



FCC TEST REPORT

Reference No. : G-45-2011-00899
Applicant : SEOWONINTECH CO., LTD.
Equipment Under Test (EUT) :
Product Name : Wimax USB Dongle
Model Name : SWU-3400AN
Applied Standards : FCC Part 15 : 2009, Subpart B, Class B
ANSI C63.4 : 2003
CISPR 22 : 2006
Date of Receipt : March 31, 2011
Date of Test : April 06, 2011
Date of Issue : April 11, 2011
Test Results : Complied

Tested by	:	 ----- Jerry Jeong
Reviewed by	:	 ----- Forest Lee

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



Contents

1. General Information.....	3
1.1 Client Information.....	3
1.2 Test Laboratory.....	3
1.3 General Information of E.U.T.	3
1.4 Operating Modes and Conditions.....	4
1.5 Peripheral Equipments.....	4
1.6 Cable List.....	4
1.7 System Configurations.....	5
1.8 Test System Layout	5
1.9 Modifications	5
1.10 Applicable Standards for Testing	5
1.11 Summary of Test Results.....	5
2. Emission Test.....	6
2.1 Test Results.....	6
2.2 Test Equipments	6
2.3 Test Site.....	6
2.4 Conducted Emission Test Data.....	7
2.5 Radiated Emission Test Data.....	8
3. Photographs of EUT	9
Appendix A : Conducted Emission	12



1. General Information

1.1 Client Information

Applicant : SEOWONINTECH CO., LTD.
Address of Applicant : 689-47 Geumjeong-dong, Gunpo-City, Kyounggi-do,
436-862 Korea
Manufacturer : SEOWONINTECH CO., LTD.
Address of Manufacturer : 689-47 Geumjeong-dong, Gunpo-City, Kyounggi-do,
436-862 Korea

1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd.
18-34, Sanbon-dong, Gunpo, Gyeonggi-do, Korea
435-041

1.3 General Information of E.U.T.

Product Name : Wimax USB Dongle
Model Name : SWU-3400AN
Serial No. : KRS0126U3400AN 0000003
Test Voltage : Input 120 V a.c., 60 Hz (Notebook Computer)

1.4 Operating Modes and Conditions

Operating mode	Operating condition
Wimax + Idle	Wimax Communication Mode

1.5 Peripheral Equipments

Description	Model	Serial No.	Manufacturer
LCD Monitor	W2261VT-PF	003NDWEKY873	LG
USB Keyboard	KU-0459	7691402003981	Microsoft
USB MOUSE	Wheel mouse optical	0447	Microsoft Corporation
Local Area Network	-	-	-
Wimax Communication Tester	CMW270	100386	R&S
Notebook Computer	LGX14	008QTEQ024836	LG

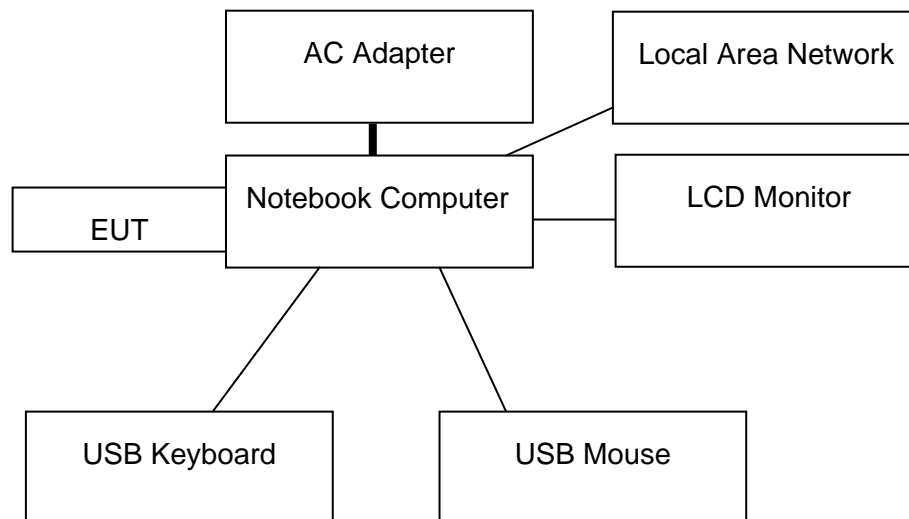
1.6 Cable List

Start		END		Cable Spec.	
Name	I/O Port	Name	I/O Port	Length	Shield
AC Adapter	AC IN	Power Source	-	1.3	Unshield
	DC OUT	Notebook Computer	DC IN	1.0	Unshield
Notebook Computer	DC IN	AC ADAPTER	DC OUT	1.0	Unshield
	LAN	Local Area Network	-	6.0	Unshield
	USB	USB Mouse	-	1.6	Shield
	USB	USB Keyboard	-	1.6	Shield
	RGB	LCD Monitor	RGB	1.8	Shield
	USB	EUT	-	-	-

1.7 System Configurations

Description	Model	Serial No.	Manufacturer
MAIN Board	SWU-3400AN V2.0	-	-

1.8 Test System Layout



1.9 Modifications

There was no modified item during the test.

1.10 Applicable Standards for Testing

Standards	Status	Deviation
FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Standards	Results
Conducted Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied
Radiated Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied

EMISSION

2.1 Test Results

Test Items	Standards	Test Results
Conducted Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied
Radiated Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied

2.2 Test Equipments

Equipment	Model	Manufacturer	Last Cal. Date
Two-Line V-Network	ENV216	R & S	2011.01.06
Artificial Mains Networks	ESH2-Z5	R & S	2011.04.06
Test Receiver	ESHS10	R & S	2010.07.12
Horn Antenna	HF906	R & S	2009.10.08
Bilog Antenna	VULB9163	SCHWARZBECK MESS-ELEKTRONIK	2009.05.07
Test Receiver	ESU26	R & S	2010.04.08
Amplifier	8447F	HP	2010.07.05
Preamplifier	8449B	Agilent	2011.03.31

Note : Only the calibration period of Antennas is 2 years but the period of every equipment is 1 year.

2.3 Test Site

Conducted Emission: Shield Room in Gunpo Laboratory

Radiated Emission: 3m Semi-Anechoic Chamber in Gunpo Laboratory

2.4 Conducted Emission Test Data

The initial preliminary exploratory scans were performed using a max hold mode incorporating a Peak detector. The final test data was measured using a Quasi-Peak detector and Average detector.

Temperature : 21.5 §

Humidity : 30.0 % RH ~ 31.0 % RH

Atmospheric Pressure : 100.4 kPa

FREQ. (MHz)	LINE	LEVEL(dB)		LIMIT(dB)		MARGIN(dB)	
		Q-Peak	Average	Q-Peak	Average	Q-Peak	Average
0.48	H	37.60	30.90	56.34	46.34	18.74	15.44
0.49	N	37.80	30.80	56.17	46.17	18.37	15.37
0.97	N	36.80	28.30	56.00	46.00	19.20	17.70
1.12	N	32.40	24.60	56.00	46.00	23.60	21.40
2.07	H	39.20	25.90	56.00	46.00	16.80	20.10
2.24	H	37.50	25.60	56.00	46.00	18.50	20.40

Measurement Uncertainty : TM 3.37dB (The confidential level is about 95%, K=2)

Note : • Line (H) : Hot

• Line (N) : Neutral

• Margin = Limit – Level

See Appendix A (Conducted Emission)

2.5 Radiated Emission Test Data

The initial preliminary exploratory scans were performed using a max hold mode incorporating a Peak detector. The final test data was measured using a Quasi-Peak detector below 1GHz and a Peak and Average detector above 1GHz. This test was performed up to 14GHz.

Below 1GHz (3m method)

Temperature : 21.6 §

Humidity : 27.0 % RH ~ 28.0 % RH

Atmospheric Pressure : 100.4 kPa

FREQ. (MHz)	LEVEL (dB)	POL (H/V)	A (°)	H (m)	AF (dB)	CL (dB)	Amp (dB)	F/S (dB /m)	LIMIT (dB /m)	MARGIN (dB)
203.96	37.50	H	203.0	2.00	10.38	1.40	27.61	21.67	43.50	21.83
321.29	34.90	H	155.0	1.00	13.74	1.77	27.50	22.91	46.00	23.09
447.95	42.90	H	200.0	2.00	16.24	2.22	28.68	32.68	46.00	13.32

Measurement Uncertainty (Horizontal) : TM 5.00dB (The confidential level is about 95%, K=2)

Measurement Uncertainty (Vertical) : TM 5.36dB (The confidential level is about 95%, K=2)

Note : • AF = Antenna Factor • CL = Cable Loss • F/S = Field Strength
• POL H = Horizontal • POL V = Vertical • Amp = Amplifier Gain
• Margin = Limit – F/S • F/S = Level + AF + CL – Amp
• A : Angle • H : Height

Above 1GHz (3m method)

Temperature : 21.6 § ~ 21.7 §

Humidity : 27.0 % RH ~ 28.0 % RH

Atmospheric Pressure : 100.4 kPa

FREQ. (MHz)	LEVEL (dB)	POL (H/V)	A (°)	H (m)	AF (dB)	CL (dB)	Amp (dB)	F/S (dB /m)	LIMIT (dB /m)	MARGIN (dB)
Peak Detector										
1327.72	49.00	V	281.0	1.00	25.01	3.61	35.36	42.26	74.00	31.74
1379.69	47.20	V	10.0	1.00	25.13	3.60	35.49	40.43	74.00	33.57
Average Detector										
1327.72	29.40	V	281.00	1.00	25.01	3.61	35.36	22.66	54.00	31.34
1379.69	28.50	V	10.00	1.00	25.13	3.60	35.49	21.73	54.00	32.27

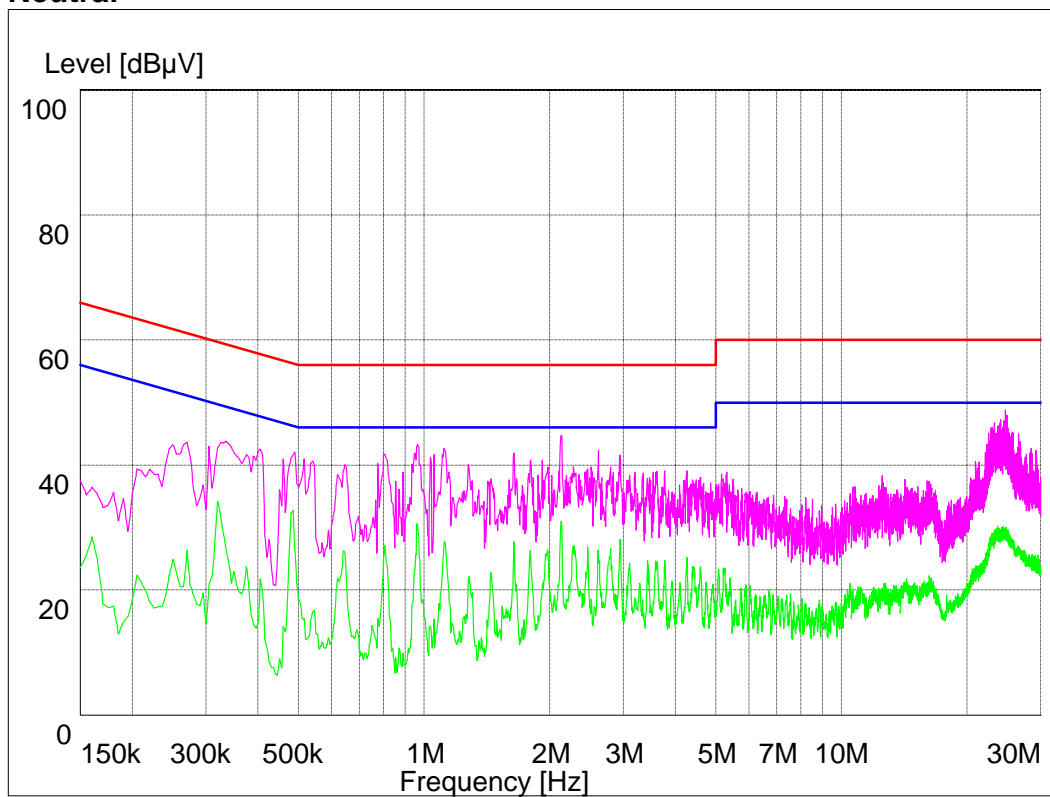
Measurement Uncertainty (Horizontal) : TM 4.89dB (The confidential level is about 95%, K=2)

Measurement Uncertainty (Vertical) : TM 4.93dB (The confidential level is about 95%, K=2)

Note : • AF = Antenna Factor • CL = Cable Loss • F/S = Field Strength
• POL H = Horizontal • POL V = Vertical • Amp = Amplifier Gain
• Margin = Limit – F/S • F/S = Level + AF + CL – Amp
• A : Angle • H : Height

Appendix A : Conducted Emission

Neutral



Hot

