

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: 4/10-4/26/2017 Test Site/Location: PCTEST Lab., Columbia, MD, USA Test Report Serial No.: 1M1704100138-03.ZNF

ZNFM322

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-M322
Additional Model(s):	LGM322, M322
Test Device Serial No.:	identical prototype [S/N: 09455, 09521,09513]

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.

Randy Ortanez President



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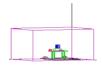


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§2.1033 General Information

APPLICANT:	LG Electronics MobileCor	nm U.S.A		
APPLICANT ADDRESS:	1000 Sylvan Avenue			
	Englewood Cliffs, NJ 0763	32, United States		
TEST SITE:	PCTEST ENGINEERING	LABORATORY, INC.		
TEST SITE ADDRESS:	7185 Oakland Mills Road, Columbia, MD 21045 USA			
FCC RULE PART(S):	§2; §22; §24; §27			
BASE MODEL:	LG-M322			
FCC ID:	ZNFM322			
FCC CLASSIFICATION:	PCS Licensed Transmitte	r Held to Ear (PCE)		
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)			
Test Device Serial No.:	09455, 09521,09513	Production	Pre-Production	Engineering
DATE(S) OF TEST:	4/10-4/26/2017			
TEST REPORT S/N:	1M1704100138-03.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.

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ERP/EIRP FCC Rule Emission Mode Tx Frequency (MHz) Max. Power Max. Pow er Modulation Part Designator (W) (dBm) LTE Band 13 27 779.5 - 784.5 0.124 20.95 4M52G7D QPSK LTE Band 13 27 779.5 - 784.5 0.093 19.67 4M49W7D 16QAM 27 782 21.45 8M95G7D QPSK LTE Band 13 0.140 LTE Band 13 27 782 0.089 19.48 8M96W7D 16QAM 22H 824.7 - 848.3 21.27 1M13G7D **QPSK** LTE Band 5 0.134 LTE Band 5 22H 824.7 - 848.3 0.096 1M13W7D 16QAM 19.81 LTE Band 5 22H 825.5 - 847.5 0.138 21.40 2M73G7D QPSK LTE Band 5 22H 825.5 - 847.5 0.109 20.36 2M73W7D 16QAM 22H **QPSK** LTE Band 5 826.5 - 846.5 0.153 21.86 4M52G7D LTE Band 5 22H 826.5 - 846.5 0.109 20.37 4M51W7D 16QAM LTE Band 5 22H 829 - 844 0.151 21.78 8M98G7D QPSK LTE Band 5 22H 829 - 844 21.05 16QAM 0.127 9M00W7D LTE Band 4 27 1710.7 - 1754.3 0.106 20.25 1M12G7D **QPSK** LTE Band 4 27 1710.7 - 1754.3 0.072 18.58 1M13W7D 16QAM LTE Band 4 27 1711.5 - 1753.5 0.103 20.11 2M72G7D QPSK LTE Band 4 27 1711.5 - 1753.5 0.073 2M73W7D 16QAM 18.63 27 LTE Band 4 1712.5 - 1752.5 0.102 20.07 4M52G7D QPSK LTE Band 4 27 1712.5 - 1752.5 0.069 18.39 4M52W7D 16QAM 27 LTE Band 4 1715 - 1750 0.115 20.61 8M98G7D QPSK LTE Band 4 27 1715 - 1750 0.078 18.90 8M96W7D 16QAM 27 1717.5 - 1747.5 20.29 13M4G7D QPSK LTE Band 4 0.107 LTE Band 4 27 1717.5 - 1747.5 0.071 18.51 13M4W7D 16QAM LTE Band 4 27 1720 - 1745 0.105 20.20 17M9G7D QPSK LTE Band 4 1720 - 1745 0.085 19.31 17M9W7D 16QAM 27 1850.7 - 1909.3 1M12G7D QPSK LTE Band 2 24E 0.218 23.38 24E 1850.7 - 1909.3 21.89 LTE Band 2 1M13W7D 16QAM 0.155 23.35 LTE Band 2 24E 1851.5 - 1908.5 0.216 2M73G7D QPSK 24E 2M73W7D 16QAM LTE Band 2 1851.5 - 1908.5 0.160 22.03 LTE Band 2 24E 1852.5 - 1907.5 0.219 23.40 4M54G7D QPSK LTE Band 2 24E 1852.5 - 1907.5 0.156 21.92 4M52W7D 16QAM 24E 1855 - 1905 LTE Band 2 0.228 23.57 8M96G7D QPSK 24E 1855 - 1905 8M95W7D 16QAM LTE Band 2 0.150 21.76 24E QPSK LTE Band 2 1857.5 - 1902.5 0.221 23.44 13M4G7D LTE Band 2 24E 1857.5 - 1902.5 0.183 22.64 13M4W7D 16QAM LTE Band 2 24E 1860 - 1900 0.217 23.36 17M9G7D QPSK LTE Band 2 24E 1860 - 1900 0.183 22.63 17M9W7D 16QAM

EUT Overview

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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 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.

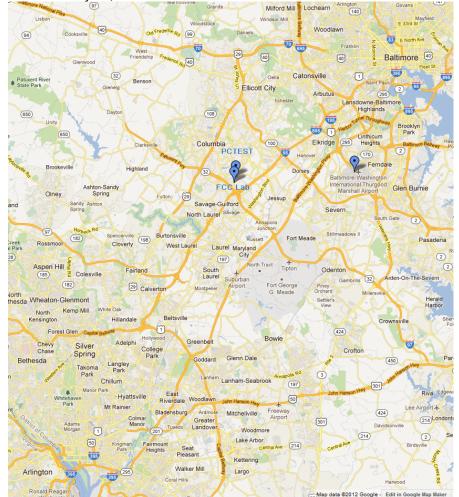


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFM322**. 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 CDMA/EvDO Rev0/A (BC0, BC1), 850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n WLAN, 802.11a/n UNII, Bluetooth (1x, EDR, LE)

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.

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3.0 DESCRIPTION OF TESTS

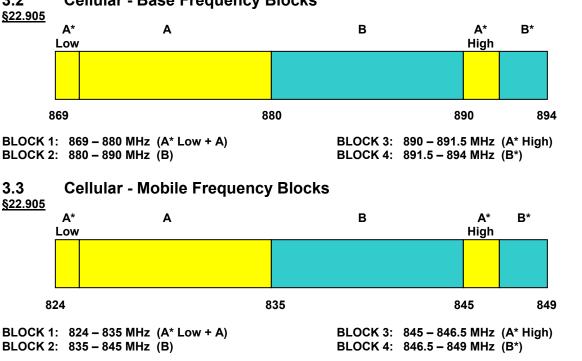
3.1 Measurement Procedure

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.

3.1 Block C Frequency Range

<u>§27.5(b)(3)</u>

Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results do not satisfy the applicable reserve price, the spectrum in the 746-757 MHz and 776-787 MHz bands will instead be made available for assignment at a subsequent auction as follows: (i) Two paired channels of 6 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands. (ii) Two paired channels of 5 megahertz each available for assignment in Block C1 in Block C2 in the 752-757 MHz and 782-787 MHz bands.

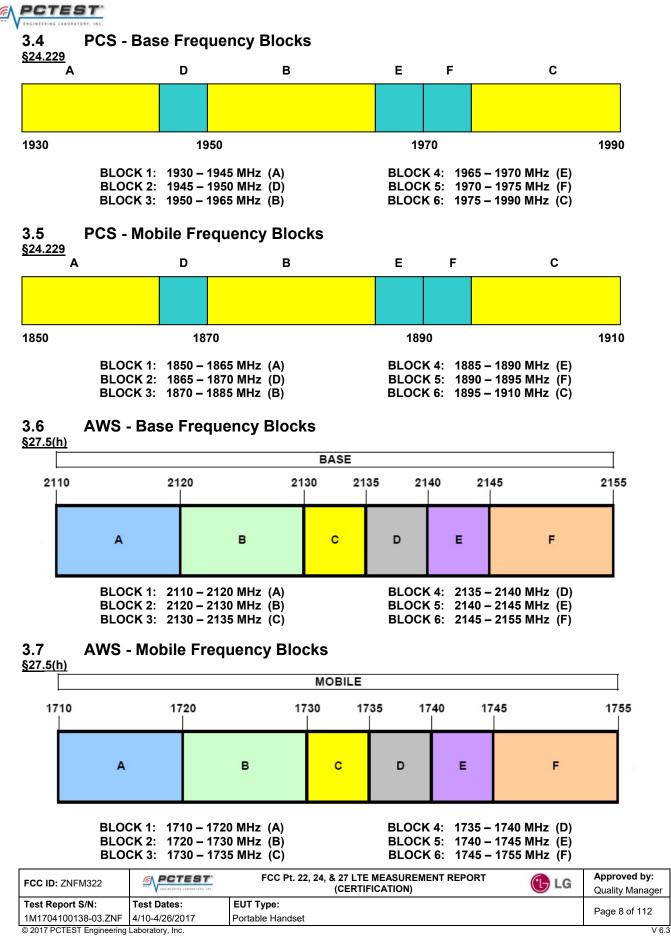


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3.2 Cellular - Base Frequency Blocks



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3.8 Radiated Power and Radiated Spurious Emissions §2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) §27.50(b.10) §27.50(d.4) §27.53(f) §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]).

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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 uncertainty shown below 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

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5.0 TEST EQUIPMENT CALIBRATION DATA

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
-	LTx2	Licensed Transmitter Cable Set	10/19/2016	Annual	10/19/2017	LTx2
-	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
Agilent	N9030A	PXA Signal Analyzer (26.5GHz)	7/20/2016	Annual	7/20/2017	MY49432391
Agilent	N9038A	MXE EMI Receiver	4/21/2016	Annual	4/21/2017	MY51210133
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	7/30/2015	Biennial	7/30/2017	121034
Com-Power	PAM-103	Pre-Amplifier (1-1000MHz)	7/6/2016	Annual	7/6/2017	441119
Com-Power	PAM-118A	PREAMPLIFIER 500MHZ TO 18GHZ	7/26/2016	Annual	7/26/2017	551079
Emco	3115	Horn Antenna (1-18GHz)	3/10/2016	Biennial	3/10/2018	9704-5182
EMCO	3160-09	Small Horn	8/23/2016	Biennial	8/23/2018	135427
Espec	ESX-2CA	Environmental Chamber	5/4/2016	Annual	5/4/2017	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/26/2016	Biennial	4/26/2018	125518
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	ESU26	EMI Test Receiver (26.5GHz)	5/16/2016	Annual	5/16/2017	100342
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	5/7/2016	Annual	5/7/2017	100040
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	3/30/2016	Biennial	3/30/2018	9105-2404
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

Table 5-1. Test Equipment

Notes:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

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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).

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7.0 TEST RESULTS

7.1 Summary

Company Name:	LG Electronics MobileComm U.S.A
FCC ID:	ZNFM322
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(c) 27.53(h)	Out of Band Emissions	> 43 + 10log ₁₀ (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.3, 7.4
24.232(d)	Peak-Average Ratio	< 13 dB	CONDUCTED	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(b.10)	Effective Radiated Power (Band 13)	< 3 Watts max. ERP		PASS	Section 7.6
24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	< 2 Watts max. EIRP		PASS	Section 7.6
27.50(d.4)	Equivalent Isotropic Radiated Power (Band 4 66)	< 1 Watts max. EIRP	RADIATED	PASS	Section 7.6
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(h)	Undesirable Emissions	> 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 7.7
27.53(f)	Undesirable Emissions (Band 13)	 -70 dBW/MHz (for wideband signals) -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 – 1610 MHz 		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.
- 4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "LTE Automation," Version 4.5.

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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.

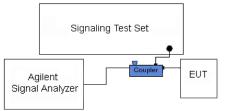


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

None.

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Plot 7-1. Occupied Bandwidth Plot (Band 13 – 5.0MHz QPSK – RB Size 25)



Plot 7-2. Occupied Bandwidth Plot (Band 13 – 5.0MHz 16-QAM – RB Size 25)

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Plot 7-3. Occupied Bandwidth Plot (Band 13 – 10.0MHz QPSK – RB Size 50)



Plot 7-4. Occupied Bandwidth Plot (Band 13 – 10.0MHz 16-QAM – RB Size 50)

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



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

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Keysight Spectrum Analyzer - Occupied BV	1			- ē 🔀
KM RL RF 50Ω AC	🛶 Trig	sense:INT ter Freq: 836.500000 MHz : Free Run Avg Hold: en: 36 dB	06:25:42 PM Apr14, 2 Radio Std: None 100/100 Radio Device: BTS	Trace/Detector
10 dB/div Ref 30.00 dBn	1 			
20.0		m		Clear Write
-10.0			man and the and the second	Average
-40.0				Max Hold
Center 836.5 MHz Res BW 75 kHz		#VBW 240 kHz	Span 8 M Sweep 1.4	Hz ms Min Hole
Occupied Bandwidt	ⁿ 7280 MHz	Total Power	31.7 dBm	Detector Peak
Transmit Freq Error	8.909 kHz	% of OBW Power	r 99.00 %	Auto <u>Mar</u>
x dB Bandwidth	3.043 MHz	x dB	-26.00 dB	
MSG			STATUS	

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



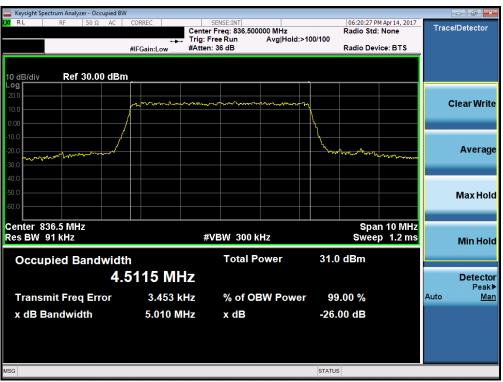
Plot 7-8. Occupied Bandwidth Plot (Band 5 – 3.0MHz 16-QAM – RB Size 15)

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Plot 7-9. Occupied Bandwidth Plot (Band 5 - 5.0MHz QPSK - RB Size 25)



Plot 7-10. Occupied Bandwidth Plot (Band 5 – 5.0MHz 16-QAM – RB Size 25)

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Plot 7-11. Occupied Bandwidth Plot (Band 5 – 10.0MHz QPSK – RB Size 50)



Plot 7-12. Occupied Bandwidth Plot (Band 5 – 10.0MHz 16-QAM – RB Size 50)

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Plot 7-13. Occupied Bandwidth Plot (Band 4 – 1.4MHz QPSK – RB Size 6)



Plot 7-14. Occupied Bandwidth Plot (Band 4 – 1.4MHz 16-QAM – RB Size 6)

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



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

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Plot 7-17. Occupied Bandwidth Plot (Band 4 – 5.0MHz QPSK – RB Size 25)



Plot 7-18. Occupied Bandwidth Plot (Band 4 – 5.0MHz 16-QAM – RB Size 25)

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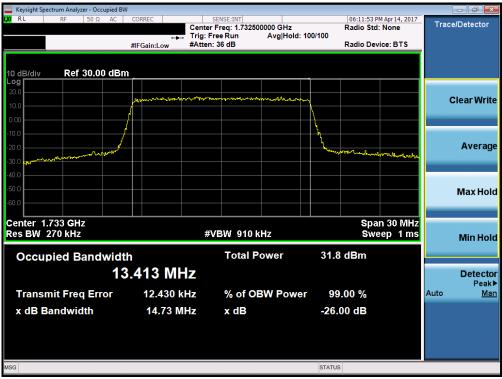
Plot 7-19. Occupied Bandwidth Plot (Band 4 – 10.0MHz QPSK – RB Size 50)



Plot 7-20. Occupied Bandwidth Plot (Band 4 – 10.0MHz 16-QAM – RB Size 50)

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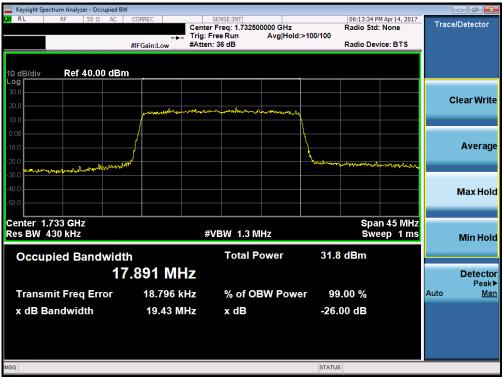
Plot 7-21. Occupied Bandwidth Plot (Band 4 – 15.0MHz QPSK – RB Size 75)



Plot 7-22. Occupied Bandwidth Plot (Band 4 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕑 LG	Approved by: Quality Manager
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Plot 7-23. Occupied Bandwidth Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



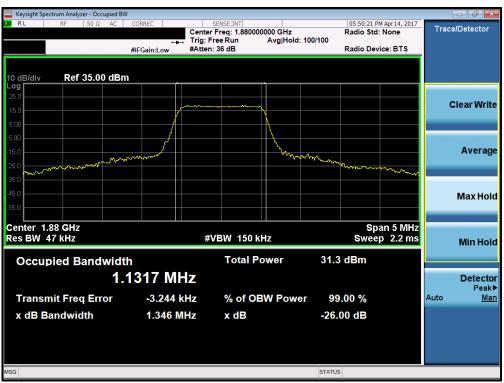
Plot 7-24. Occupied Bandwidth Plot (Band 4 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Plot 7-25. Occupied Bandwidth Plot (Band 2 – 1.4MHz QPSK – RB Size 6)



Plot 7-26. Occupied Bandwidth Plot (Band 2 – 1.4MHz 16-QAM – RB Size 6)

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Plot 7-27. Occupied Bandwidth Plot (Band 2 – 3.0MHz QPSK – RB Size 15)



Plot 7-28. Occupied Bandwidth Plot (Band 2 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Plot 7-29. Occupied Bandwidth Plot (Band 2 - 5.0MHz QPSK - RB Size 25)



Plot 7-30. Occupied Bandwidth Plot (Band 2 – 5.0MHz 16-QAM – RB Size 25)

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Plot 7-31. Occupied Bandwidth Plot (Band 2 – 10.0MHz QPSK – RB Size 50)



Plot 7-32. Occupied Bandwidth Plot (Band 2 – 10.0MHz 16-QAM – RB Size 50)

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Plot 7-33. Occupied Bandwidth Plot (Band 2 – 15.0MHz QPSK – RB Size 75)



Plot 7-34. Occupied Bandwidth Plot (Band 2 – 15.0MHz 16-QAM – RB Size 75)

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Plot 7-35. Occupied Bandwidth Plot (Band 2 – 20.0MHz QPSK – RB Size 100)



Plot 7-36. Occupied Bandwidth Plot (Band 2 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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7.3 Spurious and Harmonic Emissions at Antenna Terminal §2.1051 §22.917(a) §24.238(a) §27.53(c.2) §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 $43 + \log_{10}(P_{[Watts]})$, 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.

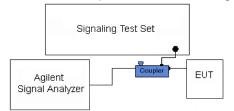


Figure 7-2. Test Instrument & Measurement Setup

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.

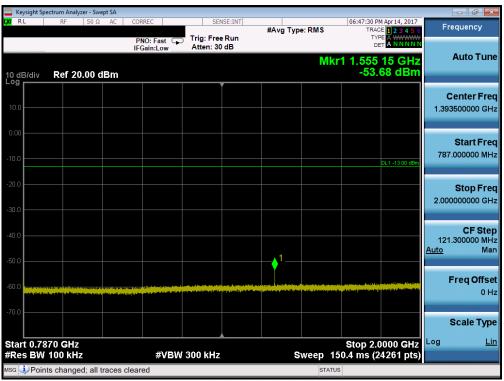
FCC ID: ZNFM322	<u>PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	ectrum Analy											
X/RL	RF	50 Ω	CORREC PNO: Fa	ast 😱	Trig: Free		#Avg Typ	e: RMS	TRA	M Apr 14, 2017 CE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Fr	equency
10 dB/div	Ref 20).00 dE	IFGain:L	.ow	Atten: 30	dB			Mkr1 777			Auto Tune
10.0												Center Fred .500000 MH;
-10.0										DL1 -13.00 dBm	30	Start Free .000000 MH:
-20.0										1⁄	777	Stop Free .000000 MH
40.0											74 <u>Auto</u>	CF Stej .700000 MH Ma
60.0 <mark>channer</mark>			terres de la com	a de la compañía de l		un des sections de la commune de 1914 des margin de la commune d	y star bin za filozofi na bita 19 maj - Sangara Parta Part	aniji kasing kinga			1	F req Offse 0 H
-70.0	MUz								Stop	'77.0 MHz	Log	Scale Type Lir
start 30.0 #Res BW		z	#	¢VB₩	300 kHz		s	weep	stop / 92.63 ms (*	7 7 V WITZ		
//SG								STAT	rus			

Plot 7-37. Conducted Spurious Plot (Band 13 - 10.0MHz QPSK - RB Size 1, RB Offset 0)



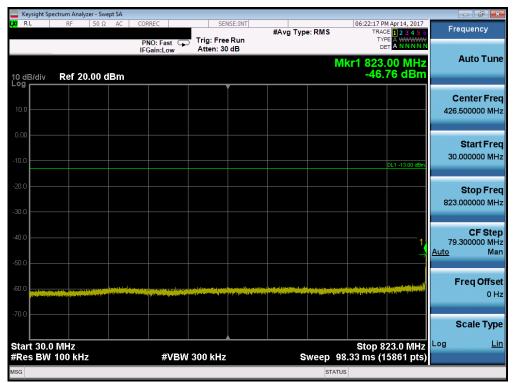
Plot 7-38. Conducted Spurious Plot (Band 13 – 10.0MHz QPSK – RB Size 1, RB Offset 0)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	nt Spectrum	n Analyzer - Sv	vept SA									[- 0 ×
X/RL	F	F 50 Ω	2 AC	CORREC		SE	ISE:INT	#Avg Typ	e: RMS		M Apr 14, 2017 DE 1 2 3 4 5 6	Fre	quency
				PNO: F IFGain:	ast ⊊ Low	Trig: Free Atten: 10		• ,1		TY			
10 dB/di Log r	iv Re	ef 0.00 d	Bm						Mł	r1 2.33 -28.	3 0 GHz 89 dBm		Auto Tune
												С	enter Frec
-10.0											DL1 -13.00 dBm	6.000	000000 GH:
20.0													04
30.0	• ¹												Start Fred 000000 GH
-40.0												40.000	Stop Fred
-50.0												10.000	000000 GH;
60.0													CF Step
		-		و بالعدامية	a faile and a street							800. <u>Auto</u>	000000 MH: Mar
70.0			C under										
80.0												F	req Offse 0 Ha
90.0													• • •
												5	Scale Type
Start 2.										Stop 10	.000 GHz	Log	<u>Lir</u>
≠Res B					#VBW	3.0 MHz		s			6001 pts)		
SG VP	oints ch	anged; all	traces	cleared					STATUS				

Plot 7-39. Conducted Spurious Plot (Band 13 – 10.0MHz QPSK – RB Size 1, RB Offset 0)



Plot 7-40. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🔁 LG	Approved by: Quality Manager
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	rum Analyzer - Swe	ept SA							
UX/RL	RF 50 Ω		PNO: Fast		#Avg Typ	e: RMS	TRAC	Apr 14, 2017 1 2 3 4 5 6 A WWWWW A NNNN	Frequency
10 dB/div	Ref 20.00 d					Mkr	1 1.648 -50.	70 GHz 88 dBm	Auto Tu
10.0									Center Fr 1.424500000 G
-10.0								DL1 -13.00 dBm	Start Fr 849.000000 M
-20.0									Stop Fr 2.000000000 G
-40.0						1			CF St 115.100000 M Auto M
-60.0	la da la managenta margi farma y Asilar sun, 2.a jilga ya manaka a	(19. providence and a factor		l an de la facto de constant la con La degementa de la constant de la constant de la constant de la constant de	pen langung segan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan pengan	s first on the second strength of the second	le de la grande de la grande de la deservación A de la constante de la constante de la deservación de la deservación de la deservación de la deservación de la	anna bitana an ta anna an taon an tao	Freq Offs 0
-70.0							Oton 24		Scale Ty
Start 0.849 #Res BW 1			#VBW	/ 300 kHz	s	weep 14	2.7 ms (2	000 GHz 3021 pts)	
wsg 횢 Points	changed; all t	traces cle	ared		 	STATUS	3		

Plot 7-41. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



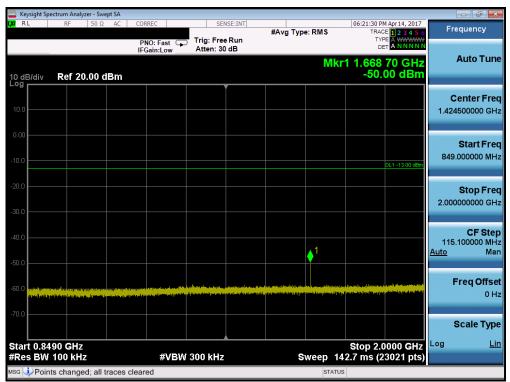
Plot 7-42. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	ectrum Analyzer - S								
XI RL	RF 50	ORREC PNO: Fast C			#Avg Typ	e: RMS	TRAC	M Apr 14, 2017 DE 1 2 3 4 5 6 PE A WWWW ET A N N N N N	Frequency
10 dB/div	Ref 20.00	FGam.Low	, talen. oo				Mkr1 800 -58.	.20 MHz 31 dBm	Auto Tu
10.0									Center Fr 427.000000 M
10.00								DL1 -13.00 dBm	Start Fr 30.000000 M
20.0									Stop Fr 824.000000 M
10.0									CF St 79.400000 M <u>Auto</u> M
i0.0	an de partieur de la constant de la An de valer de la constant de la cons	ale di fate e prova a la contra da	i san dan karafasi katalar San Igaran San San San San San San San San San S	da a se de la sectión de l					Freq Offs 0
70.0) MHz						Stop.8	24.0 MHz	Scale Ty
	100 kHz	#VBW	300 kHz		S	weep	98.46 ms (1	5881 pts)	
SG						STA	TUS		

Plot 7-43. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-44. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

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Keysight Spectrum Analyzer - Swept SA				- 🗗 💌
C RL RF 50 Ω AC	PNO: Fast 🕞 Trig: Free		06:21:44 PM Apr14, 2017 TRACE 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
10 dB/div Ref 0.00 dBm	IFGain:Low Atten: 10	ab	Mkr1 2.503 0 GHz -25.73 dBm	Auto Tuno
- og 10.0			0L1 -13.00 dBm	Center Free 6.000000000 GH
30.0				Start Fre 2.000000000 GH
40.0				Stop Fre 10.000000000 GH
60.0				CF Ste 800.000000 MH <u>Auto</u> Ma
80.0				Freq Offs 0 F
90.0 Start 2.000 GHz			3100 IV.000 GHZ	Scale Typ
Res BW 1.0 MHz	#VBW 3.0 MHz		13.87 ms (16001 pts)	

Plot 7-45. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-46. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Keysight Spectrum Analyze	er - Swept SA						
XIRL RF	50 Ω AC	CORREC PNO: Fast	Trig: Free Run Atten: 30 dB	#Avg Typ	e: RMS	06:23:39 PM Apr 14, 2017 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N	
10 dB/div Ref 20.	00 dBm	- Guilleon			Μ	kr1 852.95 MHz -38.38 dBm	Auto Tune
10.0							Center Freq 1.425000000 GHz
-10.0						DL1 -13.00 dBm	Start Fred 850.000000 MHz
-20.0							Stop Free 2.000000000 GH:
-40.0							CF Step 115.000000 MH <u>Auto</u> Mar
-60.0 	ene di secti a sectora produces despondente escopitadat pode	a analy provide a second by the	ling solven in weist die Statissen Bahred annes In gewennen weisten Kong bei Kong opp die eigen eige	dalaman para Davidi na karanta na kata Jarapa na para na karanta na para na karanta na para na karanta na para Mana na karanta na para na karanta	a tatin da ja jan karlana a 1999 yang karlang karjang		Freq Offse 0 H:
-70.0						Stop 2 0000 SH	Scale Type
Start 0.8500 GHz #Res BW 100 kHz		#VBW	300 kHz	s	weep 1	Stop 2.0000 GHz 42.6 ms (23001 pts)	
MSG 🗼 Points changed	; all traces c	leared			STATU	s	

Plot 7-47. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-48. Conducted Spurious Plot (Band 5 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	ectrum Analyzer - Swep	t SA								- 6 -
U RL	RF 50 Ω	AC COR	REC		#Avg Typ	e: RMS	TRAC	Apr 14, 2017 E 1 2 3 4 5 6 E A WWWW T A N N N N N	Fr	equency
0 dB/div	Ref 20.00 dl		Jamesow	Allen. of		M	(r1 1.70) -31.	2 0 GHz 19 dBm		Auto Tun
10.0										enter Fre .000000 МН
10.00								DL1 -13.00 dBm	30	Start Fre .000000 M⊦
20.0								1	1.708	Stop Fre 3000000 GH
10.0								An al Arian dan an	167 <u>Auto</u>	CF Ste .800000 MI Ma
i0.0			de y Malanage Ingge Andrews	angen gan bar kan bar k	 999 (A)				i	F req Offs 0 I
70.0	300 GHz						Stop 1 7	'080 GHz		Scale Typ
	1.0 MHz		#VBW	3.0 MHz		Sweep 2	.239 ms (3359 pts)		_
SG						STATUS	3			

Plot 7-49. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)



Plot 7-50. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Plot 7-51. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



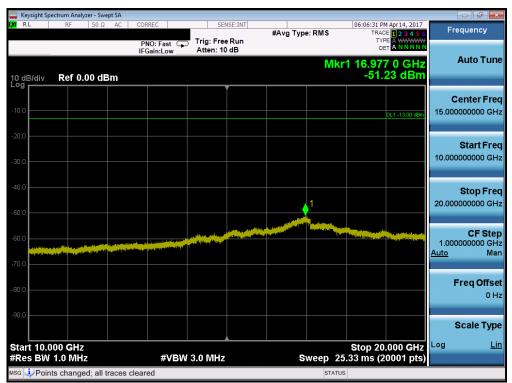
Plot 7-52. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	rum Analyzer - S	Swept SA								- 6
0 RL	RF 50	Ω AC	PNO: Fast			#Avg Typ	e: RMS	TRAC	M Apr 14, 2017 E 1 2 3 4 5 6 PE A WWWWW A N N N N N	Frequency
10 dB/div	Ref 20.00	dBm	IFGain:Low	Atten: 30			MI	(r1 9.47) -42.	9 0 GHz 46 dBm	Auto Tun
- og 10.0										Center Fre 5.877500000 GH
10.0									DL1 -13.00 dBm	Start Fre 1.755000000 GF
20.0										Stop Fre 10.000000000 GF
			a na mar an a star sa na a dhina Mar a na mar a sha sha sa na dhina		The Descent of Descent	eed of the part of the survey of a	e stration of the desired states	a an an an air tha an		CF Ste 824.500000 MH <u>Auto</u> Ma
60.0										Freq Offs 0 F
70.0										Scale Typ
itart 1.755 Res BW 1			#VB	W 3.0 MHz		s	weep 14	Stop 10 .29 ms (1	.000 GHz 6491 pts)	Log <u>L</u>
sg 連 Points	changed; a	ll traces cl	eared				STATU	5		

Plot 7-53. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-54. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM322		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 42 of 112
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PNO: Fast Trig: Free Run Atten: 30 dB #Avg Type: RMS TRACE 2.2.4.5 or Trig: Free Run Atten: 30 dB Auto Tur 10 dB/div Ref 20.00 dBm Mkr1 1.579 0 GHz -48.15 dBm Auto Tur Auto Tur 10 dB/div Ref 20.00 dBm Center Free 30.0000 M Start Free 30.0000 M Start Free 30.00000 M Start Free 30.0000 M Start Free		ctrum Analyzei											
IFGain:Low Atten: 30 dB Def Mattala Mkr1 1.579 0 GHz Auto Tur Mkr1 1.579 0 GHz -48.15 dBm 10 dB/div Ref 20.00 dBm -48.15 dBm 200 dBm Ref 20.00 dBm -48.15 dBm 200 dBm Ref 20.00 dBm -41.15 dBm 200 dBm Ref 20.00 dBm -41.15 dBm 200 dBm Ref 20.00 dBm -41.15 dBm 200 dBm Ref 20.10 dBm -41.15 dBm 200 dBm Ref 20.11 dBm -41.15 dBm 200 dBm Ref 20.11 dBm -41.15 dBm	X/RL	RF	50 Ω AC	PNO: Fa		rig: Free	Run	#Avg Typ	e: RMS	TRAC	E 1 2 3 4 5 6 E A WWWW	Fr	equency
100 Center Fr 100 Start Fr 100 001 100	10 dB/div	Ref 20.0	00 dBm	IFGain:L	ow A	Atten: 30	dB		M	kr1 1.57	9 0 GHz		Auto Tune
100 0.11 - 13 00 etcm Start Fr 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm 0.11 - 13 00 etcm 200 0.11 - 13 00 etcm													Center Freq 0.000000 MHz
.300 .300	-10.0										DL1 -13.00 dBm	30	Start Fred
4400 168.00000 M 500 1 600 1 770 <td></td> <td>1.71</td> <td>Stop Free</td>												1.71	Stop Free
60.0 -70.0 Start 0.0300 GHz Stop 1.7100 GHz	-50.0						with series of the series	ma da ante ale atra de arte	and the state of the		↓ ¹		CF Step 000000 MH Mar
Start 0.0300 GHz Stop 1.7100 GHz	فيزيد إنهاما الدرمو												F req Offse 0 H
#Res BW 1.0 MHz #VBW 3.0 MHz Sweep 2.240 ms (3361 pts)	-70.0	00 GHz								Stop 17	7100 GHz		Scale Type Lir
ASG STATUS	#Res BW	1.0 MHz		#	VBW 3.	0 MHz				2.240 ms (3361 pts)		

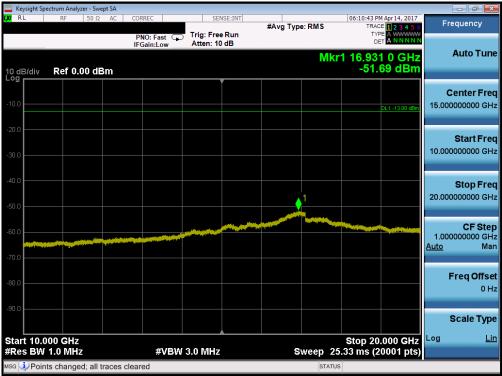
Plot 7-55. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-56. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

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Plot 7-57. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-58. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0- Low Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
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Keysight Sp	ectrum Analyze	er - Swept S	5A										- • •
LXI RL	RF	50Ω A		ORREC PNO: Fa	st 🖵	Trig: Fr		#Avg Typ	e: RMS	TRA T)	PM Apr 14, 2017 CE 1 2 3 4 5 6 (PE A WWWWW A N N N N N	Fre	equency
10 dB/div	Ref 20.	00 dBi		FGain:Lo	ow	Atten: 3	80 dB		M	lkr1 9.45	4 0 GHz .33 dBm		Auto Tune
10.0													enter Fred
-10.0											DL1 -13.00 dBm	1.910	Start Fred
-20.0												10.000	Stop Fred 0000000 GH:
-40.0			a de la companya de l			, in the second second					1	809. <u>Auto</u>	CF Step 000000 MH: Mar
-60.0												F	F req Offse 0 Hi
-70.0													Scale Type
Start 1.91 #Res BW				#	VBW	3.0 MH	z	s		14.02 ms (0.000 GHz 16181 pts)		<u></u>
MSG									STAT	US			

Plot 7-59. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-60. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM322	CTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	ectrum Analyzer - S										- 6 ×
<mark>()</mark> RL	RF 50	Ω AC	PNO: Fast			#Avg Type	e: RMS	TRAC	Apr 14, 2017 E 1 2 3 4 5 6 E A WWWWW T A N N N N N	Fr	equency
I0 dB/div	Ref 20.00	dBm	IPGalli.LOw	Auton of			Mk	r1 1.829 -48.	9 5 GHz 06 dBm		Auto Tune
10.0											enter Fred 000000 MH:
10.00									DL1 -13.00 dBm	30	Start Free 000000 MH:
20.0										1.850	Stop Fred 0000000 GH:
40.0									•	182 <u>Auto</u>	CF Stej 000000 MH Ma
50.0 60.0	and on the first of the second se	, , , , , , , , , , , , , , , , , , ,		nggag nandin dag Afrika yang kinakan	^{19 A} PERTURNAL PROPERTY.					F	F req Offse 0 H
70.0											Scale Type
Start 0.03 ≇Res BW	300 GHz 1.0 MHz		#VB	V 3.0 MHz		ę	Sweep 2	Stop 1.8 .427 ms (3500 GHz 3641 pts)	Log	Lir
ISG							STATUS				

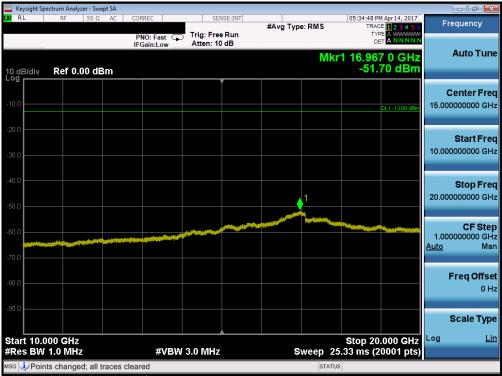
Plot 7-61. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-62. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM322	CTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Plot 7-63. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



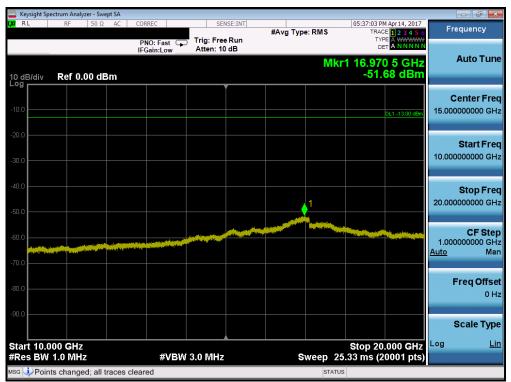
Plot 7-64. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM322	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
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	CORREC SENSE PNO: Fast IFGain:Low Trig: Free R Atten: 30 dE	#Avg Type: RMS un 3	05:36:55 PM Apr.14, 2017 TRACE 2 2 4 5 6 TYPE MINNINN Ikr1 1.911 0 GHz -22.45 dBm	Frequency Auto Tune
o dB/div Ref 20.00 dBm	IFGain:Low Attent 30 de		lkr1 1.911 0 GHz -22.45 dBm	Auto Tune
				Center Fred 5.955500000 GHz
0.00			DL1 -13.00 dBm	Start Free 1.911000000 GH
30.0				Stop Free 10.000000000 GH
40.0		station Mitty and a start with a state of the start of Mitty and the start of the s		CF Ste 808.900000 MH <u>Auto</u> Ma
60.0				Freq Offse 0 H
5tart 1.911 GHz			Stop 10.000 GHz	Scale Type
Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep stat	14.02 ms (16179 pts)	

Plot 7-65. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-66. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM322	<u>PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
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