HCT CO., LTD.

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EMI REPORT (Certification)

LG Electronics Inc. **60-39, Gasan-dong, Gumchon-gu,** **Seoul, 153-023, Korea**	**Date of Issue: Jun 12, 2009** **Test report No.: HCT-EF09-0607** **Test Site: HCT CO., LTD.** **HCT FRN: 0005-8664-21**

FCC ID: **BEJL07A**

Classification / Standard(s)	: FCC PART 15 Subpart B / CISPR 22 Class B
Equipment (E.U.T) type	: Cellular/PCS GSM/WCDMA PCMCIA Card
Trade name / Model(s)	: LG Electronics Inc. / L-07A
Port / Connector(s)	: USB 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 Act of 1988, 21 U.S.C 862.

Report prepared by
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Test Engineer of EMC Tech. Part

Approved by
: Nam Wook Kang
Manager of EMC Tech. Part

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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product description

The **LG Electronics Inc. L-07A, Cellular/PCS GSM/WCDMA PCMCIA Card.**
Its basic purpose is used for communications. Its transmits from GSM 850 (824.20 ㎒ to 848.80 ㎒), GSM 1 900 (1 850.20 ㎒ to 1 909.80 ㎒), WCDMA 850 (826.40 ㎒ to 846.60 ㎒) and receives from GSM 850 (869.20 ㎒ to 893.80 ㎒), GSM 1 900 (1 930.20 ㎒ to 1 989.80 ㎒), WCDMA 850 (871.40 ㎒ to 891.60 ㎒).

Model	L-07A
FCC ID	BEJL07A
E.U.T type	Cellular/PCS GSM/WCDMA PCMCIA Card
TX frequency	824.20 ㎒ to 848.80 ㎒ (GSM 850) 1 850.20 ㎒ to 1 909.80 ㎒ (GSM 1 900) 826.40 ㎒ to 846.60 ㎒ (WCDMA 850)
RX frequency	869.20 ㎒ to 893.80 ㎒ (GSM850) 1930.20 ㎒ to 1 989.80 ㎒ (GSM 1 900) 871.40 ㎒ to 891.60 ㎒ (WCDMA 850)

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/WCDMA PCMCIA Card	LG	L-07A	BEJL07A	Notebook PC
PCMCIA Card PCMCIA to USB Jig	-	-	-	E.U.T Notebook PC
Notebook PC	TOSHIBA	PSMA2K-01D002	DoC	E.U.T, TA
Notebook PC adaptor	DELTA	SADP-65KB B	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2	DoC	Notebook PC
12 VDC to 5 VDC Converter	-	-	-	E.U.T
Battery	Rocket	ES 2.9 - 12	-	DC Converter

1.4 Cable description

Product name	Port	Power cord shielded (Y/N)	I/O cable shielded (Y/N)	Length (M)
Cellular/PCS GSM/WCDMA PCMCIA Card	DC in	N	-	(P)0.5
	USB data	-	Y	(D)0.6
Notebook PC	USB (Mouse)	-	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/WCDMA PCMCIA Card	USB data	N	-	Y	Both end
Notebook PC	USB (Mouse)	Y	Notebook PC end	Y	Notebook PC end

1.6 Test methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 m

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, Icheon-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 (㎒)	Upper frequency of measurement range (㎒)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5^{th} harmonic of the highest frequency or 40 ㎓, whichever is lower

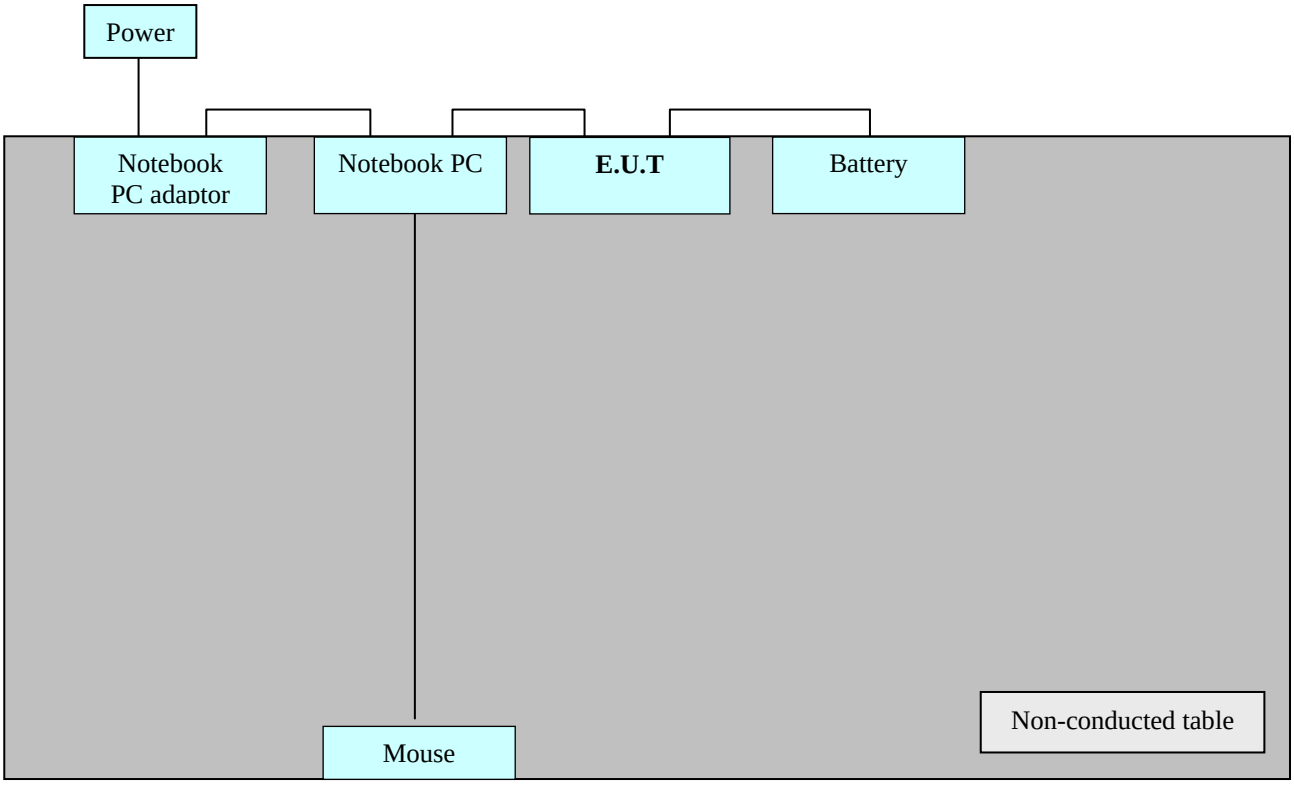
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of test system

Power Line Conducted test : E.U.T 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 m open area test site.

[Configuration of tested system]



Power Line: 110 VAC

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 (850, 1 900)	
WCDMA Idle (850)	
Data transfer	○

3. 2 Radiated Emission test

During preliminary test, the following operation mode was investigated

Operation mode	The worst operating condition
GSM Idle (850, 1 900)	
WCDMA Idle (850)	
Data transfer	○

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	: Data transfer mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 23.6 °C
Humidity level	: 38.7 %
Test date	: Jun 07, 2009

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	**Amplitude (dBμV)**	**Conductor**	**Result**	**Limit (dBμV)**	**Margin (dB)**
0.2026	52.2	HOT	Quasi-Peak	64.0	11.3
4.9120	35.4	HOT	Average	46.0	10.6
0.2026	54.8	NEUTRAL	Quasi-Peak	64.0	8.7
0.2026	44.5	NEUTRAL	Average	54.0	9.0

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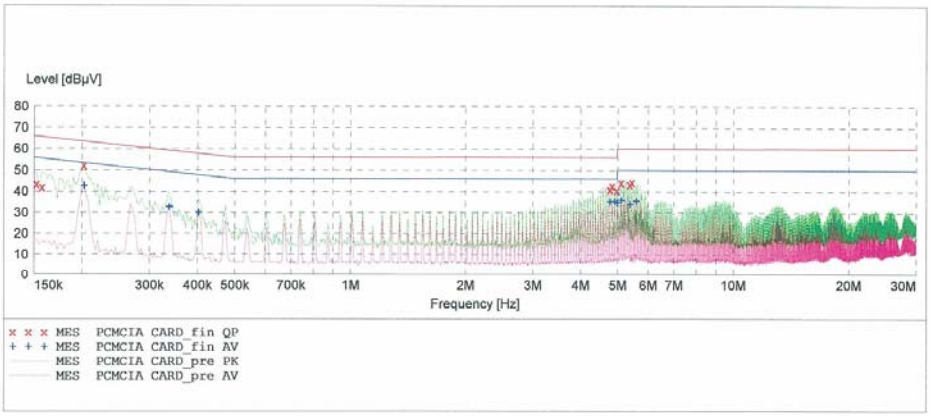
EUT: L-07A
Manufacturer: LG Electronics Inc.
Operating Condition: DATA TRANSFER MODE
Test Site: SHIELD ROOM
Operator: YH-LEE
Test Specification: CISPR 22 CLASS B
Comment: H

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 Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PCMCIA CARD_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.152600	43.40	10.1	66	22.5	---	---
0.157600	41.90	10.1	66	23.7	---	---
0.202600	52.20	10.1	64	11.3	---	---
4.776000	41.10	10.6	56	14.9	---	---
4.844000	42.70	10.7	56	13.3	---	---
4.980000	40.70	10.7	56	15.3	---	---
5.112000	44.20	10.7	60	15.8	---	---
5.380000	43.40	10.7	60	16.6	---	---
5.448000	44.40	10.7	60	15.6	---	---

MEASUREMENT RESULT: "PCMCIA CARD_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	42.80	10.1	54	10.7	---	---
0.337600	32.70	10.1	49	16.5	---	---

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MEASUREMENT RESULT: "PCMCIA CARD_fin AV"

(continued)

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.402600	30.10	10.1	48	17.7	---	---
4.776000	35.30	10.6	46	10.7	---	---
4.912000	35.40	10.7	46	10.6	---	---
4.980000	34.90	10.7	46	11.1	---	---
5.112000	36.00	10.7	50	14.0	---	---
5.380000	34.10	10.7	50	15.9	---	---
5.584000	35.60	10.7	50	14.4	---	---

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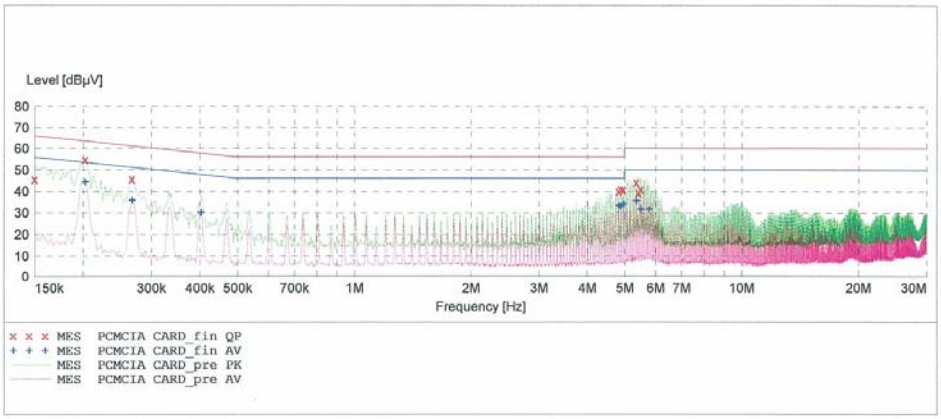
EMC TEST LAB.

EUT: L-07A
Manufacturer: LG Electronics Inc.
Operating Condition: DATA TRANSFER 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: "PCMCIA CARD_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	45.60	10.1	66	20.4	---	---
0.202600	54.80	10.1	64	8.7	---	---
0.267600	45.70	10.1	61	15.5	---	---
4.820000	40.00	10.7	56	16.0	---	---
4.884000	41.10	10.7	56	14.9	---	---
4.952000	40.90	10.7	56	15.1	---	---
5.356000	44.20	10.7	60	15.8	---	---
5.420000	39.40	10.7	60	20.6	---	---
5.488000	40.80	10.7	60	19.2	---	---

MEASUREMENT RESULT: "PCMCIA CARD_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	44.50	10.1	54	9.0	---	---
0.267600	35.80	10.1	51	15.4	---	---

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MEASUREMENT RESULT: "PCMCIA CARD_fin AV"

(continued)

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.402600	30.20	10.1	48	17.6	---	---
4.820000	33.40	10.7	46	12.6	---	---
4.884000	33.10	10.7	46	12.9	---	---
4.952000	34.10	10.7	46	11.9	---	---
5.356000	35.70	10.7	50	14.3	---	---
5.488000	31.70	10.7	50	18.3	---	---
5.756000	31.80	10.8	50	18.2	---	---

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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 3.5 dB
Operating condition : Data transfer mode
Detector : Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature : 24.2 °C
Humidity level : 39.0 %
Test date : Jun 08, 2009

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBμV	dB/m	dB	(H/V)	dBμV/m	dBμV/m	dB
47.0	16.9	12.5	0.7	V	30.1	40.0	9.9
300.0	18.1	13.1	1.9	V	33.1	46.0	12.9
300.0	26.0	13.1	1.9	H	41.0	46.0	5.0
370.0	23.6	14.6	2.1	H	40.3	46.0	5.7
498.0	14.0	17.2	2.5	V	33.7	46.0	12.3
935.0	15.3	23.6	3.6	H	42.5	46.0	3.5

* **Note)**
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 dBμV is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dBμV/m value is mathematically converted to its corresponding level in μV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission limits]

Frequency of emission (㎒)	Field strength	
	μV/m	dBμV/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

Type	Manufacturer	Model number	Next CAL date
EMI Test Receiver	Rohde & Schwarz	ESI40	2009.10.31
EMI Test Receiver	Rohde & Schwarz	ESCI	2010.06.02
LISN	Rohde & Schwarz	ESH2-Z5	2010.04.10
LISN	Rohde & Schwarz	ESH3-Z5	2010.06.13
LISN	EMCO	3816/2SH	2010.06.09
Attenuator	Rohde & Schwarz	ESH3-Z2	2009.10.30
Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18
Communication Antenna	TDK	LPDA-0802	-
Antenna Position Tower	HD	240/520/00	-
Base Station	Rohde & Schwarz	CMU 200	2010.02.17
Horn Antenna	Schwarzbeck	BBHA 9120D	2010.03.26
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2010.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2010.01.09

7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Model: L-07A, Cellular/PCS GSM/ WCDMA PCMCIA Card. FCC ID: BEJL07A** complies with §15.107 and §15.109 of the FCC rules.