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EMI CERTIFICATION REPORT

Applicant:

LG Electronics MobileComm U.S.A., Inc.
10101 Old Grove Road, San Diego, CA 92131

Date of Issue: May 02, 2012

Test Report No.: HCTE1205FE02

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

ZNFL46C

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B Class B
Equipment Type : Cellular/PCS CDMA Phone with Bluetooth and WLAN
Model Name : LGL46C
Additional Model Name(s) : L46C
Port / Connector(s) : USB / Headset 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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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test is **Cellular/PCS CDMA Phone with Bluetooth and WLAN, Model: LGL46C** manufactured by **LG Electronics MobileComm U.S.A., Inc.** Its basic purpose is used for communications.

Model	LGL46C
Additional Model(s)	L46C
FCC ID	ZNFL46C
E.U.T Type	Cellular/PCS CDMA Phone with Bluetooth and WLAN
TX Frequency	824.70 MHz to 848.31 MHz (CDMA 835) 1 851.25 MHz to 1 908.75 MHz (CDMA 1 900)
RX Frequency	869.70 MHz to 893.31 MHz (CDMA 835) 1 931.25 MHz to 1 988.75 MHz (CDMA 1 900)

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 Name	FCC ID / DoC	Connected To
E.U.T	LG	LGL46C	ZNFL46C	Notebook PC
Notebook PC	LG	X140-02	DoC	E.U.T Notebook PC adaptor
Notebook PC adaptor	DELTA (JIANG SU)	ADP-40PH AD	-	Notebook PC
Mouse	PRIMAX ELECTRONICS	MOARUO	DoC	Notebook PC
SD card	SanDisk	8GB	-	E.U.T
USB cable	-	-	-	E.U.T Notebook PC
Headset	-	-	-	E.U.T
Router	MMCTECH	MW-2100R	-	Notebook PC
Router adaptor	Dee Van Electronics(Shenz hen)Co., Ltd.	DSA-0101F-05K A1	-	Router
RJ45 cable	-	-	-	Router Notebook PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
E.U.T	Micro USB	Y	Y	(P,D)1.2
	Headset jack	-	N	(D)1.1
Notebook PC	RJ 45	-	N	(D)1.5
	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
E.U.T	Micro USB	N	N/A	Y	Both End
	Headset jack	N	N/A	Y	E.U.T End
Notebook PC	RJ 45	N	N/A	N	Both End
	USB (Mouse)	-	-	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 3 m semi anechoic chamber used to collect the test data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, Republic of Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4.

Detailed description of test facilities was submitted to the Commission and accepted dated Mar 02, 2011 (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

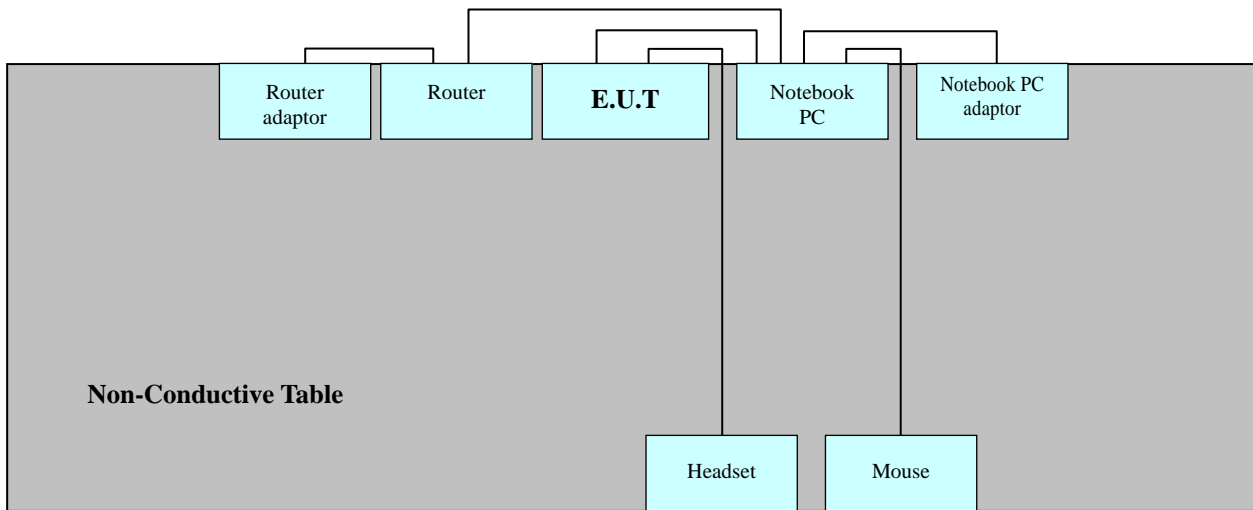
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor and Base Station. 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

- It was tested Data Communication mode, after connecting all peripheral devices.

Operation Mode: Datacommunication mode

3. 2 Radiated Emission Test

- It was tested Data Communication mode, after connecting all peripheral devices.

Operation Mode: Datacommunication 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	: FCC PART 15 Subpart B Class B
Frequency Range (Test Limit)	: 0.15 MHz to 0.5 MHz Quasi-Peak(66dB μ V) Average (56 dB μ V) : 0.5 MHz to 5 MHz Quasi-Peak(56dB μ V) Average (46 dB μ V) : 5 MHz to 30 MHz Quasi-Peak(60dB μ V) Average (50 dB μ V)
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Operation Mode	: Datacommunication mode
Temperature	: 23.7 °C
Humidity Level	: 44.2 %
Test Date	: April 27, 2012

※ **NOTE:** Refer to page 10 to page 13 for details.

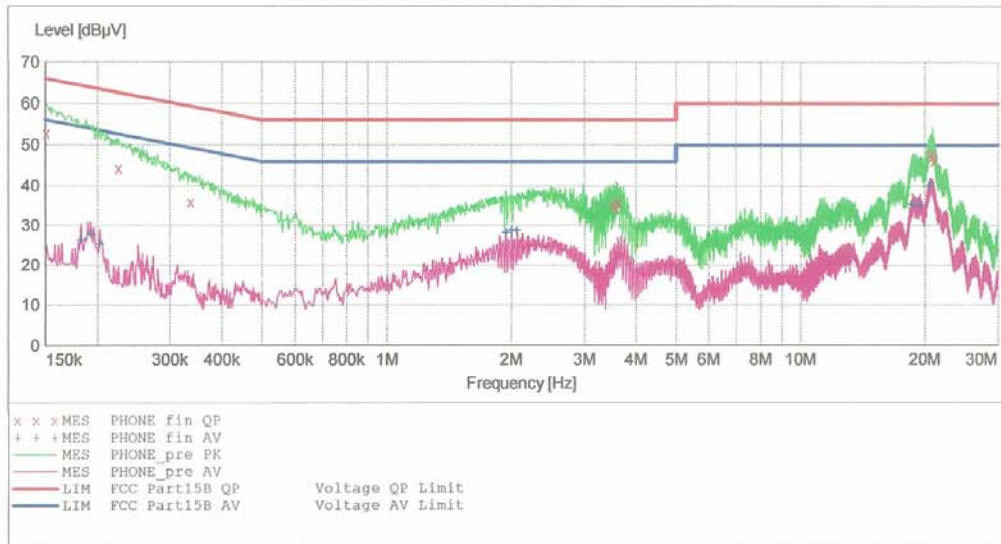
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EUT: L46C
 Manufacturer: LG
 Operating Condition: DATA MODE
 Test Site: SHIELD ROOM
 Operator: JH-CHOI
 Test Specification: FCC PART15 CLASS B
 Comment: H

SCAN TABLE: "FCC PART 15 B(H)"

Short Description:			FCC PART 15 CLASS B			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	1.0 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
0.151010	52.80	10.0	66	13.2	---	---
0.225010	44.30	10.1	63	18.4	---	---
0.336010	35.90	10.1	59	23.4	---	---
3.528000	35.40	10.3	56	20.6	---	---
3.592000	34.20	10.3	56	21.8	---	---
3.620000	35.90	10.3	56	20.1	---	---
20.648000	47.80	11.6	60	12.2	---	---
20.860000	47.40	11.6	60	12.6	---	---
20.988000	46.30	11.6	60	13.7	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.183010	26.20	10.1	54	28.1	---	---
0.193010	27.70	10.1	54	26.2	---	---
0.203010	25.30	10.1	54	28.2	---	---
1.944000	28.10	10.2	46	17.9	---	---
2.008000	28.80	10.2	46	17.2	---	---
2.068000	28.70	10.2	46	17.3	---	---
18.672000	35.20	11.4	50	14.8	---	---
19.476000	35.00	11.5	50	15.0	---	---
20.572000	40.00	11.6	50	10.0	---	---

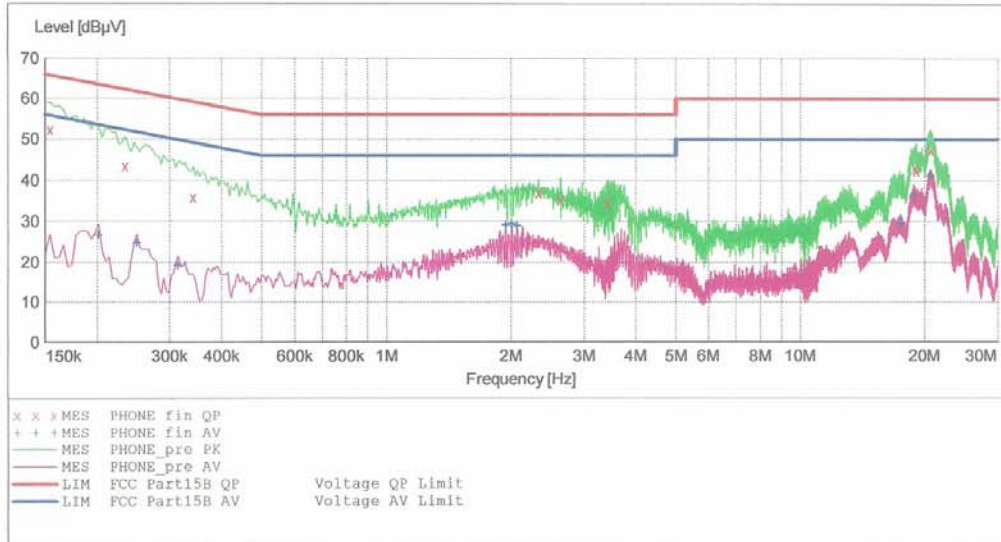
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EMC

EUT: L46C
 Manufacturer: LG
 Operating Condition: DATA MODE
 Test Site: SHIELD ROOM
 Operator: JH-CHOI
 Test Specification: FCC PART15 CLASS B
 Comment: N

SCAN TABLE: "FCC PART 15 B(N)"

Short Description:			FCC PART 15 CLASS B			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
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
0.154010	52.40	10.0	66	13.4	---	---
0.234010	43.50	10.1	62	18.8	---	---
0.342010	36.00	10.1	59	23.1	---	---
2.332000	37.00	10.2	56	19.0	---	---
2.636000	35.30	10.2	56	20.7	---	---
3.412000	34.50	10.3	56	21.5	---	---
18.944000	42.90	11.3	60	17.1	---	---
19.088000	42.30	11.3	60	17.7	---	---
20.696000	47.40	11.4	60	12.6	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

4/27/2012 3:47PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200010	26.70	10.1	54	27.2	----	----
0.250010	24.70	10.1	52	27.1	----	----
0.314010	19.30	10.0	50	30.6	----	----
1.944000	29.20	10.2	46	16.8	----	----
2.008000	29.40	10.2	46	16.6	----	----
2.072000	28.90	10.2	46	17.1	----	----
17.532000	29.60	11.2	50	20.4	----	----
18.828000	36.20	11.3	50	13.8	----	----
20.696000	41.00	11.4	50	9.0	----	----

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

-For measurement below 1 GHz

Detector : Quasi-Peak (6 dB Bandwidth: 120 kHz)

Operation Mode : Datacommunication mode

-For measurement above 1 GHz

Detector : Peak mode: Peak (RBW: 1 MHz / VBW: 1 MHz)

: Average mode: Peak (RBW: 1 MHz / VBW: 10 Hz)

Operation Mode : Datacommunication mode

Temperature : 22.7 °C

Humidity Level : 46.5 %

Test Date : April 27, 2012

Frequency (MHz)	Reading (dBuV)	Polarity (H/V)	Antenna Height (m)	Correction Factor		Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
				Antenna (dB/m)	Cable (dB)			
59.100	14.35	V	1.0	11.95	3.60	40.0	29.9	10.1
64.900	15.86	V	1.2	11.19	3.65	40.0	30.7	9.3
125.000	19.41	V	1.0	12.10	4.00	43.5	35.5	8.0
250.001	20.43	H	1.7	11.77	4.50	46.0	36.7	9.3
377.900	14.06	H	1.0	15.13	4.91	46.0	34.1	11.9
500.400	11.60	H	1.2	17.70	5.30	46.0	34.6	11.4

※ NOTE:

1. Measurement above 1 GHz was performed from 1 GHz to the 5th harmonic of highest fundamental frequency.
2. For measurement above 1 GHz, Emission noise was not founded over the ambient noise.

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>
<u>Conducted Emission</u>				
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESCI	100584	2012.05.03
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ESH3-Z5	100282	2013.02.03
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ENV216	100073	2013.02.09
<input checked="" type="checkbox"/> Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.352	2012.08.01
<u>Radiated Emission</u>				
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2012.05.26
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU26	100241	2012.08.02
<input type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB9160	3125	2013.05.03
<input checked="" type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB9160	3301	2012.09.13
<input type="checkbox"/> Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
<input type="checkbox"/> Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
<input checked="" type="checkbox"/> Antenna master	HD GmbH	MA240	240/520	-
<input type="checkbox"/> Antenna master controller	HD GmbH	HD100	100/637BJ:00	-
<input checked="" type="checkbox"/> Turn Table	HD GmbH	2090	9702/1224	-
<input checked="" type="checkbox"/> Power Amplifier	Rohde & Schwarz	SCU-18	10094	2012.09.19
<input type="checkbox"/> Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	937	2013.10.17

7. CONCLUSION

The data collected shows that the **Cellular/PCS CDMA Phone with Bluetooth and WLAN, Model: LGL46C, FCC ID: ZNFL46C** complies with §15.107 and §15.109 of the FCC rules.