



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No. : E055R-074

Applicant : Onairsolution Co., Ltd.
Address : Nuri Bldg. 3F, 7-1, Yangpyeong-Dong 4Ga, Yeongdeungpo-Gu, Seoul, 150-866,
Korea

Manufacturer : Onairsolution Co., Ltd.
Address : Nuri Bldg. 3F, 7-1, Yangpyeong-Dong 4Ga, Yeongdeungpo-Gu, Seoul, 150-866,
Korea

Type of Equipment : USB HDTV Receiver

FCC ID : TBPONAIRCREATOR

Model Name : OnAir USB HDTV CREATOR

Serial number : N/A

Total page of Report : 12 pages (including this page)

Date of Incoming : May 16, 2005

Date of Issuing : May 24, 2005

SUMMARY

The equipment complies with the regulation; *PART 15 SUBPART B, Class B Computing Device Peripherals.*

This test report contains only the result of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production

Prepared by: _____

Reviewed by: _____



ONETECH

Testing & Evaluation Lab.

Page 2 of 12

FCC ID. : TBPONAIRCREATOR

Report No. : E055R-074

Seung-Hyun, Nam / Project Engineer
EMC Div.
ONETECH Corp.

Gea-Won, Lee / Chief Engineer
EMC Div.
ONETECH Corp.



CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE.....	4
2. GENERAL INFORMATION.....	5
2.1 PRODUCT DESCRIPTION.....	5
2.2 MODEL DIFFERENCES.....	5
2.3 RELATED SUBMITTAL(S) / GRANT(S)	5
2.4 TEST SYSTEM DETAILS	5
2.5 TEST METHODOLOGY	6
2.6 TEST FACILITY	6
3. SYSTEM TEST CONFIGURATION.....	7
3.1 JUSTIFICATION	7
3.2 EUT EXERCISE SOFTWARE.....	7
3.3 CABLE DESCRIPTION	7
3.4 NOISE SUPPRESSION PARTS ON CABLE	7
3.5 EQUIPMENT MODIFICATIONS	8
3.6 CONFIGURATION OF TEST SYSTEM	8
4. PRELIMINARY TEST.....	8
4.1 AC POWER LINE CONDUCTED EMISSION TEST	8
4.2 RADIATED EMISSION TEST	8
5. FINAL RESULT OF MEASUREMENT	9
5.1 CONDUCTED EMISSION TEST.....	9
5.2 RADIATED EMISSION TEST	11
6. FIELD STRENGTH CALCULATION	12
7. LIST OF TEST EQUIPMENT.....	13

**1. VERIFICATION OF COMPLIANCE**

APPLICANT : Onairsolution Co., Ltd.
ADDRESS : Nuri Bldg. 3F, 7-1, Yangpyeong-Dong 4Ga, Yeongdeungpo-Gu, Seoul, 150-866, Korea
CONTACT PERSON : Mr. Sangjin, Kim / Assistant Manager
TELEPHONE NO : +82-2-1588-6778
FCC ID : TBPONAIRCREATOR
MODEL NO/NAME : OnAir USB HDTV CREATOR
SERIAL NUMBER : N/A
DATE : May 24, 2005

DEVICE TYPE	Peripheral Device for Class B Computing Device
E.U.T. DESCRIPTION	USB HDTV Receiver
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2001
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	PART 15 SUBPART B, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	Yes
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

- This device has shown compliance with the conducted emissions limits in 15.107 adopted under FCC 02-107 (ET Docket 98-80). The device may be marketed after July 11, 2005 affected by the 15.37(j) transition provisions.
- The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



2. GENERAL INFORMATION

2.1 Product Description

The Onairsolution Co., Ltd., Model OnAir USB HDTV CREATOR (referred to as the EUT in this report) is a USB HDTV Receiver. The verification report for the TV tuner in the EUT shall be issued with another test report number. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ. $\geq$ 1MHz)	20 MHz, 24 MHz, 32.110 MHz and 27 MHz on the Main Board
NUMBER OF LAYERS	2 Layers: Tuner Board 4 Layers: Main Board
ELECTRICAL RATING	Input : AC100-240V, 50/60Hz, 0.3A, Output : DC 5V, 2.0A
EXTERNAL TERMINALS	ANT In, Video In, S-Video In, Audio L/R In, DC In, USB Port

2.2 Model Differences

The difference(s) compared to the EUT is as follows: None

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Test System Details

The model numbers for all the equipments which were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
OnAir USB HDTV CREATOR	Onairsolution Co., Ltd.	TBPONAIRCREATOR	USB HDTV Receiver (EUT)	Notebook PC
KSAF0500200W1US	Ktec	N/A	AC/DC Adaptor	EUT
PQG10K-01S005	Toshiba	DoC	Notebook PC	-
SCPH-103	Sony	DoC	Game Device	EUT
MO56UO	Dell	DoC	Mouse	Notebook PC
LT 416	LEADER	N/A	Pattern Generator	EUT



2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2001. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Eup, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on April 04, 2003. (Registration Number: 340658)

3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Onairsolution	OnAir USB HDTV Creator	N/A
Tuner Board	Onairsolution	OnAir USB HDTV Creator-Tuner	N/A
Tuner	LG Innotek	TDVS-062F	N/A

3.2 EUT exercise Software

-. The EUT was received video data from a game device or a pattern generator. After connecting the USB 2.0 Port on the EUT to the Notebook PC, the received video data from the tuner or RCA Jack was transferred to the Notebook PC.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
USB HDTV Receiver	N	Y	1.5(P), 1.5(D)
AC/DC Adaptor	N	N/A	1.5(P)
Notebook PC	N	-	1.5(P)
Game Device	N	N	1.5(P), 1.5(D)
Mouse	N/A	N	1.5 (D)
Pattern Generator	N	N	1.5(P), 1.5(D)

* The marked "(P)" means the Power Cable and "(D)" means Signal Cable.

3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
USB HDTV Receiver	N	N/A	Y	BOTH END
AC/DC Adaptor	Y	EUT END	Y	EUT END
Notebook PC	-	-	-	-
Game Device	Y	Game Device END	Y	BOTH END
Mouse	N	N/A	Y	Notebook PC END
Pattern Generator	N	N/A	Y	BOTH END

3.5 Equipment Modifications

- The capacitor(0.1uF) was added between the pin(5) of U17 and ground.
- The bead(102 Ohm) was added between the pin(28) of U4 and ground.
- The bead(33 Ohm) was added between the pin(4) of U17 and the pin(2) of U18.
- The EMI gasket was added between the USB port and tuner.

3.6 Configuration of Test System

Line Conducted Test: The power of the EUT was supplied by AC/DC adapter and the adapter was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2001 7.2.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2001 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Receiving and transmitting video data from game device	
Receiving and transmitting video data from pattern generator	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Receiving and transmitting video data from game device	
Receiving and transmitting video data from pattern generator	X

**5. FINAL RESULT OF MEASUREMENT**

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Conducted Emission Test

Humidity Level : 39 %

Temperature: 21 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)Type of Test : Peripheral Device for Class B Computing DeviceResult : PASSED BY -6.98 dB at 2.10 MHz under average mode

EUT : USB HDTV Receiver

Date: May 20, 2005

Operating Condition : Receiving and transmitting video data from pattern generator

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

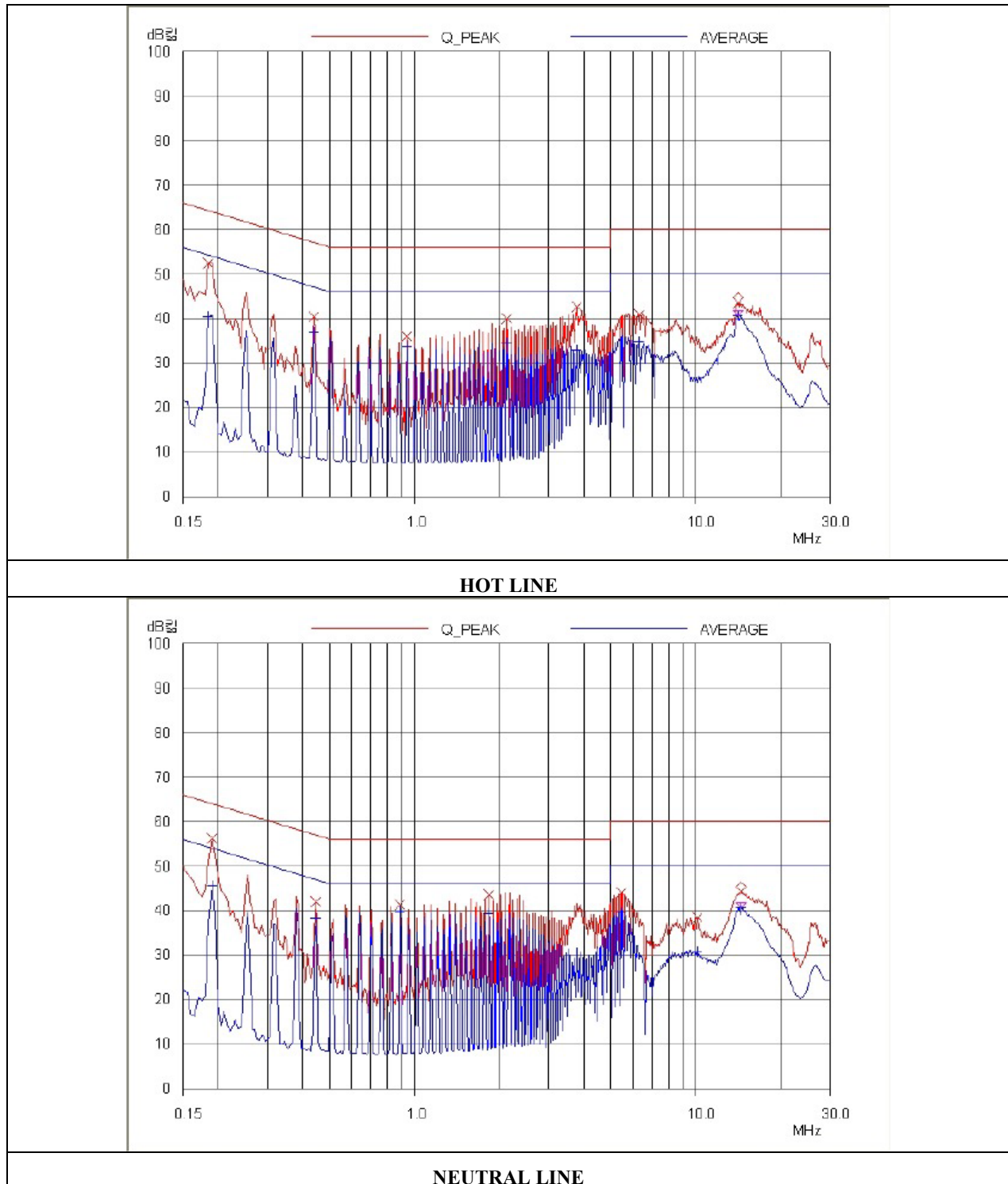
Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.19	N	56.24	64.04	-7.80
0.25	N	47.95	61.59	-13.64
0.38	N	43.01	58.28	-15.27
1.33	N	42.02	56.00	-13.98
2.10	N	44.00	56.00	-12.00
3.77	H	42.62	56.00	-13.38
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
0.19	N	45.49	54.04	-8.55
0.25	N	39.45	51.59	-12.14
2.10	N	39.02	46.00	-6.98
3.77	H	32.96	46.00	-13.04

Line Conducted Emission Tabulated Data

Remark : "H": Hot Line, "N": Neutral line

See next page for an overview sweep performed with peak and average detector.

Tested by: Sung-Chel, You / Test Engineer





5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 41 % Temperature: 22 °C
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109(a)
Type of Test : CLASS B
Result : PASSED BY -2.32dB at 404.93MHz

EUT : USB HDTV Receiver Date: May 19, 2005
Operating Condition : Receiving and transmitting video data from pattern generator
Frequency range : 30MHz – 2000MHz
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Distance : 3 Meter

Radiated Emission		Ant	Correction Factors		Total	FCC	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
133.31	14.30	V	14.16	2.27	30.73	43.52	-12.79
149.96	14.90	V	15.04	2.30	32.24	43.52	-11.28
165.00	15.00	V	15.48	2.40	32.88	43.52	-10.64
199.90	14.90	V	15.87	2.80	33.57	43.52	-9.95
269.80	20.00	H	17.75	3.48	41.23	46.02	-4.79
286.00	13.50	V	20.04	3.63	37.17	46.02	-8.85
404.93	23.70	H	15.59	4.41	43.70	46.02	-2.32
539.90	20.00	H	18.22	5.34	43.56	46.02	-2.46
759.90	14.40	H	21.09	6.96	42.45	46.02	-3.57
799.90	11.60	H	20.38	7.20	39.18	46.02	-6.84

Tested by: Sung-Chel, You / Test Engineer



6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)



7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS10	827864/005	DEC/04	12MONTH	■
2.	Test receiver	R/S	ESHS10	834467/007	MAY/05	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/04	12MONTH	■
4.	Spectrum analyzer	HP	8568B	3109A05456	JUL/04	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	APR/05	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	JUL/04	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/05	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/05		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/05	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/05		■
10.	LISN	EMCO	3825/2	9109-1867	JUL/04	12MONTH	
				9109-1869	OCT/04		■
		Schwarzbeck	NSLK 8128	8128-216	MAY/04		■
11.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
12.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
13.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■