



FCC ID: OR7GM305
Issued on Aug. 19, 2005

Report No.: FR580503

FCC TEST REPORT

CATEGORY : Portable
PRODUCT NAME : Wireless Mouse
FCC ID. : OR7GM305
FILING TYPE : Certification
BRAND NAME : Targus, Trust, Globlink
MODEL NAME : GM305

APPLICANT : **Globlink Technology Inc.**
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

MANUFACTURER : **Globlink Technology Inc.**
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

ISSUED BY : **SPORTON INTERNATIONAL INC.**
6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi 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 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.



Lab Code: 200079-0

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255



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History of this test report

Original Report Issue Date: Aug. 19, 2005

Report No.: FR580503

- ☒ No additional attachment.
- ☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

with

47 CFR FCC Part 15 Subpart C (Section 15.227)

PRODUCT NAME : Wireless Mouse

BRAND NAME : Targus, Trust, Globlink

MODEL NAME : GM305

APPLICANT : **Globlink Technology Inc.**
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

MANUFACTURER : **Globlink Technology Inc.**
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

I **HEREBY** CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in ANSI C63.4 - 2003 and all test are performed according to 47 CFR FCC Part 15. Testing was carried out on Aug. 08, 2005 at SPORTON International Inc. LAB.



Wayne Hsu / Supervisor
Sporton International Inc.



1. General Description of Equipment under Test

1.1. Applicant

Globlink Technology Inc.
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

1.2. Manufacturer

Globlink Technology Inc.
2Fl., 101 Rui-hu Street Nei-hu Taipei, Taiwan

1.3. Basic Description of Equipment under Test

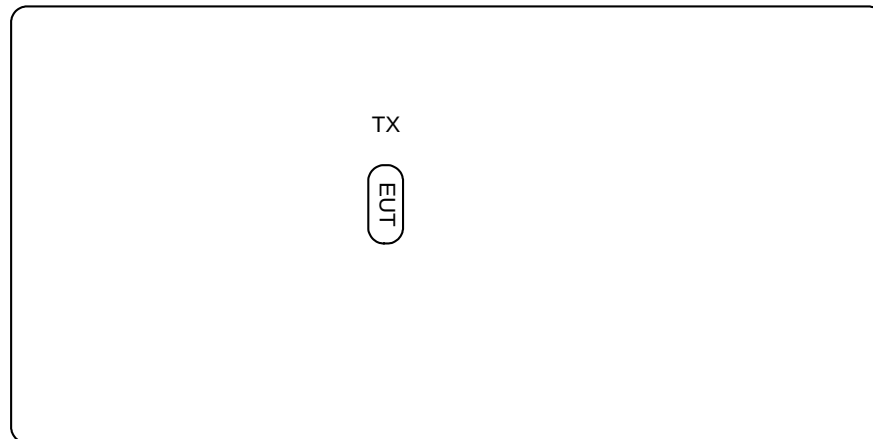
This product is a 27MHz wireless mouse. The radio technical data has been listed on section “ Features of Equipment under Test ”.

1.4. Features of Equipment under Test

Items	Description
Type of Modulation	FSK
Number of Channels	1
Frequency Band	27.045MHz
Channel Bandwidth	30kHz
Antenna Type	Printed Antenna
Testing Duty Cycle	100.00%
Power Rating (DC/AC, Voltage)	3 VDC (battery powered)
Temperature Range (Operating)	-10 ~ 50

2. Test Configuration of the Equipment under Test

2.1. Connection Diagram of Radiated Test System



2.2. The Test Mode Description

1. The used peripherals as well as the configuration fulfill the requirements of ANSI C63.4: 2003. The configuration is operated in a manner that tends to maximize its emission characteristics in a typical application.
2. 3 meters measurement distance was used in this test.

2.3. Description of Test Supporting Units

There is no supporting unit for the test.



3. General Information of Test

3.1. Test Facility

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
: TEL 886-3-327-3456
: FAX 886-3-318-0055
Test Site No : 03CH03-HY / CO04-HY

3.2. Test Conditions

Normal Voltage : 3.0VDC (battery powered)
Normal Temperature : 20

3.3. Standards for Methods of Measurement

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

ANSI C63.4-2003

47 CFR Part 15 Subpart C (Section 15.227)

3.4. DoC Statement

This EUT is also classified as a device of computer peripheral Class B which DoC has to be followed. It has been verified according to the rule of 47 CFR part 15 Subpart B, and found that all the requirements has been fulfilled.

3.5. Frequency Range Investigated

Radiated emission test: from 30 MHz to 10th carrier harmonic.

3.6. Test Distance

The test distance of radiated emission (30MHz~1GHz) test from antenna to EUT is 3 M.
The test distance of radiated emission (1GHz~10th carrier harmonic) test from antenna to EUT is 3 M.

3.7. Test Software

During testing, there is no supporting test software.



4. List of Measurements

4.1. Summary of the Test Results

Applied Standard:47CFR FCC Part 15 Subpart C			
Paragraph	FCC Section	Description of Test	Result
5.1	15.227(a)	Maximum Field Strength of Fundamental	Pass
-	15.207	AC Power Line Conducted Emission	NA
5.2	15.227(b)	Spurious Radiated Emission	Pass
5.4	15.203	Antenna Requirement	Pass

5. Test Result

5.1. Test of Maximum Carrier Field Strength

5.1.1. Applicable Standard

Section 15.227(a): The field strength of any emission within this band shall not exceed 10,000 micro-volts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

5.1.2. Measuring Instruments

Item 1~15 of the table is on section 6.

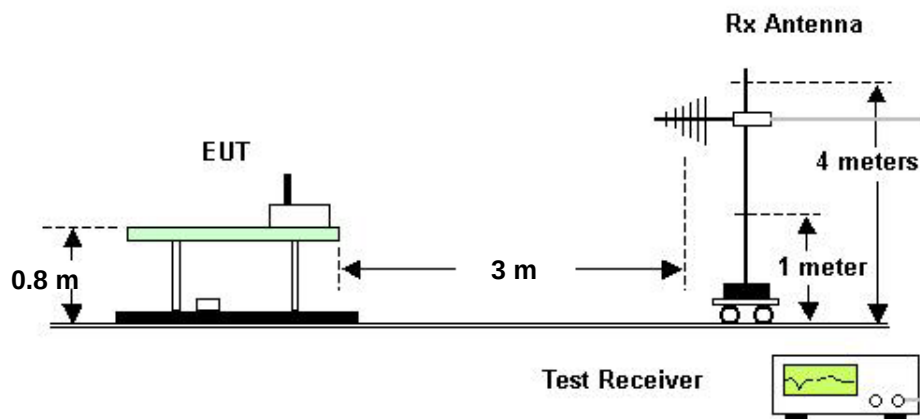
5.1.3. Description of Major Test Instruments Setting

- Test Receiver : (R&S ESCS 30)
- Attenuation : Auto
- Center Frequency : Carrier Frequency of EUT
- IF Bandwidth : 9 KHz

5.1.4. Test Procedures

1. Configure the EUT according to ANSI C63.4-2003.
2. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the loop receiving antenna was fixed on one meter above ground to find the maximum emission field strength.
4. For carrier field strength emission, the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. For carrier field strength emission, maximum carrier field strength is X axis.
6. For carrier field strength emission, use 9kHz RBW of Receiver for reading under average and peak detector.

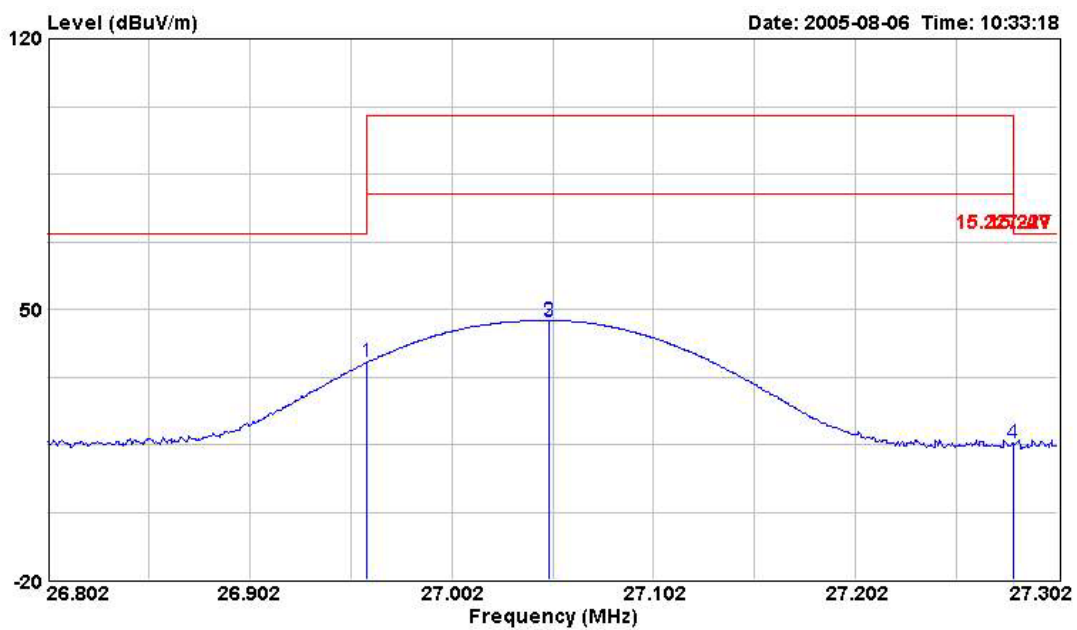
5.1.5 Test Setup Layout





5.1.6 Test Result

- Temperature: 24.9°C
- Relative Humidity: 54%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu



	Freq	Level	Over	Read	Limit	Cable	Antenna	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Level	Line	Loss	Factor	Factor	Remark	Pos	Pos
			dB	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	26.960	36.30	-33.24	50.77	69.54	0.52	15.17	30.17	Peak	---	---
2	27.050	47.19	-52.81	61.78	100.00	0.52	15.05	30.17	Peak	---	---
3	27.050	46.75	-33.25	61.34	80.00	0.52	15.05	30.17	Average	---	---
4	27.280	15.24	-54.30	29.95	69.54	0.52	14.93	30.17	Peak	---	---

5.2. Test of Spurious Radiated Emission

5.2.1. Applicable Standard

Section 15.227(b): The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

5.2.2. Measuring Instruments

Please reference item 1~15 in chapter 6 for the instruments used for testing.

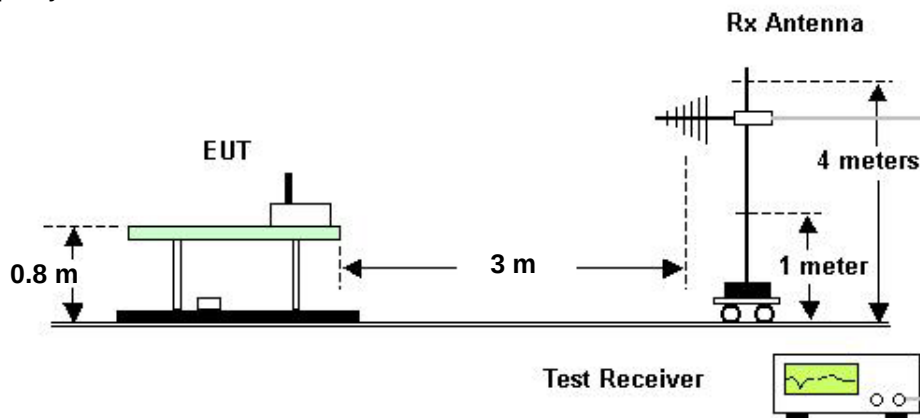
5.2.3. Description of Major Test Instruments Setting

- Test Receiver : R&S ESCS 30
- Attenuation : Auto
- Start Frequency : 30 MHz
- Stop Frequency : 10th carrier harmonic
- RB : 120 KHz for QP or PK

5.2.4. Test Procedures

1. Configure the EUT according to ANSI C63.4-2003.
2. The EUT was placed on the top of the turn table 0.8 meter above ground.
3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed meters far away from the turn table.
4. Power on the EUT and all the supporting units.
5. The turn table was rotated by 360 degrees to determine the position of the highest radiation.
6. 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.
7. 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.
8. Set the test-receiver system to peak or quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

5.2.5. Test Setup Layout



5.2.6. Test Criteria

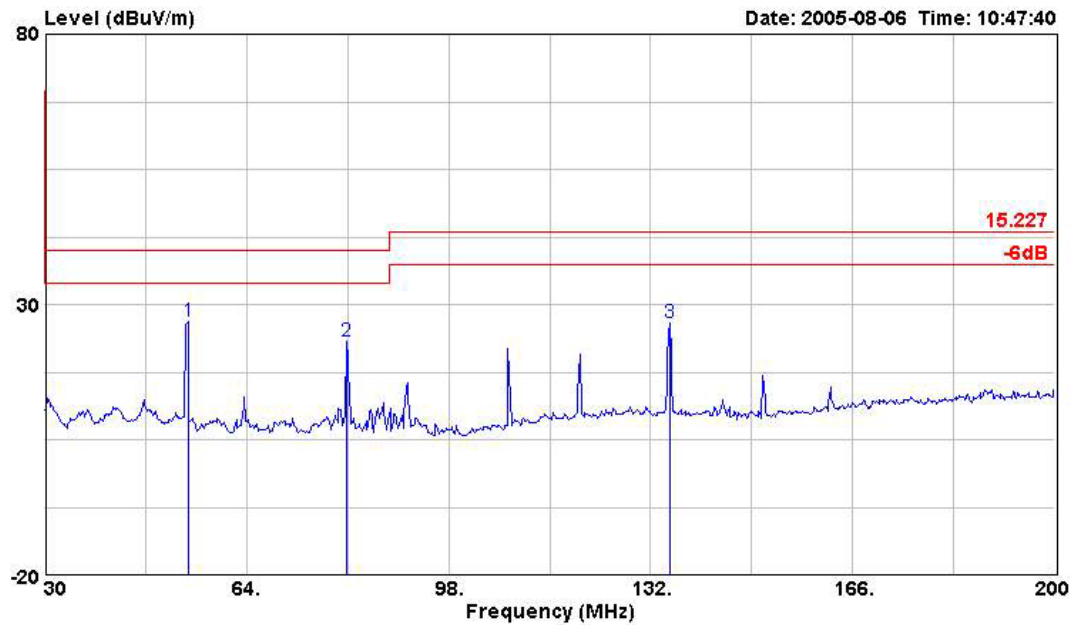
All test results complied with the requirements of the section 15.227(b). Measurement Uncertainty is 2.26dB.



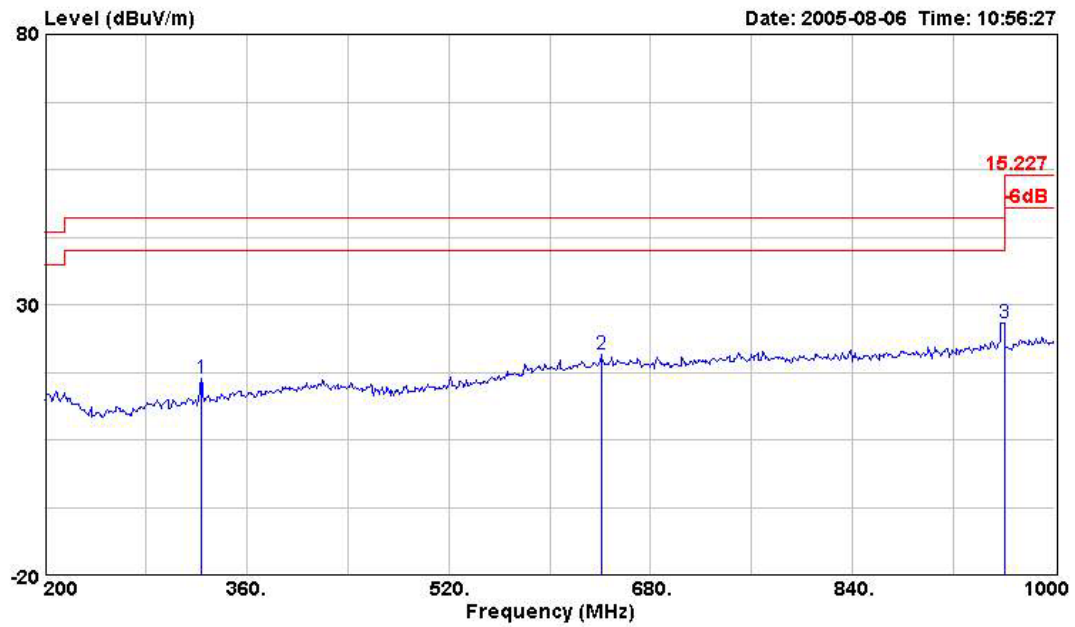
5.2.7. Test Results

- Test Mode: Tx Mode
- Temperature: 24.9°C
- Relative Humidity: 54%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

(A) Polarization: Horizontal



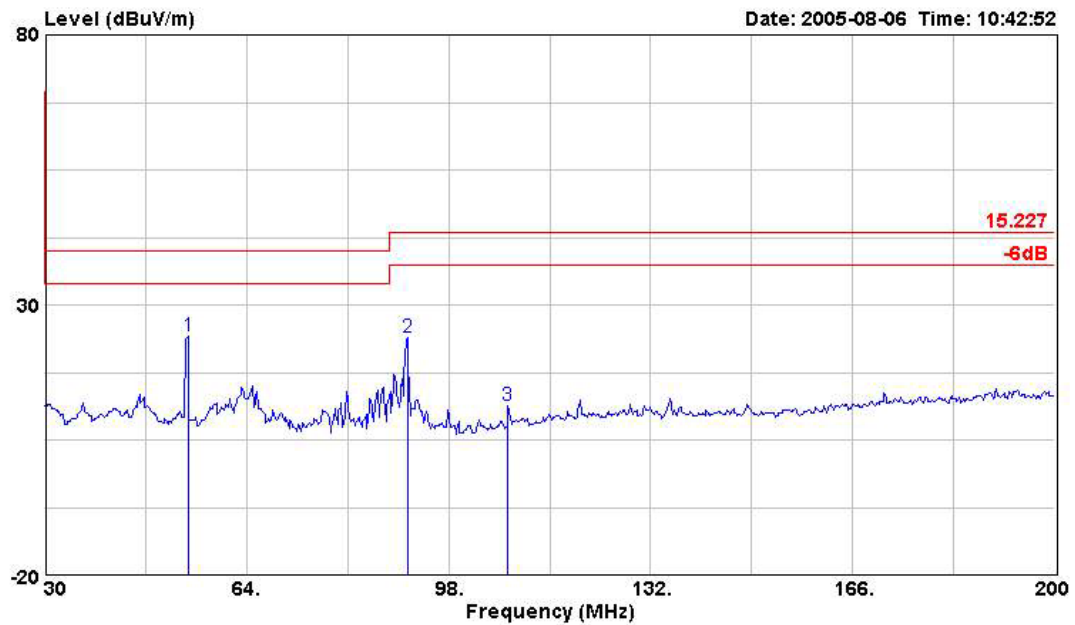
	Freq	Level	Over	Read	Limit	Cable	Antenna	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Level	Line	Loss	Factor	Factor	Remark	Pos	Pos
			dB	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	54.140	26.77	-13.23	45.28	40.00	0.72	11.02	30.25	Peak	---	---
2	80.830	23.05	-16.95	42.75	40.00	0.88	9.41	29.99	Peak	---	---
3	135.230	26.64	-16.86	43.74	43.50	1.16	12.47	30.74	Peak	---	---



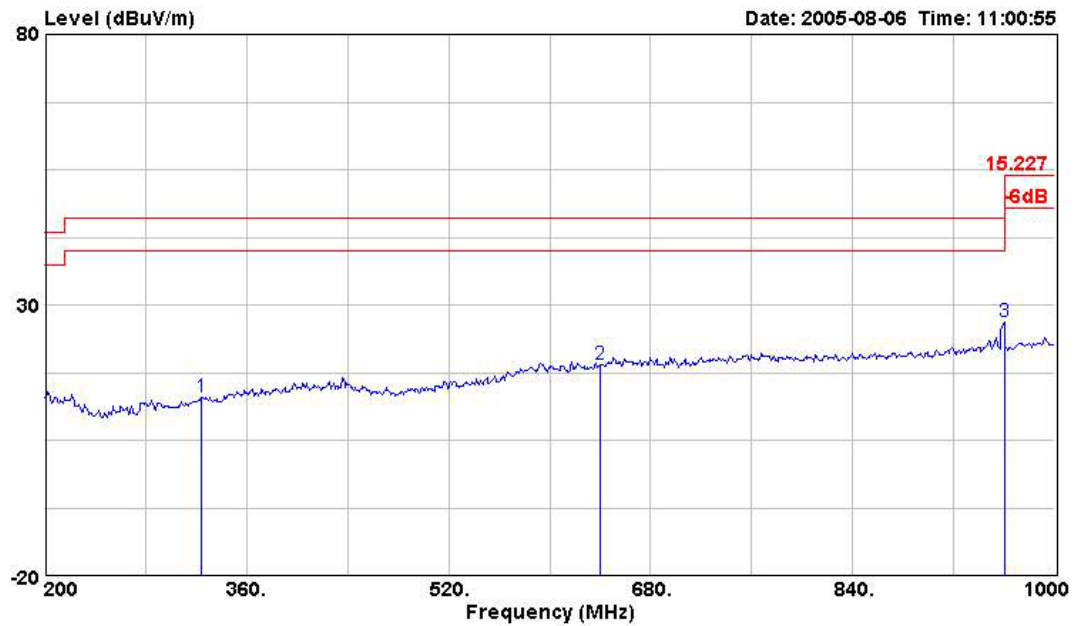
	Freq	Level	Over	Read	Limit	Cable&Antenna	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Level	Line	Loss	Factor	Factor	Pos	Pos
	MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB/m	dB	cm	deg
1	324.000	16.45	-29.55	30.82	46.00	1.76	14.54	30.66	---	---
2	640.800	20.74	-25.26	28.34	46.00	2.47	20.52	30.60	---	---
3	960.000	26.69	-19.31	29.94	46.00	3.02	23.02	29.29	---	---



(B) Polarization: Vertical



	Freq	Level	Over	Read	Limit	Cable&Antenna	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Level	Line	Loss	Factor	Factor	Pos	Pos
	MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB/m	dB	cm	deg
1	54.140	24.10	-15.90	42.61	40.00	0.72	11.02	30.25	---	---
2	91.030	23.88	-19.62	43.91	43.50	0.91	8.55	29.49	---	---
3	108.030	11.20	-32.30	30.40	43.50	1.01	10.14	30.36	---	---



	Freq	Level	Over	Read	Limit	Cable	Antenna	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Level	Line	Loss	Factor	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	324.000	13.03	-32.97	27.40	46.00	1.76	14.54	30.66	Peak	---	---
2	640.000	18.87	-27.13	26.48	46.00	2.47	20.52	30.61	Peak	---	---
3 @	960.000	26.92	-19.08	30.17	46.00	3.02	23.02	29.29	Peak	---	---

Note:

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

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

Results for the radiated measurement below 30MHz, no emissions found and caused by the EUT.

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

5.2.8. Photographs of Radiated Emission Test Configuration

FRONT VIEW



REAR VIEW



5.3. 20dB Spectrum Bandwidth Measurement

5.3.1. Applicable Standard

Section **15.215**: Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (26.96~27.28MHz).

In **ANSI C63.4-2003**, the resolution bandwidth of the measuring instrument shall be set to a value greater than 5% of the bandwidth requirements. When no bandwidth requirements are specified, the minimum resolution band-width of the measuring instrument is given in the following:

Fundamental Freq.	Minimum Resolution Bandwidth
9 kHz to 30 MHz	1 kHz
30 to 1000 MHz	10 kHz
1000 MHz to 40 GHz	100 kHz

5.3.2. Measuring Instruments

Item 16~27 of the table is on section 6.

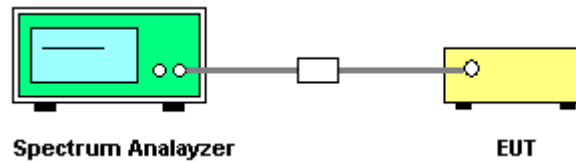
5.3.3. Major Test Instruments Setting

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth
RB	1 kHz (20dB Bandwidth)
VB	1 kHz (20dB Bandwidth)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3.4. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 1 kHz were utilised for 20 dB bandwidth measurement.

5.3.5. Test Setup Layout



5.3.6. Test Deviation

The measurement uncertainty is 10^{-7} . Test methods have no deviations with original standard.

5.3.7. Test Mode(s)

EUT is CTX mode (Continuous Transmission). Measurements have been done on channel 1, 27.045 MHz.

5.3.8. Test Result

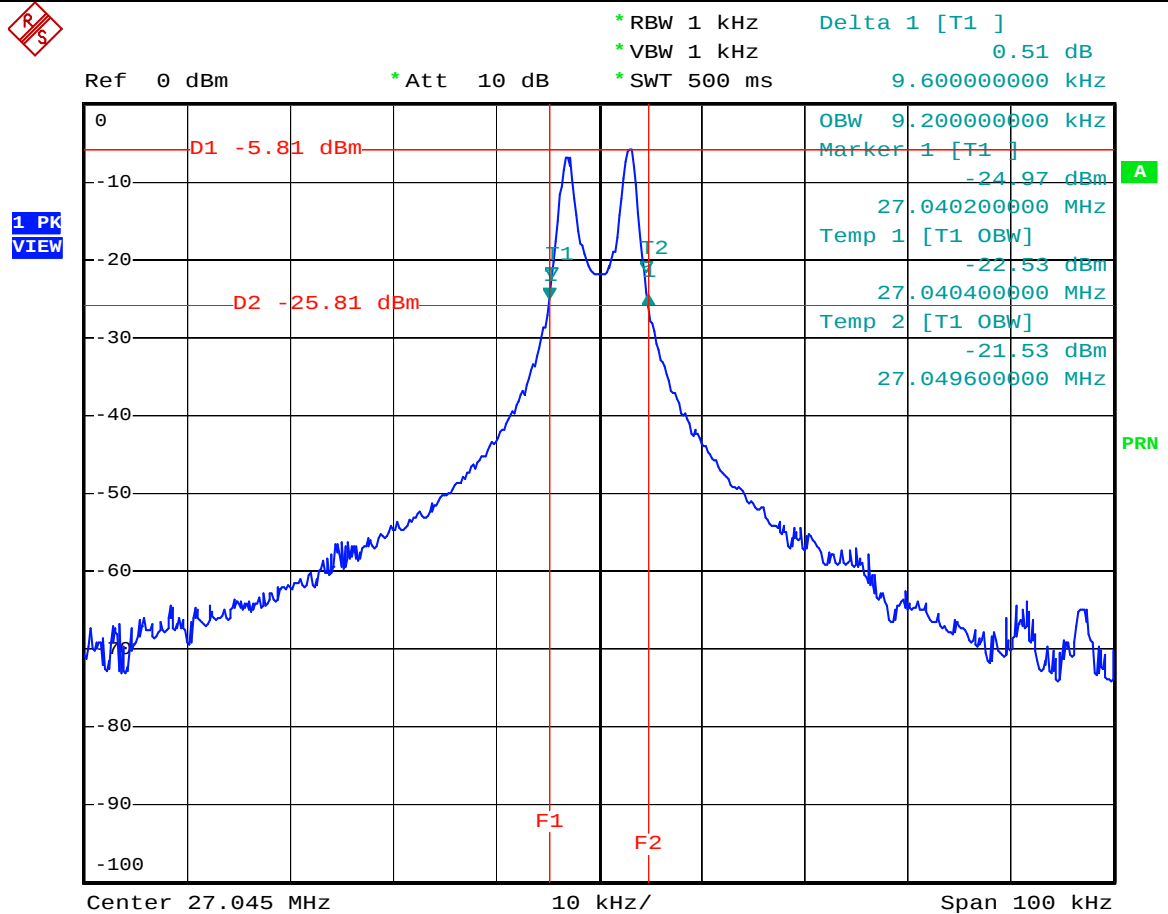
Test Site	TH01-HY
Temperature	20
Humidity	100%
Test Engineer	Sam Lee

Frequency	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Frequency range MHz (20dB Down) $f_L > 26.96 \text{ MHz}$	Frequency range MHz (20dB Down) $f_H < 27.28 \text{ MHz}$
27.045 MHz	9.6000	9.20	27.0402	27.0498



5.3.9. 20 dB Bandwidth Plots

20 dB Bandwidth Plot on 27.045 MHz



Date: 8.AUG.2005 16:18:25



5.4. Antenna Requirements

5.4.1. Standard Applicable

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

5.4.2. Antenna Connected Construction

There is no antenna connector for printed antenna.

5.4.3. Test Criteria

All test results complied with the requirements of section 15.203.

6. 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. 16, 2005	Radiation (03CH03-HY)
2	Spectrum analyzer	R&S	FSP40	100004	9KHZ ~ 40GHz	Aug. 31, 2004	Radiation (03CH03-HY)
3	Amplifier	SCHAFFNER	CPA9231A	18667	9KHz ~ 2GHz	Jan. 10, 2005	Radiation (03CH03-HY)
4	Amplifier	Agilent	8449B	3008A02120	1GHz ~ 26.5GHz	May 31, 2005	Radiation (03CH03-HY)
5	Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30MHz ~ 200MHz	Jul. 28, 2004	Radiation (03CH03-HY)
6	Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz ~ 1GHz	Jul. 28, 2004	Radiation (03CH03-HY)
7	Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	Apr. 22, 2005	Radiation (03CH03-HY)
9	RF Cable-R03m	Jye Bao	RG142	CB021	30MHz ~ 1GHz	Feb. 22, 2005	Radiation (03CH03-HY)
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz ~ 40GHz	Dec.01, 2004	Radiation (03CH03-HY)
11	Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
12	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.

Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
13	Amplifier	MITEQ	AMF-6F-260400	923364	26.5GHz ~ 40GHz	Jan. 05, 2004*	Radiation (03CH03-HY)
14	Loop Antenna	R&S	HFH2-Z2	860004/001	9kHz ~ 30MHz	May 24, 2004*	Radiation (03CH03-HY)
15	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz ~ 40GHz	Jun. 09, 2004*	Radiation (03CH03-HY)

Calibration Interval of instruments listed above is two years.



Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
16	Spectrum analyzer	R&S	FSP40	100004	9KHZ ~ 40GHz	Aug. 31, 2004	Conducted (TH01-HY)
17	Power meter	R&S	NRVS	100444	DC ~ 40GHz	Jul. 06, 2005	Conducted (TH01-HY)
18	Power sensor	R&S	NRV-Z55	100049	DC ~ 40GHz	Jul. 06, 2005	Conducted (TH01-HY)
19	Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Apr. 28, 2005	Conducted (TH01-HY)
20	AC power source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	Apr. 21, 2005	Conducted (TH01-HY)
21	DC power source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Nov. 28, 2004	Conducted (TH01-HY)
22	Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2004	Conducted (TH01-HY)
23	RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Jan. 01, 2005	Conducted (TH01-HY)
24	RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Jan. 01, 2005	Conducted (TH01-HY)
25	Oscilloscope	Tektronix	TDS1012	CO38515	100MHz / 1GS/s	Apr. 15, 2005	Conducted (TH01-HY)
26	Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Dec. 31, 2004	Conducted (TH01-HY)
27	Data Generator	Tektronix	DG2030	063-2920-50	0.1Hz~400MHz	Jun. 02, 2005	Conducted (TH01-HY)

Calibration Interval of instruments listed above is one year.

7. Company Profile

SPORTON Lab. was established in 1986 with one shielded room: the first private EMI test facility, offering local manufacturers an alternative EMI test facility apart from ERSO. In 1988, one 3M and 10M/3M open area test site were setup and also obtained official accreditation from FCC, VCCI and NEMKO. In 1993, a Safety laboratory was founded and obtained accreditation from UL of USA, CSA of Canada and TUV (Rhineland & PS) of Germany. In 1995, one EMC lab, including EMI and EMS test facilities was setup. In 1997, SPORTON Group has provided financial expense to relocate the headquarter to Orient Scientific Park in Taipei Hsien to offer more comprehensive, more qualified and better service to local suppliers and manufactures. In 1999, Safety Group and Component Group were setup. In 2001, SPORTON has established 3M/10M chamber in Hwa Ya Technology Park.

7.1. Certificate of Accreditation

Taiwan	BSMI, CNLA, DGT
USA	FCC, NVLAP, UL
EU	Nemko, TUV
Japan	VCCI
Canada	Industry Canada

7.2. Test Location

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 02-2696-2468 FAX : 02-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 03-327-3456 FAX : 03-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 02-2601-1640 FAX : 02-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihsu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 02-2631-4739 FAX : 02-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 02-8227-2020 FAX : 02-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 nd Rd., Taipei 114, Taiwan, R.O.C. TEL : 02-2794-8886 FAX : 02-2794-9777