



HCT CO., LTD.

CERTIFICATION DIVISION
105-1, JANGAM-RI, MAJANG-MYEON, ICHEON-SI, KYOUNGKI-DO, REPUBLIC OF KOREA
TEL: +82 31 645 6300 FAX: +82 31 645 6401

EMI CERTIFICATION REPORT

Applicant:

LG Electronics MobileComm U.S.A., Inc.

10101 Old Grove Road, San Diego, CA 92131

Date of Issue: November 07, 2011

Test Report No.: HCTE1111FE08

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

ZNFIS11LG

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B Class B
Equipment Type : Cellular CDMA Phone with Bluetooth and WLAN
Model Name : IS11LG
Port / Connector(s) : USB Data Port / Headset Port / HDMI 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

Report prepared by
: Jeong Hyeon Choi
Test Engineer of EMC Team

Approved by
: Sang Jun Lee
Manager of EMC Team

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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **Cellular CDMA Phone with Bluetooth and WLAN, Model: IS11LG** manufactured by **LG Electronics MobileComm U.S.A., Inc.** Its basic purpose is used for communications.

Model	IS11LG
FCC ID	ZNFIS11LG
E.U.T Type	Cellular CDMA Phone with Bluetooth and WLAN
TX Frequency	824.70 MHz to 848.31 MHz (CDMA 835)
RX Frequency	869.70 MHz to 893.31 MHz (CDMA 835)

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
Cellular CDMA Phone with Bluetooth and WLAN	LG	IS11LG	ZNFIS11LG	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	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
USB cable	-	-	-	E.U.T Notebook PC
Headset	-	-	-	E.U.T
Micro SD card (2 GB)	SanDisk	-	-	E.U.T
TV monitor	LG	W2261VT	-	E.U.T
HDMI cable	-	-	-	E.U.T TV monitor

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
Cellular CDMA Phone with Bluetooth and WLAN	Micro USB	Y	Y	(P,D)1.2
	Headset jack	-	N	(D)1.2
	USB data	Y	Y	(P,D)1.2
	HDMI	-	Y	(D)1.8
TV Monitor	HDMI	-	Y	(D)1.8
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 CDMA Phone with Bluetooth and WLAN	Micro USB	N	-	Y	Both End
	Headset jack	N	-	Y	E.U.T End
	USB data	N	-	Y	Both End
	HDMI	N	-	Y	Both End
TV Monitor	HDMI	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 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 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

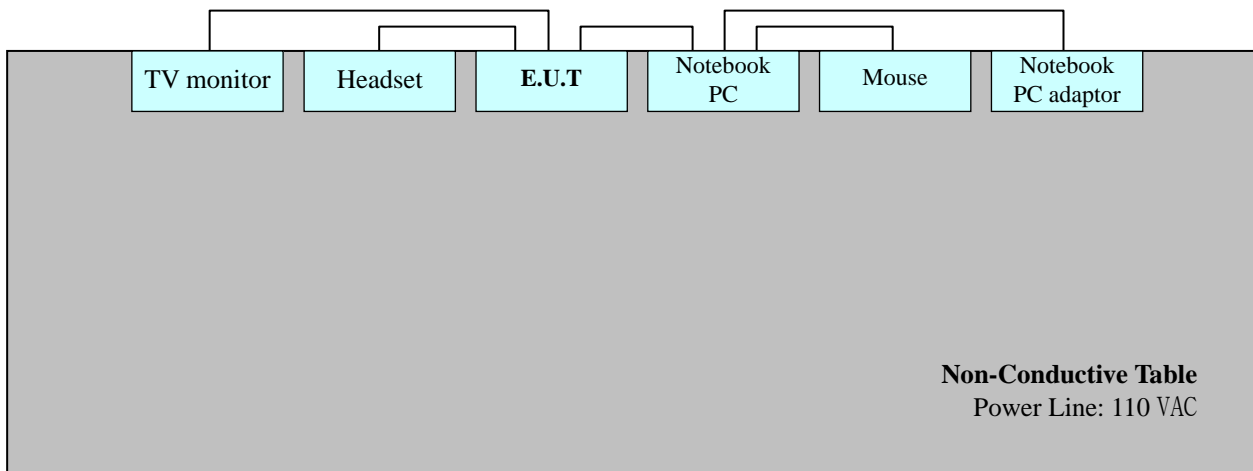
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor 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 10 m semi-anechoic chamber.

[Configuration of Tested System]



3. PRELIMINARY TEST

3.1 Conducted Emission Test

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

Operation Mode: Data Communication mode

3.2 Radiated Emission Test

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

Operation Mode: Data Communication 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
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Operation Mode	: Data Communication mode
Temperature	: 23.3 °C
Humidity Level	: 50.4 %
Test Date	: November 04, 2011

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

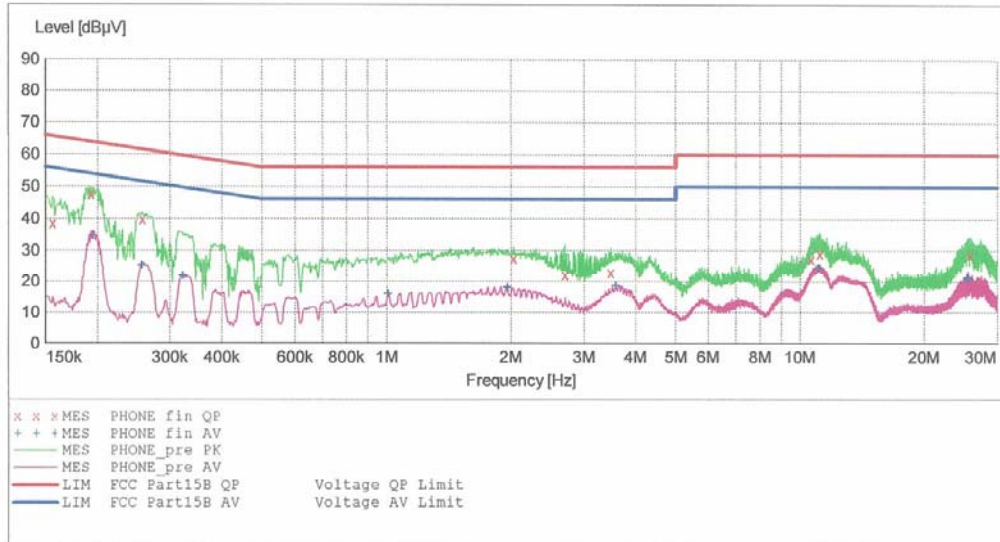
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EUT: IS11LG
 Manufacturer: LG
 Operating Condition: DATA MODE
 Test Site: SHIELD ROOM
 Operator: JH CHOI
 Test Specification: FCC PART15 CLASS B
 Comment: H

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

Short Description:			FCC PART 15 CLASS B			
Start Frequency	Stop Frequency	Step Width	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
0.156010	38.50	10.1	66	27.2	---	---
0.193010	47.40	10.1	64	16.6	---	---
0.257010	39.80	10.1	62	21.8	---	---
2.032000	27.40	10.2	56	28.6	---	---
2.708000	22.10	10.2	56	33.9	---	---
3.496000	23.00	10.3	56	33.0	---	---
10.640000	27.30	11.0	60	32.7	---	---
11.188000	29.20	11.0	60	30.8	---	---
25.792000	28.80	12.1	60	31.2	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.195010	34.60	10.1	54	19.2	---	---
0.256010	25.20	10.1	52	26.3	---	---
0.322010	21.70	10.1	50	28.0	---	---
1.008000	16.00	10.1	46	30.0	---	---
1.960000	18.00	10.2	46	28.0	---	---
3.588000	18.50	10.4	46	27.5	---	---
11.124000	24.40	11.0	50	25.6	---	---
25.360000	21.20	12.1	50	28.8	---	---
25.496000	20.80	12.1	50	29.2	---	---

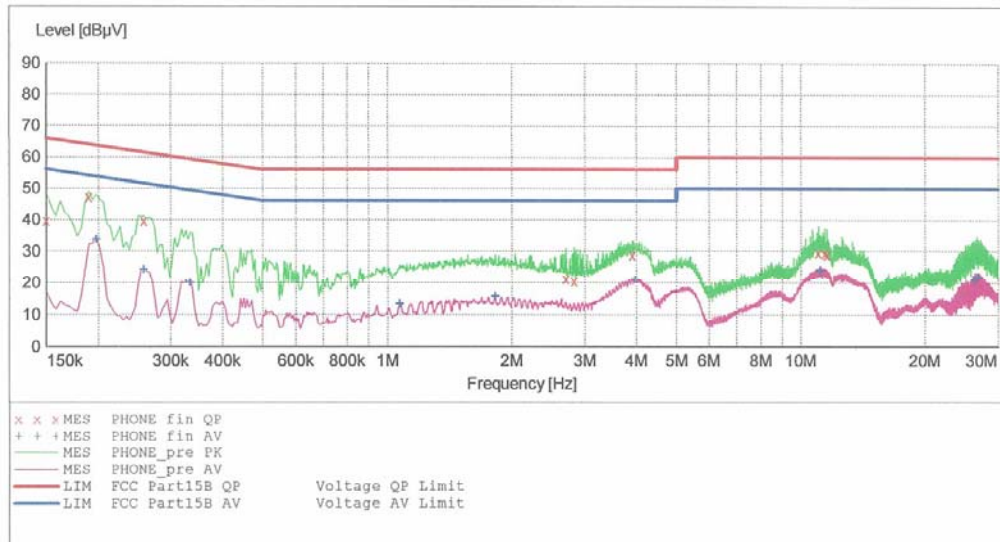
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EMC

EUT: IS11LG
 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)"

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
500.0 kHz	5.0 MHz	4.0 kHz	Average	10.0 ms	9 kHz	None
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	39.70	10.3	66	26.3	---	---
0.190010	47.20	10.3	64	16.9	---	---
0.258010	39.60	10.3	62	21.9	---	---
2.708000	21.40	10.5	56	34.6	---	---
2.836000	20.40	10.5	56	35.6	---	---
3.924000	28.70	10.6	56	27.3	---	---
11.036000	29.60	11.1	60	30.4	---	---
11.440000	29.40	11.1	60	30.6	---	---
11.580000	29.00	11.1	60	31.0	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

11/04/2011 11:07AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.198010	33.80	10.3	54	19.9	---	---
0.258010	24.30	10.3	52	27.2	---	---
0.334010	20.00	10.3	49	29.4	---	---
1.072000	13.30	10.4	46	32.7	---	---
1.824000	15.60	10.4	46	30.4	---	---
3.980000	21.00	10.6	46	25.0	---	---
11.168000	23.70	11.1	50	26.3	---	---
26.392000	21.00	11.8	50	29.0	---	---
26.828000	21.70	11.8	50	28.3	---	---

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 : Data Communication mode
-For measurement above 1 GHz
 Setting : Peak mode: Detector- Peak(RBW: 1 MHz / VBW: 1 MHz)
 : Average mode: Detector- Peak (RBW: 1 MHz / VBW: 10 Hz)
 Temperature : 24.3 °C
 Humidity Level : 48.1 %
 Test Date : November 04, 2011

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)			
49.30	11.4	V	1.0	12.0	1.2	40.0	24.6	15.4
138.40	13.6	V	1.0	12.5	2.0	43.5	28.1	15.4
191.90	17.7	V	1.0	10.2	2.4	43.5	30.3	13.2
288.00	21.7	V	1.0	13.0	3.0	46.0	37.7	8.3
376.50	8.1	V	1.3	15.1	3.4	46.0	26.7	19.3
752.80	6.2	H	1.5	22.0	5.0	46.0	33.1	12.9

※ NOTE:

1. Measurement above 1 GHz was performed from 1 GHz to the 5th harmonic of highest fundamental frequency. The highest fundamental frequency is CDMA 835 center 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 type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2012.05.26
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESCI	100584	2012.05.03
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ENV216	100073	2012.04.01
<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	ESU26	100241	2012.08.02
<input checked="" type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB9160	3125	2013.05.03
<input checked="" type="checkbox"/> Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
<input checked="" type="checkbox"/> Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
<input type="checkbox"/> Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	147	2012.04.13
<input checked="" type="checkbox"/> Power Amplifier	Rohde & Schwarz	SCU-18	10094	2012.09.19
<input type="checkbox"/> Power Amplifier	Rohde & Schwarz	CBL01188035-01	16074B	2012.04.28
<input type="checkbox"/> Base Station	Rohde & Schwarz	CMU 200	1100000802	2012.02.16

7. CONCLUSION

The data collected shows that the **Cellular CDMA Phone with Bluetooth and WLAN, Model: IS11LG, FCC ID: ZNFIS11LG** complies with §15.107 and §15.109 of the FCC rules.