

**802.11n-HT40**
**Ch3**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2381.000	46.2	2.9	32.1	11.26	54.0	7.8	H
2385.600	46.2	2.9	32.0	11.31	54.0	7.8	H
4844.000	28.73	-32.7	34.5	26.93	54.0	25.3	H
7266.000	30.46	-31.9	36.1	26.23	54.0	23.5	H
9688.000	32.82	-30.7	37.1	26.44	54.0	21.2	H
12110.000	35.00	-29.5	39.3	25.23	54.0	19.0	H

**Ch6**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2382.400	46.1	2.9	32.0	11.20	54.0	7.9	H
2485.600	47.1	2.9	32.7	11.47	54.0	6.9	H
4874.000	28.80	-32.7	34.5	27.01	54.0	25.2	H
7311.000	29.85	-31.9	36.1	25.69	54.0	24.1	H
9748.000	32.74	-30.7	37.2	26.21	54.0	21.3	H
12185.000	35.39	-29.4	39.2	25.60	54.0	18.6	H

**Ch9**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2484.900	47.0	2.9	32.7	11.34	54.0	7.0	H
2486.500	47.0	2.9	32.7	11.38	54.0	7.0	H
4904.000	28.93	-32.9	34.5	27.32	54.0	25.1	H
7356.000	30.81	-31.9	36.1	26.66	54.0	23.2	H
9808.000	32.92	-30.4	37.3	26.01	54.0	21.1	H
12260.000	34.80	-29.6	39.2	25.17	54.0	19.2	H

**PEAK**
**802.11b**
**Ch1**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2388.694	59.2	2.9	32.0	24.36	74.0	14.8	H
2381.050	59.8	2.9	32.1	24.94	74.0	14.2	H
17784.750	53.7	-23.4	41.0	36.15	74.0	20.3	H

17809.500	53.2	-23.0	41.0	35.23	74.0	20.8	H
17802.750	52.8	-23.1	41.0	34.98	74.0	21.2	V
17778.000	52.7	-23.5	41.0	35.20	74.0	21.3	H

#### Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2314.200	48.4	-27.8	31.1	45.10	74.0	25.6	H
2634.400	51.8	-26.8	33.5	45.10	74.0	22.2	H
17794.500	55.0	-23.2	41.0	37.26	74.0	19.0	V
17812.500	53.8	-23.0	40.9	35.85	74.0	20.2	V
17806.500	52.9	-23.0	41.0	34.97	74.0	21.1	H
17766.000	52.9	-23.7	41.0	35.59	74.0	21.1	V

#### Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2484.350	60.6	2.9	32.7	24.92	74.0	13.4	H
2483.630	60.9	2.9	32.8	25.25	74.0	13.1	H
17801.250	53.2	-23.1	41.0	35.32	74.0	20.8	H
17811.750	52.9	-23.0	41.0	34.97	74.0	21.1	V
17816.250	52.5	-23.1	40.9	34.67	74.0	21.5	H
17811.000	52.5	-23.0	41.0	34.59	74.0	21.5	H

#### 802.11g

#### Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2387.378	59.2	2.9	32.0	24.33	74.0	14.8	H
2380.266	59.6	2.9	32.1	24.73	74.0	14.4	H
17799.000	54.5	-23.2	41.0	36.74	74.0	19.5	V
17795.250	53.5	-23.2	41.0	35.77	74.0	20.5	H
17803.500	52.9	-23.1	41.0	35.00	74.0	21.1	H
17826.000	52.8	-23.2	40.9	35.07	74.0	21.2	V

#### Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2359.000	49.4	-27.6	31.8	45.22	74.0	24.6	H

2648.400	52.1	-26.7	33.7	45.18	74.0	21.9	H
17826.000	54.1	-23.2	40.9	36.43	74.0	19.9	H
17823.750	53.3	-23.2	40.9	35.56	74.0	20.7	H
17724.000	52.8	-24.4	41.0	36.16	74.0	21.2	H
17814.750	52.6	-23.1	40.9	34.69	74.0	21.4	H

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2483.840	59.9	2.9	32.8	24.25	74.0	14.1	H
2485.260	59.5	2.9	32.7	23.84	74.0	14.5	H
17801.250	53.8	-23.1	41.0	35.94	74.0	20.2	H
17809.500	52.9	-23.0	41.0	34.97	74.0	21.1	V
17814.750	52.6	-23.1	40.9	34.74	74.0	21.4	H
17822.250	52.6	-23.2	40.9	34.83	74.0	21.4	V

802.11n-HT20

Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2382.352	59.5	2.9	32.0	24.65	74.0	14.5	H
2387.056	59.1	2.9	32.0	24.22	74.0	14.9	H
17765.250	53.6	-23.7	41.0	36.28	74.0	20.4	V
17805.000	53.0	-23.1	41.0	35.14	74.0	21.0	V
17795.250	52.5	-23.2	41.0	34.79	74.0	21.5	H
17811.000	52.3	-23.0	41.0	34.41	74.0	21.7	V

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2363.800	49.4	-27.4	31.9	44.84	74.0	24.6	H
2629.600	52.4	-26.8	33.4	45.81	74.0	21.6	H
17821.500	53.9	-23.2	40.9	36.15	74.0	20.1	V
17805.750	53.0	-23.1	41.0	35.06	74.0	21.0	H
17807.250	52.9	-23.0	41.0	34.95	74.0	21.1	V
17808.750	52.7	-23.0	41.0	34.72	74.0	21.3	V

Ch11

Frequency (MHz)	Measurement Result	Cable loss	Antenna Factor	Receiver eading	Limit (dBμV/m)	Margin (dB)	Antenna Pol.
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	(dBμV/m)	(dB)	(dB/m)	(dBμV)			(H/V)
2484.350	63.9	2.9	32.7	28.21	74.0	10.1	H
2485.460	61.7	2.9	32.7	26.05	74.0	12.3	H
17794.500	53.5	-23.2	41.0	35.78	74.0	20.5	H
17779.500	52.8	-23.5	41.0	35.30	74.0	21.2	V
17795.250	52.7	-23.2	41.0	34.92	74.0	21.3	V
17800.500	52.4	-23.1	41.0	34.58	74.0	21.6	H

### 802.11n-HT40

#### Ch3

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2380.750	59.5	2.9	32.1	24.60	74.0	14.5	H
2385.236	59.6	2.9	32.0	24.75	74.0	14.4	H
17805.000	52.5	-23.1	41.0	34.60	74.0	21.5	V
17797.500	52.4	-23.2	41.0	34.66	74.0	21.6	V
17818.500	52.4	-23.1	40.9	34.56	74.0	21.6	V
17812.500	52.3	-23.0	40.9	34.38	74.0	21.7	H

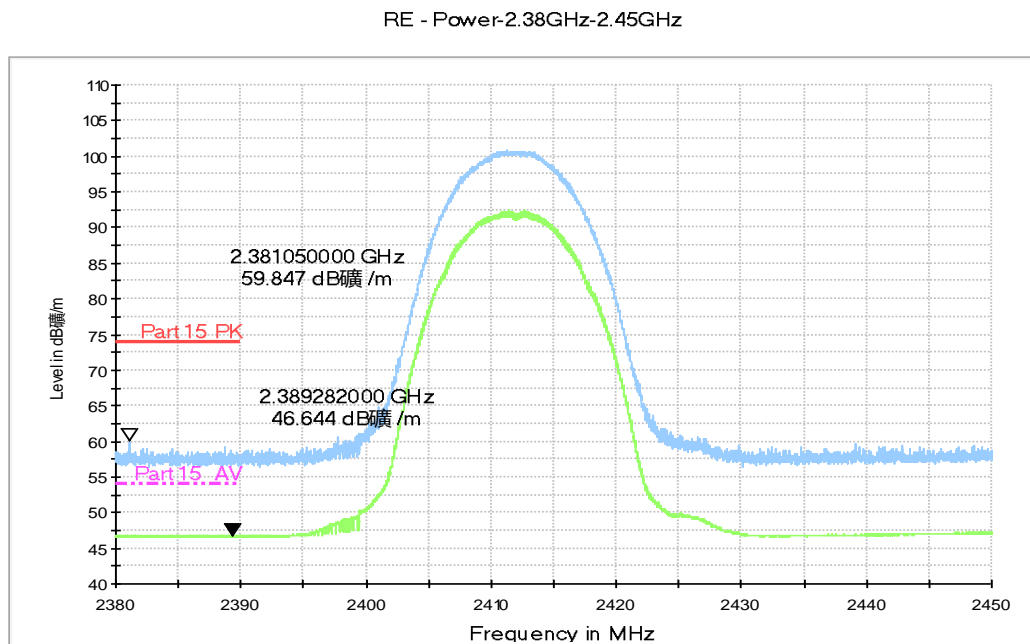
#### Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2359.400	49.1	-27.6	31.8	44.84	74.0	24.9	H
2669.800	52.3	-26.7	33.5	45.54	74.0	21.7	H
17810.250	53.2	-23.0	41.0	35.26	74.0	20.8	V
17877.000	52.7	-23.9	40.9	35.74	74.0	21.3	H
17792.250	52.5	-23.3	41.0	34.79	74.0	21.5	V
17800.500	52.5	-23.1	41.0	34.64	74.0	21.5	V

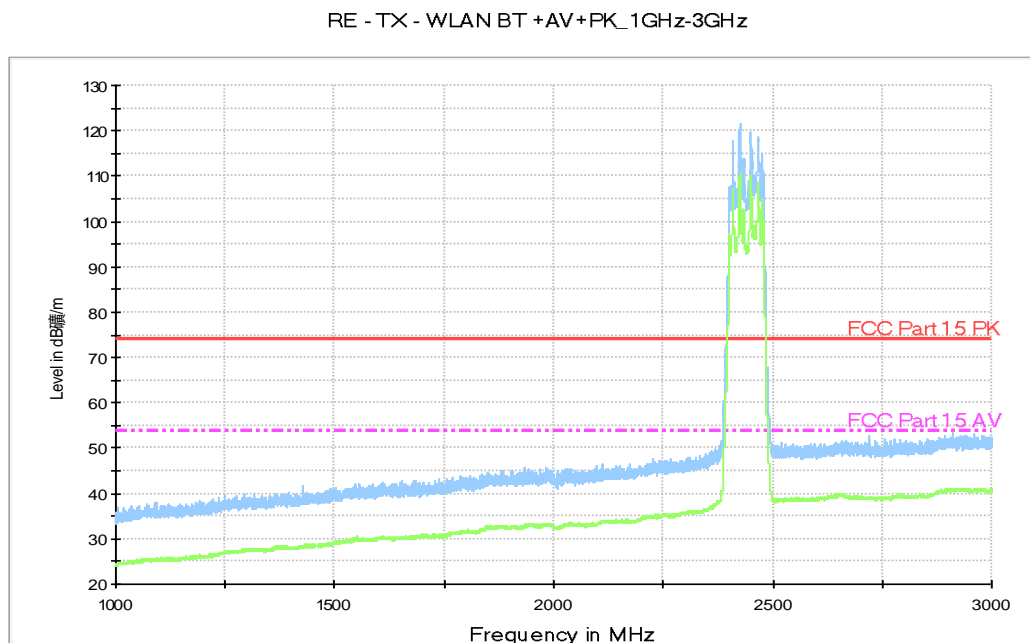
#### Ch9

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2483.600	59.7	2.9	32.8	24.04	74.0	14.3	H
2487.730	61.1	2.9	32.6	25.49	74.0	12.9	H
17787.750	53.4	-23.3	41.0	35.81	74.0	20.6	V
17804.250	53.0	-23.1	41.0	35.10	74.0	21.0	H
17790.750	52.5	-23.3	41.0	34.88	74.0	21.5	V
17800.500	52.5	-23.1	41.0	34.64	74.0	21.5	V

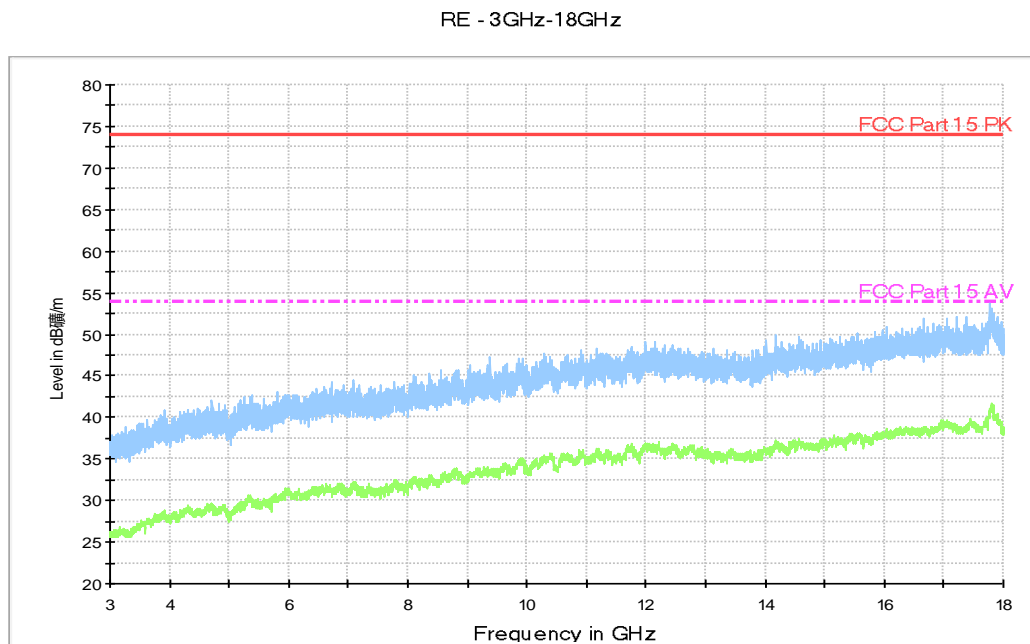
Test graphs as below:



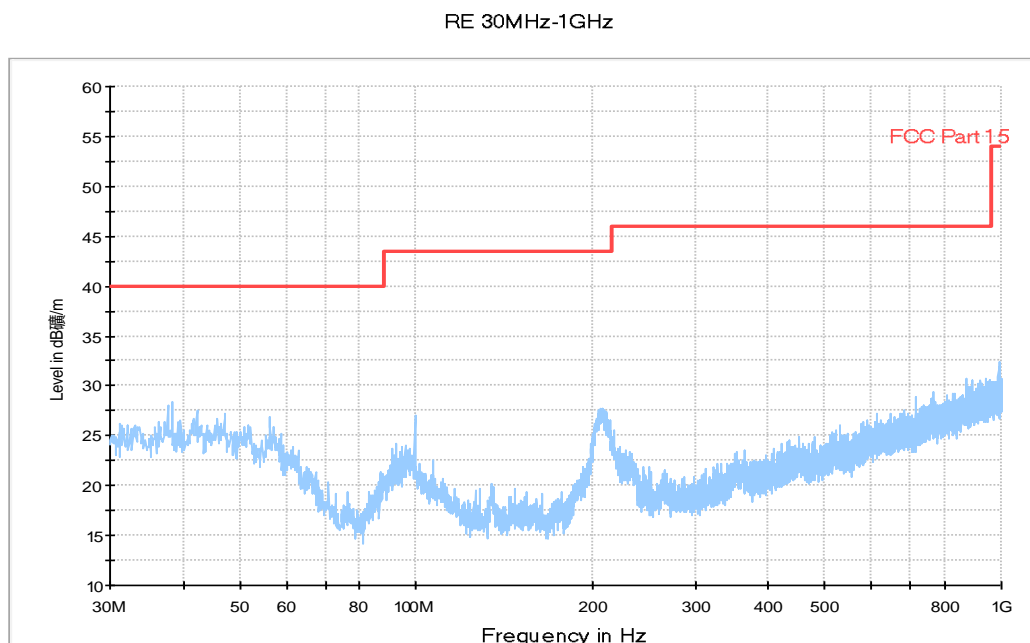
**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.38 GHz – 2.45GHz**



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

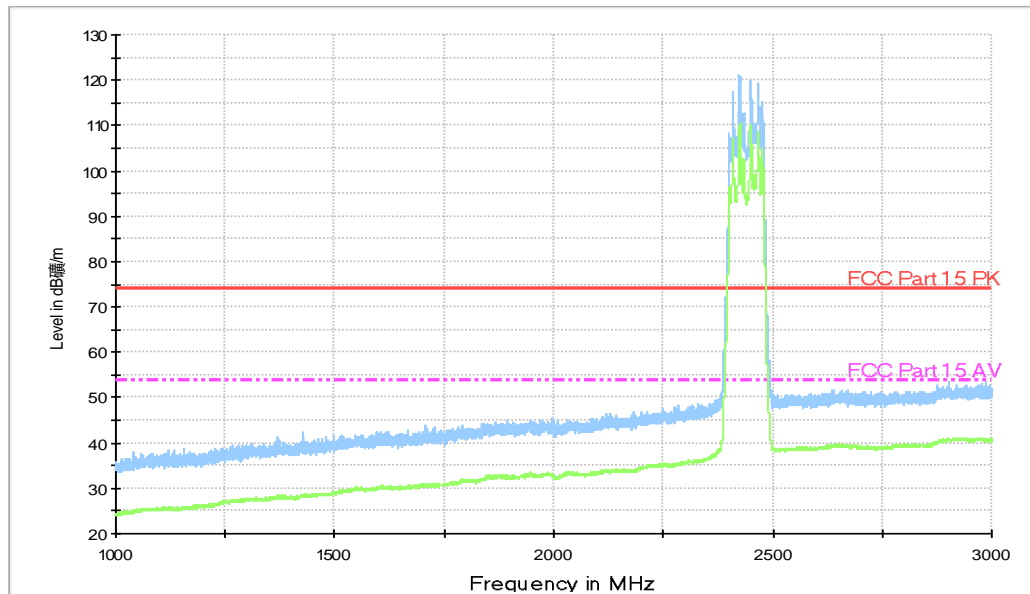


**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (802.11b, Ch1, 3 GHz-18 GHz)**



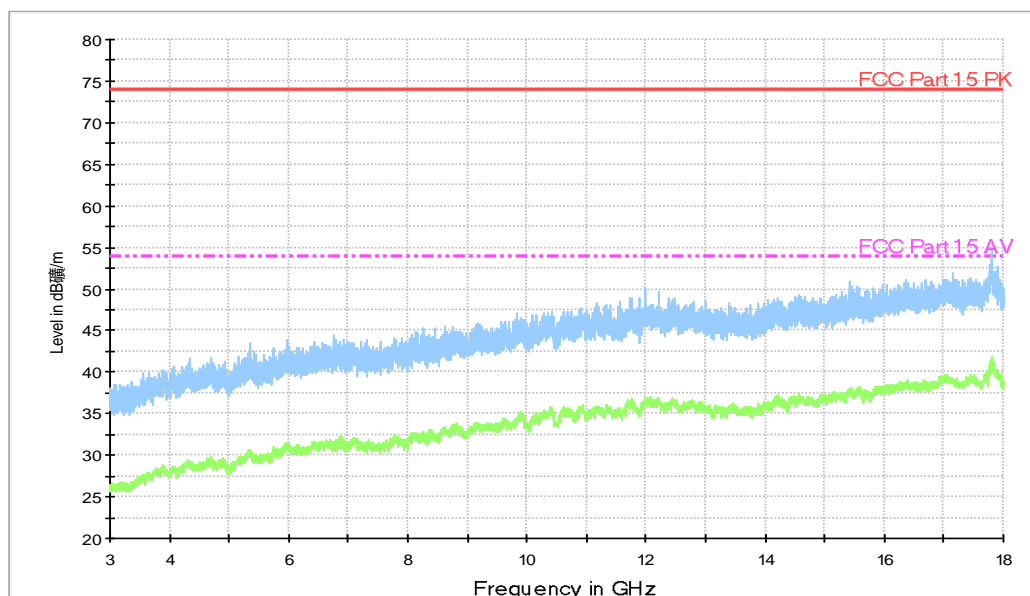
**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 30 MHz-1 GHz)**

RE - TX - WLAN BT +AV+PK\_1GHz-3GHz

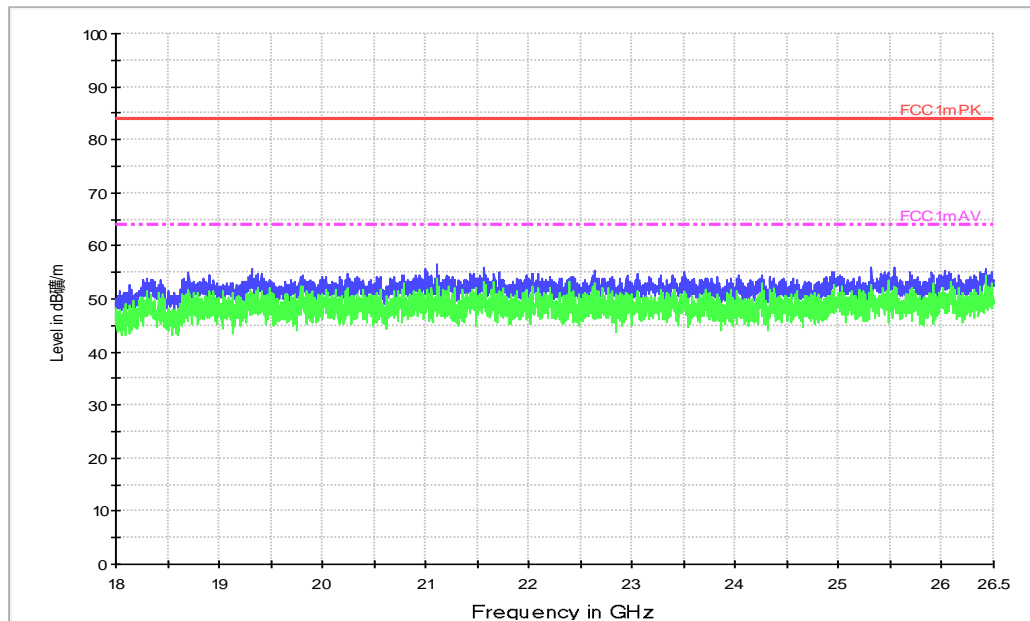


**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 1 GHz-3 GHz)**

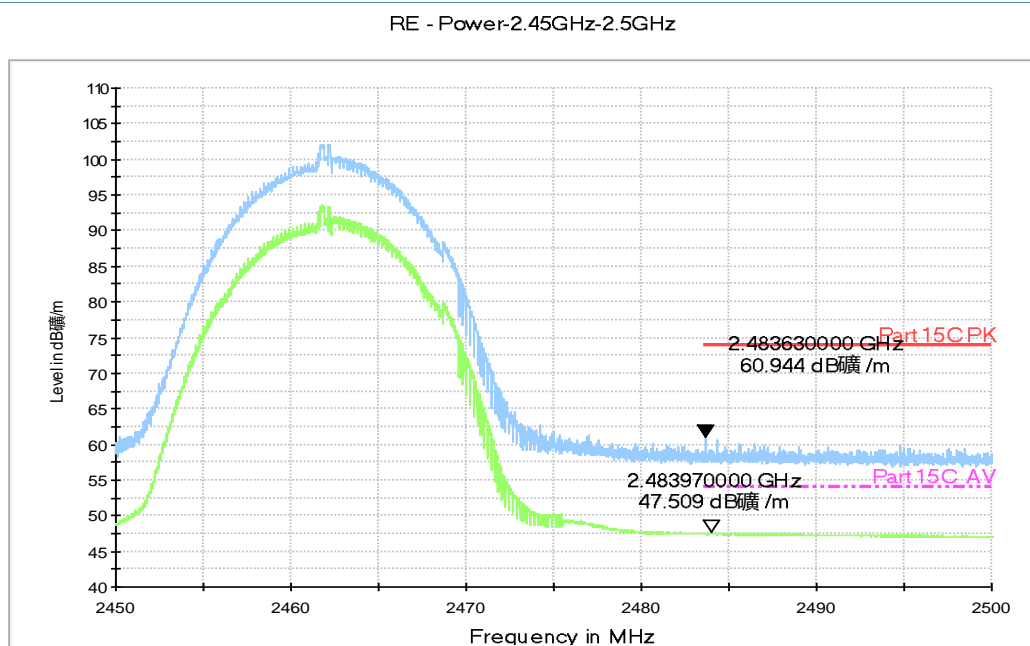
RE - 3GHz-18GHz



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

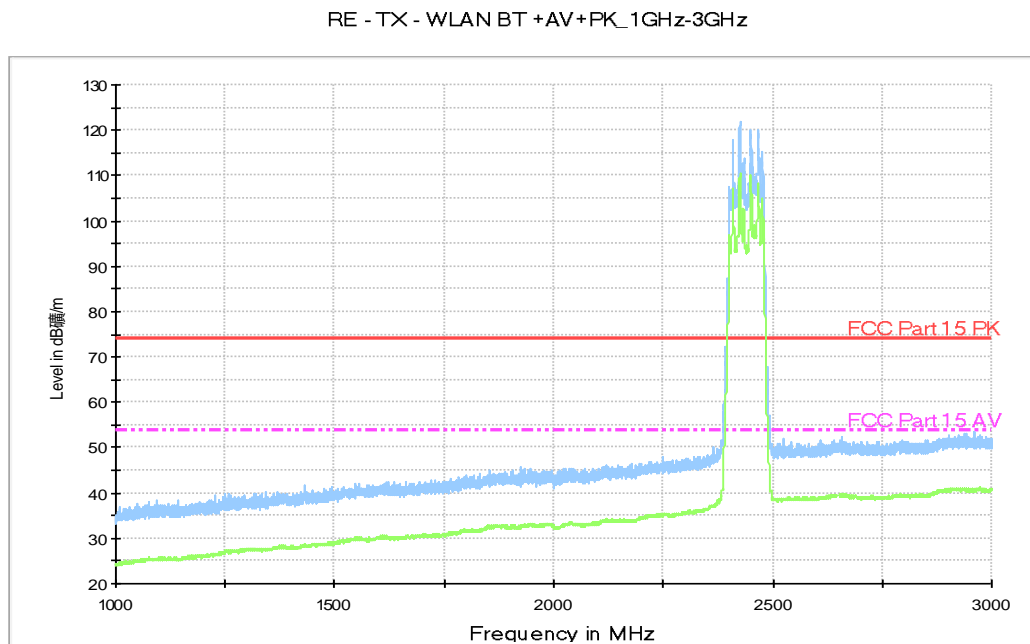


**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (802.11b, Ch6, 18GHz – 26.5GHz)**

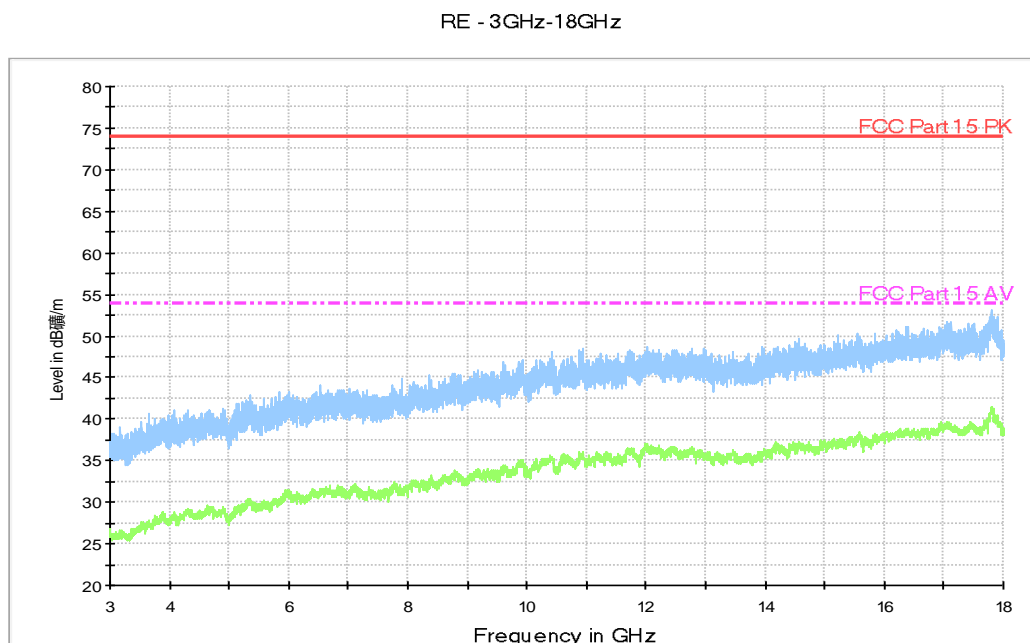


**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**

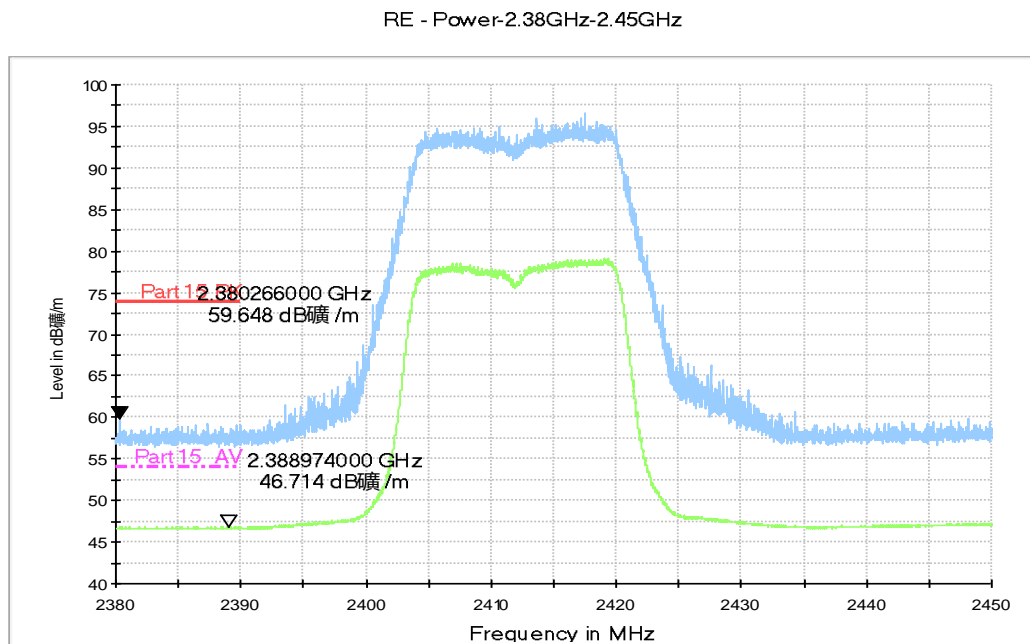




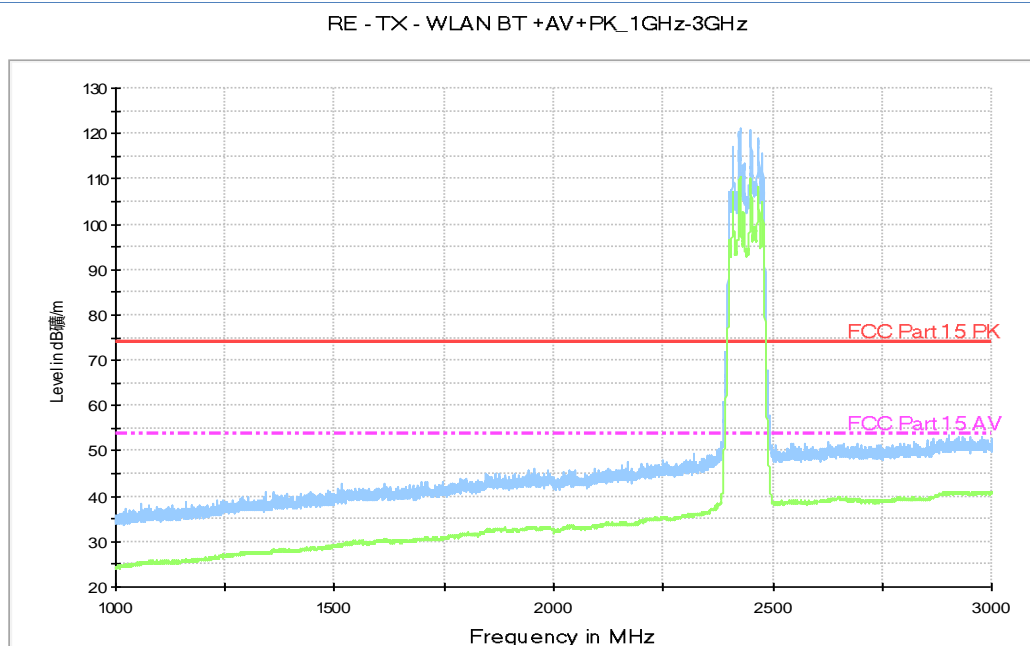
**Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (802.11b, Ch11, 1 GHz-3 GHz)**



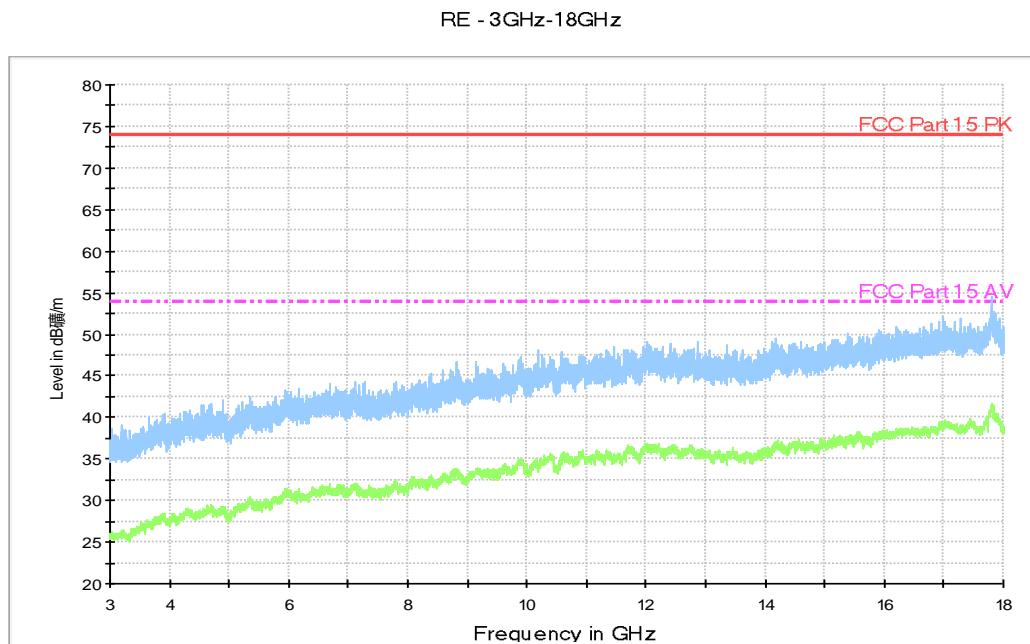
**Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (802.11b, Ch11, 3 GHz-18 GHz)**



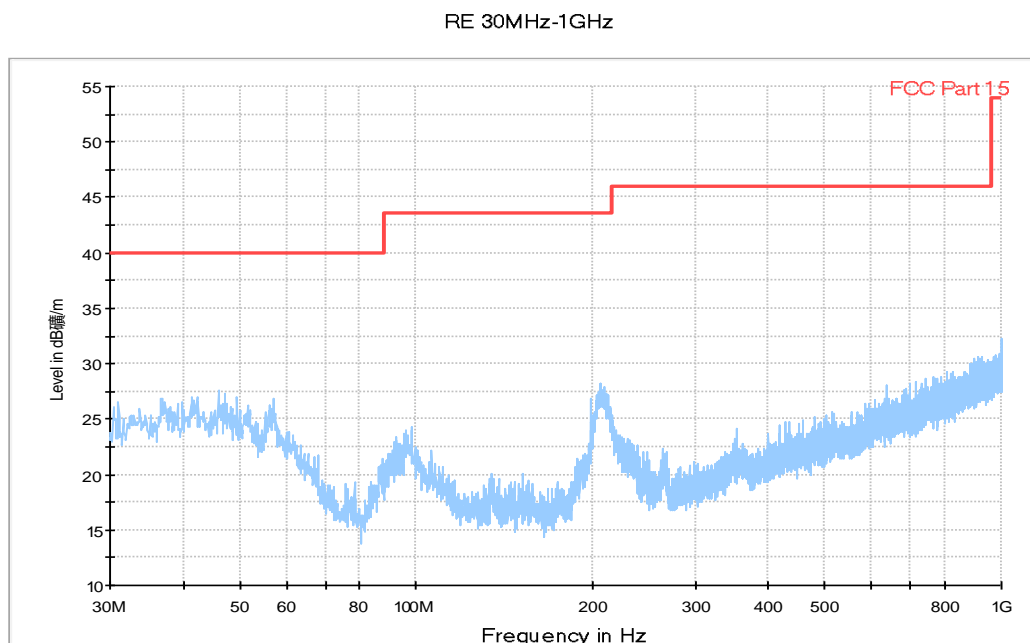
**Fig.A.6.2.11 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.38 GHz - 2.45GHz**



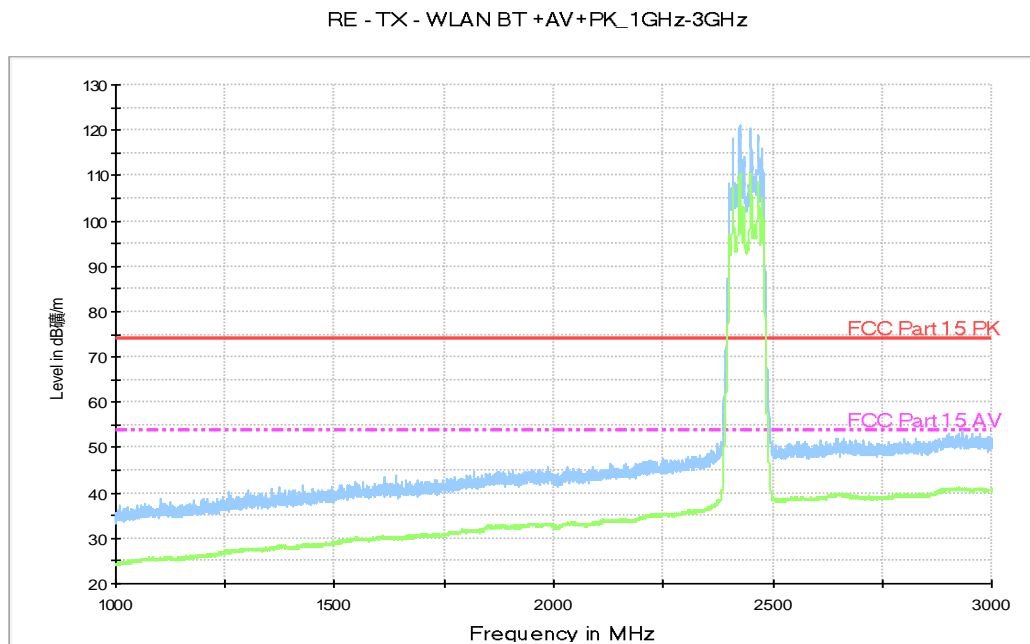
**Fig.A.6.2.12 Transmitter Spurious Emission - Radiated (802.11g, Ch1, 1 GHz-3 GHz)**



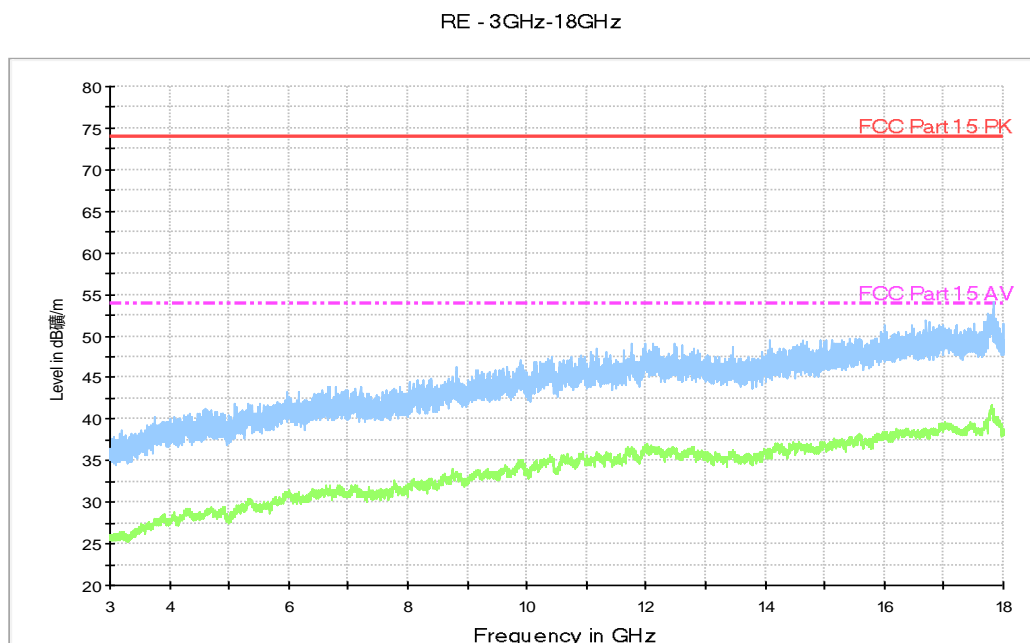
**Fig.A.6.2.13 Transmitter Spurious Emission - Radiated (802.11g, Ch1, 3 GHz-18 GHz)**



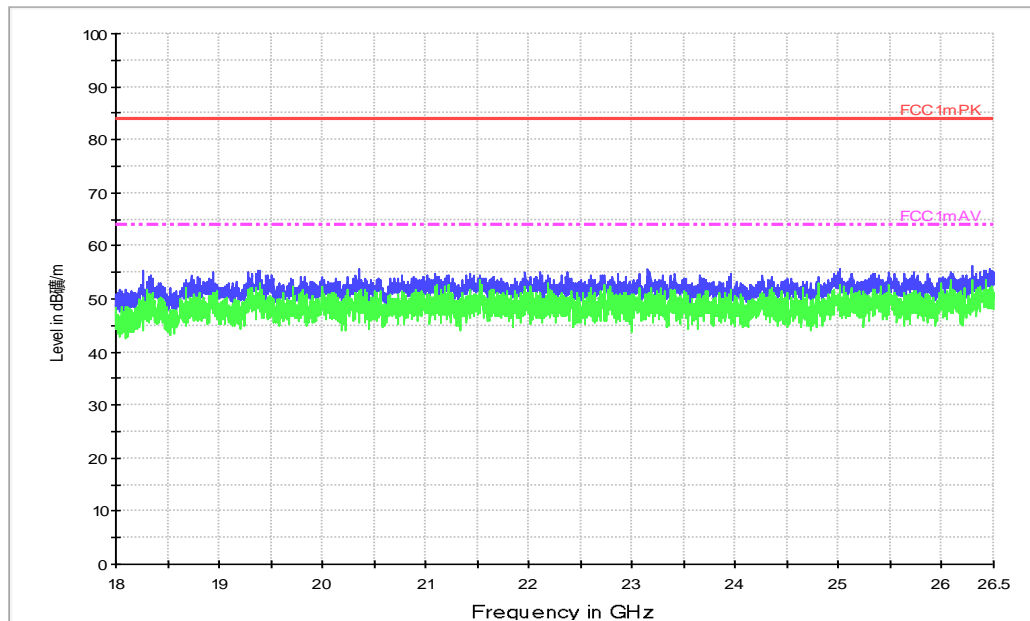
**Fig.A.6.2.14 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 30 MHz-1 GHz)**



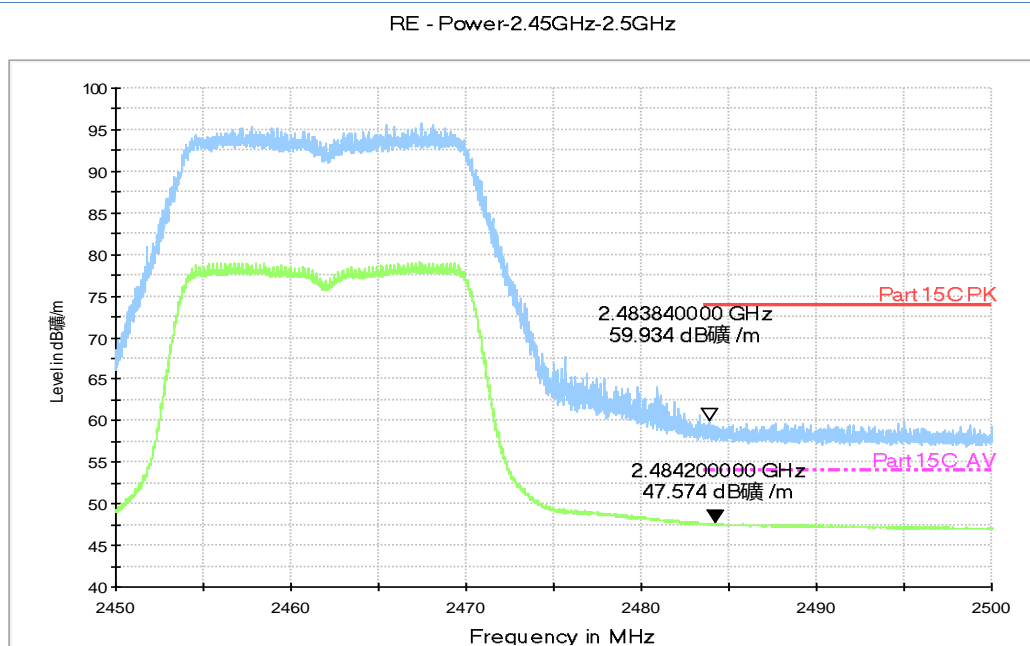
**Fig.A.6.2.15 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 1 GHz-3 GHz)**



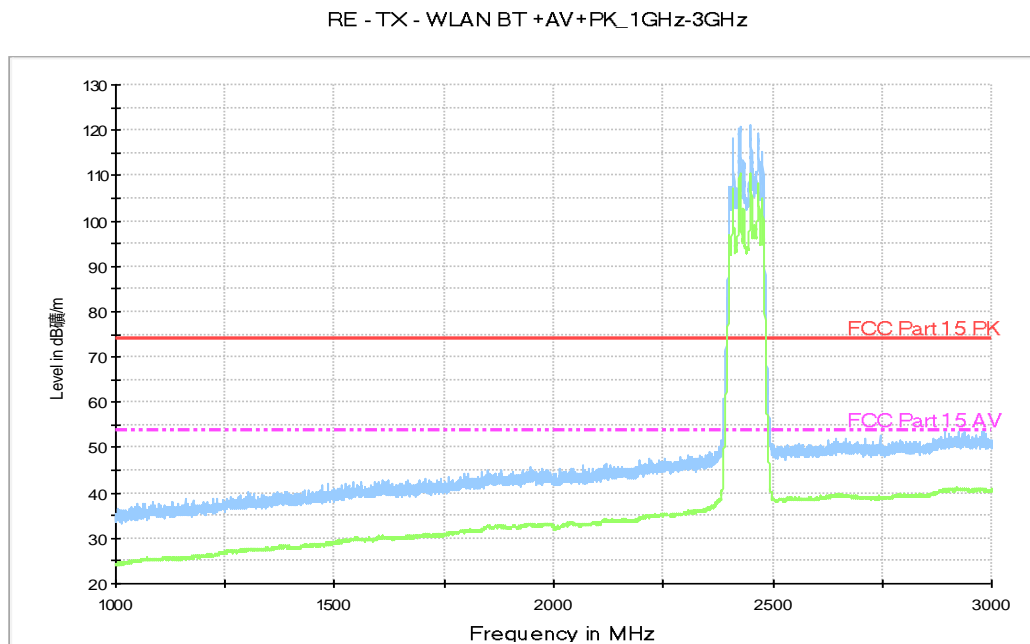
**Fig.A.6.2.16 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 3 GHz-18 GHz)**



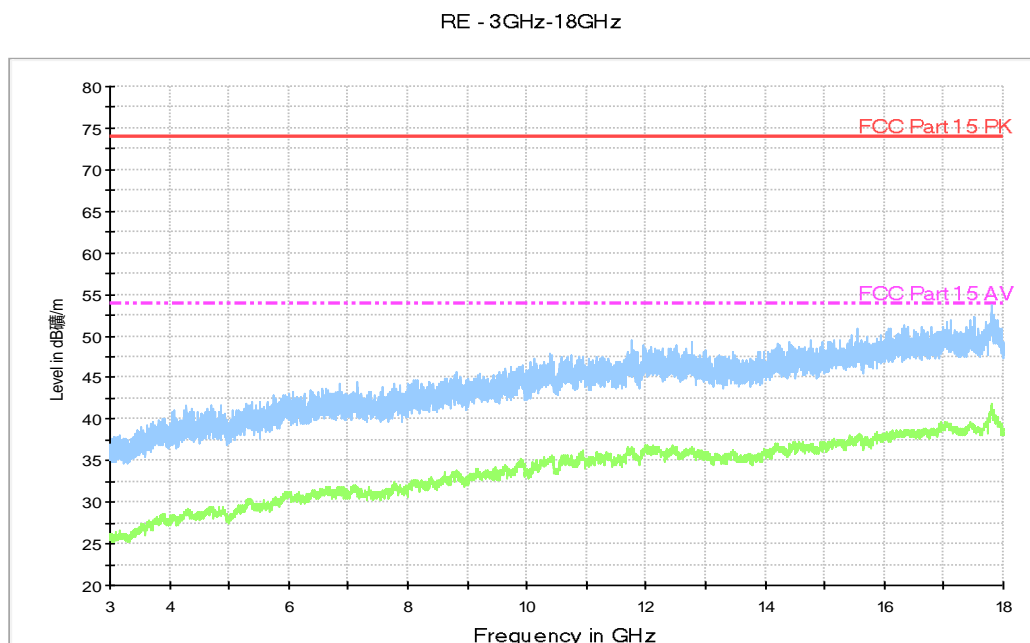
**Fig.A.6.2.17 Transmitter Spurious Emission - Radiated (802.11g, Ch6, 18GHz – 26.5GHz)**



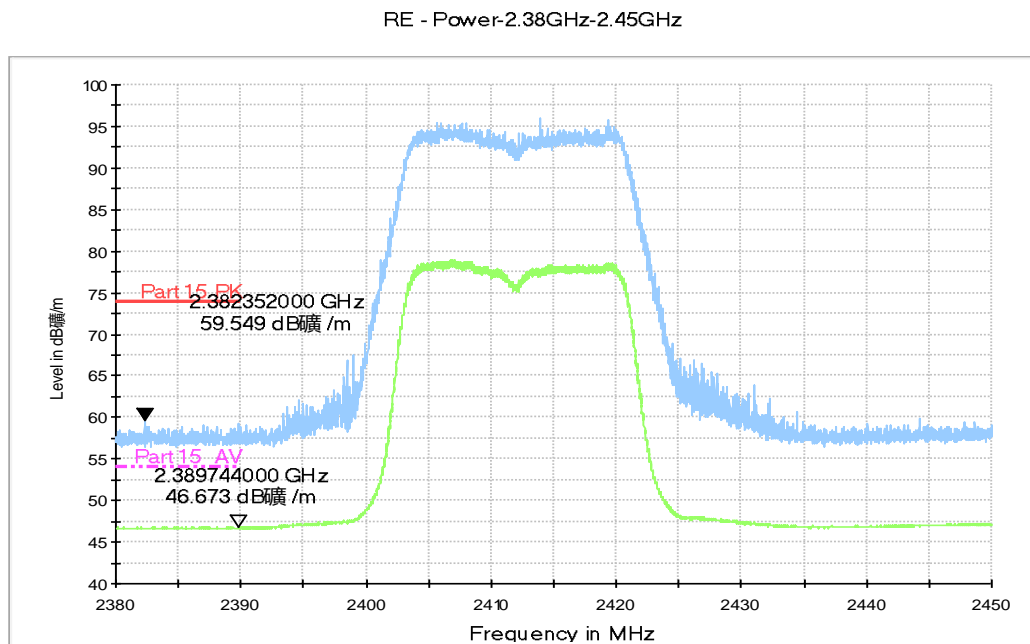
**Fig.A.6.2.18 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**



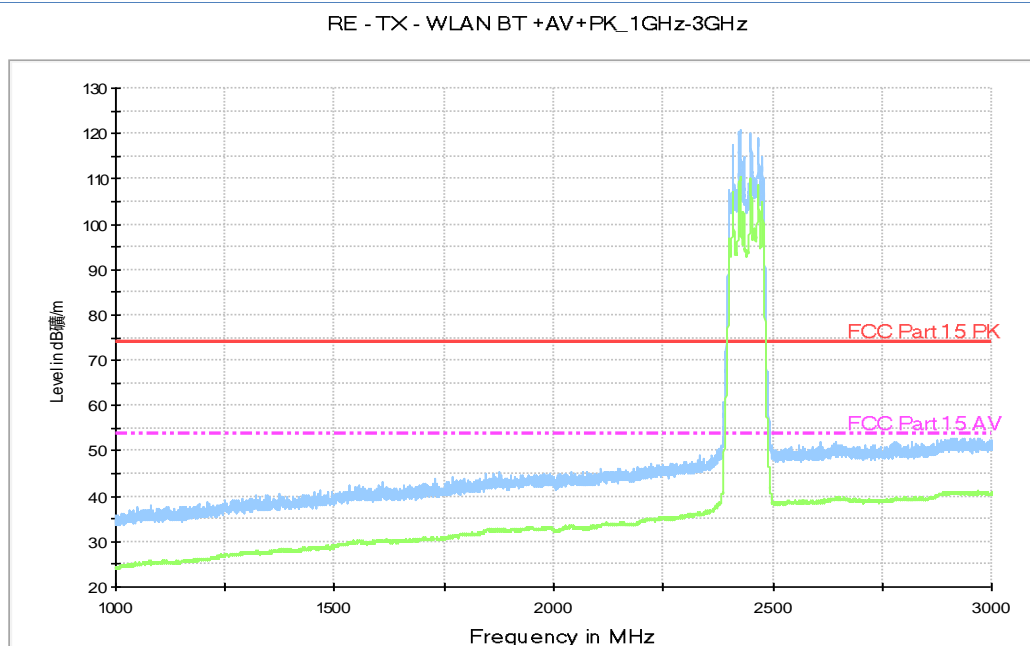
**Fig.A.6.2.19 Transmitter Spurious Emission - Radiated (802.11g, Ch11, 1 GHz-3 GHz)**



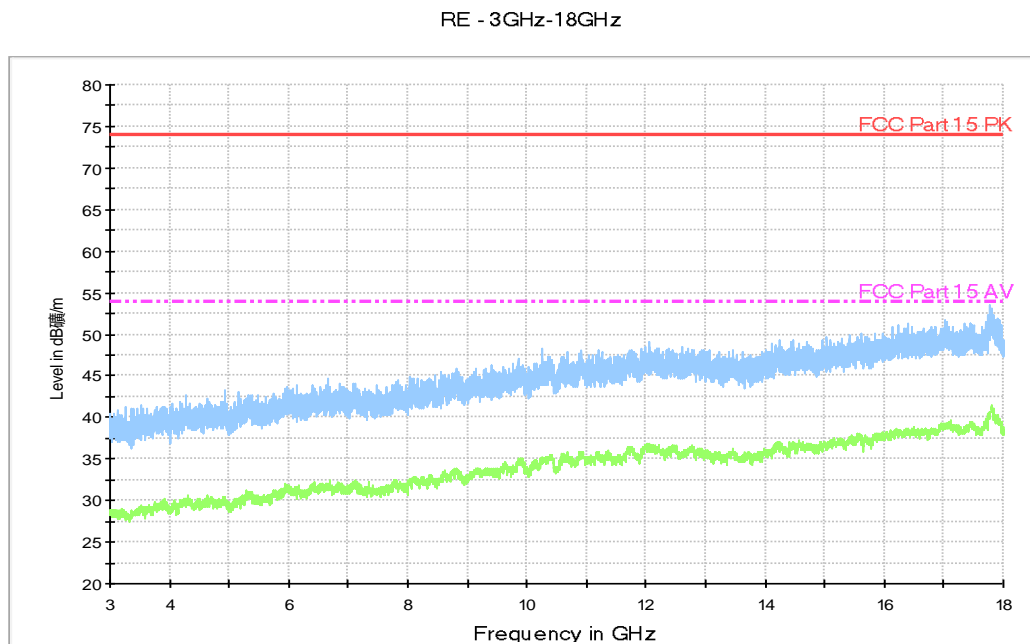
**Fig.A.6.2.20 Transmitter Spurious Emission - Radiated (802.11g, Ch11, 3 GHz-18 GHz)**



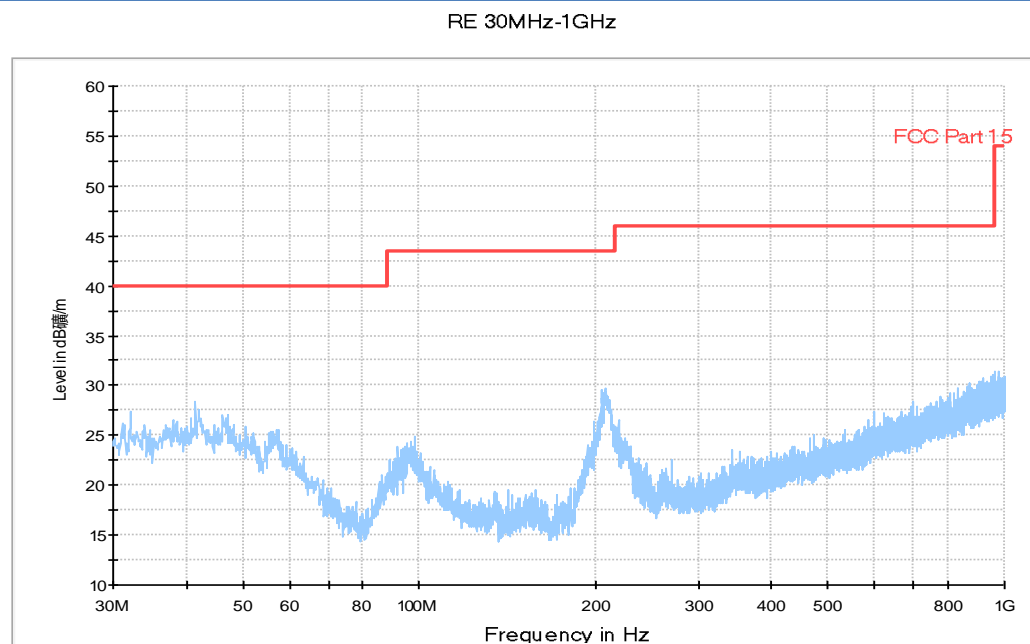
**Fig.A.6.2.21 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.38 GHz - 2.45GHz**



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

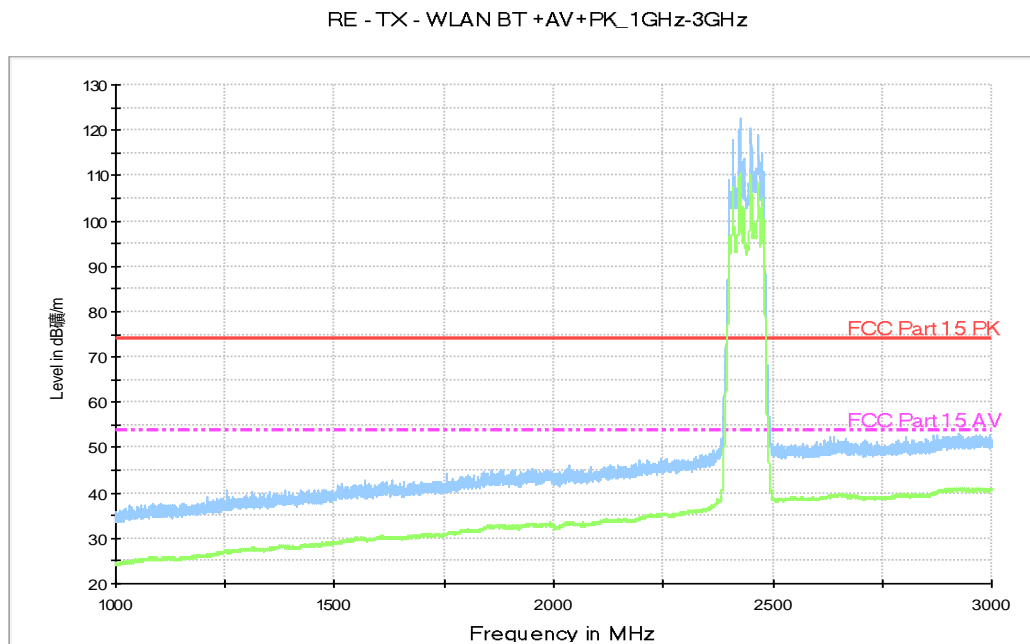


**Fig.A.6.2.23 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch1, 3 GHz-18 GHz)**

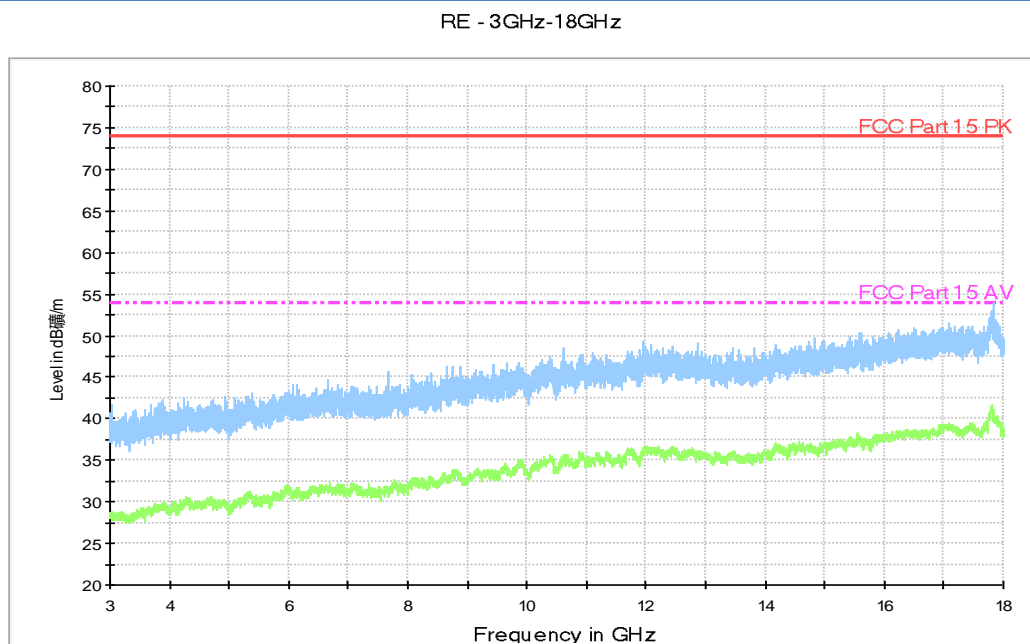


**Fig.A.6.2.24 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 30 MHz-1 GHz)**

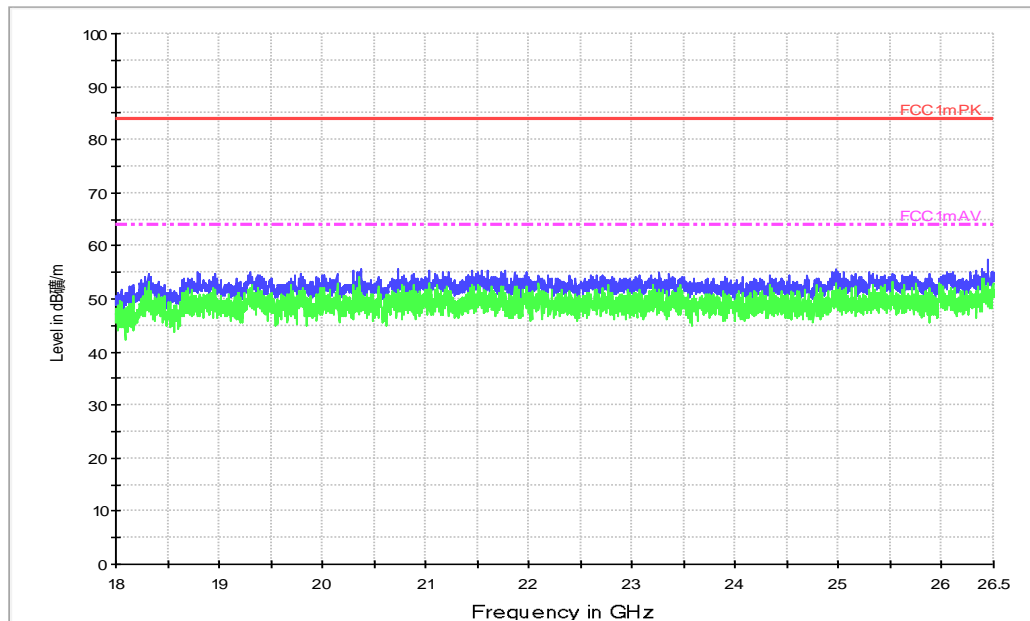




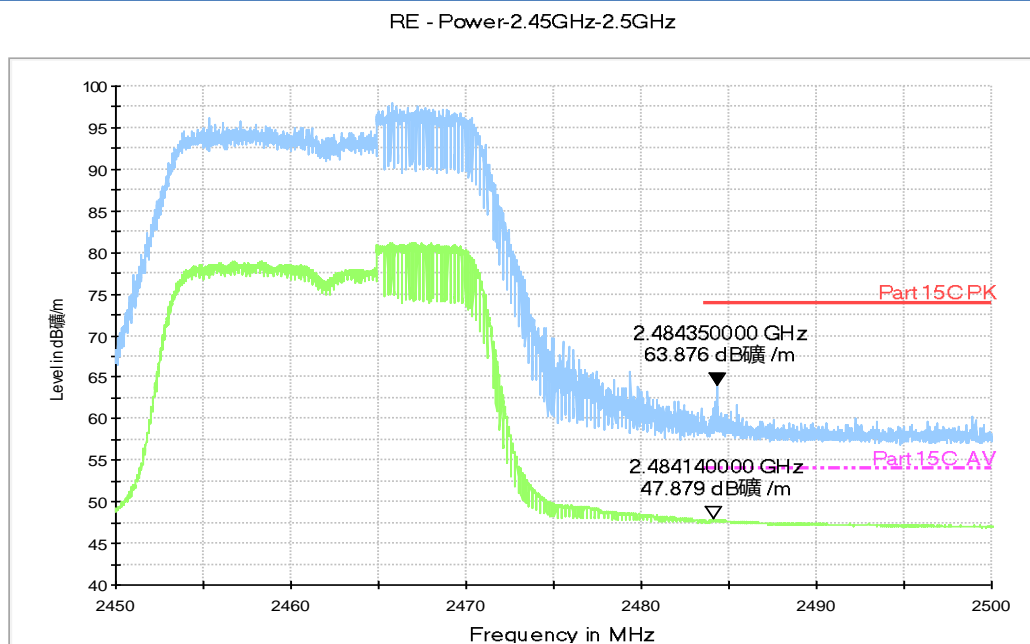
**Fig.A.6.2.25 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 1 GHz-3 GHz)**



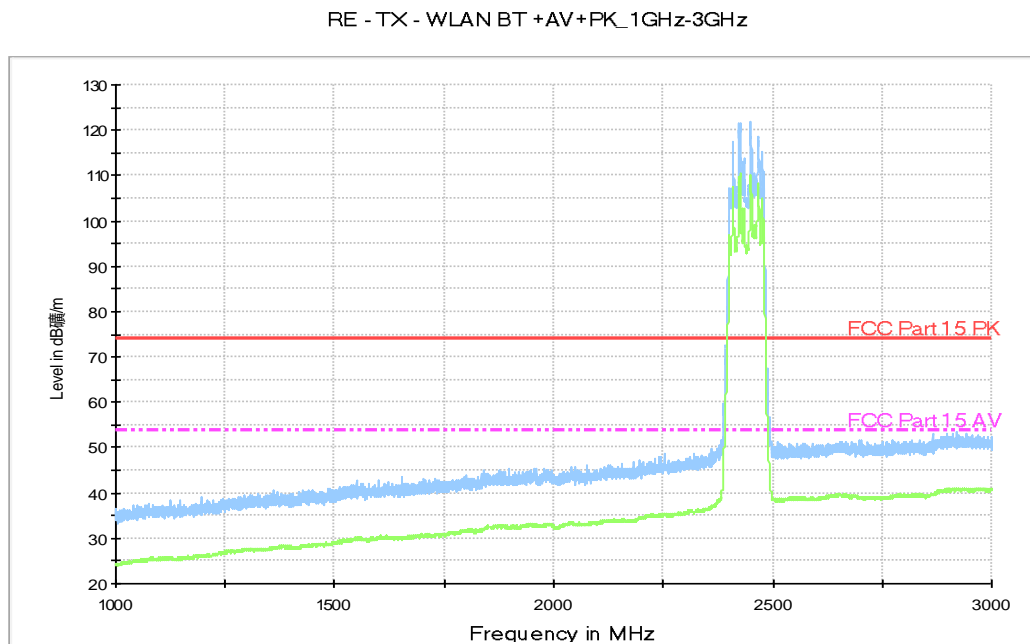
**Fig.A.6.2.26 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 3 GHz-18 GHz)**



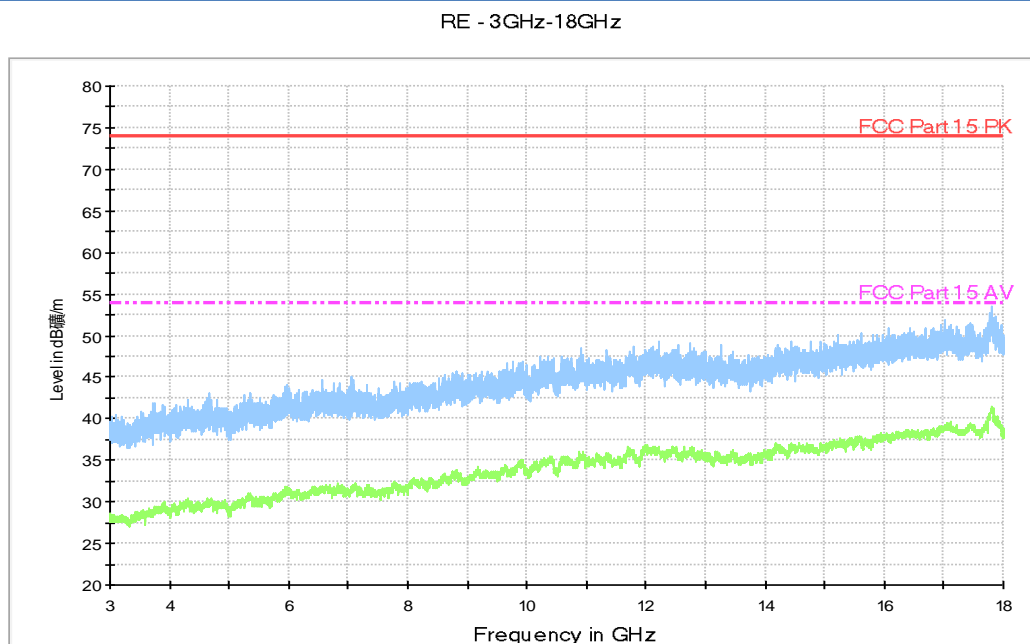
**Fig.A.6.2.27 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch6, 18GHz – 26.5GHz)**



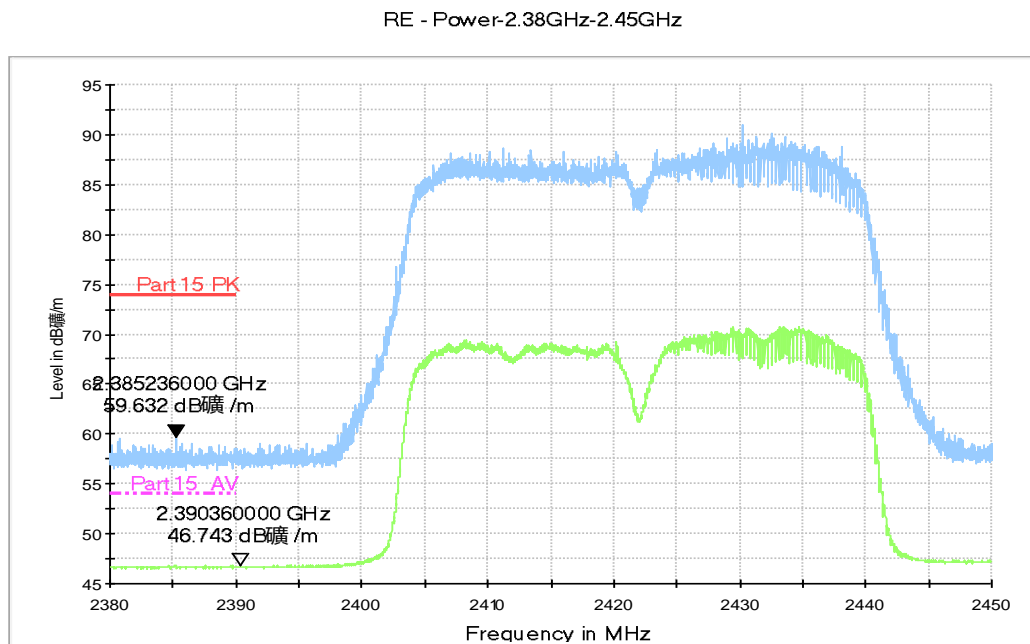
**Fig.A.6.2.28 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**



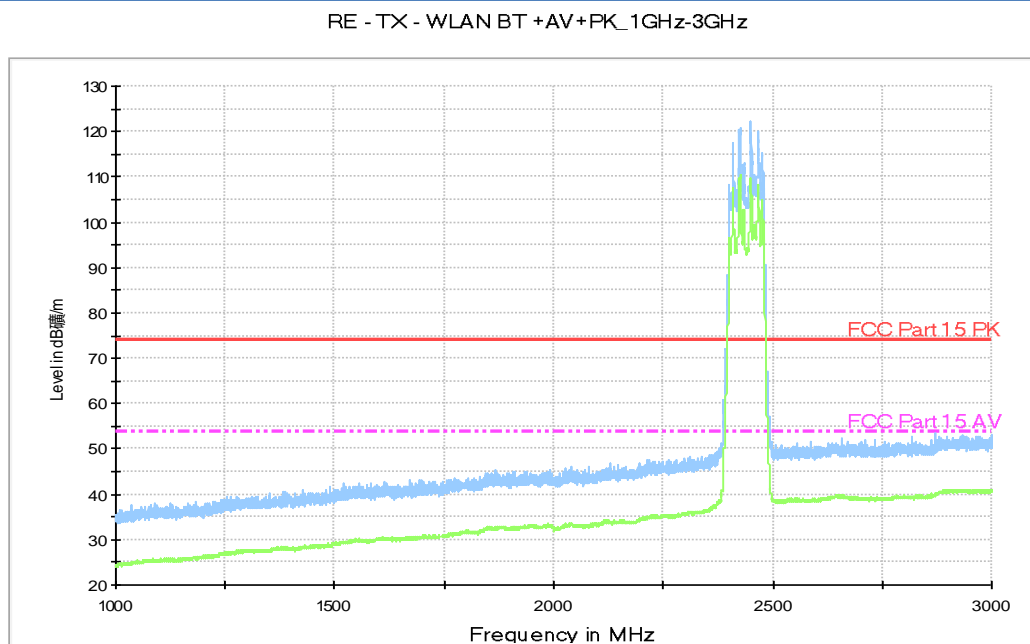
**Fig.A.6.2.29 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch11, 1 GHz-3 GHz)**



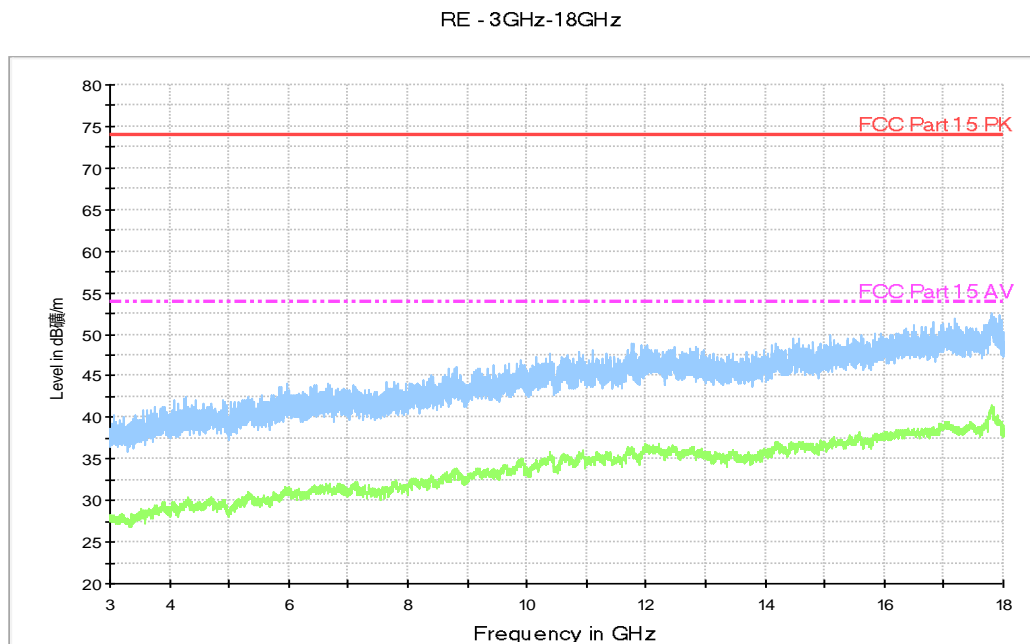
**Fig.A.6.2.30 Transmitter Spurious Emission - Radiated (802.11n-HT20, Ch11, 3 GHz-18 GHz)**



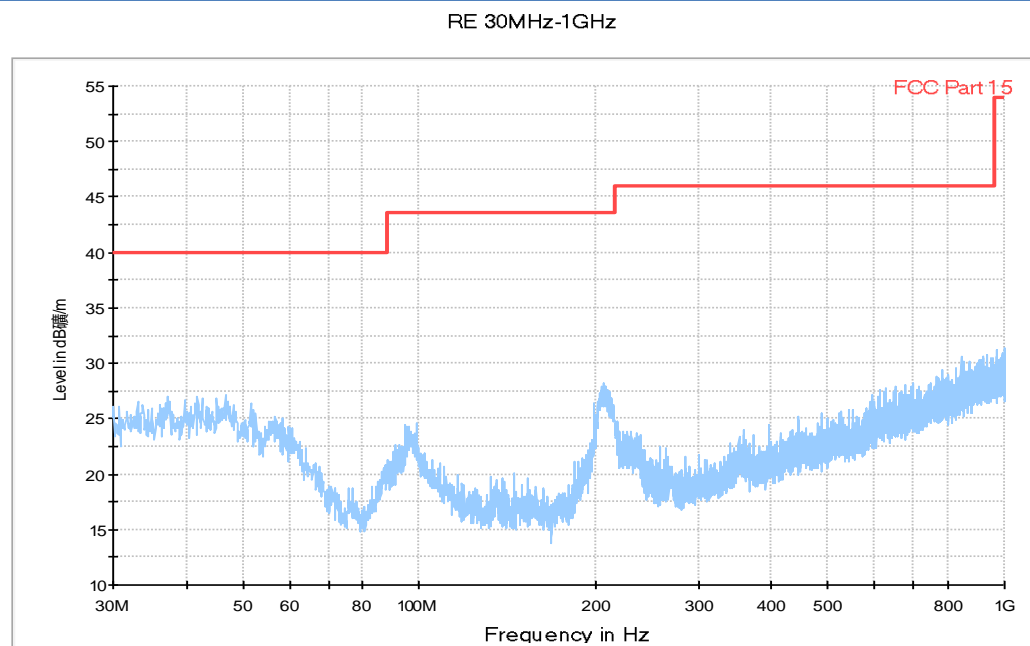
**Fig.A.6.2.31 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.38 GHz - 2.45GHz**



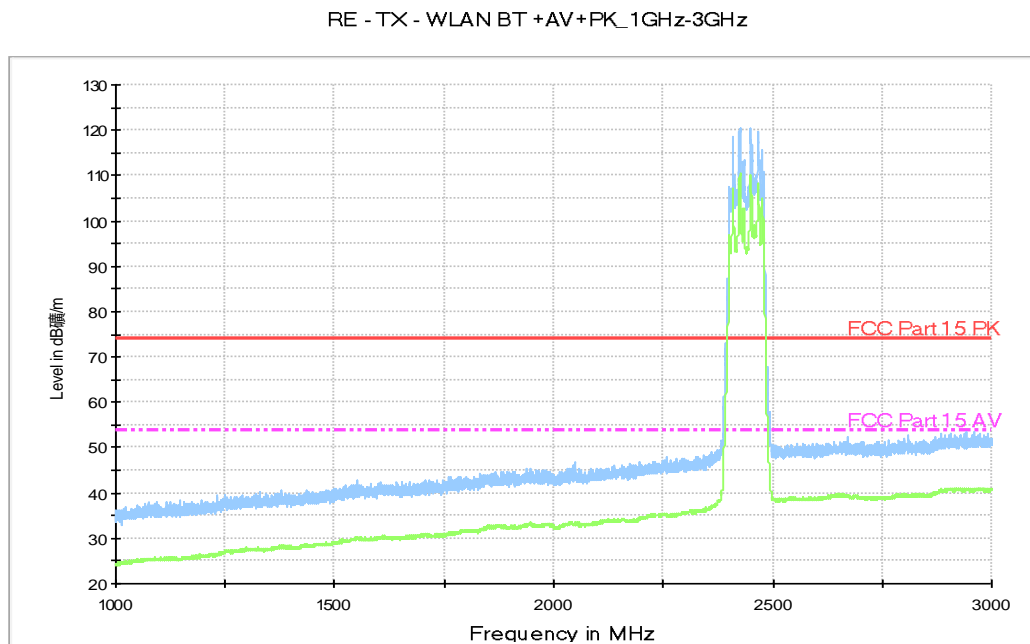
**Fig.A.6.2.32 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch3, 1 GHz-3 GHz)**



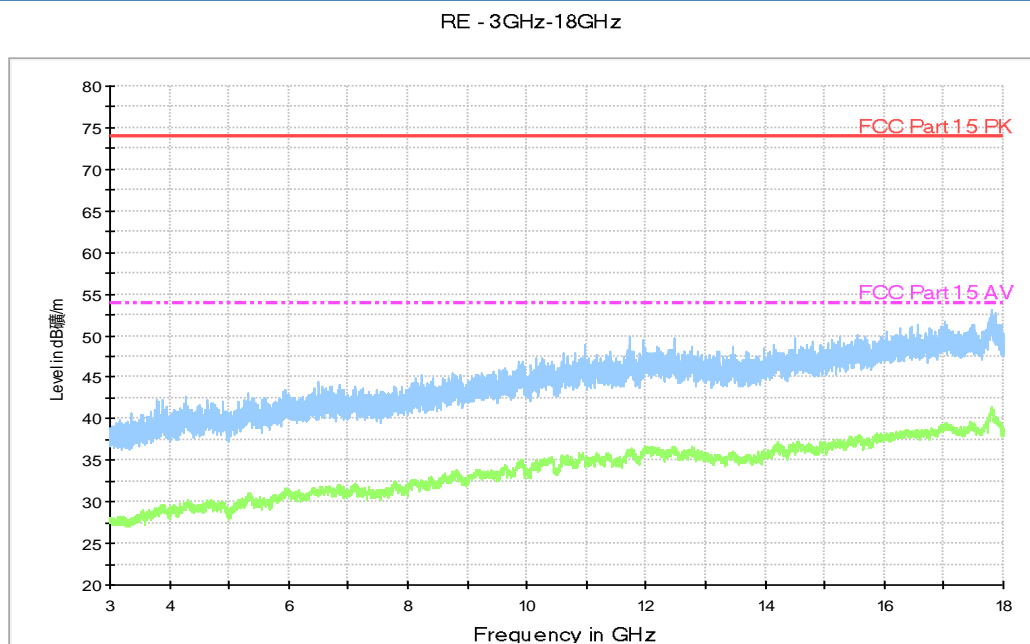
**Fig.A.6.2.33 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch3, 3 GHz-18 GHz)**



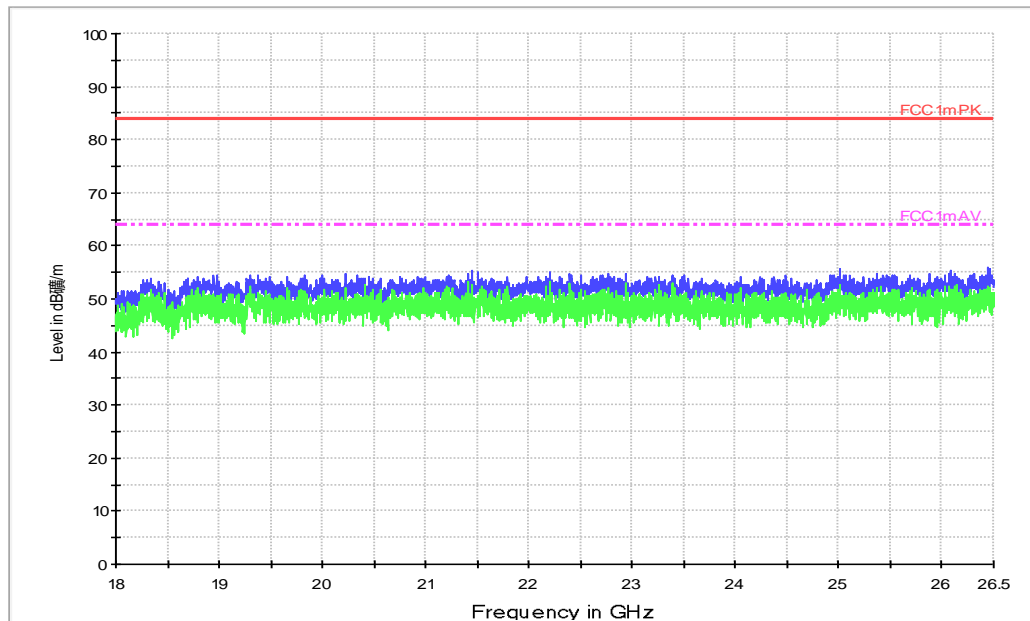
**Fig.A.6.2.34 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 30 MHz-1 GHz)**



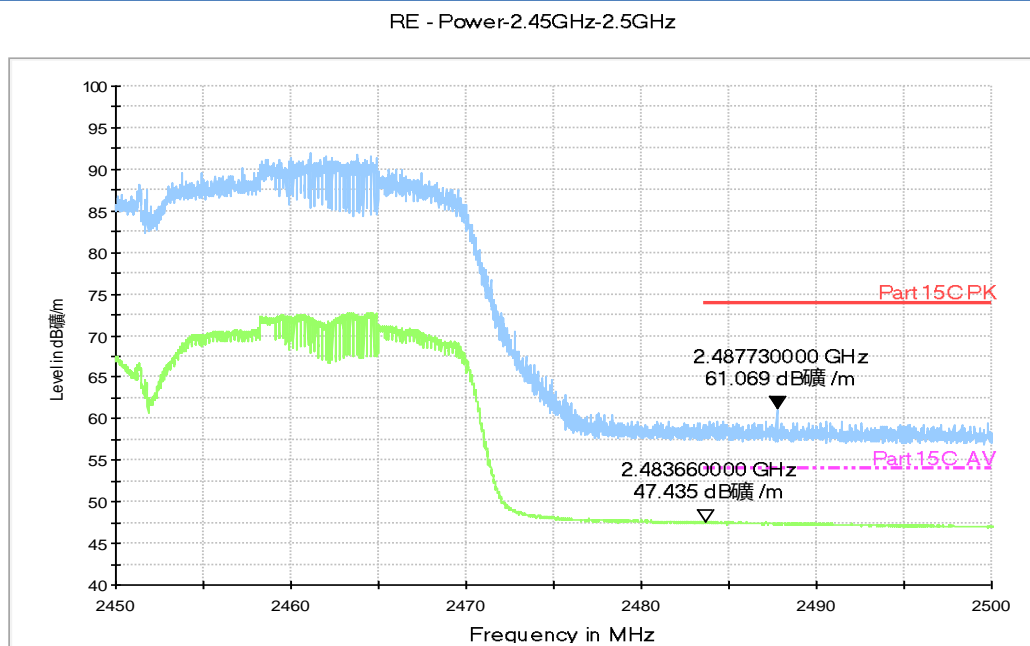
**Fig.A.6.2.35 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 1 GHz-3 GHz)**



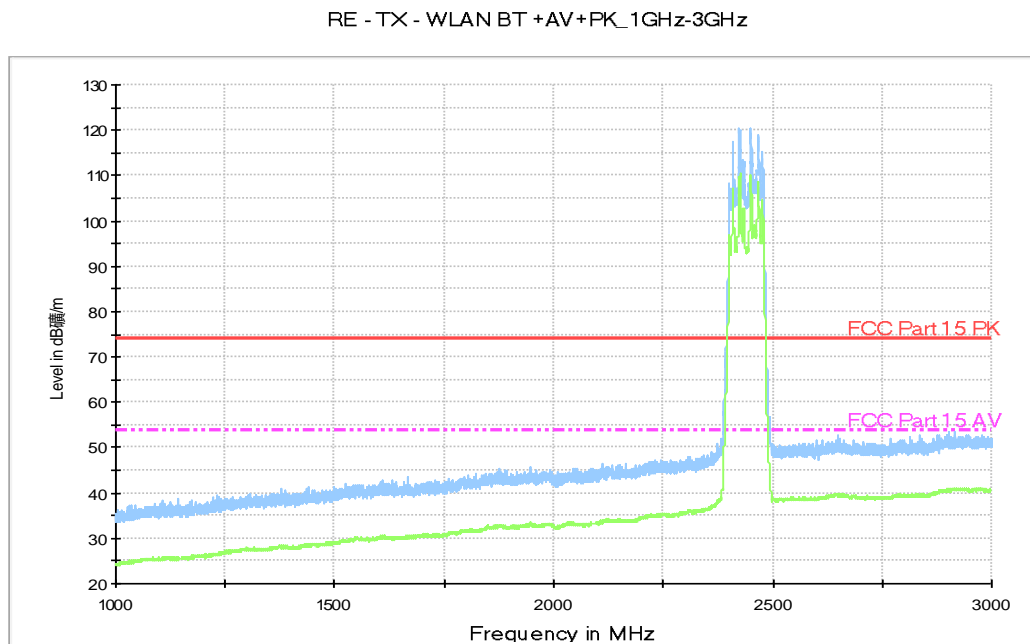
**Fig.A.6.2.36 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 3 GHz-18 GHz)**



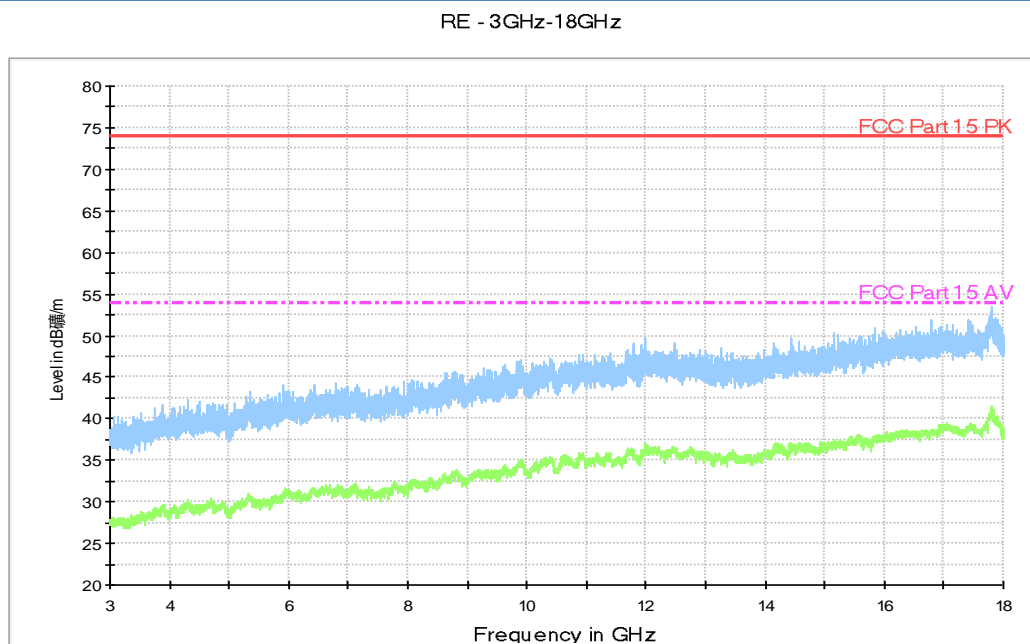
**Fig.A.6.2.37 Transmitter Spurious Emission - Radiated (802.11n-HT40, Ch6, 18GHz – 26.5GHz)**



**Fig.A.6.2.38 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz**



**Fig.A.6.2.39 Transmitter Spurious Emission - Radiated (802.11n-HT40, ch9, 1 GHz-3 GHz)**



**Fig.A.6.2.40 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)

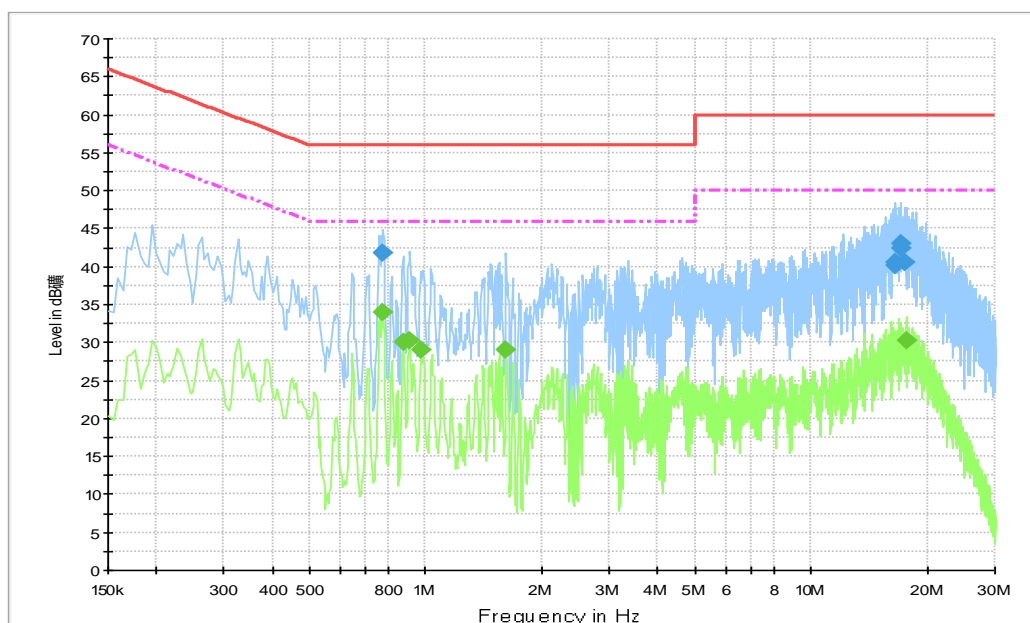
Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

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	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:



**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

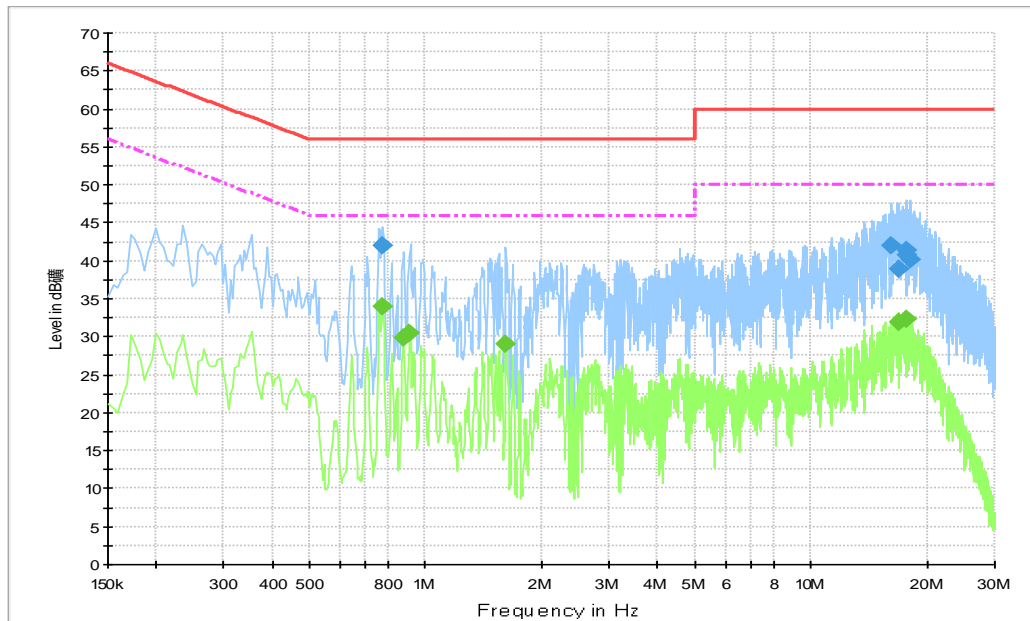
neutral line.

## Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.775500	41.9	GND	L1	10.7	14.1	56.0
16.462500	40.6	GND	L1	11.2	19.4	60.0
16.530000	40.1	GND	L1	11.2	19.9	60.0
17.052000	43.0	GND	L1	11.2	17.0	60.0
17.115000	42.5	GND	L1	11.2	17.5	60.0
17.479500	40.6	GND	L1	11.2	19.4	60.0

## Final Result 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.775500	33.9	GND	L1	10.7	12.1	46.0
0.874500	30.0	GND	L1	10.7	16.0	46.0
0.910500	30.2	GND	L1	10.7	15.8	46.0
0.973500	29.0	GND	L1	10.7	17.0	46.0
1.617000	29.0	GND	L1	10.7	17.0	46.0
17.754000	30.3	GND	L1	11.2	19.7	50.0



**Fig.A.7.1 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)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.775500	42.0	GND	L1	10.7	14.0	56.0
16.206000	42.0	GND	L1	11.2	18.0	60.0
16.984500	39.0	GND	L1	11.2	21.0	60.0
17.637000	40.7	GND	L1	11.2	19.3	60.0
17.767500	41.4	GND	L1	11.2	18.6	60.0
18.015000	40.2	GND	L1	11.2	19.8	60.0

## Final Result 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.775500	33.9	GND	L1	10.7	12.1	46.0
0.874500	29.8	GND	L1	10.7	16.2	46.0
0.910500	30.5	GND	L1	10.7	15.5	46.0
1.617000	29.0	GND	L1	10.7	17.0	46.0
16.998000	32.0	GND	L1	11.2	18.0	50.0
17.709000	32.3	GND	L1	11.2	17.7	50.0

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