FCC TEST REPORT

Reference No. : **G-45-2014-02792**

Applicant : **LG Electronics MobileComm U.S.A., Inc.**

Equipment Under Test (EUT) :

Product Name : Cellular/PCS GSM/GPRS/EDGE /WCDMA/HSDPA/HSUPA Smart Phone

Model Name : LGL25

Applied Standards : **FCC Part 15 Subpart B, Class B**
ANSI C63.4 : 2009
CISPR 22 : 2008

Date of Receipt : **September 16, 2014**

Date of Test : **September 29, 2014 ~ September 30, 2014**

Date of Issue : **October 31, 2014**

Test Results : **Complied**

Tested by : **Emily Lee**

Reviewed by : **Paul Kang**

Remarks :

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Member of SGS Group(Société Générale de Surveillance)

Contents

1. General Information

1.1 Client Information

Applicant : LG Electronics MobileComm U.S.A., Inc.
Address of Applicant : 10101 Old Grove Road, San Diego, CA 92131

Manufacturer : LG Electronics MobileComm U.S.A., Inc.
Address of Manufacturer : 10101 Old Grove Road, San Diego, CA 92131

1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd. (Gunpo Laboratory)
4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 435-040
Republic of Korea
Phone : + 82 31 428 5700
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e-mail : paul.kang@sgs.com

1.3 General Information of E.U.T.

Product Name	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA /HSUPA Smart Phone
Model Name	LGL25
FCC ID	ZNFLGL25
Serial No.	-
EMI Classification	Class B
Test Voltage	120 Va.c., 60 Hz (from. Notebook Computer)
Highest Internal Frequency	1.2 GHz

1.4 Operating Modes and Conditions

Operating mode	Operating condition
USB data Communication	PC Link USB Communication

1.5 Auxiliary Equipments

Description	Model	Serial No.	Manufacturer	FCC ID
LCD Monitor	S2740Lb	CN-DP7D0G-74261-352-05CL	DELL Inc.	DOC
USB MOUSE	M-UV96	F93A9OA5BS301GA	Logitech	DOC
USB Keyboard	MULTIMEDIA KEYBOARD	D11D0100665	PLEOMAX	DOC
Notebook Computer	4236-B78	R8-FAM6L 12/01	Lenovo	DOC
Wireless Router	WG602v4	-	NETGEAR	PY3WG602V4

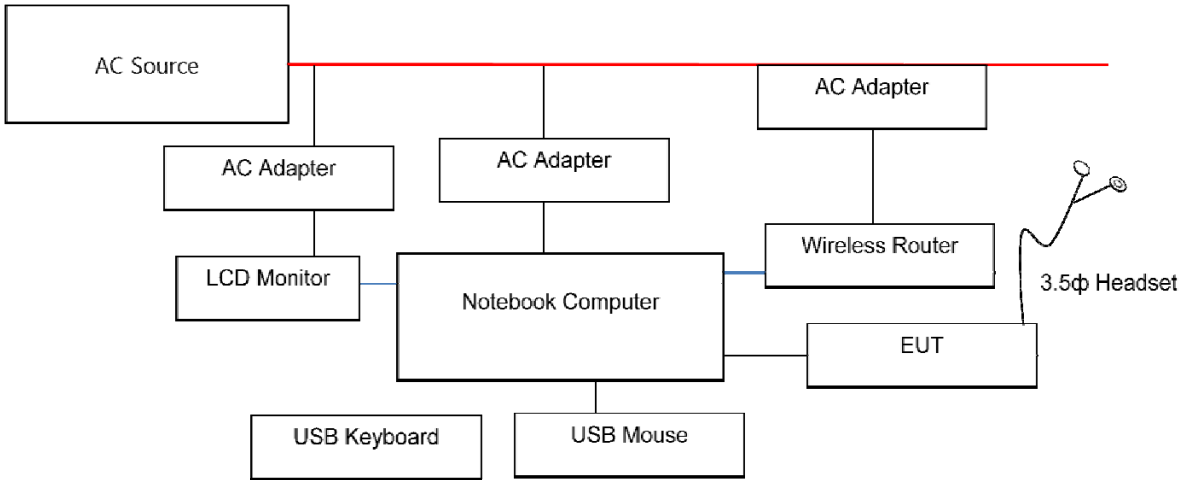
1.6 Cable List

Start		END		Cable Spec.		
Name	I/O Port	Name	I/O Port	Length	Shield	Core
EUT	Micro USB	Notebook Computer	USB	1.0	Shield	Not used
	3.5φ Headset	Headset	-	1.4	Shield	
Notebook Computer	USB	USB Mouse	-	1.8	Shield	
	USB	USB Keyboard	-	1.5	Shield	
	USB	EUT	Micro USB	1.0	Shield	
	DC IN	AC Adapter	DC OUT	1.8	Unshield	Molded*1ea.
	RGB	LCD Monitor	RGB	1.5	Shield	Molded*2ea.
	LAN	Wireless Router	LAN	3.0	Shield	Not used
AC Adapter	AC IN	AC Source	-	1.5	Unshield	
LCD Monitor	DC OUT	AC Adapter	DC IN	1.5	Unshield	Molded *1ea.
AC Adapter	AC IN	AC Source	-	1.0	Unshield	Not used
Wireless Router	DC IN	AC Adapter	DC OUT	1.0	Unshield	
AC Adapter	AC IN	AC Source	-	-	Unshield	

1.7 System Configurations

Description	Model	Serial No.	Manufacturer
USB Cable	-	-	-
Headset	-	-	-
Li-ion Battery	BL-59UH	-	LG

1.8 Test System Layout



1.9 Modifications

There was no modified item during the test.

1.10 Applicable Standards for Testing

Standards	Status	Deviation
FCC Part 15 Subpart B, Class B	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Basic Standards	Results
Conducted Emission	ANSI C63.4 : 2009	Complied
Radiated Emission	ANSI C63.4 : 2009	Complied

Note : Test methods of all test items are performed according to the basic standards in this table.

EMISSION

2.1 Test Results

Test Items	Basic Standards	Test Results
Conducted Emission	ANSI C63.4 : 2009	**Complied**
Radiated Emission	ANSI C63.4 : 2009	**Complied**

2.2 Test Method and Limits

2.2.1 Test Method

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Conducted Emission	0.15 ㎒ ~ 30 ㎒	9 ㎑	N/A
Radiated Emission	30 ㎒ ~ 1 ㎓	120 ㎑	10 m & 3 m
	Above 1 ㎓	1 ㎒	3 m

Note : 10 m method of radiated emission measurement is only applied to Class A equipment over the frequency range of 30 ㎒ ~ 1 ㎓. Except this, 3 m method is applied to Class B equipment over the frequency range of 30 ㎒ ~ 1 ㎓ and Class A and Class B equipment above 1 ㎓.

2.2.2 Test Limits

-Conducted Emission Limits

Frequency Range	Limits(dB(㎶))		Class
	Quasi-peak	Average	
0.15 ㎒ ~ 0.5 ㎒	79	66	**Class A**
0.5 ㎒ ~ 30 ㎒	73	60	
0.15 ㎒ ~ 0.5 ㎒	66 to 56	56 to 46	**Class B**
0.5 ㎒ ~ 5 ㎒	56	46	
5 ㎒ ~ 30 ㎒	60	50	

Note : The lower limit shall apply at the transition frequencies. The limit decreases linearly with the logarithm of the frequency in the range 0.15 ㎒ to 0.5 ㎒.

-Radiated Emission Limits below 1 ㎓

Frequency Range	Limits(㏈(㎶/m))	Class
	Quasi-peak	
30 ㎒ ~ 230 ㎒	40	**Class A (10m method)**
230 ㎒ ~ 1 ㎓	47	
30 ㎒ ~ 230 ㎒	40.5	**Class B (3m method)**
230 ㎒ ~ 1 ㎓	47.5	

-Radiated Emission Limits above 1 ㎓ (3m method)

Frequency Range	Limits(㏈(㎶/m))		Class
	Average	Peak	
Above 1 ㎓	59.5	79.5	**Class A**
Above 1 ㎓	54	74	**Class B**

2.3 Conducted Emission

The initial preliminary exploratory scans were performed over the measuring frequency range(0.15 ㎒ to 30 ㎒) using a max hold mode incorporating a Peak detector and Average detector and using the software of EMC32(Version V9.12.00 from R&S). The final test data was measured using a Quasi-Peak detector and Average detector.

2.3.1 Test Equipments

Description	Model No.	Manufacturer	S/N	Last Cal. Date
Two-Line V-Network	ENV216	R & S	100190	2014.01.02
Artificial Mains Networks	ESH2-Z5	R & S	100280	2014.04.04
Test Receiver	ESCI 7	R & S	100911	2014.01.07

Note : The calibration period of every equipment is 1 year.

2.3.2 Test Site

Shield Room in Gunpo Laboratory

2.3.3 Environment Conditions

Temperature: 25.6 ℃ ~ 25.8 ℃
Humidity: 49.0 %R.H. ~ 50.0 %R.H.
Atmospheric Pressure: 100.8 kPa

Test Date: September 30, 2014

Freq.	Line	Level (dBμV)		CL	LISN	Result (dBμV)		Limit (dBμV)		Margin (dB)	
(MHz)	(H/N)	Q/P	A/V	(dB)	(dB)	Q/P	A/V	Q/P	A/V	Q/P	A/V
0.15	N	51.9	32.5	0.0	9.8	61.7	42.3	66.0	56.0	4.3	13.7
0.15	H	46.2	28.4	0.0	9.7	55.9	38.1	65.8	55.8	9.9	17.7
0.20	H	43.5	28.5	0.0	9.7	53.2	38.2	63.5	53.5	10.3	15.3
0.22	N	44.9	27.5	0.0	9.8	54.7	37.3	62.9	52.9	8.2	15.6
0.30	H	42.2	21.8	0.0	9.7	51.9	31.5	60.3	50.3	8.4	18.8
0.30	N	31.5	17.7	0.0	9.8	41.3	27.5	60.1	50.1	18.8	22.6

Measurement Uncertainty : ± 3.24 dB (The confidential level is about 95%, *k*=2)

Note : • Line (H) : Hot • Line (N) : Neutral
• CL: Cable Loss • LISN : LISN Factor
• Result = Level + CL + LISN • Margin = Limit – Result

See Appendix A (Conducted Emission)

2.4 Radiated Emission

The initial preliminary exploratory scans were performed at 3 m distance over the measuring frequency range(30 ㎒ to 6 ㎓) using a max hold mode incorporating a Peak detector and using the software of EP5RE(Version Ver3.10.20 from TOYO). The final test data was measured using a Quasi-Peak detector below 1 ㎓ at 3 ㎝ distance and a Peak and Average detector above 1 ㎓ at 3 ㎝ distance. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

2.4.1 Test Equipments

Description	Model No.	Manufacturer	S/N	Last Cal. Date
Horn Antenna	HF906	R & S	100326	2013.04.10
Signal Conditioning Unit	SCU 18	R & S	10117	2014.01.14
Bilog Antenna	VULB9163	SCHWARZBECK MESS-ELEKTRONIK	396	2014.06.16
Test Receiver	ESU26	R & S	100109	2014.06.16
Amplifier	8447F	HP	2944A03909	2014.08.27

Note: Only the calibration period of Antennas is 2 years but the period of every equipment is 1 year.

2.4.2 Test Site

3 m Semi-Anechoic Chamber in Gunpo Laboratory

2.4.3 Environment Conditions

Below 1 GHz (3 m method)

Temperature: 27.1 ℃ ~ 27.4 ℃
Humidity: 49.0 %R.H. ~ 50.0 %R.H.
Atmospheric Pressure: 100.8 kPa

Test Date: September 29, 2014

Freq. (MHz)	Level (dBμV)	Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	F/S (dBμV/m)	Limit (dBμV/m	Margin (dB)
84.12	34.2	V	128	100	8.3	1.2	27.8	15.8	40.5	24.7
240.01	49.5	H	144	100	12.6	2.0	27.2	36.9	47.5	10.6
298.89	32.4	V	334	100	14.2	2.3	27.2	21.6	47.5	25.9
360.00	51.6	H	105	100	15.6	2.5	27.1	42.6	47.5	4.9
480.00	38.3	H	88	200	17.7	2.8	27.7	31.2	47.5	16.3
959.99	39.1	H	169	100	23.5	4.3	27.7	39.2	47.5	8.3

Measurement Uncertainty (Horizontal) : ± 5.56 dB (The confidential level is about 95%, *k*=2)
Measurement Uncertainty (Vertical) : ± 5.92 dB (The confidential level is about 95%, *k*=2)

Note:
- AF = Antenna Factor
- CL = Cable Loss
- F/S = Field Strength
- Pol.(H) = Horizontal
- Pol.(V) = Vertical
- Amp. = Amplifier Gain
- Margin = Limit – F/S
- F/S = Level + AF + CL – Amp.
- A : Angle
- H : Height

Above 1 GHz (3 m method)

Temperature: 27.1 ℃ ~ 27.4 ℃
Humidity: 49.0 %R.H. ~ 50.0 %R.H.
Atmospheric Pressure: 100.8 kPa

Test Date: September 29, 2014

Freq. (MHz)	Level (dBμV)	Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	F/S (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Peak Detector										
1991.46	66.9	V	154	100	27.9	11.1	42.5	63.4	74.0	10.6
4925.00	52.8	V	128	200	33.2	9.4	42.8	52.7	74.0	21.3
Average Detector										
1991.46	36.6	V	154	100	27.9	11.1	42.5	33.1	54.0	20.9
4925.00	30.9	V	128	200	33.2	9.4	42.8	30.8	54.0	23.2

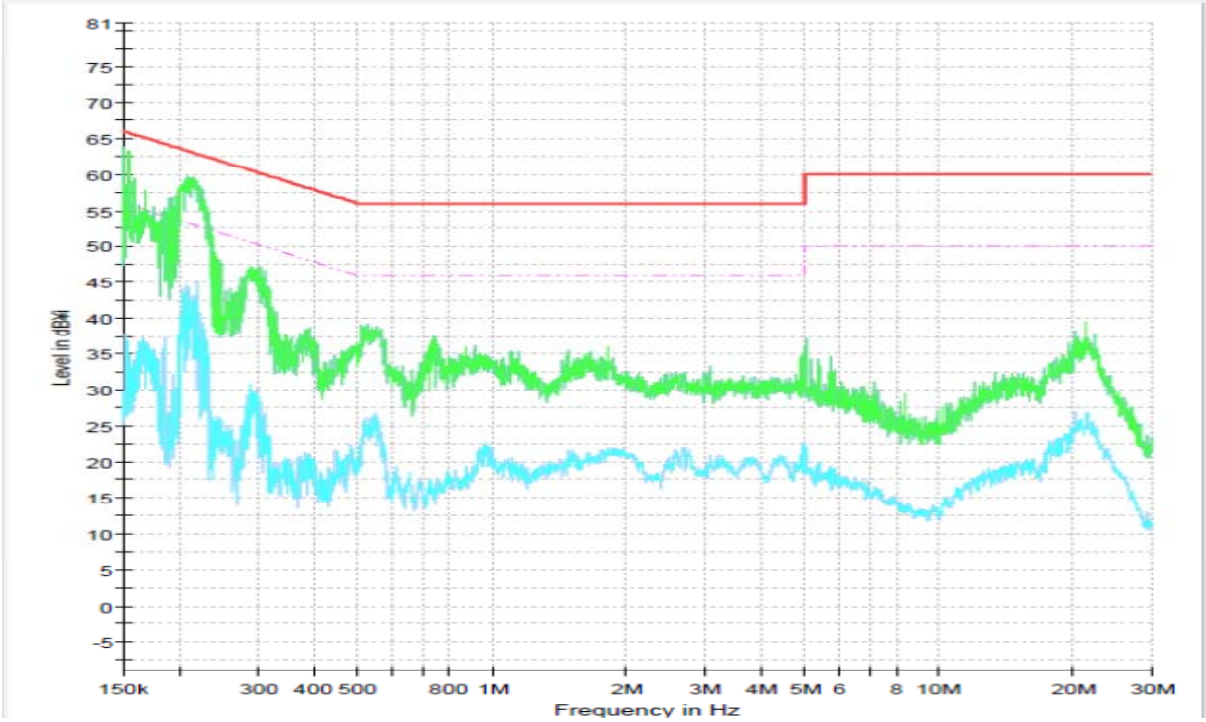
Measurement Uncertainty (Horizontal) : ± 4.99 dB (The confidential level is about 95%, *k* =2)
Measurement Uncertainty (Vertical) : ± 4.99 dB (The confidential level is about 95%, *k* =2)

Note: • AF = Antenna Factor • CL = Cable Loss • F/S = Field Strength
• Pol.(H) = Horizontal • Pol.(V) = Vertical • Amp. = Amplifier Gain
• Margin = Limit – F/S • F/S = Level + AF + CL – Amp.
• A : Angle • H : Height

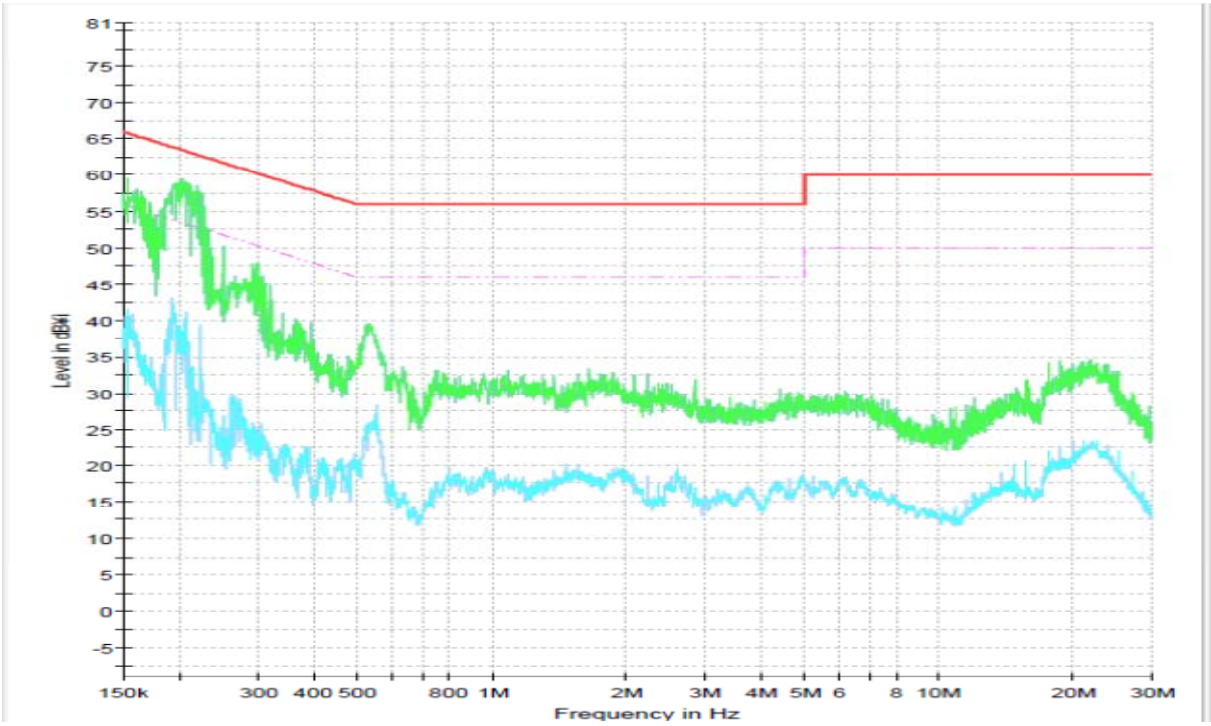
See Appendix B (Radiated Emission)

Appendix A : Conducted Emission

Neutral

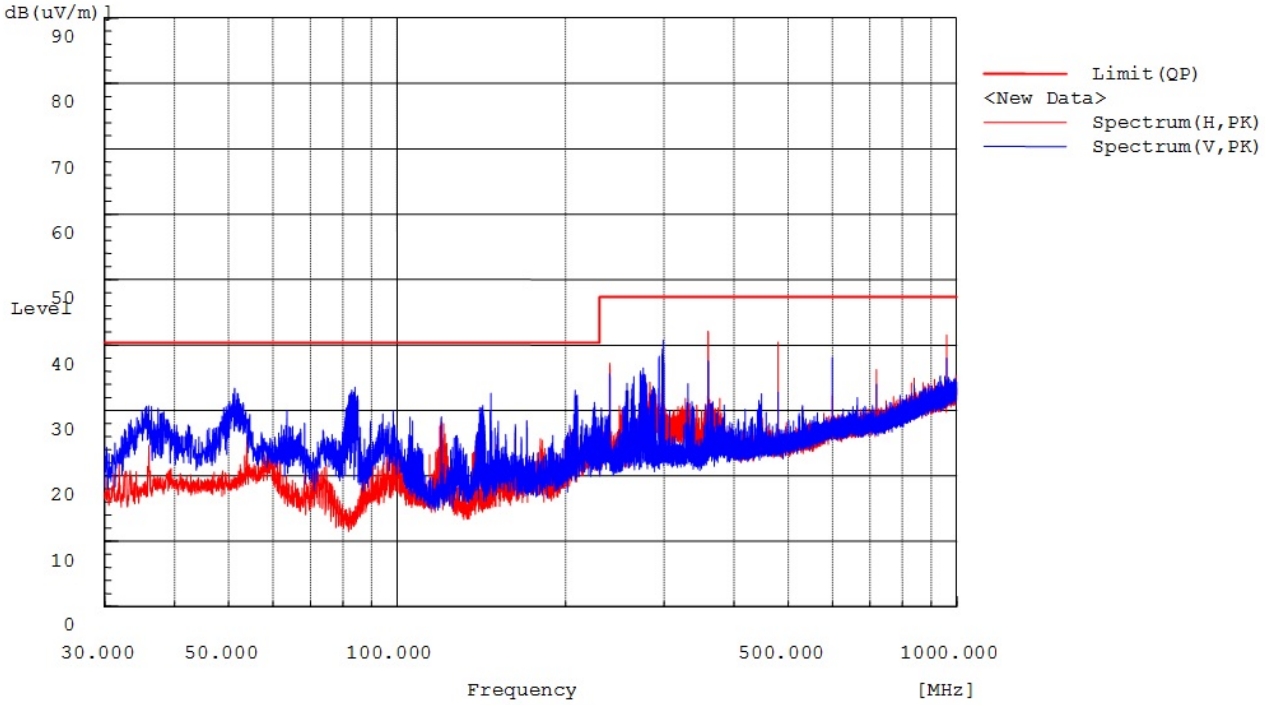


Hot



Appendix B : Radiated Emission (3 m Scan Data)

Below 1 GHz



Above 1 GHz