

# HCT CO., LTD.

## CERTIFICATE OF COMPLIANCE FCC Certification

<b>Applicant Name:</b> LG Electronics MobileComm U.S.A., Inc.	<b>Date of Issue:</b> January 15, 2014
<b>Address:</b> 1000 Sylvan Avenue, Englewood Cliffs NJ 07632	<b>Test Site/Location:</b> HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang- myeon, Icheon-si, Gyeonggi-do, Korea
	<b>Report No.:</b> HCTR1401F007
	<b>HCT FRN:</b> 0005866421

**FCC ID** : ZNFD405N

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

<b>FCC Model(s):</b>	LG-D405n
<b>Additional FCC Model(s):</b>	D405n, D405N, LGD405n, LGD405N, LG-D405N
<b>EUT Type:</b>	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)
<b>RF Output Field Strength</b>	11.12 dBuV/m
<b>Frequency of Operation:</b>	13.55939 MHz
<b>Modulation type</b>	ASK
<b>FCC Classification:</b>	Low Power Communication Device – Transmitter
<b>FCC Rule Part(s):</b>	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**

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FCC PT.15.225 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFD405N



# Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1401F007	January 15, 2014	- First Approval Report

# Table of Contents

1. GENERAL INFORMATION .....	4
2. EUT DESCRIPTION .....	4
3. TEST METHODOLOGY .....	5
3.1 EUT CONFIGURATION .....	5
3.2 EUT EXERCISE .....	5
3.3 GENERAL TEST PROCEDURES .....	5
3.4 DESCRIPTION OF TEST MODES .....	5
3.5 STANDARDS .....	6
4. INSTRUMENT CALIBRATION.....	7
5. FACILITIES AND ACCREDITATIONS .....	7
5.1 FACILITIES .....	7
5.2 EQUIPMENT .....	7
6. ANTENNA REQUIREMENTS .....	7
7. TEST SUMMARY .....	8
8. RADIATED EMISSION MEASUREMENT .....	9
8.1. RADIATED EMISSION 9 kHz – 30 MHz .....	10
8.2. RADIATED EMISSION 30 MHz – 1000 MHz .....	13
9. EMISSION BANDWIDTH PLOT.....	14
10. FREQUENCY TOLERANCE .....	15
11. POWERLINE CONDUCTE EMISSIONS.....	16
12. LIST OF TEST EQUIPMENT .....	25



## 1. GENERAL INFORMATION

**Applicant:** LG Electronics MobileComm U.S.A., Inc.  
**Address:** 1000 Sylvan Avenue, Englewood Cliffs NJ 07632  
**FCC ID:** ZNFD405N  
**EUT:** Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)  
**Model name(s):** LG-D405n  
**Additional Model name(s):** D405n, D405N, LGD405n, LGD405N, LG-D405N  
**Date of Test:** December 27, 2013 ~ January 08, 2014  
**Place of Tests:** HCT Co., Ltd.  
 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea  
 (IC Recognition No. : 5944A-3)

## 2. EUT DESCRIPTION

<b>Product</b>	Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)
<b>FCC Model Name</b>	LG-D405n
<b>Additional FCC Model Name</b>	D405n, D405N, LGD405n, LGD405N, LG-D405N
<b>Power Supply</b>	DC 3.8 V
<b>Battery Type</b>	Li-ion Battery(Standard)
<b>Frequency of Operation</b>	13.55939 MHz
<b>Transmit Power</b>	11.12 dBuV/m
<b>Modulation Type</b>	ASK
<b>Antenna Specification</b>	Manufacturer: AT&C Co. LTD. Antenna type: FPCB Antenna

<b>FCC PT.15.225 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1401F007	<b>Date of Issue:</b> January 15, 2014	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	<b>FCC ID:</b> ZNFD405N



### 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.

<b>FCC PT.15.225 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1401F007	<b>Date of Issue:</b> January 15, 2014	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	<b>FCC ID:</b> ZNFD405N



### 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 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-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 Sep. 03, 2010 (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

FCC PT.15.225 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFD405N



## 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.

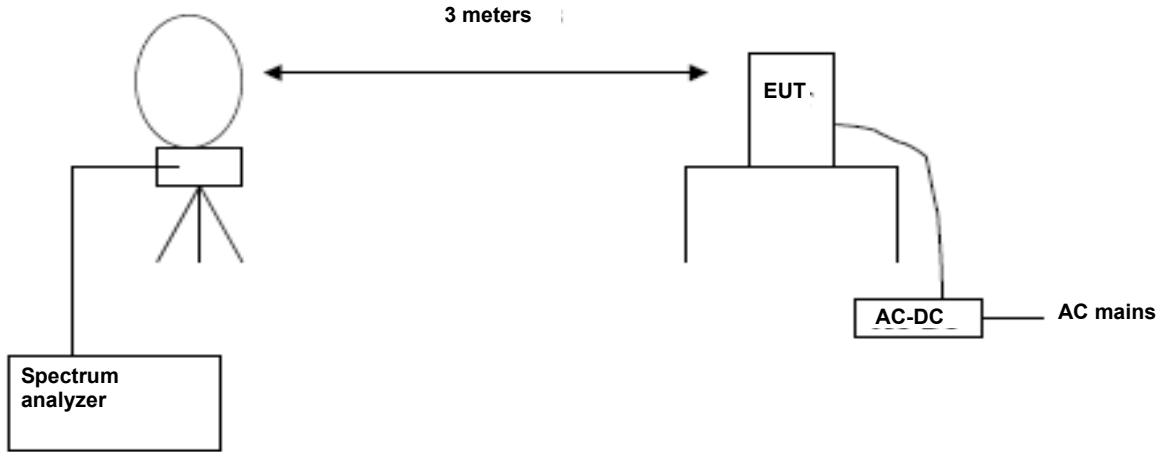
(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a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

<b>FCC PT.15.225 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFD405N

## 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(dB $\mu$ V/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

FCC PT.15.225 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFD405N



## 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)
13.55939	41.31(H)*	9.81	-40	11.12	84	72.88
13.55939	36.13(V)*	9.81	-40	5.94	84	78.06

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)
13.553	31.08	9.81	-40	0.89	50.47	49.58
13.567	27.81	9.81	-40	-2.38	50.47	52.85

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)
13.4016	15.27	9.81	-40	-14.92	40.51	55.43
13.7184	14.52	9.81	-40	-15.67	40.51	56.18

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)
10.4635	12.43	9.81	-40	-17.76	29.54	47.30
27.1218	26.76	9.81	-40	-3.43	29.54	32.97



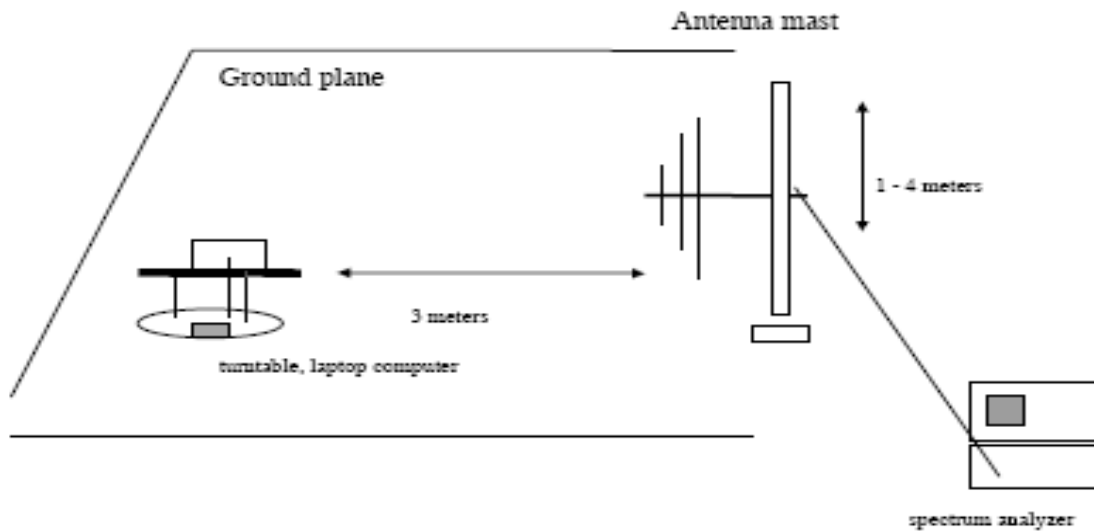
Note :

1. Distance Correction Below 30MHz =  $40\log(3m/30m) = -40$  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.

<b>FCC PT.15.225 TEST REPORT</b>	<b>FCC CERTIFICATION REPORT</b>		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
<b>Test Report No.</b> HCTR1401F007	<b>Date of Issue:</b> January 15, 2014	<b>EUT Type:</b> Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	<b>FCC ID:</b> ZNFD405N

## 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
Mhz	dB $\mu$ V	dB /m	dB	(H/V)	dB $\mu$ V/m	dB $\mu$ V/m	dB
35.31	20.87	12.5	0.5	H	33.87	40.0	6.13
37.05	23.21	12.5	0.5	H	36.21	40.0	3.79
44.99	21.00	13.3	0.6	V	34.90	40.0	5.10
73.01	23.13	11.0	0.9	H	35.03	40.0	4.97
149.88	24.53	12.7	1.2	H	38.43	43.5	5.07
159.03	21.77	12.7	1.2	V	35.67	43.5	7.83

### Remark

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

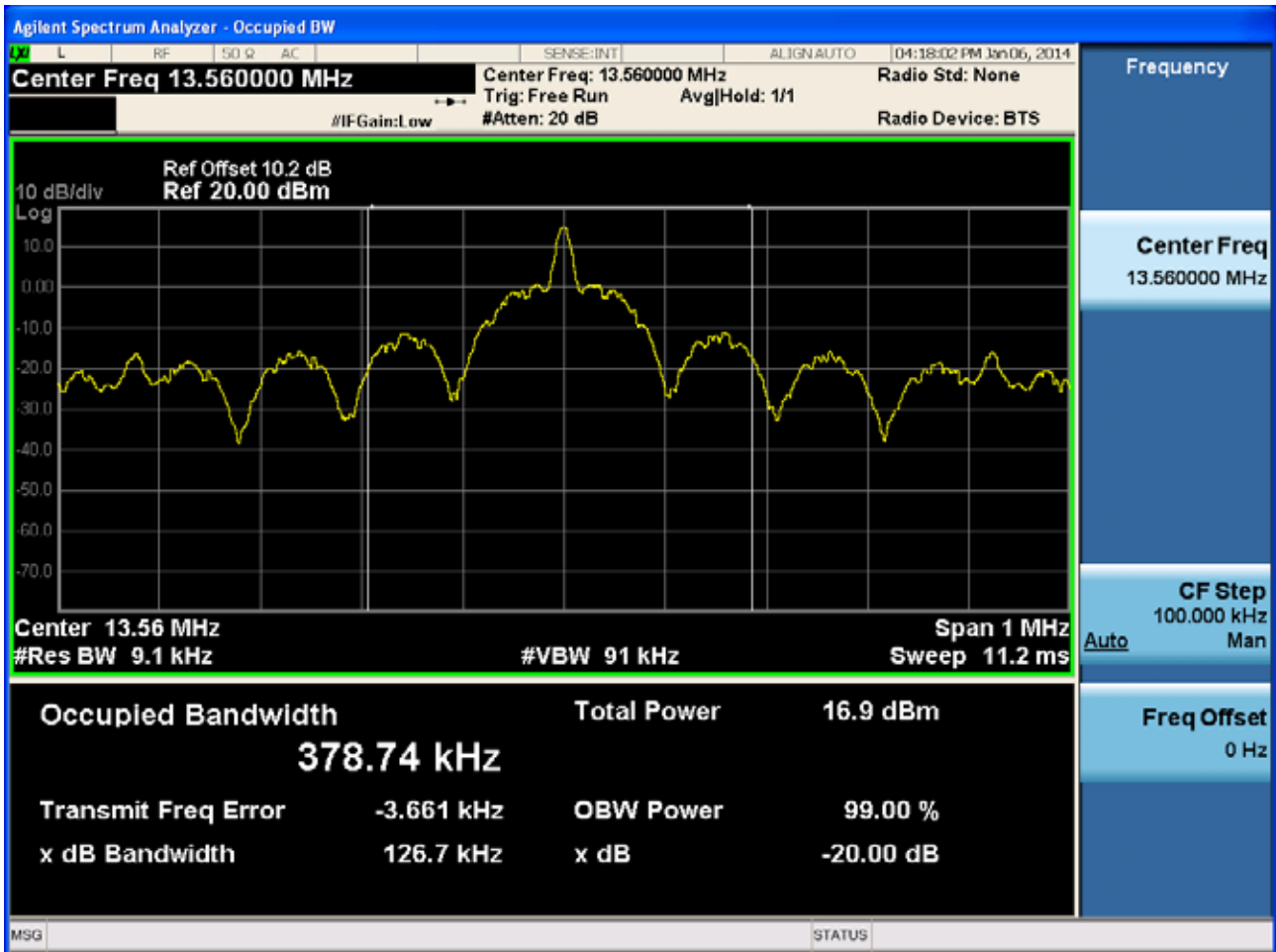


## 9. EMISSION BANDWIDTH PLOT.

### 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.



FCC PT.15.225 TEST REPORT		FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)		FCC ID: ZNFD405N

## 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	13.55976	370
100%		-10	13.55961	220
100%		0	13.55954	150
100%		10	13.55946	70
100%		20	13.55939	0
100%		30	13.55951	120
100%		40	13.55955	160
100%		50	13.55965	260
115%		4.37	20	13.55963
Batt. Endpoint	3.50	20	13.55961	220

## 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 (dB $\mu$ 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

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**

**Untermine the Antenna**

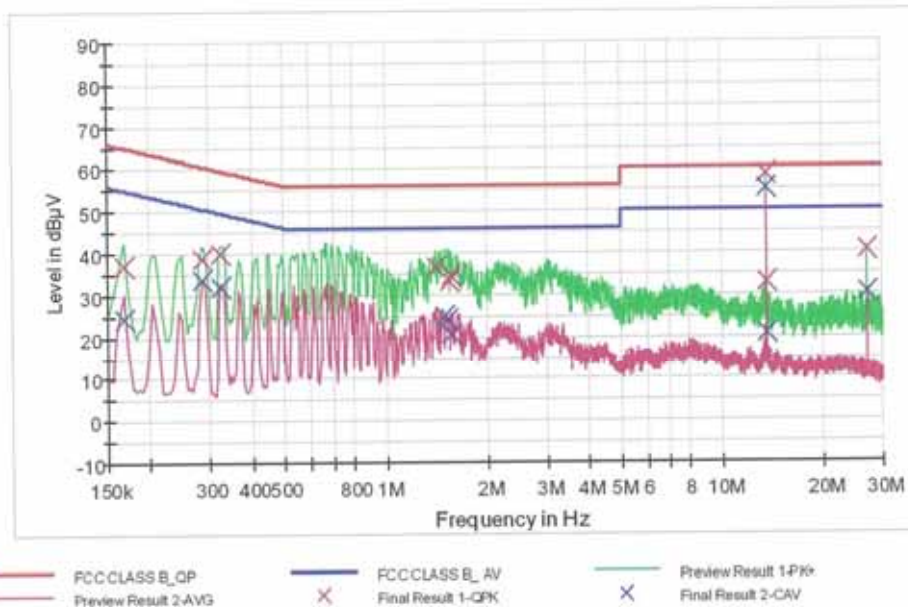
**Conducted Emissions (Line 1)**

## HCT TEST Report

**Common Information**

EUT:	LG-D405N
Manufacturer:	LG
Test Site:	SHIELD ROOM
Operating Conditions:	NFC MODE(UNTERMINATED)
Operator Name:	JS LEE

FCC CLASS B



**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	37.2	9.000	On	L1	9.8	27.9	65.1
0.285000	38.6	9.000	On	L1	9.8	22.1	60.7
0.325500	39.9	9.000	On	L1	9.8	19.7	59.6
1.409000	36.8	9.000	On	L1	9.9	19.2	56.0
1.553000	33.2	9.000	On	L1	9.9	22.8	56.0
1.562000	34.5	9.000	On	L1	9.9	21.5	56.0
13.559000	58.3	9.000	On	L1	10.7	1.7	60.0
13.586000	32.7	9.000	On	L1	10.7	27.3	60.0
27.117500	40.2	9.000	On	L1	11.2	19.8	60.0

**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	24.6	9.000	On	L1	9.8	30.5	55.1
0.285000	33.7	9.000	On	L1	9.8	17.0	50.7
0.325500	32.0	9.000	On	L1	9.8	17.6	49.6

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.494500	25.0	9.000	On	L1	9.9	21.0	46.0
1.535000	23.8	9.000	On	L1	9.9	22.2	46.0
1.557500	20.6	9.000	On	L1	9.9	26.4	46.0
13.559000	55.3	9.000	On	L1	10.7	-5.3	50.0
13.640000	20.8	9.000	On	L1	10.7	29.2	50.0
27.117500	30.2	9.000	On	L1	11.2	19.8	50.0

# Conducted Emissions (Line 2)

EMI Auto Test(1)

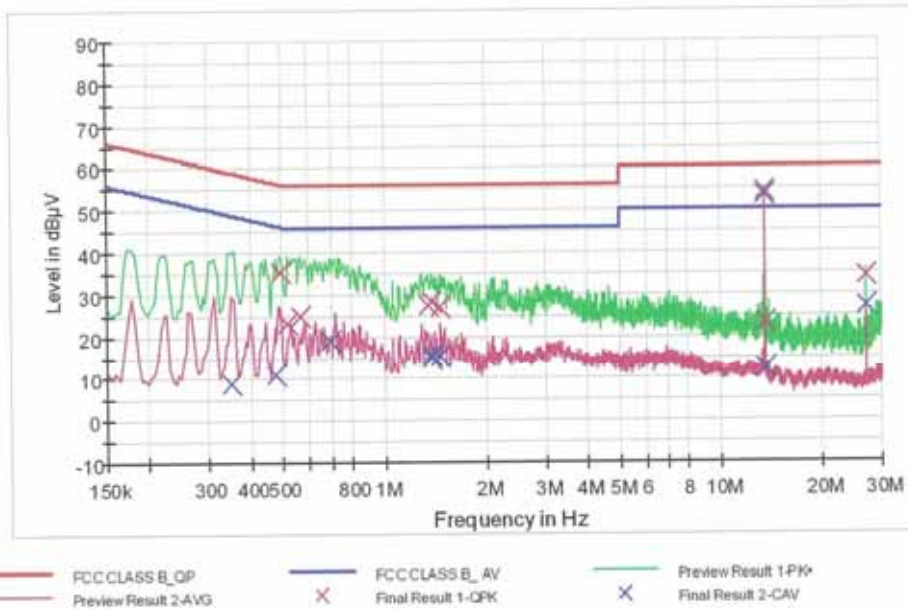
1 / 2

## HCT TEST Report

### Common Information

EUT: LG-D405N  
 Manufacturer: LG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE(UNTERMINATED)  
 Operator Name: JS LEE

FCC CLASS B



### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.492000	35.3	9.000	On	N	10.0	20.8	56.1
0.518000	23.3	9.000	On	N	10.0	32.7	56.0
0.563000	24.7	9.000	On	N	10.0	31.3	56.0
1.341500	27.6	9.000	On	N	10.1	28.4	56.0
1.386500	28.3	9.000	On	N	10.1	27.7	56.0
1.467500	27.0	9.000	On	N	10.1	29.0	56.0
13.559000	54.1	9.000	On	N	10.9	5.9	60.0
13.617500	23.1	9.000	On	N	10.9	36.9	60.0
27.117500	34.3	9.000	On	N	11.7	25.7	60.0

### Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.352500	8.9	9.000	On	N	10.0	40.0	48.9
0.474000	11.0	9.000	On	N	10.0	35.4	46.4
0.693500	18.9	9.000	On	N	10.0	27.1	46.0

1/8/2014

7:35:36

EMI Auto Test(1)

Frequency (MHz)	CAverage (dBμV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.377500	14.7	9.000	On	N	10.1	31.3	46.0
1.386500	15.5	9.000	On	N	10.1	30.5	46.0
1.467500	15.3	9.000	On	N	10.1	30.7	46.0
13.559000	53.3	9.000	On	N	10.9	-3.3	50.0
13.617500	12.3	9.000	On	N	10.9	37.7	50.0
27.117500	27.2	9.000	On	N	11.7	22.8	50.0



**Terminate the Antenna  
Conducted Emissions (Line 1)**

EMI Auto Test(1)

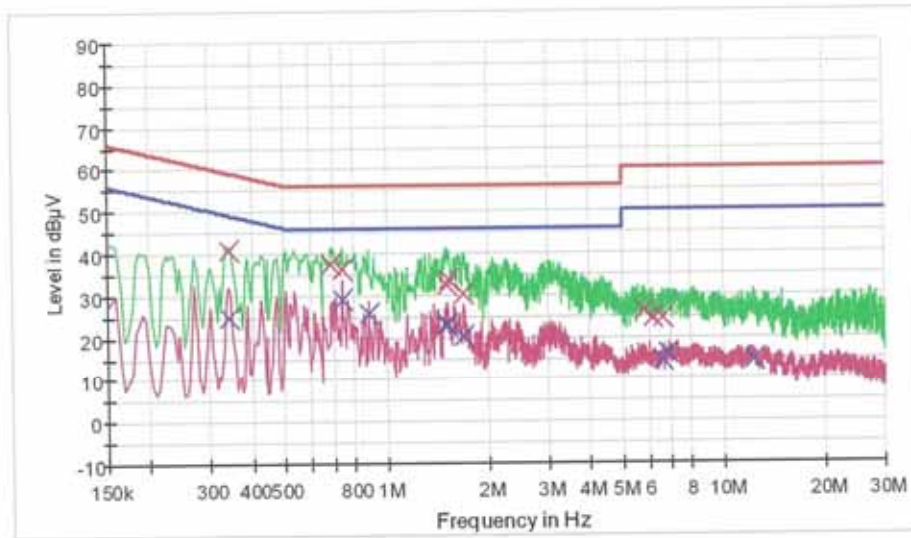
1 / 2

## HCT TEST Report

### Common Information

EUT: LG-D405N  
 Manufacturer: LG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE(TERMINATED)  
 Operator Name: JS LEE

FCC CLASS B



— FCCCLASS B\_OP      — FCCCLASS B\_AV      — Preview Result 1-PK  
— Preview Result 2-AVG      X Final Result 1-QPK      X Final Result 2-CAV

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.343500	40.8	9.000	On	L1	9.8	18.3	59.1
0.684500	37.6	9.000	On	L1	9.8	18.4	56.0
0.738500	36.1	9.000	On	L1	9.8	19.9	56.0
1.512500	32.6	9.000	On	L1	9.9	23.4	56.0
1.535000	33.8	9.000	On	L1	9.9	22.2	56.0
1.697000	30.3	9.000	On	L1	9.9	25.7	56.0
5.787500	26.1	9.000	On	L1	10.2	33.9	60.0
6.116000	24.4	9.000	On	L1	10.2	35.6	60.0
6.575000	24.6	9.000	On	L1	10.3	35.4	60.0

### Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.343500	24.9	9.000	On	L1	9.8	24.2	49.1
0.738500	29.1	9.000	On	L1	9.8	16.9	46.0
6.887000	25.9	9.000	On	L1	9.8	20.1	46.0

1/8/2014

7:48:20

FCC PT.15.225 TEST REPORT	FCC CERTIFICATION REPORT		<a href="http://www.hct.co.kr">www.hct.co.kr</a>
Test Report No. HCTR1401F007	Date of Issue: January 15, 2014	EUT Type: Cellular/PCS GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC(Felica)	FCC ID: ZNFD405N

EMI Auto Test(1)

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.508000	23.0	9.000	On	L1	9.9	23.0	46.0
1.517000	22.8	9.000	On	L1	9.9	23.2	46.0
1.697000	20.3	9.000	On	L1	9.9	25.7	46.0
6.575000	14.4	9.000	On	L1	10.3	35.6	50.0
6.777500	16.0	9.000	On	L1	10.3	34.0	50.0
12.308000	14.4	9.000	On	L1	10.6	35.6	50.0

# Conducted Emissions (Line 2)

EMI Auto Test(1)

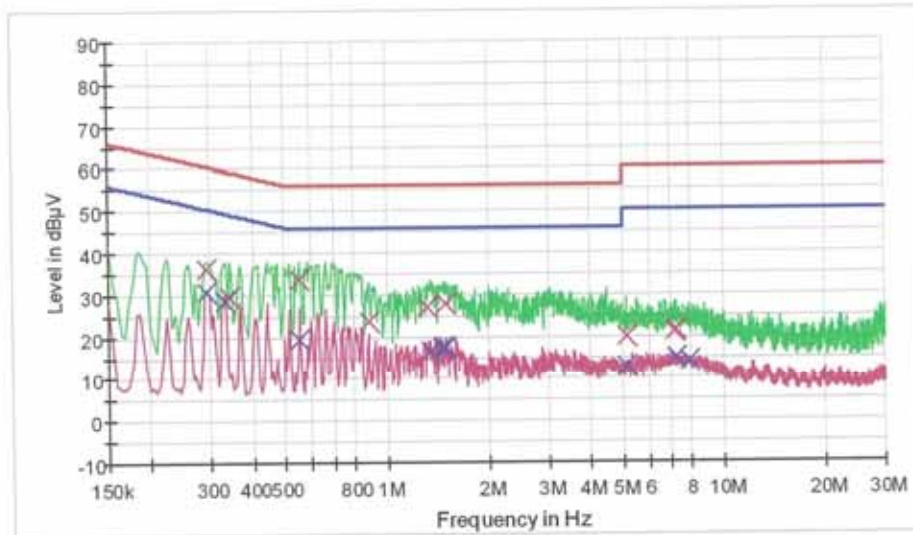
1 / 2

## HCT TEST Report

### Common Information

EUT: LG-D405N  
 Manufacturer: LG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE(TERMINATED)  
 Operator Name: JS LEE

FCC CLASS B



— FCCCLASS B\_OP      — FCCCLASS B\_AV      — Preview Result 1-PK+  
— Preview Result 2-AVG      X Final Result 1-GPK      X Final Result 2-CAV

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.294000	36.1	9.000	On	N	10.0	24.3	60.4
0.343500	29.6	9.000	On	N	10.0	29.5	59.1
0.554000	33.6	9.000	On	N	10.0	22.4	56.0
0.891500	23.8	9.000	On	N	10.0	32.2	56.0
1.323500	26.8	9.000	On	N	10.1	29.2	56.0
1.490000	27.9	9.000	On	N	10.1	28.1	56.0
5.130500	19.9	9.000	On	N	10.4	40.1	60.0
7.092500	21.0	9.000	On	N	10.5	39.0	60.0
7.223000	21.5	9.000	On	N	10.5	38.5	60.0

### Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.294000	30.9	9.000	On	N	10.0	19.5	50.4
0.330000	28.7	9.000	On	N	10.0	20.8	49.5
0.554000	19.3	9.000	On	N	10.0	26.7	46.0

1/8/2014

7:53:36

EMI Auto Test(1)

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.346000	16.4	9.000	On	N	10.1	29.6	46.0
1.458500	17.4	9.000	On	N	10.1	28.6	46.0
1.490000	17.3	9.000	On	N	10.1	28.7	46.0
5.130500	12.6	9.000	On	N	10.4	37.4	50.0
7.223000	14.6	9.000	On	N	10.5	35.4	50.0
7.902500	13.9	9.000	On	N	10.6	36.1	50.0



## 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
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/10/2014	10094
CERNEX	CBL18265035 / POWER AMP	Annual	07/24/2014	22966
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2015	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	N1911A/Power Meter	Annual	01/22/2014	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
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	10/22/2014	11377
Agilent	87300B/Directional Coupler	Annual	12/18/2014	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	10/29/2014	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/05/2014	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
Rohde & Schwarz	LOOP ANTENNA	Biennial	08/14/2014	100179
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHTEL	2-3 / Attenuator(3 dB)	Annual	10/28/2014	BR0617
CERNEX	CBL06185030 / POWER AMP	Annual	07/24/2014	22965
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	22964