

FCC / IC TEST REPORT

According to

47 CFR Part 15 Subpart B and IC RSS-210

Equipment : USRobotics Wireless MAXg USB Adapter

Trade Name : USRobotics

Model No. : USR5425

FCC ID : IXM-USGBR02

IC ID : 550A-15044

Filing Type : Declaration of Conformity

Applicant : Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

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- Report Version: Rev. 01

SPORTON International Inc.

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

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History of this test report

Report Issue Date: Jul. 11, 2007

Report No.	Description

CERTIFICATE OF COMPLIANCE

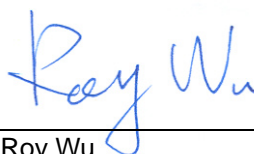
according to

47 CFR Part 15 Subpart B and IC RSS-210

Equipment : USRobotics Wireless MAXg USB Adapter
Trade Name : USRobotics
Model No. : USR5425
FCC ID : IXM-USGBR02
IC ID : 550A-15044
Filing Type : Declaration of Conformity
Applicant : Universal Scientific Industrial Co., Ltd.
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, 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 the energy emitted by this equipment was *passed* FCC Part 15 B and IC RSS-210 in both radiated and conducted emission class B limits. Testing was carried out on Jun. 27, 2007 at SPORTON International Inc. LAB.



Roy Wu
Manager

SPORTON International Inc.

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

1. General Description of Equipment under Test

1.1 Applicant

Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

1.2 Manufacturer

Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

1.3 Basic Description of Equipment under Test

Equipment	: USRobotics Wireless MAXg USB Adapter
Trade Name	: USRobotics
Model No.	: USR5425
FCC ID	: IXM-USGBR02
IC ID	: 550A-15044

1.4 Feature of Equipment under Test

Product Feature & Specification				
1.	DUT Type	USRobotics Wireless MAXg USB Adapter		
2.	Trade Name	USRobotics		
3.	Model Name	USR5425		
4.	FCC ID	IXM-USGBR02		
5.	IC ID	550A-15044		
6.	Modulation Type/Data Rate	DSSS / OFDM		
7.	Frequency Range.	2400 MHz ~ 2483.5 MHz		
8.	Number of Channels	11		
9.	Carrier Frequency of each channel	2412+(n-1)*5 MHz; n=1~11		
10.	Maximum Output Power to Antenna (Normal condition)	802.11b : 18.74 dBm 802.11g : 20.76 dBm		
11.	Type of Antenna Connector	N/A		
12.	Antenna Type	Printed Antenna		
13.	Antenna Gain	3.63 dBi		
14.	Function Type	Transmitter		Transceiver V

2. Test Configuration of Equipment under Test

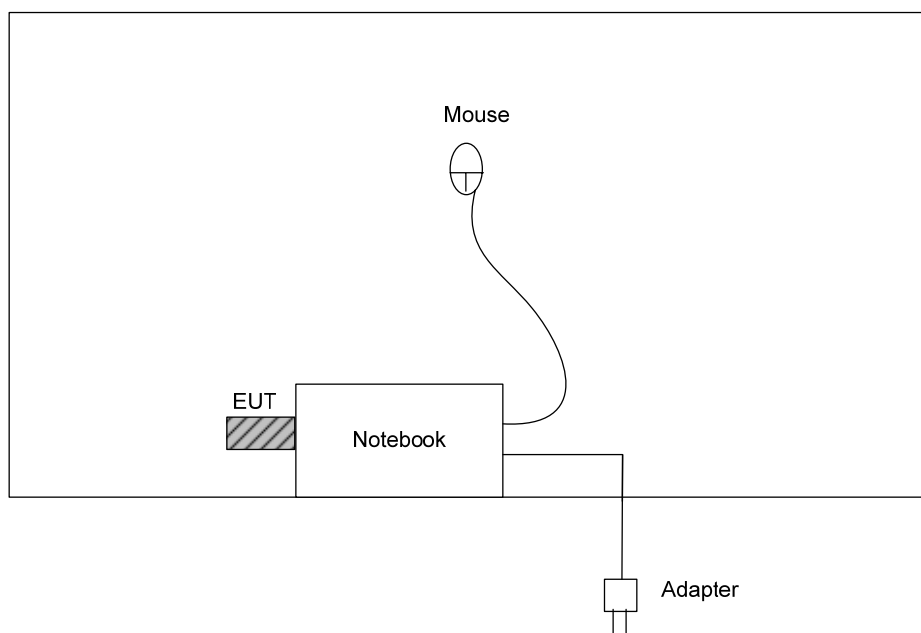
2.1 Test Manner

- a. The EUT has been setup pursuant to ANSI C63.4-2003 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system refers to 2.2 for EMI test.
- c. The following test modes were tested for conducted emission test:
Mode 1: WLAN Idle Mode
- d. The following test modes were tested for radiated emission test:
Mode 1: WLAN Idle Mode
- e. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 13 GHz.

2.2 Description of Test System

Item	Asset	Trade Name	Model Name	FCC ID	Power Cord
1.	Mouse	State	MS-303	DoC	N/A

2.3 Connection Diagram of Test System



3. Test Software

The executive program, EMCTest.exe, under WINXP installed in notebook which generates a complete line continuously repeating "H" pattern were used as the test software.

The programs were executed as follows:

- a. Turn on the power of all equipments.
- b. The Notebook reads the test program from its hard disk drive and runs it.
- c. The Notebook sends "H" messages to the Notebook panel, and the Notebook panel displays "H" patterns on the screen.
- d. The Notebook sends "H" messages to its internal hard disk, and the hard disk reads and writes the message.
- e. Repeat the steps from b to d.

4. General Information of Test

4.1 Test Facility

Test Site Location : 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. : CO01-HY, 03CH06-HY

4.2 Test Voltage

120V / 60Hz

4.3 Standard for Methods of Measurement

ANSI C63.4-2003

4.4 Test in Compliance with

FCC Part 15 Subpart B and RSS-210 Issued 6

4.5 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 13000MHz

4.6 Test Distance

The test distance of radiated emission from antenna to EUT is 3m.

5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

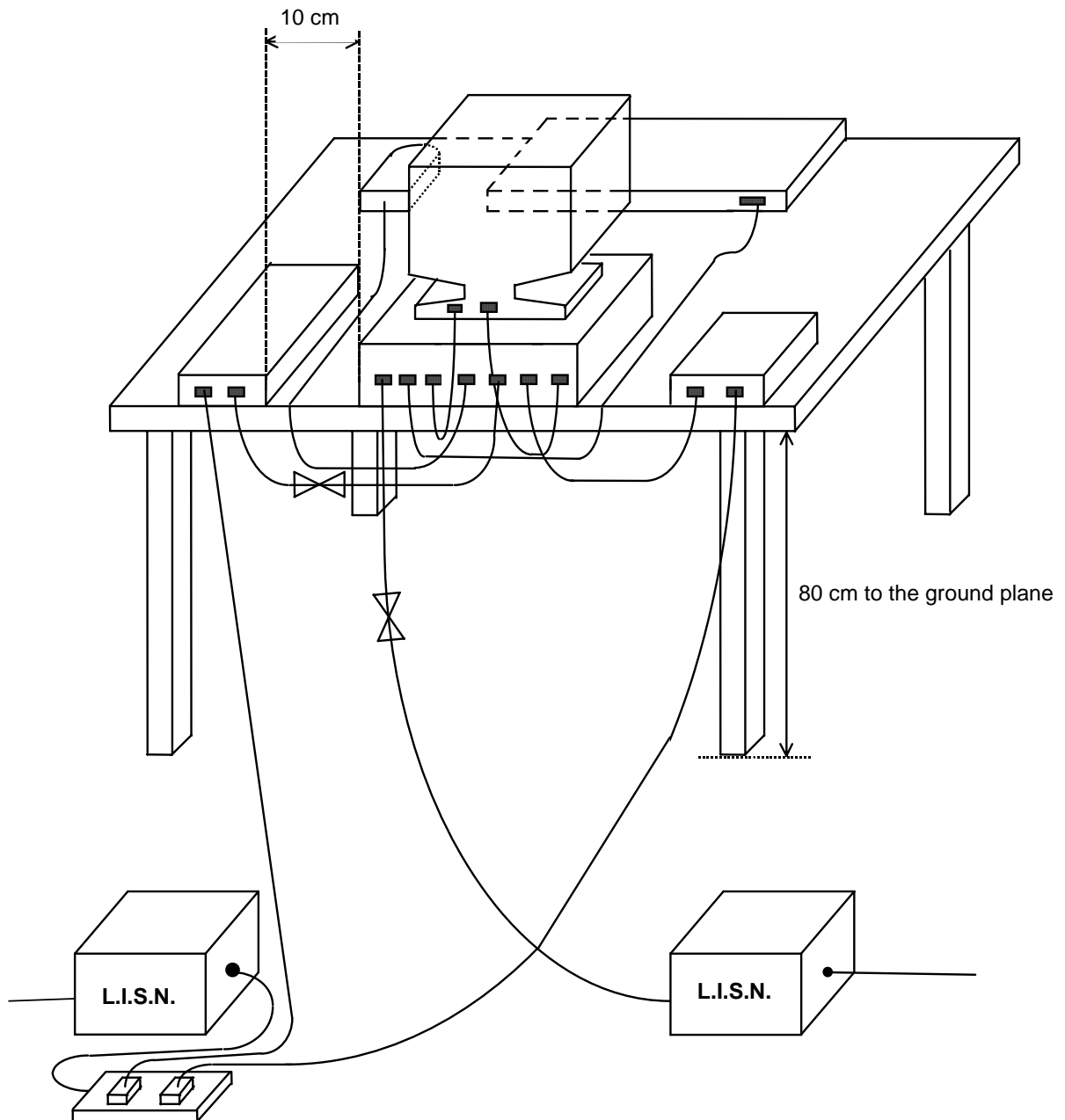
5.1 Major Measuring Instruments

As described in Chapter 7.

5.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.3 Typical Test Setup Layout of Conducted Powerline

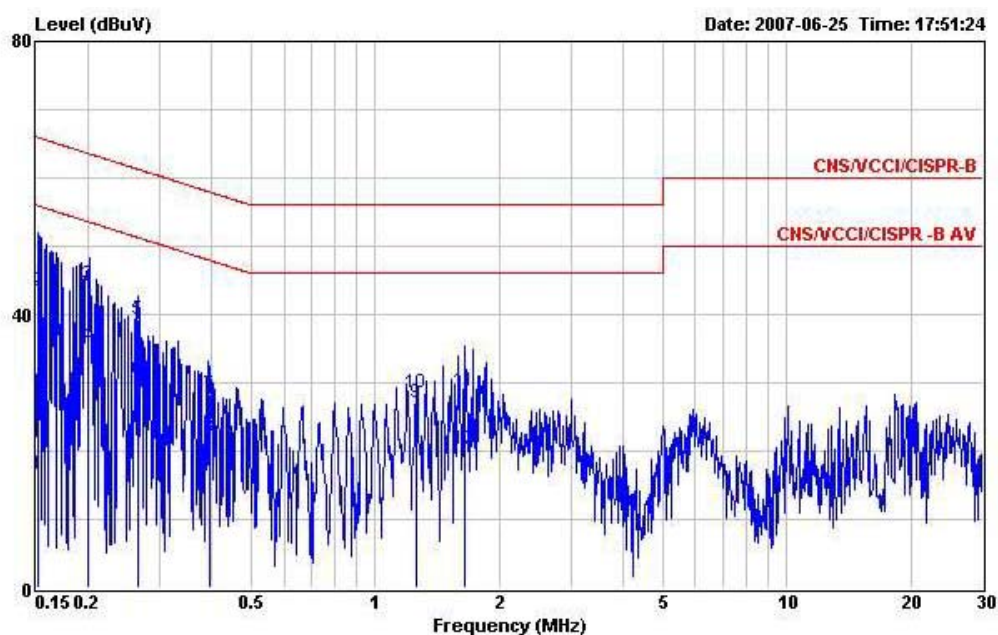


5.4 Test Result of AC Powerline Conducted Emission

5.4.1 Test Mode:

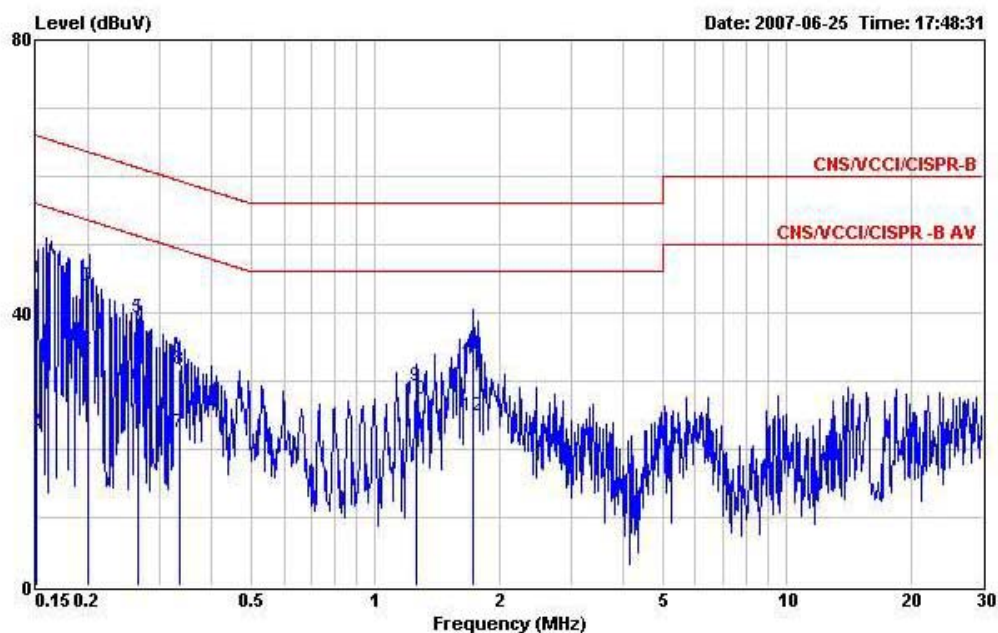
- Temperature: 25~26°C
- Relative Humidity: 57~59%
- Test Engineer: Tony
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.

■ The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : USB DONGLE
Power : 120V/60Hz(FROM SYSTER)
Model :
Memo : WLAN IDLE
Memo :
Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	16.65	-39.31	55.96	16.47	0.10	0.08	Average
2	0.151	43.38	-22.58	65.96	43.20	0.10	0.08	QP
3	0.199	44.34	-19.29	63.63	44.14	0.10	0.10	QP
4	0.199	35.45	-18.18	53.63	35.25	0.10	0.10	Average
5	0.264	39.30	-22.00	61.30	39.12	0.10	0.08	QP
6	0.264	30.51	-20.79	51.30	30.33	0.10	0.08	Average
7	0.394	28.19	-29.78	57.97	28.05	0.10	0.04	QP
8	0.394	21.90	-26.07	47.97	21.76	0.10	0.04	Average
9	1.261	27.18	-18.82	46.00	26.89	0.10	0.19	Average
10	1.261	28.57	-27.43	56.00	28.28	0.10	0.19	QP
11	1.650	28.68	-27.32	56.00	28.36	0.10	0.22	QP
12	1.650	20.35	-25.65	46.00	20.03	0.10	0.22	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : USB DONGLE
 Power : 120V/60Hz(FROM SYSTER)
 Model :
 Memo : WLAN IDLE
 Memo :
 Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	43.67	-22.33	66.00	43.49	0.10	0.08	QP
2	0.150	22.73	-33.27	56.00	22.55	0.10	0.08	Average
3	0.200	43.81	-19.78	63.59	43.61	0.10	0.10	QP
4	0.200	34.13	-19.46	53.59	33.93	0.10	0.10	Average
5	0.265	39.34	-21.94	61.28	39.16	0.10	0.08	QP
6	0.265	29.16	-22.12	51.28	28.98	0.10	0.08	Average
7	0.334	22.43	-26.92	49.35	22.27	0.10	0.06	Average
8	0.334	31.73	-27.62	59.35	31.57	0.10	0.06	QP
9	1.260	29.28	-26.72	56.00	28.99	0.10	0.19	QP
10	1.260	27.30	-18.70	46.00	27.01	0.10	0.19	Average
11	1.729	32.70	-23.30	56.00	32.37	0.10	0.23	QP
12	1.729	25.00	-21.00	46.00	24.67	0.10	0.23	Average

5.5 Photographs of Conducted Powerline Test Configuration

Please refer to Appendix B

6. Test of Radiated Emission

Radiated emissions from 30 MHz to 13 GHz were measured with a bandwidth of 120 kHz and 1MHz according to the methods defines in ANSI C63.4-2003. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

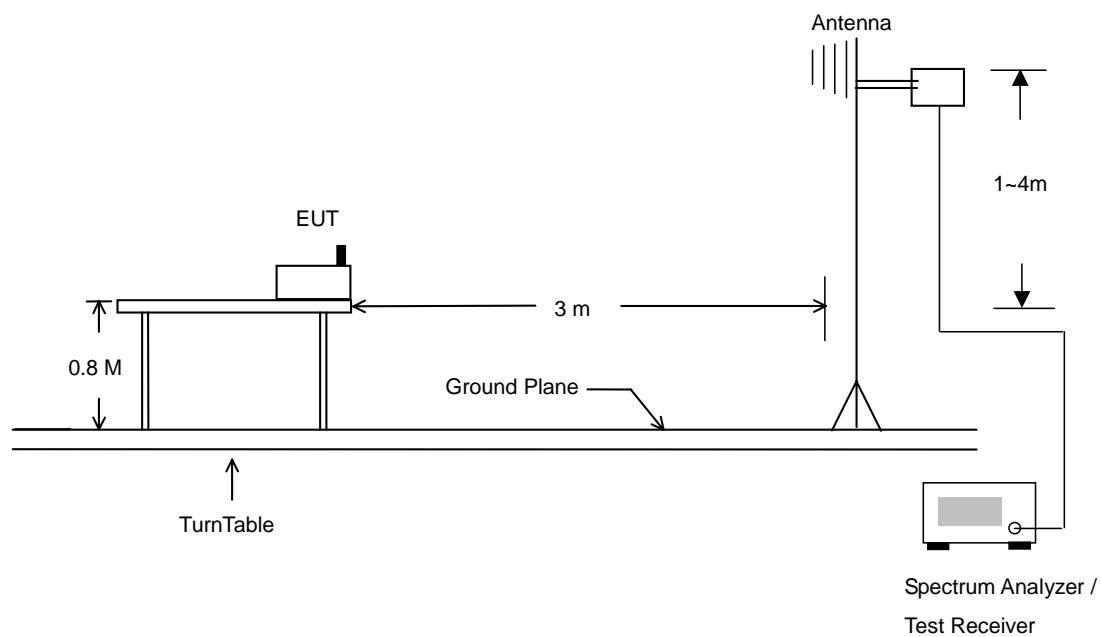
6.1 Major Measuring Instruments

As described in Chapter 7.

6.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a Bi-Log antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both for horizontal polarization and vertical polarization of the antenna.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. 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 will be repeated one by one using the quasi-peak method and reported.

6.3 Typical Test Setup Layout of Radiated Emission

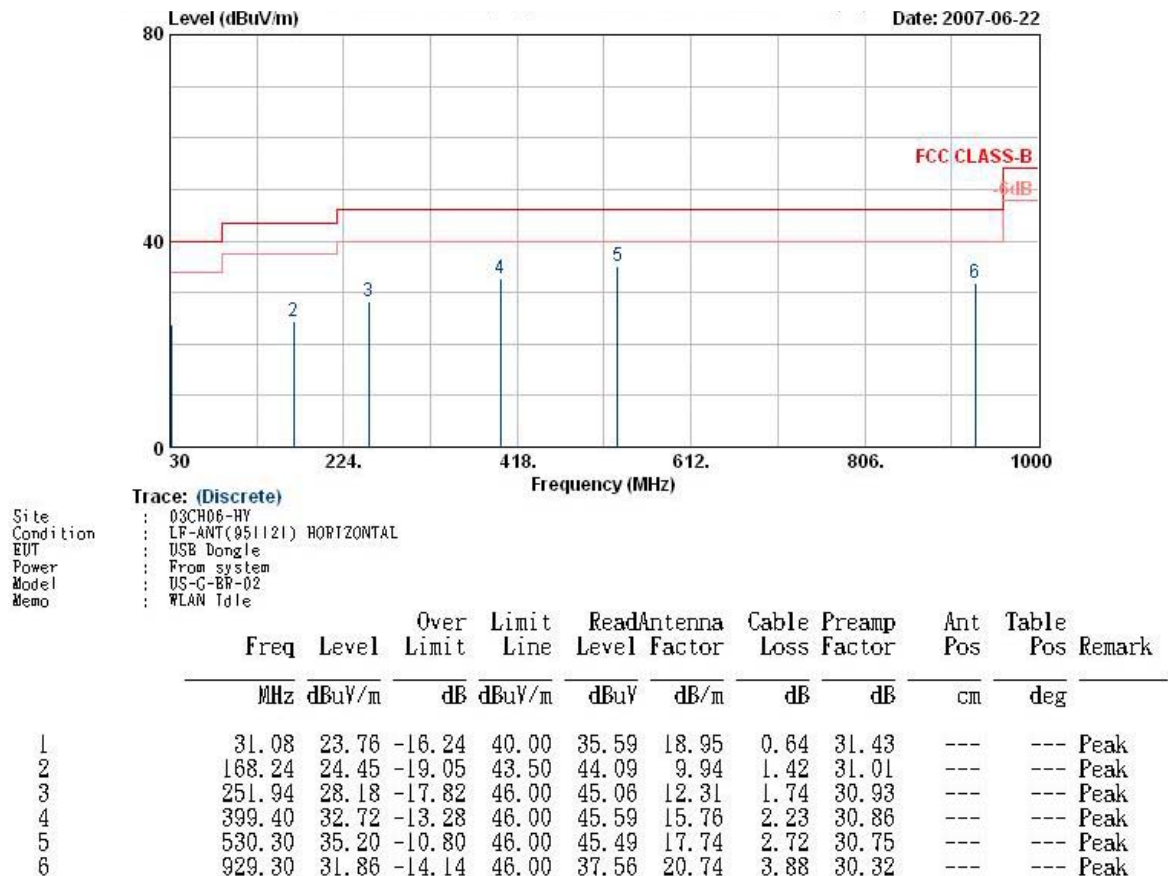


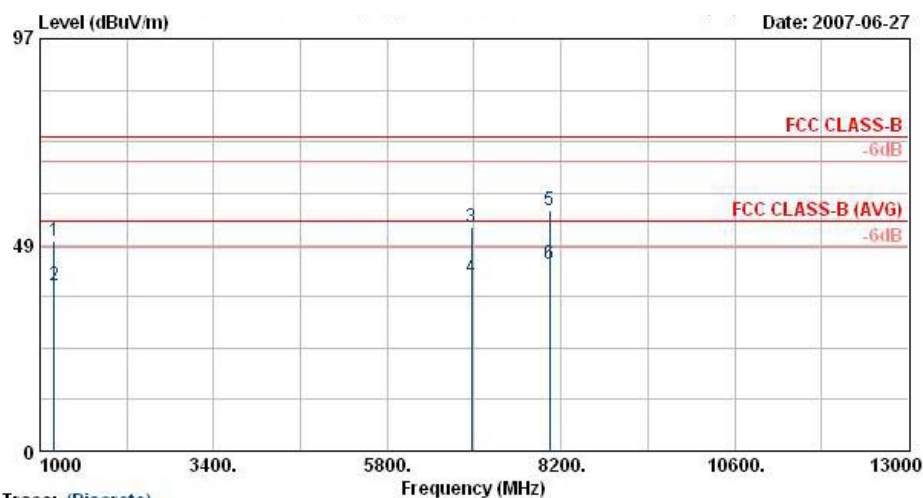
6.4 Test Result of Radiated Emission

6.4.1 Test Mode:

- Test Distance: 3m
- Temperature: 27~28°C
- Relative Humidity: 56~57%
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Test Engineer: Sam
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test that passed at the minimum margin was marked by a frame in the following data

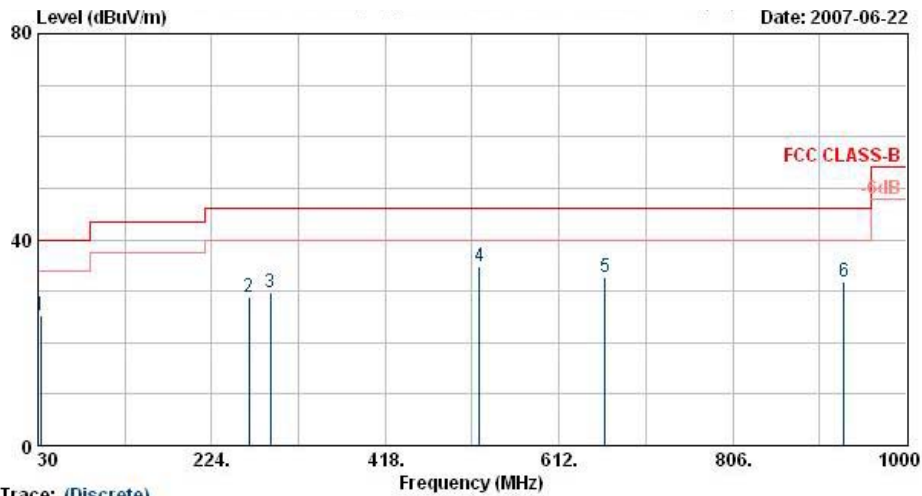




Trace: (Discrete)

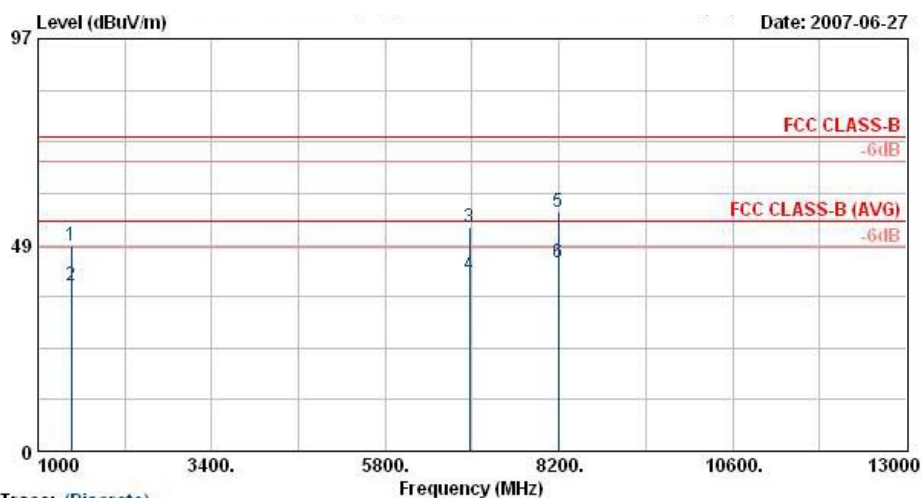
Site	: 03CH06-HY
Condition	: HF-ANT(8-16)-060918 HORIZONTAL
EUT	: USB Dongle
Power	: From system
Model	: US-C-BR-02
Memo	: WLAN Title

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1198.00	49.30	-24.70	74.00	57.46	24.99	3.09	36.23	100	0 Peak
2	1198.00	38.77	-15.23	54.00	46.93	24.99	3.09	36.23	100	55 Average
3	6964.00	52.66	-21.34	74.00	42.62	37.61	8.16	35.73	100	0 Peak
4	6964.00	40.85	-13.15	54.00	30.81	37.61	8.16	35.73	100	100 Average
5	8038.00	56.45	-17.55	74.00	43.10	39.57	9.65	35.87	100	0 Peak
6	8038.00	44.12	-9.88	54.00	30.77	39.57	9.65	35.87	100	125 Average



Trace: (Discrete)
 Site : 03CH06-HY
 Condition : LF-ANT(951121) VERTICAL
 EUT : USB Dongle
 Power : From system
 Model : US-G-BR-02
 Memo : WLAN Idle

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	33.24	25.31	-14.69	40.00	38.47	17.54	0.66	31.36	---	---	Peak
2	265.44	28.99	-17.01	46.00	45.59	12.56	1.80	30.96	---	---	Peak
3	289.74	29.65	-16.35	46.00	45.69	13.03	1.90	30.96	---	---	Peak
4	523.30	34.91	-11.09	46.00	45.31	17.67	2.69	30.76	---	---	Peak
5	663.30	32.65	-13.35	46.00	41.40	18.74	3.14	30.63	---	---	Peak
6	930.70	31.84	-14.16	46.00	37.52	20.75	3.88	30.31	---	---	Peak



Trace: (Discrete)

Site : 03CH06-HV
Condition : HF-ANT(8-16)-060918 VERTICAL
EUT : USB Dongle
Power : From system
Model : US-G-BP-02
Memo : WLAN Idle

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1464.00	48.48	-25.52	74.00	54.82	25.97	3.47	35.77	100	0 Peak
2	1464.00	38.77	-15.23	54.00	45.11	25.97	3.47	35.77	100	300 Average
3	6968.00	52.60	-21.40	74.00	42.56	37.61	8.16	35.73	100	0 Peak
4	6968.00	41.55	-12.45	54.00	31.51	37.61	8.16	35.73	100	25 Average
5	8194.00	56.27	-17.73	74.00	43.25	39.45	9.52	35.96	100	0 Peak
6 @	8194.00	44.27	-9.73	54.00	31.26	39.45	9.52	35.96	100	55 Average

6.5 Photographs of Radiated Emission Test Configuration

Please refer to Appendix B

7. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz – 2.75GHz	Aug. 30, 2006	Aug. 29, 2007	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Mar. 30, 2007	Mar. 29, 2008	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 30, 2007	Mar. 29, 2008	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 04, 2006	Dec. 03, 2007	Conduction (CO01-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	N/A	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 05, 2006	Oct. 04, 2007	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 13, 2006	Jul. 12, 2007	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G~18G	Jun. 04, 2007	Jun. 04, 2008	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBEC K	BBHA 9170	9170-249	14G - 40G	Nov. 20, 2006	Nov. 19, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Pre Amplifier	Mini Circuits	ZKL-2	D092004-1	10~2500MHz	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Base Station Simulator	R & S	CMU200	106656	WCDMA	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Controller	INN-CO	CO2000	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	INN-CO	MM3000	114/8000604/L	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)

8. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	± 0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	± 1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	± 0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U = 2U_c(y)$	4.72				

9. Certificate of NVLAP Accreditation

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200079-0

Sporton International, Inc. Hwa Ya EMC Laboratory
Tao Yuan Hsien 333
TAIWAN

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2005).*

2007-01-01 through 2007-12-31

Effective dates




For the National Institute of Standards and Technology