



FCC TEST REPORT

CATEGORY: Outdoor Mobile End Product
PRODUCT NAME: **Wireless Mouse**
FCC ID.: RST-GINGO8000
FILING TYPE: Certification
BRAND NAME: GINGO
MODEL NAME: **GINGO8000**

APPLICANT: **Im-Ready Co., Ltd.**

No. 748, Sec. 2, Jhanghe Rd., Hemei Township, Changhua,
Taiwan, R.O.C.

MANUFACTURER: The same as Applicant.

ISSUED BY: **SPORTON INTERNATIONAL INC.**

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., His Chih, Taipei Hsien,
Taiwan, R.O.C.

Statements:

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

Certificate or Test Report could not be used by the applicant to claim the product endorsement by CNLA, NVLAP or any agency of U.S. government.

The test equipment used to perform the test are calibrated and traceable to NML/ROC or NIST/USA.

Alex Chen

Manager



Lab Code: 200079-0

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History of this test report

No additional attachment.

Additional attachment were issued as following record:

Attachment No.	Issue Date	Description



1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST

1.1. General Description

Items	Description
Sample Type	Wireless Mouse
Date of Testing	Dec. 18, 2003

1.2. List of EUT Accessories

Items	Description
USB Cable	Non-Shielded, 1.6 m

Note: USB Cable is used for charge mode and the power is 5 VDC.



1.3. Technical Features

Items	Description
Modulation	FSK
Number of Channels	1
Operating Frequency Band	27.045MHz
Channel Modulation Bandwidth	50KHz
IF & L.O. Frequencies	455KHz, 26.59MHz
Type of Antenna Connector	N/A
Type of Antenna (Gain)	Loop Antenna (N/A)
Function Type	Transmitter
Power Rating (DC/AC , Voltage)	Battery: 3 VDC Charger: 5 VDC
Signal Type	Data transmitting
Temperature Range (Operating)	-10°C to 60 °C



2. TEST CONFIGURATION OF THE EQUIPMENT UNDER TEST

2.1. Description of the Test

- a) The used peripherals as well as the configuration fulfill the requirements of ANSI C63.4:2001. The configuration is operated in a manner which tends to maximize its emission characteristics in a typical application.
- b) 3 meters measurement distance was used in this test.
- c) When EUT was setted in charge mode, the EUT can not operate as intended. So we can not show the test data with charge mode.

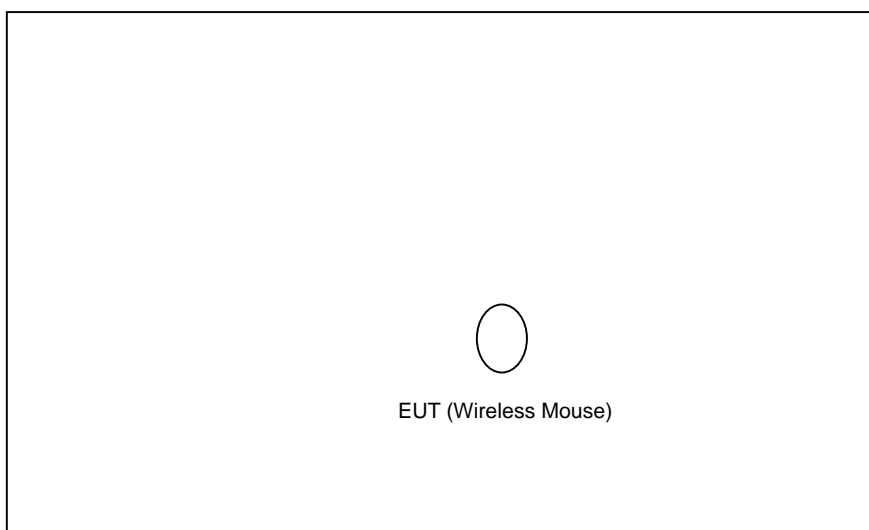
2.2. Frequency Range Investigated

- a) Radiated emission test: from 30 MHz to 1000MHz.

2.3. Details of the Supporting Units

The EUT was tested alone. No support device is needed for testing.

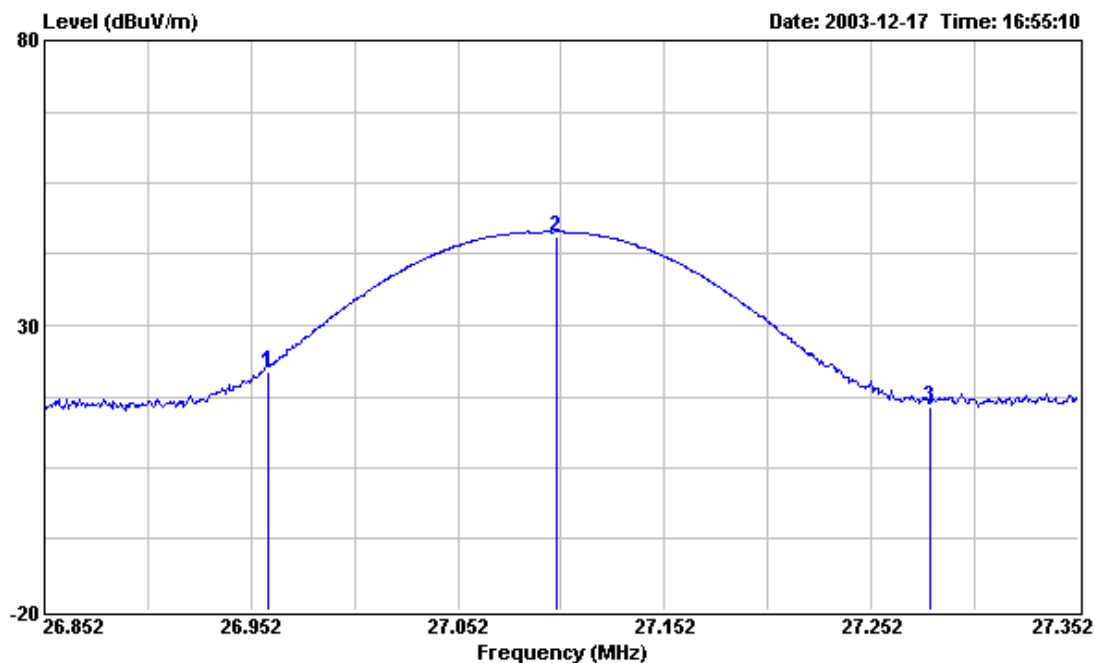
2.4. Connection Diagram of Test System





2.5. Band edge compliance plot per 15.227(b).

Horizontal



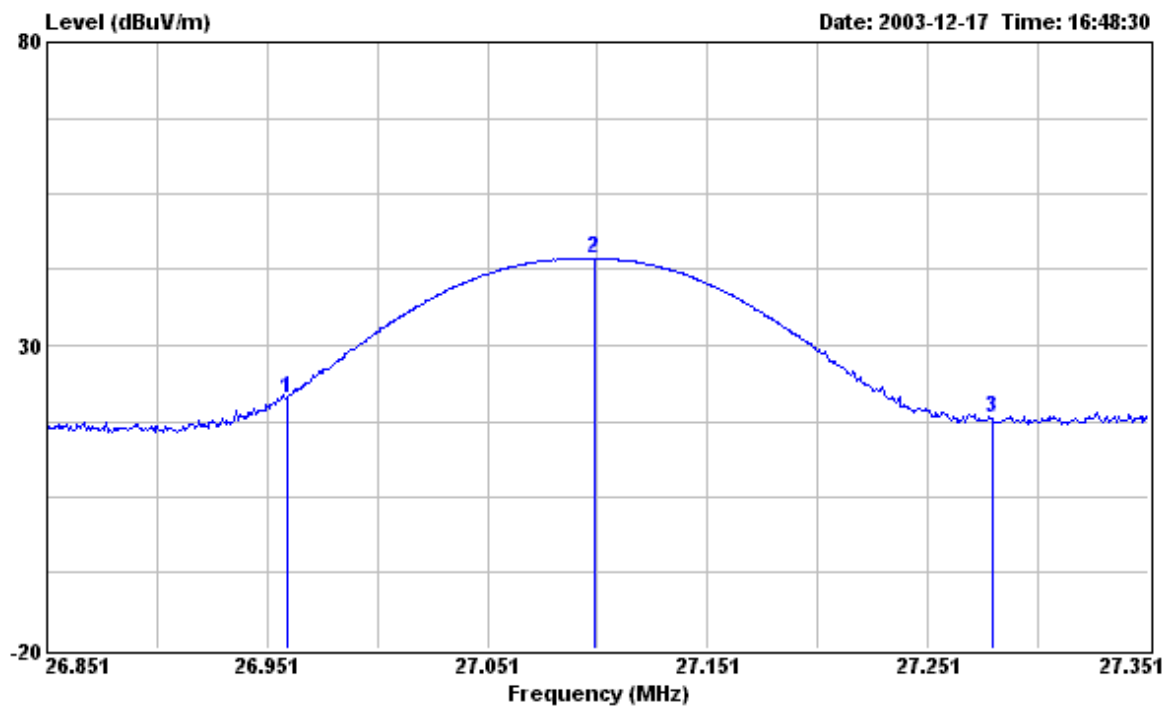
RBW:120KHz,VBW:300KHz

Conformation of the fundamental frequency

Frequency	Over	Limit	Read	Probe	Calbe	Preamp	
Level	Limit	Line	Level	Factor	Loss	Factor	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	
26.960	22.00	-47.54	69.54	35.22	14.84	0.00	28.06
27.100	45.65	-34.35	80.00	58.89	14.82	0.00	28.06
27.280	15.62	-53.92	69.54	28.87	14.81	0.00	28.06



Vertical



RBW:120KHz,VBW:300KHz

Conformation of the fundamental frequency

Frequency	Over	Limit	Read	Probe	Calbe	Preamp	
Level	Limit	Line	Level	Factor	Loss	Factor	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	
26.960	21.29	-48.25	69.54	33.65	14.84	0.86	28.06
27.100	44.32	-35.68	80.00	56.70	14.82	0.86	28.06
27.280	17.88	-51.66	69.54	30.26	14.81	0.87	28.06



3. TEST SOFTWARE

The EUT is programed in continue transmit mode.



4. TEST LOCATION AND STANDARDS

4.1. Test Location

Test Location : Sporton Hwa Ya Testing Building

Address : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao
Yuan Hsien, Taiwan, R.O.C.

Tel: +886 3 327 3456 Fax: +886 3 318 0055

Test Site No. : 03CH03-HY

4.2. Test Standards

Here is the list of the standards followed in this test report.

ANSI C63.4-2001

47 CFR Part 15 Subpart C (Section 15.227)



5. Conducted Emission Measurement

The power supply of the EUT is from battery.

So the conducted powerline test is not applicable to the EUT.



6. Test of Radiated Emission

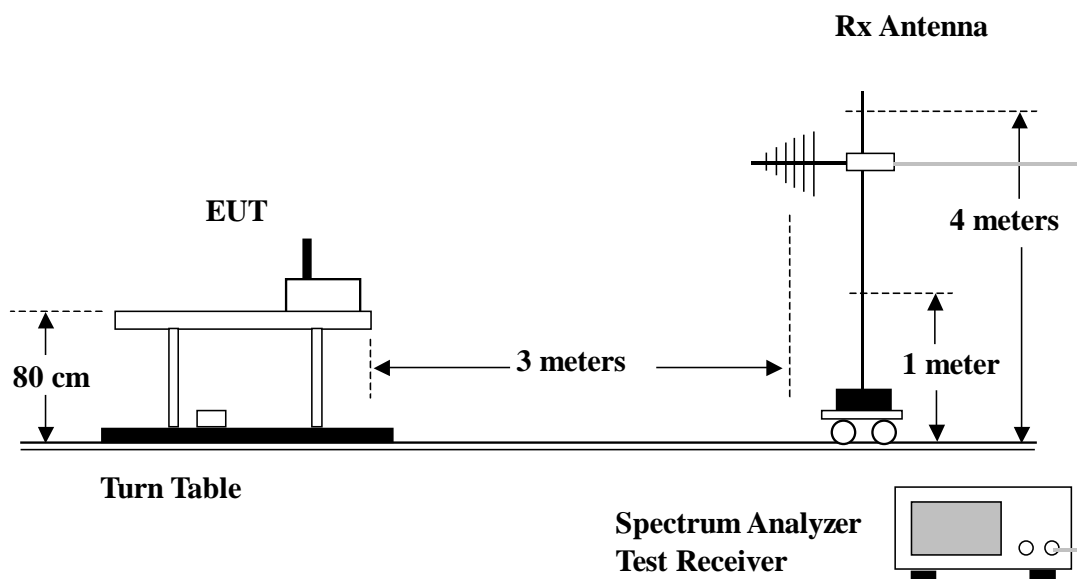
6.1.1. Measuring Instruments

Please reference item 1~8 in chapter 7 for the instruments used for testing.

6.1.2. Test Procedures

- a) Configure the EUT according to ANSI C63.4.
- b) The EUT was placed on the top of the turn table 0.8 meter above ground.
- c) The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turn table.
- d) Power on the EUT and all the supporting units.
- e) The turn table was rotated 360 degrees to determine the position of the highest radiation.
- f) The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
- g) For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turn table was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- h) Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- i) If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

6.1.3. Test Setup Layout





6.1.4. Test Results and Limit

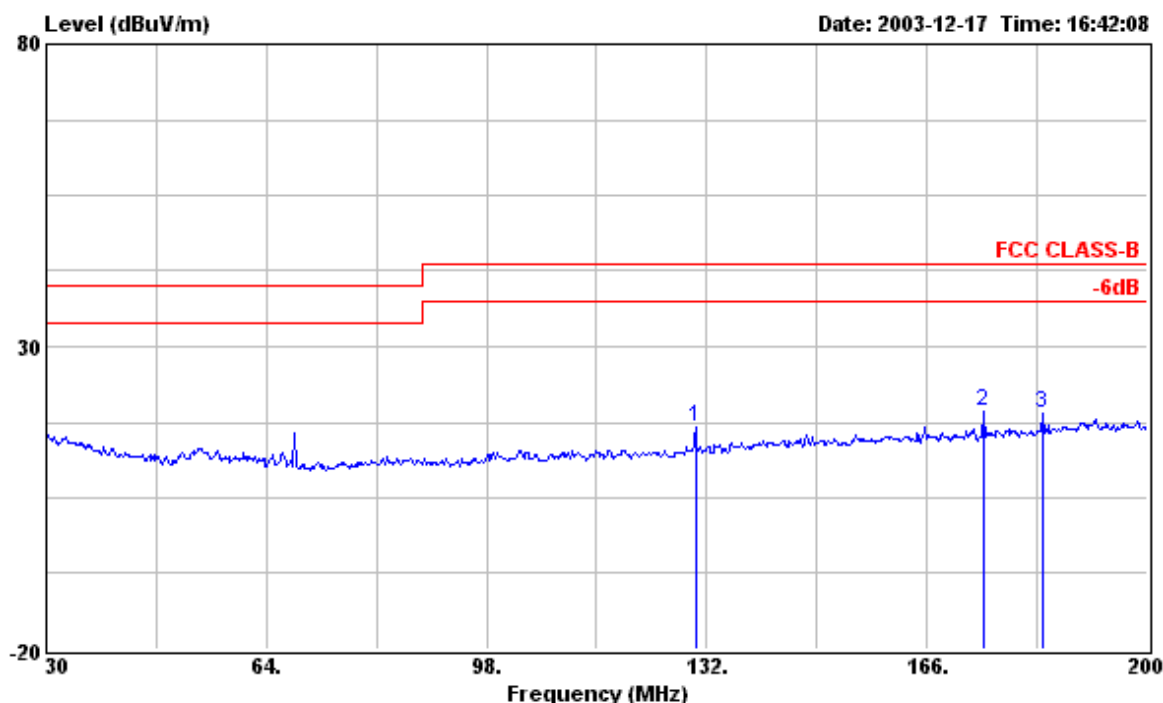
Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

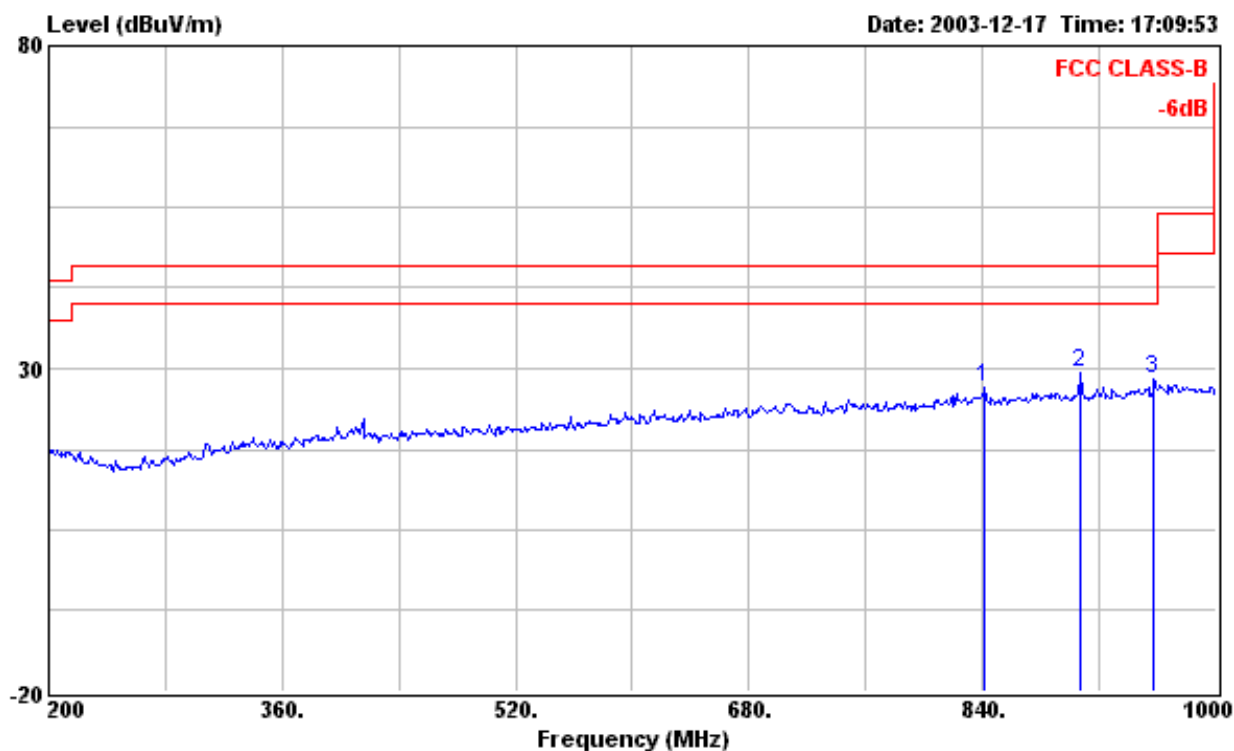
Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

Test Mode	TX	Temperature	25 deg. C	Tested By	Steve Chen
Freq. Range	30MHz~1GHz	Humidity	67%		

(A) Polarization: Horizontal



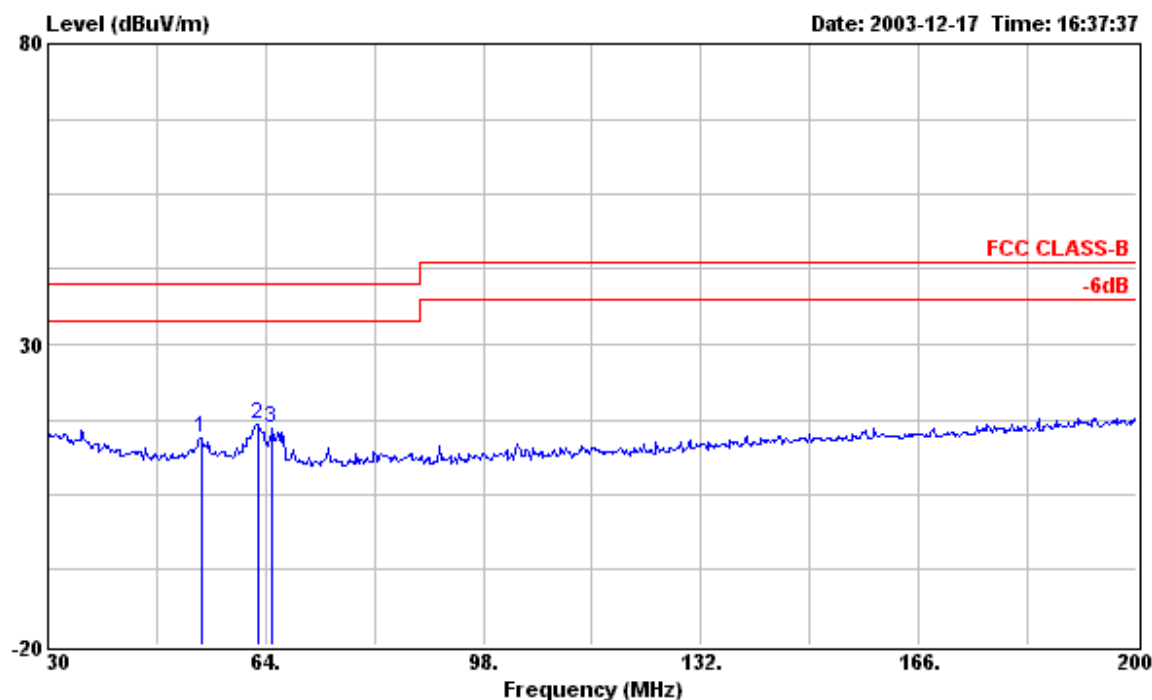
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	130.300	16.82	-26.68	43.50	31.62	11.38	1.66	27.84	Peak	---	---
2	174.670	19.17	-24.33	43.50	31.32	13.40	2.20	27.75	Peak	---	---
3	184.020	18.92	-24.58	43.50	30.29	13.97	2.39	27.73	Peak	---	---



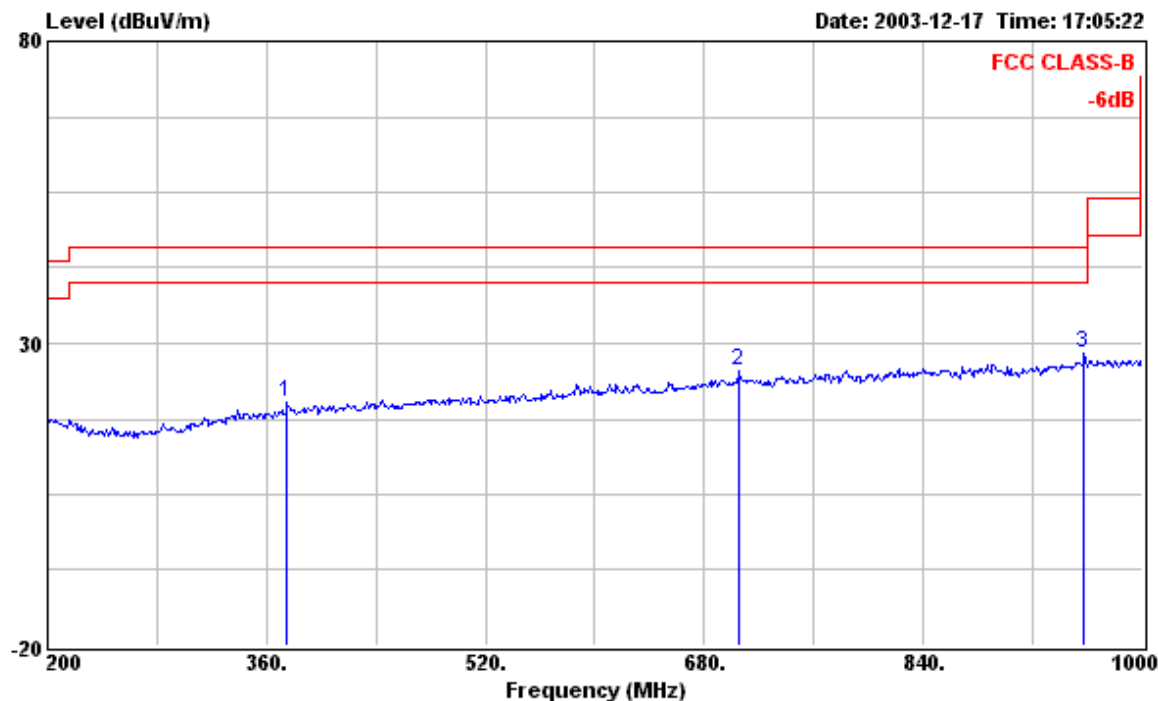
	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	841.600	26.92	-19.08	46.00	29.48	20.78	5.25	28.59	Peak	---	---
2	906.400	29.46	-16.54	46.00	31.33	21.18	5.24	28.29	Peak	100	136
3	957.600	28.49	-17.51	46.00	29.34	21.90	5.49	28.24	Peak	---	---



(B) Polarization: Vertical



	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	54.140	14.51	-25.49	40.00	30.72	10.19	1.59	27.99	Peak	---	---
2	62.980	16.60	-23.40	40.00	33.65	9.58	1.34	27.97	Peak	---	---
3	65.020	16.15	-23.85	40.00	33.41	9.35	1.36	27.97	Peak	---	---



	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	375.200	20.18	-25.82	46.00	28.83	15.35	3.68	27.68	Peak	---	---
2	704.800	25.44	-20.56	46.00	29.51	19.82	4.82	28.71	Peak	---	---
3	957.600	28.27	-17.73	46.00	29.12	21.90	5.49	28.24	Peak	---	---



7. List of Measuring Equipments Used

Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	Jun. 21, 2003	Radiation (03CH03-HY)
2	Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GHz	Aug. 23, 2003	Radiation (03CH03-HY)
3	Amplifier	SCHWARZBECK	VHBB 9124	301	30MHz ~200MHz	Jul. 24, 2003	Radiation (03CH03-HY)
4	Biconical Antenna	HP	8447D	2944A09072	100KHz – 1.3GHz	Nov. 05, 2003	Radiation (03CH03-HY)
5	Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz -1GHz	Jul. 24, 2003	Radiation (03CH03-HY)
6	RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Dec. 03, 2003	Radiation (03CH03-HY)
7	Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
8	Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)

Calibration Interval of instruments listed above is one year.