HCT CO., LTD.



PRODUCT COMPLIANCE DIVISION
SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA
TEL: +82 31 639 8539 FAX: +82 31 639 8525 www.hct.co.kr

EMI CERTIFICATION REPORT

Applicant:

LG Electronics Inc.

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

Date of Issue: January 29, 2010 Test Report No.: HCTE1001FE30

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

FCC ID:

BEJGT400

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B / CISPR 22 Class B

Equipment (EUT) Type

: Cellular/PCS GSM/EDGE Phone with Bluetooth

Trade Name / Model(s)

: LG Electronics Inc. / GT400

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 denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862.

Report prepared by

: Dong Sup Kim

Test Engineer of EMC Tech. Part

1200

Approved by

: Nam Wook Kang

Manager of EMC Tech. Part

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

Report No.: HCTE1001FE30 Date: January 29, 2010

TABLE OF CONTENTS

	PAGE
1. GENERAL INFORMATION	
1.1 Product description	3
1.2 Related submittal(s)/Grant(s)	3
1.3 Tested system details	4
1.4 Cable description	4
1.5 Noise suppression parts on cable. (I/O cable)	4
1.6 Test methodology	5
1.7 Test facility	5
1.8 Frequency Range of Radiated Measurements	5
2. SYSTEM TEST CONFIGURATION	
2.1 Configuration of tested system	6
3. PRELIMINARY TEST	
3.1 Conducted Emission test	7
3.2 Radiated Emission test	7
4. CONDUCTED AND RADIATED EMISSION TESTS SUMMARY	
4.1 Conducted Emission test	8
4.2 Radiated Emission test	13
5. FIELD STRENGTH CALCULATION	14
6. TEST EQUIPMENT	15
7. CONCLUSION	16

ATTACHMENT: TEST SETUP PHOTOGRAPHS



1. GENERAL INFORMATION

1.1 Product Description

The LG Electronics Inc. Model: GT400, Cellular/PCS GSM/EDGE Phone with Bluetooth.

Its basic purpose is used for communications. It transmits from GSM 850 (824.20 N地 to 848.80 N地), GSM 1 900 (1 850.20 N地 to 1 909.80 N地) and receives from GSM 850 (869.20 N地 to 893.80 N地), GSM 1 900 (1 930.20 N地 to 1 989.80 N地).

Model	GT400
FCC ID	BEJGT400
E.U.T Type	Cellular/PCS GSM/EDGE Phone with Bluetooth
TX Frequency	824.20 Mb to 848.80 Mb (GSM 850) 1 850.20 Mb to 1 909.80 Mb (GSM 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)

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/ Part Number	FCC ID / DoC	Connected To
Cellular/PCS GSM/EDGE Phone with Bluetooth	LG	GT400	BEJGT400	Notebook PC
Notebook PC	НР	Compaq 6730b	DoC	E.U.T
Notebook PC adaptor	Hipro Electronics	PPP014Y-S	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
USB cable	-	-	-	E.U.T Notebook PC

Date: January 29, 2010

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Cellular/PCS GSM/EDGE Phone with Bluetooth	USB data	N	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	Product Name Port Ferrite (Y/I		Location	Metal Hood (Y/N)	Location
Cellular/PCS GSM/EDGE Phone with Bluetooth	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

Date: January 29, 2010

C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 m

1.7 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are

located at the 254-1, Maekok-ri, Hobup-myun, Ichon-si, Kyoungki-do, 467-701, KOREA. The site

is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated June 10,

2009. (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



2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

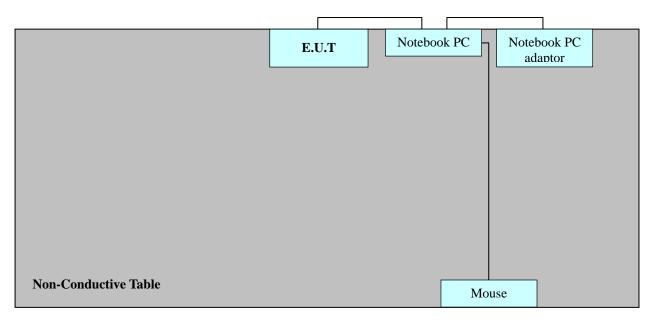
Power Line Conducted test : E.U.T was connected to LISN, all other peripheral equipment were

connected to another LISN. 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 open area test site.

[Configuration of Tested System]



Power Line: 110 VAC



3. PRELIMINARY TEST

3.1 Conducted Emission Test

■ Test E.U.T with Data Communication between E.U.T and laptop, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	0

3. 2 Radiated Emission Test

■ Test E.U.T with Data Communication between E.U.T and laptop, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	0



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.

Date: January 29, 2010

Limit apply to : CISPR 22 Class B

Result : Passed by 6.5 dB

Operating condition : Data Communication mode

Detector : Quasi-Peak, Average (6 dB Bandwidth: 9 klb)

Temperature : 23.1 °C

Humidity level : 40.1 %

Test date : January 28, 2010

Power Line Conducted Emissions			CISPR 22 Class B			
Frequency (MHz)	Amplitude (dBμV)	Conductor	Result	Limit (dBµV)	Margin (dB)	
0.1500	54.6	NEUTRAL	Quasi-Peak	66.0	11.4	
0.7240	39.5	НОТ	Average	46.0	6.5	
0.7280	44.2	НОТ	Quasi-Peak	56.0	11.8	
0.7320	39.2	NEUTRAL	Average	46.0	6.8	

^{*} NOTE: Refer to page 9 to page 12 for details.

- 1. All modes of operation were investigated, and the worst-case emissions are reported.
- 2. Line H = Hot, Line N = Neutral

Report No.: HCTE1001FE30 Date: January 29, 2010

HCT

EMC

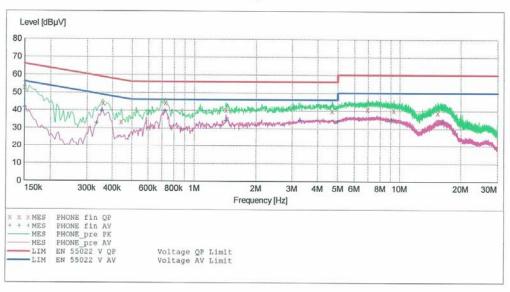
EUT: GT400
Manufacturer: LG Electronics Icn.
Operating Condition: DATA Comminication Mode

Test Site: SHIELD ROOM Operator: DS-KIM Test Specification: CISPR22 CLASS B

Comment:

SCAN TABLE: "CISPR22 CLASS B"

Short Desc	ription:		CLASS	В		
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
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"

1/28/2010	1:15PM					
Frequenc MH		Transd dB	Limit dBµV	Margin dB	Line	PE
0.15000	1 52.90	10.1	66	13.1		
0.35800	1 44.00	10.1	59	14.8		
0.44200	1 33.50	10.1	57	23.5		
0.72800	0 44.20	10.1	56	11.8		
1.42400	0 40.40	10.1	56	15.6		
4.69600	0 39.80	10.3	56	16.2		
6.96400	0 40.80	10.5	60	19.2		
9.36800	0 40.20	10.7	60	19.8		
15.44400	0 38.90	11.1	60	21.1		

Page 1/2 1/28/2010 1:15PM HCT EMC LAB



Report No.: HCTE1001FE30 Date: January 29, 2010

		AV"	E_fin	: "PHON	RESULT	MEASUREMENT
					5PM	1/28/2010 1:1
PE	Line	Margin dB	Limit dBµV	Transd dB	Level dBµV	Frequency MHz
		14.6	56	10.1	41.40	0.150001
		16.5	49	10.1	32.80	0.334001
		9.2	49	10.1	39.60	0.354001
		6.5	46	10.1	39.50	0.724000
		11.7	46	10.1	34.30	1.424000
		11.5	46	10.2	34.50	3.276000
		11.9	46	10.3	34.10	5.000000
		15.2	50	10.6	34.80	9.104000
		16.5	50	11.1	33.50	16.292000

Page 2/2 1/28/2010 1:15PM HCT EMC LAB

Report No.: HCTE1001FE30 Date: January 29, 2010

HCT

EMC

EUT: GT400

Manufacturer: LG Electronics Icn.
Operating Condition: DATA Comminication Mode

Test Site: SHIELD ROOM

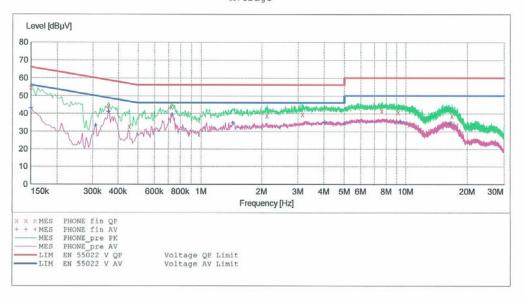
Operator: DS-KIM

Test Specification: CISPR22 CLASS B

Comment:

SCAN TABLE: "CISPR22 CLASS B"

Short Desc	ription:		CLASS	В		
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
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"

1/28/2010	1:19PM					
Frequenc MH			Limit dBµV	Margin dB	Line	PE
0.15000	1 54.6	0 10.1	66	11.4		
0.35800	1 44.4	0 10.1	59	14.4		
0.45400	1 32.8	0 10.1	57	24.0		
0.72400	0 43.8	0 10.1	56	12.2		
2.12400	0 38.9	0 10.2	56	17.1		
3.16400	0 39.6	0 10.2	56	16.4		
7.62800	0 41.4	0 10.5	60	18.6		
9.17200	0 40.7	0 10.6	60	19.3		
16.85200	0 38.7	0 11.2	60	21.3		

Page 1/2 1/28/2010 1:19PM HCT EMC LAB



Report No.: HCTE1001FE30 Date: January 29, 2010

MEASUREMENT	RESULT:	"PHONE	fin	AV"	
		_	_		

1/28/2010 1:1	9PM					
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150001	43.00	10.1	56	13.0		
0.310001	33.40	10.1	50	16.6		
0.358001	41.00	10.1	49	7.8		
0.732000	39.20	10.1	46	6.8		
1.436000	34.70	10.1	46	11.3		
4.036000	35.00	10.3	46	11.0		
5.000000	34.40	10.3	46	11.6		
9.388000	35.40	10.7	50	14.6		
16.512000	34.10	11.2	50	15 9		1000000

Page 2/2 1/28/2010 1:19PM HCT EMC LAB



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

Result : Passed by 3.6 dB

Operating condition : Data Communication mode

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

Temperature : $12.0 \,^{\circ}\text{C}$

Humidity level : 41.5 %

Test date : January 28, 2010

Frequency	Reading	Ant. Factor	Cable Loss	Ant. POL	Total	Limit	Margin
MHz	dΒμV	dB/m	dB	(H/V)	dBμV/m	dBμV/m	dB
31.0	23.8	11.2	0.7	Н	35.7	40.0	4.3
50.1	20.8	12.6	0.7	V	34.1	40.0	5.9
176.5	21.2	11.8	1.4	V	34.4	43.5	9.1
262.8	15.6	11.8	1.7	V	29.1	46.0	16.9
432.6	21.6	16.2	2.2	Н	40.0	46.0	6.1
882.6	15.9	23.1	3.4	Н	42.4	46.0	3.6



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	Field Strength			
(Mb)	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

	<u>Type</u>	<u>Manufacturer</u>	Model Number	Next CAL Date					
Conducted Emission									
\boxtimes	EMI Test Receiver	Rohde & Schwarz	ESCI	2010.06.02					
\boxtimes	LISN	Rohde & Schwarz	ESH3-Z5	2010.02.06					
\boxtimes	LISN	Rohde & Schwarz	ENV216	2010.04.01					
\boxtimes	Attenuator	Rohde & Schwarz	ESH3-Z2	2010.10.30					
Rac	liated Emission								
\boxtimes	EMI Test Receiver	Rohde & Schwarz	ESI40	2010.10.30					
\boxtimes	Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18					
\boxtimes	Antenna Master	HD	MA240	-					
\boxtimes	Turn Table	EMCO	1060	-					
	Communication Antenna	TDK	LPDA-0802	-					
	Antenna Position Tower	HD	240/520/00	-					
	Base Station	Rohde & Schwarz	CMU 200	2010.02.17					
\boxtimes	Horn Antenna	Schwarzbeck	BBHA 9120D	2010.03.26					
\boxtimes	RF-Amplifier	MITEQ	AMF-6D-00101800-35. 20P.PS	2010.04.25					
	Bluetooth Base Station	TESCOM	TC-3000A	2011.01.07					

Date: January 29, 2010



7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Model: GT400. Cellular/ PCS GSM/ EDGE Phone with Bluetooth. FCC ID: BEJGT400** complies with §15.107 and §15.109 of the FCC rules.

Date: January 29, 2010