FCC TEST REPORT

REPORT NO.: RF950118L08
MODEL NO.: NXA-WC80211G/CF
OEM MODEL NO.: WN3320M-A7
RECEIVED: Jan. 13, 2006
TESTED: Jan. 13 ~ Feb. 26, 2006
ISSUED: Mar. 01, 2006

APPLICANT : AMX Corp.

ADDRESS : 3000 Research Drive, Richardson, TX 75082, U.S.A.

ISSUED BY : Advance Data Technology Corporation

LAB ADDRESS : No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.

TEST LOCATION : No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

0528

No.: 2177-01

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1 CERTIFICATION

PRODUCT:	2.4 GHz 54 Mbps Wireless LAN Compact Flash
MODEL:	NXA-WC80211G/CF
BRAND:	AMX
OEM MODEL:	WN3320M-A7
OEM BRAND:	LITE-ON
APPLICANT:	AMX Corp.
TESTED:	Jan. 13 ~ Feb. 26, 2006
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003

The above equipment has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Rennie Wang , **DATE:** Mar. 01, 2006
Rennie Wang

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Mar. 01, 2006
Responsible for RF
Long Chen

APPROVED BY : Gary Chang , **DATE:** Mar. 01, 2006
Gary Chang / Supervisor

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.84dB at 0.201MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit : min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -5.24dB at 319.64MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.55 dB
	200MHz ~1000MHz	3.58 dB
	1GHz ~ 18GHz	1.10 dB
	18GHz ~ 40GHz	0.91 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	2.4 GHz 54 Mbps Wireless LAN Compact Flash
MODEL NO.	NXA-WC80211G/CF
OEM MODEL NO.	WN3320M-A7
FCC ID	CWU-CF80211G
POWER SUPPLY	3.3Vdc from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
MAXIMUM OUTPUT POWER	10.186mW
ANTENNA TYPE	PIFA antenna with 2.396dBi gain
DATA CABLE	NA
I/O PORTS	NA

NOTE:

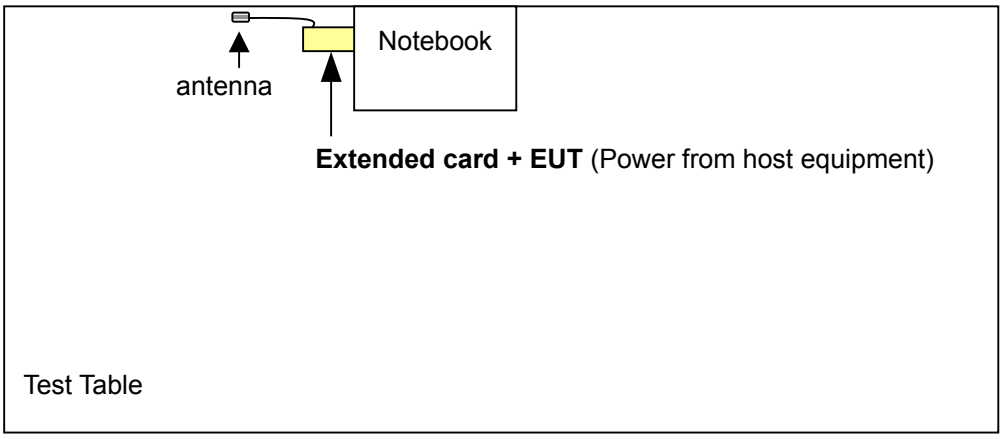
1. The EUT complies with IEEE 802.11g standards and backwards compatible with IEEE 802.11b products.
2. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.
3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

11 channels are provided to this EUT.

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	-

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz APCM: Antenna Port Conducted Measurement

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1

Radiated Emission Test (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11g	1 to 11	11	OFDM	BPSK	6

Radiated Emission Test (Above 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

Bandedge Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 11	OFDM	BPSK	6

Antenna Port Conducted Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)
ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 11, 2006
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 06, 2007
LISN SCHWARZBECK	NNBL 8226-2	8226-142	May 02, 2006
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Feb. 15, 2006
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.

4.1.3 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.

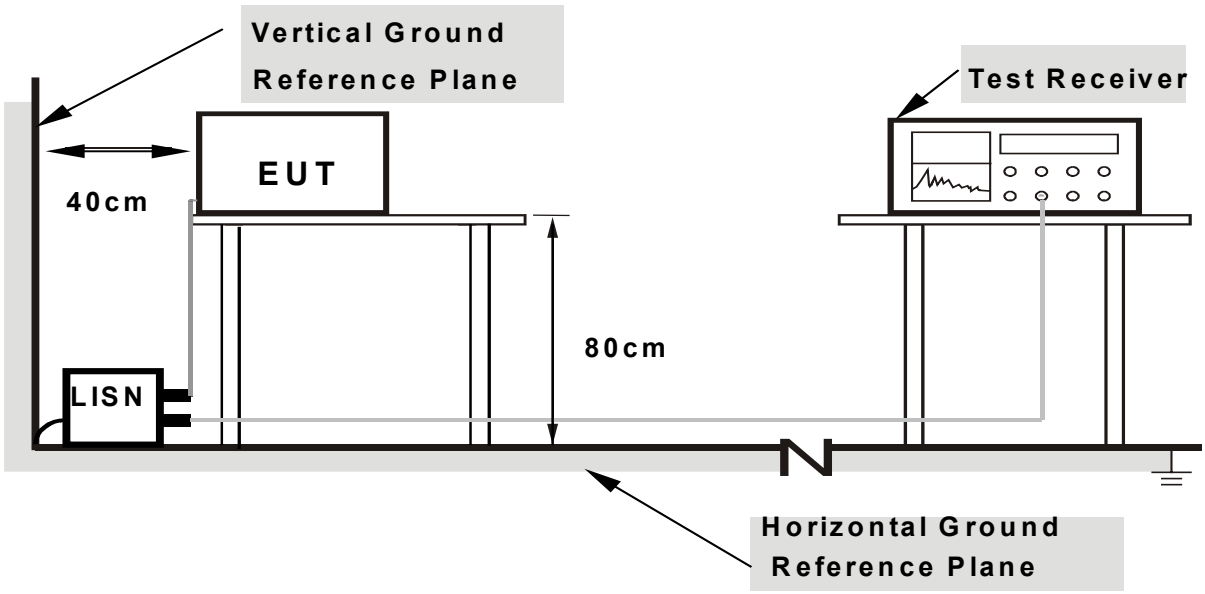
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 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 related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

a. Connected EUT to notebook placed on the testing table.

b. The notebook ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

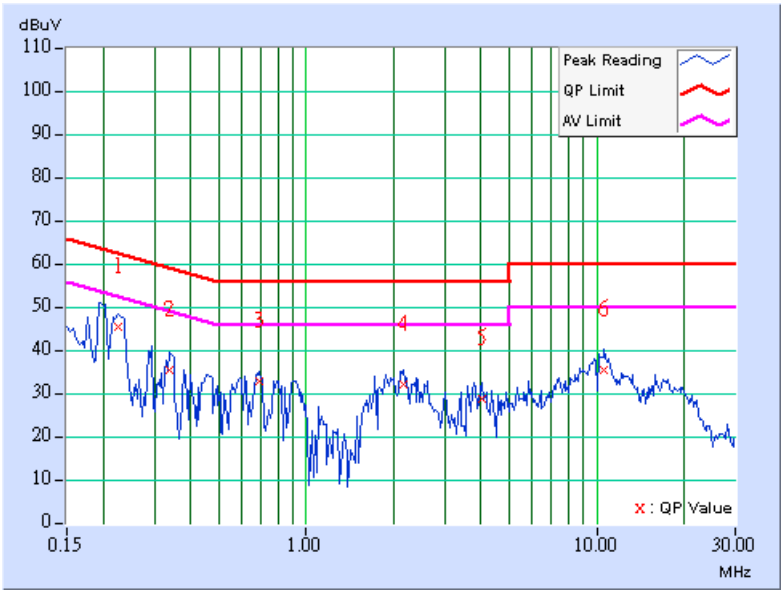
4.1.7 TEST RESULTS

Conducted Worst-Case Data

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**PHASE**	Line 1
MODULATION TYPE	DBPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.226	0.10	44.84	-	44.94	-	62.58	52.58	-17.64	-
2	0.338	0.10	35.01	-	35.11	-	59.26	49.26	-24.15	-
3	0.693	0.15	32.30	-	32.45	-	56.00	46.00	-23.55	-
4	2.164	0.22	31.55	-	31.77	-	56.00	46.00	-24.23	-
5	4.039	0.47	28.25	-	28.72	-	56.00	46.00	-27.28	-
6	10.555	0.58	34.95	-	35.53	-	60.00	50.00	-24.47	-

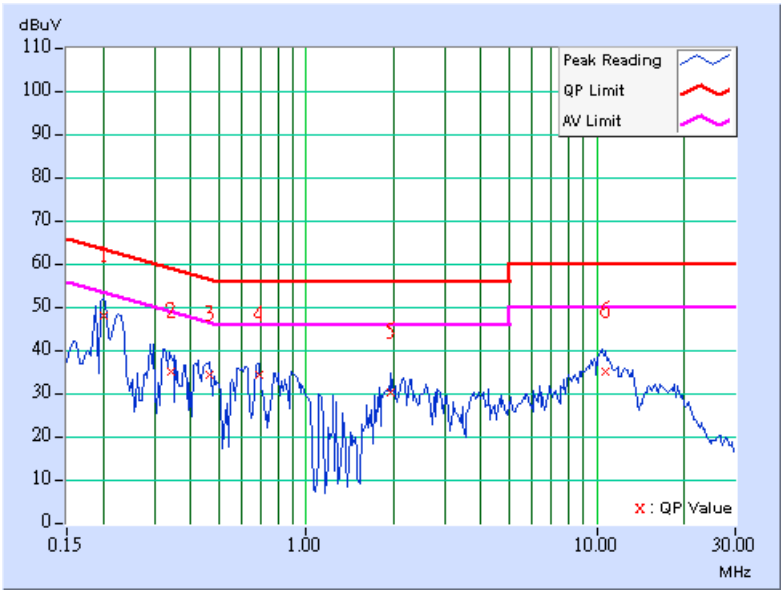
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**PHASE**	Line 2
MODULATION TYPE	DBPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.201**	**0.10**	**47.64**	**-**	**47.74**	**-**	**63.58**	**53.58**	**-15.84**	**-**
2	0.342	0.10	34.83	-	34.93	-	59.15	49.15	-24.22	-
3	0.463	0.11	33.92	-	34.03	-	56.65	46.65	-22.62	-
4	0.685	0.15	33.92	-	34.07	-	56.00	46.00	-21.93	-
5	1.961	0.20	29.94	-	30.14	-	56.00	46.00	-25.86	-
6	10.691	0.48	34.88	-	35.36	-	60.00	50.00	-24.64	-

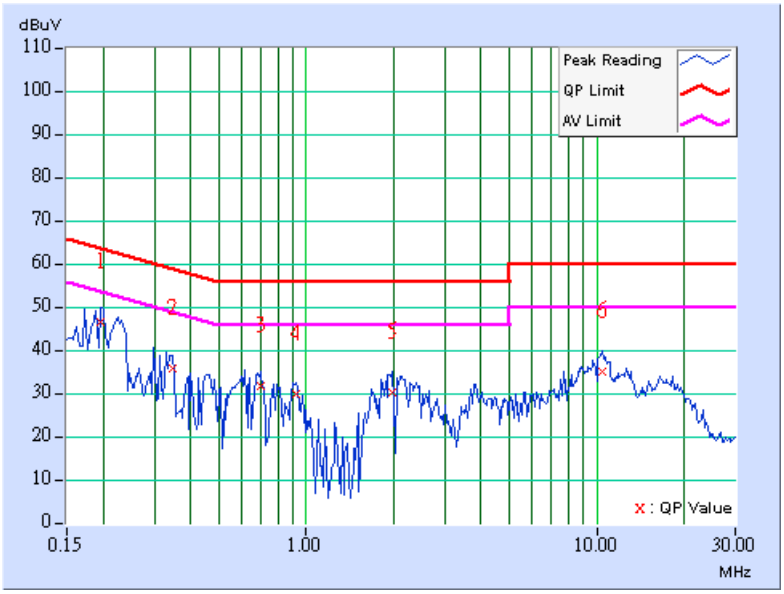
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	**PHASE**	Line 1
MODULATION TYPE	DBPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	46.13	-	46.23	-	63.74	53.74	-17.51	-
2	0.345	0.10	35.39	-	35.49	-	59.07	49.07	-23.58	-
3	0.697	0.15	31.41	-	31.56	-	56.00	46.00	-24.44	-
4	0.921	0.19	29.25	-	29.44	-	56.00	46.00	-26.56	-
5	1.973	0.20	29.68	-	29.88	-	56.00	46.00	-26.12	-
6	10.453	0.58	34.55	-	35.13	-	60.00	50.00	-24.87	-

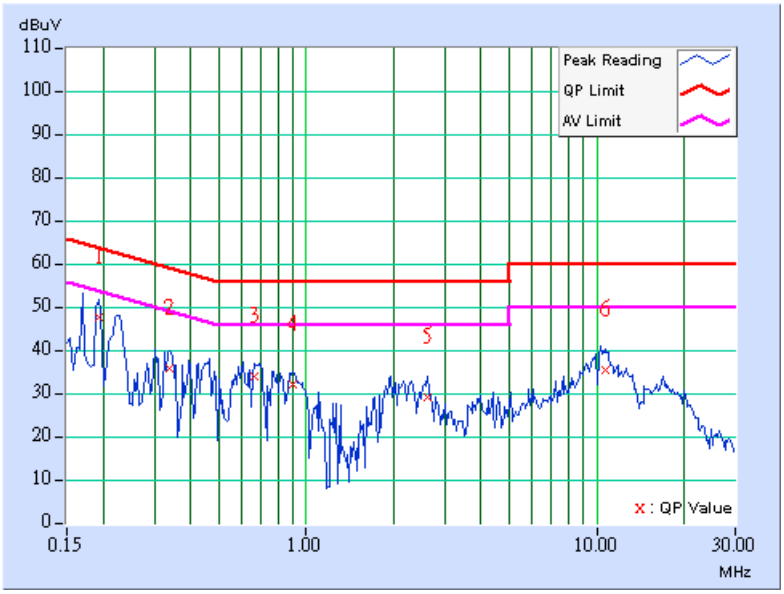
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	**PHASE**	Line 2
MODULATION TYPE	DBPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.10	47.18	-	47.28	-	63.91	53.91	-16.63	-
2	0.338	0.10	35.39	-	35.49	-	59.26	49.26	-23.77	-
3	0.666	0.14	33.65	-	33.79	-	56.00	46.00	-22.21	-
4	0.896	0.18	31.77	-	31.95	-	56.00	46.00	-24.05	-
5	2.613	0.28	28.84	-	29.12	-	56.00	46.00	-26.88	-
6	10.652	0.48	35.00	-	35.48	-	60.00	50.00	-24.52	-

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 11	PHASE	Line 1
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.10	46.84	-	46.94	-	63.91	53.91	-16.97	-
2	0.338	0.10	34.76	-	34.86	-	59.26	49.26	-24.40	-
3	0.689	0.15	32.30	-	32.45	-	56.00	46.00	-23.55	-
4	1.906	0.20	31.27	-	31.47	-	56.00	46.00	-24.53	-
5	3.953	0.46	26.59	-	27.05	-	56.00	46.00	-28.95	-
6	10.594	0.58	34.49	-	35.07	-	60.00	50.00	-24.93	-

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.
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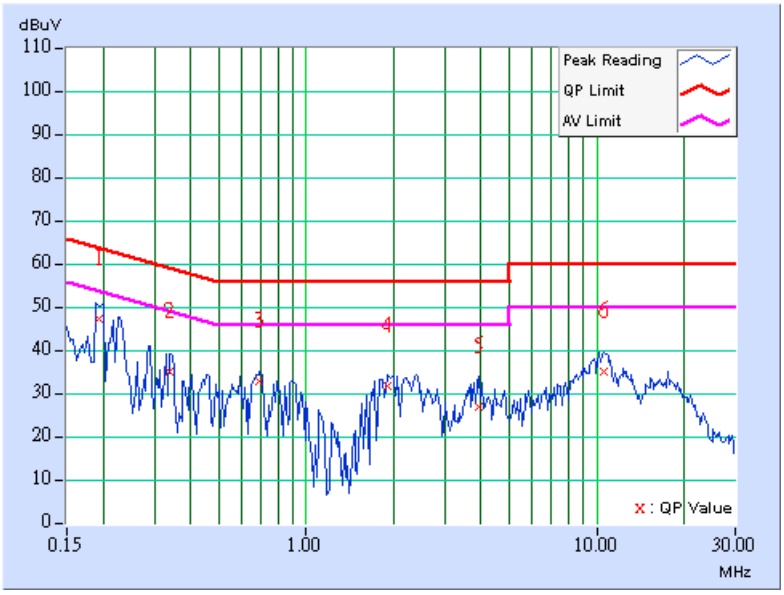
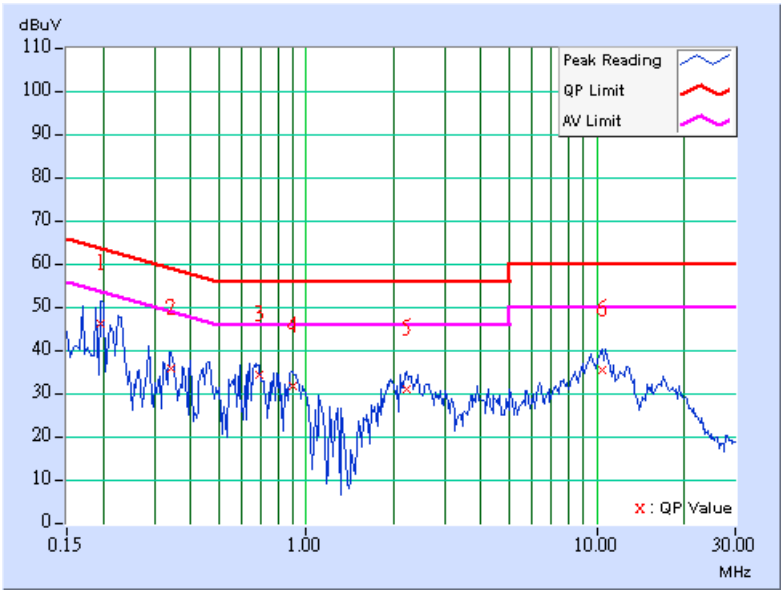
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	45.97	-	46.07	-	63.74	53.74	-17.67	-
2	0.341	0.10	35.52	-	35.62	-	59.17	49.17	-23.55	-
3	0.685	0.15	34.06	-	34.21	-	56.00	46.00	-21.79	-
4	0.900	0.18	31.37	-	31.55	-	56.00	46.00	-24.45	-
5	2.227	0.23	30.66	-	30.89	-	56.00	46.00	-25.11	-
6	10.426	0.47	35.14	-	35.61	-	60.00	50.00	-24.39	-

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.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 20, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 27, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 15, 2007
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 22, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170147	Jan. 26, 2007
Preamplifier Agilent	8449B	3008A01961	Oct. 23, 2006
Preamplifier Agilent	8447D	2944A10629	Oct. 27, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	214380/4	Jan. 16, 2007
RF signal cable HUBER+SUHNER	SUCOFLEX 104	219266/4	Jan. 16, 2007
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.

2. The test was performed in HwaYa Chamber 1.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The IC Site Registration No. is IC4924-2.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak method or average method as specified and then reported in data sheet.

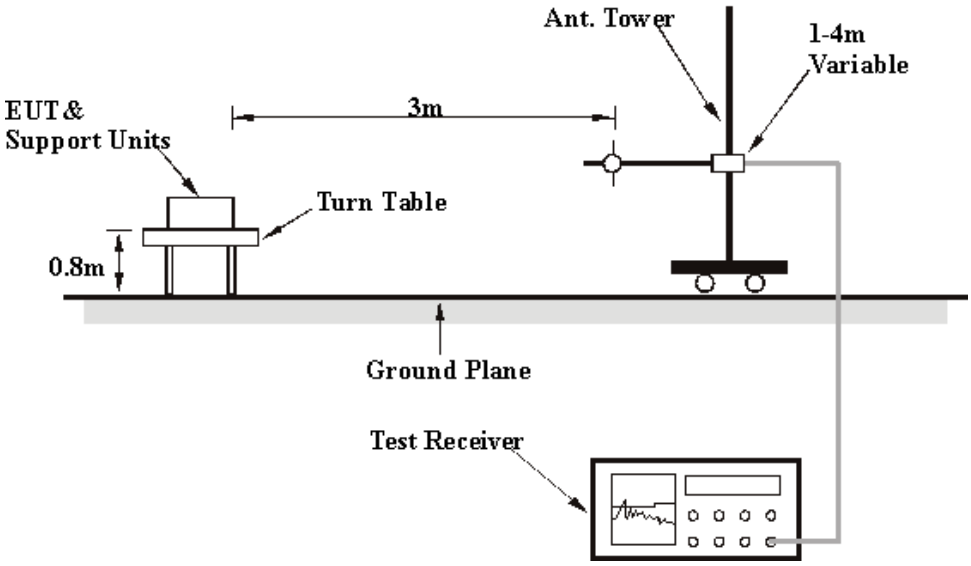
NOTE:

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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

Below 1GHz Worst-Case Data

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
MODULATION TYPE	BPSK	**DETECTOR FUNCTION**	Quasi-Peak
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	24deg. C, 69%RH, 991hPa
TESTED BY	Match Tsui	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	195.23	28.64 QP	43.50	-14.86	1.50 H	319	17.73	10.91
2	239.94	36.77 QP	46.00	-9.23	1.00 H	217	24.76	12.01
3	267.15	30.79 QP	46.00	-15.21	1.50 H	340	17.05	13.74
4	**319.64**	**40.76 QP**	**46.00**	**-5.24**	**1.00 H**	**139**	**25.00**	**15.76**
5	368.24	30.02 QP	46.00	-15.98	1.50 H	343	13.16	16.86
6	399.34	34.06 QP	46.00	-11.94	1.50 H	340	16.14	17.92
7	817.27	29.78 QP	46.00	-16.22	1.00 H	232	3.78	26.00
8	863.93	30.50 QP	46.00	-15.50	1.00 H	343	3.58	26.92
9	912.53	31.50 QP	46.00	-14.50	1.00 H	1	4.54	26.96

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	195.23	28.24 QP	43.50	-15.26	1.00 V	280	17.33	10.91
2	239.94	29.46 QP	46.00	-16.54	1.00 V	160	17.45	12.01
3	319.64	35.82 QP	46.00	-10.18	1.00 V	298	20.05	15.76
4	368.24	29.84 QP	46.00	-16.16	1.00 V	250	12.98	16.86
5	399.34	32.07 QP	46.00	-13.93	1.00 V	217	14.16	17.92
6	817.27	30.01 QP	46.00	-15.99	1.00 V	304	4.01	26.00
7	863.93	30.30 QP	46.00	-15.70	2.00 V	214	3.39	26.92
8	912.53	29.28 QP	46.00	-16.72	1.00 V	4	2.33	26.96

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.

802.11b DSSS modulation

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	DBPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	2390.00	51.73 PK	74.00	-22.27	1.21 H	276	20.51	31.22
2	2390.00	43.46 AV	54.00	-10.54	1.21 H	276	12.24	31.22
3	*2412.00	98.56 PK			1.21 H	276	67.25	31.31
4	*2412.00	94.89 AV			1.21 H	276	63.58	31.31
5	4824.00	45.08 PK	74.00	-28.92	1.02 H	121	8.08	37.00
6	4824.00	32.61 AV	54.00	-21.39	1.02 H	121	-4.39	37.00

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	2390.00	49.34 PK	74.00	-24.66	1.25 V	346	18.12	31.22
2	2390.00	41.29 AV	54.00	-12.71	1.25 V	346	10.07	31.22
3	*2412.00	92.58 PK			1.25 V	348	61.27	31.31
4	*2412.00	88.67 AV			1.25 V	348	57.36	31.31
5	4824.00	44.21 PK	74.00	-29.79	1.12 V	184	7.21	37.00
6	4824.00	31.79 AV	54.00	-22.21	1.12 V	184	-5.21	37.00

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.
5. " * " : Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	DBPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	*2437.00	98.41 PK			1.23 H	241	67.01	31.40
2	*2437.00	95.03 AV			1.23 H	241	63.63	31.40
3	4874.00	45.17 PK	74.00	-28.83	1.35 H	80	8.03	37.14
4	4874.00	32.50 AV	54.00	-21.50	1.35 H	80	-4.64	37.14

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	*2437.00	92.18 PK			1.64 V	291	60.78	31.40
2	*2437.00	88.76 AV			1.64 V	291	57.36	31.40
3	4874.00	44.65 PK	74.00	-29.35	1.09 V	262	7.51	37.14
4	4874.00	31.98 AV	54.00	-22.02	1.09 V	262	-5.16	37.14

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.
5. " * " : Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	DBPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	*2462.00	98.26 PK			1.29 H	108	66.76	31.50
2	*2462.00	95.11 AV			1.29 H	108	63.61	31.50
3	2487.00	52.04 PK	74.00	-21.96	1.27 H	110	20.44	31.60
4	2487.00	43.95 AV	54.00	-10.05	1.27 H	110	12.35	31.60
5	4924.00	46.11 PK	74.00	-27.89	1.57 H	269	8.84	37.27
6	4924.00	32.08 AV	54.00	-21.92	1.57 H	269	-5.19	37.27

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	*2462.00	91.96 PK			1.43 V	236	60.46	31.50
2	*2462.00	88.17 AV			1.43 V	236	56.67	31.50
3	2487.00	49.57 PK	74.00	-24.43	1.43 V	236	17.97	31.60
4	2487.00	41.39 AV	54.00	-12.61	1.43 V	236	9.79	31.60
5	4924.00	44.83 PK	74.00	-29.17	1.07 V	193	7.56	37.27
6	4924.00	30.59 AV	54.00	-23.41	1.07 V	193	-6.68	37.27

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.
5. " * " : Fundamental frequency.

802.11g OFDM modulation

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	BPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	2390.00	54.03 PK	74.00	-19.97	1.42 H	217	22.81	31.22
2	2390.00	43.62 AV	54.00	-10.38	1.42 H	217	12.40	31.22
3	*2412.00	94.53 PK			1.42 H	220	63.22	31.31
4	*2412.00	84.70 AV			1.42 H	220	53.39	31.31
5	4824.00	45.48 PK	74.00	-28.52	1.56 H	347	8.48	37.00
6	4824.00	32.57 AV	54.00	-21.43	1.56 H	347	-4.43	37.00

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	2390.00	50.19 PK	74.00	-23.81	1.24 V	36	18.97	31.22
2	2390.00	39.67 AV	54.00	-14.33	1.24 V	36	8.45	31.22
3	*2412.00	90.73 PK			1.24 V	34	59.42	31.31
4	*2412.00	80.11 AV			1.24 V	34	48.80	31.31
5	4824.00	43.91 PK	74.00	-30.09	1.50 V	242	6.91	37.00
6	4824.00	31.03 AV	54.00	-22.97	1.50 V	242	-5.97	37.00

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.
5. " * " : Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	BPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	*2437.00	94.65 PK			1.27 H	342	63.25	31.40
2	*2437.00	84.14 AV			1.27 H	342	52.74	31.40
3	4874.00	45.28 PK	74.00	-28.72	1.09 H	241	8.14	37.14
4	4874.00	32.17 AV	54.00	-21.83	1.09 H	241	-4.97	37.14

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	*2437.00	90.19 PK			1.44 V	271	58.79	31.40
2	*2437.00	80.24 AV			1.44 V	271	48.84	31.40
3	4874.00	43.00 PK	74.00	-31.00	1.11 V	297	5.86	37.14
4	4874.00	31.22 AV	54.00	-22.78	1.11 V	297	-5.92	37.14

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.
5. " * " : Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	BPSK	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	22deg. C, 66%RH, 991hPa
TESTED BY	Lori Chiu	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

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	*2462.00	94.27 PK			1.33 H	219	62.77	31.50
2	*2462.00	84.11 AV			1.33 H	219	52.61	31.50
3	2483.50	49.82 PK	74.00	-24.18	1.33 H	220	18.23	31.59
4	2483.50	38.16 AV	54.00	-15.84	1.33 H	220	6.57	31.59
5	4924.00	43.49 PK	74.00	-30.51	1.52 H	351	6.22	37.27
6	4924.00	31.26 AV	54.00	-22.74	1.52 H	351	-6.01	37.27

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	*2462.00	91.43 PK			1.04 V	253	59.93	31.50
2	*2462.00	80.15 AV			1.04 V	253	48.65	31.50
3	2483.50	47.24 PK	74.00	-26.76	1.05 V	255	15.65	31.59
4	2483.50	36.23 AV	54.00	-17.77	1.05 V	255	4.64	31.59
5	4924.00	42.89 PK	74.00	-31.11	1.25 V	249	5.62	37.27
6	4924.00	31.33 AV	54.00	-22.67	1.25 V	249	-5.94	37.27

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.
5. " * " : Fundamental frequency.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP

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

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

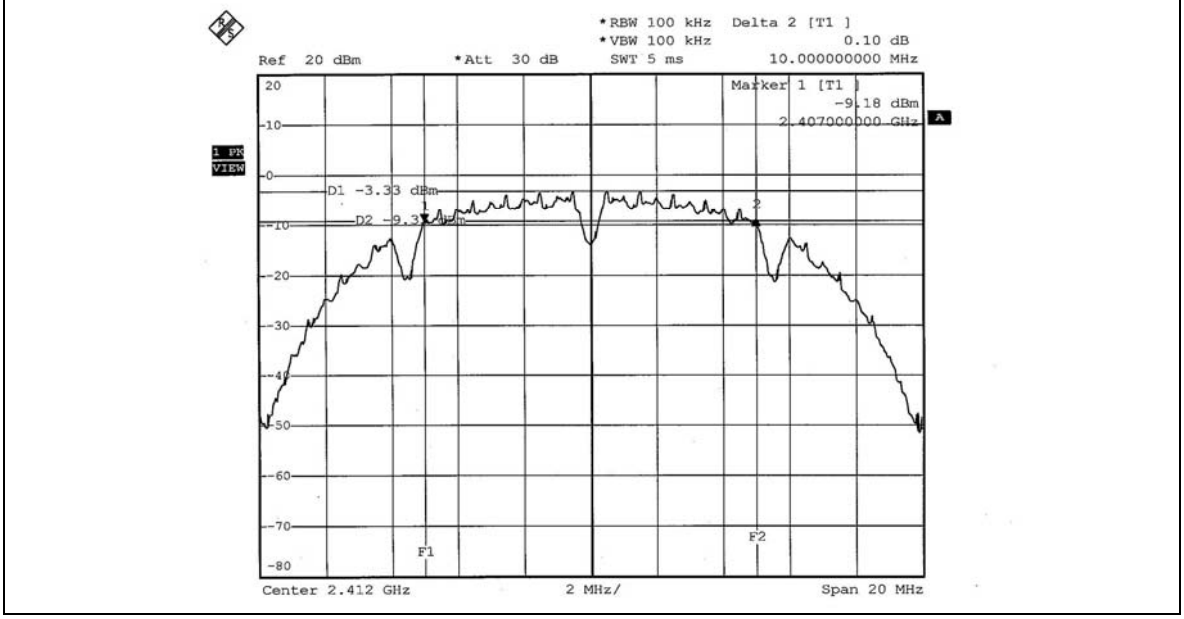
4.3.7 TEST RESULTS

802.11b DSSS modulation

MODULATION TYPE	DBPSK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.00	0.5	PASS
6	2437	10.04	0.5	PASS
11	2462	10.04	0.5	PASS

CH1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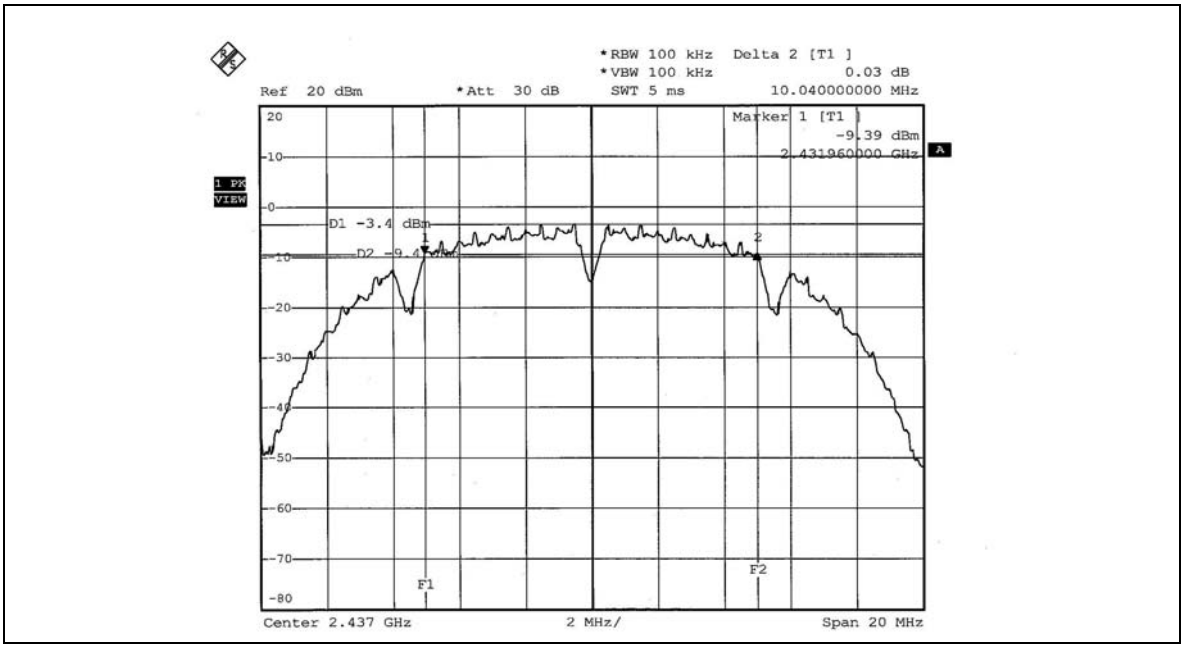
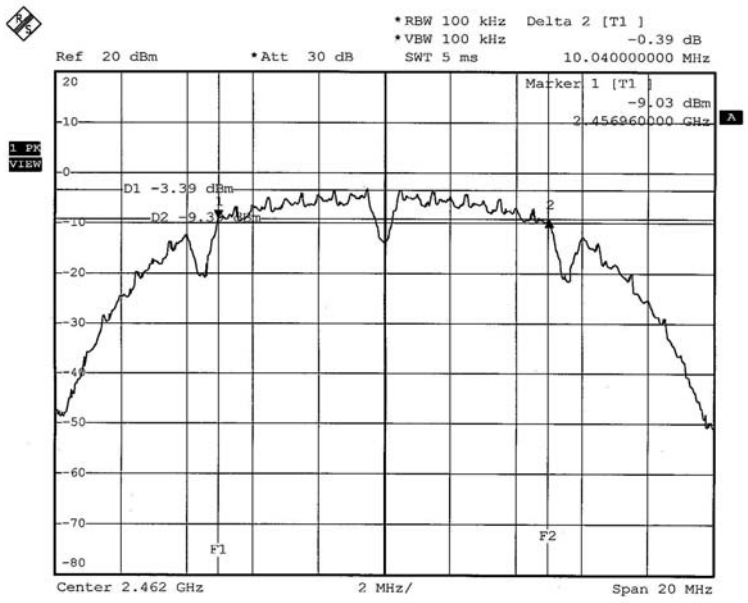
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
0.10 dB
10.000000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-9.18 dBm
2.407000000 GHz
1 PK VIEW
D1 -3.33 dBm
D2 -9.3 dBm
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
0.03 dB
10.040000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-9.39 dBm
2.431960000 GHz
1 PK VIEW
D1 -3.4 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11

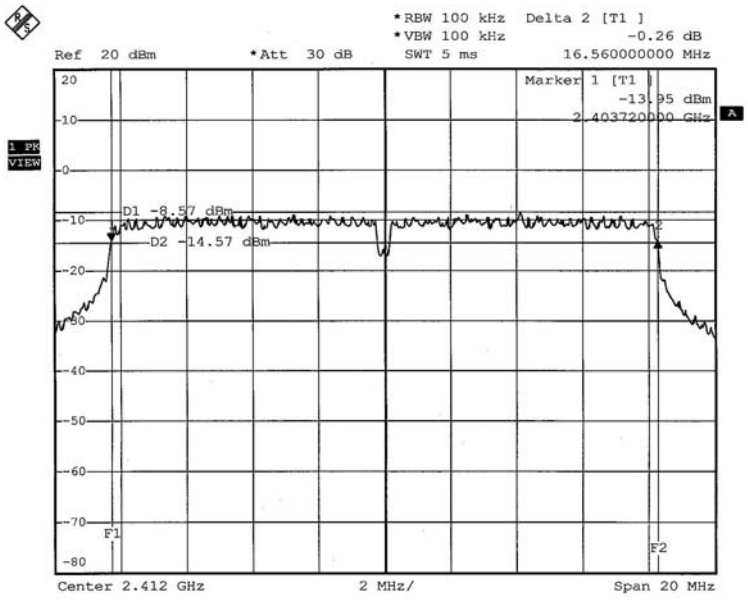

*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
-0.39 dB
10.040000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-9.03 dBm
2.456960000 GHz
1 PK
VIEW
A
D1 -3.39 dBm
D2 -9.3
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

802.11g OFDM modulation

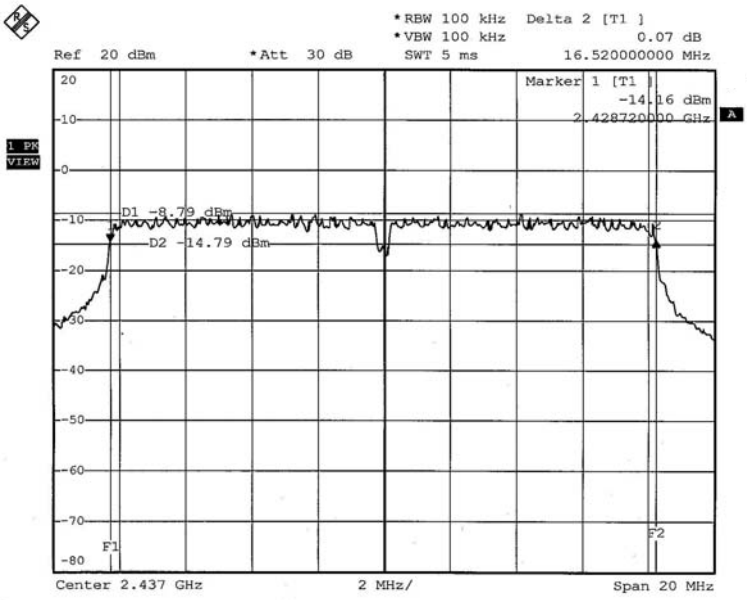
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.56	0.5	PASS
6	2437	16.52	0.5	PASS
11	2462	16.56	0.5	PASS

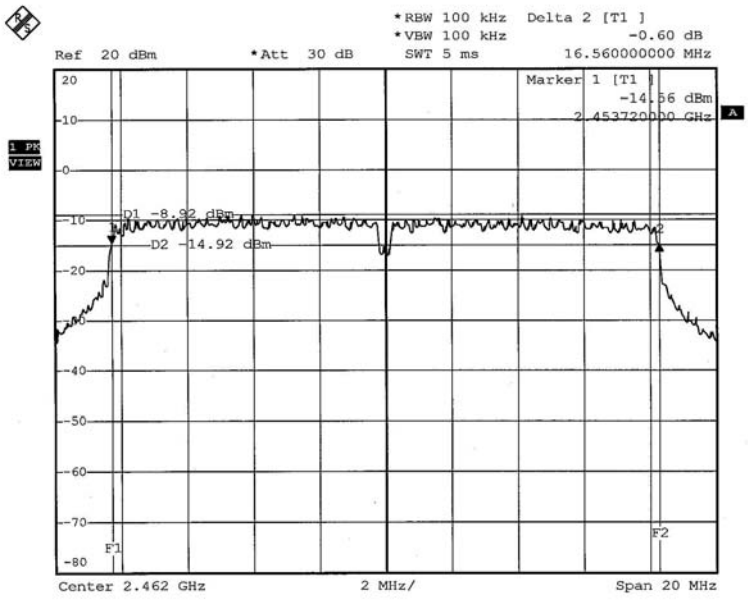
CH1


*RBW 100 kHz
*VBW 100 kHz
Delta 2 [T1]
-0.26 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
16.560000000 MHz
Marker 1 [T1]
-13.95 dBm
2.403720000 GHz
1 PK VIEW
D1 -8.57 dBm
D2 -14.57 dBm
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


*RBW 100 kHz
*VBW 100 kHz
Delta 2 [T1]
0.07 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
16.520000000 MHz
Marker 1 [T1]
-14.16 dBm
2.428720000 GHz
1 PK VIEW
D1 -8.79 dBm
D2 -14.79 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
-0.60 dB
16.560000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-14.56 dBm
2.453720000 GHz
1 PK VIEW
D1 -8.92 dBm
D2 -14.92 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 07, 2006
TEKTRONIX OSCILLOSCOPE	TDS 220	C019167	Jan. 16, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to peak the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same peak reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

802.11b DSSS modulation

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	10.139	10.06	30	PASS
6	2437	10.139	10.06	30	PASS
11	2462	10.186	10.08	30	PASS

802.11g OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	10.046	10.02	30	PASS
6	2437	10.162	10.07	30	PASS
11	2462	10.116	10.05	30	PASS

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
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

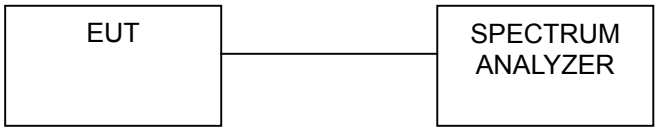
4.5.3 TEST PROCEDURE

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 CONDITIONS

Same as 4.3.6.

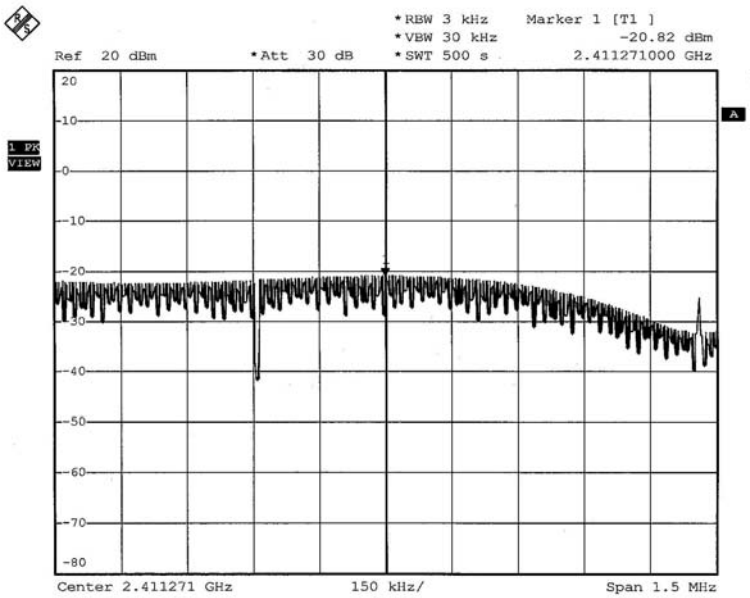
4.5.7 TEST RESULTS

802.11b DSSS modulation

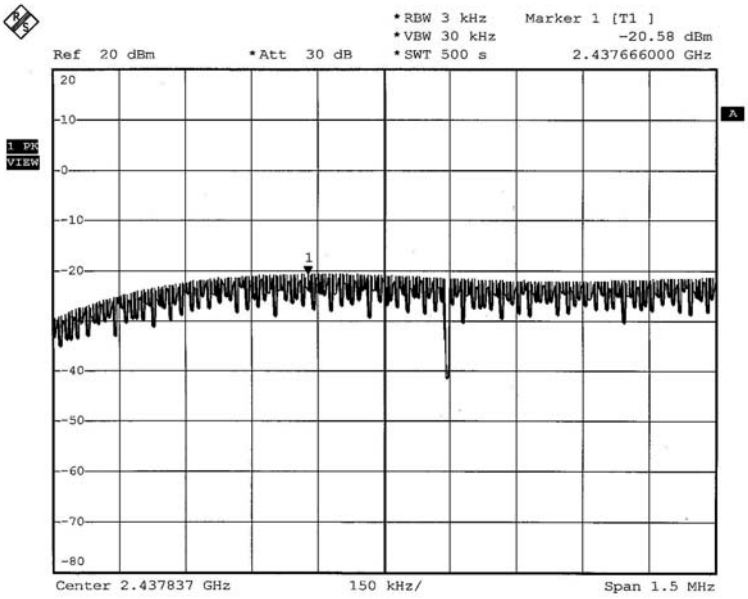
MODULATION TYPE	DBPSK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-20.82	8	PASS
6	2437	-20.58	8	PASS
11	2462	-20.80	8	PASS

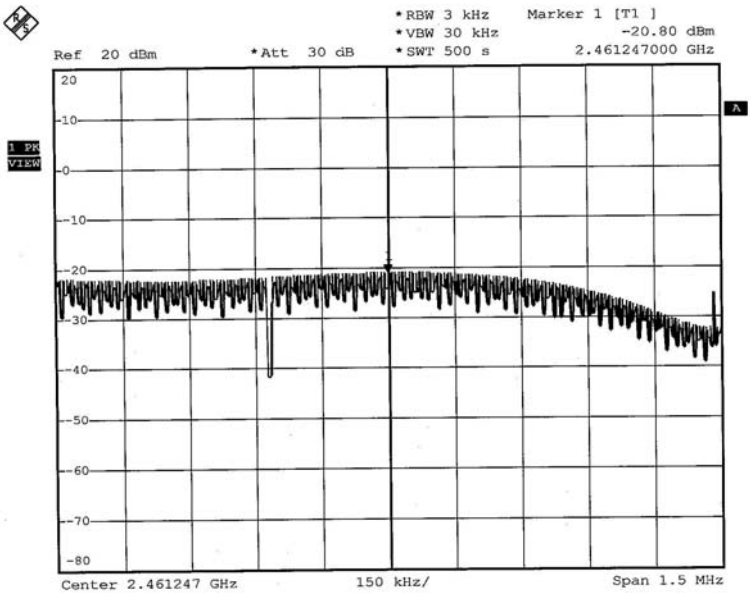
CH1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-20.82 dBm
2.411271000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
-10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.411271 GHz
150 kHz/
Span 1.5 MHz

CH6


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-20.58 dBm
2.437666000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
-10
0
-10
-20
-40
-50
-60
-70
-80
Center 2.437837 GHz
150 kHz/
Span 1.5 MHz

CH11

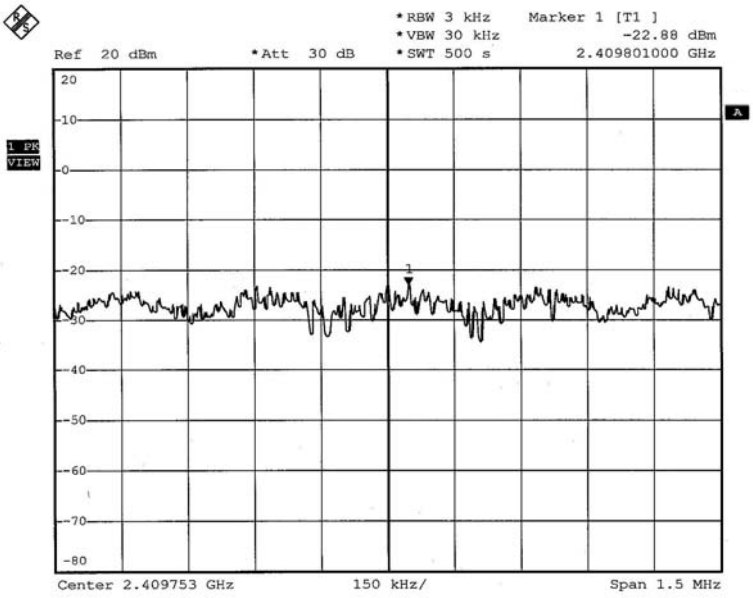

*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-20.80 dBm
2.461247000 GHz
Ref 20 dBm
*Att 30 dB
1 PK
VIEW
A
20
-10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.461247 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM modulation

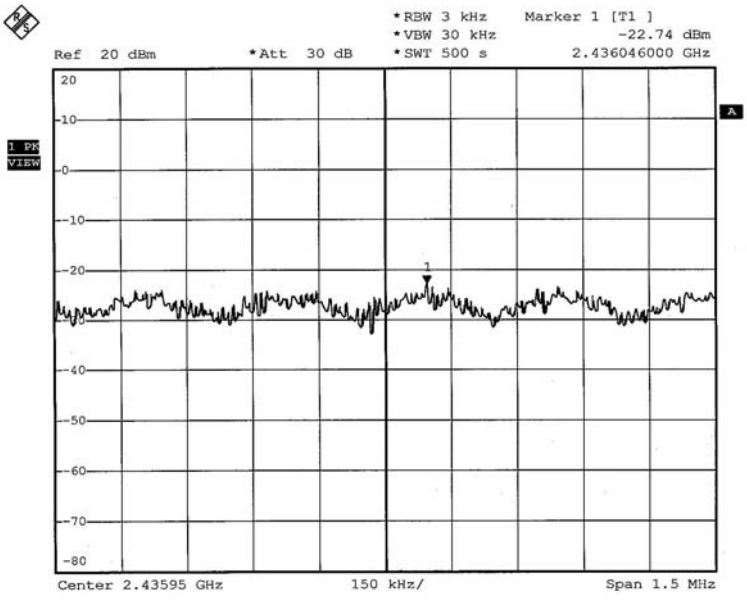
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-22.88	8	PASS
6	2437	-22.74	8	PASS
11	2462	-22.78	8	PASS

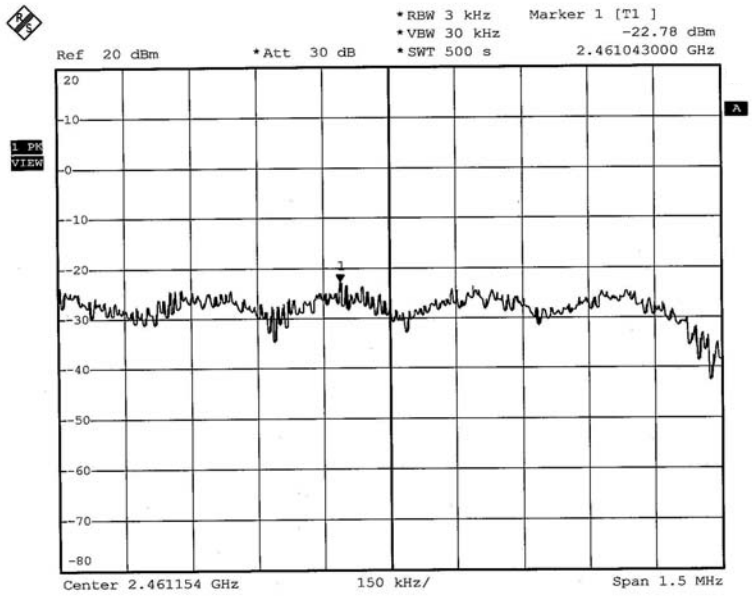
CH1


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-22.88 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.409801000 GHz
1 PK VIEW
A
Center 2.409753 GHz
150 kHz/
Span 1.5 MHz

CH6


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-22.74 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.436046000 GHz
1 PK VIEW
A
Center 2.43595 GHz
150 kHz/
Span 1.5 MHz

CH11


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-22.78 dBm
2.461043000 GHz
Ref 20 dBm
*Att 30 dB
1 PK
VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.461154 GHz
150 kHz/
Span 1.5 MHz

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
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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 100MHz 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 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

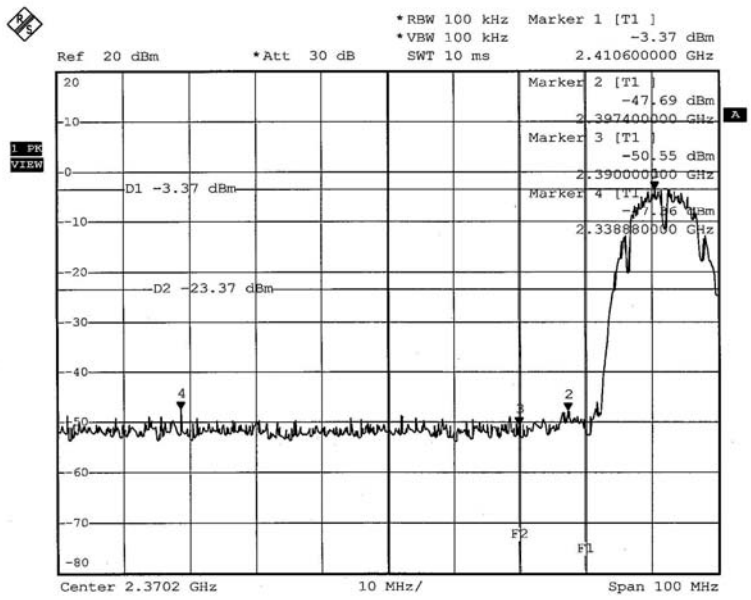
802.11b DSSS modulation

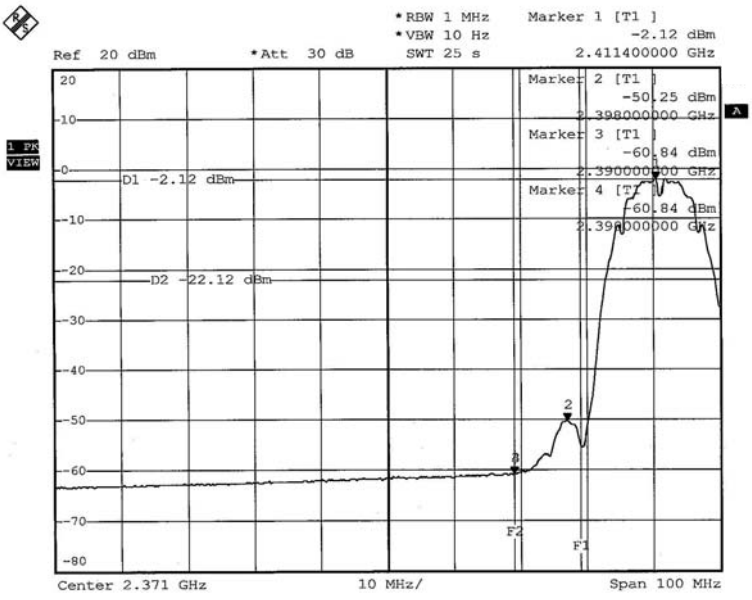
NOTE 1: The band edge emission plot on page 51 shows 43.99dBc between carrier maximum power and local maximum emission in restrict band (2.33888GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 98.56dBuV/m (Peak), so the maximum field strength in restrict band is 98.56-43.99=54.57dBuV/m which is under 74dBuV/m limit.

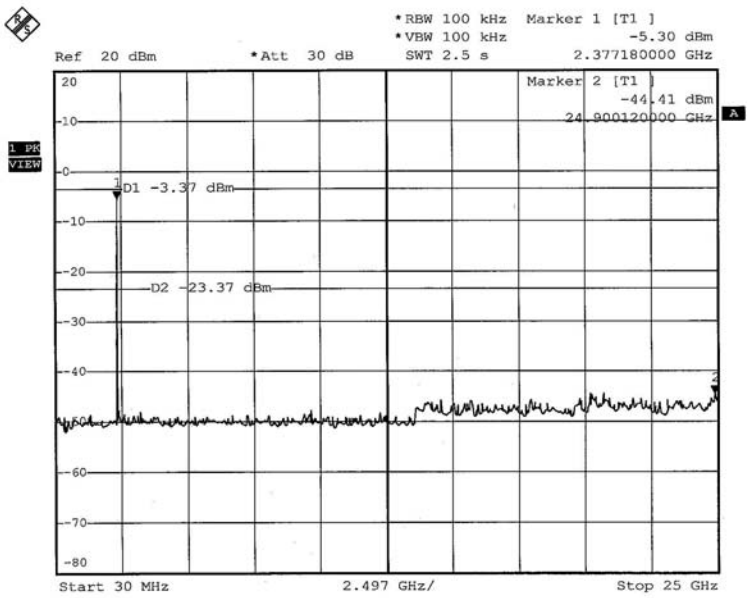
The band edge emission plot on page 51 shows 58.72dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 94.89dBuV/m (Average), so the maximum field strength in restrict band is 94.89-58.72=36.17dBuV/m which is under 54dBuV/m limit.

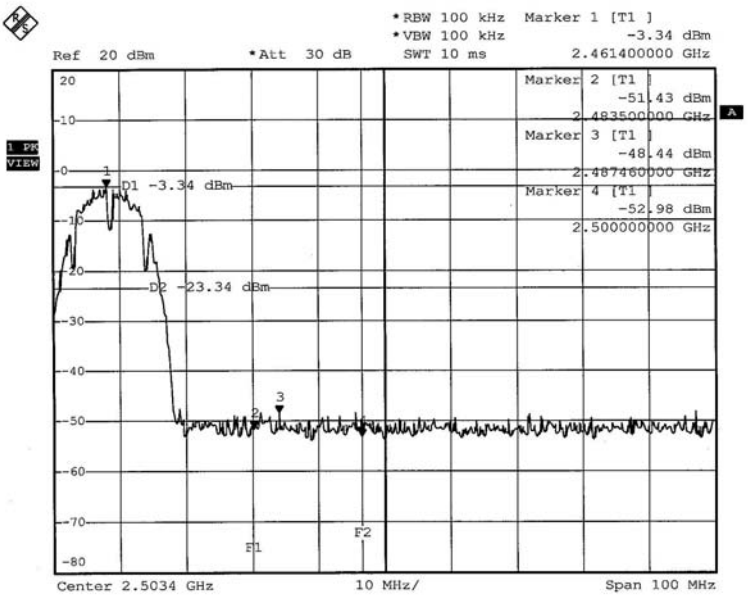
NOTE 2: The band edge emission plot on page 52 shows 45.10dBc between carrier maximum power and local maximum emission in restrict band (2.48746GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 98.26dBuV/m (Peak), so the maximum field strength in restrict band is 98.26-45.10=53.16dBuV/m which is under 74dBuV/m limit.

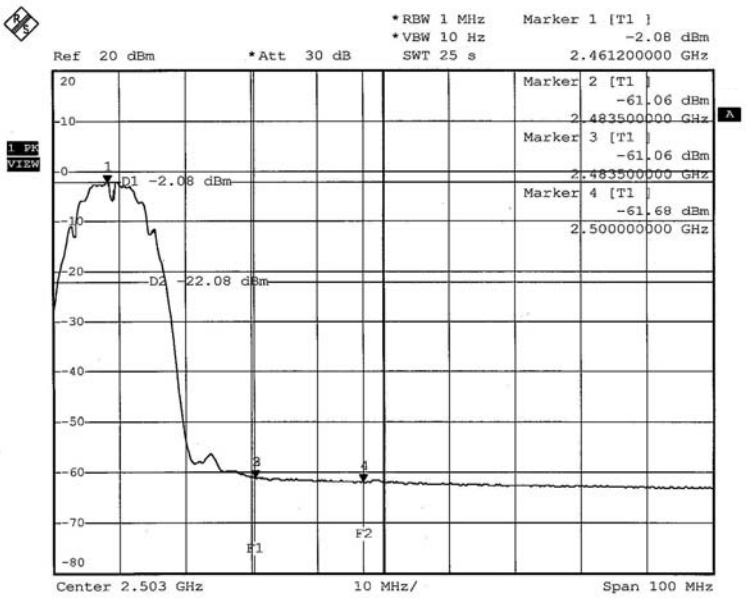
The band edge emission plot on page 53 shows 58.98dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 95.11dBuV/m (Average), so the maximum field strength in restrict band is 95.11-58.98=36.13dBuV/m which is under 54dBuV/m limit.

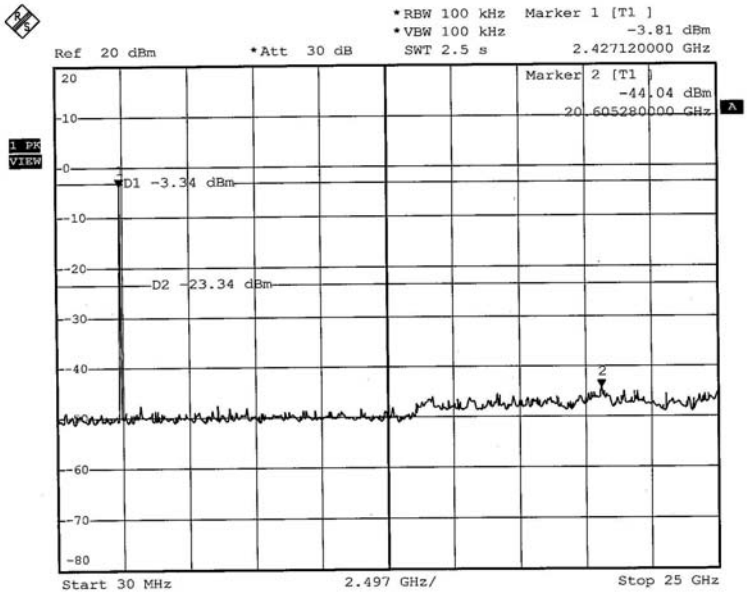

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-3.37 dBm
2.410600000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-47.69 dBm
2.397400000 GHz
Marker 3 [T1]
-50.55 dBm
2.390000000 GHz
Marker 4 [T1]
2.338880000 GHz
1 PK VIEW
D1 -3.37 dBm
D2 -23.37 dBm
F2
F1
Center 2.3702 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-2.12 dBm
2.411400000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-50.25 dBm
2.398000000 GHz
Marker 3 [T1]
-60.84 dBm
2.390000000 GHz
Marker 4 [T1]
-60.84 dBm
1 PK VIEW
D1 -2.12 dBm
D2 -22.12 dBm
F2
F1
Center 2.371 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-5.30 dBm
2.377180000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-44.41 dBm
24.900120000 GHz
1 PK VIEW
D1 -3.37 dBm
D2 -23.37 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-3.34 dBm
2.461400000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-51.43 dBm
2.483500000 GHz
Marker 3 [T1]
-48.44 dBm
2.487460000 GHz
Marker 4 [T1]
-52.98 dBm
2.500000000 GHz
1 PK VIEW
D1 -3.34 dBm
D2 -23.34 dBm
F1
F2
Center 2.5034 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-2.08 dBm
2.461200000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-61.06 dBm
2.483500000 GHz
Marker 3 [T1]
-61.06 dBm
2.483500000 GHz
Marker 4 [T1]
-61.68 dBm
2.500000000 GHz
1 PK VIEW
D1 -2.08 dBm
D2 -22.08 dBm
F1
F2
Center 2.503 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-3.81 dBm
2.427120000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-44.04 dBm
20.605280000 GHz
1 PK VIEW
D1 -3.34 dBm
D2 -23.34 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

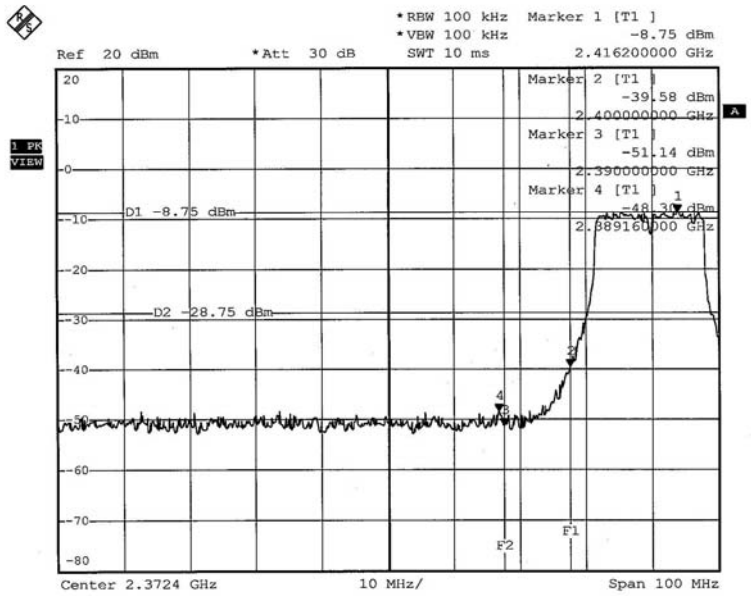
802.11g OFDM modulation

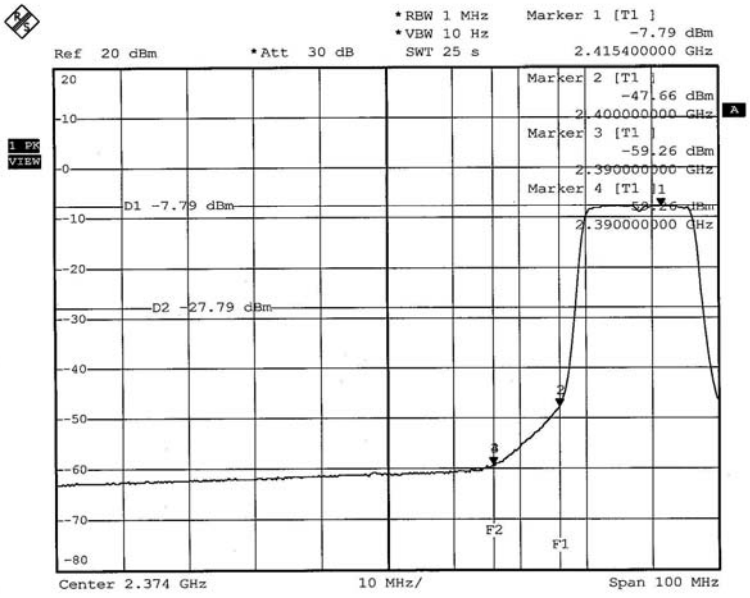
NOTE 1: The band edge emission plot on page 55 shows 39.55dBc between carrier maximum power and local maximum emission in restrict band (2.38916GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 94.53dBuV/m (Peak), so the maximum field strength in restrict band is 94.53-39.55=54.98dBuV/m which is under 74dBuV/m limit.

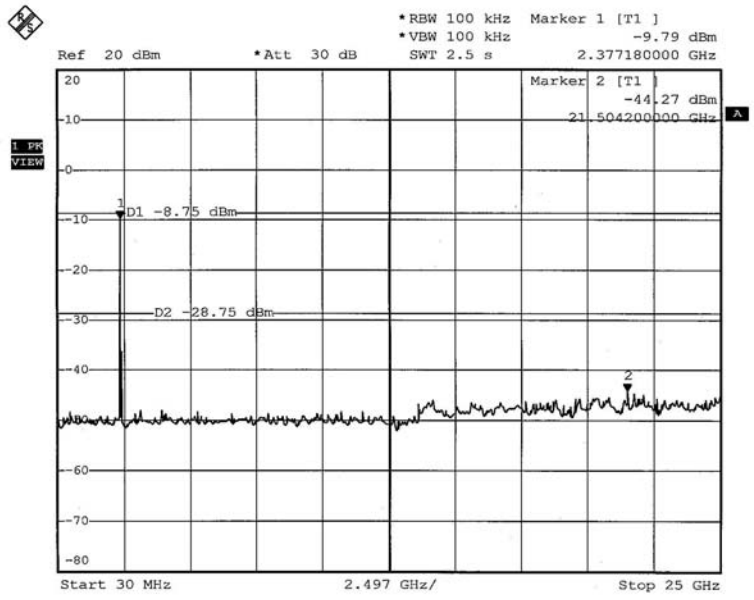
The band edge emission plot on page 55 shows 51.47dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 84.70dBuV/m (Average), so the maximum field strength in restrict band is 84.70-51.47=33.23dBuV/m which is under 54dBuV/m limit.

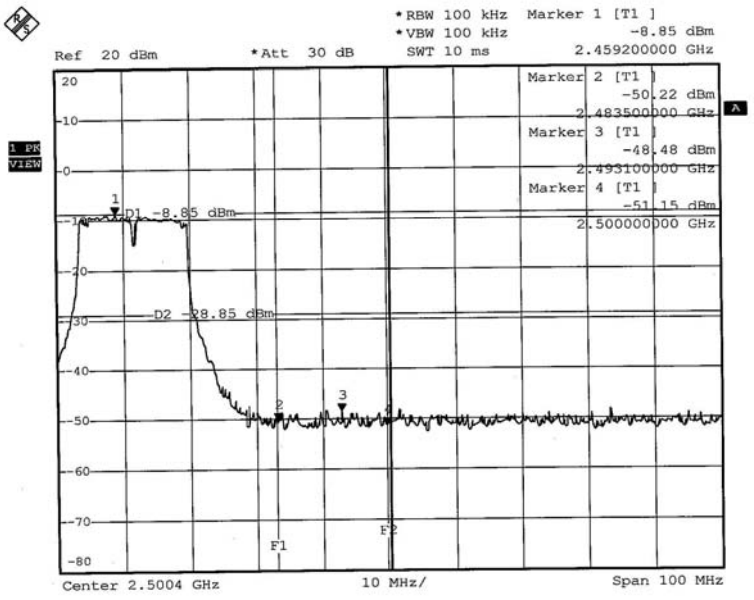
NOTE 2: The band edge emission plot on page 56 shows 39.63dBc between carrier maximum power and local maximum emission in restrict band (2.4931GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 94.27dBuV/m (Peak), so the maximum field strength in restrict band is 94.27-39.63=54.64dBuV/m which is under 74dBuV/m limit.

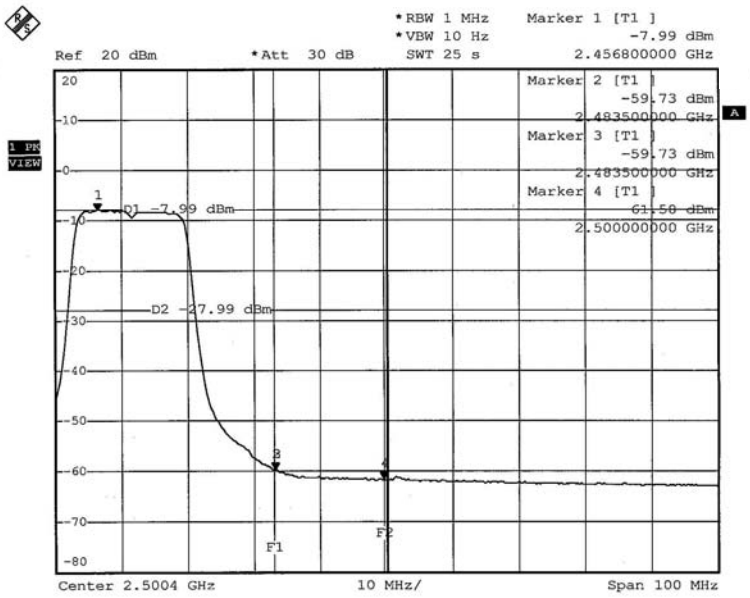
The band edge emission plot on page 57 shows 51.74dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 84.11dBuV/m (Average), so the maximum field strength in restrict band is 84.11-51.74=32.37dBuV/m which is under 54dBuV/m limit.

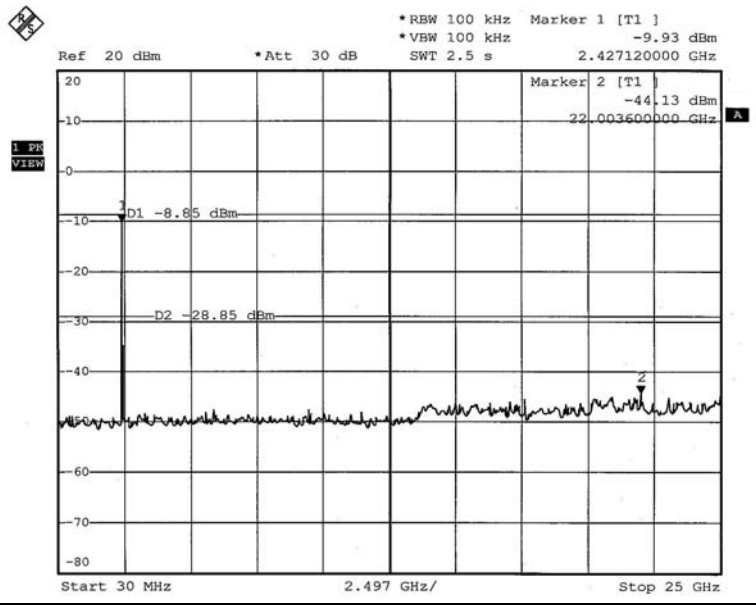

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-8.75 dBm
2.416200000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-39.58 dBm
2.400000000 GHz
Marker 3 [T1]
-51.14 dBm
2.390000000 GHz
Marker 4 [T1]
2.389160000 GHz
1 PK VIEW
D1 -8.75 dBm
D2 -28.75 dBm
F2
F1
Center 2.3724 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-7.79 dBm
2.415400000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-47.66 dBm
2.400000000 GHz
Marker 3 [T1]
-59.26 dBm
2.390000000 GHz
Marker 4 [T1]
2.390000000 GHz
1 PK VIEW
D1 -7.79 dBm
D2 -27.79 dBm
F2
F1
Center 2.374 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-9.79 dBm
2.377180000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-44.27 dBm
21.504200000 GHz
1 PK VIEW
D1 -8.75 dBm
D2 -28.75 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-8.85 dBm
2.459200000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-50.22 dBm
2.483500000 GHz
Marker 3 [T1]
-48.48 dBm
2.493100000 GHz
Marker 4 [T1]
-51.15 dBm
2.500000000 GHz
1 PK VIEW
D1 -8.85 dBm
D2 -28.85 dBm
F1
F2
Center 2.5004 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-7.99 dBm
2.456800000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-59.73 dBm
2.483500000 GHz
Marker 3 [T1]
-59.73 dBm
2.483500000 GHz
Marker 4 [T1]
61.50 dBm
2.500000000 GHz
D1 -7.99 dBm
D2 -27.99 dBm
F1
F2
Center 2.5004 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-9.93 dBm
2.427120000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-44.13 dBm
22.003600000 GHz
D1 -8.85 dBm
D2 -28.85 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

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.

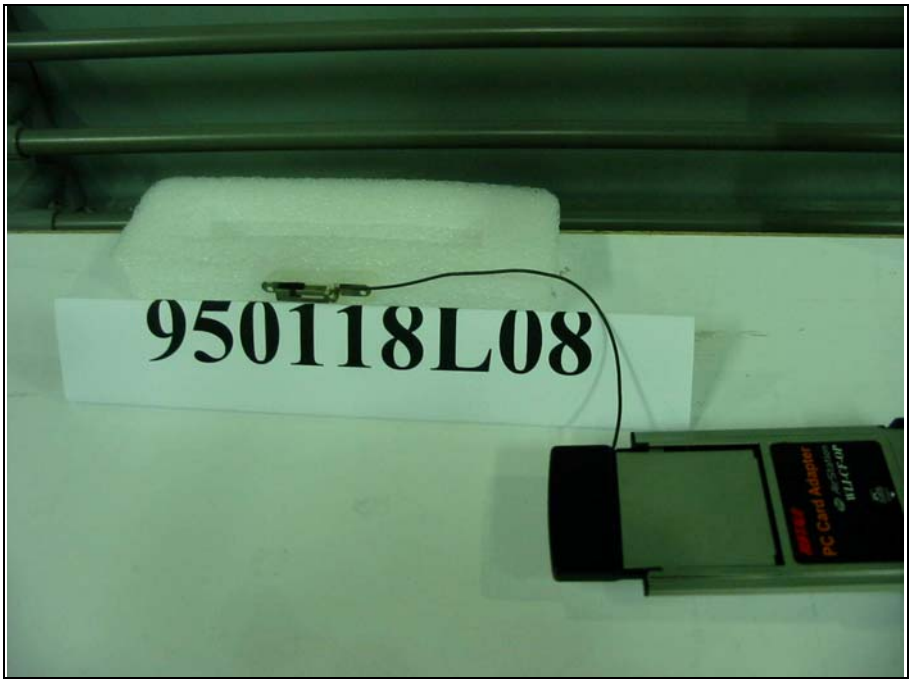
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna type used in this product is PIFA antenna with UFL connector. The maximum Gain of the antenna is 2.396dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST


950118L08
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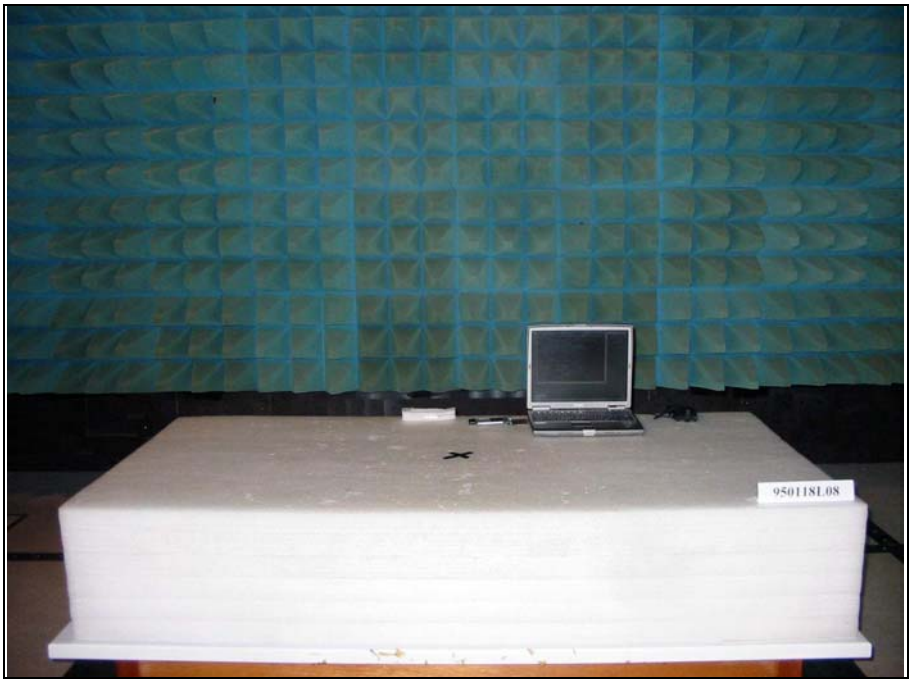
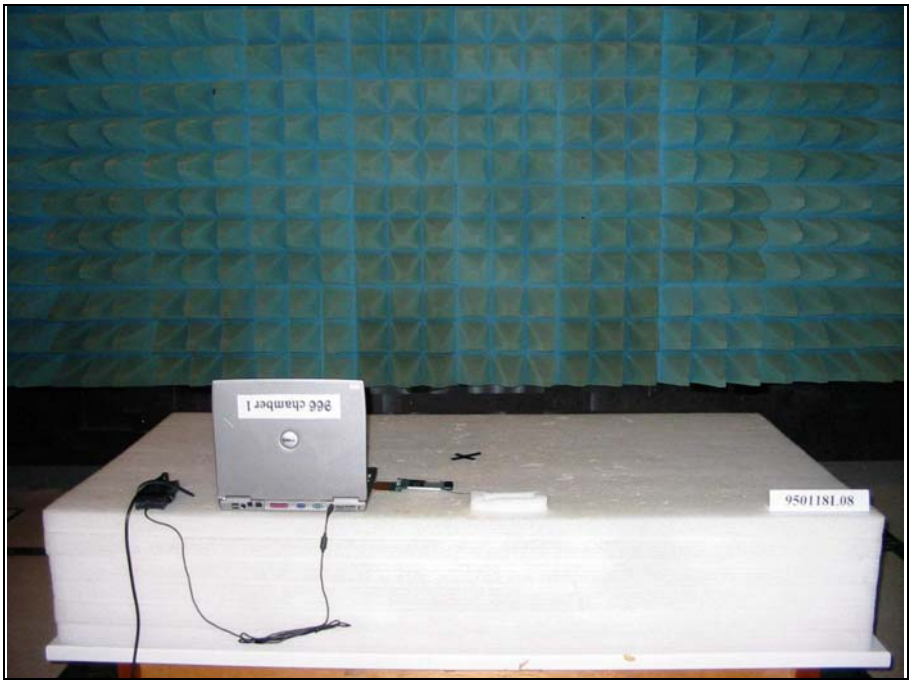
RADIATED EMISSION TEST



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AirStation
WLI-CF-OP
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6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF Lab
Tel: 886-3-3270910
Fax: 886-3-3270892

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.