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<http://www.digitalemcc.com>

FCC Test Report

FCC ID : BEJE300

Applicant : LG Electronics Inc.

Model Number : LG-E300

Additional Model(s) : E300

Manufacturer : LG Electronics Inc.

ANSI C 63.4:2003

Test Standard : FCC Part 15 Subpart B

(Type of Device : Class B Computing Device Peripheral (JBP))

Date of Tests : January 24 ~ January 31, 2011

Date of Issue : February 7, 2011

Tested by : M.J.SONG Manager

Reviewed by : Y.K.SHIN/Manager

A handwritten signature in black ink, appearing to be 'M.J. Song', written over a horizontal line.

A handwritten signature in black ink, appearing to be 'Y.K. Shin', written over a horizontal line.

This test result only responds to the tested sample.

It is not allowed to copy this report even partly without the allowance of the test laboratory.

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1. General Remarks

This Report describes the emission characteristics of the tested product.

If the product will be used with additional equipment other than those mentioned in this report or if the tested product will be used against the manufacture's specifications, the compliance with the relevant standards for the system has to be ensured.

2. Test Laboratory

Digital EMC Co., Ltd. has been accredited / filed / authorized by the agencies listed in the following table;

Certificate	Nation	Agency	Code	Mark
Accreditation	Korea	KOLAS	393	ISO/IEC 17025
Site Filing	USA	FCC	101842	Test Facility list & NSA Data
	Japan	VCCI	C-1427 R-1364, R-3385 T-1442	Test Facility list & NSA Data
Certification	Korea	KCC	KR0034	Test Facility list & NSA Data
	Germany	TUV	ROK1028C	ISO/IEC 17025

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".

DIGITAL EMC CO., LTD.

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3. General Information of EUT

3.1 Product Description

Equipment Under Test (E.U.T) is Cellular/PCS GSM/GPRS/EDGE phone with Bluetooth

Model: LG-E300 manufactured by LG Electronics Inc. Its basic purpose is used for communications.

3.2 Product Information

Model No.	LG-E300
Add Model No.	E300
EUT Type	Cellular/PCS GSM/GPRS/EDGE phone with Bluetooth
Serial No	NONE
FCC ID	BEJE300
Type of Sample Tested	Pre-Production
High Frequency	184MHz
Supplied Power for Test	AC120V, 60Hz
Applicant	LG Electronics Inc. 60-39, Gasan-dong, Gumchon-gu, Seoul, 153-023, Korea
TX Frequency	824.20 MHz to 848.80 MHz (GSM850) 1850.20 MHz to 1909.80 MHz (GSM1900)
RX Frequency	869.20 MHz to 893.80 MHz (GSM850) 1930.20 MHz to 1989.80 MHz (GSM1900)
Date of Receipt of Sample	2011-01-10

Related Submittal(s) / Grant(s)

Original submittal only.

4. Test Summary

4.1 Summary of tests

The applied standards to evaluate the compliance of requirements is 47CFR Part 15, Subpart B and the measurement procedures specified in ANSI C63.4 are performed.

Test Items	Applied Standards	Status
Emission		
Conducted Emission	FCC Part 15 Subpart B	C
Radiated Emission	FCC Part 15 Subpart B	C
Note 1: C=Conform NC=Not Conform NT=Not Tested NA=Not Applicable		

5. Test Set-up and operation mode

5.1 Principle of Configuration Selection

Emission : The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

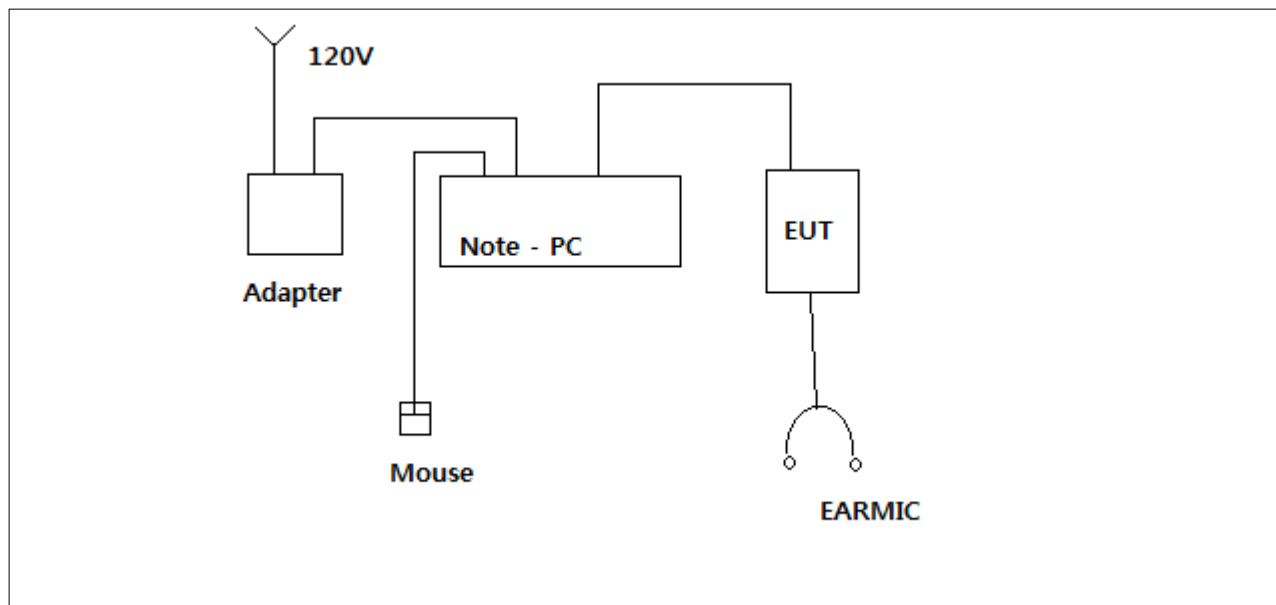
5.2 Test Operation Mode

- PC link mode(The measurement was made of the maximized by: Write/Delete the “H” pattern mode; data exchange speed; moving the cable)

5.3 Support Equipment Used

Unit	Model No.	Serial No.	Manufacturer	CABLE			Backshell	FCC ID
				Connect type	Length (m)	shield		
NOTE PC	LGX14	F022040	LG	USB	1.0	Shield	Plastic	DOC
				DC POWER	1.6	Shield	Plastic	
				USB	1.4	Shield	Plastic	
MOUSE	OMS3CB	OMS3CBGGD RT	SAMSUNG ELECTRO- MECHANICS	USB	1.4	Shield	Plastic	DOC
ADAPTER	ADP-40PH	6T1094	DELTA ELECTRONICS,INC.	AC POWER	1.2	Shield	Plastic	-
EARMIC	A184	N/A	CRESYN	Stereo	1.2	Shield	Plastic	-

(Configuration of Tested System)



6. Test Results : Emission

6.1 Conducted Emission

RESULT : COMPLY

6.1.1 Measurement Procedure

In the range of 0.15MHz to 30MHz, the conducted emission was measured and set-up was made accordance with **ANSI C63.4:2003**.

If the EUT is table top equipment, it was placed on a wooden table with a height of 0.8m above the reference ground plane and 0.4m from the conducting wall of the shielded room.

Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15m above the reference ground plane.

Connect the EUT's power source lines to the appropriate power mains / peripherals through the LISN. All the other peripherals are connected to the 2nd LISN, if any.

Unused measuring port of the LISN was resistively terminated by 50 ohm terminator.

The measuring port of the LISN for EUT was connected to spectrum analyzer.

Using TSJ conducted emission test software, the emissions were scanned from 150KHz to 30MHz with peak detector mode.

After scanning over the frequency range, suspected emissions were selected to perform final measurement. When performing final measurement, the receiver was used which has Quasi-Peak detector and Average detector.

By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission.

For further description of the configuration refer to the picture of the test set-up.

6.1.2 List of Test and Measurement Instruments

Name of Instrument	Model No.	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
EMI TEST RECEIVER	ESCI	100364	R&S	2010.05.12	2011.05.12
DC BLOCK	KFL-007	7-1581-5	Hyuplip	-	-
LISN	LISN1600	197204	TTI	2010.07.02	2011.07.02
LISN(EUT)	ESH2-Z5	828739/006	R&S	2010.10.01	2011.10.01
50 ohm Terminator	CT-01	N/A	TME	2011.01.10	2012.01.10

6.1.3 Limit for Conducted Emission

(1) Conducted Emission at mains ports of class A

Frequency range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60
Note The lower limit shall apply at the transition frequencies.		

(2) Conducted Emission at mains ports of class B

Frequency range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1 The lower limit shall apply at the transition frequencies.		
Note 2 The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

6.1.4 Test Result

Test date	January 27, 2011
Ambient Temperature	21 °C
Relative Humidity	36 % R.H.

Result : For the measurement data, see next page.

- Note) 1. Emission Level = Reading Value + Correction Factor.
2. Correction Factor = Cable Loss + Insertion Loss of LISN
3. Margin = Limit - Emission level
4. Passed by 9.3 dB

Power Line Conducted Emissions			FCC PART 15b Class B		
Frequency (MHz)	Amplitude (dB μ V)	Conductor	Detector	Limit (dB μ V)	Margin (dB)
0.160	55.7	N	Quasi-Peak	65.5	9.8
0.152	56.6	L1	Quasi-Peak	65.9	9.3

Test Result



Results of Conducted Emission

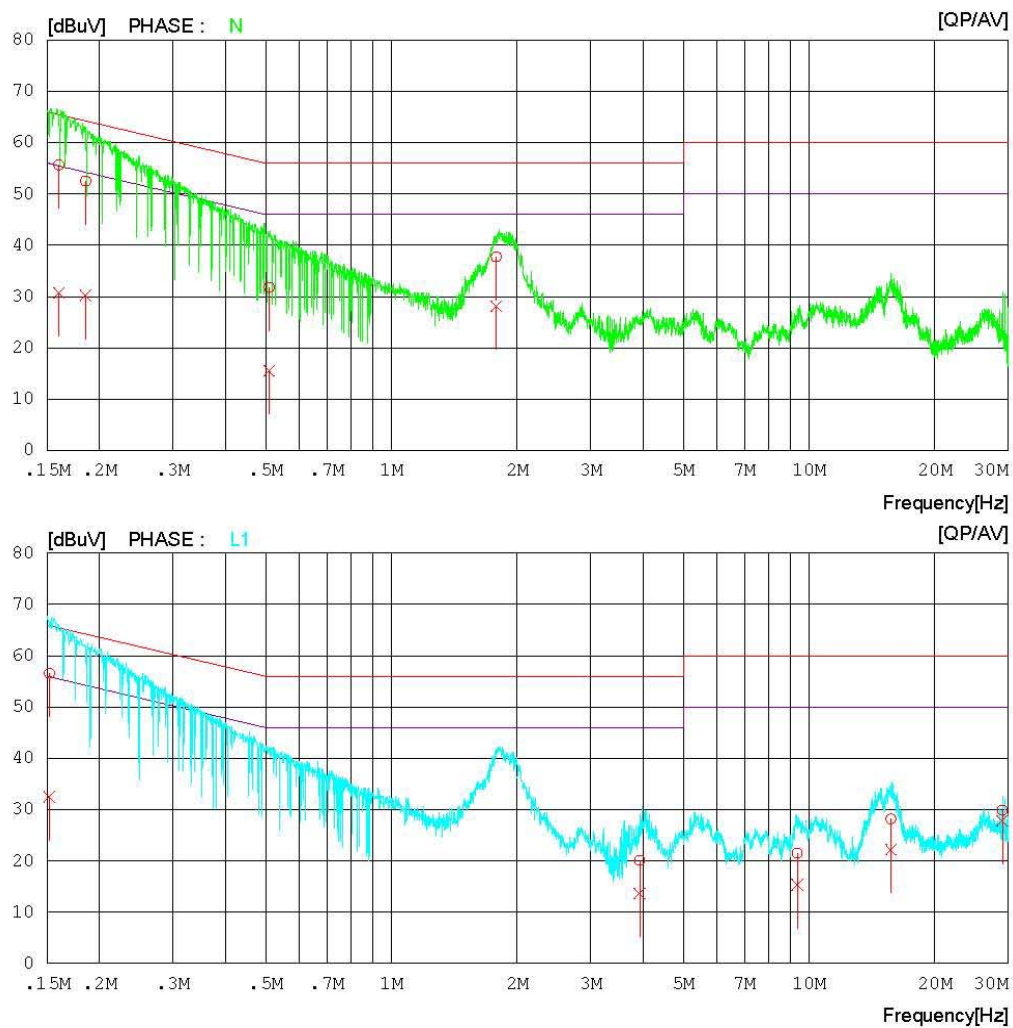
Digital EMC
Date : 2011/01/27

Model No. : LG-E300
Type :
Serial No. :
Test Condition : DATA MODE

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 21 °C 36 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2011/01/27

Model No. : LG-E300
Type :
Serial No. :
Test Condition : DATA MODE

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 21 °C 36 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15979	55.6	30.6	0.1	55.7	30.7	65.5	55.5	9.8	24.8	N
2	0.18526	52.4	30.1	0.1	52.5	30.2	64.2	54.2	11.7	24.0	N
3	0.50955	31.6	15.3	0.2	31.8	15.5	56.0	46.0	24.2	30.5	N
4	1.78200	37.5	27.8	0.3	37.8	28.1	56.0	46.0	18.2	17.9	N
5	0.15173	56.5	32.4	0.1	56.6	32.5	65.9	55.9	9.3	23.4	L1
6	3.92750	19.7	13.2	0.4	20.1	13.6	56.0	46.0	35.9	32.4	L1
7	9.35700	20.9	14.7	0.6	21.5	15.3	60.0	50.0	38.5	34.7	L1
8	15.69650	27.4	21.4	0.8	28.2	22.2	60.0	50.0	31.8	27.8	L1
9	29.02250	28.6	26.5	1.3	29.9	27.8	60.0	50.0	30.1	22.2	L1

6.2 Radiated Emission

RESULT : COMPLY

6.2.1 Measurement Procedure

The radiated emission was measured and set-up was made accordance with **ANSI C63.4:2003**.

If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8m above the reference ground plane and 3m away from the interference receiving antenna in the **10m semi-anechoic chamber**.

Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15m above the reference ground plane.

Rotate the EUT from 0° to 360° and position the receiving antenna at heights from 1 to 4m above the reference ground plane continuously to determine associated with higher emission levels and record them.

The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

For below 1GHz frequency range, Quasi-Peak detector with 120kHz RBW was used.

Also Peak and Average detector with 1MHz RBW were used for above 1GHz frequency range.

For further description of the configuration refer to the picture of the test set-up.

6.2.2 List of Test and Measurement Instruments

Radiated Emission (10m Chamber)					
Name of Instrument	Model No.	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
EMI Test Receiver	ESU	100014	R&S	2011.01.20	2012.01.20
Bilog Antenna	CBL6112B	2737	SCHAFFNER	2010.07.14	2011.07.14
Horn Antenna	BBHA9120A	322	SCHWARZBECK	2010.04.13	2011.04.13
Amplifier(22dB)	8447E	2945A02865	H/P	2011.01.11	2012.01.11
Low Noise Preamplifier	MLA-00108-B02-36	1518831	TSJ	2011.01.11	2012.01.11
Controller	5905A	N/A	TOKIN	-	-
ANT.master	N/A	N/A	TOKIN	-	-

6.2.3 Limit of Radiated Emission

- The test frequency range of Radiated Emission measurements are listed below.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40GHz, whichever is lower

(1) Limit for Radiated Emission below 1000MHz

Frequency range (MHz)	Class A Equipment (10m distance)	Class B Equipment (3m distance)
	Quasi-peak limits (dB μ V/m)	Quasi-peak limits (dB μ V/m)
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1000	49.5	54
Note 1 The lower limit shall apply at the transition frequency. Note 2 Additional provisions may be required for cases where interference occurs. Note 3 According to 15.109(g), as an alternative to the radiated emission limit shown above, digital devices may be shown to comply with the standards(CISPR), Pub. 22 shown as below.		
30 to 230	40	30
230 to 1000	47	37

(2) Limits for Radiated Emission in the frequency range 1000 - 2000MHz at a measuring distance of 10m

Frequency (GHz)	Class A Equipment		Class B Equipment	
	peak (dB μ V/m)	peak (dB μ V/m)	peak (dB μ V/m)	Average (dB μ V/m)
1 to 2	69.5	49.5	63.5	43.5

(3) Limits for Radiated Emission above 1000MHz at a measuring distance of 3m

Frequency (GHz)	Class A Equipment		Class B Equipment	
	peak (dB μ V/m)	peak (dB μ V/m)	peak (dB μ V/m)	Average (dB μ V/m)
1 to 40	80	60	74	54

6.2.4 Test Result

Test date	January 24, 2011.	January 31, 2011.
Ambient Temperature	21 °C	23 °C
Relative Humidity	23 % R.H.	33 % R.H.

Result : For the measurement data, see next page

Note) 1. Emission Level = Reading Value + Correction Factor.

2. Correction Factor = Cable loss - Amp gain + Antenna Factor

3. Margin = Limit - Emission level

Frequency [MHz]	Pol.	Reading [dB μ V]	C.F. [dB(1/m)]	Result [dB(μ V/m)]	Limit [dB(μ V/m)]	Margin [dB]
191.995	H	43.6	-11.9	31.7	43.50	11.8

Radiated emission Test Data

Test Result

- 30MHz-1GHz



RADIATED EMISSION

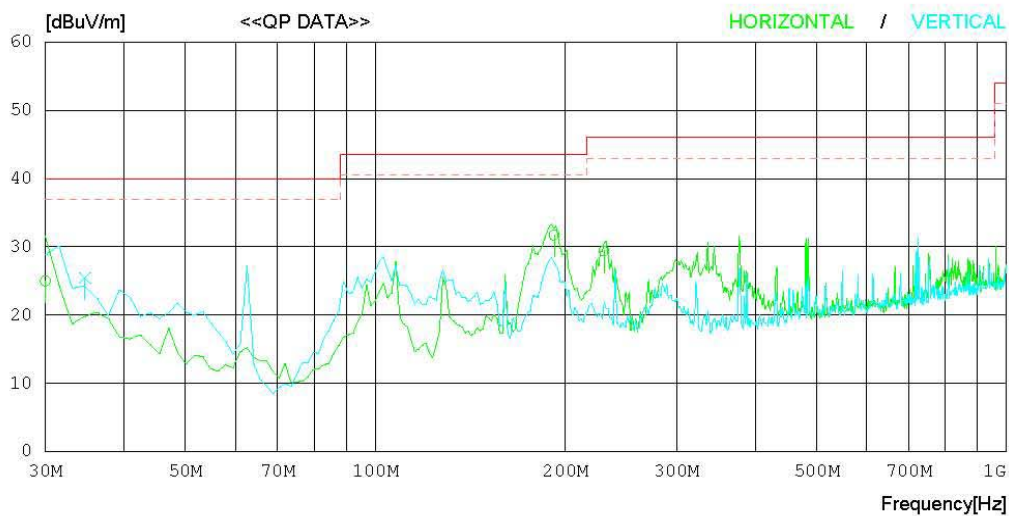
Date : 2011-01-24

Model Name : LG-E300
 Model No. :
 Serial No. :
 Test Condition :

Reference No. :
 Power Supply : 120V 60Hz
 Temp/Humi : 21 °C 23 % R.H.
 Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
 MARGIN: 3 dB



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	30.000	29.6	17.4	0.7	22.7	25.0	40.0	15.0	100	1
2	191.995	43.6	9.7	1.6	23.2	31.7	43.5	11.8	100	1
3	230.439	39.3	11.7	1.8	23.4	29.4	46.0	16.6	100	1
----- Vertical -----										
4	34.663	30.4	16.8	0.8	22.6	25.4	40.0	14.6	100	213

- 1GHz-2GHz_PEAK



RADIATED EMISSION

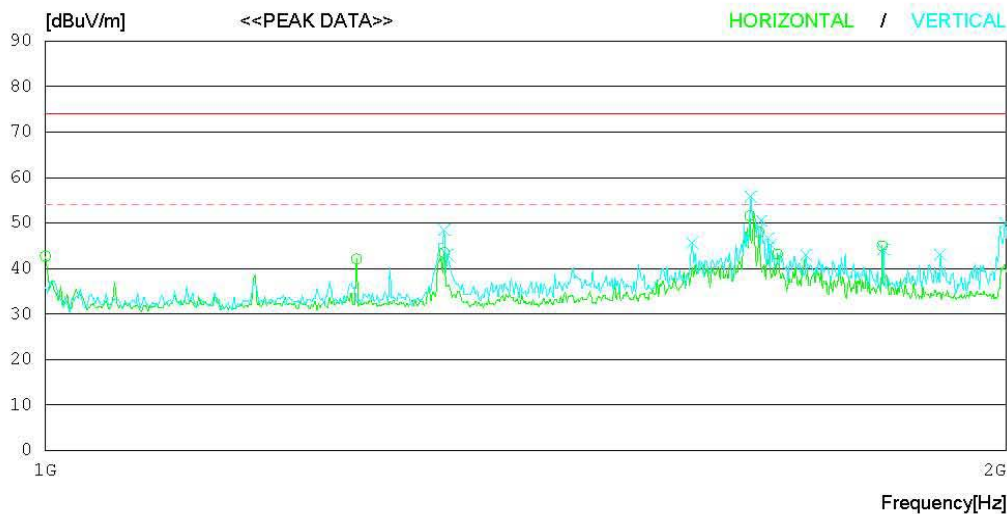
Date : 2011-01-31

Model Name : LG-E300
Model No. :
Serial No. :
Test Condition :

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 23°C 33 % R. H.
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)
FCC Part15 Subpart.B Class B (3m) - 18G(Avg)



No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1000.000	58.2	23.6	2.7	41.8	42.7	74.0	31.3	100	153
2	1251.599	56.5	24.4	3.1	41.9	42.1	74.0	31.9	100	0
3	1333.328	57.6	24.6	3.2	41.9	43.5	74.0	30.5	100	157
4	1661.849	64.6	25.2	3.7	41.9	51.6	74.0	22.4	100	358
5	1673.066	61.0	25.2	3.7	41.9	48.0	74.0	26	100	226
6	1695.502	56.1	25.2	3.8	41.9	43.2	74.0	30.8	100	358
7	1828.513	57.8	25.2	4.0	42.0	45.0	74.0	29	100	358
----- Vertical -----										
8	1333.328	62.6	24.6	3.2	41.9	48.5	74.0	25.5	100	1
9	1336.533	57.1	24.6	3.2	41.9	43.0	74.0	31	100	229
10	1594.542	58.7	25.2	3.6	41.9	45.6	74.0	28.4	100	1
11	1663.451	68.8	25.2	3.7	41.9	55.8	74.0	18.2	100	1
12	1676.271	63.5	25.2	3.7	41.9	50.5	74.0	23.5	100	1
13	1684.284	59.6	25.2	3.8	41.9	46.7	74.0	27.3	100	300
14	1687.489	58.1	25.2	3.8	41.9	45.2	74.0	28.8	100	292
15	1730.758	55.9	25.2	3.8	41.9	43.0	74.0	31	100	1
16	1830.115	57.0	25.2	4.0	42.0	44.2	74.0	29.8	100	1
17	1907.037	55.8	25.2	4.1	42.0	43.1	74.0	30.9	100	1
18	1998.382	62.6	25.2	4.2	42.0	50.0	74.0	24	100	125

- 1GHz-2GHz_AV



RADIATED EMISSION

Date : 2011-01-31

Model Name : LG-E300

Model No. :

Serial No. :

Test Condition :

Reference No. :

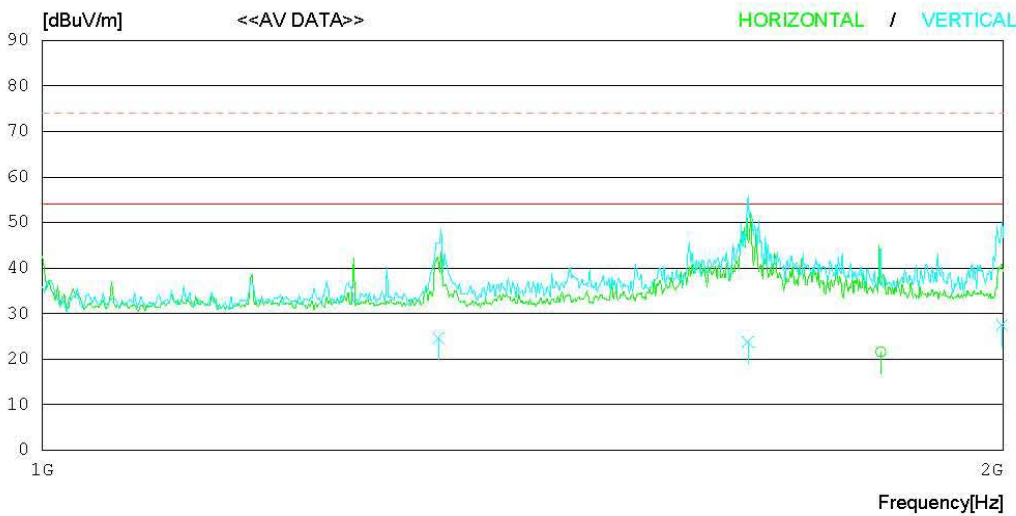
Power Supply : 120V 60Hz

Temp/Humi : 23°C 33 % R. H.

Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(Peak)



No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1830.612	34.4	25.2	4.0	42.0	21.6	54.0	32.4	100	358
----- Vertical -----										
2	1330.724	38.7	24.6	3.2	41.9	24.6	54.0	29.4	100	1
3	1663.321	36.8	25.2	3.7	41.9	23.8	54.0	30.2	100	1
4	1997.597	40.1	25.2	4.2	42.0	27.5	54.0	26.5	100	125