PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
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MEASUREMENT REPORT
FCC Part 27 / IC RSS-139 LTE

Applicant Name:
LG Electronics MobileComm U.S.A
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632
United States

Date of Testing:
Sep. 25 - Oct. 01, 2012
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1209201385.ZNF

FCC ID :	**ZNFE973**
APPLICANT:	**LG ELECTRONICS MOBILECOMM U.S.A**

FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§2; §27
EUT Type:	Portable Handset
Model(s):	E973, LG-E973, LGE973
IC Specification(s):	RSS-139 Issue 2
Test Device Serial No.:	*identical prototype* [S/N: EMC E-973 Radiated]
Class II Permissive Change:	*Please See FCC Change Document*
Original Grant Date:	10/18/2012

Mode	Tx Frequency (MHz)	Emission Designator	Modulation	ERP/EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE Band 17	706.5 - 713.5	4M46G7D	QPSK	0.180	22.56
LTE Band 17	706.5 - 713.5	4M44W7D	16QAM	0.145	21.60
LTE Band 17	709 - 711	8M99G7D	QPSK	0.172	22.36
LTE Band 17	709 - 711	9M00W7D	16QAM	0.137	21.38
LTE Band 4	1712.5 - 1752.5	4M48G7D	QPSK	0.249	23.96
LTE Band 4	1712.5 - 1752.5	4M46W7D	16QAM	0.190	22.78
LTE Band 4	1715 - 1750	9M03G7D	QPSK	0.228	23.59
LTE Band 4	1715 - 1750	9M05W7D	16QAM	0.208	23.18
LTE Band 4	1717.5 - 1747.5	13M3G7D	QPSK	0.198	22.96
LTE Band 4	1717.5 - 1747.5	13M3W7D	16QAM	0.151	21.80
LTE Band 4	1720 - 1745	17M9G7D	QPSK	0.219	23.41
LTE Band 4	1720 - 1745	17M9W7D	16QAM	0.194	22.87

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested. I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

PCTEST certifies that no party to this application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

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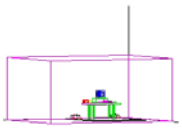
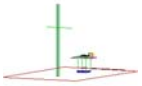


MEASUREMENT REPORT
FCC Part 27



§2.1033 General Information

APPLICANT:	LG Electronics MobileComm U.S.A
APPLICANT ADDRESS:	1000 Sylvan Avenue
	Englewood Cliffs, NJ 07632, United States
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	7185 Oakland Mills Road, Columbia, MD 21045 USA
FCC RULE PART(S):	§2; §27
BASE MODEL:	E973, LG-E973, LGE973
FCC ID:	ZNFE973
FCC CLASSIFICATION:	PCS Licensed Transmitter Held to Ear (PCE)
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)
Test Device Serial No.:	EMC E-973 Radiated ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	Sep. 25 - Oct. 01, 2012
TEST REPORT S/N:	0Y1209201385.ZNF

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 159966) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC.

- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (S*ee Figure 1-1*).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The site coordinates are 39^{o} 10'23" N latitude and 76^{o} 49'50" W longitude. The facility is 0.4 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on February 15, 2012.

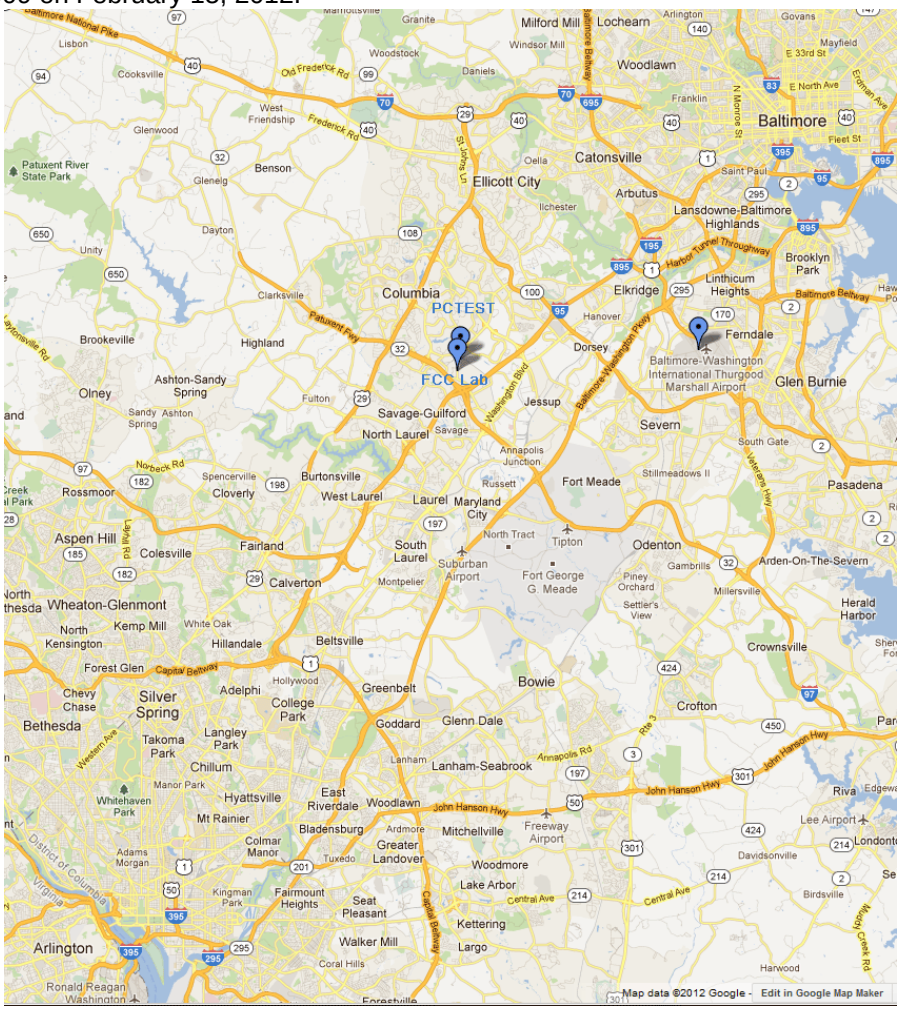


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Electronics MobileComm U.S.A Portable Handset FCC ID: ZNFE973**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA, Band 4 (5, 10, 15, 20 MHz BW), 17 (5,10MHz BW) LTE, 802.11a/b/g/n WLAN (DTS/NII), Bluetooth (1x,EDR), NFC

2.3 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

2.4 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase..

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) was used in the measurement of the **LG Electronics MobileComm U.S.A Portable Handset FCC ID: ZNFE973.**

3.2 Block A Frequency Range

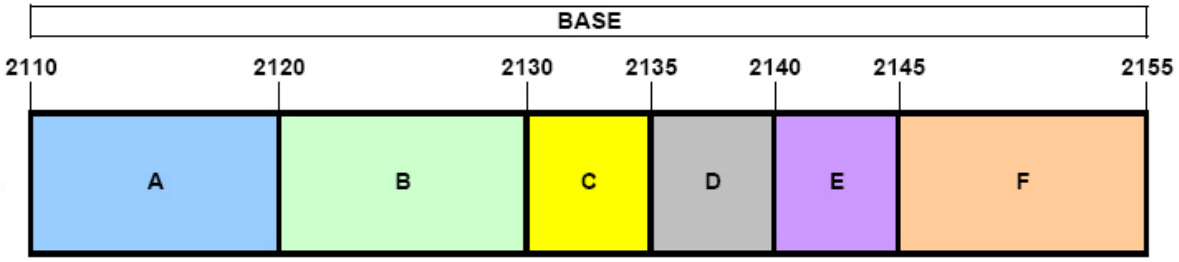
§27.5(c)

698-746 MHz band. The following frequencies are available for licensing pursuant to this part in the 698-746 MHz band: (1) Three paired channel blocks of 12 megahertz each are available for assignment as follows:

Block A: 698-704 MHz and 728-734 MHz;
Block B: 704-710 MHz and 734-740 MHz; and
Block C: 710-716 MHz and 740-746 MHz.

3.3 AWS - Base Frequency Blocks

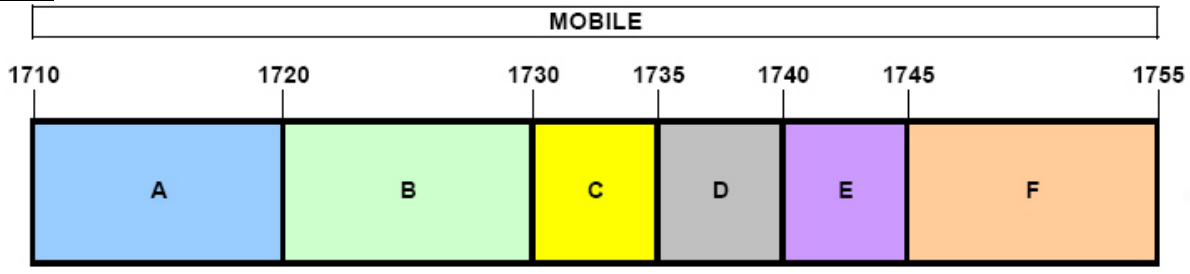
§27.5(h)



BLOCK 1: 2110 – 2120 MHz (A)
BLOCK 2: 2120 – 2130 MHz (B)
BLOCK 3: 2130 – 2135 MHz (C)
BLOCK 4: 2135 – 2140 MHz (D)
BLOCK 5: 2140 – 2145 MHz (E)
BLOCK 6: 2145 – 2155 MHz (E)

3.4 AWS - Mobile Frequency Blocks

§27.5(h)



BLOCK 1: 1710 – 1720 MHz (A)
BLOCK 2: 1720 – 1730 MHz (B)
BLOCK 3: 1730 – 1735 MHz (C)
BLOCK 4: 1735 – 1740 MHz (D)
BLOCK 5: 1740 – 1745 MHz (E)
BLOCK 6: 1745 – 1755 MHz (F)

3.5 Occupied Bandwidth

§2.1049, RSS-Gen (4.6.1)

The implementation of this test is performed by the spectrum analyzer's occupied bandwidth function. The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

3.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53(g)(h)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10^{th} harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.7 Peak-Average Ratio

§27.50(d)(5), RSS-133 (6.4)

A peak to average ratio measurement is performed at the conducted port of the EUT. For LTE signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

3.8 Radiated Power and Radiated Spurious Emissions

§2.1053, §27.53(g)(h), 27.50(d)(4), 27.50(c)(10).

Radiated spurious emissions are investigated indoors in a semi-anechoic chamber to determine the frequencies producing the worst case emissions. Final measurements for radiated power and radiated spurious emissions are performed on the 3 meter OATS per the guidelines of ANSI/TIA-603-C-2004. The measurement area is situated on an 18 meter x 20 meter galvanized 1/2" hardware cloth as the conducting ground plane. This material is sewn together in sections 4 feet wide and 60 feet long. A total of eighteen sections are required to cover the entire measurement area. Sections are laid across the width of the pad, overlapped 1" and sewn and soldered together at intervals of 3" (7.6 cm.) The terrain of the test site is reasonably flat and level. Power and cable to the test site are buried 18" deep into the ground outside the perimeter of the site. An all-weather non-metallic housing is situated on a 2 x 3 meter area adjacent to the measurement area to house the test equipment. The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10^{th} harmonic. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Emissions are also investigated with the receive antenna horizontally and vertically polarized. The level of the maximized emission is recorded with the spectrum analyzer using a peak detector with RBW = 1MHz, VBW = 3MHz for emissions greater than 1GHz. For emissions below 1GHz, the spectrum analyzer is set to RBW = 100kHz and VBW = 300kHz.

A half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\ [dBm]} = P_{g\ [dBm]} - \text{cable loss}_{\ [dB]} + \text{antenna gain}_{\ [dBd/dBi]}$$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g\ [dBm]}$ – cable loss $_{[dB]}$.

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + $10\log_{10}$(Power $_{[Watts]}$) specified in 27.53(g)(h).

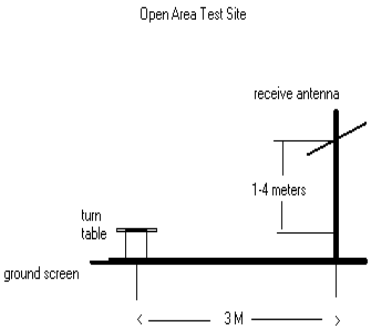


Figure 3-1. Diagram of 3-meter outdoor test range

4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx1	Licensed Transmitter Cable Set	1/25/2012	Annual	1/25/2013	N/A
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	6/7/2012	Annual	6/7/2013	N/A
-	RE2	Radiated Emissions Cable Set (VHF/UHF)	2/13/2012	Annual	2/13/2013	N/A
-	LTx2	Licensed Transmitter Cable Set	2/17/2012	Annual	2/17/2013	N/A
Agilent	8447D	Broadband Amplifier	5/8/2012	Annual	5/8/2013	1937A03348
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/15/2012	Annual	2/15/2013	3008A00985
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/10/2011	Annual	10/10/2012	3613A00315
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	2/15/2012	Annual	2/15/2013	US42510244
Agilent	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
Agilent	N9038A	MXE EMI Receiver	10/5/2011	Annual	10/5/2012	MY51210133
Agilent	N9030A	PXA Signal Analyzer	2/23/2012	Annual	2/23/2013	MY49432391
Anritsu	MA2411B	Power Sensor	3/5/2012	Annual	3/5/2013	846215
Anritsu	ML2495A	Power Meter	10/13/2011	Annual	10/13/2012	1039008
Emco	3115	Horn Antenna (1-18GHz)	1/12/2012	Biennial	1/12/2014	9704-5182
Espec	ESX-2CA	Environmental Chamber	5/21/2013	Annual	5/21/2013	17620
Mini-Circuits	VHF-1300+	High Pass Filter	2/7/2012	Annual	2/7/2013	30716
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2012	Annual	1/15/2013	30841
Mini-Circuits	VHF-3100+	High Pass Filter	2/7/2012	Annual	2/7/2013	31144
Pasternack	PE2208-6	Bidirectional Coupler	6/3/2012	Annual	6/3/2013	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	N/A		N/A	836536/0005
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	N/A		N/A	102060
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	11/14/2011	Biennial	11/14/2013	9105-2404
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	11/14/2011	Biennial	11/14/2013	9105-2403
Schwarzbeck	VULB-9161SE	Trilog Super Broadband Test Antenna	11/8/2011	Biennial	11/8/2013	9161-4075
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	10/3/2011	Biennial	10/3/2013	91052522TX
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	10/3/2011	Biennial	10/3/2013	91052523RX
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	7/5/2011	Biennial	7/5/2013	A050307
Sunol	DRH-118	Horn Antenna (1-18 GHz)	6/17/2011	Biennial	6/17/2013	A042511

Table 4-1. Test Equipment

Note: For equipment that has "N/A" for Cal Dates, these are used only for setting up a connection between the call box and EUT. Measurements were not taken using this equipment.

5.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Amplitude/Angle Modulated

16QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Combination (Audio/Data)

Spurious Radiated Emission – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0 dBm on the spectrum analzyer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80).

6.0 TEST RESULTS

6.1 Summary

Company Name: LG Electronics MobileComm U.S.A
FCC ID: ZNFE973
FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
Mode(s): LTE

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Result	Reference
TRANSMITTER MODE (TX)						
27.50(c)(10)	N/A	Effective Radiated Power (Band 17)	< 3 Watts max. ERP		PASS	Section 6.2
27.50(d)(4)	N/A	Equivalent Isotropic Radiated Power (Band 4)	< 1 Watts max. EIRP		PASS	Section 6.3
2.1053, 27.53(g)(h)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Undesirable Emissions	< 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Section 6.4, 6.5,

Table 6-1. Summary of Test Results

Notes:

1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

6.2 Effective Radiated Power (ERP)

§27.50(c)(10)

Freq [MHz]	BW [MHz]	Mod.	Battery	RB Size/Offset	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Margin [dB]
706.5	5	QPSK	Standard	1 / 24	-14.99	20.41	2.15	V	22.56	0.180	-12.21
710.0	5	QPSK	Standard	1 / 24	-15.06	20.34	2.15	V	22.49	0.177	-12.28
713.5	5	QPSK	Standard	1 / 24	-15.62	19.78	2.15	V	21.93	0.156	-12.84
706.5	5	16-QAM	Standard	1 / 24	-15.98	19.42	2.15	V	21.57	0.144	-13.20
710.0	5	16-QAM	Standard	1 / 24	-15.95	19.45	2.15	V	21.60	0.145	-13.17
713.5	5	16-QAM	Standard	1 / 24	-16.44	18.96	2.15	V	21.11	0.129	-13.66
709.0	10	QPSK	Standard	1 / 49	-15.26	20.14	2.15	V	22.29	0.169	-12.48
710.0	10	QPSK	Standard	1/49	-15.19	20.21	2.15	V	22.36	0.172	-12.41
711.0	10	QPSK	Standard	1/49	-15.59	19.81	2.15	V	21.96	0.157	-12.81
709.0	10	16-QAM	Standard	1/0	-16.60	18.80	2.15	V	20.95	0.124	-13.82
710.0	10	16-QAM	Standard	1/49	-16.17	19.23	2.15	V	21.38	0.137	-13.39
711.0	10	16-QAM	Standard	1/49	-16.76	18.64	2.15	V	20.79	0.120	-13.98

Table 6-2. ERP Data (Band 17)

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations.

2. The worst case test configuration was found in the Vertical setup.

6.3 Equivalent Isotropic Radiated Power (EIRP)

§27.50(d)(4),

Freq [MHz]	BW [MHz]	Mod.	Battery	RB Size/Offset	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Margin [dB]
1712.5	5	QPSK	Standard	1 / 24	-18.89	13.91	8.47	H	22.38	0.173	-7.62
1732.5	5	QPSK	Standard	1 / 24	-18.79	14.01	8.54	H	22.55	0.180	-7.45
1752.5	5	QPSK	Standard	1 / 24	-17.44	15.36	8.60	H	23.96	0.249	-6.04
1712.5	5	16-QAM	Standard	1 / 24	-20.03	12.77	8.47	H	21.24	0.133	-8.76
1732.5	5	16-QAM	Standard	1 / 24	-19.94	12.86	8.54	H	21.40	0.138	-8.60
1752.5	5	16-QAM	Standard	1 / 24	-18.62	14.18	8.60	H	22.78	0.190	-7.22
1715.0	10	QPSK	Standard	1/49	-19.37	13.43	8.47	H	21.90	0.155	-8.10
1732.5	10	QPSK	Standard	1/49	-18.18	14.62	8.54	H	23.16	0.207	-6.84
1750.0	10	QPSK	Standard	1/49	-17.81	14.99	8.60	H	23.59	0.228	-6.41
1715.0	10	16-QAM	Standard	1 / 49	-20.98	11.82	8.47	H	20.29	0.107	-9.71
1732.5	10	16-QAM	Standard	1/49	-19.57	13.23	8.54	H	21.77	0.150	-8.23
1750.0	10	16-QAM	Standard	1/49	-18.22	14.58	8.60	H	23.18	0.208	-6.82
1717.5	15	QPSK	Standard	1/0	-19.69	13.11	8.47	H	21.58	0.144	-8.42
1732.5	15	QPSK	Standard	1/49	-18.55	14.25	8.54	H	22.79	0.190	-7.21
1747.5	15	QPSK	Standard	75/0	-18.44	14.36	8.60	H	22.96	0.198	-7.04
1717.5	15	16-QAM	Standard	1/0	-20.68	12.12	8.47	H	20.59	0.114	-9.41
1732.5	15	16-QAM	Standard	1/74	-19.60	13.20	8.54	H	21.74	0.149	-8.26
1747.5	15	16-QAM	Standard	75/0	-19.60	13.20	8.60	H	21.80	0.151	-8.20
1720.0	20	QPSK	Standard	1/99	-18.80	14.00	8.47	H	22.47	0.176	-7.53
1732.5	20	QPSK	Standard	1/99	-18.66	14.14	8.54	H	22.68	0.185	-7.32
1745.0	20	QPSK	Standard	1/0	-17.99	14.81	8.60	H	23.41	0.219	-6.59
1720.0	20	16-QAM	Standard	1/99	-19.61	13.19	8.47	H	21.66	0.146	-8.34
1732.5	20	16-QAM	Standard	1/99	-20.26	12.54	8.54	H	21.08	0.128	-8.92
1745.0	20	16-QAM	Standard	1/99	-18.53	14.27	8.60	H	22.87	0.194	-7.13

Table 6-3. EIRP Data (Band 4)

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations.

2. The worst case test configuration was found in the Horizontal setup.

6.4 Band 17 Radiated Spurious Emissions

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	706.50	MHz		
MEASURED OUTPUT POWER:	22.56	dBm	=	0.180 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W	35.56	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1413.00	-51.91	3.59	-48.32	V	70.88
2119.50	-41.63	3.88	-37.75	V	60.31
2826.00	-91.46	5.00	-86.46	V	109.01
3532.50	-89.83	6.25	-83.58	V	106.14
4239.00	-88.74	7.21	-81.53	V	104.09
4945.50	-87.37	7.84	-79.53	V	102.09

Table 6-4. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Vertical setup.

Band 17 Radiated Spurious Measurements (continued)

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	710.00	MHz		
MEASURED OUTPUT POWER:	22.49	dBm	=	0.177 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	35.49	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1420.00	-51.96	3.64	-48.32	V	70.81
2130.00	-42.92	3.90	-39.02	V	61.51
2840.00	-91.41	5.02	-86.39	V	108.88
3550.00	-89.79	6.25	-83.54	V	106.03
4260.00	-88.78	7.24	-81.54	V	104.03
4970.00	-87.29	7.88	-79.41	V	101.90

Table 6-5. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Vertical setup.

Band 17 Radiated Spurious Measurements (continued)

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	713.50	MHz		
MEASURED OUTPUT POWER:	21.93	dBm	=	0.156 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	34.93	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1427.00	-50.02	3.69	-46.32	V	68.25
2140.50	-42.35	3.92	-38.43	V	60.36
2854.00	-91.36	5.03	-86.33	V	108.26
3567.50	-89.76	6.25	-83.51	V	105.44
4281.00	-88.79	7.25	-81.54	V	103.47
4994.50	-87.21	7.91	-79.30	V	101.22

Table 6-6. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Vertical setup.

6.5 Band 4 Radiated Spurious Emissions

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1712.50	MHz		
MEASURED OUTPUT POWER:	22.38	dBm	=	0.173 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}$ (W	35.38	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3425.00	-35.86	8.09	-27.77	H	50.15
5137.50	-52.04	10.21	-41.83	H	64.21
6850.00	-86.65	11.31	-75.34	H	97.72
8562.50	-85.08	13.02	-72.06	H	94.44
10275.00	-82.55	13.01	-69.53	H	91.91
11987.50	-78.25	13.21	-65.04	H	87.42

Table 6-7. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Horizontal setup.

Band 4 Radiated Spurious Measurements (continued)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1732.50	MHz		
MEASURED OUTPUT POWER:	22.55	dBm	=	0.180 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	35.55	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3465.00	-34.15	8.26	-25.89	H	48.44
5197.50	-51.53	10.26	-41.28	H	63.83
6930.00	-86.68	11.42	-75.26	H	97.81
8662.50	-84.78	13.07	-71.72	H	94.27
10395.00	-82.25	13.12	-69.14	H	91.69
12127.50	-77.60	13.25	-64.35	H	86.90

Table 6-8. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Horizontal setup.

Band 4 Radiated Spurious Measurements (continued)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1752.50	MHz		
MEASURED OUTPUT POWER:	23.96	dBm	=	0.249 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5 MHz			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	36.96	dBc	

FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3505.00	-38.50	8.40	-30.10	H	54.06
5257.50	-51.11	10.32	-40.79	H	64.75
7010.00	-86.72	11.51	-75.20	H	99.16
8762.50	-84.67	13.11	-71.57	H	95.53
10515.00	-81.97	13.20	-68.77	H	92.73
12267.50	-77.35	13.31	-64.03	H	87.99

Table 6-9. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. Please see ERP and EIRP tables in sections 6.2 and 6.3 for the RB offsets that produced highest power and worst case emissions.

2. The worst case test configuration was found in the Horizontal setup.

7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Electronics MobileComm U.S.A Portable Handset FCC ID: ZNFE973** complies with all the requirements of Parts 2 and 27 of the FCC rules for LTE operation only.