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EMI CERTIFICATION REPORT

Applicant: **LG Electronics Inc.** **60-39, Gasan-dong, Gumchon-gu, Seoul 153-023, Korea**	**Date of Issue: June 30, 2011** **Test Report No.: HCTE1106FE42** **Test Site: HCT CO., LTD.** **HCT FRN: 0005-8664-21**

FCC ID: **BEJP690G**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: Cellular/PCS GSM/GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN
Trade Name	: LG Electronics Inc
Model(s)	: LG-P690g, P690g, LGP690g, LG-P690G, P690G, LGP690G
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
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Approved by
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TABLE OF CONTENTS

	PAGE
1. GENERAL INFORMATION	
1.1 Product description	4
1.2 Related submittal(s)/Grant(s)	4
1.3 Tested system details	5
1.4 Cable description	6
1.5 Noise suppression parts on cable. (I/O cable)	6
1.6 Test methodology	7
1.7 Test facility	7
1.8 Frequency Range of Radiated Measurements	7
2. SYSTEM TEST CONFIGURATION	
2.1 Configuration of tested system	8
3. PRELIMINARY TEST	
3.1 Conducted Emission test	9
3.2 Radiated Emission test	9
4. CONDUCTED AND RADIATED EMISSION TESTS SUMMARY	
4.1 Conducted Emission test	10
4.2 Radiated Emission test	14
5. FIELD STRENGTH CALCULATION	15
6. TEST EQUIPMENT	16
7. CONCLUSION	17

ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test is **Type: Cellular/PCS GSM/GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN, Model: LG-P690g** manufactured by **LG Electronics Inc**. Its basic purpose is used for communications.

Model (s)	LG-P690g
Additional Model	P690g, LGP690g, LG-P690G, P690G, LGP690G
FCC ID	BEJP690G
E.U.T Type	Cellular/PCS GSM/GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN
TX Frequency	824.20 ㎒ to 848.80 ㎒ (GSM 850) 1 850.20 ㎒ to 1 909.80 ㎒ (GSM 1 900) 826.40 ㎒ to 846.60 ㎒ (WCDMA 850) 1 852.4 ㎒ to 1 907.6 ㎒ (WCDMA 1 900)
RX Frequency	869.20 ㎒ to 893.80 ㎒ (GSM 850) 1 930.20 ㎒ to 1 989.80 ㎒ (GSM 1 900) 871.40 ㎒ to 891.60 ㎒ (WCDMA 850) 1 932.4 ㎒ to 1 987.6 ㎒ (WCDMA 1 900)

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/PCS GSM/ GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN	LG	LG-P690g	BEJP690G	Notebook PC
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
Headset	CRESYN	SGEY0003744	-	E.U.T
USB cable	KSD	SGDY0016701	-	E.U.T Notebook PC
SD card (2 GB)	SanDisk	-	-	E.U.T

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
Cellular/PCS GSM/ GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN	Headset jack	-	N	(D)1.2
	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
Cellular/PCS GSM/ GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN	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 10 m semi anechoic chamber used to collect the test is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, Republic of 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

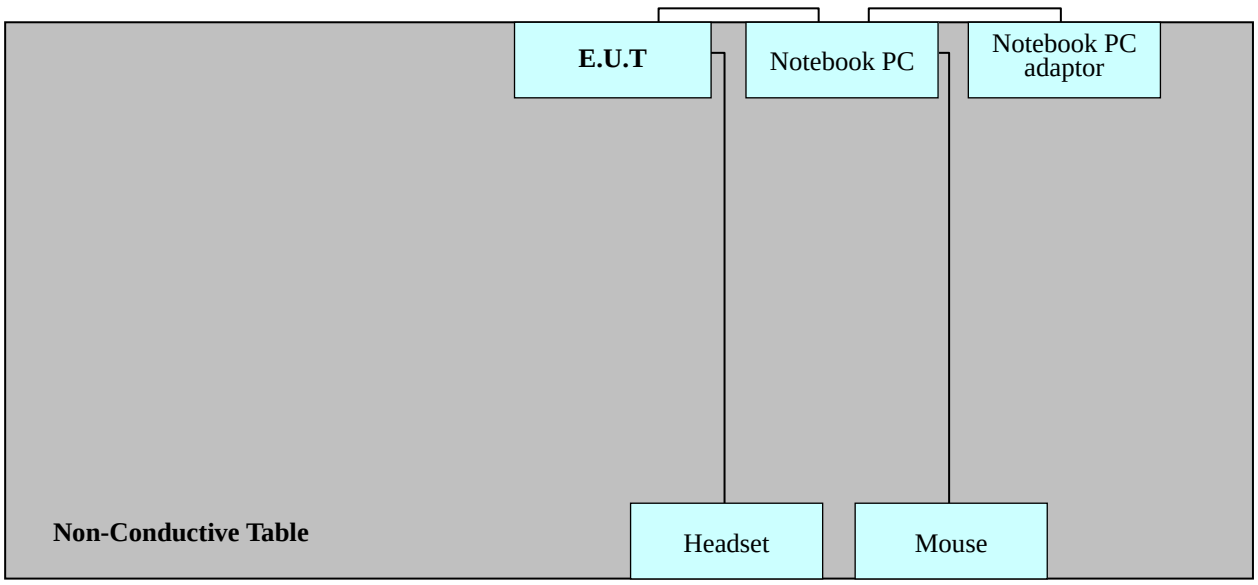
2. SYSTEM TEST CONFIGURATION

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 10 m semi-anechoic chamber.

[Configuration of Tested System]



Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

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

Operation Mode: ☒ Data Communication mode

3. 2 Radiated Emission Test

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

Operation Mode: ☒ Data Communication 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	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 ㏈ Bandwidth: 9 ㎑)
Operation Mode	: Data Communication mode
Temperature	: 25.7 °C
Humidity Level	: 50.3 %
Test Date	: June 14, 2011

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

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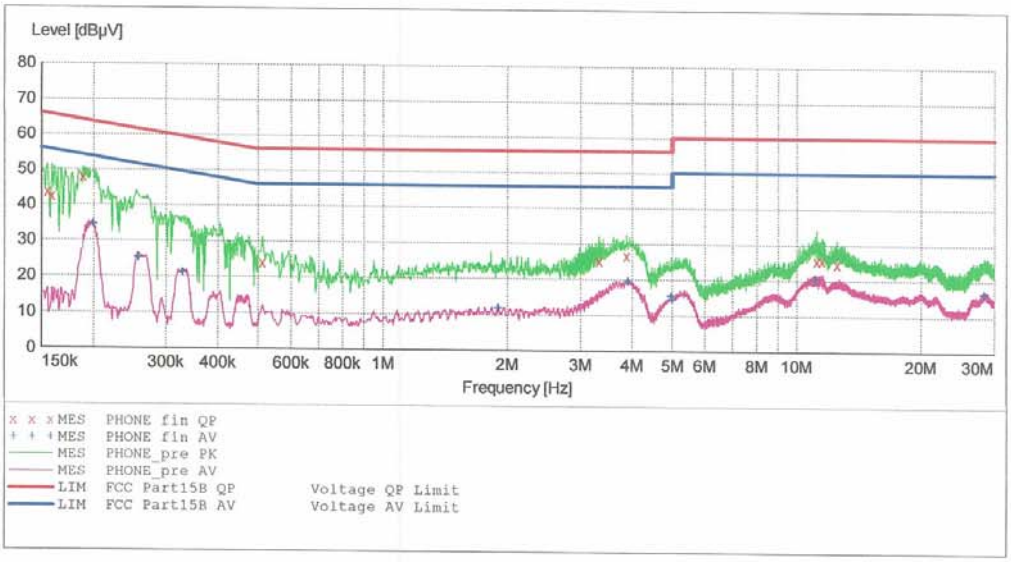
EUT: LG-P690g
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B

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"

6/14/2011 3:33PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.155010	43.50	10.1	66	22.3	---	---
0.159010	42.30	10.1	66	23.2	---	---
0.189010	47.90	10.1	64	16.2	---	---
0.512000	24.00	10.1	56	32.0	---	---
3.336000	25.10	10.3	56	30.9	---	---
3.884000	26.60	10.4	56	29.4	---	---
11.180000	25.50	11.0	60	34.5	---	---
11.496000	25.70	11.1	60	34.3	---	---
12.524000	24.60	11.2	60	35.4	---	---

Page 1/2 6/14/2011 3:33PM PHONE

MEASUREMENT RESULT: "PHONE_fin AV"

6/14/2011 3:33PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.200010	34.40	10.1	54	19.2	---	---
0.257010	25.20	10.1	52	26.3	---	---
0.329010	21.10	10.1	50	28.4	---	---
1.904000	11.90	10.2	46	34.1	---	---
3.920000	19.50	10.4	46	26.5	---	---
4.972000	15.40	10.5	46	30.6	---	---
5.000000	14.70	10.5	46	31.3	---	---
11.100000	20.20	11.0	50	29.8	---	---
28.348000	16.50	12.2	50	33.5	---	---

Page 2/2 6/14/2011 3:33PM PHONE

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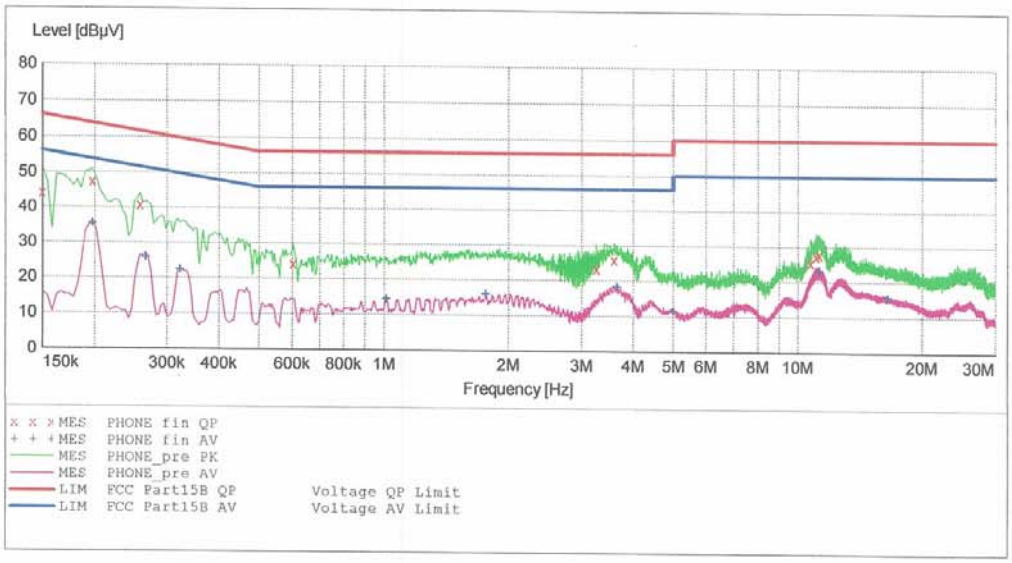
EMC

EUT: LG-P690g
Manufacturer: LG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: FCC PART 15 CLASS B

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"

6/14/2011 3:37PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150010	44.00	10.3	66	22.0	---	---
0.198010	47.30	10.3	64	16.4	---	---
0.258010	40.70	10.3	62	20.8	---	---
0.604000	24.10	10.3	56	31.9	---	---
3.264000	23.30	10.5	56	32.7	---	---
3.604000	25.90	10.6	56	30.1	---	---
10.752000	25.40	11.1	60	34.6	---	---
11.092000	27.40	11.1	60	32.6	---	---
11.296000	27.60	11.1	60	32.4	---	---

Page 1/2 6/14/2011 3:37PM PHONE

MEASUREMENT RESULT: "PHONE_fin AV"

6/14/2011 3:37PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.198010	35.40	10.3	54	18.3	---	---
0.266010	25.80	10.3	51	25.4	---	---
0.322010	22.20	10.3	50	27.4	---	---
1.016000	14.40	10.4	46	31.6	---	---
1.764000	16.00	10.4	46	30.0	---	---
3.664000	18.30	10.6	46	27.7	---	---
5.000000	11.40	10.7	46	34.6	---	---
11.288000	22.90	11.1	50	27.1	---	---
16.520000	15.50	11.5	50	34.5	---	---

Page 2/2 6/14/2011 3:37PM PHONE

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 ㎓

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

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

Temperature : 25.1 °C

Humidity Level : 53.7 %

Test Date : June 15, 2011

Frequency (MHz)	Reading (dBuV)	Polarity (H/V)	Antenna Height (m)	Correction Factor		Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
				Antenna (dB/m)	Cable (dB)			
121.0	14.54	V	1.0	11.36	1.90	43.5	27.8	15.7
147.1	12.25	V	1.0	12.76	2.09	43.5	27.1	16.4
240.0	13.88	H	2.5	11.32	2.70	46.0	27.9	18.1
336.0	14.25	H	2.5	14.22	3.23	46.0	31.7	14.3
479.9	5.47	H	1.5	17.53	3.90	46.0	26.9	19.1
720.0	8.17	H	1.0	21.48	4.85	46.0	34.5	11.5

※ **NOTE:**

1. Measurement above 1 ㎓ was performed from 1 ㎓ to the 5th harmonic of highest fundamental frequency. The highest fundamental frequency is GSM 1 900 center frequency.
2. For measurement above 1 ㎓, Emission noise was not founded over the ambient noise.

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	357.8810.352	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	VULB9160	3125	2013.05.03
☒	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
☒	Power Amplifier	Rohde & Schwarz	SCU-18	10094	2011.09.29
☐	Base Station	Rohde & Schwarz	CMU 200	1100000802	2012.02.16

7. CONCLUSION

The data collected shows that the **Cellular/PCS GSM/GPRS/EDGE/HSDPA Phone with Bluetooth and WLAN, Model: LG-P690g, FCC ID: BEJP690G** complies with §15.107 and §15.109 of the FCC rules.