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EMI CERTIFICATION REPORT

LG Electronics Inc.

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

Date of Issue: January 07, 2010

Test Report No.: HCTE1001FE01

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJMN240

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

Equipment (EUT) Type : Cellular/AWS/PCS CDMA Phone with Bluetooth

Trade Name / Model(s) : LG Electronics Inc. / MN240

Additional Model(s) : LW240

Port / Connector(s) : USB Data 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 denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862.


Report prepared by
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ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The **LG Electronics Inc. Model: MN240, Cellular/AWS/PCS CDMA Phone with Bluetooth.**

Its basic purpose is used for communications. It transmits from GSM 850 (824.20 MHz to 848.80 MHz), GSM 1 900 (1 850.20 MHz to 1 909.80 MHz), CDMA 850 (824.70 MHz to 848.31 MHz), CDMA 1 900 (1 850 MHz to 1 910. 2 MHz) AWS CDMA (1 711.25 MHz to 1 753.75 MHz) and receives from GSM 850 (869.20 MHz to 893.80 MHz), GSM 1 900 (1 930.20 MHz to 1 989.80 MHz), CDMA 850 (869.70 MHz to 893.31 MHz) CDMA 1 900 (1 930 MHz to 1 990 MHz), AWS CDMA (2 111.25 MHz to 2 153.75 MHz).

Model	MN240
Additional Model	LW240
FCC ID	BEJMN240
E.U.T Type	Cellular/AWS/PCS CDMA Phone with Bluetooth
TX Frequency	824.20 MHz to 848.80 MHz (GSM 850) 1 850.20 MHz to 1 909.80 MHz (GSM 1 900) 824.70 MHz to 848.31 MHz (CDMA 850) 1 850 MHz to 1 910. 2 MHz (CDMA 1 900) 1 711.25 MHz to 1 753.75 MHz (AWS CDMA)
RX Frequency	869.20 MHz to 893.80 MHz (GSM 850) 1 930.20 MHz to 1 989.80 MHz (GSM 1 900) 869.70 MHz to 893.31 MHz (CDMA 850) 1 930 MHz to 1 990 MHz (CDMA 1 900) 2 111.25 MHz to 2 153.75 MHz (AWS CDMA)

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/AWS/PCS CDMA Phone with Bluetooth	LG	MN240	BEJMN240	Notebook PC
Notebook PC	Sam-Sung	NT-R519	DoC	E.U.T
Notebook PC adaptor	DELTA	ADP-60ZH D AD-6019R	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
USB cable	-	-	-	E.U.T Notebook PC
Headset	-	-	-	-

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Cellular/AWS/PCS CDMA Phone with Bluetooth	Headset jack	-	N	(D)1.1
	USB data	Y	Y	(P,D)1.1
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/AWS/PCS CDMA Phone with Bluetooth	Headset 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, 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

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

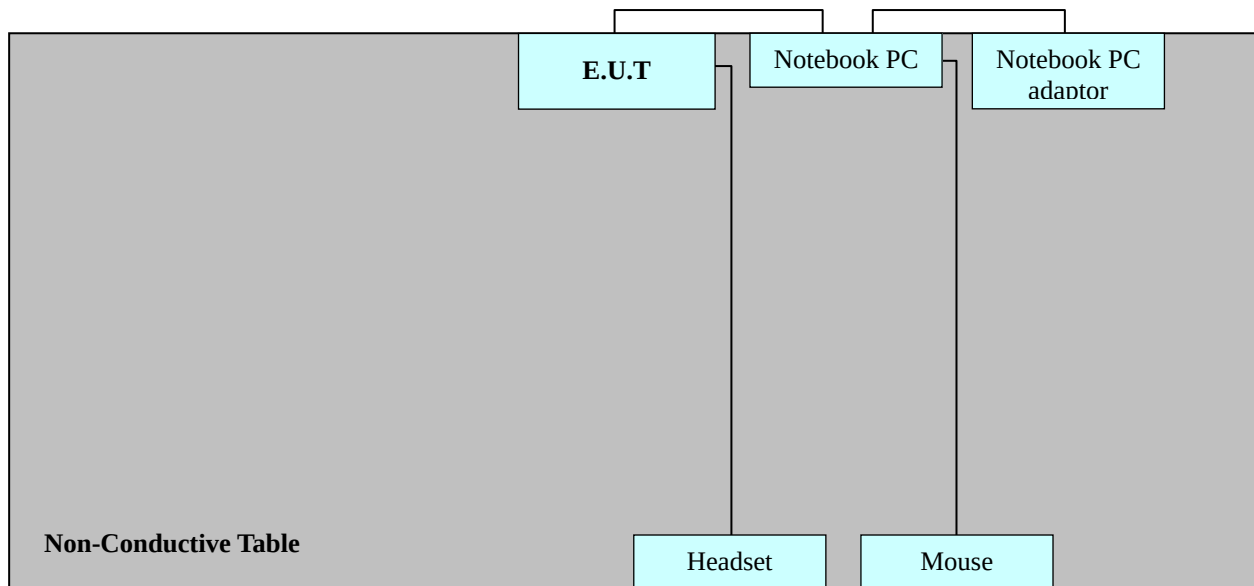
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN, 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

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	○

3. 2 Radiated Emission Test

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
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 8.2 dB
Operating condition	: Data Communication mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 22.0 °C
Humidity level	: 38.0 %
Test date	: January 05, 2010

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	Amplitude (dB μ V)	Conductor	Result	Limit (dB μ V)	Margin (dB)
0.1541	42.3	NEUTRAL	Average	56.0	13.4
0.1541	55.2	HOT	Quasi-Peak	66.0	10.6
0.1541	57.6	NEUTRAL	Quasi-Peak	66.0	8.2
0.6280	29.1	HOT	Average	46.0	16.9

※ **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

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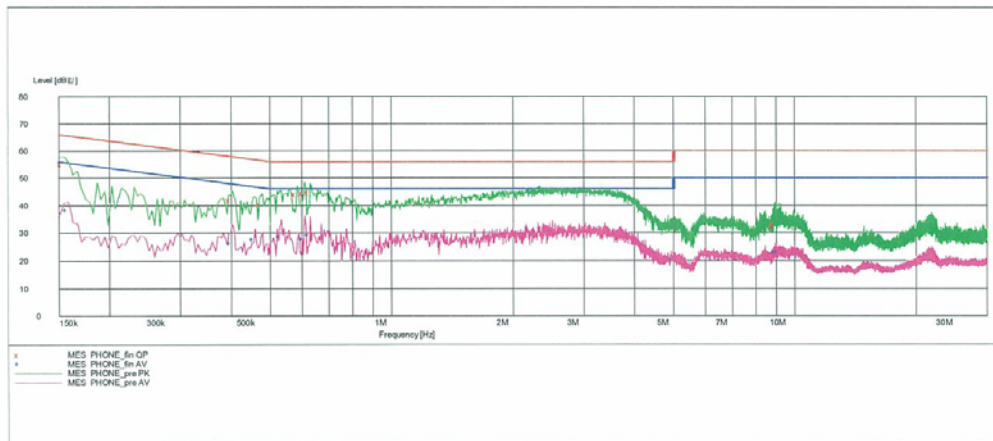
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EUT : MN240
Manufacturer : LG
Operating Condition : DATA COMMUNICATION MODE
Test Site : SHIELD ROOM
Operator : GS-KIM
Test Specification : CISPR22 CLASS B
Comment : H

SCAN TABLE: "EN 55022 Voltage"

Short Description: EN 55022 Voltage

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.1 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16
Average						
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16
Average						
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16



MEASUREMENT RESULT: "PHONE_fin OP"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.154100	55.20	10.0	66	10.6	1	---
0.402100	41.70	10.0	58	16.1	1	---
0.478100	40.30	10.0	56	16.1	1	---
0.584000	44.00	10.0	56	12.0	1	---
0.608000	44.40	10.0	56	11.6	1	---
0.628000	44.50	10.0	56	11.5	1	---
8.932000	32.20	10.7	60	27.8	1	---
8.956000	32.10	10.7	60	27.9	1	---
9.000000	33.00	10.7	60	27.0	1	---

MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.158100	38.30	10.0	56	17.2	1	---
0.402100	26.20	10.0	48	21.6	1	---

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MEASUREMENT RESULT: "PHONE_fin AV"

(continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.458100	27.50	10.0	47	19.3	1	---
0.532000	28.60	10.0	46	17.4	1	---
0.608000	27.70	10.0	46	18.3	1	---
0.628000	29.10	10.0	46	16.9	1	---
5.000000	20.40	10.3	46	25.6	1	---
9.000000	22.90	10.7	50	27.1	1	---
9.160000	23.10	10.7	50	26.9	1	---

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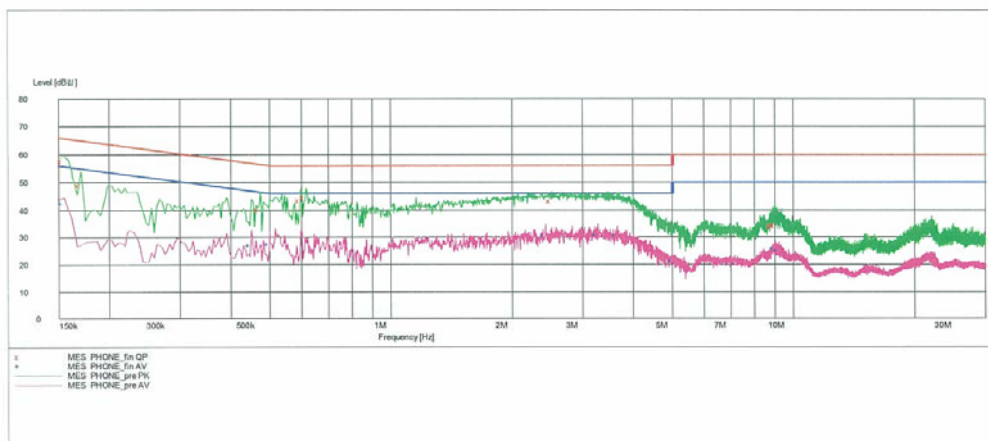
EMC

EUT : MN240
Manufacturer : LG
Operating Condition : DATA COMMUNICATION MODE
Test Site : SHIELD ROOM
Operator : GS-KIM
Test Specification : CISPR22 CLASS B
Comment : N

SCAN TABLE: "EN 55022 Voltage"

Short Description: EN 55022 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16
Average						
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16
Average						
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH3-Z5-2009.9.16



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.154100	57.60	10.0	66	8.2	1	---
0.170100	49.00	10.0	65	16.0	1	---
0.474100	40.10	10.0	56	16.3	1	---
0.600000	43.50	10.0	56	12.5	1	---
0.616000	44.80	10.0	56	11.2	1	---
2.516000	43.30	10.2	56	12.7	1	---
8.868000	34.00	10.7	60	26.0	1	---
9.008000	34.40	10.7	60	25.6	1	---
9.064000	34.40	10.7	60	25.6	1	---

MEASUREMENT RESULT: "PHONE_fin AV"

1/5/2010 10:29AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.154100	42.30	10.0	56	13.4	1	---
0.450100	26.80	10.0	47	20.1	1	---

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MEASUREMENT RESULT: "PHONE_fin AV"

(continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.500000	27.30	10.0	46	18.7	1	---
2.420000	30.40	10.2	46	15.6	1	---
3.264000	30.80	10.2	46	15.2	1	---
3.644000	30.50	10.2	46	15.5	1	---
5.000000	21.20	10.3	46	24.8	1	---
9.008000	25.80	10.7	50	24.2	1	---
9.204000	25.10	10.7	50	24.9	1	---

1/5/2010 10:30AM HCT 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 9.7 dB
Operating condition	: Data Communication mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 10.0 °C
Humidity level	: 60.3 %
Test date	: January 05, 2010

Frequency	Reading	Ant. Factor	Cable Loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB/m	dB	(H/V)	dB μ V/m	dB μ V/m	dB
95.9	13.0	8.7	1.1	H	22.8	43.5	20.7
199.7	10.1	10.0	1.5	H	21.6	43.5	21.9
399.5	7.4	15.4	2.2	H	25.0	46.0	21.0
404.1	8.0	15.5	2.2	V	25.7	46.0	20.3
492.0	16.7	17.2	2.4	H	36.3	46.0	9.7
937.8	5.1	23.7	3.6	V	32.4	46.0	13.6

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 (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>Next CAL Date</u>
<u>Conducted Emission</u>			
☒ EMI Test Receiver	Rohde & Schwarz	ESCI	2010.06.02
☒ LISN	Rohde & Schwarz	ESH3-Z5	2010.02.06
☐ LISN	Rohde & Schwarz	ENV216	2010.04.01
☒ Attenuator	Rohde & Schwarz	ESH3-Z2	2010.10.30
<u>Radiated Emission</u>			
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	2010.10.30
☒ Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18
☒ Antenna Master	HD	MA240	-
☒ 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
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	2010.03.26
☒ RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2010.04.25
☐ Bluetooth Base Station	TESCOM	TC-3000A	2011.01.07

7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Model: MN240. Cellular/AWS/PCS CDMA Phone with Bluetooth. FCC ID: BEJMN240** complies with §15.107 and §15.109 of the FCC rules.