

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: January 24, 2008

Test Report No.: HCT-F08-0113

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJKM710D

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. / KM710d

Additional Model(s): KM710c, KM710

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
: Kyoung Hee Yoon
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)	5
1.6 Test Methodology.....	6
1.7 Test Facility.....	6
2. SYSTEM TEST CONFIGURATION.....	7
2.1 Configuration of Tested System.....	7
3. PRELIMINARY TEST.....	8
3.1 Conducted Emission Test.....	8
3.2 Radiated Emission Test.....	8
4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY.....	9
4.1 Conducted Emission Test.....	10 – 13
4.2 Radiated Emission Test.....	14
5. FIELD STRENGTH CALCULATION.....	15
6. Test Equipment.....	16
7. Conclusion.....	17

ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics, Inc. KM710d Cellular/PCS GSM/EDGE 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) and receives from GSM 850 (869.20 MHz – 893.80 MHz), GSM1900 (1930.20 MHz – 1989.80 MHz).

MODEL	KM710d
FCC ID	BEJKM710D
EUT Type	Cellular/PCS GSM/EDGE Phone with Bluetooth
TX Frequency	824.20 MHz – 848.80 MHz (GSM850) 1850.20 MHz – 1909.80 MHz (GSM1900) 2402 MHz – 2480 MHz (Bluetooth)
RX Frequency	869.20 MHz – 893.80 MHz (GSM850) 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
Cellular/PCS GSM/EDGE Phone with Bluetooth	LG Electronics, Inc.	KM710d	BEJKM710D	PC, Travel Adaptor
Travel Adaptor	Solcomp	STA-P52ES	-	EUT
Notebook PC	Toshiba	PSMA2K-01D002	DoC	EUT
Notebook Adaptor	Delta	SADP-65KB B	-	Notebook
Mouse	DELL	MO56U0	DoC	Notebook
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 Phone with Bluetooth	DC In	N	N/A	(P)1.7
	Ear Jack	N/A	N	(D)1.6
	USB Data	Y	Y	(P, D)1.5
Notebook	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 Phone with Bluetooth	DC-In	N	-	Y	EUT End
	Ear-jack	N	-	Y	EUT End
	USB Data	N	-	Y	Both End
Notebook	USB (Mouse)	N	-	Y	Notebook 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

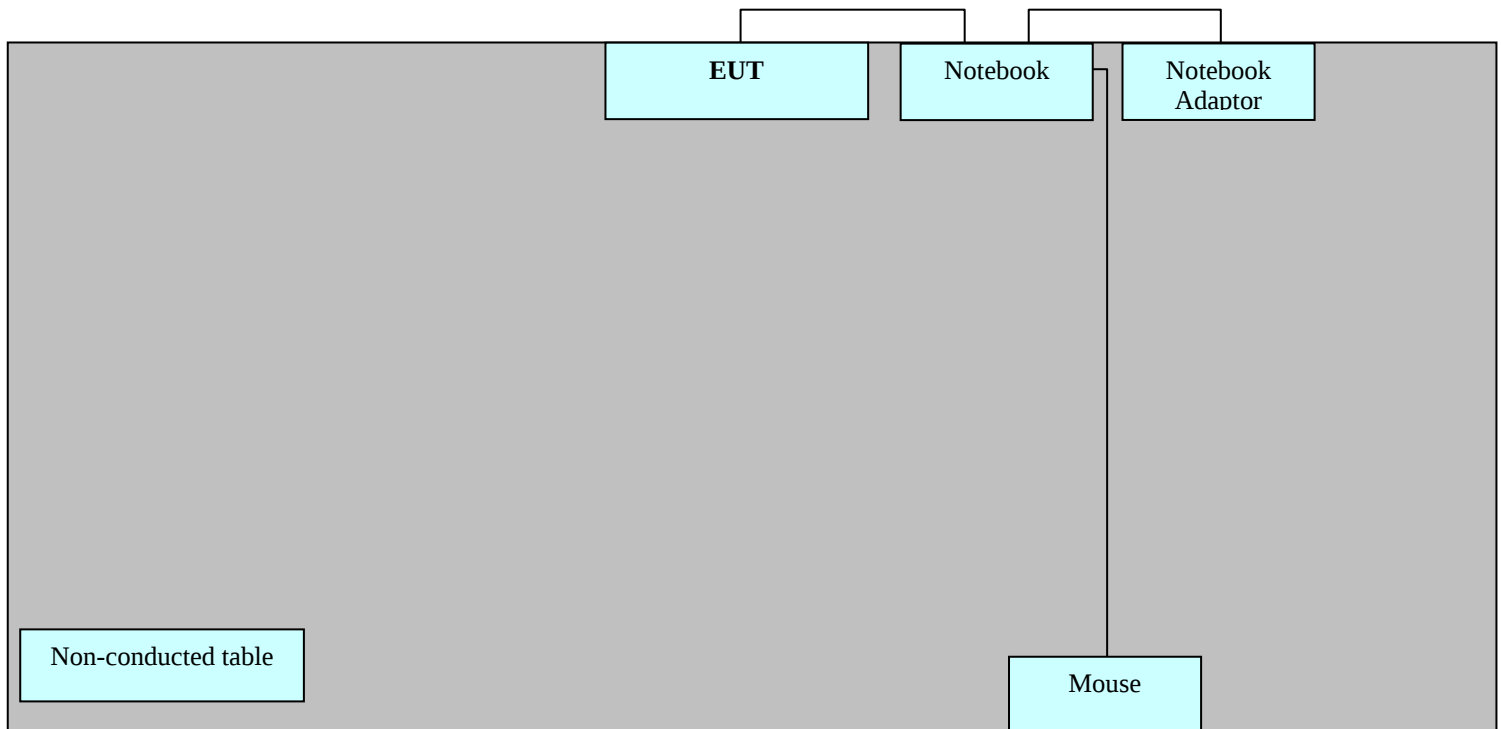
The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-Ri, Hobup-Myun, Ichon-Si, Kyungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated 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
Camera Mode	
Idle (850, 1900)	
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	
Idle (850, 1900)	
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 – 13.9 dB
Operating Condition	: Data Communication Mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 5.0 °C
Humidity Level	: 39.0 %
Test Date	: February 21, 2008

Power Line Conducted Emissions				CISPR 22 Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuV)	Margin (dB)
0.2001	48.20	HOT	Quasi-Peak	64.0	-15.4
4.8800	31.70	HOT	Average	46.0	-14.3
0.2026	47.30	NEUTRAL	Quasi-Peak	64.0	-16.2
4.8800	32.10	NEUTRAL	Average	46.0	-13.9

Line Conducted Emissions Tabulated Data

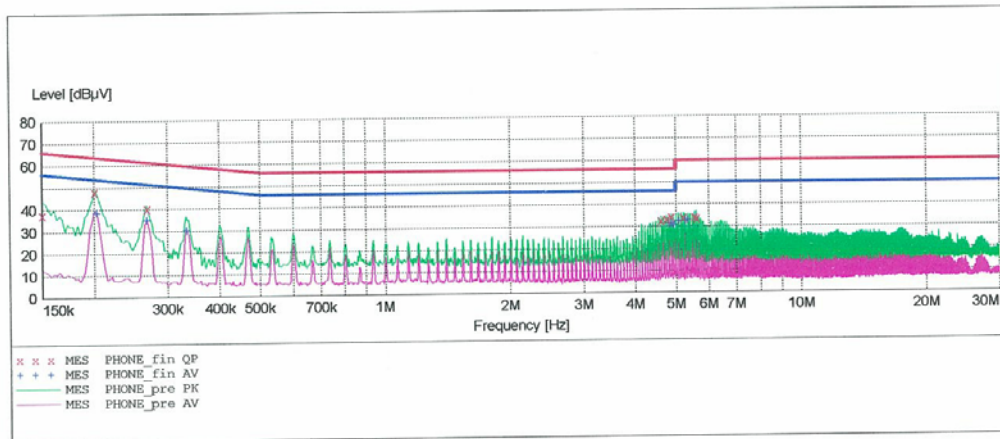
HCT

EMC TEST LAB.

EUT: KM710d
Manufacturer: LG
Operating Condition: Data communication
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	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"

2/18/2008 4:56PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150100	37.70	10.0	66	28.3	---	---
0.200100	48.20	10.0	64	15.4	---	---
0.267600	40.40	10.0	61	20.8	---	---
4.612000	32.80	10.6	56	23.2	---	---
4.744000	33.40	10.6	56	22.6	---	---
4.880000	34.40	10.6	56	21.6	---	---
5.216000	34.00	10.6	60	26.0	---	---
5.548000	34.30	10.7	60	25.7	---	---
5.616000	33.80	10.7	60	26.2	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2/18/2008 4:56PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202600	38.80	10.0	54	14.7	---	---
0.267600	35.10	10.0	51	16.1	---	---
0.332600	30.50	10.0	49	18.8	---	---
4.812000	31.60	10.6	46	14.4	---	---
4.880000	31.70	10.6	46	14.3	---	---
4.944000	30.80	10.6	46	15.2	---	---
5.080000	32.70	10.6	50	17.3	---	---
5.280000	32.70	10.7	50	17.3	---	---
5.348000	33.10	10.7	50	16.9	---	---

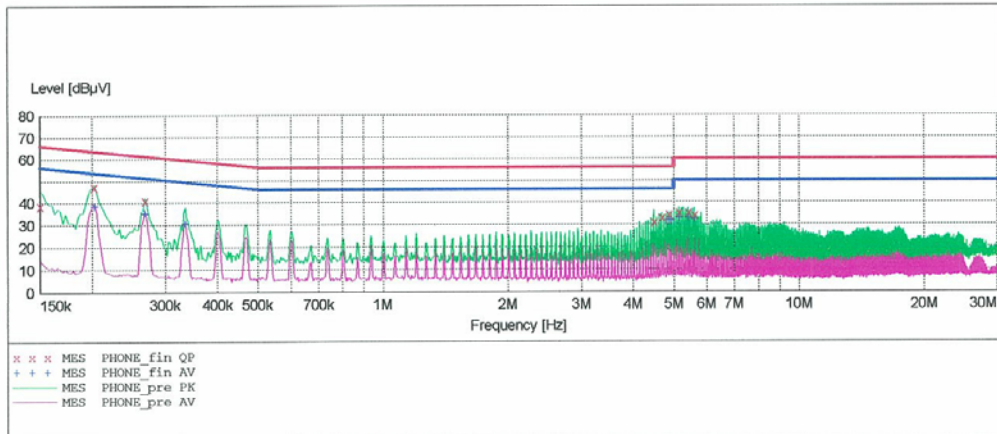
HCT

EMC TEST LAB.

EUT: KM710d
Manufacturer: LG
Operating Condition: Data communication
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	Stop	Step	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"

2/18/2008 5:00PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	38.70	10.0	66	27.3	---	---
0.202600	47.30	10.0	64	16.2	---	---
0.267600	41.10	10.0	61	20.1	---	---
4.480000	30.90	10.6	56	25.1	---	---
4.680000	33.10	10.6	56	22.9	---	---
4.880000	34.50	10.6	56	21.5	---	---
5.148000	35.40	10.6	60	24.6	---	---
5.416000	35.40	10.7	60	24.6	---	---
5.616000	34.20	10.7	60	25.8	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2/18/2008 5:00PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202600	38.80	10.0	54	14.7	---	---
0.267600	35.40	10.0	51	15.7	---	---
0.335100	30.80	10.0	49	18.5	---	---
4.812000	31.90	10.6	46	14.1	---	---
4.880000	32.10	10.6	46	13.9	---	---
4.948000	31.90	10.6	46	14.1	---	---
5.148000	33.10	10.6	50	16.9	---	---
5.416000	33.00	10.7	50	17.0	---	---
5.616000	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 – 7.7 dB
Operating Condition	: Data Communication mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 1.0 °C
Humidity Level	: 52.0 %
Test Date	: January 22, 2008

Frequency MHz	Reading dBuV/m	Ant. Factor dB/m	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
97.7	20.2	8.8	2.4	V	31.4	43.5	-12.1
127.4	21.0	11.5	2.7	V	35.2	43.5	-8.3
132.9	21.3	11.8	2.7	V	35.8	43.5	-7.7
142.8	13.3	12.5	2.8	H	28.6	43.5	-14.9
167.4	18.4	12.4	3.1	V	33.9	43.5	-9.6
480.0	7.3	16.6	5.2	H	29.1	46.0	-16.9

*** 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	2008.02.03
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
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	2008.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2009.01.11

7. Conclusion

The data collected shows that the LG Electronics, Inc. Cellular/PCS GSM/EDGE Phone with Bluetooth. FCC ID: BEJKM710D Complies with §15.107 and §15.109 of the FCC Rules.