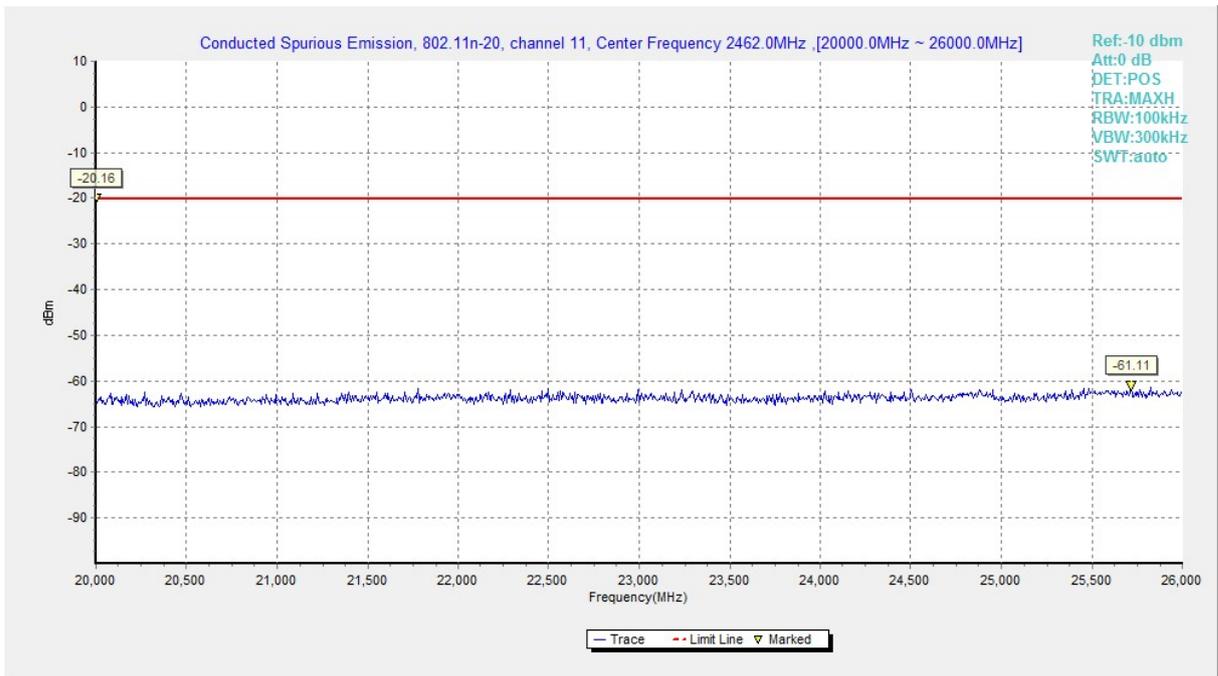


**Fig.A.6.1.71 Conducted Spurious Emission (802.11n-HT20, Ch11, 15 GHz-20 GHz)**



**Fig.A.6.1.72 Conducted Spurious Emission (802.11n-HT20, Ch11, 20 GHz-26 GHz)**

### A.6.2 Transmitter Spurious Emission - Radiated

Limit in restricted band:

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	30 MHz ~1 GHz	Fig.A.6.2.4	P
		1 GHz ~ 3 GHz	Fig.A.6.2.5	P
		3 GHz ~ 18 GHz	Fig.A.6.2.6	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.7	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.8	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.9	P
		3 GHz ~ 18 GHz	Fig.A.6.2.10	P

#### 802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	Power	2.38GHz ~2.43GHz	Fig.A.6.2.11	P
	1	1 GHz ~ 3 GHz	Fig.A.6.2.12	P
		3 GHz ~ 18 GHz	Fig.A.6.2.13	P
	6	30 MHz ~1 GHz	Fig.A.6.2.14	P
		1 GHz ~ 3 GHz	Fig.A.6.2.15	P
		3 GHz ~ 18 GHz	Fig.A.6.2.16	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.17	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.18	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.19	P
		3 GHz ~ 18 GHz	Fig.A.6.2.20	P

#### 802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	Power	2.38GHz ~2.45GHz	Fig.A.6.2.21	P
	1	1 GHz ~ 3 GHz	Fig.A.6.2.22	P
		3 GHz ~ 18 GHz	Fig.A.6.2.23	P
	6	30 MHz ~1 GHz	Fig.A.6.2.24	P
		1 GHz ~ 3 GHz	Fig.A.6.2.25	P
		3 GHz ~ 18 GHz	Fig.A.6.2.26	P
		18 GHz~ 26.5 GHz	Fig.A.6.2.27	P
	Power	2.45GHz ~2.5GHz	Fig.A.6.2.28	P
	11	1 GHz ~ 3 GHz	Fig.A.6.2.29	P
		3 GHz ~ 18 GHz	Fig.A.6.2.30	P

**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:

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

These recorded emissions around 21GHz are highest noise floor levels since no higher spurious emission is detected.

**802.11b**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	$P_{Mea}$ (dBuV/m)	Polarization
2389.440	45.5	-38.8	27.7	56.600	V
17997.000	53.9	-17.7	45.6	26.000	V
17829.000	53.9	-18.5	45.6	26.800	V
17991.000	53.8	-17.7	45.6	25.900	V
17974.500	53.8	-17.7	45.6	25.900	V
17763.000	53.4	-18.5	45.6	26.300	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	$P_{Mea}$ (dBuV/m)	Polarization
17652.000	54.3	-18.9	45.6	27.600	V
17965.500	54.1	-17.7	45.6	26.200	H
17994.000	54.0	-17.7	45.6	26.100	V
17998.500	53.9	-17.7	45.6	26.000	H
17827.500	53.9	-18.5	45.6	26.800	V
17770.500	53.9	-18.5	45.6	26.800	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	$P_{Mea}$ (dBuV/m)	Polarization
2495.950	45.7	-38.9	27.7	56.900	V
17803.500	54.5	-18.5	45.6	27.400	V
17979.000	54.4	-17.7	45.6	26.500	V
17989.500	53.9	-17.7	45.6	26.000	V
17764.500	53.8	-18.5	45.6	26.700	V
17890.500	53.8	-18.5	45.6	26.700	H

**802.11g**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2385.600	45.2	-38.8	27.7	56.300	V
17965.500	54.7	-17.7	45.6	26.800	V
17772.000	54.6	-18.5	45.6	27.500	H
17995.500	54.3	-17.7	45.6	26.400	V
17983.500	54.3	-17.7	45.6	26.400	V
17979.000	53.9	-17.7	45.6	26.000	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17985.000	54.8	-17.7	45.6	26.900	V
17962.500	54.7	-17.7	45.6	26.800	V
17998.500	54.6	-17.7	45.6	26.700	V
17992.500	54.3	-17.7	45.6	26.400	V
17976.000	54.2	-17.7	45.6	26.300	V
17995.500	54.2	-17.7	45.6	26.300	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.950	48.6	-38.9	27.7	59.800	V
17992.500	55.6	-17.7	45.6	27.700	V
17980.500	54.5	-17.7	45.6	26.600	H
17989.500	54.4	-17.7	45.6	26.500	V
17982.000	54.3	-17.7	45.6	26.400	V
17973.000	54.1	-17.7	45.6	26.200	H

**802.11n-HT20**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2387.500	45.3	-38.8	27.7	56.400	H
17998.500	54.5	-17.7	45.6	26.600	V
17920.500	54.3	-17.7	45.6	26.400	V
17959.500	54.1	-17.7	45.6	26.200	H
17821.500	54.0	-18.5	45.6	26.900	V
17983.500	53.9	-17.7	45.6	26.000	V

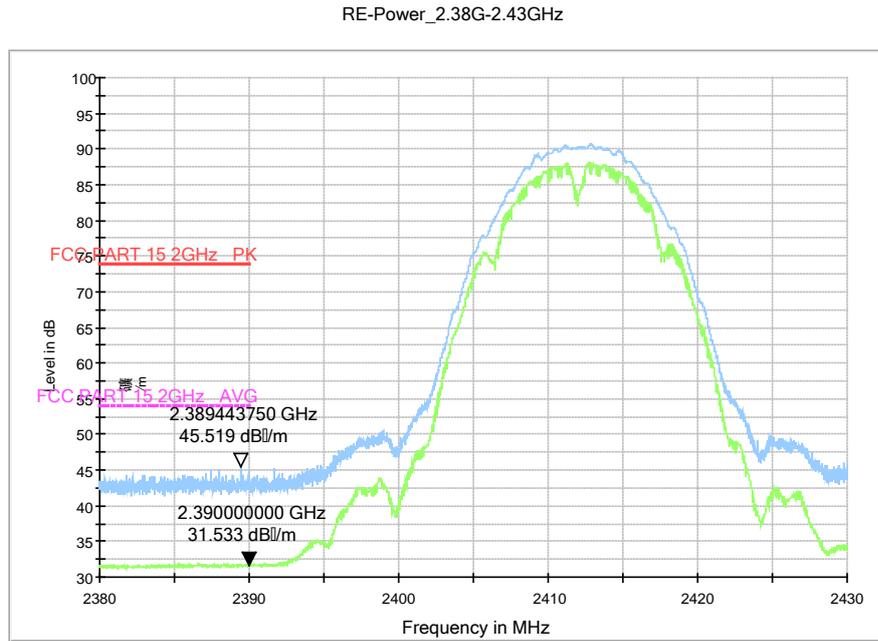
Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
17794.500	55.2	-18.5	45.6	28.100	V
17901.000	55.0	-18.5	45.6	27.900	V
17974.500	54.8	-17.7	45.6	26.900	V
17977.500	54.0	-17.7	45.6	26.100	V
17814.000	53.7	-18.5	45.6	26.600	V
17950.500	53.7	-17.7	45.6	25.800	H

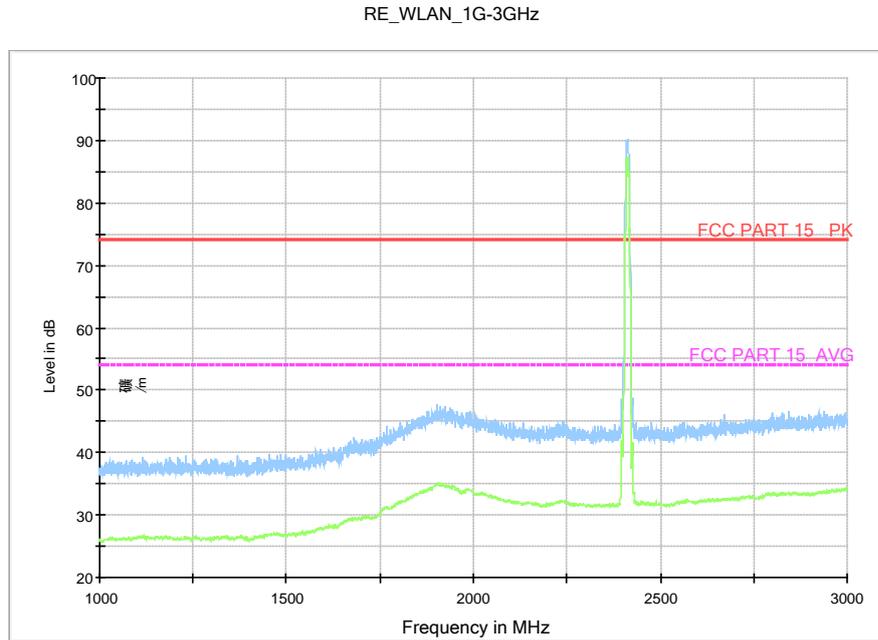
Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P <sub>Mea</sub> (dBuV/m)	Polarization
2483.900	45.2	-38.9	27.7	56.400	V
17646.000	54.6	-18.9	45.6	27.900	H
17994.000	54.4	-17.7	45.6	26.500	V
17992.500	54.3	-17.7	45.6	26.400	V
17811.000	54.1	-18.5	45.6	27.000	V
17976.000	54.1	-17.7	45.6	26.200	V

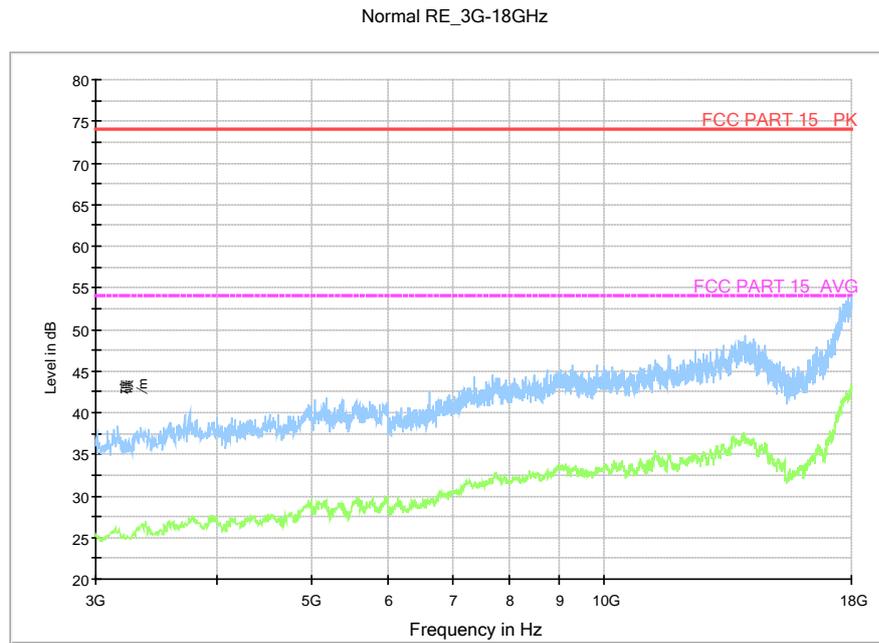
**Test graphs as below:**



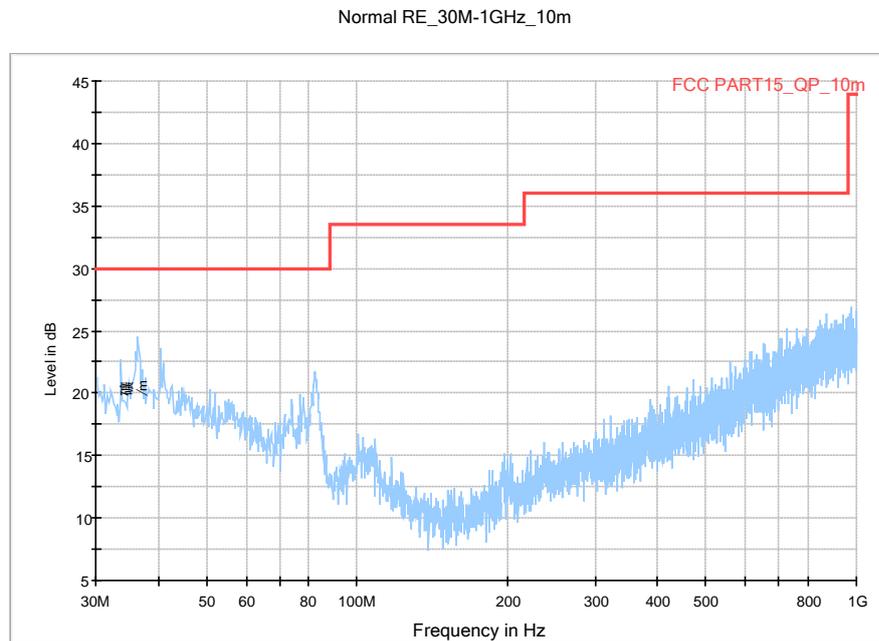
**Fig.A.6.2.1 Radiated Spurious Emission (Power): 802.11b, ch1, 2.38 GHz – 2.45GHz**



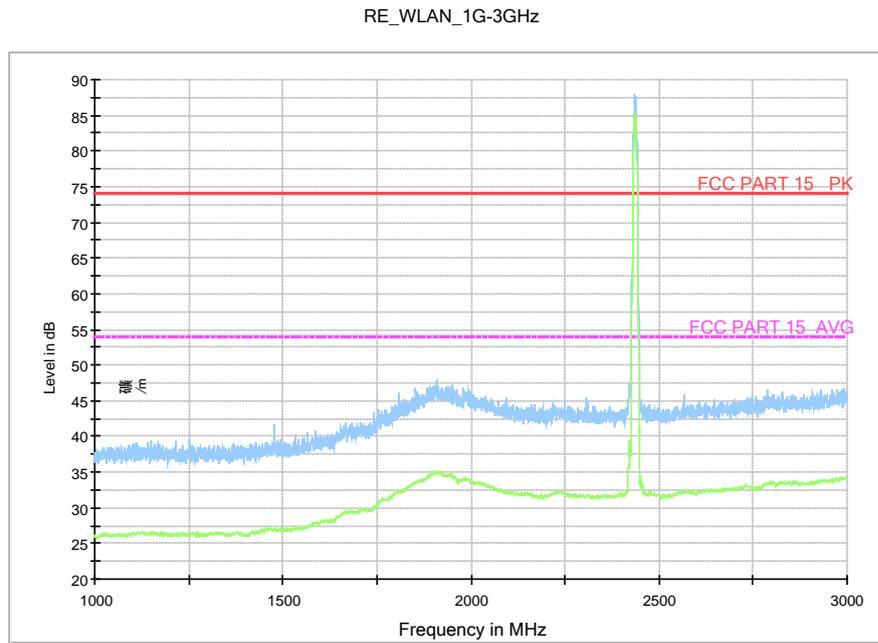
**Fig.A.6.2.2 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-3 GHz)**



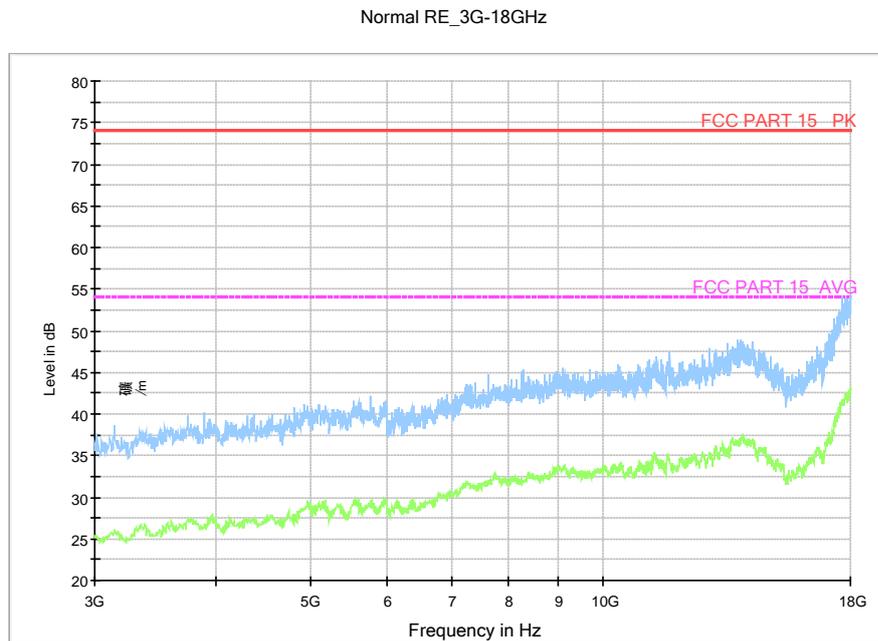
**Fig.A.6.2.3 Radiated Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)**



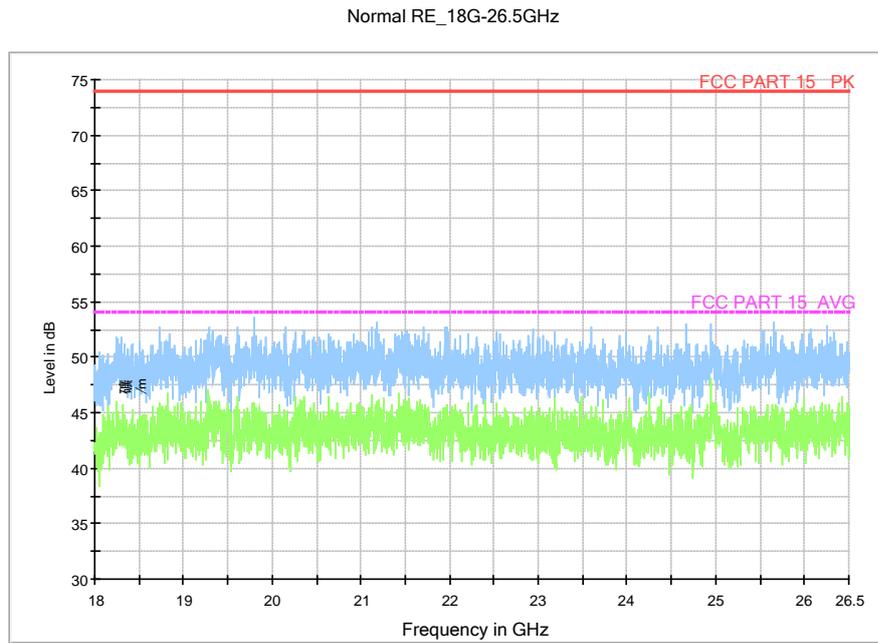
**Fig.A.6.2.4 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)**



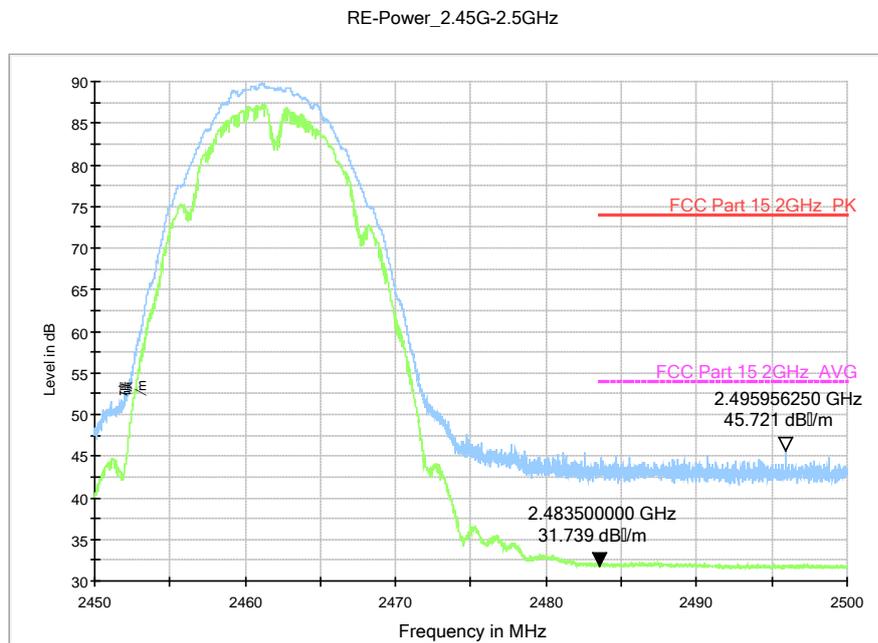
**Fig.A.6.2.5 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-3 GHz)**



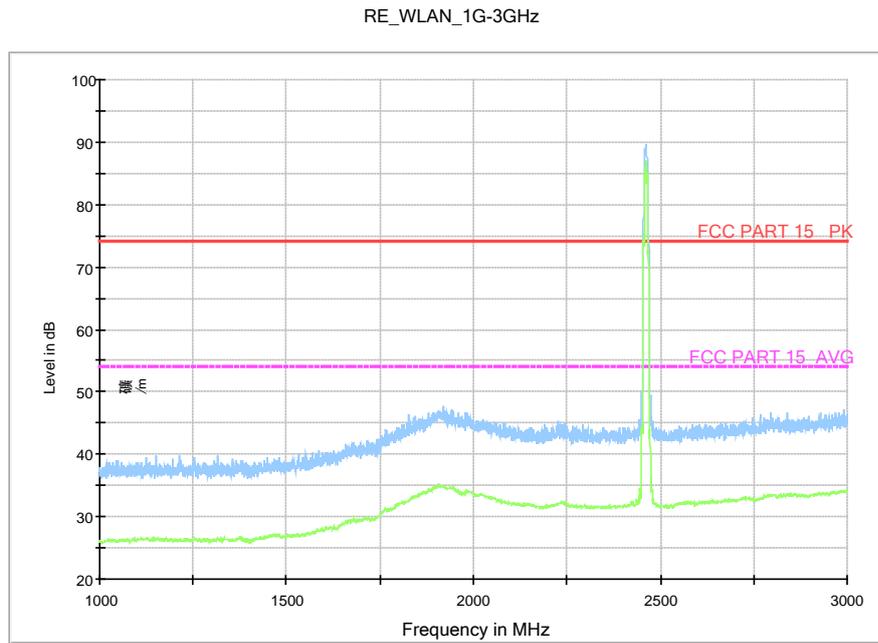
**Fig.A.6.2.6 Radiated Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)**



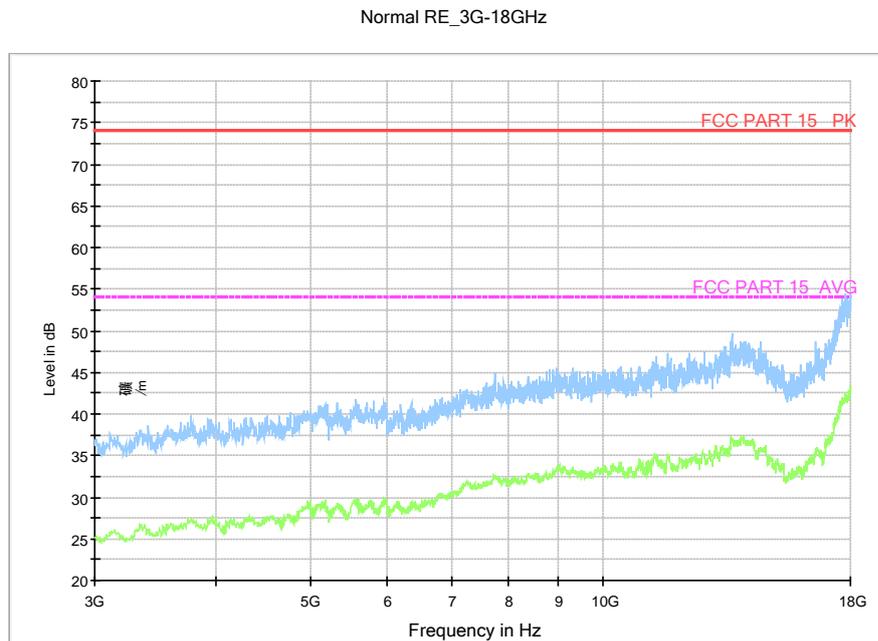
**Fig.A.6.2.7 Radiated Spurious Emission (802.11b, Ch6, 18GHz – 26.5GHz)**



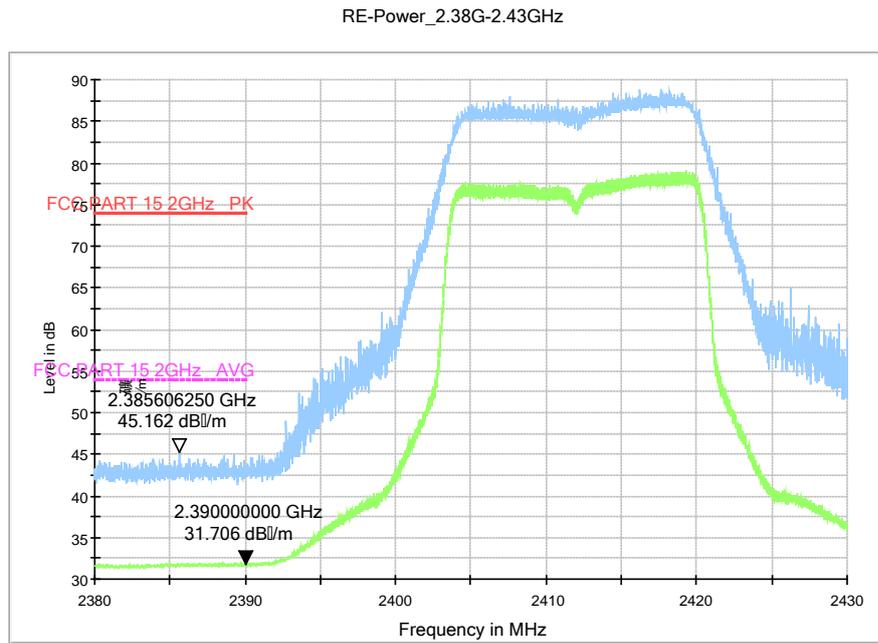
**Fig.A.6.2.8 Radiated Spurious Emission (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



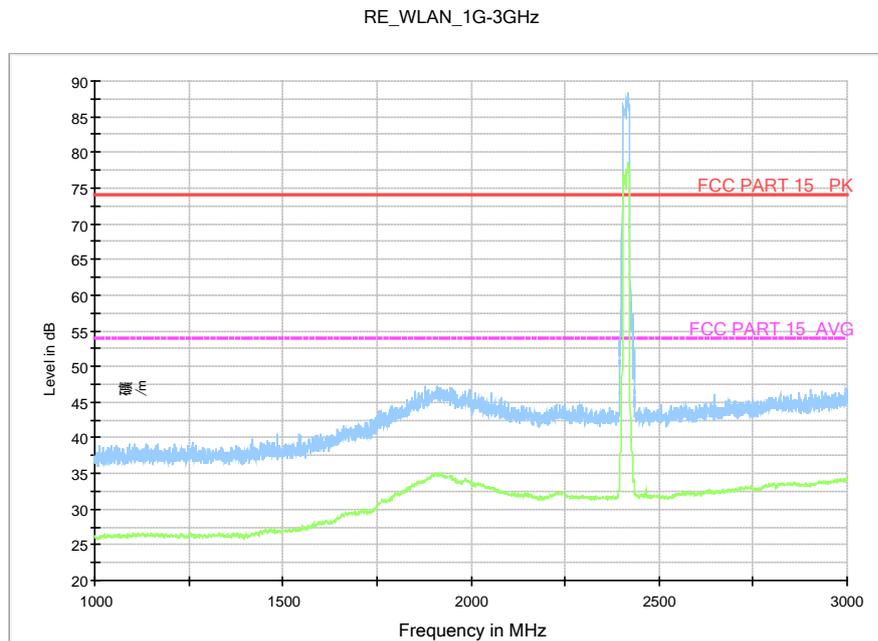
**Fig.A.6.2.9 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-3 GHz)**



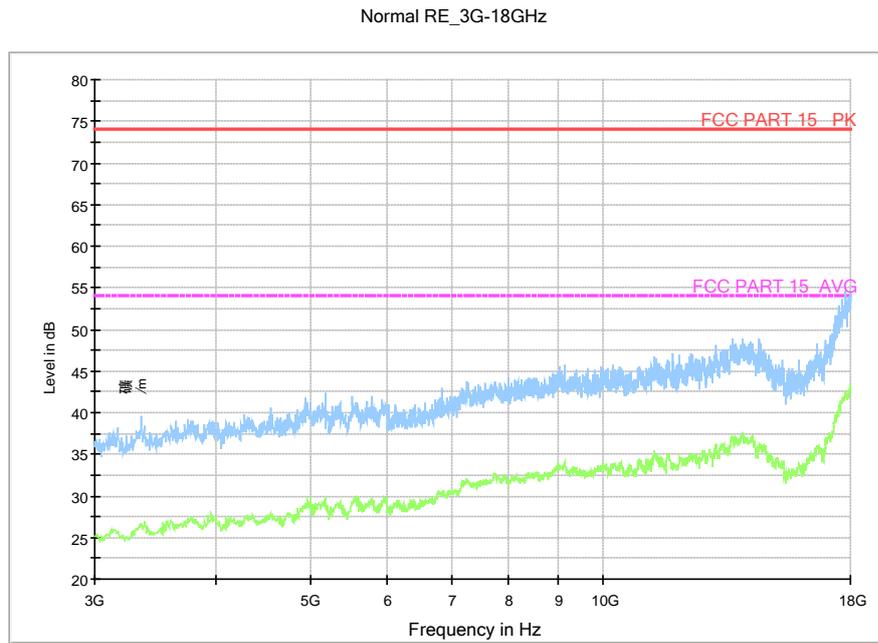
**Fig.A.6.2.10 Radiated Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)**



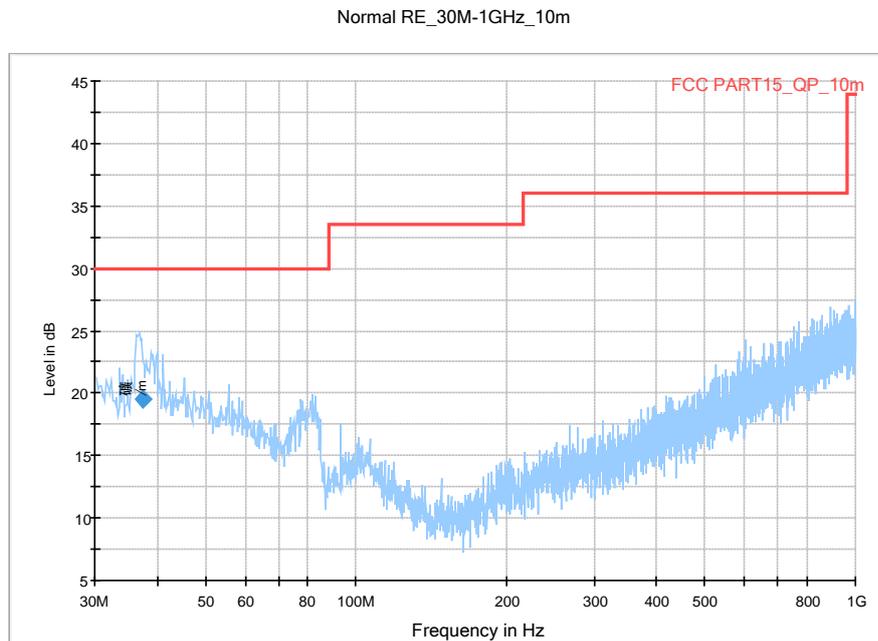
**Fig.A.6.2.11 Radiated Spurious Emission (Power): 802.11g, ch1, 2.38 GHz - 2.45GHz**



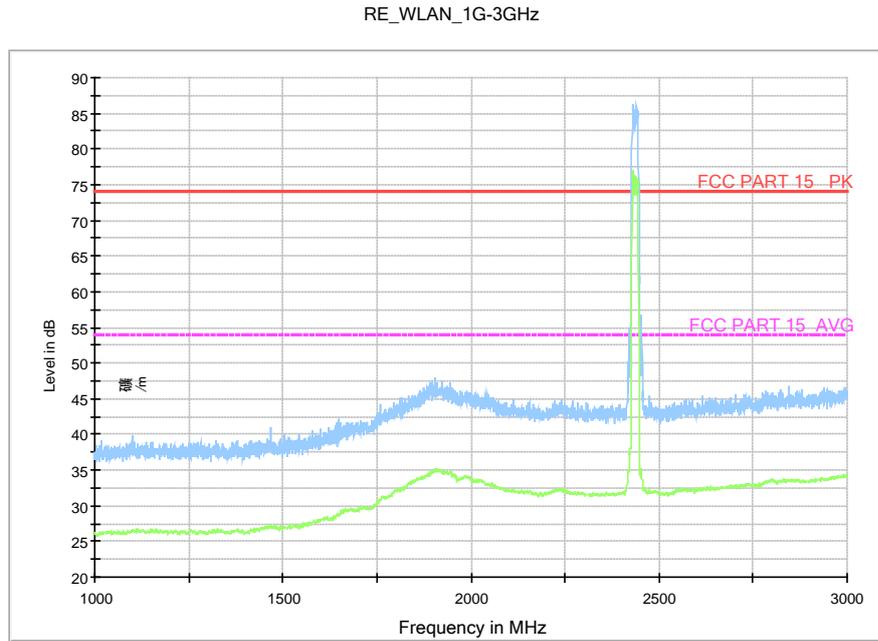
**Fig.A.6.2.12 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-3 GHz)**



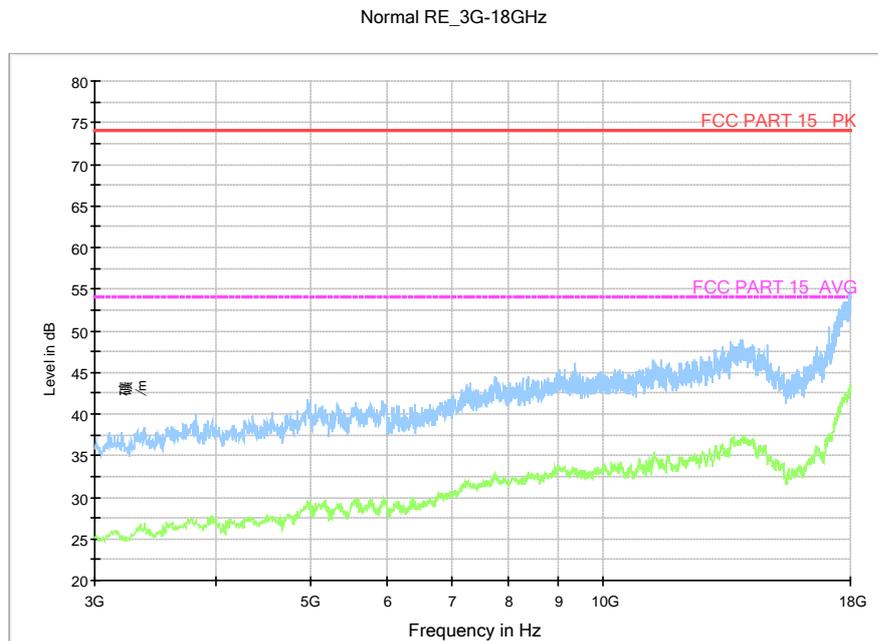
**Fig.A.6.2.13 Radiated Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)**



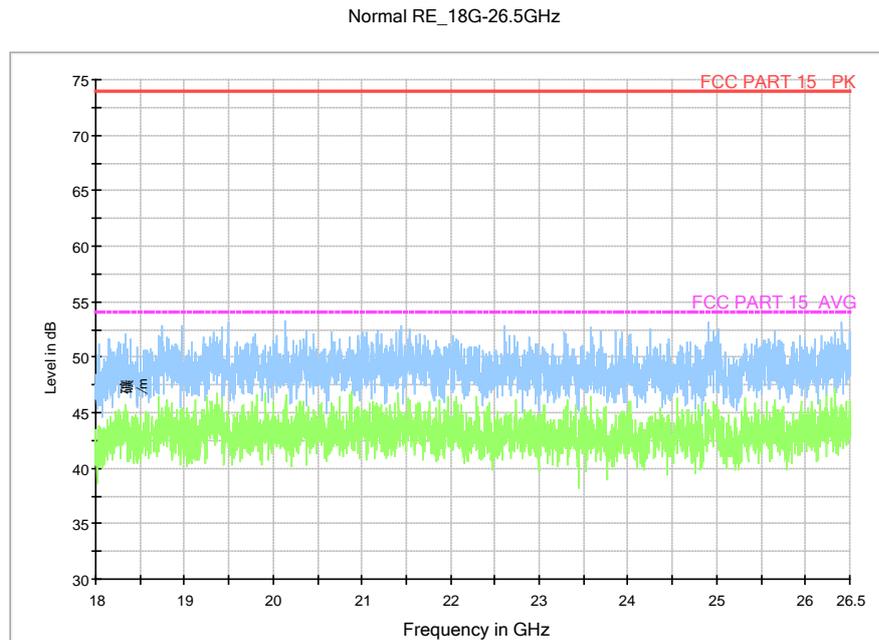
**Fig.A.6.2.14 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)**



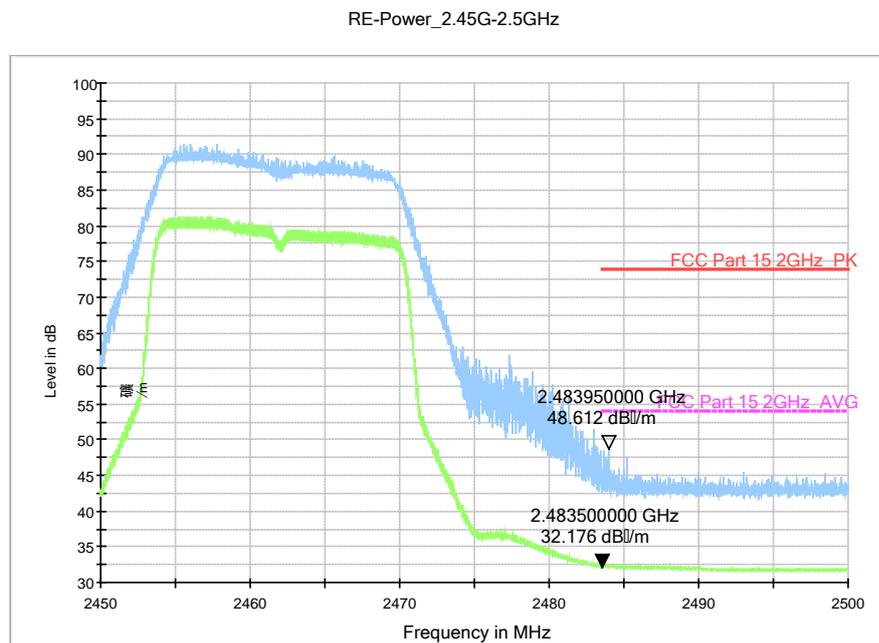
**Fig.A.6.2.15 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-3 GHz)**



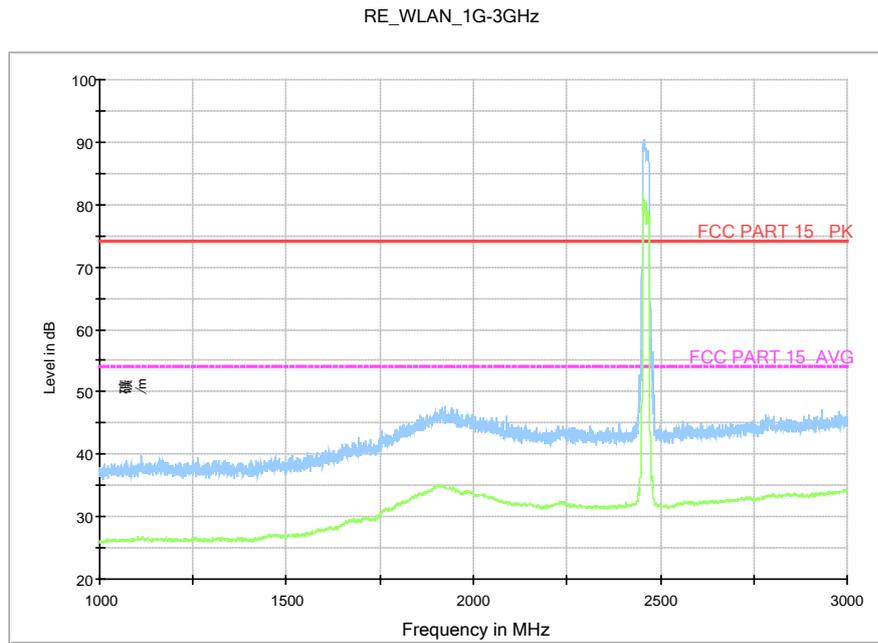
**Fig.A.6.2.16 Radiated Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)**



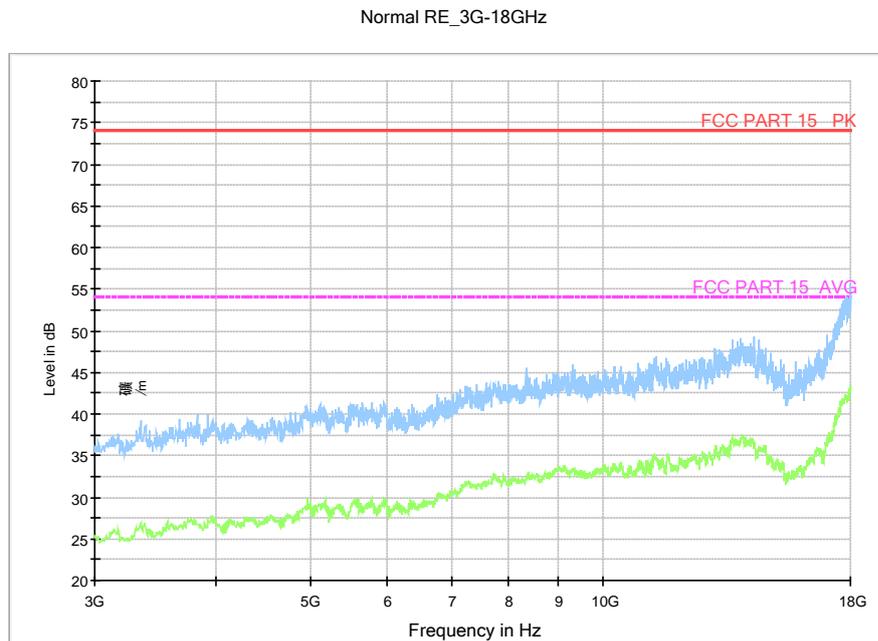
**Fig.A.6.2.17 Radiated Spurious Emission (802.11g, Ch6, 18GHz – 26.5GHz)**



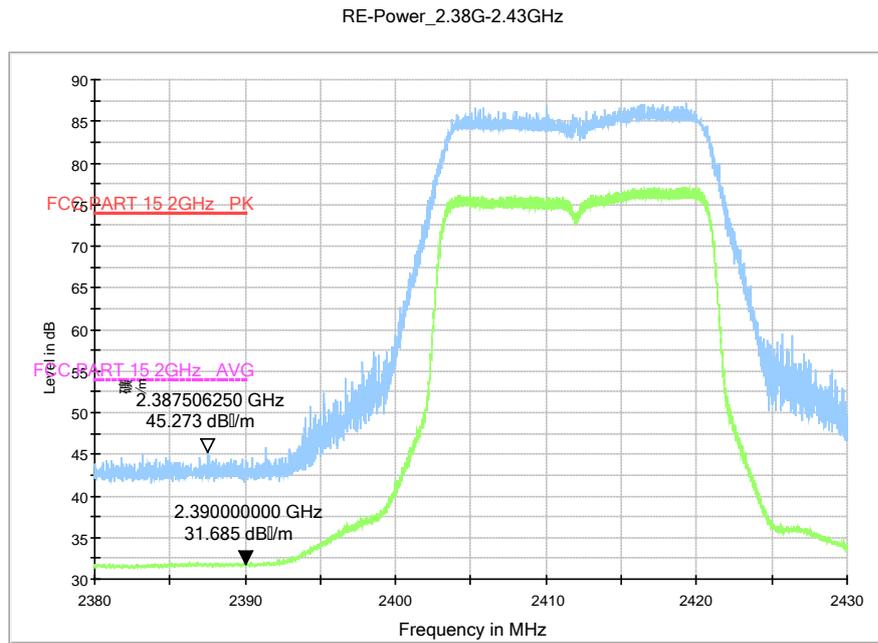
**Fig.A.6.2.18 Radiated Spurious Emission (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**



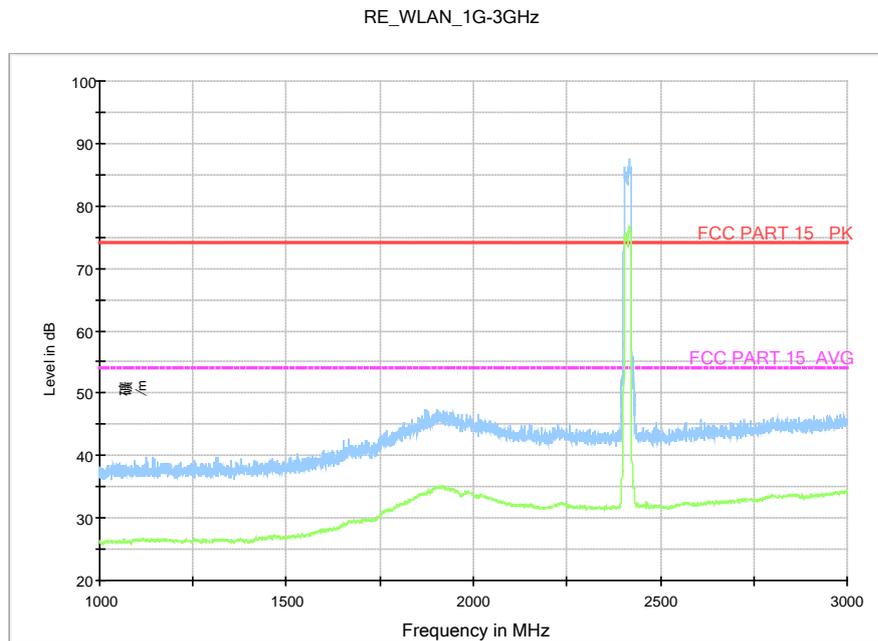
**Fig.A.6.2.19 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-3 GHz)**



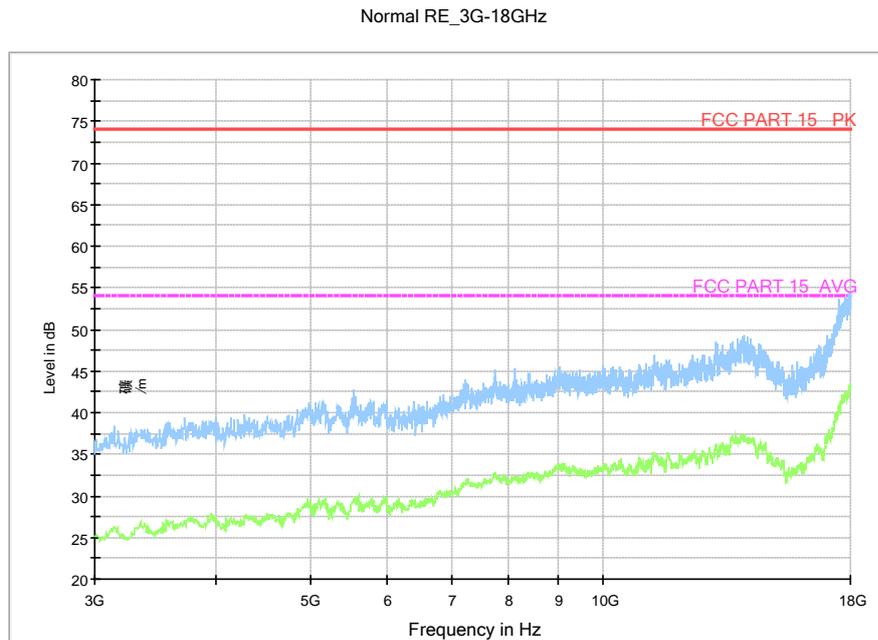
**Fig.A.6.2.20 Radiated Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)**



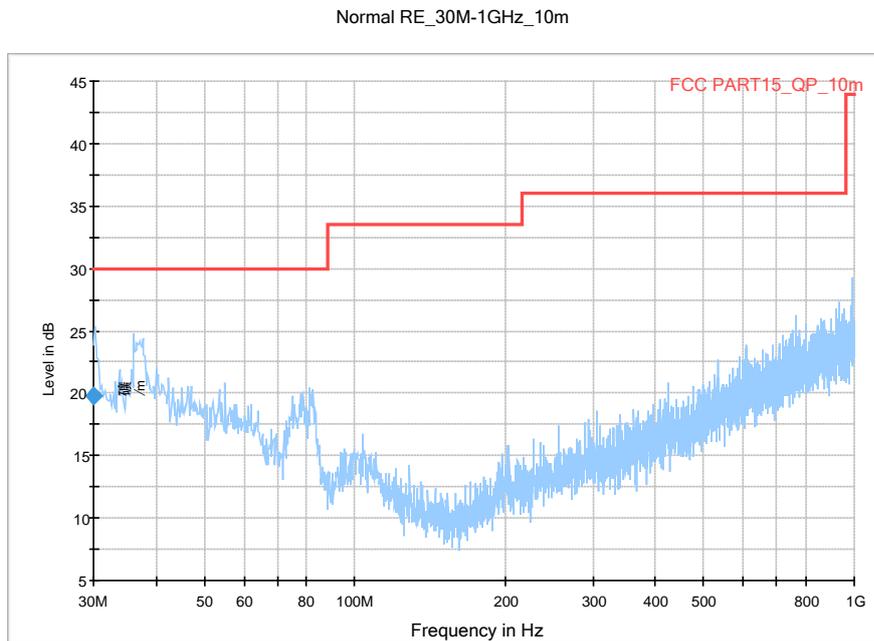
**Fig.A.6.2.21 Radiated Spurious Emission (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz**



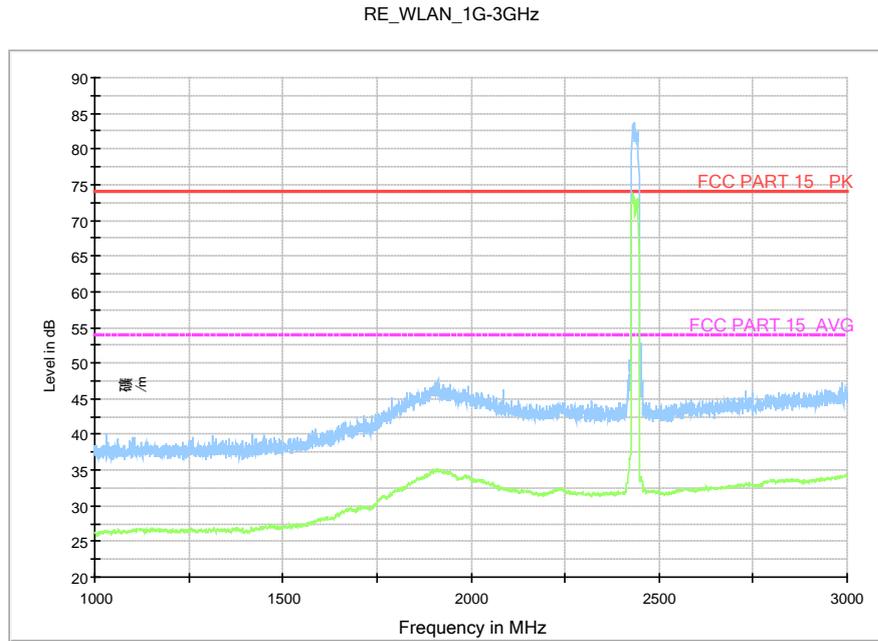
**Fig.A.6.2.22 Radiated Spurious Emission (802.11n-HT20, Ch1, 1 GHz-3 GHz)**



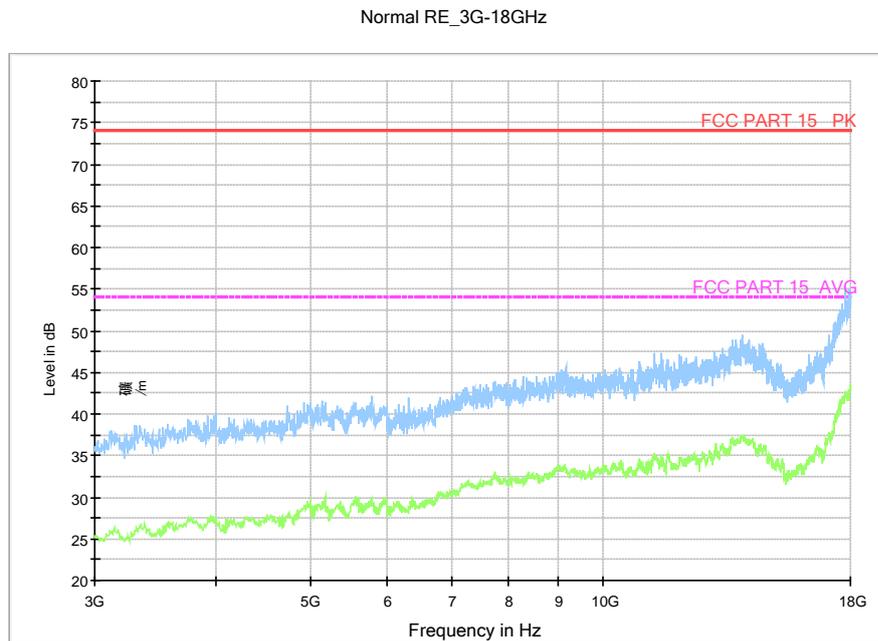
**Fig.A.6.2.23 Radiated Spurious Emission (802.11n-HT20, Ch1, 3 GHz-18 GHz)**



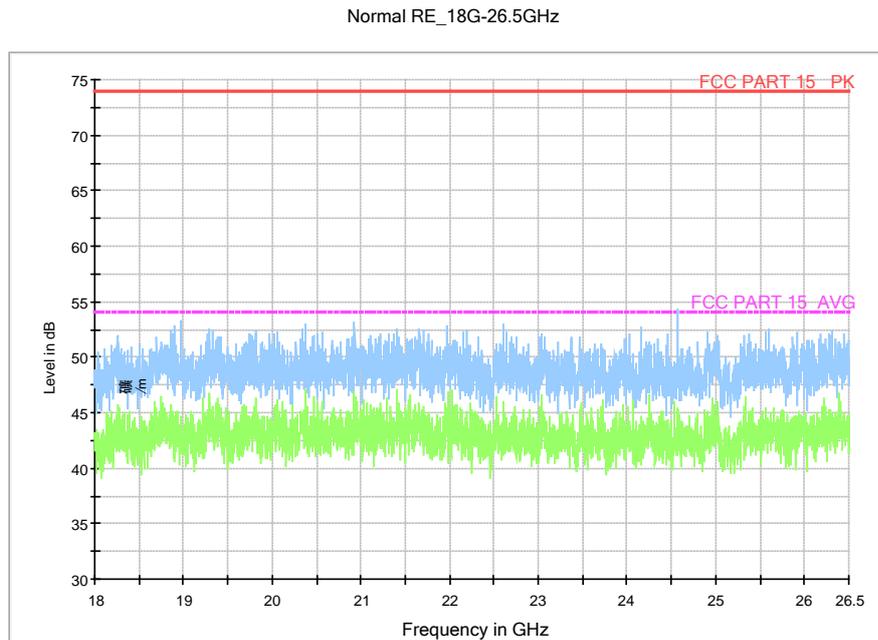
**Fig.A.6.2.24 Radiated Spurious Emission (802.11n-HT20, Ch6, 30 MHz-1 GHz)**



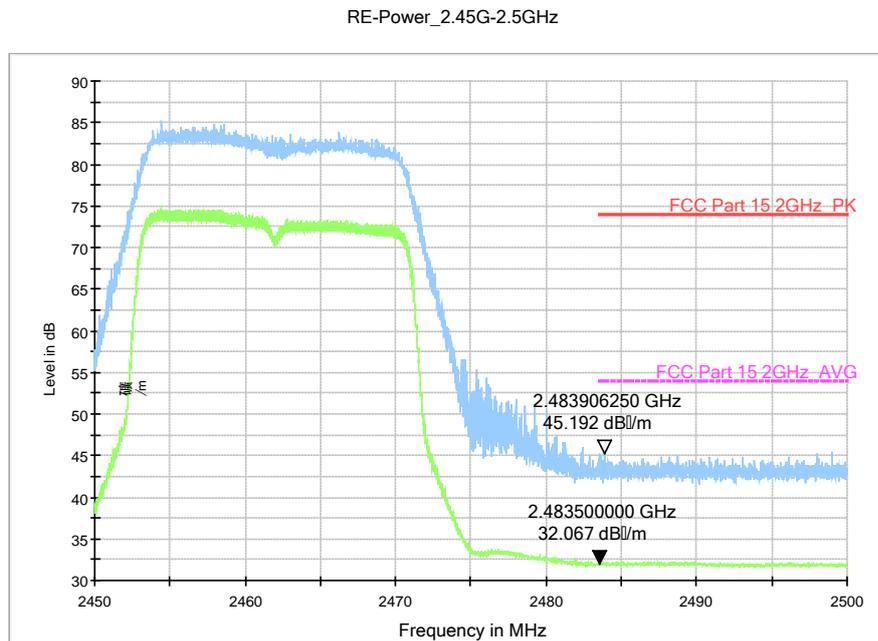
**Fig.A.6.2.25 Radiated Spurious Emission (802.11n-HT20, Ch6, 1 GHz-3 GHz)**



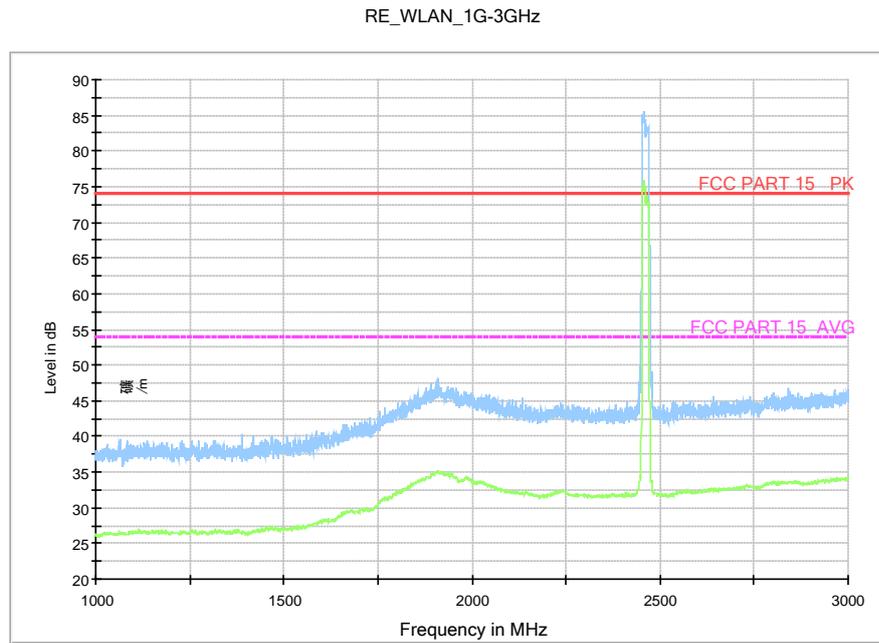
**Fig.A.6.2.26 Radiated Spurious Emission (802.11n-HT20, Ch6, 3 GHz-18 GHz)**



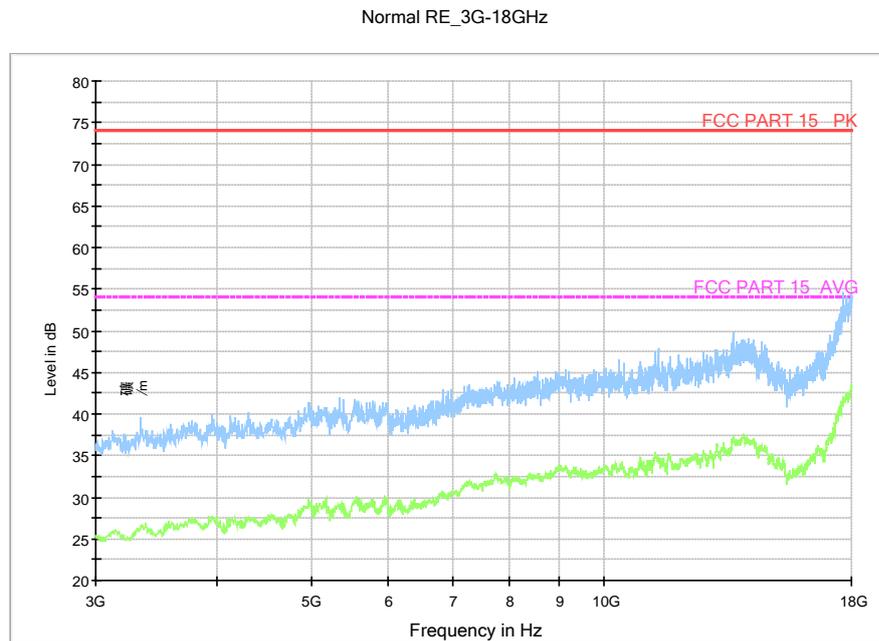
**Fig.A.6.2.27 Radiated Spurious Emission (802.11n-HT20, Ch6, 18GHz – 26.5GHz)**



**Fig.A.6.2.28 Radiated Spurious Emission (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**



**Fig.A.6.2.29 Radiated Spurious Emission (802.11n-HT20, Ch11, 1 GHz-3 GHz)**



**Fig.A.6.2.30 Radiated Spurious Emission (802.11n-HT20, Ch11, 3 GHz-18 GHz)**

### A.7. AC Powerline Conducted Emission

**Test Condition:**

Voltage (V)	Frequency (Hz)
120	60

**Measurement Result and limit:**

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.7.1	Fig.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 (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

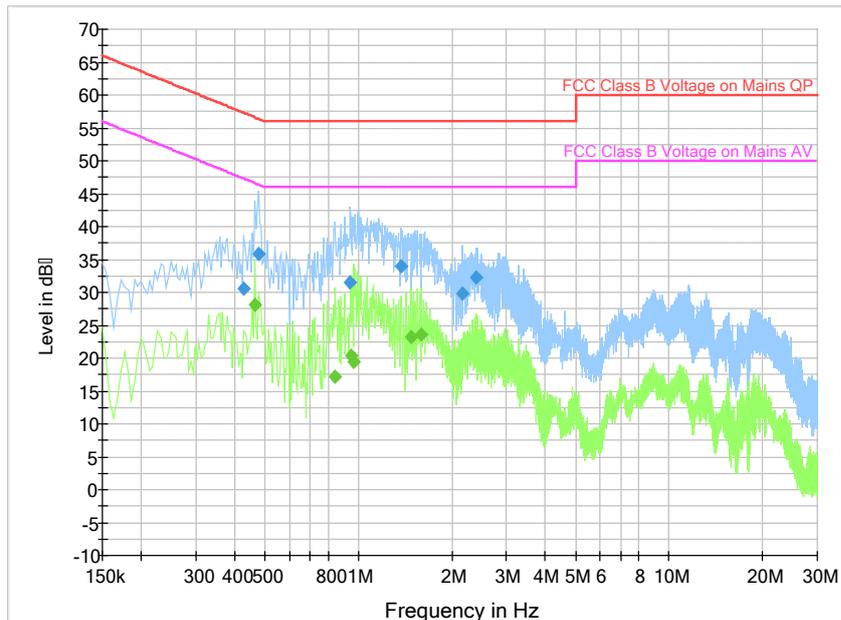
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10

Note: Expanded measurement uncertainty for this test item is  $U = 3.2\text{dB}$ ,  $k=2$ .

**Conclusion: PASS**

Test graphs as below:



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

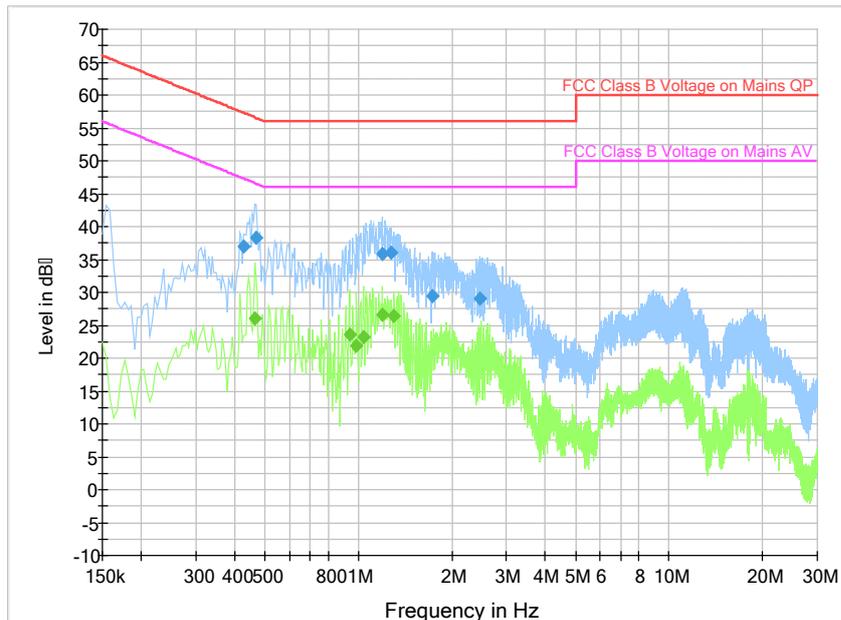
Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.429000	30.6	GND	N	9.8	26.6	57.3
0.478500	35.8	GND	L1	9.8	20.6	56.4
0.942000	31.4	GND	L1	9.7	24.6	56.0
1.374000	34.0	GND	L1	9.7	22.0	56.0
2.157000	29.8	GND	L1	9.7	26.2	56.0
2.391000	32.3	GND	L1	9.7	23.7	56.0

Measurement Result 2:

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.465000	28.1	GND	L1	9.8	18.5	46.6
0.843000	17.2	GND	L1	9.8	28.8	46.0
0.946500	20.4	GND	L1	9.7	25.6	46.0
0.969000	19.5	GND	L1	9.7	26.5	46.0
1.473000	23.3	GND	L1	9.7	22.7	46.0
1.599000	23.7	GND	L1	9.7	22.3	46.0



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

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

Measurement Result 1:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.429000	37.0	GND	L1	9.8	20.3	57.3
0.469500	38.2	GND	N	9.8	18.3	56.5
1.194000	35.8	GND	L1	9.7	20.2	56.0
1.270500	36.1	GND	L1	9.7	19.9	56.0
1.725000	29.5	GND	L1	9.7	26.5	56.0
2.458500	29.1	GND	L1	9.7	26.9	56.0

Measurement Result 2:

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.465000	26.1	GND	L1	9.8	20.5	46.6
0.937500	23.5	GND	L1	9.7	22.5	46.0
0.987000	21.9	GND	L1	9.7	24.1	46.0
1.036500	23.1	GND	L1	9.7	22.9	46.0
1.194000	26.6	GND	L1	9.7	19.4	46.0
1.302000	26.4	GND	L1	9.7	19.6	46.0