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EMI REPORT (Certification)

LG Electronics Inc. **60-39, Gasan-dong, Gumchon-gu,** **Seoul, 153-023, Korea**	**Date of Issue: September 12, 2008** **Test Report No.: HCT-F08-0913** **Test Site: HCT CO., LTD.** **HCT FRN: 0005-8664-21**

FCC ID: **BEJKC780**

Classification/ Standard(s):	FCC PART 15 Subpart B / CISPR 22 CLASS B
Equipment (EUT) Type:	PCS GSM/EDGE Phone with Bluetooth
Trade Name/Model(s):	LG Electronics Inc. / KC780
Additional model(s):	KC780c
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	**Approved by**
: Yong Hyun Lee	**: Sang Jun Lee**
Test engineer of EMC Tech. Part	**Manager of EMC Tech. Part**

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ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product description

The **LG Electronics Inc. KC780 PCS GSM/EDGE Phone with Bluetooth.**

Its basic purpose is used for communications. It transmits from GSM1900 (1850.20 MHz – 1909.80 MHz), Bluetooth (2402 MHz – 2480 MHz) and receives from GSM1900 (1930.20 MHz – 1989.80 MHz), Bluetooth (2402 MHz – 2480 MHz).

MODEL	KC780
FCC ID	BEJKC780
EUT Type	PCS GSM/EDGE Phone with Bluetooth
TX Frequency	1850.20 MHz – 1909.80 MHz (GSM1900) 2402 MHz – 2480 MHz (Bluetooth)
RX Frequency	1930.20 MHz – 1989.80 MHz (GSM1900) 2402 MHz – 2480 MHz (Bluetooth)

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
PCS GSM/EDGE Phone with Bluetooth	LG	KC780	BEJKC780	TA, Notebook PC
Travel adaptor	SALCOMP	STA-P52ES	-	EUT
Notebook PC	TOSHIBA	PSA50K-04W007	DoC	EUT, TA
Notebook PC Adaptor	DELTA	ADP-60RH A	-	Notebook PC
Mouse	Logitech	M-BT96a	DoC	Notebook PC
Ear phone	-	-	-	EUT
USB cable	-	-	-	EUT, Notebook PC

1.4 Cable description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
PCS GSM/EDGE 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)1.5
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
PCS GSM/EDGE 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, Kyounggi-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

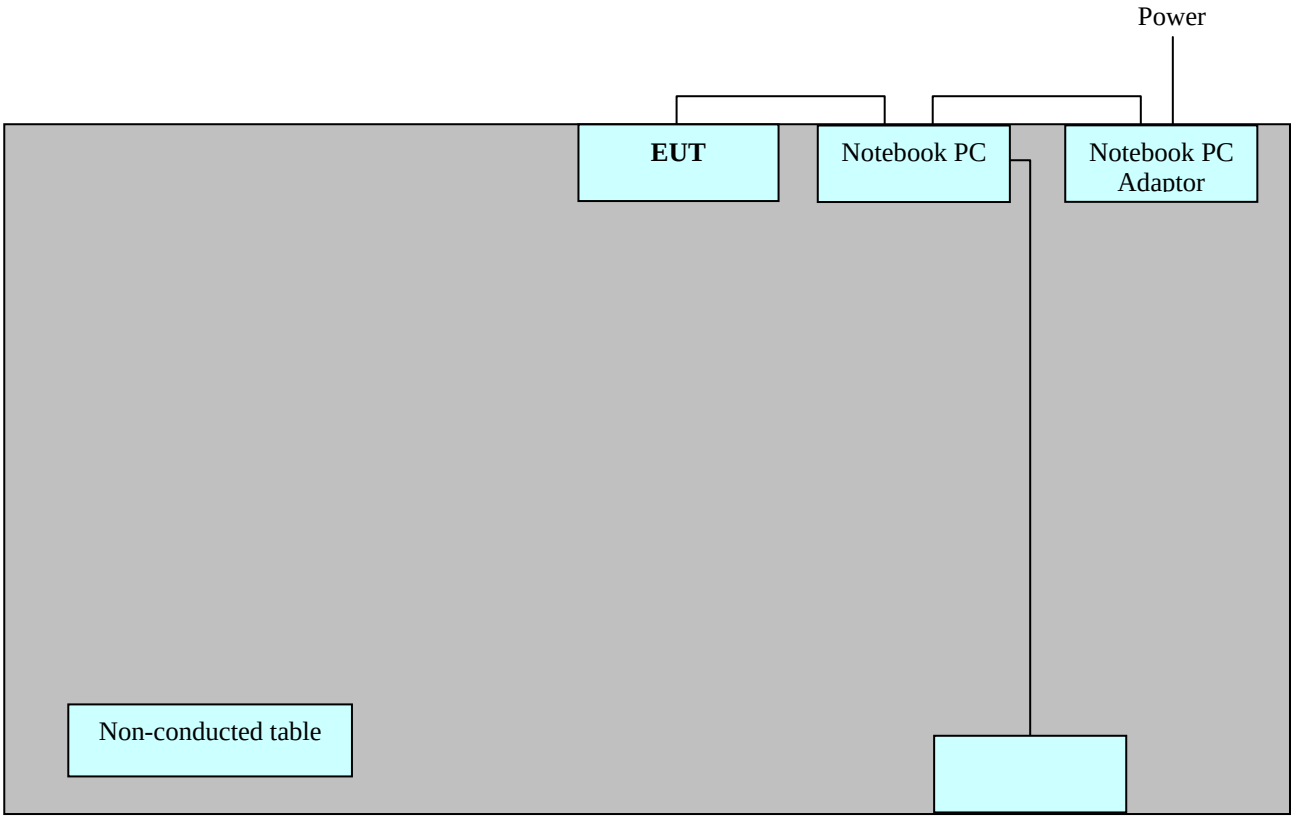
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

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
GSM Idle (1900) mode	
Camera 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
GSM Idle (1900) mode	
Camera 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 9.1 dB
Operating Condition	: Data Communication Mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 27.5 ℃
Humidity Level	: 60.2 %
Test Date	: September 11, 2008

Power Line Conducted Emissions				CISPR 22 Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuV)	Margin (dB)
0.1501	47.50	HOT	Quasi-Peak	66.0	18.5
0.2001	43.30	HOT	Average	54	10.3
0.2026	51.8	NEUTRAL	Quasi-Peak	64.0	11.7
0.2026	44.4	NEUTRAL	Average	54.0	9.1

Line Conducted Emissions Tabulated Data

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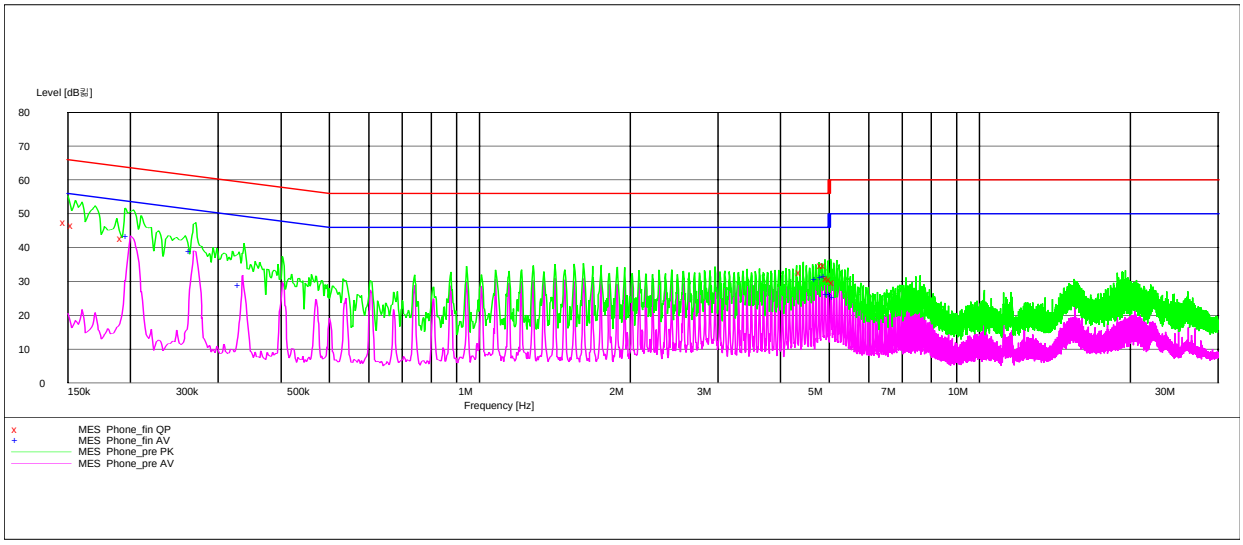
EMC TEST LAB.

EUT: KC780
Manufacturer: LG
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 Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "Phone_fin QP"

9/9/2008 4:45PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	47.50	10.0	66	18.5	---	---
0.155100	46.70	10.0	66	19.0	---	---
0.195100	42.60	10.0	64	21.2	---	---
4.436000	32.70	10.6	56	23.3	---	---
4.904000	34.80	10.6	56	21.2	---	---
4.972000	34.90	10.6	56	21.1	---	---
5.040000	31.00	10.6	60	29.0	---	---
5.108000	30.60	10.6	60	29.4	---	---
5.176000	29.80	10.6	60	30.2	---	---

9/9/2008 4:46PM HCT EMC LAB

MEASUREMENT RESULT: "Phone_fin AV"

9/9/2008 4:45PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.200100	43.30	10.0	54	10.3	---	---
0.267600	38.80	10.0	51	12.4	---	---
0.335100	28.90	10.0	49	20.4	---	---
4.772000	30.70	10.6	46	15.3	---	---
4.904000	31.10	10.6	46	14.9	---	---
4.972000	31.40	10.6	46	14.6	---	---
5.040000	26.20	10.6	50	23.8	---	---
5.108000	26.10	10.6	50	23.9	---	---
5.176000	25.40	10.6	50	24.6	---	---

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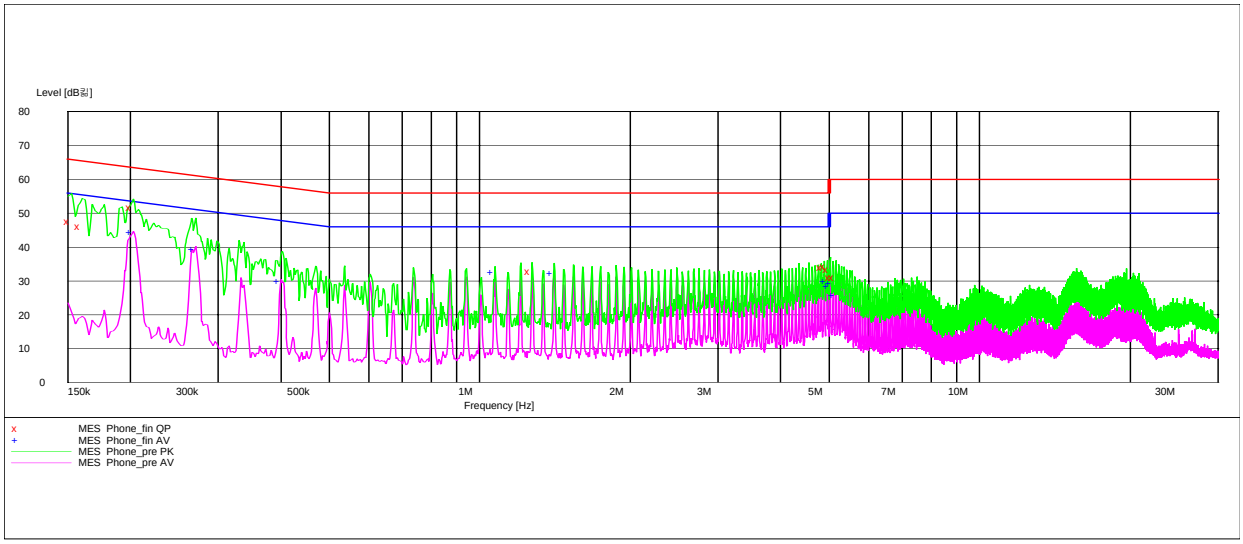
EMC TEST LAB.

EUT: KC780
Manufacturer: LG
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 Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "Phone_fin QP"

9/9/2008 4:41PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.152600	47.70	10.0	66	18.1	---	---
0.160100	46.30	10.0	66	19.1	---	---
0.202600	51.80	10.0	64	11.7	---	---
1.272000	32.80	10.2	56	23.2	---	---
4.892000	34.00	10.6	56	22.0	---	---
4.956000	34.20	10.6	56	21.8	---	---
5.028000	33.50	10.6	60	26.5	---	---
5.092000	31.00	10.6	60	29.0	---	---
5.160000	31.20	10.6	60	28.8	---	---

9/9/2008 4:41PM HCT EMC LAB

MEASUREMENT RESULT: "Phone_fin AV"

9/9/2008 4:41PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	44.40	10.0	54	9.1	---	---
0.270100	39.20	10.0	51	11.9	---	---
0.400100	29.80	10.0	48	18.1	---	---
1.072000	32.50	10.2	46	13.5	---	---
1.408000	32.30	10.2	46	13.7	---	---
4.956000	29.80	10.6	46	16.2	---	---
5.028000	28.40	10.6	50	21.6	---	---
5.096000	29.40	10.6	50	20.6	---	---
5.160000	25.80	10.6	50	24.2	---	---

9/9/2008 4:41PM HCT EMC LAB

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 5.9 dB
Operating Condition	: Data Communication Mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 27.5 °C
Humidity Level	: 60.2 %
Test Date	: September 11, 2008

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBuV	dB/m	dB	(H/V)	dBuV/m	dBuV/m	dB
56.9	19.5	12.9	1.7	V	34.1	40.0	5.9
144.0	19.1	12.5	2.8	V	34.4	43.5	9.1
312.0	16.9	13.1	4.3	H	34.3	46.0	11.7
480.0	9.6	16.9	5.2	H	31.7	46.0	14.3
480.0	8.8	16.9	5.2	V	30.9	46.0	15.1

*** 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 is obtained. The Antenna Factor of 7.4 dB/m 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 dBuV/m

Radiated emission limits

Frequency of emission	Field strength	
	uV/m	dBuV/m
30 ~ 88	100	40.0
88 ~ 216	150	43.5
216 ~ 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

Type	Manufacture	Model Number	Next CAL Date
EMI Test Receiver	Rohde & Schwarz	ESI40	2008.11.06
EMI Test Receiver	Rohde & Schwarz	ESCI	2009.06.01
LISN	EMCO	703125	2009.05.04
LISN	Rohde & Schwarz	ESH2-Z5	2009.04.18
LISN	Rohde & Schwarz	ESH3-Z5	2009.06.13
LISN	EMCO	3816/2SH	2009.02.01
Attenuator	Rohde & Schwarz	ESH3-Z2	2009.10.30
TRILOG Antenna	Schwarzbeck	VULB9168	2009.01.18
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	2009.03.18
RF-Amplifier	MITEQ	AMF-6D-00101800 -35.20P.PS	2009.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2009.01.11

7. CONCLUSION

The data collected shows that the **LG Electronics Inc. PCS GSM/EDGE Phone with Bluetooth FCC ID: BEJKC780** Complies with §15.107 and §15.109 of the FCC Rules.