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EMI CERTIFICATION REPORT

Applicant:
LG Electronics Inc.
60-39, Gasan-dong, Gumchon-gu, Seoul 153-023, Korea

Date of Issue: May 11, 2011
Test Report No.: HCTE1105FE13
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **BEJMS910**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: Cellular/AWS/PCS CDMA/EvDO & AWS/PCS LTE Phone with Bluetooth & WLAN
Trade Name	: LG Electronics Inc
Model(s)	: MS910
Port / Connector(s)	: USB Data Port / Headset Port / HDMI 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
: Doo Hwan Ryu
Test Engineer of EMC Team

Approved by
: Sang Jun Lee
Manager of EMC Team

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1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **Type: Cellular/AWS/PCS CDMA/EvDO & AWS/PCS LTE Phone with Bluetooth & WLAN, Model: MS910** manufactured by **LG Electronics Inc.** Its basic purpose is used for communications.

Model (s)	MS910
FCC ID	BEJMS910
E.U.T Type	Cellular/AWS/PCS CDMA/EvDO & AWS/PCS LTE Phone with Bluetooth & WLAN
TX Frequency	824.70 ㎒ to 848.31 ㎒ (CDMA 835) 1 851.25 ㎒ to 1 908.75 ㎒ (CDMA 1 900) 1 711.25 ㎒ to 1 753.75 ㎒ (AWS 1 700) 1 850.7 ㎒ to 1 909.3 ㎒ (PCS LTE) 1 710.7 ㎒ to 1 754.3 ㎒ (AWS LTE)
RX Frequency	869.70 ㎒ to 893.31 ㎒ (CDMA 835) 1 931.25 ㎒ to 1 988.75 ㎒ (CDMA 1 900) 2 111.25 ㎒ to 2 153.75 ㎒ (AWS 1 700) 1 930.0 ㎒ to 1 990.0 ㎒ (PCS LTE) 2 111.25 ㎒ to 2 153.75 ㎒ (AWS LTE)

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	FCC ID / DoC	Connected To
Cellular/AWS/PCS CDMA/EvDO & AWS /PCS LTE Phone with Bluetooth & WLAN	LG	MS910	BEJMS910	Notebook PC TV Monitor
Notebook PC	LG	X140-02	DoC	E.U.T Notebook PC adaptor
Notebook PC adaptor	DELTA (JIANG SU)	ADP-40PH AD	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
USB cable	-	-	-	E.U.T Notebook PC
SD card (2 GB)	SanDisk	-	-	E.U.T
Headset	-	-	-	E.U.T
TV Monitor	LG	W2261VT	-	E.U.T
HDMI cable	BD	-	-	E.U.T TV Monitor

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
Cellular/AWS/PCS CDMA/EvDO & AWS /PCS LTE Phone with Bluetooth & WLAN	Headset jack	-	N	(D)1.0
	USB data	Y	Y	(P,D)1.2
	HDMI	-	Y	(D)2.0
TV Monitor	AC In	N	-	(P)1.8
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/EvDO & AWS /PCS LTE Phone with Bluetooth & WLAN	Headset jack	N	-	Y	E.U.T End
	USB data	N	-	Y	Both End
	HDMI	N	-	Y	Both End
TV Monitor	HDMI	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 ㎜

1.7 Test Facility

The 10 m semi anechoic chamber used to collect the test is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, 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 Sep. 03, 2010 (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

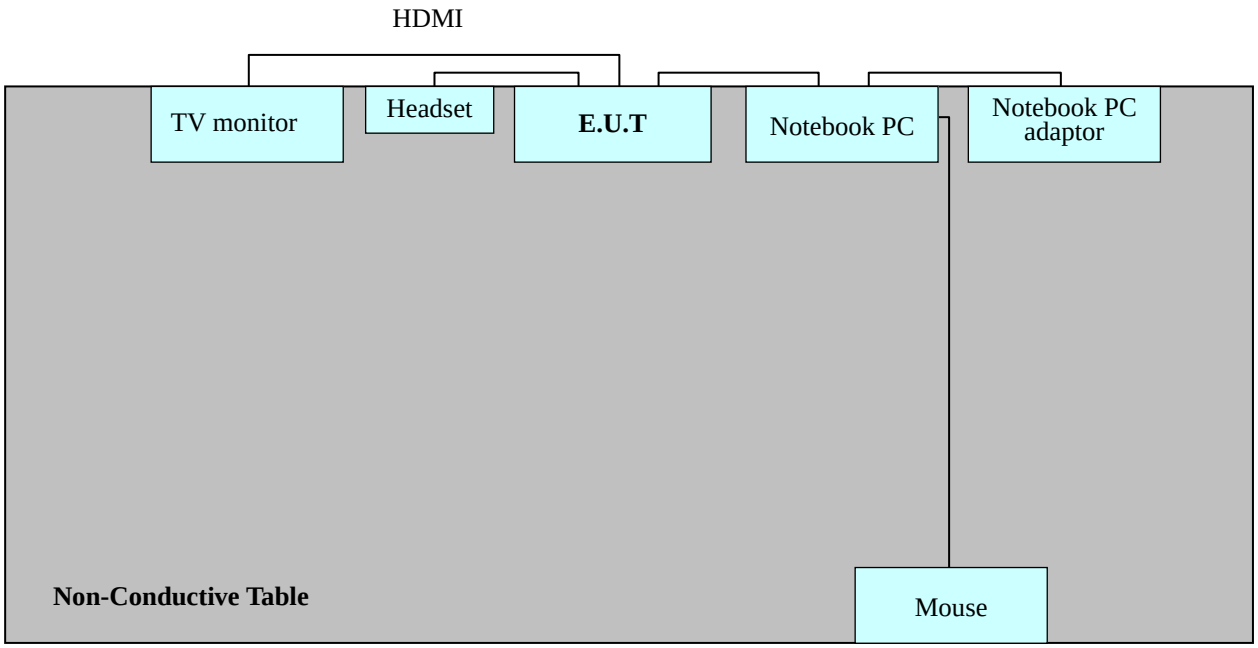
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor. 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]



3. PRELIMINARY TEST

3.1 Conducted Emission Test

■ It was tested Data Communication mode, after connecting all peripheral devices.

Operation Mode	The Worst Operating Condition
Data Communication	○

3. 2 Radiated Emission Test

■ It was tested Data Communication mode, after connecting all peripheral devices.

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	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 ㏈ Bandwidth: 9 ㎑)
Operation Mode	: Data Communication mode
Temperature	: 24.5 °C
Humidity level	: 46.7 %
Test date	: May 11, 2011

※ **NOTE:** Refer to page 10 to page 13 for details.

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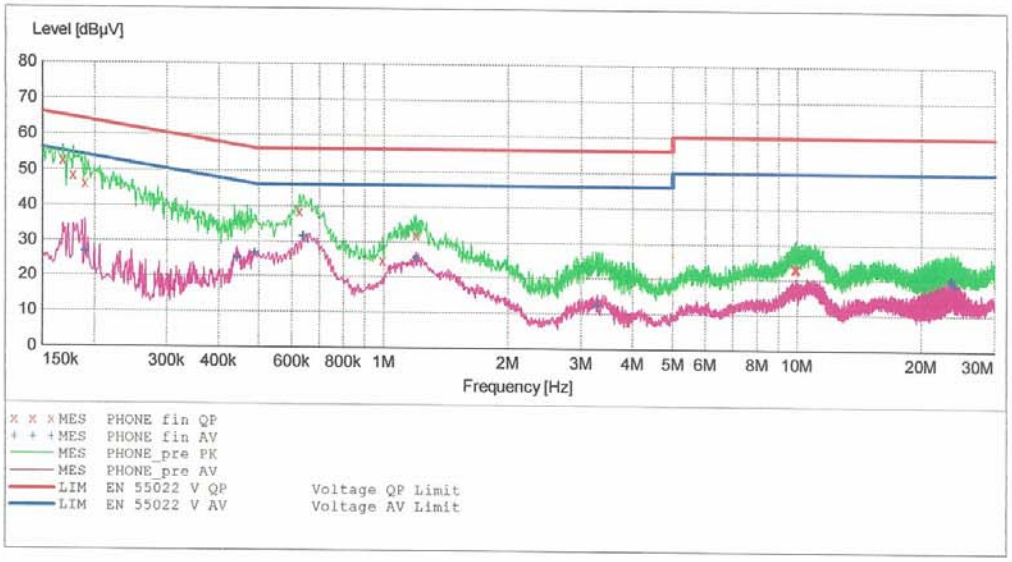
EUT: MS910
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B
Comment: H

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

Short Description: FCC PART 15 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	1.0 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"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.168010	52.50	10.1	65	12.6	---	---
0.178010	48.30	10.1	65	16.3	---	---
0.190010	46.10	10.1	64	18.0	---	---
0.628000	38.40	10.1	56	17.6	---	---
0.996000	24.60	10.1	56	31.4	---	---
1.200000	31.80	10.2	56	24.2	---	---
9.864000	23.30	10.9	60	36.7	---	---
9.916000	23.10	10.9	60	36.9	---	---
9.996000	23.20	10.9	60	36.8	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

5/11/2011 1:55PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190010	26.60	10.1	54	27.4	---	---
0.443010	24.80	10.1	47	22.2	---	---
0.489010	26.50	10.1	46	19.7	---	---
0.640000	31.30	10.1	46	14.7	---	---
1.200000	25.30	10.2	46	20.7	---	---
3.292000	12.30	10.3	46	33.7	---	---
23.528000	20.20	12.0	50	29.8	---	---
23.600000	19.50	12.0	50	30.5	---	---
24.028000	18.40	12.0	50	31.6	---	---

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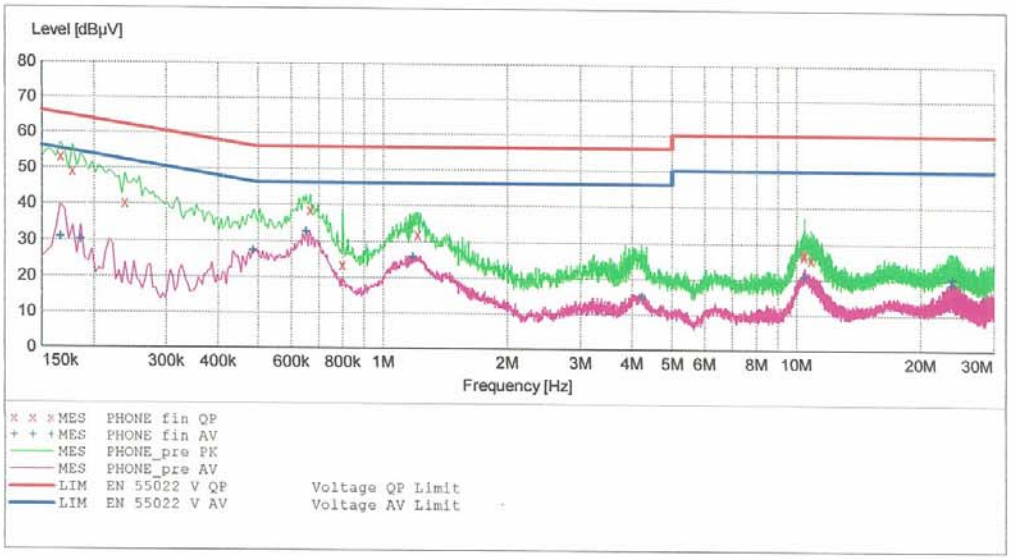
EMC

EUT: MS910
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B
Comment: N

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

Short Description: FCC PART 15 CLASS B

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"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.166010	53.00	10.3	65	12.2	---	---
0.178010	48.90	10.3	65	15.6	---	---
0.238010	40.20	10.3	62	22.0	---	---
0.668000	38.40	10.4	56	17.6	---	---
0.800000	23.50	10.4	56	32.5	---	---
1.216000	31.80	10.4	56	24.2	---	---
10.408000	26.60	11.1	60	33.4	---	---
10.460000	27.30	11.1	60	32.7	---	---
10.864000	25.70	11.1	60	34.3	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.166010	30.80	10.3	55	24.4	---	---
0.186010	30.00	10.3	54	24.2	---	---
0.486010	27.20	10.3	46	19.0	---	---
0.652000	32.40	10.3	46	13.6	---	---
1.184000	25.70	10.4	46	20.3	---	---
4.228000	14.90	10.6	46	31.1	---	---
10.460000	21.00	11.1	50	29.0	---	---
23.676000	18.60	11.8	50	31.4	---	---
23.820000	20.30	11.8	50	29.7	---	---

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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 Class B

-For measurement below 1 ㎓

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

Operation Mode : Data Communication mode

-For measurement above 1 ㎓

Limit apply to : FCC PART 15 Subpart B Class B

Setting : Peak mode: Detector- Peak(RBW: 1 ㎒ / VBW: 1 ㎒)

: Average mode: Detector- Peak (RBW: 1 ㎒ / VBW: 10 ㎐)

Temperature : 23.8 °C

Humidity Level : 45.8 %

Test Date : May 09, 2011

Frequency	Reading	Ant. Factor	Cable Loss	Ant. POL	Total	Limit	Margin
㎒	㏈㎶	㏈/m	㏈	(H/V)	㏈㎶/m	㏈㎶/m	㏈
129.2	15.0	11.5	1.4	V	27.9	43.5	15.6
139.3	16.9	12.3	1.5	V	30.7	43.5	12.8
235.7	19.0	11.0	2.0	H	32.0	46.0	14.0
297.0	15.5	13.1	2.3	V	30.9	46.0	15.1
445.4	7.0	16.6	2.7	V	26.3	46.0	19.7
519.7	10.5	17.8	3.0	V	31.3	46.0	14.7

※ **NOTE:**

1. Measurement Above 1 ㎓ performed from 1 ㎓ to the 5th harmonic of highest fundamental frequency. The highest fundamental frequency is PCS LTE center frequency.
2. For measurement above 1 ㎓, noise level is more than 14 ㏈ below the limit, specified in FCC Part 15.35.

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 Number	Serial Number	Next CAL Date
	Conducted Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	100033	2012.02.15
☒	LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
☒	LISN	Rohde & Schwarz	ENV216	100073	2012.04.01
☒	Attenuator	Rohde & Schwarz	ESH3-Z2	375.8810.352	2011.10.25
	Radiated Emission				
☐	EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2011.10.29
☒	EMI Test Receiver	Rohde & Schwarz	ESU26	100241	2011.09.01
☒	Trilog Antenna	Schwarzbeck	VULB9168	255	2011.05.28
☒	Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
☒	Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
☒	Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
☒	Horn Antenna	Schwarzbeck	BBHA 9120D	-	2012.04.13
☐	RF-Amplifier	MITEQ	AMF-6D-0010 1800-35.20P.PS	-	2011.05.20
☐	Base Station	Rohde & Schwarz	CMU 200	1100000802	2012.02.16

7. CONCLUSION

The data collected shows that the **E.U.T type: Cellular/AWS/PCS CDMA/EvDO & AWS/PCS LTE Phone with Bluetooth & WLAN, Model: MS910, FCC ID: BEJMS910** complies with §15.107 and §15.109 of the FCC rules.