



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR PART15 CLASS B COMPUTING DEVICE PERIPHERAL

Test report file number : E05OR-079

Applicant : SoundGraph, Inc.
Address : 621-1 Yeoksam 1-dong, Gangnam-gu, Seoul Korea

Manufacturer : SoundGraph, Inc.
Address : 621-1 Yeoksam 1-dong, Gangnam-gu, Seoul Korea

Type of Equipment : USB RF Receiver

FCC ID. : PMTSGLT

Model Name : iMON 2.4G LT

Serial number : None

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

Date of Incoming : October 17, 2005

Date of issue : October 28, 2005

SUMMARY

The equipment complies with the regulation, **FCC CFR 47 PART 15 SUBPART B, Class B.**

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

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

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1. VERIFICATION OF COMPLIANCE

APPLICANT : SoundGraph, Inc.
 ADDRESS : 621-1 Yeoksam 1-dong, Gangnam-gu, Seoul Korea
 CONTACT PERSON : Mr.Hyoung-Min Jo / Manager
 TELEPHONE NO : +82-2-569-2097
 FCC ID : PMTSGLT
 MODEL NO/NAME : iMON 2.4G LT
 SERIAL NUMBER : N/A
 DATE : October 28, 2005

EQUIPMENT CLASS	<i>JBP-Part 15 Class B Computing Device Peripheral</i>
KIND OF EQUIPMENT	USB RF Receiver
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4/2003
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART B Section 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER(S) 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 and is not 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 SoundGraph, Inc., Model: iMON 2.4G LT (referred to as the EUT in this report) is a USB RF Receiver. The EUT control Multi-Median Software is designed to enjoy the media files like Music, Movie, and Photo and use the multimedia device like DVD, TV, Digital Camcorder and Digital Camera using by this EUT and the USB RF Remote Controller, Model: iMON 2.4G has FCC ID: PMTSG24G. The USB RF Remote Controller shall be issued another test report number. Product specification information described herein was obtained from product data sheet or user’s manual.

CHASSIES	Plastic-Non Coated
RECEIVING FREQUENCY	2430 ~2460 MHz
ANTENNA	Inserted into the main board (Pattern Antenna)
CHANNEL	31 Channels
DATA TRANSFER RATE	250kbps
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12MHz
USED BOARD NAME	Main Board
NUMBER OF LAYER	2 Layers
POWER REQUIREMENT	DC 5V from USB Bus
EXTERNAL CONNECTOR	None

2.2 Alternative type(s)/model(s); also covered by this test report.

No other model differences have been mentioned.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

**2.5 Test Facility**

The Electromagnetic compatibility measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myeon, Gwangju-Si, Gyeonggi-Do 464-080 Korea. Description details of test facilities were submitted to the Federal Communications Commission on January 18, 2002 (Registration Number: 92819 and 340658), accredited by KOLAS (Korea Laboratory Accreditation Scheme, No: 85) and approved by TUV, DNV, SEMKO and MIC (Ministry of Information and Communications in Korea) according to the requirement of ISO17025.

3. EUT MODIFICATIONS

None

4. SYSTEM TEST CONFIGURATION**4.1 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	SoundGraph, Inc.	N/A	N/A

4.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	FCC ID	Description	Connected to
iMON 2.4G LT	SoundGraph, Inc.	PMTSGLT	USB RF Receiver (EUT)	HOST
iMON 2.4G	SoundGraph, Inc.	PMTSG24G	USB RF Remote Controller	-
PP05LC	DELL Computer Corp.	DoC	NOTEBOOK PC (HOST)	-
020-0470	Cardinal	GDE0196	MODEM	HOST
2225C	HP	DSI6XU2225	PRINTER	HOST

**4.3 Cable Description**

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
USB RF Receiver (EUT)	N/A	N/A	-
NOTEBOOK PC (HOST)	N	-	1.5 (P)
AC/DC ADAPTER (Notebook PC)	N	N	1.6(P), 1.0(D)
MODEM	N	N	1.6(P), 1.2(D)
PRINTER	N	Y	1.8(P), 1.2(D)

* The marked “(P)” means the Power Cable and “D” means the I/O Cable.

4.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
USB RF Receiver (EUT)	N	N/A	N/A	-
NOTEBOOK PC	-	-	-	-
AC/DC ADAPTER (Notebook PC)	Y	Notebook PC END	Y	Notebook PC END
MODEM	N	N/A	Y	BOTH END
PRINTER	N	N/A	Y	BOTH END

4.5 Mode of operation during the test

The EUT was connected with a laptop PC and then received data from the transmitter was activated continuously during the testing.



4.5 Configuration of Test System

Line Conducted Test: The power cord of the HOST was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power lines Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.4/2003 8.3.1.1 and 13.1.4.1 to determine the worse operating conditions. Final radiated emission tests were conducted at 3meter open area test site. The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5. PRELIMINARY TEST

5.1 AC Power line Conducted Emissions Tests

During Preliminary Tests, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Stand-by mode	
Receiving Mode	X

Remark: The EUT was tested at above each mode, but the worst emissions were collected in this report.

5.2 General Radiated Emissions Tests

During Preliminary Tests, the following operating modes were investigated

Operation Mode	The Worse operating condition (Please check one only)
Stand-by mode	
Receiving Mode	X



6. FINAL RESULT OF MEASUREMENT

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

6.1 Conducted Emission Test

Humidity Level : 49 %

Temperature: 19 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)

Result : PASSED BY -11.00 dB at 0.465 MHz under peak detector mode

EUT : USB RF Receiver

Date: October 28, 2005

Operating Condition : Receiving Mode

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

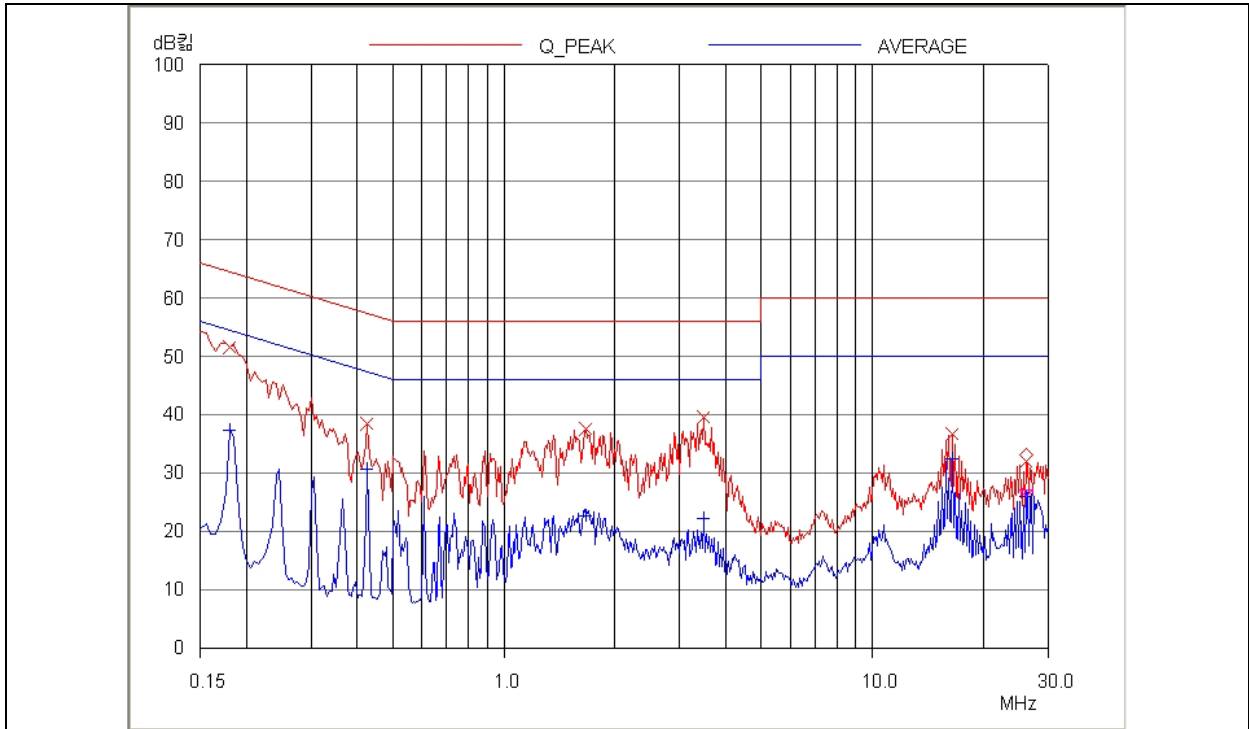
Frequency (MHz)	Line	Quasi-Peak (dBuV)			Margin (dB)	Average (dBuV)		Margin (dB)
		Emission level	Detect Mode	Limits		Emission level	Limits	
0.155	N	54.13	P	65.73	-11.60	-	-	-
0.180	H	51.58	P	64.49	-12.91	-	-	-
0.225	N	50.36	P	62.53	-12.27	-	-	-
0.465	N	45.60	P	56.60	-11.00	-	-	-
0.930	N	41.95	P	56.00	-14.05	-	-	-
3.460	H	39.57	P	56.00	-16.43	-	-	-

Line Conducted Emission Tabulated Data

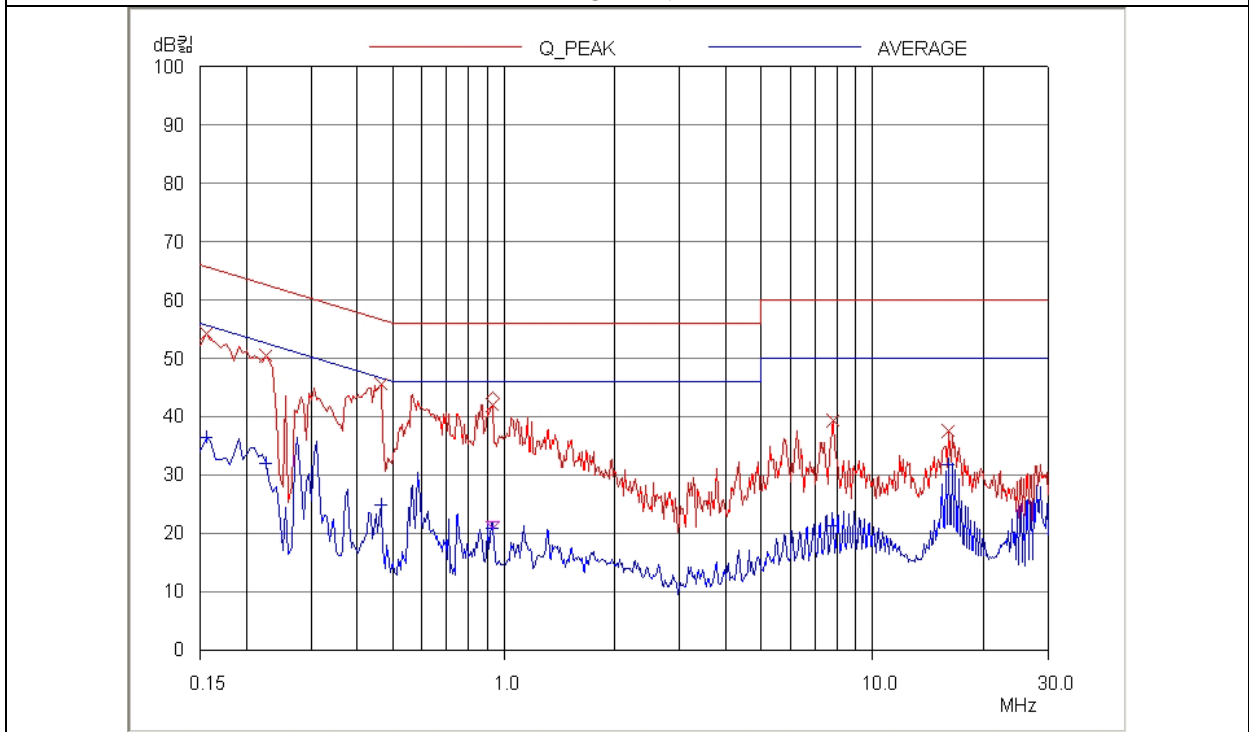
Remark : "H": Hot Line, "N": Neutral line, "P": Peak detector.

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

Tested by: Ki-Hong, Nam / Test Engineer



HOT LINE



NEUTRAL LINE



6.2 Radiated Emission Test

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

Humidity Level : 47 % Temperature: 23 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)
 Result : PASSED BY -5.73 dB at 654.66 MHz

EUT : USB RF Receiver Date: October 25, 2005
 Operating Condition : Receiving Mode.
 Frequency range : 30MHz – 1000MHz
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 meters

Radiated Emissions		Ant	Correction Factors		Total	FCC PMTSGLT	
Freq. (MHz)	Amplitude (dBuV)	Pol.	Antenna (dB/m)	Cable (dB)	Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)
68.71	22.13	V	5.76	1.50	29.39	43.52	-10.61
108.45	16.43	V	11.34	1.90	29.67	43.52	-13.85
164.88	15.44	H	15.47	2.40	33.31	43.52	-10.21
322.16	21.94	H	14.01	3.98	39.93	46.02	-6.09
495.30	17.33	V	17.17	5.41	39.91	46.02	-6.11
654.66	15.13	V	19.39	5.77	40.29	46.02	-5.73

Radiated Emissions Tabulated Data

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Tested by: Ki-Hong, Nam / Test Engineer



7. 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)



8. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	DEC/04	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	APR/05	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	MAY/05	12MONTH	
4.	Spectrum analyzer	HP	8568B	3109A05456	MAY/05	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	MAY/05	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	MAY/05	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/05	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/05	12MONTH	
				9109-4444	JUL/05		
		Schwarzbeck	VHA9103	91031852	JAN/05		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/05	12MONTH	
				9109-3214	JUL/04		
				9109-3217	MAY/05		
		Schwarzbeck	UHALP9108A	62281001	FEB/05		■
10.	LISN	Schwarzbeck	NSLK8126	8126-404	AUG/05	12MONTH	■
		EMCO	3825/2	9109-1869	JUL/05		■
11.	Position Controller	INCO	N/A	N/A	N/A	N/A	■
12.	Turn Table	INCO	MA220	N/A	N/A	N/A	■
13.	Antenna Master	INCO	HD240	N/A	N/A	N/A	■