

# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No. : E066R-018

AGR No. : A064A-096

Applicant : LG Electronics Inc.

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Manufacturer : LG Electronics Inc.

Address : 50, Hyangjeong-dong, Heungdeok-gu, Cheongju-si, Chungcheongbuk-do, 361-480, Korea

Type of Equipment : MP3 Player (Peripheral Device for Class B Computing Device)

FCC ID : SSNUP-F

Model Name : UP-F

Serial number : N/A

Total page of Report : 11 pages (including this page)

Date of Incoming : May 22, 2006

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## SUMMARY

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

This test report contains only the results 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.

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EMC-002 (Rev.0)

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**1. VERIFICATION OF COMPLIANCE**

-. APPLICANT : LG Electronics Inc.  
 -. ADDRESS : 50, Hyangjeong-dong, Heungdeok-gu, Cheongju-si, Chungcheongbuk-do, 361-480, Korea  
 -. CONTACT PERSON : Mr. O-Byoung, Kang / Senior Research Engineer  
 -. TELEPHONE NO : +82-43-279-3272  
 -. FCC ID : SSNUP-F  
 -. MODEL NAME : UP-F  
 -. SERIAL NUMBER : N/A  
 -. DATE : June 12, 2006

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	MP3 Player
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, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

-. 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 LG Electronics Inc., Model UP-F (referred to as the EUT in this report) is a MP3 Player that has a difference memory capacity and color. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Metal
LIST OF EACH OSC. or CRY. FREQ.(FREQ.>=1MHz)	12 MHz
POWER REQUIREMENT	DC5V from the USB hub standard of PC
MEMORY CAPACITY	512MB, 1GB, 2GB
NUMBER OF LAYERS	4 Layers
EXTERNAL CONNECTOR	USB Port, Earphone Jack

### 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 that were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
UP-F	LG Electronics Inc.	SSNUP-F	MP3 Player (EUT)	PC
DHS	DELL COMPUTER CORP.	DoC	PC	-
E176FPb	DELL COMPUTER CORP.	N/A	Monitor	PC
SK-8115	DELL COMPUTER CORP.	N/A	Keyboard	PC
M4	Mouse Systems	N/A	Mouse	PC
UP-DP10	SONY Corporation	DoC	Printer	PC

### 2.5 Test Methodology

Both conducted and 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.

### 2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 307-51 Daessangryung-Ri, Chowol-Eup, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on August 30, 2005. (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	Bayon	UP3-LED Y060530	N/A

#### 3.2 Mode of operation during the test

- After connecting the EUT to a personal computer, data were continuously read and written from the HDD of the personal computer to the EUT.

#### 3.3 Cable Description

Ports Name	Shielded	Ferrite Bead	Metal Hood	Length (m)	Connected to
USB	-	-	PC END	Direct Inserted	PC

#### 3.5 Equipment Modifications

- None

#### 3.6 Configuration of Test System

**Line Conducted Test** : The EUT was inserted to USB port of PC and the power line of PC 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: 2003 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: 2003 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 operating condition
Data were continuously read and write by USB Port	X

### 4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The operating condition
Data were continuously read and write by USB Port	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	: <u>46 %</u>	Temperature: <u>20 °C</u>
Limits apply to	: <u>FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)</u>	
Type of Test	: <u>CLASS B</u>	
Result	: <u>PASSED BY -18.24 dB at 18.72 MHz</u>	

EUT	: MP3 Player	Date: June 05, 2006
Operating Condition	: Data were continuously read and written.	
Detector	: CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)	

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.20	H	43.44	63.82	-20.38
0.69	N	34.55	56.00	-21.45
0.88	H	33.91	56.00	-22.09
0.98	N	34.10	56.00	-21.90
18.41	N	40.44	60.00	-19.56
18.72	H	41.76	60.00	-18.24
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
-				
-				

Line Conducted Emission Tabulated Data

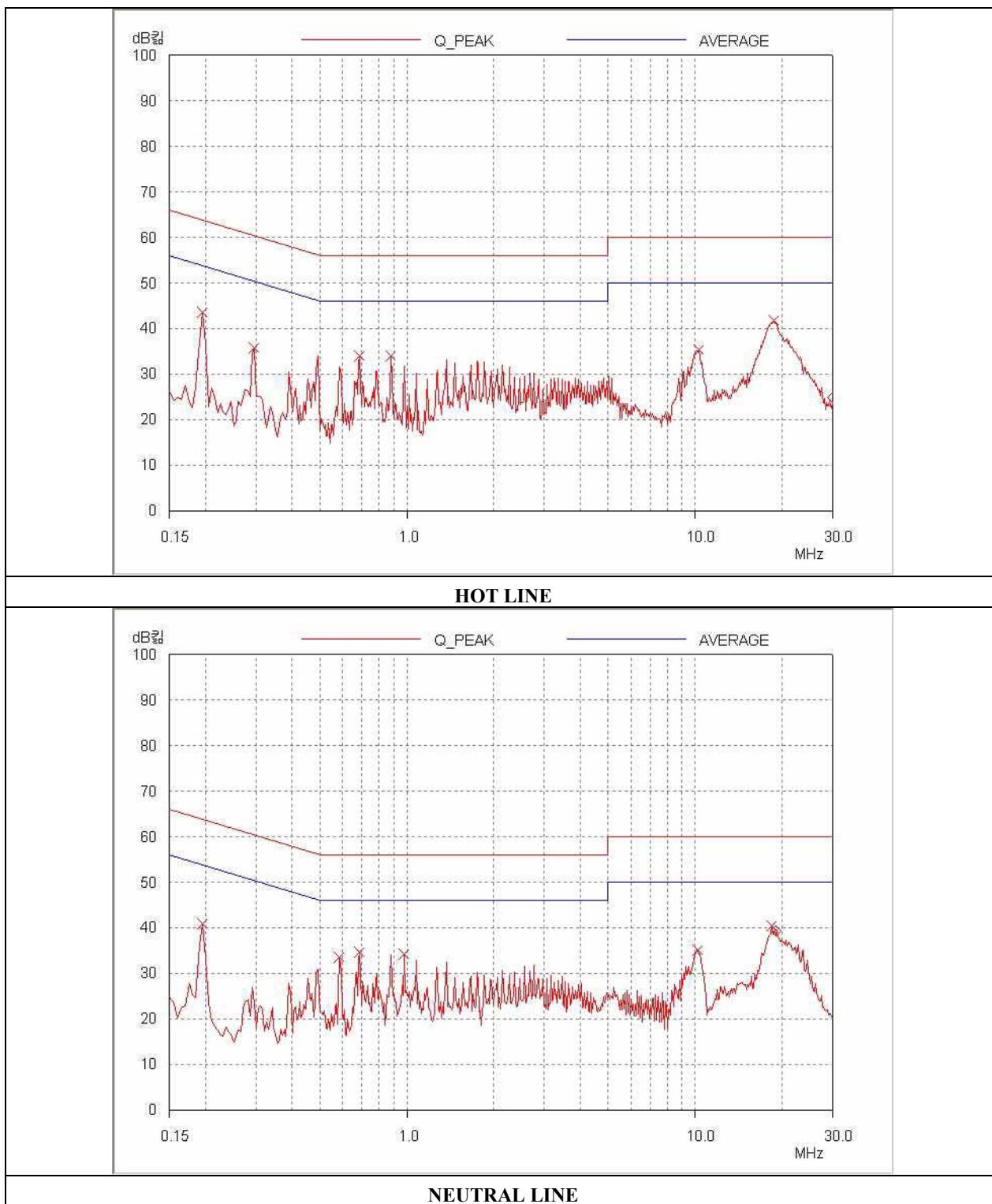
Remark : "H": Hot Line, "N": Neutral line

Average mode was not measured, because peak values were under the Average limit.

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



Tested by: Dong-Yub, Lee / 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	: <u>41 %</u>	Temperature: <u>22 °C</u>
Limits apply to	: <u>FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)</u>	
Type of Test	: <u>CLASS B</u>	
Result	: <u>PASSED BY -1.14 dB at 479.63 MHz</u>	

EUT	: MP3 Player	Date: June 05, 2006
Operating Condition	: Data were continuously read and written.	
Detector	: CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)	
Frequency Range	: 30 MHz – 1000 MHz	
Distance	: 3 Meter	

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)		Ant.	Cable (dB)		Amp. (dBuV/m)	Limit (dBuV/m)
191.30	14.20	H	15.90	2.80	32.90	43.52	-10.62
239.31	21.00	H	17.02	3.23	41.25	46.02	-4.77
310.00	18.30	H	14.99	3.88	37.17	46.02	-8.85
384.00	15.60	H	16.48	4.34	36.42	46.02	-9.60
479.63	21.00	H	18.79	5.09	44.88	46.02	-1.14
720.00	15.50	H	22.44	6.60	45.54	46.02	-1.48

Radiated Emissions Tabulated Data



Tested by: Dong-Yub, Lee / 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)

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= 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/05	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/06	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/05	12MONTH	
4.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	MAY/06	12MONTH	
5.	Biconical antenna	EMCO	3110	9003-1121	FEB/06	12MONTH	
		Schwarzbeck	VHA9103	91031852	FEB/06		■
6.	Log Periodic antenna	EMCO	3146	9001-2614	FEB/06	12MONTH	
		Schwarzbeck	9108-A(494)	62281001	FEB/06		■
7.	LISN	EMCO	3825/2	9109-1867	JUL/05	12MONTH	■
				9109-1869	JUL/05		
		Schwarzbeck	NSLK 8126	8126-404	AUG/05		■
8.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
9.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
10.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■