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EMI CERTIFICATION REPORT

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

Date of Issue: February 25, 2011
Test Report No.: HCTE1102FE24
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **BEJVP200**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: PCS CDMA phone with Bluetooth
Trade Name	: LG Electronics Inc
Model(s)	: VP200, LG-VP200
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 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 **PCS CDMA phone with Bluetooth, Model: VP200** manufactured by **LG Electronics Inc.** Its basic purpose is used for communications.

Model (s)	VP200
Additional Model	LG-VP200
FCC ID	BEJVP200
E.U.T Type	PCS CDMA phone with Bluetooth
TX Frequency	1 851.25 ㎒ to 1 908.75 ㎒ (PCS CDMA)
RX Frequency	1 931.25 ㎒ to 1 988.75 ㎒ (PCS 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/ Serial Number	FCC ID / DoC	Connected To
PCS CDMA phone with Bluetooth	LG	VP200	BEJVP200	Notebook PC
Notebook PC	SAMSUNG	NT-R519 *ZLA693AS900033M*	DoC	E.U.T
Notebook PC adaptor	DELTA (JIANG SU)	ADP-60ZH D AD-6019R *DA44-00242A*	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible *3902B008*	DoC	Notebook PC
Headset	-	-	-	E.U.T
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)
PCS CDMA phone with Bluetooth	Headset jack	-	N	(D)1.3
	USB data	Y	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	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
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 ㎙

1.7 Test Facility

The 10 m semi anechoic chamber used to collect the radiated data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, South Korea, and the conducted measurement facility used to measure the conducted data are located at San 136-1, Ami-Ri Bubal-Eup, Icheon-Si, Kyoungki-Do, 467-701, South Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. 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

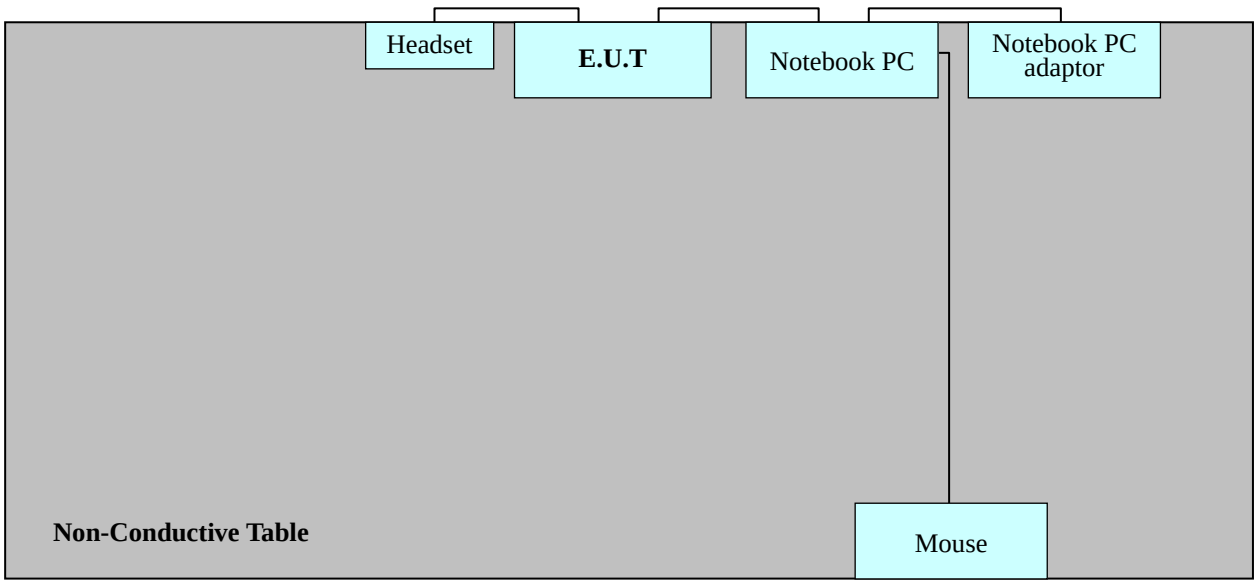
2. SYSTEM TEST CONFIGURATION

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]



Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

■ Test E.U.T with Data Communication mode, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	○

3. 2 Radiated Emission Test

■ Test E.U.T with Data Communication mode, after connecting all peripheral devices.

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	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 ㏈ Bandwidth: 9 ㎑)
Temperature	: 23.5 °C
Humidity level	: 40.1 %
Test date	: February 22, 2011

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

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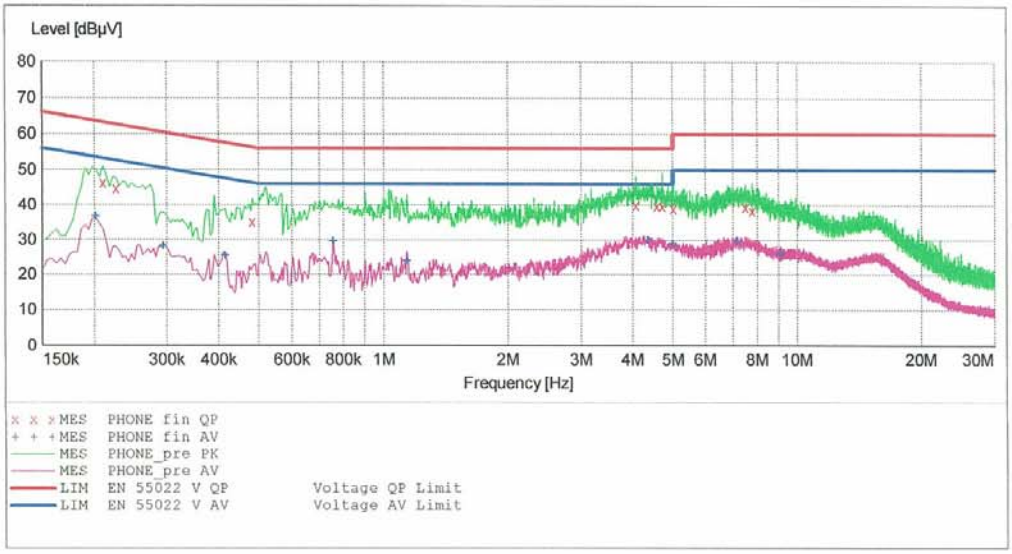
EUT: VP200
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B
Comment: H

SCAN TABLE: "FCC PART 15 CLASS B"

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
0.210010	46.20	10.1	63	17.0	---	---
0.226010	44.60	10.1	63	18.0	---	---
0.482010	35.30	10.1	56	21.0	---	---
4.076000	40.10	10.4	56	15.9	---	---
4.584000	39.70	10.5	56	16.3	---	---
4.720000	39.70	10.5	56	16.3	---	---
5.012000	39.00	10.5	60	21.0	---	---
7.500000	39.40	10.6	60	20.6	---	---
7.792000	38.50	10.7	60	21.5	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

2/22/2011 4:13PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202010	36.70	10.1	54	16.9	---	---
0.294010	28.30	10.1	50	22.1	---	---
0.414010	25.40	10.1	48	22.1	---	---
0.756000	29.60	10.1	46	16.4	---	---
1.140000	24.00	10.2	46	22.0	---	---
4.348000	30.00	10.4	46	16.0	---	---
5.000000	29.00	10.5	46	17.0	---	---
7.176000	29.60	10.6	50	20.4	---	---
9.132000	26.10	10.7	50	23.9	---	---

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HCT

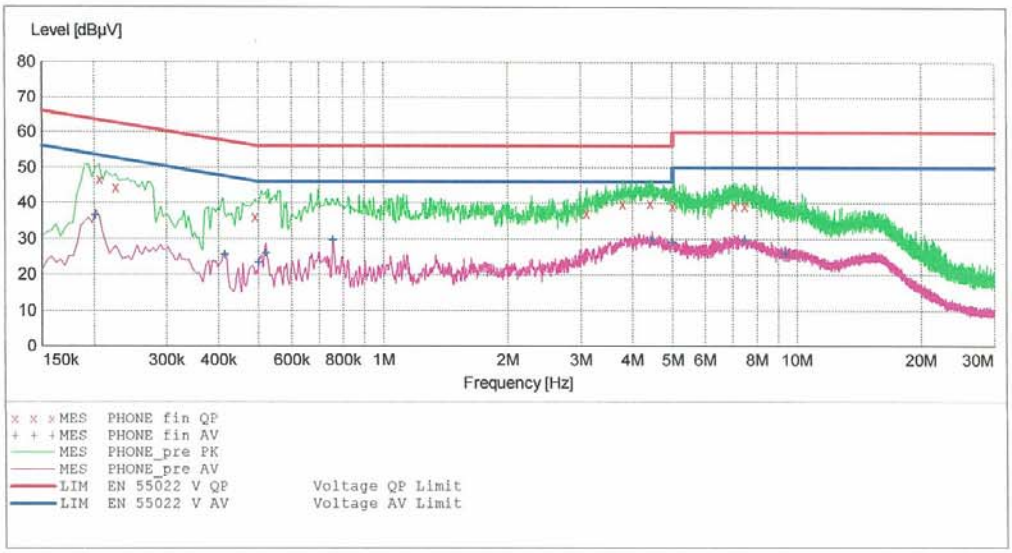
EMC

EUT: VP200
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 CLASS B"

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"

2/22/2011 4:17PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.206010	46.70	10.1	63	16.7	---	---
0.226010	44.40	10.1	63	18.2	---	---
0.490010	36.20	10.1	56	19.9	---	---
3.100000	37.20	10.4	56	18.8	---	---
3.796000	39.80	10.4	56	16.2	---	---
4.428000	40.00	10.4	56	16.0	---	---
5.000000	39.30	10.5	56	16.7	---	---
7.048000	39.40	10.6	60	20.6	---	---
7.476000	39.20	10.6	60	20.8	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

2/22/2011 4:17PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202010	36.50	10.1	54	17.0	---	---
0.414010	25.60	10.1	48	22.0	---	---
0.500000	23.40	10.1	46	22.6	---	---
0.520000	26.10	10.1	46	19.9	---	---
0.756000	29.70	10.1	46	16.3	---	---
4.476000	29.70	10.5	46	16.3	---	---
5.000000	29.10	10.5	46	16.9	---	---
7.476000	29.60	10.6	50	20.4	---	---
9.352000	26.00	10.8	50	24.0	---	---

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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
Detector	: Quasi-Peak (6 ㏈ Bandwidth: 120 ㎑)
Temperature	: 19.0 °C
Humidity level	: 42.0 %
Test date	: February 11, 2011

※ **NOTE:**

1. Refer to page 15 for details
2. For measurement above 1 ㎓, noise level is more than 14 ㏈ below the limit, specified in FCC Part 15.35

Test 1 / 1

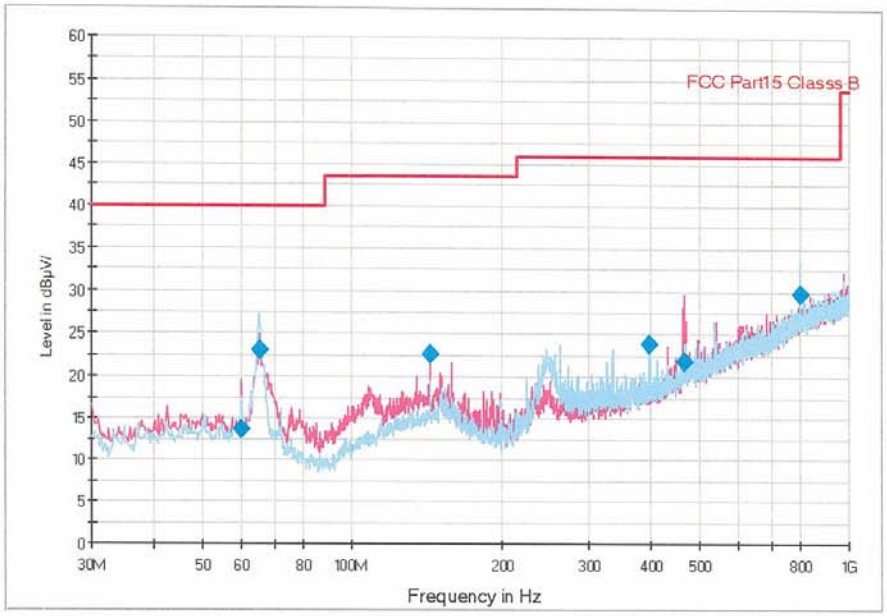
HCT Test Report

Common Information

EUT Name: VP200
Test Description: DATA
Operator Name:
Environment Conditions:
Comment:

FCC Part15 Class B

FCC Part15 Class B



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
60.001900	13.6	100.0	V	279.0	12.9	26.4	40.0	
65.062000	23.2	350.0	H	2.0	12.2	16.8	40.0	
144.015200	22.7	100.0	V	221.0	14.4	20.8	43.5	
398.465500	23.8	100.0	H	216.0	18.2	22.2	46.0	
467.485200	21.8	100.0	V	301.0	19.9	24.2	46.0	
798.934600	29.7	198.0	H	233.0	26.5	16.3	46.0	

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	100584	2011.05.28
☒	LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
☒	LISN	Rohde & Schwarz	ENV216	3560.6550.02	2011.04.05
☒	Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.52	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	VULB9160	3301	2012.09.13
☒	Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
☒	Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
☒	Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
☐	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 **PCS CDMA phone with Bluetooth, Model: VP200, FCC ID: BEJVP200** complies with §15.107 and §15.109 of the FCC rules.