



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.
1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue: August 10, 2012
Test Report No.: HCTE1208FE10
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID:

ZNFP769

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B Class B
Equipment Type : Cellular/PCS GSM/GPRS/EDGE and Cellular/PCS/AWS WCDMA/
HSPA Phone with Bluetooth and WLAN
Model Name : LG-P769
Additional Model Name : P769, LGP769
Port / Connector(s) : USB Port / 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

Report prepared by
: Jin Pyo Hong
Test Engineer of EMC Team

Approved by
: Sang Jun Lee
Manager of EMC Team

DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCTE1208FE10	August 10, 2012	Initial Release

TABLE OF CONTENTS

	PAGE
1. GENERAL INFORMATION	4
1.1 Product Description.....	4
1.2 Related Submittal(s) / Grant(s).....	4
1.3 Tested System Details.....	5
1.4 Cable Description	6
1.5 Noise Suppression Parts on Cable. (I/O cable)	6
1.6 Test Methodology	7
1.7 Test Facility	7
1.8 Frequency Range of Radiated Measurements	7
2. SYSTEM TEST CONFIGURATION.....	8
2.1 Configuration of Test System	8
3. PRELIMINARY TEST	9
3.1 Conducted Emission Test	9
3. 2 Radiated Emission Test	9
4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY	10
4.1 Conducted Emission Test	10
4.2 Radiated Emission Test	11
5. FIELD STRENGTH CALCULATION	17
6. TEST EQUIPMENT	18
7. CONCLUSION	19

ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test is **Cellular/PCS GSM/GPRS/EDGE and Cellular/PCS/AWS WCDMA/HSPA Phone with Bluetooth and WLAN, Model: LG-P769** manufactured by **LG Electronics MobileComm U.S.A., Inc.** Its basic purpose is used for communications.

Model	LG-P769
Additional Model Name	P769, LGP769
FCC ID	ZNFP769
E.U.T Type	Cellular/PCS GSM/GPRS/EDGE and Cellular/PCS /AWS WCDMA/HSPA Phone with Bluetooth and WLAN
TX Frequency	824.20 MHz to 848.80 MHz (GSM 850) 1 850.20 MHz to 1 909.80 MHz (GSM 1 900) 826.40 MHz to 846.60 MHz (WCDMA 850) 1 852.4 MHz to 1 907.6 MHz (WCDMA 1 900)
RX Frequency	869.20 MHz to 893.80 MHz (GSM 850) 1 930.20 MHz to 1 989.80 MHz (GSM 1 900) 871.40 MHz to 891.60 MHz (WCDMA 850) 1 932.4 MHz to 1 987.6 MHz (WCDMA 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	LG-P769	ZNFP769	Notebook PC
Notebook PC	H.P	ProBook 6560b	DoC	E.U.T Notebook PC adaptor
Notebook PC adaptor	CHICONY POWER TECHNOLOGY	Series PPP012H-S	-	Notebook PC
Mouse	PRIMAX ELECTRONICS	MOARUO	DoC	Notebook PC
SD Card	SanDisk	8GB	-	E.U.T
USB cable	BD	EAD61648501	-	E.U.T Notebook PC
Headset	CRESYN	EAB62410801	-	E.U.T
Mouse	Radio shack	Series 2-button mouse	FSUGMZE3	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)1.2
Notebook PC	USB (Mouse)	-	Y	(D)1.8
	Serial (Mouse)	-	N	(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	USB (Mouse)	-	-	Y	Notebook PC End
	Serial (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

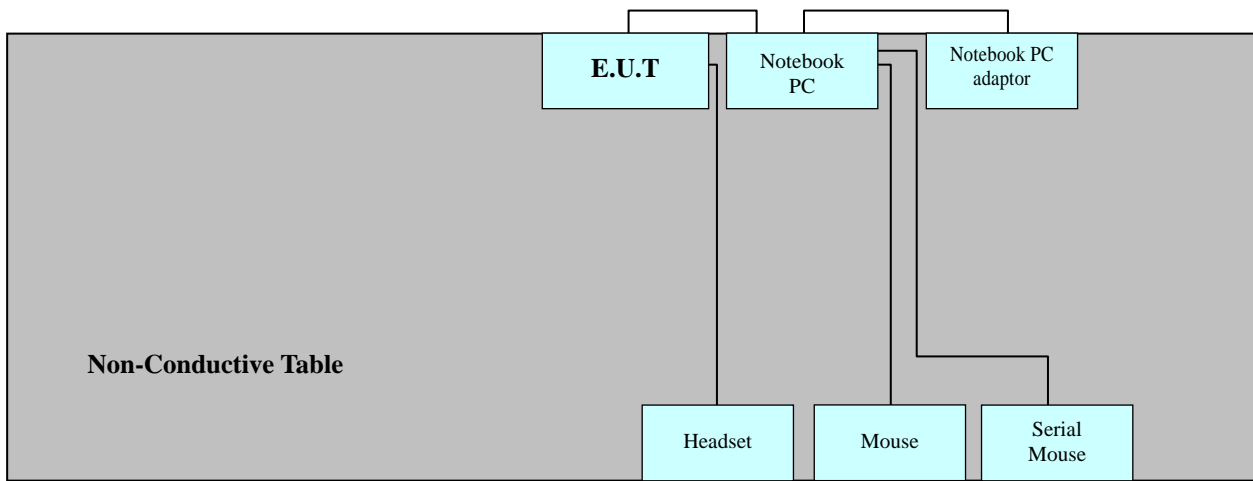
2. SYSTEM TEST CONFIGURATION

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: 120 VAC

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	: 26.5 °C
Humidity Level	: 46.6 %
Test Date	: August 10, 2012

Frequency (MHz)	Transd (dB)	Conductor	Quasi-Peak			Average		
			Limit	Measurement Level	Result Level	Limit	Measurement Level	Result Level
			(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV)
0.216	9.8	H	63	29.0	38.8	53	-	-
0.644	9.8	H	56	22.0	31.8	46	12.20	22.00
0.190	9.9	N	64	25.5	35.4	54	11.20	21.10
0.210	9.9	N	63	25.4	35.3	53	8.90	18.80
24.144	12.3	N	60	21.4	33.7	50	-	-
24.948	12.0	H	60	24.2	36.2	50	-	-

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

1. Line H = Hot, Line N = Neutral
2. Transd = LISN factor + Cable Loss factor

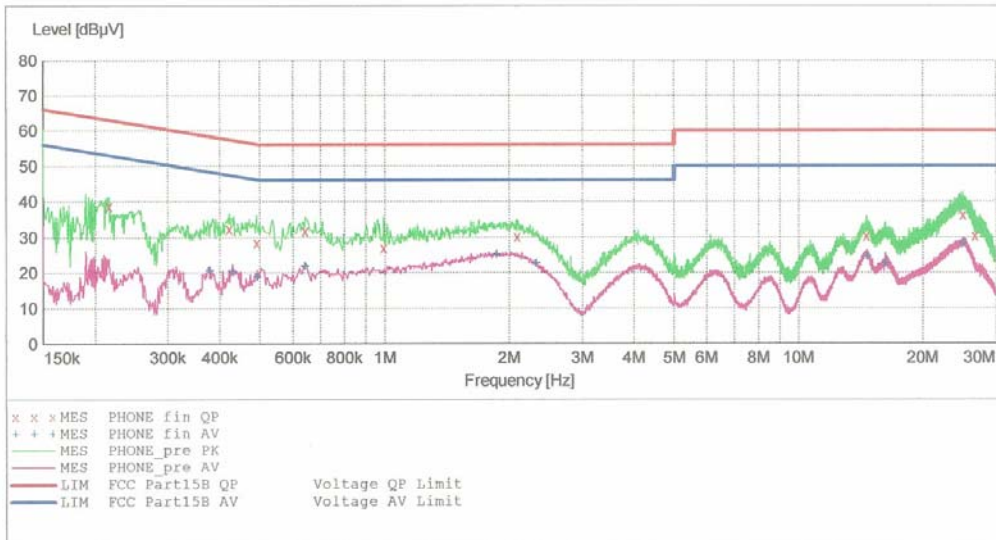
HCT

EMC

EUT: P769
 Manufacturer: LG
 Operating Condition: DATA MODE
 Test Site: SHIELD ROOM
 Operator: JP HONG
 Test Specification: FCC PART 15 B
 Comment: H

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

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"

8/7/2012 11:28AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.216010	38.80	9.7	63	24.2	---	---
0.421010	32.40	9.8	57	25.0	---	---
0.491010	28.50	9.8	56	27.6	---	---
0.644000	31.80	9.8	56	24.2	---	---
0.996000	27.10	9.8	56	28.9	---	---
2.092000	30.20	9.9	56	25.8	---	---
14.588000	30.40	10.9	60	29.6	---	---
24.948000	36.20	12.0	60	23.8	---	---
26.668000	30.40	12.1	60	29.6	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

8/7/2012 11:28AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.379010	20.60	9.8	48	27.7	---	---
0.430010	20.30	9.8	47	27.0	---	---
0.493010	19.00	9.8	46	27.2	---	---
0.644000	22.00	9.8	46	24.0	---	---
1.868000	25.20	9.9	46	20.8	---	---
2.328000	22.60	10.0	46	23.4	---	---
14.672000	24.60	10.9	50	25.4	---	---
16.216000	22.60	11.2	50	27.4	---	---
25.048000	28.20	12.0	50	21.8	---	---

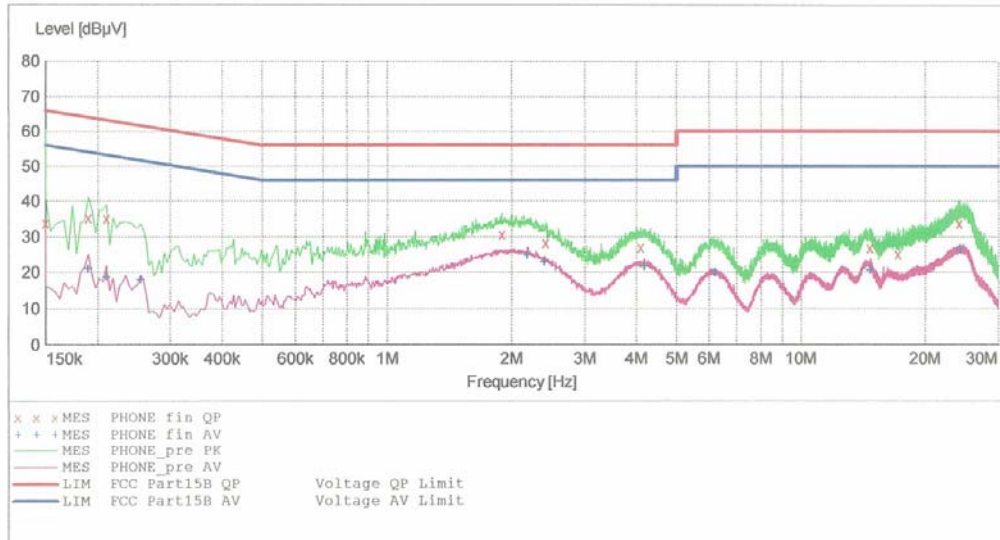
HCT

EMC

EUT: P769
 Manufacturer: LG
 Operating Condition: DATA MODE
 Test Site: SHIELD ROOM
 Operator: JP HONG
 Test Specification: FCC PART 15 CLASS B
 Comment: N

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

Short Description:			FCC PART 15 CLASS B			
Start	Stop	Step	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"

8/7/2012 11:34AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150010	33.90	10.0	66	32.1	---	---
0.190010	35.40	9.9	64	28.6	---	---
0.210010	35.30	9.9	63	27.9	---	---
1.896000	30.70	10.1	56	25.3	---	---
2.420000	28.40	10.2	56	27.6	---	---
4.108000	27.10	10.3	56	28.9	---	---
14.684000	26.90	11.2	60	33.1	---	---
17.124000	25.20	11.6	60	34.8	---	---
24.144000	33.70	12.3	60	26.3	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

8/7/2012 11:34AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.190010	21.10	9.9	54	33.0	---	---
0.210010	18.80	9.9	53	34.4	---	---
0.254010	18.00	10.0	52	33.6	---	---
2.184000	24.80	10.1	46	21.2	---	---
2.404000	22.90	10.2	46	23.1	---	---
4.192000	21.70	10.3	46	24.3	---	---
6.208000	20.00	10.4	50	30.0	---	---
14.716000	20.60	11.2	50	29.4	---	---
24.296000	26.30	12.3	50	23.7	---	---

4.2 Radiated Emission Test

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

-For measurement below 1 GHz

Limit Apply to : FCC PART 15 Subpart B Class B

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

Operation Mode : Data communication mode

Temperature : 26.3 °C

Humidity Level : 53.8 %

Test Date : August 10, 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)			
44.000	10.99	V	1.0	12.31	3.50	40.0	26.8	13.2
64.900	14.66	V	1.2	11.19	3.65	40.0	29.5	10.5
99.900	17.00	H	1.0	9.30	3.80	43.5	30.1	13.4
119.400	19.22	V	1.2	11.78	3.99	43.5	35.0	8.5
133.000	16.53	V	1.5	12.47	4.00	43.5	33.0	10.5
234.100	15.09	V	1.0	11.18	4.44	46.0	30.7	15.3

-For measurement above 1 GHz

Limit Apply to : FCC PART 15 Subpart B Class B

Detector : Peak mode: Peak (RBW: 1)
 : Average mode: Peak (RBW: 1)

Temperature : 26.3 °C

Humidity Level : 53.8 %

Test Date : August 10, 2012

Frequency (GHz)	Peak			POL	Average		
	Total (dB/m)	Limit (dB/m)	Margin (dB)		Total (dB/m)	Limit (dB/m)	Margin (dB)
1.5900	50.10	74	23.9	V	26.00	54	28.0
1.9900	45.70	74	28.3	V	24.80	54	29.2
1.9900	49.30	74	24.7	H	25.60	54	28.4
2.4500	50.20	74	23.8	H	27.30	54	26.7

※ NOTE:

1. Measurement above 1 GHz was performed from 1 GHz to the 5th harmonic of highest fundamental frequency. Test was measured by 12 GHz.

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 Name</u>	<u>Serial Number</u>	<u>Calibration Cycle</u>	<u>Next CAL Date</u>
<u>Conducted Emission</u>					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESCI	100584	1 year	2013.05.02
<input type="checkbox"/> LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	2013.07.04
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ENV216	100073	1 year	2013.02.09
<input type="checkbox"/> LISN	EMCO	3816/2SH	9706-1070	1 year	2013.05.02
<input type="checkbox"/> Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.352	1 year	2013.07.31
<u>Radiated Emission</u>					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	2013.05.03
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU26	100241	1 year	2013.07.30
<input checked="" type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB9160	3301	2 year	2012.09.13
<input type="checkbox"/> Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
<input checked="" type="checkbox"/> Antenna master	HD GmbH	MA240	240/520	N/A	-
<input checked="" type="checkbox"/> Turn Table	HD GmbH	2090	9702/1224	N/A	-
<input checked="" type="checkbox"/> Power Amplifier	Rohde & Schwarz	SCU-18	10094	1 year	2012.09.19
<input type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	937	2 year	2013.10.17
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	2014.02.20

7. CONCLUSION

The data collected shows that the **Cellular/PCS GSM/GPRS/EDGE and Cellular/PCS/AWS WCDMA/HSPA Phone with Bluetooth and WLAN, Model: LG-P769, FCC ID: ZNFP769** complies with §15.107 and §15.109 of the FCC rules.