FCC TEST REPORT

REPORT NO.: RF941020H04B
MODEL NO.: AW-GM120
RECEIVED: Oct. 13, 2006
TESTED: Oct. 16 to Nov. 01, 2006
ISSUED: Nov. 01, 2006

APPLICANT: AzureWave Technologies, Inc.

ADDRESS: 8F, No.94, Baozhong Rd., Xindian, Taipei , Taiwan 231

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.

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0536

No. 2177-01

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1 CERTIFICATION

PRODUCT :	Wireless Digital Media Adapter Module
BRAND NAME :	AzureWave
MODEL NO. :	AW-GM120
TESTED:	Oct. 16 to Nov. 01, 2006
APPLICANT :	AzureWave Technologies, Inc.
TEST ITEM:	MASS-PRODUCTION
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: AW-GM120) 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:** Nov. 01, 2006
(Carol Liao)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Nov. 01, 2006
Responsible for RF
(Hank Chung)

APPROVED BY : , **DATE:** Nov. 01, 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**
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –0.3dB at 2487.20MHz
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

NOTE: This report is prepared for FCC class II permissive change. Only radiated emission, Maximum Peak Output Power and Band Edge Measurement were presented in this test report.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Digital Media Adapter Module
MODEL NO.	AW-GM120
FCC ID	TLZ-GM120
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	BPSK, QPSK, CCK, 16QAM, 64QAM
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	1/2/5.5/6/9/11/12/18/24/36/48/54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
CHANNEL SPACING	5MHz
OUTPUT POWER	802.11b: 57.677mW 802.11g: 55.463mW
ANTENNA TYPE	Please see note 1 (on next page)
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the Report No.:RF941020H04 and RF941020H04A design is as the following:

Antennas of Report No.:RF941020H04				
No.	Antenna Type	Gain (dBi)		Antenna Connector
1	PIFA	3.0		I-PEX
2	1/2 λ Dipole	1.5		MHF
Antennas of Report No.:RF941020H04A				
No.	Antenna Type	Gain (dBi)	Cable lose(dB)	Antenna Connector
1	Dipole	1.8	1.3	SMA Plug Reverse
◆ ***Add three new antennas***				
No.	Antenna Type	Gain (dBi)		Antenna Cable to EUT Connector
1	PCB antenna	-6.15		I-PEX
2	PCB antenna	-6.15		I-PEX
3	Dipole	3.071		I-PEX

From the above antennas, antenna 1 and 3 were selected as representative antennas for the test and its data were recorded in this report.

2. The PCB antennas only used with the following main board:

Brand	**Model No.**
ASUS	AS-862B/BL

3. For Spurious Emissions test, the antenna 1 was pre-tested under the following test modes for three different axes placements:

Test Mode	**Description**
Mode A	X-Y plane
Mode B	X-Z plane
Mode C	Y-Z plane

From the above modes, the worst emission level was found in **Mode A**. Therefore only the test data of the modes were recorded in this report individually.

4. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.

5. The EUT complies with IEEE 802.11g standards, and backwards compatible with IEEE 802.11b products.

6. 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: 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

Radiated Emission Test (Below 1 GHz):

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

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

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

Radiated Emission Test (Above 1 GHz):

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

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

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

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless Digital Media Adapter Module. 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.

3.5 DESCRIPTION OF SUPPORT UNITS

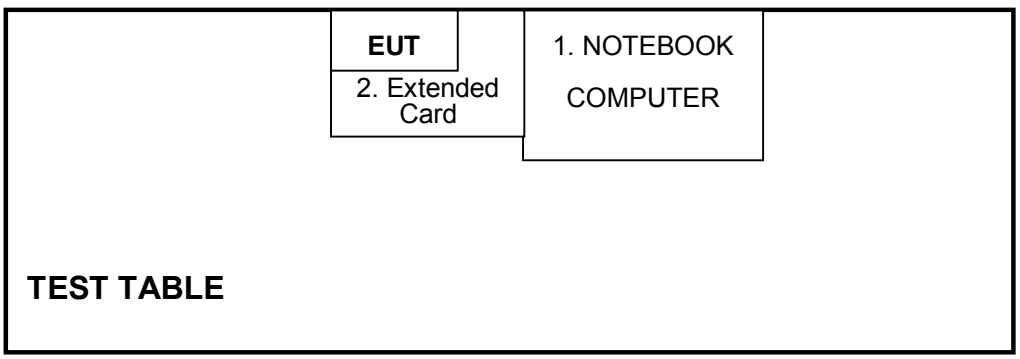
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	Notebook Computer	ASUS	A2400H	49NG038481	NA
2	Extended Card	ADT	NA	ADT-RF-001	NA

No.	Signal cable description
1	NA
2	NA

Note: 1. All power cords of the above support units are unshielded (1.8m).

3.6 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Please refer to the photos of test configuration in Item 5 also.

4 TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 03, 2007
HP Pre_Amplifier	8449B	3008A01922	Sep. 18, 2007
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Sep. 20, 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-1 GHz	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)

4.1.3 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.

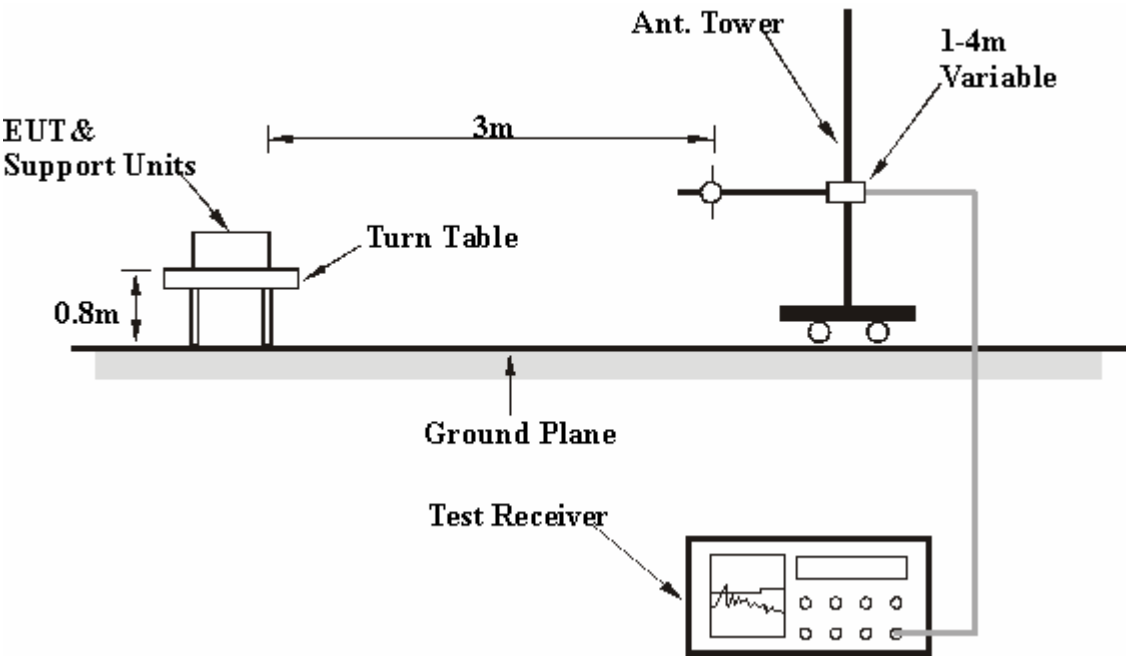
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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 is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) 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.

4.1.4 TEST SETUP



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

4.1.5 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.1.6 TEST RESULTS (ANTENNA 1)

Below 1GHz Worst-Case Data

MODE	Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

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	66.33	31.20 QP	40.00	-8.80	1.02 H	144	24.30	6.90
2	166.05	41.50 QP	43.50	-2.00	1.11 H	352	30.70	10.90
3	232.68	41.30 QP	46.00	-4.70	1.01 H	355	28.50	12.90
4	266.46	44.80 QP	46.00	-1.20	1.11 H	227	29.60	15.10
5	589.82	43.80 QP	46.00	-2.20	1.38 H	203	21.80	22.00
6	665.76	33.40 QP	46.00	-12.60	1.23 H	256	10.50	22.90
7	799.50	34.70 QP	46.00	-11.30	1.18 H	348	10.00	24.60
8	924.99	34.90 QP	46.00	-11.10	1.43 H	123	8.90	26.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.16	35.50 QP	40.00	-4.50	1.12 V	341	17.60	17.90
2	66.20	38.20 QP	40.00	-1.80	1.00 V	244	31.30	6.90
3	166.48	38.80 QP	43.50	-4.70	1.00 V	34	27.90	10.90
4	233.13	37.70 QP	46.00	-8.30	1.02 V	245	24.80	12.90
5	266.46	41.00 QP	46.00	-5.00	1.10 V	22	25.90	15.10
6	589.82	39.00 QP	46.00	-7.00	1.28 V	144	17.00	22.00
7	664.46	32.20 QP	46.00	-13.80	1.15 V	120	9.30	22.90
8	800.00	31.50 QP	46.00	-14.50	1.04 V	331	6.90	24.60
9	924.99	39.50 QP	46.00	-6.50	1.08 V	345	13.50	26.00

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

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	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

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	59.00 PK	74.00	-15.00	1.36 H	19	28.70	30.30
1	2389.00	50.00 AV	54.00	-4.00	1.36 H	19	19.70	30.30
2	*2412.00	114.00 PK			1.32 H	22	83.60	30.40
2	*2412.00	106.20 AV			1.32 H	22	75.80	30.40
3	3216.00	54.30 PK	74.00	-19.70	1.91 H	180	22.00	32.30
3	3216.00	51.90 AV	54.00	-2.10	1.91 H	180	19.60	32.30
4	4824.00	48.40 PK	74.00	-25.60	1.32 H	195	12.70	35.70
4	4824.00	40.60 AV	54.00	-13.40	1.32 H	195	4.90	35.70
5	7236.00	51.30 PK	74.00	-22.70	1.35 H	167	10.00	41.30
5	7236.00	38.10 AV	54.00	-15.90	1.35 H	167	-3.20	41.30

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	2390.00	55.10 PK	74.00	-18.90	1.41 V	30	24.80	30.30
1	2390.00	43.90 AV	54.00	-10.10	1.41 V	30	13.60	30.30
2	*2412.00	98.70 PK			1.40 V	32	68.30	30.40
2	*2412.00	90.50 AV			1.40 V	32	60.10	30.40
3	3216.00	53.00 PK	74.00	-21.00	1.83 V	0	20.70	32.30
3	3216.00	51.60 AV	54.00	-2.40	1.83 V	0	19.30	32.30
4	4824.00	50.00 PK	74.00	-24.00	1.06 V	20	14.30	35.70
4	4824.00	43.50 AV	54.00	-10.50	1.06 V	20	7.80	35.70
5	7236.00	51.80 PK	74.00	-22.20	1.29 V	318	10.50	41.30
5	7236.00	39.20 AV	54.00	-14.80	1.29 V	318	-2.10	41.30

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.
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	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

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	114.90 PK			1.08 H	0	84.40	30.50
1	*2437.00	106.70 AV			1.08 H	0	76.20	30.50
2	3249.00	51.20 PK	74.00	-22.80	1.91 H	176	18.90	32.30
2	3249.00	47.80 AV	54.00	-6.20	1.91 H	176	15.50	32.30
3	4874.00	46.20 PK	74.00	-27.80	1.54 H	0	10.30	35.90
3	4874.00	38.00 AV	54.00	-16.00	1.54 H	0	2.10	35.90
4	7311.00	51.60 PK	74.00	-22.40	1.30 H	187	10.10	41.50
4	7311.00	38.40 AV	54.00	-15.60	1.30 H	187	-3.10	41.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	98.50 PK			1.62 V	23	68.00	30.50
1	*2437.00	90.40 AV			1.62 V	23	59.90	30.50
2	3249.00	52.10 PK	74.00	-21.90	1.49 V	265	19.80	32.30
2	3249.00	49.70 AV	54.00	-4.30	1.49 V	265	17.40	32.30
3	4874.00	49.30 PK	74.00	-24.70	1.45 V	229	13.40	35.90
3	4874.00	43.80 AV	54.00	-10.20	1.45 V	229	7.90	35.90
4	7311.00	52.30 PK	74.00	-21.70	1.28 V	330	10.80	41.50
4	7311.00	39.20 AV	54.00	-14.80	1.28 V	330	-2.30	41.50

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

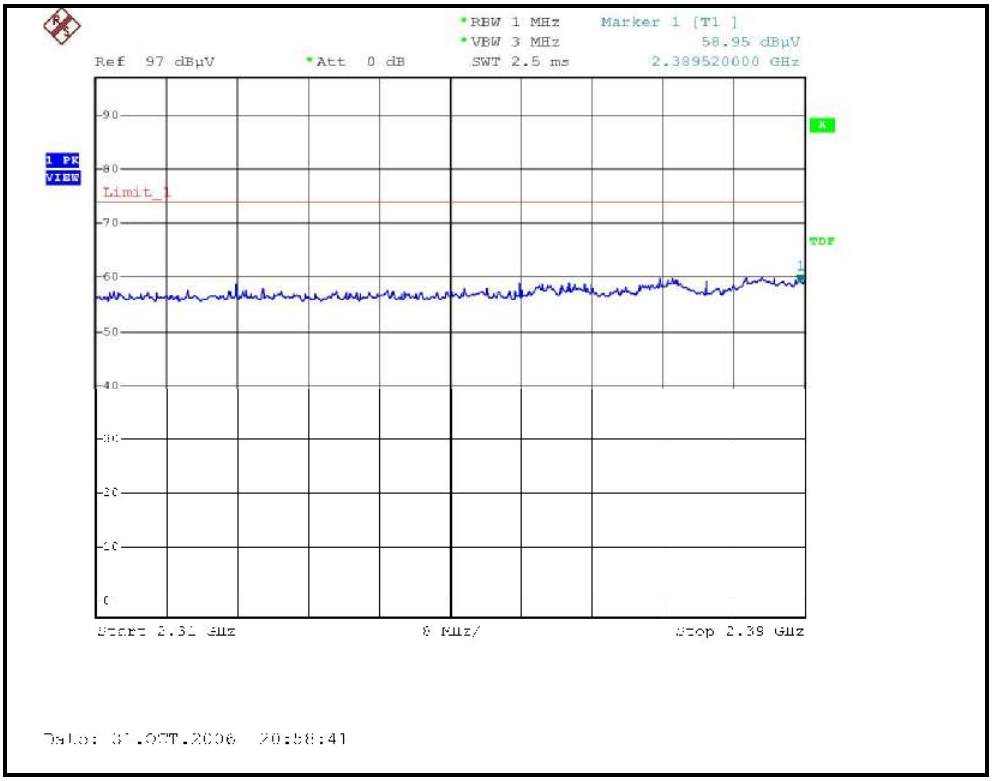
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

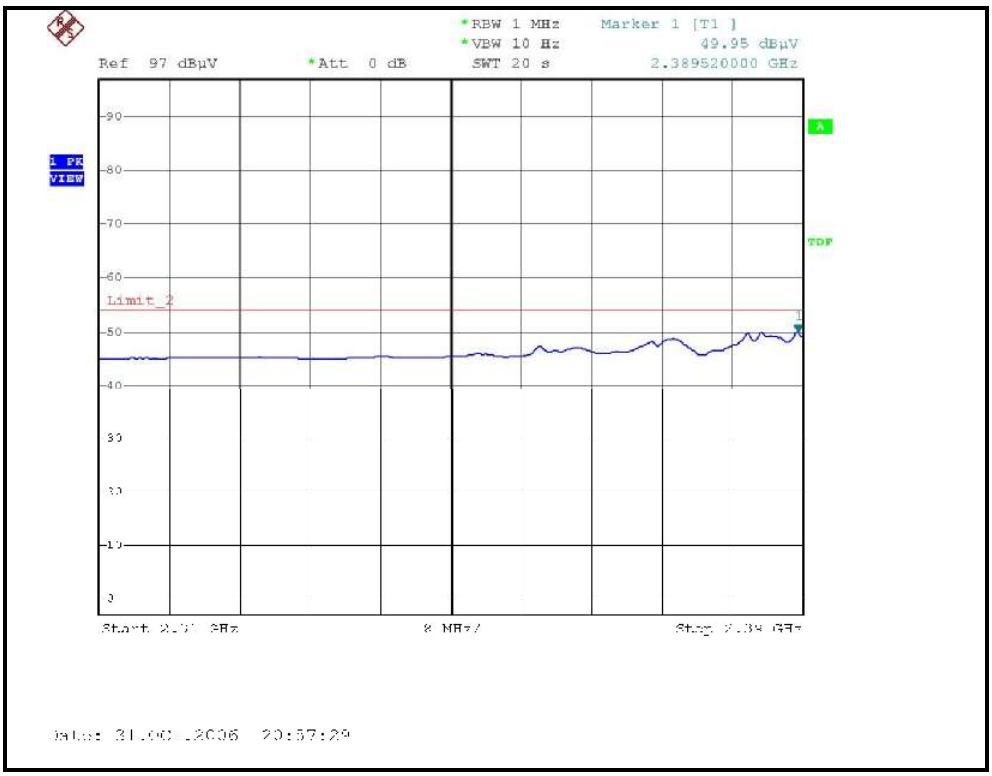
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	115.50 PK			1.03 H	3	84.90	30.60
1	*2462.00	107.20 AV			1.03 H	3	76.60	30.60
2	2488.00	60.00 PK	74.00	-14.00	1.04 H	7	29.30	30.70
2	2488.00	50.10 AV	54.00	-3.90	1.04 H	7	19.40	30.70
3	3282.00	49.60 PK	74.00	-24.40	1.86 H	181	17.30	32.40
3	3282.00	45.20 AV	54.00	-8.80	1.86 H	181	12.90	32.40
4	4924.00	43.30 PK	74.00	-30.70	1.37 H	351	7.20	36.00
4	4924.00	35.20 AV	54.00	-18.80	1.37 H	351	-0.90	36.00
5	7386.00	51.90 PK	74.00	-22.10	1.31 H	192	10.30	41.60
5	7386.00	38.80 AV	54.00	-15.20	1.31 H	192	-2.80	41.60

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	99.20 PK			1.66 V	30	68.60	30.60
1	*2462.00	90.80 AV			1.66 V	30	60.20	30.60
2	2483.50	55.20 PK	74.00	-18.80	1.64 V	25	24.50	30.70
2	2483.50	44.10 AV	54.00	-9.90	1.64 V	25	13.40	30.70
3	3282.00	51.10 PK	74.00	-22.90	1.87 V	205	18.80	32.40
3	3282.00	48.30 AV	54.00	-5.70	1.87 V	205	16.00	32.40
4	4924.00	48.50 PK	74.00	-25.50	1.38 V	227	12.40	36.00
4	4924.00	41.30 AV	54.00	-12.70	1.38 V	227	5.20	36.00
5	7386.00	52.60 PK	74.00	-21.40	1.31 V	319	11.00	41.60
5	7386.00	39.40 AV	54.00	-14.60	1.31 V	319	-2.20	41.60

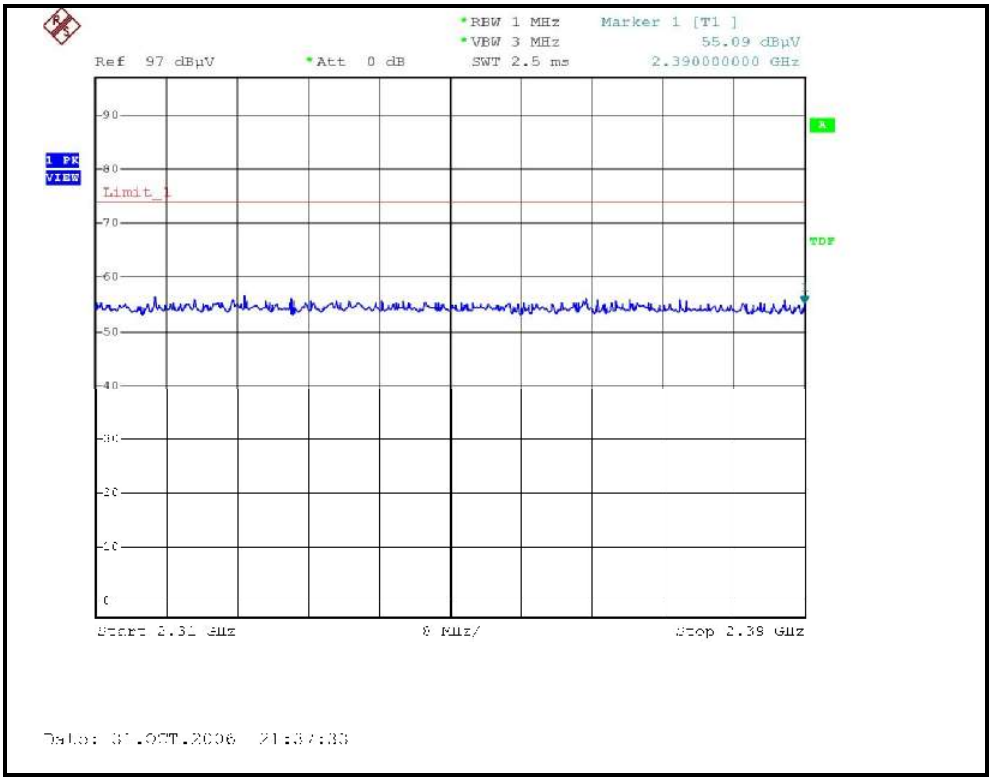
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

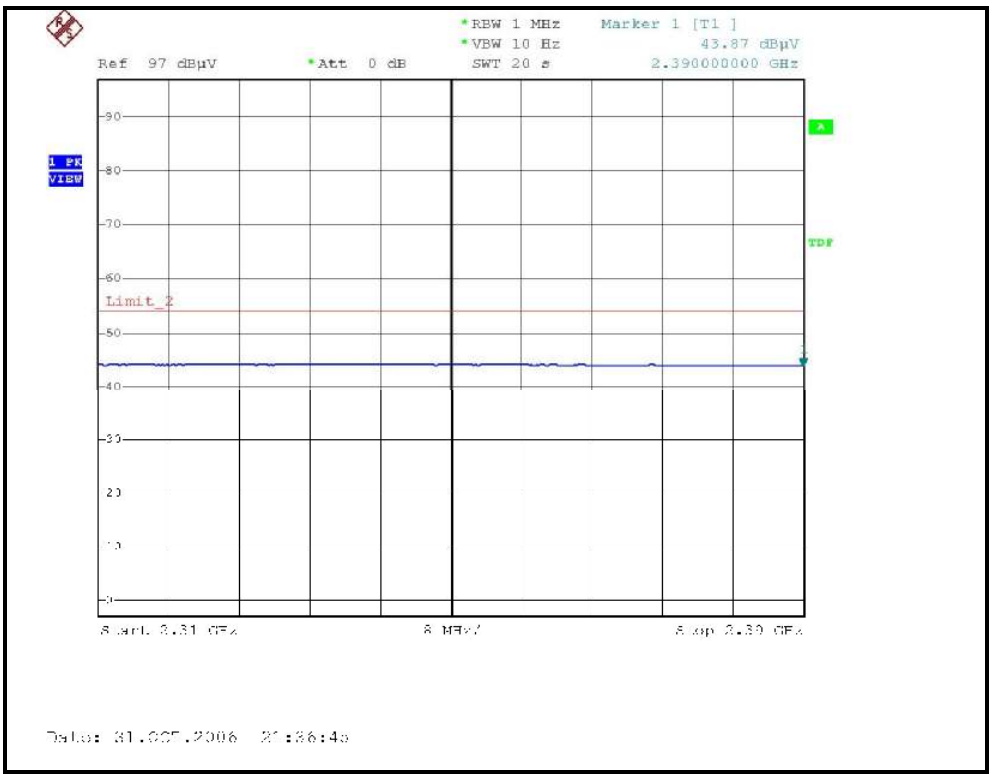
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)



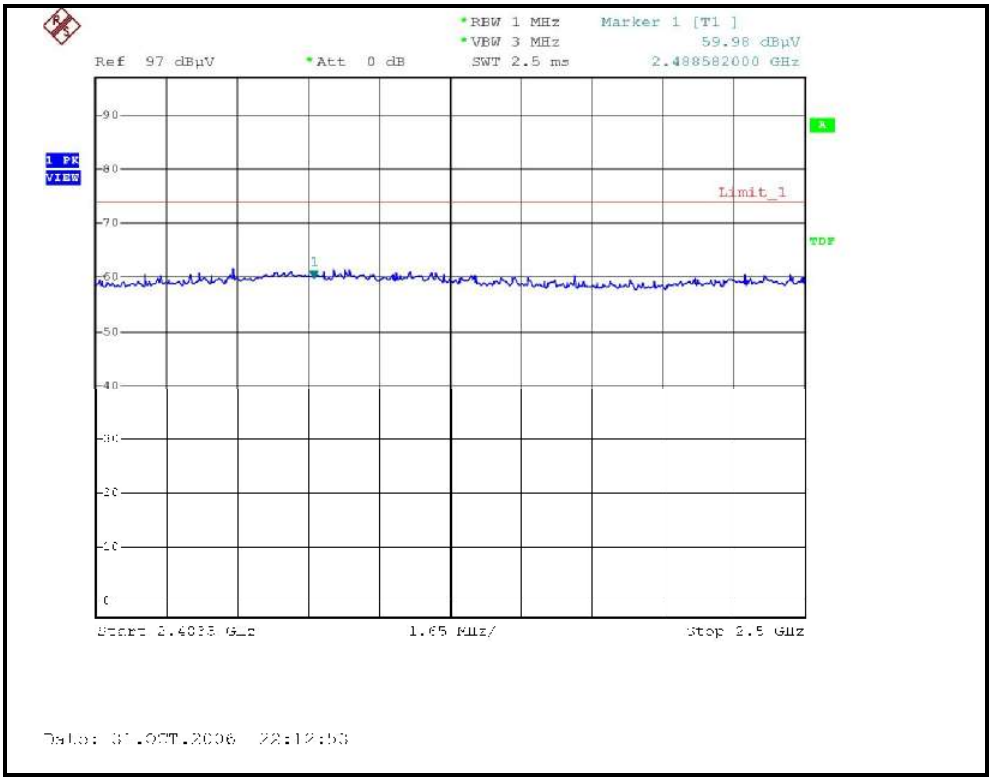


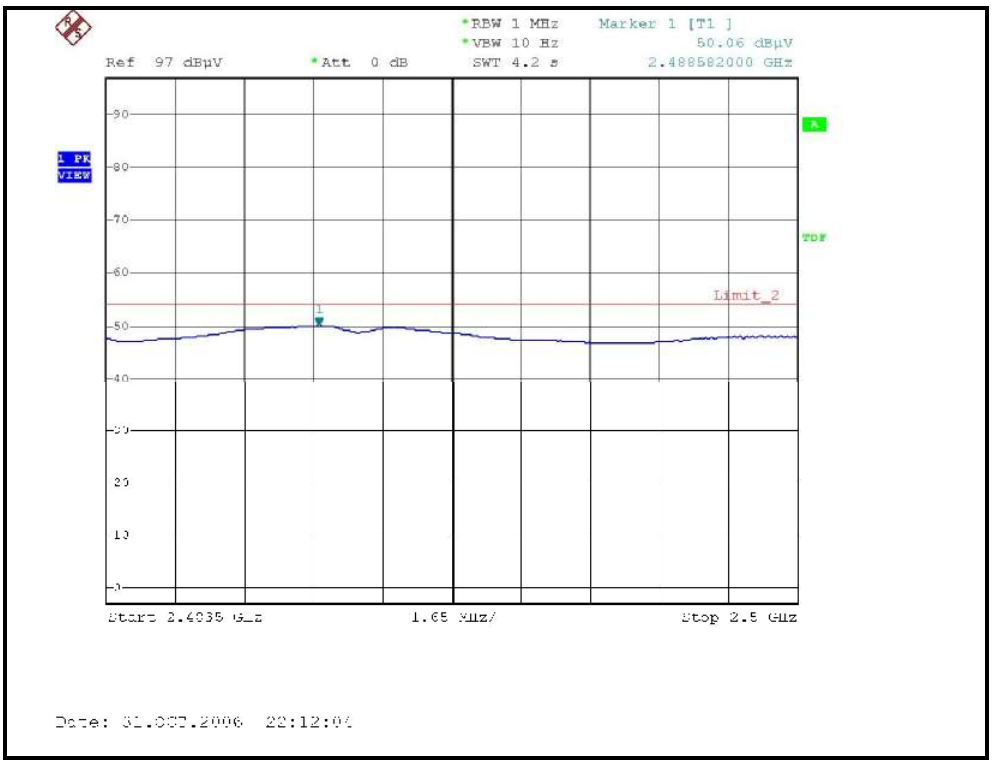
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)



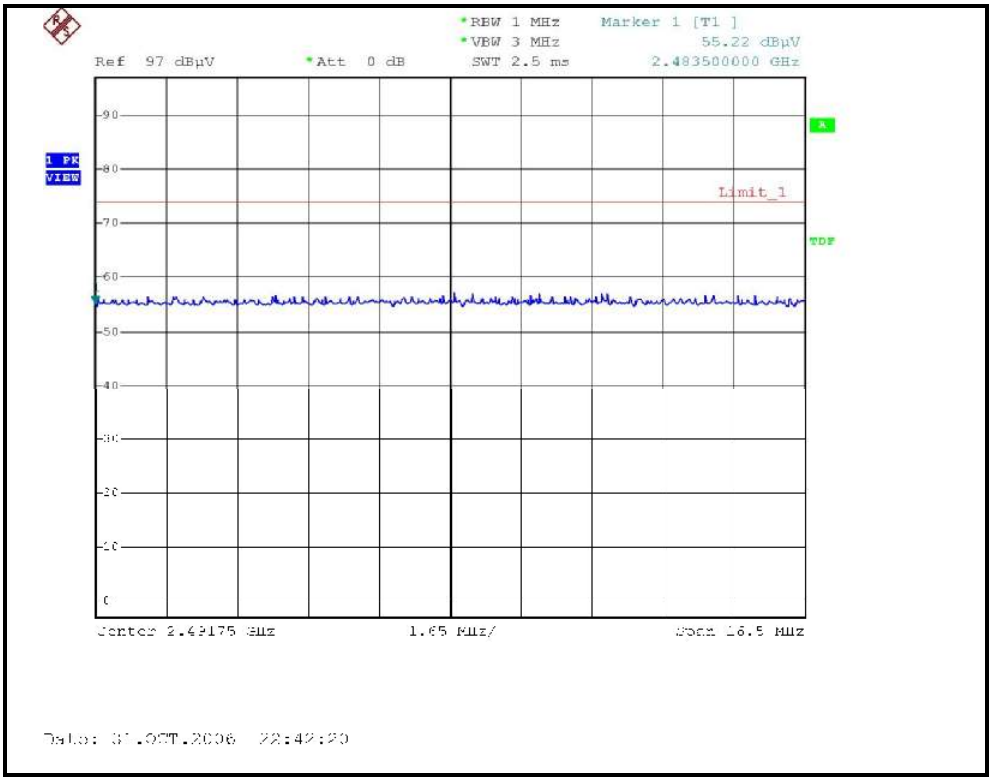


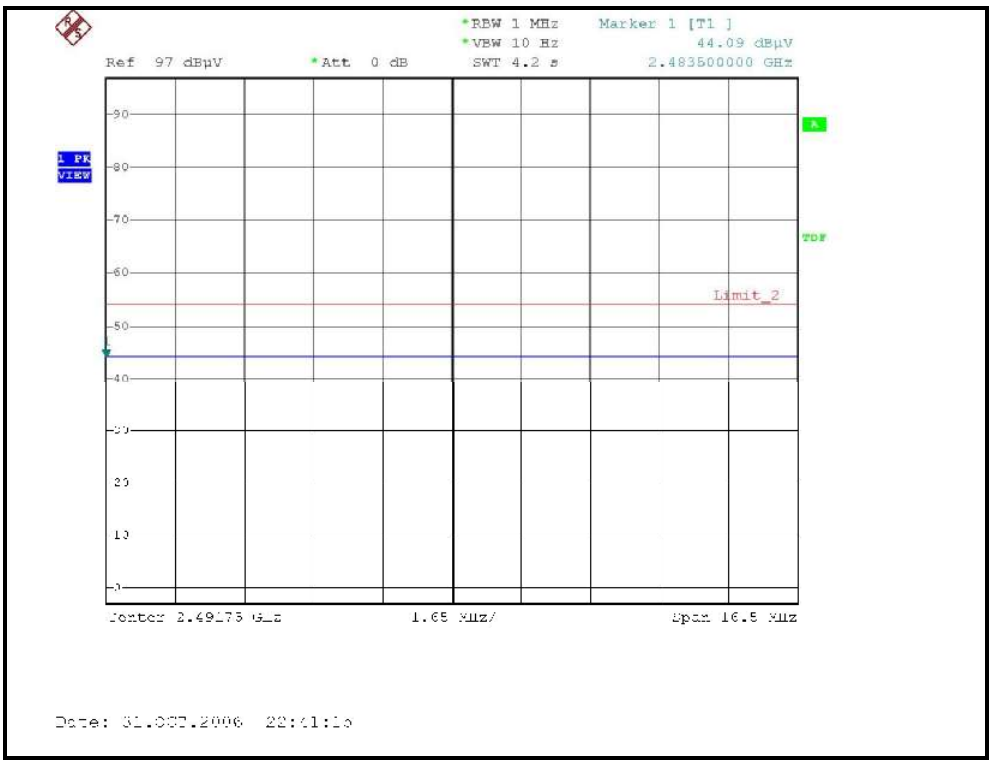
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g 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	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

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	71.30 PK	74.00	-2.70	1.55 H	11	41.00	30.30
1	2390.00	53.00 AV	54.00	-1.00	1.55 H	11	22.70	30.30
2	*2412.00	110.70 PK			1.57 H	13	80.30	30.40
2	*2412.00	100.50 AV			1.57 H	13	70.10	30.40
3	3216.00	49.30 PK	74.00	-24.70	1.65 H	178	17.00	32.30
3	3216.00	45.80 AV	54.00	-8.20	1.65 H	178	13.50	32.30
4	4824.00	45.70 PK	74.00	-28.30	1.19 H	267	10.00	35.70
4	4824.00	32.10 AV	54.00	-21.90	1.19 H	267	-3.60	35.70
5	7236.00	52.20 PK	74.00	-21.80	1.32 H	298	10.90	41.30
5	7236.00	38.40 AV	54.00	-15.60	1.32 H	298	-2.90	41.30

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	2390.00	57.30 PK	74.00	-16.70	1.53 V	268	27.00	30.30
1	2390.00	44.80 AV	54.00	-9.20	1.53 V	268	14.50	30.30
2	*2412.00	97.90 PK			1.51 V	149	67.50	30.40
2	*2412.00	87.50 AV			1.51 V	149	57.10	30.40
3	3216.00	50.60 PK	74.00	-23.40	1.98 V	30	18.30	32.30
3	3216.00	46.90 AV	54.00	-7.10	1.98 V	30	14.60	32.30
4	4824.00	45.20 PK	74.00	-28.80	1.04 V	322	9.50	35.70
4	4824.00	31.90 AV	54.00	-22.10	1.04 V	322	-3.80	35.70
5	7236.00	50.80 PK	74.00	-23.20	1.35 V	56	9.50	41.30
5	7236.00	37.70 AV	54.00	-16.30	1.35 V	56	-3.60	41.30

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.
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	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

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	110.90 PK			1.04 H	0	80.40	30.50
1	*2437.00	100.20 AV			1.04 H	0	69.70	30.50
2	3249.00	49.40 PK	74.00	-24.60	1.70 H	181	17.10	32.30
2	3249.00	45.30 AV	54.00	-8.70	1.70 H	181	13.00	32.30
3	4874.00	46.00 PK	74.00	-28.00	1.17 H	256	10.10	35.90
3	4874.00	32.40 AV	54.00	-21.60	1.17 H	256	-3.50	35.90
4	7311.00	52.20 PK	74.00	-21.80	1.22 H	316	10.70	41.50
4	7311.00	38.50 AV	54.00	-15.50	1.22 H	316	-3.00	41.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	96.80 PK			1.60 V	31	66.30	30.50
1	*2437.00	86.70 AV			1.60 V	31	56.20	30.50
2	3249.00	50.30 PK	74.00	-23.70	2.00 V	35	18.00	32.30
2	3249.00	45.70 AV	54.00	-8.30	2.00 V	35	13.40	32.30
3	4874.00	45.30 PK	74.00	-28.70	1.06 V	318	9.40	35.90
3	4874.00	32.00 AV	54.00	-22.00	1.06 V	318	-3.90	35.90
4	7311.00	51.10 PK	74.00	-22.90	1.30 V	48	9.60	41.50
4	7311.00	38.00 AV	54.00	-16.00	1.30 V	48	-3.50	41.50

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

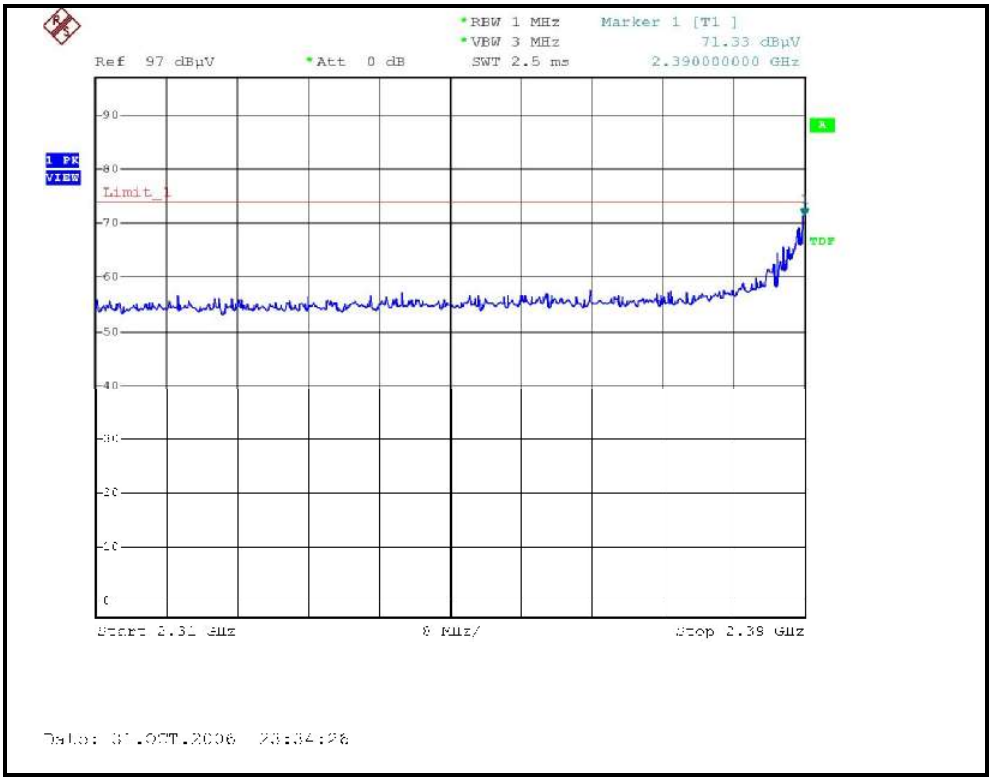
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 60%RH, 970 hPa	**TESTED BY**	Wen Yu

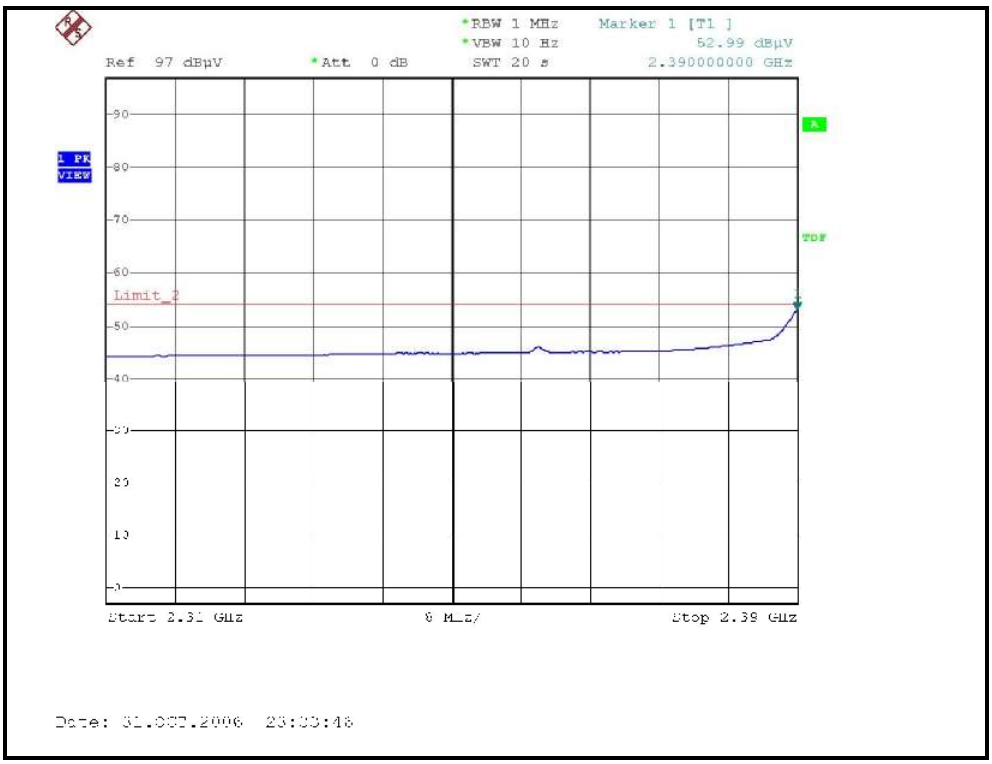
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	111.90 PK			1.02 H	0	81.30	30.60
1	*2462.00	100.80 AV			1.02 H	0	70.20	30.60
2	2483.50	71.40 PK	74.00	-2.60	1.00 H	0	40.70	30.70
2	2483.50	52.70 AV	54.00	-1.30	1.00 H	0	22.00	30.70
3	3282.00	47.90 PK	74.00	-26.10	1.65 H	177	15.60	32.40
3	3282.00	43.00 AV	54.00	-11.00	1.65 H	177	10.70	32.40
4	4924.00	46.00 PK	74.00	-28.00	1.12 H	278	9.90	36.00
4	4924.00	32.50 AV	54.00	-21.50	1.12 H	278	-3.60	36.00
5	7386.00	52.20 PK	74.00	-21.80	1.25 H	300	10.60	41.60
5	7386.00	38.60 AV	54.00	-15.40	1.25 H	300	-3.00	41.60

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	97.30 PK			1.62 V	28	66.70	30.60
1	*2462.00	87.10 AV			1.62 V	28	56.50	30.60
2	2483.50	54.70 PK	74.00	-19.30	1.66 V	30	24.00	30.70
2	2483.50	44.10 AV	54.00	-9.90	1.66 V	30	13.40	30.70
3	3282.00	48.40 PK	74.00	-25.60	2.03 V	27	16.10	32.40
3	3282.00	43.20 AV	54.00	-10.80	2.03 V	27	10.90	32.40
4	4924.00	45.50 PK	74.00	-28.50	1.05 V	328	9.40	36.00
4	4924.00	32.20 AV	54.00	-21.80	1.05 V	328	-3.90	36.00
5	7386.00	51.10 PK	74.00	-22.90	1.32 V	35	9.50	41.60
5	7386.00	38.10 AV	54.00	-15.90	1.32 V	35	-3.50	41.60

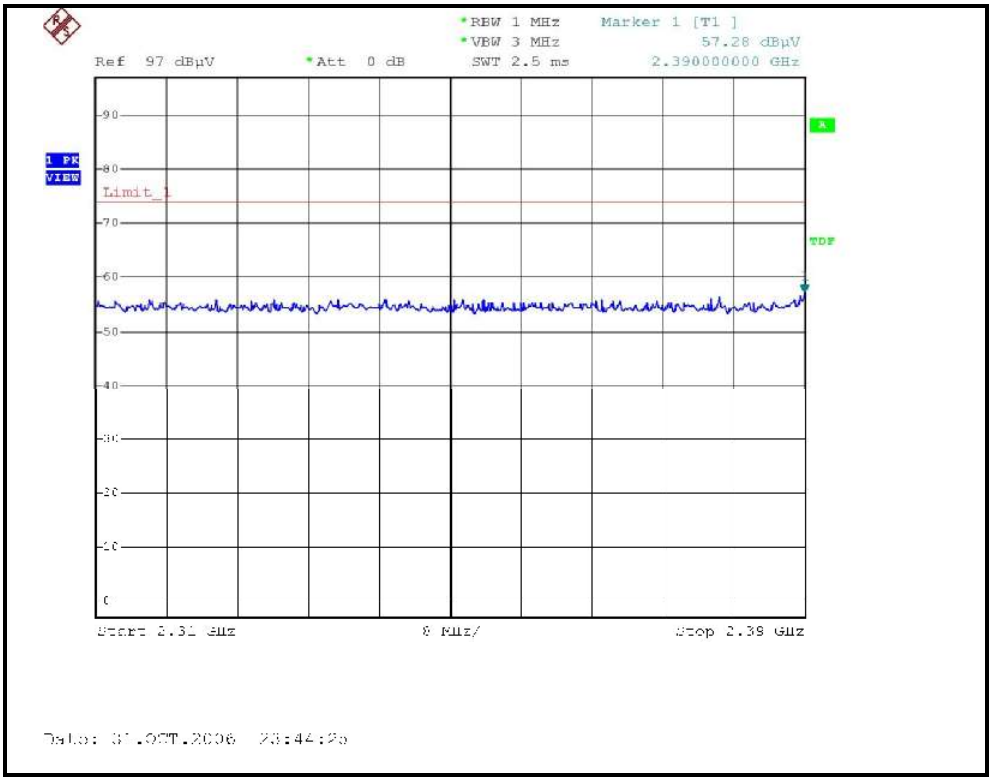
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

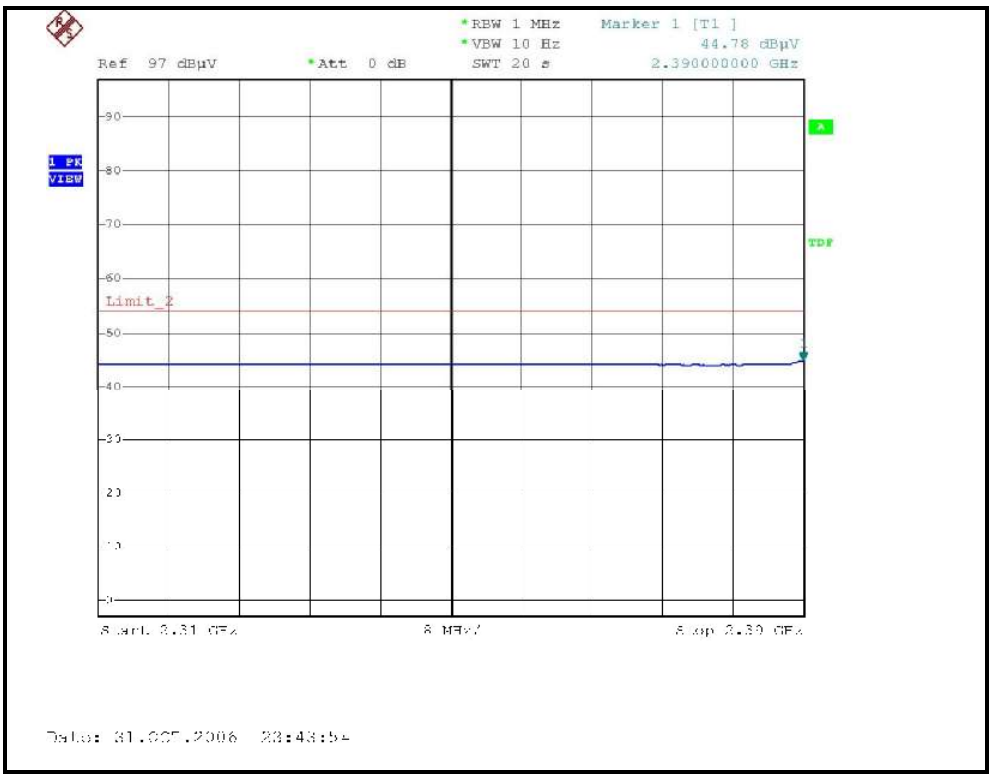
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



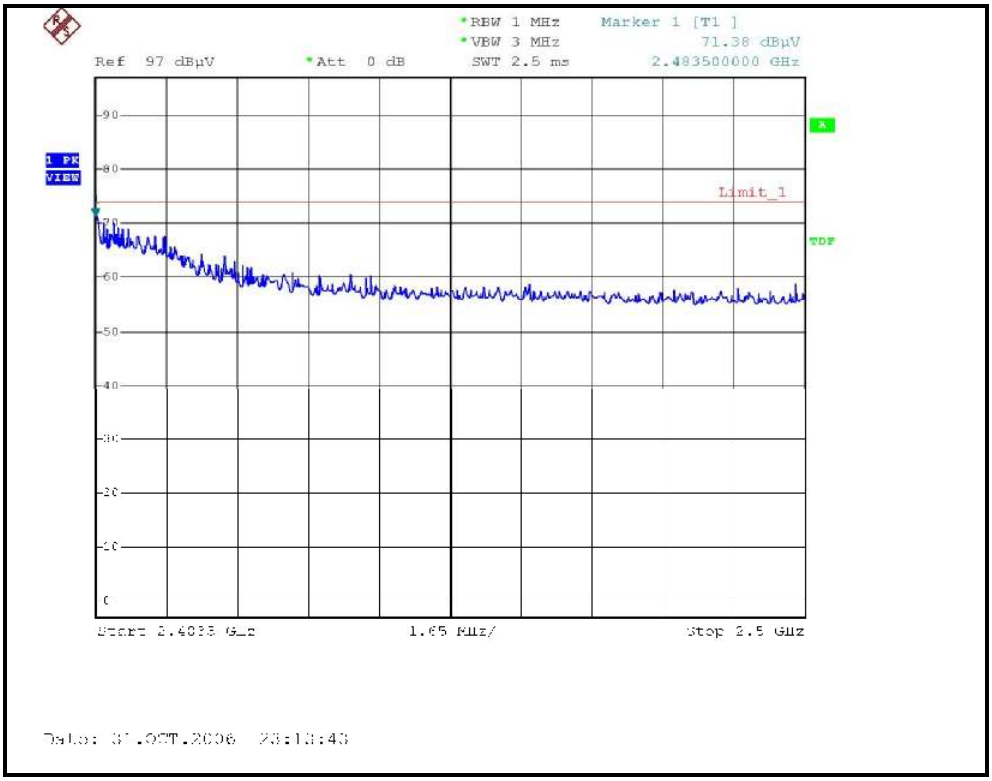


RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)

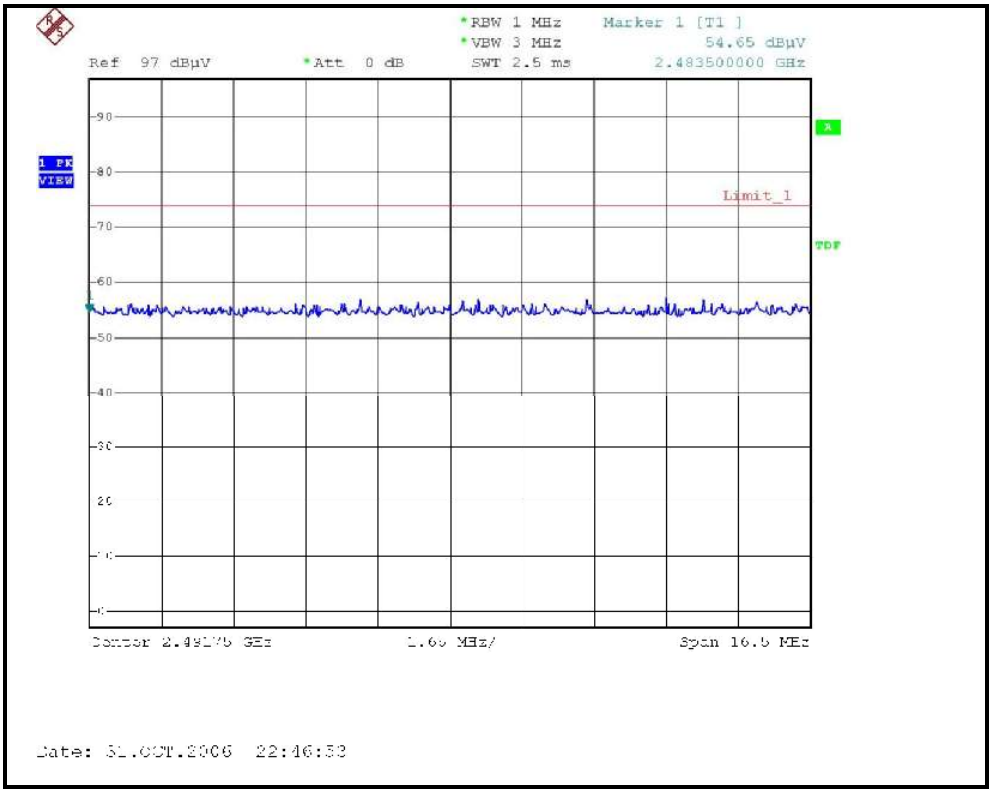


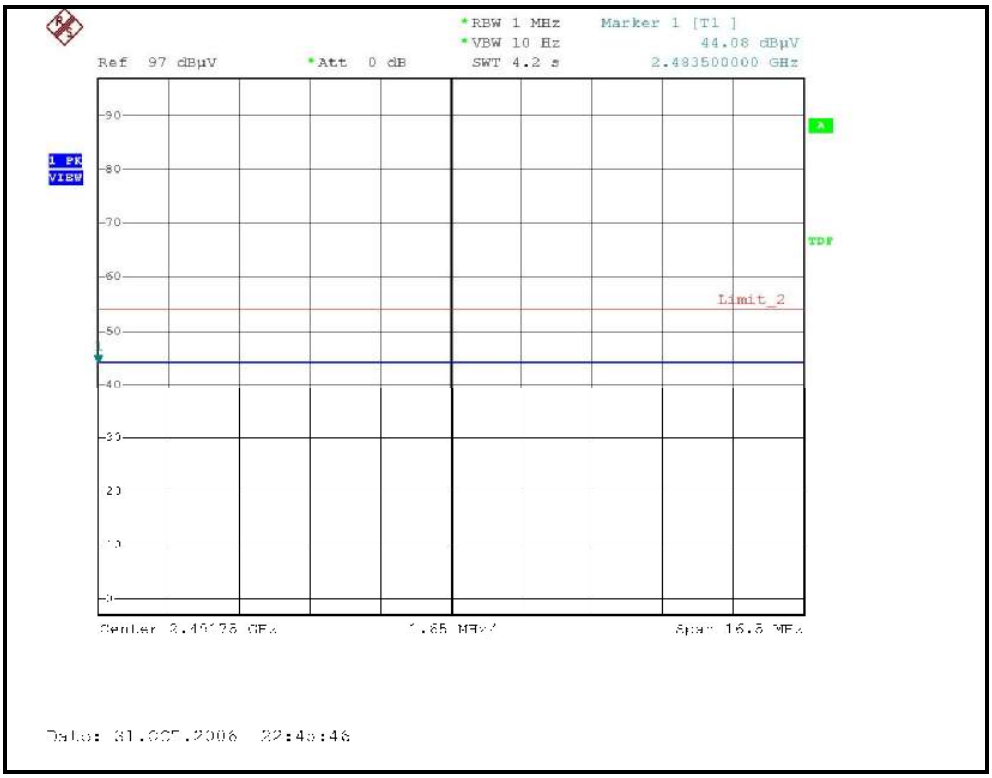


RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





4.1.7 TEST RESULTS (ANTENNA 3)

Below 1GHz Worst-Case Data

MODE	Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 970 hPa	**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	66.33	29.10 QP	40.00	-10.90	1.06 H	150	16.10	13.00
2	166.05	40.50 QP	43.50	-3.00	1.09 H	348	26.70	13.80
3	232.68	40.60 QP	46.00	-5.40	1.02 H	342	27.50	13.00
4	266.46	44.30 QP	46.00	-1.70	1.09 H	327	29.50	14.90
5	589.82	43.60 QP	46.00	-2.40	1.40 H	210	19.30	24.20
6	665.76	32.40 QP	46.00	-13.60	1.27 H	246	7.10	25.30
7	799.50	33.50 QP	46.00	-12.50	1.08 H	354	5.90	27.60
8	924.99	33.90 QP	46.00	-12.10	1.32 H	147	4.60	29.40

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	33.16	34.00 QP	40.00	-6.00	1.17 V	57	21.80	12.30
2	66.20	37.00 QP	40.00	-3.00	1.00 V	127	24.00	13.00
3	166.48	37.00 QP	43.50	-6.50	1.02 V	61	23.20	13.80
4	233.13	35.40 QP	46.00	-10.60	1.00 V	216	22.40	13.00
5	266.46	39.00 QP	46.00	-7.00	1.04 V	235	24.20	14.90
6	589.82	37.80 QP	46.00	-8.20	1.34 V	250	13.60	24.20
7	664.46	29.20 QP	46.00	-16.80	1.11 V	168	3.90	25.30
8	800.00	29.30 QP	46.00	-16.70	1.00 V	324	1.80	27.60
9	924.99	37.00 QP	46.00	-9.00	1.12 V	219	7.70	29.40

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

MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 970 hPa	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	2386.00	61.30 PK	74.00	-12.70	1.18 H	1	29.40	31.90
1	2386.00	49.40 AV	54.00	-4.60	1.18 H	1	17.50	31.90
2	*2412.00	108.50 PK			1.18 H	1	76.50	32.00
2	*2412.00	100.80 AV			1.18 H	1	68.80	32.00
3	3216.00	51.10 PK	74.00	-22.90	1.03 H	271	17.80	33.20
3	3216.00	49.70 AV	54.00	-4.30	1.03 H	271	16.50	33.20
4	4824.00	52.30 PK	74.00	-21.70	1.00 H	242	16.30	36.00
4	4824.00	51.20 AV	54.00	-2.80	1.00 H	242	15.20	36.00
5	7236.00	50.80 PK	74.00	-23.20	1.60 H	302	8.50	42.20
5	7236.00	40.70 AV	54.00	-13.30	1.60 H	302	-1.50	42.20

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	63.50 PK	74.00	-10.50	1.00 V	352	31.50	31.90
1	2386.00	51.10 AV	54.00	-2.90	1.00 V	352	19.10	31.90
2	*2412.00	113.00 PK			1.00 V	352	80.90	32.00
2	*2412.00	105.30 AV			1.00 V	352	73.30	32.00
3	3216.00	50.40 PK	74.00	-23.60	1.11 V	336	17.10	33.20
3	3216.00	47.50 AV	54.00	-6.50	1.11 V	336	14.30	33.20
4	4824.00	60.60 PK	74.00	-13.40	1.00 V	329	24.60	36.00
4	4824.00	48.90 AV	54.00	-5.10	1.00 V	329	12.90	36.00
5	7236.00	49.10 PK	74.00	-24.90	1.25 V	192	6.90	42.20
5	7236.00	39.30 AV	54.00	-14.70	1.25 V	192	-2.90	42.20

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	27 deg. C, 59%RH, 970 hPa	**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	*2437.00	109.40 PK			1.14 H	0	77.30	32.10
1	*2437.00	101.70 AV			1.14 H	0	69.60	32.10
2	3249.00	50.90 PK	74.00	-23.10	1.00 H	281	17.60	33.20
2	3249.00	48.80 AV	54.00	-5.20	1.00 H	281	15.50	33.20
3	4874.00	52.80 PK	74.00	-21.20	1.01 H	241	16.70	36.10
3	4874.00	51.50 AV	54.00	-2.50	1.01 H	241	15.40	36.10
4	7311.00	52.10 PK	74.00	-21.90	1.59 H	312	9.60	42.50
4	7311.00	42.70 AV	54.00	-11.30	1.59 H	312	0.20	42.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	112.30 PK			1.01 V	344	80.20	32.10
1	*2437.00	104.50 AV			1.01 V	344	72.40	32.10
2	3249.00	48.70 PK	74.00	-25.30	1.00 V	337	15.40	33.20
2	3249.00	45.50 AV	54.00	-8.50	1.00 V	337	12.20	33.20
3	4874.00	64.20 PK	74.00	-9.80	1.00 V	326	28.10	36.10
3	4874.00	50.70 AV	54.00	-3.30	1.00 V	326	14.60	36.10
4	7311.00	52.10 PK	74.00	-21.90	1.18 V	198	9.60	42.50
4	7311.00	42.10 AV	54.00	-11.90	1.18 V	198	-0.40	42.50

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

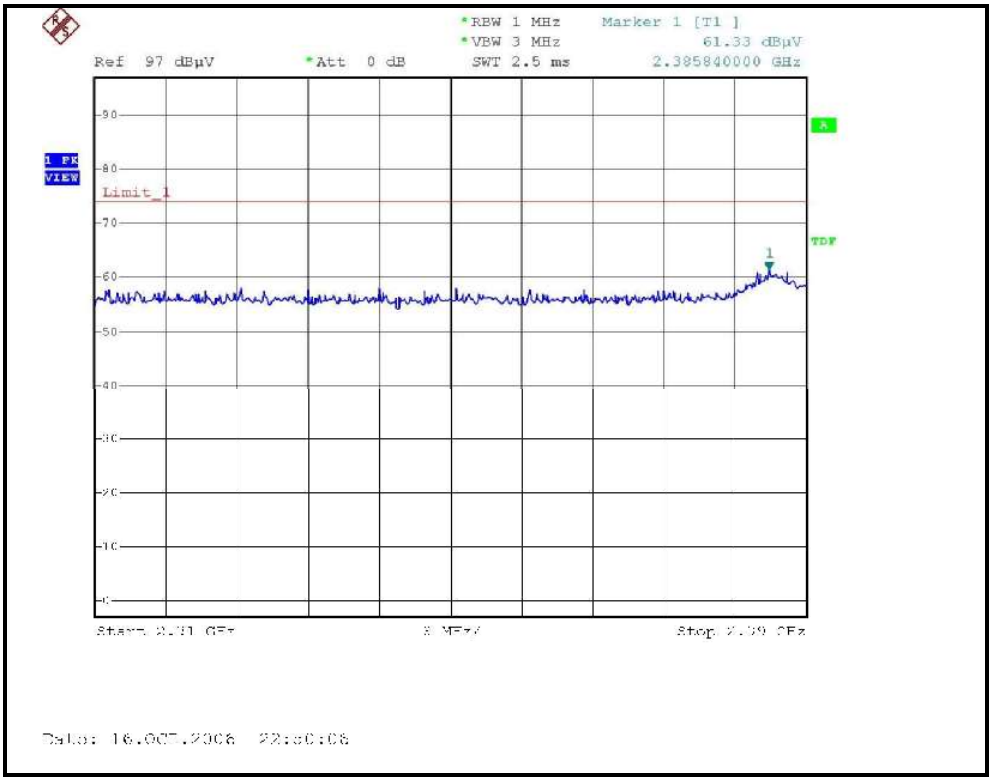
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 970 hPa	**TESTED BY**	Tony Chen

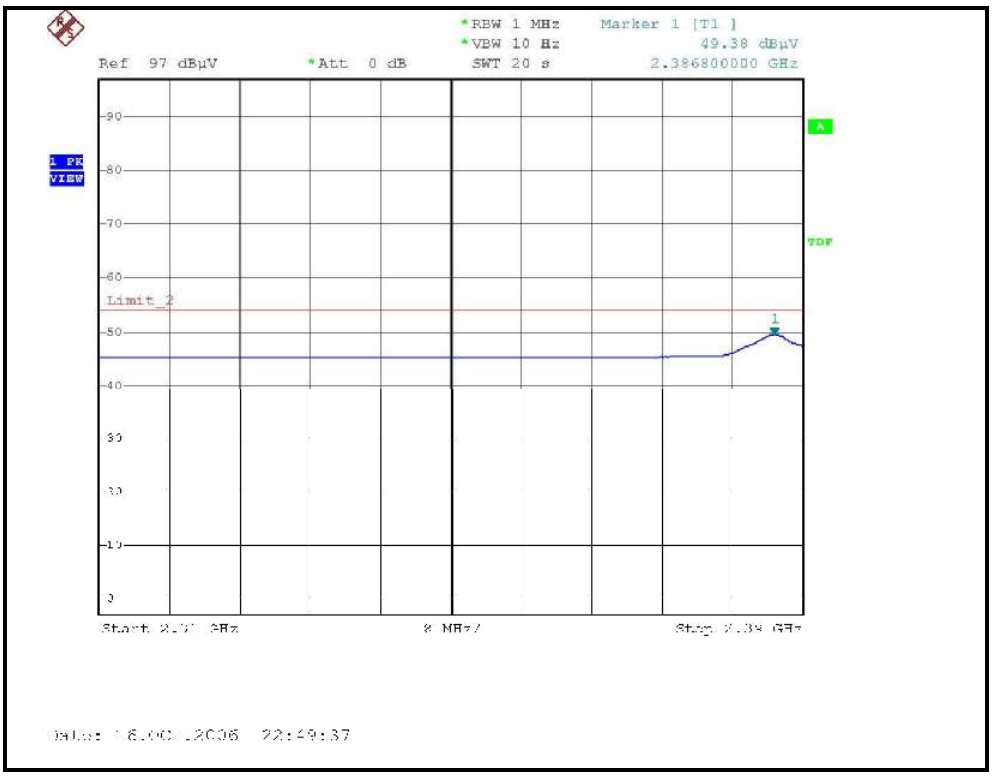
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	109.40 PK			1.14 H	3	77.20	32.20
1	*2462.00	101.60 AV			1.14 H	3	69.40	32.20
2	2487.20	62.00 PK	74.00	-12.00	1.14 H	3	29.70	32.30
2	2487.20	50.00 AV	54.00	-4.00	1.14 H	3	17.60	32.30
3	3282.00	48.90 PK	74.00	-25.10	1.10 H	142	15.70	33.30
3	3282.00	46.80 AV	54.00	-7.20	1.10 H	142	13.60	33.30
4	4924.00	53.10 PK	74.00	-20.90	1.03 H	111	16.90	36.20
4	4924.00	51.10 AV	54.00	-2.90	1.03 H	111	14.90	36.20
5	7386.00	53.30 PK	74.00	-20.70	1.00 H	124	10.50	42.80
5	7386.00	42.40 AV	54.00	-11.60	1.00 H	124	-0.40	42.80

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	112.00 PK			1.01 V	347	79.80	32.20
1	*2462.00	104.40 AV			1.01 V	347	72.20	32.20
2	2487.20	65.40 PK	74.00	-8.60	1.01 V	347	33.10	32.30
2	**2487.20**	**53.70 AV**	**54.00**	**-0.30**	**1.01 V**	**347**	**21.40**	**32.30**
3	3282.00	48.70 PK	74.00	-25.30	1.07 V	325	15.50	33.30
3	3282.00	46.00 AV	54.00	-8.00	1.07 V	325	12.70	33.30
4	4924.00	61.50 PK	74.00	-12.50	1.08 V	321	25.30	36.20
4	4924.00	49.80 AV	54.00	-4.20	1.08 V	321	13.60	36.20
5	7386.00	50.70 PK	74.00	-23.30	1.65 V	89	7.90	42.80
5	7386.00	40.80 AV	54.00	-13.20	1.65 V	89	-2.00	42.80

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)





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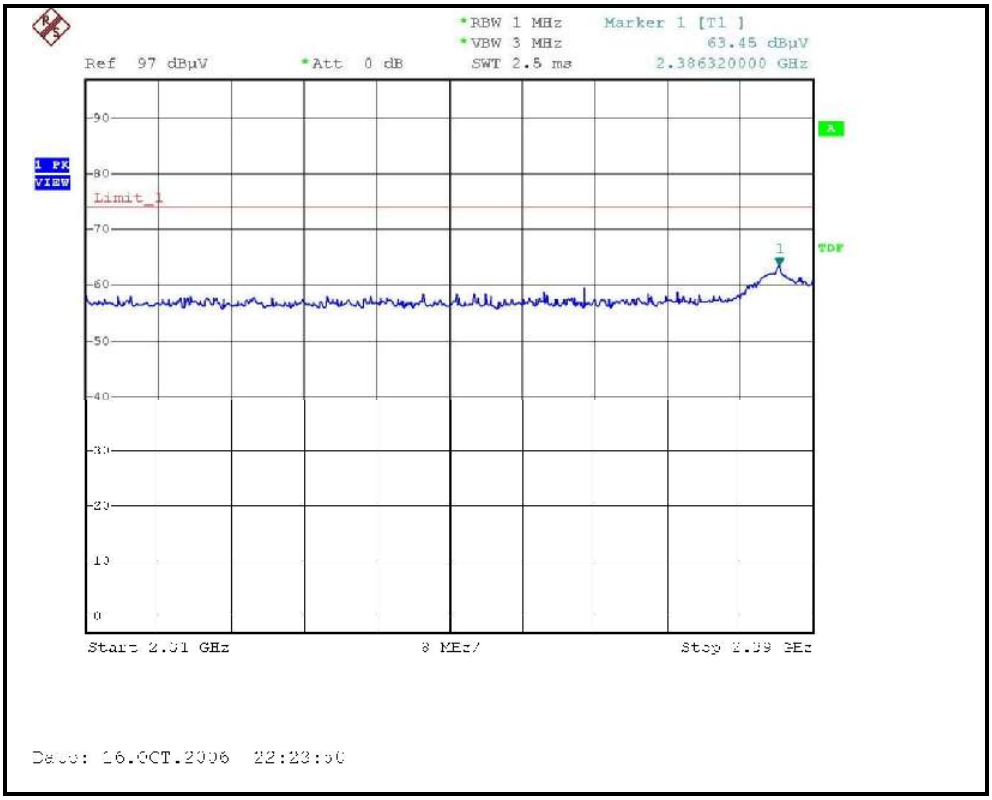
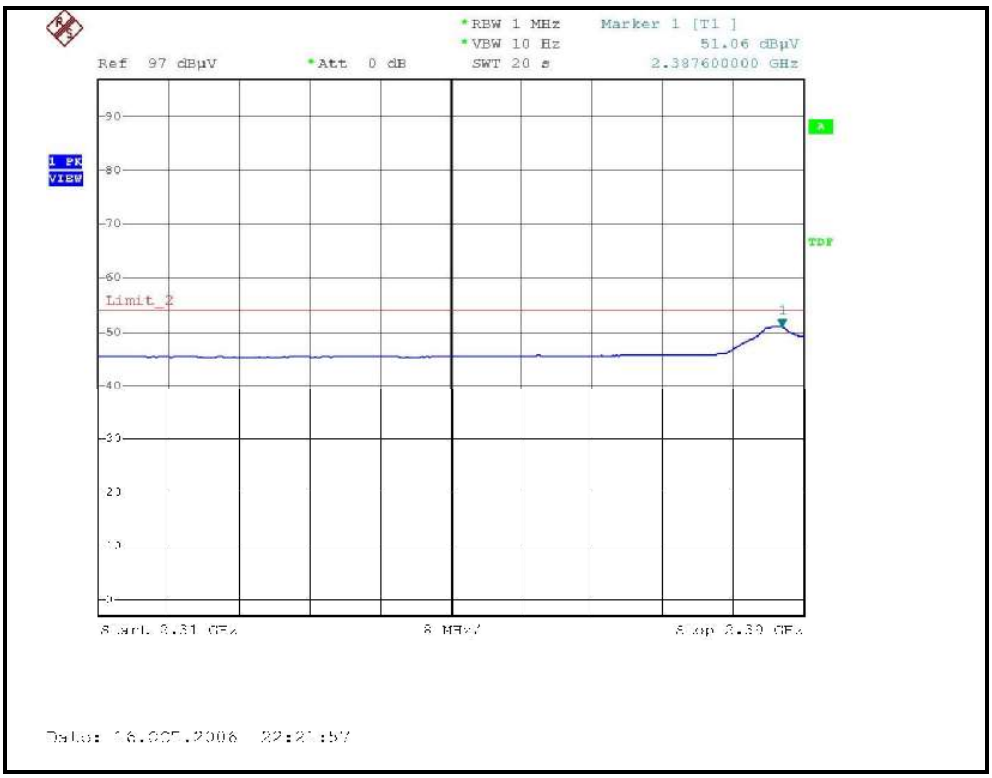
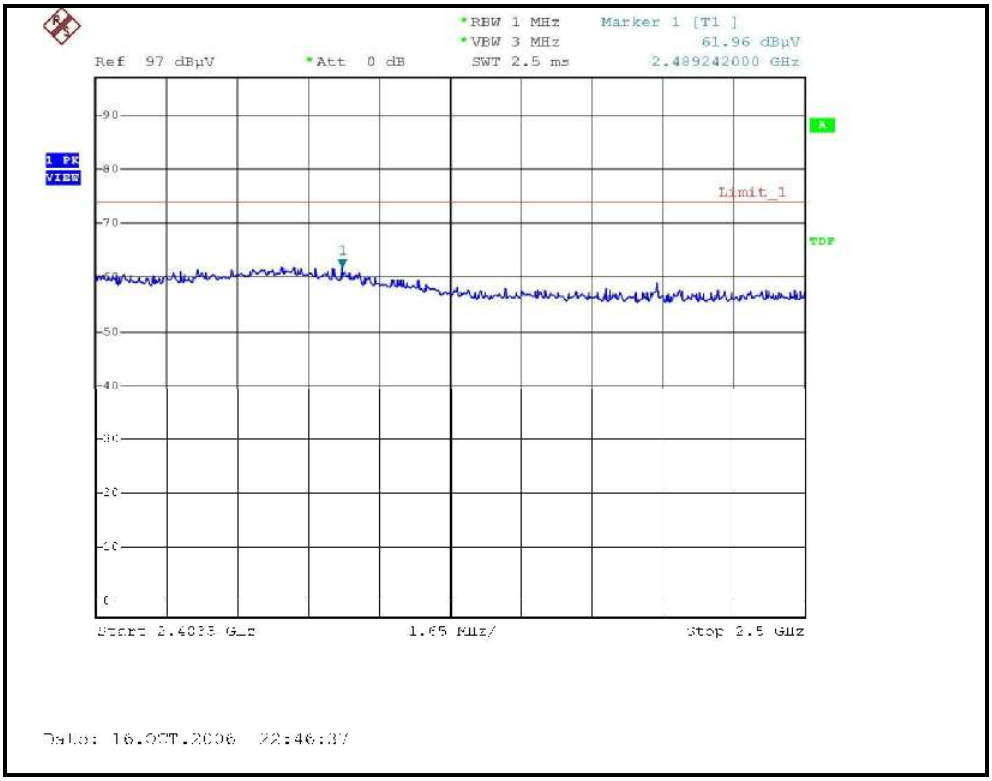
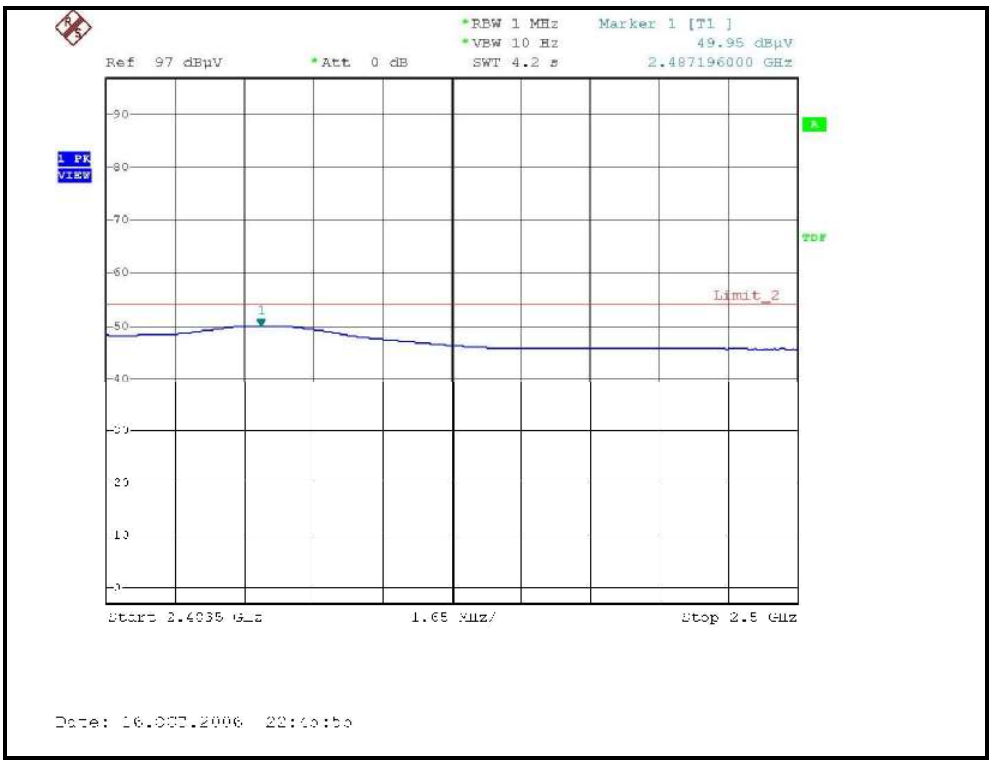


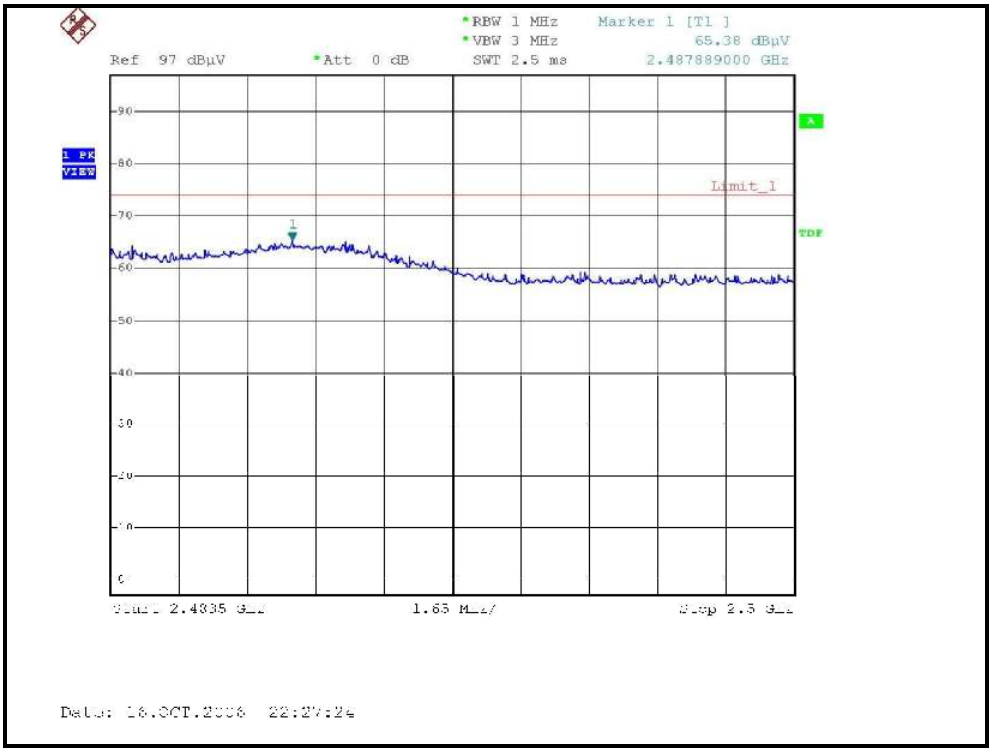


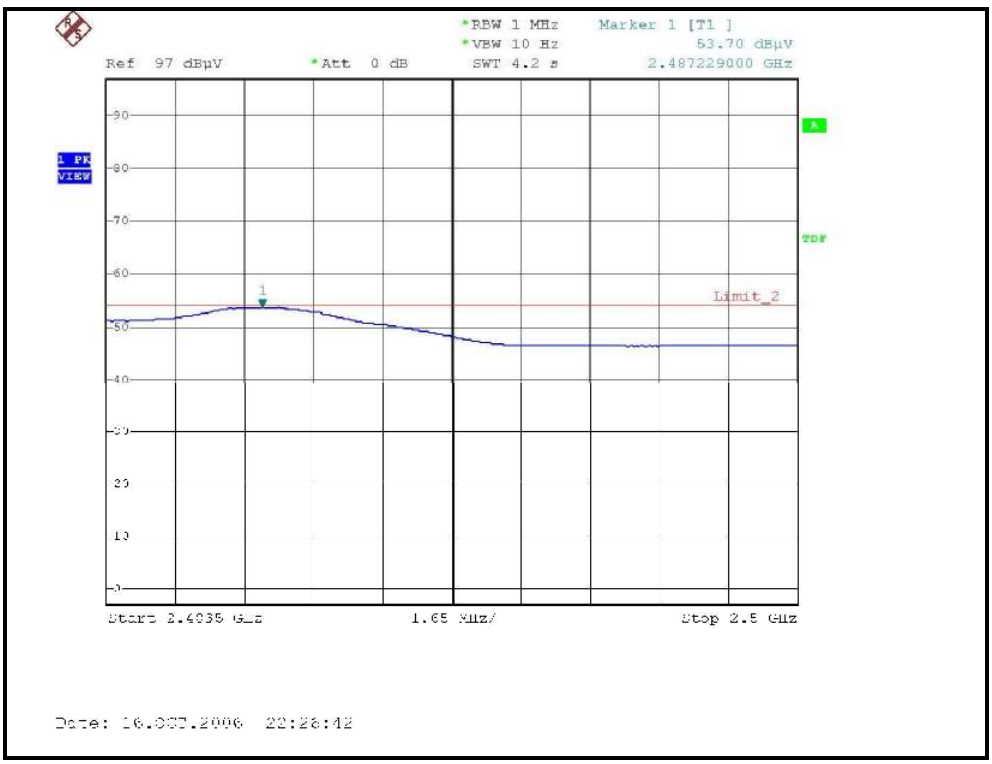
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g 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	27 deg. C, 59%RH, 970 hPa	**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	2390.00	66.60 PK	74.00	-7.40	1.18 H	4	34.60	31.90
1	2390.00	49.00 AV	54.00	-5.00	1.18 H	4	17.00	31.90
2	*2412.00	104.60 PK			1.18 H	4	72.60	32.00
2	*2412.00	95.70 AV			1.18 H	4	63.70	32.00
3	3216.00	49.70 PK	74.00	-24.30	1.43 H	265	16.40	33.20
3	3216.00	48.60 AV	54.00	-5.40	1.43 H	265	15.30	33.20
4	4824.00	59.90 PK	74.00	-14.10	1.00 H	157	24.00	36.00
4	4824.00	42.80 AV	54.00	-11.20	1.00 H	157	6.90	36.00
5	7236.00	57.50 PK	74.00	-16.50	1.03 H	241	15.30	42.20
5	7236.00	43.20 AV	54.00	-10.80	1.03 H	241	1.00	42.20

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	71.20 PK	74.00	-2.80	1.01 V	351	39.30	31.90
1	2390.00	51.60 AV	54.00	-2.40	1.01 V	351	19.60	31.90
2	*2412.00	110.00 PK			1.01 V	351	78.00	32.00
2	*2412.00	99.80 AV			1.01 V	351	67.80	32.00
3	3216.00	50.30 PK	74.00	-23.70	1.07 V	334	17.10	33.20
3	3216.00	47.80 AV	54.00	-6.20	1.07 V	334	14.60	33.20
4	4824.00	59.50 PK	74.00	-14.50	1.47 V	190	23.50	36.00
4	4824.00	41.70 AV	54.00	-12.30	1.47 V	190	5.80	36.00
5	7236.00	57.20 PK	74.00	-16.80	1.33 V	191	14.90	42.20
5	7236.00	42.00 AV	54.00	-12.00	1.33 V	191	-0.20	42.20

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	27 deg. C, 59%RH, 970 hPa	**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	*2437.00	105.50 PK			1.12 H	3	73.40	32.10
1	*2437.00	96.50 AV			1.12 H	3	64.30	32.10
2	3249.00	48.90 PK	74.00	-25.10	1.11 H	222	15.70	33.20
2	3249.00	46.00 AV	54.00	-8.00	1.11 H	222	12.80	33.20
3	4874.00	59.80 PK	74.00	-14.20	1.15 H	248	23.70	36.10
3	4874.00	44.60 AV	54.00	-9.40	1.15 H	248	8.60	36.10
4	7311.00	56.20 PK	74.00	-17.80	1.03 H	159	13.70	42.50
4	7311.00	41.50 AV	54.00	-12.50	1.03 H	159	-1.00	42.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	109.40 PK			1.00 V	350	77.20	32.10
1	*2437.00	100.00 AV			1.00 V	350	67.80	32.10
2	3249.00	48.70 PK	74.00	-25.30	1.01 V	336	15.50	33.20
2	3249.00	46.80 AV	54.00	-7.20	1.01 V	336	13.60	33.20
3	4874.00	59.70 PK	74.00	-14.30	1.30 V	184	23.60	36.10
3	4874.00	42.90 AV	54.00	-11.10	1.30 V	184	6.80	36.10
4	7311.00	56.30 PK	74.00	-17.70	1.24 V	174	13.70	42.50
4	7311.00	41.30 AV	54.00	-12.70	1.24 V	174	-1.20	42.50

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

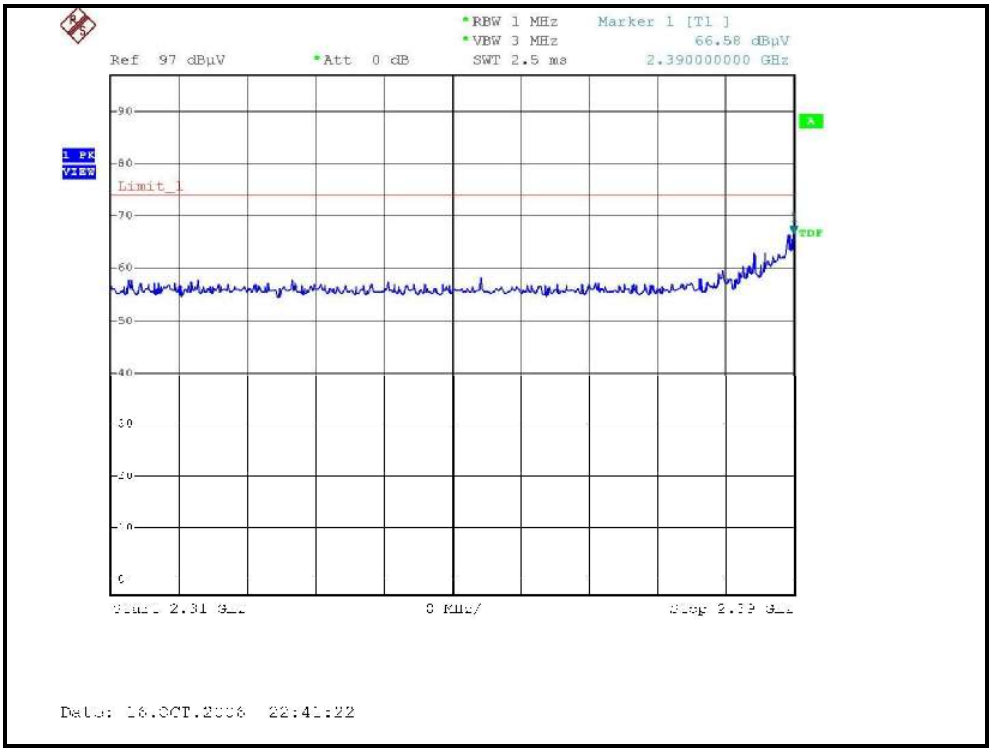
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 970 hPa	**TESTED BY**	Tony Chen

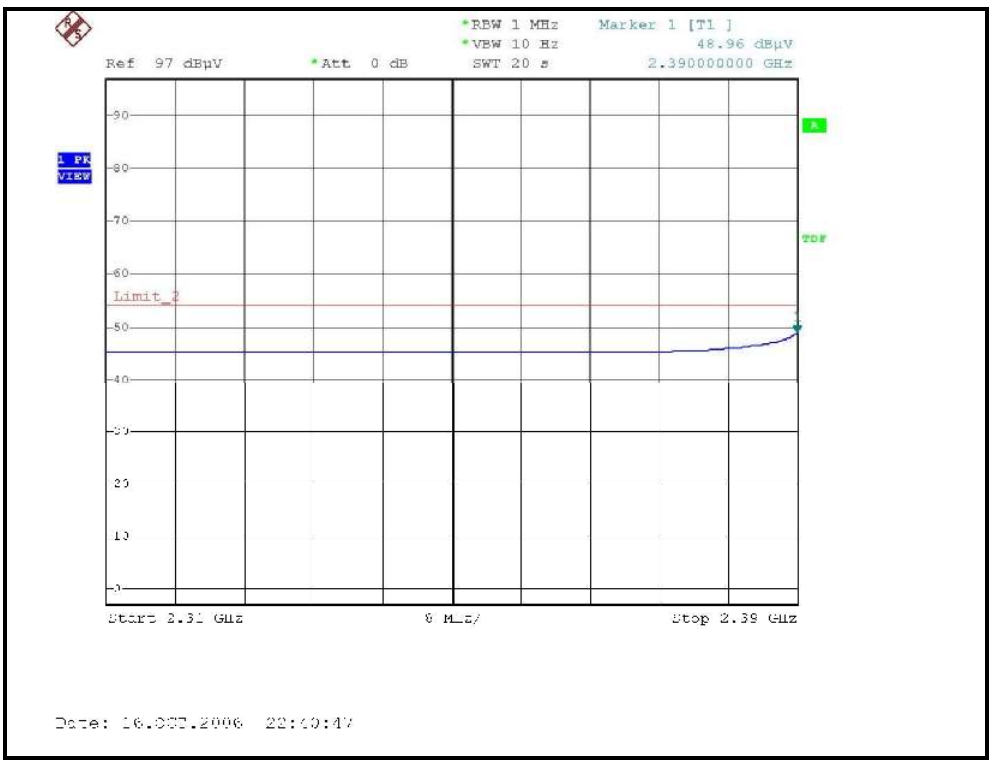
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	105.90 PK			1.15 H	1	73.70	32.20
1	*2462.00	96.30 AV			1.15 H	1	64.10	32.20
2	2483.50	72.40 PK	74.00	-1.60	1.15 H	1	40.10	32.30
2	2483.50	50.60 AV	54.00	-3.40	1.15 H	1	18.30	32.30
3	3282.00	49.40 PK	74.00	-24.60	1.16 H	268	16.10	33.30
3	3282.00	46.70 AV	54.00	-7.30	1.16 H	268	13.40	33.30
4	4924.00	59.10 PK	74.00	-14.90	1.23 H	174	22.90	36.20
4	4924.00	44.10 AV	54.00	-9.90	1.23 H	174	8.00	36.20
5	7386.00	54.80 PK	74.00	-19.20	1.03 H	19	12.00	42.80
5	7386.00	42.40 AV	54.00	-11.60	1.03 H	19	-0.40	42.80

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	108.20 PK			1.00 V	348	76.00	32.20
1	*2462.00	99.30 AV			1.00 V	348	67.00	32.20
2	2483.50	72.50 PK	74.00	-1.50	1.00 V	348	40.20	32.30
2	2483.50	52.50 AV	54.00	-1.50	1.00 V	348	20.20	32.30
3	3282.00	49.80 PK	74.00	-24.20	1.07 V	330	16.50	33.30
3	3282.00	46.20 AV	54.00	-7.80	1.07 V	330	12.90	33.30
4	4924.00	58.20 PK	74.00	-15.80	1.25 V	114	22.00	36.20
4	4924.00	43.40 AV	54.00	-10.60	1.25 V	114	7.20	36.20
5	7386.00	55.50 PK	74.00	-18.50	1.08 V	134	12.70	42.80
5	7386.00	41.40 AV	54.00	-12.60	1.08 V	134	-1.40	42.80

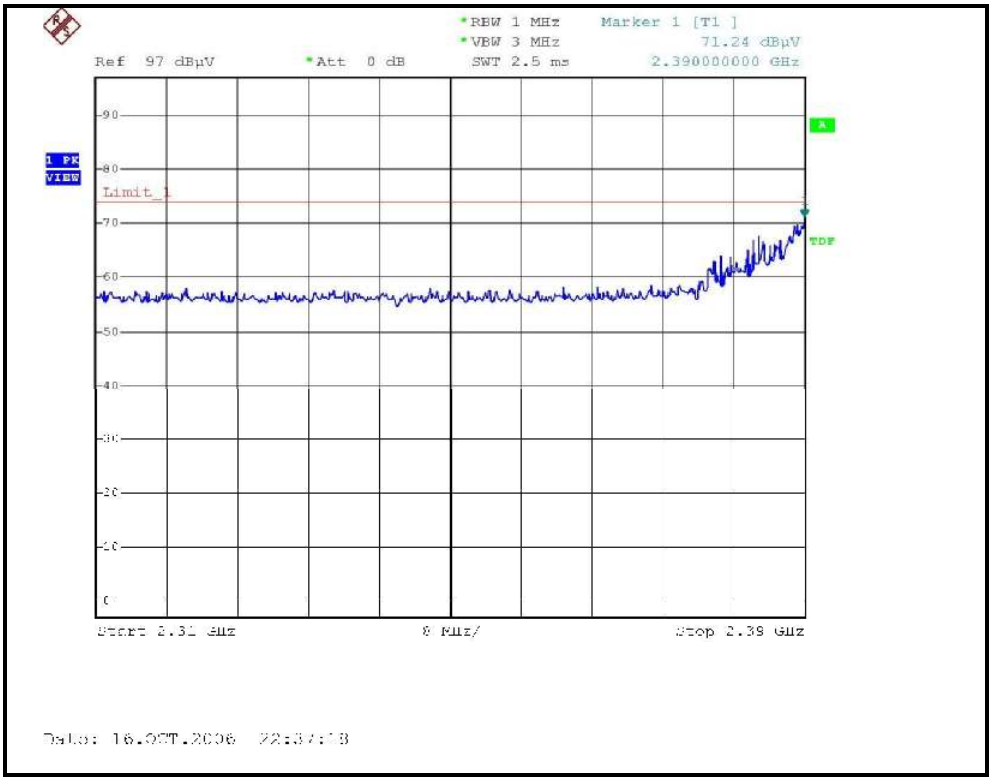
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

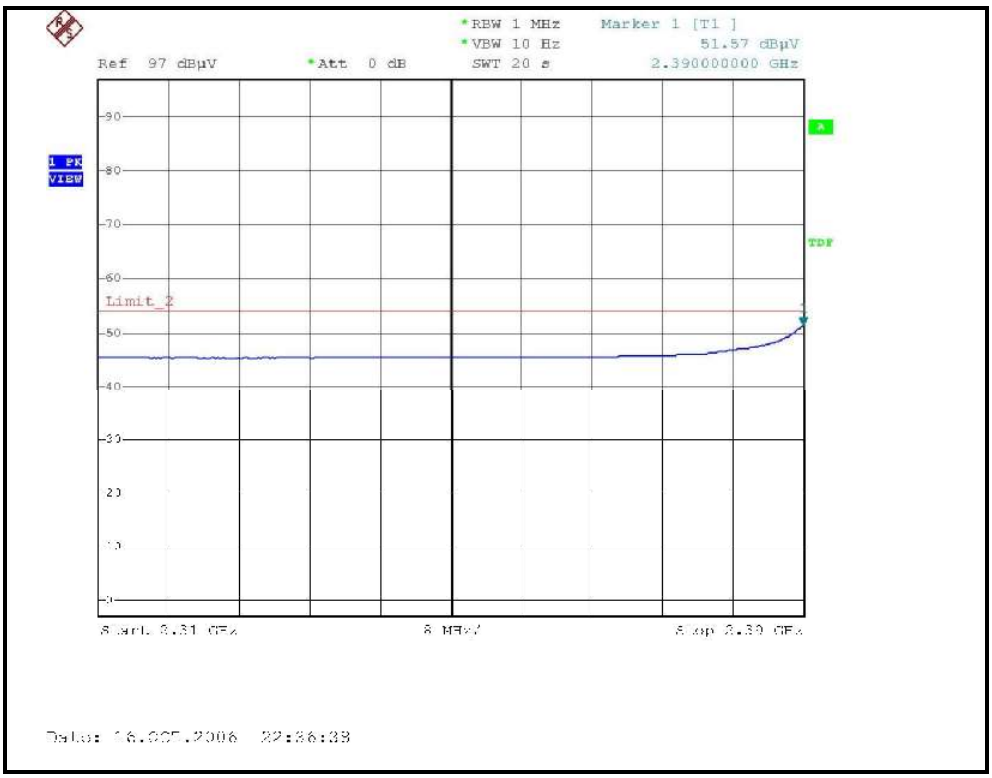
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



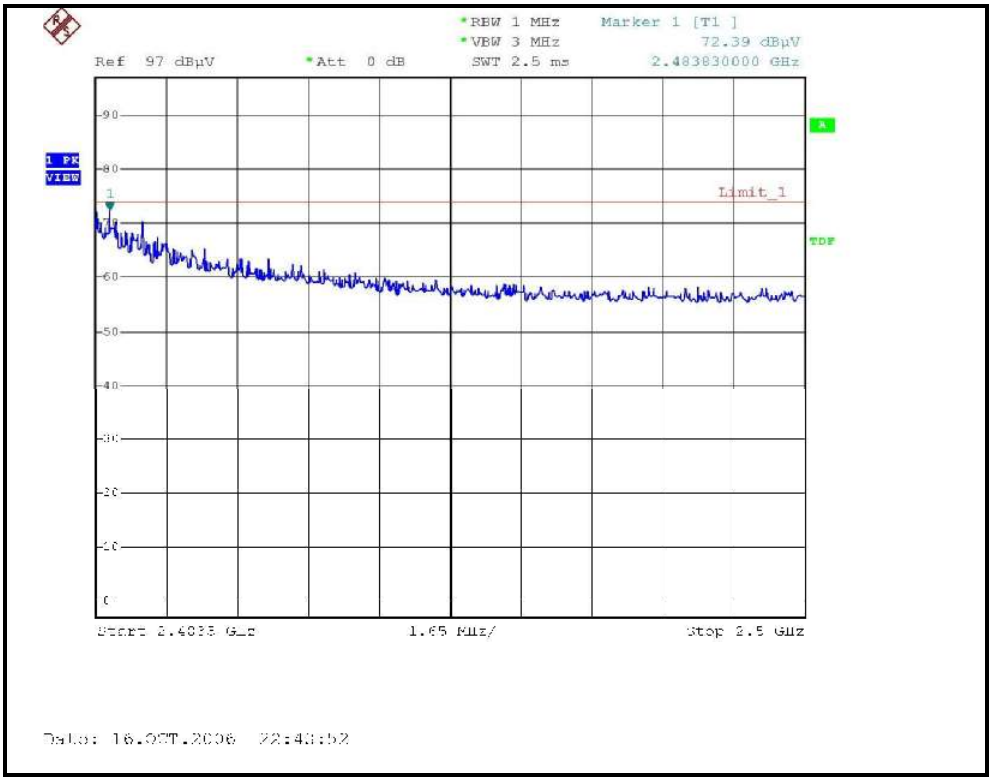


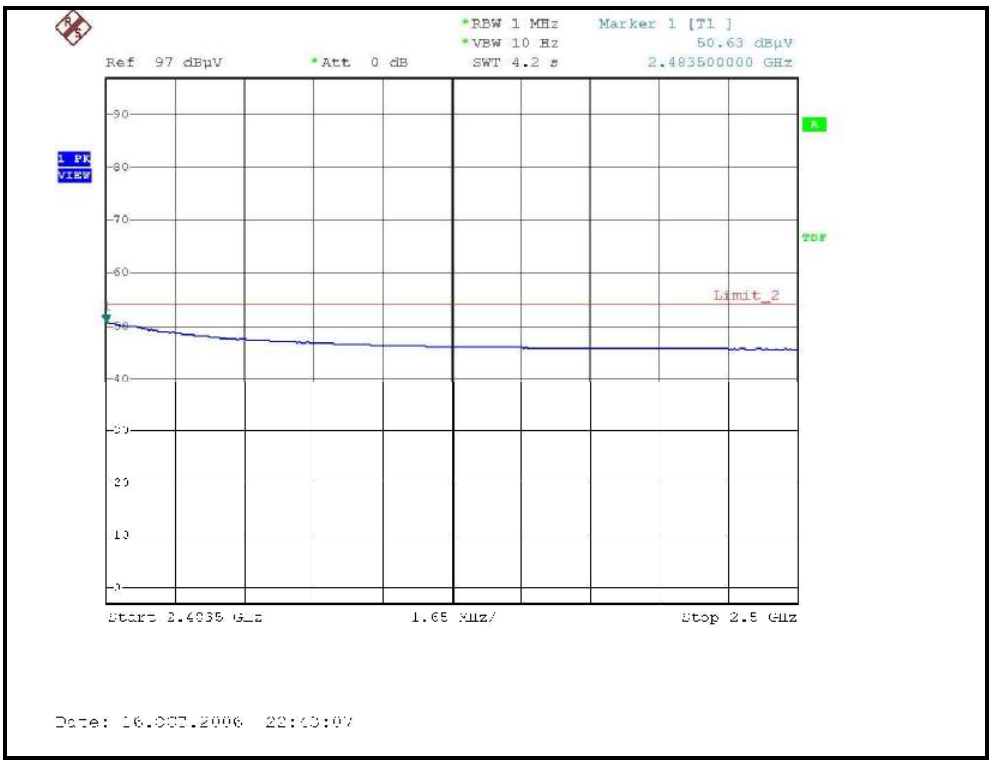
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



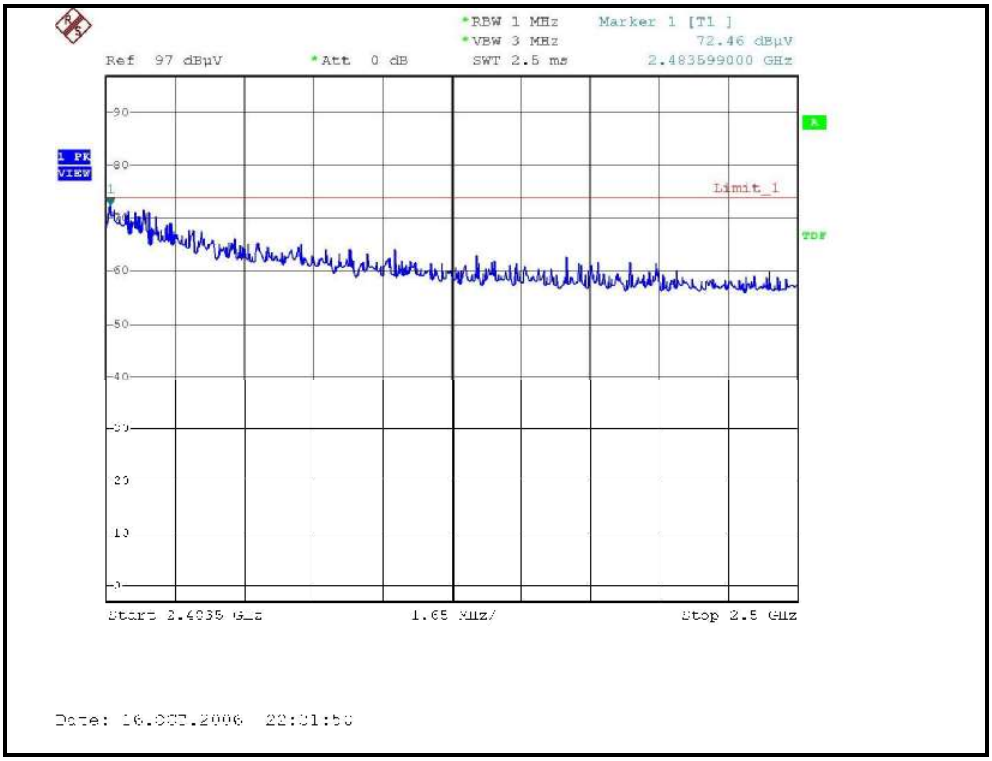


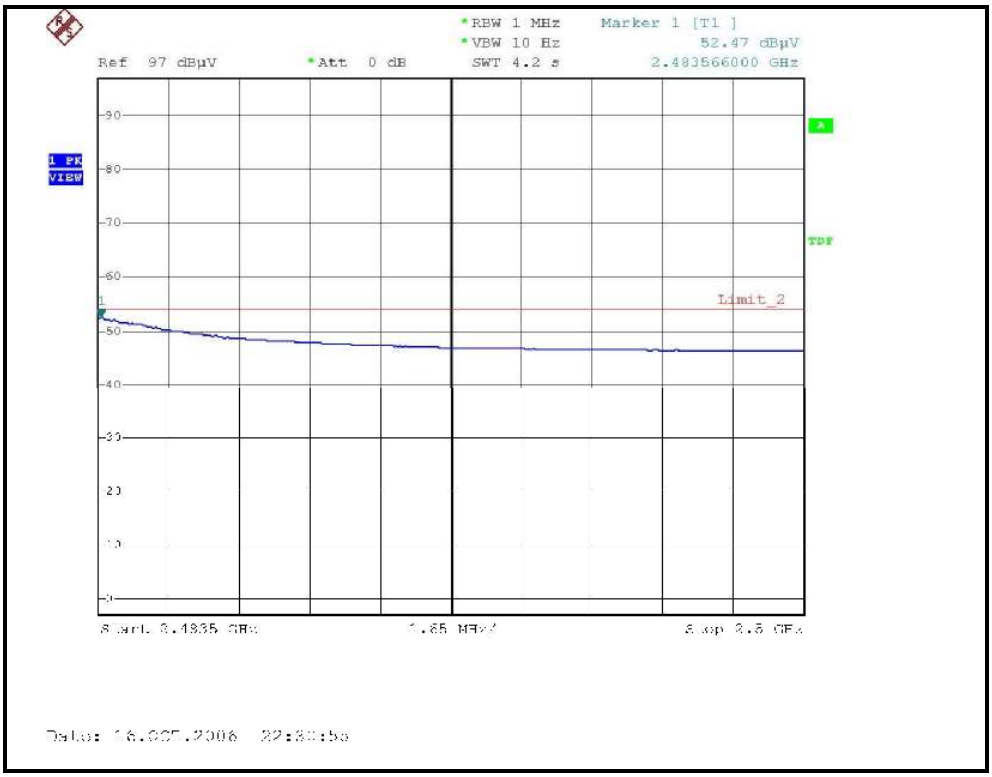
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





4.2 MAXIMUM PEAK OUTPUT POWER

4.2.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.2.2 TEST INSTRUMENTS

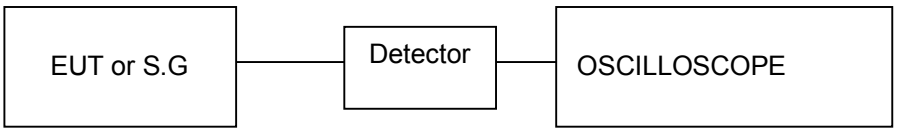
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2006
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 07, 2006
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	Jun. 21, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.2.3 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.

4.2.4 TEST SETUP



4.2.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.2.6 TEST RESULTS

802.11b DSSS modulation

INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26 deg. C, 67%RH, 970 hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	52.723	17.22	30	PASS
6	2437	56.885	17.55	30	PASS
11	2462	57.677	17.61	30	PASS

802.11g OFDM modulation

INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26 deg. C, 67%RH, 970 hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	52.240	17.18	30	PASS
6	2437	55.463	17.44	30	PASS
11	2462	54.325	17.35	30	PASS

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

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

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

4.3.4 EUT OPERATING CONDITION

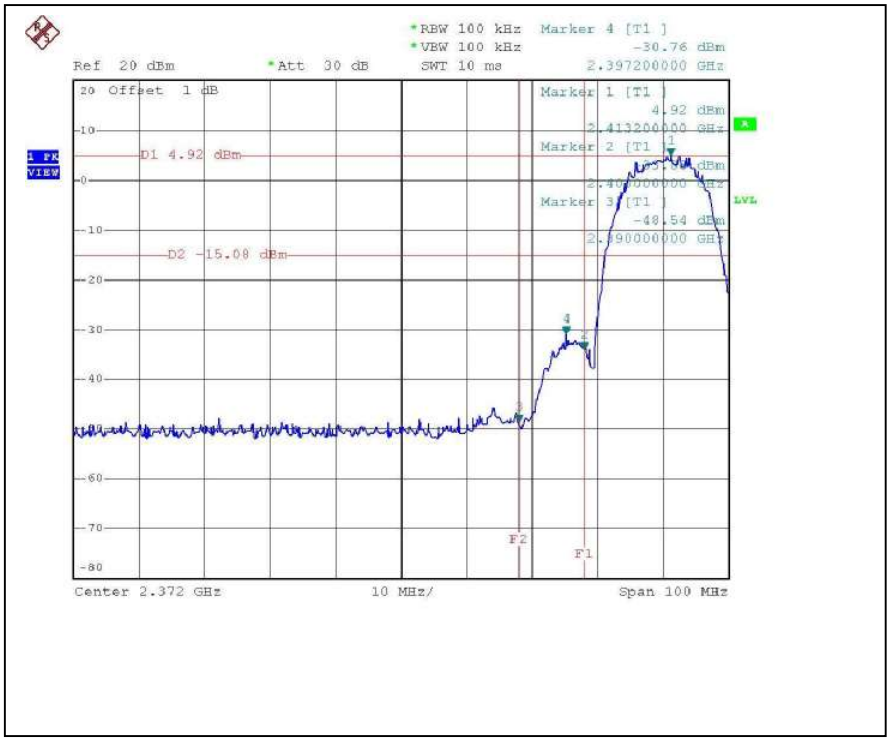
Same as Item 4.3.5

4.3.5 TEST RESULTS

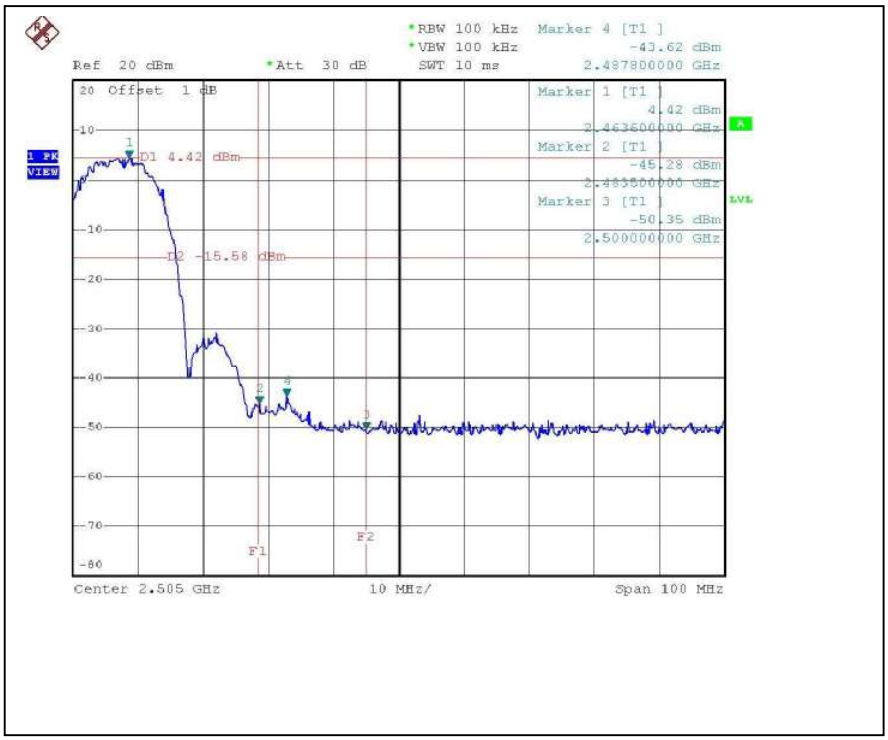
The spectrum plots are attached on the following 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

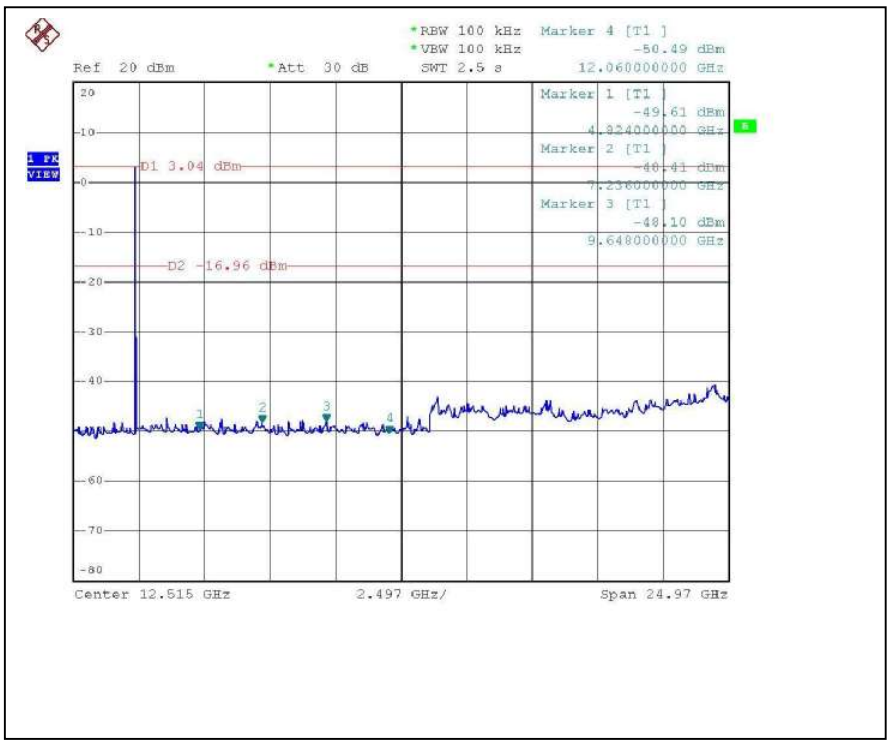
CH1



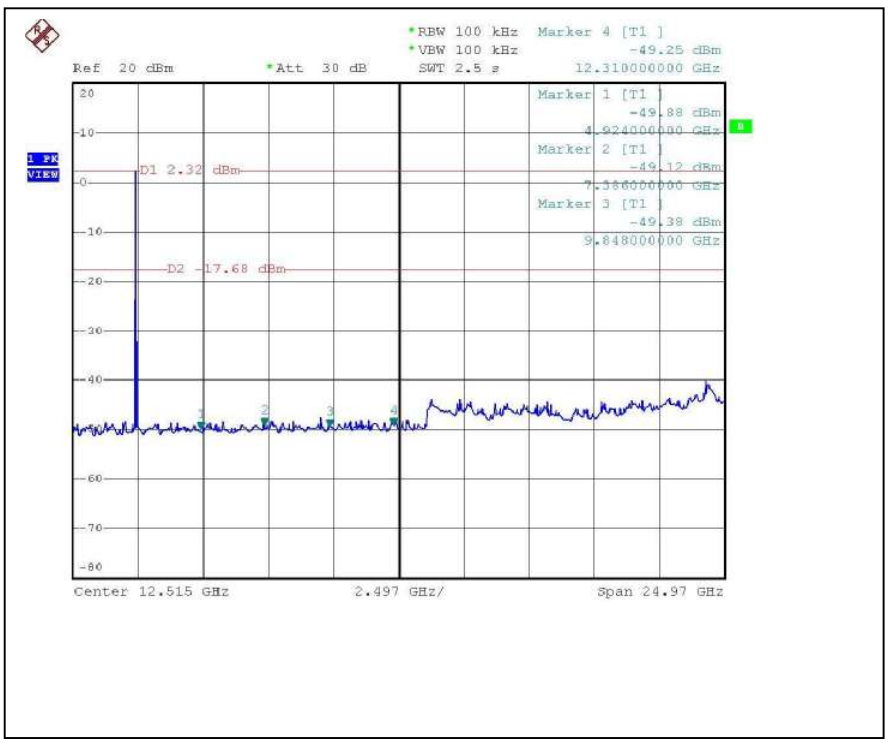
CH11



CH1

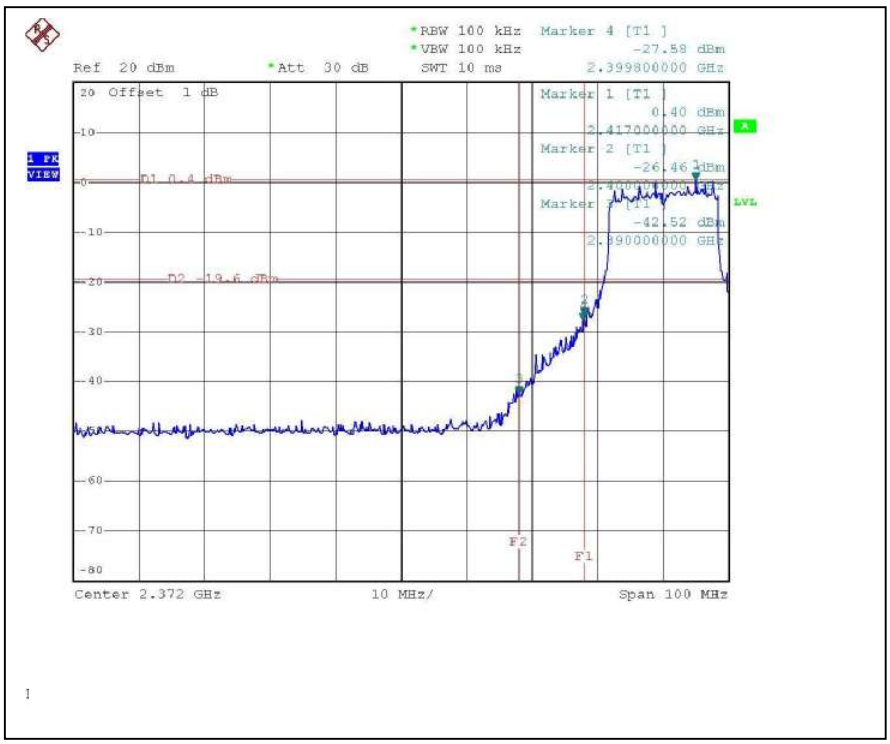

*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-50.49 dBm
12.060000000 GHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-49.61 dBm
4.824000000 GHz
Marker 2 [T1]
-48.41 dBm
7.236000000 GHz
Marker 3 [T1]
-48.10 dBm
9.648000000 GHz
1 PK
VIEW
D1 3.04 dBm
D2 -16.96 dBm
Center 12.515 GHz
2.497 GHz/
Span 24.97 GHz

CH11

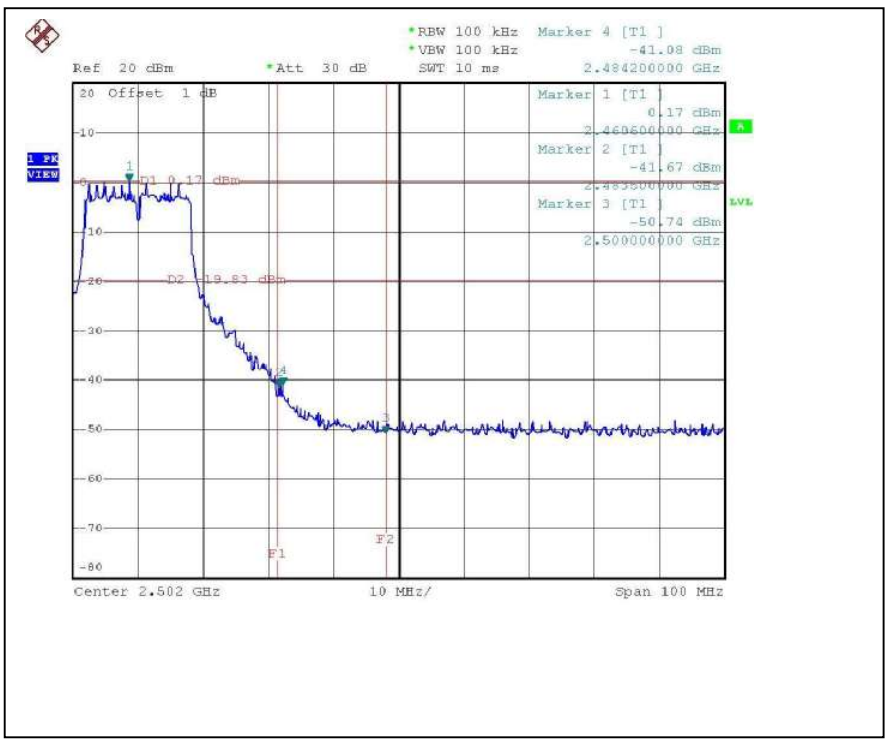

*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-49.25 dBm
12.310000000 GHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-49.88 dBm
4.924000000 GHz
Marker 2 [T1]
-49.12 dBm
7.386000000 GHz
Marker 3 [T1]
-49.38 dBm
9.848000000 GHz
1 PK
VIEW
D1 2.32 dBm
D2 -17.68 dBm
Center 12.515 GHz
2.497 GHz/
Span 24.97 GHz

802.11g OFDM MODULATION:

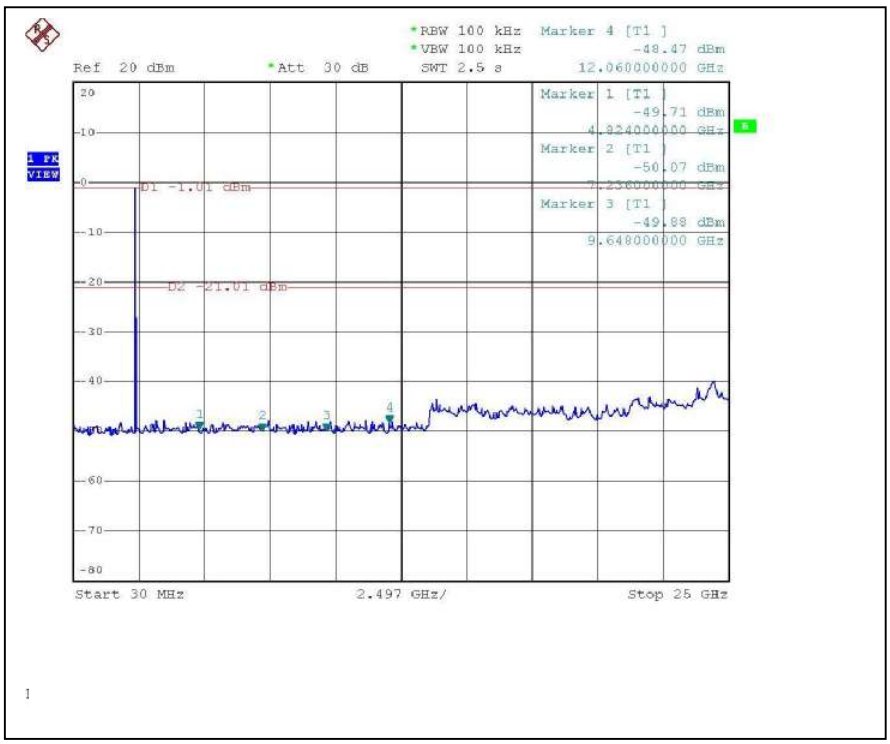
CH1



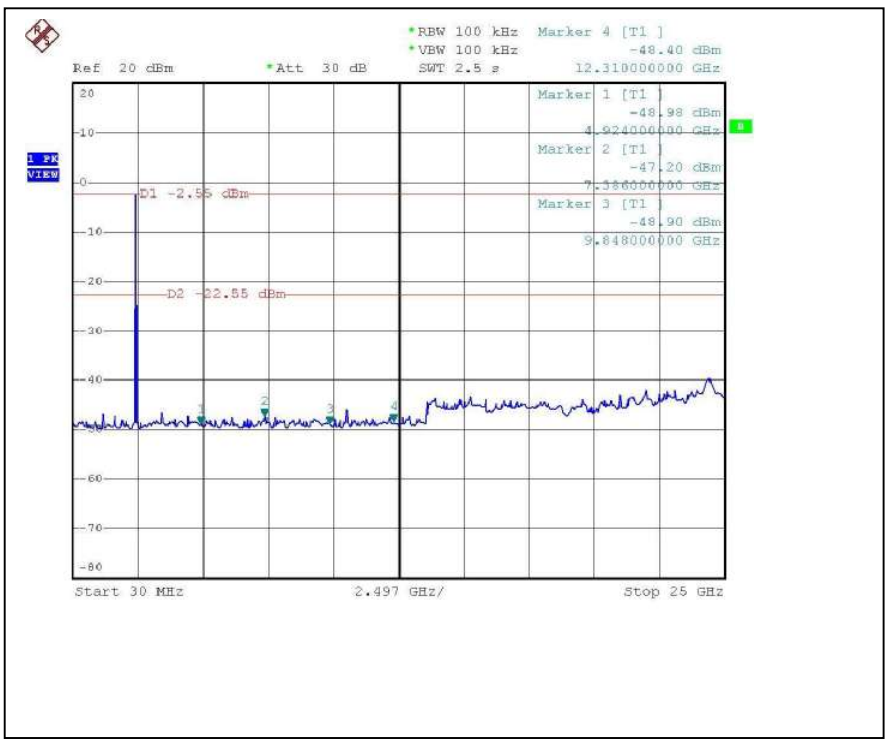
CH11



CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Ref 20 dBm
*Att 30 dB
Marker 4 [T1]
-48.47 dBm
12.060000000 GHz
Marker 1 [T1]
-49.71 dBm
4.824000000 GHz
Marker 2 [T1]
-50.07 dBm
7.236000000 GHz
Marker 3 [T1]
-49.88 dBm
9.648000000 GHz
1 PK
VIEW
D1 -1.01 dBm
D2 -21.01 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Ref 20 dBm
*Att 30 dB
Marker 4 [T1]
-48.40 dBm
12.310000000 GHz
Marker 1 [T1]
-48.98 dBm
4.924000000 GHz
Marker 2 [T1]
-47.20 dBm
7.386000000 GHz
Marker 3 [T1]
-48.90 dBm
9.848000000 GHz
1 PK
VIEW
D1 -2.55 dBm
D2 -22.55 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

4.4 ANTENNA REQUIREMENT

4.4.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

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

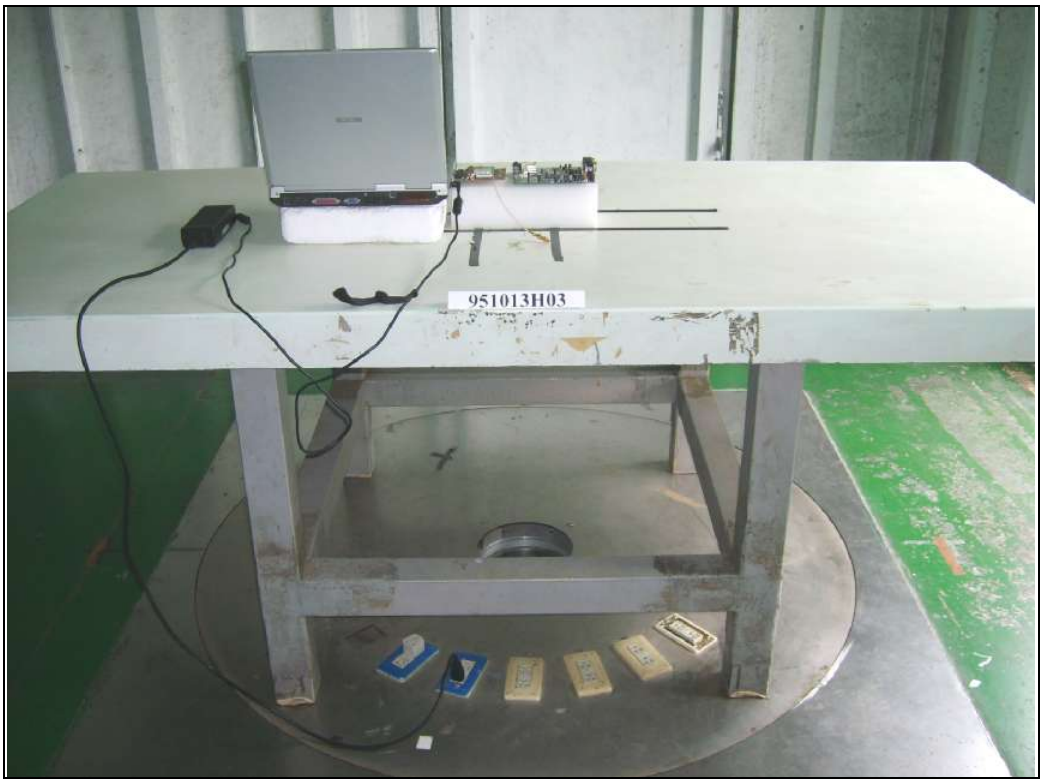
4.4.2 ANTENNA CONNECTED CONSTRUCTION

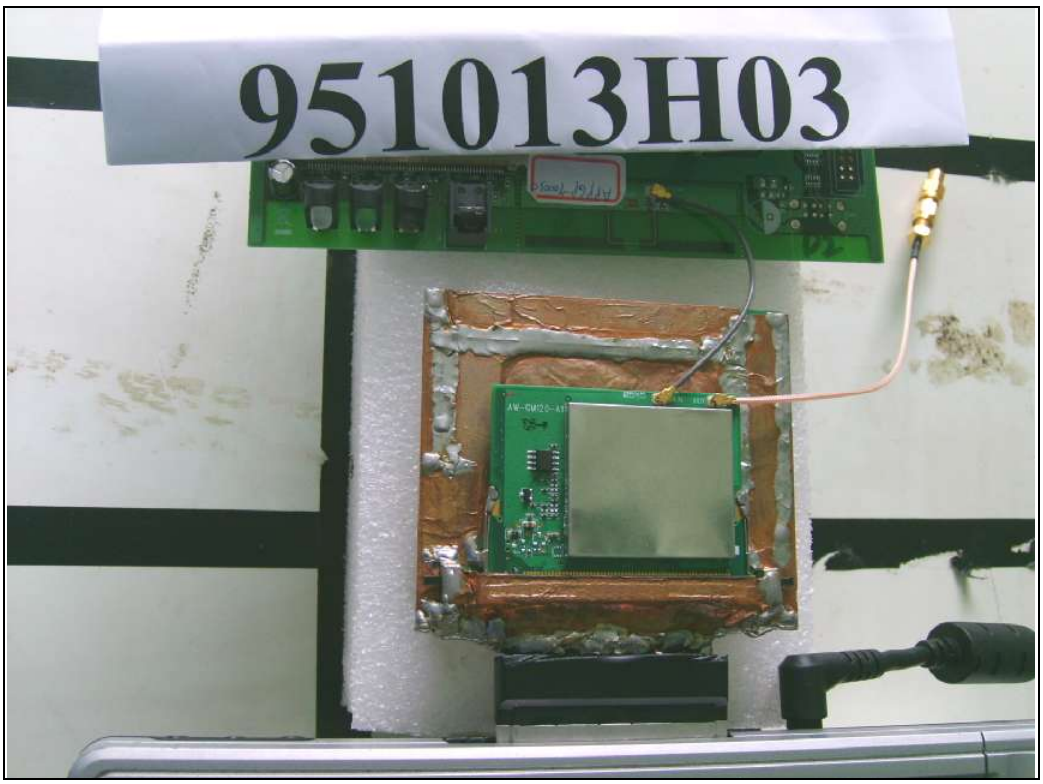
The antennas used in this product are as following:

No.	Antenna Type	Gain (dBi)	Antenna Cable to EUT Connector
1	PCB antenna	-6.15	I-PEX
2	PCB antenna	-6.15	I-PEX
3	Dipole	3.071	I-PEX

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

RADIATED EMISSION TEST (ANTENNA 1)




951013H03

RADIATED EMISSION TEST (ANTENNA 3)

951013H03

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, NCC
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

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.