

PCTEST ENGINEERING LABORATORY, INC.

7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. 410.290.6652 / Fax 410.290.6654 http://www.pctestlab.com



MEASUREMENT REPORT FCC Part 22, 24, & 27 LTE

Applicant Name:

LG Electronics MobileComm U.S.A 1000 Sylvan Avenue Englewood Cliffs, NJ 07632 United States Date of Testing: 3/2/2017-3/22/2017 Test Site/Location: PCTEST Lab., Columbia, MD, USA Test Report Serial No.: 1M1703010080-03.ZNF

ZNFM255

APPLICANT:

FCC ID :

LG ELECTRONICS MOBILECOMM U.S.A

Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§2; §22; §24; §27
Test Procedure(s):	ANSI/TIA-603-D-2010, KDB 971168 D01 v02r02
EUT Type:	Portable Handset
Model:	LG-M255
Additional Model(s):	LGM255, M255
Test Device Serial No.:	identical prototype [S/N: 06872, 06864]

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.

andy Ortanez President



FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 1 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 1 of 117
© 2017 PCTEST Engineering Laboratory, Inc. V 6.2				

01/09/2016

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, include or produced or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized in any part, form or by any means, electronic or mechanical, include or utilized or utilized in any part, form or by any means, electronic or mechanical, include or utilized or utilized in any part, form or by any means, electronic or mechanical, include or utilized or utilized in any part, form or by any means, electronic or mechanical, include or utilized or utilized in any part, form or by any means, electronic or mechanical, include or utilized or

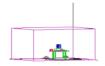


TABLE OF CONTENTS

FCC F	PART 2	22, 24, & 27 MEASUREMENT REPORT	3
1.0	INTF	RODUCTION	5
	1.1	Scope	5
	1.2	Testing Facility	5
2.0	PRC	DUCT INFORMATION	6
	2.1	Equipment Description	6
	2.2	Device Capabilities	6
	2.3	Test Configuration	6
	2.4	EMI Suppression Device(s)/Modifications	6
3.0	DES	CRIPTION OF TESTS	7
	3.1	Measurement Procedure	7
	3.2	Block A Frequency Range	7
	3.3	Cellular - Base Frequency Blocks	7
	3.4	Cellular - Mobile Frequency Blocks	7
	3.5	PCS - Base Frequency Blocks	8
	3.6	PCS - Mobile Frequency Blocks	8
	3.7	AWS - Base Frequency Blocks	8
	3.8	AWS - Mobile Frequency Blocks	8
	3.9	Radiated Power and Radiated Spurious Emissions	9
4.0	MEA	SUREMENT UNCERTAINTY	10
5.0	TES	T EQUIPMENT CALIBRATION DATA	11
6.0	SAM	IPLE CALCULATIONS	12
7.0	TES	T RESULTS	13
	7.1	Summary	
	7.2	Occupied Bandwidth	14
	7.3	Spurious and Harmonic Emissions at Antenna Terminal	
	7.4	Band Edge Emissions at Antenna Terminal	54
	7.5	Peak-Average Ratio	87
	7.6	Radiated Power (ERP/EIRP)	94
	7.7	Radiated Spurious Emissions Measurements	
	7.8	Frequency Stability / Temperature Variation	
8.0	CON	ICLUSION	117

FCC ID: ZNFM255	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 2 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 2 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2 01/09/2016





MEASUREMENT REPORT FCC Part 22, 24, & 27



§2.1033 General Information

APPLICANT: APPLICANT ADDRESS:	LG Electronics MobileComm U.S.A 1000 Sylvan Avenue				
	Englewood Cliffs, NJ 07632	2, United States			
TEST SITE:	PCTEST ENGINEERING L	ABORATORY, INC.			
TEST SITE ADDRESS:	7185 Oakland Mills Road, Columbia, MD 21045 USA				
FCC RULE PART(S):	§2; §22; §24; §27				
BASE MODEL:	LG-M255				
FCC ID:	ZNFM255				
FCC CLASSIFICATION:	PCS Licensed Transmitter	Held to Ear (PCE)			
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)				
Test Device Serial No.:	06872, 06864	Production	Pre-Production	Engineering	
DATE(S) OF TEST:	3/2/2017-3/22/2017				
TEST REPORT S/N:	1M1703010080-03.ZNF				

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, 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 and Industry Canada (2451B-1).
 - 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 and Industry Canada Rules.
 - 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 facility is an IC registered (2451B-1) test laboratory with the site description on file at Industry Canada.
 - 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.

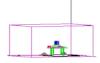
FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 2 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 3 of 117
© 2017 PCTEST Engineering Laboratory, Inc. V 6.2				



2

01/09/2016





MEASUREMENT REPORT FCC Part 22, 24, & 27



01/09/2016

ERP/EIRP FCC Rule Emission Mode Tx Frequency (MHz) Max. Power Max. Power Modulation Part Designator (W) (dBm) 0.081 LTE Band 12 27 699.7 - 715.3 19.07 1M13G7D QPSK LTE Band 12 27 699.7 - 715.3 0.068 18.33 1M11W7D 16QAM LTE Band 12 27 700.5 - 714.5 0.094 19.72 2M71G7D QPSK LTE Band 12 700.5 - 714.5 2M72W7D 16QAM 27 0.076 18.82 4M54G7D **QPSK** LTE Band 12 27 701.5 - 713.5 20.68 0.117 LTE Band 12 27 701.5 - 713.5 0.090 19.55 4M49W7D 16QAM LTE Band 12 27 704 - 711 20.47 8M94G7D QPSK 0.111 LTE Band 12 27 704 - 711 0.092 19.64 8M93W7D 16QAM LTE Band 5 22H 824.7 - 848.3 0.109 20.38 1M13G7D QPSK LTE Band 5 22H 824.7 - 848.3 0.090 19.55 1M12W7D 16QAM LTE Band 5 22H 825.5 - 847.5 0.131 21.17 2M71G7D QPSK LTE Band 5 22H 825.5 - 847.5 0.107 20.31 2M72W7D 16QAM LTE Band 5 22H 826.5 - 846.5 0.152 21.82 4M52G7D QPSK 22H 4M52W7D LTE Band 5 826.5 - 846.5 0.121 20.84 16QAM LTE Band 5 22H 829 - 844 0.151 21.80 8M97G7D QPSK LTE Band 5 22H 829 - 844 0.120 20.80 9M00W7D 16QAM LTE Band 4 27 1710.7 - 1754.3 0.260 24.15 1M12G7D **QPSK** 27 1710.7 - 1754.3 0.198 22.97 1M12W7D 16QAM LTE Band 4 27 QPSK LTE Band 4 1711.5 - 1753.5 0.298 24.75 2M73G7D LTE Band 4 27 1711.5 - 1753.5 0.223 23.49 2M72W7D 16QAM LTE Band 4 27 1712.5 - 1752.5 0.359 4M54G7D QPSK 25.55 LTE Band 4 27 1712.5 - 1752.5 0.365 25.63 4M53W7D 16QAM LTE Band 4 27 1715 - 1750 0.363 25.60 8M95G7D QPSK LTE Band 4 27 1715 - 1750 0.296 24.71 8M95W7D 16QAM LTE Band 4 27 1717.5 - 1747.5 0.375 25.74 13M4G7D **QPSK** 27 1717.5 - 1747.5 0.291 24.64 13M4W7D 16QAM LTE Band 4 LTE Band 4 27 1720 - 1745 0.353 25.47 17M9G7D QPSK LTE Band 4 27 1720 - 1745 0.274 24.38 17M9W7D 16QAM QPSK LTE Band 2 24E 1850.7 - 1909.3 0.265 24.24 1M13G7D 1850.7 - 1909.3 0.204 16QAM LTE Band 2 24F 23.10 1M13W7D 24E QPSK 1851.5 - 1908.5 0.297 24.73 2M71G7D LTE Band 2 24E 1851.5 - 1908.5 0.272 2M72W7D 16QAM LTE Band 2 24.35 QPSK LTE Band 2 24E 1852.5 - 1907.5 0.361 25.57 4M52G7D LTE Band 2 24E 1852.5 - 1907.5 0.272 24.35 4M52W7D 16QAM LTE Band 2 24E 1855 - 1905 0.371 25.70 8M98G7D QPSK 1855 - 1905 LTE Band 2 24E 0.327 25.14 8M96W7D 16QAM 1857.5 - 1902.5 LTE Band 2 24F 0.367 25.64 13M4G7D QPSK 24E 13M4W7D 16QAM LTE Band 2 1857.5 - 1902.5 0.283 24.51 LTE Band 2 24E 1860 - 1900 0.364 25.61 17M9G7D **QPSK** LTE Band 2 24E 1860 - 1900 0.273 24.36 17M9W7D 16QAM

EUT Overview

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 4 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 4 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.	•		V 6.2

ing Labo ngine atory,



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'I (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 C63.4-2014 on January 22, 2015.

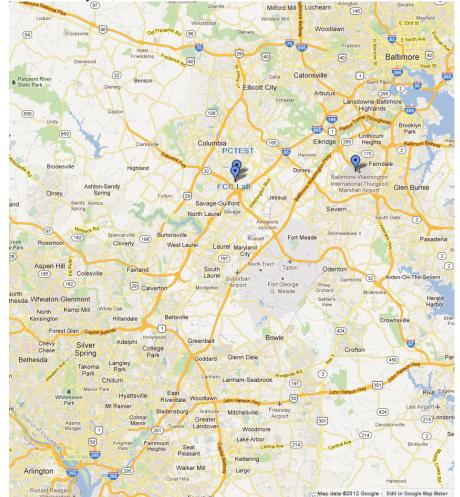


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: ZNFM255	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 5 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 5 of 117
© 2017 PCTEST Engineering	aboratory Inc	•		V 6 2

^{01/09/2016}



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFM255**. 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 GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n WLAN, Bluetooth (1x, EDR, LE), NFC

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/TIA-603-D-2010 and KDB 971168 D01 v02r02. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

2.4 EMI Suppression Device(s)/Modifications

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

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 6 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 6 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

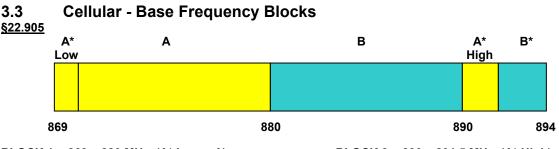
The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-D-2010) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" (KDB 971168 D01 v02r02) were used in the measurement of the EUT.

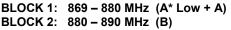
3.2 Block A Frequency Range

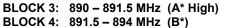
<u>§27.5(c)</u>

<u>698-746 MHz band</u>. 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:

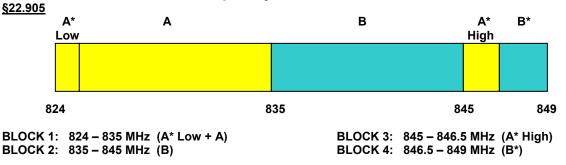
Block A: 698-704 MHz and 728-734 MHz; Block B: 704-710 MHz and 734-740 MHz; and Block C: 710-716 MHz and 740-746 MHz.







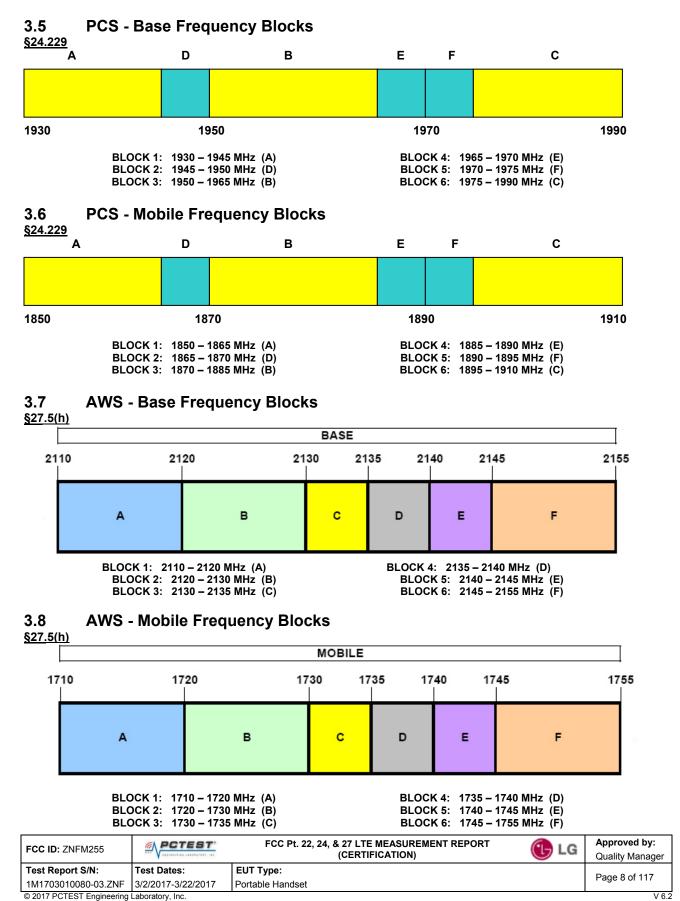
3.4 Cellular - Mobile Frequency Blocks



FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 7 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 7 of 117
© 2017 PCTEST Engineering Laboratory, Inc. V 6.2				

^{01/09/2016}





^{01/09/2016}



3.9 Radiated Power and Radiated Spurious Emissions §2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) §27.50(c.10) §27.50(d.4) §27.53(g) §27.53(h)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. A 72.4cm high PVC support structure is placed on top of the turntable. A 3" (~7.6cm) sheet of high density polystyrene is used as the table top and is placed on top of the PVC supports to bring the total height of the table to 80cm.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. 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. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v02r02.

Per the guidance of ANSI/TIA-603-D-2010, 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:

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

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 + 10log₁₀(Power [Watts]).

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 0 of 447
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 9 of 117
© 2017 PCTEST Engineering Laboratory. Inc. V 6.2				

^{01/09/2016}



4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 10 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 10 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			

^{01/09/2016}



TEST EQUIPMENT CALIBRATION DATA 5.0

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2006.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx3	Licensed Transmitter Cable Set	7/12/2016	Annual	7/12/2017	N/A
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	7/11/2016	Annual	7/11/2017	RE1
Agilent	N9020A	MXA Signal Analyzer	10/28/2016	Annual	10/28/2017	US46470561
Anritsu	MT8820C	Radio Communication Analyzer	4/14/2016	Annual	4/14/2017	6201240328
Emco	3115	Horn Antenna (1-18GHz)	3/10/2016	Biennial	3/10/2018	9704-5182
Espec	ESX-2CA	Environmental Chamber	4/4/2016	Annual	4/4/2017	17620
ETS Lindgren	3160-09	18-26.5 GHz Standard Gain Horn	8/28/2016	Biennial	8/28/2018	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	4/26/2016	Biennial	4/26/2018	128338
K & L	11SH10-3075/U18000	High Pass Filter	7/11/2016	Annual	7/11/2017	11SH10-3075/U18000-2
K & L	13SH10-1000/U1000	N Type High Pass Filter	7/6/2016	Annual	7/6/2017	13SH10-1000/U1000-1
Mini-Circuits	PWR-SENS-4RMS	USB Power Sensor	4/4/2016	Annual	4/4/2017	11210140001
Mini-Circuits	SSG-4000HP	USB Synthesized Signal Generator		N/A		11208010032
Mini-Circuits	TVA-11-422	RF Power Amp		N/A		QA1303002
PCTEST	-	EMC Switch System	7/11/2016	Annual	7/11/2017	NM1
PCTEST	-	EMC Switch System	7/6/2016	Annual	7/6/2017	NM2
Rohde & Schwarz	CMW500	Radio Communication Tester	10/20/2016	Annual	10/20/2017	100976
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	7/15/2016	Annual	7/15/2017	100348
Rohde & Schwarz	TS-PR18	1-18 GHz Pre-Amplifier	7/11/2016	Annual	7/11/2017	100071
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	4/7/2016	Annual	4/7/2017	100040
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	3/30/2016	Biennial	3/30/2018	9105-2403
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	3/2/2016	Biennial	3/2/2018	N/A
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	3/14/2016	Biennial	3/14/2018	A051107
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/26/2016	Biennial	4/26/2018	125518
Schwarzbeck	UHA 9105	Dipole Antenna	8/26/2016	Biennial	8/26/2017	2696

Table 5-1. Test Equipment

Notes:

1. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

FCC ID: ZNFM255	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 11 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 11 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			

01/09/2016



6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

16QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

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 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).

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 12 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 12 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



TEST RESULTS 7.0

7.1 Summary

Company Name:	LG Electronics MobileComm U.S.A
FCC ID:	<u>ZNFM255</u>
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Result	Reference		
2.1049	Occupied Bandwidth	N/A		PASS	Section 7.2		
2.1051 22.917(a) 24.238(a) 27.53(g) 27.53(h)	Out of Band Emissions	> 43 + 10log ₁₀ (P[Watts]) at Band Edge and for all out-of-band emissions	CONDUCTED	PASS	Section 7.3, 7.4		
24.232(d)	Peak-Average Ratio	< 13 dB		PASS	Section 7.5		
2.1046	Transmitter Conducted Output Power	N/A		PASS	See RF Exposure Report		
2.1055. 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) and fundamental emissions stay within authorized frequency block (Part 24, 27)		PASS	Section 7.8		
22.913(a.2)	Effective Radiated Power (Band 5)	< 7 Watts max. ERP		PASS	Section 7.6		
27.50(c.10)	Effective Radiated Power (Band 12)	< 3 Watts max. ERP		PASS	Section 7.6		
24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	< 2 Watts max. EIRP	RADIATED	PASS	Section 7.6		
27.50(d.4)	Equivalent Isotropic Radiated Power (Band 4)	< 1 Watts max. EIRP		PASS	Section 7.6		
2.1053 22.917(a) 24.238(a) 27.53(g) 27.53(h)	Undesirable Emissions	> 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 7.7		
	Table 7-1. 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 (Sections 7.2, 7.3, 7.4, 7.5) 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.
- For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding 4) plots necessary to show compliance. The measurement software utilized is PCTEST "LTE Automation," Version 4.5.

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 12 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 13 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			

^{01/09/2016}



7.2 Occupied Bandwidth §2.1049

Test Overview

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. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

KDB 971168 D01 v02r02 - Section 4.2

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within

1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

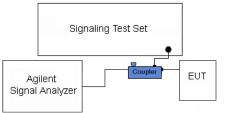


Figure 7-1. Test Instrument & Measurement Setup

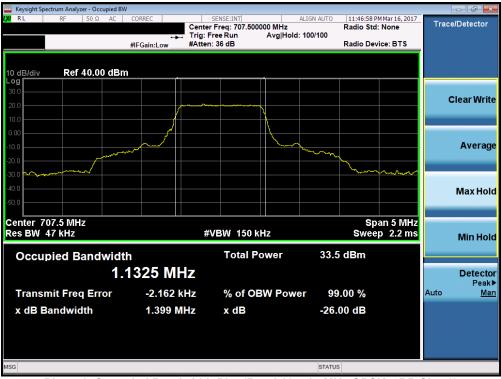
Test Notes

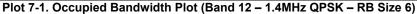
None.

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 14 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 14 of 117
2017 PCTEST Engineering Laboratory, Inc.				

^{01/09/2016}









Plot 7-2. Occupied Bandwidth Plot (Band 12 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 15 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 15 of 117	
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.				









Plot 7-4. Occupied Bandwidth Plot (Band 12 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 16 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 16 of 117
© 2017 PCTEST Engineering	1017 PCTEST Engineering Laboratory, Inc.			









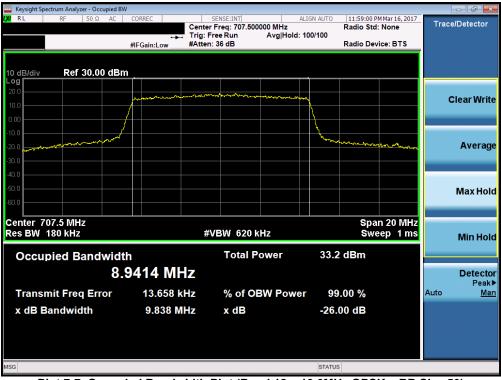
Plot 7-6. Occupied Bandwidth Plot (Band 12 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM255	CALEST.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 17 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 17 of 117
© 2017 PCTEST Engineering	017 PCTEST Engineering Laboratory, Inc.			

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTESTLAB.COM.

01/09/2016









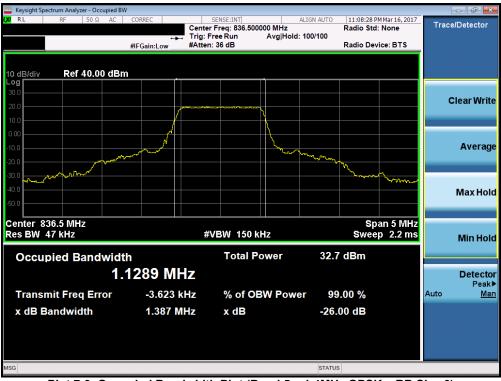
Plot 7-8. Occupied Bandwidth Plot (Band 12 – 10.0MHz 16-QAM – RB Size 50)

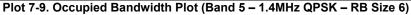
FCC ID: ZNFM255	CONTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 19 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 18 of 117	
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.				

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTESTLAB.COM.

01/09/2016







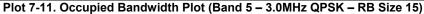


Plot 7-10. Occupied Bandwidth Plot (Band 5 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 10 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 19 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2







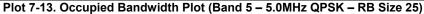


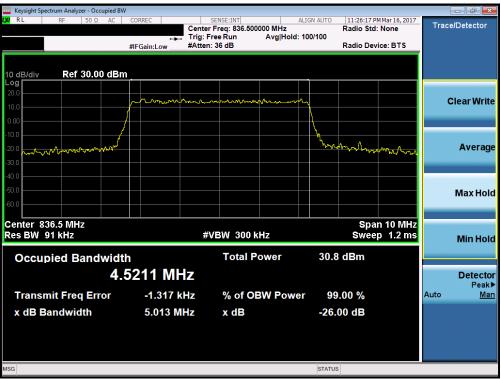
Plot 7-12. Occupied Bandwidth Plot (Band 5 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM255	CONTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 20 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 20 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			









Plot 7-14. Occupied Bandwidth Plot (Band 5 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 21 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 21 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2





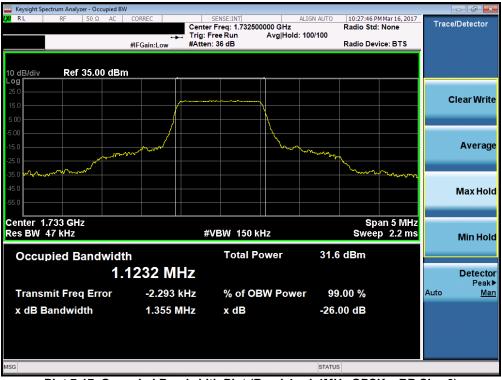
Plot 7-15. Occupied Bandwidth Plot (Band 5 – 10.0MHz QPSK – RB Size 50)

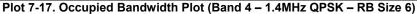


Plot 7-16. Occupied Bandwidth Plot (Band 5 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 22 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 22 01 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2









Plot 7-18. Occupied Bandwidth Plot (Band 4 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 22 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 23 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			





Plot 7-19. Occupied Bandwidth Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

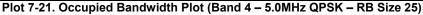


Plot 7-20. Occupied Bandwidth Plot (Band 4 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 24 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 24 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			





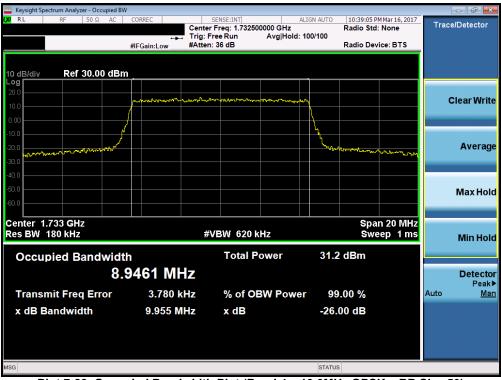




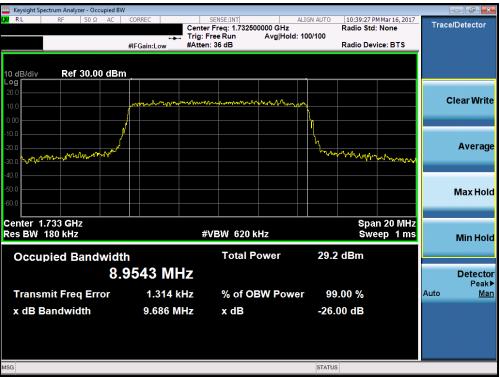
Plot 7-22. Occupied Bandwidth Plot (Band 4 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 25 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 25 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			





Plot 7-23. Occupied Bandwidth Plot (Band 4 – 10.0MHz QPSK – RB Size 50)



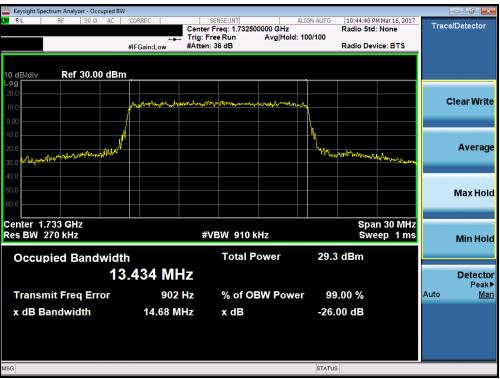
Plot 7-24. Occupied Bandwidth Plot (Band 4 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 26 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 26 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			





Plot 7-25. Occupied Bandwidth Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

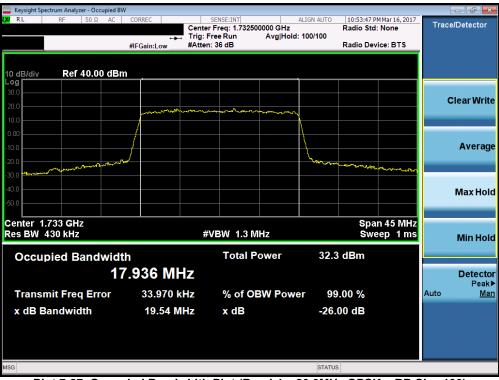


Plot 7-26. Occupied Bandwidth Plot (Band 4 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 27 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 27 01 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2

V 6.2 01/09/2016





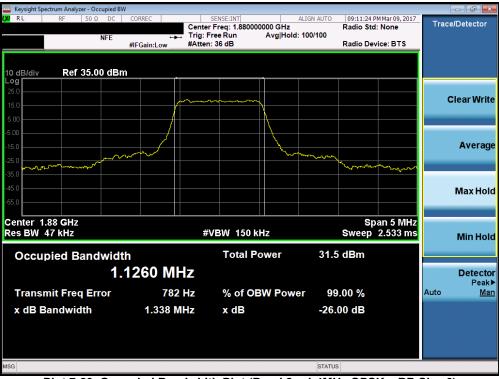




Plot 7-28. Occupied Bandwidth Plot (Band 4 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 29 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 28 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2





Plot 7-29. Occupied Bandwidth Plot (Band 2 – 1.4MHz QPSK – RB Size 6)



Plot 7-30. Occupied Bandwidth Plot (Band 2 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 20 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 29 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2





Plot 7-31. Occupied Bandwidth Plot (Band 2 – 3.0MHz QPSK – RB Size 15)



Plot 7-32. Occupied Bandwidth Plot (Band 2 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 20 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 30 of 117
© 2017 PCTEST Engineering	2017 PCTEST Engineering Laboratory, Inc.			V 6.2





Plot 7-33. Occupied Bandwidth Plot (Band 2 – 5.0MHz QPSK – RB Size 25)



Plot 7-34. Occupied Bandwidth Plot (Band 2 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dego 21 of 117		
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 31 of 117		
© 2017 PCTEST Engineering Laboratory, Inc.						





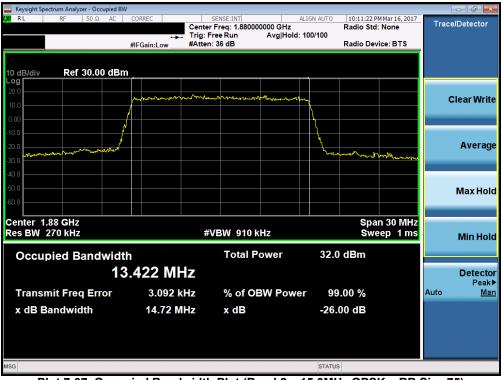
Plot 7-35. Occupied Bandwidth Plot (Band 2 – 10.0MHz QPSK – RB Size 50)



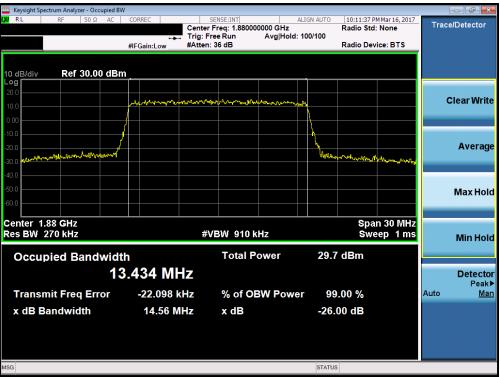
Plot 7-36. Occupied Bandwidth Plot (Band 2 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dogo 22 of 117		
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 32 of 117		
© 2017 PCTEST Engineering Laboratory, Inc.						





Plot 7-37. Occupied Bandwidth Plot (Band 2 – 15.0MHz QPSK – RB Size 75)



Plot 7-38. Occupied Bandwidth Plot (Band 2 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dega 22 of 117		
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 33 of 117		
© 2017 PCTEST Engineering Laboratory, Inc.						





Plot 7-39. Occupied Bandwidth Plot (Band 2 – 20.0MHz QPSK – RB Size 100)



Plot 7-40. Occupied Bandwidth Plot (Band 2 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dege 24 of 117		
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 34 of 117		
© 2017 PCTEST Engineering Laboratory, Inc.						



Spurious and Harmonic Emissions at Antenna Terminal 7.3 §2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)

Test Overview

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 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is 43 + log₁₀(P_[Watts]), where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v02r02 - Section 6.0

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
- 2. Detector = RMS
- 3. Trace mode = trace average
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

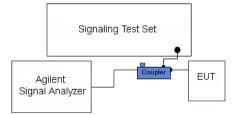


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. 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.

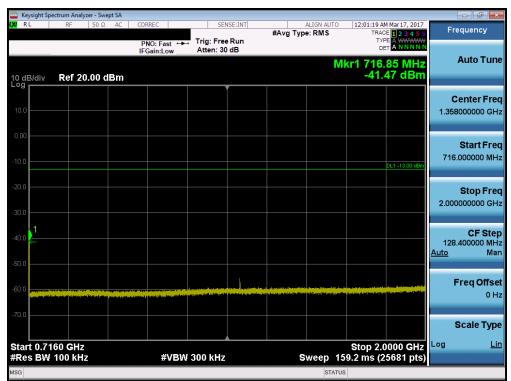
FCC ID: ZNFM255	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dego 25 of 117			
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 35 of 117			
© 2017 PCTEST Engineering Laboratory. Inc.							

01/09/2016



	ectrum Analyzer - Swe									×
RL	RF 50 Ω	AC	CORREC PNO: Fast ↔ IFGain:Low		#Avg Typ	ALIGN AUTO e: RMS	TYPE	Mar 17, 2017 1 2 3 4 5 6 A NNNNN	Frequenc	У
0 dB/div	Ref 20.00 d	Bm				M	kr1 697.9 -44.4	0 MHz 7 dBm	Auto 1	Гun
10.0									Center 363.950000	
10.0							D	L1 -13.00 dBm	Start 30.000000	
:0.0 									Stop 697.900000	
0.0								1,	CF 9 66.790000 <u>Auto</u>	
0.0	Attraction of the second s			za Gran na zaj nazi se kancinazi dina Protector (a protector di dinanci di di					Freq O	offs 0 I
'0.0									Scale 1	
tart 30.0 Res BW) MHz 100 kHz		#VBV	V 300 kHz	s	weep 82	Stop 69 82 ms (13.	7.9 MHz 359 pts)	Log	L
G						STATUS				

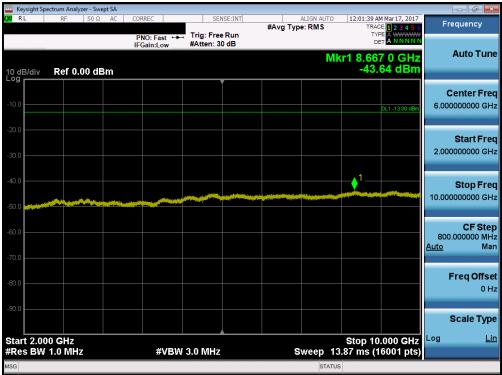
Plot 7-41. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)



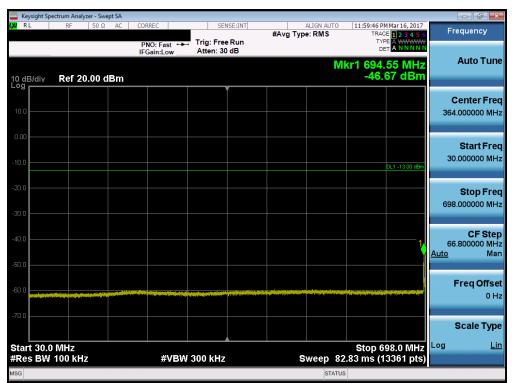
Plot 7-42. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 36 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 36 01 117	
© 2017 PCTEST Engineering Laboratory, Inc.					





Plot 7-43. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



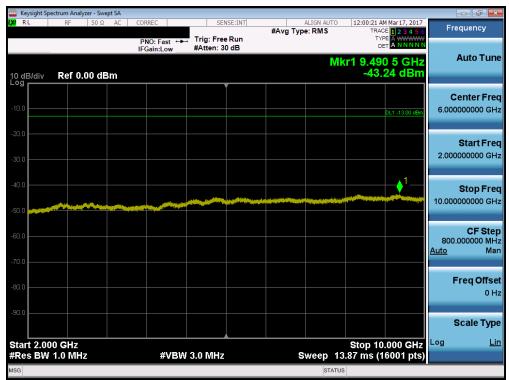
Plot 7-44. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 37 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 37 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



	trum Analyzer - Sv								
RL	RF 50 Ω	2 AC	CORREC PNO: Fast ↔ IFGain:Low		#Avg Typ	ALIGN AUTO e: RMS	12:00:01 AM Mar 17, 2 TRACE 1 2 3 4 TYPE A WWW DET A N N	5 6 /////	Frequency
10 dB/div	Ref 20.00	dBm				N	lkr1 720.20 M -50.42 dE	Hz Sm	Auto Tune
10.0								1.3	Center Free 58000000 GH
10.00							DL1 -13.00		Start Fre 16.000000 MH
20.0								2.0	Stop Fre 00000000 GH
40.0								1: <u>Auto</u>	CF Ste 28.400000 M⊢ Ma
50.0 									Freq Offse 0 ⊢
5tart 0.716							Stop 2.0000 G	Hz Log	Scale Typ
Res BW 1			#VB\	V 300 kHz	s	weep 1	59.2 ms (25681 p		
ISG						STATU	JS		

Plot 7-45. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



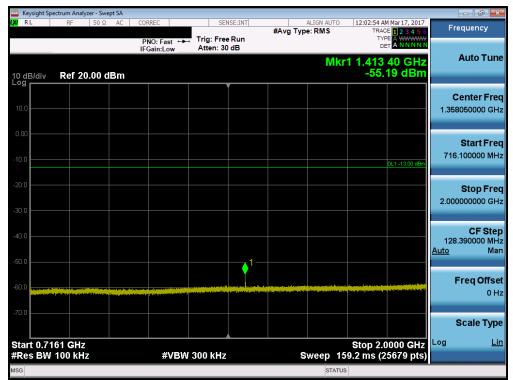
Plot 7-46. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 29 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 38 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2



	ectrum Analyzer - Swept S					
RL	RF 50 Ω A	C CORREC PNO: Fast ++ IFGain:Low	Trig: Free Run Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	12:02:37 AM Mar17, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN	Frequency
0 dB/div	Ref 20.00 dBr	n		М	kr1 698.00 MHz -47.03 dBm	Auto Tun
10.0						Center Fre 364.000000 MH
0.0					DL1 -13.00 dBm	Start Fre 30.000000 Mi
0.0						Stop Fr 698.000000 M
					1,	CF Sto 66.800000 M <u>Auto</u> M
D.0						Freq Offs 0
0.0						Scale Ty
tart 30.0 Res BW	MHz 100 kHz	#VBW	/ 300 kHz	Sweep 82	Stop 698.0 MHz 2.83 ms (13361 pts)	Log <u>L</u>
G				STATUS	3	

Plot 7-47. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-48. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

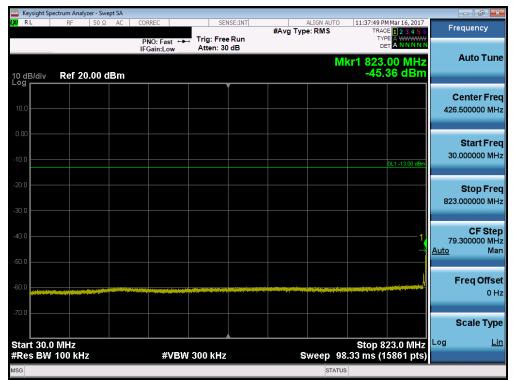
FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 20 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 39 of 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2

01/09/2016



Keysight Spectrum Analyzer - Swept SA					
RL RF 50 Ω AC		SENSE:INT Free Run n: 26 dB	ALIGN AUTO #Avg Type: RMS	12:03:14 AM Mar17, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNN	Frequency
D dB/div Ref 0.00 dBm			M	(r1 9.508 0 GHz -47.70 dBm	Auto Tun
0.0		<u> </u>		DL1 -13.00 dBm	Center Fre 6.000000000 GF
0.0					Start Fre 2.000000000 GH
				1 1	Stop Fre 10.000000000 GH
0.0					CF Ste 800.000000 MI <u>Auto</u> M
0.0					Freq Offs
0.0					Scale Typ
tart 2.000 GHz Res BW 1.0 MHz	#VBW 3.0 M	Hz	Sweep 13	Stop 10.000 GHz 3.87 ms (16001 pts)	Log <u>L</u>

Plot 7-49. Conducted Spurious Plot (Band 12 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



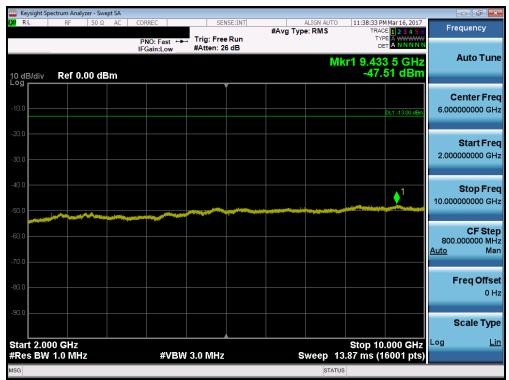
Plot 7-50. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 40 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 40 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



	ectrum Analyze		1							- Ø	X
XV RL	RF	50 Ω AC	PNO: Fa		SENSE:INT	#Avg Type	LIGN AUTO :: RMS	TRAC	MMar 16, 2017 E 1 2 3 4 5 6 E A WWWWW T A N N N N N	Frequency	
10 dB/div	Ref 20.	00 dBm					Mk	r1 1.649 -51.	40 GHz 92 dBm	Auto T	un
10.0										Center F 1.424500000	
10.00									DL1 -13.00 dBm	Start F 849.000000 1	
20.0 30.0 										Stop F 2.000000000	
40.0							1			CF S 115.100000 I <u>Auto</u>	Ste M⊢ Ma
60.0	ning mign (his/sylasion) hi	energi de la francé de la desira d								Freq Ofi	ffse 0⊢
70.0										Scale T	
Start 0.84 ≉Res BW			#	VBW 300 k	Hz	SI	veep 1	Stop 2.0 42.7 ms (2		Log	Li
ISG							STATU	IS			

Plot 7-51. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



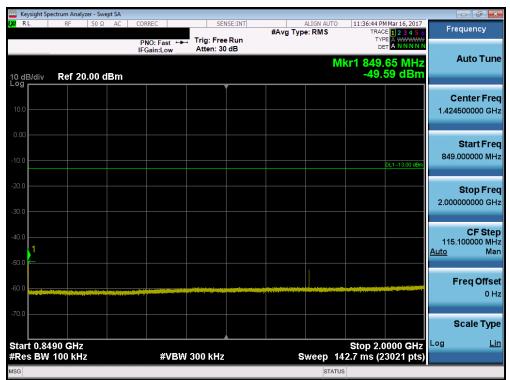
Plot 7-52. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 41 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 41 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2



	ectrum Analyzer - Swe									[- ē 🗙
0 RL	RF 50 Ω	AC	PNO: Fast ↔			#Avg Typ	ALIGN AUTO e: RMS	TRAC TYP	IMar 16, 2017 E 1 2 3 4 5 6 E A WWWWW A NNNNN	Fre	quency
0 dB/div	Ref 20.00 d	Bm	- Guilleon				M	kr1 823. -48.3	55 MHz 32 dBm		Auto Tun
10.0											enter Fre 000000 M⊦
10.0									DL1 -13.00 dBm		Start Fre
20.0										824.	Stop Fre
0.0									1	79. <u>Auto</u>	CF Ste 400000 MI Mi
0.0		and the second state			VAU & M					F	r eq Offs 0 I
70.0	MHz							Stop 8	24.0 MHz	s Log	Scale Typ
	100 kHz		#VBV	V 300 kHz		s	weep 98	.46 ms (1			
G							STATUS	5			

Plot 7-53. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-54. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 42 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 42 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2



Keysight Spect		- Swept S	SA										- 6 - X
U RL	RF	50Ω A		CORREC PNO: Fa IFGain:L	ast ↔→			#Avg Typ	ALIGN AUTO e: RMS	11:37:05 P TRAC TY D	M Mar 16, 2017 DE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Fre	equency
0 dB/div	Ref 0.0) dBm							MI	(r1 9.44 -41.	3 5 GHz 44 dBm		Auto Tur
10.0											DL1 -13.00 dBm		enter Fre
80.0												2.000	Start Fre
40.0 50.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	····									1	10.000	Stop Fre 000000 GH
0.0												800. <u>Auto</u>	CF Ste 000000 MI M
0.0												F	F req Off s 0
0.0													Scale Ty
tart 2.000 Res BW 1				#	VBW	3.0 MHz	2	s	weep 1	Stop 10 3.87 ms (1	.000 GHz 6001 pts)	Log	Ĺ

Plot 7-55. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-56. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 42 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 43 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2	



	rum Analyzer - Swept S					
XV RL	RF 50 Ω A	C CORREC PNO: Fast ↔	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	11:39:49 PM Mar 16, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
10 dB/div	Ref 20.00 dBr			Mkı	1 1.679 50 GHz -51.28 dBm	Auto Tun
10.0						Center Fre 1.425000000 GH
10.0					DL1 -13.00 dBm	Start Fre 850.000000 M⊦
80.0						Stop Fre 2.000000000 GH
0.0						CF Ste 115.000000 Mi <u>Auto</u> Mi
i0.0			a shine for a start of a start of the start of		n an	Freq Offs 0 F
					Dtop 2 0000 Oli-	Scale Typ
tart 0.850 Res BW 1		#VBW	300 kHz	Sweep 14	Stop 2.0000 GHz I2.6 ms (23001 pts)	
G				STATU	S	

Plot 7-57. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-58. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 44 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 44 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2	

01/09/2016



	ectrum Analyzer -										
X/RL	RF 50	Ω AC	CORREC PNO: Fast ↔			#Avg Typ	ALIGN AUTO	TRAC	Mar 16, 2017 E 1 2 3 4 5 6 E A WWWW T A N N N N N	Fre	equency
10 dB/div	Ref 20.0	0 dBm	IFGain:Low	Atten: 30	uв		М	kr1 1.70			Auto Tune
10.0											enter Fred 500000 MH:
-10.0									DL1 -13.00 dBm	30.	Start Free
-20.0									1,	1.709	Stop Free 000000 GH
-40.0					ay i the mark for the star	a da ati see a des Isibe	a starting of the local			167. <u>Auto</u>	CF Ste 900000 MH Ma
60.0	ne her en	1969-1 - 2019-1 - 2019-201 - 2019-1 - 2019-2019-2019-2019-2019-2019-2019-2019-	a gydr y dyfar a fylan a fyl o myng y hwyfor fen							F	F req Offse 0 H
-70.0											Scale Type
Start 0.03 #Res BW	300 GHz 1.0 MHz		#VBV	V 3.0 MHz			Sweep :	Stop 1.7 2.239 ms (Log	Lir
MSG							STATU	IS			

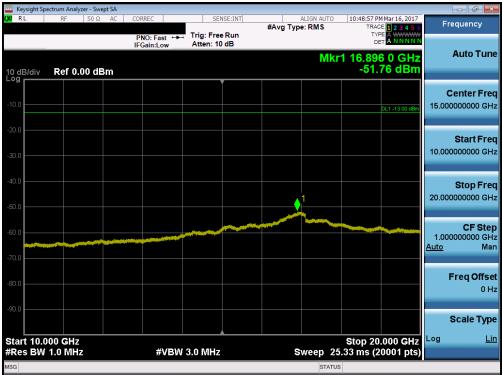
Plot 7-59. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-60. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 45 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 45 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2	





Plot 7-61. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-62. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 46 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 46 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2	



	ectrum Analyzer - Swept SA					
XU RL	RF 50 Ω AC	CORREC PNO: Fast ↔→	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	10:46:04 PM Mar 16, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
10 dB/div	Ref 20.00 dBm	II Guilleow		M	r1 3.452 0 GHz -36.48 dBm	Auto Tune
10.0						Center Fre 5.877500000 GH
0.00					DL1 -13.00 dBm	Start Fre 1.755000000 GH
30.0						Stop Fre 10.000000000 G⊦
40.0						CF Ste 824.500000 M⊦ <u>Auto</u> Ma
60.0						Freq Offs 0 F
70.0						Scale Typ
Start 1.75 Res BW	5 GHz 1.0 MHz	#VBW	3.0 MHz	Sweep 14	Stop 10.000 GHz .29 ms (16491 pts)	Log <u>Li</u>

Plot 7-63. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-64. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 47 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 47 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2	



	ectrum Analyzer - Sv								
RL	RF 50 \$	Ω AC	CORREC PNO: Fast + IFGain:Low		#Avg Typ	ALIGN AUTO e: RMS	TYPE A	r 16, 2017 2 3 4 5 6 WWWWW N N N N N	Frequency
0 dB/div	Ref 20.00	dBm	I Guilleow			MI	(r1 1.701 5 -47.96	dBm	Auto Tu
10.0									Center Fr 870.000000 Mi
10.0							DL1	-13.00 dBm	Start Fr 30.000000 M
20.0									Stop Fr 1.710000000 G
0.0								1	CF St e 168.000000 MI <u>Auto</u> M
0.0	<u>anteranter (1997)</u>	ana							Freq Offs 0
'0.0									Scale Tyj
tart 0.03 Res BW	800 GHz 1.0 MHz		#VB	W 3.0 MHz		Sweep 2	Stop 1.710 2.240 ms (33	0 GHz 61 pts)	
SG						STATU	5		

Plot 7-65. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

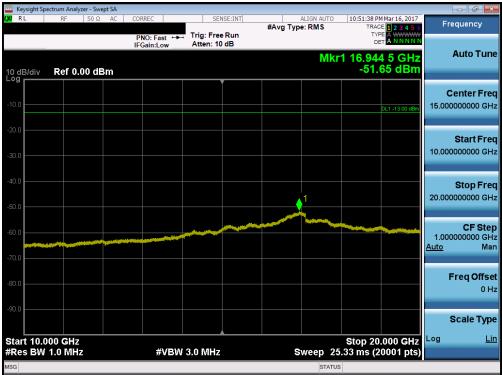


Plot 7-66. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 49 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 48 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2	

01/09/2016





Plot 7-67. Conducted Spurious Plot (Band 4 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



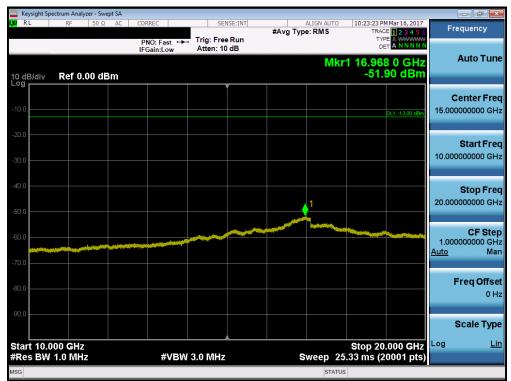
Plot 7-68. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 49 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 49 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



Keysight Spectrum	ectrum Analyzer	- Swept SA										
L <mark>XI</mark> RL	RF	50Ω AC	CORREC	0		ISE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Mar 16, 2017 CE <mark>1 2 3 4 5 6</mark>	Fre	equency
			PNO: IFGair	Fast ↔ h:Low	Trig: Free Atten: 30				D			Auto Tune
10 dB/div Log	Ref 20.0	0 dBm						Mk	r1 8.68 -43.	4 0 GHz 38 dBm		Auto Tune
Log											C	enter Freq
10.0											5.955	5000000 GHz
0.00												Start Freq
-10.0										DL1 -13.00 dBm	1.910	0000000 GHz
-20.0												
											10.000	Stop Freq
-30.0												
-40.0									1			CF Step .000000 MHz
-50.0					and the second						<u>Auto</u>	Man
-60.0											F	req Offset
-70.0												0 Hz
-70.0											;	Scale Type
Start 1.91					0.0.84				Stop 10	.000 0112	Log	Lin
#Res BW	1.U MHZ			#VBW	3.0 MHz		S	status		6181 pts)		

Plot 7-69. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-70. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 50 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 50 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·	•	V 6.2

01/09/2016



Keysight Spectrum Analyzer - Sv					
0 RL RF 50 S	Ω AC CORREC PNO: Fast ↔ IFGain:Low	JENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	10:19:47 PM Mar 16, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
0 dB/div Ref 20.00			Mk	r1 1.836 0 GHz -43.45 dBm	Auto Tuno
10.0					Center Fre 940.000000 MH
10.0				DL1 -13.00 dBm	Start Fre 30.000000 MH
30.0					Stop Fre 1.850000000 G⊢
40.0			والمروان		CF Ste 182.000000 MH <u>Auto</u> Ma
60.0	den fan yn de feren wer fan fan yn de feren fa I'r feren fan yn de feren fan fan yn de feren f				Freq Offs 0 F
70.0				Stop 1.8500 GHz	Scale Typ
Res BW 1.0 MHz	#VBW	/ 3.0 MHz	Sweep 2	.427 ms (3641 pts)	

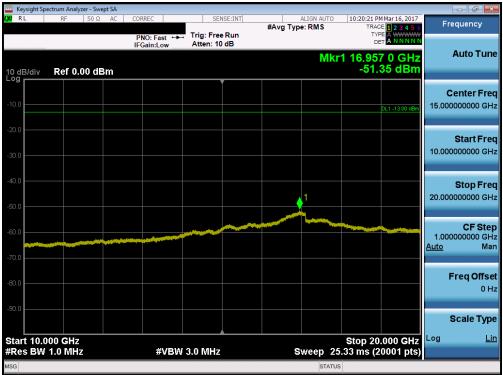
Plot 7-71. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-72. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM255		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 51 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 51 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.	·		V 6.2





Plot 7-73. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-74. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM255	CONTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 52 of 117
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 52 01 117
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2



🔤 Keysight Spe	ctrum Analyzer	- Swept SA									- • •
LXU RL	RF 5	50Ω AC	CORREC	Т	SENSE	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Mar 16, 2017 DE 1 2 3 4 5 6 PE A WWWWW	Fr	equency
10 dB/div	Ref 20.0	0 dBm	IFGain:L		tten: 30 d		M	₀ (r1 1.91	1 0 GHz 49 dBm		Auto Tune
10.0											Center Freq 5500000 GHz
-10.0									DL1 -13.00 dBm	1.91	Start Fred
-20.0										10.00	Stop Fred
-40.0										808 <u>Auto</u>	CF Step .900000 MH; Mar
-60.0										I	F req Offse 0 H:
-70.0	4.041-							Stop 40			Scale Type
Start 1.91 #Res BW			#	VBW 3.0) MHz	s	weep 14	5.0p 10 1.02 ms (1	.000 GHz 6179 pts)	209	
MSG						 	STATUS	5			

Plot 7-75. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-76. Conducted Spurious Plot (Band 2 – 20.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM255	CONTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 52 of 117	
1M1703010080-03.ZNF	3/2/2017-3/22/2017	Portable Handset		Page 53 of 117	
© 2017 PCTEST Engineering	Laboratory, Inc.			V 6.2	

01/09/2016