

FCC TEST REPORT

REPORT NO.: RF950317L11

MODEL NO.: NOC-3220

Refer to page 6 for other models

RECEIVED: Apr. 03, 2006

TESTED: Apr. 07 ~ Apr. 11, 2006

ISSUED: Apr. 13, 2006

APPLICANT: SENAO INTERNATIONAL CO., LTD.

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Table of Contents

1	CERTIFICATION	4
2	SUMMARY OF TEST RESULTS	5
2.1	MEASUREMENT UNCERTAINTY.....	5
3	GENERAL INFORMATION	6
3.1	GENERAL DESCRIPTION OF EUT	6
3.2	DESCRIPTION OF TEST MODES	8
3.2.1	CONFIGURATION OF SYSTEM UNDER TEST	9
3.2.2	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS.....	12
3.4	DESCRIPTION OF SUPPORT UNITS	12
4	TEST TYPES AND RESULTS	13
4.1	CONDUCTED EMISSION MEASUREMENT	13
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	13
4.1.2	TEST INSTRUMENTS.....	13
4.1.3	TEST PROCEDURES	14
4.1.4	DEVIATION FROM TEST STANDARD	14
4.1.5	TEST SETUP	15
4.1.6	EUT OPERATING CONDITIONS	15
4.1.7	TEST RESULTS	16
4.2	RADIATED EMISSION MEASUREMENT	28
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT.....	28
4.2.2	TEST INSTRUMENTS.....	29
4.2.3	TEST PROCEDURES	30
4.2.4	DEVIATION FROM TEST STANDARD	30
4.2.5	TEST SETUP	31
4.2.6	EUT OPERATING CONDITIONS	31
4.2.7	TEST RESULTS	32
4.3	6dB BANDWIDTH MEASUREMENT	48
4.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	48
4.3.2	TEST INSTRUMENTS.....	48
4.3.3	TEST PROCEDURE.....	49
4.3.4	DEVIATION FROM TEST STANDARD	49
4.3.5	TEST SETUP	49
4.3.6	EUT OPERATING CONDITIONS	49
4.3.7	TEST RESULTS	50
4.4	MAXIMUM PEAK OUTPUT POWER.....	56
4.4.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	56

4.4.2	TEST INSTRUMENTS.....	56
4.4.3	TEST PROCEDURES	57
4.4.4	DEVIATION FROM TEST STANDARD	57
4.4.5	TEST SETUP	57
4.4.6	EUT OPERATING CONDITIONS	57
4.4.7	TEST RESULTS	58
4.5	POWER SPECTRAL DENSITY MEASUREMENT.....	59
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT.....	59
4.5.2	TEST INSTRUMENTS.....	59
4.5.3	TEST PROCEDURE.....	60
4.5.4	DEVIATION FROM TEST STANDARD	60
4.5.5	TEST SETUP	60
4.5.6	EUT OPERATING CONDITIONS	60
4.5.7	TEST RESULTS	61
4.6	BAND EDGES MEASUREMENT.....	67
4.6.1	LIMITS OF BAND EDGES MEASUREMENT	67
4.6.2	TEST INSTRUMENTS.....	67
4.6.3	TEST PROCEDURE.....	67
4.6.4	DEVIATION FROM TEST STANDARD	67
4.6.5	EUT OPERATING CONDITION	67
4.6.6	TEST RESULTS	68
4.7	ANTENNA REQUIREMENT	78
4.7.1	STANDARD APPLICABLE.....	78
4.7.2	ANTENNA CONNECTED CONSTRUCTION.....	78
5	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	79
6	INFORMATION ON THE TESTING LABORATORIES	83
	APPENDIX-A	A-1

1 CERTIFICATION

PRODUCT : Outdoor 802.11 b/g AP/CB

MODEL NO.: NOC-3220

Refer to page 6 for other models

BRAND: Senao

Refer to page 6 for other brand names

APPLICANT : SENAIO INTERNATIONAL CO., LTD.

TESTED: Apr. 07 ~ Apr. 11, 2006

TEST SAMPLE: ENGINEERING SAMPLE

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

The above equipment have 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 : Wendy Liao , **DATE:** Apr. 13, 2006
(Wendy Liao)

TECHNICAL
ACCEPTANCE : Long Chen , **DATE:** Apr. 13, 2006
Responsible for RF (Long Chen)

APPROVED BY : Gary Chang , **DATE:** Apr. 13, 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 -13.31dB at 1.872MHz.
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 -1.00dB at 2484.00MHz or 2483.50MHz
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	3.59 dB
	200MHz ~1000MHz	3.61 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 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	Outdoor 802.11 b/g AP/CB
MODEL NO.	NOC-3220 (Refer to Note 2 for other models)
FCC ID	NI3-OC32106001
POWER SUPPLY	48Vdc from POE
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	40.087mW
ANTENNA TYPE	Patch antenna with 9dBi gain Dipole antenna with 5dBi gain
I/O PORTS	RJ45
DATA CABLE	1m non-shielded RJ45 cable without core (connect to PC) 0.6m non-shielded RJ45 cable with one core (connect to EUT)
ASSOCIATED DEVICES	NA

NOTE:

- The EUT is powered by the following POE:

POE: (Power supply form Adapter)

Brand	SENAO
Output Power	48Vdc, 375mA
Power Cord	DC 1.8m non-shielded cable with one core

Adapter:

Brand	MEAN WELL
Model	ES18U48-P1J
Input Power	100-240Vac, 50-60Hz, 0.5A
Output Power	48Vdc, 0.375A, 18W
Power Cord	DC 1.8m non-shielded cable with one core

- The following model names were provided to this EUT.

Brand	Model	Remark
SENAO	NOC-3220	Patch ANT use
SENAO	NOC-3220(EXT)	Dipole ANT use
EnGenius	EOC-3220	OEM model for Patch ANT use
EnGenius	EOC-3220(EXT)	OEM model for Dipole ANT use
SENAO	SOC-3220	OEM model for Patch ANT use
SENAO	SOC-3220 EXT	OEM model for Dipole ANT use

3. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions of up to 54Mbps.
4. 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.

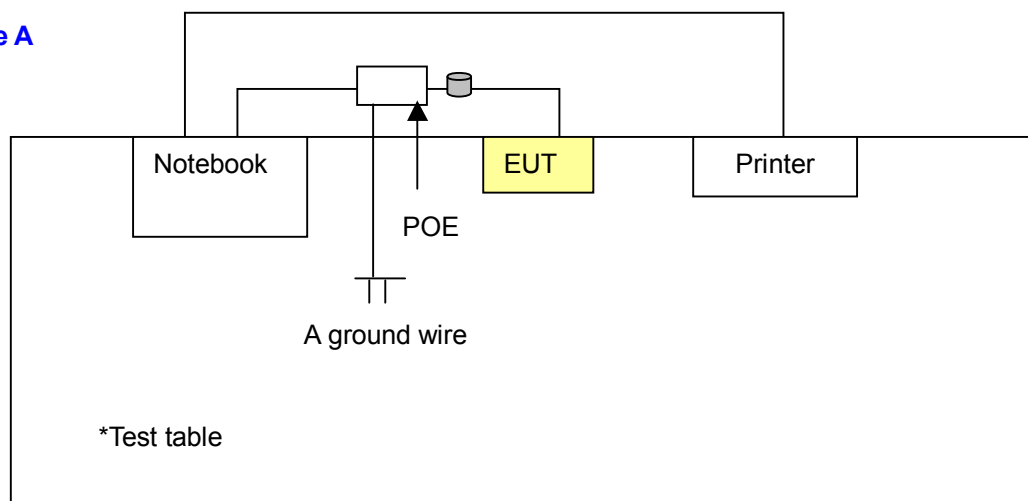
3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided to this EUT for normal mode.

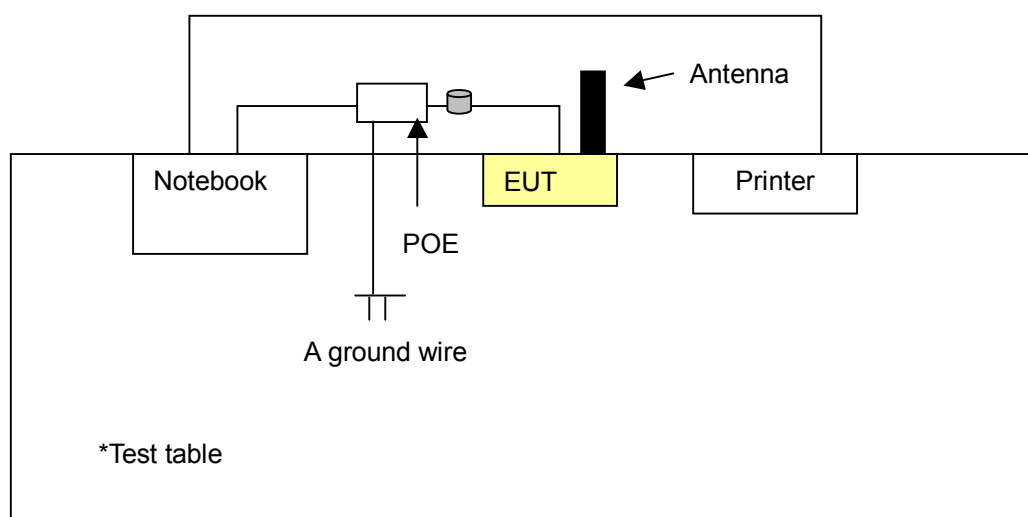
Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Mode A



Mode B



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
A	√	√	√	√	Patch Antenna with 9dBi gain
B	√	√	√	-	Dipole Antenna with 5dBi gain

Where **PLC**: Power Line Conducted Emission

RE<1G: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

NOTE: “-” means no effect

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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	802.11g	1 to 11	1, 6, 11	DSSS	DBPSK	1
B	802.11g	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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	802.11g	1 to 11	11	OFDM	BPSK	6
B	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.

EUT configure mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
B	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
2	PRINTER	EPSON	LQ-300+	DCGY047265	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m shielded cable

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	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

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 ROHDE & SCHWARZ	ESH3-Z5	100312	Feb. 15, 2007
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Feb. 07, 2007
Software ADT	ADT_Cond_V3	NA	NA

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

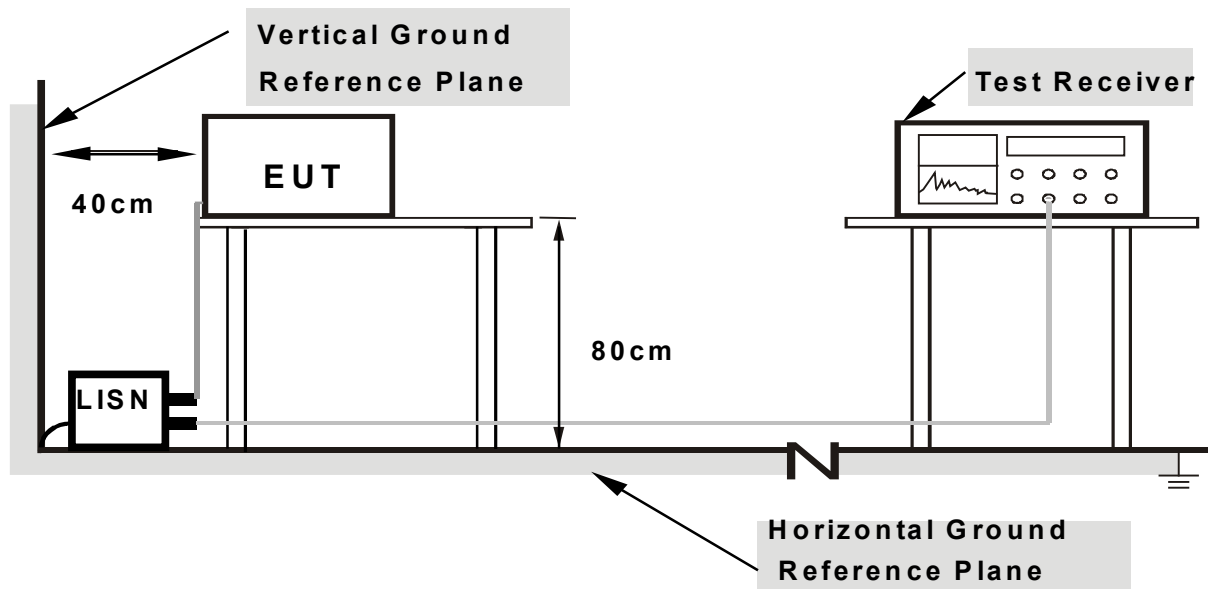
4.1.3 TEST PROCEDURES

- 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

- Connected the EUT to the notebook via the RJ45 cable and placed on a testing table.
- The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The notebook system sent "H" messages to its screen.
- The notebook system sent "H" messages to the printer and the printer printed them out.
- Steps c ~ d were repeated.

4.1.7 TEST RESULTS

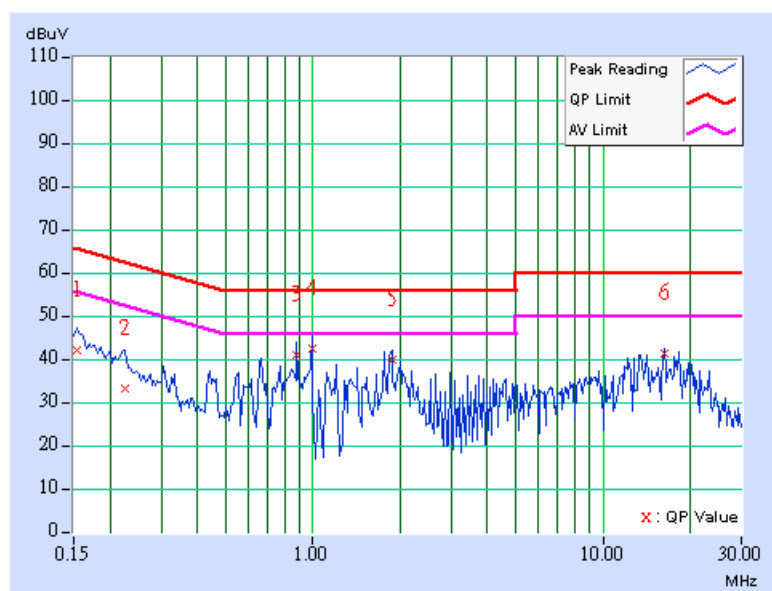
CONDUCTED WORST-CASE DATA

(Patch Antenna with 9dBi gain)

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	41.56	-	41.66	-	65.79	55.79	-24.13	-
2	0.224	0.10	32.56	-	32.66	-	62.66	52.66	-30.00	-
3	0.880	0.18	40.37	-	40.55	-	56.00	46.00	-15.45	-
4	0.990	0.20	41.97	-	42.17	-	56.00	46.00	-13.83	-
5	1.879	0.20	39.43	-	39.63	-	56.00	46.00	-16.37	-
6	16.227	0.68	40.98	-	41.66	-	60.00	50.00	-18.34	-

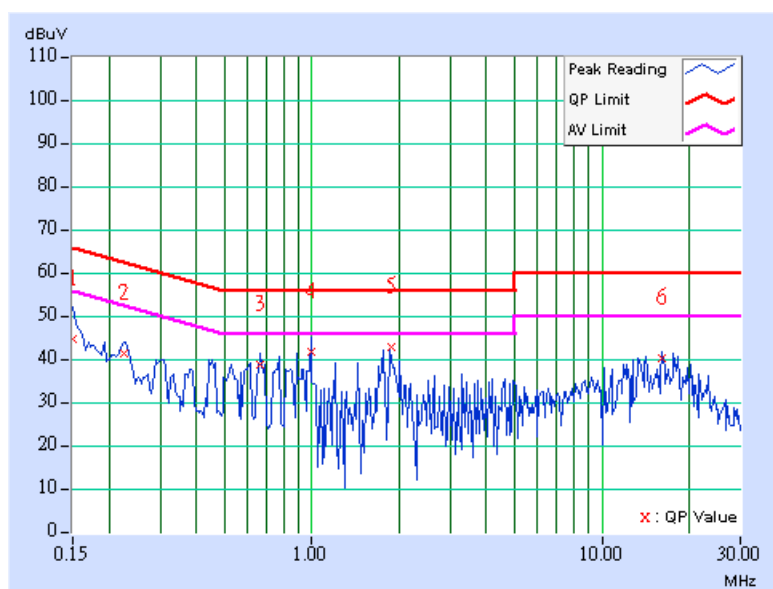
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	44.34	-	44.44	-	66.00	56.00	-21.56	-
2	0.224	0.10	40.94	-	41.04	-	62.66	52.66	-21.62	-
3	0.662	0.10	38.22	-	38.32	-	56.00	46.00	-17.68	-
4	0.994	0.10	41.19	-	41.29	-	56.00	46.00	-14.71	-
5	1.872	0.19	42.50	-	42.69	-	56.00	46.00	-13.31	-
6	16.168	0.55	39.91	-	40.46	-	60.00	50.00	-19.54	-

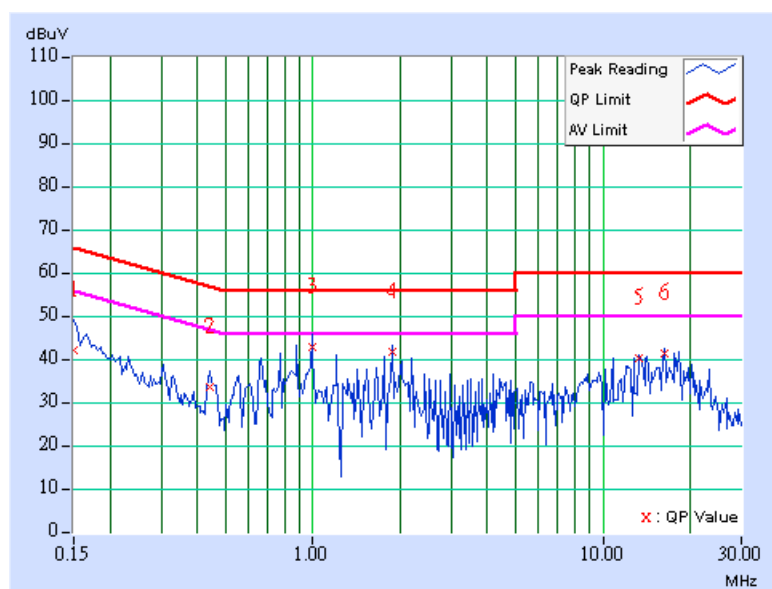
- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	41.61	-	41.71	-	66.00	56.00	-24.29	-
2	0.439	0.11	33.11	-	33.22	-	57.08	47.08	-23.86	-
3	0.990	0.20	42.26	-	42.46	-	56.00	46.00	-13.54	-
4	1.871	0.20	41.25	-	41.45	-	56.00	46.00	-14.55	-
5	13.359	0.57	39.60	-	40.17	-	60.00	50.00	-19.83	-
6	16.227	0.68	40.98	-	41.66	-	60.00	50.00	-18.34	-

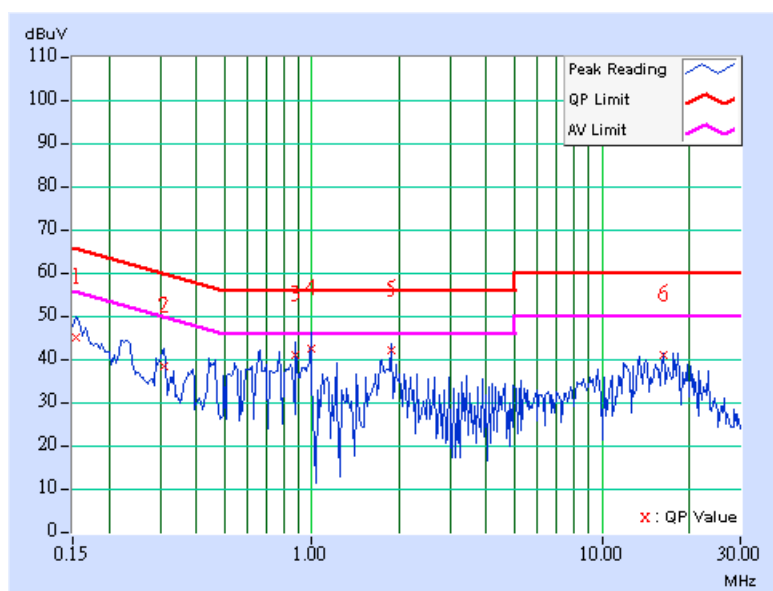
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	44.66	-	44.76	-	65.79	55.79	-21.03	-
2	0.310	0.10	38.07	-	38.17	-	59.97	49.97	-21.80	-
3	0.880	0.10	40.67	-	40.77	-	56.00	46.00	-15.23	-
4	0.990	0.10	41.95	-	42.05	-	56.00	46.00	-13.95	-
5	1.875	0.19	41.77	-	41.96	-	56.00	46.00	-14.04	-
6	16.230	0.55	40.66	-	41.21	-	60.00	50.00	-18.79	-

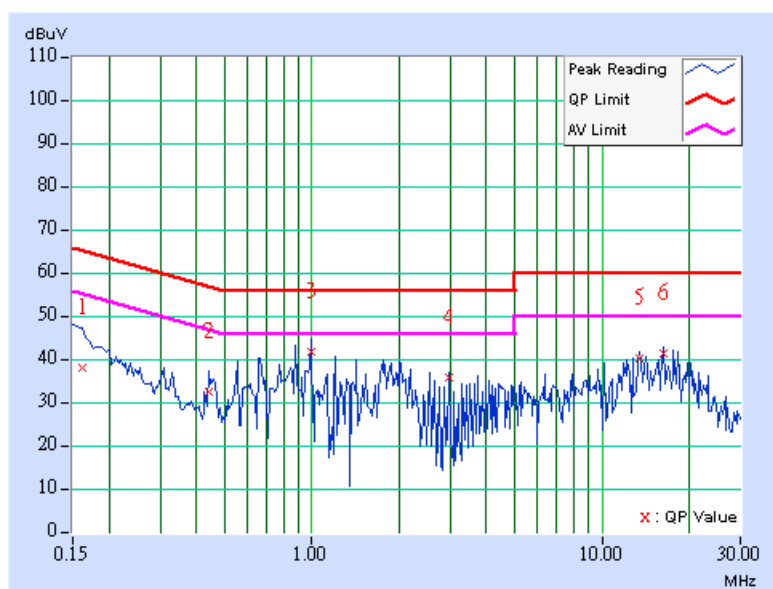
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1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.10	37.51	-	37.61	-	65.38	55.38	-27.77	-
2	0.439	0.11	31.76	-	31.87	-	57.08	47.08	-25.21	-
3	0.994	0.20	41.25	-	41.45	-	56.00	46.00	-14.55	-
4	2.973	0.33	35.08	-	35.41	-	56.00	46.00	-20.59	-
5	13.418	0.58	39.51	-	40.09	-	60.00	50.00	-19.91	-
6	16.227	0.68	40.90	-	41.58	-	60.00	50.00	-18.42	-

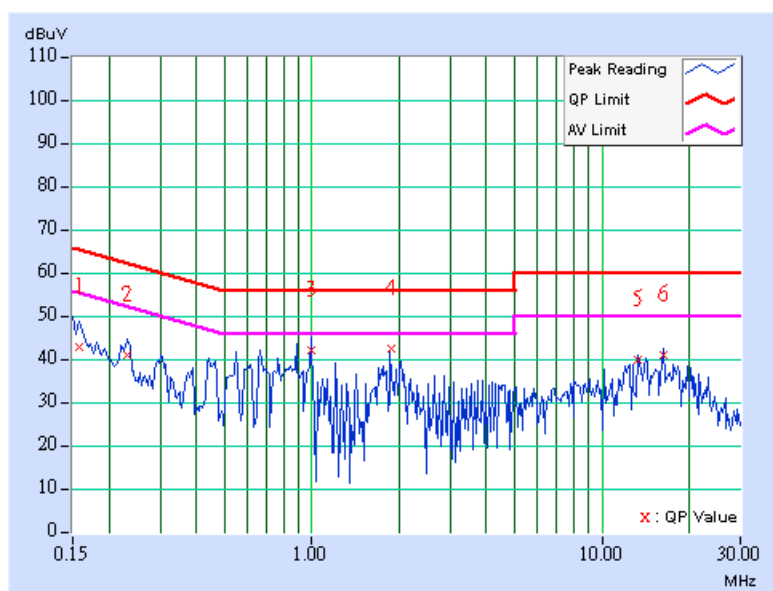
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 2
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.10	42.59	-	42.69	-	65.58	55.58	-22.89	-
2	0.232	0.10	40.50	-	40.60	-	62.38	52.38	-21.78	-
3	0.990	0.10	41.63	-	41.73	-	56.00	46.00	-14.27	-
4	1.872	0.19	42.14	-	42.33	-	56.00	46.00	-13.67	-
5	13.359	0.51	39.29	-	39.80	-	60.00	50.00	-20.20	-
6	16.230	0.55	40.66	-	41.21	-	60.00	50.00	-18.79	-

- 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.



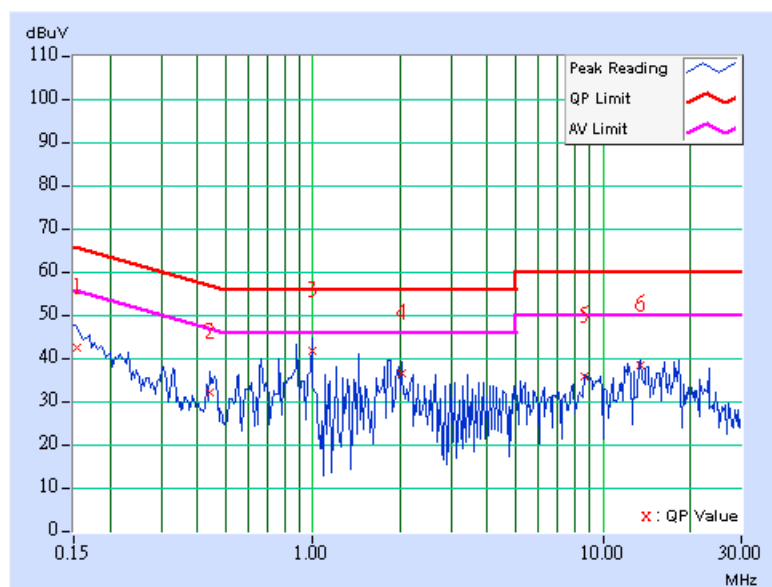
CONDUCTED WORST-CASE DATA

(Dipole Antenna with 5dBi gain)

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.153	0.10	42.01	-	42.11	-	65.83	55.83	-23.72	-
2	0.439	0.11	31.50	-	31.61	-	57.08	47.08	-25.47	-
3	0.990	0.20	41.13	-	41.33	-	56.00	46.00	-14.67	-
4	2.020	0.20	36.12	-	36.32	-	56.00	46.00	-19.68	-
5	8.598	0.46	35.17	-	35.63	-	60.00	50.00	-24.37	-
6	13.422	0.58	38.01	-	38.59	-	60.00	50.00	-21.41	-

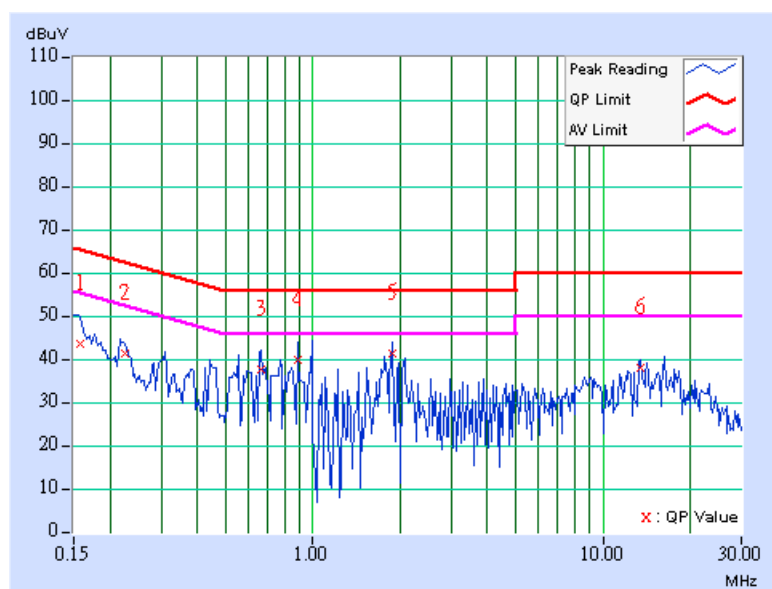
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	A
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.10	43.11	-	43.21	-	65.58	55.58	-22.37	-
2	0.224	0.10	40.92	-	41.02	-	62.67	52.67	-21.65	-
3	0.662	0.10	37.21	-	37.31	-	56.00	46.00	-18.69	-
4	0.884	0.10	39.61	-	39.71	-	56.00	46.00	-16.29	-
5	1.871	0.19	41.15	-	41.34	-	56.00	46.00	-14.66	-
6	13.422	0.51	37.67	-	38.18	-	60.00	50.00	-21.82	-

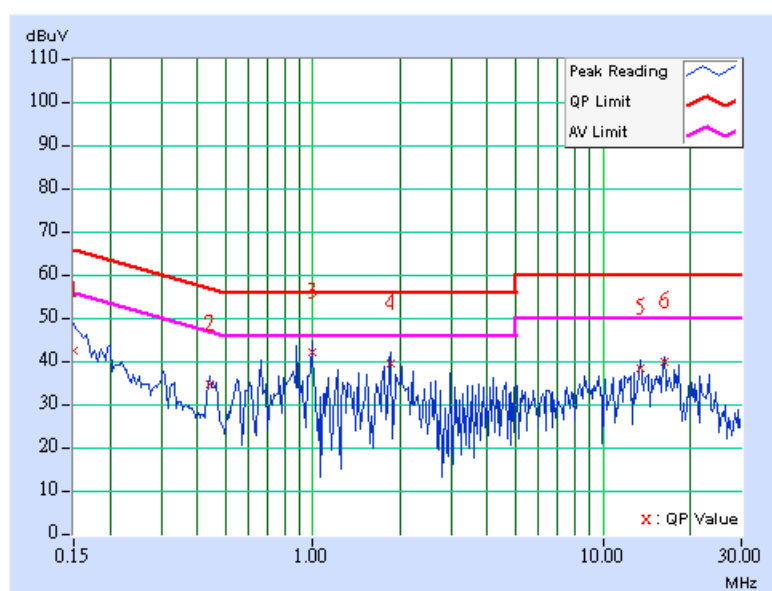
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	B
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	42.00	-	42.10	-	66.00	56.00	-23.90	-
2	0.443	0.11	34.08	-	34.19	-	57.01	47.01	-22.82	-
3	0.990	0.20	41.51	-	41.71	-	56.00	46.00	-14.29	-
4	1.867	0.20	39.00	-	39.20	-	56.00	46.00	-16.80	-
5	13.422	0.58	38.01	-	38.59	-	60.00	50.00	-21.41	-
6	16.230	0.68	39.41	-	40.09	-	60.00	50.00	-19.91	-

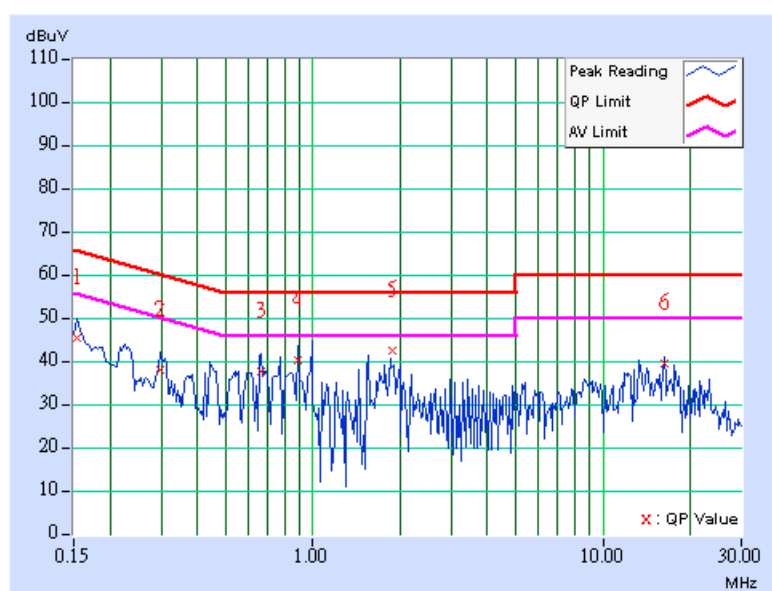
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	B
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	44.92	-	45.02	-	65.79	55.79	-20.77	-
2	0.298	0.10	37.71	-	37.81	-	60.29	50.29	-22.48	-
3	0.662	0.10	37.31	-	37.41	-	56.00	46.00	-18.59	-
4	0.884	0.10	39.81	-	39.91	-	56.00	46.00	-16.09	-
5	1.876	0.19	42.12	-	42.31	-	56.00	46.00	-13.69	-
6	16.230	0.55	39.15	-	39.70	-	60.00	50.00	-20.30	-

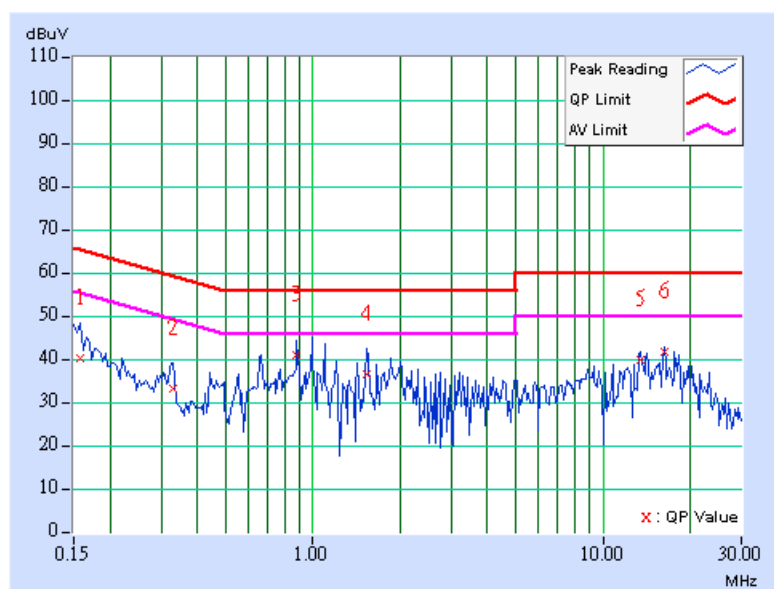
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	B
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.10	39.56	-	39.66	-	65.58	55.58	-25.92	-
2	0.330	0.10	32.52	-	32.62	-	59.46	49.46	-26.84	-
3	0.880	0.18	40.51	-	40.69	-	56.00	46.00	-15.31	-
4	1.543	0.20	35.94	-	36.14	-	56.00	46.00	-19.86	-
5	13.480	0.58	39.23	-	39.81	-	60.00	50.00	-20.19	-
6	16.227	0.68	41.00	-	41.68	-	60.00	50.00	-18.32	-

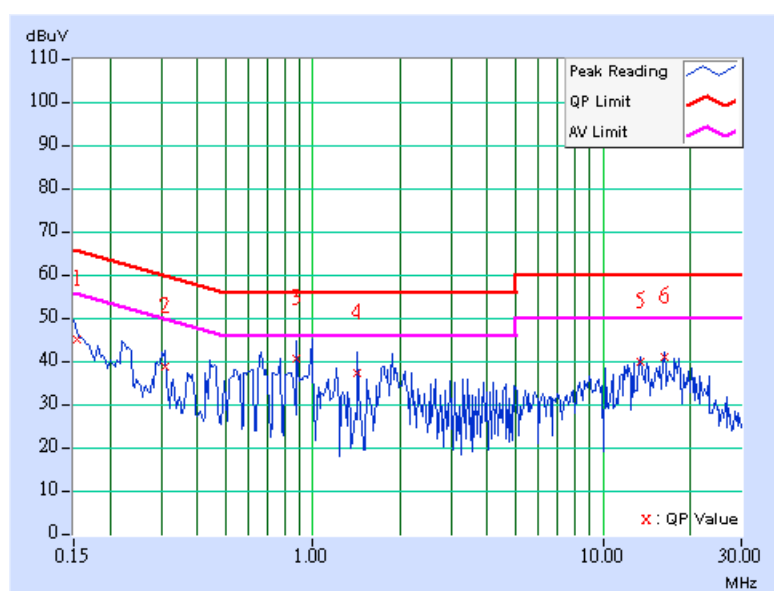
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 2
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TEST MODE	B
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	44.78	-	44.88	-	65.79	55.79	-20.91	-
2	0.310	0.10	38.43	-	38.53	-	59.97	49.97	-21.44	-
3	0.880	0.10	40.01	-	40.11	-	56.00	46.00	-15.89	-
4	1.430	0.14	36.92	-	37.06	-	56.00	46.00	-18.94	-
5	13.418	0.51	39.40	-	39.91	-	60.00	50.00	-20.09	-
6	16.230	0.55	40.66	-	41.21	-	60.00	50.00	-18.79	-

- 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	ESI7	100033	May. 19, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100025	Dec. 05, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Jun. 01, 2006
HORN Antenna SCHWARZBECK	9120D	9120D-408	Jan. 08, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Jan. 19, 2007
Preamplifier Agilent	8447D	2944A10633	Nov. 04, 2006
Preamplifier Agilent	8449B	3008A01964	Oct. 30, 2006
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	214377/4	Dec. 13, 2006
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219272/4	Dec. 13, 2006
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 2.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The VCCI Site Registration No. is R-237.
 5. The IC Site Registration No. is IC4924-3.

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 or average method as specified and then reported in a data sheet.

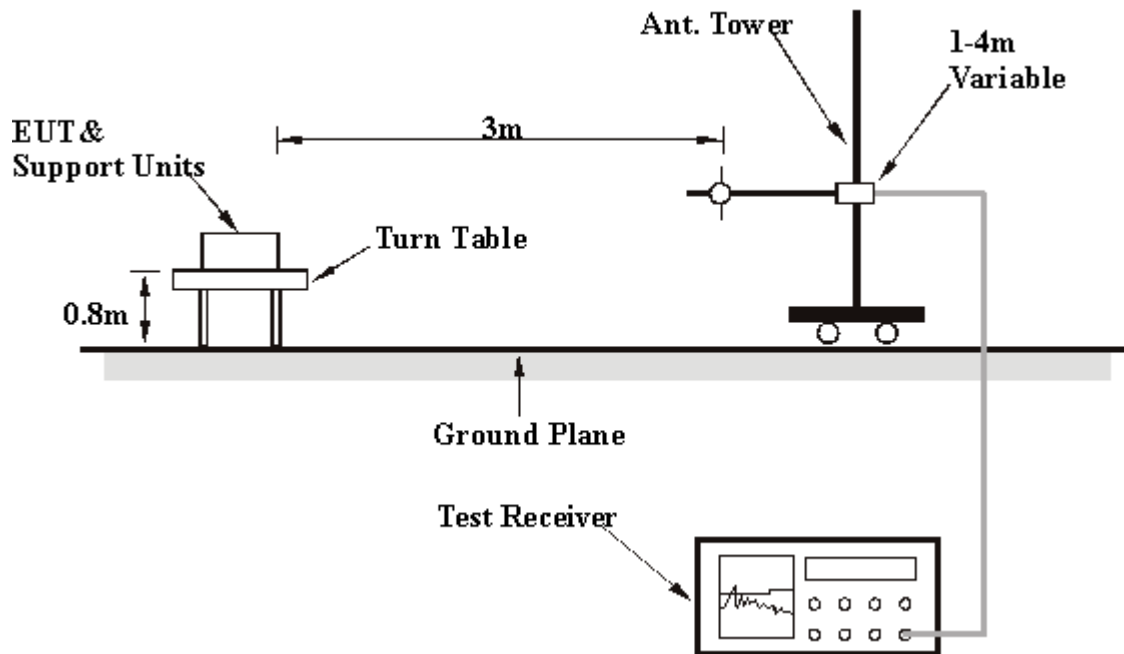
NOTE:

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 1MHz and the video bandwidth is 10Hz 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

RADIATED WORST-CASE DATA: BELOW 1GHz

(Patch Antenna with 9dBi gain)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa	TEST MODE	A
TESTED BY	Morgan Chen		

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	57.21	28.00 QP	40.00	-12.00	1.00 H	34	14.25	13.75
2	78.60	37.25 QP	40.00	-2.75	1.00 H	226	26.56	10.69
3	125.25	35.50 QP	43.50	-8.00	1.00 H	37	23.81	11.69
4	146.63	40.16 QP	43.50	-3.34	1.00 H	232	26.70	13.46
5	175.79	37.36 QP	43.50	-6.14	1.00 H	319	24.86	12.50
6	249.66	43.62 QP	46.00	-2.38	1.00 H	46	30.96	12.66
7	323.53	34.74 QP	46.00	-11.26	1.00 H	37	18.47	16.26
8	374.07	36.91 QP	46.00	-9.09	1.00 H	319	19.45	17.46
9	399.34	33.42 QP	46.00	-12.58	1.25 H	40	15.14	18.28
10	432.38	34.13 QP	46.00	-11.87	1.25 H	40	15.26	18.87
11	539.30	36.69 QP	46.00	-9.31	1.00 H	319	15.52	21.17
12	648.16	35.19 QP	46.00	-10.81	1.25 H	28	11.66	23.54
13	751.18	33.89 QP	46.00	-12.11	1.00 H	37	7.59	26.30
14	757.01	37.67 QP	46.00	-8.33	1.00 H	340	11.33	26.34
15	865.87	34.38 QP	46.00	-11.62	1.00 H	151	7.10	27.27
16	881.42	33.30 QP	46.00	-12.70	1.00 H	34	5.89	27.41

- 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 TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa	TEST MODE	A
TESTED BY	Morgan Chen		

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	59.16	29.55 QP	40.00	-10.45	1.25 V	106	15.99	13.56
2	78.60	34.89 QP	40.00	-5.11	1.00 V	202	24.20	10.69
3	125.25	40.80 QP	43.50	-2.70	1.25 V	106	29.10	11.69
4	140.80	38.06 QP	43.50	-5.44	1.00 V	274	24.75	13.30
5	175.79	37.12 QP	43.50	-6.38	1.00 V	247	24.62	12.50
6	360.46	33.74 QP	46.00	-12.26	1.00 V	100	16.72	17.02
7	432.38	34.32 QP	46.00	-11.68	1.00 V	253	15.45	18.87
8	500.42	33.33 QP	46.00	-12.67	1.25 V	115	12.85	20.48
9	539.30	39.27 QP	46.00	-6.73	1.00 V	247	18.10	21.17
10	560.68	34.38 QP	46.00	-11.62	1.00 V	283	12.64	21.74
11	599.56	35.72 QP	46.00	-10.28	1.25 V	115	12.59	23.13
12	648.16	40.90 QP	46.00	-5.10	1.25 V	160	17.37	23.54
13	720.08	35.48 QP	46.00	-10.52	1.25 V	106	10.38	25.10
14	733.69	33.85 QP	46.00	-12.15	1.00 V	274	8.20	25.64
15	757.01	34.69 QP	46.00	-11.31	1.25 V	346	8.35	26.34
16	863.93	33.84 QP	46.00	-12.16	1.00 V	26	6.58	27.26

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.

RADIATED WORST-CASE DATA: BELOW 1GHz

(Dipole Antenna with 5dBi gain)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa	TEST MODE	B
TESTED BY	Morgan Chen		

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	78.60	37.43 QP	40.00	-2.57	1.00 H	187	26.74	10.69
2	123.31	37.07 QP	43.50	-6.43	1.25 H	22	25.58	11.49
3	144.69	38.68 QP	43.50	-4.82	1.00 H	187	25.28	13.40
4	189.40	39.69 QP	43.50	-3.81	1.25 H	22	28.00	11.69
5	199.12	33.88 QP	43.50	-9.62	1.25 H	334	22.66	11.21
6	249.66	43.66 QP	46.00	-2.34	1.00 H	325	31.00	12.66
7	263.27	33.67 QP	46.00	-12.33	1.25 H	331	20.50	13.17
8	323.53	35.63 QP	46.00	-10.37	1.25 H	139	19.37	16.26
9	374.07	37.45 QP	46.00	-8.55	1.25 H	220	19.99	17.46
10	399.34	33.43 QP	46.00	-12.57	1.25 H	304	15.15	18.28
11	432.38	34.41 QP	46.00	-11.59	1.25 H	304	15.54	18.87
12	539.30	37.47 QP	46.00	-8.53	1.25 H	220	16.30	21.17
13	640.38	35.17 QP	46.00	-10.83	1.00 H	187	11.69	23.47
14	751.18	33.30 QP	46.00	-12.70	1.25 H	139	7.00	26.30
15	757.01	38.13 QP	46.00	-7.87	1.25 H	334	11.79	26.34
16	863.93	36.28 QP	46.00	-9.72	1.00 H	325	9.03	27.26
17	881.42	33.90 QP	46.00	-12.10	1.25 H	3	6.49	27.41

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 TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa	TEST MODE	B
TESTED BY	Morgan Chen		

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	30.39 QP	40.00	-9.61	1.00 V	190	16.64	13.75
2	78.60	34.38 QP	40.00	-5.62	1.00 V	208	23.69	10.69
3	125.25	40.94 QP	43.50	-2.56	1.25 V	181	29.24	11.69
4	142.75	38.99 QP	43.50	-4.51	1.25 V	238	25.64	13.35
5	175.79	37.27 QP	43.50	-6.23	1.25 V	238	24.77	12.50
6	360.46	33.46 QP	46.00	-12.54	1.25 V	13	16.44	17.02
7	432.38	34.80 QP	46.00	-11.20	1.00 V	97	15.93	18.87
8	500.42	35.36 QP	46.00	-10.64	1.25 V	76	14.88	20.48
9	539.30	37.33 QP	46.00	-8.67	1.25 V	238	16.16	21.17
10	560.68	34.37 QP	46.00	-11.63	1.25 V	61	12.63	21.74
11	599.56	34.85 QP	46.00	-11.15	1.25 V	76	11.72	23.13
12	648.16	40.70 QP	46.00	-5.30	1.00 V	211	17.16	23.54
13	673.43	34.79 QP	46.00	-11.21	1.00 V	208	10.89	23.90
14	720.08	34.66 QP	46.00	-11.34	1.25 V	181	9.56	25.10
15	735.63	34.15 QP	46.00	-11.85	1.25 V	238	8.43	25.72
16	757.01	35.01 QP	46.00	-10.99	1.00 V	250	8.67	26.34
17	865.87	33.87 QP	46.00	-12.13	1.25 V	0	6.60	27.27

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.

802.11b DSSS MODULATION

(Patch Antenna with 9dBi gain)

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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	A
TESTED BY	Morgan Chen		

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	2389.00	55.22 PK	74.00	-18.78	1.02 H	345	23.31	31.91
1	2389.00	43.22 AV	54.00	-10.78	1.02 H	345	11.31	31.91
2	*2412.00	101.55 PK			1.05 H	325	69.51	32.04
2	*2412.00	99.22 AV			1.05 H	325	67.18	32.04
3	2493.00	56.11 PK	74.00	-17.89	1.02 H	318	23.56	32.55
3	2493.00	44.12 AV	54.00	-9.88	1.02 H	318	11.57	32.55
4	4824.00	47.89 PK	74.00	-26.11	1.05 H	322	10.38	37.51
4	4824.00	39.88 AV	54.00	-14.12	1.05 H	322	2.37	37.51
5	7236.00	52.03 PK	74.00	-21.97	1.03 H	325	8.11	43.92
5	7236.00	40.12 AV	54.00	-13.88	1.03 H	325	-3.80	43.92

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	2389.00	66.29 PK	74.00	-7.71	1.14 V	349	34.38	31.91
1	2389.00	52.50 AV	54.00	-1.50	1.14 V	349	20.59	31.91
2	*2412.00	110.03 PK			1.13 V	348	77.99	32.04
2	*2412.00	105.89 AV			1.13 V	348	73.85	32.04
3	2493.00	64.42 PK	74.00	-9.58	1.11 V	352	31.87	32.55
3	2493.00	52.97 AV	54.00	-1.03	1.11 V	352	20.42	32.55
4	4824.00	48.11 PK	74.00	-25.89	1.02 V	325	10.60	37.51
4	4824.00	40.02 AV	54.00	-13.98	1.02 V	325	2.51	37.51
5	7236.00	52.25 PK	74.00	-21.75	1.11 V	23	8.33	43.92
5	7236.00	40.33 AV	54.00	-13.67	1.11 V	23	-3.59	43.92

- RMARKS:**
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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	A
TESTED BY	Morgan Chen		

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	2294.00	57.84 PK	74.00	-16.16	1.08 H	315	26.49	31.35
1	2294.00	45.36 AV	54.00	-8.64	1.08 H	315	14.01	31.35
2	2437.00	104.27 PK			1.09 H	329	72.07	32.20
2	2437.00	102.02 AV			1.09 H	329	69.82	32.20
3	4874.00	50.01 PK	74.00	-23.99	1.05 H	2	12.46	37.55
3	4874.00	41.89 AV	54.00	-12.11	1.05 H	2	4.34	37.55
4	7311.00	54.20 PK	74.00	-19.80	1.02 H	31	10.17	44.03
4	7311.00	42.01 AV	54.00	-11.99	1.02 H	31	-2.02	44.03

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	2294.00	65.30 PK	74.00	-8.70	1.00 V	2	33.95	31.35
1	2294.00	52.90 AV	54.00	-1.10	1.00 V	2	21.55	31.35
2	*2437.00	114.01 PK			1.14 V	357	81.81	32.20
2	*2437.00	110.52 AV			1.14 V	357	78.32	32.20
3	4874.00	50.23 PK	74.00	-23.77	1.01 V	337	12.68	37.55
3	4874.00	42.03 AV	54.00	-11.97	1.01 V	337	4.48	37.55
4	7311.00	54.79 PK	74.00	-19.21	1.03 V	328	10.76	44.03
4	7311.00	42.40 AV	54.00	-11.60	1.03 V	328	-1.63	44.03

- RMARKS:**
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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	A
TESTED BY	Morgan Chen		

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	99.35 PK			1.05 H	323	67.00	32.35
1	*2462.00	97.25 AV			1.05 H	323	64.90	32.35
2	2484.00	50.22 PK	74.00	-23.78	1.02 H	328	17.73	32.49
2	2484.00	37.89 AV	54.00	-16.11	1.02 H	328	5.40	32.49
3	4924.00	46.22 PK	74.00	-27.78	1.03 H	26	8.64	37.58
3	4924.00	38.25 AV	54.00	-15.75	1.03 H	26	0.67	37.58
4	7386.00	49.75 PK	74.00	-24.25	1.05 H	315	5.77	43.98
4	7386.00	37.85 AV	54.00	-16.15	1.05 H	315	-6.13	43.98

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	107.08 PK			1.11 V	353	74.73	32.35
1	*2462.00	103.28 AV			1.11 V	353	70.93	32.35
2	2484.00	69.13 PK	74.00	-4.87	1.11 V	356	36.64	32.49
2	2484.00	53.00 AV	54.00	-1.00	1.11 V	356	20.51	32.49
3	4924.00	46.88 PK	74.00	-27.12	1.05 V	325	9.30	37.58
3	4924.00	38.69 AV	54.00	-15.31	1.05 V	325	1.11	37.58
4	7386.00	50.11 PK	74.00	-23.89	1.01 V	322	6.13	43.98
4	7386.00	38.25 AV	54.00	-15.75	1.01 V	322	-5.73	43.98

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	A
TESTED BY	Morgan Chen		

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	52.11 PK	74.00	-21.89	1.10 H	332	20.20	31.91
1	2390.00	42.05 AV	54.00	-11.95	1.10 H	332	10.14	31.91
2	*2412.00	103.52 PK			1.22 H	311	71.48	32.04
2	*2412.00	93.41 AV			1.22 H	311	61.37	32.04
3	4824.00	47.18 PK	74.00	-26.82	1.02 H	22	9.67	37.51
3	4824.00	35.08 AV	54.00	-18.92	1.02 H	22	-2.43	37.51

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	66.25 PK	74.00	-7.75	1.22 V	10	34.34	31.91
1	2390.00	52.95 AV	54.00	-1.05	1.22 V	10	21.04	31.91
2	*2412.00	107.42 PK			1.08 V	310	75.38	32.04
2	*2412.00	97.22 AV			1.08 V	310	65.18	32.04
3	4824.00	45.97 PK	74.00	-28.03	1.04 V	22	8.46	37.51
3	4824.00	33.65 AV	54.00	-20.35	1.04 V	22	-3.86	37.51

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	A
TEST BY	Morgan Chen		

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	103.42 PK			1.23 H	324	71.22	32.20
1	*2437.00	93.32 AV			1.23 H	324	61.12	32.20
2	2500.00	52.25 PK	74.00	-21.75	1.12 H	325	19.66	32.59
2	2500.00	42.35 AV	54.00	-11.65	1.12 H	325	9.76	32.59
3	4874.00	47.22 PK	74.00	-26.78	1.05 H	12	9.67	37.55
3	4874.00	35.12 AV	54.00	-18.88	1.05 H	12	-2.43	37.55

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	113.67 PK			1.15 V	0	81.47	32.20
1	*2437.00	103.45 AV			1.15 V	0	71.25	32.20
2	2500.00	62.39 PK	74.00	-11.61	1.15 V	3	29.80	32.59
2	2500.00	52.61 AV	54.00	-1.39	1.15 V	3	20.02	32.59
3	4874.00	47.67 PK	74.00	-26.33	1.02 V	18	10.12	37.55
3	4874.00	35.55 AV	54.00	-18.45	1.02 V	18	-2.00	37.55

- RMARKS:**
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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	A
TEST BY	Morgan Chen		

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	103.25 PK			1.17 H	316	70.90	32.35
1	*2462.00	93.36 AV			1.17 H	316	61.01	32.35
2	2483.50	62.33 PK	74.00	-11.67	1.16 H	360	29.84	32.49
2	2483.50	49.89 AV	54.00	-4.11	1.16 H	360	17.40	32.49
3	4924.00	45.22 PK	74.00	-28.78	1.05 H	315	7.64	37.58
3	4924.00	33.12 AV	54.00	-20.88	1.05 H	315	-4.46	37.58

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	107.30 PK			1.13 V	325	74.95	32.35
1	*2462.00	97.02 AV			1.13 V	325	64.67	32.35
2	2483.50	66.60 PK	74.00	-7.40	1.42 V	1	34.11	32.49
2	2483.50	53.00 AV	54.00	-1.00	1.42 V	1	20.51	32.49
3	4924.00	45.88 PK	74.00	-28.12	1.09 V	29	8.30	37.58
3	4924.00	33.55 AV	54.00	-20.45	1.09 V	29	-4.03	37.58

- RMARKS:**
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.

802.11b DSSS MODULATION

(Dipole Antenna with 5dBi gain)

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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	B
TESTED BY	Morgan Chen		

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	55.55 PK	74.00	-18.45	1.22 H	325	23.64	31.91
1	2390.00	47.35 AV	54.00	-6.65	1.22 H	325	15.44	31.91
2	*2412.00	102.28 PK			1.22 H	313	70.24	32.04
2	*2412.00	98.12 AV			1.22 H	313	66.08	32.04
3	4824.00	47.44 PK	74.00	-26.56	1.29 H	312	9.93	37.51
3	4824.00	39.28 AV	54.00	-14.72	1.29 H	312	1.77	37.51

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	58.81 PK	74.00	-15.19	1.44 V	19	26.90	31.91
1	2390.00	50.67 AV	54.00	-3.33	1.44 V	19	18.76	31.91
2	*2412.00	105.31 PK			1.43 V	15	73.27	32.04
2	*2412.00	101.75 AV			1.43 V	15	69.71	32.04
3	4824.00	47.68 PK	74.00	-26.32	1.33 V	318	10.17	37.51
3	4824.00	39.55 AV	54.00	-14.45	1.33 V	318	2.04	37.51

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	B
TESTED BY	Morgan Chen		

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	104.57 PK			1.23 H	322	72.37	32.20
1	*2437.00	100.23 AV			1.23 H	322	68.03	32.20
2	2483.50	58.35 PK	74.00	-15.65	1.30 H	310	25.86	32.49
2	2483.50	48.74 AV	54.00	-5.26	1.30 H	310	16.25	32.49
3	4874.00	48.02 PK	74.00	-25.98	1.28 H	325	10.47	37.55
3	4874.00	39.68 AV	54.00	-14.32	1.28 H	325	2.13	37.55

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	107.98 PK			1.34 V	19	75.78	32.20
1	*2437.00	103.40 AV			1.34 V	19	71.20	32.20
2	2483.50	61.04 PK	74.00	-12.96	1.34 V	15	28.55	32.49
2	2483.50	51.47 AV	54.00	-2.53	1.34 V	15	18.98	32.49
3	4874.00	48.52 PK	74.00	-25.48	1.32 V	352	10.97	37.55
3	4874.00	40.02 AV	54.00	-13.98	1.32 V	352	2.47	37.55

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	B
TESTED BY	Morgan Chen		

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	100.03 PK			1.26 H	325	67.68	32.35
1	*2462.00	96.13 AV			1.26 H	325	63.78	32.35
2	2483.50	55.35 PK	74.00	-18.65	1.25 H	315	22.86	32.49
2	2483.50	47.19 AV	54.00	-6.81	1.25 H	315	14.70	32.49
3	4924.00	47.03 PK	74.00	-26.97	1.20 H	317	9.45	37.58
3	4924.00	38.89 AV	54.00	-15.11	1.20 H	317	1.31	37.58

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	103.03 PK			1.40 V	320	70.68	32.35
1	*2462.00	99.58 AV			1.40 V	320	67.23	32.35
2	2483.50	58.26 PK	74.00	-15.74	1.40 V	319	25.77	32.49
2	2483.50	50.12 AV	54.00	-3.88	1.40 V	319	17.63	32.49
3	4924.00	47.42 PK	74.00	-26.58	1.35 V	325	9.84	37.58
3	4924.00	39.29 AV	54.00	-14.71	1.35 V	325	1.71	37.58

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	B
TESTED BY	Morgan Chen		

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	55.85 PK	74.00	-18.15	1.08 H	315	23.94	31.91
1	2390.00	45.13 AV	54.00	-8.87	1.08 H	315	13.22	31.91
2	*2412.00	98.18 PK			1.21 H	312	66.14	32.04
2	*2412.00	86.09 AV			1.21 H	312	54.05	32.04
3	4824.00	45.01 PK	74.00	-28.99	1.15 H	315	7.50	37.51
3	4824.00	32.79 AV	54.00	-21.21	1.15 H	315	-4.72	37.51

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	59.08 PK	74.00	-14.92	1.18 V	335	27.17	31.91
1	2390.00	48.55 AV	54.00	-5.45	1.18 V	335	16.64	31.91
2	*2412.00	101.59 PK			1.15 V	320	69.55	32.04
2	*2412.00	92.53 AV			1.15 V	320	60.49	32.04
3	4824.00	45.32 PK	74.00	-28.68	1.24 V	359	7.81	37.51
3	4824.00	33.21 AV	54.00	-20.79	1.24 V	359	-4.30	37.51

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	B
TEST BY	Morgan Chen		

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	104.12 PK			1.20 H	325	71.92	32.20
1	*2437.00	95.20 AV			1.20 H	325	63.00	32.20
2	4874.00	47.02 PK	74.00	-26.98	1.08 H	351	9.47	37.55
2	4874.00	35.08 AV	54.00	-18.92	1.08 H	351	-2.47	37.55

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	107.28 PK			1.33 V	352	75.08	32.20
1	*2437.00	98.35 AV			1.33 V	352	66.15	32.20
2	4874.00	47.12 PK	74.00	-26.88	1.03 V	328	9.57	37.55
2	4874.00	35.26 AV	54.00	-18.74	1.03 V	328	-2.29	37.55

- 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	25deg. C, 68%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TEST MODE	B
TEST BY	Morgan Chen		

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	98.25 PK			1.25 H	325	65.90	32.35
1	*2462.00	89.13 AV			1.25 H	325	56.78	32.35
2	2483.50	56.02 PK	74.00	-17.98	1.08 H	351	23.53	32.49
2	2483.50	45.41 AV	54.00	-8.59	1.08 H	351	12.92	32.49
3	4924.00	45.03 PK	74.00	-28.97	1.20 H	322	7.45	37.58
3	4924.00	32.89 AV	54.00	-21.11	1.20 H	322	-4.69	37.58

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	101.75 PK			1.16 V	312	69.40	32.35
1	*2462.00	92.57 AV			1.16 V	312	60.22	32.35
2	2483.50	59.12 PK	74.00	-14.88	1.23 V	326	26.63	32.49
2	2483.50	48.30 AV	54.00	-5.70	1.23 V	326	15.81	32.49
3	4924.00	45.25 PK	74.00	-28.75	1.23 V	315	7.67	37.58
3	4924.00	33.12 AV	54.00	-20.88	1.23 V	315	-4.46	37.58

- 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.

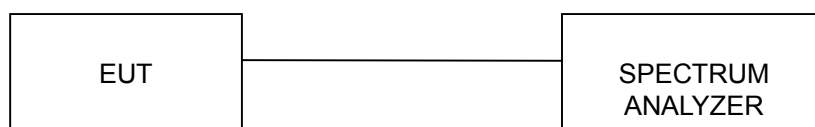
4.3.3 TEST PROCEDURE

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.

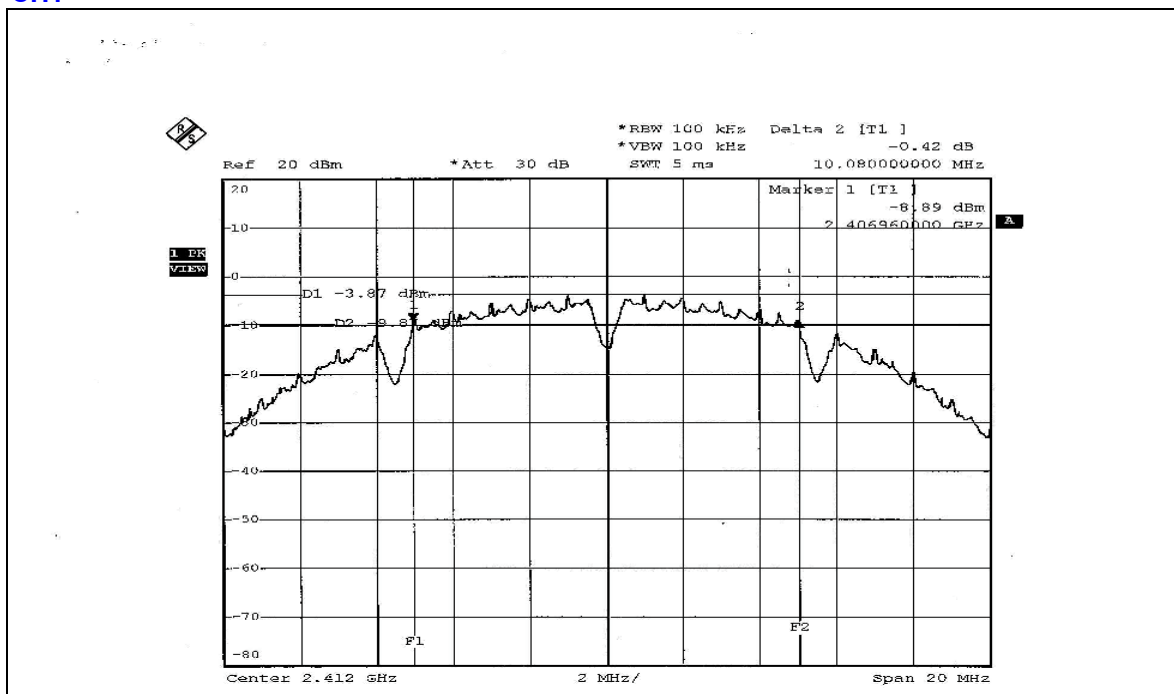
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

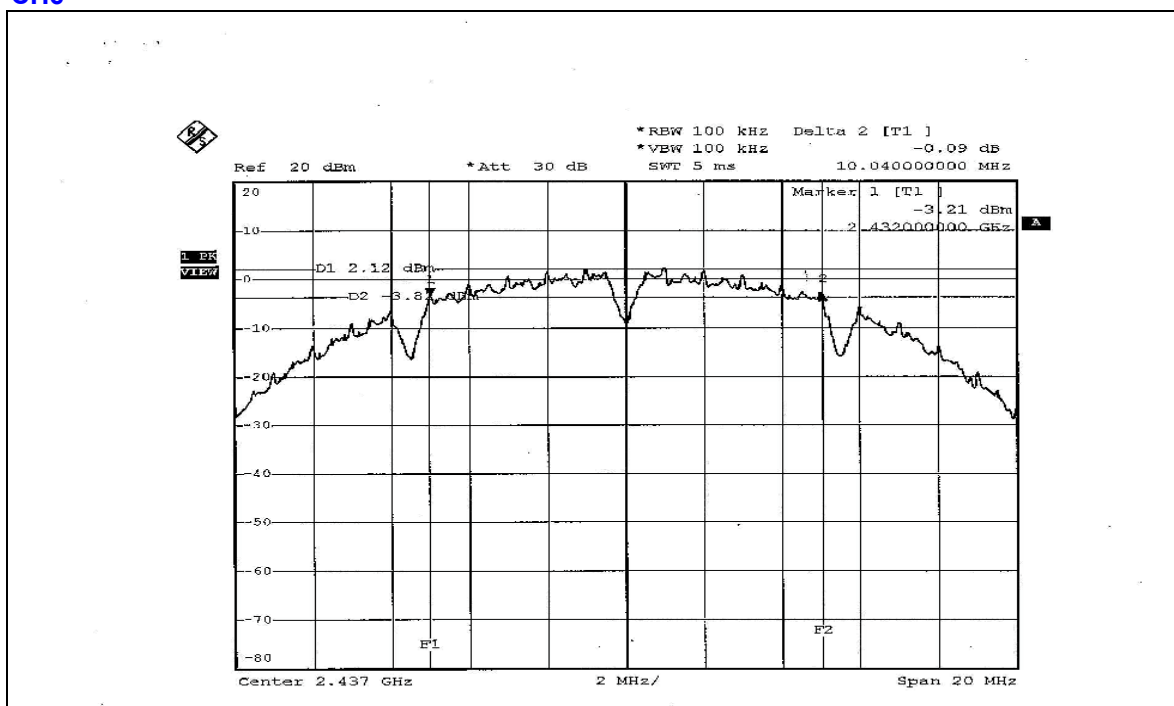
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 66%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.08	0.5	PASS
6	2437	10.04	0.5	PASS
11	2462	10.08	0.5	PASS

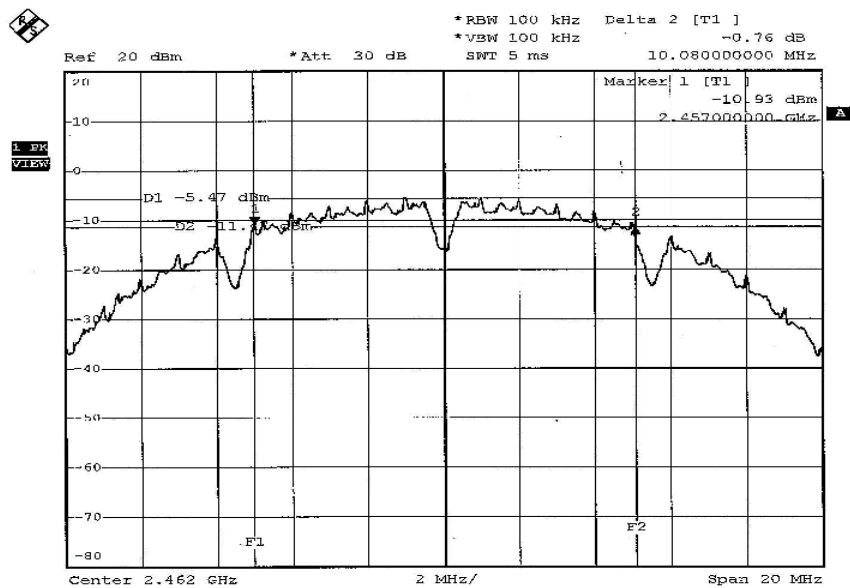
CH1



CH6



CH11

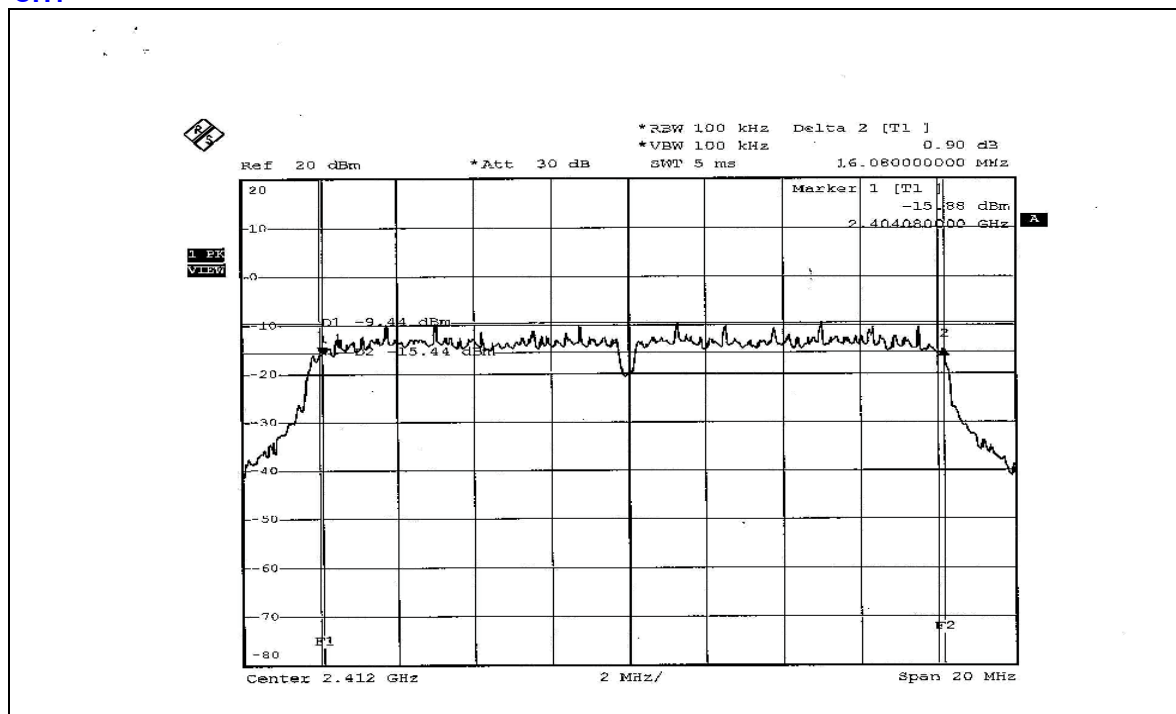


802.11g OFDM MODULATION

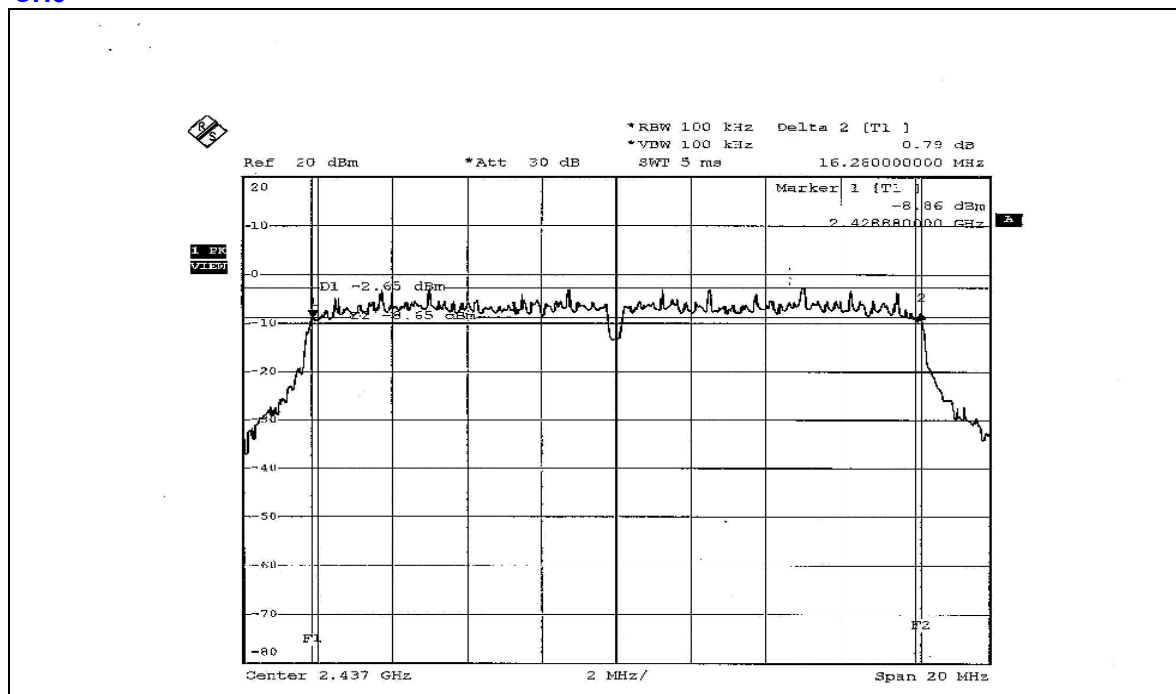
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 66%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.08	0.5	PASS
6	2437	16.28	0.5	PASS
11	2462	16.32	0.5	PASS

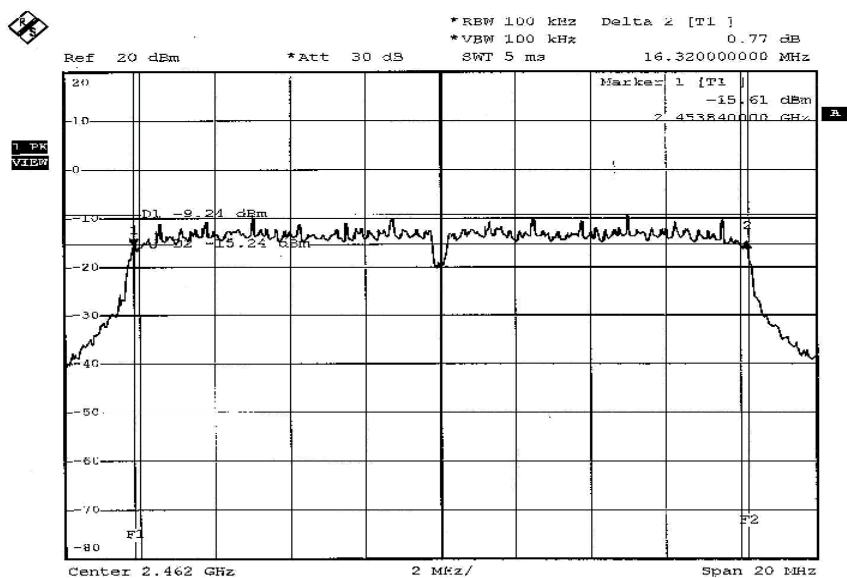
CH1



CH6



CH11



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
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 28, 2006
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	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	22.387	13.50	29	PASS
6	2437	39.811	16.00	29	PASS
11	2462	12.589	11.00	29	PASS

According to 15.247(C) (1) (i) the maximum antenna gain 9dBi is higher than 6dBi, so limit of peak power shall be reduced by 1dBi.

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	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	10.023	10.01	29	PASS
6	2437	40.087	16.03	29	PASS
11	2462	10.069	10.03	29	PASS

According to 15.247(C) (1) (i) the maximum antenna gain 9dBi is higher than 6dBi, so limit of peak power shall be reduced by 1dBi.

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.

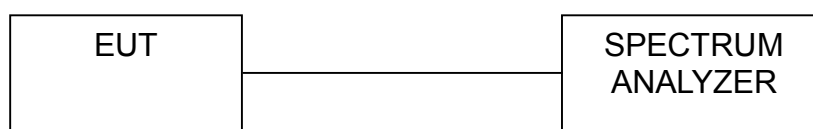
4.5.3 TEST PROCEDURE

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

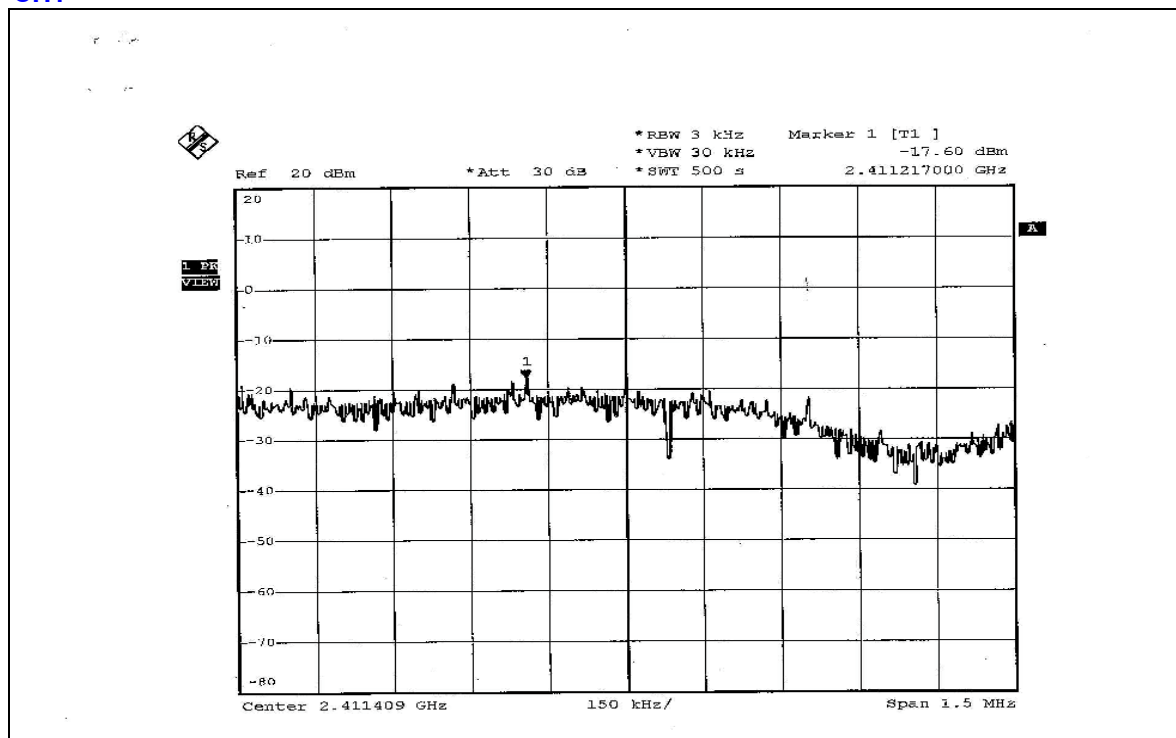
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

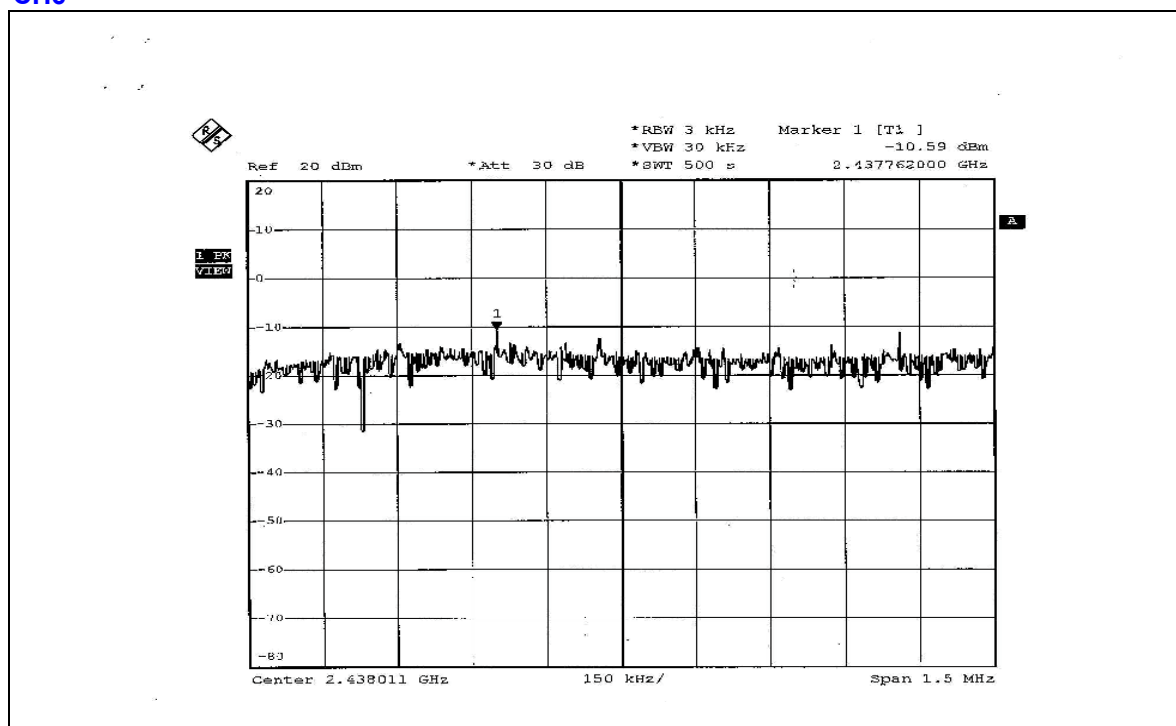
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 66%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-17.60	8	PASS
6	2437	-10.59	8	PASS
11	2462	-18.68	8	PASS

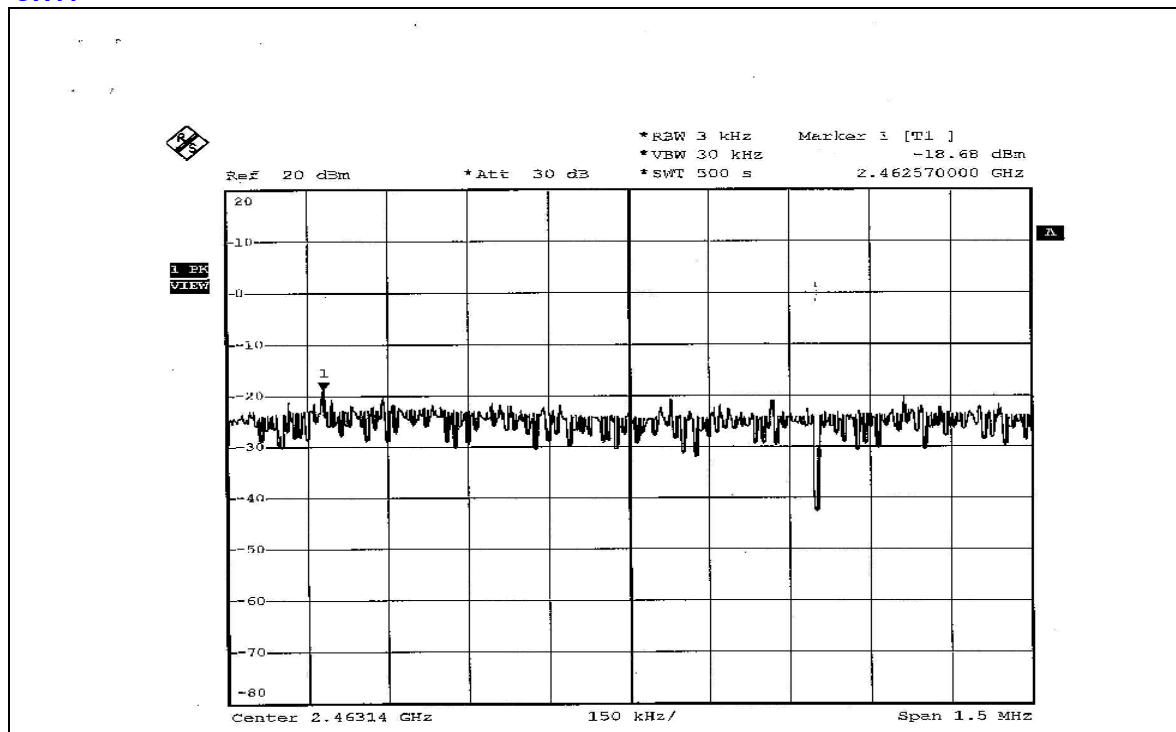
CH1



CH6



CH11

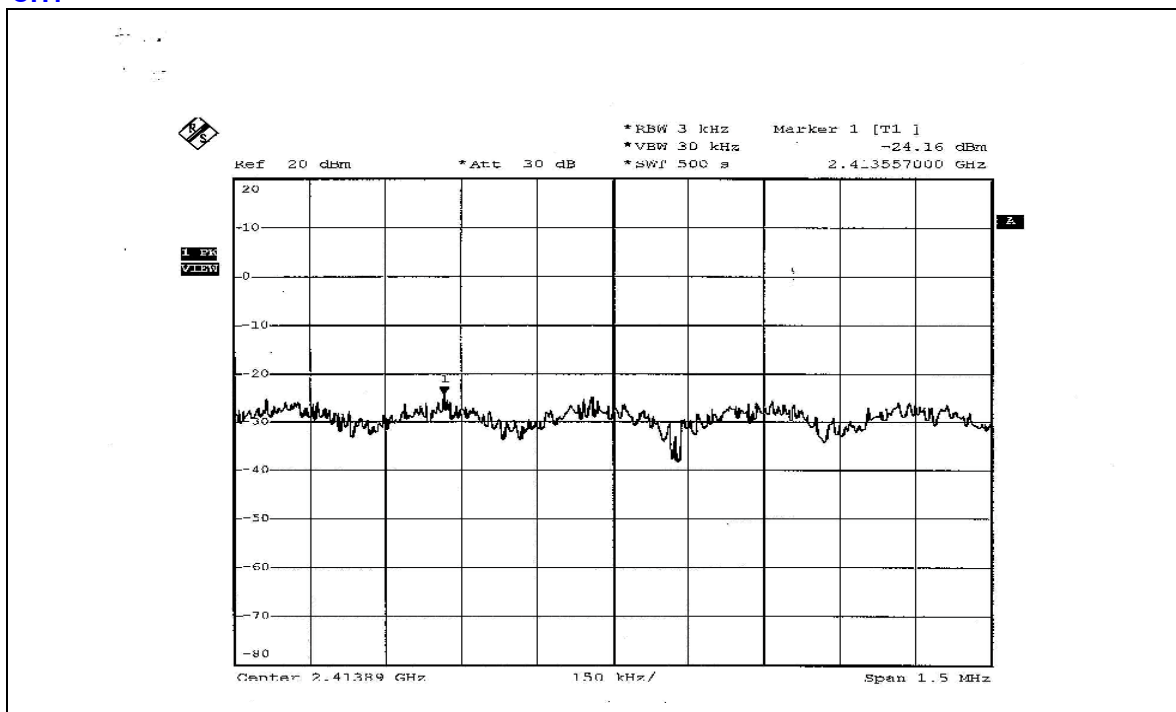


802.11g OFDM MODULATION

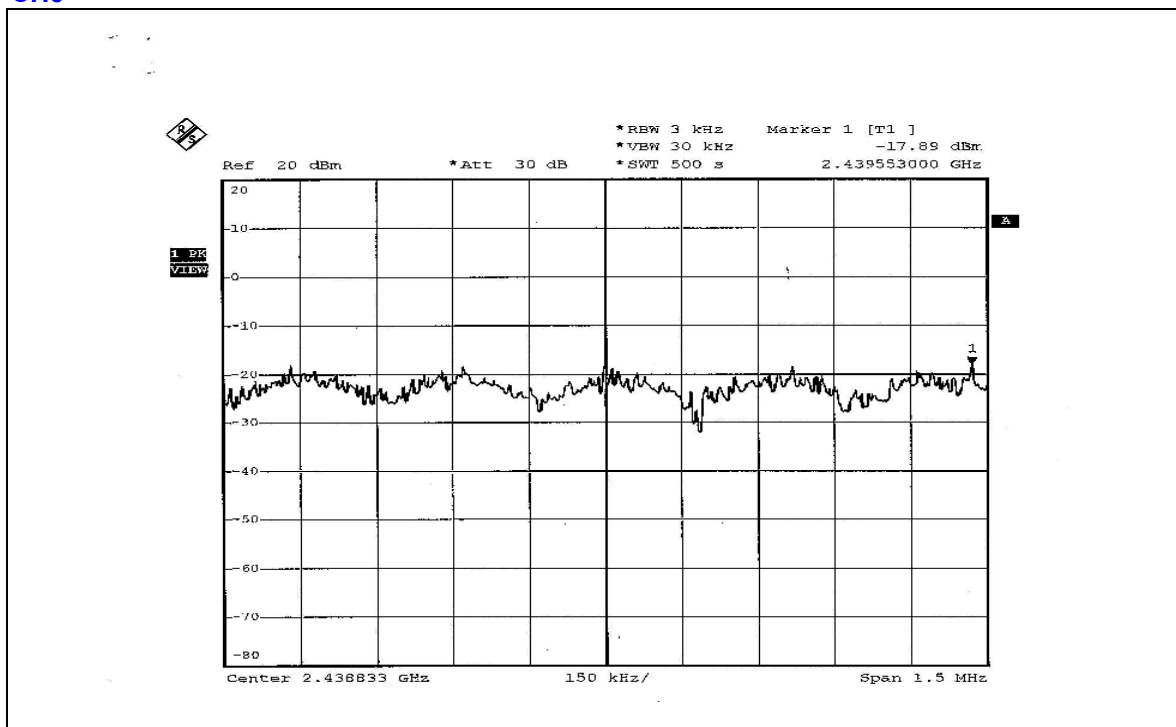
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 66%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-24.16	8	PASS
6	2437	-17.89	8	PASS
11	2462	-23.23	8	PASS

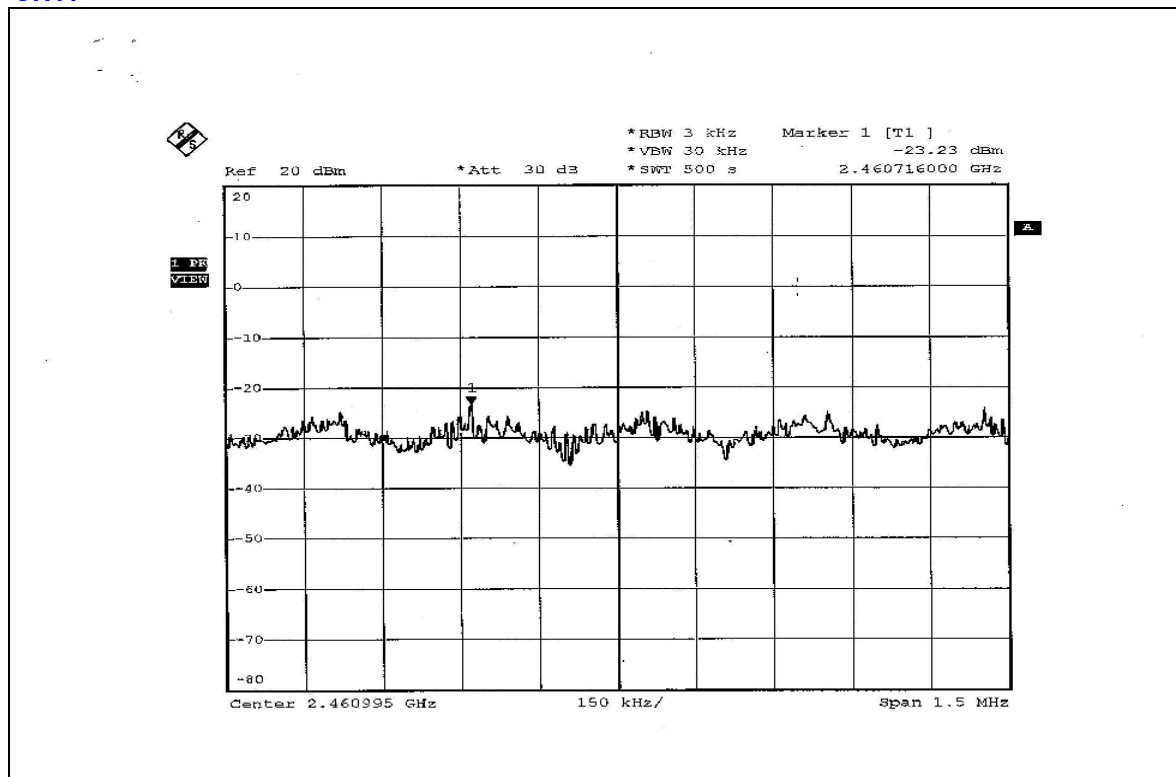
CH1



CH6



CH11



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

MODE A

NOTE 1: The band edge emission plot of DSSS technique on the next second page shows 45.06dBc between carrier maximum power and local maximum emission in restrict band (2.36816GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.03dBuV/m (Peak), so the maximum field strength in restrict band is $110.03 - 45.06 = 64.97$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of DSSS technique on the next second page shows 54.02dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 105.89dBuV/m (Average), so the maximum field strength in restrict band is $105.89 - 54.02 = 51.87$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of DSSS technique on the next third page shows 43.22dBc between carrier maximum power and local maximum emission in restrict band (2.48406GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.08dBuV/m (Peak), so the maximum field strength in restrict band is $107.08 - 43.22 = 63.86$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of DSSS technique on the next fourth page shows 49.77dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 103.28dBuV/m (Average), so the maximum field strength in restrict band is $103.28 - 49.77 = 53.51$ dBuV/m which is under 54dBuV/m limit.

MODE B

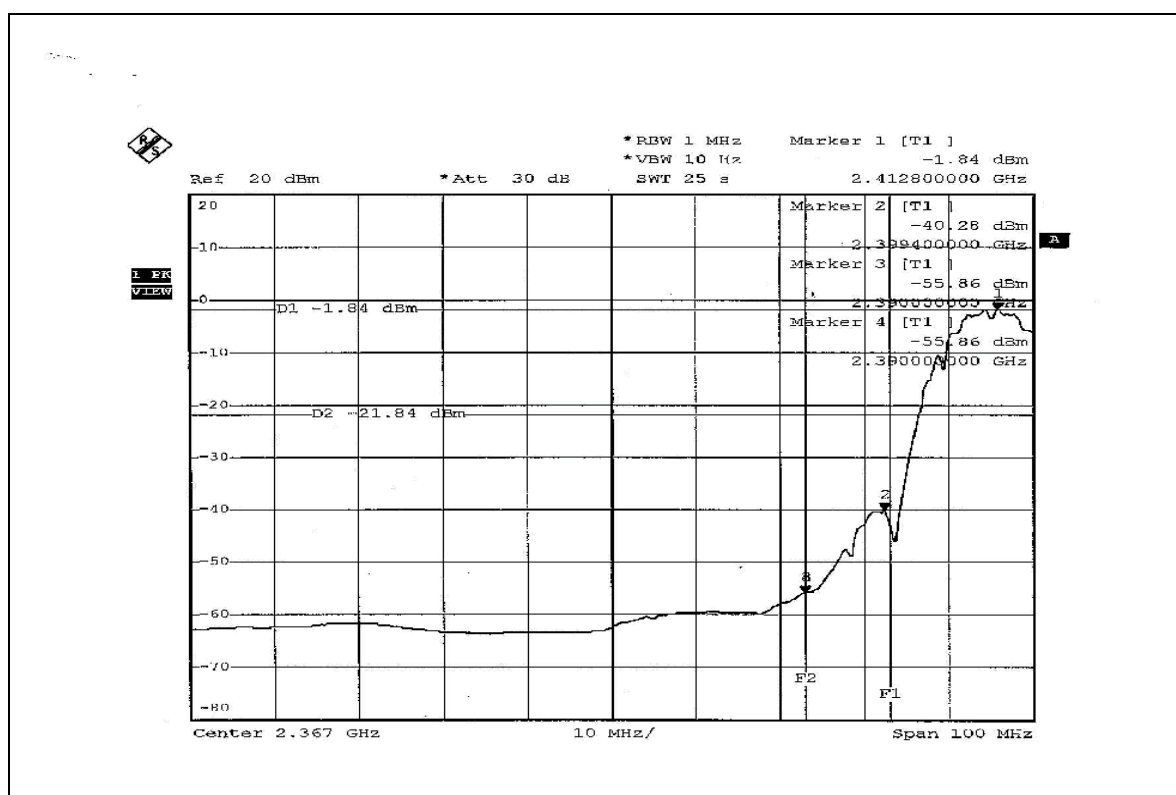
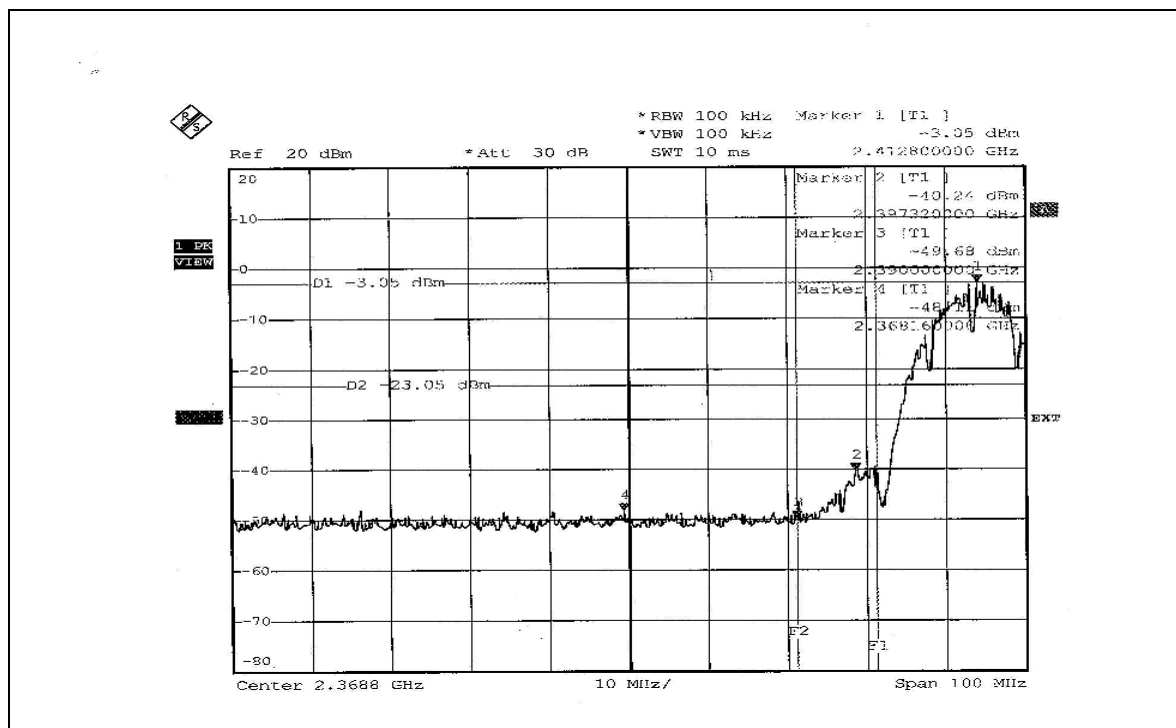
NOTE 1: The band edge emission plot of DSSS technique on the next page shows 45.06dBc between carrier maximum power and local maximum emission in restrict band (2.36816GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 105.31dBuV/m (Peak), so the maximum field strength in restrict band is $105.31 - 45.06 = 60.25\text{dBuV/m}$ which is under 74dBuV/m limit.

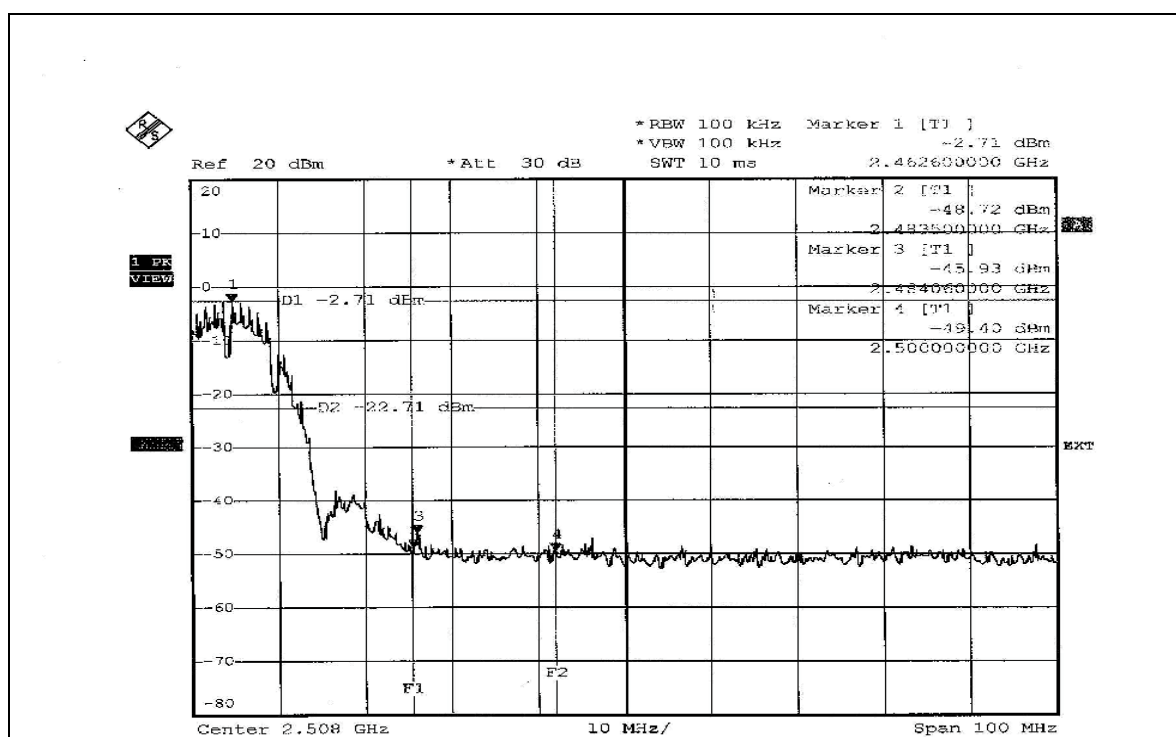
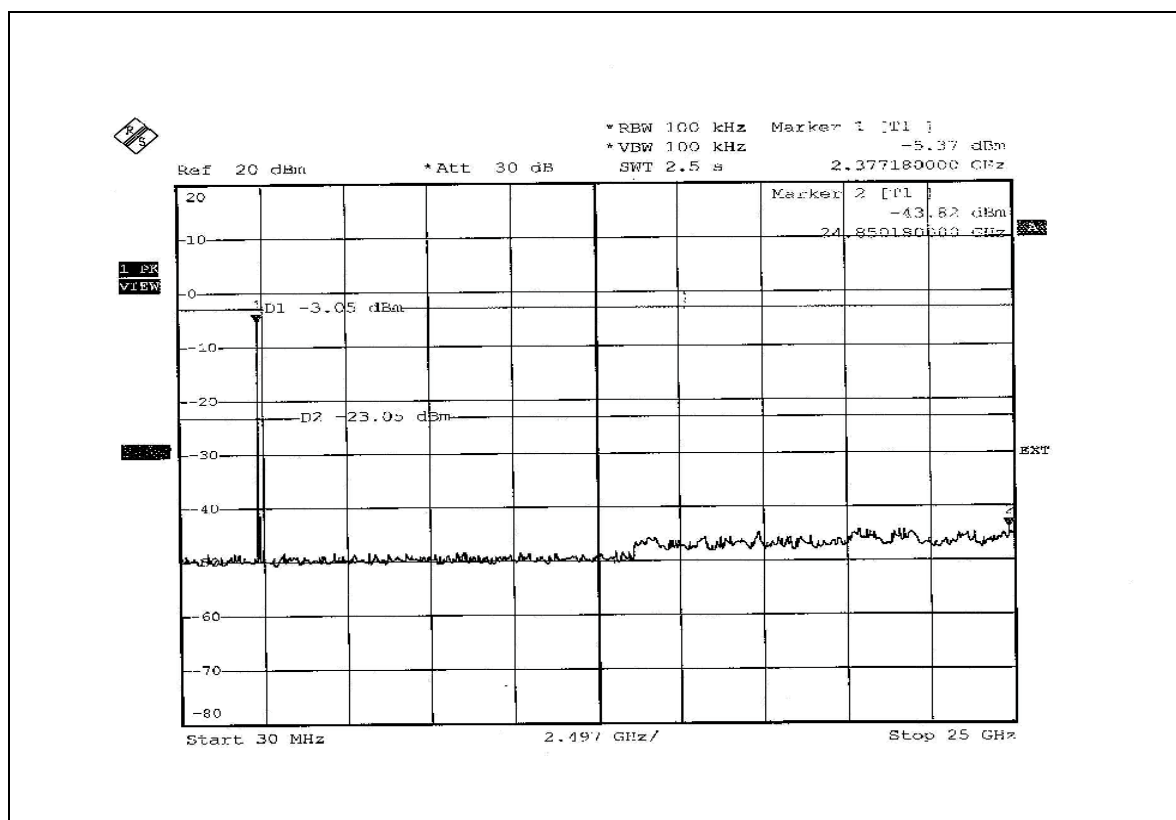
The band edge emission plot of DSSS technique on the next page shows 54.02dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.75dBuV/m (Average), so the maximum field strength in restrict band is $101.75 - 54.02 = 47.73\text{dBuV/m}$ which is under 54dBuV/m limit.

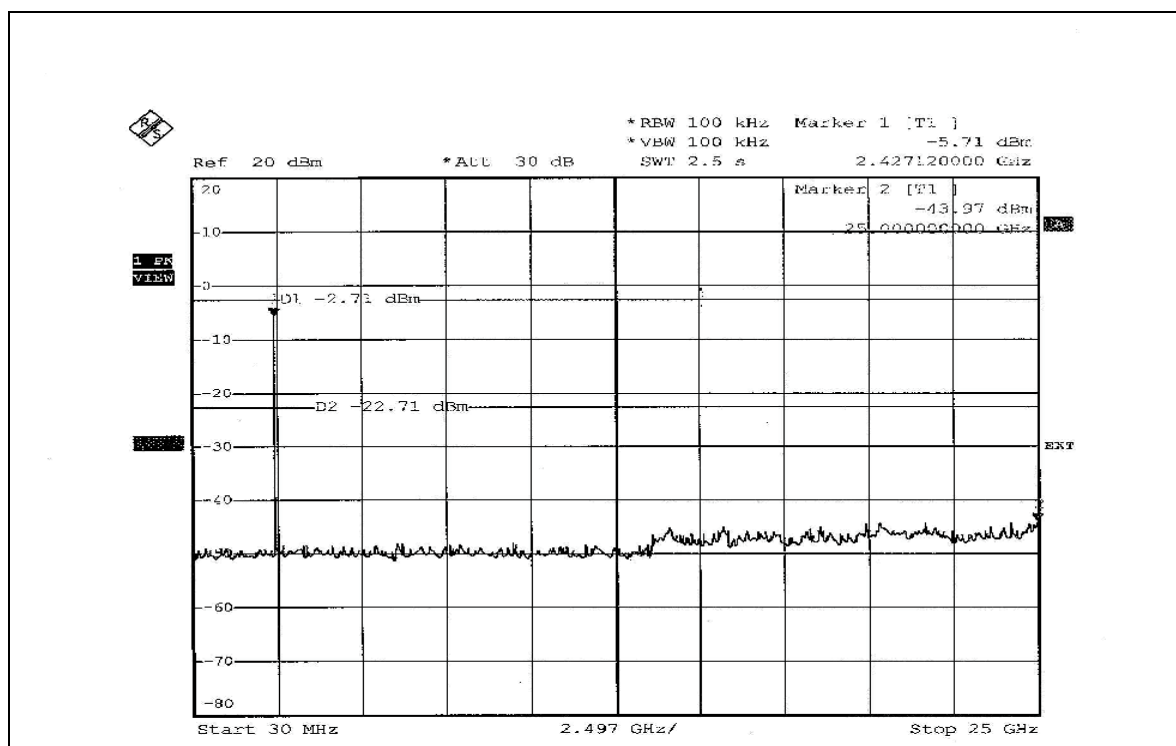
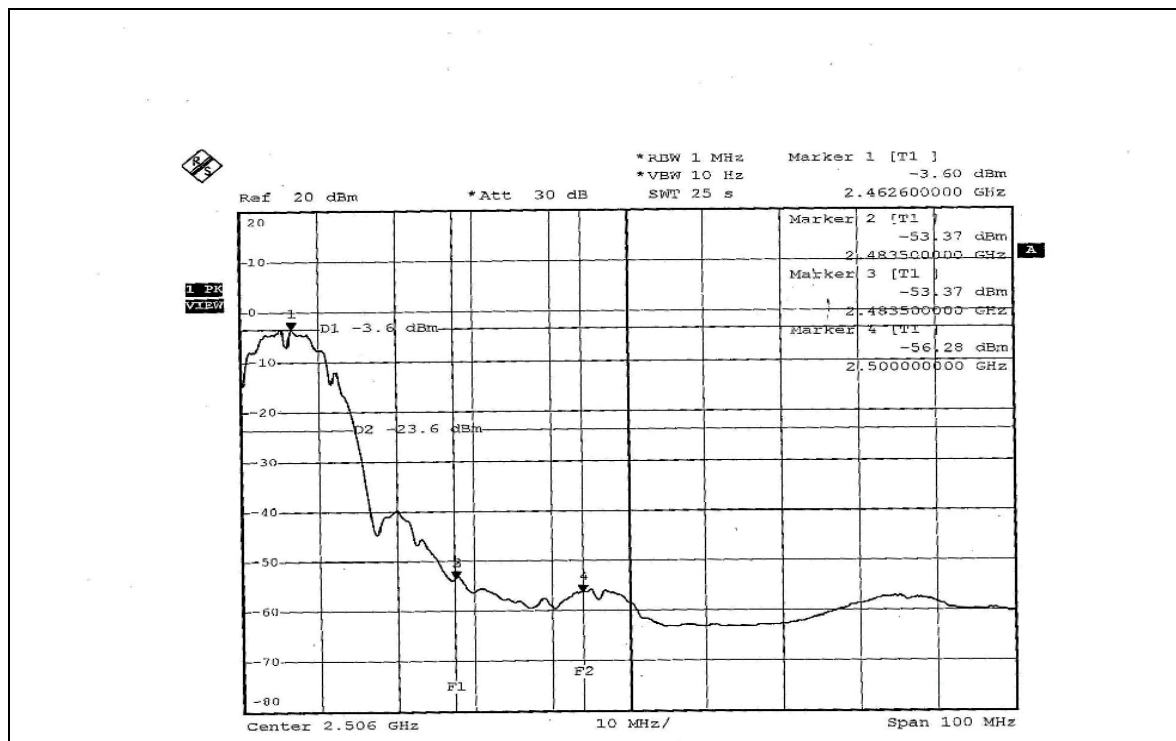
NOTE 2: The band edge emission plot of DSSS technique on the next second page shows 43.22dBc between carrier maximum power and local maximum emission in restrict band (2.48406GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 103.03dBuV/m (Peak), so the maximum field strength in restrict band is $103.03 - 43.22 = 59.81\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot of DSSS technique on the next third page shows 49.77dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 99.58dBuV/m (Average), so the maximum field strength in restrict band is $99.58 - 49.77 = 49.81\text{dBuV/m}$ which is under 54dBuV/m limit.

802.11b DSSS MODULATION







802.11g OFDM MODULATION

MODE A

NOTE 1: The band edge emission plot of OFDM technique on the next second page shows 39.15dBc between carrier maximum power and local maximum emission in restrict band (2.36820GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 107.42dBuV/m (Peak), so the maximum field strength in restrict band is $107.42 - 39.15 = 68.27$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique on the next second page shows 46.00dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 97.22dBuV/m (Average), so the maximum field strength in restrict band is $97.22 - 46.00 = 51.22$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of OFDM technique on the next third second page shows 39.44dBc between carrier maximum power and local maximum emission in restrict band (2.48996GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.30dBuV/m (Peak), so the maximum field strength in restrict band is $107.30 - 39.44 = 67.86$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique on the next fourth page shows 43.35dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 97.02dBuV/m (Average), so the maximum field strength in restrict band is $97.02 - 43.35 = 53.67$ dBuV/m which is under 54dBuV/m limit.

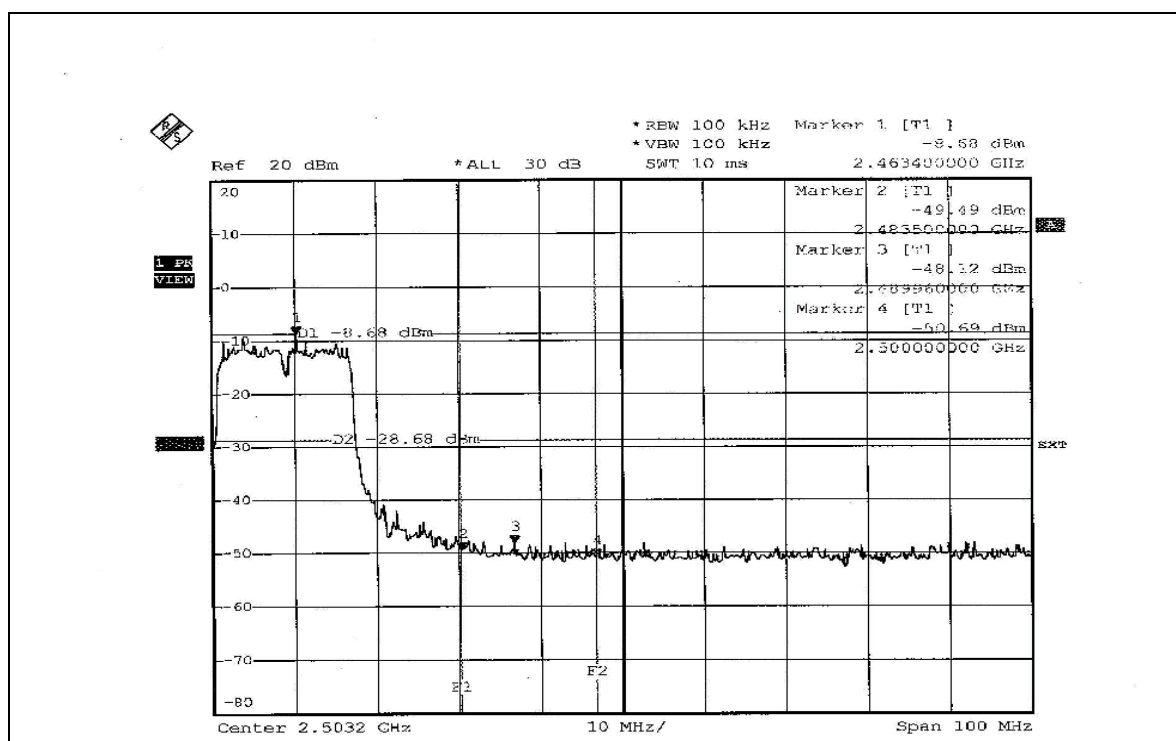
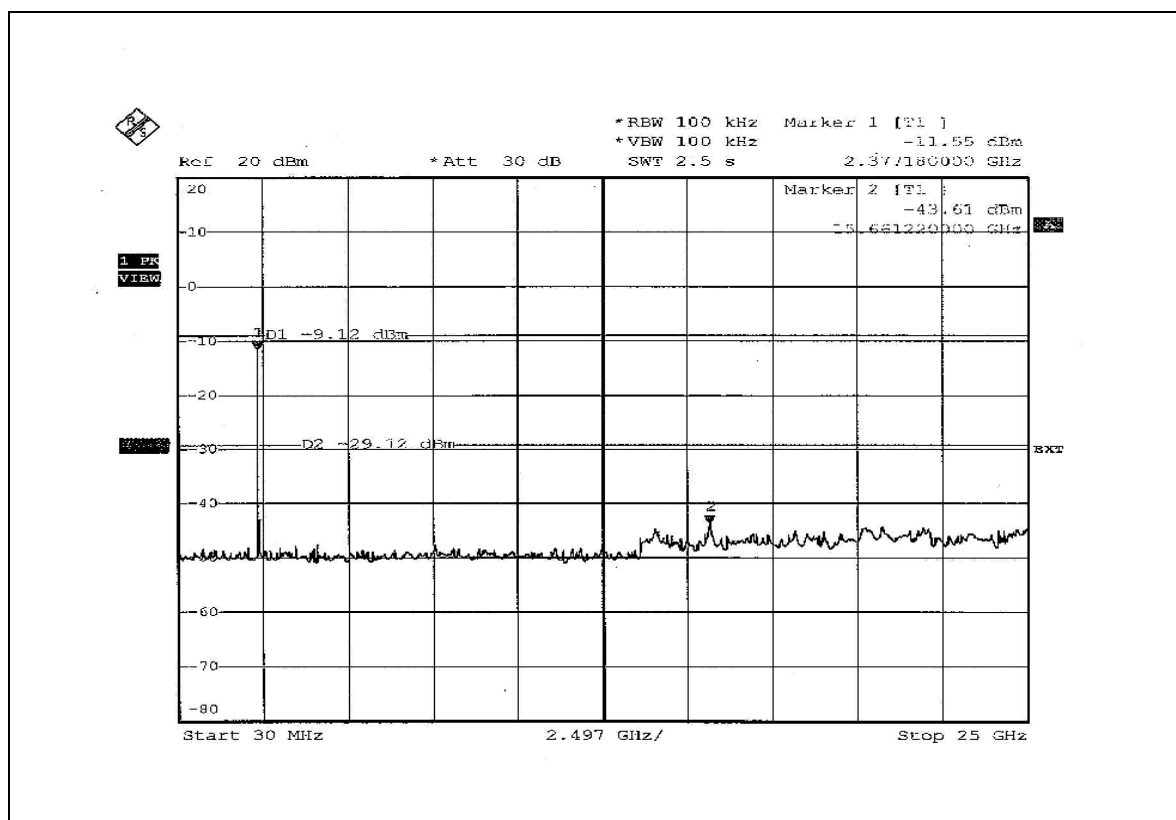
MODE B

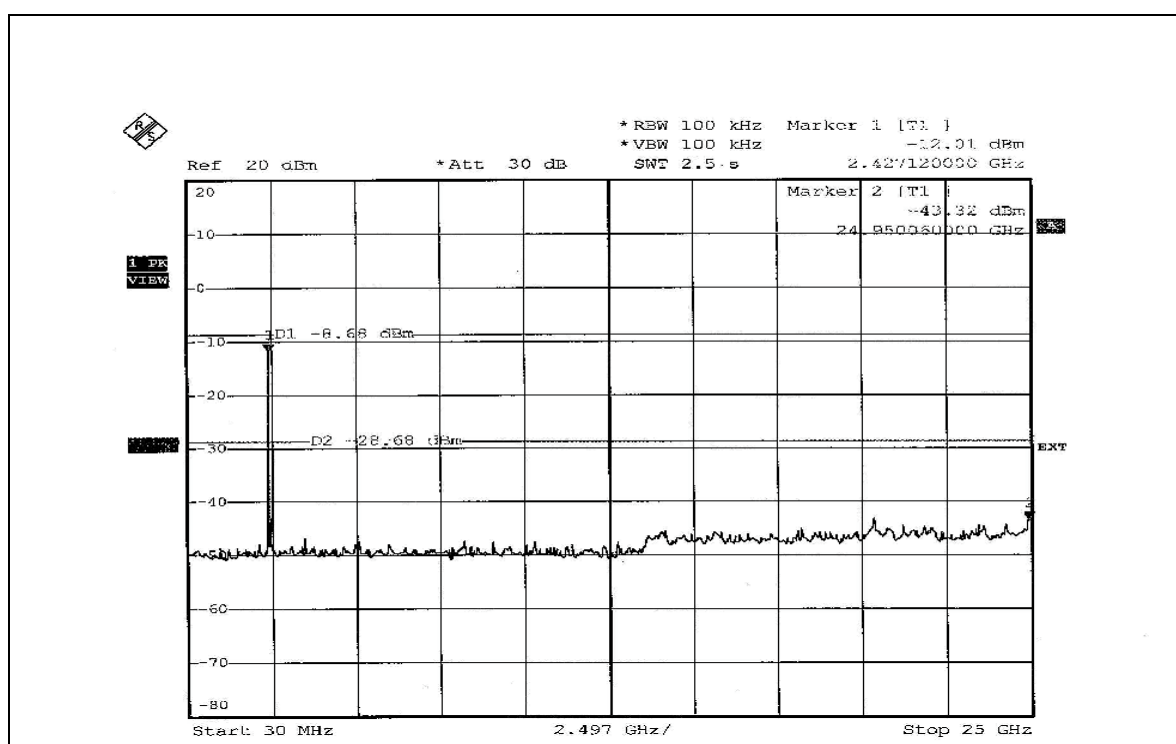
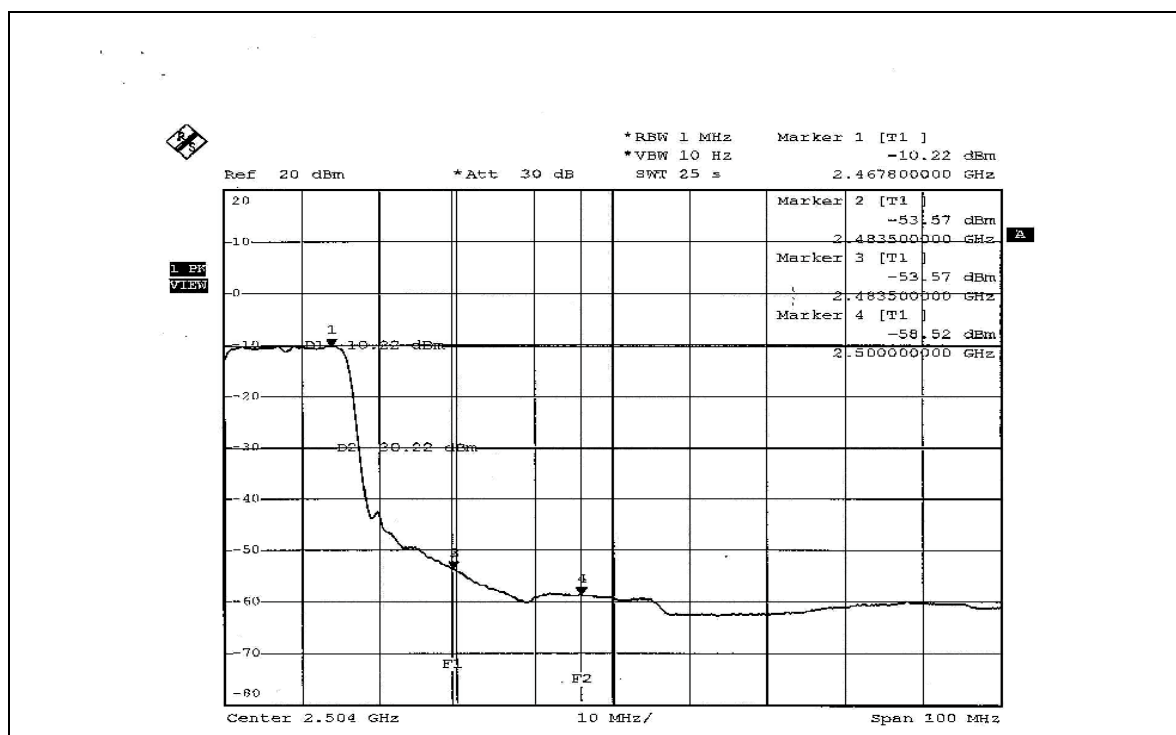
NOTE 1: The band edge emission plot of OFDM technique on the next page shows 39.15dBc between carrier maximum power and local maximum emission in restrict band (2.36820GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.59dBuV/m (Peak), so the maximum field strength in restrict band is $101.59 - 39.15 = 62.44\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique on the next page shows 46.00dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 92.53dBuV/m (Average), so the maximum field strength in restrict band is $92.53 - 46.00 = 46.53\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of OFDM technique on the next second page shows 39.44dBc between carrier maximum power and local maximum emission in restrict band (2.48996GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 101.75dBuV/m (Peak), so the maximum field strength in restrict band is $101.75 - 39.44 = 62.31\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique on the next third page shows 43.35dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 92.57dBuV/m (Average), so the maximum field strength in restrict band is $92.57 - 43.35 = 49.22\text{dBuV/m}$ which is under 54dBuV/m limit.





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 antennas used in this product are Patch antenna with UFL antenna connector and Dipole antenna with Reverse SMA antenna connector. The maximum Gain of the antenna is 9dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

Mode A

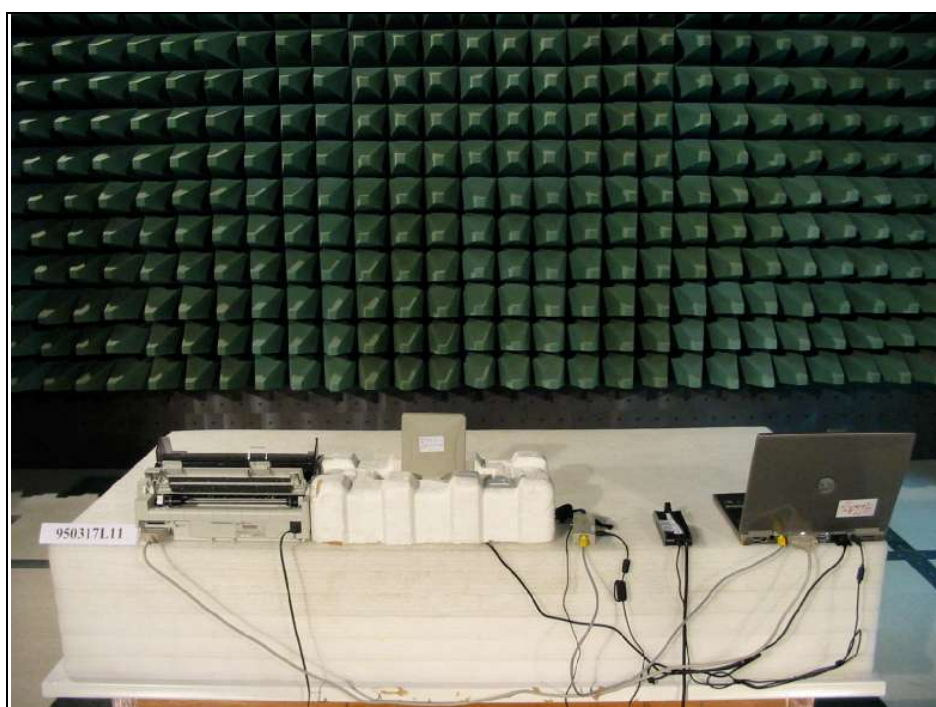
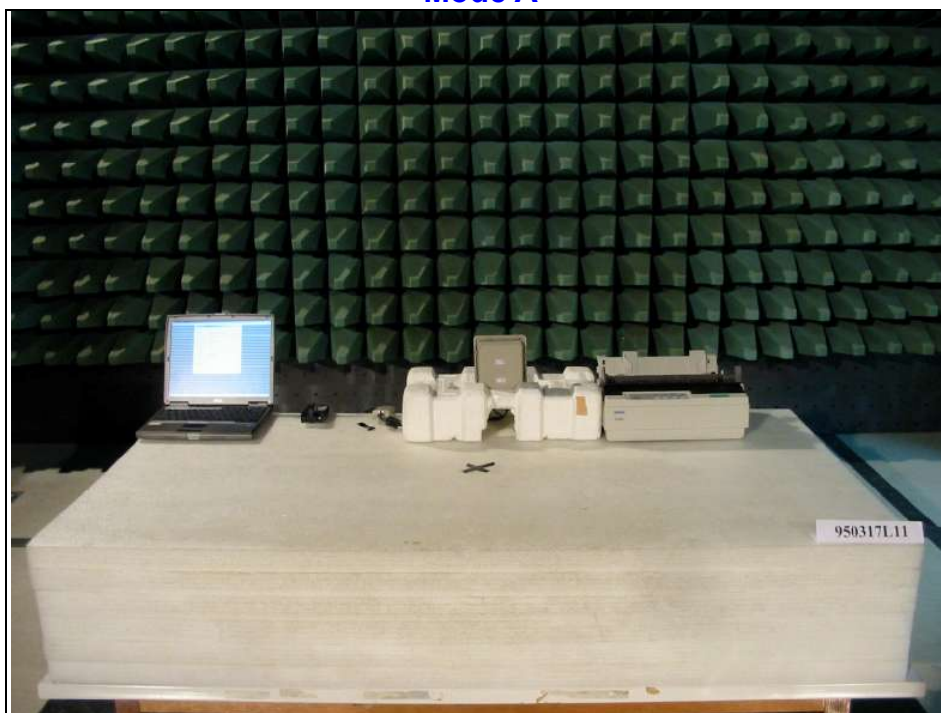


Mode B

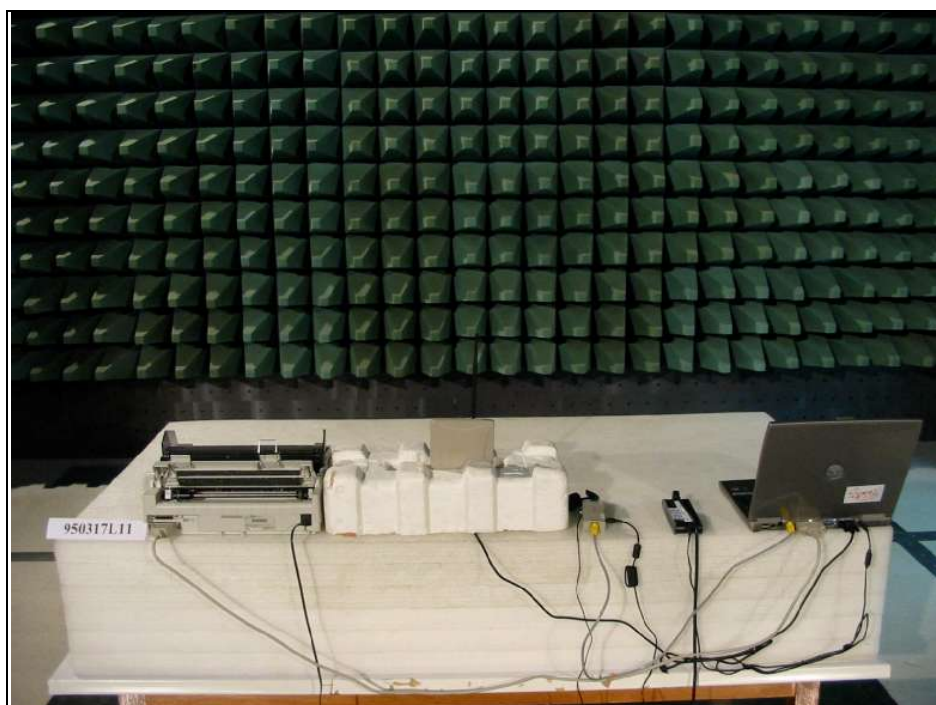
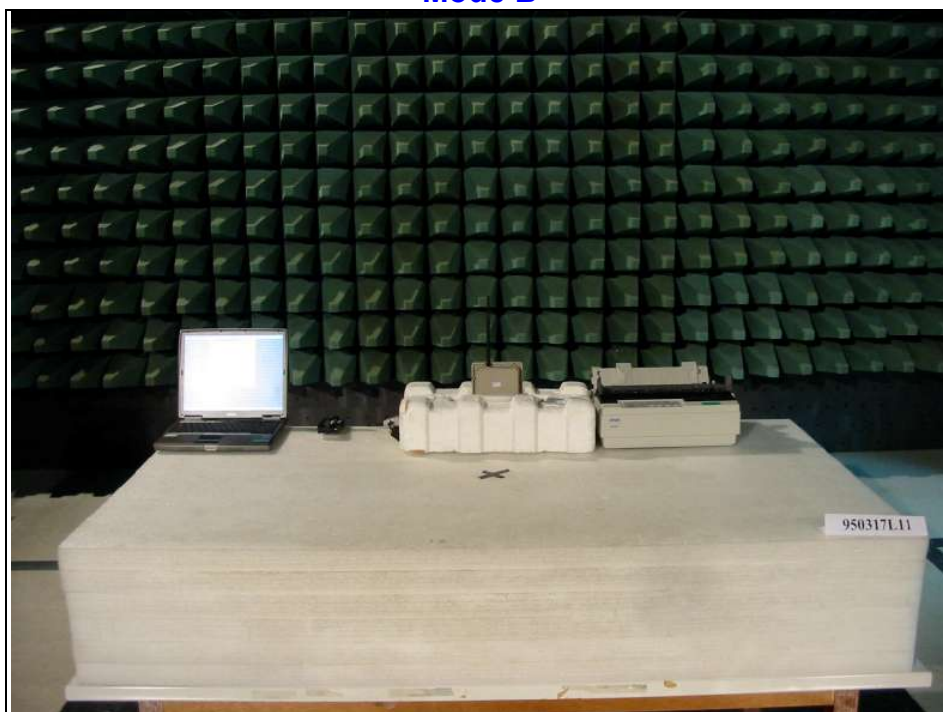


RADIATED EMISSION TEST

Mode A



Mode B



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.