



DUAL TX: 802.11g OFDM & 802.11b DSSS MODULATION (TEST MODE C)

NOTE 1:

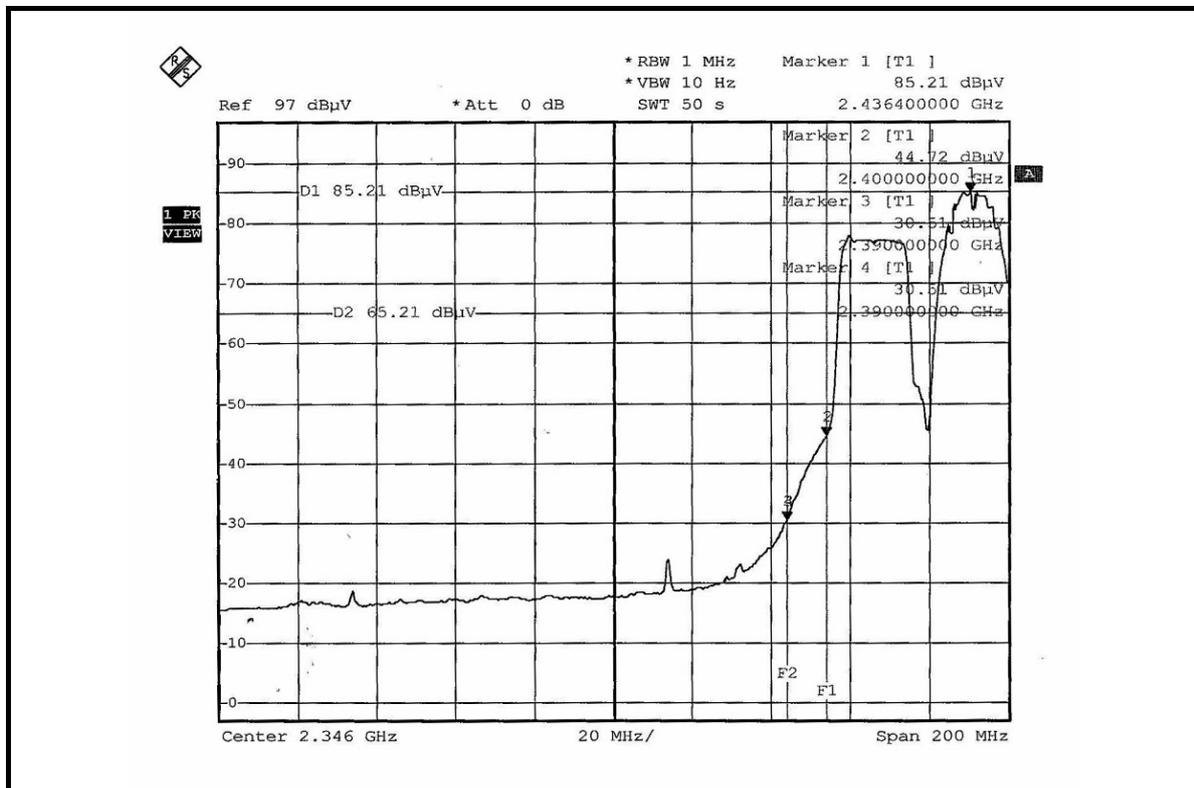
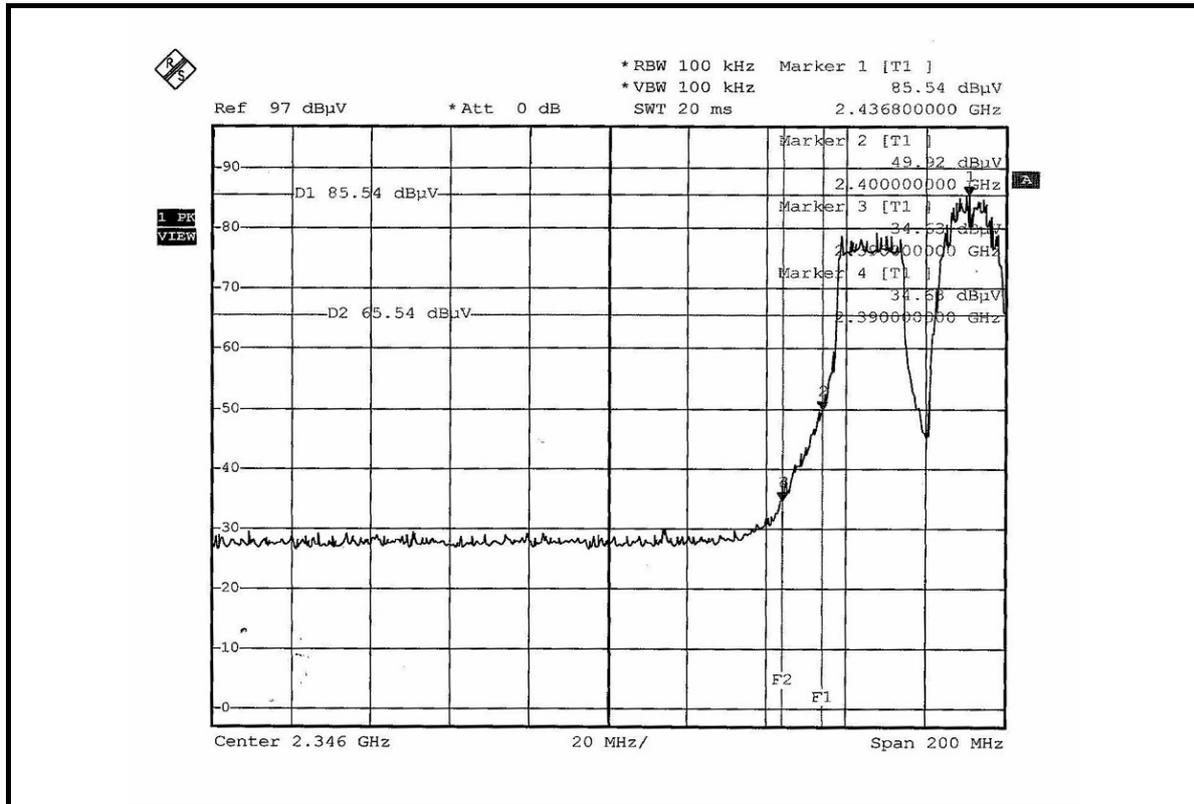
The band edge emission plot on the next page shows 50.91dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 111.68dBuV/m (Peak), so the maximum field strength in restrict band is $111.68 - 50.91 = 60.77$ dBuV/m which is under 74dBuV/m limit.

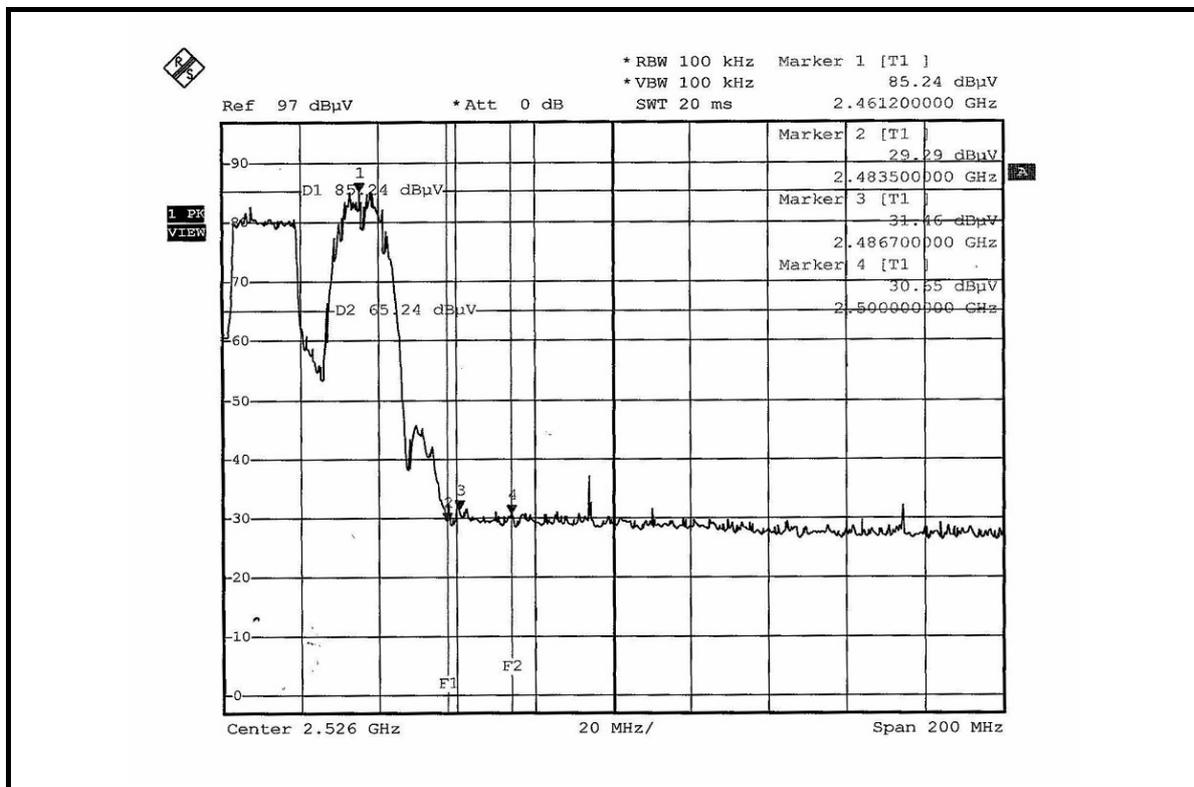
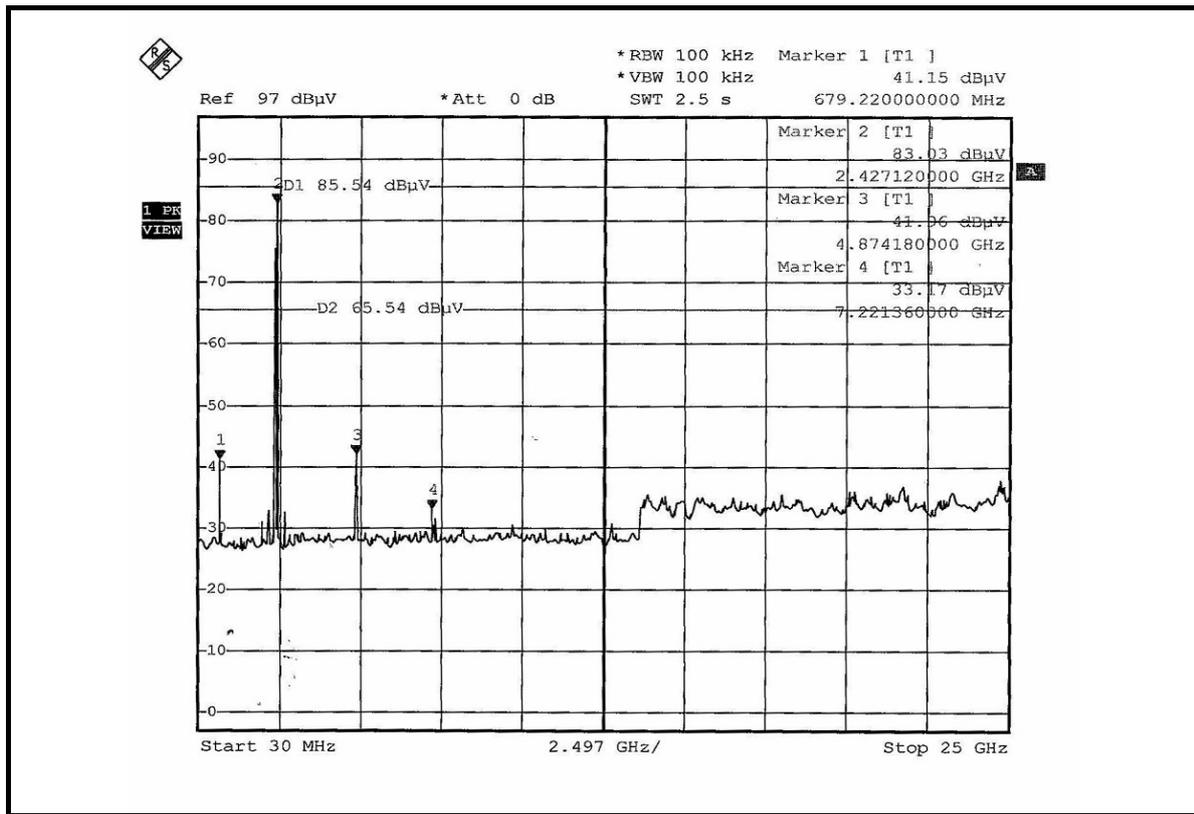
The band edge emission plot of on the next page shows 54.70dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 107.34dBuV/m (Average), so the maximum field strength in restrict band is $107.34 - 54.70 = 52.64$ dBuV/m which is under 54dBuV/m limit.

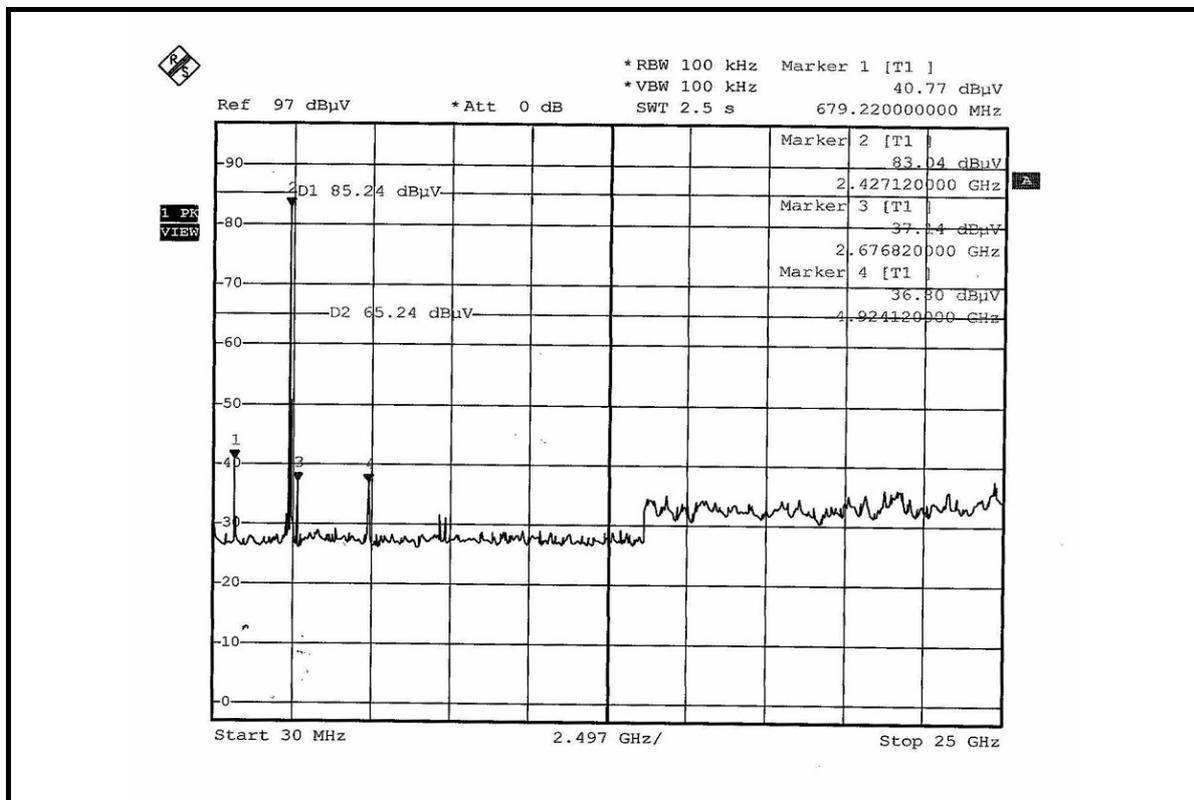
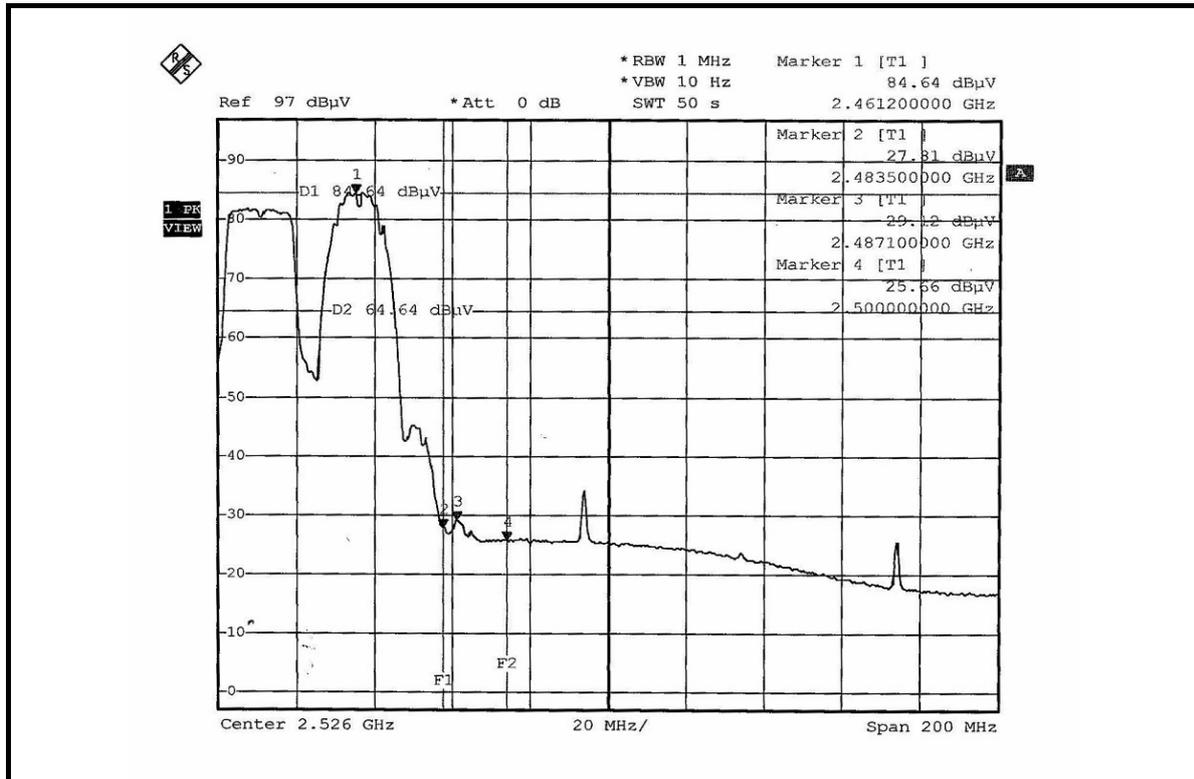
NOTE 2:

The band edge emission plot on the next second page shows 53.78dBc between carrier maximum power and local maximum emission in restrict band (2.48670GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 113.98dBuV/m (Peak), so the maximum field strength in restrict band is $112.90 - 53.78 = 59.12$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 55.52dBc between carrier maximum power and local maximum emission in restrict band (2.48710GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 108.00dBuV/m (Average), so the maximum field strength in restrict band is $108.00 - 55.52 = 52.48$ dBuV/m which is under 54dBuV/m limit.









DUAL TX: 802.11g OFDM & 802.11g OFDM MODULATION (TEST MODE B)

NOTE 1:

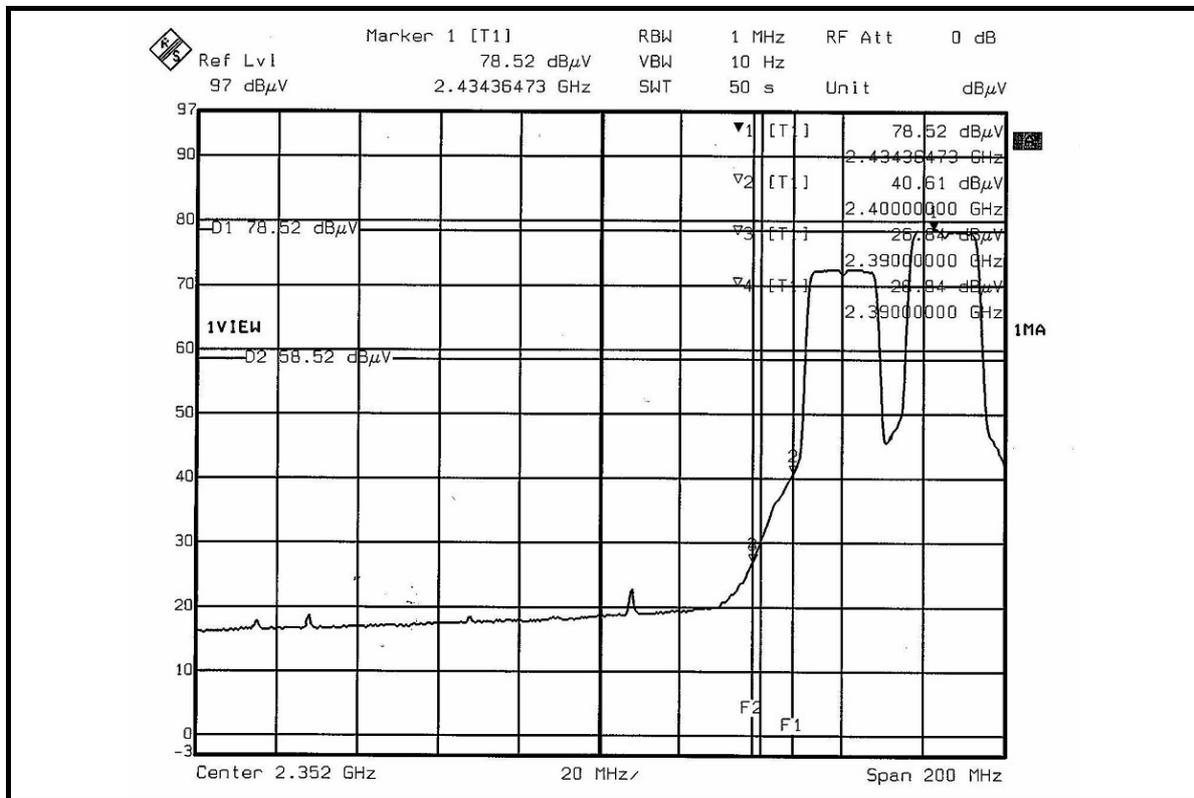
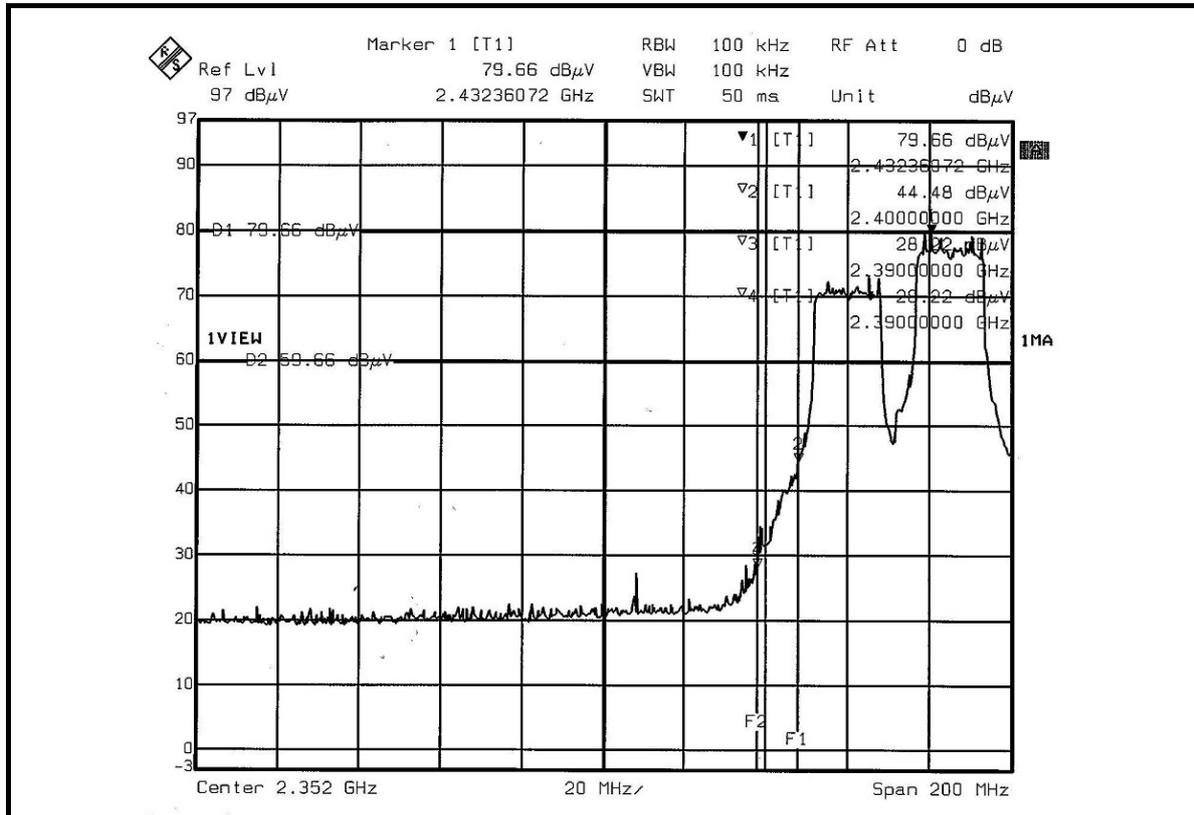
The band edge emission plot on the next page shows 51.44dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 111.12dBuV/m (Peak), so the maximum field strength in restrict band is $111.12 - 51.44 = 59.68$ dBuV/m which is under 74dBuV/m limit.

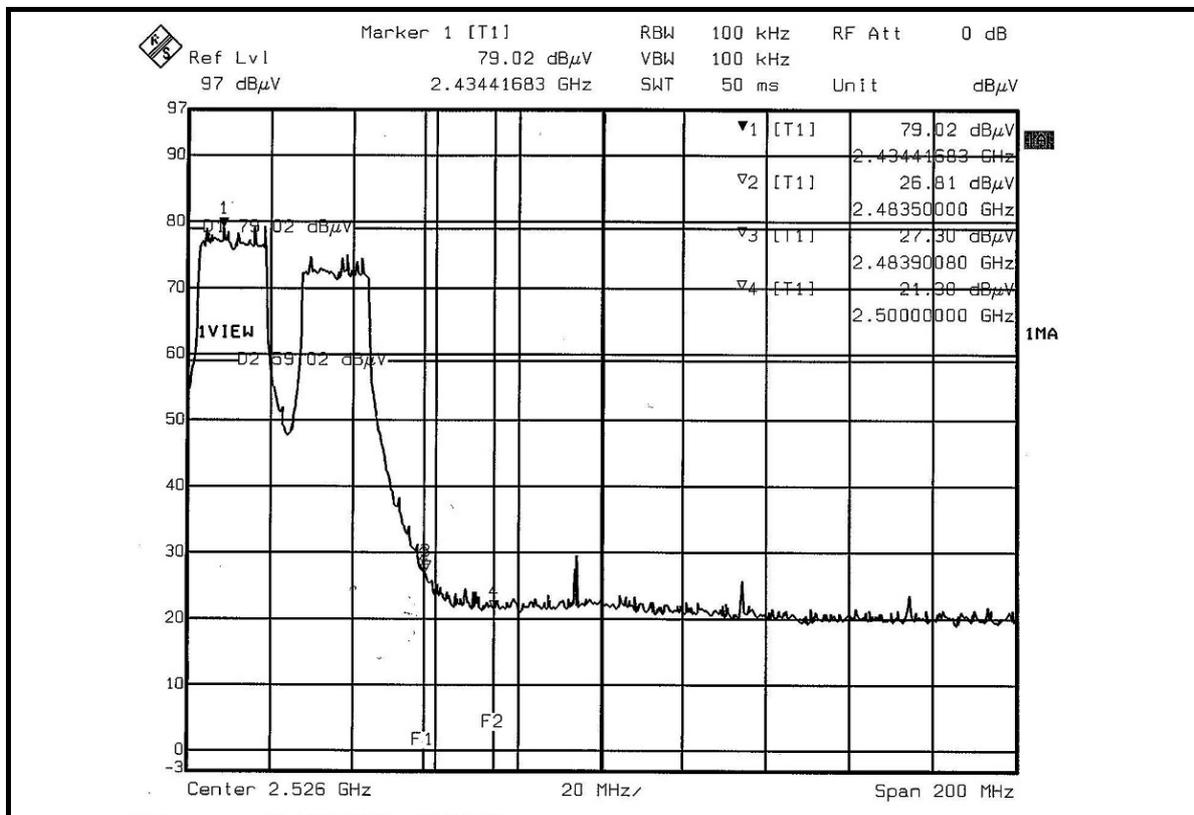
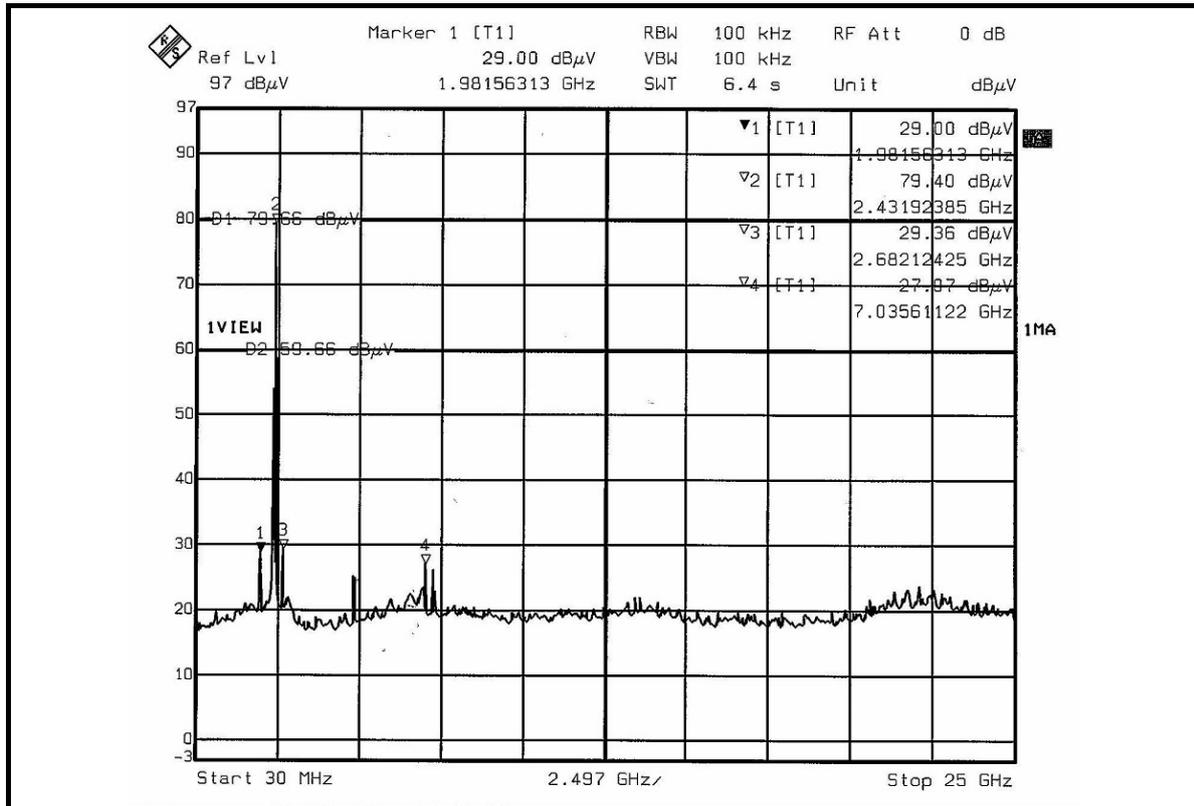
The band edge emission plot of on the next page shows 51.68dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 101.44dBuV/m (Average), so the maximum field strength in restrict band is $101.44 - 51.68 = 49.76$ dBuV/m which is under 54dBuV/m limit.

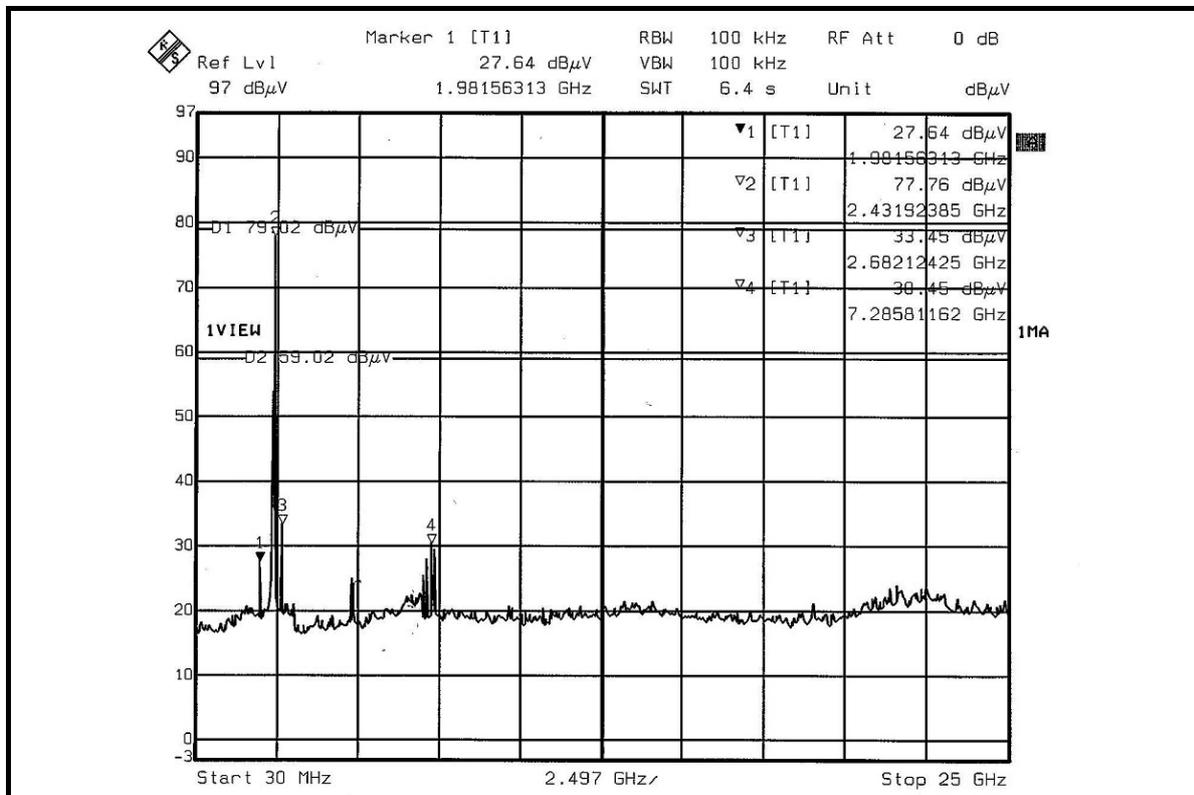
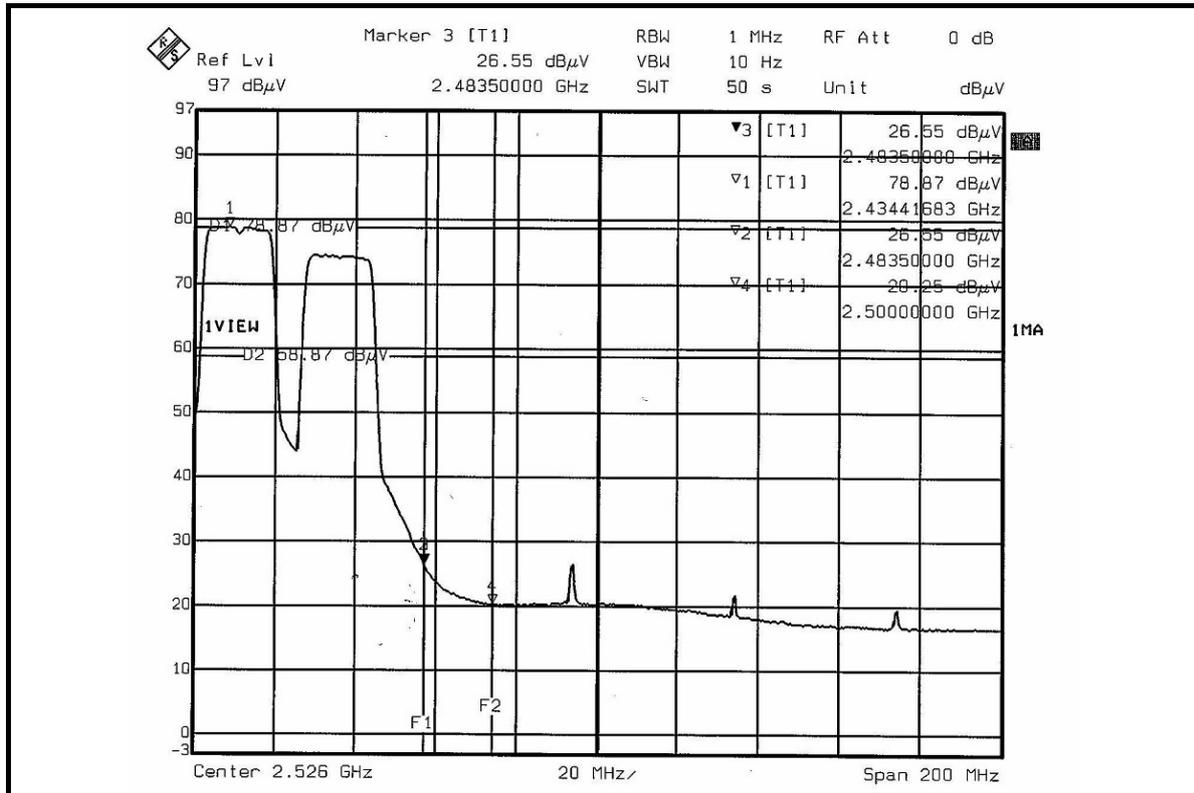
NOTE 2:

The band edge emission plot on the next second page shows 51.72dBc between carrier maximum power and local maximum emission in restrict band (2.48390GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 111.80dBuV/m (Peak), so the maximum field strength in restrict band is $111.80 - 51.72 = 60.08$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 52.32dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 101.74dBuV/m (Average), so the maximum field strength in restrict band is $101.74 - 52.32 = 49.42$ dBuV/m which is under 54dBuV/m limit.









DUAL TX: 802.11g OFDM & 802.11g OFDM MODULATION (TEST MODE C)

NOTE 1:

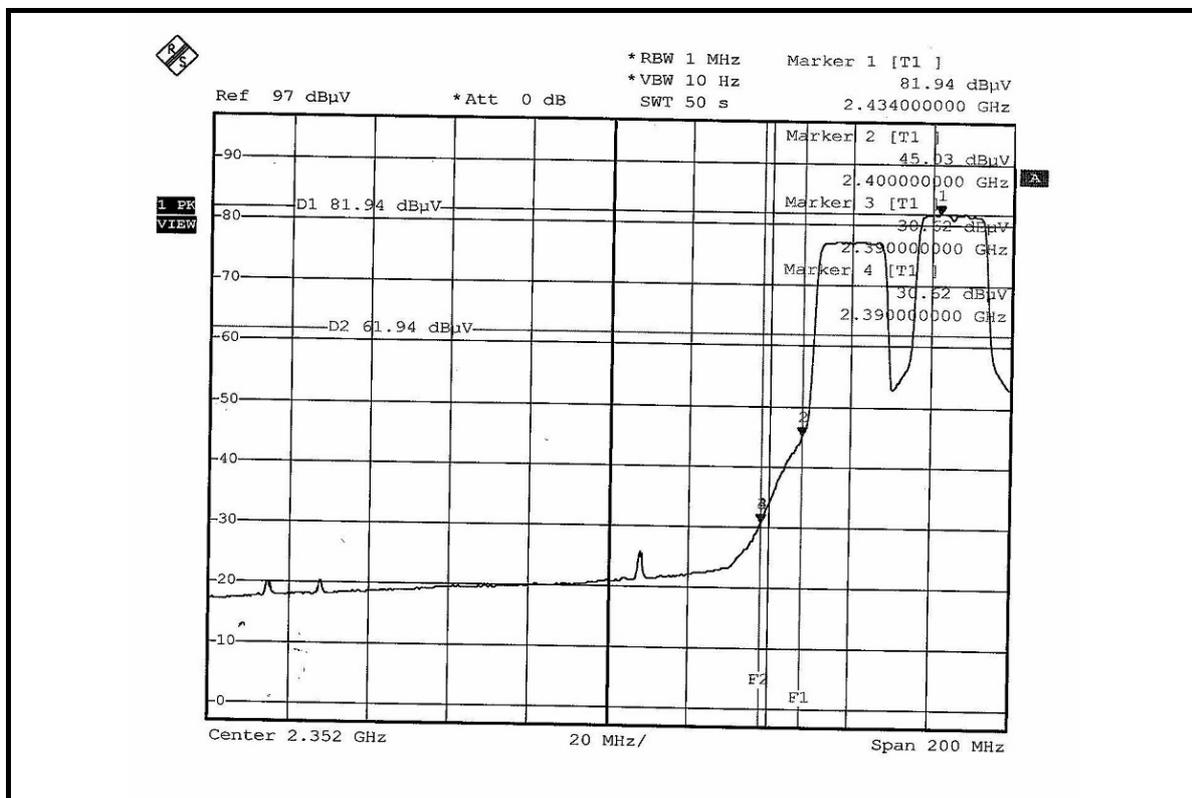
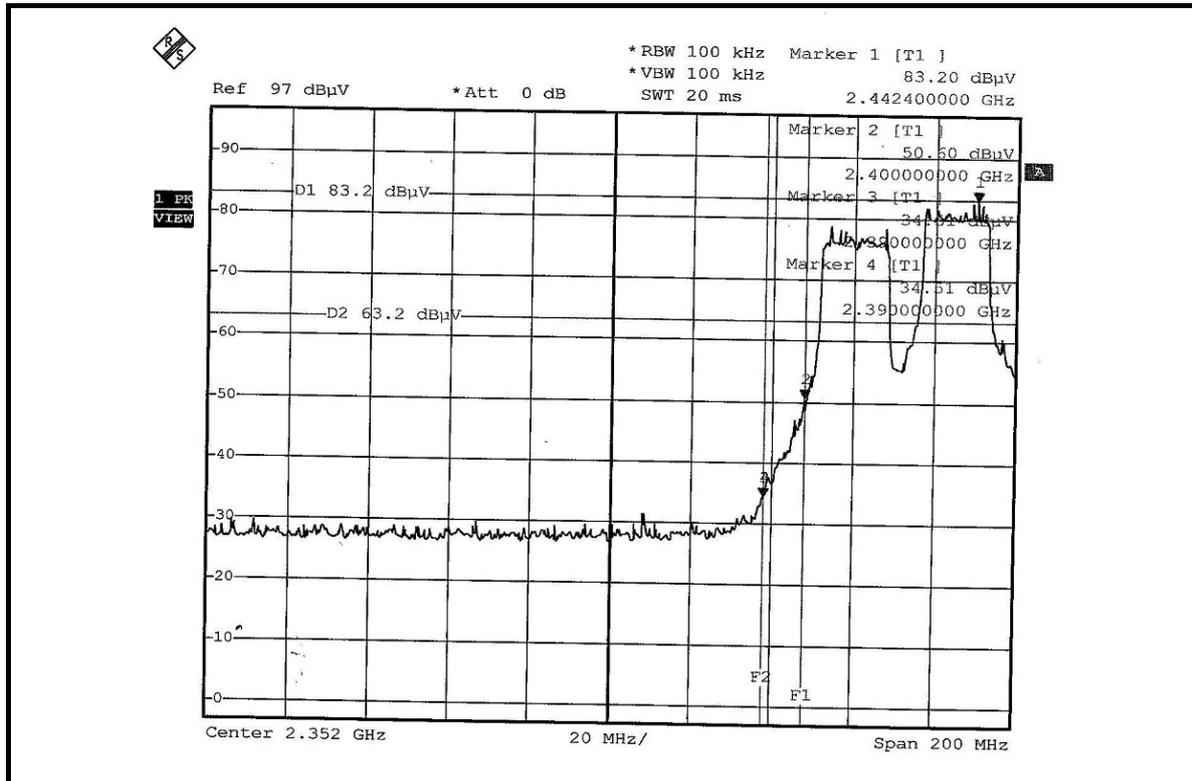
The band edge emission plot on the next page shows 48.69dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 113.86dBuV/m (Peak), so the maximum field strength in restrict band is $113.86 - 48.69 = 65.17$ dBuV/m which is under 74dBuV/m limit.

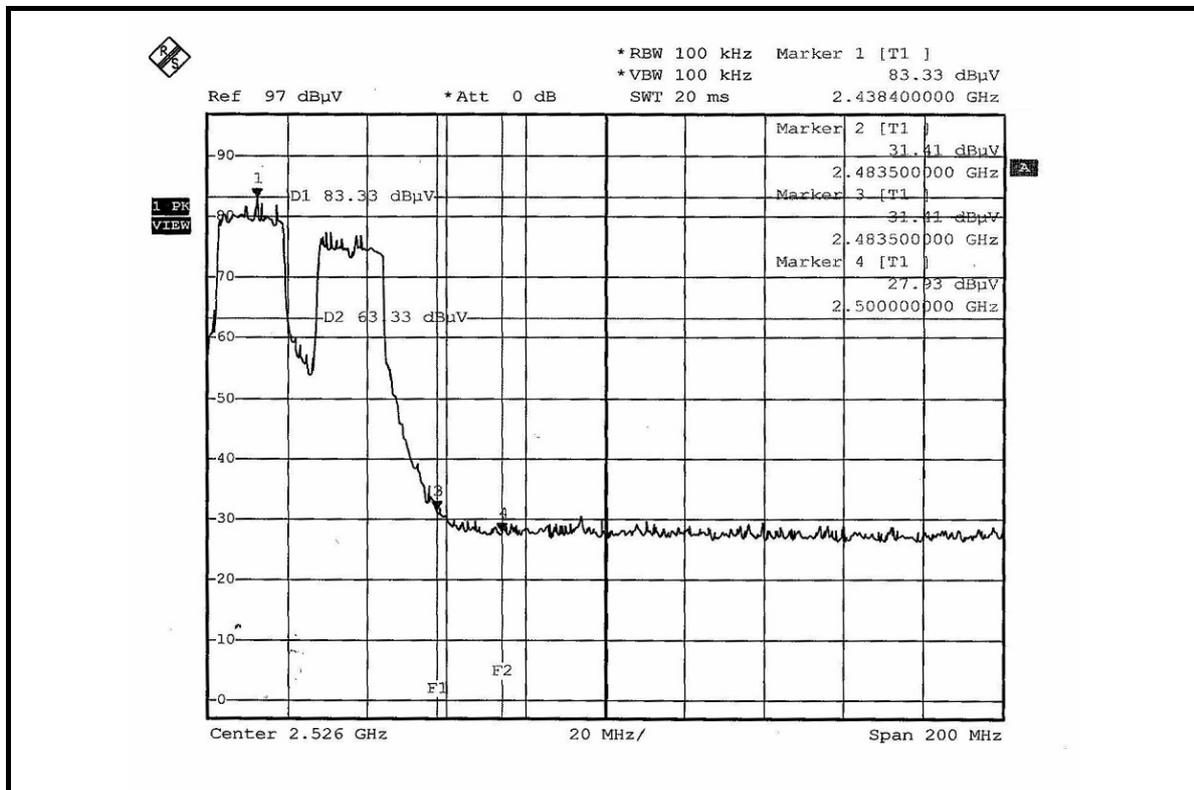
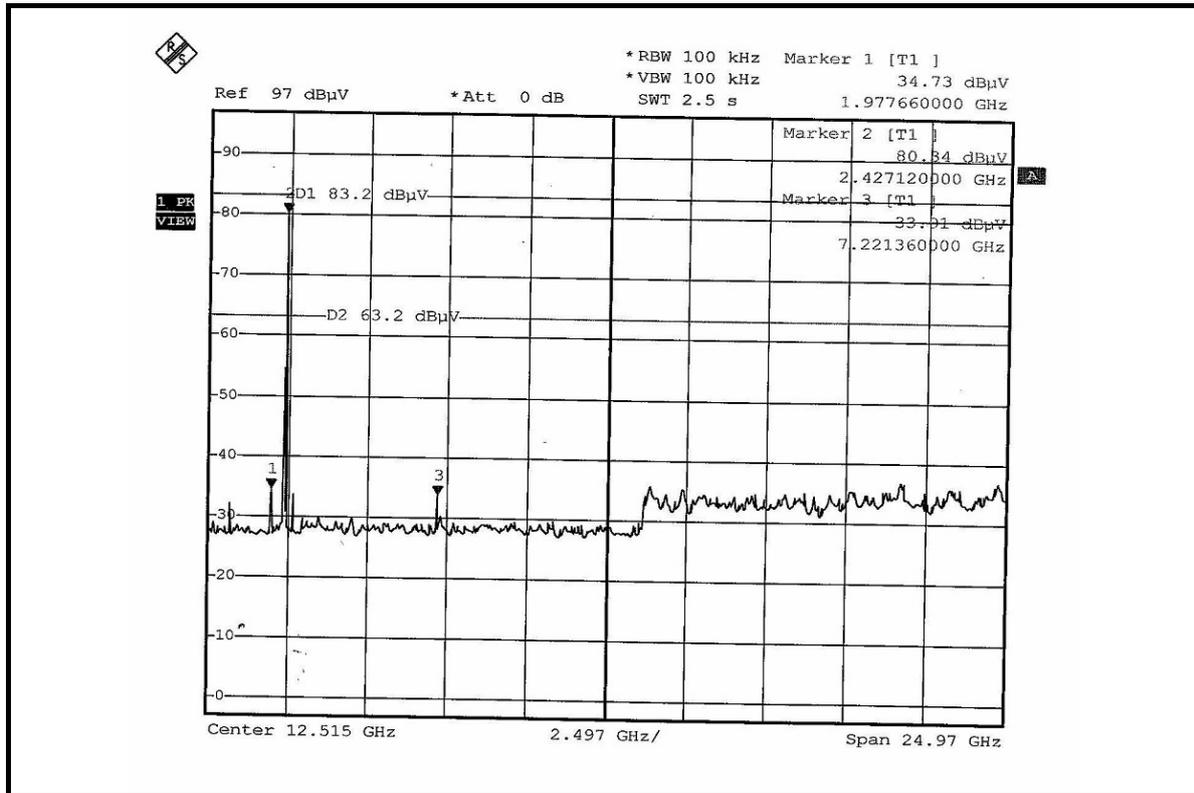
The band edge emission plot of on the next page shows 51.32dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 & channel 6 at the item 4.2.7 is 104.32dBuV/m (Average), so the maximum field strength in restrict band is $104.32 - 51.32 = 53.00$ dBuV/m which is under 54dBuV/m limit.

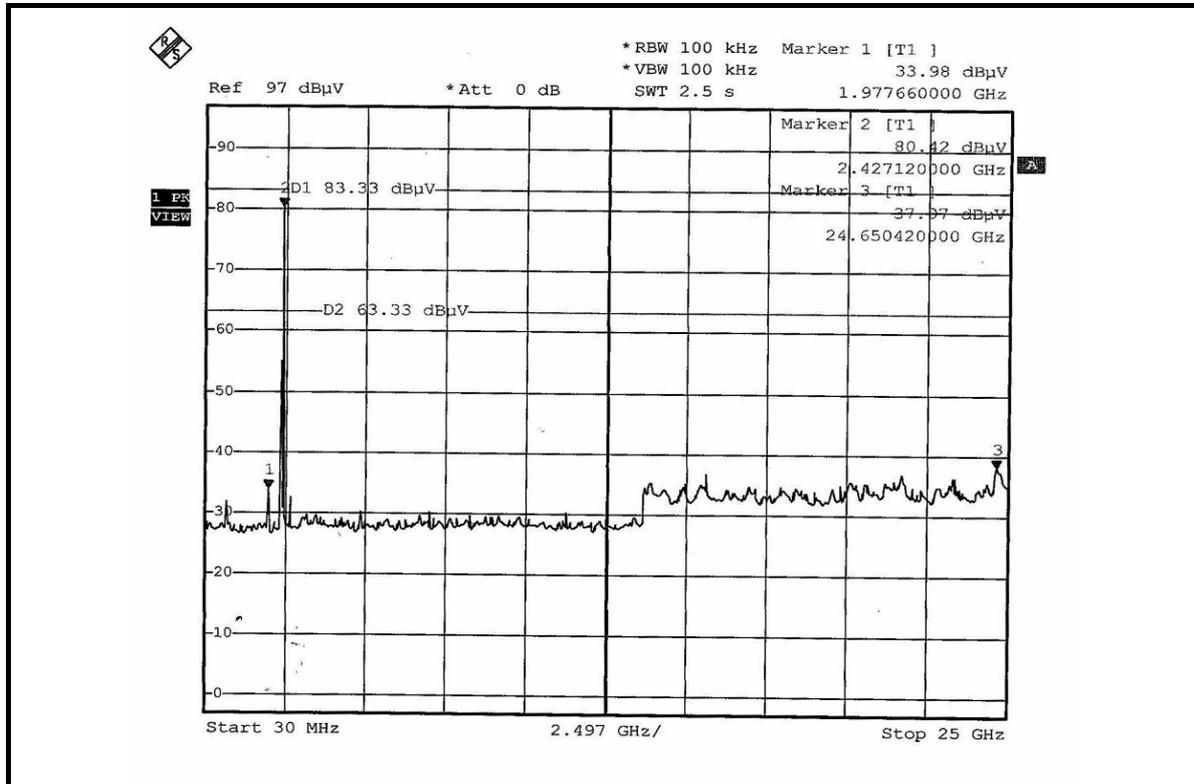
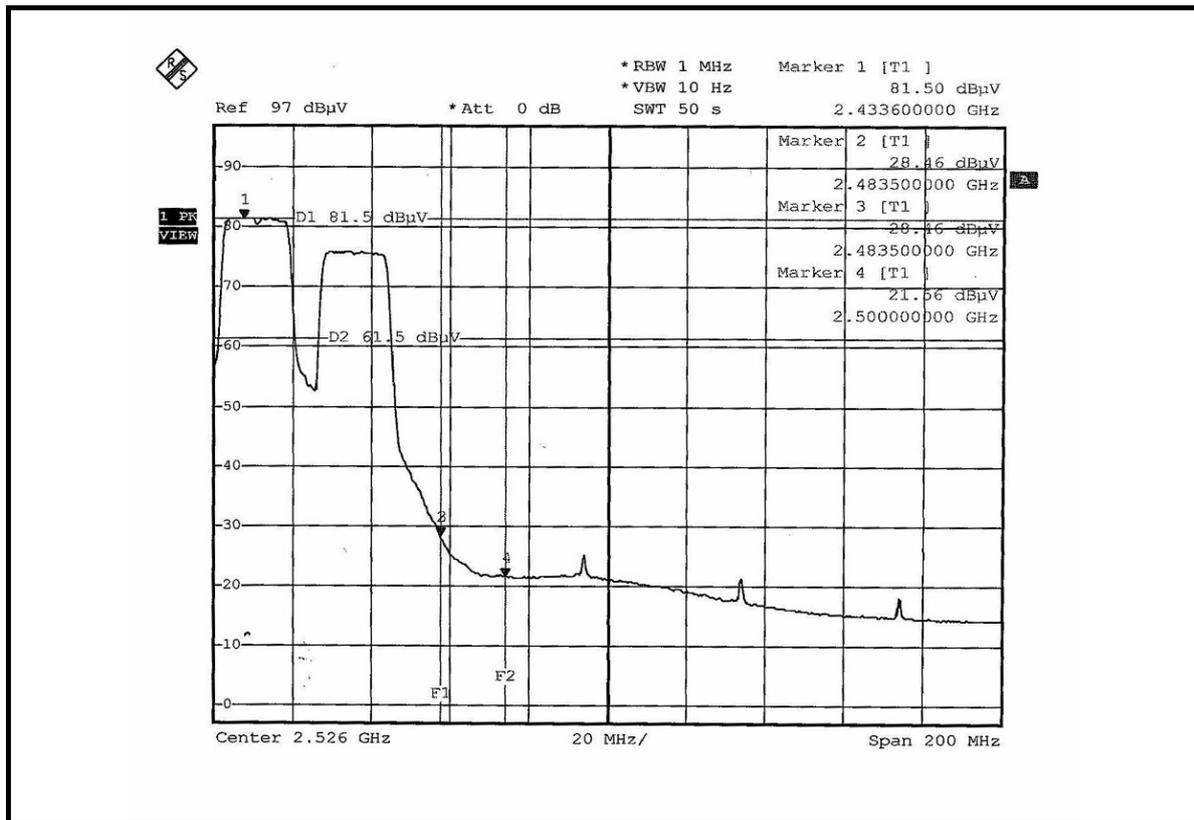
NOTE 2:

The band edge emission plot on the next second page shows 51.92dBc between carrier maximum power and local maximum emission in restrict band (2.48390GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 113.95dBuV/m (Peak), so the maximum field strength in restrict band is $113.95 - 51.92 = 62.03$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 53.04dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 6 & channel 11 at the item 4.2.7 is 104.84dBuV/m (Average), so the maximum field strength in restrict band is $104.84 - 53.04 = 51.80$ dBuV/m which is under 54dBuV/m limit.







4.4 ANTENNA REQUIREMENT

4.4.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.4.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used in this product are Dipole with R-TNC connector and Dualband Built-in directional antenna with UFL connector. The maximum Gain of the antenna is 6dBi.

5. TEST TYPES AND RESULTS (FOR 802.11a 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Dec. 07, 2007
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Feb. 13, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Sep. 14, 2007
Software ADT	ADT_Cond_V3	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

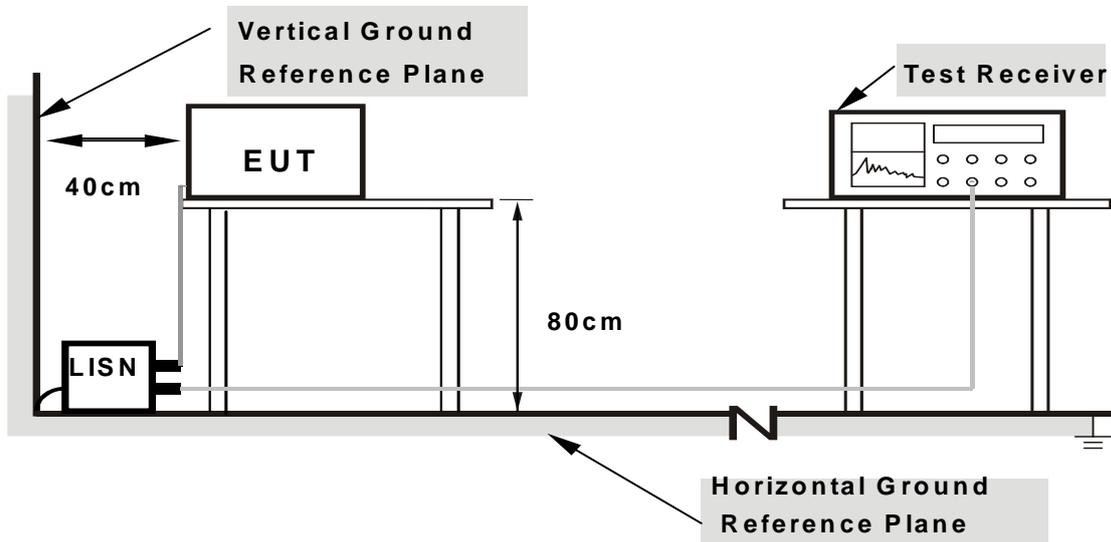
5.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

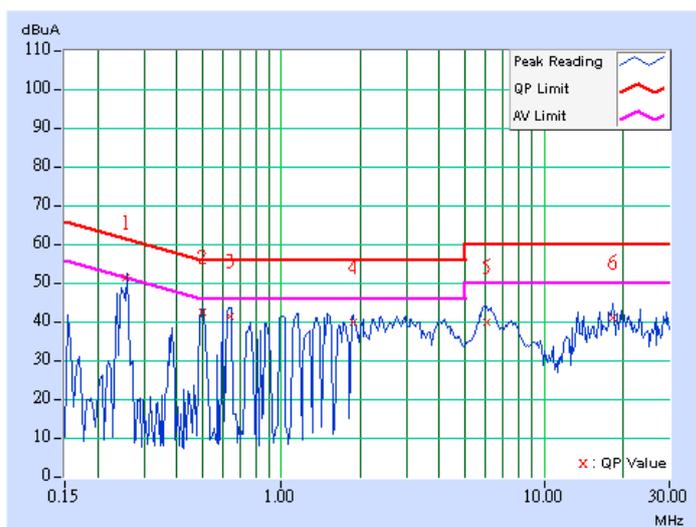
5.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA FOR TEST MODE A (ADAPTER MODE):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line 1
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.254	0.21	50.46	-	50.67	-	61.62	51.62	-10.95	-
2	0.503	0.22	41.79	-	42.01	-	56.00	46.00	-13.99	-
3	0.640	0.22	40.51	-	40.73	-	56.00	46.00	-15.27	-
4	1.887	0.26	39.17	-	39.43	-	56.00	46.00	-16.57	-
5	6.082	0.44	39.21	-	39.65	-	60.00	50.00	-20.35	-
6	18.242	0.93	40.02	-	40.95	-	60.00	50.00	-19.05	-

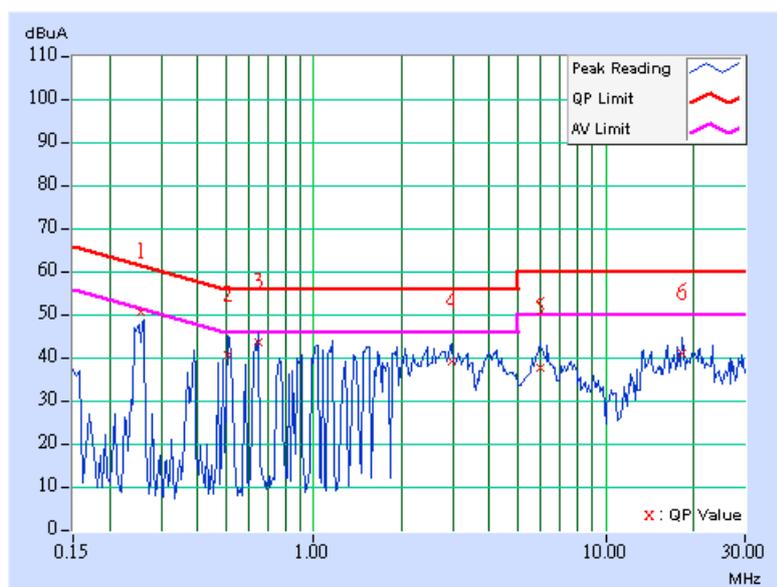
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line 2
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.257	0.21	50.25	-	50.46	-	61.53	51.53	-11.07	-
2	0.508	0.22	40.30	-	40.52	-	56.00	46.00	-15.48	-
3	0.646	0.22	43.36	-	43.58	-	56.00	46.00	-12.42	-
4	2.969	0.32	38.62	-	38.94	-	56.00	46.00	-17.06	-
5	5.941	0.44	37.46	-	37.90	-	60.00	50.00	-22.10	-
6	18.242	0.50	40.51	-	41.01	-	60.00	50.00	-18.99	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



FOR TEST MODE B (POE MODE):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line 1
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.21	46.33	-	46.54	-	64.98	54.98	-18.45	-
2	0.256	0.21	35.85	-	36.06	-	61.57	51.57	-25.51	-
3	0.341	0.21	35.10	-	35.31	-	59.17	49.17	-23.86	-
4	0.849	0.23	32.79	-	33.02	-	56.00	46.00	-22.98	-
5	4.168	0.39	32.68	-	33.07	-	56.00	46.00	-22.93	-
6	17.759	0.90	48.04	-	48.94	-	60.00	50.00	-11.06	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

