

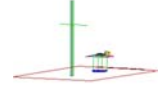


PCTEST ENGINEERING LABORATORY, INC.

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MEASUREMENT REPORT FCC Part 24 LTE

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

Date of Testing:
July 27 - August 6, 2012
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1207241010.ZNF

FCC ID:	ZNFLS860
APPLICANT:	LG ELECTRONICS MOBILECOMM U.S.A

Application Type: Class II Permissive Change
FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s): §2; §24
EUT Type: Portable Handset
Model(s): LS860, LG-LS860, LGLS860
Test Device Serial No.: *identical prototype* [S/N: N/A]
Class II Permissive Change: Please see change document
Original Grant Date: 8/29/2012

Mode	Tx Frequency (MHz)	Emission Designator	Modulation	ERP/EIRP	
				Maximum Power (Watts)	Maximum Power (dBm)
LTE Band 25	1852.5 - 1912.5	4M51G7D	QPSK	0.136	21.33
LTE Band 25	1852.5 - 1912.5	4M51W7D	16QAM	0.107	20.29
LTE Band 25	1855 - 1910	8M95G7D	QPSK	0.156	21.94
LTE Band 25	1855 - 1910	8M94W7D	16QAM	0.119	20.75

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

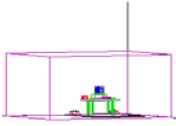


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MEASUREMENT REPORT

FCC Part 24

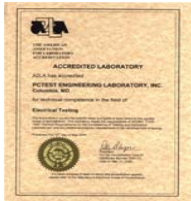


§2.1033 General Information



APPLICANT: LG Electronics MobileComm U.S.A
APPLICANT ADDRESS: 1000 Sylvan Avenue
 Englewood Cliffs, NJ 07632
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 7185 Oakland Mills Road, Columbia, MD 21046 USA
FCC RULE PART(S): §2; §24
FCC ID: ZNFLS860
FCC CLASSIFICATION: PCS Licensed Transmitter Held to Ear (PCE)
MODULATIONS: QPSK, 16-QAM (Uplink)
FREQUENCY TOLERANCE: Emission must remain in band
Test Device Serial No.: N/A Production Pre-Production Engineering
DATE(S) OF TEST: July 27 - August 6, 2012
TEST REPORT S/N: 0Y1207241010.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. 90864) 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.
- 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.

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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.

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 Intern't'l (BWI) airport, the city of Baltimore and the Washington, DC area. (See 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° 10'23" N latitude and 76° 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 C63.4-2003/9 on February 15, 2012.

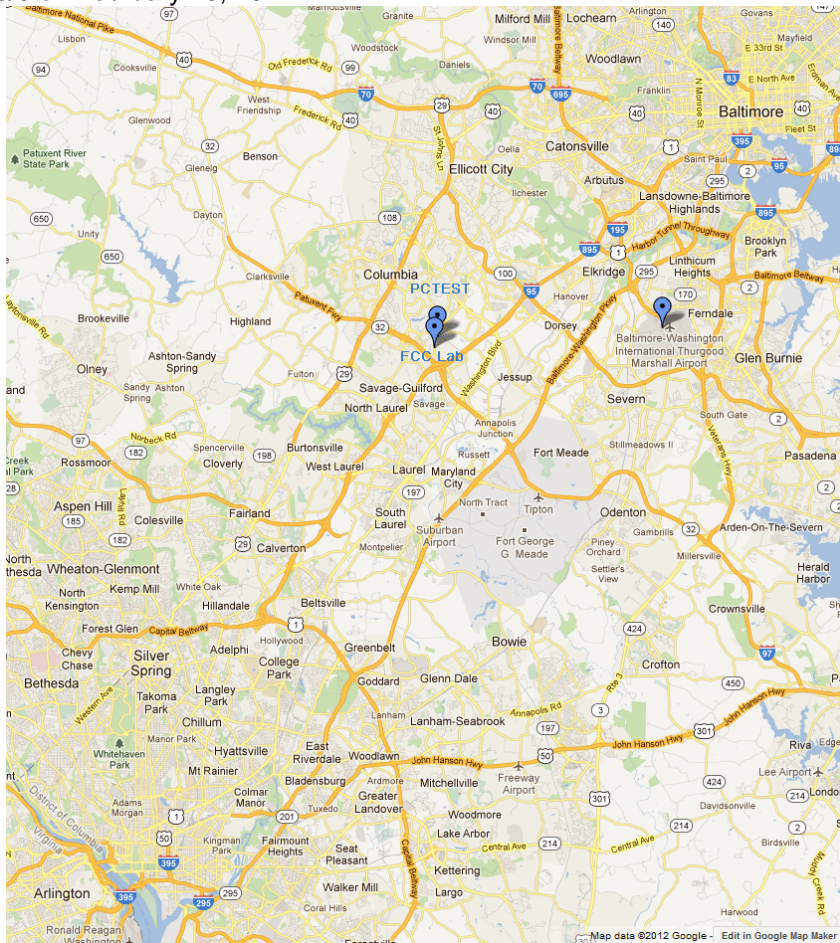




Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LGE Portable Handset FCC ID: ZNFLS860**. The test data contained in this report pertains to the emissions from the EUT's LTE operation. When testing in SVLTE mode, test data reported herein pertains to emissions from both LTE and CDMA operations. The CMW500 call box was used to set the EUT to transmit at full power. Each available modulation type (i.e. QPSK, 16-QAM) and RB size/RB offset combination was tested to determine the configuration producing the highest power and the worst case emissions.

2.2 EUT Capabilities

850/1900 CDMA/EvDO Rev 0/A (BC0, BC1, BC10), Band 25 (5/10 MHz BW) LTE, 802.11b/g/n WLAN, Bluetooth (1x,EDR, LE), NFC

This device allows for simultaneous transmission of 1x CDMA with LTE (5/10MHz BW).

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.

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3.0 DESCRIPTION OF TESTS

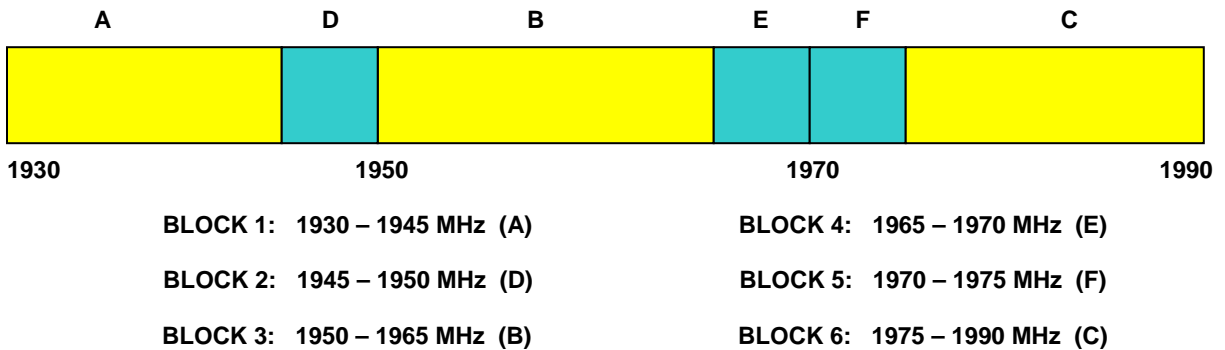
3.1 Evaluation Procedure

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 **LGE Portable Handset FCC ID: ZNFLS860**.

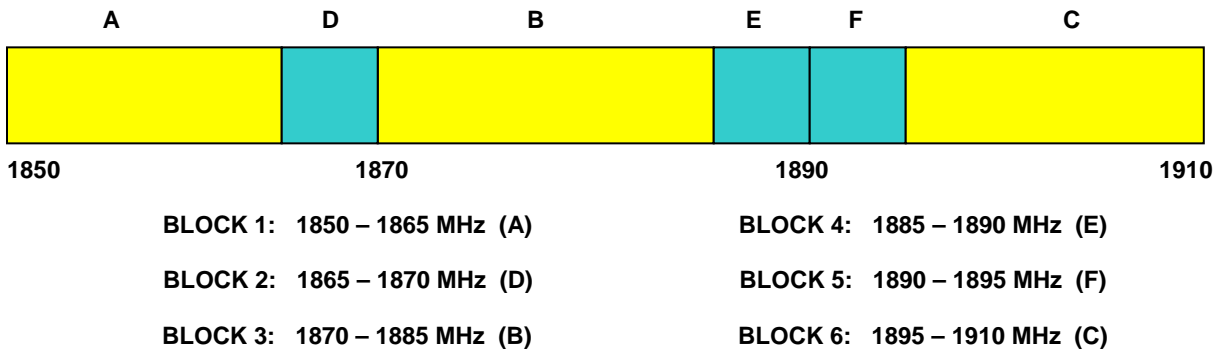
Deviation from Measurement Procedure.....None

3.2 PCS - Base Frequency Blocks

§24.229 (a)(b)(c)



PCS - Mobile Frequency Blocks



The paired frequency blocks 1910–1915 MHz and 1990–1995 MHz are available for assignment in the 175 Economic Areas defined in §90.7 of this chapter. The 1910–1915 MHz block shall be used for mobile/portable station transmissions while the 1990–1995 MHz block shall be used for base station transmissions.

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3.3 Radiated Power and Radiated Spurious Emissions

§24.232(c), 24.238(a); RSS-133 (6.5.1)

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 10th 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:

$$P_d \text{ [dBm]} = P_g \text{ [dBm]} - \text{cable loss [dB]} + \text{antenna gain [dBd/dBi]}$$

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 $P_g \text{ [dBm]} - \text{cable loss [dB]}$.

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 $43 + 10\log_{10}(\text{Power}_{\text{[Watts]}})$ specified in 22.917(a) and 24.238(a).

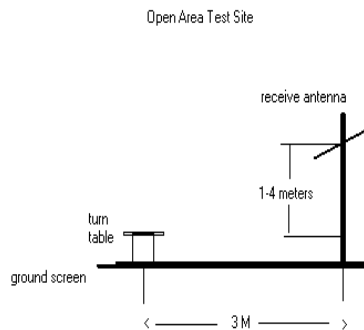




Figure 3-1. Diagram of 3-meter outdoor test range

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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)	7/10/2012	Annual	7/10/2013	N/A
Agilent	8447D	Broadband Amplifier	5/8/2012	Annual	5/8/2013	1937A03348
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	2/15/2012	Annual	2/15/2013	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/5/2012	Annual	4/5/2013	MY45470194
Agilent	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
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
Espec	ESX-2CA	Environmental Chamber	4/4/2012	Annual	4/4/2013	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	7/22/2011	Biennial	7/22/2013	125518
ETS Lindgren	3160-09	18-26.5 GHz Standard Gain Horn	5/30/2012	Annual	5/30/2013	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	10/1/2010	Biennial	10/1/2012	128337
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
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	N/A		N/A	100976
Rohde & Schwarz	RS-PR18	1-18 GHz Pre-Amplifier	6/26/2012	Annual	6/26/2013	100071
Rohde & Schwarz	RS-PR26	18-26.5 GHz Pre-Amplifier	5/30/2012	Annual	5/30/2013	100040
Rohde & Schwarz	ESU26	EMI Test Receiver	12/15/2011	Annual	12/15/2012	100342
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
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/26/2012	Biennial	1/26/2014	A051107

Table 4-1. Test Equipment

Note: Equipment with 'N/A' Calibration dates were used for signaling purposes only and not for calibrated measurements. Care was taken to ensure testing was performed while equipment was in calibration.

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5.0 SAMPLE CALCULATIONS

Note: Bandwidth and EIRP values listed below in this section are not representative of actual measurements. They are listed as examples only.

Spurious Radiated Emission – LTE Band

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

The 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 analyzer. 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 $- (-24.80)$.

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6.0 TEST RESULTS

6.1 Summary



Company Name: LG Electronics MobileComm U.S.A
 FCC ID: ZNFLS860
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): LTE

FCC Part Section(s)	RSS Sections(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (Tx)						
24.232(c)	RSS-133 (6.4) [SRSP-510(5.1.2)]	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP	RADIATED	PASS	Section 6.2
2.1053, 24.238(a)	RSS-133 (6.5.1)	Single Transmit Undesirable Out-of-Band Emissions	< 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 6.3
2.1053, 24.238(a)	RSS-133 (6.5.1)	Simultaneous Transmission Undesirable Out-of-Band Emissions	< -13dBm for all out-of-band emissions		PASS	Section 6.4

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) The analyzer plots shown in Section 7.0 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) 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.
- 4) For out of band conducted spurious emissions (including those at the band edges), the emissions of both QPSK and 16-QAM modulations were investigated. The worst case transmitter emissions are shown in Section 7.0.

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6.2 Equivalent Isotropic Radiated Power



§24.232(c); RSS-133 (6.4) [SRSP-510(5.1.2)]

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Battery	RB Size/Offset	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Margin [dB]
1852.50	5	QPSK	Standard	1 / 0	-20.28	12.62	8.56	H	21.18	0.131	-11.83
1882.50	5	QPSK	Standard	1 / 0	-20.12	12.78	8.55	H	21.33	0.136	-11.68
1912.50	5	QPSK	Standard	1 / 0	-20.51	12.39	8.53	H	20.92	0.124	-12.09
1852.50	5	16-QAM	Standard	1 / 0	-21.17	11.73	8.56	H	20.29	0.107	-12.72
1882.50	5	16-QAM	Standard	1 / 0	-21.24	11.66	8.55	H	20.21	0.105	-12.80
1912.50	5	16-QAM	Standard	1 / 0	-21.63	11.27	8.53	H	19.80	0.096	-13.21
1855.00	10	QPSK	Standard	1 / 49	-19.81	13.09	8.56	H	21.65	0.146	-11.36
1882.50	10	QPSK	Standard	1 / 0	-19.51	13.39	8.55	H	21.94	0.156	-11.07
1910.00	10	QPSK	Standard	1 / 49	-20.89	12.01	8.53	H	20.54	0.113	-12.47
1855.00	10	16-QAM	Standard	1 / 49	-20.97	11.93	8.56	H	20.49	0.112	-12.52
1882.50	10	16-QAM	Standard	1 / 0	-20.70	12.20	8.55	H	20.75	0.119	-12.26
1910.00	10	16-QAM	Standard	1 / 49	-21.73	11.17	8.53	H	19.70	0.093	-13.31

Table 6-2. Band 25 LTE - Equivalent Isotropic Radiated Power Output Data

Notes:

1. This device was tested under all modulations, RB sizes and offsets and channel bandwidth configurations and the worst case emissions are reported at the maximum channel BW and respective settings for QPSK for all bands.
2. This unit was tested with its standard battery. All spurious emissions were investigated and the worst case emissions were found with the EUT powered by this battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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6.3 LTE Radiated Measurements §2.1053, §24.238(a)

Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 1855.00 MHz
 CHANNEL: 26090
 MEASURED OUTPUT POWER: 21.65 dBm = 0.146 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.65 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3710.00	-43.90	8.40	-35.50	H	57.15
5565.00	-52.91	10.63	-42.28	H	63.93
7420.00	-49.51	11.84	-37.67	H	59.32
9275.00	-41.38	13.29	-28.10	H	49.74
11130.00	-43.87	13.50	-30.37	H	52.01
12985.00	-84.45	13.68	-70.78	H	92.42

Table 6-3. Radiated Spurious Data (Band 25 LTE - Ch 26065)

Notes:

1. This device was tested under all modulations, RB sizes and offsets and channel bandwidth configurations and the worst case emissions are reported at the maximum channel BW and respective settings for QPSK for all bands.
2. This unit was tested with its standard battery. All spurious emissions were investigated and the worst case emissions were found with the EUT powered by this battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 MEASURED OUTPUT POWER: 21.94 dBm = 0.156 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.94 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3765.00	-40.76	8.44	-32.33	H	54.26
5647.50	-52.70	10.66	-42.04	H	63.98
7530.00	-50.91	11.94	-38.97	H	60.90
9412.50	-45.31	13.23	-32.08	H	54.01
11295.00	-46.28	13.48	-32.80	H	54.74
13177.50	-84.23	13.84	-70.38	H	92.32

Table 6-4. Radiated Spurious Data (Band 25 LTE - Ch 26365)

Notes:

1. This device was tested under all modulations, RB sizes and offsets and channel bandwidth configurations and the worst case emissions are reported at the maximum channel BW and respective settings for QPSK for all bands.
2. This unit was tested with its standard battery. All spurious emissions were investigated and the worst case emissions were found with the EUT powered by this battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 1910.00 MHz
 CHANNEL: 26640
 MEASURED OUTPUT POWER: 20.54 dBm = 0.113 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 33.54 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3820.00	-41.36	8.57	-32.79	H	53.33
5730.00	-53.06	10.69	-42.36	H	62.91
7640.00	-47.81	12.07	-35.74	H	56.28
9550.00	-40.89	13.20	-27.69	H	48.24
11460.00	-46.95	13.42	-33.54	H	54.08
13370.00	-84.05	14.04	-70.01	H	90.55

Table 6-5. Radiated Spurious Data (Band 25 LTE - Ch 26665)

Notes:

1. This device was tested under all modulations, RB sizes and offsets and channel bandwidth configurations and the worst case emissions are reported at the maximum channel BW and respective settings for QPSK for all bands.
2. This unit was tested with its standard battery. All spurious emissions were investigated and the worst case emissions were found with the EUT powered by this battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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6.4 SVLTE Radiated Spurious Measurements

§2.1053, §27.53(c)(2)

Intermodulation distortion (IMD) was investigated while both LTE and CDMA were operating simultaneously. Both LTE and CDMA were set to maximum power during testing. The 2nd and 3rd order IMD produce the highest radiated spurious emissions. Both QPSK and 16-QAM modulation were investigated for LTE and the worst case emissions were found in QPSK modulation. Only the worst case out-of-band emissions within 20dB of the limit are reported below.

Note: The tables below show test results for low, middle, and high channel for Cellular and PCS CDMA and Ch 476 or Ch 684 for BC10 CDMA while LTE was set to transmit with 1RB, offset 0 in QPSK modulation at Band 25 LTE low, mid and high channels. The following tables represent the worst case emissions.

Field Strength of SPURIOUS Radiation



Tx1 Freq. (f1): 824.70 MHz
 Tx2 Freq. (f2): 1852.50 MHz
 Tx1 / Tx2 Modulation: CDMA / QPSK
 LTE Bandwidth: 5 MHz
 LTE RB Size / Offset: 1 / 0
 Distance: 3 meters
 Limit: -13 dBm

Intermod Order	Intermod formula	FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	Margin [dB]
2nd	f1+f2	2677.20	-38.59	6.48	-32.11	H	-19.1
3rd	2f2-f1	2880.30	-39.57	7.21	-32.36	H	-19.4

Table 6-6. Radiated Spurious Data (SVLTE)

Notes:

1. This device was tested under all configurations, RB Sizes and offsets and channel BW configurations. The worst case radiated spurious emission is reported with 5MHz BW while transmitting with 1 resource block with an offset of 0 using QPSK modulation for LTE, and for CDMA with RC3/SO55 with "All Up" power control bits.
2. This unit was tested with its standard battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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SVLTE Radiated Spurious Measurements (Continued)

§2.1053, §27.53(c)(2)



Tx1 Freq. (f1): 824.70 MHz
 Tx2 Freq. (f2): 1882.50 MHz
 Tx1 / Tx2 Modulation: CDMA / QPSK
 LTE Bandwidth: 5 MHz
 LTE RB Size / Offset: 1 / 0
 Distance: 3 meters
 Limit: -13 dBm

Intermod Order	Intermod formula	FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	Margin [dB]
2nd	f1+f2	2707.20	13.97	-45.92	-31.95	H	-18.9
3rd	2f2-f1	2940.30	13.28	-41.87	-28.59	H	-15.6
3rd	2f2+f1	4589.70	8.88	-35.97	-27.09	H	-14.1

Table 6-7. Radiated Spurious Data (SVLTE)

Notes:

1. This device was tested under all configurations, RB Sizes and offsets and channel BW configurations. The worst case radiated spurious emission is reported with 5MHz BW while transmitting with 1 resource block with an offset of 0 using QPSK modulation for LTE, and for CDMA with RC3/SO55 with "All Up" power control bits.
2. This unit was tested with its standard battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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SVLTE Radiated Spurious Measurements (Continued)

§2.1053, §27.53(c)(2)



Tx1 Freq. (f1): 824.70 MHz
 Tx2 Freq. (f2): 1912.50 MHz
 Tx1 / Tx2 Modulation: CDMA / QPSK
 LTE Bandwidth: 5 MHz
 LTE RB Size / Offset: 1 / 0
 Distance: 3 meters
 Limit: -13 dBm

Intermod Order	Intermod formula	FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	Margin [dB]
2nd	f1+f2	2737.20	-37.95	6.99	-30.96	H	-18.0
3rd	2f2-f1	3000.30	-36.99	7.30	-29.69	H	-16.7
3rd	2f2+f1	4649.70	-37.00	9.58	-27.42	H	-14.4

Table 6-8. Radiated Spurious Data (SVLTE)

Notes:

1. This device was tested under all configurations, RB Sizes and offsets and channel BW configurations. The worst case radiated spurious emission is reported with 5MHz BW while transmitting with 1 resource block with an offset of 0 using QPSK modulation for LTE, and for CDMA with RC3/SO55 with "All Up" power control bits.
2. This unit was tested with its standard battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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SVLTE Radiated Spurious Measurements (Continued)
§2.1053, §27.53(c)(2)

Field Strength of SPURIOUS Radiation



Tx1 Freq. (f1): 817.90 MHz
 Tx2 Freq. (f2): 1852.50 MHz
 Tx1 / Tx2 Modulation: CDMA / QPSK
 LTE Bandwidth: 5 MHz
 LTE RB Size / Offset: 1 / 0
 Distance: 3 meters
 Limit: -13 dBm

Intermod Order	Intermod formula	FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	Margin [dB]
3rd	2f2-f1	2887.10	-38.32	7.21	-31.11	H	-18.1

Table 6-9. Radiated Spurious Data (SVLTE)

Notes:

1. This device was tested under all configurations, RB Sizes and offsets and channel BW configurations. The worst case radiated spurious emission is reported with 5MHz BW while transmitting with 1 resource block with an offset of 0 using QPSK modulation for LTE, and for CDMA with RC3/SO55 with "All Up" power control bits.
2. This unit was tested with its standard battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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SVLTE Radiated Spurious Measurements (Continued)
§2.1053, §27.53(c)(2)

Field Strength of SPURIOUS Radiation



Tx1 Freq. (f1): 823.10 MHz
 Tx2 Freq. (f2): 1852.50 MHz
 Tx1 / Tx2 Modulation: CDMA / QPSK
 LTE Bandwidth: 5 MHz
 LTE RB Size / Offset: 1 / 0
 Distance: 3 meters
 Limit: -13 dBm

Intermod Order	Intermod formula	FREQ (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	Margin [dB]
3rd	2f2-f1	2881.90	-38.40	7.21	-31.19	H	-18.2

Table 6-10. Radiated Spurious Data (SVLTE)



Notes:

1. This device was tested under all configurations, RB Sizes and offsets and channel BW configurations. The worst case radiated spurious emission is reported with 5MHz BW while transmitting with 1 resource block with an offset of 0 using QPSK modulation for LTE, and for CDMA with RC3/SO55 with "All Up" power control bits.
2. This unit was tested with its standard battery.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal polarity, slide-in setup. The data reported in the table above was measured in this test setup.

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7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LGE Portable Handset FCC ID: ZNFLS860** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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