HCT CO., LTD.

CERTIFICATION DIVISION
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EMI CERTIFICATION REPORT

Applicant:

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

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue: December 26, 2013
Test Report No.: HCTE1312FE30

Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **ZNFLG305C**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: Cellular/PCS CDMA Phone with BT & WLAN
Model Name	: LG305C
Additional Model Name	: LG-305C, 305C
Port / Connector(s)	: USB / Earphone Port
Date of Test	: December 24, 2013 - December 26, 2013

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
: Gu-Cheol Yoon
Test Engineer of EMC Team

Approved by
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DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCTE1312FE30	December 26, 2013	Initial Release

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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test is manufactured by **LG Electronics MobileComm U.S.A., Inc.**
Its basic purpose is used for communications.

Model Name	LG305C
Additional Model	LG-305C, 305C
FCC ID	ZNFLG305C
EUT Type	Cellular/PCS CDMA Phone with BT & WLAN
TX Frequency	824.70 ㎒ to 848.31 ㎒ (CDMA 850) 1 851.25 ㎒ to 1 908.75 ㎒ (CDMA 1 900)
RX Frequency	869.70 ㎒ to 893.31 ㎒ (CDMA 850) 1 931.25 ㎒ to 1 988.75 ㎒ (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	Model Name	Manufacturer	FCC ID / DoC	Connected To
EUT	LG305C	LG	ZNFLG305C	Notebook PC Ear-phone
USB cable※	EAD62377902	Ningbo Broad	-	E.U.T Notebook PC
USB cable	EAD62377903	KSD	-	E.U.T Notebook PC
Ear-phone	SGEY0003219	CRESYN	-	E.U.T
Notebook PC	ProBook6560b	H.P	DoC	EUT Notebook PC adaptor
Notebook PC adaptor	PPP009D	DELTA Electronics (JIANGSU)LTD	-	Notebook PC
Gateway	MV440	Axesstel	PH7MV440	Notebook PC, Adaptor
Serial Mouse	Serial 2 button mouse	Radio shack	FSUGMZE3	Notebook PC
Adaptor	DA-60M12	Yang Ming Industrial	-	Gateway
RJ45 cable	-	-	-	Notebook PC, Gateway
Micro SD card	8 GB	SanDisk	-	EUT

※Note: The worst-case emissions are reported.

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
EUT	Micro USB	Y	Y	(P,D)1.0
	Ear-phone	N/A	Y	(D)1.2
Notebook PC	RJ 45	N/A	N	(D)1.5
	Serial (Mouse)	N/A	Y	(D)1.8
	DC in	N	N/A	(P)1.8
Gateway	DC in	N	N/A	(P)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
EUT	Micro USB	N	N/A	Y	Both End
	Ear-phone	N	N/A	Y	EUT End
Notebook PC	RJ 45	N	N/A	N	N/A
	Serial (Mouse)	N	N/A	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 EUT distance of 3 m.

1.7 Test Facility

Chamber used to collect the test data is located at the 74, SEOICHEON-RO, 578BEON-GIL, MAJANG-MYEON, ICHEON-SI, GYEONGGI-DO, KOREA. Those measurement facilities are constructed in conformance with the requirements of C63.4/2003.

Measurement Facilities	Reg. No.
Radiated Field strength measurement facility (3m)	90661 (June 21, 2011)
Radiated Field strength measurement facility (10m)	90661 (June 21, 2011)

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 (㎒)	Upper frequency of measurement range (㎒)
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 ㎓, whichever is lower

2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

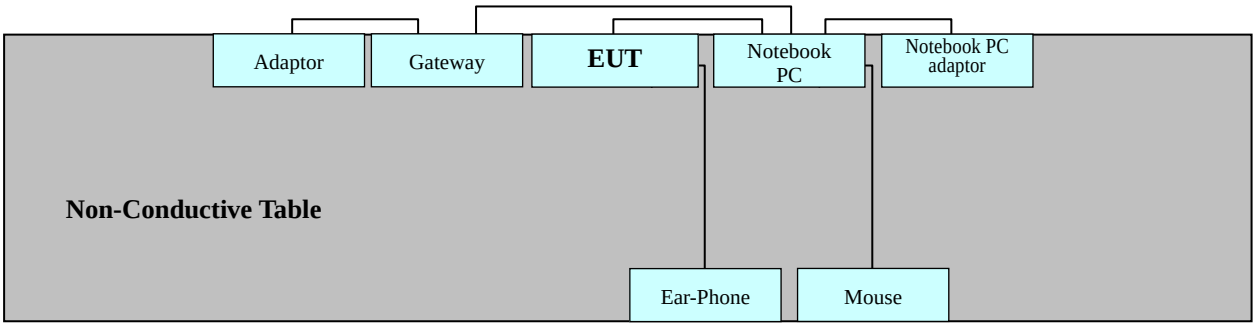
2.1.1 Conducted Emission Test

EUT 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.

2.1.2 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
USB Type : Ningbo Broad

Temperature : 19.0°C
Humidity Level : 30.6 %
Test Date : December 24, 2013

Frequency	Transd	Conductor	Quasi-Peak			Average		
			Limit	Measurement Level	Result Level	Limit	Measurement Level	Result Level
(MHz)	(dB)		(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV]
0.198	10.0	N	64	42.7	52.7	54	25.9	35.9
1.980	9.9	H	56	30.3	40.2	46	-	-
4.172	10.1	H	56	-	-	46	23.7	33.8
4.372	10.3	N	56	-	-	46	23.6	33.9
4.384	10.2	H	56	31.4	41.6	46	-	-
4.456	10.3	N	56	32.0	42.3	46	-	-

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

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

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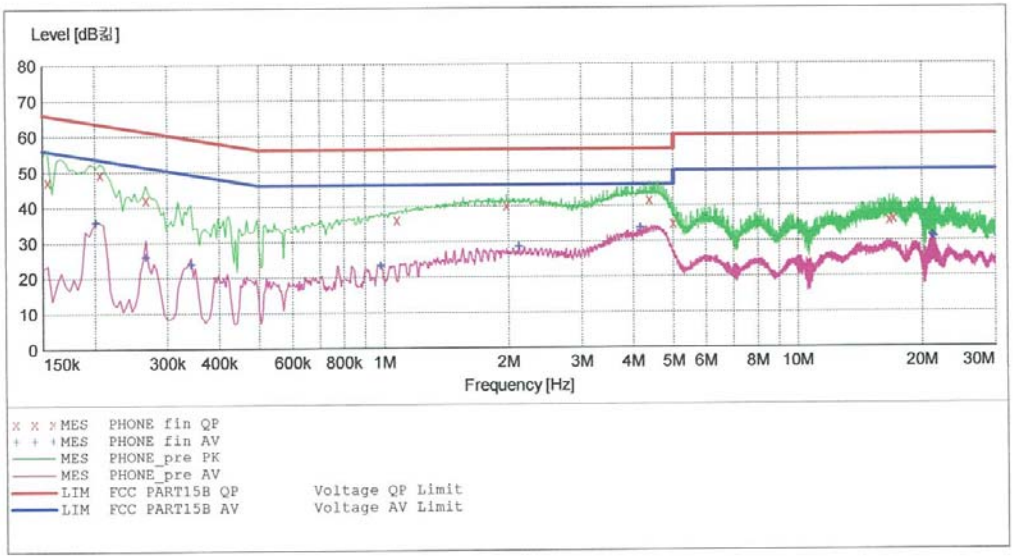
EUT:	LG305C
Manufacturer:	LG
Operating Condition:	DATA MODE
Test Site:	SHIELD ROOM
Operator:	GC YOON
Test Specification:	FCC PART15B
Comment:	H (BROAD CABLE)
Start of Test:	2013-12-24 / 10:38:59오전

SCAN TABLE: "FCC CLASS B(H)"

Short Description: FCC CLASS B(H)

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-12-24 10:41오전

Frequency MHz	Level dBµ	Transd dB	Limit dBµ	Margin dB	Line	PE
0.154000	47.40	9.8	66	18.3	---	---
0.206000	49.30	9.8	63	14.0	---	---
0.266000	42.10	9.8	61	19.1	---	---
1.076000	36.20	9.8	56	19.8	---	---
1.980000	40.20	9.9	56	15.8	---	---
4.384000	41.60	10.2	56	14.4	---	---
5.000000	35.00	10.2	56	21.0	---	---
16.668000	35.80	10.8	60	24.2	---	---
17.052000	36.20	10.8	60	23.8	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-12-24 10:41오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202000	35.70	9.8	54	17.8	---	---
0.266000	25.90	9.8	51	25.4	---	---
0.342000	23.70	9.8	49	25.4	---	---
0.984000	23.30	9.8	46	22.7	---	---
2.120000	28.50	10.0	46	17.5	---	---
4.172000	33.80	10.1	46	12.2	---	---
21.152000	31.50	11.0	50	18.5	---	---
21.224000	31.10	11.0	50	18.9	---	---
21.356000	30.90	11.0	50	19.1	---	---

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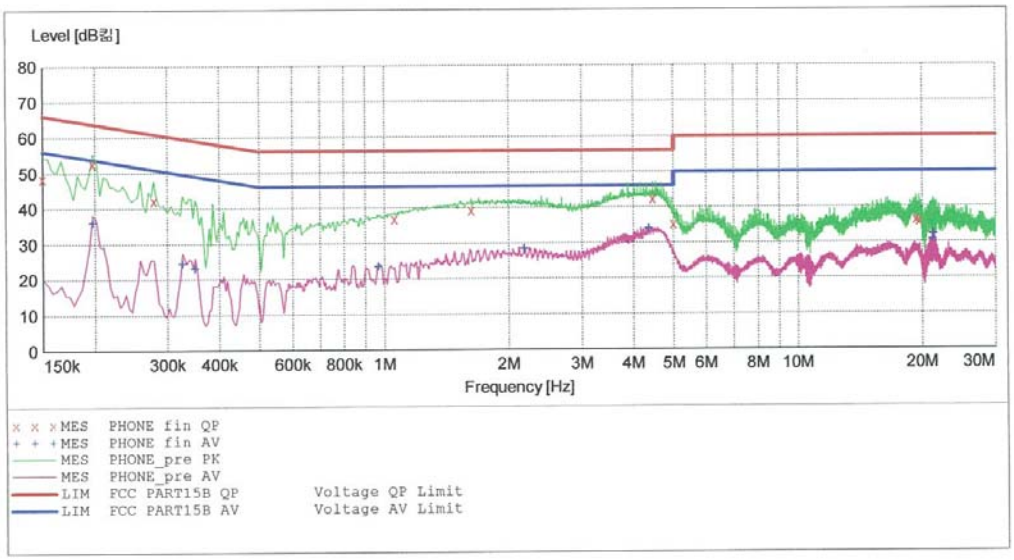
EMC

EUT:	LG305C
Manufacturer:	LG
Operating Condition:	DATA MODE
Test Site:	SHIELD ROOM
Operator:	GC YOON
Test Specification:	FCC PART15B
Comment:	N (BROAD CABLE)
Start of Test:	2013-12-24 / 10:42:24오전

SCAN TABLE: "FCC CLASS B(N)"

Short Description: FCC CLASS B(N)

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-12-24 10:45오전

Frequency MHz	Level dBµ	Transd dB	Limit dBµ	Margin dB	Line	PE
0.150000	48.40	10.0	66	17.6	---	---
0.198000	52.70	10.0	64	11.0	---	---
0.278000	42.20	10.0	61	18.6	---	---
1.060000	37.00	10.1	56	19.0	---	---
1.628000	39.20	10.1	56	16.8	---	---
4.456000	42.30	10.3	56	13.7	---	---
5.000000	35.30	10.4	56	20.7	---	---
19.324000	36.40	11.2	60	23.6	---	---
19.664000	36.00	11.2	60	24.0	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-12-24 10:45오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.198000	35.90	10.0	54	17.8	---	---
0.326000	24.40	10.0	50	25.1	---	---
0.350000	22.90	10.0	49	26.1	---	---
0.968000	23.50	10.0	46	22.5	---	---
2.184000	28.40	10.2	46	17.6	---	---
4.372000	33.90	10.3	46	12.1	---	---
21.144000	30.60	11.3	50	19.4	---	---
21.220000	32.20	11.3	50	17.8	---	---
21.284000	32.00	11.3	50	18.0	---	---

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 ㎓

Limit Apply to : FCC PART 15 Subpart B Class B

Detector : Quasi-Peak (6 ㏈ Bandwidth: 120 ㎑)
Operation Mode : Data Communication mode
USB Type : Ningbo Broad

Temperature : 20.1°C
Humidity Level : 29.4 %
Test Date : December 24, 2013

Frequency (㎒)	Reading (㏈㎶)	Polarity (H/V)	Antenna Height (m)	Correction Factor		Limit (㏈㎶/m)	Level (㏈㎶/m)	Margin (㏈)
				Antenna (㏈/m)	Cable (㏈)			
63.7	11.52	V	1.0	11.36	3.56	40.0	26.44	13.56
85.3	19.56	H	4.0	7.73	3.71	40.0	31.00	9.00
88.9	25.74	H	2.4	7.53	3.73	43.5	37.00	6.50
125.0	14.39	V	1.0	12.01	3.90	43.5	30.30	13.20
375.0	10.17	V	1.0	15.08	4.79	46.0	30.04	15.96
625.0	13.14	V	1.0	19.97	5.39	46.0	38.50	7.50

※ **NOTE:** Polarity H = Horizontal, Polarity V = Vertical

-For measurement above 1 ㎓

Limit Apply to : FCC PART 15 Subpart B Class B

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

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

Operation Mode : Data Communication mode

USB Type : Ningbo Broad

Temperature : 21.9°C

Humidity Level : 31.4 %

Test Date : December 26, 2013

Frequency (㎓)	Peak			POL	Average		
	Total (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)		Total (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1.3287	48.2	74	25.8	V	28.4	54	25.6
1.9904	52.6	74	21.4	V	28.4	54	25.6

※ **NOTE:**

1. Polarity H = Horizontal, Polarity V = Vertical
2. Measurement above 1 ㎓ was performed from 1 ㎓ to the 5th harmonic of highest fundamental frequency. Test was measured by 12 ㎓.

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

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission Limits]

Frequency of Emission (㎒)	Field Strength	
	μV/m	dBμV/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

Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Next CAL Date
Conducted Emission					
☒ EMI Test Receiver	Rohde & Schwarz	ESCI	100584	1 year	2014.04.25
☒ LISN	EMCO	3816/2SH	9706-1070	1 year	2014.04.26
☒ LISN	Rohde & Schwarz	ENV216	100073	1 year	2014.02.06
☐ EMI Test Receiver	Rohde & Schwarz	ESCI	100033	1 year	2014.06.23
☐ LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	2014.07.03
☐ Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.352	1 year	2014.07.03
Radiated Emission (30 ㎒ to 1 ㎓)					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	2014.04.16
☒ Trilog Antenna	Schwarzbeck	VULB9160	3301	2 year	2014.12.17
☒ Antenna master	HD GmbH	MA240	240/520	N/A	-
☒ Turn Table	HD GmbH	2090	9702/1224	N/A	-
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	2014.07.01
☐ Trilog Antenna	Schwarzbeck	VULB9168	185	2 year	2015.04.16
☐ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
Radiated Emission (1 ㎓ to 12 ㎓)					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	2014.04.16
☒ Antenna master	HD GmbH	MA240	240/520	N/A	-
☒ Turn Table	HD GmbH	2090	9702/1224	N/A	-
☒ Power Amplifier	CERNEX	CBLU1183540	21690	1 year	2014.07.12
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	2014.12.13
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	2014.07.01
☐ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-

7. CONCLUSION

The data collected shows that the **EUT type: Cellular/PCS CDMA Phone with BT & WLAN, FCC ID: ZNFLG305C, Model: LG305C** complies with §15.107 and §15.109 of the FCC rules.