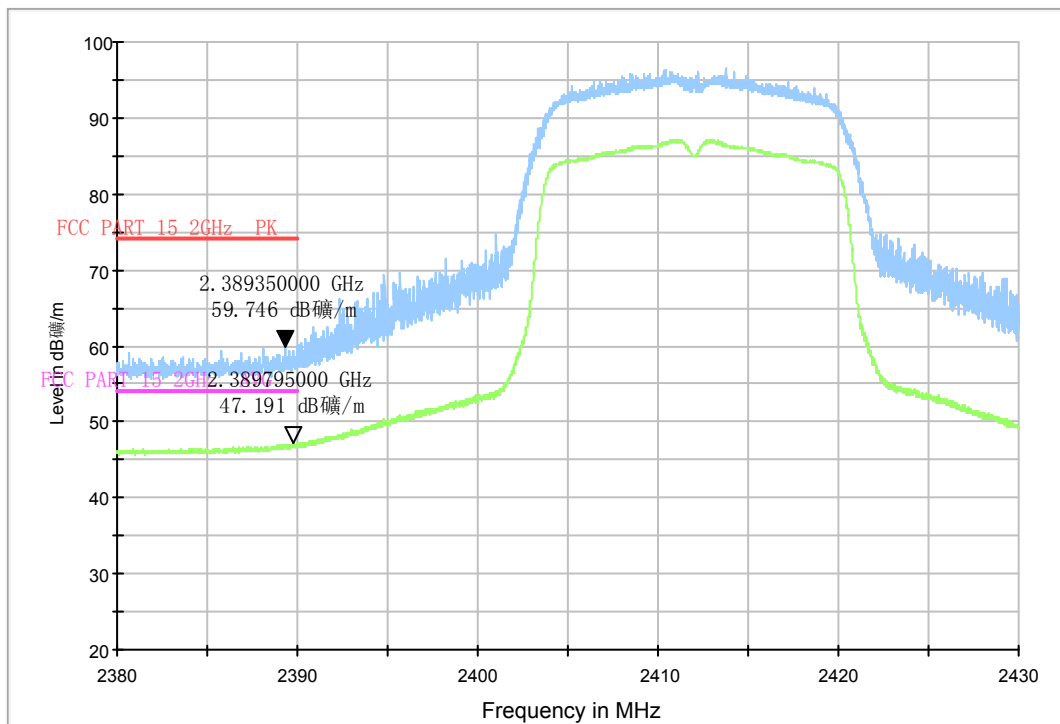
**Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (802.11b, Ch11, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter



**Fig.A.6.2.11 Transmitter Spurious Emission - Radiated (802.11b, Ch11, 3 GHz-18 GHz)**

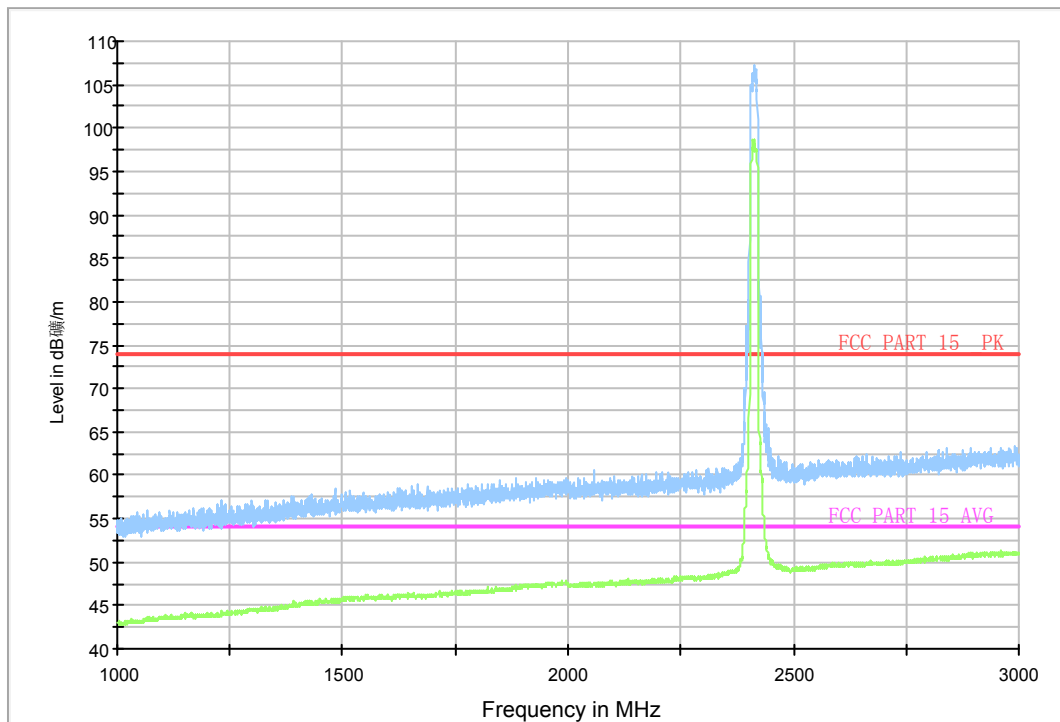
RE-BT-Power\_2.38G-2.43GHz



**Fig.A.6.2.12 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz**



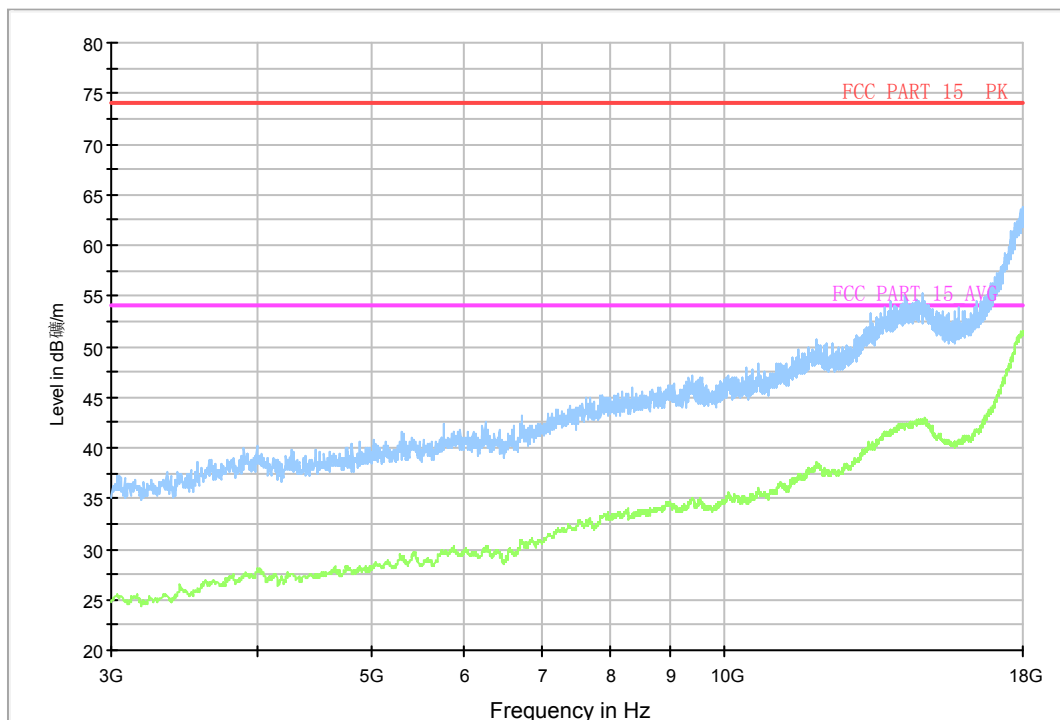
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

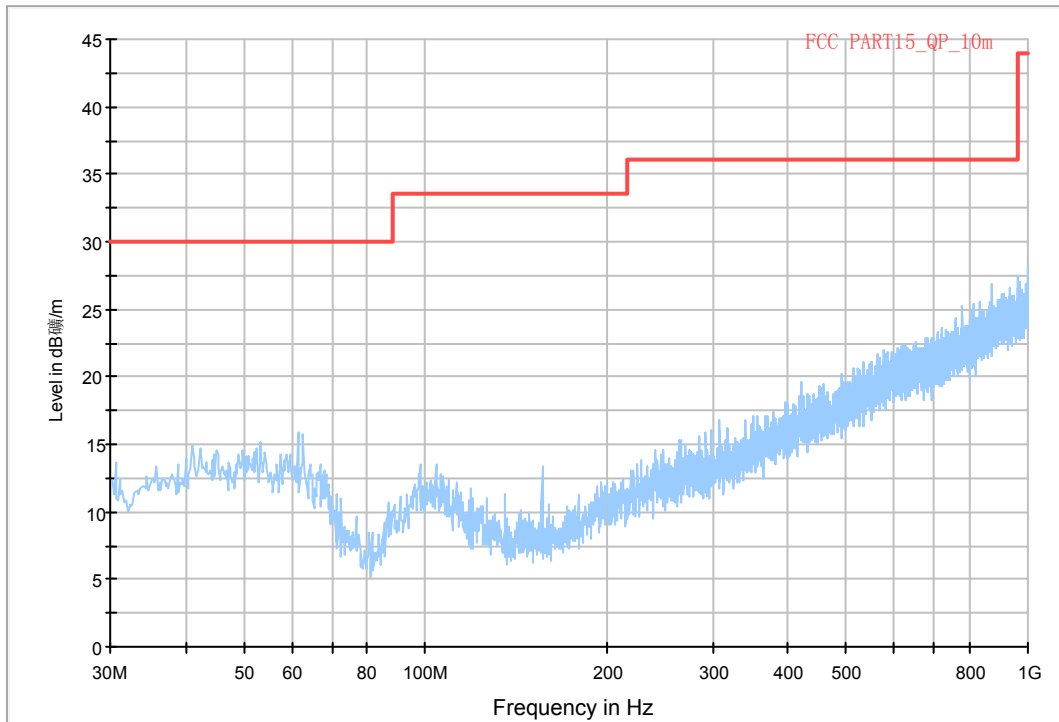
**Fig.A.6.2.13 Transmitter Spurious Emission - Radiated (802.11g, Ch1, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter



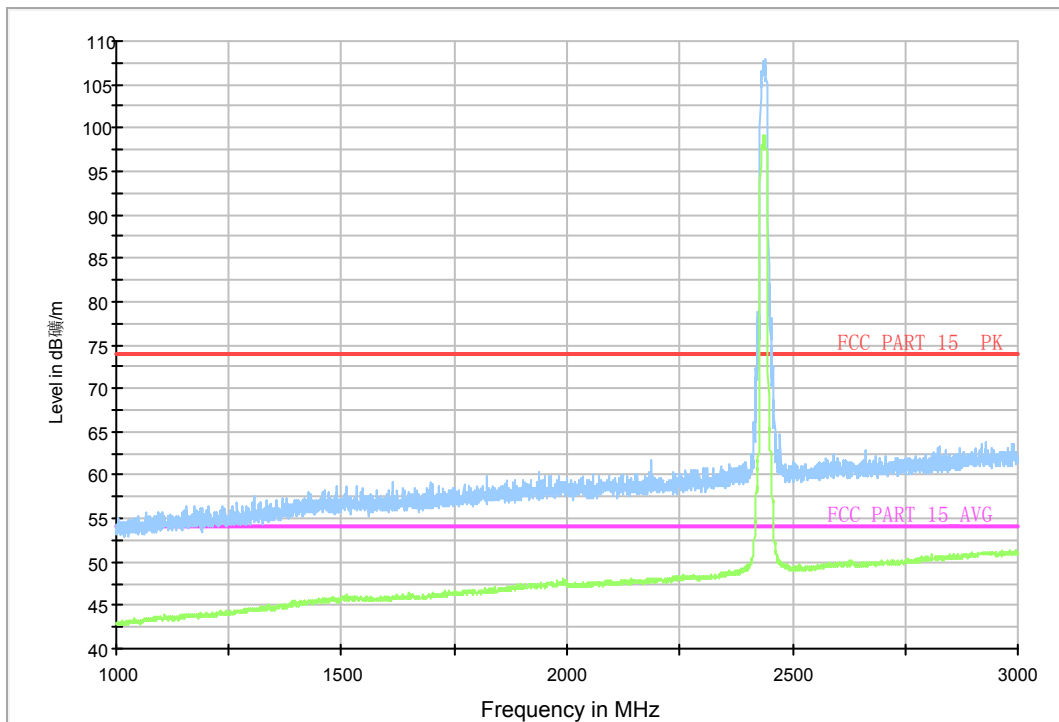
**Fig.A.6.2.14 Transmitter Spurious Emission - Radiated (802.11g, Ch1, 3 GHz-18 GHz)**

Normal RE\_30M-1GHz\_10m



**Fig.A.6.2.15 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 30 MHz-1 GHz)**

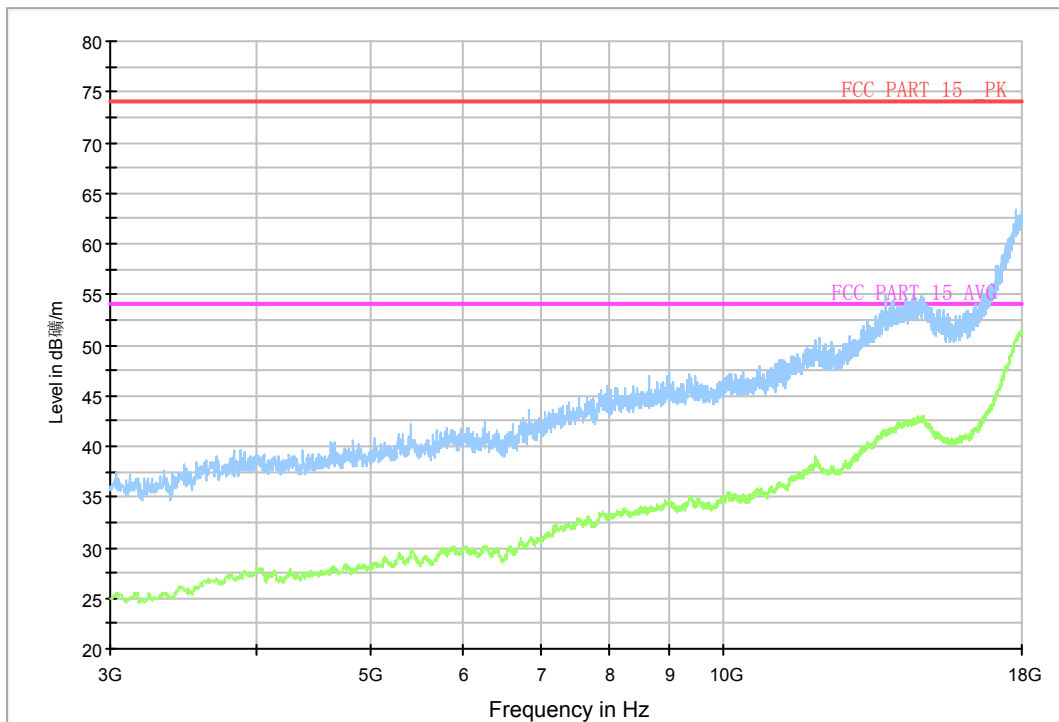
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

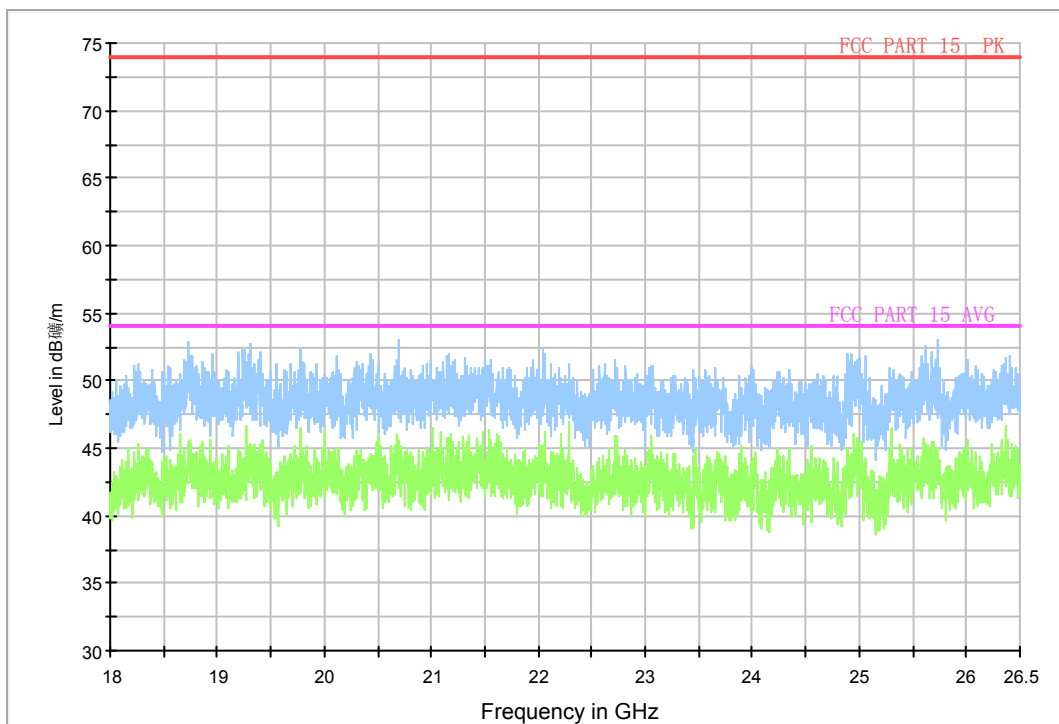
**Fig.A.6.2.16 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter



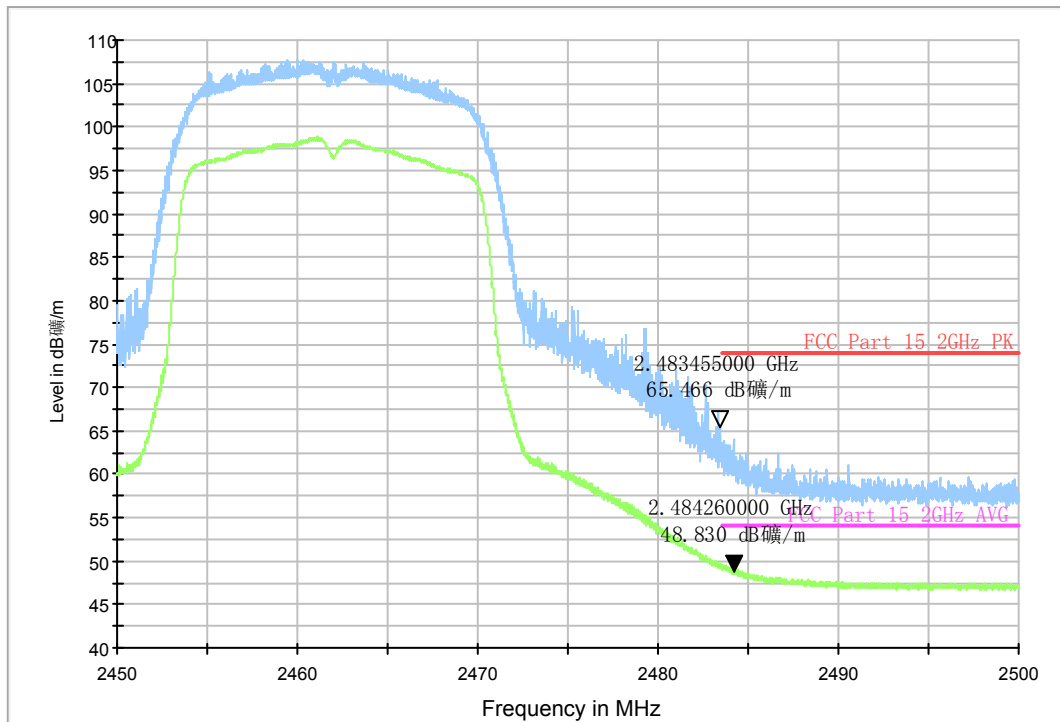
**Fig.A.6.2.17 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 3 GHz-18 GHz)**

Normal RE\_18G-26.5GHz



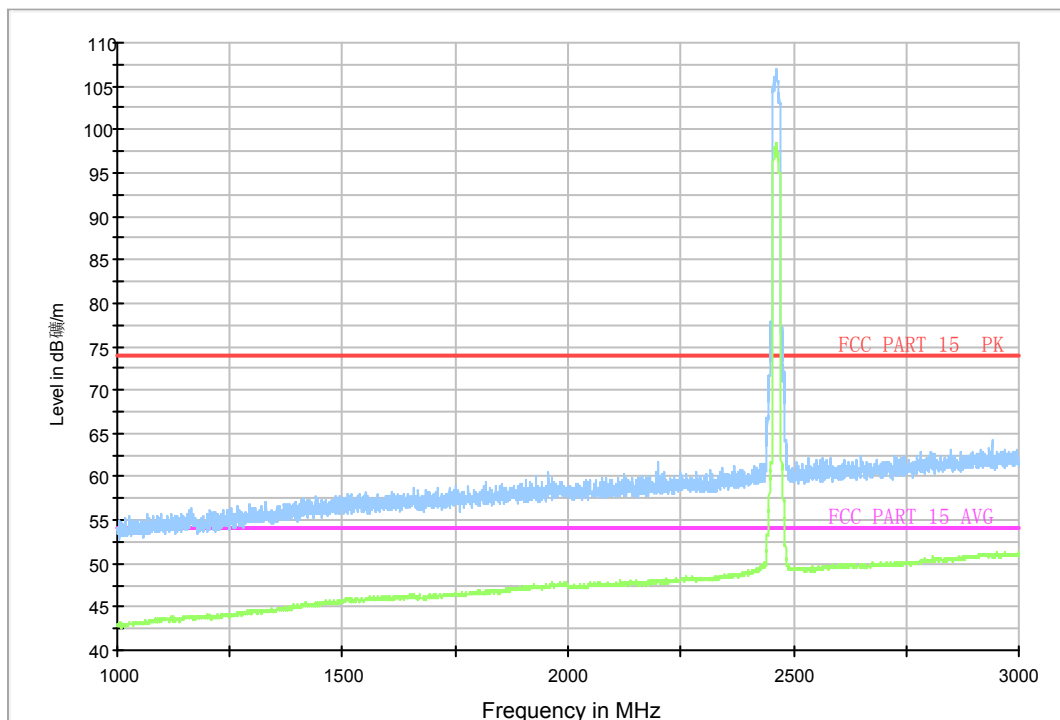
**Fig.A.6.2.18 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 18GHz – 26.5GHz)**

RE-ANT+-Power\_2.45G-2.5GHz



**Fig.A.6.2.19 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**

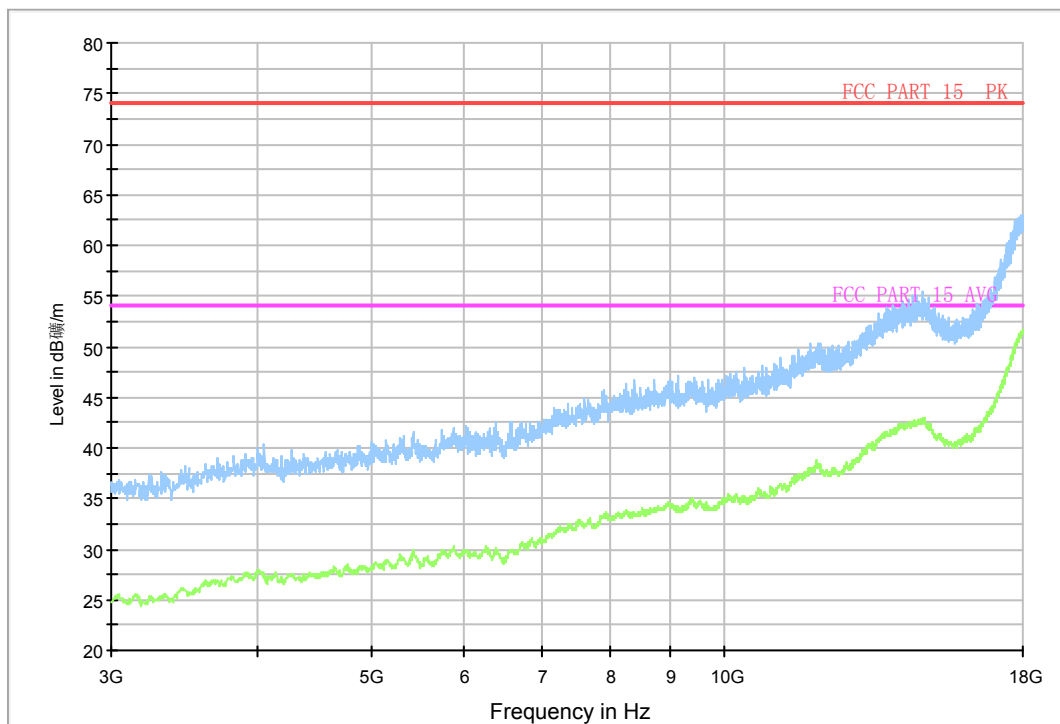
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

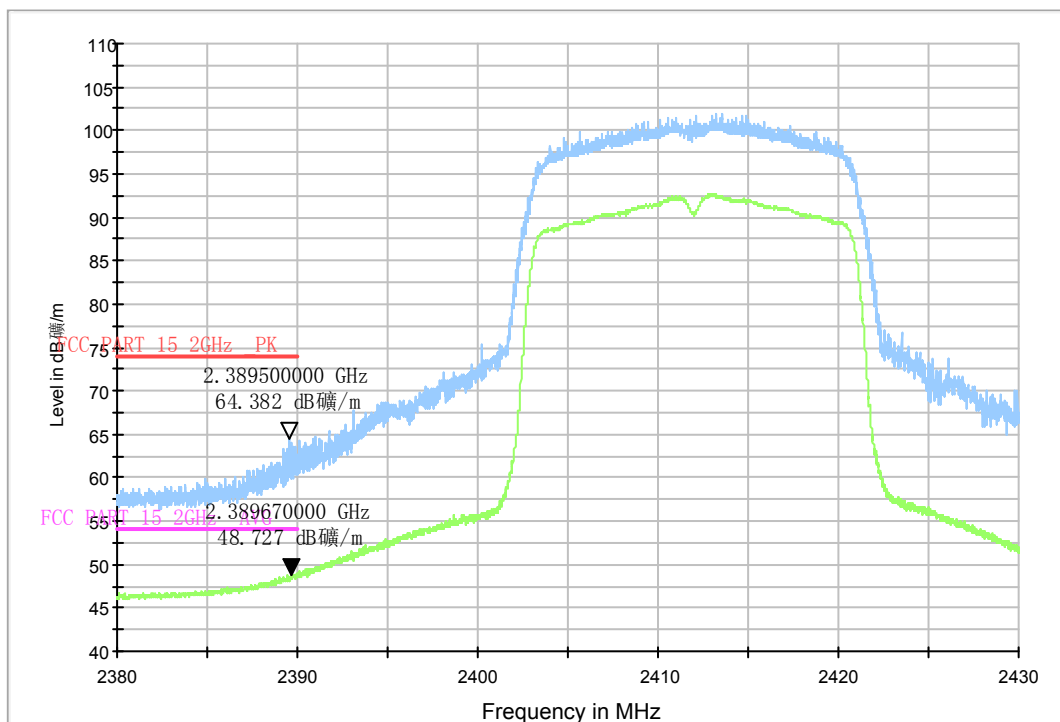
**Fig.A.6.2.20 Transmitter Spurious Emission - Radiated (802.11g, Ch11, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter

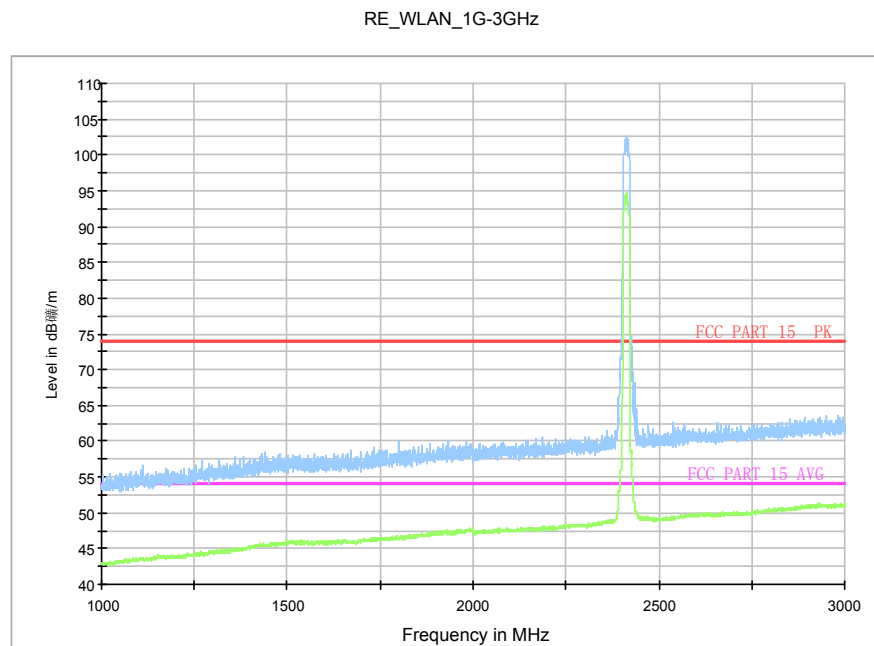


**Fig.A.6.2.21 Transmitter Spurious Emission - Radiated (802.11g, Ch11, 3 GHz-18 GHz)**

RE-BT-Power\_2.38G-2.43GHz

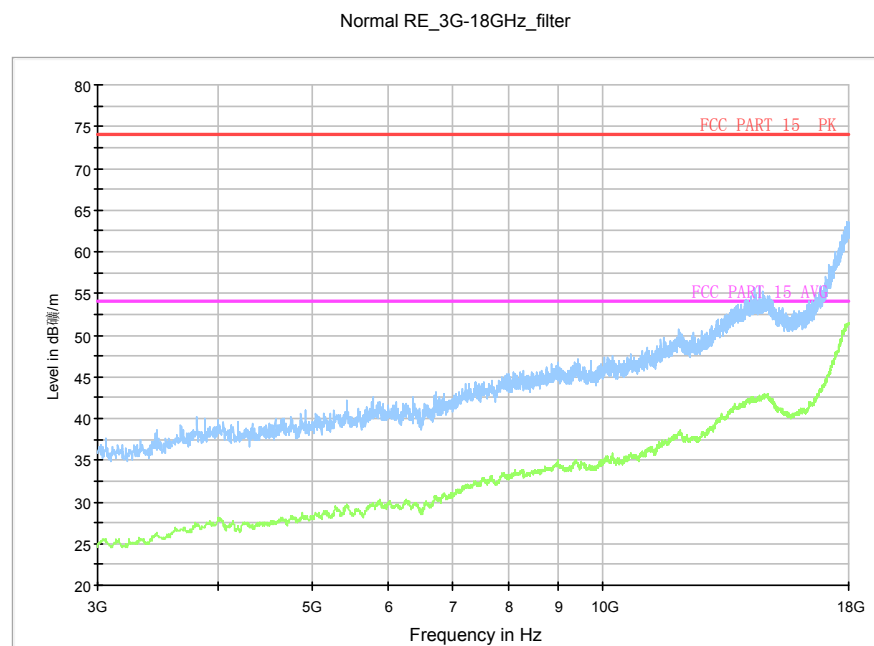


**Fig.A.6.2.22 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz**

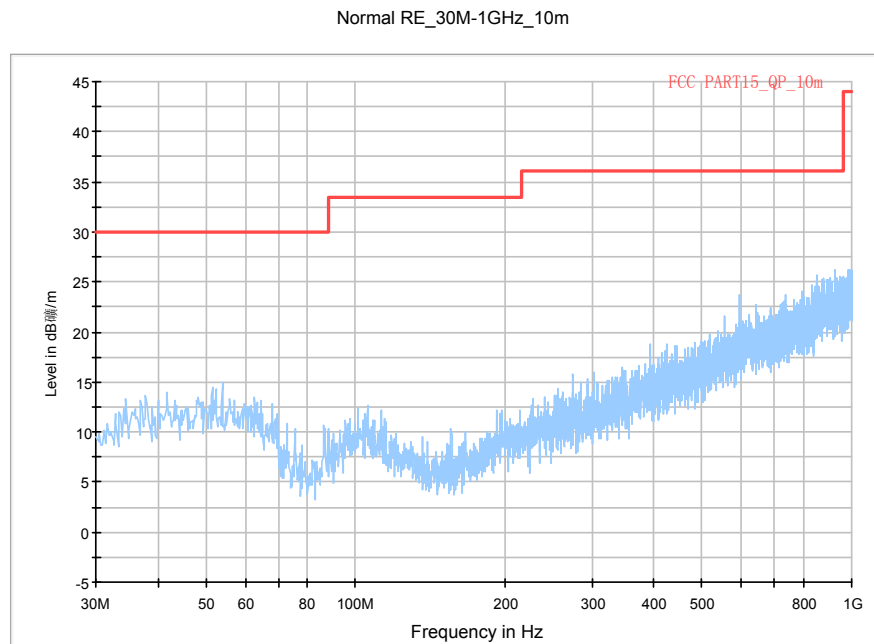


Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

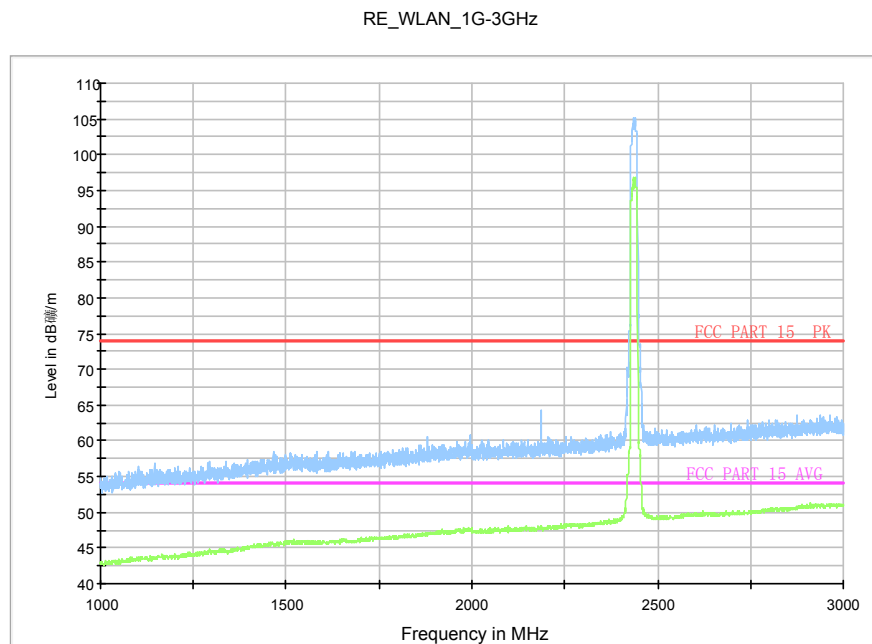
**Fig.A.6.2.23 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch1, 1 GHz-3 GHz)**



**Fig.A.6.2.24 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch1, 3 GHz-18 GHz)**



**Fig.A.6.2.25 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 30 MHz-1 GHz)**

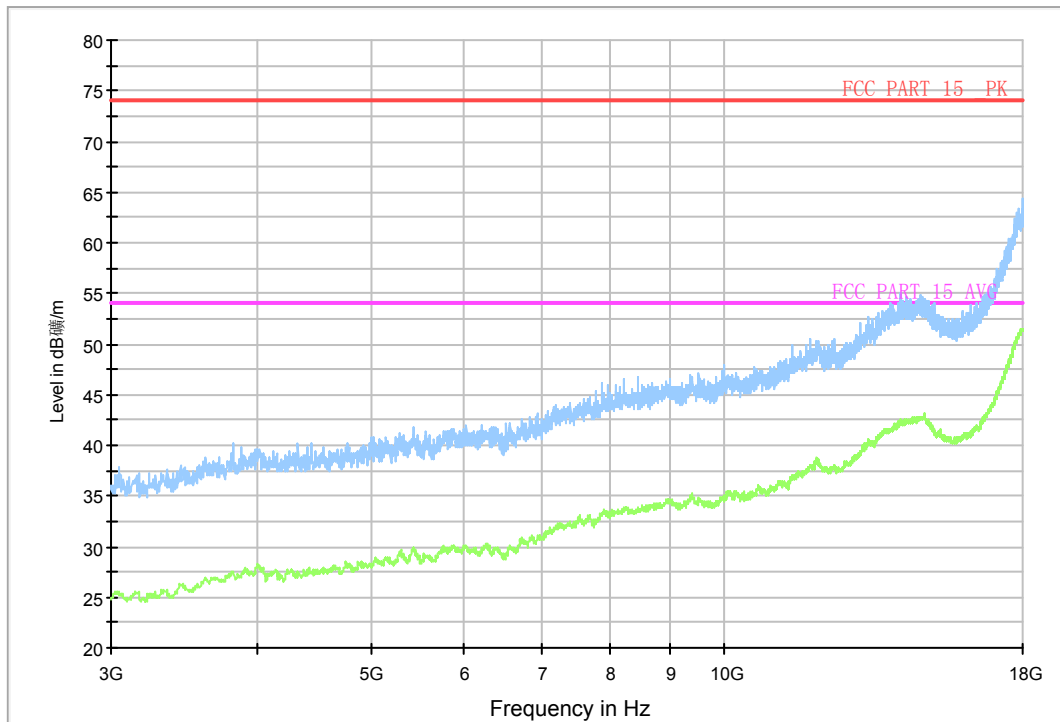


Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

**Fig.A.6.2.26 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 1 GHz-3 GHz)**

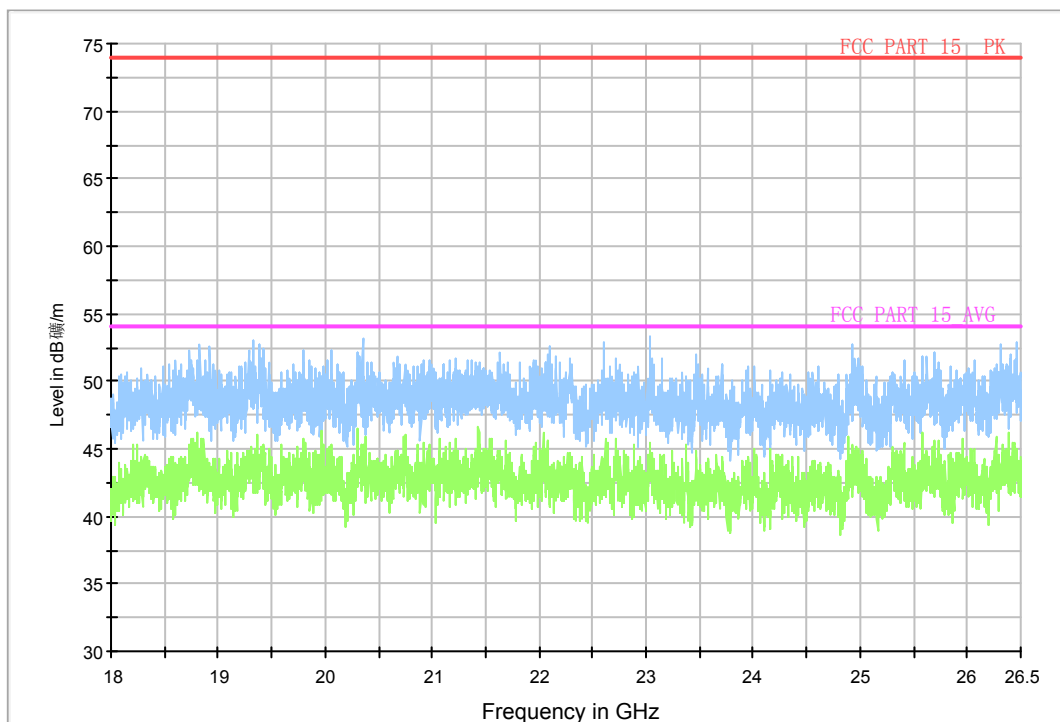


Normal RE\_3G-18GHz\_filter



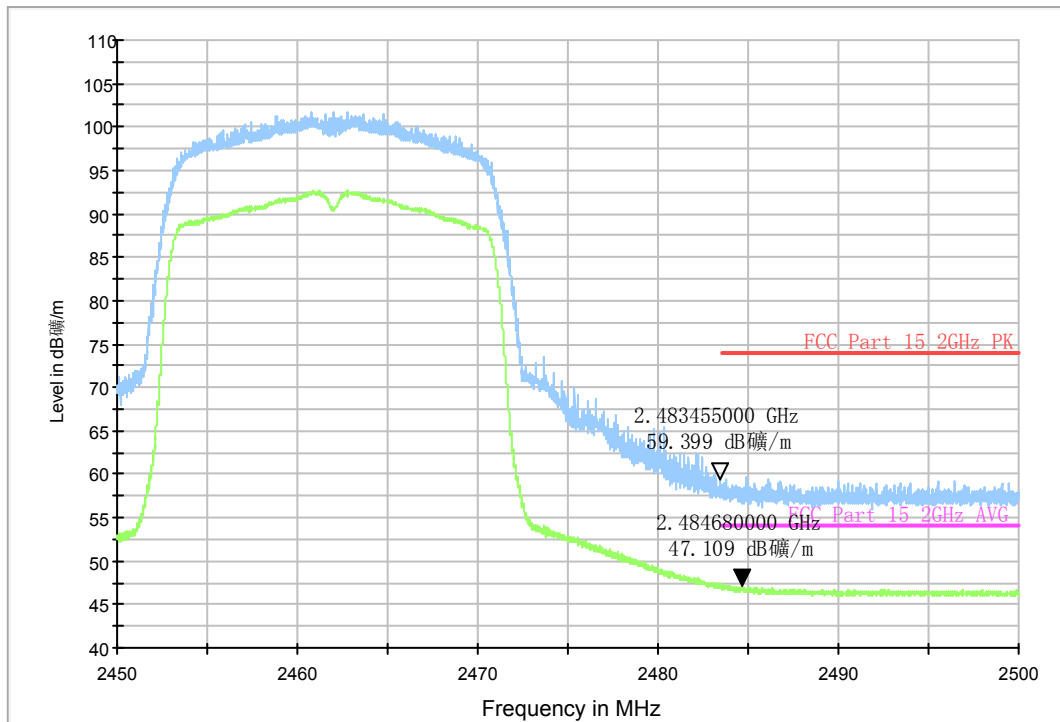
**Fig.A.6.2.27 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 3 GHz-18 GHz)**

Normal RE\_18G-26.5GHz



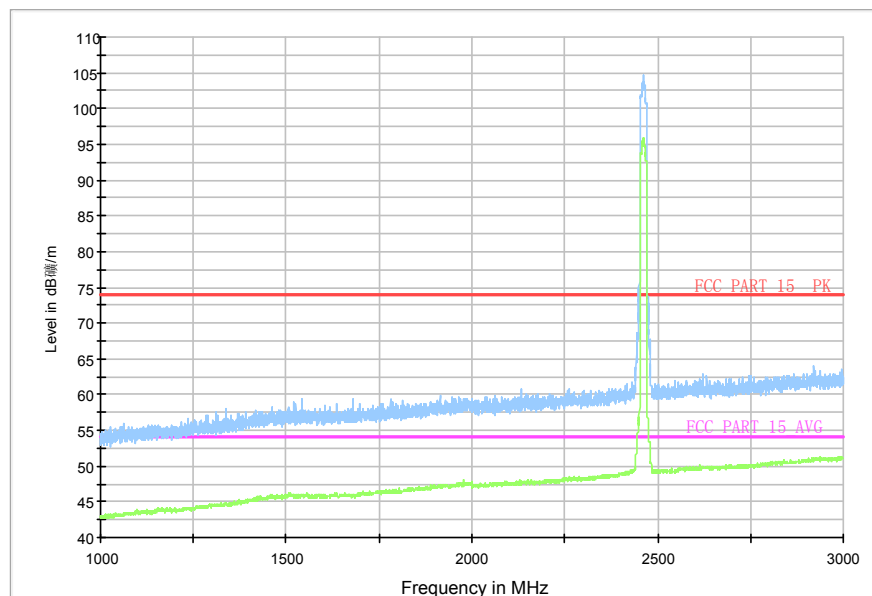
**Fig.A.6.2.28 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 18GHz – 26.5GHz)**

RE-BT-Power\_2.45G-2.5GHz



**Fig.A.6.2.29 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**

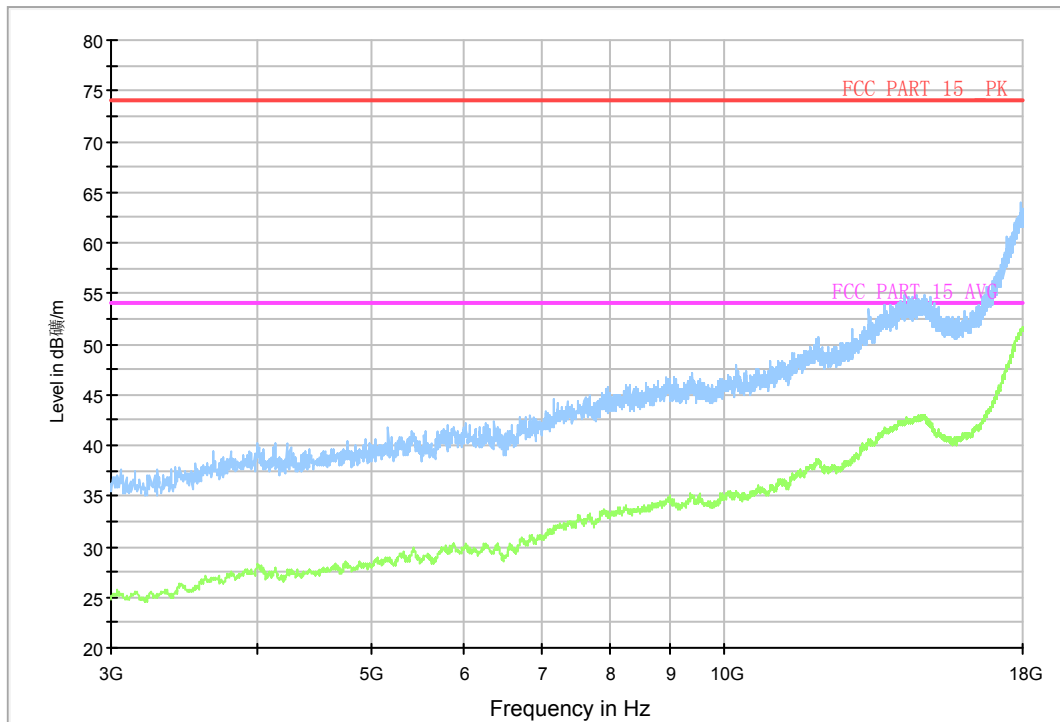
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

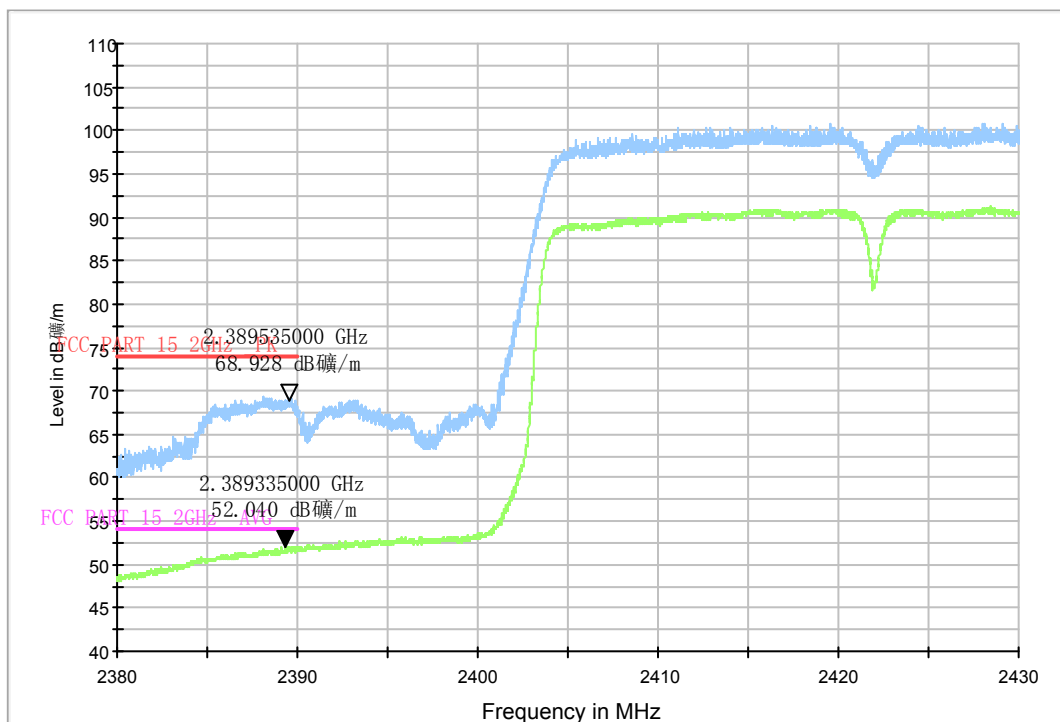
**Fig.A.6.2.30 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch11, 1 GHz-3 GHz)**

Normal RE\_3G-18GHz\_filter

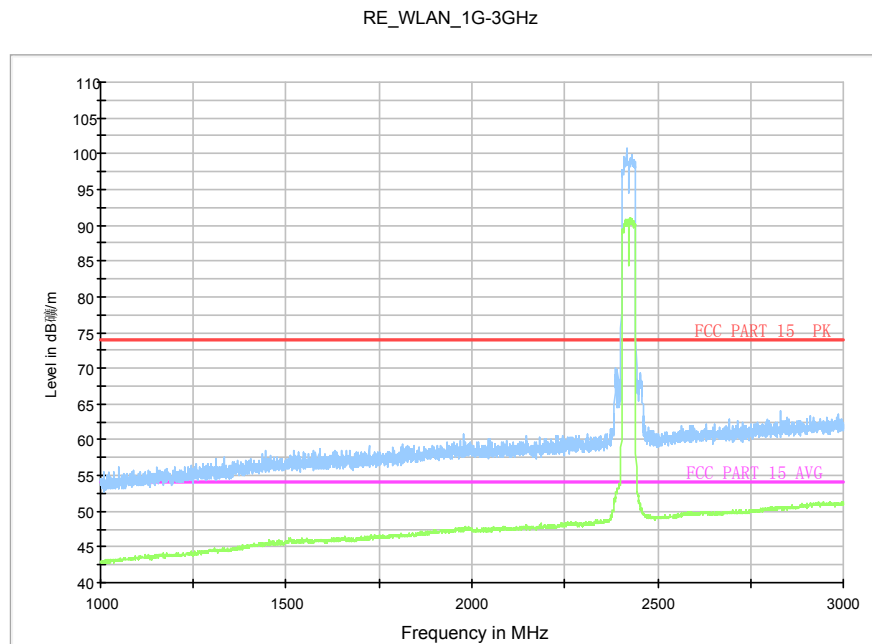


**Fig.A.6.2.31 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch11, 3 GHz-18 GHz)**

RE-BT-Power\_2.38G-2.43GHz

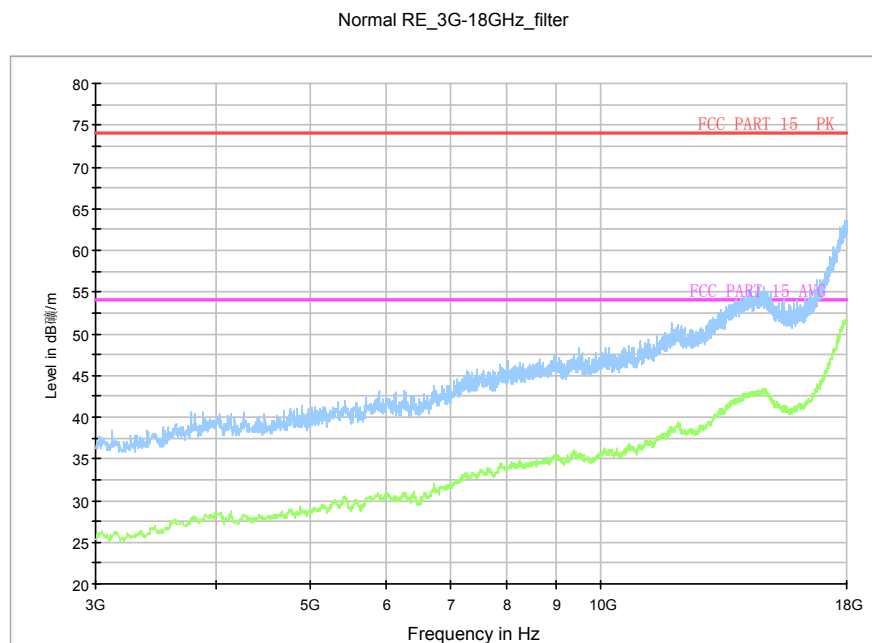


**Fig.A.6.2.32 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.38 GHz - 2.43GHz**

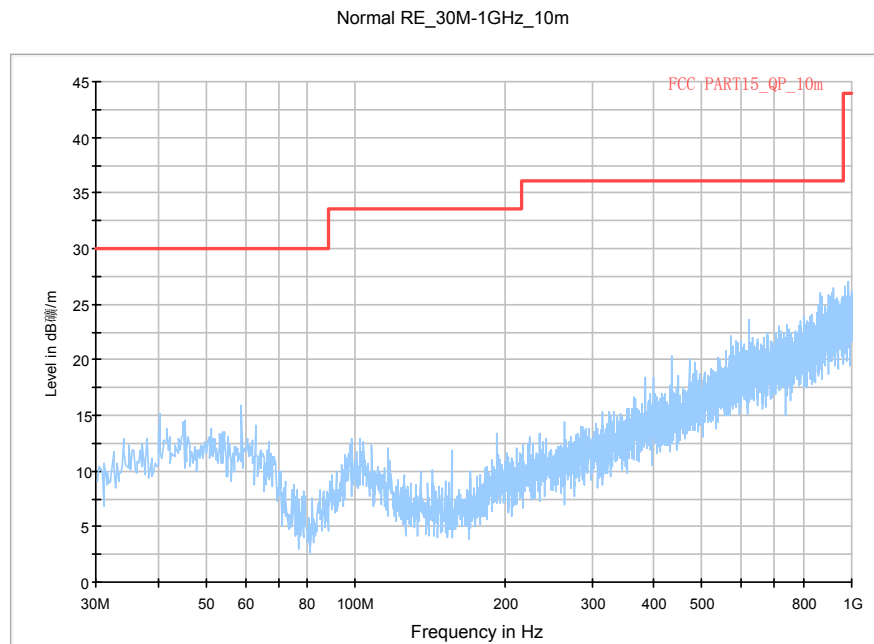


Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

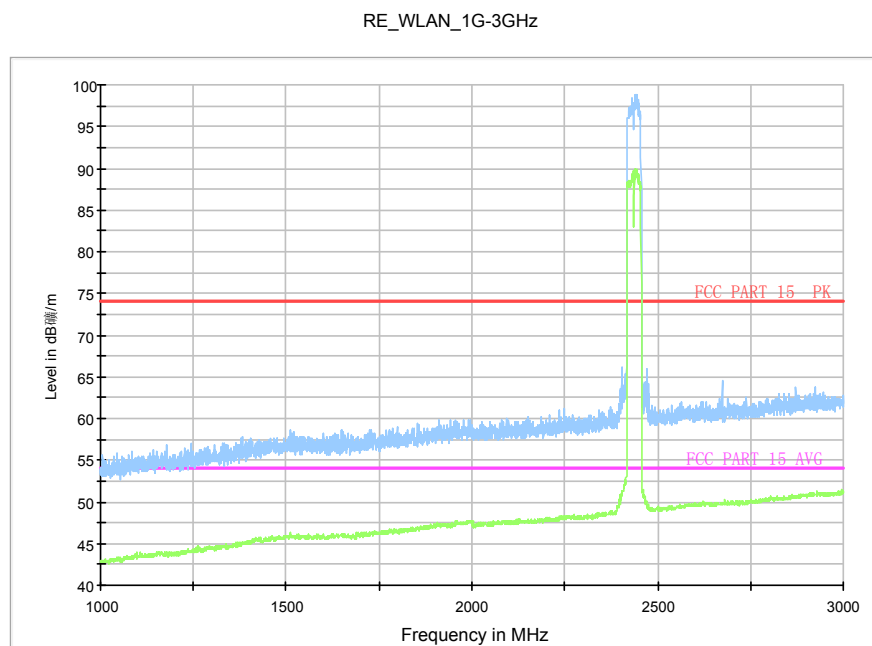
**Fig.A.6.2.33 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch3, 1 GHz-3 GHz)**



**Fig.A.6.2.34 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch3, 3 GHz-18 GHz)**

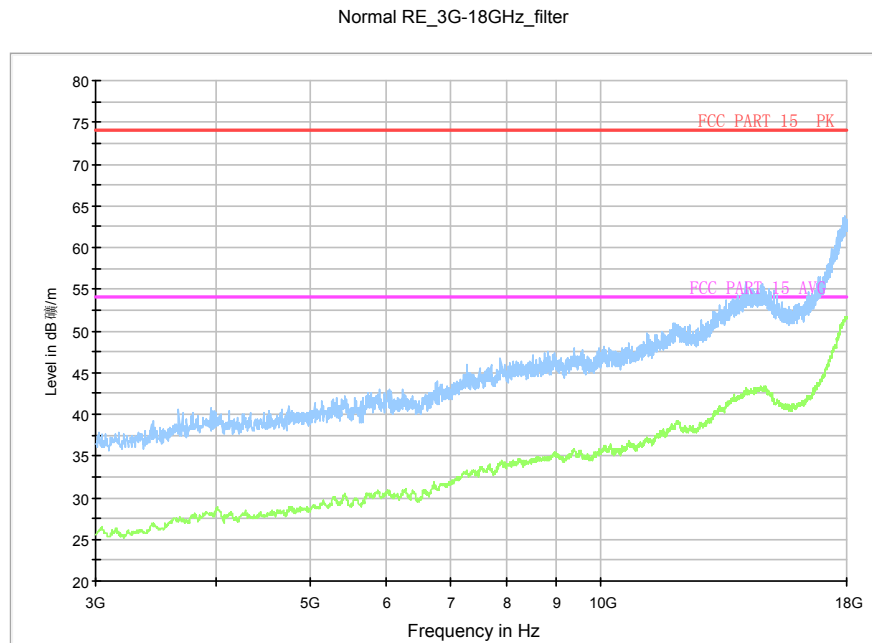


**Fig.A.6.2.35 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 30 MHz-1 GHz)**

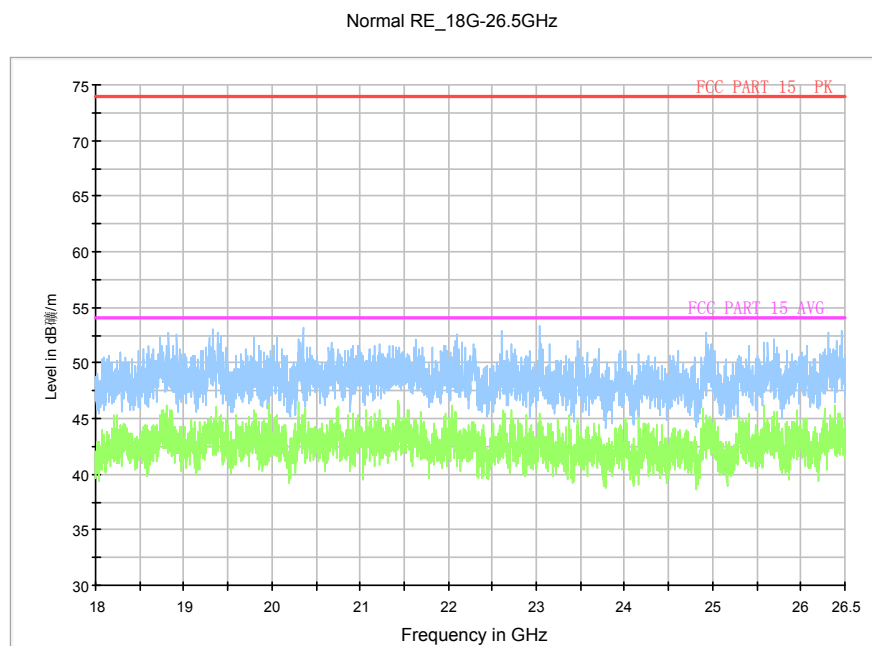


Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

**Fig.A.6.2.36 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 1 GHz-3 GHz)**

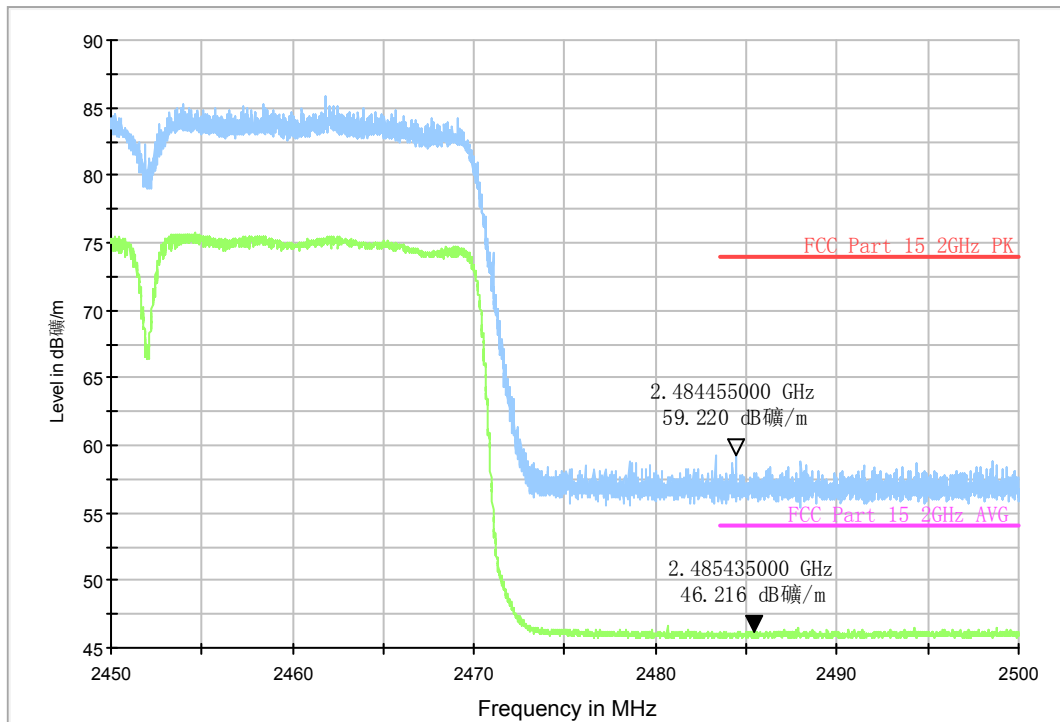


**Fig.A.6.2.37 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 3 GHz-18 GHz)**



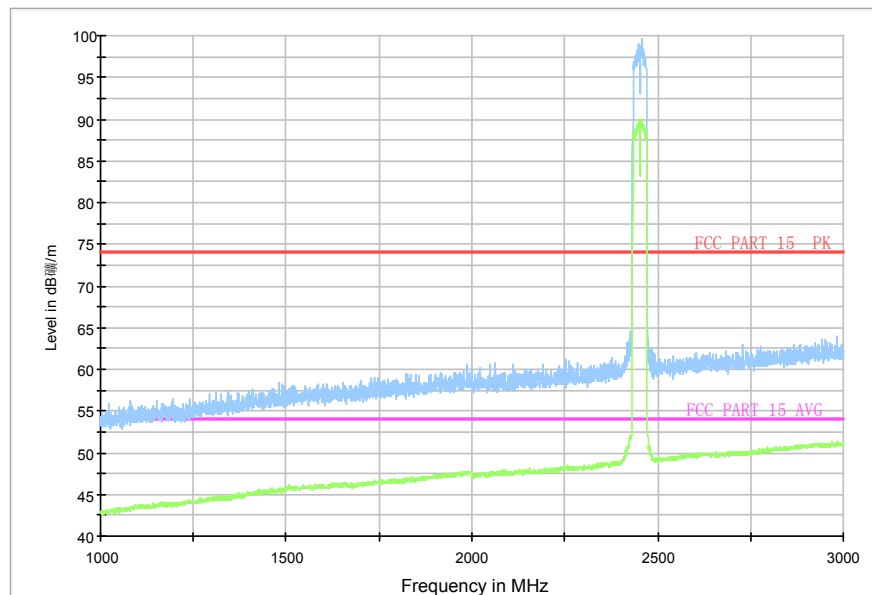
**Fig.A.6.2.38 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 18GHz – 26.5GHz)**

RE-BT-Power\_2.45G-2.5GHz



**Fig.A.6.2.39 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz**

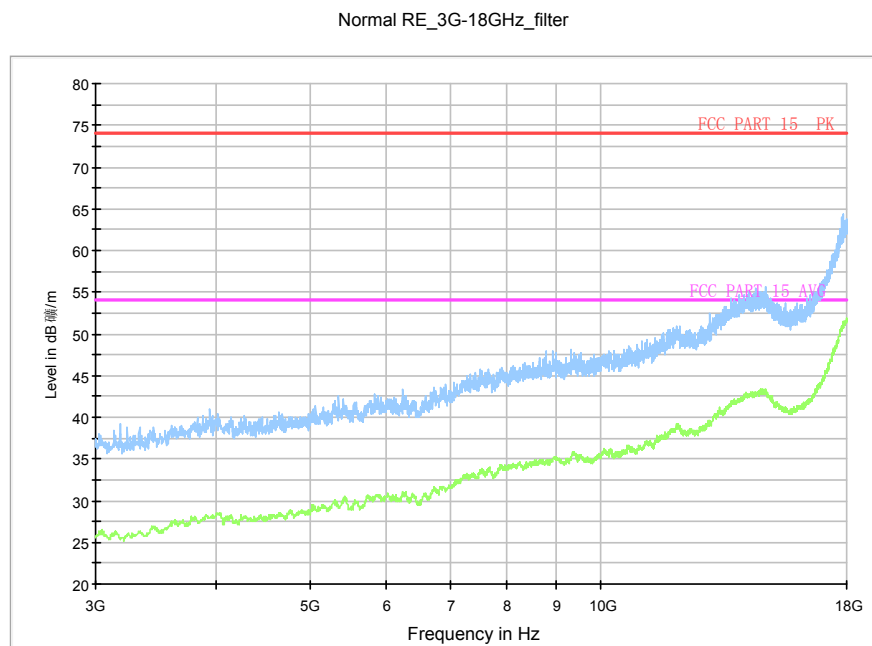
RE\_WLAN\_1G-3GHz



Note: the spike over the limit is the WLAN carrier frequency and coming from the radio equipment.

**Fig.A.6.2.40 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch9, 1 GHz-3 GHz)**





**Fig.A.6.2.41 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch9, 3 GHz-18 GHz)**

## **A.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:**

<b>Voltage (V)</b>	<b>Frequency (Hz)</b>
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	Fig.A.7.3	P
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.				

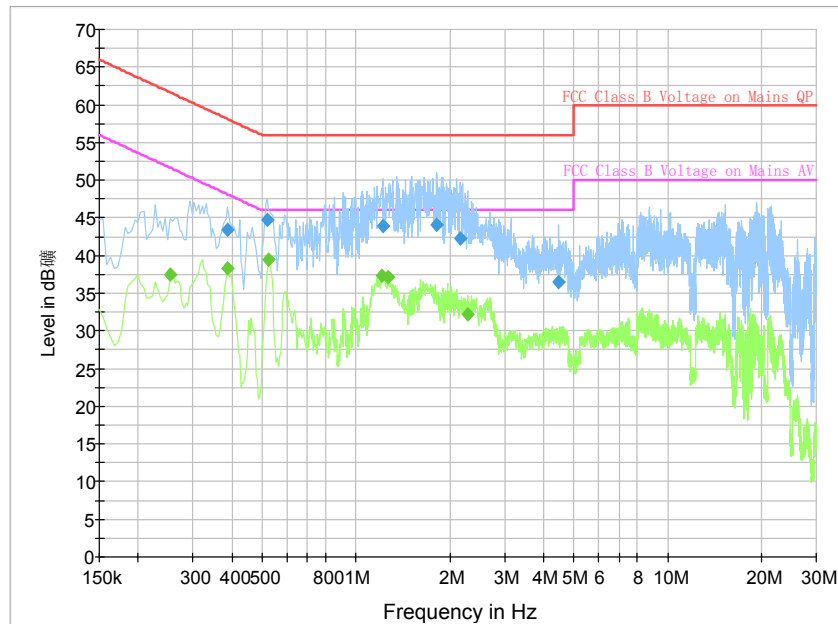
WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1 Fig.A.7.2	Fig.A.7.3	P
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.				

**Conclusion: Pass**

**Test graphs as below:**

## Traffic: Set.12



**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.

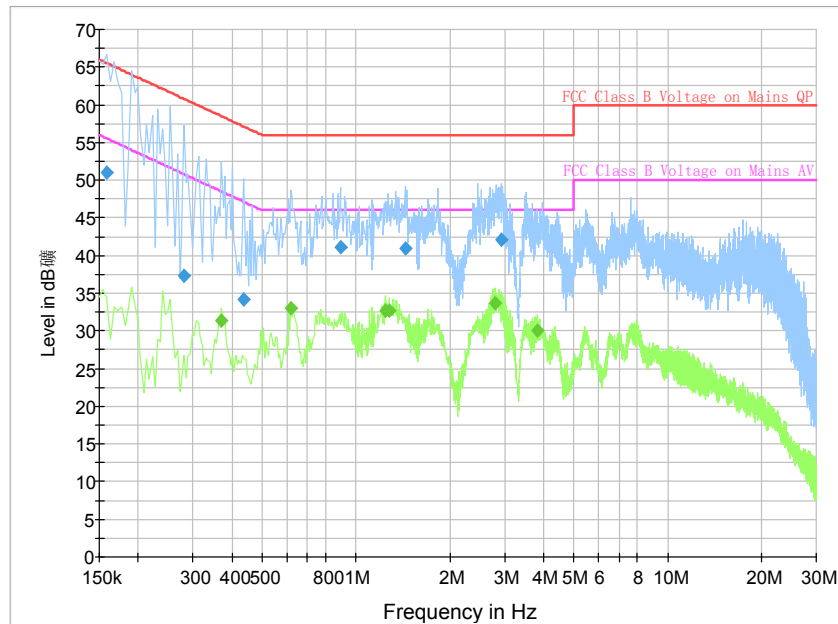
### Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.388500	43.4	2000.0	9.000	On	N	19.9	14.7	58.1
0.519000	44.8	2000.0	9.000	On	N	19.9	11.2	56.0
1.216500	43.8	2000.0	9.000	On	N	19.7	12.2	56.0
1.810500	44.0	2000.0	9.000	On	L1	19.7	12.0	56.0
2.166000	42.3	2000.0	9.000	On	L1	19.4	13.7	56.0
4.456500	36.4	2000.0	9.000	On	N	19.6	19.6	56.0

### Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.253500	37.5	2000.0	9.000	On	N	19.8	14.2	51.6
0.388500	38.2	2000.0	9.000	On	N	19.9	9.9	48.1
0.523500	39.4	2000.0	9.000	On	N	19.9	6.6	46.0
1.207500	37.4	2000.0	9.000	On	N	19.7	8.6	46.0
1.270500	37.1	2000.0	9.000	On	N	19.7	8.9	46.0
2.283000	32.1	2000.0	9.000	On	L1	19.3	13.9	46.0

### Traffic: Set.13



**Fig.A.7.2 AC Powerline Conducted Emission-802.11b**

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

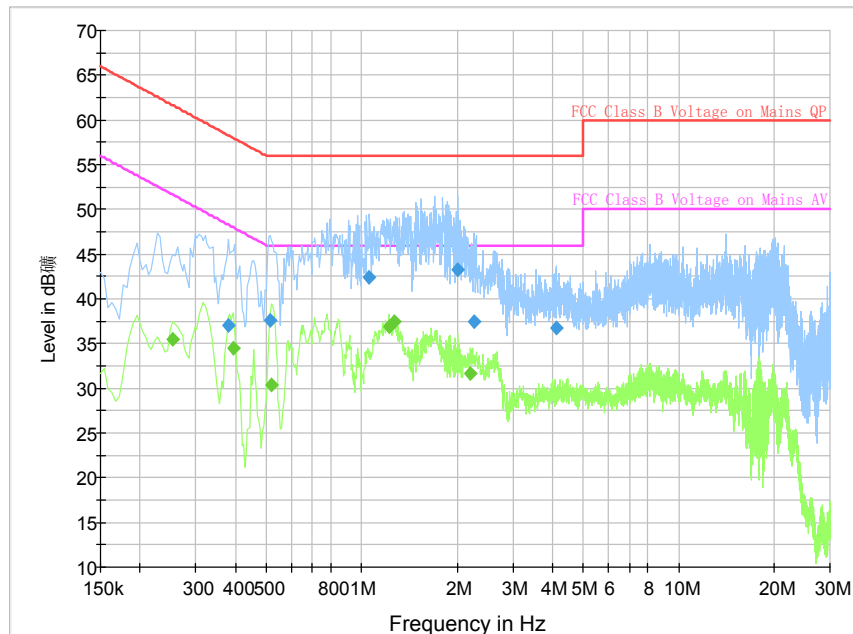
### Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	51.1	2000.0	9.000	On	L1	19.9	14.5	65.5
0.280500	37.3	2000.0	9.000	On	L1	19.8	23.5	60.8
0.438000	34.1	2000.0	9.000	On	L1	19.9	23.0	57.1
0.892500	41.2	2000.0	9.000	On	N	19.8	14.8	56.0
1.437000	41.0	2000.0	9.000	On	N	19.7	15.0	56.0
2.935500	42.1	2000.0	9.000	On	N	19.0	13.9	56.0

### Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.370500	31.4	2000.0	9.000	On	L1	19.9	17.1	48.5
0.618000	33.0	2000.0	9.000	On	L1	19.8	13.0	46.0
1.239000	32.7	2000.0	9.000	On	L1	19.7	13.3	46.0
1.279500	32.7	2000.0	9.000	On	L1	19.7	13.3	46.0
2.800500	33.7	2000.0	9.000	On	L1	18.8	12.3	46.0
3.835500	30.0	2000.0	9.000	On	L1	19.5	16.0	46.0

## Idle: Set.12



**Fig.A.7.3 AC Powerline Conducted Emission-Idle**

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)
0.379500	37.1	2000.0	9.000	On	N	19.9	21.2	58.3
0.514500	37.6	2000.0	9.000	On	N	19.9	18.4	56.0
1.059000	42.3	2000.0	9.000	On	L1	19.7	13.7	56.0
2.013000	43.3	2000.0	9.000	On	L1	19.7	12.7	56.0
2.256000	37.4	2000.0	9.000	On	L1	19.3	18.6	56.0
4.096500	36.8	2000.0	9.000	On	N	19.6	19.2	56.0

### Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.253500	35.5	2000.0	9.000	On	N	19.8	16.1	51.6
0.393000	34.4	2000.0	9.000	On	N	19.9	13.6	48.0
0.519000	30.4	2000.0	9.000	On	N	19.9	15.6	46.0
1.216500	36.9	2000.0	9.000	On	N	19.7	9.1	46.0
1.266000	37.5	2000.0	9.000	On	N	19.7	8.5	46.0
2.197500	31.7	2000.0	9.000	On	N	19.3	14.3	46.0

## ANNEX B: Accreditation Certificate

<div></div> <div><p><b>China National Accreditation Service for Conformity Assessment</b></p><p><b>LABORATORY ACCREDITATION CERTIFICATE</b></p><p><b>(No. CNAS L0570 )</b></p><p><b>Telecommunication Technology Labs,</b> <b>Academy of Telecommunication Research, MIIT</b> <u>No.52, Huayuan North Road, Haidian District, Beijing, China</u> <u>No.51, Xueyuan Road, Haidian District, Beijing, China</u></p><p><i>to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing and calibration.</i></p><p><i>The scope of accreditation is detailed in the attached schedule bearing the same accreditation number as above. The schedule forms an integral part of this certificate.</i></p><p>Date of Issue: 2014-10-29 Date of Expiry: 2017-06-19 Date of Initial Accreditation: 1998-07-03</p><div></div><p>Signed on behalf of China National Accreditation Service for Conformity Assessment</p><p><small>China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).</small></p><div><div>No.CNAS AL 2</div><div>0011149</div></div></div>
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