



EMI REPORT (Certification)

LG Electronics, Inc.

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

Date of Issue: May. 18. 2007

Test Report No.: HCT-F07-0504

Test Site: HYUNDAI CALIBRATION & CERTIFICATION
TECHNOLOGIES CO., LTD.

**FCC ID:
MODEL:**

**BEJL704i
L704i**

Classification/ Standard(s):	FCC PART 15 Subpart B / CISPR 22 CLASS B
Equipment (EUT) Type:	Single-Band Mobile Handset (PCS1900)
Trade Name/Model(s):	LG Electronics, Inc. / L704i
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.

HYUNDAI C-Tech. 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).


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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
4.3 Test Setup Photos.....	15
4.3.1 Conducted Emission.....	15
4.3.2 Radiated Emission.....	16
5. FIELD STRENGTH CALCULATION.....	17
6. Test Equipment.....	18
7. Conclusion.....	19

1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics, Inc. L704i Single-Band Mobile Handset (PCS1900). Its basic purpose is used for communications. It transmits from GSM1900 (1850.20 – 1909.80) MHz and receives from GSM1900 (1930.20 – 1989.80) MHz.

MODEL	L704i
FCC ID	BEJL704i
EUT Type	Single-Band Mobile Handset (PCS1900)
TX Frequency	1850.20MHz – 1909.80MHz (GSM1900)
RX Frequency	1930.20MHz – 1989.80MHz (GSM1900)
FCC Classification	Licensed Portable Transmitter Held to Ear (PCE)
Modulation	GSM1900

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
Single-Band Mobile Handset (PCS1900)	LG Electronics, Inc.	L704i	BEJL704i	PC
Adaptor	MAS-BH 0008-A 001	-	-	Phone
PC	DELL	OPTIPLEXGX620	DoC	-
Mouse	DELL	MO56U0	DoC	PC
Keyboard	DELL	SK-8115	DoC	PC
Printer	H.P	C4569A	DoC	PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Single-Band Mobile Handset (PCS1900) (EUT)	USB	Y	Y	(P.D)0.8
	DC In	N	N/A	(P)1.5
	Ear-jack	N/A	N	(D)1.7
PC	USB(Keyboard)	N/A	Y	(D)1.8
	USB(Mouse)	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
PC	USB(Keyboard)	Y	Both end	Y	Both end
	USB(Mouse)	N	-	Y	PC end
	Parallel(Printer)	N	-	Y	PC end
	D-Sub	N	-	Y	Both end
Single-Band Mobile Handset (PCS1900) (EUT)	USB	N	-	Y	Both end
	Ear-jack	N	-	N	EUT

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

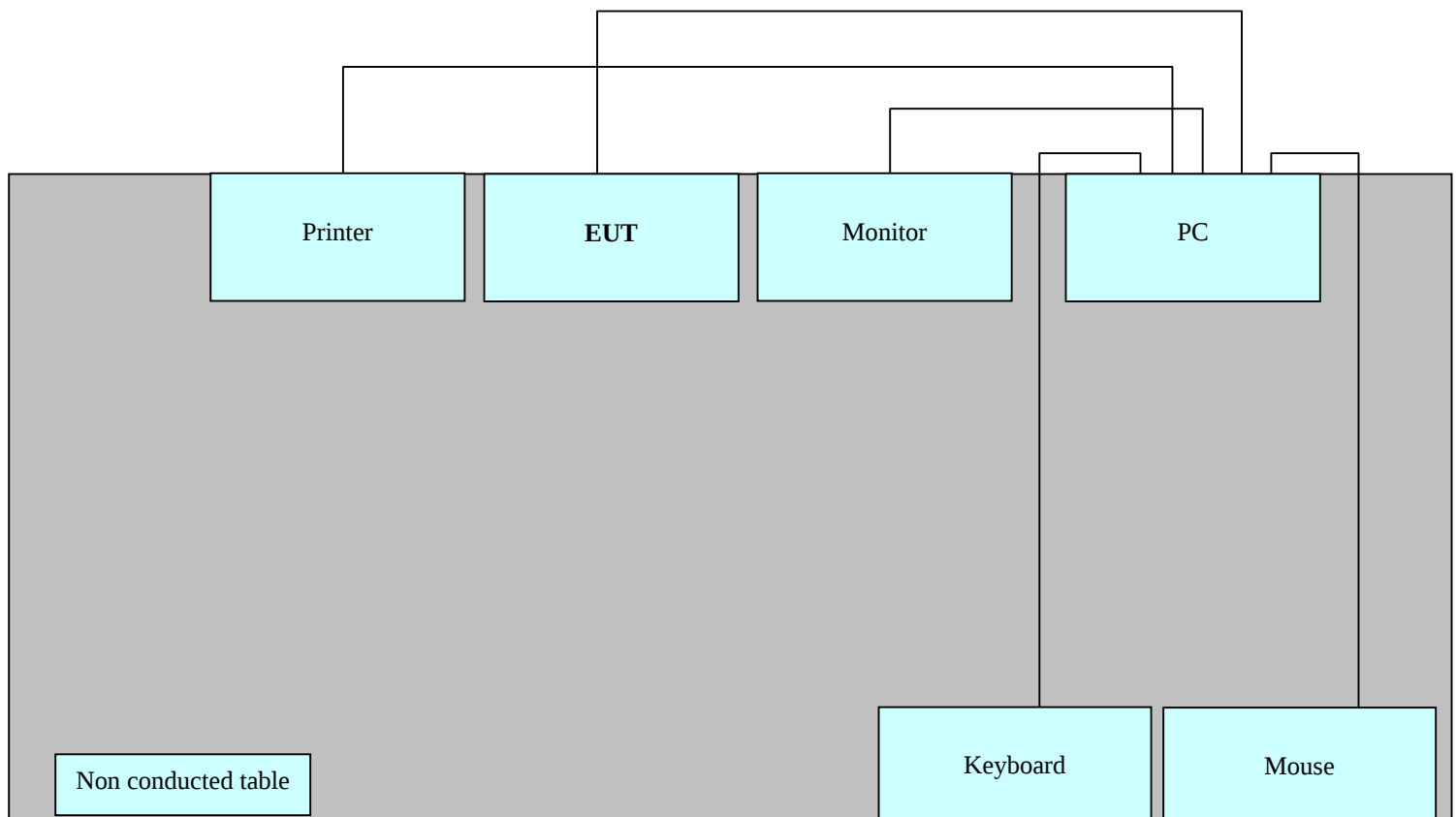
The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description 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	X
MP3 Mode	
Bluetooth	
Data Communication Mode	

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	X

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 – 2.8 dB
Operating Condition	: Camera mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 19.0 °C
Humidity Level	: 37.0 %
Test Date	: May. 04. 2007

Power Line Conducted Emissions				FCC Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuV)	Margin (dB)
1.635	53.2	HOT	Quasi-Peak	56.0	-2.8
1.66	38.1	HOT	Average	46.0	-7.9
1.61	50.5	NEUTRAL	Quasi-Peak	56.0	-5.5
1.61	33.6	NEUTRAL	Average	46.0	-12.4

Line Conducted Emissions Tabulated Data

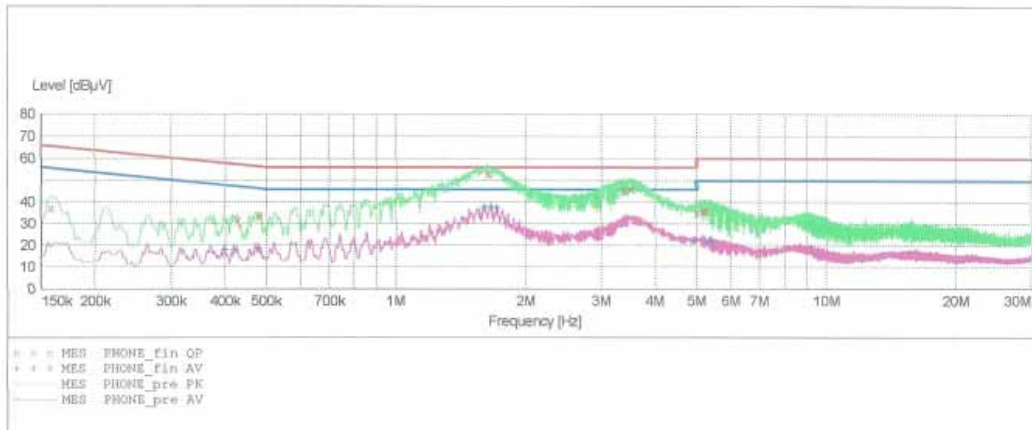
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EMC TEST LAB.

EUT: L704i
 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	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	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	5.0 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
0.157600	37.40	10.0	66	28.2	---	---
0.427600	31.60	10.0	57	25.7	---	---
0.480100	33.30	10.1	56	23.1	---	---
1.635000	53.20	10.2	56	2.8	---	---
3.395000	46.10	10.4	56	9.9	---	---
3.510000	46.20	10.5	56	9.8	---	---
5.000000	35.30	10.6	56	20.7	---	---
5.180000	36.30	10.6	60	23.7	---	---
5.230000	36.00	10.7	60	24.0	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

5/4/2007 4:20PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.400100	18.30	10.0	48	29.6	---	---
0.420100	17.90	10.0	47	29.5	---	---
0.477600	18.90	10.1	46	27.5	---	---
1.605000	38.00	10.2	46	8.0	---	---
1.660000	38.10	10.2	46	7.9	---	---
1.710000	37.30	10.3	46	8.7	---	---
5.000000	22.70	10.6	46	23.3	---	---
5.365000	21.80	10.7	50	28.2	---	---
5.395000	21.40	10.7	50	28.6	---	---

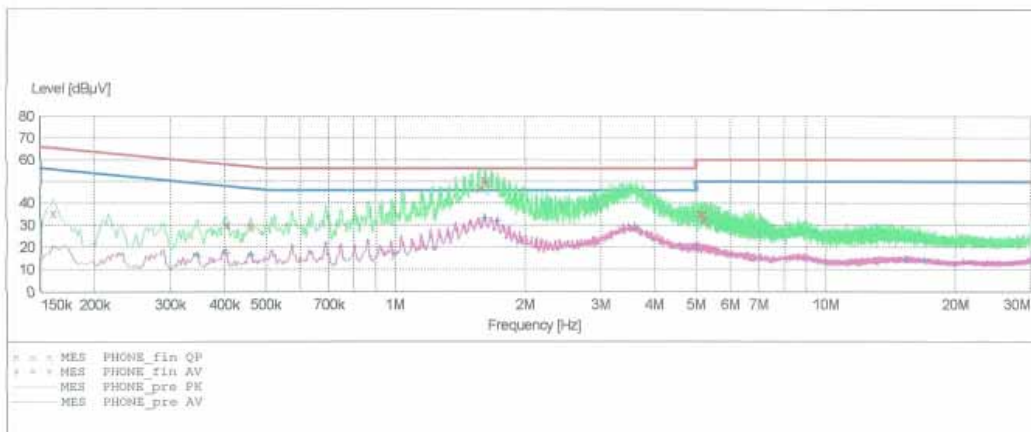
HCT

EMC TEST LAB.

EUT: L704i
 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	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	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			


MEASUREMENT RESULT: "PHONE_fin_QP"

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Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.160100	35.40	10.0	66	30.1	---	---
0.405100	30.30	10.0	58	27.5	---	---
0.460100	29.20	10.1	57	27.5	---	---
1.570000	47.00	10.2	56	9.0	---	---
1.610000	50.50	10.2	56	5.5	---	---
1.625000	49.20	10.2	56	6.8	---	---
5.090000	35.40	10.6	60	24.6	---	---
5.150000	35.30	10.6	60	24.7	---	---
5.220000	32.50	10.6	60	27.5	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

5/4/2007 5:17PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.347600	16.30	10.0	49	32.7	---	---
0.405100	17.40	10.0	48	30.3	---	---
0.462600	16.50	10.1	47	30.2	---	---
1.610000	33.60	10.2	46	12.4	---	---
1.725000	32.10	10.3	46	13.9	---	---
3.600000	29.20	10.5	46	16.8	---	---
5.000000	19.80	10.6	46	26.2	---	---
15.315000	14.50	12.0	50	35.5	---	---
16.960000	13.90	12.1	50	36.1	---	---

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	: 19.0 °C
Humidity Level	: 37.0 %
Test Date	: May. 04 2007

Frequency MHz	Reading dBuV	Ant. Factor dB	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
388.1	18.2	14.7	4.6	V	37.5	46.0	-8.5
428.5	15.0	15.7	4.9	V	35.6	46.0	-10.4
588.5	14.0	18.6	5.7	V	38.3	46.0	-7.7
301.5	15.6	12.6	4.2	H	32.4	46.0	-13.6
349.2	18.5	13.8	4.4	H	36.7	46.0	-9.3
428.5	14.5	15.7	4.9	H	35.1	46.0	-10.9

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

4.3 Test Setup Photos

4.3.1 Conducted Emission



4.3.2 Radiated Emission



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	2007.11.06
EMI Test Receiver	Rohde & Schwarz	ESCI	2007.08.24
LISN	Rohde & Schwarz	ESH2-Z5	2008.04.20
LISN	EMCO	3816/2SH	2007.06.15
LISN	Rohde & Schwarz	ESH3-Z6	2007.06.15
Attenuator	Rohde & Schwarz	ESH3-Z2	2007.10.30
TRILOG Antenna	Schwarzbeck	VULB9168	2008.03.19
Communication Antenna	TDK	LPDA-0802	N/A
Antenna Position Tower	HD	MA240	N/A
Turn Table	EMCO	1060	N/A
AC Power Source	PACIFIC	Magnetic Module	N/A
Base Station	Rohde & Schwarz	CMU 200	2008.02.27
Base Station	Hewlett-Packard	8922M	2007.08.12
Band Reject Filter	Microwave Circuits	NO408981	2007.08.12
Band Reject Filter	Wainwright Instrument	WRCG1750/1780-1715/1817-70/8SS	2007.07.10
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. Single-Band Mobile Handset (PCS1900).
FCC ID: BEJL704i Complies with §15.107 and §15.109 of the FCC Rules.