FCC TEST REPORT

REPORT NO.: RF950901H10
MODEL NO.: PePLink Surf 200BG, PePLink Surf 200BG-AP
RECEIVED: Sep. 01, 2006
TESTED: Sep. 01 to 15, 2006
ISSUED: Sep. 26, 2006

APPLICANT: PePLink Ltd.

ADDRESS: 2302, Tai Tung Building 8 Fleming Road, Wanchai, Hong Kong

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien, Taiwan, R.O.C.

0536

No. 2177-01

Table of Contents

1 CERTIFICATION 4
2 SUMMARY OF TEST RESULTS 5
3 GENERAL INFORMATION 6
3.1 GENERAL DESCRIPTION OF EUT 6
3.2 DESCRIPTION OF TEST MODES 8
3.3 TEST MODE APPLICABLITY AND TESTED CHANNEL DETAIL: 9
3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS 11
3.5 DESCRIPTION OF SUPPORT UNITS 12
3.6 CONFIGURATION OF SYSTEM UNDER TEST 13
4 TEST TYPES AND RESULTS 14
4.1 CONDUCTED EMISSION MEASUREMENT 14
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT 14
4.1.2 TEST INSTRUMENTS 14
4.1.3 TEST PROCEDURES 15
4.1.4 TEST SETUP 15
4.1.5 EUT OPERATING CONDITIONS 16
4.1.6 TEST RESULTS 17
4.2 RADIATED EMISSION MEASUREMENT 19
4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT 19
4.2.2 TEST INSTRUMENTS 20
4.2.3 TEST PROCEDURES 21
4.2.4 TEST SETUP 22
4.2.5 EUT OPERATING CONDITIONS 22
4.2.6 TEST RESULTS 23
4.2.7 TEST RESULTS - DSSS 24
4.2.8 TEST RESULTS - OFDM 31
4.3 6dB BANDWIDTH MEASUREMENT 38
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT 38
4.3.2 TEST INSTRUMENTS 38
4.3.3 TEST PROCEDURE 39
4.3.4 TEST SETUP 39
4.3.5 EUT OPERATING CONDITIONS 39
4.3.6 TEST RESULTS –DSSS 40
4.3.7 TEST RESULTS-OFDM 43
4.4 MAXIMUM PEAK OUTPUT POWER 46
4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT 46
4.4.2 TEST INSTRUMENTS 46
4.4.3 TEST PROCEDURES 47
4.4.4 TEST SETUP 47

4.4.5 EUT OPERATING CONDITIONS 47
4.4.6 TEST RESULTS – DSSS 48
4.4.7 TEST RESULTS –OFDM 49
4.5 POWER SPECTRAL DENSITY MEASUREMENT 50
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT 50
4.5.2 TEST INSTRUMENTS 50
4.5.3 TEST PROCEDURE 51
4.5.4 TEST SETUP 51
4.5.5 EUT OPERATING CONDITIONS 51
4.5.6 TEST RESULTS –DSSS 52
4.5.7 TEST RESULTS –OFDM 55
4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT 58
4.6.1 LIMITS OF condtcted emission and BAND EDGES MEASUREMENT 58
4.6.2 TEST INSTRUMENTS 58
4.6.3 TEST PROCEDURE 58
4.6.4 DEVIATION FROM TEST STANDARD 58
4.6.5 EUT OPERATING CONDITION 58
4.6.6 TEST RESULTS 59
4.7 ANTENNA REQUIREMENT 64
4.7.1 STANDARD APPLICABLE 64
4.7.2 ANTENNA CONNECTED CONSTRUCTION 64
5 PHOTOGRAPHS OF THE TEST CONFIGURATION 65
6 INFORMATION ON THE TESTING LABORATORIES 67
APPENDIX-A A-1

1 CERTIFICATION

PRODUCT :	PePLink Surf 200BG, PePLink Surf 200BG-AP
BRAND NAME :	PePLink
MODEL NO. :	PePLink Surf 200BG, PePLink Surf 200BG-AP
TESTED:	Sep. 01 to 15, 2006
APPLICANT :	PePLink Ltd.
TEST ITEM:	MASS-PRODUCTION
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: PePLink Surf 200BG) 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 : Carol Liao , **DATE:** Sep. 26, 2006
(Carol Liao)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Sep. 26, 2006
Responsible for RF
(Hank Chung)

APPROVED BY : , **DATE:** Sep. 26, 2006
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR 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 –19.71 dB at 2.306 MHz
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(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –0.2 dB at 2386.0 MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	PePLink Surf 200BG, PePLink Surf 200BG-AP
MODEL NO.	PePLink Surf 200BG, PePLink Surf 200BG-AP
FCC ID	SAN-SURF200BG-C
POWER SUPPLY	DC 5V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
RADIO 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
CHANNEL SPACING	5MHz
OUTPUT POWER	802.11b: 65.313mW 802.11g: 133.045mW
ANTENNA TYPE	Please see note 2 (on next page)
DATA CABLE	NA
I/O PORTS	LAN Port x 1
ASSOCIATED DEVICES	NA

Note :

1. The EUT has two product names and model names, which are identical to each other in all aspects except for the followings:

Product name	Model name	Difference
PePLink Surf 200BG	PePLink Surf 200BG	For marketing requirement
PePLink Surf 200BG-AP	PePLink Surf 200BG-AP	

From the above models, model: **PePLink Surf 200BG** was selected as representative model for the test and its data was recorded in this report.

2. There are two antennas provided to this EUT as below:

No.:	Antenna Type	Gain (dBi)	Cable loss (dB)	Net Gain (dBi)	Connector Type
1	Dipole Antenna	9	0.7	8.3	Reverse SMA
2	Dipole Antenna	5	0.7	4.3	Reverse SMA

From the above antennas, **antenna 1** was selected as representative antenna for the test and its data was recorded in this report.

3. The EUT must be supplied with following power adapter:

Brand:	SWITCHING
Model No.:	S024AU0500300
Input power :	100-240V ~ 47-63Hz 700mA
Output power :	5V=== 3000mA

4. 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.

5. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

For 802.11b/g normal mode: Eleven 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		

3.3 TEST MODE APPLICABLITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	NA

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	DSSS	CCK	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)
802.11b	1 to 11	1	DSSS	CCK	1

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	CCK	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	CCK	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	CCK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a PePLink Surf 200BG, PePLink Surf 200BG-AP. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C. (15.247)
ANSI C63.4 : 2003

All tests 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 47 CFR Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.5 DESCRIPTION OF SUPPORT UNITS

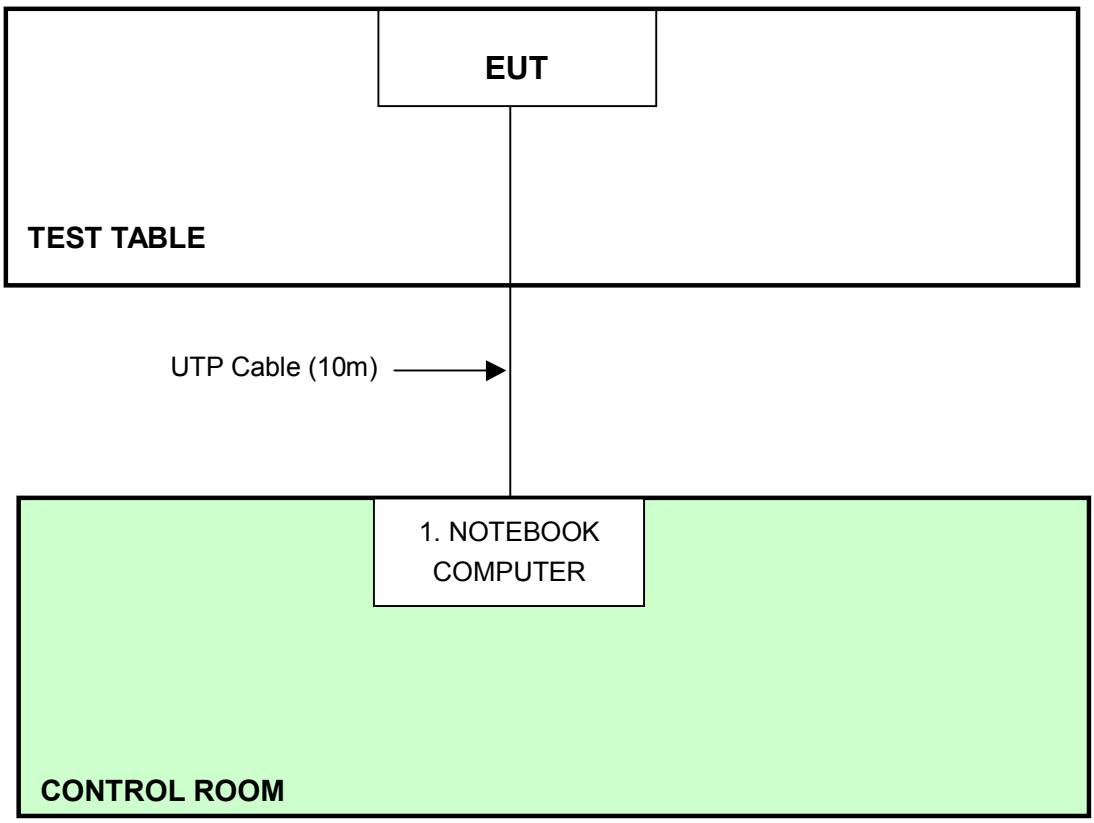
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	CN-04Y212-48643-38E-0145	DoC

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).

3.6 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Support unit 1 was kept in the control room during the test.
2. Please refer to the photos of test configuration in Item 5 also.

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. All emanations from a class 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	ESCS 30	847124/029	Dec. 15, 2006
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 10, 2006
Line-Impedance Stabilization Network(for Peripheral)	KNW-407	8/1395/12	Jul. 18, 2007
RF Cable (JETBAO)	RG233/U	Cable_CB_01	Dec. 09, 2006
Terminator	50	2	Oct. 08, 2006
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

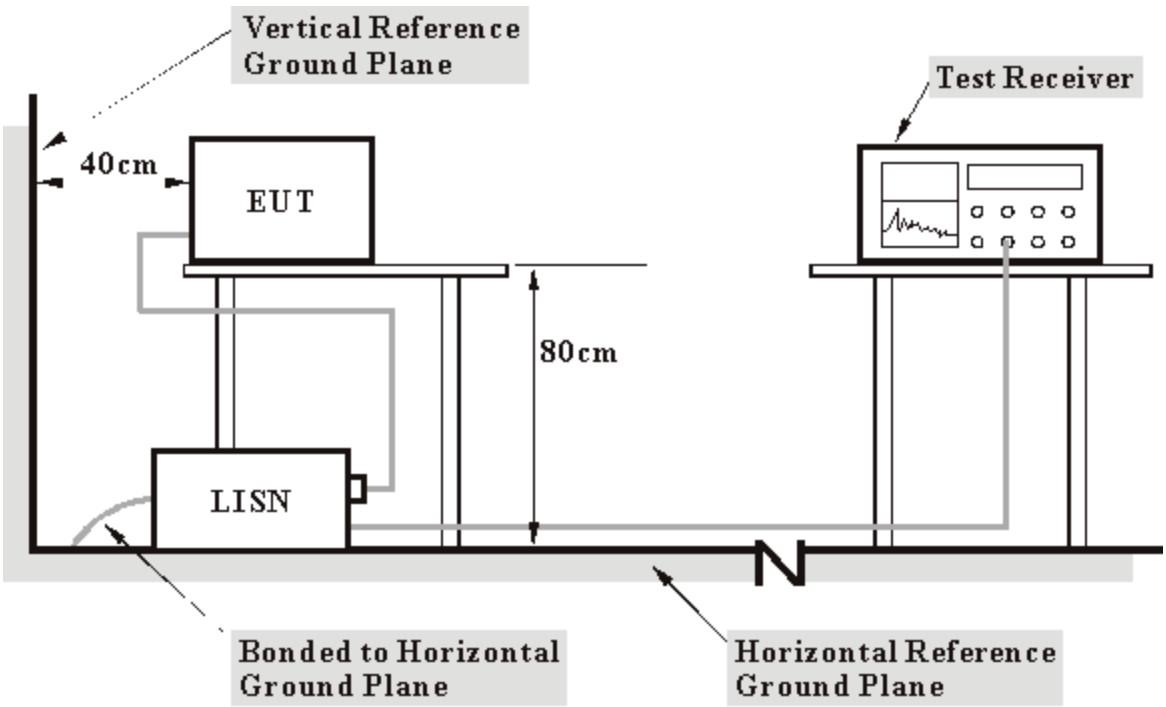
4.1.3 TEST PROCEDURES

a. The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST 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/HOST were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 TEST SETUP



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

4.1.5 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.

b. Prepared other computer system (support unit 1: Notebook computer) to act as communication partner and placed it outside of testing area.

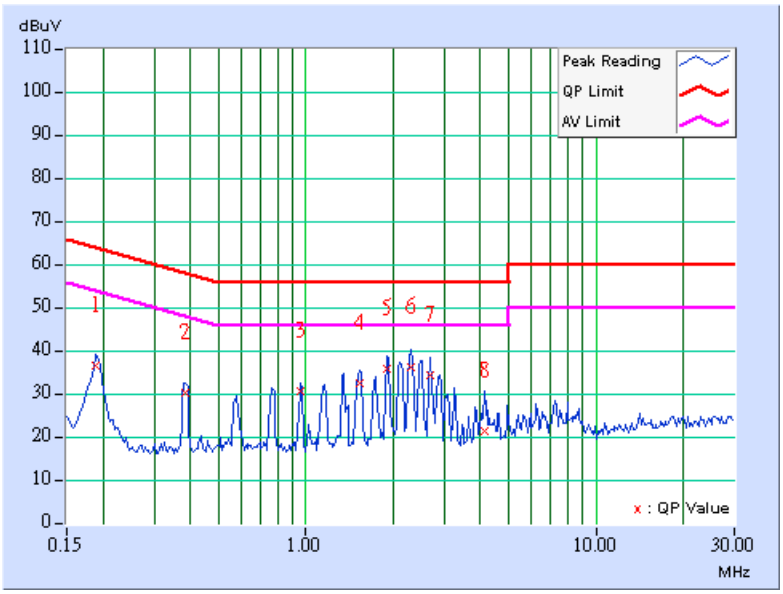
c. The communication partner runs test program “Internet Explorer” to enable EUT under transmission condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

MODULATION TYPE	CCK	CHANNEL	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 57%RH, 962hPa	TRANSFER RATE	1Mbps
TESTED BY	Moris Lin	PHASE	Line (L)

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	0.189	9.60	27.03	-	36.63	-	64.08	54.08	-27.45	-
2	0.384	9.60	20.55	-	30.15	-	58.18	48.18	-28.03	-
3	0.959	9.60	21.14	-	30.74	-	56.00	46.00	-25.26	-
4	1.529	9.65	22.99	-	32.64	-	56.00	46.00	-23.36	-
5	1.912	9.69	26.14	-	35.83	-	56.00	46.00	-20.17	-
6	**2.306**	**9.70**	**26.59**	**-**	**36.29**	**-**	**56.00**	**46.00**	**-19.71**	**-**
7	2.693	9.70	24.80	-	34.50	-	56.00	46.00	-21.50	-
8	4.117	9.70	11.91	-	21.61	-	56.00	46.00	-34.39	-

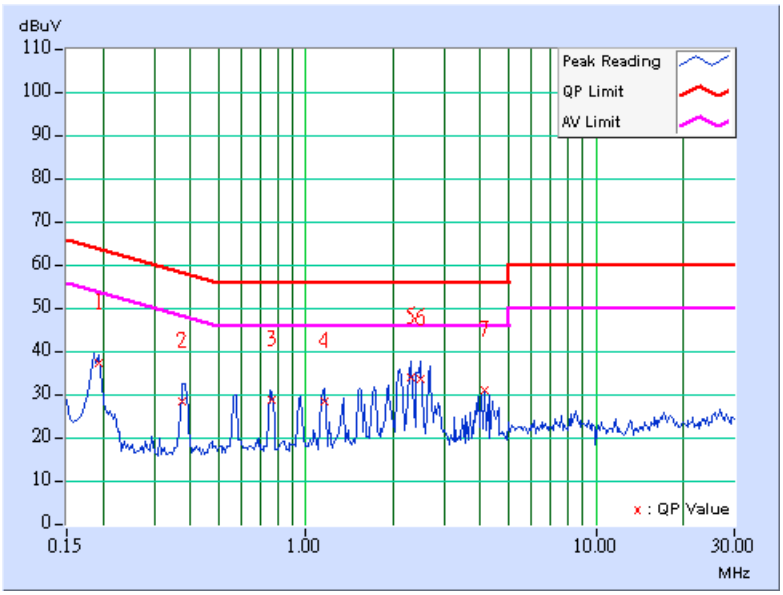
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



MODULATION TYPE	CCK	**CHANNEL**	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 57%RH, 962hPa	**TRANSFER RATE**	1Mbps
TESTED BY	Moris Lin	**PHASE**	Neutral (N)

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	9.60	27.86	-	37.46	-	63.91	53.91	-26.45	-
2	0.377	9.60	18.90	-	28.50	-	58.35	48.35	-29.85	-
3	0.762	9.60	19.15	-	28.75	-	56.00	46.00	-27.25	-
4	1.158	9.62	18.77	-	28.39	-	56.00	46.00	-27.61	-
5	2.298	9.70	24.52	-	34.22	-	56.00	46.00	-21.78	-
6	2.474	9.70	23.97	-	33.67	-	56.00	46.00	-22.33	-
7	4.148	9.70	21.38	-	31.08	-	56.00	46.00	-24.92	-

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
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 03, 2007
HP Pre_Amplifier	8449B	3008A01922	Oct. 02, 2006
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Sep. 18, 2007
CHASE Broadband Antenna	VULB9168	138	Dec. 11, 2006
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 27, 2006
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 05, 2007
SCHWARZBECK Biconical Antenna	VHBA9123	459	Jun. 08, 2009
SCHWARZBECK Periodic Antenna	UPA6108	1148	Jun. 08, 2009
R&S Loop Antenna	HFH2-Z2	881058/15	Nov. 29, 2007
RF Switches (ARNITSU)	CS-201	1565157	NA
RF CABLE (Chaintek)	SF102	22054-2	Nov. 16. 2006
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1GHz	Jul. 15, 2007
Software	ADT_Radiated_V 5.14	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Biconical and Periodic Antenna)and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 4824A-3.
7. The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Radiated emissions (30MHz-1GHz)	2.98 dB
Radiated emissions (1GHz ~18GHz)	2.21 dB
Radiated emissions (18GHz ~40GHz)	1.88 dB

8. Loop antenna was used for all emissions below 30 MHz. (FOR Loop antenna only)

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 10 meter open area test site. 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.

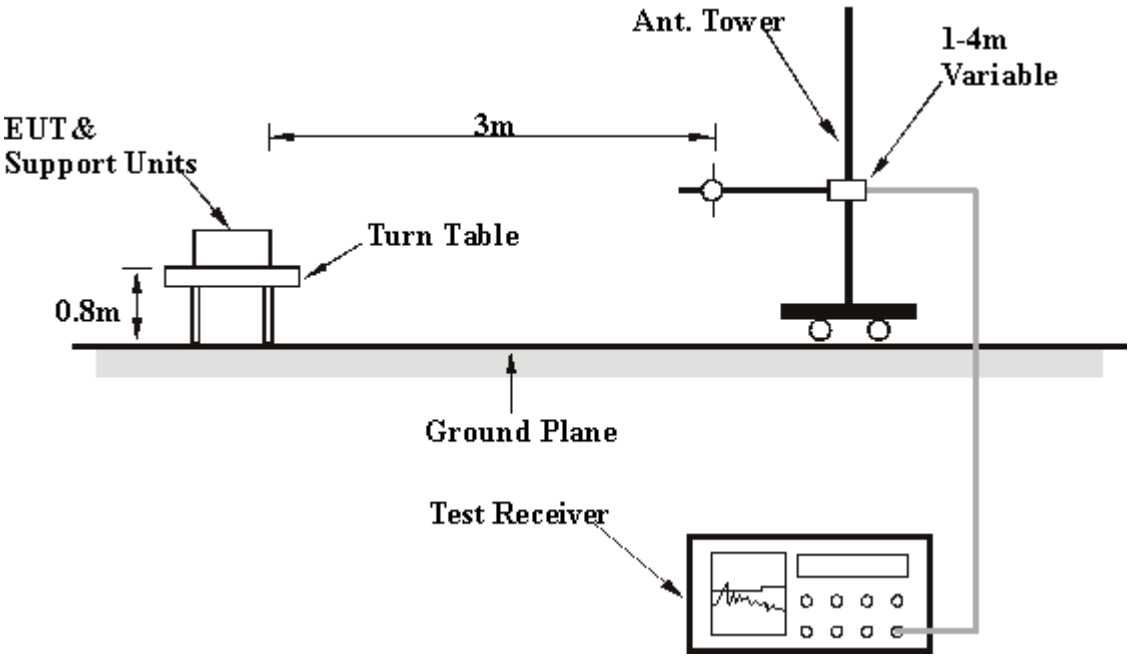
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

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



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

4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5

4.2.6 TEST RESULTS

Below 1GHz Worst-Case Data

MODULATION TYPE	CCK	**CHANNEL**	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	30-1000 MHz
ENVIRONMENTAL CONDITIONS	27deg. C, 59%RH, 962hPa	**TRANSFER RATE**	1Mbps
DETECTOR FUNCTION	Quasi-Peak, 120kHz	**TESTED BY**	Tony 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	125.00	30.20 QP	43.50	-13.30	1.65 H	214	17.90	12.30
2	250.01	31.20 QP	46.00	-14.80	1.52 H	111	17.40	13.80
3	375.01	40.30 QP	46.00	-5.70	1.25 H	236	22.50	17.80
4	500.02	37.30 QP	46.00	-8.70	1.24 H	253	16.90	20.40
5	625.02	35.20 QP	46.00	-10.80	1.07 H	58	12.70	22.50
6	750.03	33.50 QP	46.00	-12.50	1.10 H	258	9.20	24.30
7	875.03	34.40 QP	46.00	-11.60	1.32 H	258	9.20	25.30

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	125.01	31.50 QP	43.50	-12.00	1.02 V	252	19.20	12.30
2	375.01	37.50 QP	46.00	-8.50	1.17 V	343	19.70	17.80
3	500.02	37.20 QP	46.00	-8.80	1.17 V	97	16.90	20.40
4	625.03	35.20 QP	46.00	-10.80	1.68 V	320	12.70	22.50
5	750.02	35.40 QP	46.00	-10.60	1.86 V	145	11.10	24.30
6	875.03	41.20 QP	46.00	-4.80	1.58 V	360	15.90	25.30

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.

4.2.7 TEST RESULTS - DSSS

802.11b DSSS modulation

MODE	Channel 1	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

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	2386.00	57.90 PK	74.00	-16.10	1.12 H	0	28.10	29.80
1	2386.00	46.40 AV	54.00	-7.60	1.12 H	0	16.60	29.80
2	*2412.00	98.90 PK			1.10 H	17	69.00	29.90
2	*2412.00	94.70 AV			1.10 H	17	64.80	29.90
3	3216.00	50.50 PK	74.00	-23.50	1.93 H	317	18.30	32.20
3	3216.00	43.60 AV	54.00	-10.40	1.93 H	317	11.40	32.20
4	4824.00	50.20 PK	74.00	-23.80	1.45 H	96	14.00	36.20
4	4824.00	44.90 AV	54.00	-9.10	1.45 H	96	8.70	36.20
5	7236.00	55.10 PK	74.00	-18.90	1.52 H	315	13.50	41.70
5	7236.00	48.90 AV	54.00	-5.10	1.52 H	315	7.20	41.70

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	2386.00	63.20 PK	74.00	-10.80	1.20 V	251	33.40	29.80
1	**2386.00**	**53.80 AV**	**54.00**	**-0.20**	**1.20 V**	**251**	**24.00**	**29.80**
2	*2412.00	114.00 PK			1.20 V	251	84.10	29.90
2	*2412.00	109.10 AV			1.20 V	251	79.20	29.90
3	3216.00	55.70 PK	74.00	-18.30	1.14 V	45	23.50	32.20
3	3216.00	50.00 AV	54.00	-4.00	1.14 V	45	17.80	32.20
4	4824.00	53.90 PK	74.00	-20.10	1.44 V	97	17.70	36.20
4	4824.00	49.80 AV	54.00	-4.20	1.44 V	97	13.60	36.20
5	7236.00	56.40 PK	74.00	-17.60	1.80 V	266	14.80	41.70
5	7236.00	47.90 AV	54.00	-6.10	1.80 V	266	6.20	41.70

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

MODE	Channel 6	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

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	98.70 PK			1.25 H	356	68.70	30.00
1	*2437.00	94.90 AV			1.25 H	356	64.90	30.00
2	3249.00	49.40 PK	74.00	-24.60	1.27 H	284	17.10	32.30
2	3249.00	42.70 AV	54.00	-11.30	1.27 H	284	10.40	32.30
3	4874.00	49.60 PK	74.00	-24.40	1.38 H	29	13.10	36.50
3	4874.00	42.90 AV	54.00	-11.10	1.38 H	29	6.40	36.50
4	7311.00	53.80 PK	74.00	-20.20	1.21 H	295	12.00	41.80
4	7311.00	47.10 AV	54.00	-6.90	1.21 H	295	5.30	41.80

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	114.30 PK			1.18 V	316	84.30	30.00
1	*2437.00	109.20 AV			1.18 V	316	79.20	30.00
2	3249.00	53.90 PK	74.00	-20.10	1.21 V	49	21.60	32.30
2	3249.00	48.40 AV	54.00	-5.60	1.21 V	49	16.10	32.30
3	4874.00	52.40 PK	74.00	-21.60	1.32 V	89	15.90	36.50
3	4874.00	47.70 AV	54.00	-6.30	1.32 V	89	11.20	36.50
4	7311.00	55.70 PK	74.00	-18.30	1.43 V	286	13.90	41.80
4	7311.00	48.10 AV	54.00	-5.90	1.43 V	286	6.30	41.80

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

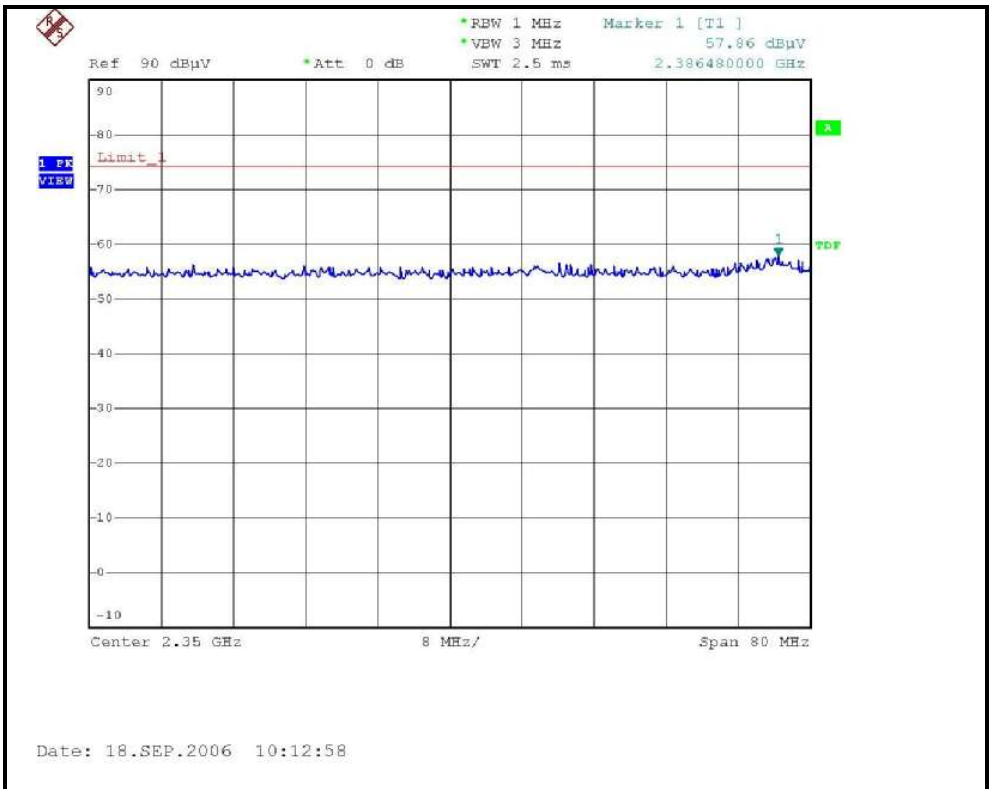
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	98.30 PK			1.33 H	334	68.30	30.10
1	*2462.00	94.80 AV			1.33 H	334	64.70	30.10
2	2488.00	57.60 PK	74.00	-16.40	1.33 H	310	27.50	30.10
2	2488.00	44.10 AV	54.00	-9.90	1.33 H	310	14.00	30.10
3	3282.00	48.90 PK	74.00	-25.10	1.90 H	119	16.50	32.40
3	3282.00	41.50 AV	54.00	-12.50	1.90 H	119	9.10	32.40
4	4924.00	48.20 PK	74.00	-25.80	1.00 H	5	11.50	36.70
4	4924.00	40.50 AV	54.00	-13.50	1.00 H	5	3.80	36.70
5	7386.00	52.40 PK	74.00	-21.60	1.34 H	311	10.50	41.80
5	7386.00	46.00 AV	54.00	-8.00	1.34 H	311	4.10	41.80

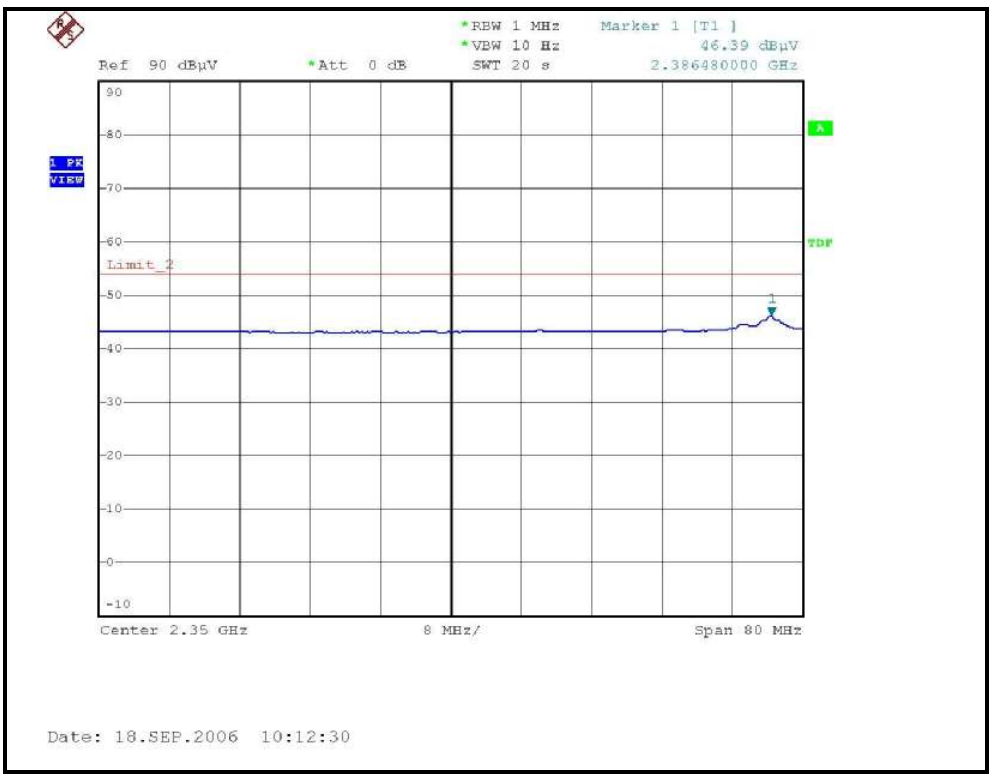
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

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	113.50 PK			1.15 V	18	83.40	30.10
1	*2462.00	109.50 AV			1.15 V	18	79.40	30.10
2	2488.00	63.20 PK	74.00	-10.80	1.15 V	18	33.10	30.10
2	2488.00	52.60 AV	54.00	-1.40	1.15 V	18	22.50	30.10
3	3282.00	51.50 PK	74.00	-22.50	1.27 V	34	19.10	32.40
3	3282.00	46.20 AV	54.00	-7.80	1.27 V	34	13.90	32.40
4	4924.00	51.40 PK	74.00	-22.60	1.23 V	45	14.70	36.70
4	4924.00	46.30 AV	54.00	-7.70	1.23 V	45	9.70	36.70
5	7386.00	54.50 PK	74.00	-19.50	1.45 V	332	12.60	41.80
5	7386.00	47.70 AV	54.00	-6.30	1.45 V	332	5.80	41.80

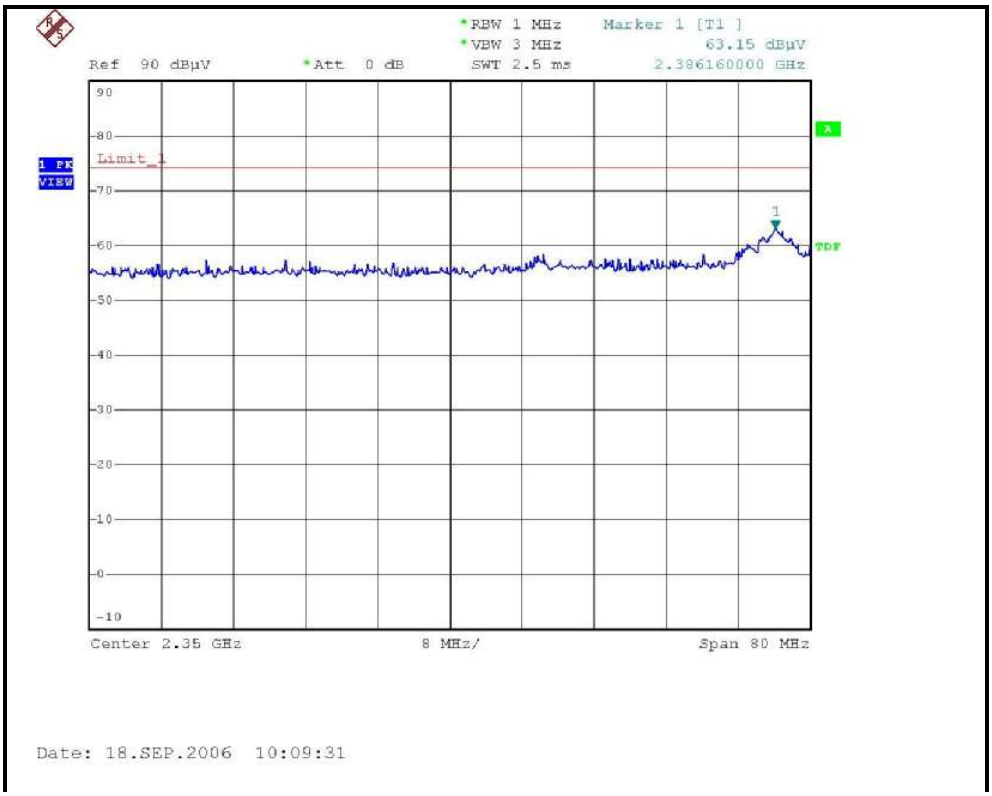
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

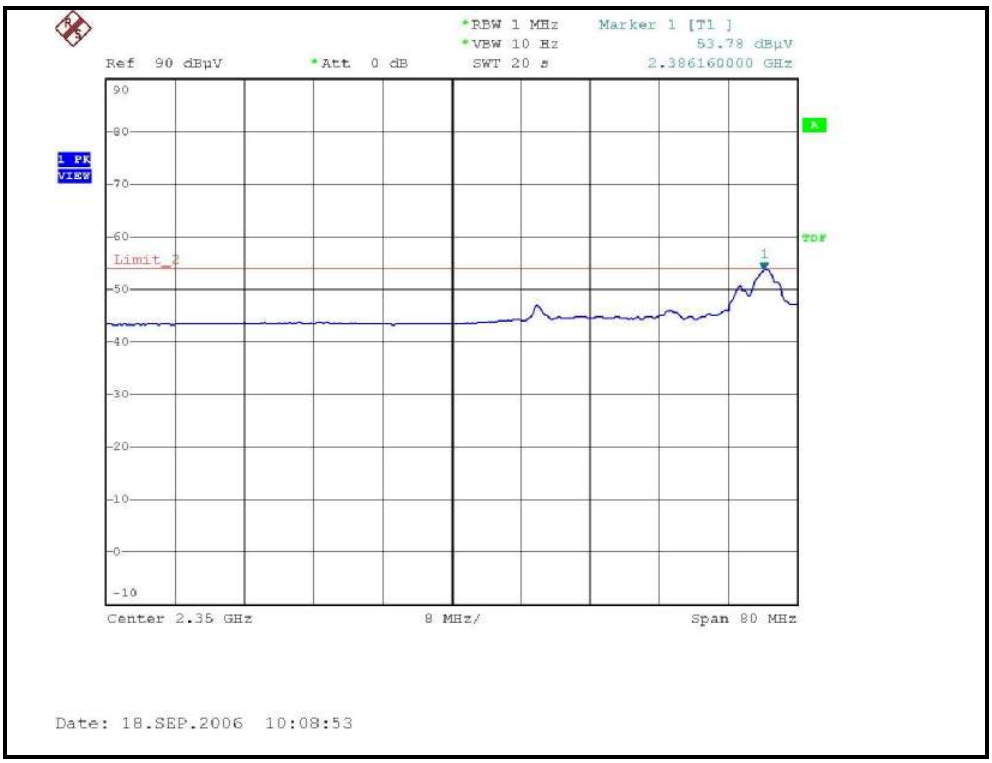
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)





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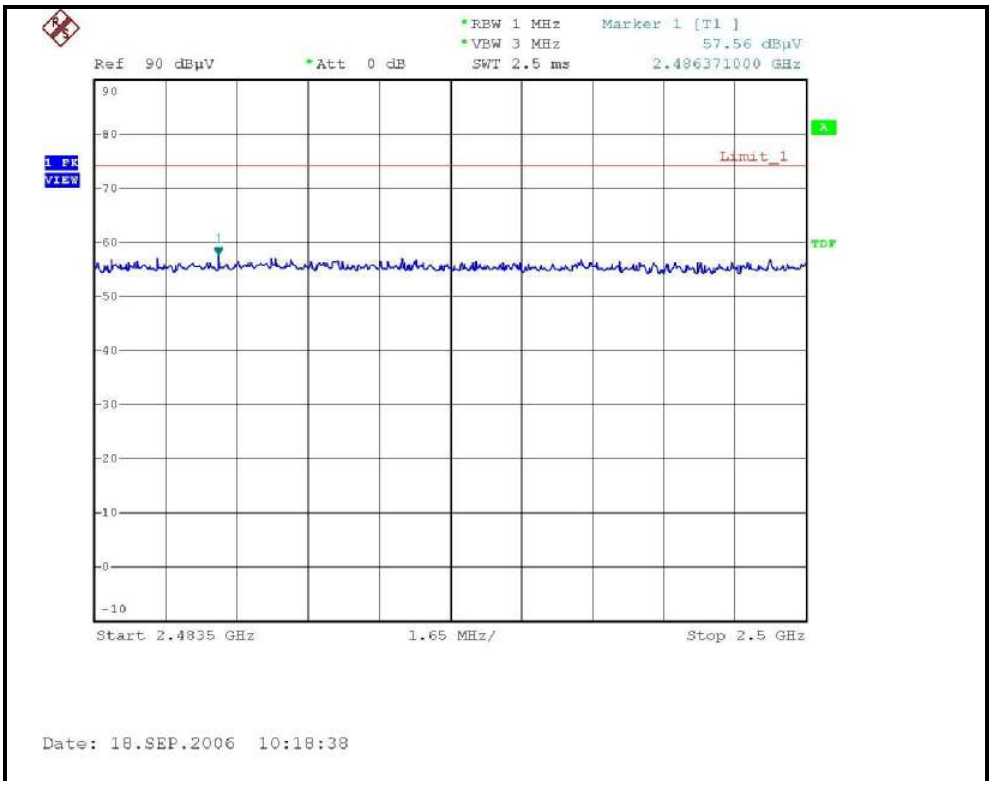
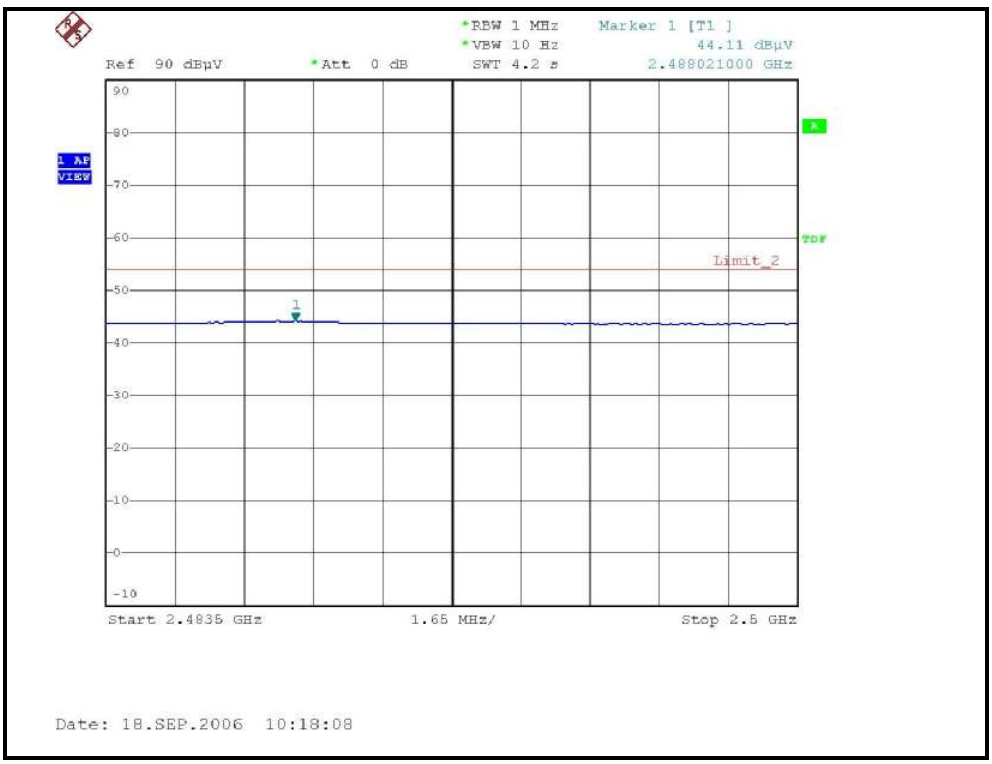
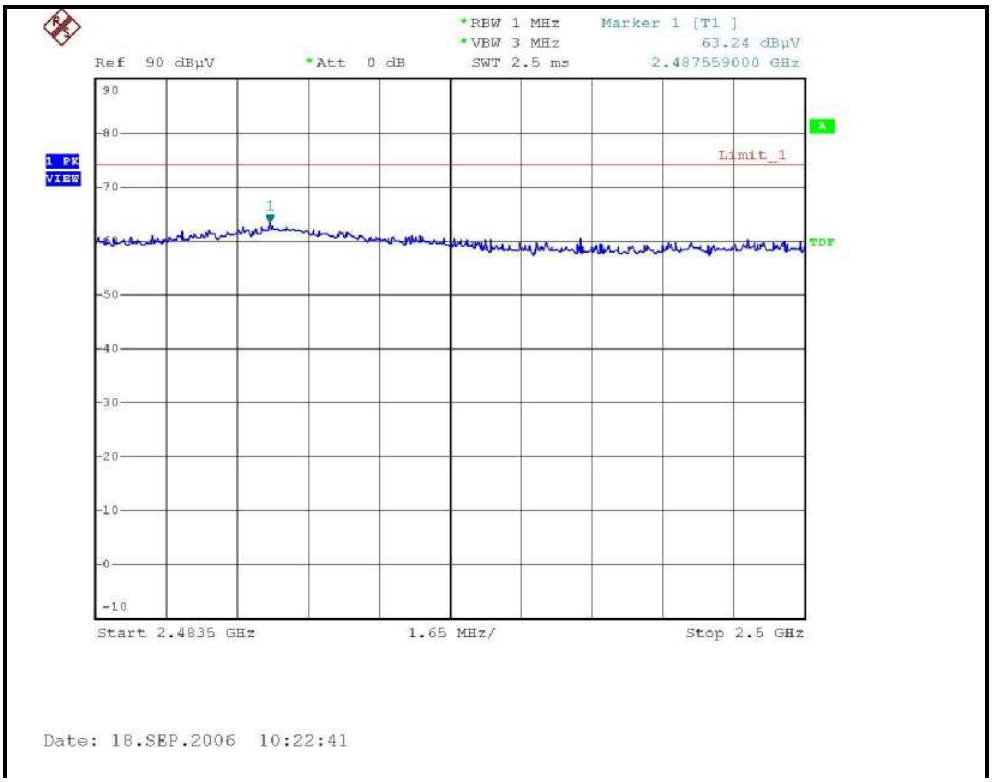
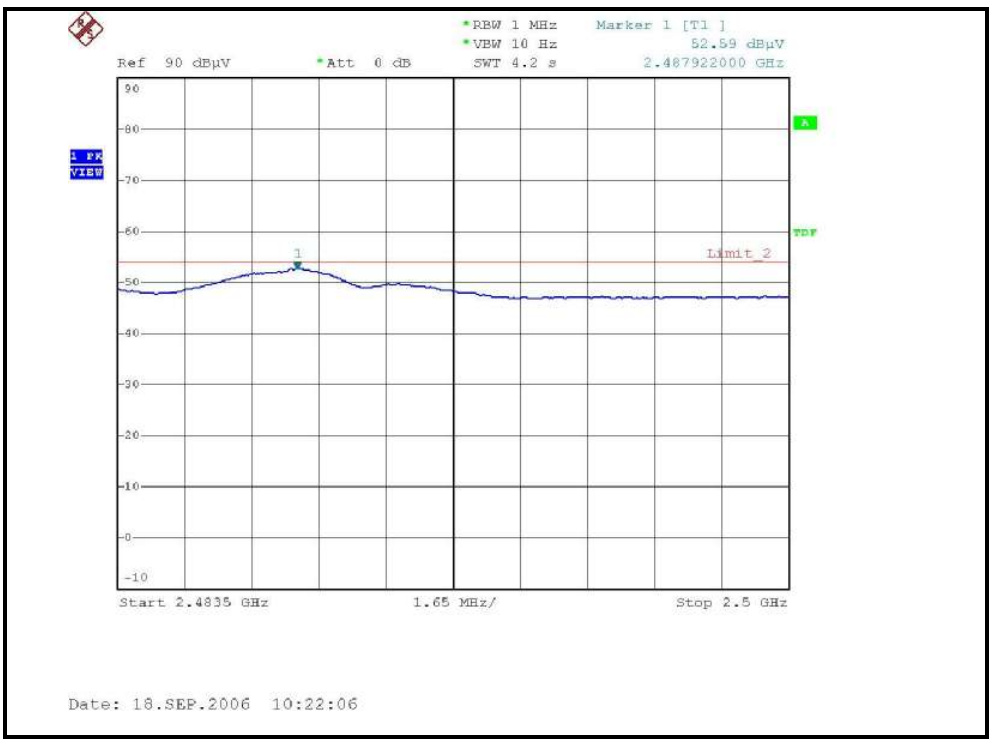




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





4.2.8 TEST RESULTS - OFDM

802.11g Normal OFDM modulation

MODE	Channel 1	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

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	63.80 PK	74.00	-10.20	1.15 H	356	33.90	29.80
1	2390.00	47.00 AV	54.00	-7.00	1.15 H	356	17.20	29.80
2	*2412.00	99.30 PK			1.14 H	21	69.40	29.90
2	*2412.00	85.80 AV			1.14 H	21	55.90	29.90
3	3216.00	54.30 PK	74.00	-19.70	1.74 H	56	22.10	32.20
3	3216.00	50.00 AV	54.00	-4.00	1.74 H	56	17.80	32.20
4	4824.00	47.90 PK	74.00	-26.10	1.70 H	88	11.70	36.20
4	4824.00	35.20 AV	54.00	-18.80	1.70 H	88	-1.00	36.20
5	7236.00	61.90 PK	74.00	-12.10	1.84 H	316	20.30	41.70
5	7236.00	44.80 AV	54.00	-9.20	1.84 H	316	3.10	41.70

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	70.30 PK	74.00	-3.70	1.18 V	350	40.50	29.80
1	2390.00	53.00 AV	54.00	-1.00	1.18 V	350	23.10	29.80
2	*2412.00	115.10 PK			1.18 V	350	85.20	29.90
2	*2412.00	101.00 AV			1.18 V	350	71.10	29.90
3	3216.00	56.70 PK	74.00	-17.30	1.32 V	32	24.50	32.20
3	3216.00	52.90 AV	54.00	-1.10	1.32 V	32	20.70	32.20
4	4824.00	47.60 PK	74.00	-26.40	1.00 V	36	11.40	36.20
4	4824.00	34.40 AV	54.00	-19.60	1.00 V	36	-1.90	36.20
5	7236.00	63.00 PK	74.00	-11.00	1.17 V	265	21.30	41.70
5	7236.00	44.50 AV	54.00	-9.50	1.17 V	265	2.80	41.70

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

MODE	Channel 6	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

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	99.70 PK			1.21 H	343	69.70	30.00
1	*2437.00	85.90 AV			1.21 H	343	55.90	30.00
2	3249.00	54.90 PK	74.00	-19.10	1.24 H	276	22.60	32.30
2	3249.00	48.80 AV	54.00	-5.20	1.24 H	276	16.50	32.30
3	4874.00	48.50 PK	74.00	-25.50	1.43 H	251	12.00	36.50
3	4874.00	35.90 AV	54.00	-18.10	1.43 H	251	-0.60	36.50
4	7311.00	62.10 PK	74.00	-11.90	1.62 H	321	20.30	41.80
4	7311.00	44.30 AV	54.00	-9.70	1.62 H	321	2.50	41.80

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	115.20 PK			1.23 V	342	85.20	30.00
1	*2437.00	101.30 AV			1.23 V	342	71.30	30.00
2	3249.00	55.30 PK	74.00	-18.70	1.32 V	288	23.00	32.30
2	3249.00	51.70 AV	54.00	-2.30	1.32 V	288	19.40	32.30
3	4874.00	49.40 PK	74.00	-24.60	1.05 V	47	12.90	36.50
3	4874.00	36.10 AV	54.00	-17.90	1.05 V	47	-0.40	36.50
4	7311.00	63.20 PK	74.00	-10.80	1.36 V	215	21.40	41.80
4	7311.00	44.70 AV	54.00	-9.30	1.36 V	215	2.90	41.80

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 962hPa	**TESTED BY**	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

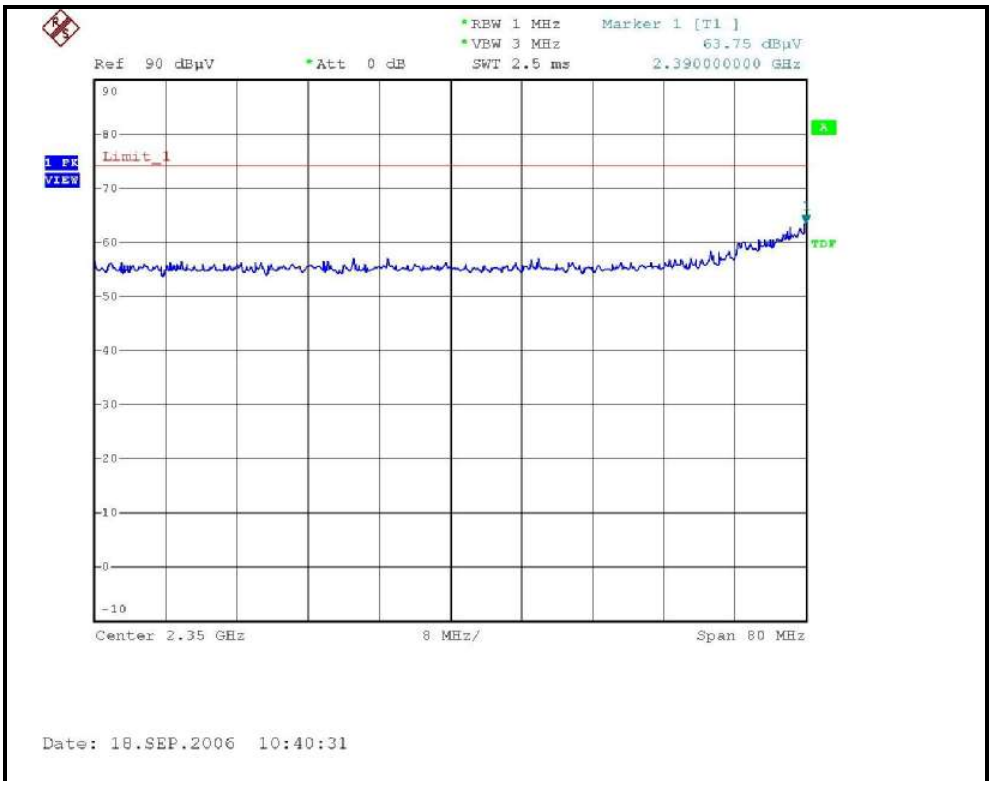
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	100.20 PK			1.43 H	293	70.10	30.10
1	*2462.00	85.80 AV			1.43 H	293	55.80	30.10
2	2483.50	61.30 PK	74.00	-12.70	1.43 H	293	31.20	30.10
2	2483.50	45.30 AV	54.00	-8.70	1.43 H	293	15.20	30.10
3	3179.00	55.80 PK	74.00	-18.20	1.69 H	246	23.70	32.10
3	3179.00	33.50 AV	54.00	-20.50	1.69 H	246	1.40	32.10
4	3282.70	59.80 PK	74.00	-14.20	1.09 H	47	27.40	32.40
4	3282.70	45.70 AV	54.00	-8.30	1.09 H	47	13.30	32.40
5	4924.00	58.10 PK	74.00	-15.90	2.00 H	118	21.40	36.70
5	4924.00	37.30 AV	54.00	-16.70	2.00 H	118	0.60	36.70
6	7386.00	62.60 PK	74.00	-11.40	1.54 H	314	20.70	41.80
6	7386.00	44.70 AV	54.00	-9.30	1.54 H	314	2.90	41.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

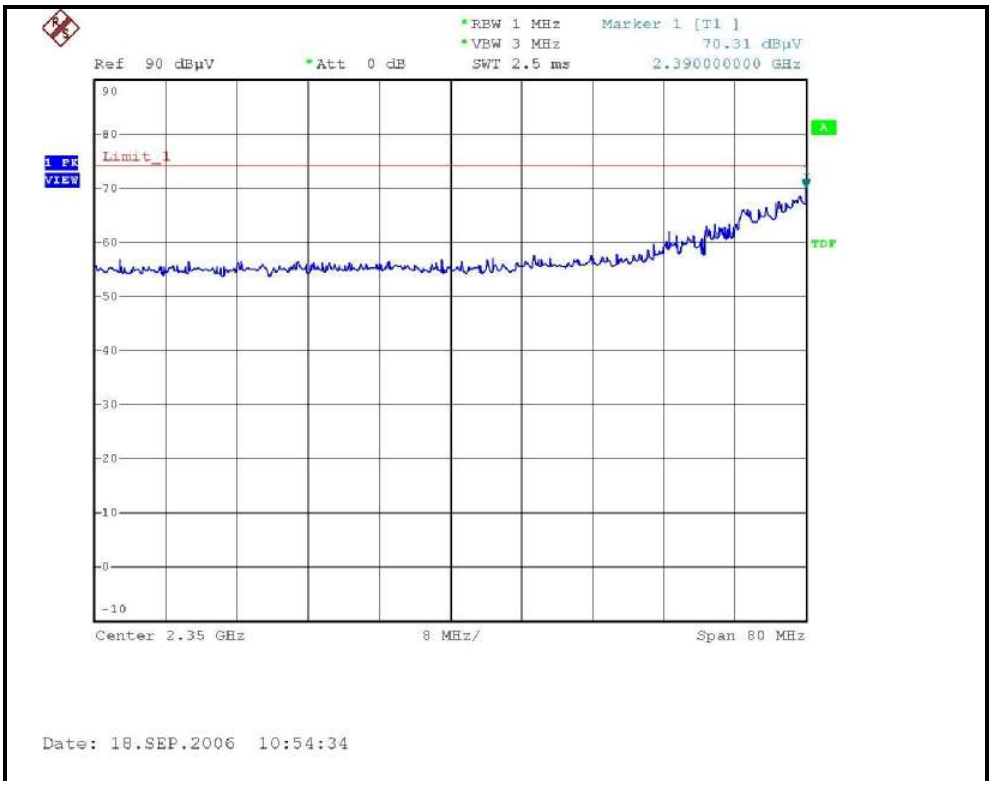
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	115.10 PK			1.15 V	18	85.00	30.10
1	*2462.00	100.50 AV			1.15 V	18	70.40	30.10
2	2483.50	72.40 PK	74.00	-1.60	1.15 V	18	42.30	30.10
2	2483.50	53.40 AV	54.00	-0.60	1.15 V	18	23.30	30.10
3	3179.00	64.80 PK	74.00	-9.20	1.32 V	16	32.70	32.10
3	3179.00	33.60 AV	54.00	-20.40	1.32 V	16	1.50	32.10
4	3282.70	54.20 PK	74.00	-19.80	1.08 V	42	21.80	32.40
4	3282.70	50.80 AV	54.00	-3.20	1.08 V	42	18.40	32.40
5	4924.00	53.00 PK	74.00	-21.00	1.72 V	184	16.30	36.70
5	4924.00	37.00 AV	54.00	-17.00	1.72 V	184	0.30	36.70
6	7386.00	65.50 PK	74.00	-8.50	1.64 V	198	23.70	41.80
6	7386.00	46.20 AV	54.00	-7.80	1.64 V	198	4.40	41.80

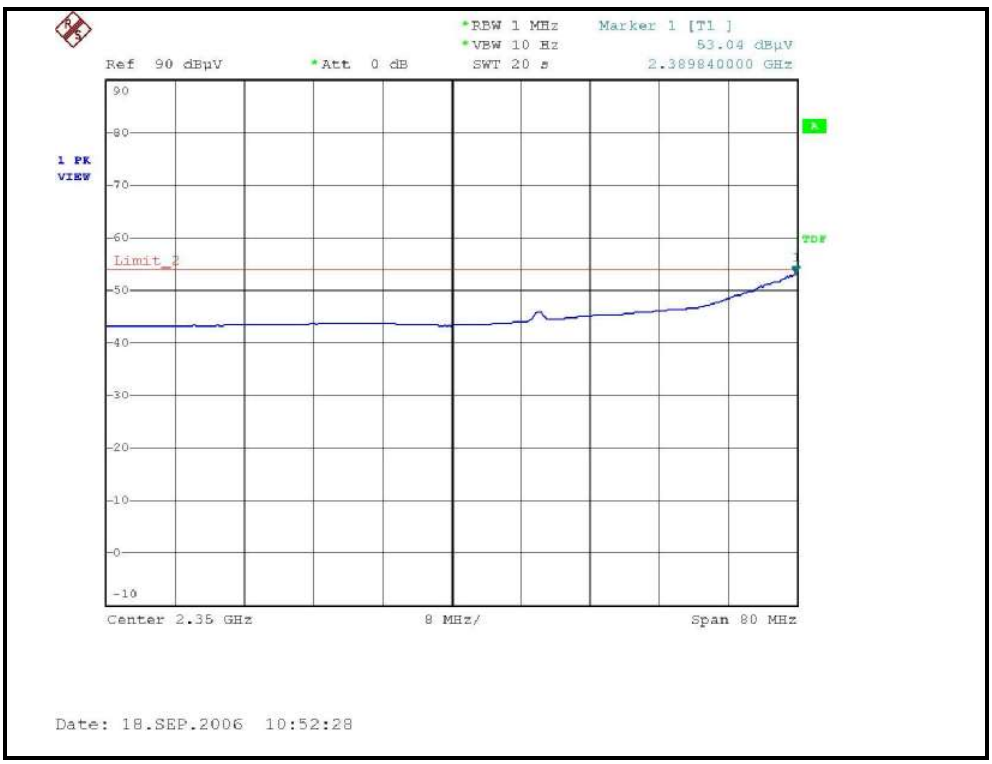
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)

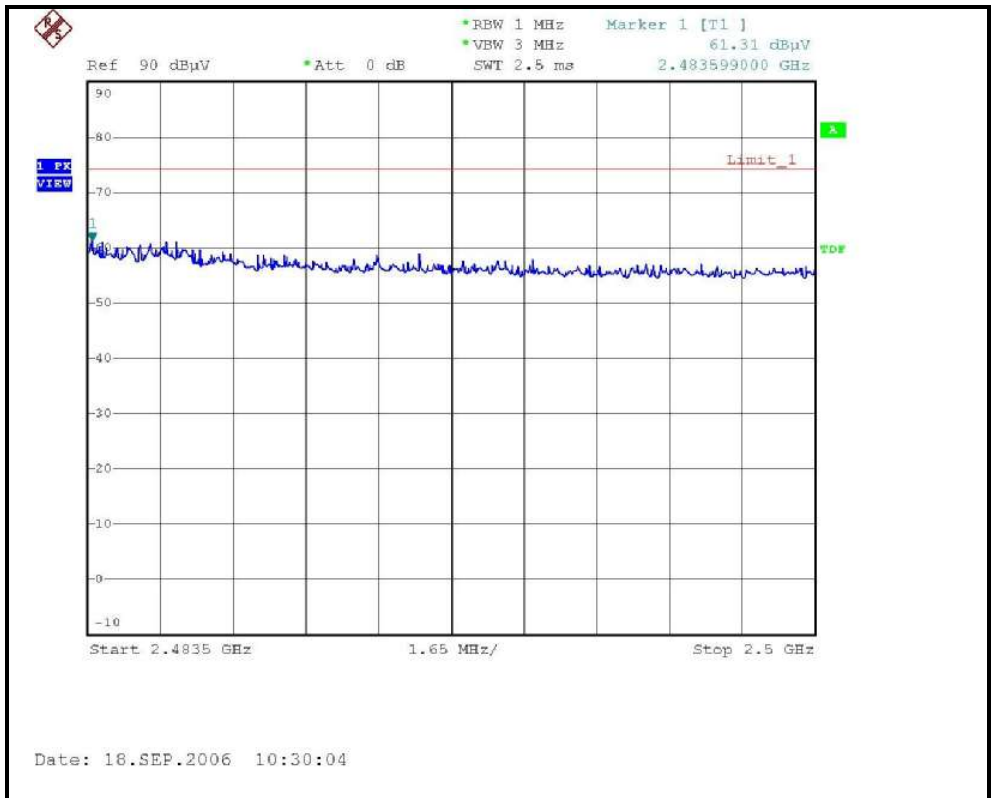


RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)

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
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. 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 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

4.3.4 TEST SETUP

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

4.3.5 EUT OPERATING CONDITIONS

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

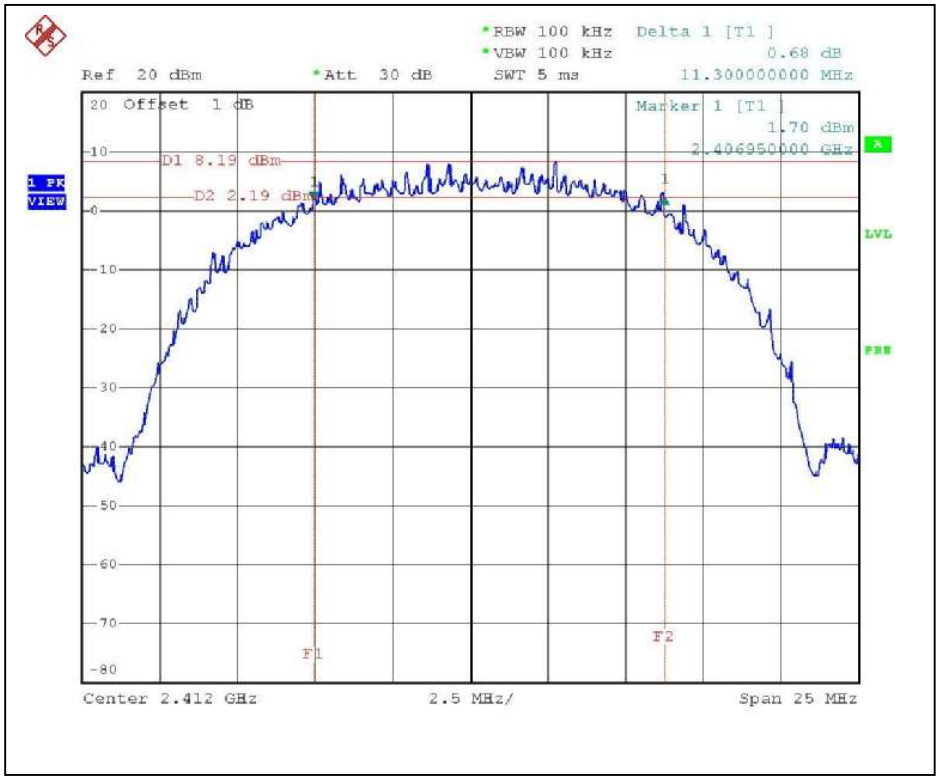
4.3.6 TEST RESULTS –DSSS

802.11b DSSS modulation

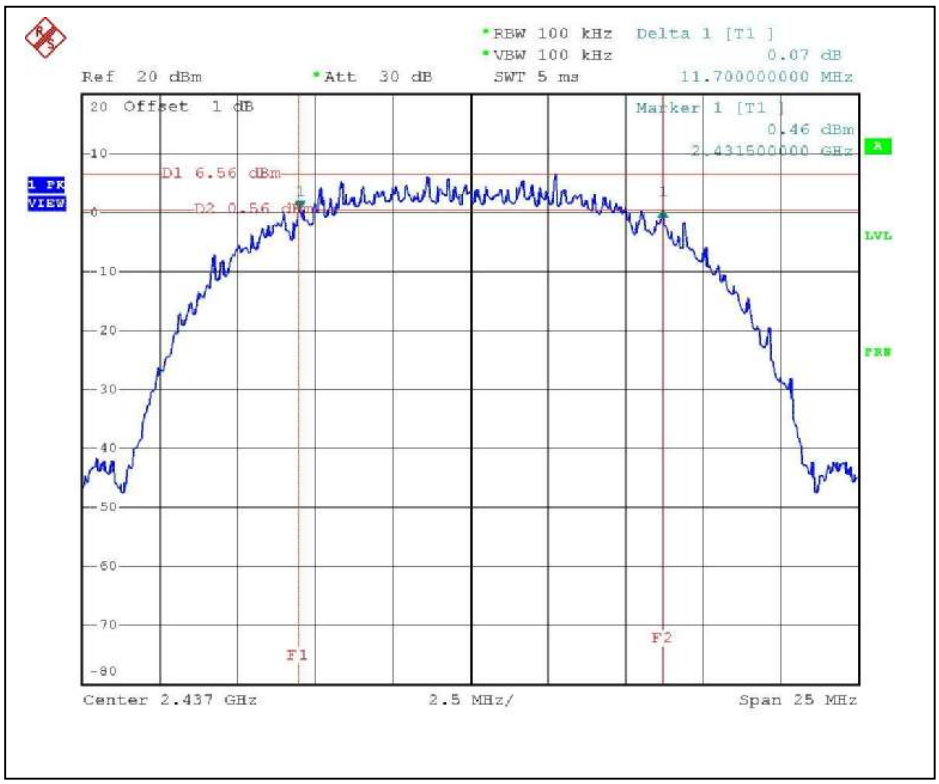
MODULATION TYPE	CCK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.30	0.5	PASS
6	2437	11.70	0.5	PASS
11	2462	12.25	0.5	PASS

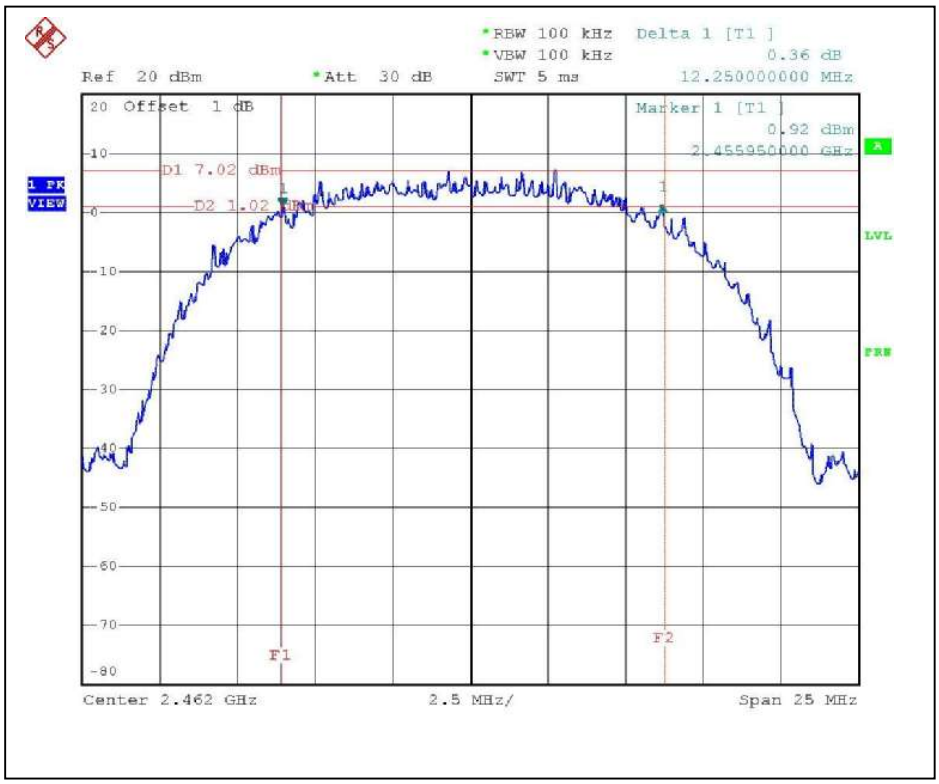
CH1


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.68 dB
11.300000000 MHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
1.70 dBm
2.406950000 GHz
D1 8.19 dBm
D2 2.19 dBm
1 PK VIEW
LVL
PRN
F1
F2
Center 2.412 GHz
2.5 MHz/
Span 25 MHz

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.07 dB
11.700000000 MHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
0.46 dBm
2.431500000 GHz
D1 6.56 dBm
1 PK VIEW
LVL
PRN
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.36 dB
12.250000000 MHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
0.92 dBm
2.455950000 GHz
D1 7.02 dBm
D2 1.02 dB
1 PK VIEW
LVL
A
FRE
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

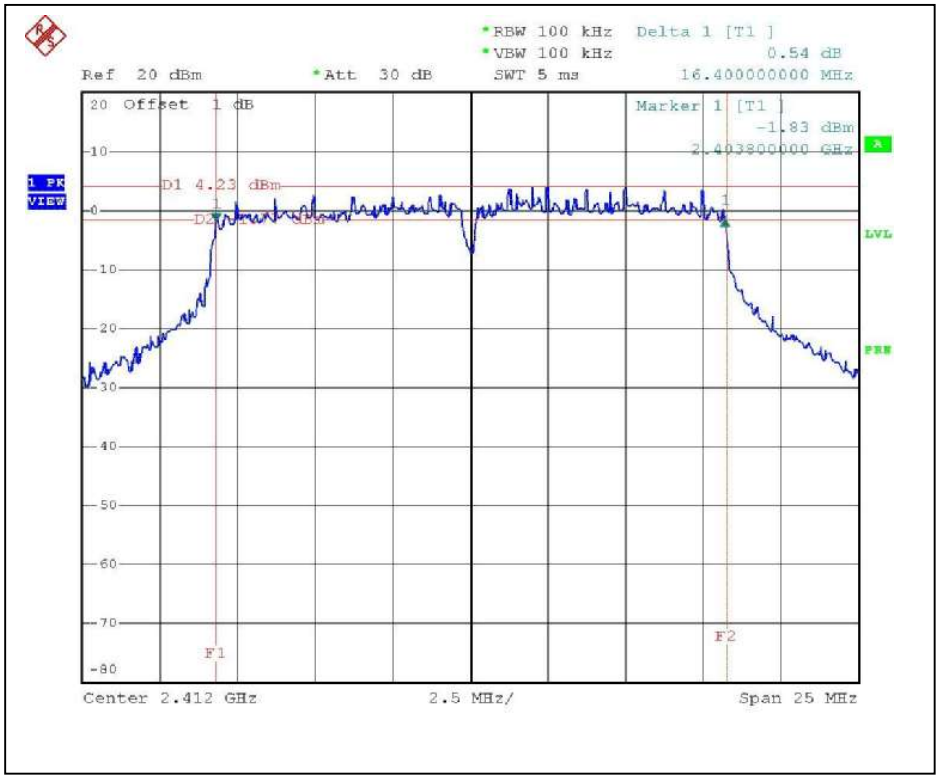
4.3.7 TEST RESULTS-OFDM

802.11g OFDM modulation

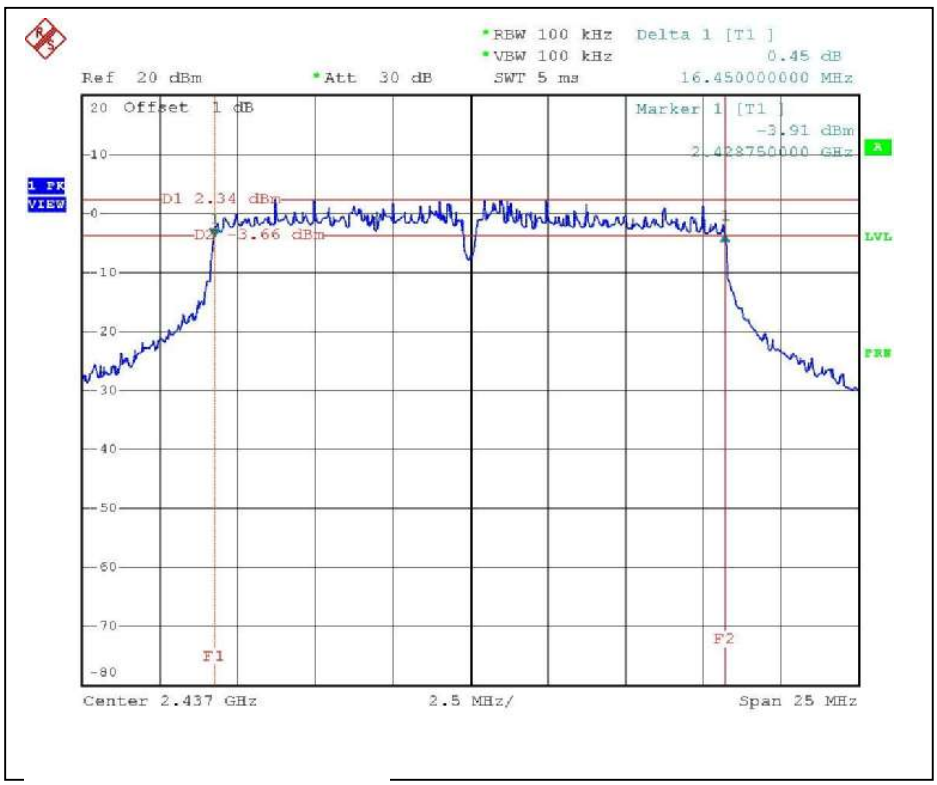
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.40	0.5	PASS
6	2437	16.45	0.5	PASS
11	2462	16.40	0.5	PASS

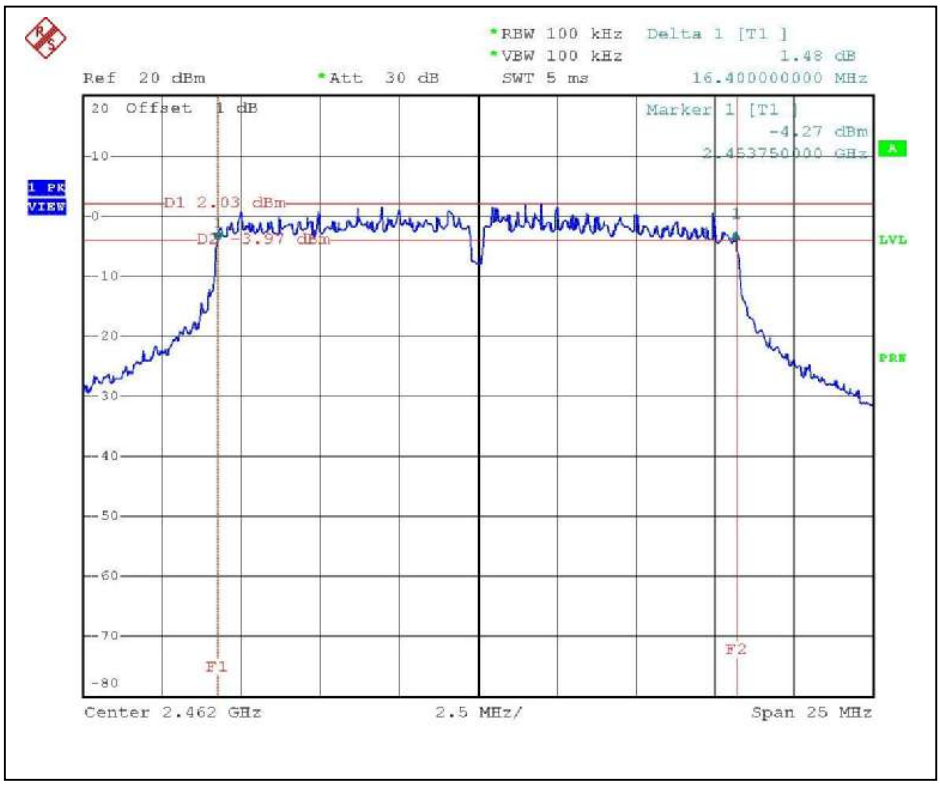
CH1


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.54 dB
16.400000000 MHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
Marker 1 [T1]
-1.83 dBm
2.403800000 GHz
1 PK VIEW
D1 4.23 dBm
LVL
F1
F2
Center 2.412 GHz
2.5 MHz/
Span 25 MHz

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.45 dB
16.450000000 MHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
Marker 1 [T1]
-3.91 dBm
2.428750000 GHz
1 PK VIEW
D1 2.34 dBm
LVL
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11


*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
1.48 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
16.400000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-4.27 dBm
2.453750000 GHz
1 PK VIEW
D1 2.03 dBm
D2 -3.97 dBm
LVL
PRN
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 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

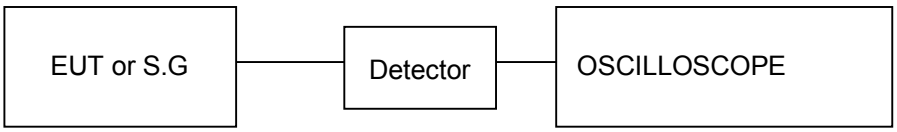
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 07, 2006
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	Jun. 21, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

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 read the peak 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 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.4.6 TEST RESULTS – DSSS

802.11b DSSS modulation

MODULATION TYPE	CCK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

Antenna Gain : 9.0 dBi + Cable loss 0.7dB

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	65.313	18.15	27.7	PASS
6	2437	63.096	18.00	27.7	PASS
11	2462	64.714	18.11	27.7	PASS

4.4.7 TEST RESULTS –OFDM

802.11g OFDM modulation

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

Antenna Gain : 9.0 dBi + Cable loss 0.7dB

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	127.350	21.05	27.7	PASS
6	2437	128.825	21.10	27.7	PASS
11	2462	133.045	21.24	27.7	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
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

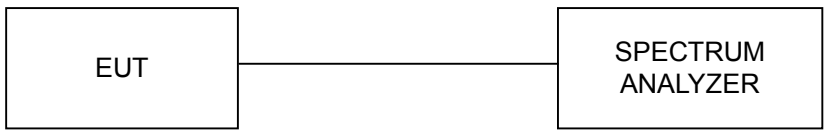
NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. 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 3 kHz RBW and 30 kHz 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 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

Same as 4.3.5

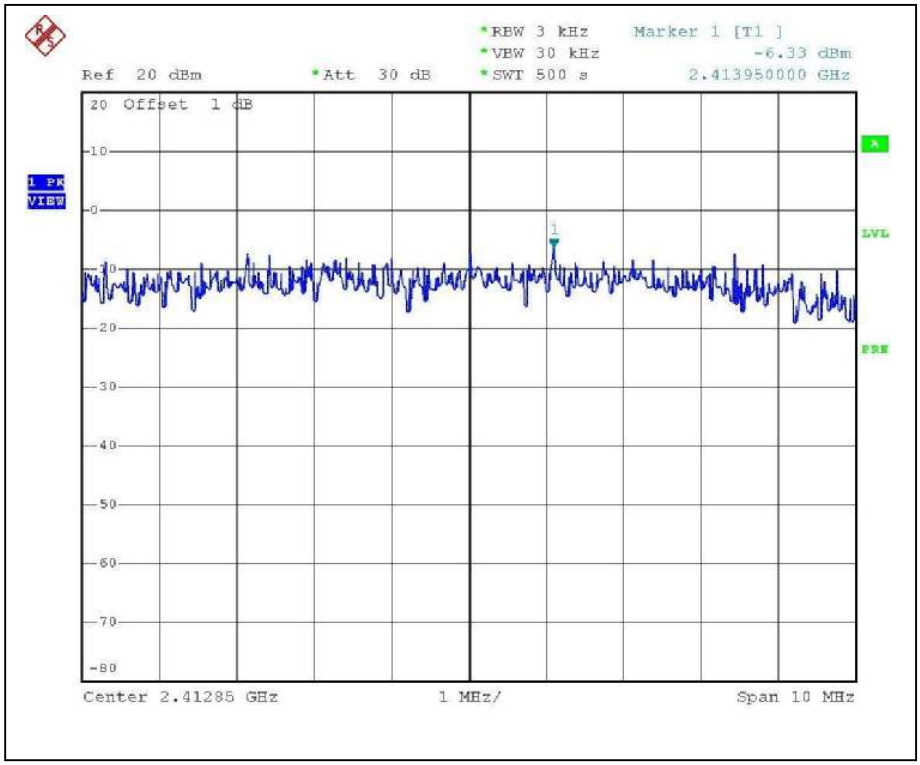
4.5.6 TEST RESULTS –DSSS

802.11b DSSS modulation

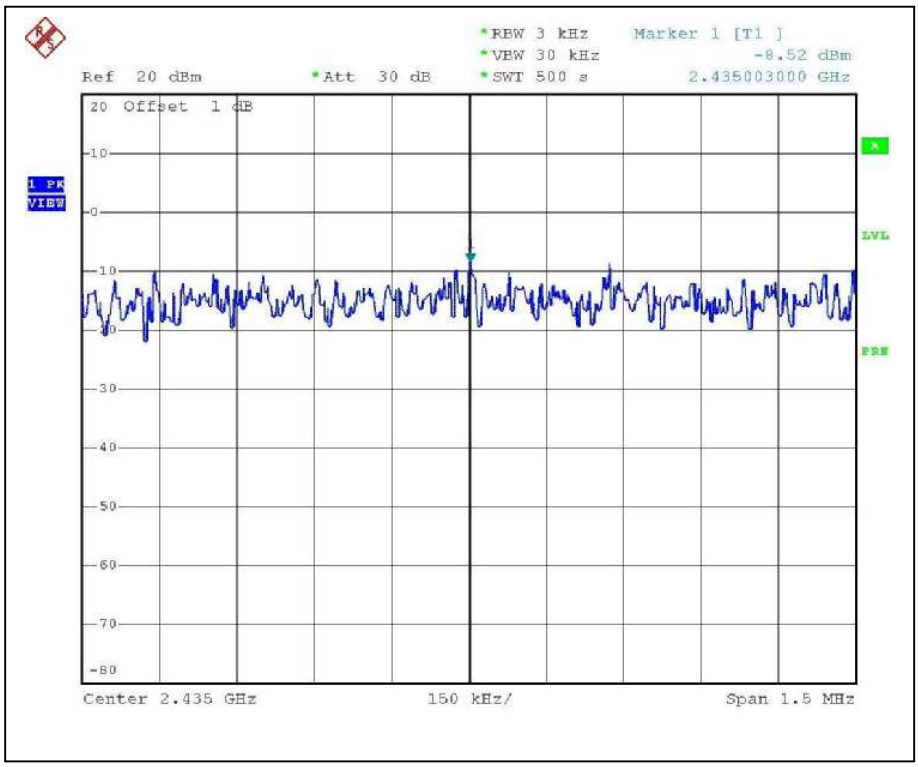
MODULATION TYPE	CCK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-6.33	8	PASS
6	2437	-8.52	8	PASS
11	2462	-7.22	8	PASS

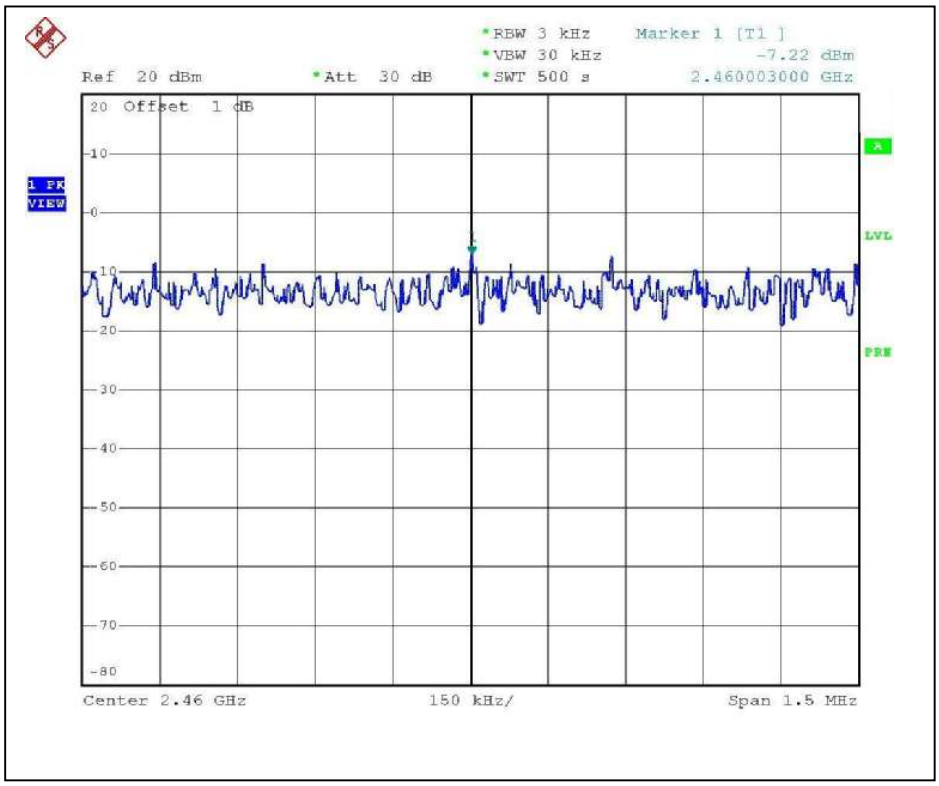
CH1


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-6.33 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.413950000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
PRN
Center 2.41285 GHz
1 MHz/
Span 10 MHz

CH6


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-8.52 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.435003000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
PRN
Center 2.435 GHz
150 kHz/
Span 1.5 MHz

CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-7.22 dBm
2.460003000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
VIEW
A
LVL
PRE
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.46 GHz
150 kHz/
Span 1.5 MHz

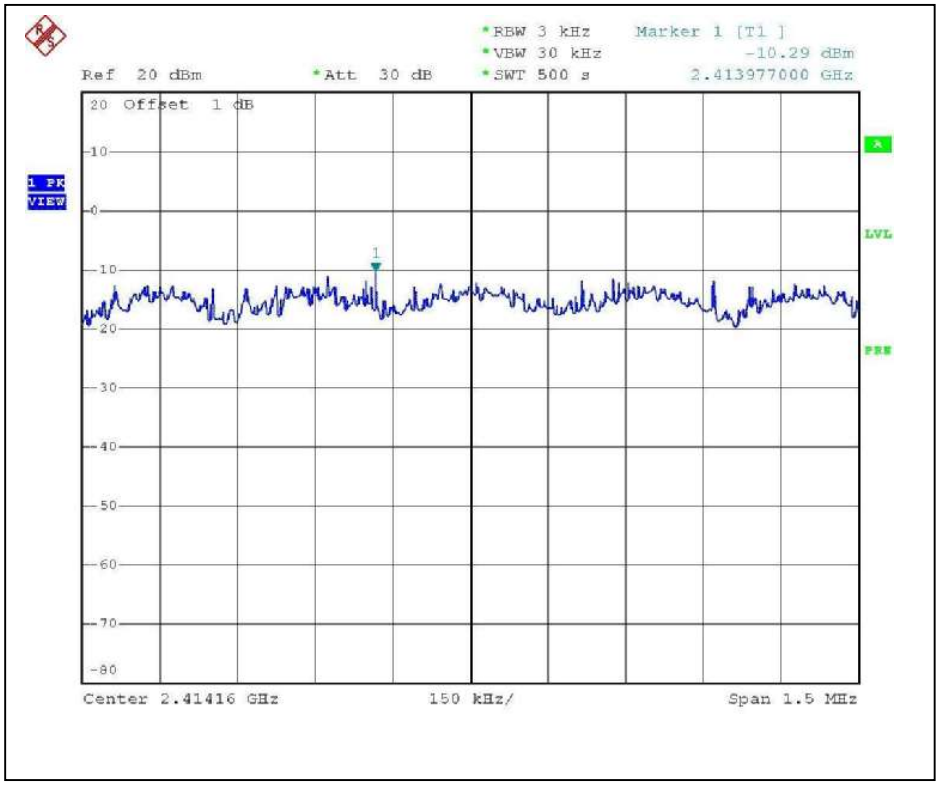
4.5.7 TEST RESULTS –OFDM

802.11g OFDM modulation

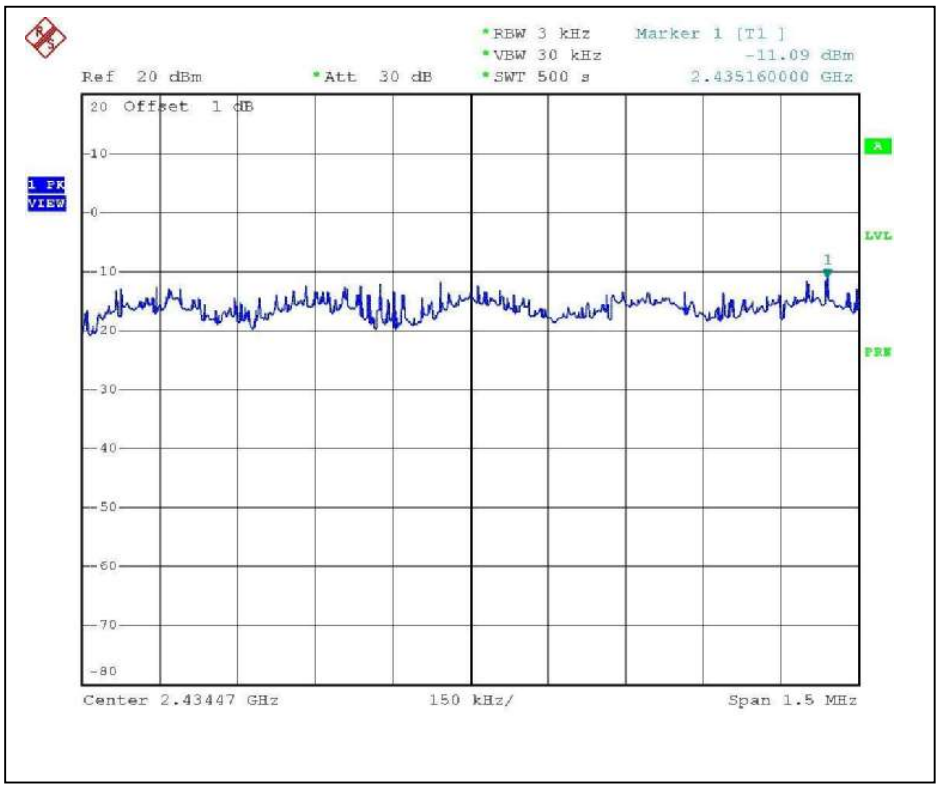
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	27deg. C, 59%RH, 962hPa
TESTED BY	Tony Chen		

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-10.29	8	PASS
6	2437	-11.09	8	PASS
11	2462	-12.57	8	PASS

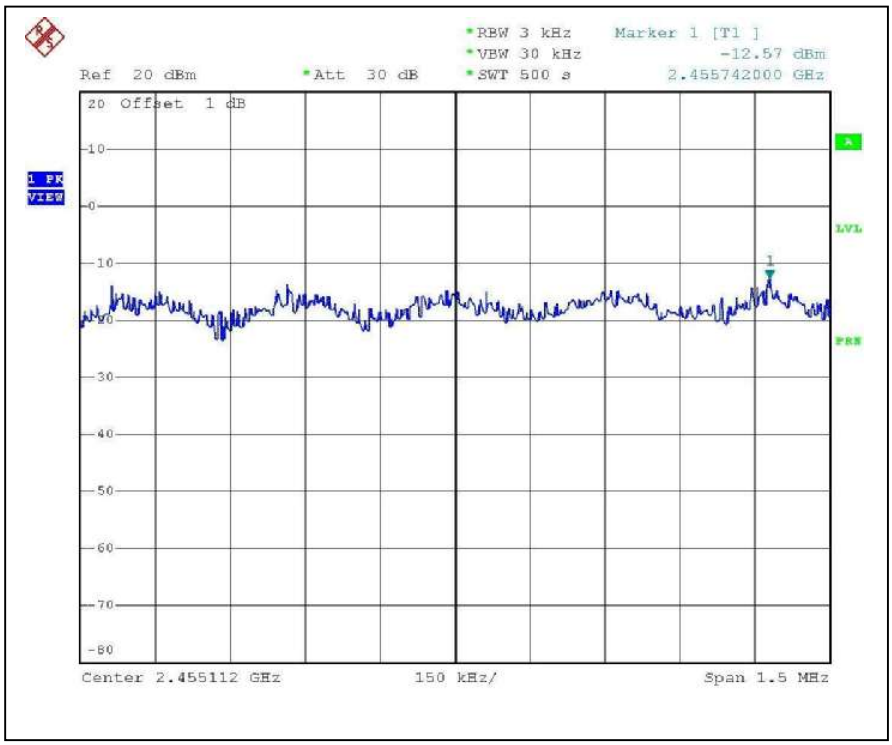
CH1


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-10.29 dBm
2.413977000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK VIEW
LVL
Center 2.41416 GHz
150 kHz/
Span 1.5 MHz

CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-11.09 dBm
2.435160000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK VIEW
LVL
Center 2.43447 GHz
150 kHz/
Span 1.5 MHz

CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-12.57 dBm
2.455742000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK VIEW
LVL
PRN
Center 2.455112 GHz
150 kHz/
Span 1.5 MHz

4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

4.6.1 LIMITS OF CONDTCTED EMISSION AND BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

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

The spectrum plots (RBW = VBW = 100kHz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

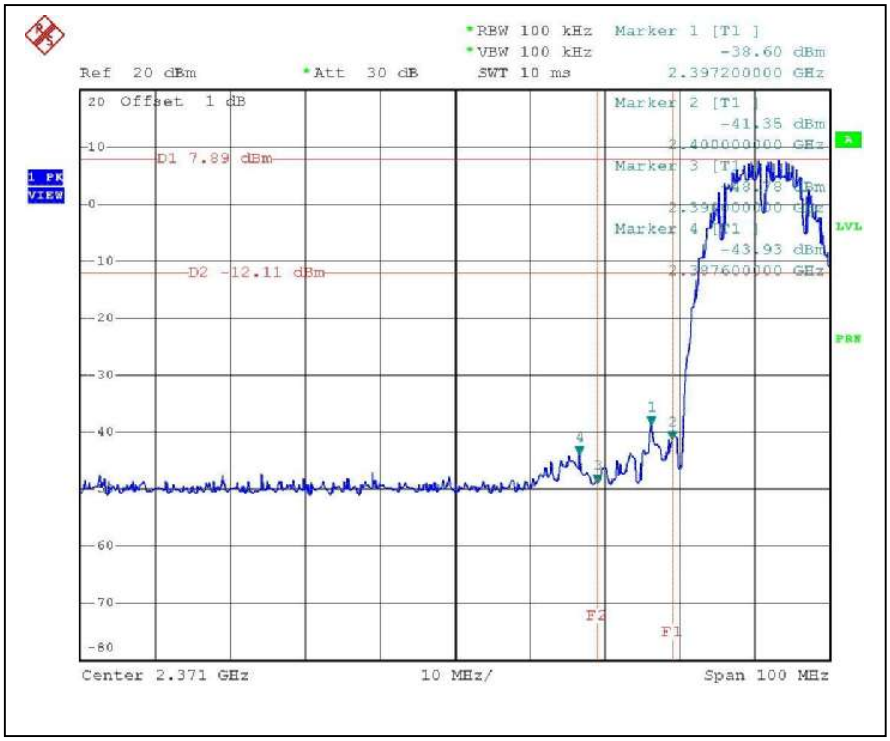
Same as Item 4.3.6

4.6.6 TEST RESULTS

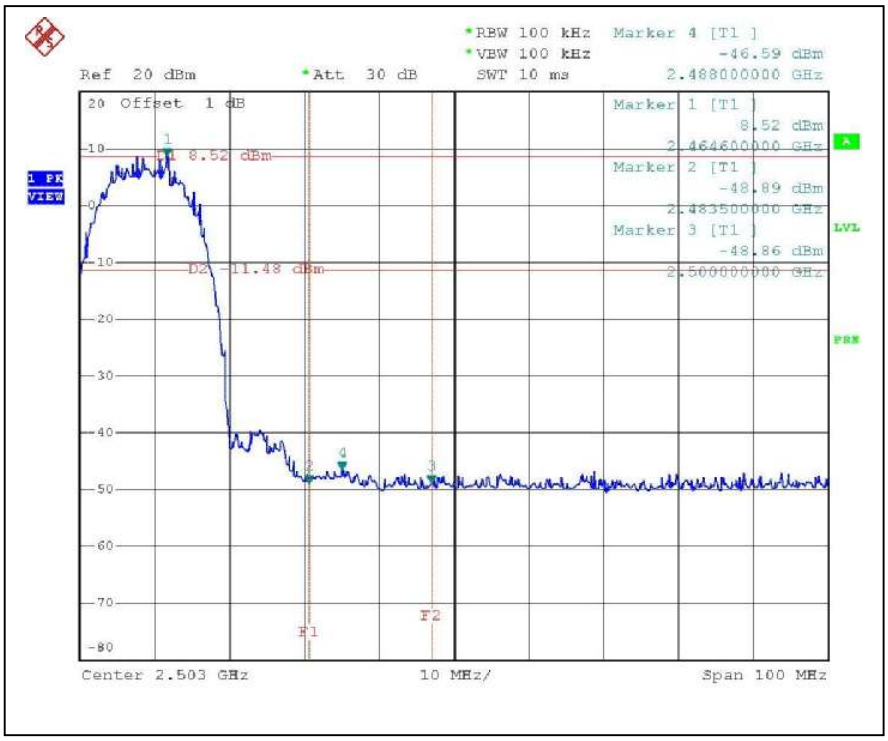
The spectrum plots are attached on the following 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

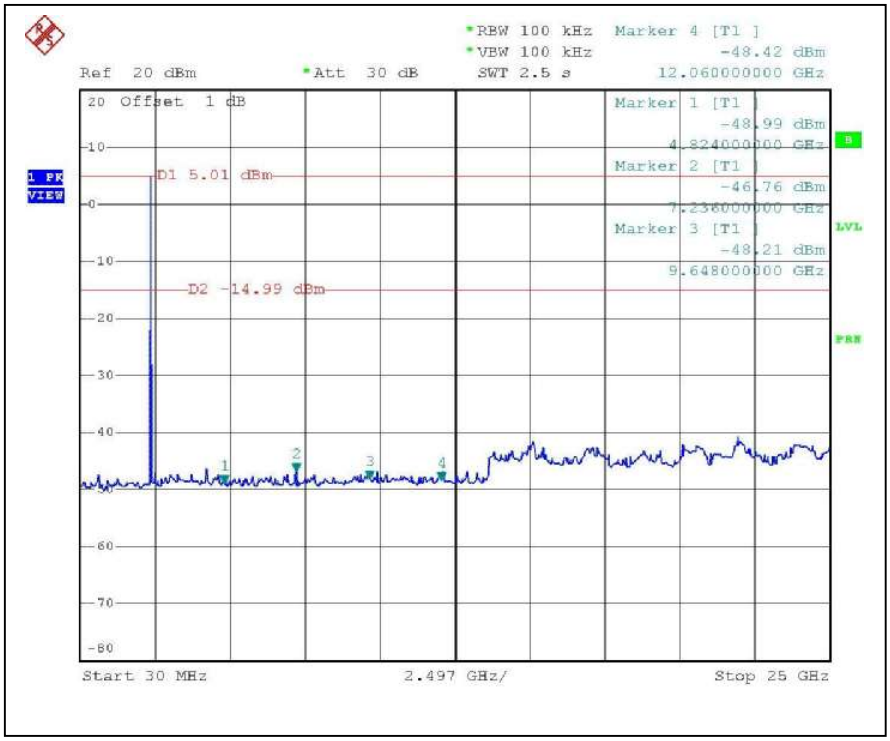
CH1



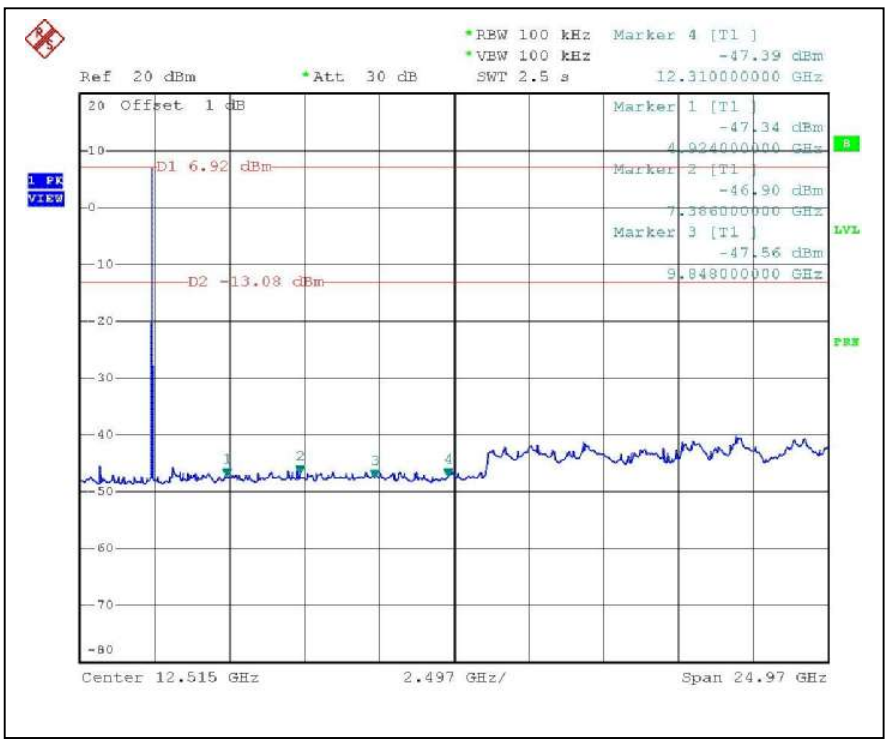
CH11



CH1

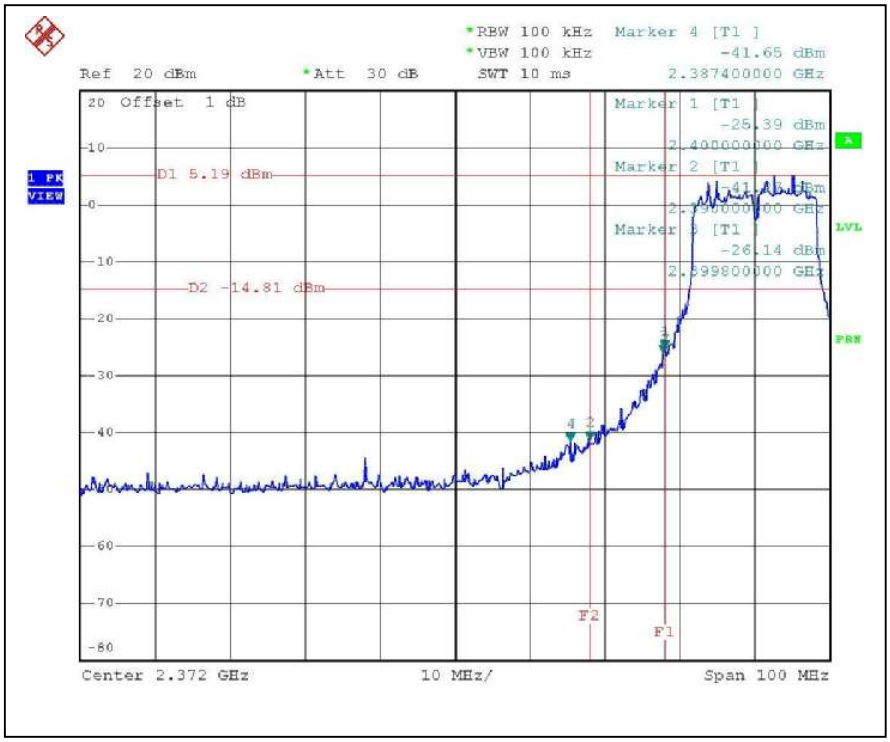

RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-48.42 dBm
12.060000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
D1 5.01 dBm
D2 -14.99 dBm
Marker 1 [T1]
-48.99 dBm
4.824000000 GHz
Marker 2 [T1]
-46.76 dBm
7.236000000 GHz
Marker 3 [T1]
-48.21 dBm
9.648000000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

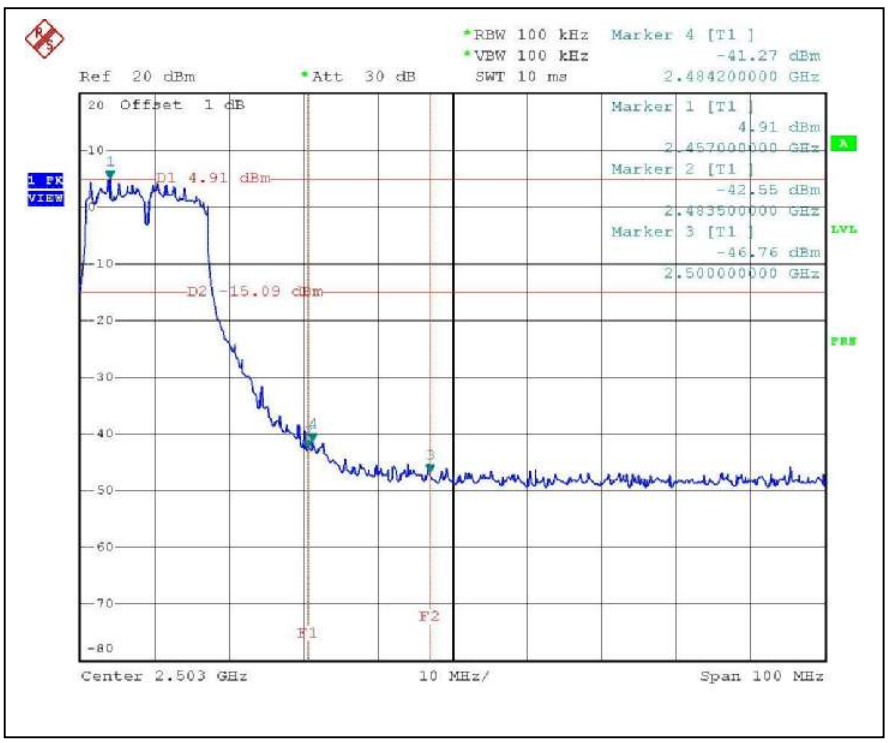

RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-47.39 dBm
12.310000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
D1 6.92 dBm
D2 -13.08 dBm
Marker 1 [T1]
-47.34 dBm
4.924000000 GHz
Marker 2 [T1]
-46.90 dBm
7.386000000 GHz
Marker 3 [T1]
-47.56 dBm
9.848000000 GHz
Center 12.515 GHz
2.497 GHz/
Span 24.97 GHz

802.11g OFDM MODULATION:

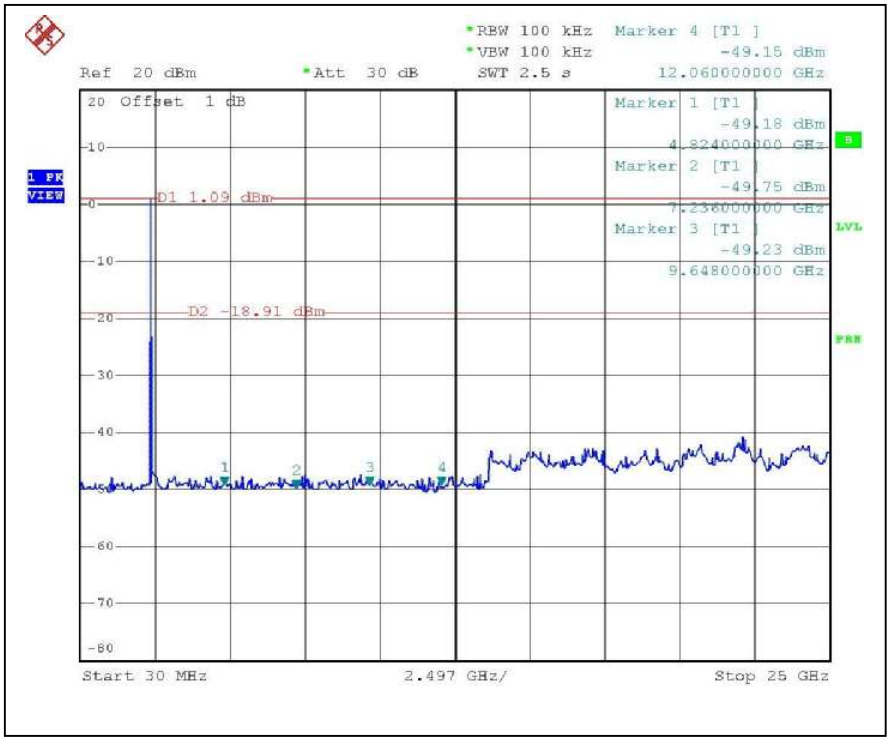
CH1



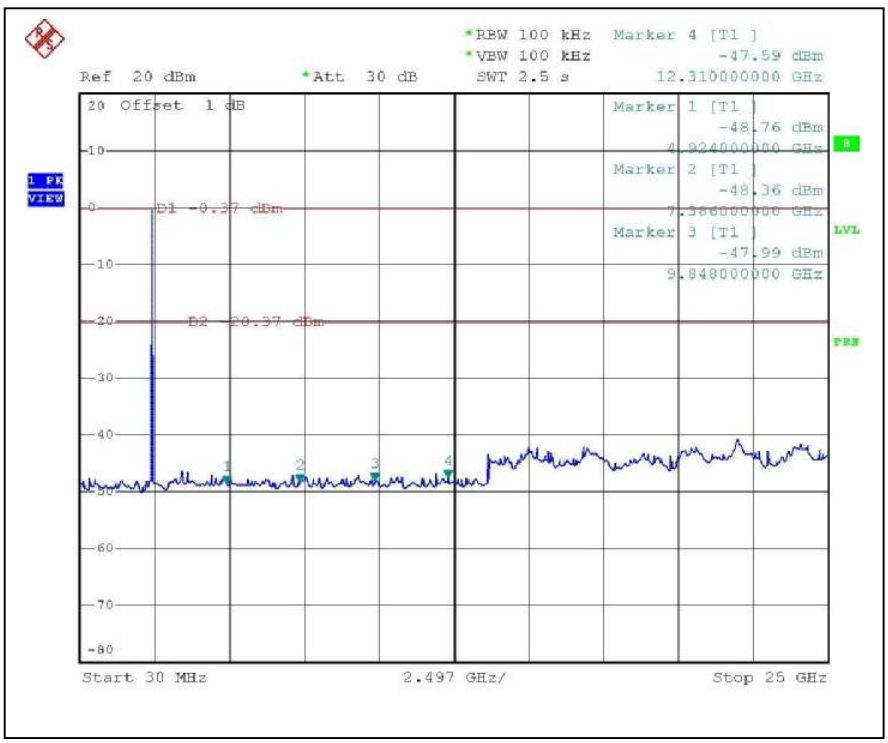
CH11



CH1


RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-49.15 dBm
12.060000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
-49.18 dBm
4.824000000 GHz
Marker 2 [T1]
-49.75 dBm
7.236000000 GHz
Marker 3 [T1]
-49.23 dBm
9.648000000 GHz
D1 1.09 dBm
D2 -18.91 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11


RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-47.59 dBm
12.310000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
-48.76 dBm
4.924000000 GHz
Marker 2 [T1]
-48.36 dBm
7.386000000 GHz
Marker 3 [T1]
-47.99 dBm
9.848000000 GHz
D1 -0.37 dBm
D2 -20.37 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

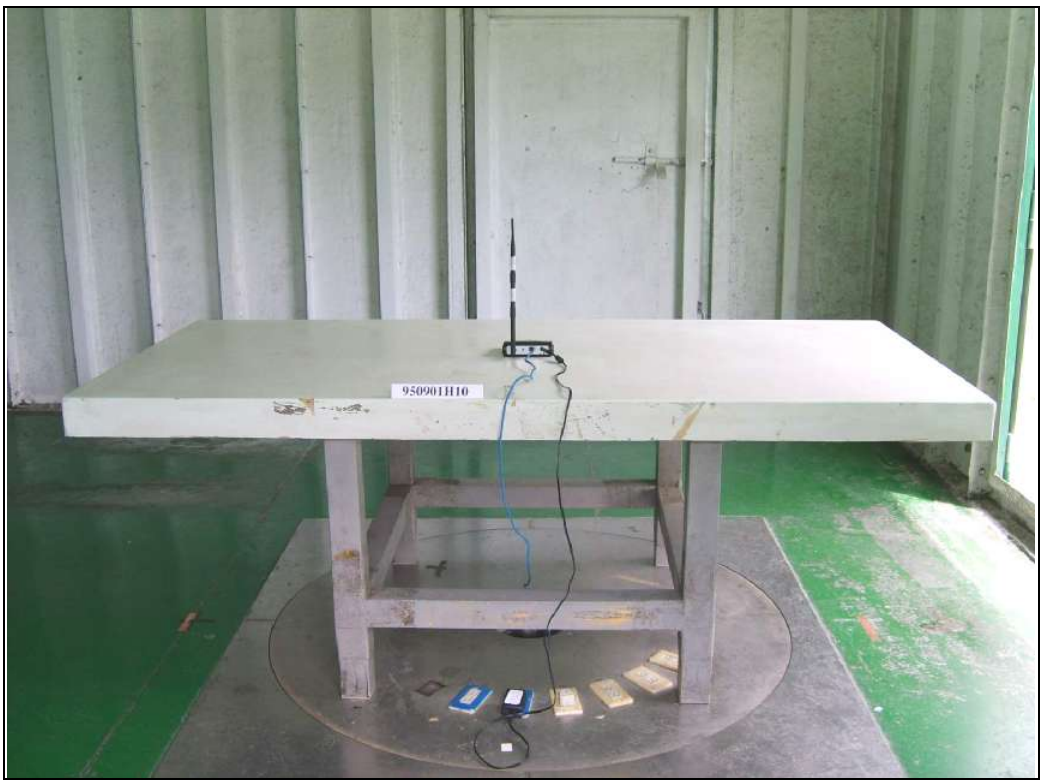
The antennas used in this product are as below:

No.:	Antenna Type	Gain (dBi)	Cable loss (dB)	Net Gain (dBi)	Connector Type
1	Dipole Antenna	9	0.7	8.3	Reverse SMA
2	Dipole Antenna	5	0.7	4.3	Reverse SMA

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST



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

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Tel: 886-3-3183232
Fax: 886-3-3185050

Email: service@adt.com.tw
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.