

HCT CO., LTD.



PRODUCT COMPLIANCE DIVISION
SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA
TEL : +82 31 639 8518 FAX : +82 31 639 8525 www.hct.co.kr

EMI REPORT (Certification)

LG Electronics, Inc.

LG Twin Towers, 20. Yeouido-dong,
Yeongdeungpo-go, Seoul Korea 150-721

Date of Issue: March 26, 2008

Test Report No.: HCT-F08-0320

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJKF390

Classification/ Standard(s): FCC PART 15 Subpart B / CISPR 22 CLASS B
Equipment (EUT) Type: Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth
Trade Name/Model(s): LG Electronics, Inc. / KF390
Application Type: Certification
Port/ Connector(s): DC Input Port / Ear Phone Port

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 of 1988, 21 U.S.C. 853(a).

Report prepared by
: Yong Hyun Lee
Test engineer of EMC Tech.Part

Approved by
: Sang Jun Lee
Manager of EMC Tech.Part

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

TABLE OF CONTENTS

	PAGE
1. GENERAL INFORMATION	3
1.1 Product Description.....	3
1.2 Related submittal(s)/Grant(s).....	3
1.3 Tested System Details.....	4
1.4 Cable Description.....	4
1.5 Noise Suppression Parts on Cable. (I/O CABLE)	4
1.6 Test Methodology.....	5
1.7 Test Facility.....	5
1.8 Frequency range of radiated measurements	5
2. SYSTEM TEST CONFIGURATION.....	6
2.1 Configuration of Tested System.....	6
3. PRELIMINARY TEST.....	7
3.1 Conducted Emission Test.....	7
3.2 Radiated Emission Test.....	7
4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY.....	8
4.1 Conducted Emission Test.....	9 – 12
4.2 Radiated Emission Test.....	13
5. FIELD STRENGTH CALCULATION.....	14
6. Test Equipment.....	15
7. Conclusion.....	16

ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics, Inc. KF390 Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth. Its basic purpose is used for communications. It transmits from GSM 850 (824.20 MHz – 848.80 MHz), GSM1900 (1850.20 MHz – 1909.80 MHz), WCDMA850 (826.40 MHz – 846.60 MHz), Bluetooth (2402 MHz – 2480 MHz) and receives from GSM 850 (869.20 MHz – 893.80 MHz), GSM1900 (1930.20 MHz – 1989.80 MHz), WCDMA850(871.40 MHz – 891.60 MHz), Bluetooth(2402 MHz – 2480 MHz).

MODEL	KF390
FCC ID	BEJKF390
EUT Type	Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth
TX Frequency	824.20 MHz – 848.80 MHz (GSM850) 1850.20 MHz – 1909.80 MHz (GSM1900) 2402 MHz – 2480 MHz (Bluetooth) 826.40 MHz – 846.60 MHz (WCDMA850)
RX Frequency	869.20 MHz – 893.80 MHz (GSM850) 1930.20 MHz – 1989.80 MHz (GSM1900) 2402 MHz – 2480 MHz (Bluetooth) 871.40 MHz – 891.60 MHz (WCDMA850)

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/EDGE/WCDMA Phone with Bluetooth	LG Electronics, Inc.	KF390	BEJKF390	PC, TA
Travel Adaptor	DONGDO	STA-P52ED	-	EUT
Notebook PC	Toshiba	PSMA2K-01D002	DoC	EUT, TA
Notebook PC Adaptor	Delta	SADP-65KB B		Notebook PC
Mouse	Logitech	M-BT96a	DoC	Notebook PC
Ear phone	-	-	-	EUT
USB Cable	-	-	-	EUT, PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth	DC In	N	N/A	(P)1.8
	Ear Jack	N/A	N	(D)1.1
	USB Data	Y	Y	(P, D)1.6
Notebook PC	USB (Mouse)	N/A	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/EDGE/WCDMA Phone with Bluetooth	DC-In	N	-	Y	EUT End
	Ear-jack	N	-	Y	EUT End
	USB Data	N	-	Y	Both End
Notebook PC	USB (Mouse)	N	-	Y	Notebook PC End

1.6 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

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, Ichon-Si, Kyoungki-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 July 6, 2006(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

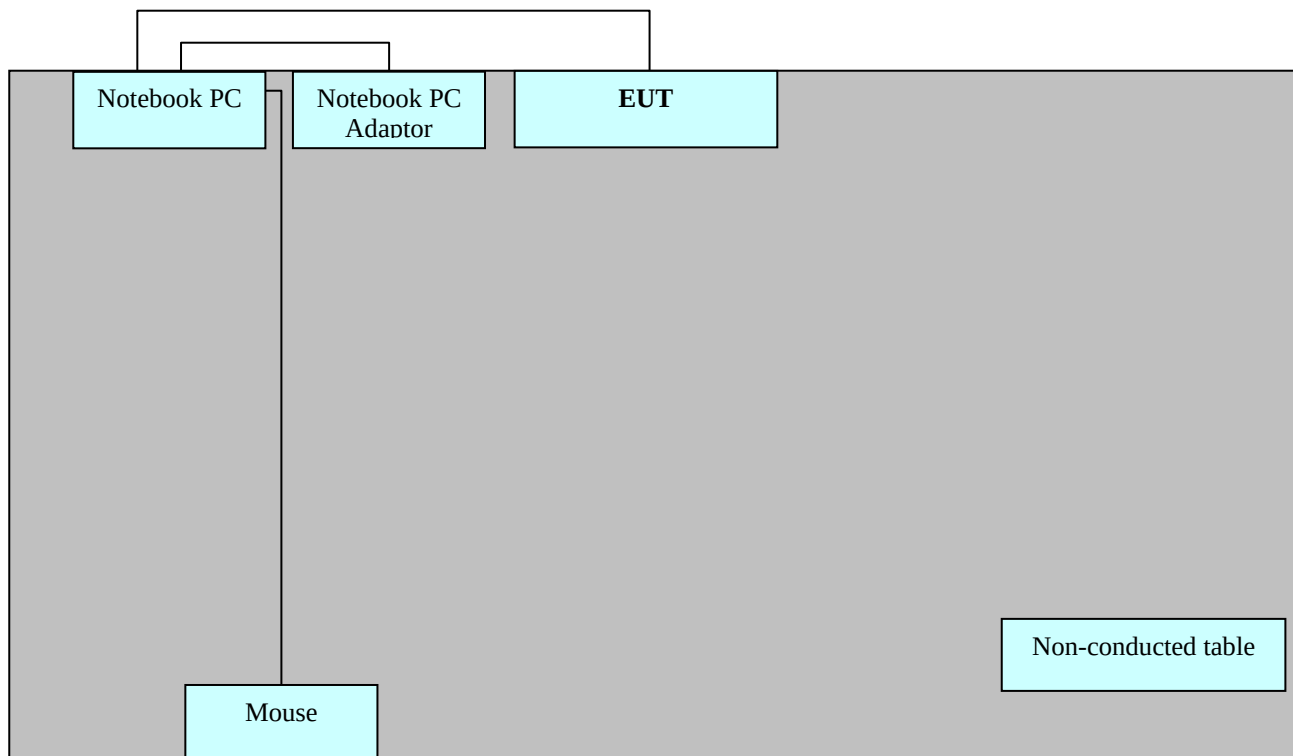
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

2.SYSTEM TEST CONFIGURATION

2.1 Configuration of Test system

Line Conducted Test : EUT was connected to LISN, all other supporting 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 meter open area test site.



Power Line: 110V AC

[Configuration of Tested System]

3. PRELIMINARY TEST

3.1 Conducted Emission Test

During Preliminary Tests, the following operating mode was investigated

Operation Mode	The worst operating condition
Camera Mode	
GSM Idle (850, 1900) Mode	
WCDMA Idle (850) Mode	
MP3 Mode	
Bluetooth Mode	
Data Communication Mode	○

3. 2 Radiated Emission Test

During Preliminary Test, the Following operation mode was investigated

Operation Mode	The worst operating condition
Camera Mode	○
GSM Idle (850, 1900) Mode	
WCDMA Idle (850) Mode	
MP3 Mode	
Bluetooth Mode	
Data Communication Mode	

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 12.3 dB
Operating Condition	: Data Communication Mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 16.0 °C
Humidity Level	: 45.0 %
Test Date	: March 20, 2008

Power Line Conducted Emissions				CISPR 22 Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuV)	Margin (dB)
3.6680	35.5	HOT	Quasi-Peak	56.0	20.5
3.6680	33.7	HOT	Average	46.0	12.3
0.2001	44.4	NEUTRAL	Quasi-Peak	64.0	19.2
0.2001	40.8	NEUTRAL	Average	54.0	12.8

Line Conducted Emissions Tabulated Data

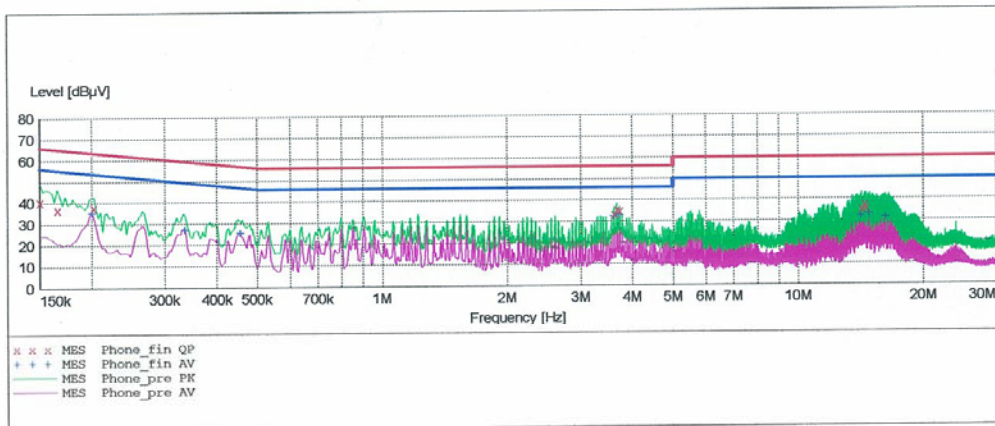
HCT

EMC TEST LAB.

EUT: KF390
 Manufacturer: LG Electronics, Inc.
 Operating Condition: Data Communication Mode
 Test Site: SHIELD ROOM
 Operator: YH.LEE
 Test Specification: CISPR 22 CLASS B
 Comment: H

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.1 kHz	500.0 kHz	2.5 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"

3/20/2008 4:52PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150100	40.50	10.0	66	25.5	---	---
0.165100	36.90	10.0	65	28.3	---	---
0.202600	37.80	10.0	64	25.7	---	---
3.616000	33.40	10.5	56	22.6	---	---
3.668000	35.50	10.5	56	20.5	---	---
3.720000	35.00	10.5	56	21.0	---	---
14.236000	35.30	11.8	60	24.7	---	---
14.500000	37.60	11.8	60	22.4	---	---
14.556000	35.70	11.8	60	24.3	---	---

MEASUREMENT RESULT: "Phone_fin AV"

3/20/2008 4:52PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200100	35.50	10.0	54	18.1	---	---
0.335100	27.40	10.0	49	21.9	---	---
0.455100	25.70	10.1	47	21.1	---	---
3.612000	32.50	10.5	46	13.5	---	---
3.668000	33.70	10.5	46	12.3	---	---
3.720000	33.20	10.5	46	12.8	---	---
14.180000	32.20	11.8	50	17.8	---	---
14.816000	33.10	11.9	50	16.9	---	---
16.252000	31.40	12.0	50	18.6	---	---

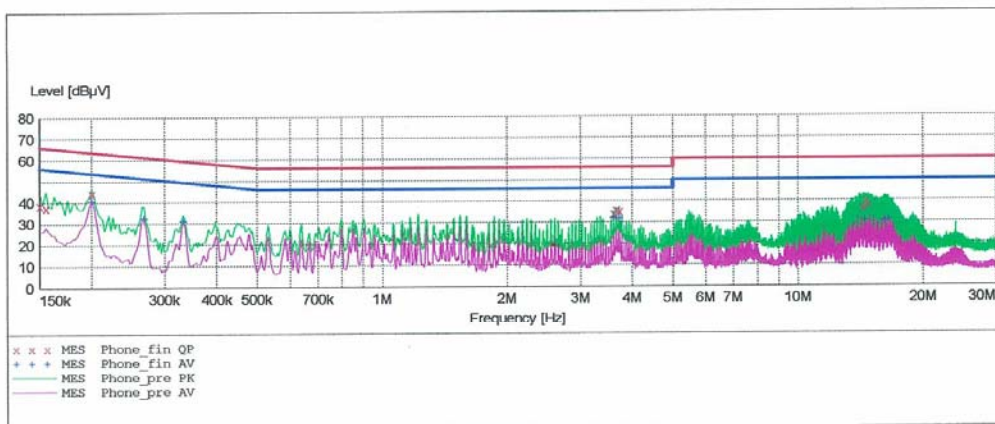
HCT

EMC TEST LAB.

EUT: KF390
 Manufacturer: LG Electronics, Inc.
 Operating Condition: Data Communication Mode
 Test Site: SHIELD ROOM
 Operator: YH.LEE
 Test Specification: CISPR 22 CLASS B
 Comment: N

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 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"

3/20/2008 4:55PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150100	38.80	10.0	66	27.2	---	---
0.155100	37.60	10.0	66	28.1	---	---
0.200100	44.40	10.0	64	19.2	---	---
3.612000	34.00	10.5	56	22.0	---	---
3.664000	35.60	10.5	56	20.4	---	---
3.720000	35.10	10.5	56	20.9	---	---
14.388000	36.40	11.8	60	23.6	---	---
14.548000	39.90	11.8	60	20.1	---	---
14.760000	38.20	11.9	60	21.8	---	---

MEASUREMENT RESULT: "Phone_fin AV"

3/20/2008 4:55PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200100	40.80	10.0	54	12.8	---	---
0.267600	32.60	10.0	51	18.6	---	---
0.332600	31.20	10.0	49	18.2	---	---
3.612000	32.30	10.5	46	13.7	---	---
3.668000	31.90	10.5	46	14.1	---	---
3.720000	32.00	10.5	46	14.0	---	---
14.492000	30.50	11.8	50	19.5	---	---
16.192000	30.40	12.0	50	19.6	---	---
16.512000	31.00	12.1	50	19.0	---	---

4.2 Radiated Emission Test**HCT CO., LTD.**SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGI-DO, 467-701, KOREA
TEL : +82 31 639 8539 FAX : +82 31 639 8535 www.hct.co.kr**12 / 16**

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 11.9 dB
Operating Condition	: Camera mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 16.0 °C
Humidity Level	: 45.0 %
Test Date	: March 20, 2008

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBuV/m	dB/m	dB	(H/V)	dBuV/m	dBuV/m	dB
502.3	9.9	17.0	5.3	V	32.2	46.0	13.8
583.8	10.0	18.5	5.6	V	34.1	46.0	11.9
583.8	9.3	18.5	5.6	H	33.4	46.0	12.6
626.5	7.0	19.4	5.9	V	32.3	46.0	13.7
658.0	7.7	19.8	6.0	H	33.5	46.0	12.5
670.4	8.0	20.0	6.1	H	34.1	46.0	11.9

*** 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 dBuV/m is obtained. The Antenna Factor of 7.4 dB and a Cable Factor of 1.1 dB is added. The 30 dBuV/m value is mathematically converted to its corresponding level in uV/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$

Radiated emission limits

Frequency of emission	Field strength	
	$\mu\text{V} / \text{m}$	$\text{dB } \mu\text{V} / \text{m}$
30 ~ 88	100	40.0
88 ~ 216	150	43.5
216 ~ 960	200	46.0
Above 960	500	54.0

6. Test Equipment

<u>Type</u>	<u>Manufacture</u>	<u>Model Number</u>	<u>Next CAL Date</u>
EMI Test Receiver	Rohde & Schwarz	ESI40	2008.11.06
EMI Test Receiver	Rohde & Schwarz	ESCI	2008.06.01
LISN	EMCO	703125	2008.05.04
LISN	Rohde & Schwarz	ESH2-Z5	2008.04.20
LISN	Rohde & Schwarz	ESH3-Z5	2008.06.13
LISN	EMCO	3816/2	2008.06.13
Attenuator	Rohde & Schwarz	ESH3-Z2	2008.10.30
TRILOG Antenna	Schwarzbeck	VULB9160	2009.04.20
Communication Antenna	TDK	LPDA-0802	N/A
Antenna Position Tower	HD	240/520/00	N/A
Base Station	Rohde & Schwarz	CMU 200	2009.02.28
Horn Antenna	Schwarzbeck	BBHA 9120D	2008.03.31
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2008.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2009.01.11

7. Conclusion

The data collected shows that the LG Electronics, Inc. Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth. FCC ID: BEJKF390 Complies with §15.107 and §15.109 of the FCC Rules.