

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, Gasan-dong, Gumchon-gu, Seoul,
153-023, Korea**

Date of Issue: September 25, 2008

Test Report No.: HCT-IEF-0809-1905

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJL02A

Classification/ Standard(s): FCC PART 15 Subpart B / CISPR 22 CLASS B

Equipment (EUT) Type: PCS GSM/WCDMA USB Modem

Trade Name/Model(s): LG Electronics Inc. / L-02A

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
: Kyoung Hee Yoon
Test engineer of EMC Tech. Part**

**Approved by
: Sang Jun Lee
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)	4
1.6 Test Methodology.....	5
1.7 Test Facility.....	5
1.8 Frequency range of radiated measurements	5
2. SYSTEM TEST CONFIGURATION.....	6
2.1 Configuration of Tested System.....	6
3. PRELIMINARY TEST.....	7
3.1 Conducted Emission Test.....	7
3.2 Radiated Emission Test.....	7
4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY.....	8
4.1 Conducted Emission Test.....	9
4.2 Radiated Emission Test.....	13
5. FIELD STRENGTH CALCULATION.....	14
6. TEST EQUIPMEN.....	15
7. CONCLUSION.....	16

ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The **LG Electronics Inc. L-02A PCS GSM/WCDMA USB Modem.**

It's basic purpose is used for communications. It transmits from GSM1900 (1850.20 MHz – 1909.80 MHz), WCDMA850 (826.40 MHz – 846.60 MHz), and receives from GSM1900 (1930.20 MHz – 1989.80 MHz), WCDMA850 (871.40 MHz – 891.60 MHz).

MODEL	L-02A
FCC ID	BEJL02A
EUT Type	PCS GSM/WCDMA USB Modem
TX Frequency	1850.20 MHz – 1909.80 MHz (GSM1900) 826.40 MHz – 846.60 MHz (WCDMA850)
RX Frequency	1930.20 MHz – 1989.80 MHz (GSM1900) 871.40 MHz – 891.60 MHz (WCDMA850)

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 /WCDMA USB Modem	LG	L-02A	BEJL02A	Notebook PC
Notebook PC	Toshiba	PSMA2K-01D002	DoC	EUT
Notebook PC Adaptor	Delta	SADP-65KB B	-	Notebook PC
Mouse	Logitech	M-BT96a	DoC	Notebook PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
PCS GSM /WCDMA USB Modem	USB Data	N/A	Y	(D)0.8

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/WCDMA USB Modem	USB Data	Y	Both End	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, 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

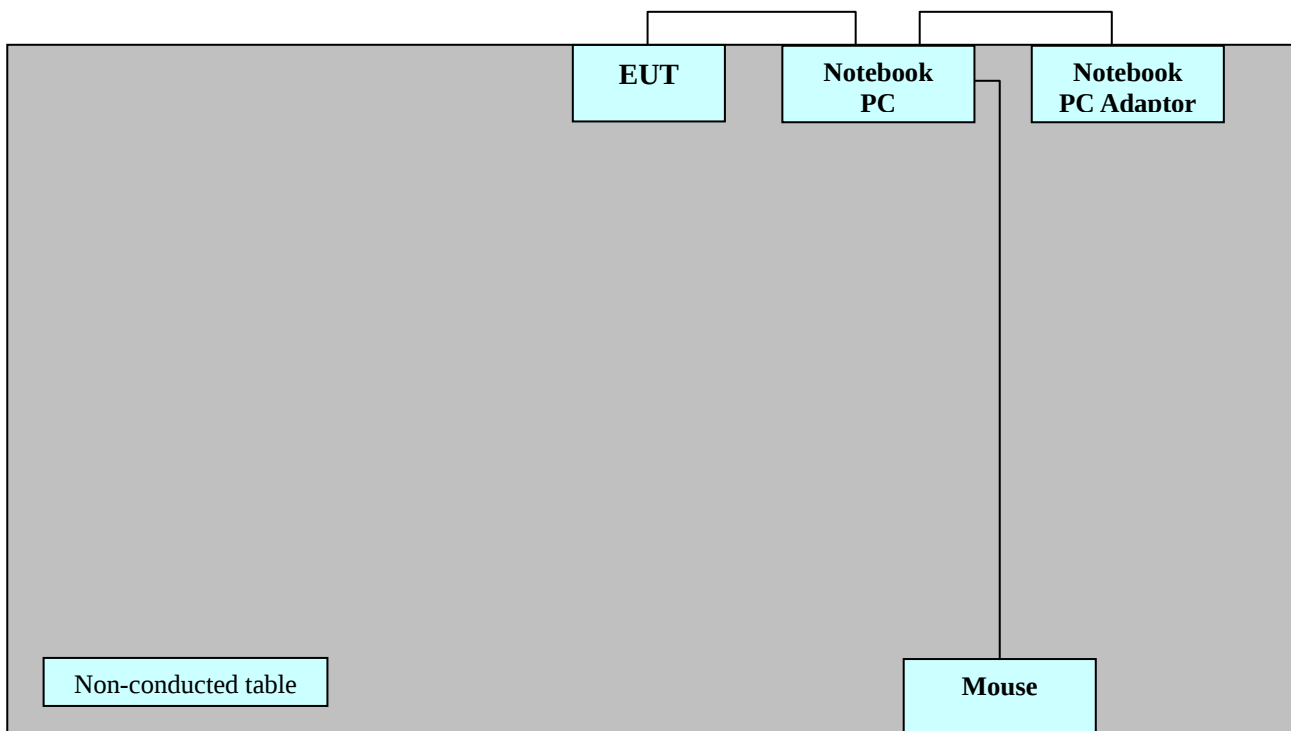
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

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.



[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(1900),WCDMA(850) Idle	○

3. 2 Radiated Emission Test

During Preliminary Test, the Following operation mode was investigated

Operation Mode	The worst operating condition
GSM(1900),WCDMA(850) Idle	○

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 15.6 dB
Operating Condition	: Idle Mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 28.0 °C
Humidity Level	: 58.5 %
Test Date	: September 23, 2008

Power Line Conducted Emissions				CISPR 22 Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuV)	Margin (dB)
0.2001	46.0	HOT	Quasi-Peak	64.0	17.6
0.2001	38.0	HOT	Average	54.0	15.6
0.2026	46.0	NEUTRAL	Quasi-Peak	64.0	17.5
0.2001	37.7	NEUTRAL	Average	54.0	15.9

***Line Conducted Emissions Tabulated Data

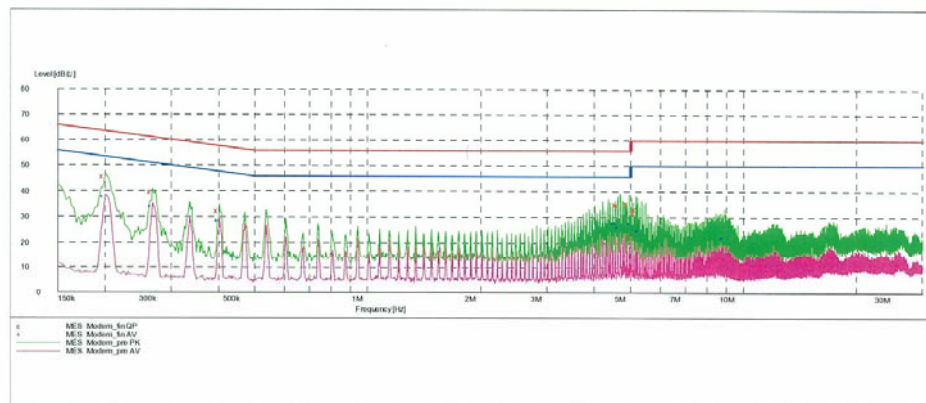
HCT

EMC TEST LAB.

EUT: L-02A
Manufacturer: LG
Operating Condition: Idle Mode
Test Site: SHIELD ROOM
Operator: YH, LEE
Test Specification: CISPR 22 CLASS B
Comment: H

SCAN TABLE: "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	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: "Modem_fin QP"

9/23/2008 11:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200100	46.00	10.0	64	17.6	---	---
0.267600	39.90	10.0	61	21.3	---	---
0.402600	32.60	10.0	58	25.2	---	---
4.628000	35.10	10.6	56	20.9	---	---
4.692000	35.00	10.6	56	21.0	---	---
4.960000	35.20	10.6	56	20.8	---	---
5.040000	23.50	10.6	60	36.5	---	---
5.168000	31.80	10.6	60	28.2	---	---
5.228000	33.30	10.7	60	26.7	---	---

9/23/2008 11:22AM HCT EMC LAB

MEASUREMENT RESULT: "Modem_fin AV"

9/23/2008 11:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200100	38.00	10.0	54	15.6	---	---
0.267600	34.30	10.0	51	16.9	---	---
0.402600	28.80	10.0	48	19.0	---	---
4.560000	27.70	10.6	46	18.3	---	---
4.628000	28.00	10.6	46	18.0	---	---
4.692000	26.30	10.6	46	19.7	---	---
5.028000	27.70	10.6	50	22.3	---	---
5.296000	24.90	10.7	50	25.1	---	---
8.920000	22.30	11.1	50	27.7	---	---

9/23/2008 11:22AM HCT EMC LAB

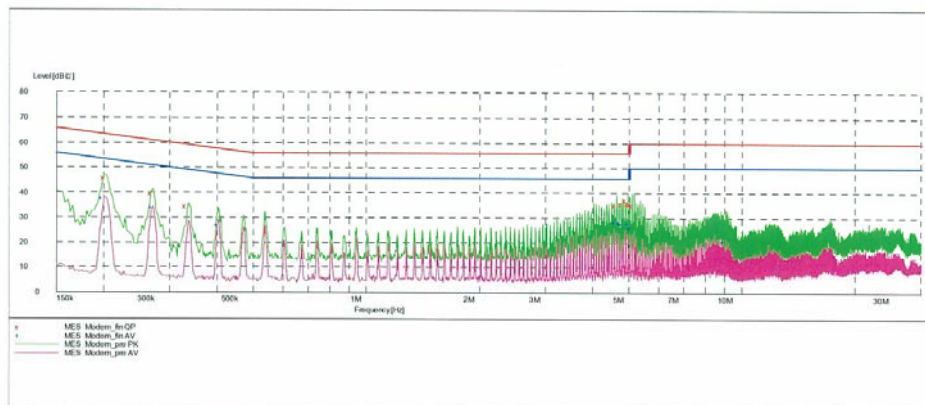
HCT

EMC TEST LAB.

EUT: L-02A
Manufacturer: LG
Operating Condition: Idle Mode
Test Site: SHIELD ROOM
Operator: YH, LEE
Test Specification: CISPR 22 CLASS B
Comment: N

SCAN TABLE: "CISPR 22 Voltage"

Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
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: "Modem_fin QP"

9/23/2008 11:14AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202600	46.00	10.0	64	17.5	---	---
0.270100	39.70	10.0	61	21.4	---	---
0.335100	34.60	10.0	59	24.7	---	---
4.628000	35.20	10.6	56	20.8	---	---
4.828000	35.70	10.6	56	20.3	---	---
4.964000	37.30	10.6	56	18.7	---	---
5.032000	36.00	10.6	60	24.0	---	---
5.100000	35.80	10.6	60	24.2	---	---
5.168000	35.10	10.6	60	24.9	---	---

9/23/2008 11:18AM HCT EMC LAB

MEASUREMENT RESULT: "Modem_fin AV"

9/23/2008 11:14AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200100	37.70	10.0	54	15.9	---	---
0.270100	33.90	10.0	51	17.2	---	---
0.405100	27.00	10.0	48	20.7	---	---
4.628000	28.40	10.6	46	17.6	---	---
4.764000	28.20	10.6	46	17.8	---	---
4.828000	27.80	10.6	46	18.2	---	---
5.032000	28.00	10.6	50	22.0	---	---
5.100000	26.10	10.6	50	23.9	---	---
9.060000	20.80	11.1	50	29.2	---	---

9/23/2008 11:18AM 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 7.0 dB
Operating Condition	: Idle Mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 28.0 °C
Humidity Level	: 58.5 %
Test Date	: September 23, 2008

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBuV	dB/m	dB	(H/V)	dBuV/m	dBuV/m	dB
146.2	15.3	12.6	2.9	V	30.8	43.5	12.7
243.4	19.7	11.0	3.7	V	34.4	46.0	11.6
301.6	16.3	12.9	4.2	V	33.4	46.0	12.6
636.3	13.5	19.6	5.9	V	39.0	46.0	7.0
481.4	15.7	16.9	5.2	H	37.8	46.0	8.2

*** 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.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$

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	ES140	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. L-02A, PCS GSM/WCDMA USB Modem.**
FCC ID: BEJL02A Complies with §15.107 and §15.109 of the FCC Rules.