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EMI CERTIFICATION REPORT

Applicant:

LG Electronics Inc.

**60-39, Gasan-dong, Gumchon-gu, Seoul
153-023, Korea**

Date of Issue: March 28, 2011

Test Report No.: HCTE1103FE01-1

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJL09C

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B Class B
Equipment Type : Cellular HSUPA Portable Wi-Fi Wireless Router
Trade Name : LG Electronics Inc
Model Name(s) : L-09C
Port / Connector(s) : USB Data 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 subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

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TEST REPORT REVISION HISTORY

Test report NO.	Date	Description
HCTE1103FE01	March 03, 2011	Issued the certification report
HCTE1103FE01-1	March 28, 2011	Version control update. Change the FCC ID. Change from "BEJL-09C" to "BEJL09C".

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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **Cellular HSUPA Portable Wi-Fi Wireless Router, Model: L-09C** manufactured by **LG Electronics Inc.** Its basic purpose is used for communications.

Model (s)	L-09C
FCC ID	BEJL09C
E.U.T Type	Cellular HSUPA Portable Wi-Fi Wireless Router
TX Frequency	826.40 MHz to 846.60 MHz (WCDMA 850)
RX Frequency	871.40 MHz to 891.60 MHz (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/ Serial Number	FCC ID / DoC	Connected To
Cellular HSUPA Portable Wi-Fi Wireless Router	LG	L-09C	BEJL09C	Notebook PC
Notebook PC	LG	X140-02 009QTAF022208	DoC	E.U.T
Notebook PC adaptor	DELTA (JIANG SU)	ADP-40PH AD EAY60725501	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible 3902B008	DoC	Notebook PC
USB cable	-	-	-	E.U.T Notebook PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
Cellular HSUPA Portable Wi-Fi Wireless Router	USB data	Y	Y	(P,D)1.2
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 HSUPA Portable Wi-Fi Wireless Router	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 10 m semi anechoic chamber used to collect the radiated data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyongki-Do, South Korea, and the conducted measurement facility used to measure the conducted data are located at San 136-1, Ami-Ri Bubal-Eup, Icheon-Si, Kyongki-Do, 467-701, South Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facilities was submitted to the Commission and accepted dated Sep. 03, 2010 (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

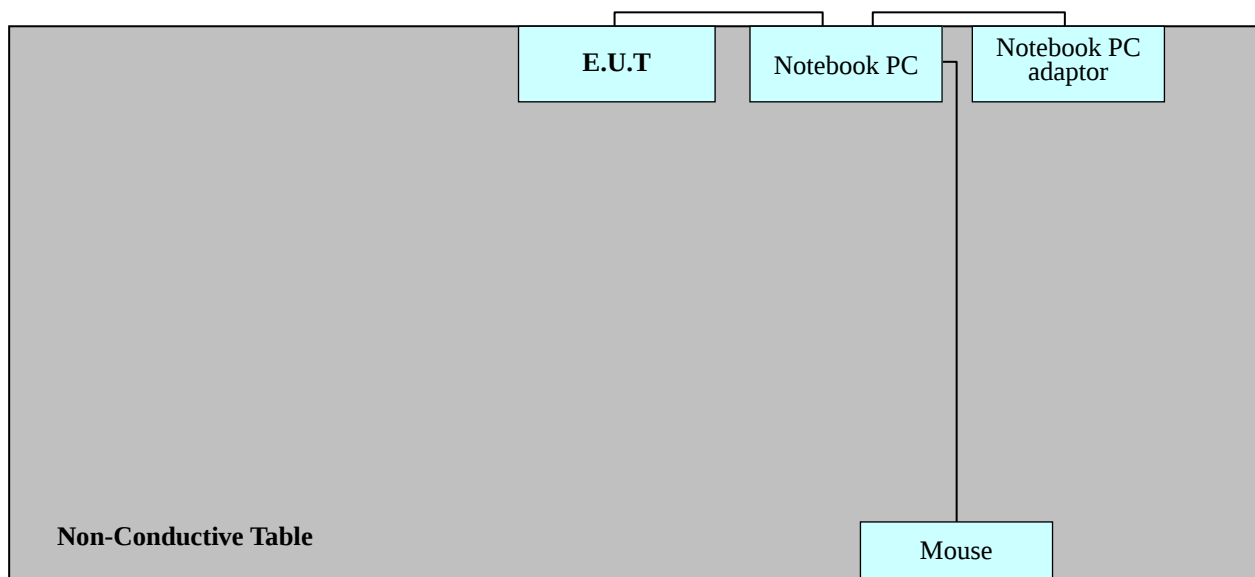
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

- Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor.
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 semi-anechoic chamber.

[Configuration of Tested System]



Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

- Test E.U.T with Data Communication mode, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	☐

3. 2 Radiated Emission Test

- Test E.U.T with Data Communication mode, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	☐

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	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 24.5 °C
Humidity level	: 4.9 %
Test date	: March 03, 2011

※ **NOTE:** Refer to page 11 to page 14 for details.

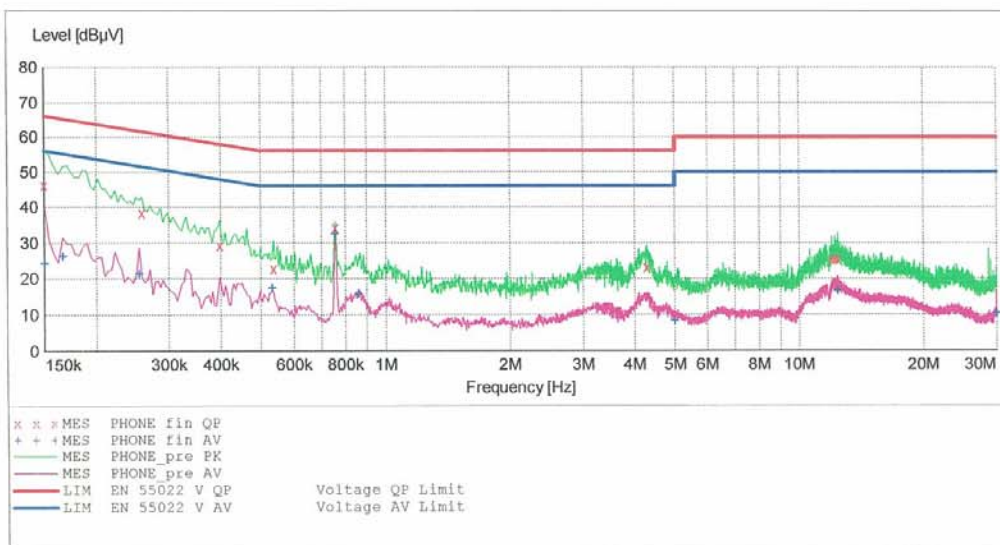
HCT

EMC

EUT: L-09C
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B
Comment: H

SCAN TABLE: "FCC PART 15 CLASS B"

Short Description:			FCC PART 15 CLASS B			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	500.0 kHz	4.0 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"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150010	46.30	10.1	66	19.7	---	---
0.258010	38.50	10.1	62	23.0	---	---
0.398010	29.30	10.1	58	28.6	---	---
0.536000	22.80	10.1	56	33.2	---	---
0.756000	34.30	10.1	56	21.7	---	---
4.276000	23.30	10.4	56	32.7	---	---
11.992000	25.40	10.9	60	34.6	---	---
12.176000	25.40	11.0	60	34.6	---	---
12.428000	25.50	11.0	60	34.5	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

3/3/2011 10:35AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150010	24.30	10.1	56	31.7	---	---
0.166010	26.20	10.1	55	28.9	---	---
0.254010	21.40	10.1	52	30.2	---	---
0.532000	17.40	10.1	46	28.6	---	---
0.756000	32.40	10.1	46	13.6	---	---
0.860000	15.80	10.2	46	30.2	---	---
5.000000	8.20	10.5	46	37.8	---	---
12.404000	16.60	11.0	50	33.4	---	---
29.984000	10.30	12.2	50	39.7	---	---

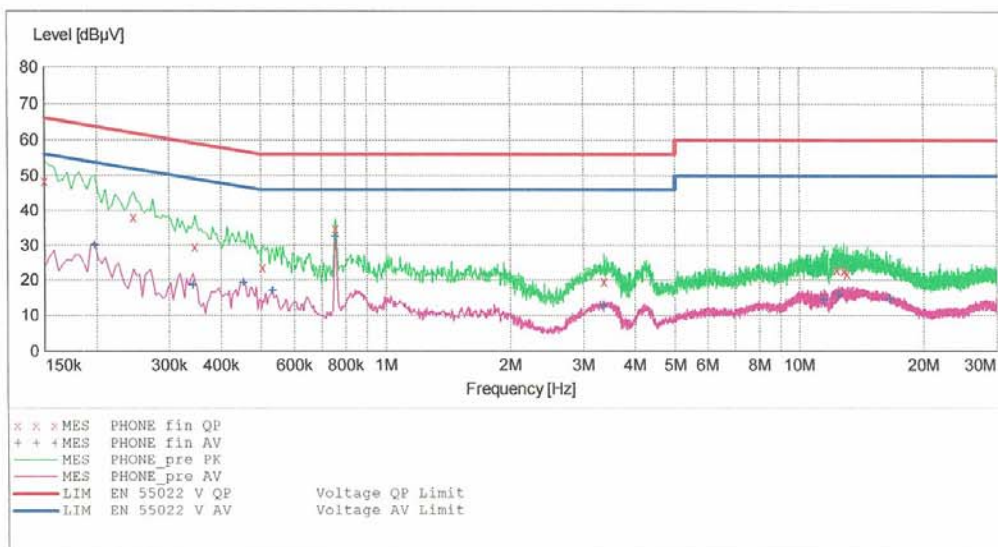
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EMC

EUT: L-09C
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B
Comment: N

SCAN TABLE: "FCC PART 15 CLASS B"

Short Description:			FCC PART 15 CLASS B			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	500.0 kHz	4.0 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"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150010	48.50	10.1	66	17.5	---	---
0.246010	38.20	10.1	62	23.7	---	---
0.346010	29.60	10.1	59	29.5	---	---
0.504000	23.80	10.1	56	32.2	---	---
0.756000	34.90	10.1	56	21.1	---	---
3.372000	19.70	10.4	56	36.3	---	---
12.276000	22.90	11.0	60	37.1	---	---
12.792000	22.60	11.0	60	37.4	---	---
13.032000	21.80	11.0	60	38.2	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

3/3/2011 10:32AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.198010	30.10	10.1	54	23.6	---	---
0.342010	18.60	10.1	49	30.6	---	---
0.454010	19.40	10.1	47	27.4	---	---
0.532000	17.00	10.1	46	29.0	---	---
0.756000	32.50	10.1	46	13.5	---	---
3.360000	12.70	10.4	46	33.3	---	---
11.480000	14.40	10.9	50	35.6	---	---
12.448000	15.80	11.0	50	34.2	---	---
16.576000	14.60	11.3	50	35.4	---	---

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 Class B
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 21.0 °C
Humidity level	: 41.5 %
Test date	: March 02, 2011

※ **NOTE:**

1. Refer to page 16 for details
2. For measurement above 1 GHz, noise level is more than 14 dB below the limit, specified in FCC Part 15.35

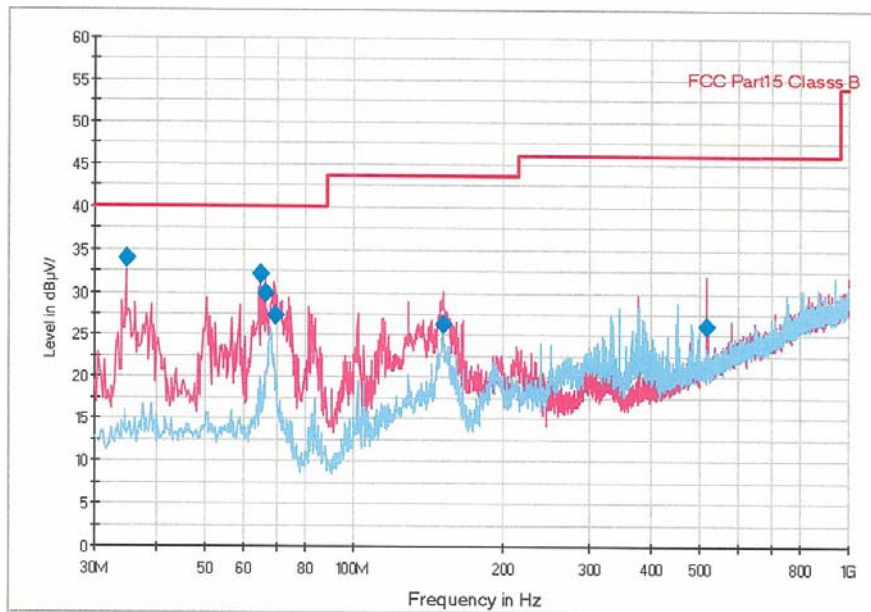
HCT Test Report

Common Information

EUT Name: L-09C
Test Description: DATA MODE
Operator Name:
Environment Conditions: PHONE + NOTEBOOK(LG)
Comment: DEBUGGING

FCC Part15 Class B

FCC Part15 Class B



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
34.636400	33.9	100.0	V	6.0	12.5	6.1	40.0	
64.816800	32.1	100.0	V	212.0	12.2	8.0	40.0	
66.272100	29.9	100.0	V	251.0	12.0	10.1	40.0	
69.153300	27.3	100.0	V	353.0	11.6	12.7	40.0	
151.270100	26.2	100.0	V	242.0	14.6	17.3	43.5	
517.473500	26.1	100.0	V	30.0	21.0	19.9	46.0	

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 dB μ V is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dB μ V/m value is mathematically converted to its corresponding level in μ V/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dB}\mu\text{V/m}$$

[Radiated Emission Limits]

Frequency of Emission (MHz)	Field Strength	
	μ V/m	dB μ V/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

<u>Type</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>Next CAL Date</u>
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Conducted Emission

☒ EMI Test Receiver	Rohde & Schwarz	ESCI	100584	2011.05.28
☒ LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
☐ LISN	Rohde & Schwarz	ENV216	3560.6550.02	2011.04.05
☒ Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.52	2011.10.25

Radiated Emission

☐ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2011.10.29
☒ EMI Test Receiver	Rohde & Schwarz	ESU26	100241	2011.09.01
☒ Trilog Antenna	Schwarzbeck	VULB9160	3301	2012.09.13
☒ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
☒ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
☒ Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
☐ RF-Amplifier	MITEQ	AMF-6D-0010 1800-35.20P.PS	-	2011.05.20
☐ Base Station	Rohde & Schwarz	CMU 200	1100000802	2012.02.16

7. CONCLUSION

The data collected shows that the **Cellular HSUPA Portable Wi-Fi Wireless Router, Model: L-09C, FCC ID: BEJL09C** complies with §15.107 and §15.109 of the FCC rules.