HCT CO., LTD.

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EMI REPORT (Certification)

LG Electronics Inc. **60-39, Gasan-dong, Gumchon-gu,** **Seoul, 153-023, Korea**	**Date of Issue: February 04, 2009** **Test report No.: HCT-EF09-0206** **Test Site: HCT CO., LTD.** **HCT FRN: 0005-8664-21**

FCC ID: **BEJGM630**

Classification / Standard(s)	: FCC PART 15 Subpart B / CISPR 22 Class B
Equipment (E.U.T) type	: Cellular/PCS GSM/EDGE Phone with Bluetooth
Trade name / Model(s)	: LG Electronics Inc. / GM630
Port / Connector(s)	: DC input port / Ear phone 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 of 1988, 21 U.S.C 853 (a).

Report prepared by
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Test engineer of EMC Tech. Part

Approved by
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Manager of EMC Tech. Part

TABLE OF CONTENTS

ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product description

The **LG Electronics Inc. GM630, Cellular/PCS GSM/EDGE Phone with Bluetooth.**
Its basic purpose is used for communications. It transmits from GSM 850 (824.20 ㎒ to 848.80 ㎒), GSM 1 900 (1 850.20 ㎒ to 1 909.80 ㎒), Bluetooth (2 402 ㎒ to 2 480 ㎒) and receives from GSM 850 (869.20 ㎒ to 893.80 ㎒), GSM 1 900 (1 930.20 ㎒ to 1 989.80 ㎒), Bluetooth (2 402 ㎒ to 2 480 ㎒).

Model	GM630
FCC ID	BEJGM630
E.U.T type	Cellular/PCS GSM/EDGE Phone with Bluetooth
TX frequency	824.20 ㎒ to 848.80 ㎒ (GSM 850) 1 850.20 ㎒ to 1 909.80 ㎒ (GSM 1 900) 2 402 ㎒ to 2 480 ㎒ (Bluetooth)
RX frequency	869.20 ㎒ to 893.80 ㎒ (GSM 850) 1 930.20 ㎒ to 1 989.80 ㎒ (GSM 1 900) 2 402 ㎒ to 2 480 ㎒ (Bluetooth)

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	GM630	BEJGM630	Notebook PC, TA
Travel adaptor	SALCOMP	STA-P52MS	-	E.U.T
Notebook PC	TOSHIBA	PSMA2K-01D002	DoC	E.U.T, TA
Notebook PC adaptor	DELTA	SADP-65KB B	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2	DoC	Notebook PC
Ear phone	-	-	-	E.U.T
USB cable	I-TECH	SGDY0010901	-	E.U.T, PC

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	DC in	N	N/A	(P)1.8
	Ear jack	N/A	N	(D)1.1
	USB data	Y	Y	(D)1.6
Notebook PC	USB (Mouse)	N/A	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/PCS GSM /EDGE Phone with Bluetooth	DC in	N	-	Y	E.U.T end
	Ear jack	N	-	Y	E.U.T end
	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 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, Icheon-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 July 6, 2006(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 (㎒)	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

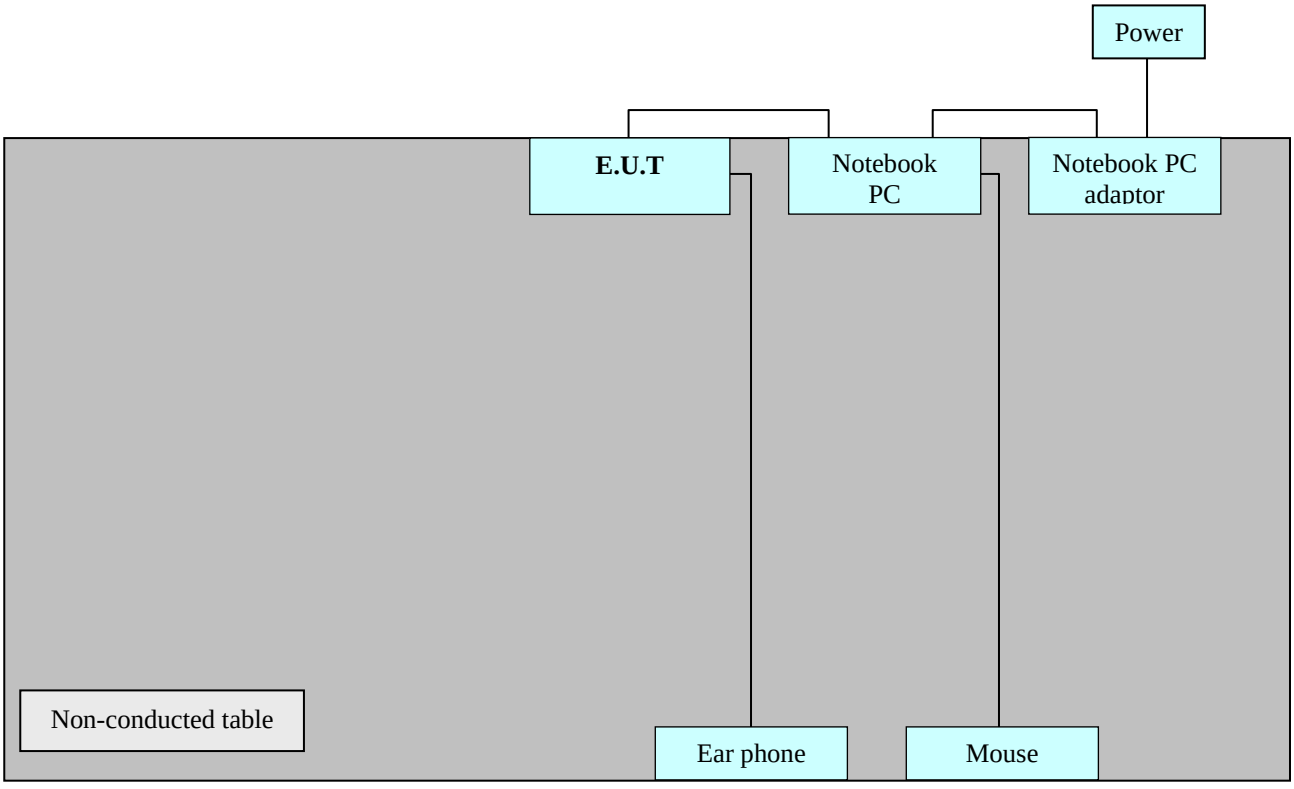
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of test system

Power Line Conducted test : E.U.T was connected to LISN, all other supporting 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: 110V AC

3. PRELIMINARY TEST

3.1 Conducted Emission test

During preliminary tests, the following operating mode was investigated

Operation mode	The worst operating condition
GSM Idle (850, 1 900)	
Camera	
MP3	
Bluetooth	
Data communication	○

3. 2 Radiated Emission test

During preliminary test, the following operation mode was investigated

Operation mode	The worst operating condition
GSM Idle (850, 1 900)	
Camera	
MP3	
Bluetooth	
Data communication	○

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 : CISPR 22 Class B
Result : Passed by 7.9 dB
Operating condition : Data communication mode
Detector : Quasi-Peak, Average (6 dB Bandwidth: 9 ㎑)
Temperature : 5.1 °C
Humidity level : 36.0 %
Test date : January 26, 2009

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	Amplitude (dBμV)	Conductor	Result	Limit (dBμV)	Margin (dB)
0.2026	51.9	HOT	Quasi-Peak	64.0	11.6
0.2026	43.3	HOT	Average	54.0	10.2
0.2026	53.4	NEUTRAL	Quasi-Peak	64.0	10.1
0.2001	45.7	NEUTRAL	Average	54.0	7.9

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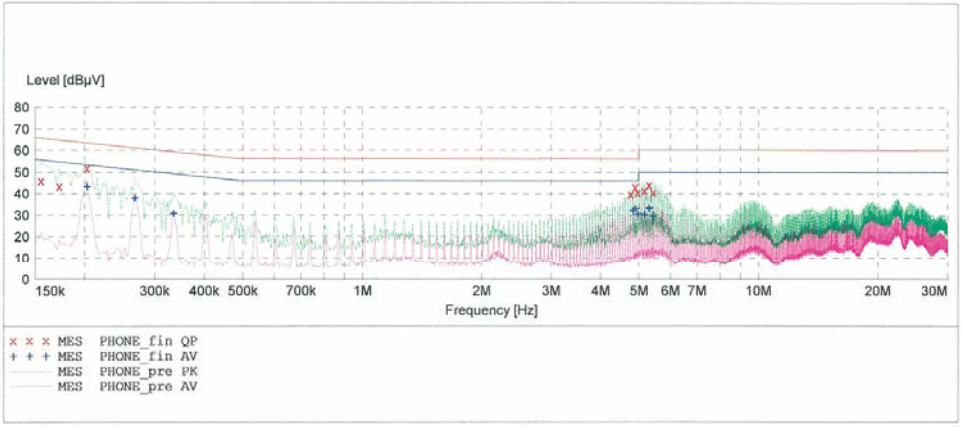
EUT: GM630
Manufacturer: LG Electronic Inc
Operating Condition: DATA COMMUNICATION MODE
Test Site: SHIELD ROOM
Operator: YH, LEE
Test Specification: CISPR 22 CLASS B
Comment: H

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 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"

1/26/2009 11:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.155100	45.90	10.1	66	19.9	---	---
0.172600	43.40	10.1	65	21.5	---	---
0.202600	51.90	10.1	64	11.6	---	---
4.760000	39.70	10.6	56	16.3	---	---
4.892000	43.10	10.7	56	12.9	---	---
4.956000	40.50	10.7	56	15.5	---	---
5.160000	41.50	10.7	60	18.5	---	---
5.296000	44.00	10.7	60	16.0	---	---
5.428000	40.60	10.7	60	19.4	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

1/26/2009 11:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	43.30	10.1	54	10.2	---	---
0.267600	38.10	10.1	51	13.1	---	---

Page 1/2 1/26/2009 11:22AM HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

(continued)

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.335100	30.90	10.1	49	18.4	---	---
4.824000	32.20	10.7	46	13.8	---	---
4.892000	33.20	10.7	46	12.8	---	---
4.956000	30.70	10.7	46	15.3	---	---
5.160000	30.50	10.7	50	19.5	---	---
5.296000	33.40	10.7	50	16.6	---	---
5.428000	29.70	10.7	50	20.3	---	---

Page 2/2 1/26/2009 11:22AM HCT EMC LAB

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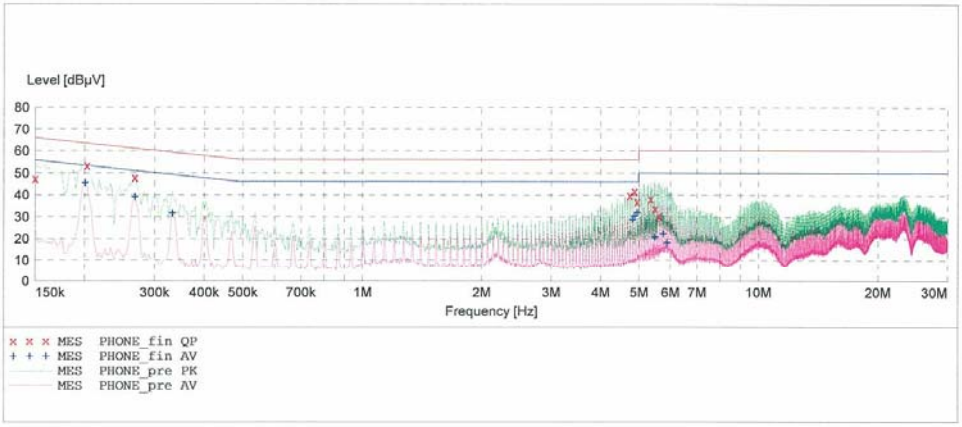
EMC TEST LAB.

```
EUT:                  GM630
Manufacturer:         LG Electronic Inc
Operating Condition:  DATA COMMUNICATION MODE
Test Site:            SHIELD ROOM
Operator:             YH, LEE
Test Specification:   CISPR 22 CLASS B
Comment:              N
```

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 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"

1/26/2009 11:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	47.30	10.1	66	18.7	---	---
0.202600	53.40	10.1	64	10.1	---	---
0.267600	47.90	10.1	61	13.3	---	---
4.744000	39.80	10.6	56	16.2	---	---
4.876000	41.80	10.7	56	14.2	---	---
4.940000	37.00	10.7	56	19.0	---	---
5.348000	38.20	10.7	60	21.8	---	---
5.480000	33.90	10.7	60	26.1	---	---
5.612000	30.40	10.7	60	29.6	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

1/26/2009 11:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.200100	45.70	10.1	54	7.9	---	---
0.267600	39.30	10.1	51	11.9	---	---

Page 1/2 1/26/2009 11:19AM HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

(continued)

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.332600	31.80	10.1	49	17.6	---	---
4.808000	29.00	10.7	46	17.0	---	---
4.876000	30.70	10.7	46	15.3	---	---
4.944000	32.20	10.7	46	13.8	---	---
5.480000	21.00	10.7	50	29.0	---	---
5.748000	22.60	10.8	50	27.4	---	---
5.880000	18.40	10.8	50	31.6	---	---

Page 2/2 1/26/2009 11:19AM 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 4.3 ㏈
Operating condition	: Data communication mode
Detector	: Quasi-Peak (6 ㏈ Bandwidth: 120 ㎑)
Temperature	: 5.1 °C
Humidity level	: 36.0 %
Test date	: January 26, 2009

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
㎒	㏈㎶	㏈ /m	㏈	(H/V)	㏈㎶/m	㏈㎶/m	㏈
127.1	24.3	11.3	2.7	V	38.3	43.5	5.2
136.5	24.3	12.1	2.8	V	39.2	43.5	4.3
136.5	15.5	12.1	2.8	H	30.4	43.5	13.1
164.6	20.1	12.5	3.0	V	35.6	43.5	7.9

* **Note)**

For measurement over 1 ㎓, noise level was more than 10 ㏈ below the limit.

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	Manufacture	Model number	Next CAL date
EMI Test Receiver	Rohde & Schwarz	ESI40	2009.10.31
EMI Test Receiver	Rohde & Schwarz	ESCI	2009.06.01
LISN	EMCO	703125	2009.05.04
LISN	Rohde & Schwarz	ESH2-Z5	2009.04.18
LISN	Rohde & Schwarz	ESH3-Z5	2009.06.13
LISN	EMCO	3816/2SH	2009.06.05
Attenuator	Rohde & Schwarz	ESH3-Z2	2009.10.30
Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18
Communication Antenna	TDK	LPDA-0802	N/A
Antenna Position Tower	HD	240/520/00	N/A
Base Station	Rohde & Schwarz	CMU 200	2009.02.28
Horn Antenna	Schwarzbeck	BBHA 9120D	2009.03.18
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2009.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2010.01.09

7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Model: GM630, Cellular/PCS GSM/ EDGE Phone with Bluetooth. FCC ID: BEJGM630** complies with §15.107 and §15.109 of the FCC rules.