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.

60-39, Kasan-Dong, Kumchon-Gu, Seoul 153-801, Korea.

Date of Issue: November 30, 2007
Test Report No.: HCT-F07-1120

Test Site: HCT CO., LTD.

FCC ID: **BEJKE990D**

Classification/ Standard(s):	FCC PART 15 Subpart B / CISPR 22 CLASS B
Equipment (EUT) Type:	Cellular/PCS/ GSM/EDGE Phone with Bluetooth
Trade Name/Model(s):	LG Electronics, Inc. / KE990d
Additional Model Name:	KE990c, KE990
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
: Doo Hwan Ryu
Test engineer of EMC Tech.Part

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

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1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics, Inc. KE990d Cellular/PCS/ GSM/EDGE Phone with Bluetooth. Its basic purpose is used for communications. It transmits from GSM 850, GSM1900 (1850.20 – 1909.80) MHz and receives from GSM 850, GSM1900 (1930.20 – 1989.80) MHz.

MODEL	KE990d
FCC ID	BEJKE990D
EUT Type	Cellular/PCS/ GSM/EDGE Phone with Bluetooth
TX Frequency	824.20MHz – 848.80MHz (GSM850) 1850.20 MHz – 1909.80 MHz (GSM1900) 2402MHz – 2480MHz (Bluetooth)
RX Frequency	869.20MHz – 893.80MHz (GSM850) 1930.20 MHz – 1989.80 MHz (GSM1900) 2402MHz – 2480MHz (Bluetooth)

1.2 Related Submittal(s) / Grant(s)

ORIGINAL SUBMITTAL ONLY

1.3 Tested System Details

The Model names for all equipment, plus 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 Phone with Bluetooth	**LG Electronics, Inc.**	**KE990d**	**BEJKE990d**	**Travel Adaptor**
Travel Adaptor	**Sunlin**	**STA-U32WR**	**-**	**EUT**
PC	**DELL**	**OPTIPLEXGX620**	**DoC**	**EUT**
Monitor	**DELL**	**1704FPTt**	**DoC**	**PC**
Mouse	**DELL**	**MO56U0**	**DoC**	**PC**
Keyboard	**DELL**	**SK-8115**	**DoC**	**PC**
Printer	**H.P**	**C4569A**	**DoC**	**PC**
Ear phone	**-**	**-**	**-**	**EUT**
USB Cable	**-**	**-**	**-**	**EUT**

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Cellular/PCS/ GSM/EDGE Phone with Bluetooth	**DC In**	**N**	**N/A**	**(P)1.8**
	USB	**Y**	**Y**	**(P.D)1.5**
	Ear Jack	**N/A**	**N**	**(D)1.8**
PC	**USB(Mouse)**	**N/A**	**Y**	**(D)1.8**
	USB(Keyboard)	**N/A**	**Y**	**(D)1.8**
	D-Sub(Monitor)	**N/A**	**Y**	**(D)1.6**
	Parallel(Printer)	**N/A**	**Y**	**(D)1.8**
	AC In	**N**	**N/A**	**(P)1.8**
Monitor	**AC In**	**N**	**N/A**	**(P)1.8**
Printer	**AC In**	**N**	**N/A**	**(P)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 Phone with Bluetooth	DC In	N	-	Y	EUT end
	USB	N	-	Y	Both end
	Ear-jack	N	-	Y	EUT end
PC	D-Sub	Y	Both end	Y	Both end
	USB(Mouse)	N	-	Y	PC end
	USB(Keyboard)	N	-	Y	PC end
	Parallel(Printer)	N	-	Y	Both 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

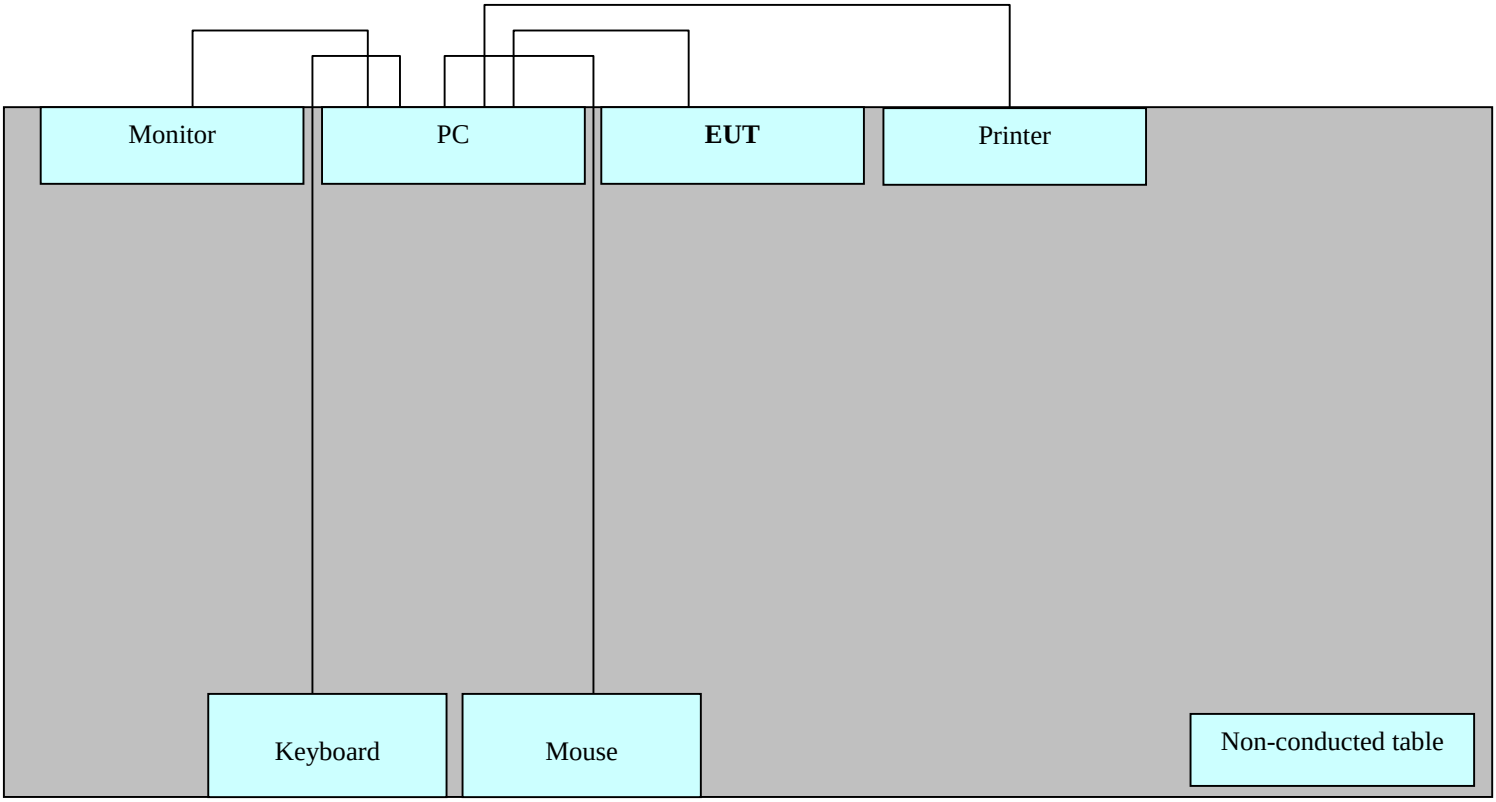
The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1,Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 6, 2006(Registration Number: 90661)

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
Idle (1900) Mode	
Camera Mode	○
MP3 Mode	
Bluetooth	

3. 2 Radiated Emission Test

During Preliminary Test, the Following operation mode was investigated

Operation Mode	The worst operating condition
Idle (1900) Mode	
Camera Mode	
MP3 Mode	
Bluetooth	
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 – 8.7 dB
Operating Condition	: Camera mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 9.0 °C
Humidity Level	: 35.0 %
Test Date	: November 17, 2007

Power Line Conducted Emissions				FCC Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuv)	Margin (dB)
0.965	46.1	HOT	Quasi-Peak	56.0	-9.9
0.735	37.3	HOT	Average	46.0	-8.7
0.985	42.8	NEUTRAL	Quasi-Peak	56.0	-13.2
0.735	34.9	NEUTRAL	Average	46.0	-11.1

Line Conducted Emissions Tabulated Data

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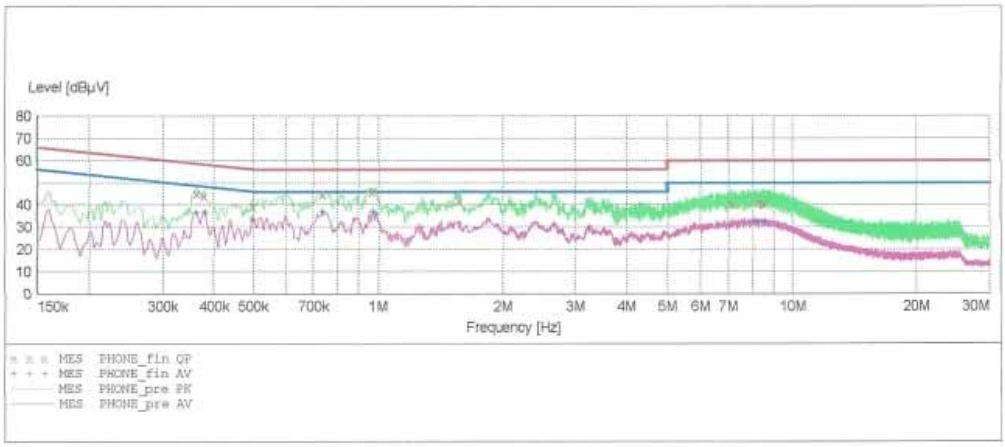
EUT: KE990d
Manufacturer: LG
Operating Condition: CAMERA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: CISPR 22 CLASS B
Comment: H

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	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.362600	45.20	10.0	59	13.4	---	---
0.377600	44.20	10.0	58	14.2	---	---
0.497600	39.30	10.1	56	16.7	---	---
0.735000	44.70	10.1	56	11.3	---	---
0.965000	46.10	10.1	56	9.9	---	---
1.555000	42.00	10.2	56	14.0	---	---
7.085000	40.30	10.9	60	19.7	---	---
8.220000	41.00	11.0	60	19.0	---	---
8.450000	40.70	11.0	60	19.3	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.362600	36.90	10.0	49	11.7	---	---
0.380100	37.00	10.0	48	11.3	---	---
0.497600	34.00	10.1	46	12.0	---	---
0.735000	37.30	10.1	46	8.7	---	---
0.970000	37.20	10.1	46	8.8	---	---
0.985000	36.10	10.1	46	9.9	---	---
8.090000	32.70	11.0	50	17.3	---	---
8.220000	32.60	11.0	50	17.4	---	---
8.520000	32.70	11.0	50	17.3	---	---

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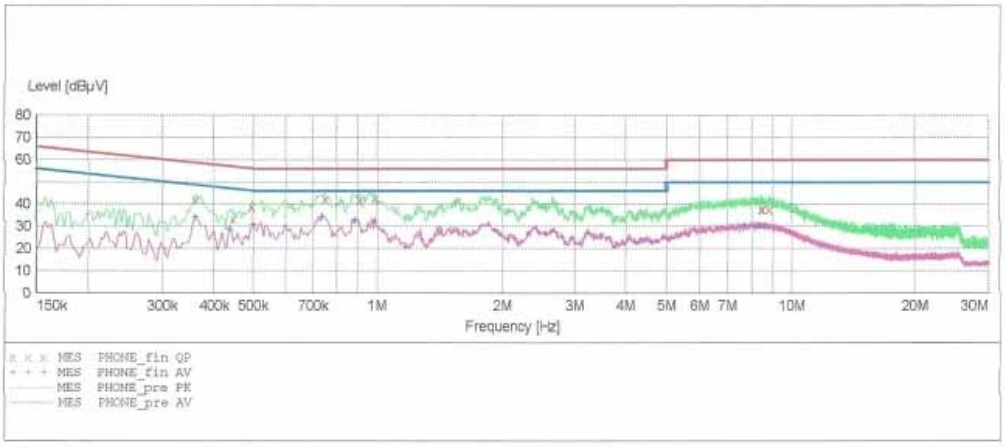
```
EUT:                  KE990d
Manufacturer:         LG
Operating Condition:  CAMERA MODE
Test Site:            SHIELD ROOM
Operator:             DH-RYU
Test Specification:   CISPR 22 CLASS B
Comment:              N
```

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	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.360100	41.80	10.0	59	16.9	---	---
0.445100	33.40	10.0	57	23.6	---	---
0.495100	39.00	10.1	56	17.1	---	---
0.745000	42.40	10.1	56	13.6	---	---
0.905000	41.80	10.1	56	14.2	---	---
0.985000	42.80	10.1	56	13.2	---	---
8.415000	37.70	11.0	60	22.3	---	---
8.455000	37.90	11.0	60	22.1	---	---
8.795000	37.90	11.0	60	22.1	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.360100	34.50	10.0	49	14.2	---	---
0.437600	29.10	10.0	47	18.0	---	---
0.500000	31.00	10.1	46	15.0	---	---
0.735000	34.90	10.1	46	11.1	---	---
0.885000	33.00	10.1	46	13.0	---	---
0.985000	32.80	10.1	46	13.2	---	---
7.655000	30.50	10.9	50	19.5	---	---
8.315000	30.30	11.0	50	19.7	---	---
8.630000	30.40	11.0	50	19.6	---	---

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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 – 4.7 dB
Operating Condition	: Data communication mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 10.0 °C
Humidity Level	: 45.0 %
Test Date	: November 27, 2007

Frequency MHz	Reading dBuV	Ant. Factor dB	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
125.8	18.2	11.4	2.7	V	32.3	43.5	-11.2
158.2	15.1	13.0	3.0	V	31.1	43.5	-12.4
209.1	24.8	9.3	3.5	V	37.6	43.5	-5.9
195.4	21.8	9.3	3.4	H	34.5	43.5	-9.0
206.2	26.2	9.2	3.4	H	38.8	43.5	-4.7
244.6	18.9	11.0	3.8	H	33.7	46.0	-12.3

*** For measurement over 1 GHz, noise level is 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 dBuV/m

Radiated emission limits

Frequency of emission	Field strength	
	μV / m	dB μV / 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	2008.06.01
LISN	EMCO	703125	2008.02.03
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	VULB9168	2008.03.19
Communication Antenna	TDK	LPDA-0802	N/A
Antenna Position Tower	HD	240/520/00	N/A
AC Power Source	PACIFIC	Magnetic Module	N/A
Base Station	Rohde & Schwarz	CMU 200	2008.02.27
Horn Antenna	Schwarzbeck	BBHA 9120D	2008.03.31
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2008.01.24
Bluetooth Base Station	TESCOM	TC-3000A	2008.01.19

7. Conclusion

The data collected shows that the LG Electronics, Inc. Cellular/PCS/ GSM/EDGE Phone with Bluetooth. FCC ID: BEJKE990D Complies with §15.107 and §15.109 of the FCC Rules.