HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

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

Address:
1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Issue:
September 23, 2013

Test Site/Location:
HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea

Report No.: HCTR1308FR38-2

HCT FRN: 0005866421

FCC ID	**: ZNFD821**
APPLICANT	**: LG Electronics MobileComm U.S.A., Inc.**

FCC Model(s):	D821
Additional FCC Model(s):	LG-D821, D821
EUT Type:	GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC
RF Output Field Strength	15.34 dBuV/m
Frequency of Operation:	13.560019 MHz
Modulation type	ASK
FCC Classification:	Low Power Communication Device – Transmitter
FCC Rule Part(s):	FCC Part 15.225 Subpart C

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by
: Jong Seok Lee
Test engineer of RF Team

Approved by
: Chang Seok Choi
Manager of RF Team

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1308FR38	September 04, 2013	- First Approval Report
HCTR1308FR38-1	September 06, 2013	- Revise EUT Type.
HCTR1308FR38-2	September 23, 2013	- Revise Radiated Emission Result

Table of Contents

1. GENERAL INFORMATION

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

Address: 1000 Sylvan Avenue, Englewood Cliffs NJ 07632

FCC ID: ZNFD821

EUT: GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz) and NFC

Model name(s): D821

Additional Model Name: LG-D821, D821

Date of Test: September 23, 2013

Place of Tests: HCT Co., Ltd.
105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA.
(IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

Product	GSM/WCDMA/LTE Phone with Bluetooth, WLAN(2.4GHz & 5GHz)and NFC
FCC Model Name	D821
Additional FCC Model Name	LG-D821, D821
Power Supply	DC 3.8 V
Battery Type	Li-ion Battery(Standard)
Frequency of Operation	15.34 dBuV/m
Transmit Power	13.560019 MHz
Modulation Type	ASK
Antenna Specification	Manufacturer: IMTECH Antenna type: FPCB Antenna

3. TEST METHODOLOGY

The measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.10-2009).

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.225 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2009) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.3 of ANSI C63.10. (Version: 2009).

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

3.5 STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance With

FCC Part 15.Subpart C

Regulation	Measurement standard	Range
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(a)	ANSI C63.10:2009	13.553MHz to 13.567MHz
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(d)	ANSI C63.10:2009	outside of the 13.110-14.010 MHz band
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2009	9kHz to 30MHz
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2009	30MHz to 1GHz
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.207	ANSI C63.10:2009	150kHz to 30MHz
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(e)	ANSI C63.10:2009	0.01% of nominal
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.215(c)	ANSI C63.10:2009	-

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The 10 m semi anechoic chamber used to collect the Conducted and Radiated data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, 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 June. 21, 2011 (Registration Number: 90661)

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned loop, dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

* The antennas of this E.U.T are permanently attached.

*The E.U.T Complies with the requirement of §15.203

7. TEST SUMMARY

The results in this report apply only to sample tested

Regulation	Test Type	Range	Result
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(a)	Radiated Electric Field Emissions	13.553MHz to 13.567MHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(b)	Radiated Electric Field Emissions	13.410MHz to 13.553MHz and 13.567MHz to 13.710MHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(c)	Radiated Electric Field Emissions	13.110 MHz to 13.410 MHz and 13.710 MHz to 14.010 MHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.209 (d)	Radiated Electric Field Emissions	9kHz to 30MHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.209	Radiated Electric Field Emissions	30MHz to 1GHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.207	AC power conducted emissions	150kHz to 30MHz	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.225(e)	Frequency Stability	0.01% of nominal	Pass
Title 47 of the CFR:2012, Part 15 Subpart (c), Clause 15.215(c)	20 dB Bandwidth	-	Pass

8. RADIATED EMISSION MEASUREMENT

Requirement(s): 15.209, 15.225

Except as provided elsewhere in this paragraph the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Minimum Standard: FCC Part 15.225 / 15.209

Rule Part	Frequency (MHz)	Limit
Part 15.209	0.009 ~ 0.490	2400/F(kHz)uV/m@300
	0.490 ~1.705	24000/F(kHz)uV/m@30
	1.705 ~ 30	30 uV/m@30
	30 ~ 88	100 ** uV/m@3m
	88 ~ 216	150 ** uV/m@3m
	216 ~ 960	200 ** uV/m@3m
	Above 960	500 uV/m@3m

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

15.225 Operation within the band 13.110 – 14.010 MHz.

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter (= 84 dBuV/m) at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (=50.5dBuV/m) at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter (=40.5 dBuV/m) at 30 meters.

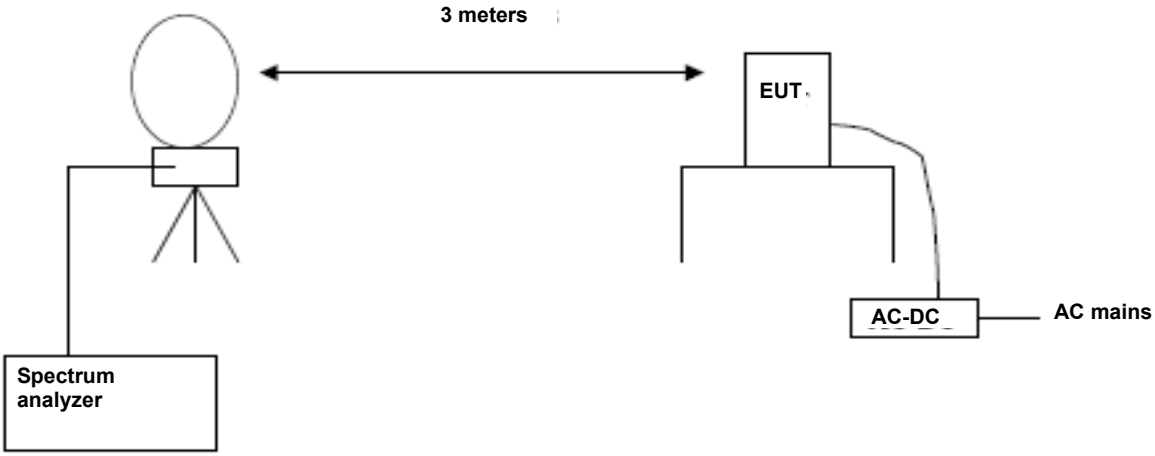
(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) In the case of radio frequency powered tags designed to operate with a device authorized under this section, the tag may be approved with the device or be considered as a separate device subject to its own authorization. Powered tags approved with a device under a single application shall be labeled with the same identification number as the device.

8.1. RADIATED EMISSION 9 kHz – 30 MHz

Test Set-up



Test Procedure

The EUT was placed on a non-conductive table located on a large open test site.
The loop antenna was placed at a location 3m from the EUT. Radiated emissions were measured with the loop antenna both parallel and perpendicular to the plane of the EUT loop antenna.

The limit is converted from microvolts/meter to decibel microvolts/meter. Sample Calculation:

Corrected Amplitude = Raw Amplitude(dBμV/m) + ACF(dB) + Cable Loss(dB) – Distance Correction Factor

The spectrum analyzer is set to:
Frequency Range = 9 kHz ~ 1GHz

RBW = 9 kHz (9 kHz ~ 30MHz)
= 120 kHz (30 MHz ~ 1 GHz)

Trace Mode = max hold
Detector Mode = peak / Quasi-peak
Sweep time = auto

Test Results

13.553 MHz-13.567 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.560019	45.53(H)*	9.81	-40	15.34	84	68.66
13.560019	38.15(V)*	9.81	-40	7.96	84	76.04

13.410 MHz-13.553 MHz and 13.567 MHz-13.710 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.553000	39.55	9.81	-40	9.36	50.47	41.11
13.567000	38.78	9.81	-40	8.59	50.47	41.88

13.110 MHz – 13.410 MHz and 13.710 MHz-14.010 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.623700	20.43	9.81	-40	-9.76	40.51	50.27
13.990900	16.08	9.81	-40	-14.11	40.51	54.62

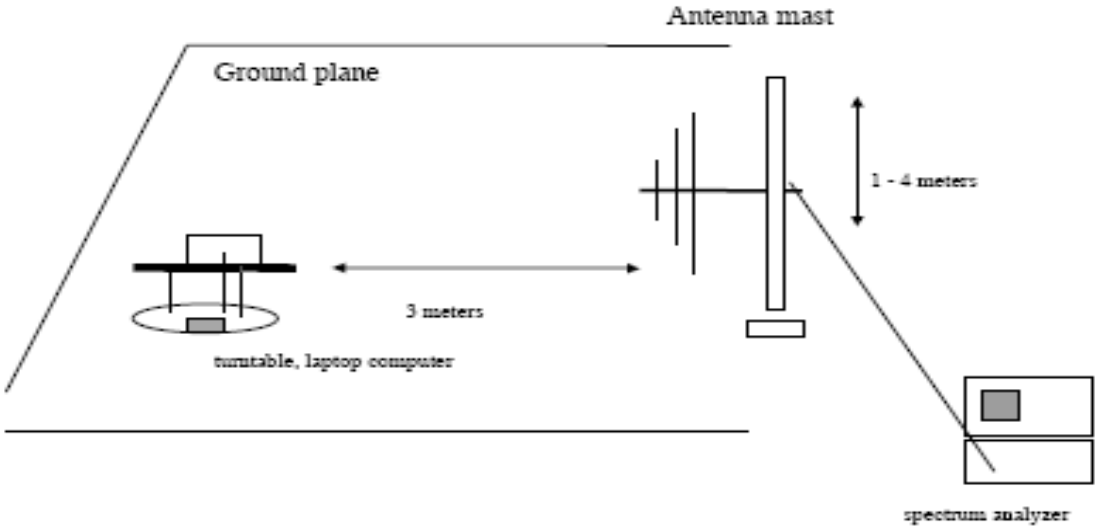
9 kHz -30 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
10.4181	14.05	10.21	-40	-15.74	29.54	45.28
21.7108	12.62	8.85	-40	-18.53	29.54	48.07

Note :

1. Distance Correction Below 30MHz = 40log(3m/30m) = - 40 dB
   Measurement Distance : 3 m (Below 30 MHz)
2. Factor = Antenna Factor + Cable Loss
3. Result Level = Read Level + Factor + Distance Correction
4. Margin = Limit – Result Level
5. (H)* and (V)* mean antenna polarization.
6. Worst case of operating mode is type A, analog mode and 106 kbps.

8.2. RADIATED EMISSION 30 MHz – 1000 MHz

Test Set-up



Test Procedures: Radiated emissions were measured according to ANSI C63.10.

The EUT was set to transmit at the highest output power.

The EUT was set 3 meter away from the measuring antenna.

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Remark

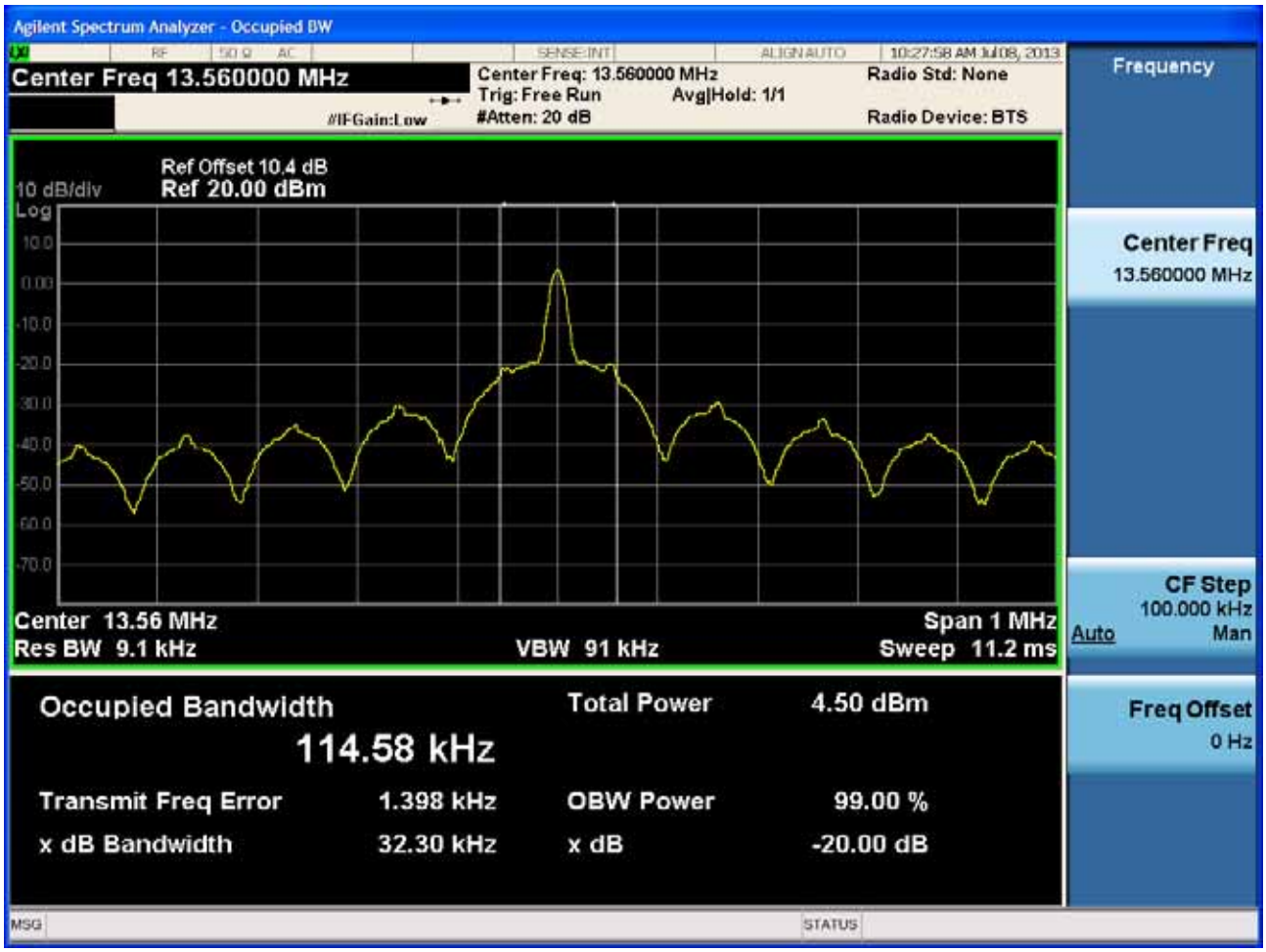
1. Result Level = Read Level + (Antenna Factor+ Cable Loss)
2. Margin = Limit – Result Level

9. EMISSION BANDWIDTH PLOT.

Requirement(s):

Test Set-up: The EUT was connected to a spectrum analyzer.

Test Procedure: The 20 dB bandwidth was measured by using a spectrum analyzer.



10. FREQUENCY TOLERANCE

Procedure: Part 15.225, ANSI 63.10

If required, the operating or transmitting frequency of an intentional radiator should be measured in accordance with the following procedure to ensure that the device operates outside certain precluded frequency bands and within the frequency range. No modulation needs to be supplied to the intentional radiator during these tests, unless modulation is required to produce an output, e.g., single-sideband suppressed carrier transmitters.

The frequency stability of the transmitter is measured by:

a) Temperature: The temperature is varied from -20°C to + 50°C using an environmental chamber.

b) For battery operated equipment, the equipment tests shall be performed using a new battery.

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

Measurement Result:

VOLTAGE (%)	POWER	Temperature (°C)	Frequency (MHz)	Frequency Error (Hz)
100%	3.8 V	-20	13.560092	73
100%		-10	13.560187	168
100%		0	13.560135	116
100%		10	13.560172	153
100%		20	13.560019	0
100%		30	13.560082	63
100%		40	13.560106	87
100%		50	13.560152	133

Notes:

1. The EUT is supplied with the fully re-charged battery.

11. POWERLINE CONDUCTE EMISSIONS

LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	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

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

Test Plots

Unterminate the Antenna

Conducted Emissions (Line 1)

HCT

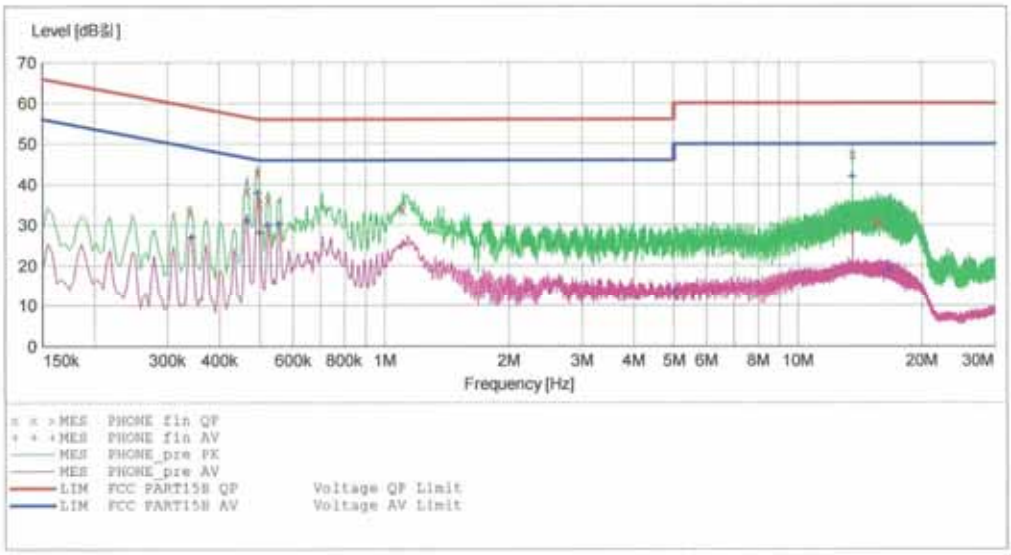
EMC

```
EUT:                  LGD821
Manufacturer:         LG
Operating Condition:  NFC MODE
Test Site:            SHIELD ROOM
Operator:             KI YOON
Test Specification:   FCC PART15 B
Comment:              H (Untermination)
```

SCAN TABLE: "FCC CLASS B(H)"

Short Description: KN22 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"

2013-07-15 3:21오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.338001	33.20	9.8	59	26.0	---	---
0.466001	38.40	9.8	57	18.2	---	---
0.494001	42.90	9.8	56	13.2	---	---
0.500000	35.20	9.8	56	20.8	---	---
0.524000	36.30	9.8	56	19.7	---	---
1.108000	33.80	9.9	56	22.2	---	---
13.560000	47.40	10.7	60	12.6	---	---
15.572000	30.90	10.8	60	29.1	---	---
15.844000	30.80	10.8	60	29.2	---	---

Page 1/2 2013-07-15 3:21오후 HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:21오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.342001	27.00	9.8	49	22.1	---	---
0.466001	31.10	9.8	47	15.5	---	---
0.494001	38.00	9.8	46	8.1	---	---
0.500000	28.10	9.8	46	17.9	---	---
0.524000	29.90	9.8	46	16.1	---	---
0.556000	30.10	9.8	46	15.9	---	---
5.000000	13.70	10.2	46	32.3	---	---
13.560000	41.90	10.7	50	8.1	---	---
16.580000	18.90	10.8	50	31.1	---	---

Conducted Emissions (Line 2)

HCT

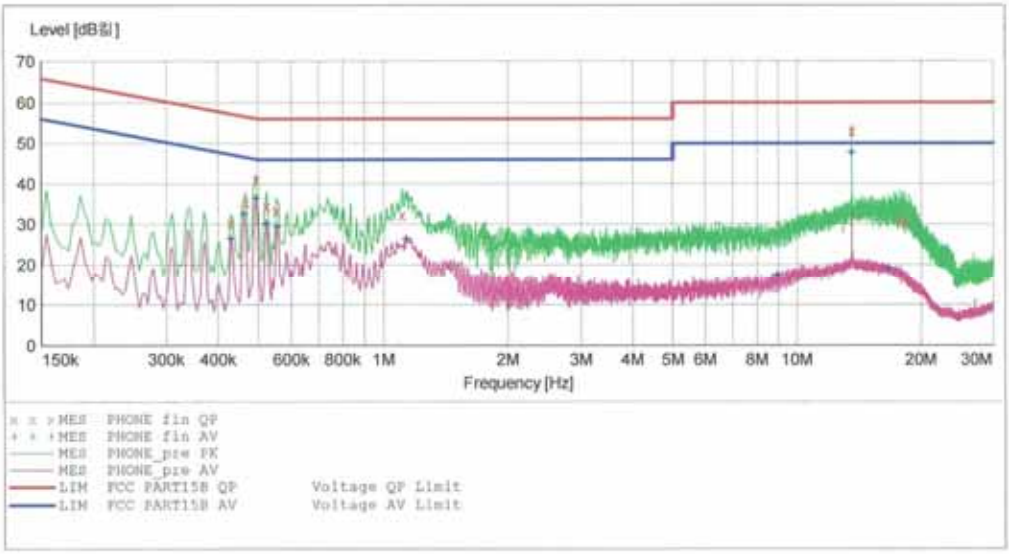
EMC

```
EUT:                    LGD821
Manufacturer:           LG
Operating Condition:    NFC MODE
Test Site:              SHIELD ROOM
Operator:               KI YOON
Test Specification:     FCC PART15 B
Comment:                N (Untermination)
```

SCAN TABLE: "FCC CLASS B(N)"

Short Description: KN22 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"

2013-07-15 3:27오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.430001	30.50	10.0	57	26.8	---	---
0.466001	35.40	10.0	57	21.2	---	---
0.494001	41.00	10.0	56	15.1	---	---
0.524000	34.50	10.0	56	21.5	---	---
0.552000	33.40	10.0	56	22.6	---	---
1.112000	32.30	10.1	56	23.7	---	---
13.560000	52.90	10.9	60	7.1	---	---
17.704000	31.00	11.1	60	29.0	---	---
18.248000	30.40	11.2	60	29.6	---	---

Page 1/2 2013-07-15 3:27오후 HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:27오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.430001	26.50	10.0	47	20.8	---	---
0.462001	32.50	10.0	47	14.1	---	---
0.494001	36.40	10.0	46	9.7	---	---
0.524000	30.20	10.0	46	15.8	---	---
0.556000	29.40	10.0	46	16.6	---	---
1.136000	26.40	10.1	46	19.6	---	---
8.964000	17.30	10.6	50	32.7	---	---
13.560000	47.60	10.9	50	2.4	---	---
16.648000	19.10	11.1	50	30.9	---	---

Terminate the Antenna

Conducted Emissions (Line 1)

HCT

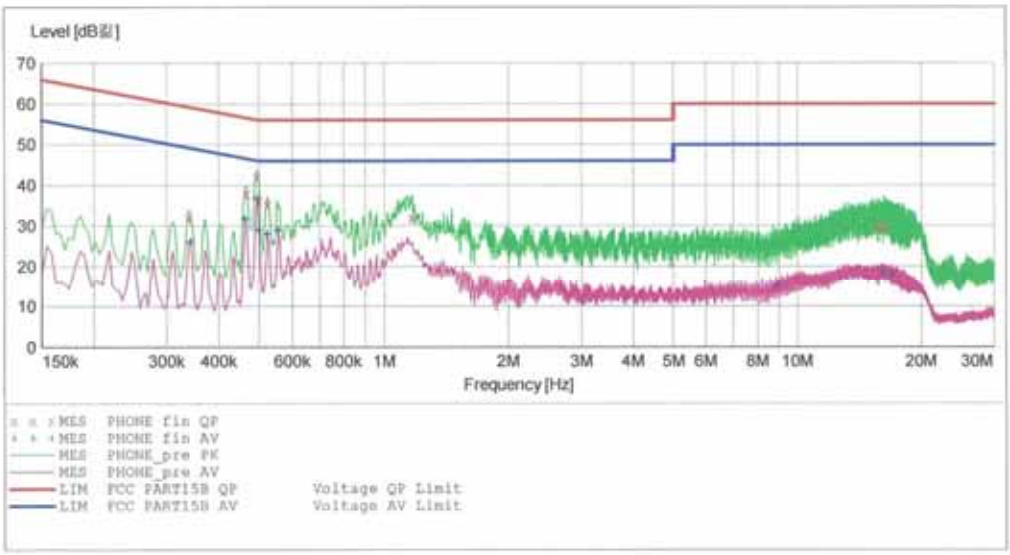
EMC

```
EUT:                    LGD821
Manufacturer:           LG
Operating Condition:    NFC MODE
Test Site:              SHIELD ROOM
Operator:               KI YOON
Test Specification:     FCC PART15 B
Comment:                H (Termination)
```

SCAN TABLE: "FCC CLASS B(H)"

Short Description: KN22 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"

2013-07-15 3:17오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.338001	32.10	9.8	59	27.1	---	---
0.466001	38.00	9.8	57	18.6	---	---
0.494001	42.10	9.8	56	14.0	---	---
0.500000	36.40	9.8	56	19.6	---	---
0.524000	35.20	9.8	56	20.8	---	---
1.172000	32.00	9.9	56	24.0	---	---
15.616000	29.90	10.8	60	30.1	---	---
16.164000	29.80	10.8	60	30.2	---	---
16.228000	29.80	10.8	60	30.2	---	---

Page 1/2 2013-07-15 3:17오후 HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:17오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.342001	26.10	9.8	49	23.1	---	---
0.462001	31.70	9.8	47	15.0	---	---
0.494001	36.70	9.8	46	9.4	---	---
0.500000	28.90	9.8	46	17.1	---	---
0.524000	28.00	9.8	46	18.0	---	---
0.556000	28.90	9.8	46	17.1	---	---
8.852000	15.10	10.4	50	34.9	---	---
16.148000	18.50	10.8	50	31.5	---	---
16.876000	17.90	10.8	50	32.1	---	---

Page 2/2 2013-07-15 3:17오후 HCT EMC LAB

Conducted Emissions (Line 2)

HCT

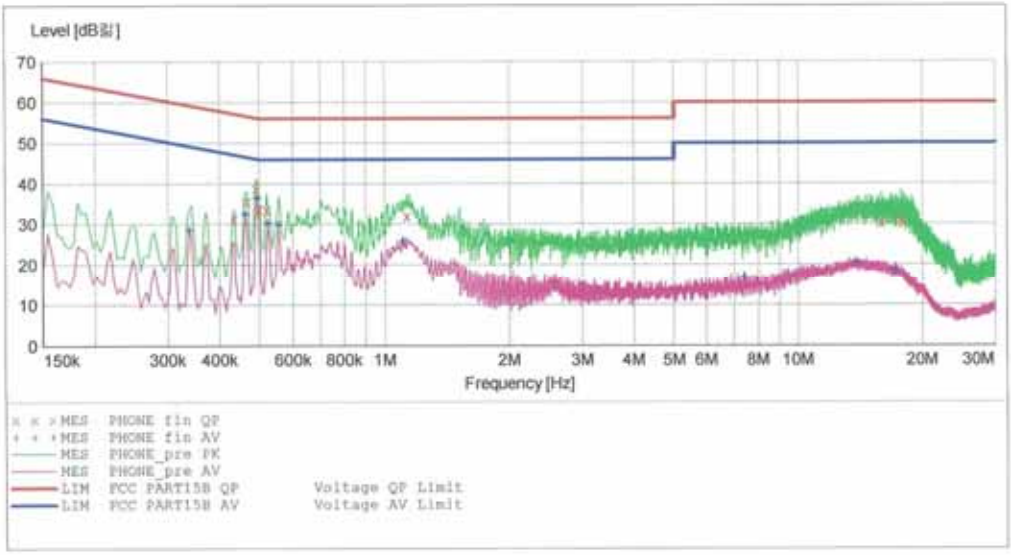
EMC

EUT: LGD821
Manufacturer: LG
Operating Condition: NFC MODE
Test Site: SHIELD ROOM
Operator: KI YOON
Test Specification: FCC PART15 B
Comment: N (Termination)

SCAN TABLE: "FCC CLASS B(N)"

Short Description: KN22 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"

2013-07-15 3:31오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.434001	31.30	10.0	57	25.9	---	---
0.466001	35.80	10.0	57	20.8	---	---
0.490001	38.90	10.0	56	17.2	---	---
0.500000	33.90	10.0	56	22.1	---	---
0.520000	33.50	10.0	56	22.5	---	---
1.132000	32.00	10.1	56	24.0	---	---
15.888000	30.40	11.1	60	29.6	---	---
17.704000	31.30	11.1	60	28.7	---	---
17.928000	30.50	11.2	60	29.5	---	---

Page 1/2 2013-07-15 3:31오후 HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

2013-07-15 3:31오후

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.338001	28.60	10.0	49	20.6	---	---
0.462001	32.50	10.0	47	14.2	---	---
0.494001	36.50	10.0	46	9.6	---	---
0.524000	30.30	10.0	46	15.7	---	---
0.556000	29.90	10.0	46	16.1	---	---
1.112000	25.80	10.1	46	20.2	---	---
7.400000	16.60	10.5	50	33.4	---	---
13.828000	20.50	11.0	50	29.5	---	---
17.144000	18.50	11.1	50	31.5	---	---

Page 2/2 2013-07-15 3:31오후 HCT EMC LAB

12. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	12/17/2014	3150
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/10/2014	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2014	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	21691
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	11/07/2013	BR0617