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EMI CERTIFICATION REPORT

LG Electronics Inc.

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Seoul, 153-023, Korea**

Date of Issue: December 29, 2009

Test Report No.: HCTE0912FE20-1

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

FCC ID:

BEJLDU810

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B / CISPR 22 Class B
Equipment (EUT) Type : 835 CDMA/EVDO USB Modem
Trade Name / Model(s) : LG Electronics Inc. / LDU-810
Additional Model(s) : HDM-2100
Port / Connector(s) : USB 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.

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ATTACHMENT : TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

The **LG Electronics Inc. Model: LDU-810, 835 CDMA/EVDO USB Modem.**

It's basic purpose is used for communications. It transmits from CDMA 835 (824.70 MHz to 848.31 MHz) and receives from CDMA 835 (869.70 MHz to 893.31 MHz).

FCC Model	LDU-810
FCC ID	BEJLDU810
Additional Model	HDM-2100
E.U.T Type	835 CDMA/EVDO USB Modem
TX Frequency	824.70 MHz to 848.31 MHz (CDMA 835)
RX Frequency	869.70 MHz to 893.31 MHz (CDMA 835)

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
835 CDMA/EVDO USB Modem	LG	LDU-810	BEJLDU810	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

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
835 CDMA/EVDO USB Modem	USB Data	N	N	(P,D)0.15
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
835 CDMA/EVDO USB Modem	USB Data	Y	E.U.T End	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

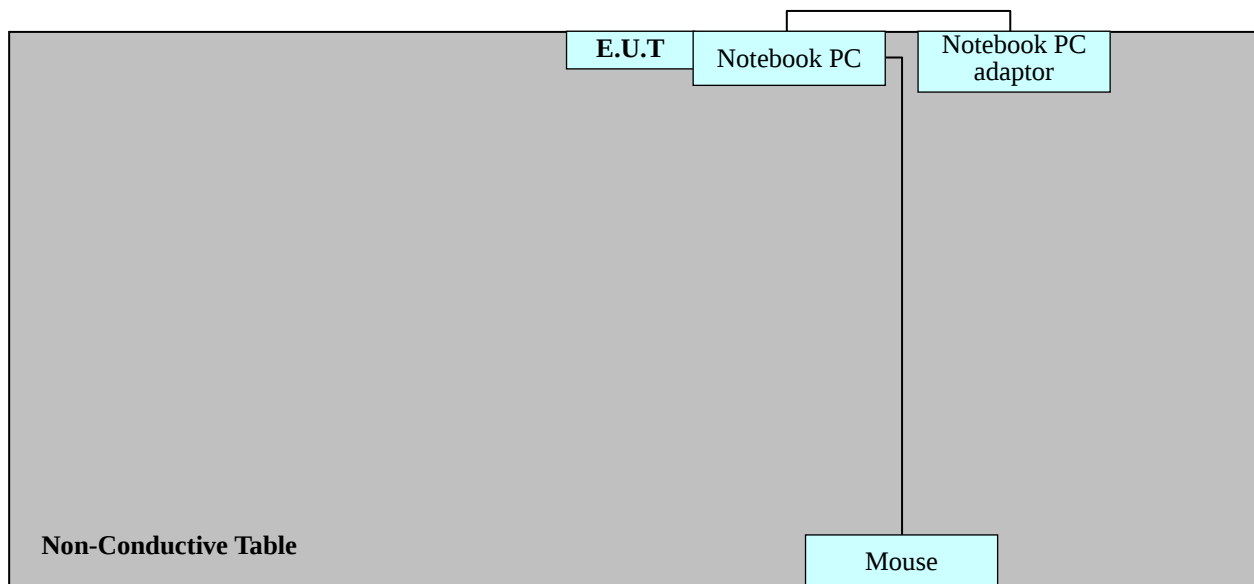
2. SYSTEM TEST CONFIGURATION

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:

- CDMA Idle mode

3. 2 Radiated Emission Test

During preliminary tests, the following operating mode was investigated:

- CDMA Idle 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	: CISPR 22 Class B
Result	: Passed by 10.1 dB
Operating condition	: Idle mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 kHz)
Temperature	: 23.2 °C
Humidity level	: 41.3 %
Test date	: December 28, 2009

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	Amplitude (dB μ V)	Conductor	Result	Limit (dB μ V)	Margin (dB)
2.9280	44.4	HOT	Quasi-Peak	56.0	11.6
2.9840	33.0	HOT	Average	46.0	13.0
3.0280	33.8	NEUTRAL	Average	46.0	12.2
3.2400	45.9	NEUTRAL	Quasi-Peak	56.0	10.1

※ **Note:** Refer to page 9 to page 12 for details.

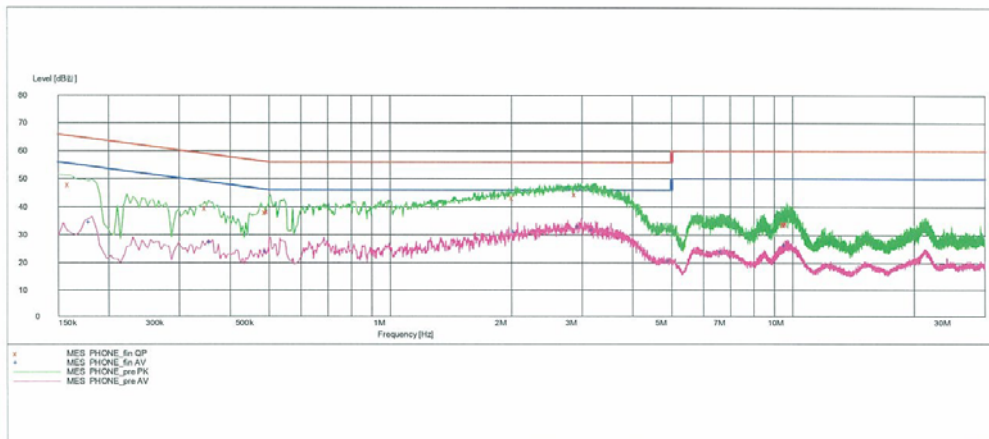
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EUT : LDU-810
Manufacturer : LG
Operating Condition : IDLE MODE
Test Site : SHIELD ROOM
Operator : GS KIM
Test Specification : CISPR22 CLASS B
Comment : H

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_QP"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.162100	47.90	10.0	65	17.5	1	---
0.354100	39.60	10.0	59	19.3	1	---
0.498100	38.00	10.0	56	18.1	1	---
0.504000	38.50	10.0	56	17.5	1	---
2.052000	43.20	10.2	56	12.8	1	---
2.928000	44.40	10.2	56	11.6	1	---
9.672000	34.20	10.7	60	25.8	1	---
9.724000	33.80	10.7	60	26.2	1	---
9.820000	34.20	10.7	60	25.8	1	---

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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
0.182100	34.60	10.0	54	19.8	1	---
0.362100	27.20	10.0	49	21.5	1	---
0.498100	24.10	10.0	46	22.0	1	---
2.072000	31.10	10.2	46	14.9	1	---
2.984000	33.00	10.2	46	13.0	1	---
3.236000	32.00	10.2	46	14.0	1	---
5.000000	20.70	10.3	46	25.3	1	---
6.748000	23.90	10.5	50	26.1	1	---
9.724000	26.40	10.7	50	23.6	1	---

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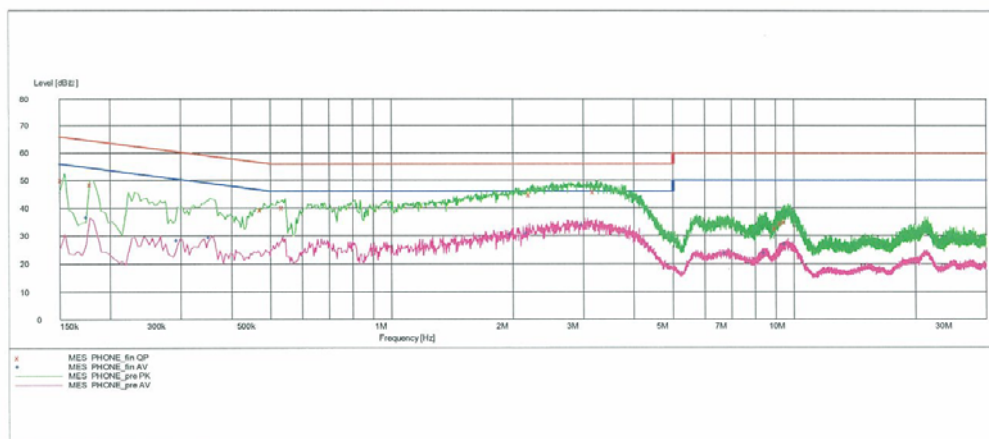
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EMC

EUT : LDU-810
Manufacturer : LG
Operating Condition : IDLE 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	Stop	Step	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 dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.154100	50.10	10.0	66	15.6	1	---
0.182100	48.50	10.0	64	15.9	1	---
0.482100	39.40	10.0	56	16.9	1	---
0.544000	40.10	10.0	56	15.9	1	---
2.240000	44.70	10.2	56	11.3	1	---
3.240000	45.90	10.2	56	10.1	1	---
9.152000	32.60	10.7	60	27.4	1	---
9.424000	34.30	10.7	60	25.7	1	---
9.648000	34.90	10.7	60	25.1	1	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.178100	36.60	10.0	55	18.0	1	---
0.298100	28.20	10.1	50	22.1	1	---
0.358100	29.30	10.0	49	19.4	1	---
2.004000	30.40	10.2	46	15.6	1	---
2.200000	30.80	10.2	46	15.2	1	---
3.028000	33.80	10.2	46	12.2	1	---
6.844000	23.70	10.5	50	26.3	1	---
8.576000	23.70	10.6	50	26.3	1	---
9.648000	26.80	10.7	50	23.2	1	---

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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
Result	: Passed by 15.6 dB
Operating condition	: Idle mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature	: 11.0 °C
Humidity level	: 40.3 %
Test date	: December 28, 2009

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
191.2	11.1	10.6	1.4	H	23.1	43.5	20.4
234.6	12.7	11.0	1.6	H	25.3	46.0	20.7
240.2	7.3	11.1	1.7	H	20.1	46.0	25.9
268.6	11.9	12.0	1.8	H	25.7	46.0	20.3
304.2	11.1	13.2	1.9	V	26.2	46.0	19.8
798.2	5.1	22.2	3.1	H	30.4	46.0	15.6

Note)

For measurement over 1 GHz, noise level was more than 10 dB 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 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	2010.01.09

7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Model: LDU-810, 835 CDMA/EVDO USB Modem. FCC ID: BEJLDU810** complies with §15.107 and §15.109 of the FCC rules.