

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTE:

The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

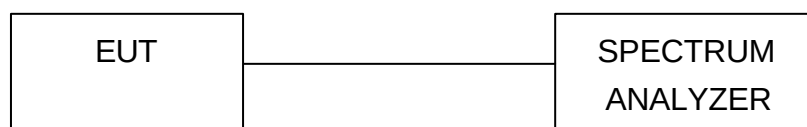
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

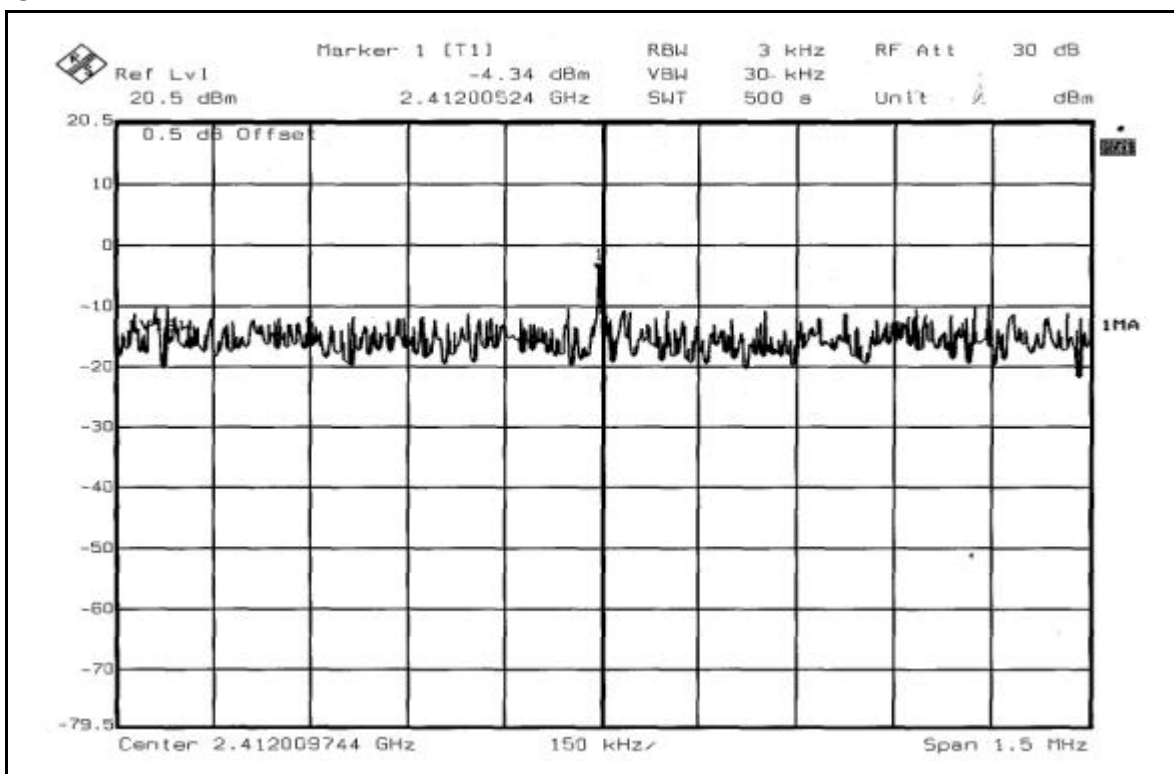
4.5.7 TEST RESULTS

802.11b DSSS modulation

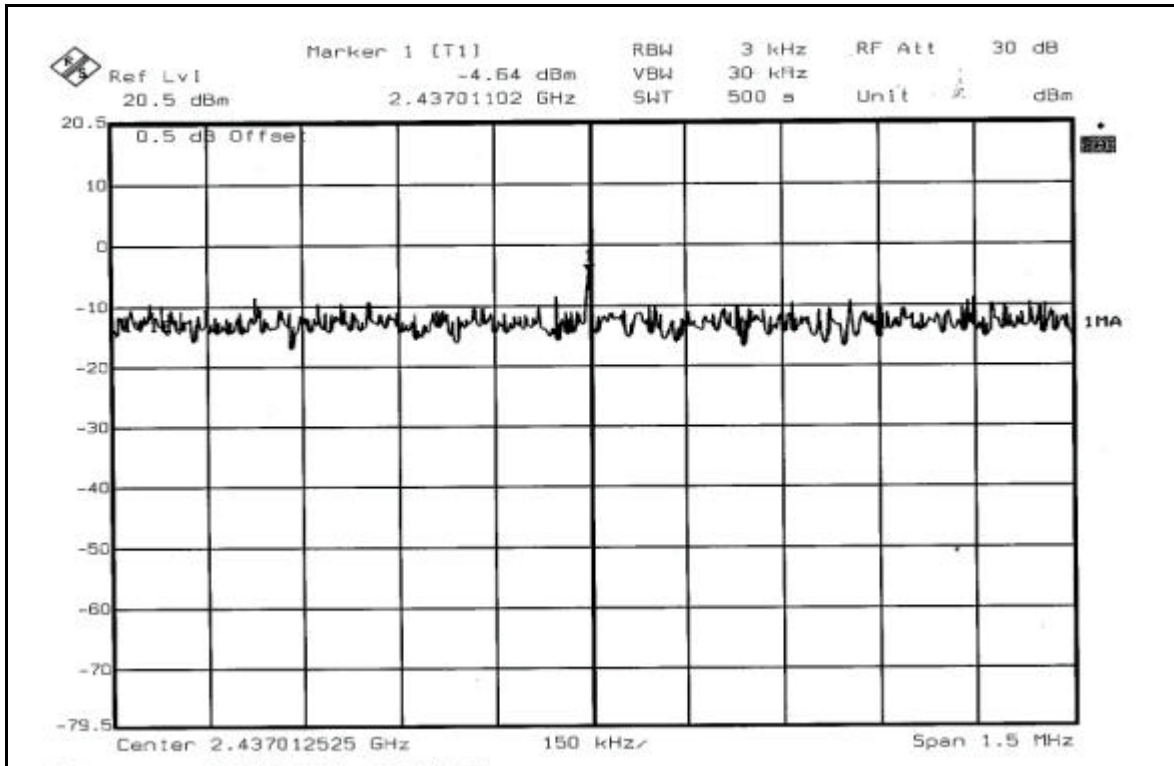
EUT	Wireless A/G USB Adapter	MODEL	F6D3050
MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
TESTED BY	Leo Hung		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-4.34	8	PASS
6	2437	-4.64	8	PASS
11	2462	-4.43	8	PASS

CH1

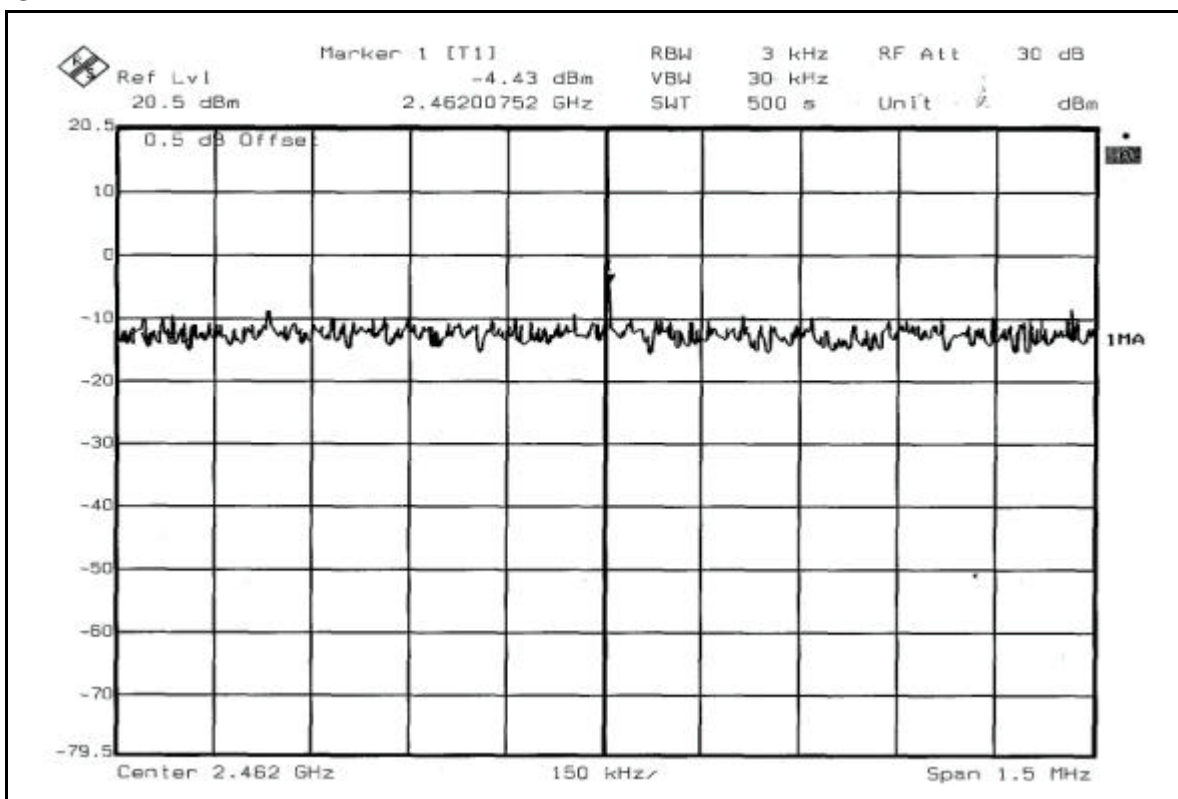


CH6





CH11

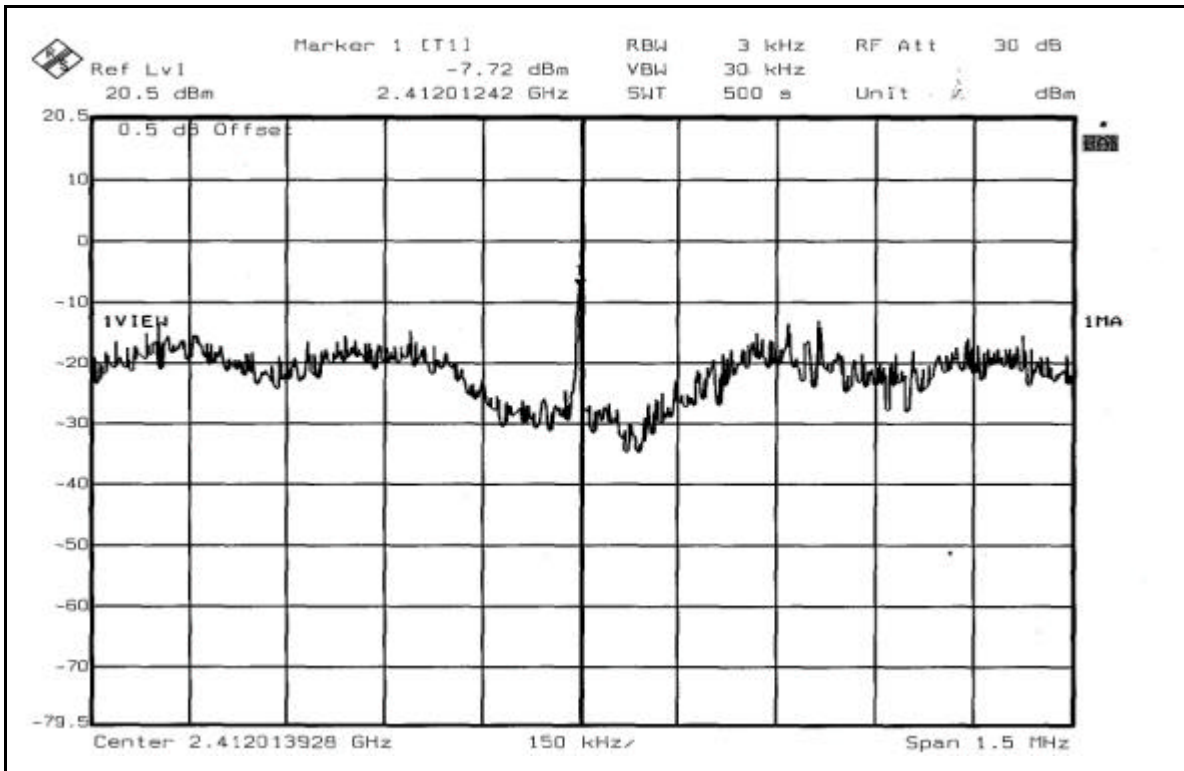


**802.11g OFDM modulation**

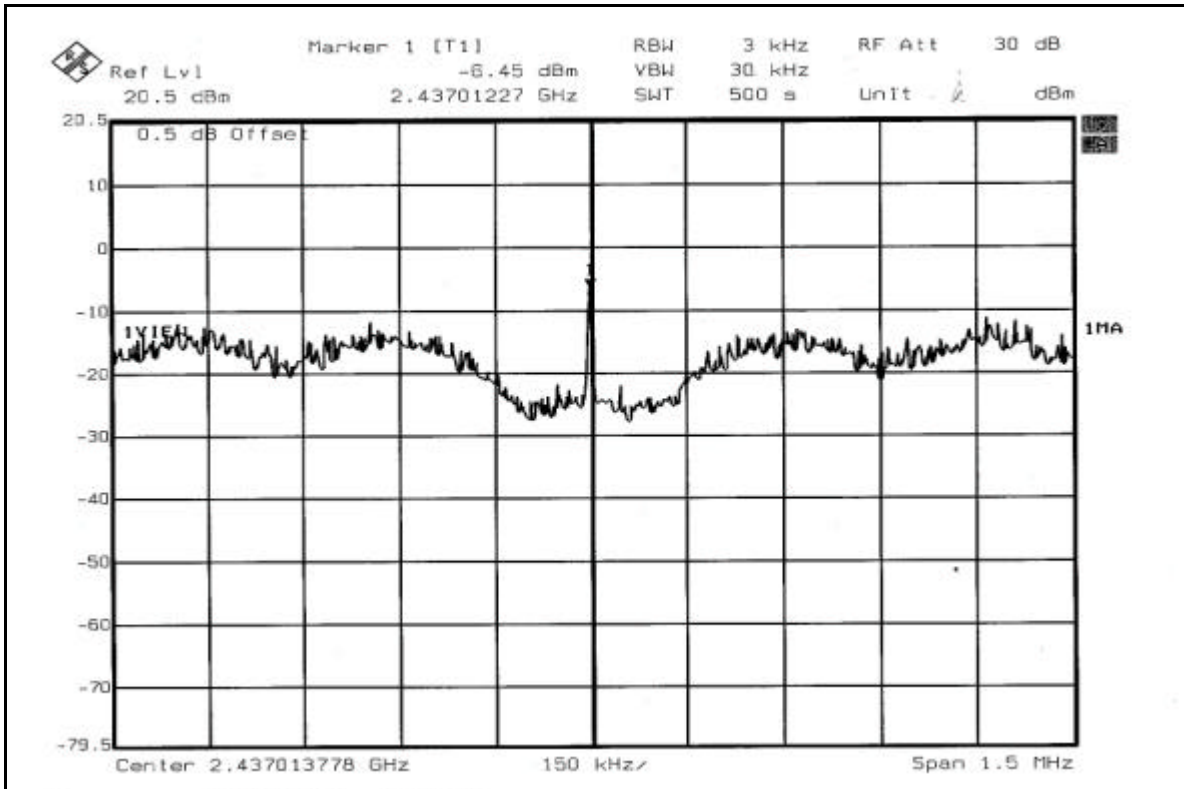
EUT	Wireless A/G USB Adapter	MODEL	F6D3050
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
TESTED BY	Leo Hung		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-7.72	8	PASS
6	2437	-6.45	8	PASS
11	2462	-7.60	8	PASS

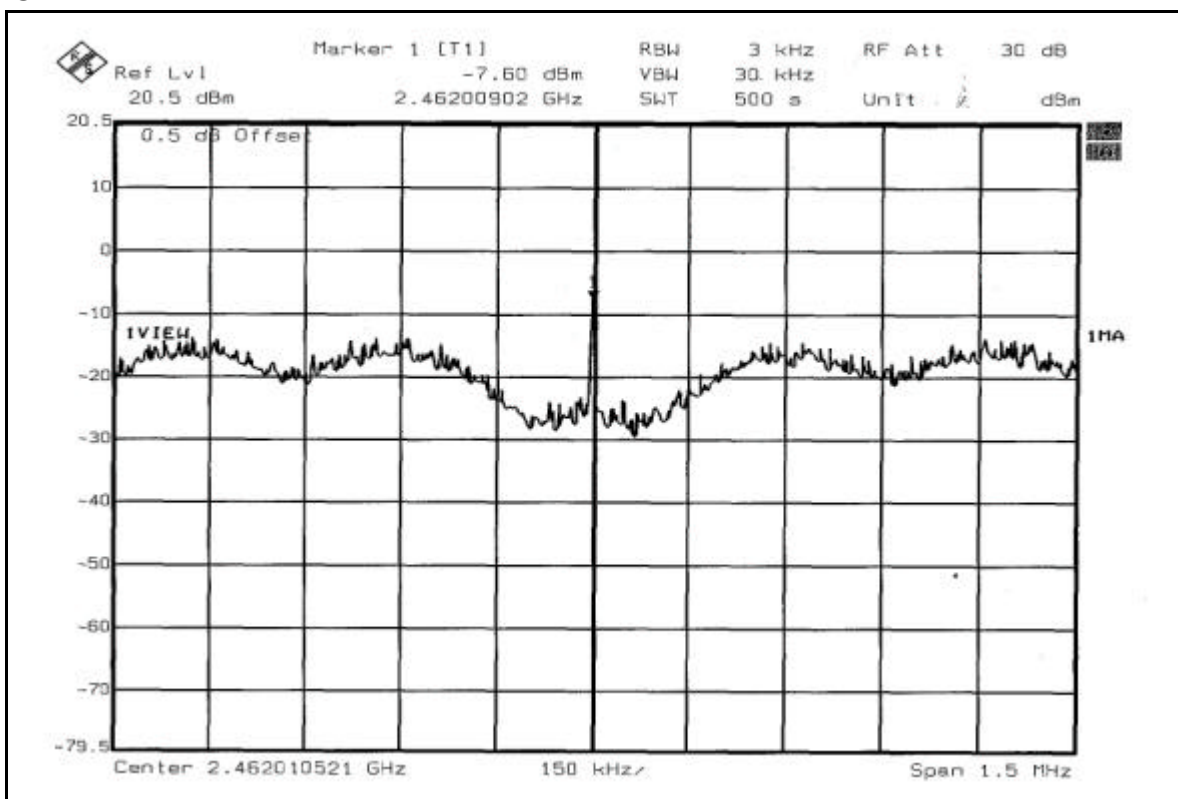
CH1



CH6



CH11



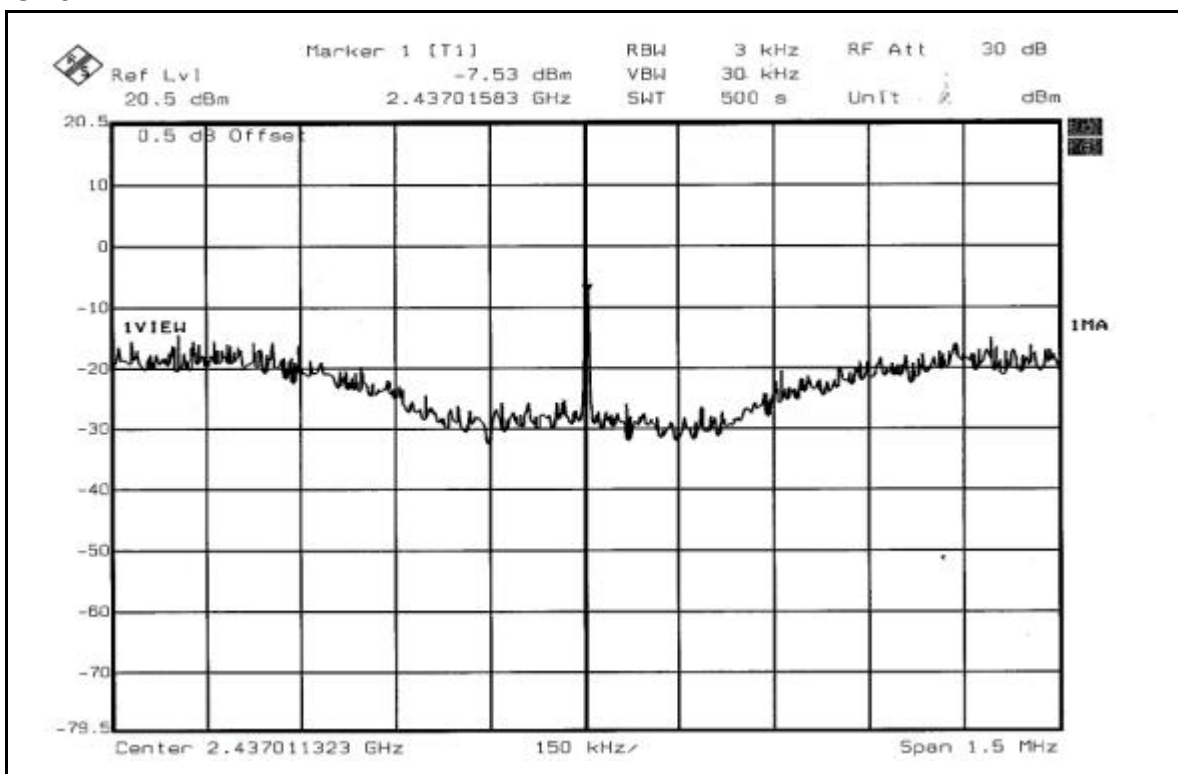
802.11g Turbo OFDM modulation

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
MODULATION TYPE	BPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
TESTED BY	Leo Hung		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
6	2437	-7.53	8	PASS



CH6



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW=VBW=100kHz ; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6



4.6.6 TEST RESULTS

The spectrum plots are attached on the following 18 images. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS modulation

NOTE 1: The band edge emission plot on page 73 shows 53.34dBc between carrier maximum power and local maximum emission in restrict band (2.3871GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 112.84dBuV/m (Peak), so the maximum field strength in restrict band is $112.84 - 53.34 = 59.50$ dBuV/m which is under 74dBuV/m limit..

The band edge emission plot of on page 73 shows 55.27dBc between carrier maximum power and local maximum emission in restrict band (2.3867GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 105.35dBuV/m (Average), so the maximum field strength in restrict band is $105.35 - 55.27 = 50.08$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on page 74 shows 52.95dBc between carrier maximum power and local maximum emission in restrict band (2.4881GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 112.96dBuV/m (Peak), so the maximum field strength in restrict band is $112.96 - 52.95 = 60.01$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 75 shows 55.80dBc between carrier maximum power and local maximum emission in restrict band (2.4869GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 105.72dBuV/m (Average), so the maximum field strength in restrict band is $105.72 - 55.80 = 49.92$ dBuV/m which is under 54dBuV/m limit.

**802.11g OFDM modulation**

NOTE 1: The band edge emission plot on page 76 shows 47.20dBc between carrier maximum power and local maximum emission in restrict band (2.3897GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 109.63dBuV/m (Peak), so the maximum field strength in restrict band is $109.63 - 47.20 = 62.43$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of on page 76 shows 49.51dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.23dBuV/m (Average), so the maximum field strength in restrict band is $99.23 - 49.51 = 49.72$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on page 77 shows 43.85dBc between carrier maximum power and local maximum emission in restrict band (2.4837GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 108.20dBuV/m (Peak), so the maximum field strength in restrict band is $108.20 - 43.85 = 64.35$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 78 shows 45.99dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 97.27dBuV/m (Average), so the maximum field strength in restrict band is $97.27 - 45.99 = 51.28$ dBuV/m which is under 54dBuV/m limit.

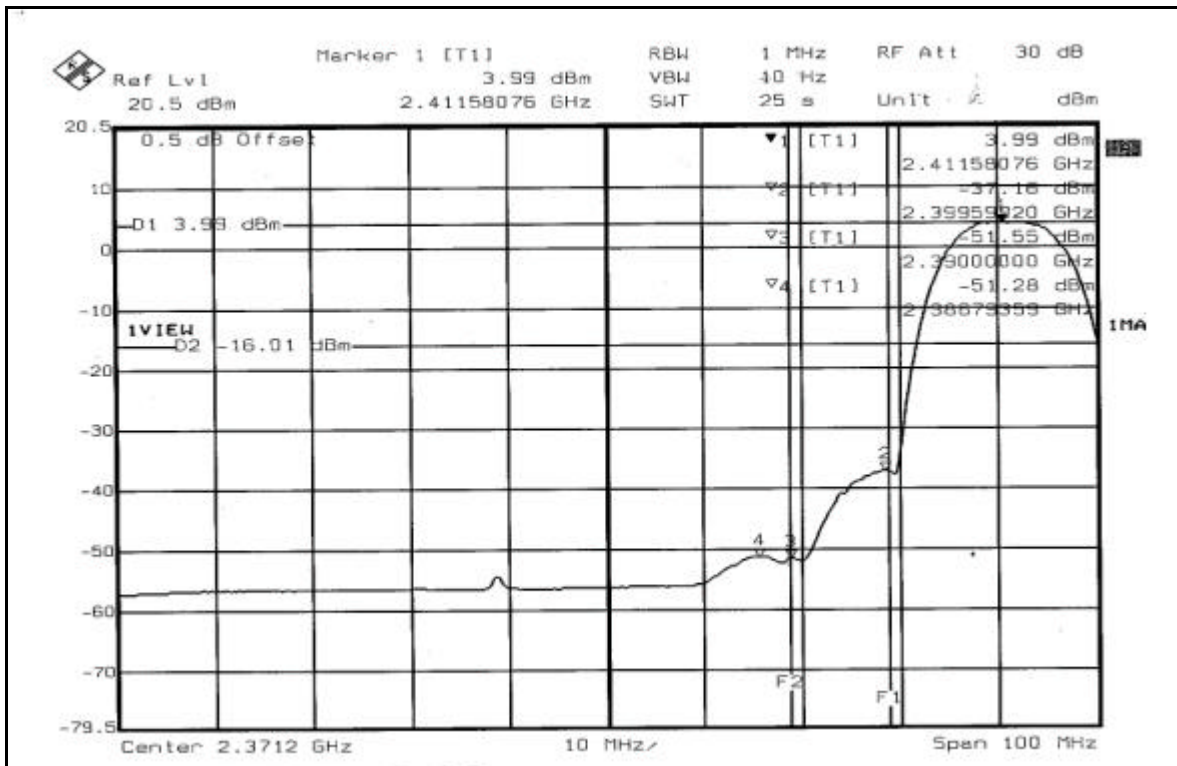
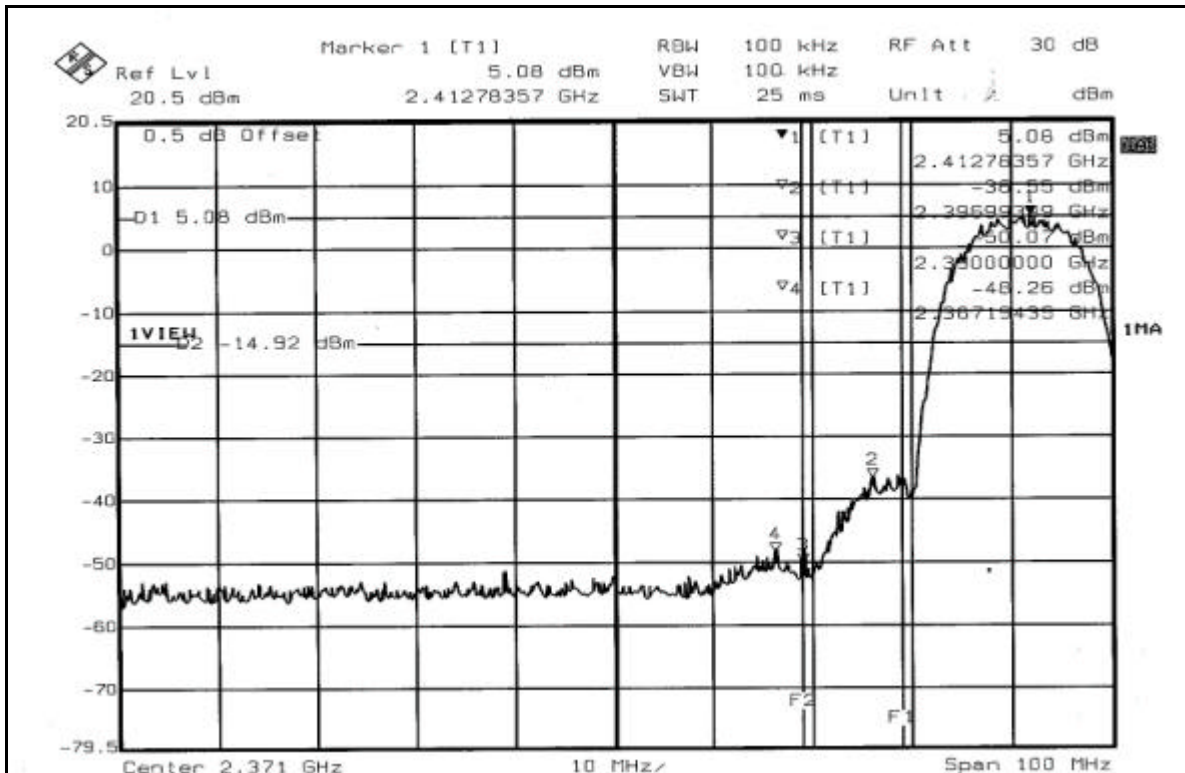
802.11g Turbo OFDM modulation

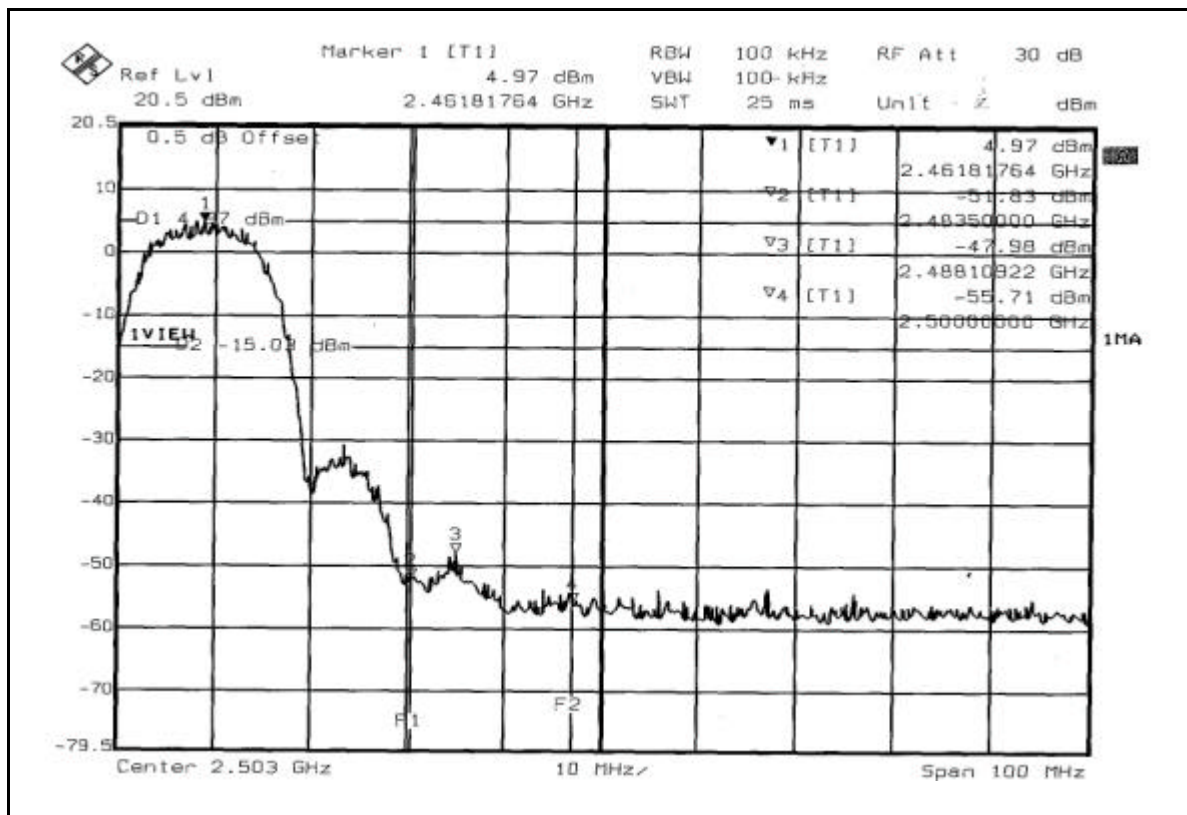
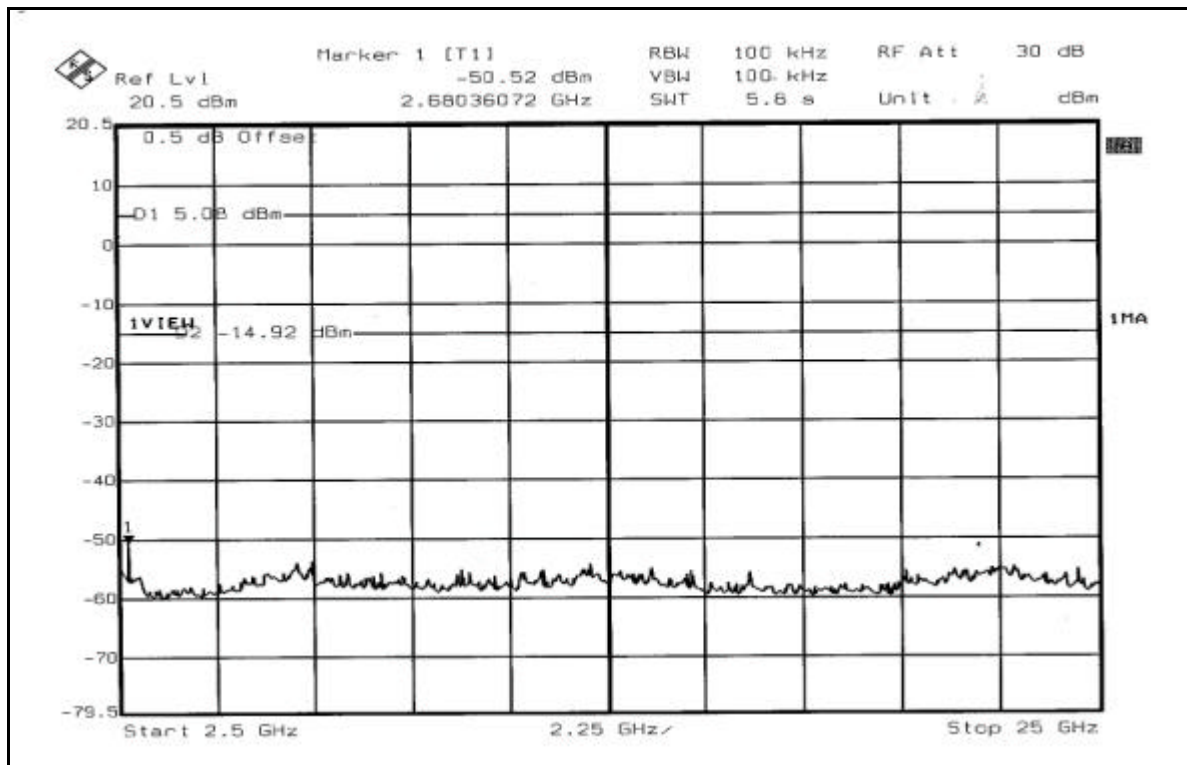
NOTE 1: The band edge emission plot on page 79 shows 51.95dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 106.11dBuV/m (Peak), so the maximum field strength in restrict band is $106.11 - 51.95 = 54.16$ dBuV/m which is under 74dBuV/m limit.

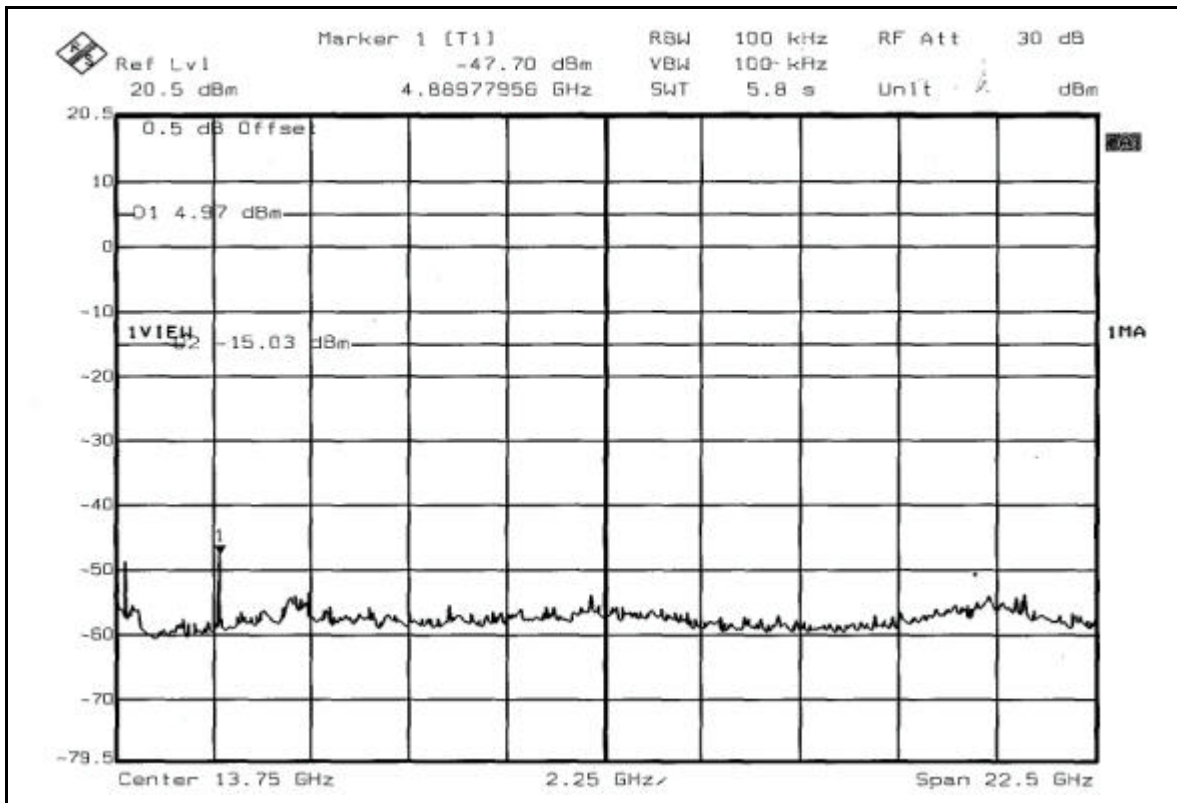
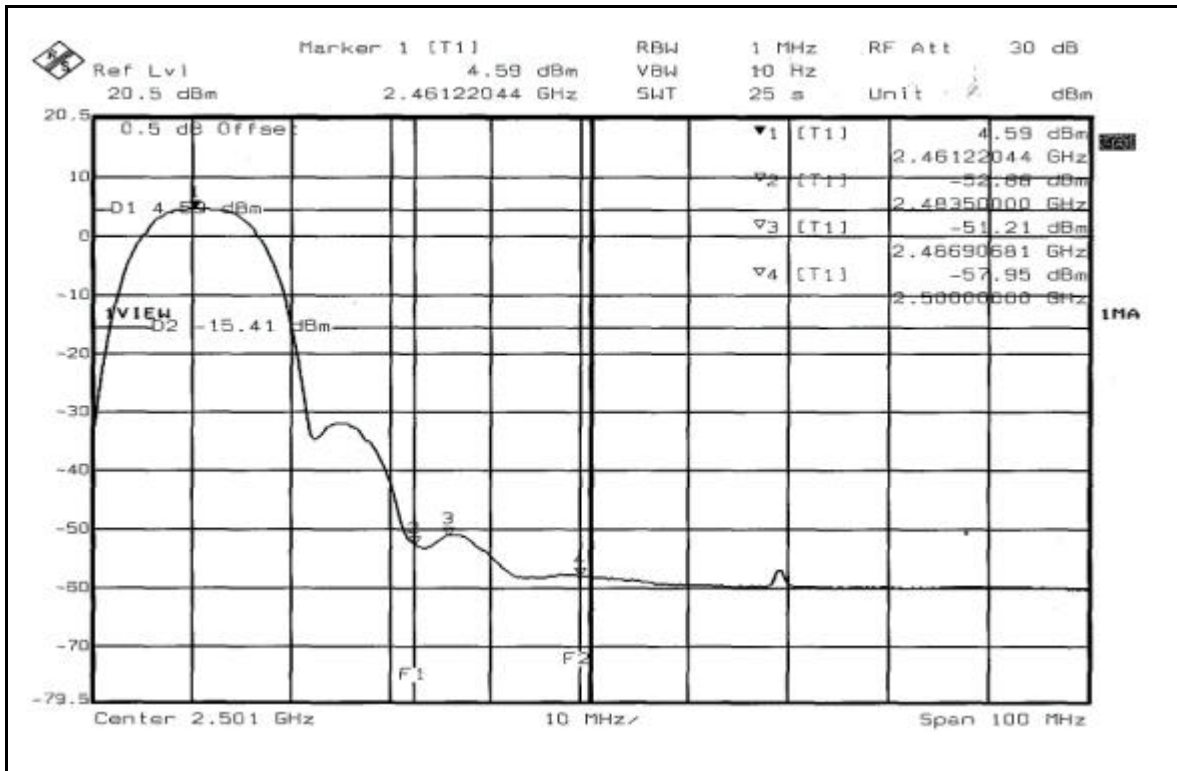
The band edge emission plot of on page 79 shows 48.81dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 97.42dBuV/m (Average), so the maximum field strength in restrict band is $97.42 - 48.81 = 48.61$ dBuV/m which is under 54dBuV/m limit.

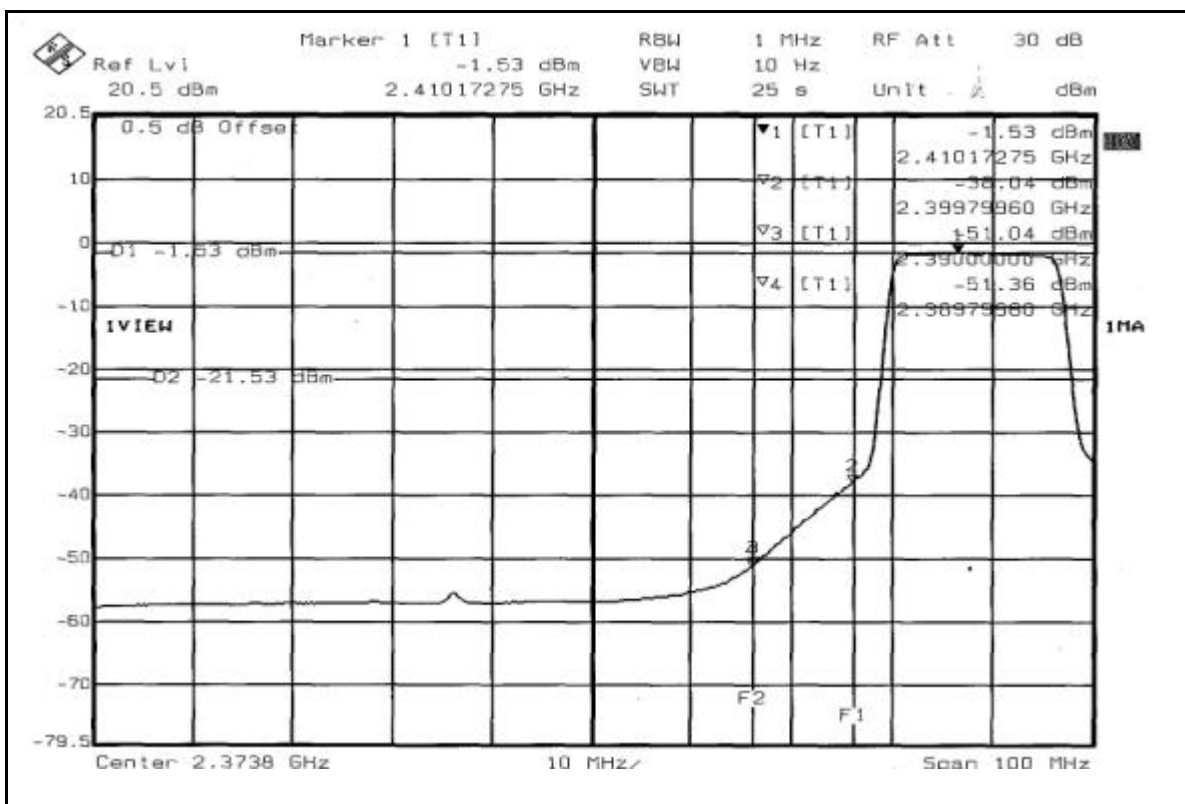
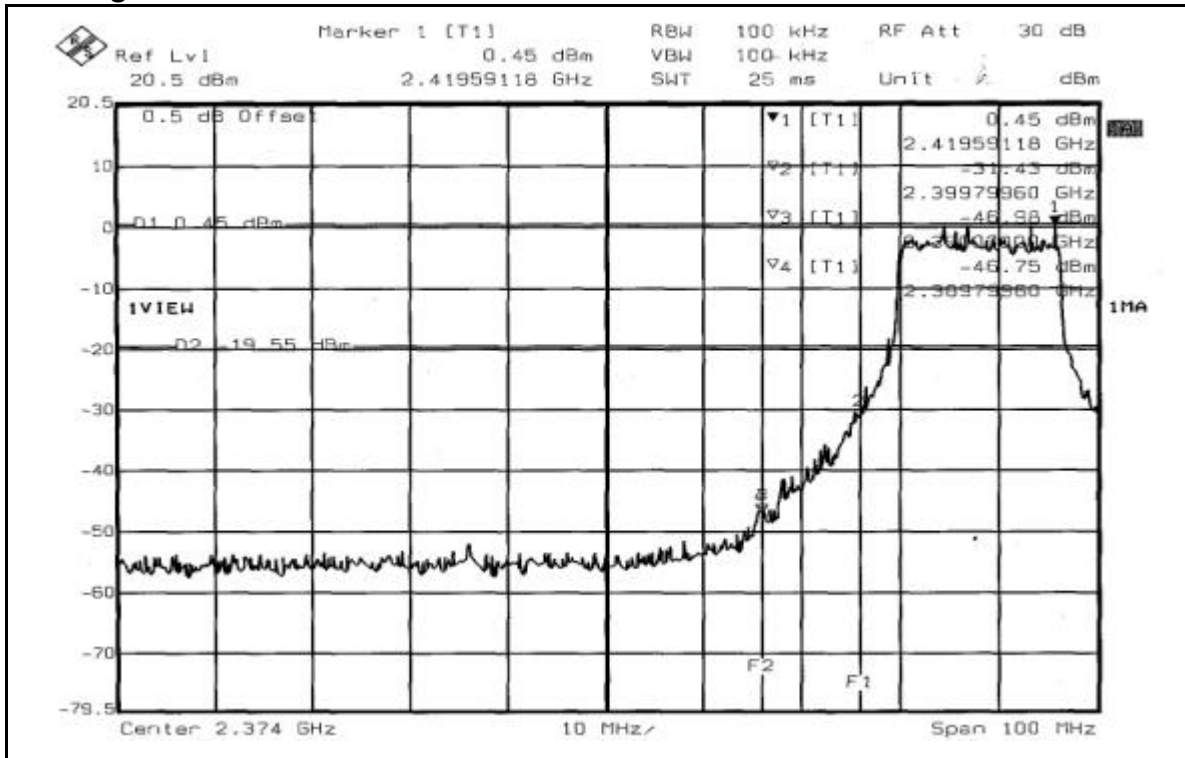
NOTE 2: The band edge emission plot on page 80 shows 50.84dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 106.11dBuV/m (Peak), so the maximum field strength in restrict band is $106.11 - 50.84 = 55.27$ dBuV/m which is under 74dBuV/m limit.

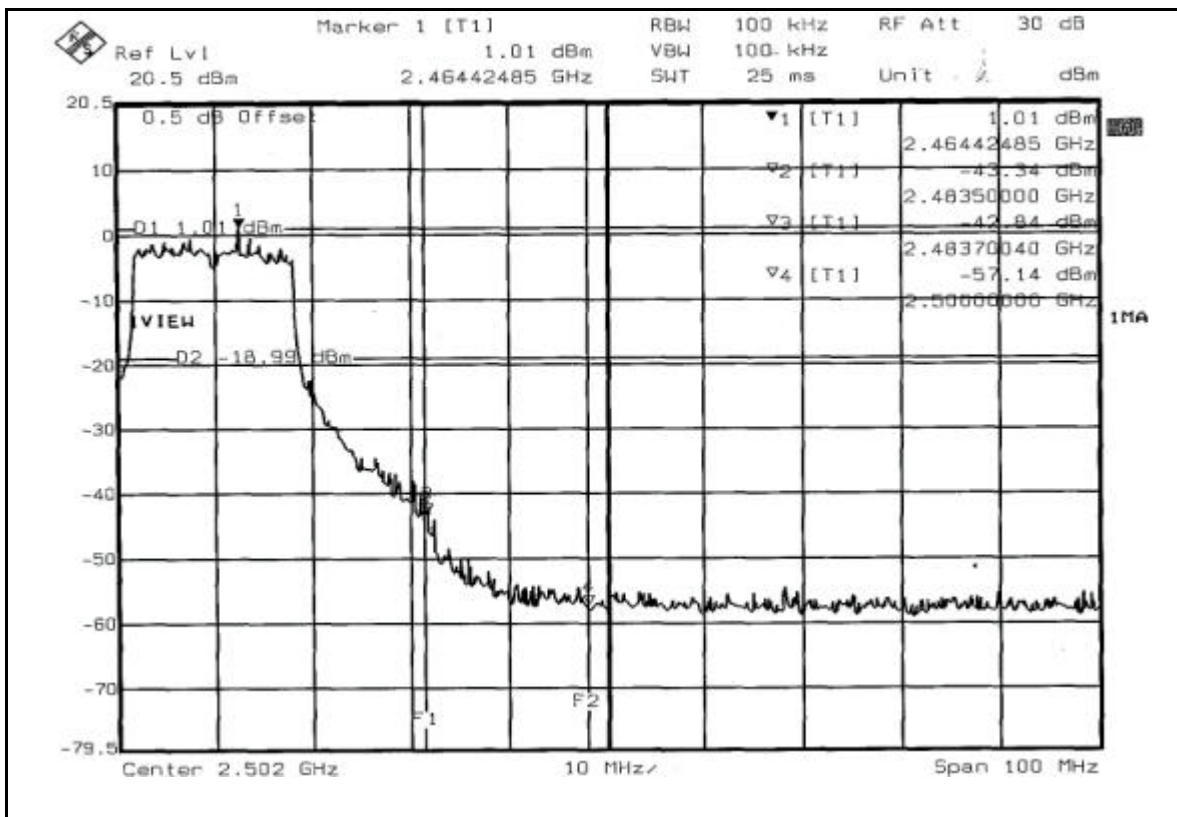
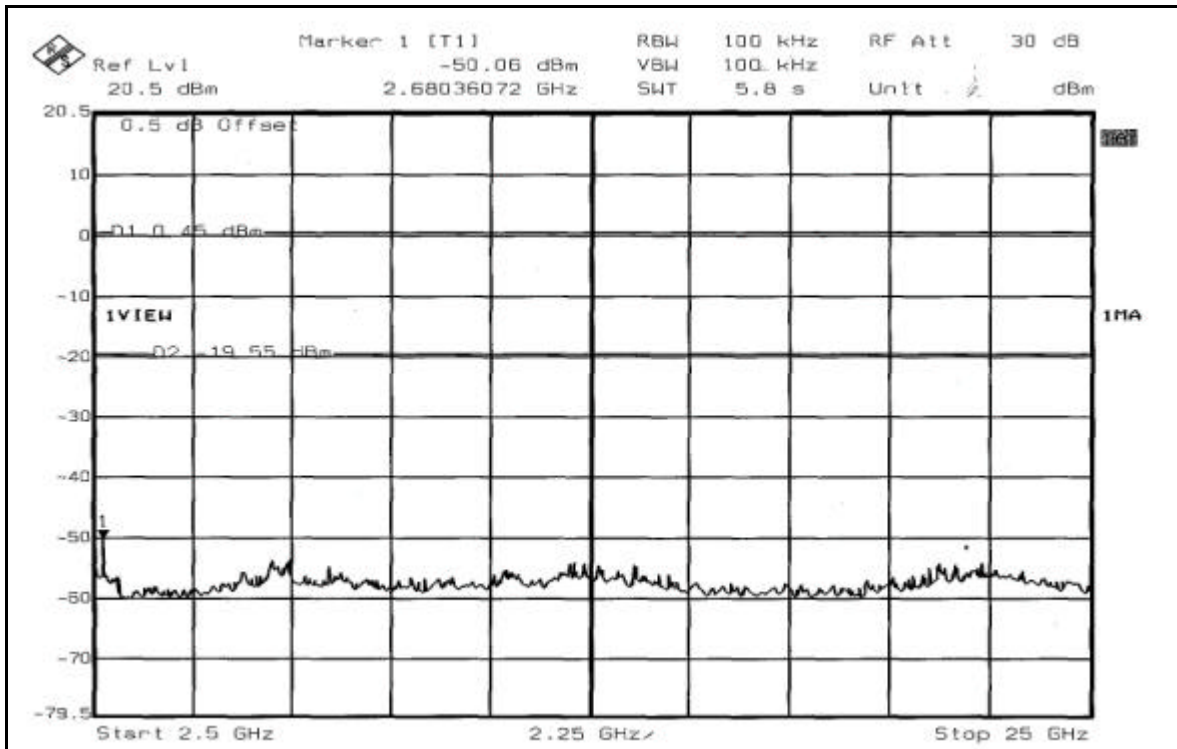
The band edge emission plot on page 81 shows 48.10dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 97.42dBuV/m (Average), so the maximum field strength in restrict band is $97.42 - 48.10 = 49.32$ dBuV/m which is under 54dBuV/m limit.

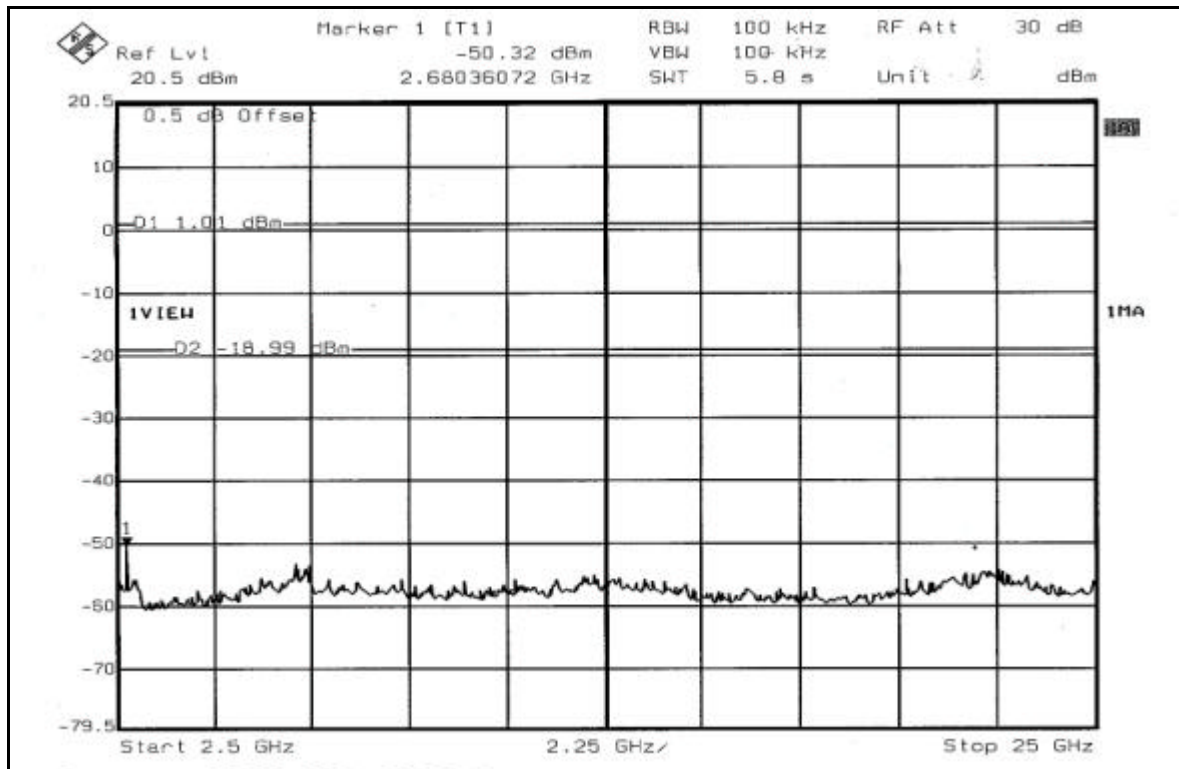
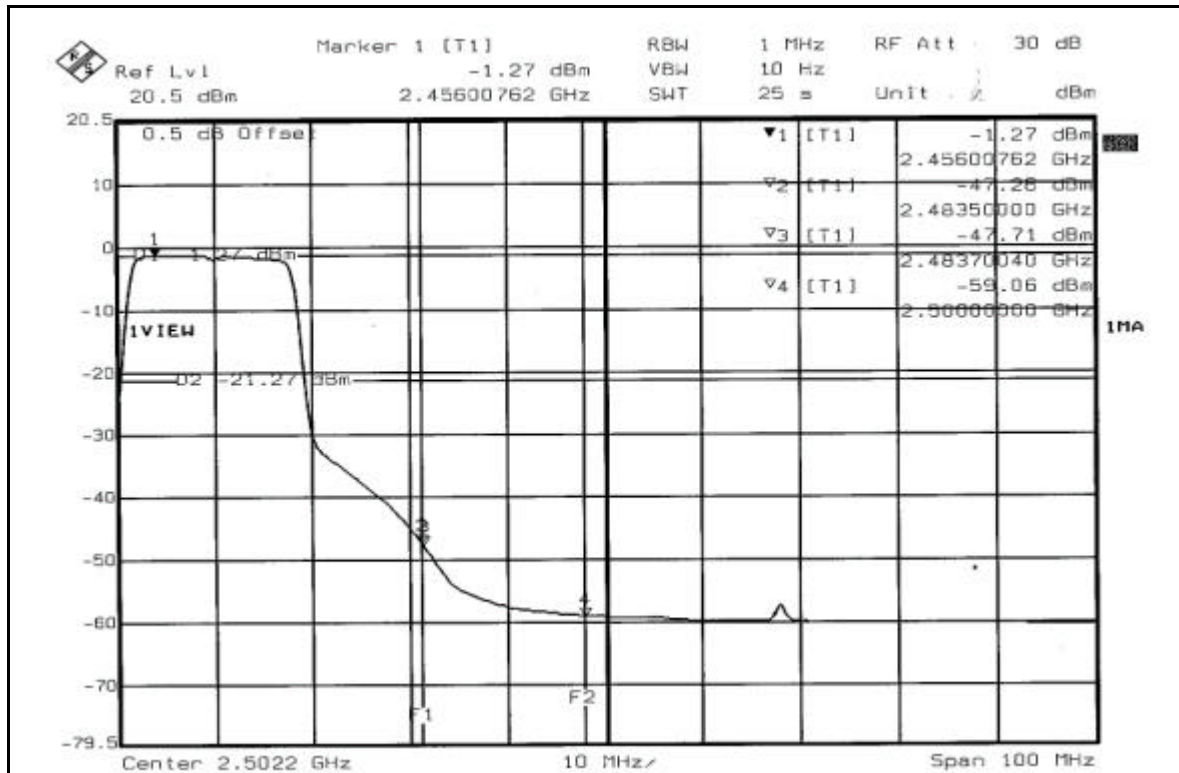
802.11b DSSS modulation

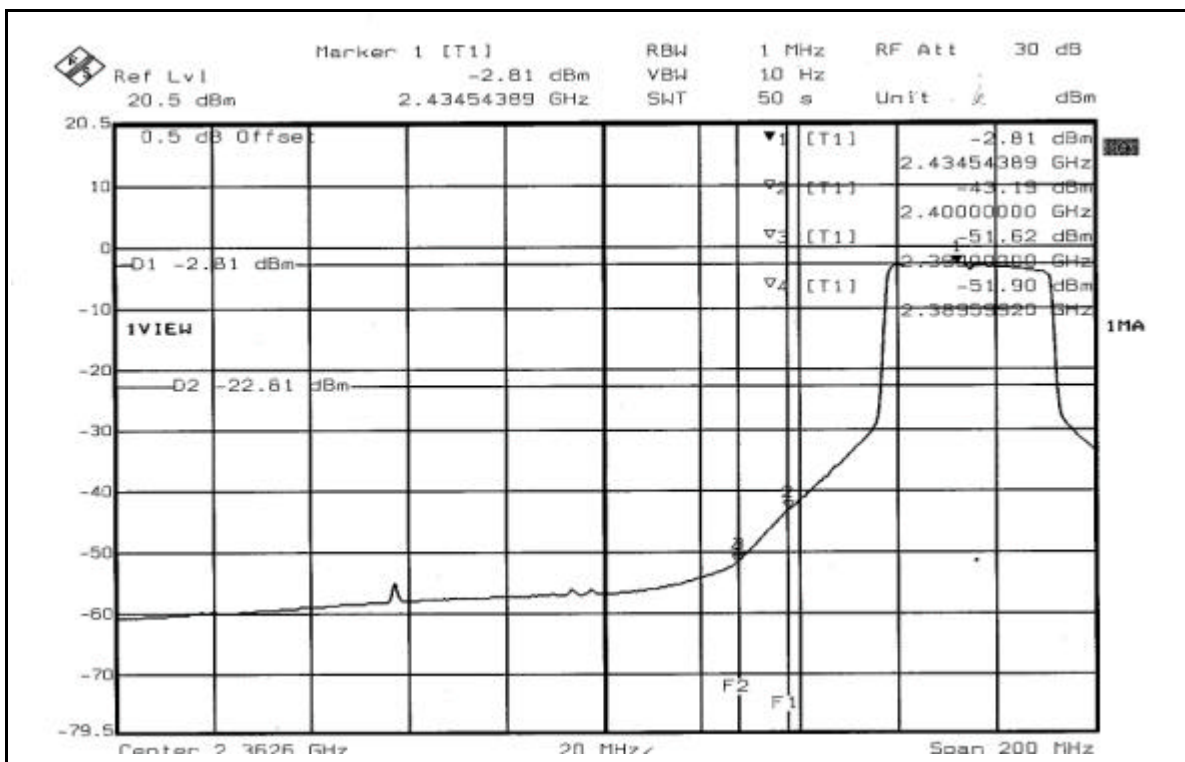
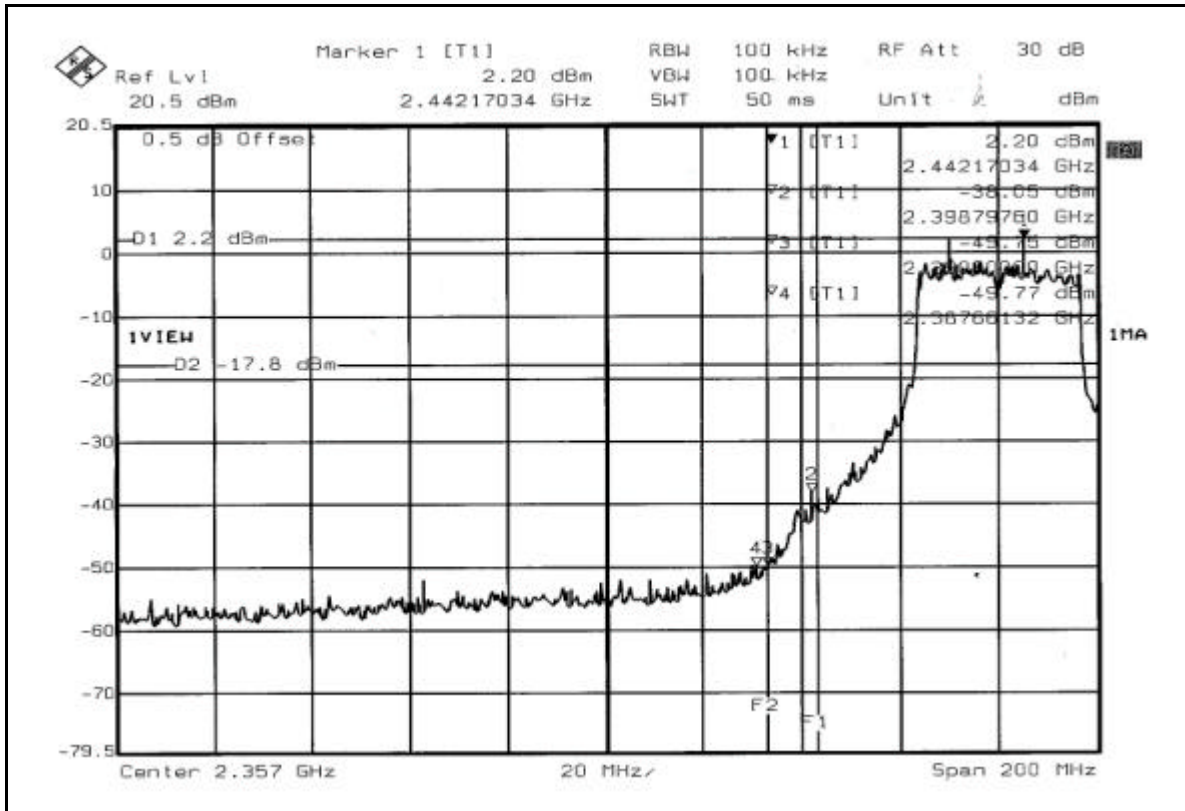


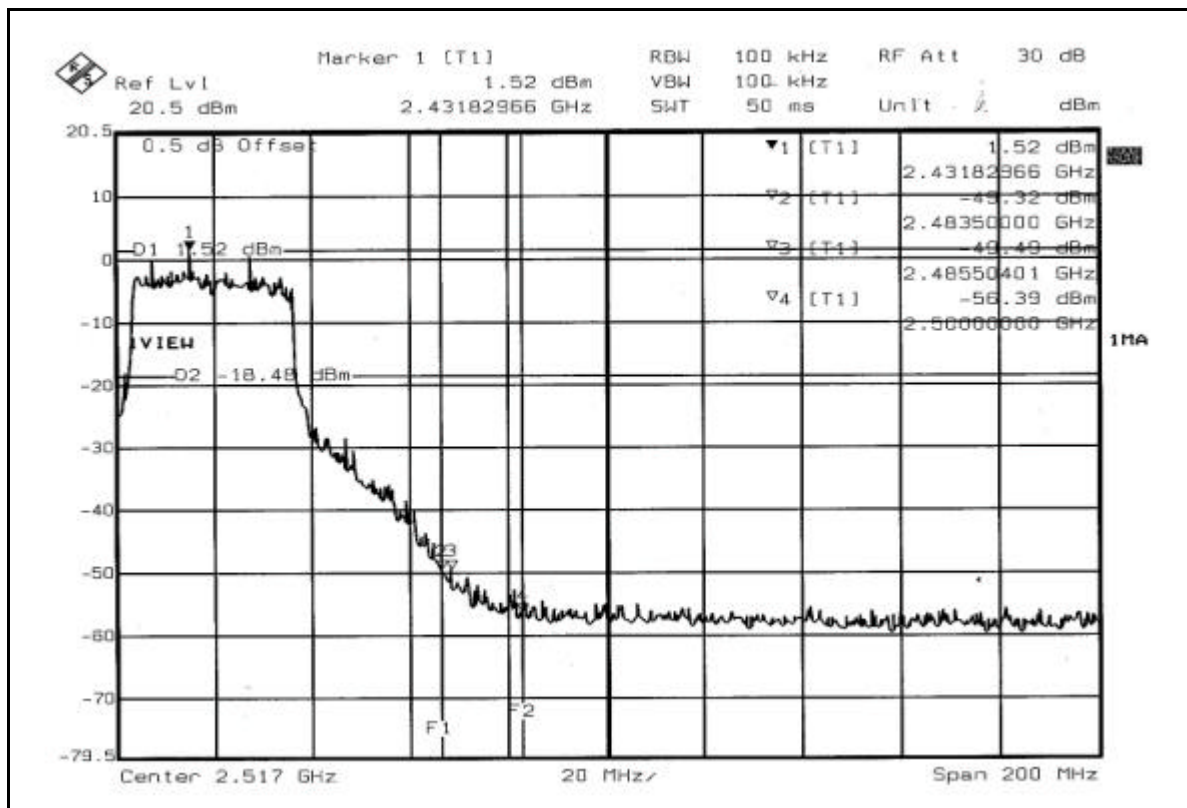
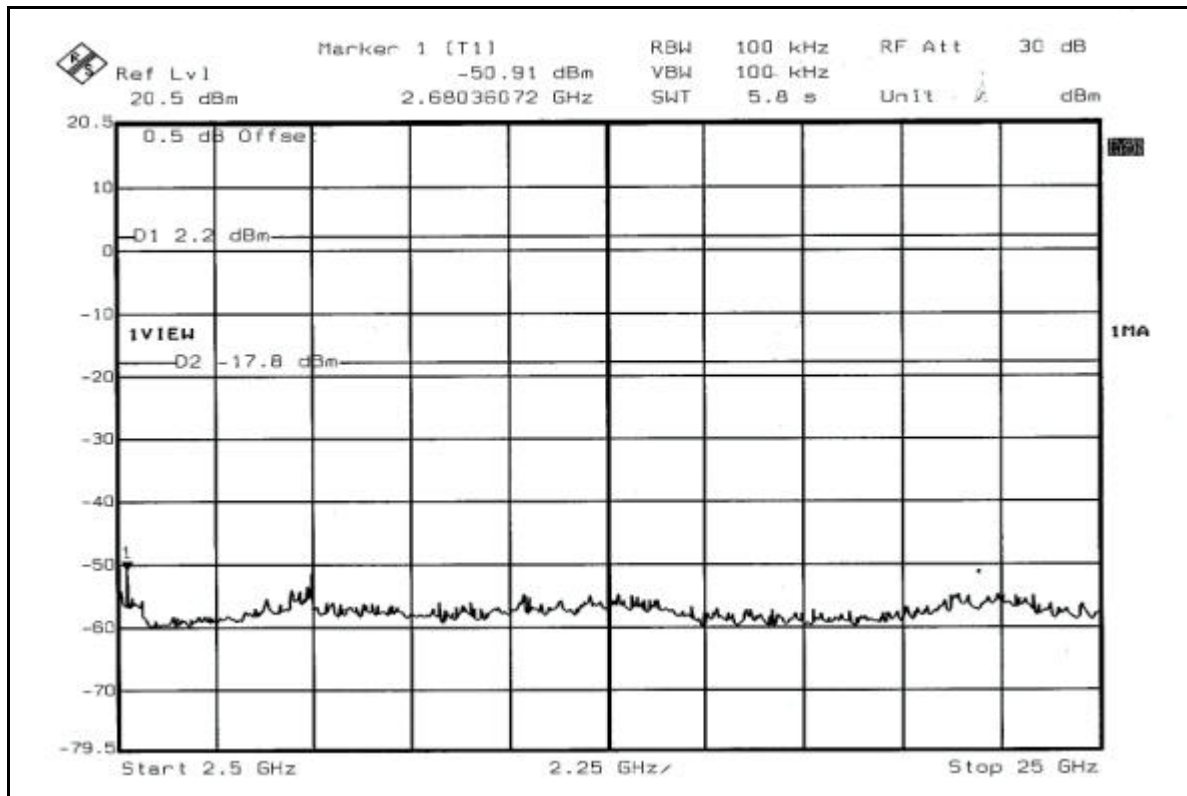


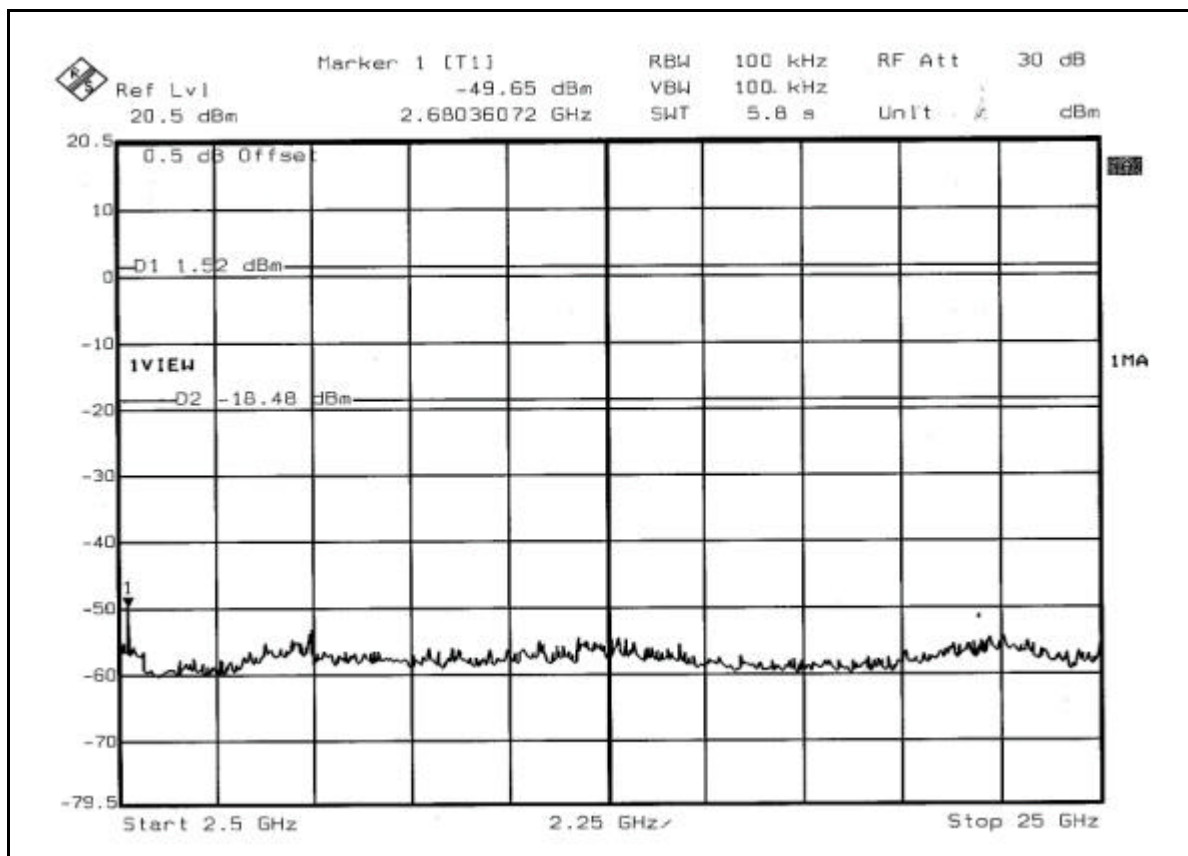
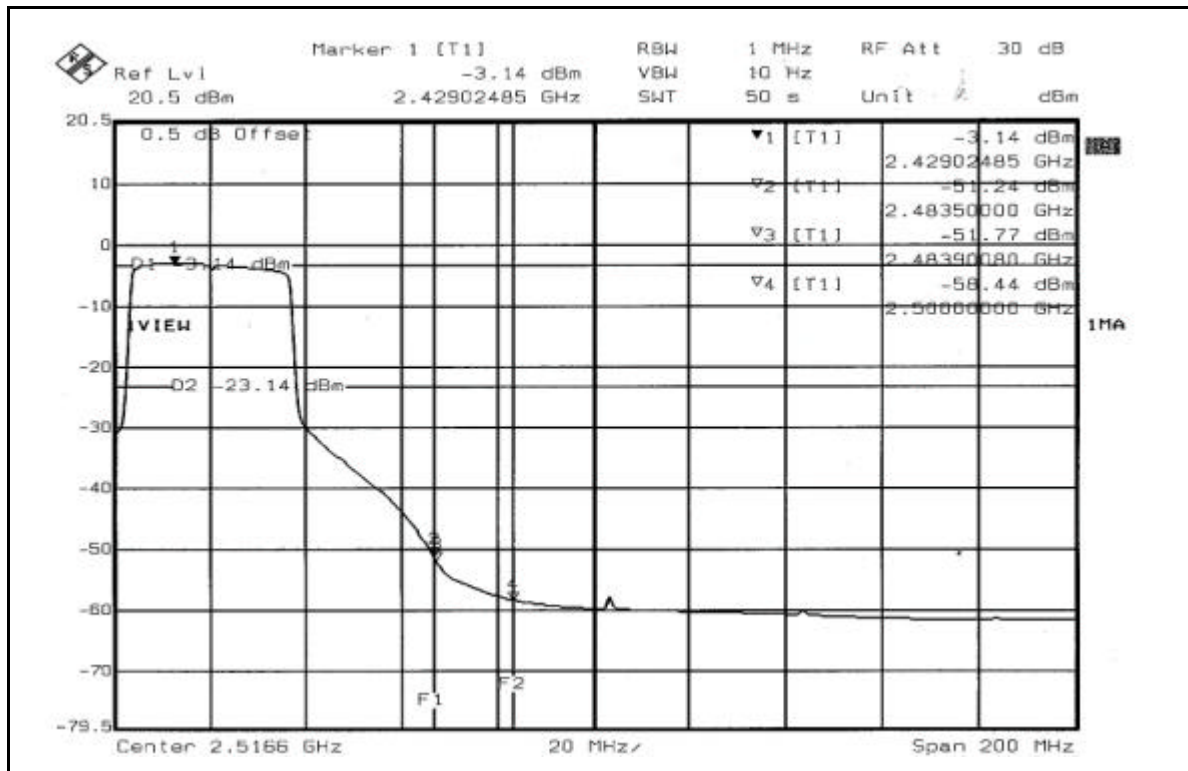
802.11g OFDM modulation





802.11g Turbo OFDM modulation







4.7 ANTENNA REQUIREMENT

4.7.1 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.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Printed antenna without connector. The maximum Gain of the antenna is 1.5dBi.

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

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:**
- The lower limit shall apply at the transition frequencies.
 - The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 - 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	100291	Nov. 16, 2005
RF signal cable Woken	5D-FB	Cable-HYC01-01	Mar. 02, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Mar. 03, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Mar. 02, 2005
Software ADT	ADT_Conc_V3	NA	NA

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



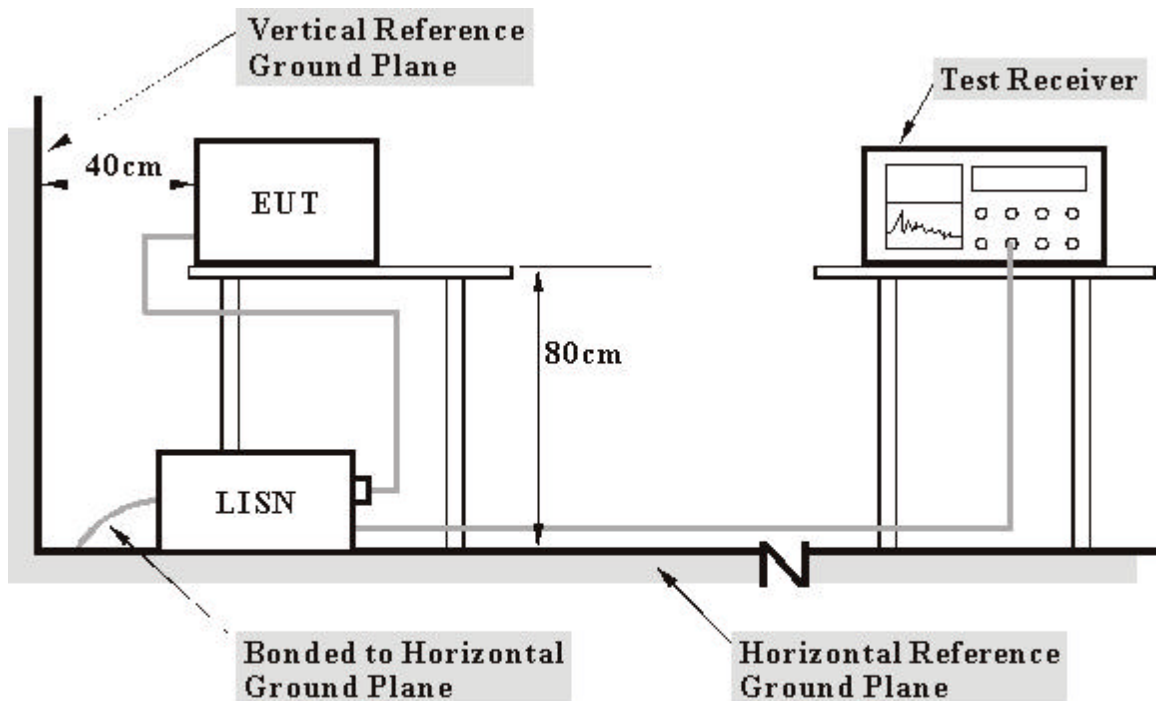
5.1.3 TEST PROCEDURES

- 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) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

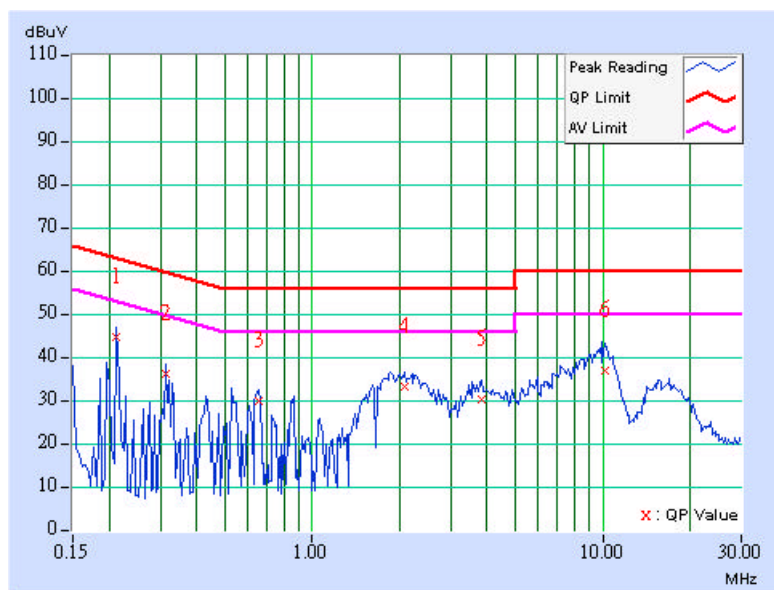
5.1.7 TEST RESULTS

Conducted Worst-Case Data (with cradle)

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Leo Hung
TEST MODE	1 (With USB cradle)		

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	0.213	0.12	44.62	-	44.74	-	63.11	53.11	-18.37	-
2	0.314	0.12	35.87	-	35.99	-	59.86	49.86	-23.87	-
3	0.658	0.13	29.72	-	29.85	-	56.00	46.00	-26.15	-
4	2.074	0.16	33.03	-	33.19	-	56.00	46.00	-22.81	-
5	3.824	0.20	29.92	-	30.12	-	56.00	46.00	-25.88	-
6	10.172	0.32	36.74	-	37.06	-	60.00	50.00	-22.94	-

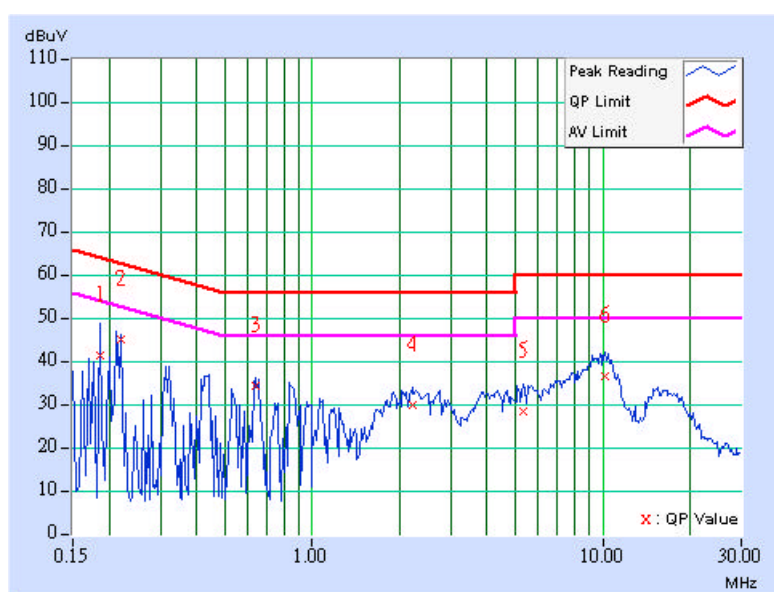
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Leo Hung
TEST MODE	1 (With USB cradle)		

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	0.185	0.11	41.12	-	41.23	-	64.25	54.25	-23.02	-
2	0.220	0.11	45.07	-	45.18	-	62.81	52.81	-17.63	-
3	0.638	0.12	34.28	-	34.40	-	56.00	46.00	-21.60	-
4	2.207	0.16	29.65	-	29.81	-	56.00	46.00	-26.19	-
5	5.336	0.23	28.29	-	28.52	-	60.00	50.00	-31.48	-
6	10.141	0.29	36.54	-	36.83	-	60.00	50.00	-23.17	-

- 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.

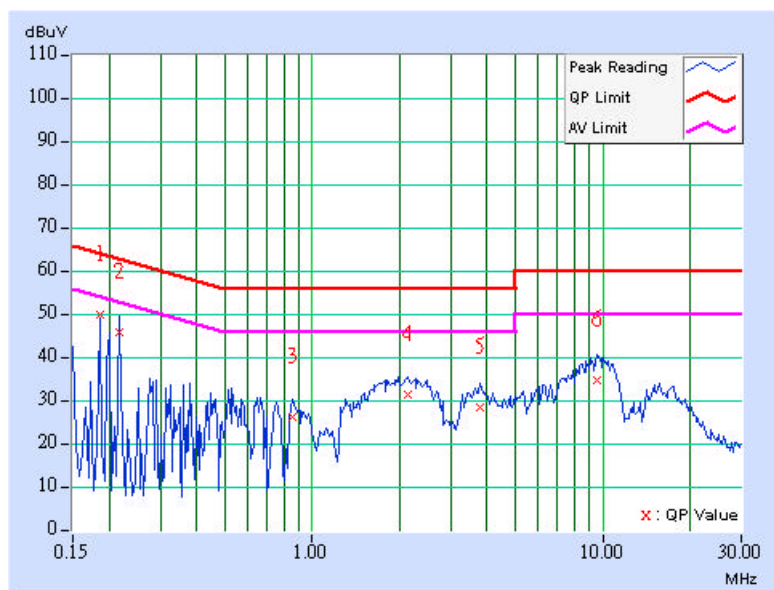


Conducted Worst-Case Data (without cradle)

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Leo Hung
TEST MODE	2 (Without USB cradle)		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.12	49.84	-	49.96	-	64.25	54.25	-14.30	-
2	0.216	0.12	45.53	-	45.65	-	62.96	52.96	-17.31	-
3	0.853	0.14	25.89	-	26.03	-	56.00	46.00	-29.97	-
4	2.133	0.16	31.31	-	31.47	-	56.00	46.00	-24.53	-
5	3.797	0.20	28.09	-	28.29	-	56.00	46.00	-27.71	-
6	9.516	0.30	34.69	-	34.99	-	60.00	50.00	-25.01	-

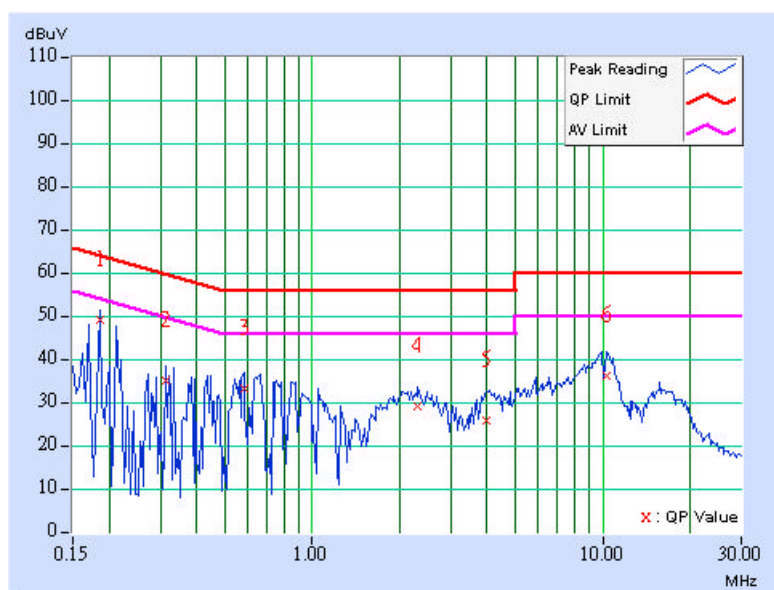
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Leo Hung
TEST MODE	2 (Without USB cradle)		

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	0.185	0.11	48.92	-	49.03	-	64.25	54.25	-15.22	-
2	0.314	0.11	34.87	-	34.98	-	59.86	49.86	-24.88	-
3	0.584	0.12	33.13	-	33.25	-	56.00	46.00	-22.75	-
4	2.301	0.17	28.89	-	29.06	-	56.00	46.00	-26.94	-
5	3.980	0.20	25.67	-	25.87	-	56.00	46.00	-30.13	-
6	10.270	0.30	35.85	-	36.15	-	60.00	50.00	-23.85	-

- 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.



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 21, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Nov. 09, 2005
Preamplifier Agilent	8447D	2944A10629	Nov. 09, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	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.
3. The test was performed in HwaYa Chamber 1.
 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 5. The IC Site Registration No. is IC4924-2.

5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

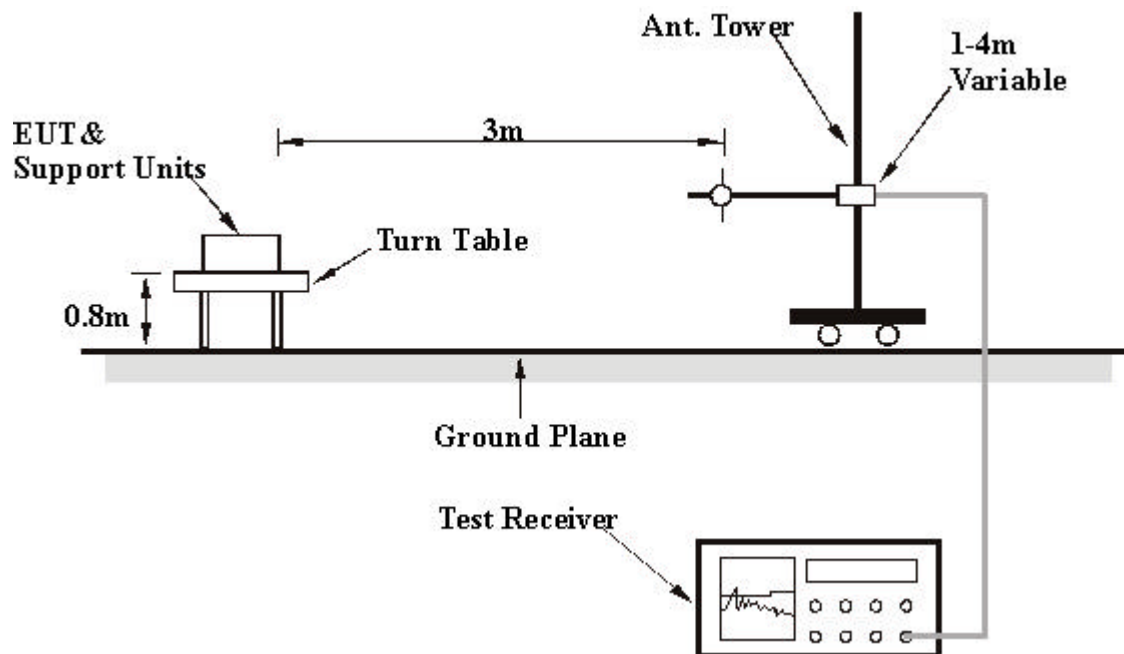
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

5.2.7 TEST RESULTS

Below 1GHz Worst-Case Data (with cradle)

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	1 (With USB cradle)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	59.16	19.51 QP	40.00	-20.49	1.50 H	61	5.72	13.79
2	119.42	29.67 QP	43.50	-13.83	1.25 H	76	16.70	12.97
3	169.96	33.53 QP	43.50	-9.97	1.00 H	271	19.61	13.93
4	220.50	42.70 QP	46.00	-3.30	1.00 H	355	30.83	11.87
5	274.93	33.76 QP	46.00	-12.24	1.00 H	7	19.78	13.98
6	319.64	36.93 QP	46.00	-9.07	1.00 H	241	21.98	14.95
7	393.51	34.86 QP	46.00	-11.14	1.00 H	190	18.26	16.61
8	480.98	33.02 QP	46.00	-12.98	1.00 H	265	14.54	18.48
9	605.39	32.25 QP	46.00	-13.75	1.25 H	244	11.16	21.08
10	665.65	27.06 QP	46.00	-18.94	1.00 H	25	5.18	21.87
11	706.47	33.23 QP	46.00	-12.77	1.00 H	358	10.77	22.46
12	760.90	28.90 QP	46.00	-17.10	1.00 H	151	5.30	23.59
13	863.93	27.54 QP	46.00	-18.46	1.25 H	1	3.09	24.45
14	974.73	34.50 QP	54.00	-19.50	1.00 H	337	8.79	25.72

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	1 (With USB cradle)		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.21	29.32 QP	40.00	-10.68	1.00 V	67	15.34	13.99
2	123.31	33.54 QP	43.50	-9.96	1.25 V	349	20.28	13.26
3	171.90	35.96 QP	43.50	-7.54	1.25 V	310	22.22	13.74
4	218.56	35.17 QP	46.00	-10.83	1.50 V	178	23.36	11.80
5	239.94	33.70 QP	46.00	-12.30	1.25 V	205	20.63	13.07
6	337.13	28.18 QP	46.00	-17.82	1.25 V	262	12.83	15.35
7	399.34	34.05 QP	46.00	-11.95	1.00 V	277	17.31	16.74
8	480.98	40.51 QP	46.00	-5.49	1.25 V	4	22.03	18.48
9	494.59	34.88 QP	46.00	-11.12	1.50 V	199	16.22	18.66
10	599.56	30.06 QP	46.00	-15.94	1.00 V	184	9.06	21.00
11	667.60	31.96 QP	46.00	-14.04	1.00 V	121	10.06	21.90
12	733.69	31.46 QP	46.00	-14.54	1.50 V	280	8.33	23.13
13	776.45	29.41 QP	46.00	-16.59	1.50 V	94	5.73	23.68
14	867.82	29.28 QP	46.00	-16.72	1.25 V	349	4.76	24.52
15	920.30	28.03 QP	46.00	-17.97	1.00 V	223	2.70	25.33

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
1. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
2. The other emission levels were very low against the limit.
3. Margin value = Emission level – Limit value

**Below 1GHz Worst-Case Data (without cradle)**

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	2 (Without USB cradle)		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	117.47	35.70 QP	43.50	-7.80	1.50 H	265	22.93	12.77
2	166.07	31.73 QP	43.50	-11.77	1.75 H	76	17.42	14.30
3	199.12	34.45 QP	43.50	-9.05	1.25 H	73	22.99	11.46
4	399.34	35.99 QP	46.00	-10.01	1.00 H	280	19.25	16.74
5	479.04	28.86 QP	46.00	-17.14	1.75 H	40	10.41	18.45
6	560.68	31.91 QP	46.00	-14.09	1.50 H	76	11.94	19.97
7	599.56	31.07 QP	46.00	-14.93	1.50 H	94	10.07	21.00
8	640.38	32.60 QP	46.00	-13.40	1.25 H	55	11.05	21.55
9	681.20	31.23 QP	46.00	-14.77	1.25 H	4	9.17	22.07
10	720.08	33.69 QP	46.00	-12.31	1.25 H	52	10.89	22.79
11	760.90	32.59 QP	46.00	-13.41	1.00 H	46	8.99	23.59
12	799.78	33.45 QP	46.00	-12.55	1.00 H	43	9.64	23.82
13	865.87	30.20 QP	46.00	-15.80	1.50 H	304	5.72	24.48
14	920.30	30.61 QP	46.00	-15.39	1.50 H	40	5.28	25.33
15	961.12	41.99 QP	54.00	-12.01	1.25 H	106	16.31	25.68

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 1. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 2. The other emission levels were very low against the limit.
 3. Margin value = Emission level – Limit value

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui
TEST MODE	2 (Without USB cradle)		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	41.66	25.18 QP	40.00	-14.82	1.00 V	79	9.94	15.25
2	84.43	28.13 QP	40.00	-11.87	1.00 V	343	18.06	10.07
3	125.25	35.99 QP	43.50	-7.51	1.00 V	22	22.60	13.39
4	173.85	32.32 QP	43.50	-11.18	1.25 V	301	18.77	13.55
5	263.27	29.59 QP	46.00	-16.41	1.00 V	4	16.09	13.50
6	399.34	30.41 QP	46.00	-15.59	1.50 V	82	13.68	16.74
7	467.37	30.32 QP	46.00	-15.68	1.00 V	40	12.02	18.30
8	560.68	28.08 QP	46.00	-17.92	1.00 V	271	8.11	19.97
9	599.56	29.34 QP	46.00	-16.66	1.00 V	37	8.34	21.00
10	640.38	30.10 QP	46.00	-15.90	1.00 V	337	8.55	21.55
11	681.20	29.12 QP	46.00	-16.88	1.00 V	37	7.05	22.07
12	720.08	30.87 QP	46.00	-15.13	1.50 V	13	8.08	22.79
13	760.90	30.66 QP	46.00	-15.34	1.00 V	271	7.06	23.59
14	799.78	30.12 QP	46.00	-15.88	1.50 V	22	6.31	23.82
15	840.60	29.80 QP	46.00	-16.20	1.50 V	337	5.68	24.12

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

**802.11a OFDM modulation**

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3830.00	51.08 PK	74.00	-22.92	1.00 H	73	14.74	36.34
1	#3830.00	45.96 AV	54.00	-8.04	1.00 H	73	9.62	36.34
2	*5745.00	108.63 PK			1.00 H	25	67.73	40.90
2	*5745.00	98.49 AV			1.00 H	25	57.59	40.90
3	#11490.00	65.83 PK	74.00	-8.17	1.40 H	18	18.46	47.38
3	#11490.00	52.72 AV	54.00	-1.28	1.40 H	18	5.35	47.38

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3830.00	51.23 PK	74.00	-22.77	1.02 V	226	14.89	36.34
1	#3830.00	46.42 AV	54.00	-7.58	1.02 V	226	10.08	36.34
2	*5745.00	103.81 PK			1.23 V	348	62.91	40.90
2	*5745.00	93.60 AV			1.23 V	348	52.70	40.90
3	#11490.00	65.05 PK	74.00	-8.95	1.02 V	182	17.68	47.38
3	#11490.00	51.31 AV	54.00	-2.69	1.02 V	182	3.94	47.38

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.
 7. The limit value is defined as per 15.247



EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3856.00	49.42 PK	74.00	-24.58	1.00 H	71	12.99	36.43
1	#3856.00	44.42 AV	54.00	-9.58	1.00 H	71	7.99	36.43
2	*5785.00	107.12 PK			1.29 H	116	66.07	41.05
2	*5785.00	96.68 AV			1.29 H	116	55.63	41.05
3	#11570.00	67.63 PK	74.00	-6.37	1.15 H	232	20.16	47.47
3	#11570.00	52.96 AV	54.00	-1.04	1.15 H	232	5.49	47.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3856.00	51.33 PK	74.00	-22.67	1.02 V	228	14.90	36.43
1	#3856.00	47.73 AV	54.00	-6.27	1.02 V	228	11.30	36.43
2	*5785.00	102.58 PK			1.16 V	36	61.53	41.05
2	*5785.00	92.66 AV			1.16 V	36	51.61	41.05
3	#11570.00	60.96 PK	74.00	-13.04	1.23 V	227	13.49	47.47
3	#11570.00	48.86 AV	54.00	-5.14	1.23 V	227	1.39	47.47

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.
 7. The limit value is defined as per 15.247



EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3870.00	50.56 PK	74.00	-23.44	1.00 H	71	14.08	36.48
1	#3870.00	45.36 AV	54.00	-8.64	1.00 H	71	8.88	36.48
2	*5805.00	102.95 PK			1.09 H	159	61.88	41.07
2	*5805.00	93.01 AV			1.09 H	159	51.94	41.07
3	#11610.00	66.47 PK	74.00	-7.53	1.24 H	219	18.93	47.54
3	#11610.00	52.68 AV	54.00	-1.32	1.24 H	219	5.14	47.54

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3870.00	51.60 PK	74.00	-22.40	1.02 V	229	15.12	36.48
1	#3870.00	47.47 AV	54.00	-6.53	1.02 V	229	10.99	36.48
2	*5805.00	99.26 PK			1.05 V	39	58.19	41.07
2	*5805.00	89.53 AV			1.05 V	39	48.46	41.07
3	#11610.00	62.17 PK	74.00	-11.83	1.48 V	226	14.63	47.54
3	#11610.00	48.58 AV	54.00	-5.42	1.48 V	226	1.04	47.54

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.
 7. The limit value is defined as per 15.247

**802.11a Turbo OFDM modulation**

EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3840.00	49.70 PK	74.00	-24.30	1.14 H	222	13.33	36.38
1	#3840.00	44.36 AV	54.00	-9.64	1.14 H	222	7.99	36.38
2	*5760.00	105.68 PK			1.14 H	234	64.72	40.96
2	*5760.00	96.48 AV			1.14 H	234	55.52	40.96
3	#11520.00	67.01 PK	74.00	-6.99	1.14 H	234	19.60	47.41
3	#11520.00	52.98 AV	54.00	-1.02	1.14 H	234	5.57	47.41

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3840.00	51.83 PK	74.00	-22.17	1.02 V	229	15.46	36.38
1	#3840.00	48.33 AV	54.00	-5.67	1.02 V	229	11.96	36.38
2	*5760.00	103.48 PK			1.18 V	38	62.52	40.96
2	*5760.00	94.61 AV			1.18 V	38	53.65	40.96
3	#11520.00	59.62 PK	74.00	-14.38	1.12 V	46	12.20	47.41
3	#11520.00	46.65 AV	54.00	-7.35	1.12 V	46	-0.77	47.41

- NOTE**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.
 7. The limit value is defined as per 15.247



EUT	Wireless A/G USB Adapter	MODEL	F6D3050
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3866.00	50.26 PK	74.00	-23.74	1.00 H	225	13.79	36.46
1	#3866.00	45.73 AV	54.00	-8.27	1.00 H	225	9.26	36.46
2	*5800.00	107.86 PK			1.06 H	113	66.75	41.11
2	*5800.00	98.45 AV			1.06 H	113	57.34	41.11
3	#11600.00	66.74 PK	74.00	-7.26	1.25 H	116	19.24	47.50
3	#11600.00	52.32 AV	54.00	-1.68	1.25 H	116	4.82	47.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#3866.00	52.20 PK	74.00	-21.80	1.02 V	229	15.73	36.46
1	#3866.00	49.22 AV	54.00	-4.78	1.02 V	229	12.75	36.46
2	*5800.00	104.03 PK			1.05 V	37	62.92	41.11
2	*5800.00	94.33 AV			1.05 V	37	53.22	41.11
3	#11600.00	63.11 PK	74.00	-10.89	1.01 V	153	15.61	47.50
3	#11600.00	51.62 AV	54.00	-2.38	1.01 V	153	4.12	47.50

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.
 7. The limit value is defined as per 15.247