

# **EMC TEST REPORT**

	Test item		. Mahila I.I.a	and a st	
	Test item		: Mobile Ha	indset	
	Model No.		: LG-D165g	9	
	Order No.	Order No.		01-00241	
	Date of rece	eipt	: 2014-01-2	20	
	Test duratio	n	: 2014-02-1	19	
	Use of repo	ort	: FCC CoC	Marking	
	Date of Issu	le	: 2014-02-1	19	
Applicant	: LG Electronics M	lobileC	omm U.S.A.,	, Inc.	
	1000 Sylvan Ave	nue, Er	nglewood Cliff	fs NJ 07632	
Test laboratory	: Digital EMC Co.,	tal EMC Co., Ltd.			
	42, Yurim-ro, 154	4beon-g	gil, Cheoin-gu	ı, Yongin-si, Gyeonggi-do, Korea 449-935	
	Test specification	: ANS	SI C 63.4:200	09	
		FC	C Part 15 Sub	bpart B	
		(Cla	ass B persona	al computers and peripherals)	
	Test environment		nperature : (2		
		Hur	nidity : (34 ~ 3	36) % R.H.	
	Test result	: 🖂	Comply	Not Comply	

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:

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Assistant Manager SangWon Lee

Reviewed by:

手管强

Technical Manager ChangHo Lee

## PRESIDENT OF DIGITAL EMC CO., LTD.



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## 1. General Remarks

This report contains the result of tests performed by:

#### DIGITAL EMC CO., LTD.

Address : 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935

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Tel: +82-31-321-2664 Fax: +82-31-321-1664

# 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
	USA	FCC	101842 678747 596748	Test Facility list & NSA Data
Site Filing	Canada	IC	5740A-1 5740A-2	Test Facility list & NSA Data
	Japan	VCCI	C-1427 R-1364, R-3385, R-4076, T-1442, G-338, G754	Test Facility list & NSA Data
Certification	Korea	КС	KR0034	Test Facility list & NSA Data
Certification	Germany	TUV	CARAT 13 11 86721 001	ISO/IEC 17025

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



# 3. General Information of EUT

Model No.	Mobile Handset				
Serial No	NONE				
FCC ID	ZNFD165G				
Supplied Power for Test	AC 120 V, 60 Hz				
Clock Frequency	1.2 GHz				
Applicant	LG Electronics MobileComm U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs NJ 07632				
Manufacturer	LG Electronics MobileComm U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs NJ 07632				

Related Submittal(s) / Grant(s)

Original submittal only.



# 4. Test Summary

## 4.1 Applied standards and test results

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4:2009	С
Radiated Disturbance	ANSI C63.4:2009	С
C=Comply N/C=Not Cor	nply N/T=Not Tested N/A=Not Applicable	

The data in this test report are traceable to the national or international standards.

### 4.2 Test environment and conditions

Test Items	Test date	Temp	Humidity
	(YYYY-MM-DD)	(°C)	(% R.H.)
Conducted Disturbance	2014-02-19	21	34
Radiated Disturbance	2014-02-19	22	34
	2014-02-19	24	36

## 4.3 Test result Summary

#### (1) Conducted Emission

Frequency	Phase	Result	Detector	Limit	Margin
[MHz]	FlidSe	[dBµV]	Detector	[dBµV]	[dB]
3.86800	Ν	35.9	Average-Peak	46.0	10.1

#### (2) Radiated Emission

Frequency [MHz]	Pol.	<b>Result</b> [dB(μV/m)]	Detector	Limit [dB(µV/m)]	Margin [dB]
339.005	Н	39.1	Quasi-Peak	46.0	6.9



## 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: data exchange speed; moving the cable)

					CABLE			
Unit	Model No.	Serial No.	Manufacturer	Connect type	Length (m)	shield	Backshell	FCC ID
				POWER	1.8	Non-Shield	Plastic	
				DVI	2.0	Shield	Plastic	
				USB	1.7	Shield	Plastic	
				USB	1.6	Shield	Plastic	
PC	DC8M	D8FQFBX	DELL	USB	1.2	Shield	Plastic	DOC
				USB	1.0	Shield	Plastic	
				STEREO	2.0	Non-Shield	Plastic	
				PARALLEL	2.1	Shield	Plastic	
				ETHERNET	20.0	Non-Shield	Plastic	
LCD Monitor	U2312HM1	CN-036N7K-	DELL	POWER	1.8	Non-Shield	Plastic	DOC
LCD Monitor	02312001	74445-199-358L	DELL	DVI	2.0	Shield	Plastic	DOC
Drinton 4		N1/A	DIVOLON	POWER	1.7	Non-Shield	Plastic	DOC
Printer 1	SRP-770	N/A	BIXOLON	PARALLEL	2.1	Shield	Plastic	DOC
Keyboard	SKG-3000UB	N/A	MONTEREY INTERNATIONA L CORP.	USB	1.7	Shield	Plastic	DOC
Mouse	1094	X817158-002	MICROSOFT CORPORATION	USB	1.6	Shield	Plastic	DOC
Headset 1	COV909	N/A	COSY	STEREO	2.0	Non-Shield	Plastic	-
Headset 2	EAB62808211	N/A	I-SOUND	AUDIO	1.1	Non-Shield	Plastic	-
External HDD	9ZR8N1-500	NA0H2L7Z	Seagate	USB	1.2	Shield	Plastic	DOC

## 5.3 Support Equipment Used



# 6. Test Results : Emission

#### 6.1 Conducted Disturbance

#### 6.1.1 Measurement Procedure

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

If the EUT is table top equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 0.4 m 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 0.15 m 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 2<sup>nd</sup> 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 conducted emission test software, the emissions were scanned 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 Limit for Conducted Disturbance

(1) Conducted disturbance at mains ports.

-	Limits dB(µV)						
Frequency range (MHz)	Quas	i-peak	Average				
(11112)	Class A	Class B	Class A	Class B			
0.15 to 0.50	79	66 to 56	66	56 to 46			
0.50 to 5	70	56	60	46			
5 to 30	73	60	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 0.15 MHz to 0.5 MHz.							

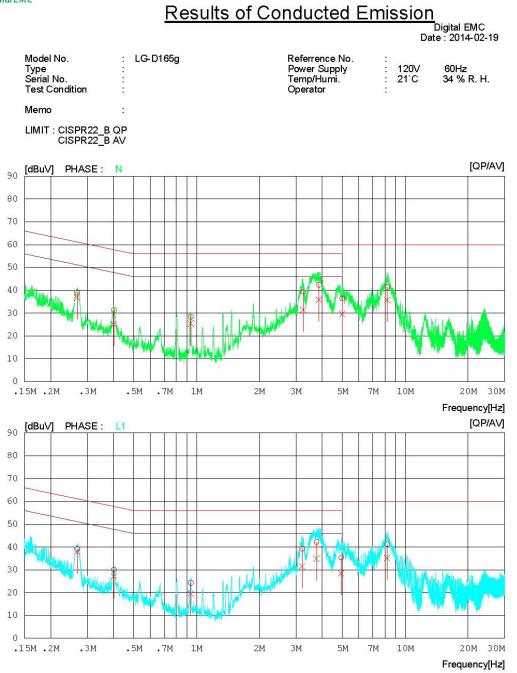
Note) 1. Emission Level = Reading Value + Correction Factor.

- 2. Correction Factor = Cable Loss + Insertion Loss of LISN
- 3. Margin = Limit Emission level



#### Test Result







#### Results of Conducted Emission Digital EMC Date : 2014-02-19

No. No. Condition		LG-D165	g		P	ower Sup emp/Hum	ply			60Hz 34 % R. H.
	:									
FREQ			.FACTOR							PHASE
[MHz]			[dB]							]
0.26770	38.9	36.7	0.1	39.0	36.8	61.2	51.2	22.2	14.4	N
0.40205	31.2	25.0	0.1	31.3	25.1	57.8	47.8	26.5	22.7	N
0.93833	28.3	25.2	0.2	28.5	25.4	56.0	46.0	27.5	20.6	N
3.24200	38.9	31.1	0.4	39.3	31.5	56.0	46.0	16.7	14.5	N
3.86800	42.0	35.5	0.4	42.4	35.9	56.0	46.0	13.6	10.1	N
		29.2	0.5	36.4	29.7	56.0	46.0	19.6	16.3	N
8.20960	41.0	35.3	0.4	41.4	35.7	60.0	50.0	18.6	14.3	N
0.26795		37.7	0.1	39.2	37.8	61.2	51.2	22.0	13.4	L1
0.40175		27.1	0.1	30.1	27.2	57.8	47.8	27.7	20.6	L1
0.93798	24.1	19.4	0.2	24.3	19.6	56.0	46.0	31.7	26.4	L1
3.20440	38.9	31.2	0.4	39.3	31.6		46.0	16.7	14.4	L1
3.76040	41.9	34.6	0.4	42.3	35.0	56.0	46.0	13.7	11.0	L1
4.93640		28.0			28.5			20.6	17.5	L1
8.19040	40.9	34.8	0.4	41.3	35.2	60.0	50.0	18.7	14.8	L1
	No. Condition : CISPR22 CISPR22 FREQ [MHz] 0.26770 0.40205 0.93833 3.24200 0.26795 0.40175 0.93798 3.20440 3.76040 4.93640	No. Condition CISPR22_B QP CISPR22_B AV FREQ READ QP [MHz] [dBuV] 0.26770 38.9 0.40205 31.2 0.93833 28.3 3.24200 38.9 3.24200 38.9 3.24200 38.9 3.26795 39.1 0.40175 30.0 0.267795 39.1 0.40175 30.0 0.26795 39.1 0.40175 30.0 0.26795 39.1 0.40175 30.0 0.93798 24.1 3.20440 38.9 3.76040 41.9 3.76040 41.9 3.76040 34.9	No. Condition CONDITION CISPR22_B AV FREQ READING O QP AV [MHz] [dBuV][dBuV] 0.26770 38.9 36.7 0.40205 31.2 25.0 0.93833 28.3 25.2 3.24200 38.9 31.1 3.86800 42.0 35.5 4.99560 35.9 29.2 8.20960 41.0 35.3 0.26795 39.1 37.7 0.40175 30.0 27.1 0.93798 24.1 19.4 3.20440 38.9 31.2 3.76040 41.9 34.6 4.93640 34.9 28.0	No. Condition :: CISPR22_B QP CISPR22_B AV FREQ READING C.FACTOR QP AV [MHz] [dBuV] [dBuV] [dB] 0.26770 38.9 36.7 0.1 0.40205 31.2 25.0 0.1 0.93833 28.3 25.2 0.2 3.24200 38.9 31.2 0.4 3.86800 42.0 35.5 0.4 4.99560 35.9 29.2 0.5 8.20960 41.0 35.3 0.4 0.26795 39.1 37.7 0.1 0.40175 30.0 27.1 0.1 0.40175 30.0 27.1 0.1 0.40175 30.0 27.1 0.1 0.93798 24.1 19.4 0.2 3.20440 38.9 31.2 0.4 3.76040 41.9 34.6 0.4 4.93640 34.9 28.0 0.5	No. Condition : CISPR22_B QP CISPR22_B AV FREQ READING C.FACTOR RES QP AV QP [MHz] [dBuV][dBuV] [dB] [dBuV] 0.26770 38.9 36.7 0.1 39.0 0.40205 31.2 25.0 0.1 31.3 0.93833 28.3 25.2 0.2 28.5 3.24200 38.9 31.1 0.4 39.3 3.86800 42.0 35.5 0.4 42.4 4.99560 35.9 29.2 0.5 36.4 8.20960 41.0 35.3 0.4 41.4 0.26795 39.1 37.7 0.1 30.1 0.93798 24.1 19.4 0.2 24.3 3.20440 38.9 31.2 0.4 39.3 3.76040 41.9 34.6 0.4 42.3 3.76040 41.9 34.6 0.4 42.3 3.76040 41.9 28.0 0.5 35.4	No.           T           Condition          T         T              T           ClSPR22_B QP         ClSPR22_B AV         QP         AV           [MHz]         [dBuV][dBuV]         [dB]         [dBuV][dBuV]           0.26770         38.9         36.7         0.1         39.0         36.8           0.40205         31.2         25.0         0.1         31.3         25.1           0.93833         28.3         25.2         0.2         28.5         25.4           3.24200         38.9         31.1         0.4         39.3         31.5           3.66800         42.0         35.5         0.4         42.4         35.9           4.99560         35.9         29.2         0.5         36.4         29.7           8.20960         41.0         35.3         0.4         41.4         35.7           0.40175         30.0         27.1         0.1         39.2         37.8           0.40175         30.0         27.1         0.1         30.1         27.2           0.93798         24.1         19.4         0.2         24.3 </td <td>No.         :         Power Sup Temp/Hun Operator           Condition         :         Temp/Hun Operator           : CISPR22_B QP CISPR22_B AV         :         IIM           <math>\mathbb{P}</math> <math>\mathbb{P}</math> <math>\mathbb{P}</math> <math>\mathbb{P}</math>           [MHz]         (dBuV)[dBuV]         (dB)         (dBuV][dBuV]         (dB)           0.26770         38.9         36.7         0.1         39.0         36.8         61.2           0.40205         31.2         25.0         0.1         31.3         25.1         57.8           0.3833         28.3         25.2         0.2         28.5         25.4         56.0           3.24200         35.5         0.4         42.4         35.9         56.0           4.99560         35.9         29.2         0.5         36.4         29.7         56.0           0.26795         39.1         37.7         0.1         39.2         37.8         61.2           0.40175         30.0         27.1         0.1         30.1         27.2         57.8           0.93798         24.1         19.4         0.2         24.3         19.6         56.0           3.76040         41.9         34.6         0.4<td>No.         Power Supply Temp/Humi. Operator           CISPR22_B QP CISPR22_B AV         C.FACTOR QP         RESULT QP         LIMIT QP           FREQ [MHz]         READING (dBuV] (dBuV)         C.FACTOR (dB)         RESULT (dBuV) (dBuV)         LIMIT (dBuV)           0.26770         38.9         36.7         0.1         39.0         36.8         61.2         51.2           0.40205         31.2         25.0         0.1         31.3         25.1         57.8         47.8           0.93833         28.3         25.2         0.2         28.5         25.4         56.0         46.0           3.24200         38.9         31.1         0.4         39.3         31.5         56.0         46.0           4.99560         35.9         29.2         0.5         36.4         29.7         56.0         46.0           0.26795         39.1         30.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.93798         24.1         1</td><td>No.       Power Supply       : 12         No.       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         ClspR22_B QP       QP       V       Operator       Power Supply         ClspR22_B AV       Presson       Power Supply       : 12       Power Supply       : 12         FREQ       READING       C.FACTOR       RESULT       LIMIT       MAI         (MHz)       (dBuV)       (dBuV)       (dB)       (dBuV)       (dBuV)       (dBuV)       (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5         0.3833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7         3.66800       42.0       31.5       56.0       46.0       13.6       21.2       22.0         0.40175       30.0       27.1       0.1       39.2       37.8       61.2</td><td>No.       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         Condition       Power Supply       120V         ClspR22_B QP       QP       QP       QP       QP       QP       AV         FREQ       READING       C.FACTOR       RESULT       LIMIT       MARGIN         QP       AV       QP       AV       QP       AV       QP       AV         (MHz]       (dBuV) (dBuV)       (dB)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2       14.4         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5       22.7         0.93833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7       14.5         3.86800       42.0       35.5       0.4       42.4       35.9       56.0       4</td></td>	No.         :         Power Sup Temp/Hun Operator           Condition         :         Temp/Hun Operator           : CISPR22_B QP CISPR22_B AV         :         IIM $\mathbb{P}$ $\mathbb{P}$ $\mathbb{P}$ $\mathbb{P}$ [MHz]         (dBuV)[dBuV]         (dB)         (dBuV][dBuV]         (dB)           0.26770         38.9         36.7         0.1         39.0         36.8         61.2           0.40205         31.2         25.0         0.1         31.3         25.1         57.8           0.3833         28.3         25.2         0.2         28.5         25.4         56.0           3.24200         35.5         0.4         42.4         35.9         56.0           4.99560         35.9         29.2         0.5         36.4         29.7         56.0           0.26795         39.1         37.7         0.1         39.2         37.8         61.2           0.40175         30.0         27.1         0.1         30.1         27.2         57.8           0.93798         24.1         19.4         0.2         24.3         19.6         56.0           3.76040         41.9         34.6         0.4 <td>No.         Power Supply Temp/Humi. Operator           CISPR22_B QP CISPR22_B AV         C.FACTOR QP         RESULT QP         LIMIT QP           FREQ [MHz]         READING (dBuV] (dBuV)         C.FACTOR (dB)         RESULT (dBuV) (dBuV)         LIMIT (dBuV)           0.26770         38.9         36.7         0.1         39.0         36.8         61.2         51.2           0.40205         31.2         25.0         0.1         31.3         25.1         57.8         47.8           0.93833         28.3         25.2         0.2         28.5         25.4         56.0         46.0           3.24200         38.9         31.1         0.4         39.3         31.5         56.0         46.0           4.99560         35.9         29.2         0.5         36.4         29.7         56.0         46.0           0.26795         39.1         30.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.93798         24.1         1</td> <td>No.       Power Supply       : 12         No.       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         ClspR22_B QP       QP       V       Operator       Power Supply         ClspR22_B AV       Presson       Power Supply       : 12       Power Supply       : 12         FREQ       READING       C.FACTOR       RESULT       LIMIT       MAI         (MHz)       (dBuV)       (dBuV)       (dB)       (dBuV)       (dBuV)       (dBuV)       (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5         0.3833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7         3.66800       42.0       31.5       56.0       46.0       13.6       21.2       22.0         0.40175       30.0       27.1       0.1       39.2       37.8       61.2</td> <td>No.       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         Condition       Power Supply       120V         ClspR22_B QP       QP       QP       QP       QP       QP       AV         FREQ       READING       C.FACTOR       RESULT       LIMIT       MARGIN         QP       AV       QP       AV       QP       AV       QP       AV         (MHz]       (dBuV) (dBuV)       (dB)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2       14.4         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5       22.7         0.93833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7       14.5         3.86800       42.0       35.5       0.4       42.4       35.9       56.0       4</td>	No.         Power Supply Temp/Humi. Operator           CISPR22_B QP CISPR22_B AV         C.FACTOR QP         RESULT QP         LIMIT QP           FREQ [MHz]         READING (dBuV] (dBuV)         C.FACTOR (dB)         RESULT (dBuV) (dBuV)         LIMIT (dBuV)           0.26770         38.9         36.7         0.1         39.0         36.8         61.2         51.2           0.40205         31.2         25.0         0.1         31.3         25.1         57.8         47.8           0.93833         28.3         25.2         0.2         28.5         25.4         56.0         46.0           3.24200         38.9         31.1         0.4         39.3         31.5         56.0         46.0           4.99560         35.9         29.2         0.5         36.4         29.7         56.0         46.0           0.26795         39.1         30.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.40175         30.0         27.1         0.1         30.1         27.2         57.8         47.8           0.93798         24.1         1	No.       Power Supply       : 12         No.       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         Condition       Power Supply       : 12         ClspR22_B QP       QP       V       Operator       Power Supply         ClspR22_B AV       Presson       Power Supply       : 12       Power Supply       : 12         FREQ       READING       C.FACTOR       RESULT       LIMIT       MAI         (MHz)       (dBuV)       (dBuV)       (dB)       (dBuV)       (dBuV)       (dBuV)       (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5         0.3833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7         3.66800       42.0       31.5       56.0       46.0       13.6       21.2       22.0         0.40175       30.0       27.1       0.1       39.2       37.8       61.2	No.       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         No.       Power Supply       120V         Condition       Power Supply       120V         Condition       Power Supply       120V         ClspR22_B QP       QP       QP       QP       QP       QP       AV         FREQ       READING       C.FACTOR       RESULT       LIMIT       MARGIN         QP       AV       QP       AV       QP       AV       QP       AV         (MHz]       (dBuV) (dBuV)       (dB)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)       (dBuV) (dBuV)         0.26770       38.9       36.7       0.1       39.0       36.8       61.2       51.2       22.2       14.4         0.40205       31.2       25.0       0.1       31.3       25.1       57.8       47.8       26.5       22.7         0.93833       28.3       25.2       0.2       28.5       25.4       56.0       46.0       16.7       14.5         3.86800       42.0       35.5       0.4       42.4       35.9       56.0       4



## 6.2 Radiated Disturbance

#### 6.2.1 Measurement Procedure

The radiated disturbance was measured and set-up was made accordance with ANSI C63.4.

If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 3 m or 10 m 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 0.15 m above the reference ground plane.

Rotate the EUT from  $(0 - 360)^{\circ}$  and position the receiving antenna at heights from (1 - 4) m 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 1 GHz frequency range, Quasi-Peak detector with 120 kHz RBW was used.

Also Peak and Average detector with 1 MHz RBW were used for above 1 GHz frequency range. For further description of the configuration refer to the picture of the test set-up.



#### 6.2.2 Limit for Radiated Disturbance

#### - The test frequency range of Radiated Disturbance 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	1 000
108 – 500	2 000
500 – 1 000	5 000
Above 1 000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

#### (1) Limit for Radiated Emission below 1 000MHz

Frequency range (MHz)	Class A Equipment (10 m distance) Quasi-peak (dBµV/m)	Class B Equipment (3 m distance) Quasi-peak (dBµV/m)
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1 000	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.

Frequency range (MHz)	Class A Equipment (10 m distance) Quasi-peak (dBµV/m)	Class B Equipment (10 m distance) Quasi-peak (dBµV/m)
30 to 230	40	30
230 to 1 000	47	37

(2) Limits for Radiated Emission above 1 000MHz at a measuring distance of 3 m

Frequency	Class A E	quipment	Class B Equipment		
(GHz)	Peak (dBµV/m)	Average (dBµV/m)	Peak (dBµV/m)	Average (dBµV/m)	
1 to 40	80	60	74	54	

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

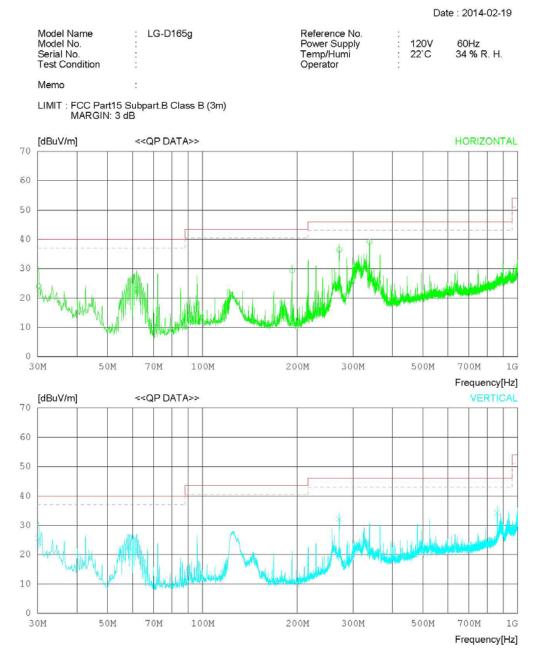
2. Correction Factor = Cable loss - Amp gain + Antenna Factor

3. Margin = Limit - Emission level



#### Test Result

#### < 30 MHz ~ 1 GHz >





Date : 2014-02-19

Model N Model N Serial N Test Co	0. D.	LG	-D165g			Po Te	eference No wer Suppl emp/Humi perator		120V 22°C	60Hz 34 % R. H.
Memo		:								
	FCC Part MARGIN:	15 Subpart 3 dB	.B Class E	3 (3m)						
No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
ł	Horizon	tal								
2 3 1 4 2	30.243 61.820 92.443 71.623 39.005	28.0 38.4 40.5 44.0 45.2	17.7 5.6 9.7 13.2 14.6	0.9 1.5 2.2 2.7 3.2	22. 22. 23. 23. 23.	6 22.9 0 29.4 5 36.4	$\begin{array}{c} 40.0\\ 40.0\\ 43.5\\ 46.0\\ 46.0 \end{array}$	16.0 17.1 14.1 9.6 6.9	323 288 100 100 100	85 285 52 326 323
1	/ertica	1								
7 8 2	30.229 58.120 71.620 60.116	29.5 37.9 39.8 31.6	17.8 5.9 13.2 20.4	0.9 1.4 2.7 4.9	22. 22. 23. 22.	6 22.6 5 32.2	$\begin{array}{c} 40.0 \\ 40.0 \\ 46.0 \\ 46.0 \end{array}$	14.4 17.4 13.8 11.8	221 206 118 100	157 62 163 1



## < (1 ~ 6) GHz\_Peak >

			Date : 2014-02-1
Model Name Model No. Serial No. Test Condition	LG-D165g	Reference No. Power Supply Temp/Humi Operator	120V 60Hz 24°C 36 % R. H.
Memo	:		
LIMIT : FCC Part1 FCC Part1	5 Subpart.B Class B (3m) - 180 5 Subpart.B Class B (3m) - 180	G(Peak) G(Avg)	
[dBuV/m]	< <peak data="">&gt;</peak>		HORIZON
		P	Land Land Land Land Land
person when the the	and the standard and a standard and a standard and the stan	her will a start of the start o	
G	2G	3G	5G Frequency
[dBuV/m]	< <peak data="">&gt;</peak>		VERTIC
	×		
		¥	
Manager Mar My Styles	عصدانه لمستارية يسمني تسريان بالاسماري	Karmel manufacture and the second	



# RADIATED EMISSION

Date : 2014-02-19

Model Name Model No. Serial No. Test Condition	LG-D165g		Powe	erence No. er Supply p/Humi rator	120V 24`C	60Hz 36 % R. H.
Memo	:					
	15 Subpart.B Class 15 Subpart.B Class					
No. FREQ	READING ANT PEAK FACTOR	LOSS GAIN	RESULT L	JIMIT MARGIN	ANTENNA	TABLE
[MHz]	[dBuV] [dB]	[dB] [dB]	[dBuV/m][d	lBuV/m] [dB]	[cm]	[DEG]
Horizont	tal					
1 1497.50 2 2495.62 3 3000.00	25 51.7 27.3	4.1 40.1 5.2 39.3 5.7 39.3	44.9	74.0 22.7 74.0 29.1 74.0 25.5	100 100 100	231 226 358
Vertica	1					
4 1497.50 5 2495.62 6 2998.12	25 55.2 27.3	4.1 40.1 5.2 39.3 5.7 39.3	48.4	74.0 18 74.0 25.6 74.0 22.4	100 100 100	0 175 10



### < (1 ~ 6) GHz\_Average >

Model Name	: LG-D165g	Reference No.	Date : 2014-02-1
Model No. Serial No. Test Condition		Power Supply Temp/Humi Operator	120V 60Hz 24`C 36 % R. H.
Memo	:		
LIMIT : FCC Part15 FCC Part15	Subpart.B Class B (3m) - 18 Subpart.B Class B (3m) - 18	G(Avg) G(Peak)	
[dBuV/m]	< <av data="">&gt;</av>		HORIZONT
		1 In man decire	
dertheminen with the man	a the number of the second descent and the second descent and the second descent and the second descent and the	philippend   philippend	
		ſ	
G	2G	3G	5G
5	20	55	Frequency[I
[dBuV/m]	< <av data="">&gt;</av>		VERTIC
[dBuV/m]	< <av data="">&gt;</av>		VERTIC
[dBuV/m]	< <av data="">&gt;</av>		VERTIC
[dBuV/m]	< <av data="">&gt;</av>		
[dBuV/m]	< <av data="">&gt;</av>		
[dBuV/m]	< <av data="">&gt;</av>		
[dBuV/m]	< <av data="">&gt;</av>	Munitiperson and and and and and and and and and an	
	< <av data="">&gt;</av>		VERTIC
	< <av data="">&gt;</av>	And and a second	
	< <av data="">&gt;</av>		VERTIC



# RADIATED EMISSION

Date : 2014-02-19

Model Name Model No. Serial No. Test Condition	LG-D165	g		Po Te	eference N ower Suppl mp/Humi berator		120V 24°C	60Hz 36 % R. H.
Memo	:							
LIMIT : FCC Part FCC Part	15 Subpart.B Cla 15 Subpart.B Cla							
No. FREQ	READING ANT AV FACT		GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
[MHz]	[dBuV] [dB		[dB] [	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
Horizont	tal							
1 1496.450 2 2498.805 3 3000.196	37.7 27.	3 5.2	40.1 39.3 39.3	30.9	54.0 54.0 54.0	14.4 23.1 17.7	100 100 100	231 226 358
Vertical	L							
4 1496.315 5 2498.855 6 2998.383	39.9 27.	3 5.2	40.1 39.3 39.3	33.1	54.0 54.0 54.0	11.9 20.9 15.7	100 100 100	322 175 10



**Appendix 1** 

## **List of Test and Measurement Instruments**



To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment is identified by the Test Laboratory.

#### 1. Conducted Disturbance

Name of Instrument		Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
	SPECTRUM ANALYZER	8591E	H/P	3649A05889	2013.02.28	2014.02.28
	RFI/FIELD INTENSITY METER	KNM-2402	KYORITSU	4N-170-3	2013.06.28	2014.06.28
	LISN	KNW-407	KYORITSU	8-317-8	2014.01.08	2015.01.08
	LISN	PMM L2-16B	NARDA S.T.S. / PMM	000WX20305	2013.06.27	2014.06.27
	50 OHM TERMINATOR	CT-01	TME	N/A	2014.01.08	2015.01.08
$\square$	EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2013.02.27	2014.02.27
$\square$	LISN	ESH2-Z5	ROHDE & SCHWARZ	828739/006	2013.09.12	2014.09.12
$\square$	LISN	LISN1600	ТТІ	197204	2013.06.28	2014.06.28
$\boxtimes$	50 OHM TERMINATOR	CT-01	TME	N/A	2014.01.08	2015.01.08

#### 2. Radiated Disturbance

N	ame of Instrument	Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
$\square$	EMI TEST RECEIVER	ESU	ROHDE & SCHWARZ	100014	2014.01.08	2015.01.08
$\boxtimes$	<b>BILOG ANTENNA</b>	CBL6112B	SCHAFFNER	2737	2012.11.06	2014.11.06
$\square$	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1014	2012.10.21	2014.10.21
$\square$	AMPLIFIER	8447E	H/P	2945A02865	2014.01.08	2015.01.08
$\square$	AMPLIFIER	8447B	AGILENT	3008A01590	2013.02.27	2014.02.27
	SPECTRUM ANALYZER	E4411B	AGILENT	US41062735	2013.06.27	2014.06.27
	AMPLIFIER	8447D	AGILENT	2443A03690	2013.06.28	2014.06.28
	EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2013.02.27	2014.02.27
	BICONICAL ANT.	VHA 9103	SCHWARZBECK	91032789	2012.04.10	2014.04.10
	LOG-PERIODIC ANT.	UHALP 9108A	SCHWARZBECK	590	2012.10.04	2014.10.04
	BICONICAL ANT.	VHA 9103	SCHWARZBECK	91031946	2013.05.16	2015.05.16
	LOG-PERIODIC ANT.	UHALP 9108-A1	SCHWARZBECK	0411	2013.05.16	2015.05.16
	AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2013.02.28	2014.02.28



#### Appendix 2

# **Report Revision History**

Revision	Description	Revised By	Revision
Date	Description	Revised by	Reviewed By
None	Original	N/A	N/A
2014-02-17	Retest by TCB comment.	SangWon Lee	MyungJin Song
2014-02-19	Retest by TCB comment.	SangWon Lee	ChangHo Lee