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EMI CERTIFICATION REPORT

LG Electronics Inc.

**60-39, Gasan-dong, Gumchon-gu,
Seoul, 153-023, Korea**

Date of Issue: July 10, 2009

Test Report No.: HCT-EF09-0703

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJBL40F

Classification / Standard(s) : FCC PART 15 Subpart B / CISPR 22 Class B

Equipment type : Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT

Trade name / Model(s) : LG Electronics Inc. / BL40f

Port / Connector(s) : USB data port / Ear jack

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003. (See test report if any modifications were made for compliance)

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862.

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ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics Inc. Model: BL40f, Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT.

It's basic purpose is used for communications. It transmits from GSM 850 (824.20 MHz to 848.80 MHz), GSM 1 900 (1 850.20 MHz to 1 909.80 MHz), WCDMA 850 (826.40 MHz to 846.60 MHz), and receives from GSM 850 (869.20 MHz to 893.80 MHz), GSM 1 900 (1 930.20 MHz to 1 989.80 MHz), WCDMA 850 (871.40 MHz to 891.60 MHz).

Model	BL40f
FCC ID	BEJBL40F
E.U.T type	Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT
TX frequency	824.20 MHz to 848.80 MHz (GSM 850) 1 850.20 MHz to 1 909.80 MHz (GSM 1 900) 826.40 MHz to 846.60 MHz (WCDMA 850)
RX frequency	869.20 MHz to 893.80 MHz (GSM 850) 1 930.20 MHz to 1 989.80 MHz (GSM 1 900) 871.40 MHz to 891.60 MHz (WCDMA 850)

1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

Device type	Manufacturer	Model number /Part number	FCC ID / DoC	Connected to
Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT	LG	BL40f	BEJBL40F	Notebook PC TA
Travel adaptor	DONGDO	STA-U12ED	-	E.U.T
Notebook PC	TOSHIBA	PSMA2K-01D002	DoC	E.U.T, TA
Notebook PC adaptor	DELTA	SADP-65KB B	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
Ear phone	-	-	-	E.U.T
USB cable	KSD	SGDY0014301	-	E.U.T Notebook PC

1.4 Cable Description

Product name	Port	Power cord shielded (Y/N)	I/O cable shielded (Y/N)	Length (M)
Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT	DC in	N	-	(P)1.15
	Ear jack	-	Y	(D)1.2
	USB data	Y	Y	(P,D)1.15
Notebook PC	USB (Mouse)	-	Y	(D)1.8

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

1.5 Noise Suppression Parts on Cable. (I/O cable)

Product name	Port	Ferrite bead (Y/N)	Location	Metal hood (Y/N)	Location
Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT	DC in	N	-	Y	E.U.T end
	Ear jack	N	-	Y	E.U.T end
	USB data	N	-	Y	Both end
Notebook PC	USB (Mouse)	Y	Notebook PC end	Y	Notebook PC end

1.6 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 m

1.7 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-ri, Hobup-myun, Icheon-si, Kyungki-do, 467-701, Korea. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the commission and accepted dated June 10, 2009. (Registration Number: 90661)

1.8 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

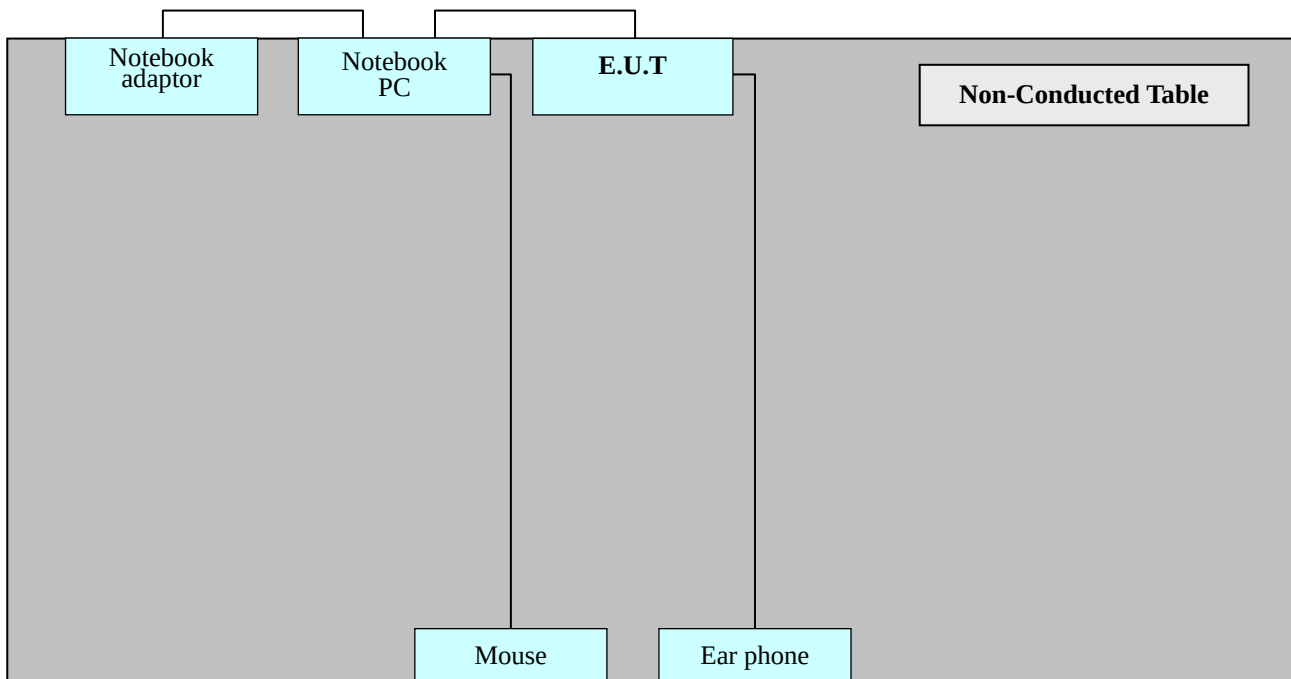
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN, all other peripheral equipment were connected to another LISN. Preliminary Power Line Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission test : Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 3 m open area test site.

[Configuration of tested system]



Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

During preliminary tests, the following operating mode was investigated

Operation mode	The worst operating condition
GSM Idle (850, 1 900)	
WCDMA Idle (850)	
Data communication	○

3. 2 Radiated Emission Test

During preliminary test, the following operation mode was investigated

Operation mode	The worst operating condition
GSM Idle (850, 1 900)	
WCDMA Idle (850)	
Data communication	○

4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

4.1 Conducted Emission Test

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Limit apply to	: CISPR 22 Class B
Result	: Passed by 10.9 dB
Operating condition	: Data communication mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 26.0 °C
Humidity level	: 50.4 %
Test date	: July 08, 2009

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	Amplitude (dB μ V)	Conductor	Result	Limit (dB μ V)	Margin (dB)
4.9280	42.2	HOT	Quasi-Peak	56.0	13.8
4.9280	35.1	HOT	Average	46.0	10.9
0.2020	49.0	NEUTRAL	Quasi-Peak	64.0	14.5
4.6600	34.8	NEUTRAL	Average	46.0	11.2

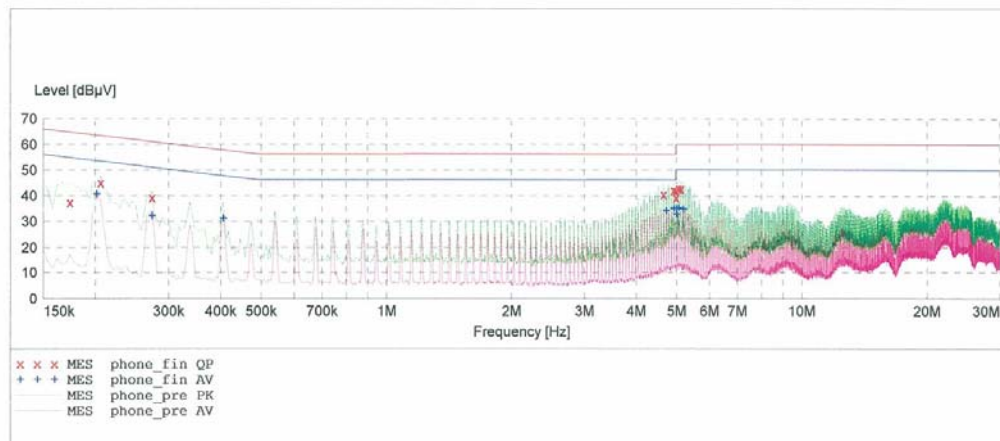
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EUT: BL40f
 Manufacturer: LG Electronics Inc.
 Operating Condition: Data Communication
 Test Site: SHIELD ROOM
 Operator: YH-LEE
 Test Specification: CISPR22 Class B
 Comment: H

SCAN TABLE: "CISPR22 CLASS B"

Short Description:			KN22 CLASS B			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "phone_fin QP"

7/8/2009 5:57PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.174000	37.50	10.1	65	27.2	---	---
0.206000	45.10	10.1	63	18.2	---	---
0.274000	39.30	10.1	61	21.7	---	---
4.660000	40.60	10.3	56	15.4	---	---
4.928000	42.20	10.3	56	13.8	---	---
4.996000	42.00	10.3	56	14.0	---	---
5.000000	39.40	10.3	56	16.6	---	---
5.064000	42.90	10.3	60	17.1	---	---
5.132000	42.80	10.3	60	17.2	---	---

MEASUREMENT RESULT: "phone_fin AV"

7/8/2009 5:57PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202000	40.70	10.1	54	12.8	---	---
0.274000	32.20	10.1	51	18.8	---	---

MEASUREMENT RESULT: "phone_fin AV"

(continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.406000	31.40	10.1	48	16.3	---	---
4.728000	34.20	10.3	46	11.8	---	---
4.928000	35.10	10.3	46	10.9	---	---
4.996000	35.10	10.3	46	10.9	---	---
5.000000	32.90	10.3	46	13.1	---	---
5.064000	35.30	10.3	50	14.7	---	---
5.200000	34.80	10.4	50	15.2	---	---

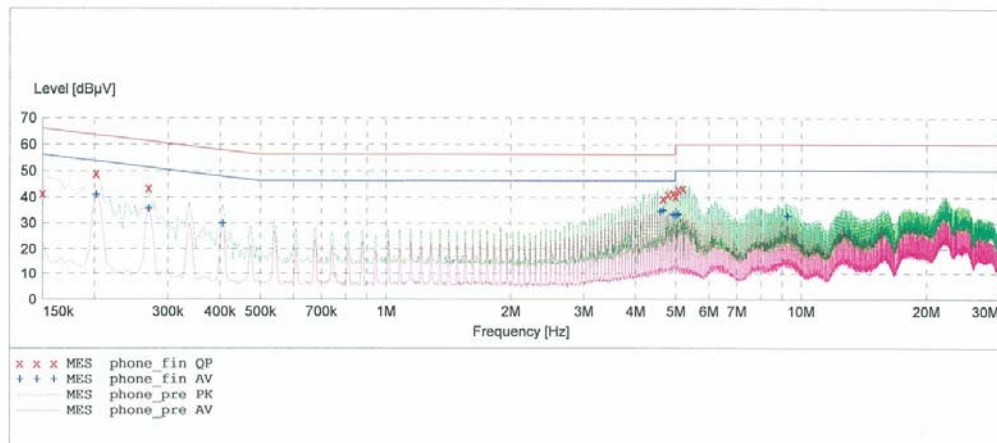
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EMC

EUT: BL40f
Manufacturer: LG Electronics Inc.
Operating Condition: Data Communication
Test Site: SHIELD ROOM
Operator: YH-LEE
Test Specification: CISPR22 Class B
Comment: N

SCAN TABLE: "CISPR22 CLASS B"

Short Description:			KN22 CLASS B			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "phone_fin QP"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150000	41.40	10.1	66	24.6	---	---
0.202000	49.00	10.1	64	14.5	---	---
0.270000	43.40	10.1	61	17.8	---	---
4.656000	39.50	10.3	56	16.5	---	---
4.792000	41.00	10.3	56	15.0	---	---
4.932000	41.60	10.3	56	14.4	---	---
5.000000	40.50	10.3	56	15.5	---	---
5.064000	42.90	10.3	60	17.1	---	---
5.200000	43.40	10.4	60	16.6	---	---

MEASUREMENT RESULT: "phone_fin AV"

7/8/2009 6:01PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202000	40.90	10.1	54	12.7	---	---
0.270000	35.60	10.1	51	15.5	---	---

MEASUREMENT RESULT: "phone_fin AV"

(continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.406000	29.90	10.1	48	17.9	---	---
4.592000	34.40	10.3	46	11.6	---	---
4.660000	34.80	10.3	46	11.2	---	---
4.932000	33.20	10.3	46	12.8	---	---
5.000000	32.90	10.3	46	13.1	---	---
5.064000	33.30	10.3	50	16.7	---	---
9.252000	32.60	10.7	50	17.4	---	---

4.2 Radiated Emission Test

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

Limit apply to	: FCC PART 15 Subpart B
Result	: Passed by 10.7 dB
Operating condition	: Data communication mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 28.0 °C
Humidity level	: 52.0 %
Test date	: July 01, 2009

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ V/m	dB
144.0	15.7	12.5	1.3	V	29.5	43.5	14.0
144.0	14.6	12.5	1.3	H	28.4	43.5	15.1
280.0	16.2	12.4	1.8	V	30.4	46.0	15.6
442.4	14.0	16.4	2.2	H	32.6	46.0	13.4
480.0	15.9	17.0	2.4	V	35.3	46.0	10.7
480.0	15.9	17.0	2.4	H	35.3	46.0	10.7

Note)

For measurement over 1 GHz, noise level was more than 10 dB below the limit.

5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the antenna factor and cable factor.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

Where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dB μ V is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dB μ V/m value is mathematically converted to its corresponding level in μ V/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dB}\mu\text{V/m}$$

[Radiated Emission limits]

Frequency of emission (MHz)	Field strength	
	μ V/m	dB μ V/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

<u>Type</u>	<u>Manufacturer</u>	<u>Model number</u>	<u>Next CAL date</u>
EMI Test Receiver	Rohde & Schwarz	ESI40	2009.10.31
EMI Test Receiver	Rohde & Schwarz	ESCI	2010.06.02
LISN	Rohde & Schwarz	ESH3-Z5	2010.02.06
Attenuator	Rohde & Schwarz	ESH3-Z2	2009.10.30
Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18
Communication Antenna	TDK	LPDA-0802	-
Antenna Position Tower	HD	240/520/00	-
Base Station	Rohde & Schwarz	CMU 200	2010.02.17
Horn Antenna	Schwarzbeck	BBHA 9120D	2010.03.26
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P .PS	2010.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2010.01.09

7. CONCLUSION

The data collected shows that the LG Electronics Inc. **Model: BL40f, Cellular/PCS GSM/WCDMA/EDGE Phone with WLAN, Bluetooth & FMT. FCC ID: BEJBL40F** complies with §15.107 and §15.109 of the FCC rules.