FCC TEST REPORT

REPORT NO.: RF950525H07
MODEL NO.: WT-3A
RECEIVED: June 7, 2006
TESTED: June 20 to July 25, 2006
ISSUED: July 27, 2006

APPLICANT: NIKON CORPORATION

ADDRESS: Nikon Corporation Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo, 100-8331 JAPAN

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 : 802.11 b/g Wireless Transmitter
BRAND NAME : Nikon
MODEL NO. : WT-3A
TESTED: June 20 to July 25, 2006
APPLICANT : NIKON CORPORATION
TEST ITEM: ENGINEERING SAMPLE
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: WT-3A) 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:** July 27, 2006
(Carol Liao)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** July 27, 2006
Responsible for RF
(Hank Chung)

APPROVED BY : , **DATE:** July 27, 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 –16.50 dB at 0.505 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 –1.5 dB at 2389.52 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	802.11 b/g Wireless Transmitter
MODEL NO.	WT-3A
FCC ID	CGJ1143EA
POWER SUPPLY	7.4VDC from Rechargeable Li-ion Battery or DC 13.5V 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: 144.544mW 802.11g: 77.625mW
ANTENNA TYPE	Please see note 3
DATA CABLE	NA
I/O PORT	DC input Port *1, Ethernet port *1 (10/100 Mbps),
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.
2. The EUT complies with IEEE 802.11g standards, and backwards compatible with IEEE 802.11b products.
3. There are two antennas provided to this EUT, please refer to the following table:

No.	Antenna Description	Antenna Type	Gain	Connector
1	Chip Antenna	1. Chip Antenna 2. Internal Antenna	4.1dBi	No Connector
2	Extended Range Antenna	1. Dipole Antenna 2. External Antenna	3dBi	Reverse SMA

4. The EUT could be supplied with Li-ion 7.4V battery or the following power adapter

Adapter	
Brand:	Nikon
Model No.:	EH-6
Input power :	AC 100-240V 50/60Hz 1.7A
Output power :	DC13.5V 5A, 1.8m/ nonshield/ with one core

Rechargeable Li-ion Battery (only for test)	
Brand:	Nikon
Model No.:	EN-El3e
Input power :	7.4V 1500mAh

5. The EUT was pre-tested in chamber as the following test modes:

Test Mode	**Condition**
Mode A	EUT With Adapter
Mode B	EUT With Battery

The worse was found in **Mode A**. The EUT with adapter, worse case one, was chosen for final test.

6. The EUT was pre-tested under the following test modes for three different axes placements:

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

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

7. 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	11

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

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11 b/g Wireless Transmitter. 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.

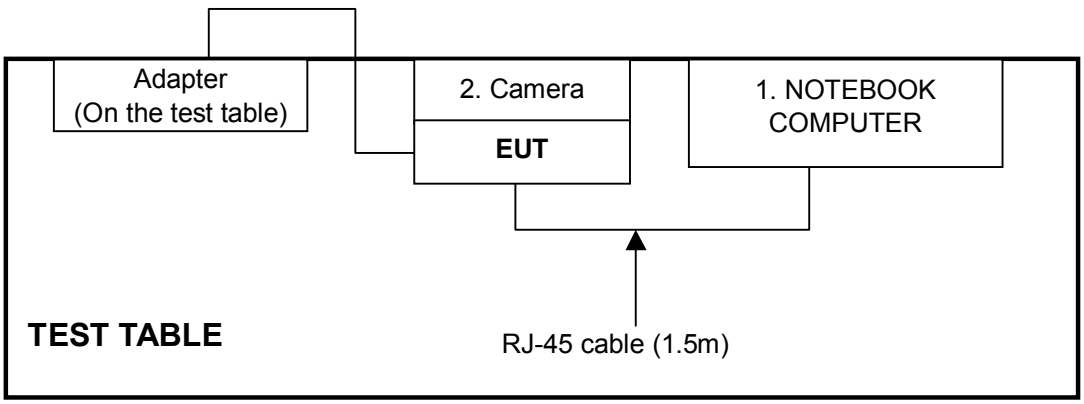
For Conducted Emission Test					
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PPT	17044664176	E2K24GBRL
2	Camera	Nikon	D200	NA	NA
For Radiated Emission Test					
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610

No.	Signal cable description
1	NA
2	NA

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

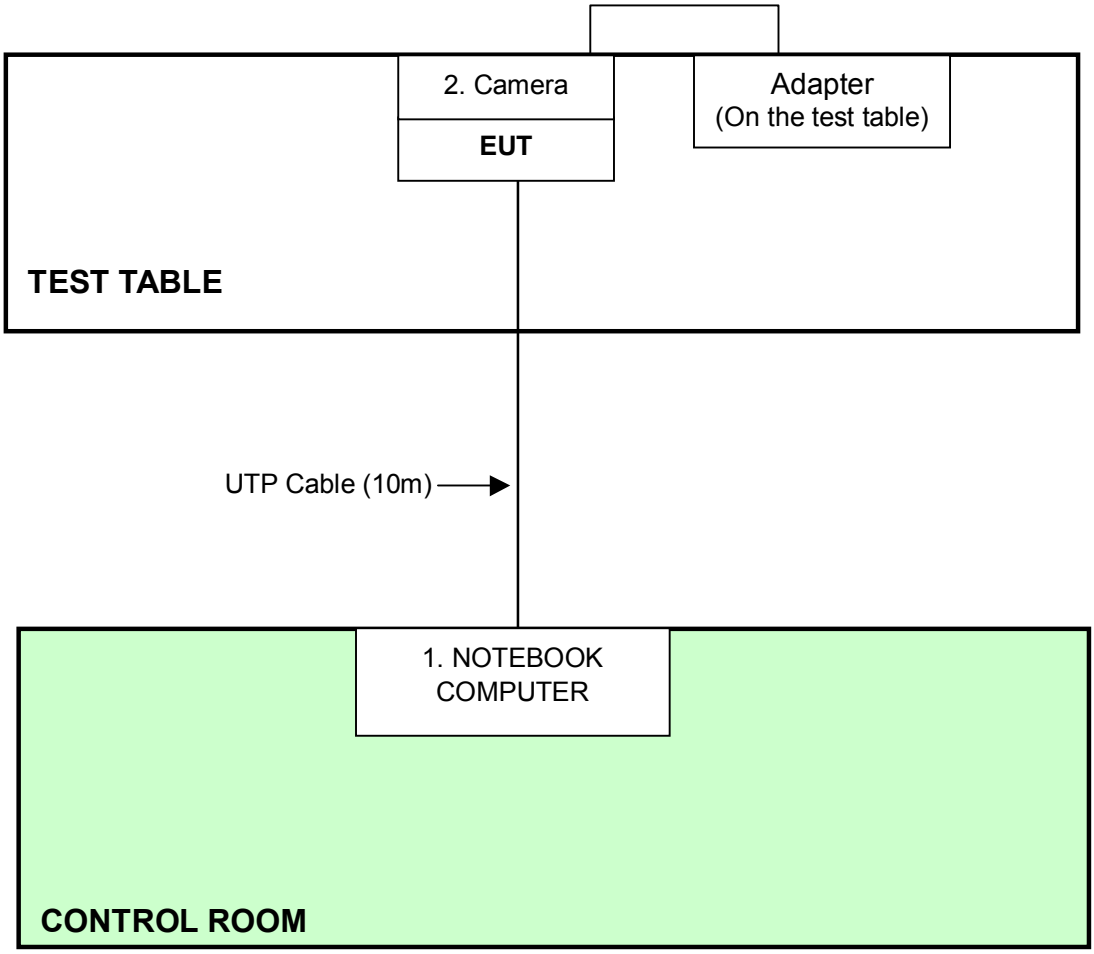
3.6 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted Emission Test:



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

For Radiated Emission 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.

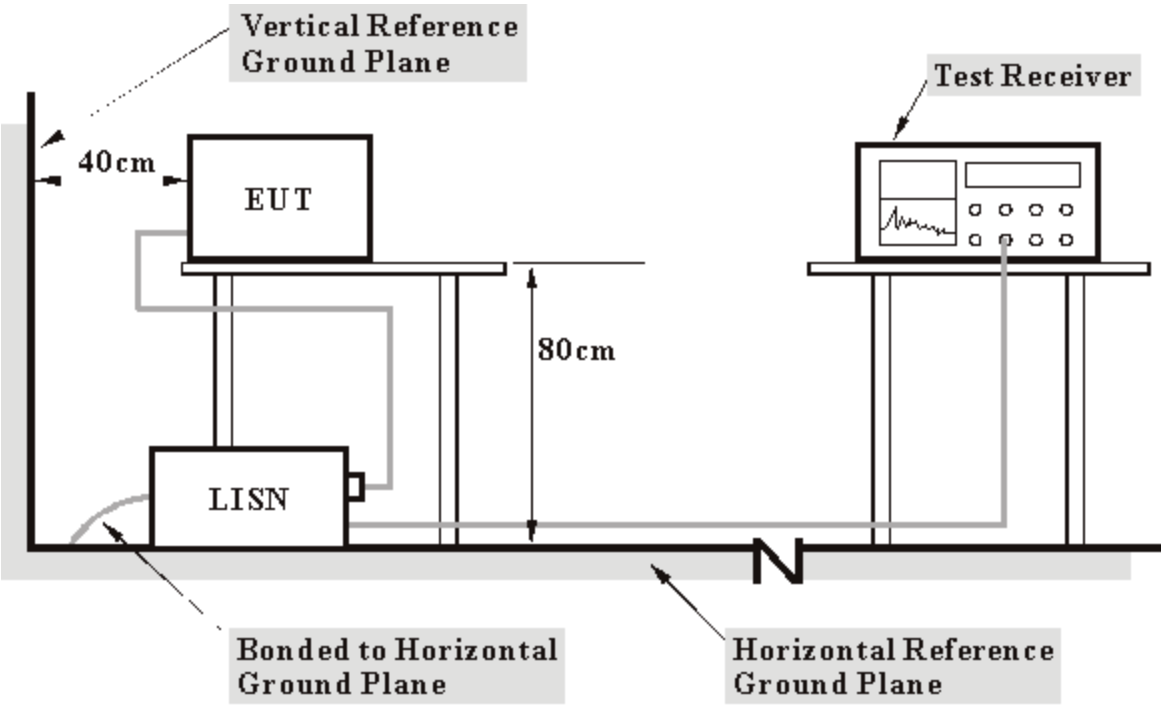
4.1.3 TEST PROCEDURES

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. Plug the support unit 2 (Camera) on EUT and placed them on the testing table.

b. Prepared other computer system (support unit 1) to act as communication partner and placed it on the testing table.

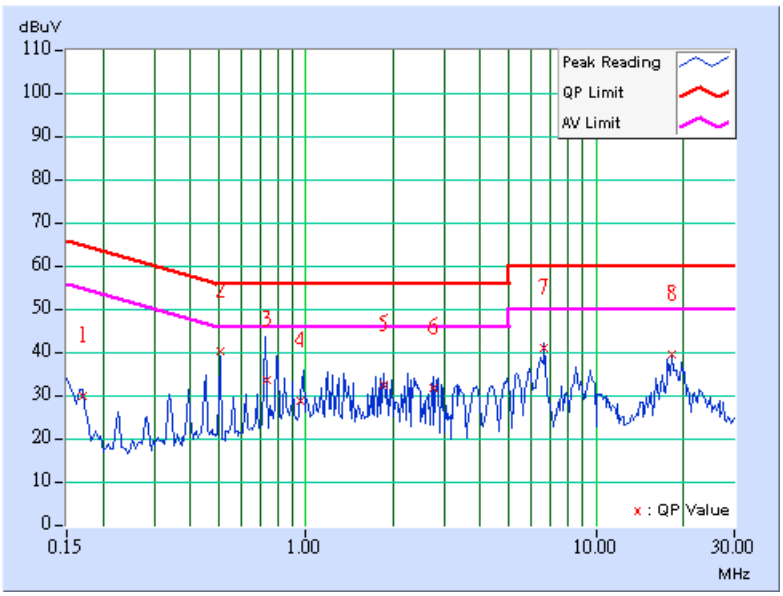
c. The communication partner run the test program "RF Certification Test " to enable EUT under transmission/receiving condition continuously at specific channel frequency via one UTP cable.

4.1.6 TEST RESULTS

MODULATION TYPE	CCK	CHANNEL	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 962hPa	TRANSFER RATE	11Mbps
TESTED BY	Moris Lin	PHASE	Line (L)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.171	9.60	19.89	-	29.49	-	64.94	54.94	-35.45	-
2	0.507	9.60	30.20	-	38.33	-	56.00	46.00	-17.67	-
3	0.731	9.60	23.60	-	31.96	-	56.00	46.00	-24.04	-
4	0.957	9.60	18.70	-	28.30	-	56.00	46.00	-27.70	-
5	1.857	9.69	22.63	-	32.32	-	56.00	46.00	-23.68	-
6	2.759	9.70	21.79	-	31.49	-	56.00	46.00	-24.51	-
7	6.652	9.79	31.05	-	40.84	-	60.00	50.00	-19.16	-
8	18.246	10.10	29.67	-	39.77	-	60.00	50.00	-20.23	-

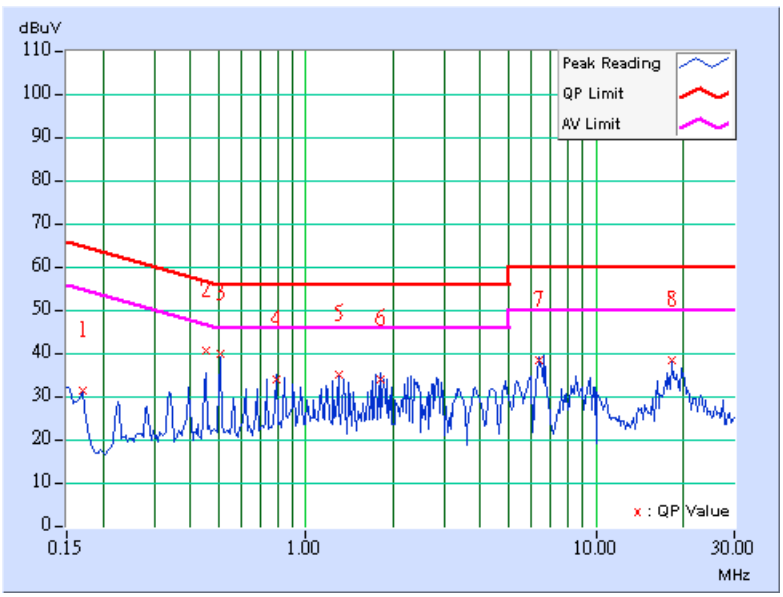
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	20deg. C, 60%RH, 962hPa	TRANSFER RATE	11Mbps
TESTED BY	Moris Lin	PHASE	Neutral (N)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	9.60	21.38	-	30.98	-	64.98	54.98	-34.00	-
2	0.451	9.60	30.55	-	40.15	-	56.86	46.86	-16.71	-
3	**0.505**	**9.60**	**29.90**	**-**	**39.50**	**-**	**56.00**	**46.00**	**-16.50**	**-**
4	0.791	9.60	23.92	-	33.52	-	56.00	46.00	-22.48	-
5	1.295	9.63	25.10	-	34.73	-	56.00	46.00	-21.27	-
6	1.802	9.68	24.11	-	33.79	-	56.00	46.00	-22.21	-
7	6.367	9.78	28.51	-	38.29	-	60.00	50.00	-21.71	-
8	18.242	10.06	28.30	-	38.36	-	60.00	50.00	-21.64	-

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



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. 19, 2006
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

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.

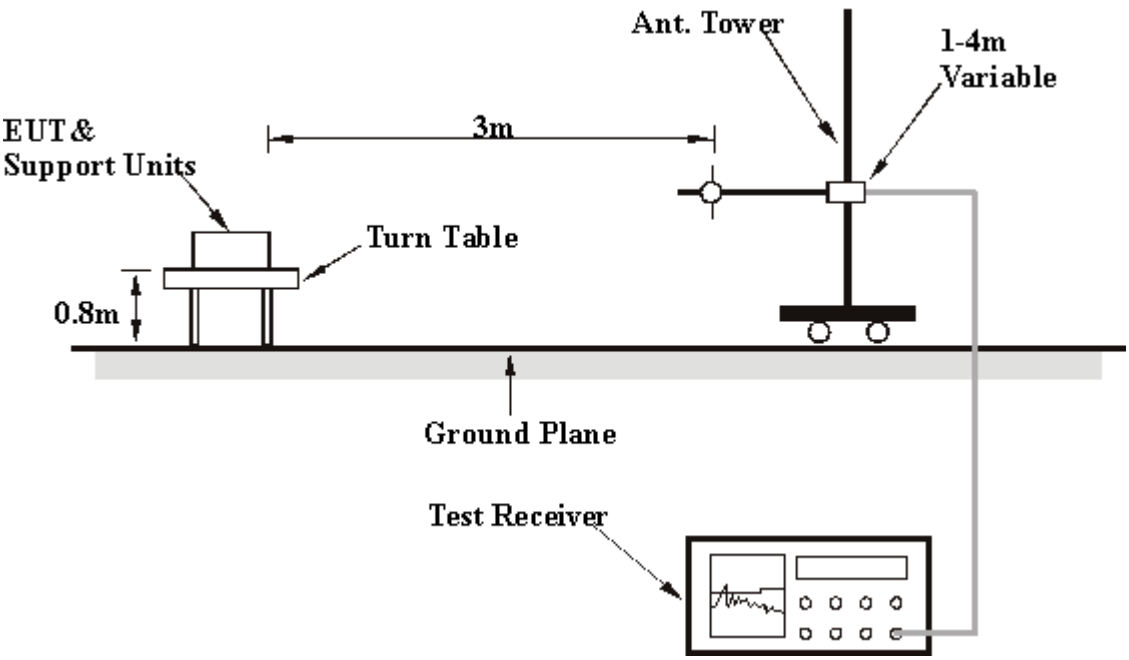
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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 and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

a. Plug the support unit 2 (Camera) on EUT and placed them on the testing table.

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

c. The communication partner run the test program "RF Certification Test " to enable EUT under transmission/receiving condition continuously at specific channel frequency via wireless.

4.2.6 TEST RESULTS (With Antenna 1)

Below 1GHz Worst-Case Data

MODULATION TYPE	OFDM	**CHANNEL**	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	30-1000 MHz
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 962hPa	**TRANSFER RATE**	6Mbps
TESTED BY	Sky Liao	**DETECTOR FUNCTION**	Quasi-Peak, 120kHz

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	225.00	25.30 QP	46.00	-20.70	1.61 H	37	12.60	12.70
2	275.01	25.20 QP	46.00	-20.80	1.00 H	21	9.60	15.60
3	400.01	34.40 QP	46.00	-11.60	1.00 H	160	15.40	19.00
4	500.01	33.40 QP	46.00	-12.60	1.00 H	158	11.60	21.80
5	600.01	34.60 QP	46.00	-11.40	1.00 H	143	10.10	24.50
6	700.01	34.50 QP	46.00	-11.50	1.30 H	214	8.60	25.80
7	800.01	31.00 QP	46.00	-15.00	2.03 H	41	3.40	27.60
8	900.01	33.00 QP	46.00	-13.00	2.22 H	316	4.10	28.90

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	225.01	27.80 QP	46.00	-18.20	1.00 V	183	15.10	12.70
2	300.01	26.60 QP	46.00	-19.40	1.00 V	210	9.80	16.80
3	400.01	33.50 QP	46.00	-12.50	1.63 V	107	14.50	19.00
4	500.01	36.90 QP	46.00	-9.10	1.31 V	139	15.20	21.80
5	600.01	37.00 QP	46.00	-9.00	1.14 V	189	12.60	24.50
6	700.01	33.60 QP	46.00	-12.40	1.00 V	4	7.80	25.80
7	800.01	29.10 QP	46.00	-16.90	1.17 V	243	1.50	27.60
8	900.01	38.20 QP	46.00	-7.80	1.28 V	354	9.40	28.90

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, 55%RH, 962hPa	**TESTED BY**	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.60 PK	74.00	-19.40	1.25 H	22	24.90	29.80
1	2390.00	43.00 AV	54.00	-11.00	1.25 H	22	13.20	29.80
2	*2412.00	87.00 PK			1.25 H	22	57.10	29.90
2	*2412.00	78.50 AV			1.25 H	22	48.60	29.90
3	4824.00	49.70 PK	74.00	-24.30	1.70 H	250	14.70	35.00
3	4824.00	44.40 AV	54.00	-9.60	1.70 H	250	9.40	35.00
4	7236.00	50.40 PK	74.00	-23.60	1.38 H	26	9.20	41.10
4	7236.00	38.30 AV	54.00	-15.70	1.38 H	26	-2.90	41.10

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	54.00 PK	74.00	-20.00	1.77 V	2	24.20	29.80
1	2390.00	43.00 AV	54.00	-11.00	1.77 V	2	13.20	29.80
2	*2412.00	87.50 PK			1.77 V	2	57.60	29.90
2	*2412.00	78.70 AV			1.77 V	2	48.80	29.90
3	4824.00	51.70 PK	74.00	-22.30	1.13 V	236	16.70	35.00
3	4824.00	48.50 AV	54.00	-5.50	1.13 V	236	13.50	35.00
4	7236.00	51.10 PK	74.00	-22.90	1.15 V	15	9.90	41.10
4	7236.00	38.30 AV	54.00	-15.70	1.15 V	15	-2.90	41.10

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
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

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, 55%RH, 962hPa	**TESTED BY**	Sky Liao

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	88.20 PK			1.22 H	42	58.20	30.00
1	*2437.00	79.60 AV			1.22 H	42	49.60	30.00
2	4874.00	50.40 PK	74.00	-23.60	1.42 H	62	15.20	35.20
2	4874.00	45.20 AV	54.00	-8.80	1.42 H	62	10.00	35.20
3	7311.00	50.20 PK	74.00	-23.80	1.32 H	42	8.80	41.40
3	7311.00	38.60 AV	54.00	-15.40	1.32 H	42	-2.80	41.40

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	*2437.00	90.20 PK			1.46 V	15	60.20	30.00
1	*2437.00	81.60 AV			1.46 V	15	51.60	30.00
2	4874.00	52.20 PK	74.00	-21.80	1.05 V	124	17.00	35.20
2	4874.00	48.80 AV	54.00	-5.20	1.05 V	124	13.60	35.20
3	7311.00	52.40 PK	74.00	-21.60	1.02 V	32	11.00	41.40
3	7311.00	39.80 AV	54.00	-14.20	1.02 V	32	-1.60	41.40

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.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

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, 55%RH, 962hPa	**TESTED BY**	Sky Liao

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	87.70 PK			1.25 H	36	57.60	30.10
1	*2462.00	79.10 AV			1.25 H	36	49.00	30.10
2	2483.50	54.60 PK	74.00	-19.40	1.25 H	36	24.40	30.20
2	2483.50	45.70 AV	54.00	-8.30	1.25 H	36	15.40	30.20
3	4924.00	50.00 PK	74.00	-24.00	1.36 H	28	14.60	35.40
3	4924.00	44.60 AV	54.00	-9.40	1.36 H	28	9.20	35.40
4	7386.00	50.60 PK	74.00	-23.40	1.22 H	15	9.00	41.60
4	7386.00	38.50 AV	54.00	-15.50	1.22 H	15	-3.10	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	89.40 PK			1.52 V	1	59.30	30.10
1	*2462.00	80.90 AV			1.52 V	1	50.80	30.10
2	2483.50	54.80 PK	74.00	-19.20	1.52 V	1	24.50	30.20
2	2483.50	44.60 AV	54.00	-9.40	1.52 V	1	14.40	30.20
3	4924.00	51.80 PK	74.00	-22.20	1.10 V	184	16.40	35.40
3	4924.00	48.40 AV	54.00	-5.60	1.10 V	184	13.00	35.40
4	7386.00	52.20 PK	74.00	-21.80	1.06 V	18	10.60	41.60
4	7386.00	39.20 AV	54.00	-14.80	1.06 V	18	-2.40	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
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

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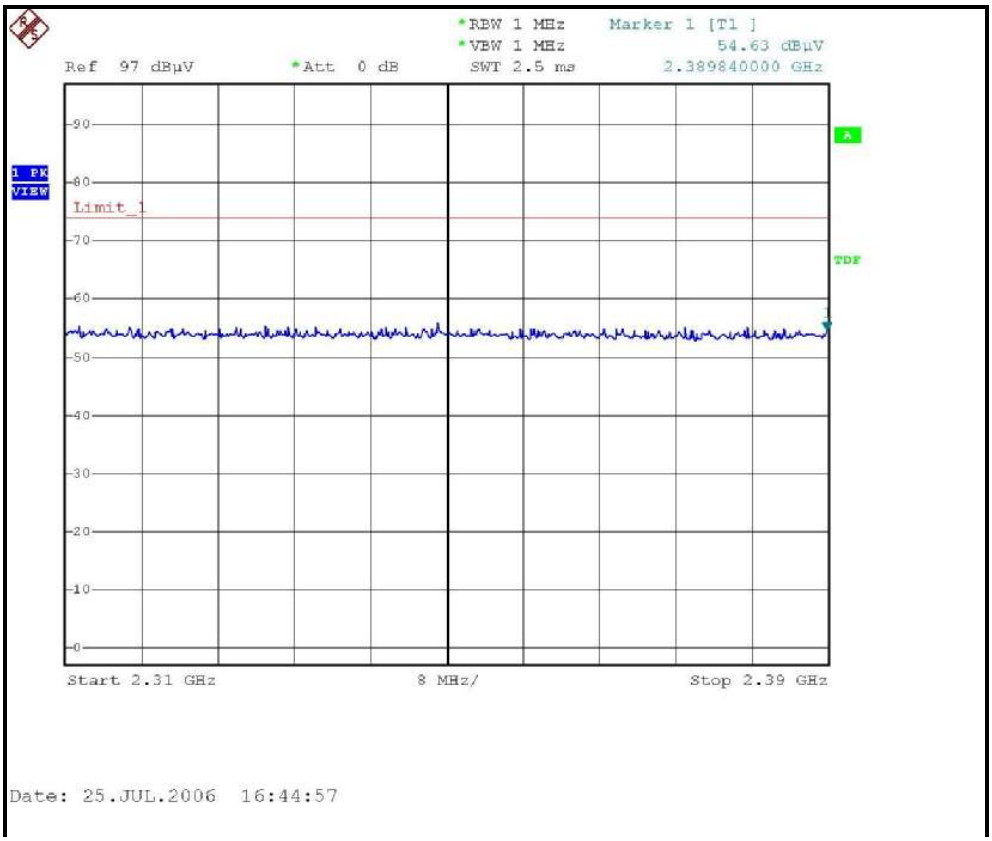

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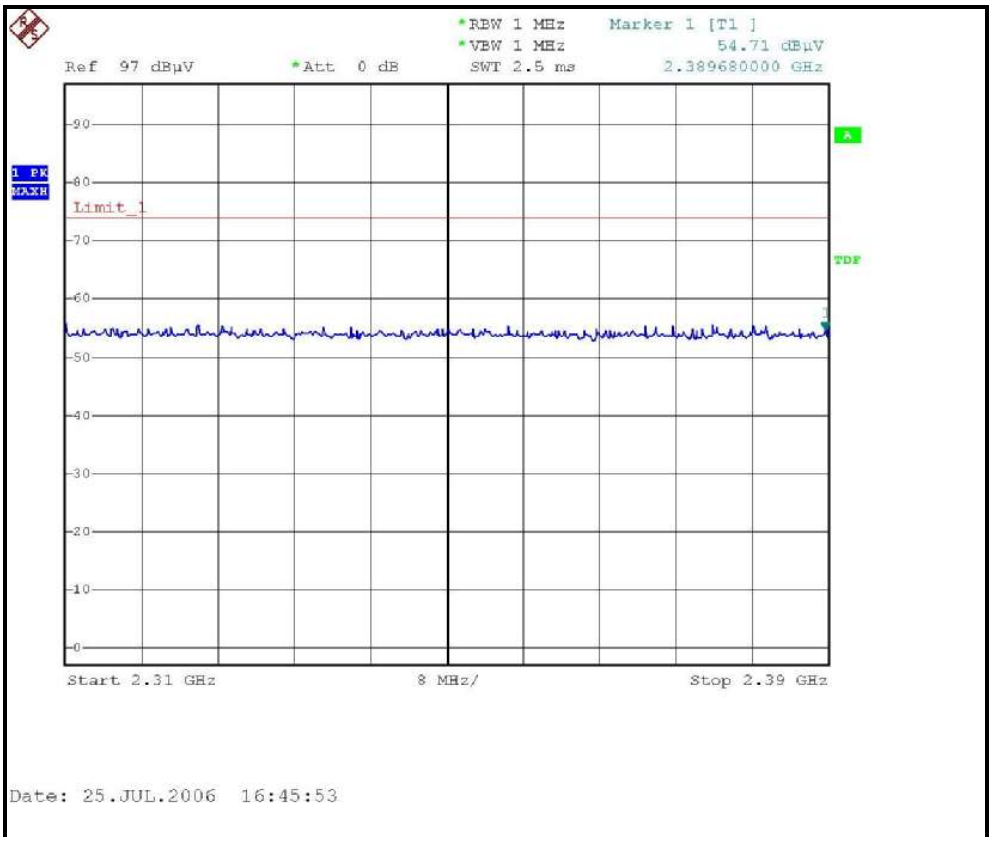

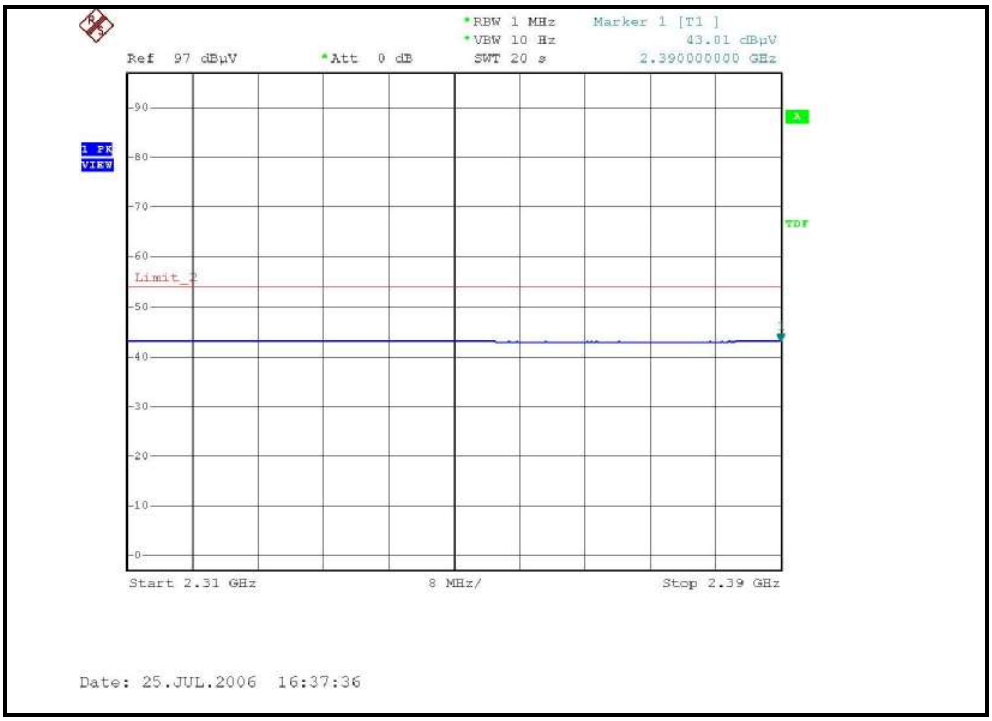

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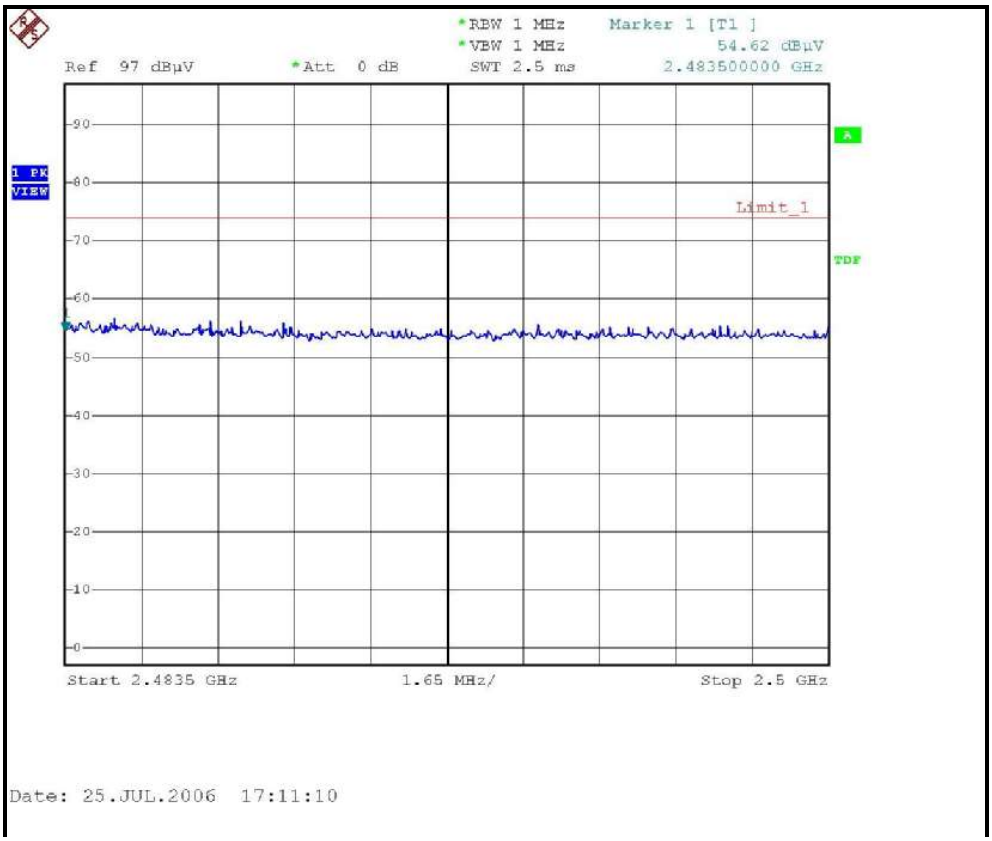
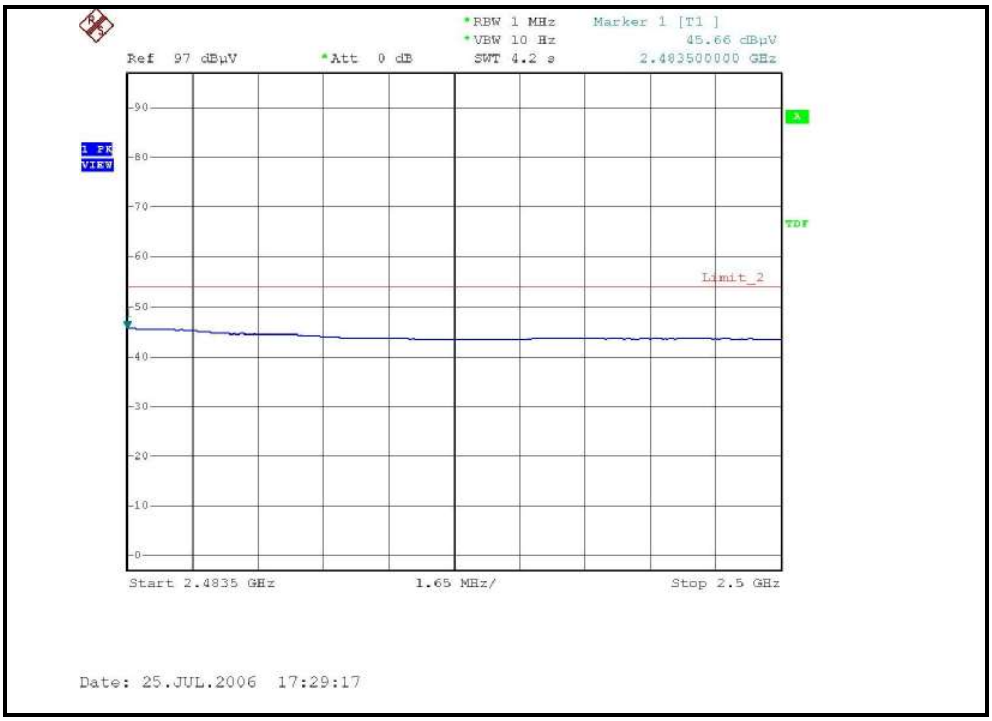
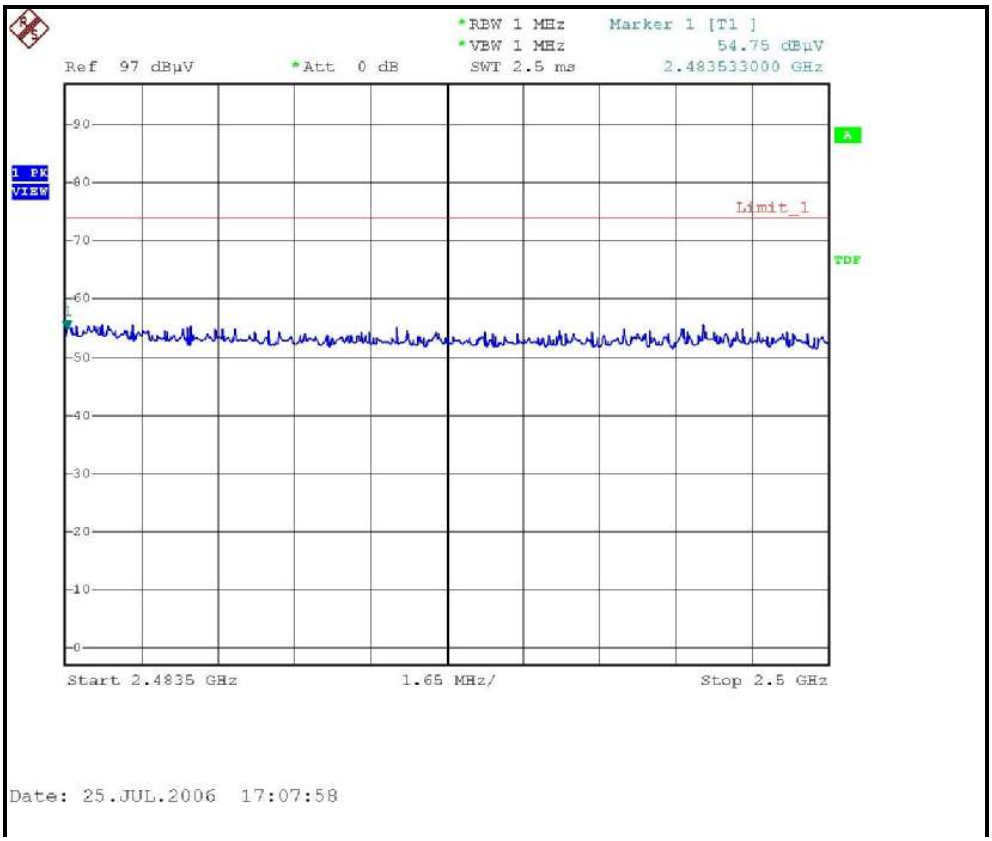
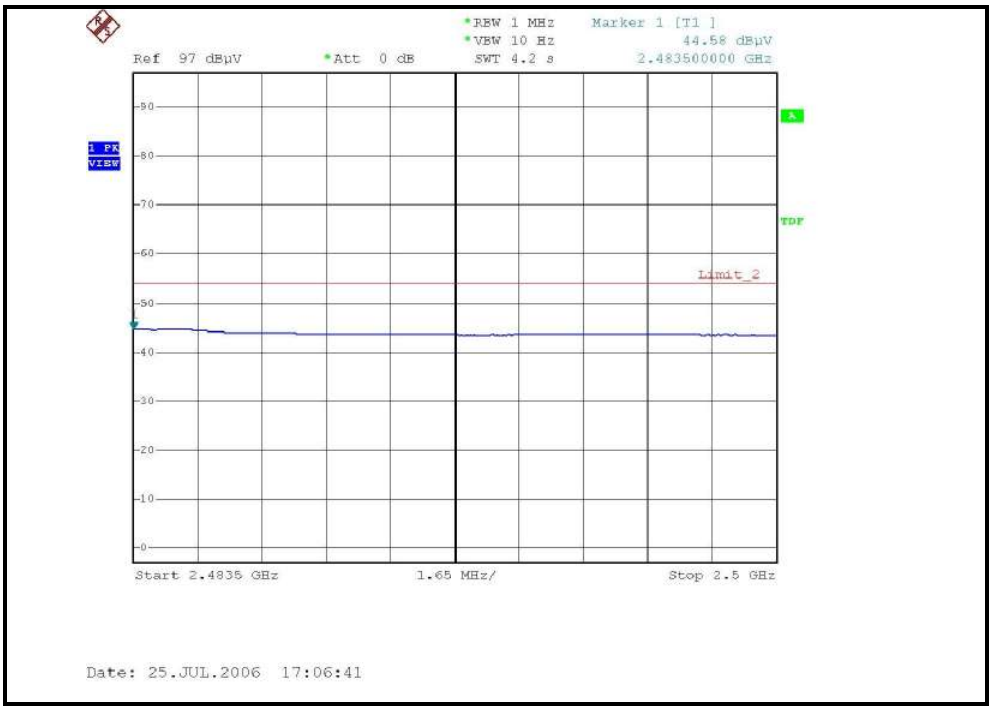




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





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) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	55.10 PK	74.00	-18.90	1.25 H	22	25.30	29.80
1	2390.00	43.00 AV	54.00	-11.00	1.25 H	22	13.20	29.80
2	*2412.00	82.40 PK			1.25 H	22	52.50	29.90
2	*2412.00	66.40 AV			1.25 H	22	36.50	29.90
3	4824.00	47.70 PK	74.00	-26.30	1.18 H	250	12.70	35.00
3	4824.00	42.30 AV	54.00	-11.70	1.18 H	250	7.30	35.00
4	7236.00	51.30 PK	74.00	-22.70	1.06 H	84	10.10	41.10
4	7236.00	38.20 AV	54.00	-15.80	1.06 H	84	-3.00	41.10

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	54.60 PK	74.00	-19.40	1.50 V	4	24.80	29.80
1	2390.00	43.00 AV	54.00	-11.00	1.50 V	4	13.20	29.80
2	*2412.00	84.10 PK			1.50 V	4	54.20	29.90
2	*2412.00	67.70 AV			1.50 V	4	37.80	29.90
3	4824.00	51.20 PK	74.00	-22.80	1.13 V	235	16.20	35.00
3	4824.00	44.30 AV	54.00	-9.70	1.13 V	235	9.30	35.00
4	7236.00	51.40 PK	74.00	-22.60	1.00 V	22	10.20	41.10
4	7236.00	38.20 AV	54.00	-15.80	1.00 V	22	-3.00	41.10

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
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

MODE	Channel 6	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

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	82.80 PK			1.22 H	62	53.10	29.70
1	*2437.00	66.80 AV			1.22 H	62	37.10	29.70
2	4874.00	48.60 PK	74.00	-25.40	1.20 H	266	13.40	35.20
2	4874.00	42.60 AV	54.00	-11.40	1.20 H	266	7.40	35.20
3	7311.00	52.60 PK	74.00	-21.40	1.20 H	62	11.20	41.40
3	7311.00	39.20 AV	54.00	-14.80	1.20 H	62	-2.20	41.40

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	*2437.00	86.80 PK			1.52 V	12	56.80	30.00
1	*2437.00	69.50 AV			1.52 V	12	39.50	30.00
2	4874.00	51.60 PK	74.00	-22.40	1.28 V	206	16.40	35.20
2	4874.00	44.60 AV	54.00	-9.40	1.28 V	206	9.40	35.20
3	7311.00	51.60 PK	74.00	-22.40	1.02 V	30	10.20	41.40
3	7311.00	38.80 AV	54.00	-15.20	1.02 V	30	-2.60	41.40

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.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

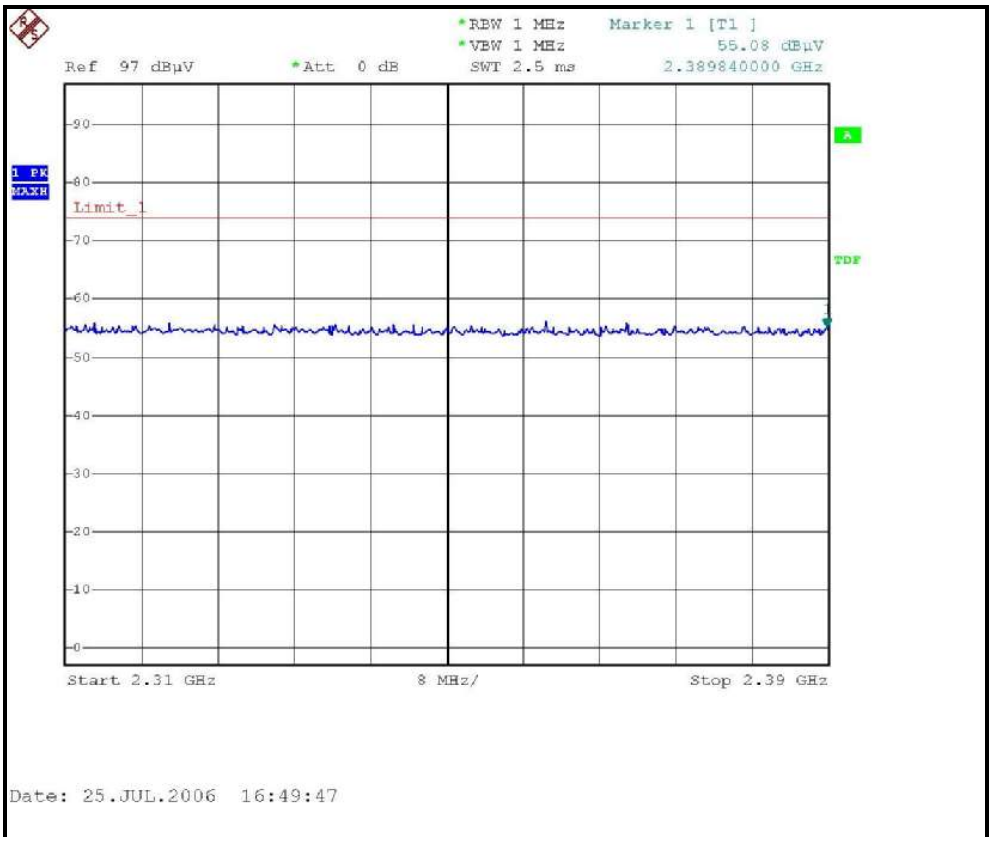
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

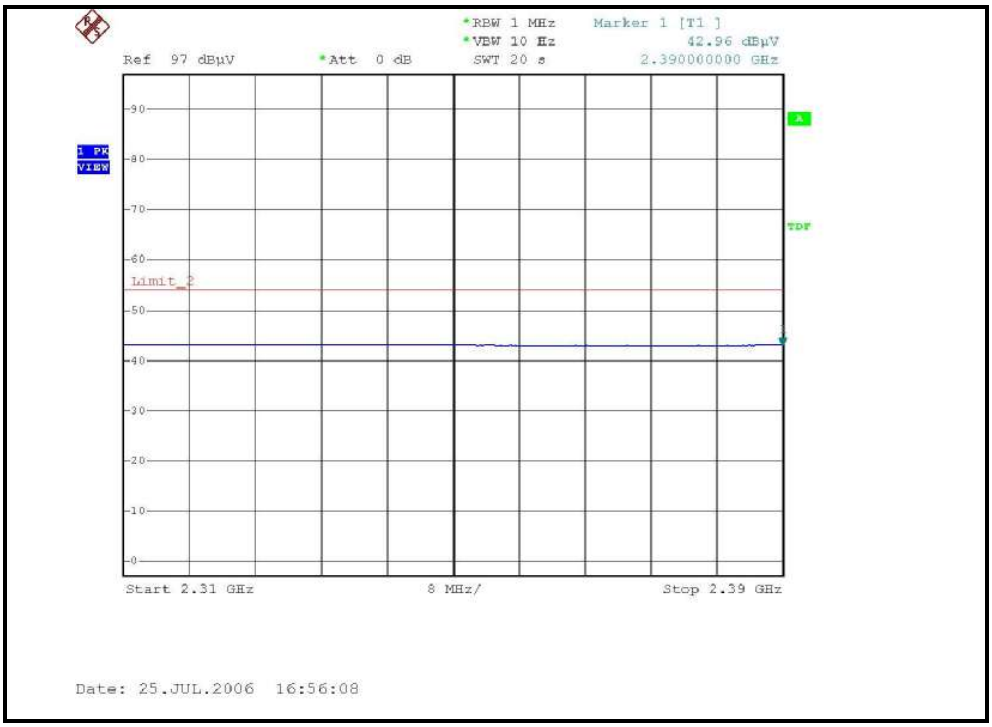
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	82.50 PK			1.24 H	337	52.40	30.10
1	*2462.00	66.40 AV			1.24 H	337	36.30	30.10
2	2483.50	54.50 PK	74.00	-19.50	1.25 H	335	24.30	30.20
2	2483.50	43.40 AV	54.00	-10.60	1.25 H	335	13.10	30.20
3	4924.00	48.40 PK	74.00	-25.60	1.22 H	302	13.00	35.40
3	4924.00	42.80 AV	54.00	-11.20	1.22 H	302	7.40	35.40
4	7386.00	52.00 PK	74.00	-22.00	1.16 H	20	10.40	41.60
4	7386.00	38.80 AV	54.00	-15.20	1.16 H	20	-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	87.10 PK			1.55 V	2	57.00	30.10
1	*2462.00	70.00 AV			1.55 V	2	39.90	30.10
2	2483.50	55.10 PK	74.00	-18.90	1.53 V	14	24.90	30.20
2	2483.50	43.70 AV	54.00	-10.30	1.53 V	14	13.50	30.20
3	4924.00	51.00 PK	74.00	-23.00	1.42 V	222	15.60	35.40
3	4924.00	43.80 AV	54.00	-10.20	1.42 V	222	8.40	35.40
4	7386.00	51.20 PK	74.00	-22.80	1.06 V	45	9.60	41.60
4	7386.00	38.50 AV	54.00	-15.50	1.06 V	45	-3.10	41.60

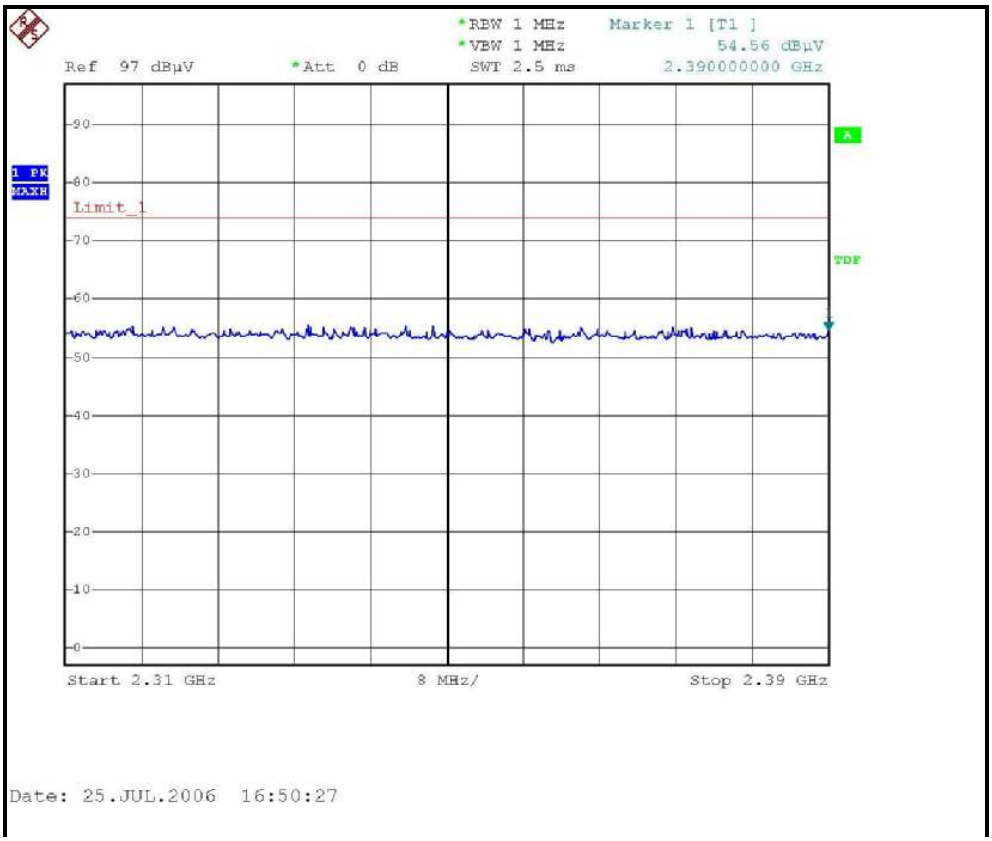
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency
7. The field strength can be affected by machine structure; the field strength of fundamental measure value can be small then the theory value.

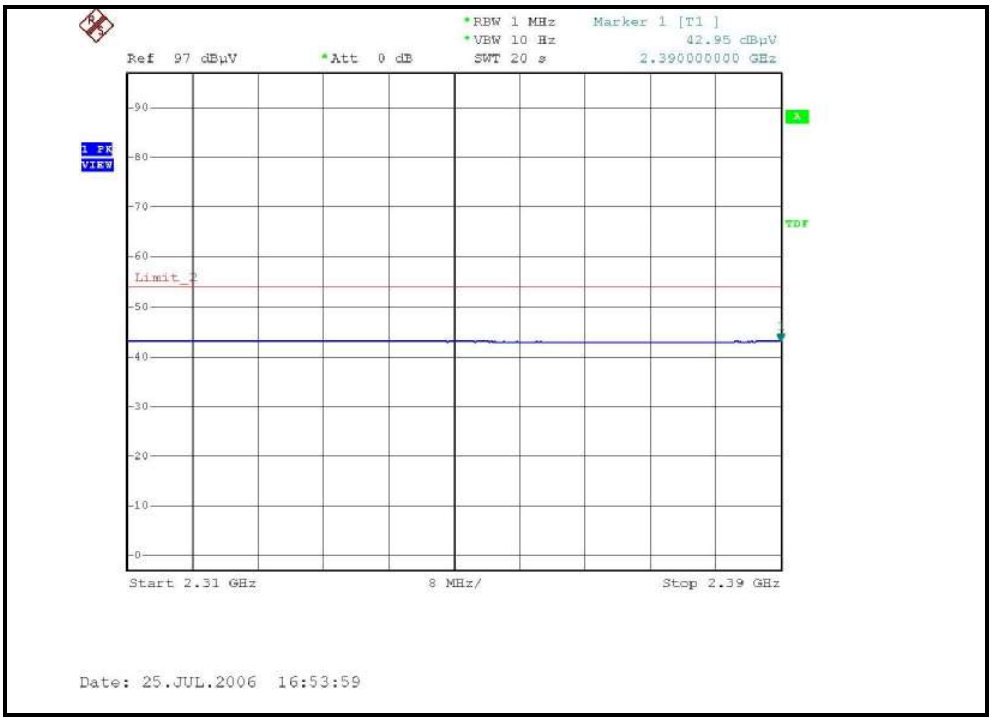
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



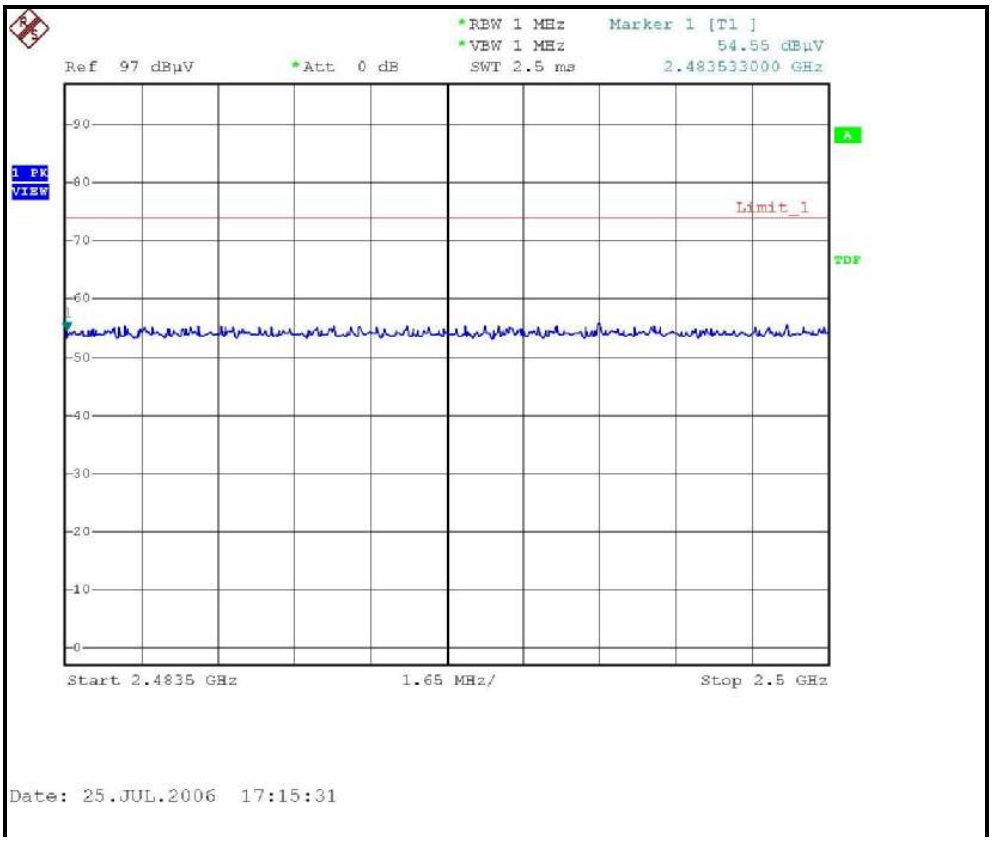


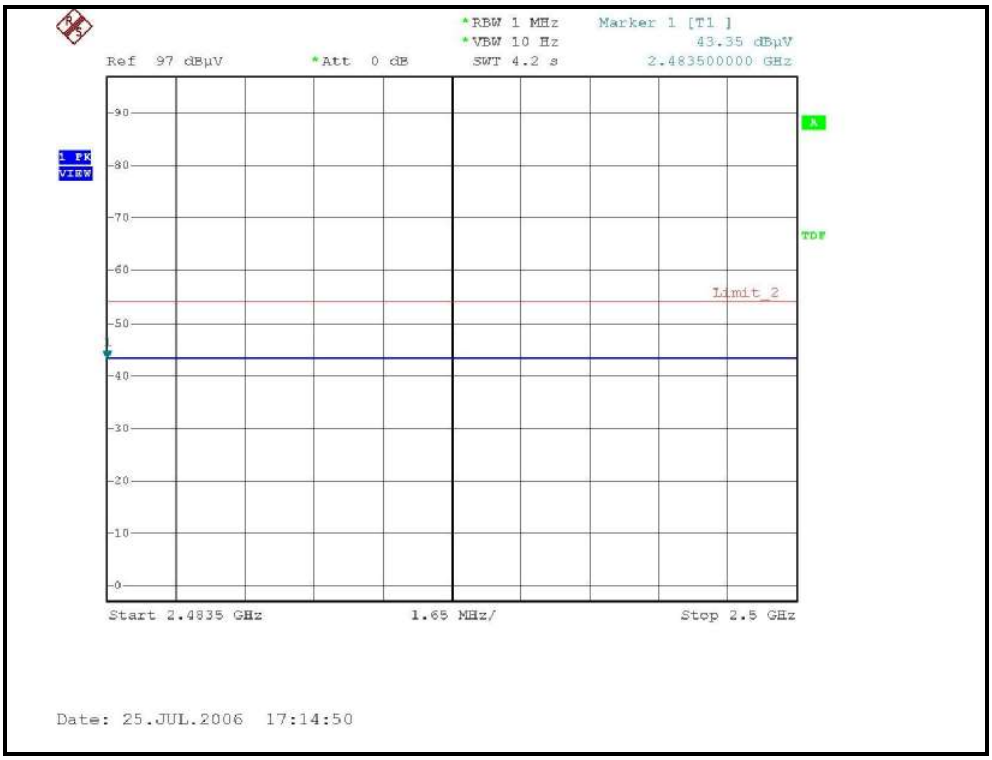
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



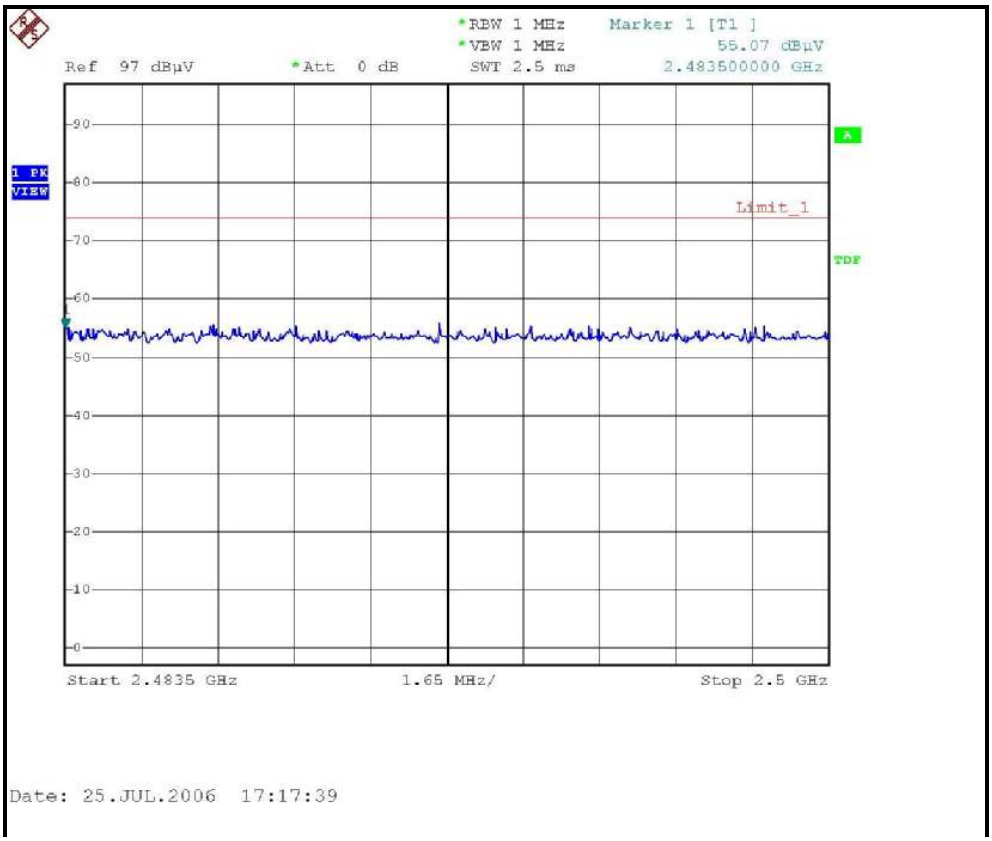


RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)



4.2.7 TEST RESULTS (With Antenna 2)

Below 1GHz Worst-Case Data

MODULATION TYPE	OFDM	**CHANNEL**	Channel 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	30-1000 MHz
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 962hPa	**TRANSFER RATE**	6Mbps
TESTED BY	Sky Liao	**DETECTOR FUNCTION**	Quasi-Peak, 120kHz

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	225.00	24.40 QP	46.00	-21.60	1.63 H	38	11.70	12.70
2	325.00	24.70 QP	46.00	-21.30	1.27 H	332	7.60	17.10
3	400.00	38.80 QP	46.00	-7.20	1.00 H	247	19.80	19.00
4	500.00	35.30 QP	46.00	-10.70	1.00 H	190	13.50	21.80
5	600.01	35.60 QP	46.00	-10.40	1.42 H	7	11.20	24.50
6	700.01	34.50 QP	46.00	-11.50	1.29 H	39	8.70	25.80
7	800.01	31.60 QP	46.00	-14.40	1.42 H	129	4.00	27.60
8	900.01	35.40 QP	46.00	-10.60	1.28 H	121	6.50	28.90

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	225.00	26.10 QP	46.00	-19.90	1.06 V	44	13.50	12.70
2	275.00	29.40 QP	46.00	-16.60	1.00 V	197	13.80	15.60
3	400.00	36.90 QP	46.00	-9.10	1.37 V	307	17.90	19.00
4	500.01	37.10 QP	46.00	-8.90	1.15 V	80	15.30	21.80
5	600.01	37.60 QP	46.00	-8.40	1.07 V	269	13.10	24.50
6	700.01	34.90 QP	46.00	-11.10	1.01 V	0	9.10	25.80
7	800.01	31.60 QP	46.00	-14.40	1.39 V	78	4.00	27.60
8	900.01	38.50 QP	46.00	-7.50	1.30 V	358	9.60	28.90

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, 55%RH, 962hPa	**TESTED BY**	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.80 PK	74.00	-19.20	1.00 H	311	25.00	29.80
1	2390.00	44.70 AV	54.00	-9.30	1.00 H	311	14.90	29.80
2	*2412.00	97.80 PK			1.00 H	310	67.90	29.90
2	*2412.00	94.60 AV			1.00 H	310	64.70	29.90
3	3216.00	41.10 PK	74.00	-32.90	1.00 H	320	9.20	32.00
3	3216.00	28.40 AV	54.00	-25.60	1.00 H	320	-3.50	32.00
4	4824.00	43.40 PK	74.00	-30.60	1.01 H	318	8.40	35.00
4	4824.00	32.70 AV	54.00	-21.30	1.01 H	318	-2.30	35.00
5	7236.00	50.90 PK	74.00	-23.10	1.02 H	118	9.70	41.10
5	7236.00	37.90 AV	54.00	-16.10	1.02 H	118	-3.30	41.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2389.52	59.90 PK	74.00	-14.10	1.00 V	46	30.10	29.80
1	**2389.52**	**52.50 AV**	**54.00**	**-1.50**	**1.00 V**	**46**	**22.70**	**29.80**
2	*2412.00	108.90 PK			1.03 V	122	79.00	29.90
2	*2412.00	105.90 AV			1.03 V	122	76.00	29.90
3	3216.00	42.30 PK	74.00	-31.70	1.00 V	343	10.40	32.00
3	3216.00	31.40 AV	54.00	-22.60	1.00 V	343	-0.50	32.00
4	4824.00	45.50 PK	74.00	-28.50	1.00 V	275	10.50	35.00
4	4824.00	35.80 AV	54.00	-18.20	1.00 V	275	0.80	35.00
5	7236.00	50.40 PK	74.00	-23.60	1.04 V	28	9.20	41.10
5	7236.00	38.30 AV	54.00	-15.70	1.04 V	28	-2.90	41.10

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, 55%RH, 962hPa	**TESTED BY**	Sky Liao

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	98.30 PK			1.00 H	312	68.30	30.00
1	*2437.00	94.80 AV			1.00 H	312	64.80	30.00
2	3249.00	41.40 PK	74.00	-32.60	1.00 H	102	9.40	32.00
2	3249.00	28.90 AV	54.00	-25.10	1.00 H	102	-3.10	32.00
3	4874.00	43.30 PK	74.00	-30.70	1.05 H	320	8.10	35.20
3	4874.00	33.20 AV	54.00	-20.80	1.05 H	320	-2.00	35.20
4	7311.00	50.70 PK	74.00	-23.30	1.00 H	132	9.30	41.40
4	7311.00	38.20 AV	54.00	-15.80	1.00 H	132	-3.20	41.40

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	*2437.00	108.60 PK			1.00 V	122	78.60	30.00
1	*2437.00	105.60 AV			1.00 V	122	75.60	30.00
2	3249.00	42.90 PK	74.00	-31.10	1.02 V	308	10.90	32.00
2	3249.00	31.40 AV	54.00	-22.60	1.02 V	308	-0.60	32.00
3	4874.00	46.00 PK	74.00	-28.00	1.01 V	270	10.80	35.20
3	4874.00	35.80 AV	54.00	-18.20	1.01 V	270	0.60	35.20
4	7311.00	50.70 PK	74.00	-23.30	1.00 V	42	9.30	41.40
4	7311.00	38.50 AV	54.00	-15.50	1.00 V	42	-2.90	41.40

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

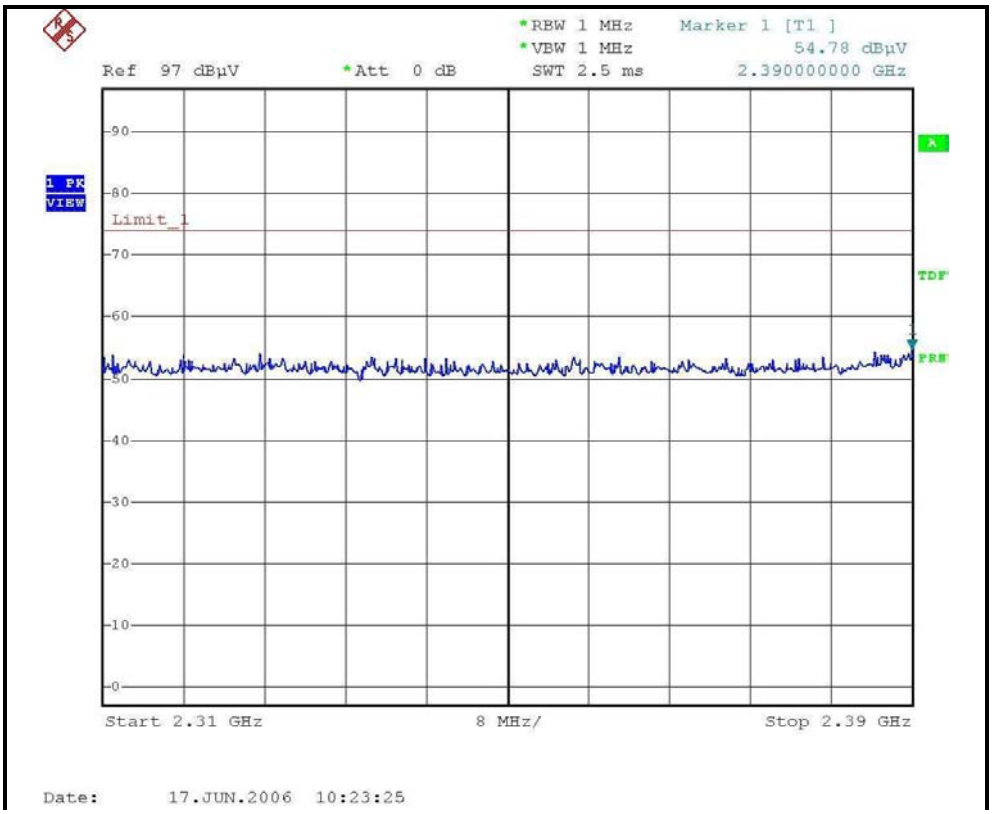
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

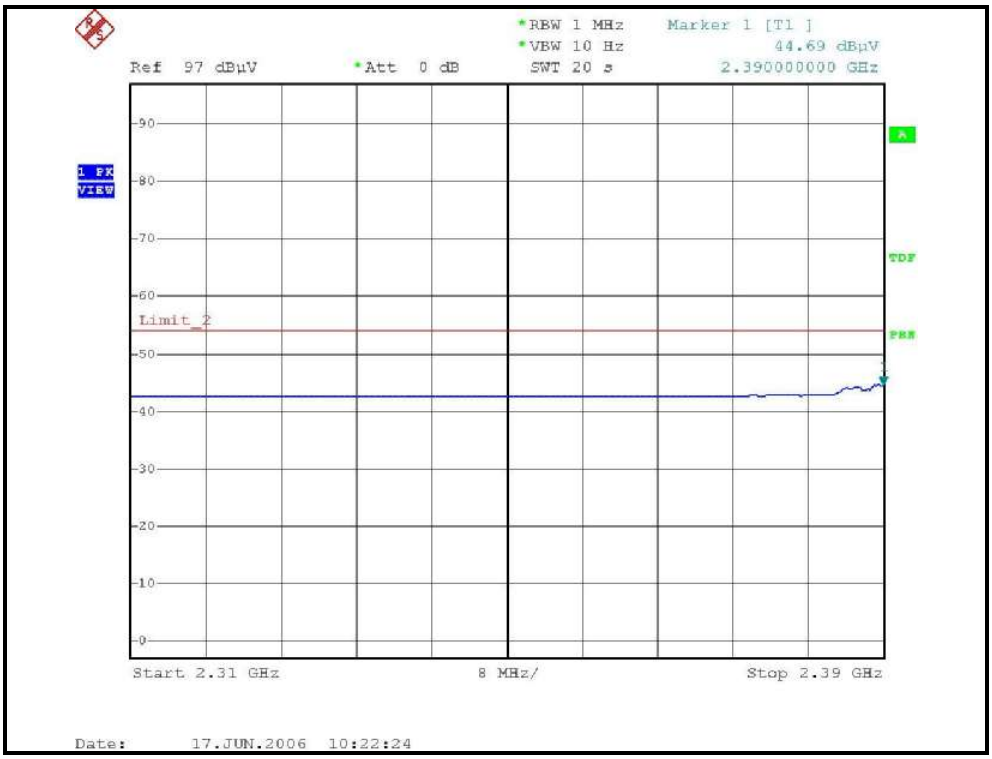
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	97.90 PK			1.00 H	315	67.80	30.10
1	*2462.00	94.50 AV			1.00 H	315	64.40	30.10
2	2483.50	56.20 PK	74.00	-17.80	1.00 H	305	26.00	30.20
2	2483.50	44.70 AV	54.00	-9.30	1.00 H	305	14.50	30.20
3	3282.00	41.20 PK	74.00	-32.80	1.02 H	264	9.10	32.10
3	3282.00	29.30 AV	54.00	-24.70	1.02 H	264	-2.80	32.10
4	4924.00	44.10 PK	74.00	-29.90	1.06 H	302	8.70	35.40
4	4924.00	33.00 AV	54.00	-21.00	1.06 H	302	-2.40	35.40
5	7386.00	51.80 PK	74.00	-22.20	1.04 H	45	10.20	41.60
5	7386.00	39.60 AV	54.00	-14.40	1.04 H	45	-2.00	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	108.20 PK			1.00 V	120	78.10	30.10
1	*2462.00	105.40 AV			1.00 V	120	75.30	30.10
2	2483.50	59.20 PK	74.00	-14.80	1.06 V	154	29.00	30.20
2	2483.50	50.80 AV	54.00	-3.20	1.06 V	154	20.60	30.20
3	3282.00	42.50 PK	74.00	-31.50	1.00 V	322	10.40	32.10
3	3282.00	31.70 AV	54.00	-22.30	1.00 V	322	-0.40	32.10
4	4924.00	46.40 PK	74.00	-27.60	1.05 V	225	11.00	35.40
4	4924.00	36.50 AV	54.00	-17.50	1.05 V	225	1.10	35.40
5	7386.00	51.50 PK	74.00	-22.50	1.08 V	98	9.90	41.60
5	7386.00	38.50 AV	54.00	-15.50	1.08 V	98	-3.10	41.60

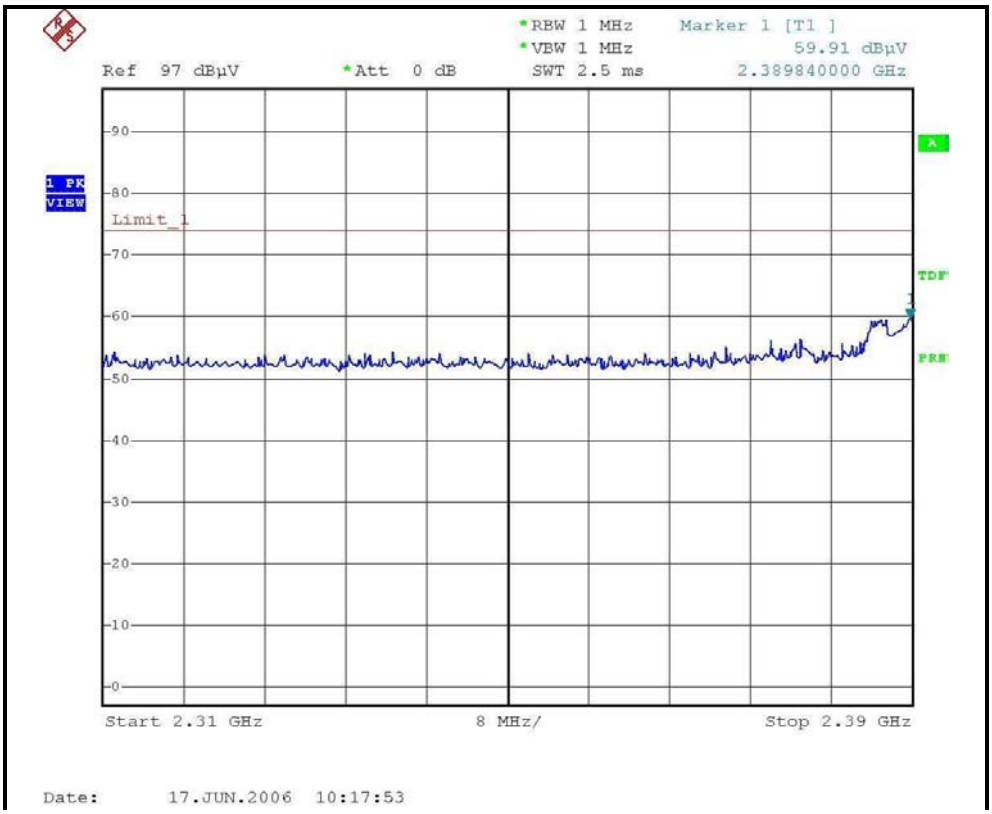
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

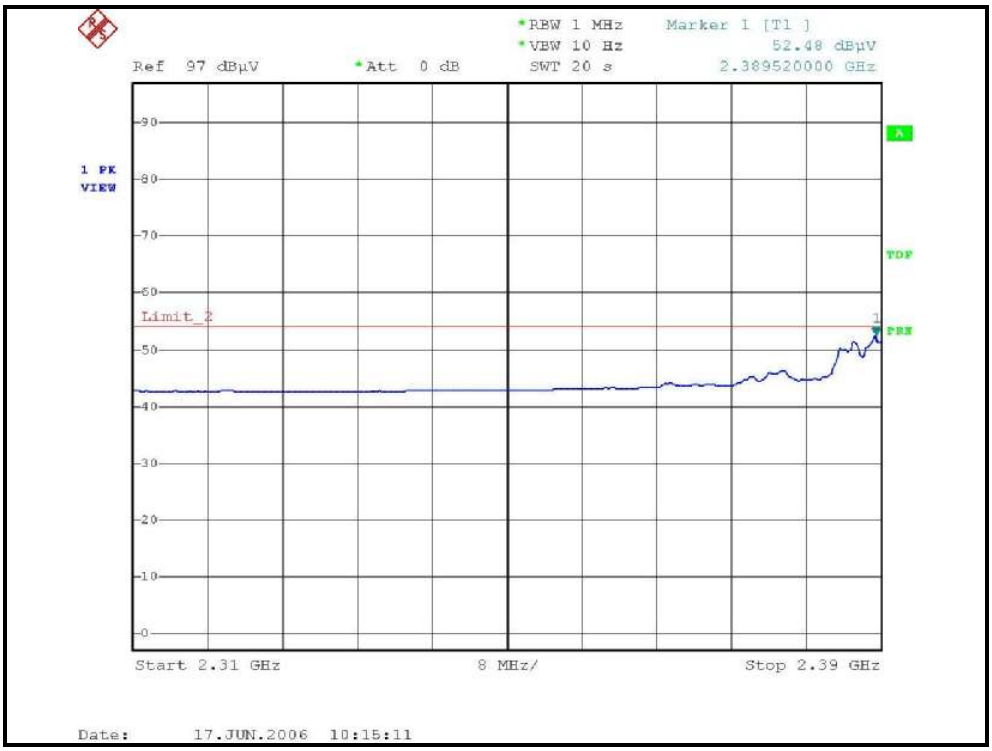
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)



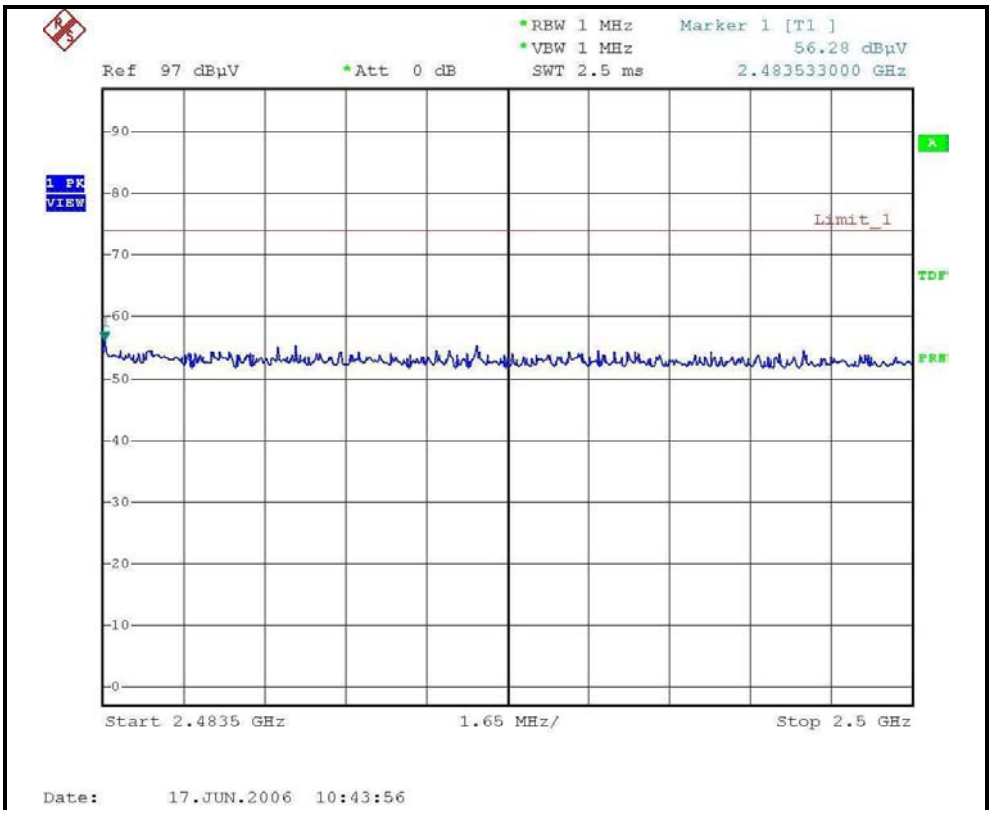


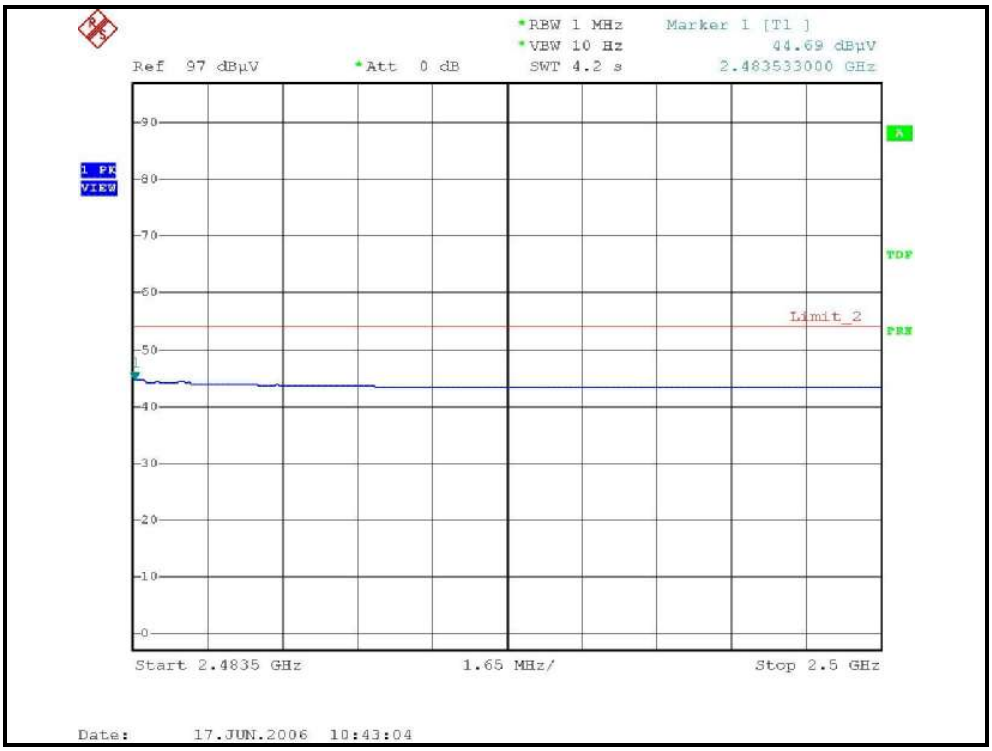
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)



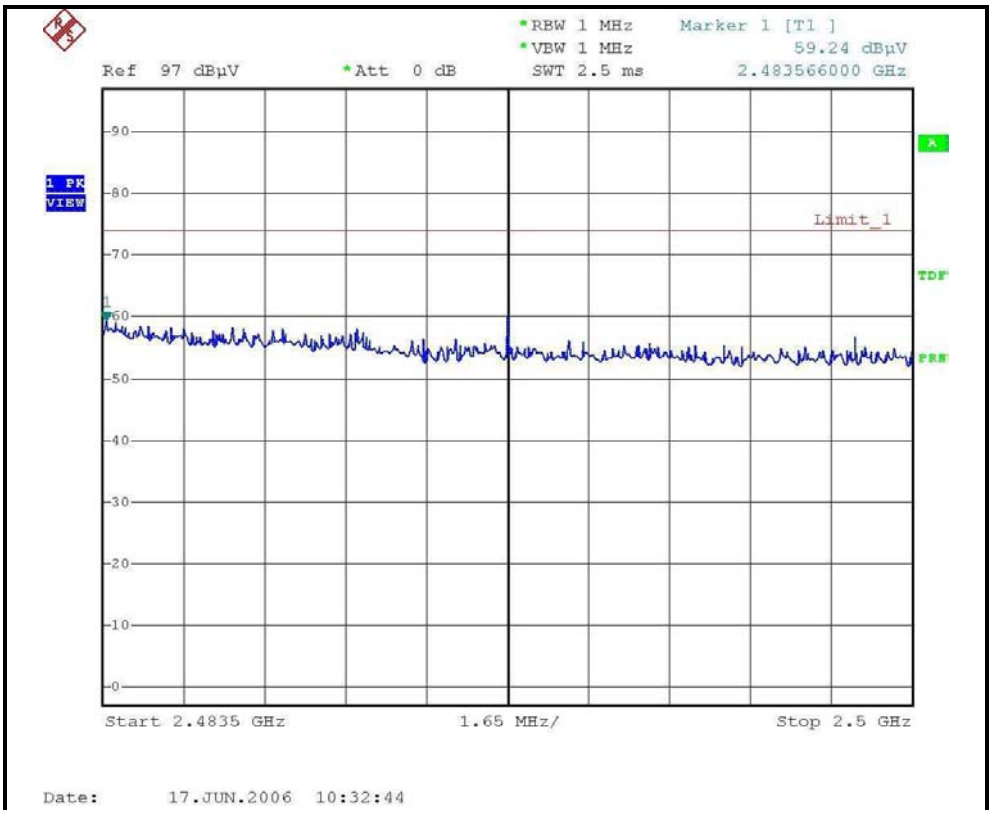


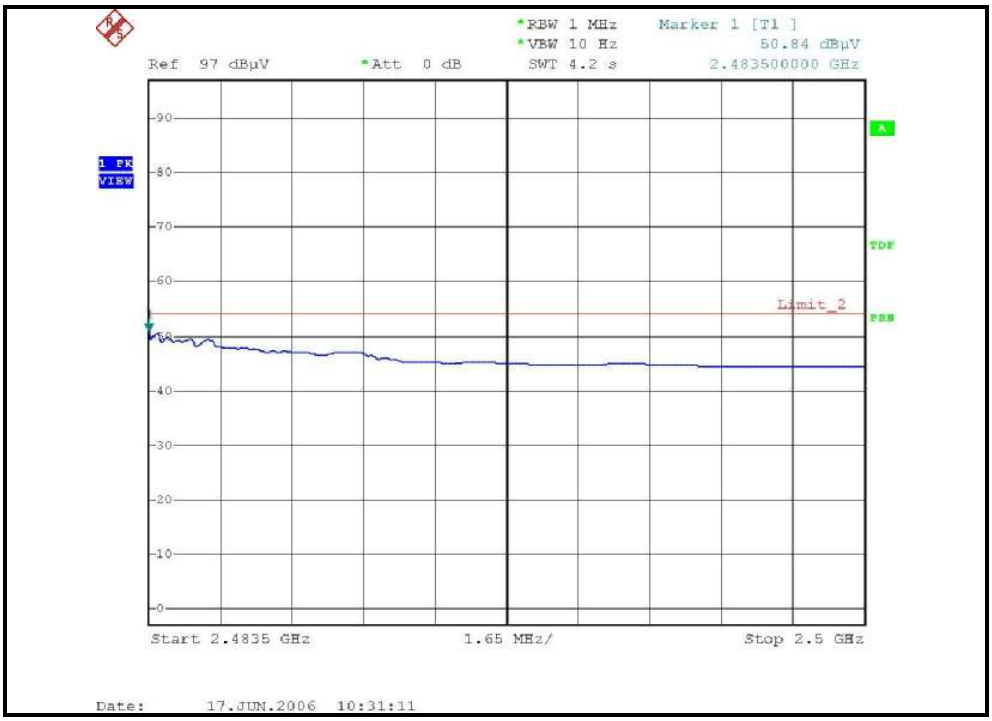
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g Normal OFDM modulation

MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	TESTED BY	Sky Liao

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	2387.12	54.70 PK	74.00	-19.30	1.00 H	310	25.00	29.70
1	2387.12	44.10 AV	54.00	-9.90	1.00 H	310	14.40	29.70
2	*2412.00	98.50 PK			1.08 H	307	68.60	29.90
2	*2412.00	85.60 AV			1.08 H	307	55.70	29.90
3	3216.00	42.00 PK	74.00	-32.00	1.05 H	230	10.10	32.00
3	3216.00	28.70 AV	54.00	-25.30	1.05 H	230	-3.20	32.00
4	4824.00	42.50 PK	74.00	-31.50	1.00 H	55	7.50	35.00
4	4824.00	30.80 AV	54.00	-23.20	1.00 H	55	-4.20	35.00
5	7236.00	48.40 PK	74.00	-25.60	1.10 H	28	7.20	41.10
5	7236.00	36.70 AV	54.00	-17.30	1.10 H	28	-4.50	41.10

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	2387.12	63.20 PK	74.00	-10.80	1.00 V	46	33.50	29.70
1	2387.12	50.50 AV	54.00	-3.50	1.00 V	46	20.70	29.70
2	*2412.00	109.30 PK			1.00 V	45	79.40	29.90
2	*2412.00	94.80 AV			1.00 V	45	64.90	29.90
3	3216.00	42.70 PK	74.00	-31.30	1.00 V	180	10.80	32.00
3	3216.00	30.20 AV	54.00	-23.80	1.00 V	180	-1.70	32.00
4	4824.00	43.20 PK	74.00	-30.80	1.00 V	29	8.20	35.00
4	4824.00	33.80 AV	54.00	-20.20	1.00 V	29	-1.20	35.00
5	7236.00	51.00 PK	74.00	-23.00	1.01 V	118	9.80	41.10
5	7236.00	37.70 AV	54.00	-16.30	1.01 V	118	-3.50	41.10

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) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

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	98.60 PK			1.06 H	306	68.60	30.00
1	*2437.00	85.80 AV			1.06 H	306	55.80	30.00
2	3249.00	42.00 PK	74.00	-32.00	1.08 H	208	10.00	32.00
2	3249.00	29.00 AV	54.00	-25.00	1.08 H	208	-3.00	32.00
3	4874.00	42.40 PK	74.00	-31.60	1.00 H	36	7.20	35.20
3	4874.00	31.30 AV	54.00	-22.70	1.00 H	36	-3.90	35.20
4	7311.00	48.50 PK	74.00	-25.50	1.02 H	16	7.10	41.40
4	7311.00	37.10 AV	54.00	-16.90	1.02 H	16	-4.30	41.40

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	*2437.00	109.50 PK			1.00 V	44	79.50	30.00
1	*2437.00	94.50 AV			1.00 V	44	64.50	30.00
2	3249.00	42.60 PK	74.00	-31.40	1.05 V	162	10.60	32.00
2	3249.00	30.40 AV	54.00	-23.60	1.05 V	162	-1.60	32.00
3	4874.00	43.60 PK	74.00	-30.40	1.02 V	30	8.40	35.20
3	4874.00	34.30 AV	54.00	-19.70	1.02 V	30	-0.90	35.20
4	7311.00	51.20 PK	74.00	-22.80	1.08 V	122	9.80	41.40
4	7311.00	38.00 AV	54.00	-16.00	1.08 V	122	-3.40	41.40

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

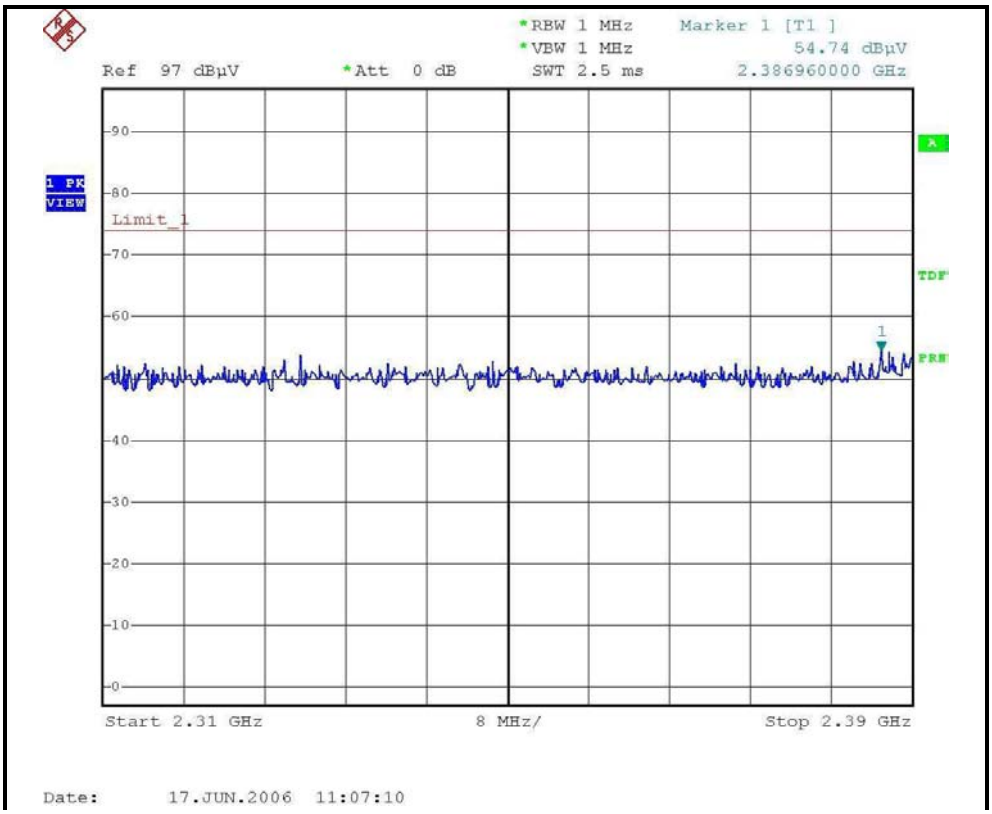
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 6 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 55%RH, 962hPa	**TESTED BY**	Sky Liao

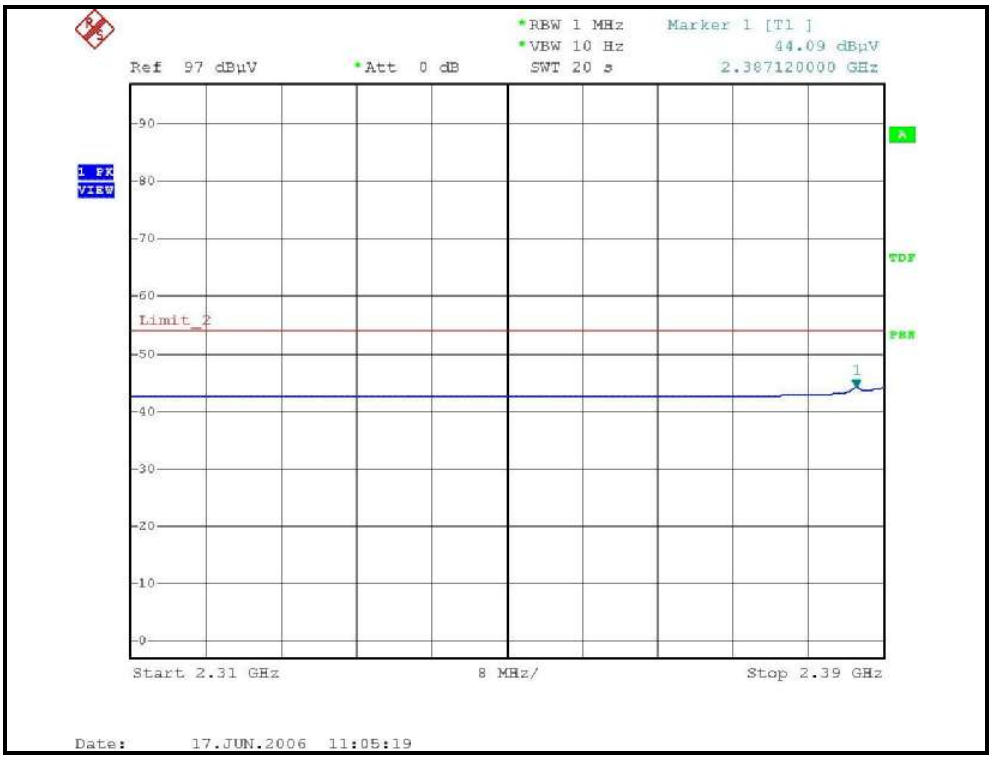
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	98.80 PK			1.08 H	305	68.70	30.10
1	*2462.00	85.70 AV			1.08 H	305	55.60	30.10
2	2486.89	56.20 PK	74.00	-17.80	1.00 H	307	26.00	30.20
2	2486.89	44.90 AV	54.00	-9.10	1.00 H	307	14.60	30.20
3	3282.00	41.50 PK	74.00	-32.50	1.00 H	280	9.40	32.10
3	3282.00	29.00 AV	54.00	-25.00	1.00 H	280	-3.10	32.10
4	4924.00	43.00 PK	74.00	-31.00	1.02 H	24	7.60	35.40
4	4924.00	31.80 AV	54.00	-22.20	1.02 H	24	-3.60	35.40
5	7386.00	46.40 PK	74.00	-27.60	1.08 H	38	4.80	41.60
5	7386.00	37.20 AV	54.00	-16.80	1.08 H	38	-4.40	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	109.60 PK			1.00 V	47	79.50	30.10
1	*2462.00	94.30 AV			1.00 V	47	64.20	30.10
2	2487.09	61.50 PK	74.00	-12.50	1.00 V	156	31.20	30.20
2	2487.09	50.60 AV	54.00	-3.40	1.00 V	156	20.40	30.20
3	3282.00	42.50 PK	74.00	-31.50	1.03 V	168	10.40	32.10
3	3282.00	31.00 AV	54.00	-23.00	1.03 V	168	-1.10	32.10
4	4924.00	44.00 PK	74.00	-30.00	1.00 V	16	8.60	35.40
4	4924.00	34.00 AV	54.00	-20.00	1.00 V	16	-1.40	35.40
5	7386.00	51.60 PK	74.00	-22.40	1.10 V	100	10.00	41.60
5	7386.00	38.60 AV	54.00	-15.40	1.10 V	100	-3.00	41.60

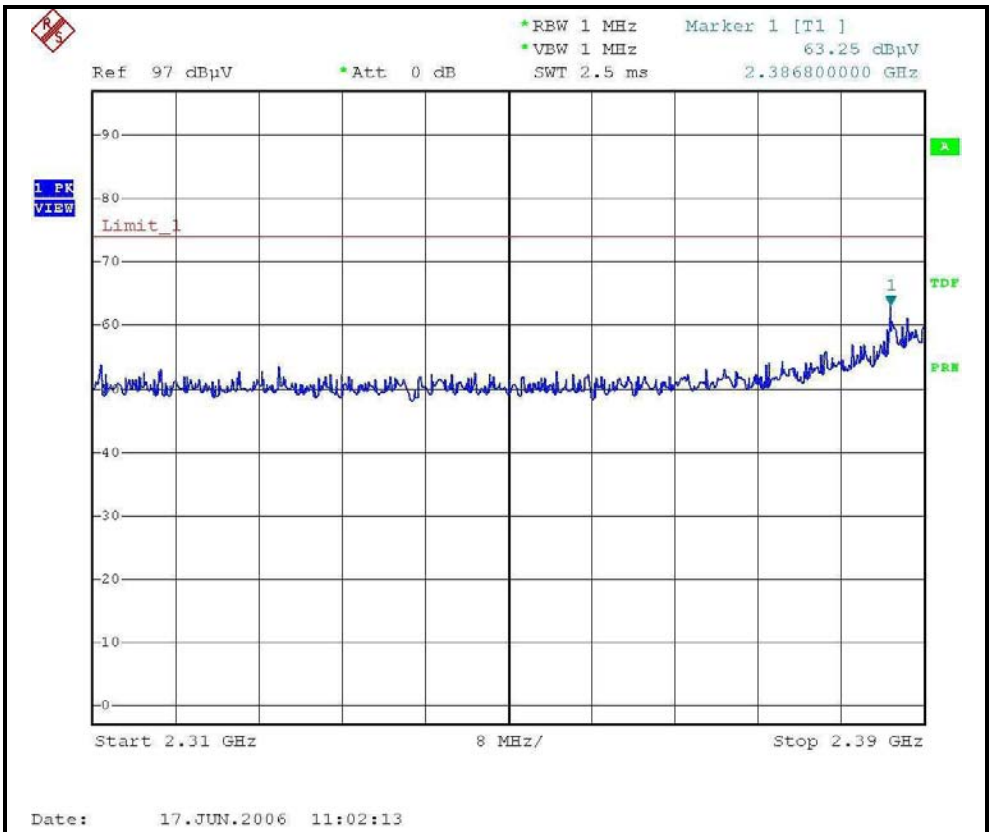
REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247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

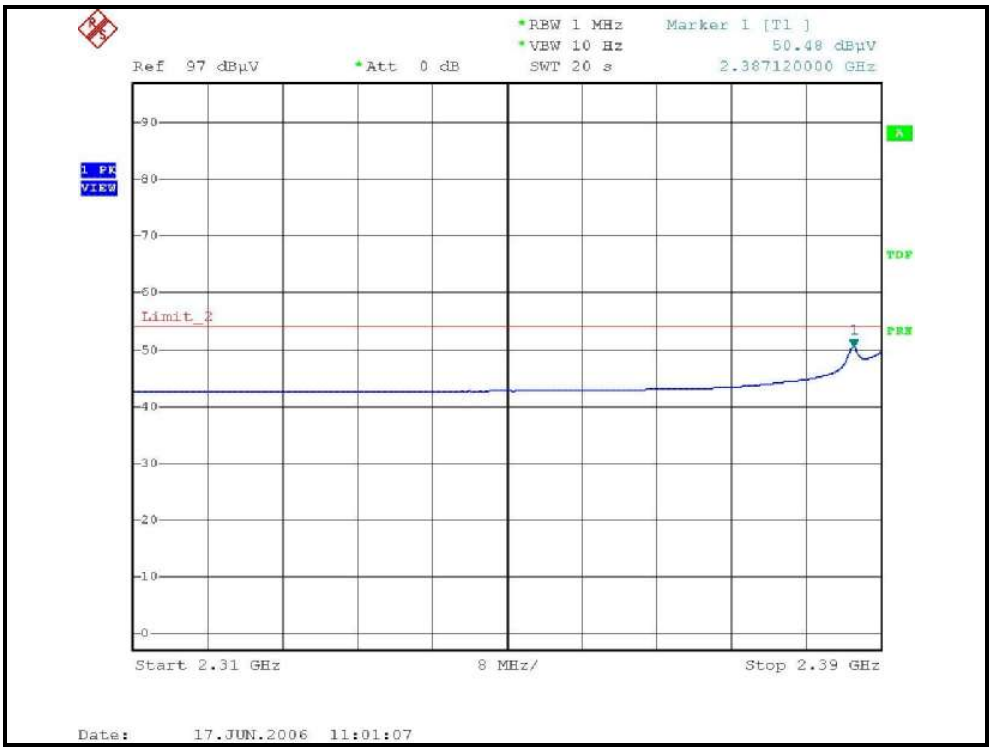
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



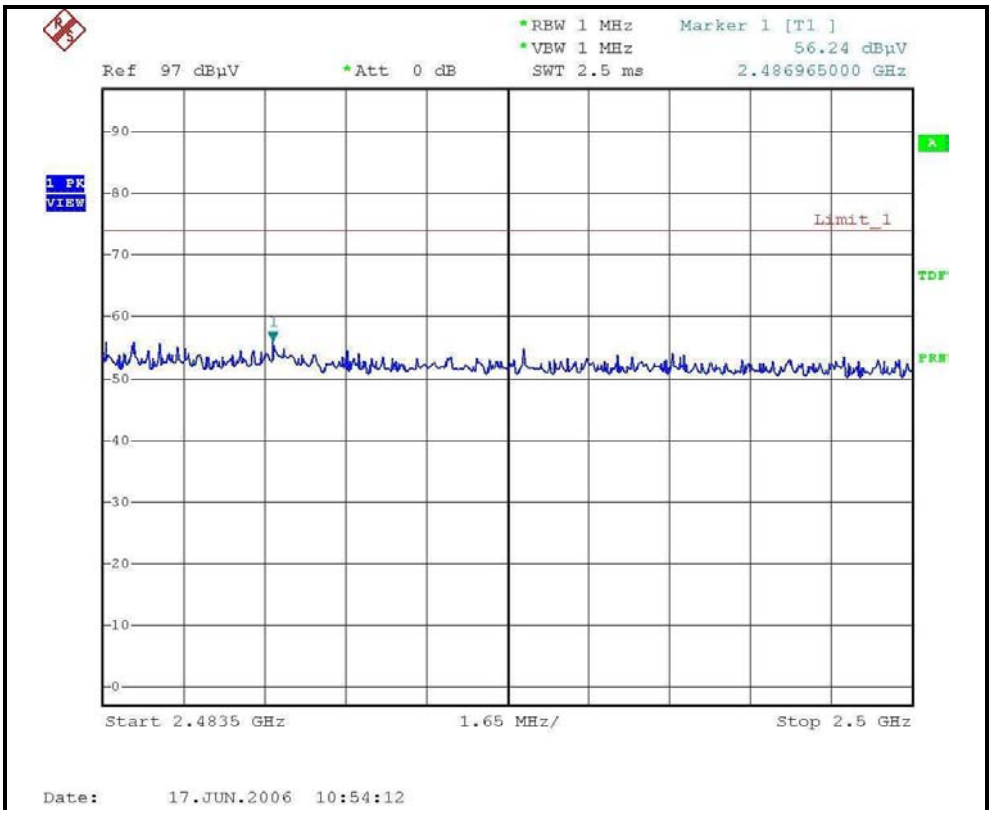


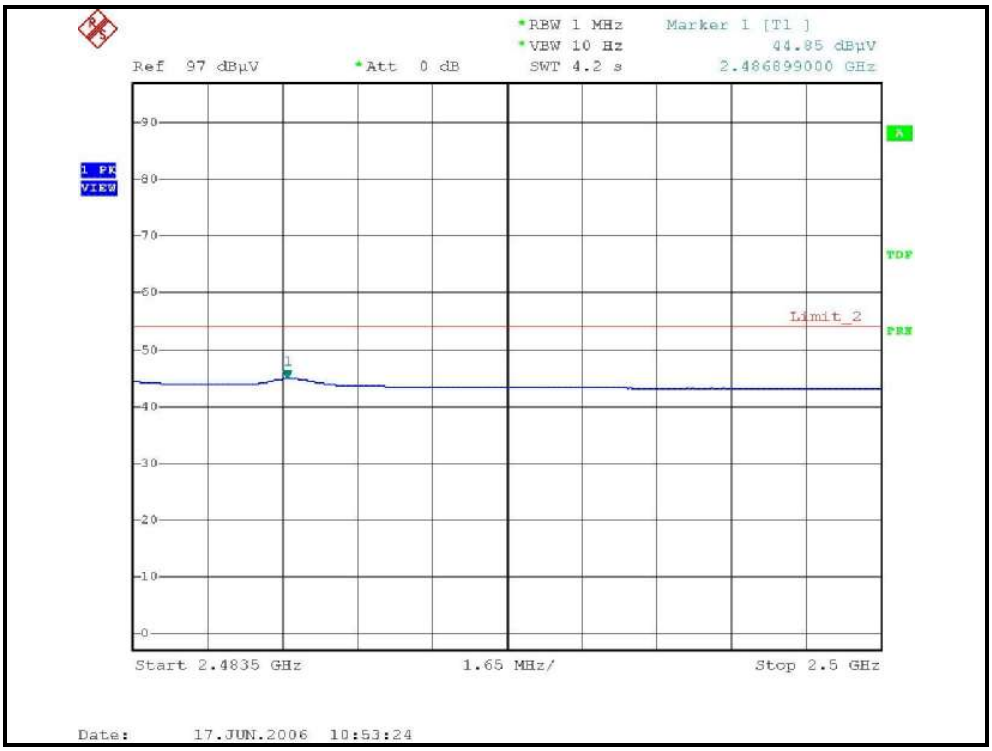
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



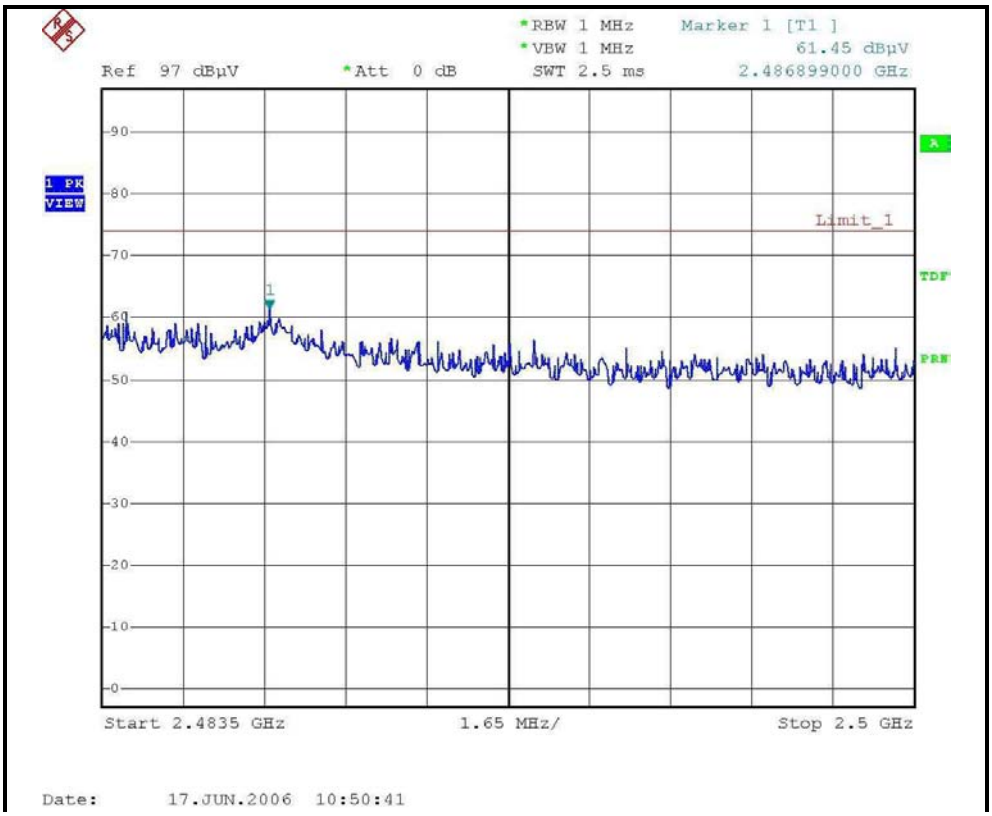


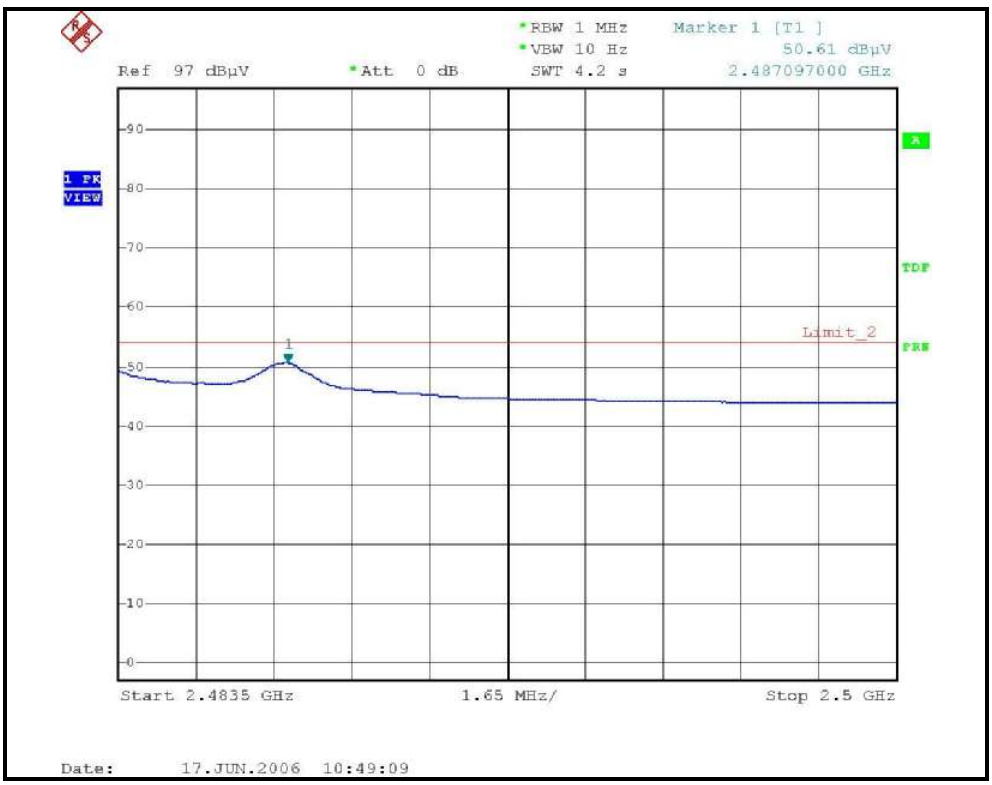
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





4.3 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.

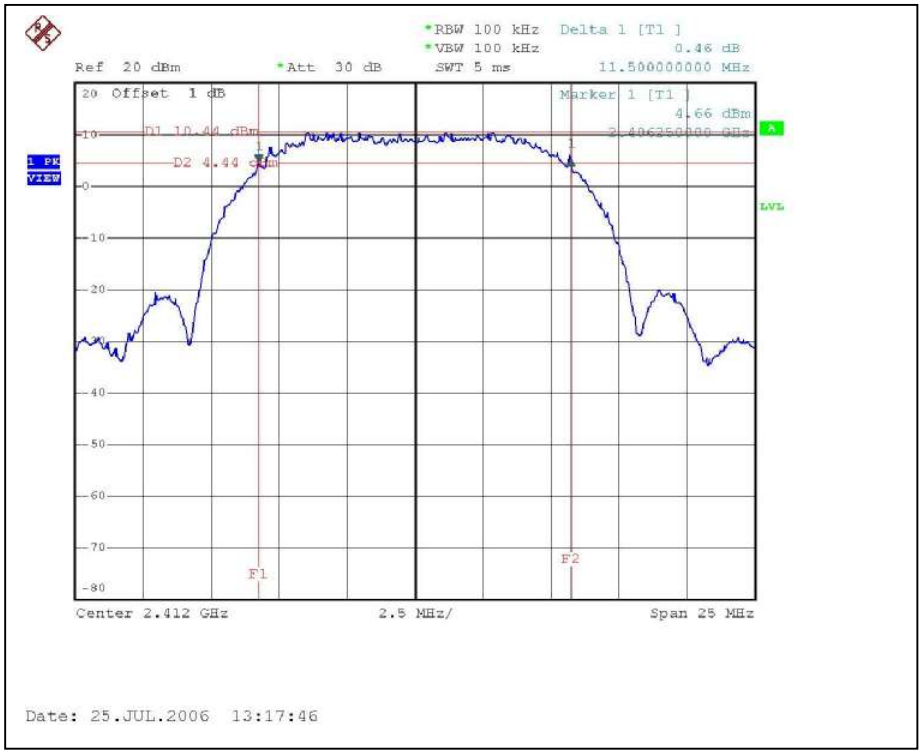
4.3.6 TEST RESULTS (ANTENNA 1)

802.11b DSSS modulation

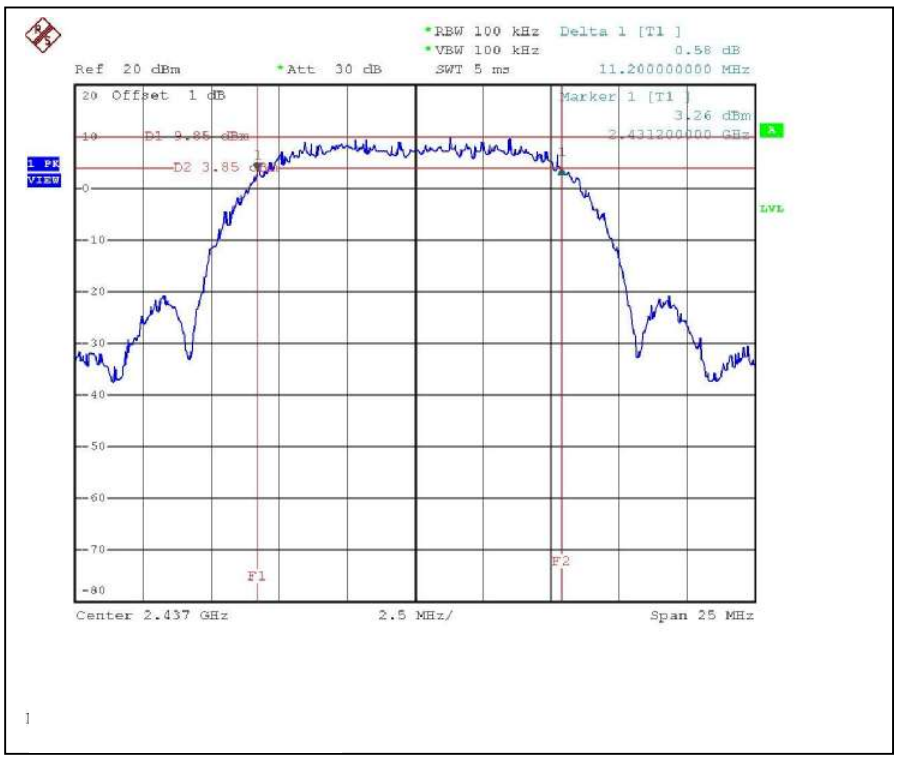
MODULATION TYPE	CCK	**TRANSFER RATE**	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 60%RH, 962hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.5	0.5	PASS
6	2437	11.2	0.5	PASS
11	2462	10.75	0.5	PASS

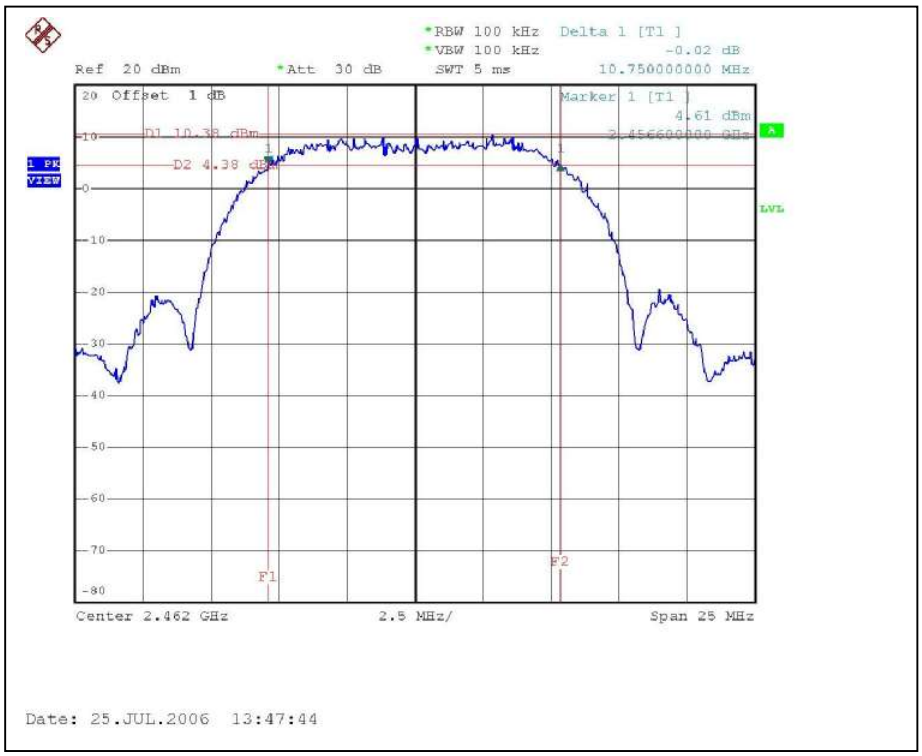
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.46 dB
11.500000000 MHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
4.66 dBm
2.406250000 GHz
D1 10.44 dBm
D2 4.44 dBm
1 PK
VIEW
LVL
F1
F2
Center 2.412 GHz
2.5 MHz/
Span 25 MHz
Date: 25.JUL.2006 13:17:46

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.58 dB
11.200000000 MHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
3.26 dBm
2.431200000 GHz
D1 9.85 dBm
D2 3.85 dBm
1 PK
VIEW
LVL
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11

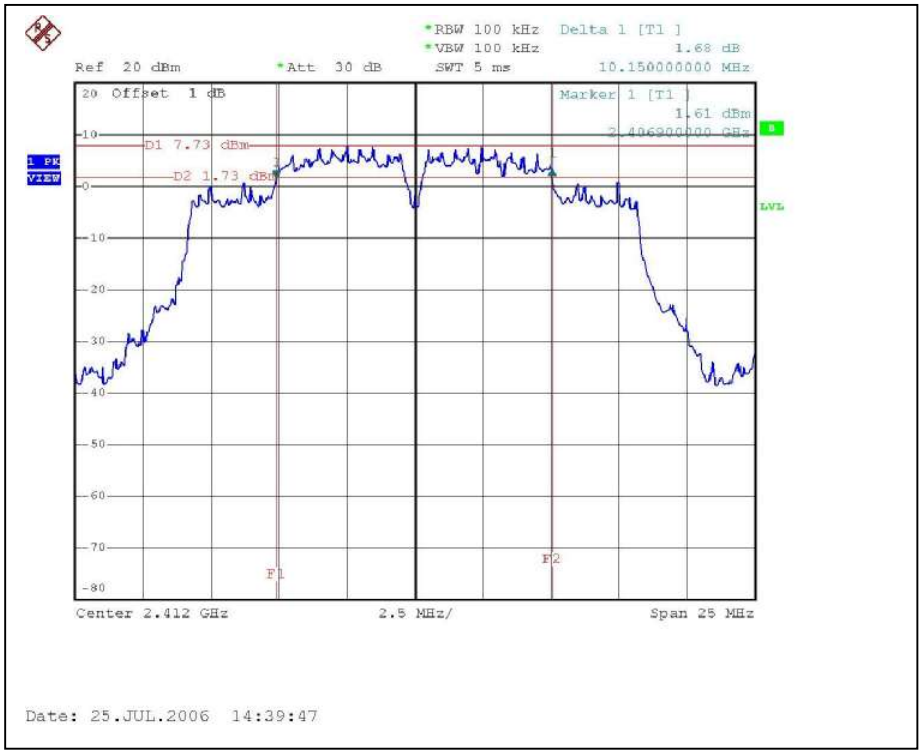

*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
-0.02 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
10.750000000 MHz
20 Offset 1 dB
Marker 1 [T1]
4.61 dBm
2.456600000 GHz
D1 10.38 dBm
D2 4.38 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
Date: 25.JUL.2006 13:47:44

802.11g OFDM modulation

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 60%RH, 962hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.15	0.5	PASS
6	2437	10.10	0.5	PASS
11	2462	10.05	0.5	PASS

CH1


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
1.68 dB
10.150000000 MHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
20 Offset 1 dB
Marker 1 [T1]
1.61 dBm
2.406900000 GHz
D1 7.73 dBm
D2 1.73 dBm
1 PK VIEW
LVL
F1
F2
Center 2.412 GHz
2.5 MHz/
Span 25 MHz
Date: 25.JUL.2006 14:39:47

CH6

*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
-2.53 dB
10.100000000 MHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
20 Offset 1 dB
Marker 1 [T1]
6.35 dBm
2.431950000 GHz
D1 9.52 dBm
D2 3.52 dBm
1 PK VIEW
LVL
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz
Date: 25.JUL.2006 14:16:36

CH11

*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
0.21 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
10.050000000 MHz
20 Offset 1 dB
Marker 1 [T1]
5.29 dBm
2.456950000 GHz
D1 9.63 dBm
D2 3.63 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
Date: 25.JUL.2006 14:05:44