

PCTEST ENGINEERING LABORATORY, INC.

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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: 10/24-10/31/2016 Test Site/Location: PCTEST Lab., Columbia, MD, USA Test Report Serial No.: 0Y1610241660-R1.ZNF

ZNFM210

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(s):	LG-M210, LGM210, M210, LG-MS210, LGMS210, MS210
Test Device Serial No.:	identical prototype [S/N: 69570, 69576, 69577]

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.

This revised Test Report (S/N: 0Y1610241660-R1.ZNF) supersedes and replaces the previously issued test report (S/N: 0Y1610241660.ZNF) on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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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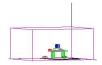


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§2.1033 General Information

APPLICANT:	LG Electronics MobileCon	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	5 USA		
FCC RULE PART(S):	§2; §22; §24; §27				
BASE MODEL:	LG-M210	LG-M210			
FCC ID:	ZNFM210				
FCC CLASSIFICATION:	PCS Licensed Transmitte	r Held to Ear (PCE)			
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)				
Test Device Serial No.:	69570, 69576, 69577	Production	Pre-Production	Engineering	
DATE(S) OF TEST:	10/24-10/31/2016				
TEST REPORT S/N:	0Y1610241660-R1.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			
Mode	FCC Rule	Tx Frequency (MHz)	Max Power	Max. Pow er	Emission	Modulation	
WIOGC	Part		(W)	(dBm)	Designator	Woddiation	
LTE Band 12	27	699.7 - 715.3	0.065	18.14	1M12G7D	QPSK	
LTE Band 12	27	699.7 - 715.3	0.003	16.68	1M12W7D	16QAM	
LTE Band 12	27	700.5 - 714.5	0.047	19.13	2M72G7D	QPSK	
LTE Band 12	27	700.5 - 714.5	0.062	18.34	2M72W7D	16QAM	
LTE Band 12	27	701.5 - 713.5	0.000	19.66	4M53G7D	QPSK	
LTE Band 12	27	701.5 - 713.5	0.093	19.00	4M50W7D	16QAM	
LTE Band 12	27	701.5 - 713.5	0.100	20.01	8M97G7D	QPSK	
LTE Band 12	27	704 - 711	0.080	19.03	8M95W7D	16QAM	
LTE Band 5	27 22H	824.7 - 848.3	0.080	19.03	1M12G7D	QPSK	
LTE Band 5	22H 22H	824.7 - 848.3	0.075	17.38	1M12W7D	16QAM	
LTE Band 5	22H 22H	825.5 - 847.5	0.055	18.95	2M70G7D	QPSK	
	22H 22H						
LTE Band 5		825.5 - 847.5	0.057	17.56	2M72W7D	16QAM	
LTE Band 5	22H	826.5 - 846.5 826.5 - 846.5	0.096	19.82	4M51G7D	QPSK 100AM	
LTE Band 5	22H	829 - 844	0.068	18.31	4M49W7D	16QAM	
LTE Band 5	22H		0.088	19.45	8M97G7D	QPSK	
LTE Band 5	22H	829 - 844	0.070	18.42	8M97W7D	16QAM	
LTE Band 4	27	1710.7 - 1754.3	0.319	25.03	1M13G7D	QPSK	
LTE Band 4	27	1710.7 - 1754.3	0.248	23.95	1M11W7D	16QAM	
LTE Band 4	27	1711.5 - 1753.5	0.299	24.76	2M72G7D	QPSK	
LTE Band 4	27	1711.5 - 1753.5	0.242	23.84	2M71W7D	16QAM	
LTE Band 4	27	1712.5 - 1752.5	0.319	25.03	4M51G7D	QPSK	
LTE Band 4	27	1712.5 - 1752.5	0.250	23.98	4M51W7D	16QAM	
LTE Band 4	27	1715 - 1750	0.321	25.06	8M96G7D	QPSK	
LTE Band 4	27	1715 - 1750	0.227	23.56	8M97W7D	16QAM	
LTE Band 4	27	1717.5 - 1747.5	0.280	24.47	13M5G7D	QPSK	
LTE Band 4	27	1717.5 - 1747.5	0.220	23.42	13M4W7D	16QAM	
LTE Band 4	27	1720 - 1745	0.310	24.91	17M9G7D	QPSK	
LTE Band 4	27	1720 - 1745	0.250	23.98	17M8W7D	16QAM	
LTE Band 2	24E	1850.7 - 1909.3	0.283	24.51	1M12G7D	QPSK	
LTE Band 2	24E	1850.7 - 1909.3	0.264	24.21	1M13W7D	16QAM	
LTE Band 2	24E	1851.5 - 1908.5	0.272	24.35	2M73G7D	QPSK	
LTE Band 2	24E	1851.5 - 1908.5	0.223	23.49	2M73W7D	16QAM	
LTE Band 2	24E	1852.5 - 1907.5	0.293	24.66	4M52G7D	QPSK	
LTE Band 2	24E	1852.5 - 1907.5	0.241	23.82	4M51W7D	16QAM	
LTE Band 2	24E	1855 - 1905	0.298	24.74	8M96G7D	QPSK	
LTE Band 2	24E	1855 - 1905	0.249	23.97	8M95W7D	16QAM	
LTE Band 2	24E	1857.5 - 1902.5	0.242	23.83	13M4G7D	QPSK	
LTE Band 2	24E	1857.5 - 1902.5	0.203	23.07	13M4W7D	16QAM	
LTE Band 2	24E	1860 - 1900	0.257	24.10	17M9G7D	QPSK	
LTE Band 2	24E	1860 - 1900	0.217	23.37	17M9W7D	16QAM	
	EUT Overview						

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INTRODUCTION 1.0

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.

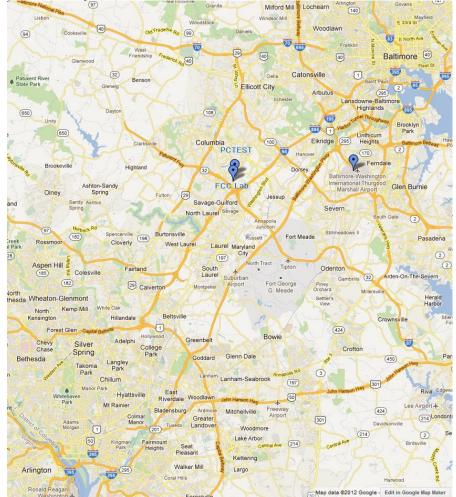


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFM210**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n WLAN, 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

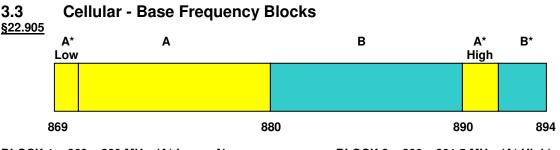
The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-D-2010) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission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

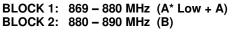
3.2 Block A Frequency Range

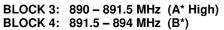
§27.5(c)

<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:

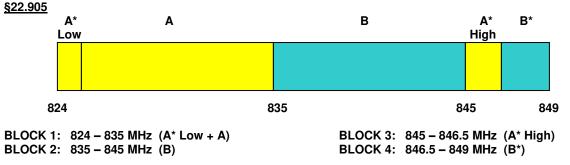
Block A: 698-704 MHz and 728-734 MHz; Block B: 704-710 MHz and 734-740 MHz; and Block C: 710-716 MHz and 740-746 MHz.



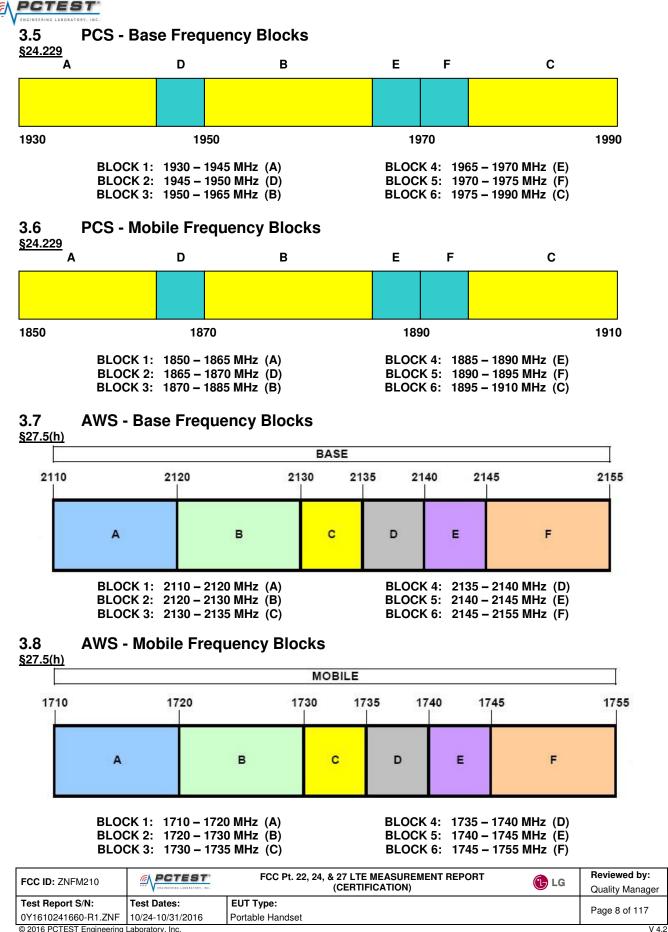








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3.9 Radiated Power and Radiated Spurious Emissions §2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) §27.50(c.10) §27.50(d.4) §27.53(g) §27.53(h)

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]).

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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 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

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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
-	LTx3	Licensed Transmitter Cable Set	7/12/2016	Annual	7/12/2017	LTx3
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	7/11/2016	Annual	7/11/2017	RE1
Agilent	N9020A	MXA Signal Analyzer	11/5/2015	Annual	11/5/2016	US46470561
Anritsu	MT8820C	Radio Communication Analyzer	4/14/2016	Annual	4/14/2017	6201240328
Espec	ESX-2CA	Environmental Chamber	3/4/2016	Annual	3/4/2017	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/26/2016	4/26/2016 Biennial 4/26		125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	4/26/2016	4/26/2016 Biennial 4		128337
Mini Circuits	TVA-11-422	RF Power Amp		N/A		QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11403100002
Mini Circuits	PWR-SEN-4GHS	USB Power Sensor	3/4/2016	Annual	3/4/2017	11401010036
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	7/15/2016 Annual 7/15/2017		100348
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	11/18/2015	Biennial	11/18/2017	91052523RX
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	3/2/2016	Biennial	3/2/2018	N/A

Table 5-1. Test Equipment

Note:

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

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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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TEST RESULTS 7.0

7.1 Summary

Company Name:	LG Electronics MobileComm U.S.A
FCC ID:	<u>ZNFM210</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			
TRANSMITTER MC	TRANSMITTER MODE (TX)							
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		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	CONDUCTED	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			

Notes:

All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst 1) case emissions.

Table 7-1. Summary of Test Results

- 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 2) 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.
- All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the 3) 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 4.2.

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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.

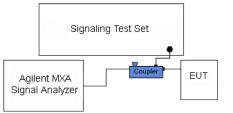


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

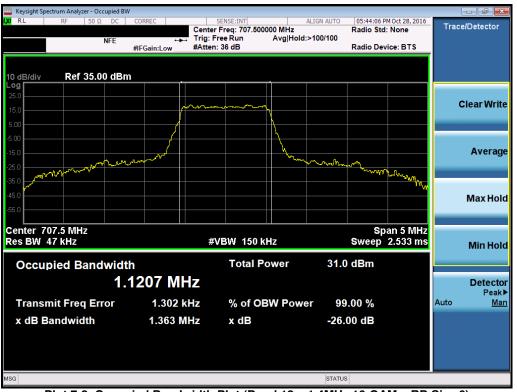
None.

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Plot 7-1. Occupied Bandwidth Plot (Band 12 - 1.4MHz QPSK - RB Size 6)



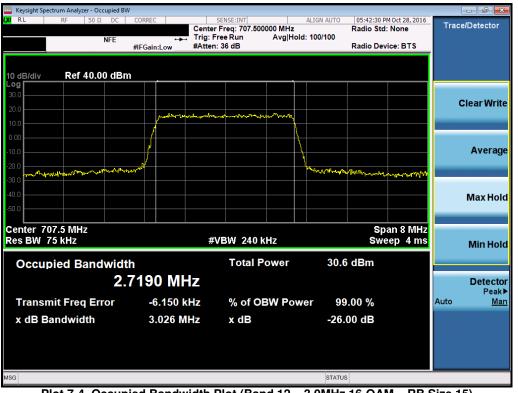
Plot 7-2. Occupied Bandwidth Plot (Band 12 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spectrum Analyzer	r - Occupied B	N										
LXI RL RF	50 Ω DC	CORREC			ISE:INT eq: 707.500	000 MH-		ALIGN AUTO	05:42:10 P Radio Std	M Oct 28, 2016	Trac	e/Detector
	NFE			Trig: Free	Run		old:	100/100				
		#IFGain	:Low	#Atten: 36	6 dB				Radio Dev	ice: BTS		
	0.00 dBr	n										
Log 30.0												
											(Clear Write
20.0			mono	mar and	Mul round	m						
10.0		1					1					
0.00		- 1					1					_
-10.0							ł					Average
-20.0	water aformed	yan a						monum	-	. my hrywny		
-30.0												
-40.0												Max Hold
-50.0												
Center 707.5 MHz Res BW 75 kHz				41 / D	W 240 k	LI				an 8 MHz		
Res BW 75 KHZ				#VD	W 240 K	пΖ			SWE	ep 4 ms		Min Hold
Occupied Ba	ndwid	th			Total P	ower		31.9	dBm			
			4 8/11									
	Ζ.	1.19.	1 MH	Z								Detector Peak►
Transmit Freq	Error	4	.207 kH	z	% of OE	3W Po	we	er 99	9.00 %		Auto	Man
x dB Bandwidt	th	3.	.033 MH	z	x dB			-26.	00 dB			
MSG								STATU	s			
							_					

Plot 7-3. Occupied Bandwidth Plot (Band 12 - 3.0MHz QPSK - RB Size 15)



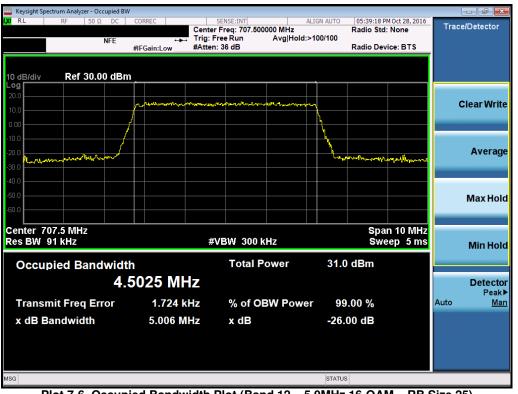
Plot 7-4. Occupied Bandwidth Plot (Band 12 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager		
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Plot 7-5. Occupied Bandwidth Plot (Band 12 - 5.0MHz QPSK - RB Size 25)



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

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Reviewed by: Quality Manager
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🔤 Keysight Sp	ectrum Analy	zer - Occupi	ied BW											
L <mark>XI</mark> RL	RF	50 Ω [DC	CORREC			NSE:INT req: 707.50	0000 MH-	ALIG	N AUTO	05:34:08 P	M Oct 28, 2016	Trac	e/Detector
		NF	E			Trig: Fre	e Run	Avg Hol	d: 100	0/100				
				#IFGain:L	ow	#Atten: 3	86 dB				Radio Dev	ice: BTS		
10 dB/div	Ref	30.00 (dBm											
Log 20.0														
10.0				renner	erren Mar	᠉᠃᠃᠂᠂		mann	~~~					Clear Write
0.00			1						1	١				
			,							1				
-10.0			1							٦,				Average
-20.0	www.www.	mm	e de la compañía de la							www.	Mul Mar	mm		Average
-40.0									+					
-50.0														Max Hold
-60.0														
Center 7	07.5 MH	7									Sna	n 20 MHz		
Res BW						#VE	3W 620	kHz			Swe	ep 1 ms		Min Hold
														Minitiona
Occu	pied B	andw	idtł	ו			Total I	Power		32.0	dBm			
			8.8	9689	MH	z								Detector
							0/ - 5 0	DW D			00.0/		0	Peak►
Trans	mit Fre	q Erroi	ſ	0.	974 k	HZ	% of C	BW Pow	ver	99	.00 %		Auto	Man
x dB E	Bandwid	dth		9.9	30 M	Hz	x dB			-26.	00 dB			
MSG										STATUS				

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



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

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Plot 7-9. Occupied Bandwidth Plot (Band 5 – 1.4MHz QPSK – RB Size 6)



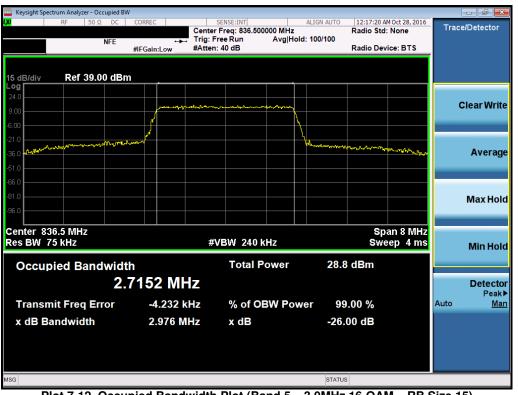
Plot 7-10. Occupied Bandwidth Plot (Band 5 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spec													_	
l <mark>,XI</mark>	RF	50 Ω	DC	CORREC			NSE:INT reg: 836.500	000 MHz		ALIGN AUTO	12:16:45 A Radio Std	M Oct 28, 2016	Trac	e/Detector
		N	IFE		÷	, Trig: Fre	e Run			100/100				
				#IFGain	:Low	#Atten: 4	0 dB				Radio Dev	rice: BTS		
15 dB/div	Ref	39.00	dBr	n										
24.0														
9.00					monor	uni	mehangana	mann						Clear Write
				1					١,					
-6.00				1					٦,					
-21.0	mun	man	՟ֈֈֈՠֈՠ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						- marthonno	Menner	american and the provide of the second		
-36.0														Average
-51.0														
-66.0														
-81.0														Max Hold
-96.0														maxitora
Center 83		z				-40.0						an 8 MHz		
Res BW 7	экнz					#VE	3W 240 k	HZ			SWE	ep 4 ms		Min Hold
Occup	ied B	land	Nid	th			Total P	ower		29.8	dBm			
		Annen												
			2.	699		ΠZ								Detector Peak▶
Transm	nit Free	q Erro	or	1	.879	(Hz	% of O	BW Po	we	er 99	.00 %		Auto	Man
x dB Ba	andwig	dth		2	995 N	IHz	x dB			-26.	00 dB			
MSG										STATUS				
MSG										STATUS				

Plot 7-11. Occupied Bandwidth Plot (Band 5 – 3.0MHz QPSK – RB Size 15)



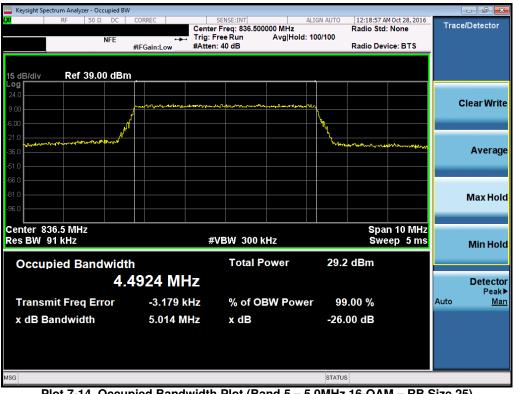
Plot 7-12. Occupied Bandwidth Plot (Band 5 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spectrum Analyzer	- Occupied BW	1								- 6 - ×
LXI RF	50 Ω DC	CORREC		ENSE:INT Freg: 836.50		LIGN AUTO	12:18:30 A Radio Std	M Oct 28, 2016	Trac	e/Detector
	NFE		🛶 Trig: Fr	ee Run	Avg Hold:	100/100				
		#IFGain:Low	#Atten:	40 dB			Radio Dev	vice: BTS		
	9.00 dBm	<u>ו</u>				_				
24.0										
9.00		monund	monter	markmann	aaaadha fall-baba	~			(Clear Write
-6.00		ł				h				
	, N					- M				
-21.0	and a second					how	m Malim	have marked		Average
-36.0										Average
-51.0										
-66.0										
-81.0										Max Hold
-96.0										
Center 836.5 MHz							Sna	n 10 MHz		
Res BW 91 kHz			#\	/BW 3001	kHz			eep 5 ms		Min Hold
										WIIII HOIG
Occupied Ba	ndwidt	h		Total F	ower	29.9	dBm (
	4	5117 N	IH7							Detector
										Peak▶
Transmit Freq	Error	-2.77	3 kHz	% of O	BW Powe	r 99	0.00 %		Auto	<u>Man</u>
x dB Bandwidt	h	5.020	MHz	x dB		-26.	00 dB			
MSG						STATU	5			

Plot 7-13. Occupied Bandwidth Plot (Band 5 – 5.0MHz QPSK – RB Size 25)



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

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spect	trum Analyz	zer - Occ	upied BW	/										
l <mark>,XI</mark>	RF	50 Ω	DC	CORREC			NSE:INT reg: 836.50		ALIC	SN AUTO	12:19:56 A Radio Std	M Oct 28, 2016	Trac	e/Detector
			NFF			Trig: Free		Avg Hold	: 10	0/100	Radio Sta	: None		
				#IFGain:L	ow	#Atten: 4	0 dB				Radio Dev	vice: BTS		
15 dB/div	Ref	39.00) dBm	۱ <u> </u>										
Log 24.0														
				and the second	way		maderico	-	-					Clear Write
9.00				1										
-6.00			٨							7				
-21.0	www	- ma	May may							manun	mm	Whowene		
-36.0														Average
-51.0														
-66.0									\square					
-81.0														Max Hold
-96.0														
Center 83 Res BW 1						#\/E	3W 620	kH7				n 20 MHz ep 1 ms		
Kes DW	00 KHZ					<i></i>	JVY 0201	KI IZ			500	ep mis		Min Hold
Occup	ied B	and	widt	h			Total F	Power		29. 6	dBm			
				9685	ML	7								Detector
			0.,	9000		2								Peak
Transm	it Fred	q Err	or	-4.	510 kH	z	% of O	BW Powe	er	99	.00 %		Auto	<u>Man</u>
x dB Ba	ndwid	dth		96	77 MH	7	x dB			-26	00 dB			
				010			A			201	oo ab			
MSG										STATUS				

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



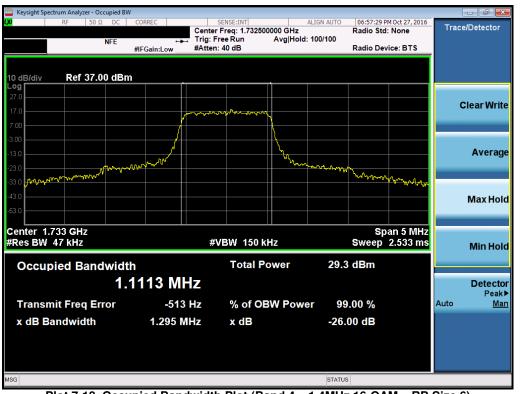
Plot 7-16. Occupied Bandwidth Plot (Band 5 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Reviewed by: Quality Manager
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Plot 7-17. Occupied Bandwidth Plot (Band 4 – 1.4MHz QPSK – RB Size 6)



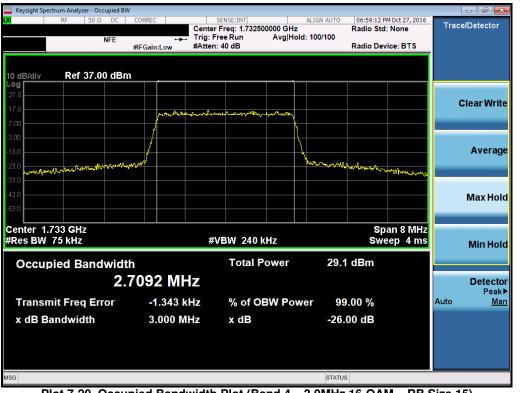
Plot 7-18. Occupied Bandwidth Plot (Band 4 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Reviewed by: Quality Manager
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🔤 Keysight Spectr	um Analyzer	- Occu	upied BV	/										
L <mark>XI</mark>	RF 5	50 Ω	DC	CORREC			NSE:INT reg: 1.73250			ALIGN AUTO	06:58:37 P Radio Std	M Oct 27, 2016	Trac	e/Detector
		N	IFE			. Trig: Fre	e Run			100/100	Radio Stu	. None		
				#IFGai	n:Low	#Atten: 4	0 dB				Radio Dev	vice: BTS		
10 dB/div	Ref 37	7.00	dBn	า	_									
Log 27.0														
17.0														Clear Write
					randone-la	- marillana	when a show	mound						
7.00				1					Ϊ					
-3.00									Ì.					•
-13.0				www.					ľ					Average
-23.0 -23.0	here when	erel de p	hand	'yan' ''						Mar and a state of the state of	and the second second	Munrulling		
-33.0														
-43.0														Max Hold
-53.0														
Conton 4 7	22.00										0	on O Mille		
Center 1.7 #Res BW 7						#VF	3W 2401	HZ				an 8 MHz eep 4 ms		
"ites Bri	VIIIZ					<i>"</i> • E	511 2401	112			UIII	50p + 1115		Min Hold
Occupi	ed Ba	nd۱	widt	h			Total P	ower		29.9	dBm			
					0 MI	7								Detector
			۷.	110		12								Peak
Transmi	it Freq	Erro	or	4	.420 I	(Hz	% of O	BW Po	we	er 99	.00 %		Auto	<u>Man</u>
x dB Ba	ndwidt	h		2	.967 N	1Hz	x dB			-26	00 dB			
	in a what			E		11 12	Aub			-20.				
MSG										STATUS				

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: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Plot 7-21. Occupied Bandwidth Plot (Band 4 – 5.0MHz QPSK – RB Size 25)



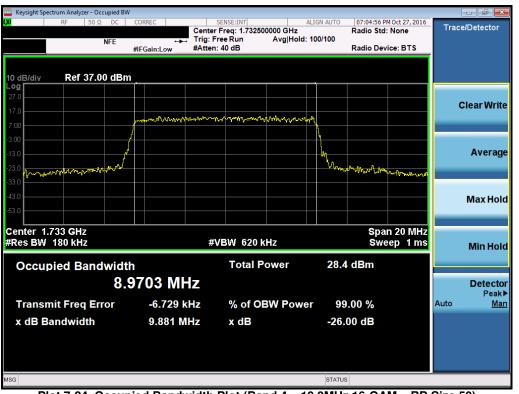
Plot 7-22. Occupied Bandwidth Plot (Band 4 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spectrum Analyzer - Occu	upied BW									- đ - ×-
<mark>ι,XI</mark> RF 50 Ω	DC	CORREC		NSE:INT reg: 1.73250		IGN AUTO	07:04:25 P Radio Std	M Oct 27, 2016	Trac	e/Detector
N	IFE		. Trig: Fre	e Run	Avg Hold: 1	00/100	Raulo Stu	. None		
		#IFGain:Low	#Atten: 4	0 dB			Radio Dev	rice: BTS		
10 dB/div Ref 37.00	dBm									
27.0										
17.0									(Clear Write
7.00		monaland	water and the state of the stat	media	www.www.www.	4				
-3.00						Į				
	M					16				Average
-13.0	کس ہے					Mr.				Average
-23.0							Mr. North March	Margaran		
-33.0										
-43.0										Max Hold
-53.0										
Center 1.733 GHz							Spa	n 20 MHz		
#Res BW 180 kHz			#VE	3W 620 k	Hz			ep 1 ms		Min Hold
										minitiona
Occupied Bandy				Total P	ower	29.5	5 dBm			
	8.8	9564 MI	ΙZ							Detector
T		0.504		0/ - 5 05			00.0/		Auto	Peak►
Transmit Freq Erro	or	-2.501 I		% of OE	3W Power	99	.00 %		Auto	Man
x dB Bandwidth		9.844 N	IHz	x dB		-26.	00 dB			
MSG						STATUS	3			

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



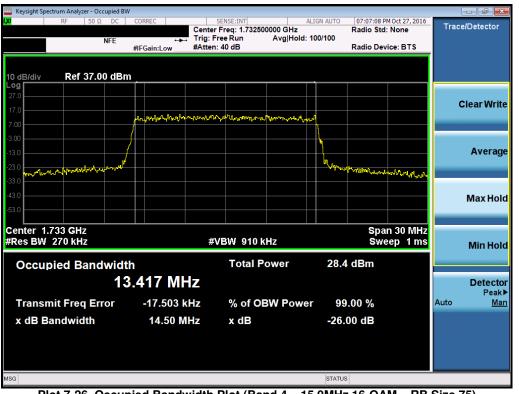
Plot 7-24. Occupied Bandwidth Plot (Band 4 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spectrum Analyzer - Occupied I	3W					x
L <mark>X/</mark> RF 50Ω DC	CORREC	SENSE:INT AL	IGN AUTO 07:06:55 Radio St	PM Oct 27, 2016	Trace/Detector	
NFE	Trig	: Free Run Avg Hold: 1		a. None		
	#IFGain:Low #Att	ten: 40 dB	Radio D	evice: BTS		
10 dB/div Ref 37.00 dB	m					
27.0						
17.0					Clear Wri	ite
	pressmann	yayloologa. Ar flor prost frankansarasha	~			
7.00						
-3.00			4		Avera	-
-13.0	/		ha.		Avera	ge
-23.0 Annorthy margaret			" " " " " " " " " " " " " " " " " " "	Munumber		
-33.0						
-43.0					Max Ho	ld
-53.0						
Center 1.733 GHz			Sn	an 30 MHz		
#Res BW 270 kHz		#VBW 910 kHz		veep 1 ms	Min Ho	Jd
				_	WIITHO	iu.
Occupied Bandwid	lth	Total Power	29.2 dBm			
1	3.453 MHz				Detect	or
					Peal	
Transmit Freq Error	-12.045 kHz	% of OBW Power	r 99.00 %		Auto <u>M</u>	an
x dB Bandwidth	14.52 MHz	x dB	-26.00 dB			
MSG			STATUS			

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



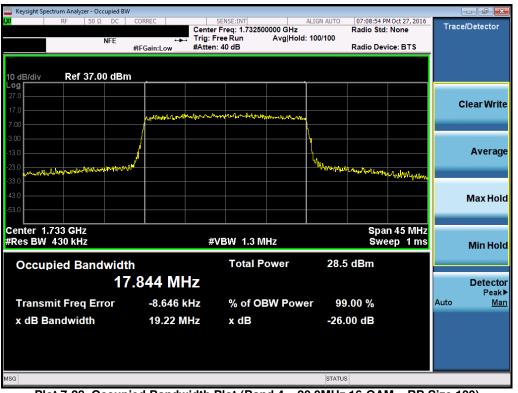
Plot 7-26. Occupied Bandwidth Plot (Band 4 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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🛄 Keysight Spectru	m Analyzer -	Occupied	BW										
LXI	RF 50	Ω DC	CO	RREC			NSE:INT reg: 1.73250		ALIGN AUTO	07:08:31 P	M Oct 27, 2016	Trac	e/Detector
		NFE			- -	Trig: Free	e Run	Avg Hold	: 100/100				
			#IF	Gain:Lo	w	#Atten: 4	0 dB			Radio Dev	rice: BTS		
10 dB/div	Ref 37	.00 dE	3m	·									
Log 27.0													
17.0													Clear Write
7.00				portur	ahartha	and the second	๛๛๚ฃ฿๛๛๛	ale adaptations	4				
-3.00													
-13.0			/						X.				Average
									nut and a line				Average
-23.0 -33.0	www.ikylahoro	all	10-1 °							and a stand the stand of the	www.hitweles		
-43.0													Max Hold
-53.0												_	
Center 1.73	3 GHz								1	Spa	n 45 MHz		
#Res BW 43	30 kHz					#VE	3W 1.3 №	Hz			eep 1 ms		Min Hold
0			141-				Total P	0)W0F	20.6	dBm			
Occupie	ed Ban						TOLAT	ower	29.0	авт			
		1	7.8	67	MH	Z							Detector
Transmit	Erea E	rror		15 3	85 k⊦	7	% of O	3W Powe	or 00	.00 %		Auto	Peak▶ Man
								50010000				riaro	<u></u>
x dB Ban	dwidth			19.2	25 MF	z	x dB		-26.	00 dB			
MSG									STATUS	5			

Plot 7-27. Occupied Bandwidth Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



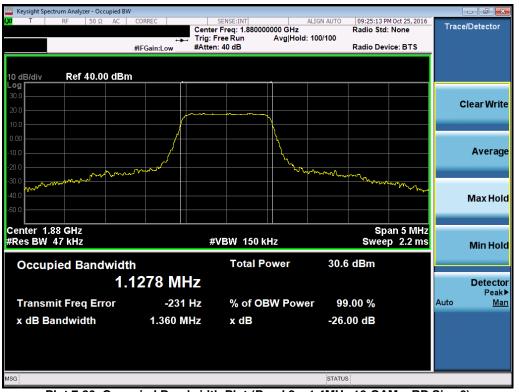
Plot 7-28. Occupied Bandwidth Plot (Band 4 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Plot 7-29. Occupied Bandwidth Plot (Band 2 – 1.4MHz QPSK – RB Size 6)



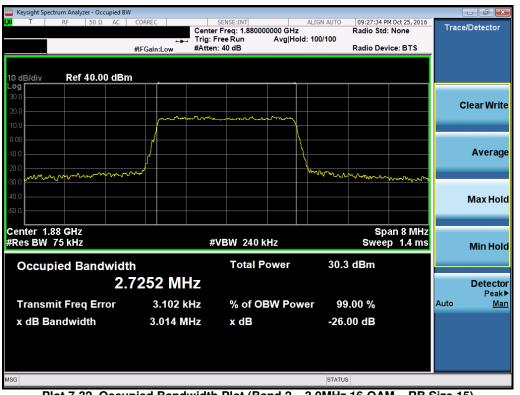
Plot 7-30. Occupied Bandwidth Plot (Band 2 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spec	trum Analyzei	r - Occup	ied BW											
LXI T	RF	50 Ω	AC CO	RREC			Freg: 1.8800			ALIGN AUTO	09:26:36 P Radio Std	M Oct 25, 2016	Trac	e/Detector
						Talas De				100/100	Raulo Stu	. None		
			#IF	Gain	:Low	#Atten:	40 dB				Radio Dev	ice: BTS		
10 dB/div	Ref 4	0.00	dBm				_		_					
Log 30.0														
20.0														Clear Write
10.0					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
0.00									Ì					
				1					\setminus					Average
-10.0				1										Average
-20.0	Land and a	$\sim \sim$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							www.www.w	www	man		
-30.0														
-40.0														Max Hold
-50.0														
Center 1.	R8 GHZ					<u> </u>					Sp	an 8 MHz		
#Res BW						#V	/BW 240	kHz				p 1.4 ms		Min Hold
														minnora
Occup	ied Ba						Total I	ower		31.3	dBm			
			2.72	28'	1 MI	Ηz								Detector
T	:4 F	-	-		274		0/ -60	DW/D-			00.0/		Auto	Peak▶ <u>Man</u>
	nit Freq				-371		% of C	BWPO	we	er 98	.00 %		Auto	Ivian
x dB Ba	andwidt	th		3.	039 N	lHz	x dB			-26.	00 dB			
MSG										STATU	6			

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



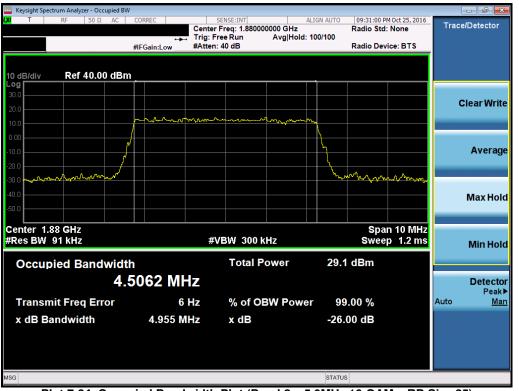
Plot 7-32. Occupied Bandwidth Plot (Band 2 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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🔤 Ke	ysight Spectr	rum Analy	yzer - Occ	upied BW	1										
L <mark>XI</mark>	T	RF	50 Ω	AC	CORREC			NSE:INT	00000 GHz	ALIC	GN AUTO	09:30:13 P Radio Std	M Oct 25, 2016	Trac	e/Detector
							Trig: Fre		Avg Ho	ld: 10	0/100	Radio Stu	. None		
					#IFGain:	Low	#Atten: 4	l0 dB				Radio Device: BTS			
	B/div	Ref	f 40.0) dBm	۱ <u>, </u>										
Log 30.0															
20.0															Clear Write
					mon			hours	L	~~					
10.0					1						ί,				
0.00					ſ'					+	1				_
-10.0	<u> </u>			- r/						+	- \				Average
-20.0											<u> </u>				
-30.0	mm	harr	mm	m							3	Man	Monnor		
-40.0	L									_					Max Hold
-50.0															Maxilola
	nter 1.8												n 10 MHz		
#Re	s BW 9	91 KH2	Z				#VE	3W 300	kHz			Swee	p 1.2 ms		Min Hold
C)ccupi	ed E	Band	widt	h			Total F	Power		30.1	dBm			
					5160	MH	7								Detector
					5100		12								Peak►
Т	ransmi	it Fre	q Err	or		-157	Hz	% of O	BW Pov	ver	99	.00 %		Auto	<u>Man</u>
x	dB Ba	ndwi	dth		4.9	958 MI	Hz	x dB			-26.	00 dB			
											0747				
MSG											STATUS				

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



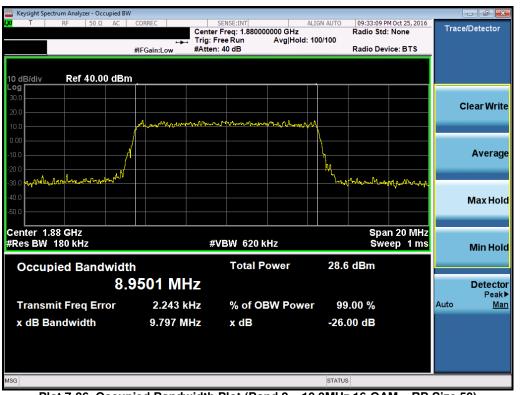
Plot 7-34. Occupied Bandwidth Plot (Band 2 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Reviewed by: Quality Manager	
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Keysight Spectrum Ana	Keysight Spectrum Analyzer - Occupied BW											- 6
L <mark>XI</mark> T RF	50 Ω	AC	CORREC			NSE:INT reg: 1.88000		ALIGN AUT	0 09:32:40 P Radio Std	M Oct 25, 2016	Trac	e/Detector
					Trig: Fre	e Run	Avg Hold	: 100/100				
			#IFGain:L	.ow	#Atten: 4	0 dB			Radio Dev	rice: BTS		
	ef 40.00	0 dBm										
Log 30.0												
20.0											(Clear Write
10.0			~ quer com	and marked	www.ww	man	an with my willy an	~~~				
0.00								l N				
-10.0		Å						4				Average
		5						h ال				Average
-20.0	<u>ኤ.</u>	man						<u>ا</u>	hand	0.000 - 0		
-30.0	1. 1								port didays	an all an front of the second of		
-40.0												Max Hold
-50.0												
Center 1.88 GH	z	<u> </u>							Spa	n 20 MHz		
#Res BW 180 k					#VE	3W 620 k	Hz			eep 1 ms		Min Hold
						_						Millinoid
Occupied I	Band					Total P	ower	2	9.6 dBm			
		8.8	9620	MH	Z							Detector
T			2	0071-		N/ - 5 OI	D14/ D		00 00 0/		Auto	Peak►
Transmit Fre		or		807 k		% of O	BW Powe		99.00 %		Auto	Man
x dB Bandw	idth		9.7	'39 M	Hz	x dB		-2	6.00 dB			
MSG								STA	TUS			

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



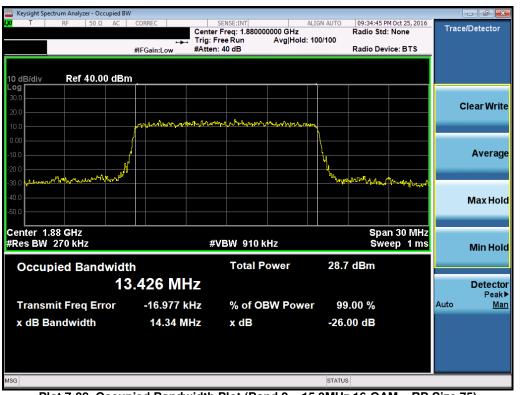
Plot 7-36. Occupied Bandwidth Plot (Band 2 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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🔤 Key	sight Spectru	ım Analyzer	- Occup	pied BW											
L <mark>XI</mark>	T	RF 5	50 Ω	AC	CORREC			SENSE:INT	000000 GHz	ALIG	N AUTO	09:34:10 P Radio Std	M Oct 25, 2016	Trac	e/Detector
							Trig: F	ree Run	Avg Ho	ld: 10	0/100				
	_				#IFGain:	ow	#Atten:	40 dB				Radio Dev	vice: BTS		
10 dE	3/div	Ref 4	0.00	dBm											
Log 30.0															
20.0														(Clear Write
10.0					an mark	on har hanner	an Malan	www.	sherbowww.	1.					
				1											
0.00				1							1				Average
-10.0				n.							۰ ۱				Average
-20.0		. co. id-locale	m.	M							The work	maryan	Balan n I		
	ᡒᢛ᠇᠇ᢏᢑᡘᡙᠬᢇᠠ	4.4.4.4.4											1 - MARANA		
-40.0															Max Hold
-50.0														_	
Cent	ter 1.88	GHz										Spa	n 30 MHz		
	BW 2						#\	/BW 910	kHz				eep 1 ms		Min Hold
								_	_						Millinoid
0	ccupi	ed Ba	ndv					Total	Power		29.8	dBm			
				13	.425	M	Z								Detector
				_	-	0071		0/ - 5 6			0.0	00.0/		Auto	Peak►
	ansmi			or		807 k		% OT (DBW Pov	ver	99	.00 %		Auto	Man
x	dB Bar	ndwidt	h		14	.48 M	Hz	x dB			-26.	00 dB			
MSG											STATUS	3			

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



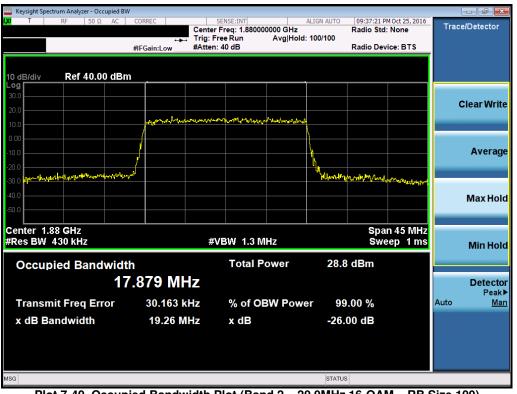
Plot 7-38. Occupied Bandwidth Plot (Band 2 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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🔤 Ke	eysight Sp	ectrum (Analyzer - (Occupie	ed BW										
L <mark>XI</mark>	Т	RF	50	ΩA	C CO	RREC			ENSE:INT Freg: 1.8800		ALIGN AUTO	09:35:57 P	M Oct 25, 2016	Trac	e/Detector
								. Trig: Fr	ee Run	Avg Hold:	: 100/100				
					#IF	Gain:L	.ow	#Atten:	40 dB			Radio Dev	ice: BTS		
	B/div		Ref 40.	00 d	Bm	_									
Log 30.0															
	1														Clear Write
20.0	1					. And	m harry	Mudall Hander	my 1kin mana						
10.0	1					í.					\				
0.00											l –				_
-10.0	\vdash					\vdash					h				Average
-20.0	\vdash		mant	a dha ant	ation	\vdash					No. Josefully	a la seta la se			
-30.0	ካማኒሐክላ	(hanger lander	A.Meller .	1004 C	- 1 × 4							www.wywluy	mullighypu		
-40.0	\vdash					_									Max Hold
-50.0	L														
	nter 1 es BW							-#34	'BW 1.31				n 45 MHz ep 1 ms		
#RC	:S DW	4JU	КПZ					#V	DVV I.JI	VILLE		300	ep mis		Min Hold
C)ccu	pied	l Ban	dwi	idth				Total I	Power	29.9	dBm			
					17.8	000	N/L	1-							Detector
					0.11	90	IVIT	12							Detector Peak▶
Т	rans	mit F	req E	rror		15.	016 k	Hz	% of O	BW Powe	er 99	.00 %		Auto	Man
x	dB E	Band	width			19	.27 M	IHz	x dB		-26.	00 dB			
MSG											STATU				
wi3G											STATU	·			

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)

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7.3 Spurious and Harmonic Emissions at Antenna Terminal §22.1051 §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 $43 + \log_{10}(P_{[Watts]})$, 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.

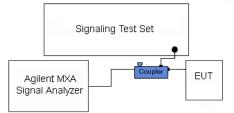


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

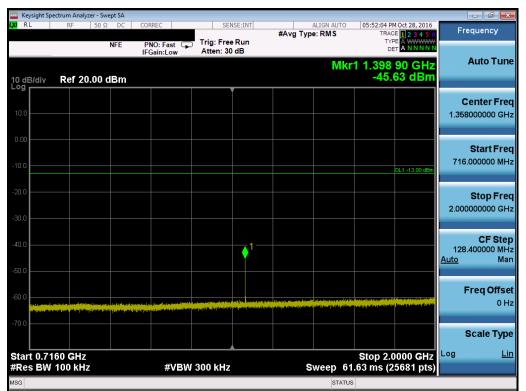
Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the 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.

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Keysight Spectrun										_	
X/RL F	RF 50 S	2 DC	CORREC	SEI	SE:INT	#Avg Typ	ALIGN AUTO		1 Oct 28, 2016	Freq	uency
		NFE	PNO: Fast G	Trig: Free Atten: 30		#Avg typ	e. RWS	TYP	E A WWWWW T A N N N N N		
10 dB/div R	ef 20.00	dBm					M	kr1 697. -45.9	90 MHz 95 dBm	A	uto Tui
- og 10.0											nter Fre
0.00									DL1 -13.00 dBm		Start Fr DOODO M
20.0											Stop Fr 00000 M
40.0									1	66.79 <u>Auto</u>	CF St 90000 M N
	a Aleman a dina di alemania di a	. Ale El avez li fest à sura m	er, om fold store in othistory			Aller of an elisten static stars and a static		a ya tifaya ya da barba ya da ya da		Fr	e q Off s 0
70.0										So	ale Ty
tart 30.0 MH Res BW 100			#VBV	V 300 kHz		S	weep 32	Stop 6 .06 ms (1	97.9 MHz 3359 pts)	Log	ļ
SG							STATUS				

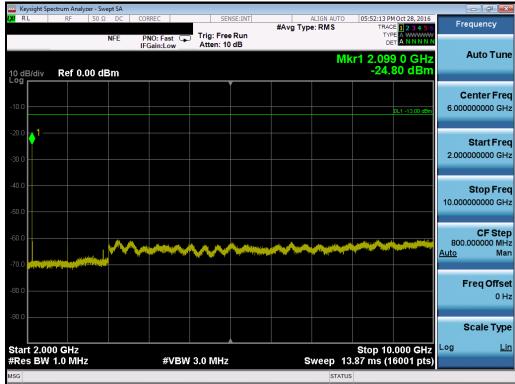
Plot 7-41. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



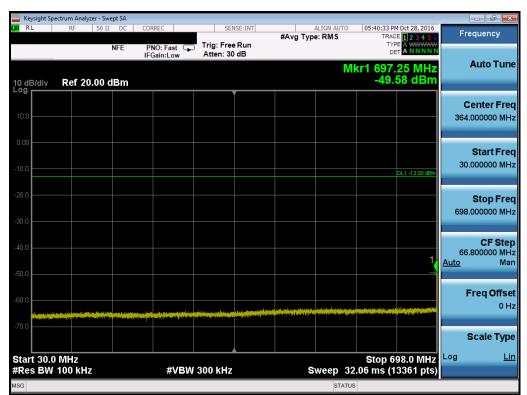
Plot 7-42. Conducted Spurious Plot (Band 12 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Plot 7-43. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



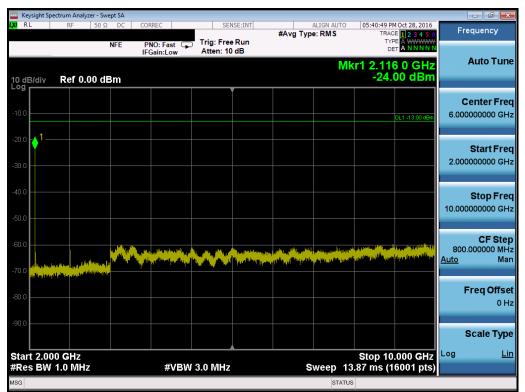
Plot 7-44. Conducted Spurious Plot (Band 12 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Sp												_	
X/RL	RF	50 Ω	DC	CORREC		SEI	NSE:INT	#Avg Typ	ALIGN AUTO	TRAC	M Oct 28, 2016	Fr	equency
			NFE	PNO: Fa IFGain:Lo	st 🖵	Trig: Fre Atten: 30				TY D			
10 dB/div	Ref 2	0.00 d	Bm						Mkı	1 1.410 ⁻ -49.	70 GHz 56 dBm		Auto Tur
- ^{og}							Ĭ						e un te un E un
10.0													enter Fre
0.00													Start Fr
10.0												716	.000000 M
											DL1 -13.00 dBm		
20.0													Stop Fr
30.0												2.000	0000000 G
30.0													
40.0												128	CF St .400000 M
												Auto	М
50.0													
60.0								a de la cara decarada en antilisme		والمستخدمة وورد مستشعره فالم	and a first a second of parts	F	Freq Offs
						A second s		a distance of the second s			a na an taite bil inte al faithful		U
70.0													Scale Ty
tart 0.71 Res BW				#	VBW	300 kHz		s	Sweep 6	Stop 2.0	0000 GHz 5681 pts)	Log	L
SG									STATU	-			

Plot 7-45. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



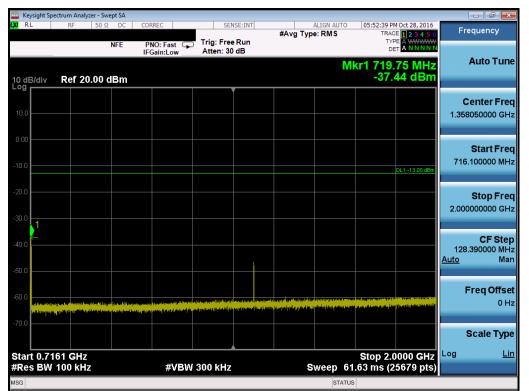
Plot 7-46. Conducted Spurious Plot (Band 12 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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RL RF 50 Ω						- 6 -
	DC CORREC	SENSE:INT	#Avg Type: F		:33 PM Oct 28, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div Ref 20.00 dE	IFGain:Low	Atten: 30 dB		Mkr1 6 -(97.60 MHz 62.21 dBm	Auto Tur
og 10.0						Center Fre 364.000000 Mi
10.0					DL1 -13.00 dBm	Start Fr 30.000000 M
20.0						Stop Fr 698.000000 M
10.0 50.0						CF St 66.800000 M <u>Auto</u> M
	And the second	Antonio al parte program de la compañía de la comp		new anti-internet all and all and all and any sector to a	1. 	Freq Offs 0
tart 30.0 MHz				Sto	p 698.0 MHz	Scale Ty
Res BW 100 kHz	#VBW 3	300 kHz	Swe	eep 32.06 m	s (13361 pts)	

Plot 7-47. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-48. Conducted Spurious Plot (Band 12 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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Keysight Spectrum Analyz	er - Swept SA								- đ
CRL RF	50 Ω DC C	DRREC	SEN	SE:INT		ALIGN AUTO		4 Oct 28, 2016	Frequency
		PNO: Fast 😱 FGain:Low	Trig: Free Atten: 10		#Avg Typ	e:RMS	TYF	E 1 2 3 4 5 6 E A WWWWW A N N N N N	
0 dB/div Ref 0.0	00 dBm					MI	(r1 2.13 -23.	5 0 GHz 24 dBm	Auto T
10.0								DL1 -13.00 dBm	Center F 6.000000000
30.0									Start F 2.000000000
40.0									Stop F 10.000000000
60.0 70.0	····		~~~			a politika na politika na sta politika na politika na sta			CF \$ 800.000000 <u>Auto</u>
30.0									Freq Of
90.0									Scale T
Start 2.000 GHz Res BW 1.0 MHz		#VBW	3.0 MHz		s	weep 1	Stop 10 3.87 ms (1	.000 GHz 6001 pts)	9
SG						STATU		/	

Plot 7-49. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



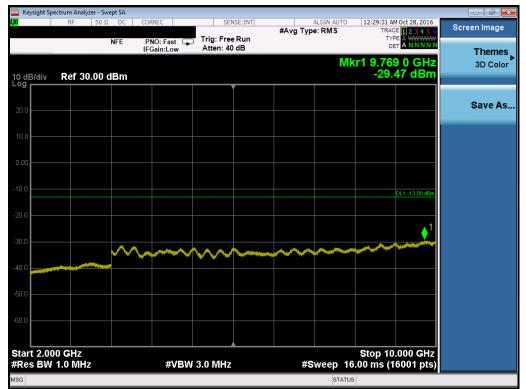
Plot 7-50. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight : XI	Spectrum Anal RF	yzer - Swept SA 50 Ω DC	CORREC	SENSE:INT	ALIGN AUTO	12:27:58 AM Oct 28, 2016	
	14	NFE	PNO: Fast G		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN	Peak Search
10 dB/div _og	Ref 3	0.00 dBm			Mk	r1 1.648 50 GHz -46.74 dBm	NextPe
20.0							Next Pk Rig
0.00							Next Pk Lo
20.0						DL1 -13.00 dBm	Marker De
30.0							Mkr→
50.0			A de la maneta de particular de la maneta de la				Mkr→RefL
	490 GHz					Stop 2.0000 GHz	M a 1 o
	V 100 KH	2	#VBW	300 kHz	Sweep 5	5.25 ms (23021 pts)	

Plot 7-51. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



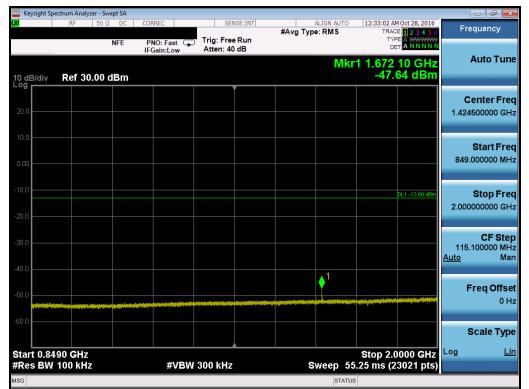
Plot 7-52. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🔁 LG	Reviewed by: Quality Manager
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Keysight Sp XI	ectrum Anal RF	yzer - swe 50 Ω		CORRE	C		SEN	ISE:INT		ALIGN AUTO		M Oct 28, 2016		
			NFE	PNO IFGai	:Fast ← in:Low	► Tri At	g: Free ten: 40	Run dB	#Avg Ty	pe:RMS	TΥ	CE 1 2 3 4 5 6 (PE A WWWWW A N N N N N		quency
10 dB/div	Ref 3	0.00 d	Bm							Μ	kr1 760 -52	.30 MHz 16 dBm		Auto Tu
20.0														enter Fr DOOOOO M
0.00														Start Fr 000000 M
-10.0												DL1 -13.00 dBm		Stop Fr 000000 M
40.0													79.4 <u>Auto</u>	CF S1 400000 M M
50.0									ng the second synchronized as the second	in a fall grow to grow provide the second state			F	req Off 0
-60.0														cale Ty
Start 30.0 ≇Res BW		z			#VB	W 300) kHz			Sweep 38	Stop 8 3.11 ms (*	824.0 MHz 15881 pts)	Log	
ISG										STATU				

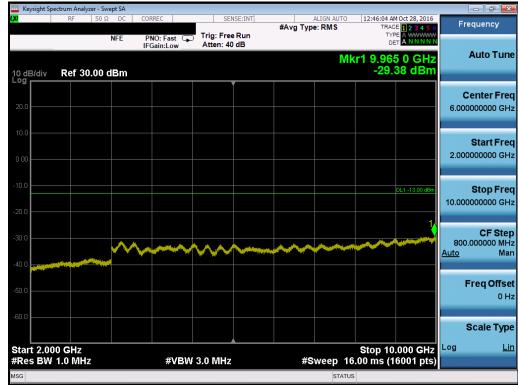
Plot 7-53. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-54. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Plot 7-55. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



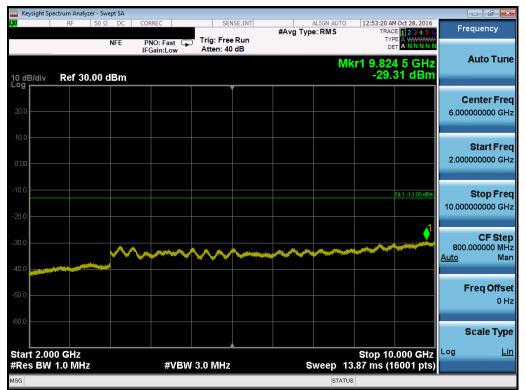
Plot 7-56. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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Keysight Spe											-	
XI	RF	50 Ω	DC	CORREC	S	ENSE:INT	#Avg Typ	ALIGN AUTO		Oct 28, 2016	Free	quency
		I	NFE	PNO: Fast IFGain:Low	Trig: Fre		#Avg iyp	e: RIVIS	TYP	1 2 3 4 5 6 A WWWWW A N N N N N		
10 dB/div	Ref 3	0.00 d	Bm					M	kr1 850. -47.8	10 MHz 39 dBm	A	uto Tur
- og 20.0												e nter Fre 00000 GH
0.00												Start Fr 00000 M
20.0										DL1 -13.00 dBm		Stop Fr 00000 G
30.0											115.0 <u>Auto</u>	CF St 00000 M N
										an the state of th	Fi	e q Off s 0
50.0											S	cale Ty
tart 0.85 Res BW				#V	BW 300 kH:	z	s	weep 55	Stop 2.0 .20 ms (2	000 GHz 3001 pts)	Log	Ţ
SG								STATUS				

Plot 7-57. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-58. Conducted Spurious Plot (Band 5 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager				
Test Report S/N:	Test Dates:	EUT Type:		Dece 44 of 117				
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Keysight Spectrum Analy								
KI RF	50 Ω DC	CORREC	SENSE:INT	#Avg Typ	ALIGN AUTO		Oct 27, 2016	Frequency
	NFE	PNO: Fast ↔→ IFGain:Low	Trig: Free Run Atten: 40 dB	#Avg iyp	DE: RIVIS	TYPE	1 2 3 4 5 6 A WWWW A N N N N N	
10 dB/div Ref 3	0.00 dBm				M	(r1 1.702 -35.87	0 GHz 4 dBm	Auto Tu
20.0								Center Fr 869.000000 M
0.00								Start Fr 30.000000 M
20.0							DL1 -13.00 dBm	Stop Fr 1.708000000 G
10.0							1	CF St 167.800000 M <u>Auto</u> M
50.0	(*************************************		يبذر توم ^{ري} ة ^م الا ^{رد} (¹		an da yana bada da sha a sh 	n, sakalarin ni mende	قىمىرىيە يومۇپ، بىرەل كەنبە	Freq Offs 0
60.0								Scale Ty
tart 0.0300 GHz Res BW 1.0 MH		#VBW 3	LO MHz		Sween_2	Stop 1.7 2.237 ms (3	080 GHz 3357 pts)	Log <u>i</u>
sg		#VBW 0	AV 111112		STATUS	-	, and proj	

Plot 7-59. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)



Plot 7-60. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager
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0 dB/div Ref	NFE		sense:INT 40 dB	#Avg Typ		TRAC TYP DE 1 19.44	1 5 GHz 89 dBm	Frequency Auto Tur
-og				#Avg Typ		TYP DE 1 19.44	1 5 GHz	
-og	30.00 dBm		Ĭ		Mkr	1 19.44 -24.	1 5 GHz 89 dBm	Auto Tur
20.0								Center Fre
								15.00000000 GH
10.0								Start Fre
0.00								10.00000000 GH
10.0							DL1 -13.00 dBm	Stop Fre
20.0							1	20.000000000 GH
30.0							maria	CF Ste 1.00000000 GF
40.0								Auto Ma
50.0								Freq Offs
								01
60.0								Scale Typ
Start 10.000 GF Res BW 1.0 M		#VBW 3.0 MH	<u> </u>		woon 47	Stop 20	.000 GHz 0001 pts)	Log <u>L</u>
	112	#VEW 3.0 MI	12	5	status		ooo r pis)	

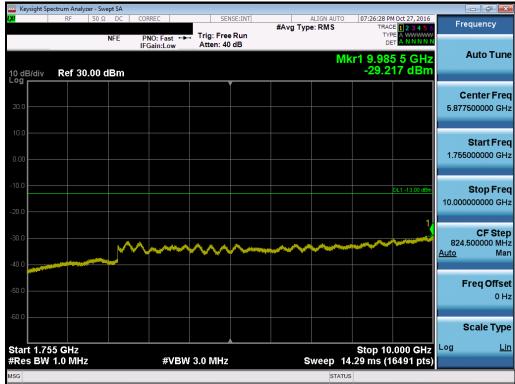
Plot 7-61. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-62. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager				
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Plot 7-63. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-64. Conducted Spurious Plot (Band 4 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager				
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Keysight Spectrum Anal							- 7
XI RF	50 Ω DC	CORREC	SENSE:INT	#A	ALIGN AUTO	07:30:25 PM Oct 27, 2016	Frequency
	NFE	PNO: Fast ↔→ IFGain:Low	Trig: Free Run Atten: 40 dB	#Avg Typ	DE: RIVIS	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNN	
10 dB/div Ref 3	0.00 dBm				Mł	r1 1.635 0 GHz -40.859 dBm	Auto Tur
20.0							Center Fre 870.000000 M⊦
0.00							Start Fre 30.000000 Mi
20.0						DL1 -13.00 dBm	Stop Fr 1.710000000 G
40.0						1	CF Sto 168.000000 M <u>Auto</u> M
50.0	1224-15-99-99-99-99-99-99-99-99-99-99-99-99-99		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	alland tage all the second	and a stand of the stand of the		Freq Offs 0
60.0							Scale Ty
Start 0.0300 GHz Res BW 1.0 MH		#VBW	3.0 MHz		Sweep_2	Stop 1.7100 GHz .240 ms (3361 pts)	Log <u>L</u>
ISG		<i>"</i> 0 E M	ono-11112		STATUS	1	

Plot 7-65. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-66. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🔁 LG	Reviewed by: Quality Manager				
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Keysight Spectrum	Analyzer - Swep	it SA								_	
XI RF	50 Ω	DC CC	ORREC	SEN	ISE:INT		ALIGN AUTO		4 Oct 27, 2016	Erec	quency
	N	IFE I	PNO: Fast ↔ FGain:Low	. Trig: Free Atten: 40		#Avg Typ	e: RMS	TYP	E 1 2 3 4 5 6 E A WWWW A N N N N N		
10 dB/div Re	f 30.00 di	Зm					Mkı	1 19.28 -25.	2 0 GHz 15 dBm	A	uto Tune
20.0											enter Free 00000 GH
0.00											Start Fre
-10.0									DL1 -13.00 dBm		Stop Fre 00000 GH
30.0	~~~~~	-								1.0000 <u>Auto</u>	CF Ste 00000 G⊦ Ma
40.0 50.0											eq Offs
60.0										S	cale Typ
Start 10.000 G #Res BW 1.0 I			#VBW	3.0 MHz		s	weep 17	Stop 20 .33 ms (2	.000 GHz 0001 pts)	Log	Li
ISG							STATU	S			

Plot 7-67. Conducted Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-68. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0– Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Reviewed by: Quality Manager				
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Keysight Spectrum Analyzer - Swept SA					_ d <mark>-</mark> ×
T RF 50 Ω AC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div Ref 22.00 dBm	IFGain:Low	Atten: 32 dB	Ν	DET A NNNNN Ikr1 9.688 0 GHz -40.81 dBm	Auto Tun
12.0					Center Fre 5.955000000 G⊢
3.00				DL1 -13.00 dBm	Start Fre 1.910000000 GF
8.0					Stop Fr 10.000000000 Gi
38.0				1	CF Sto 809.000000 M <u>Auto</u> M
58.0					Freq Offs 0
tart 1.910 GHz				Stop 10.000 GHz	Scale Ty
Res BW 1.0 MHz	#VBW :	3.0 MHz	Sweep 1	4.02 ms (16181 pts)	

Plot 7-69. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



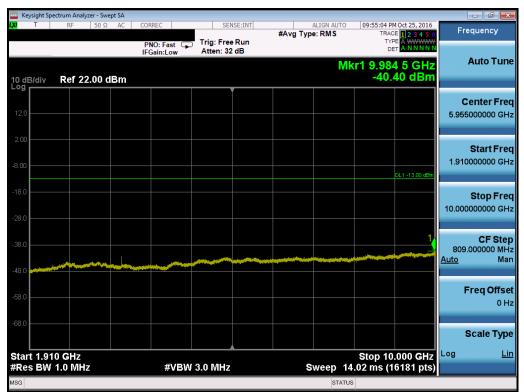
Plot 7-70. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)					
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Keysight Sp	ectrum Ana										- 6 💌
XI T	RF	50 Ω	AC	CORREC		#Avg Typ	ALIGN AUTO	TRA T)	PM Oct 25, 2016 CE 1 2 3 4 5 6 (PE A WWWWW	Fr	equency
				IFGain:Low	Atten: 32			0	A N N N N N		
10 dB/div Log	Ref 2	2.00 d	Bm				Μ	kr1 1.56 -46	7 0 GHz .05 dBm		Auto Tun
					Ì					c	enter Fre
12.0											.000000 MH
2.00											
2.00											Start Fre
-8.00										30	.000000 M⊢
									DL1 -13.00 dBm		
-18.0											Stop Fre
-28.0										1.850	000000 GH
											CF Ste
-38.0								1			-000000 MH
-48.0				a linear a subject with the	ولنميه ويورونه والمراجع	 		and the second	***	<u>Auto</u>	Ma
جعفيمالله ميه											req Offs
-58.0											0+
-68.0											
										;	Scale Typ
Start 0.03	300 GH	7						Stop 1	8500 GHz	Log	L
#Res BW				#VBW	3.0 MHz		Sweep	2.427 ms	(3641 pts)		
MSG							STATU	s			

Plot 7-71. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-72. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🔁 LG	Reviewed by: Quality Manager
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Keysight S	pectrum Analy										_	- 6 🗙
X IT	RF	50 Ω	AC	CORREC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS		M Oct 25, 2016	Fr	equency
	_			PNO: Fast IFGain:Low	Trig: Free Atten: 32				TYI Di			A
10 dB/div Log	Ref 22	2.00 dl	Bm					Mk	r1 16.98 -33.	6 5 GHz 26 dBm		Auto Tune
						Í					c	enter Fred
12.0											15.000	000000 GH
2.00												Start Free
-8.00											10.000	0000000 GH
-18.0										DL1 -13.00 dBm		
											20.000	Stop Fre
-28.0								1				
-38.0		-				~~~~]				CF Ste 0000000 GH
-48.0											<u>Auto</u>	Ma
-58.0											I	Freq Offse
												0 H
-68.0												Scale Typ
Start 10.	000 GHz								Stop 20	.000 GHz	Log	Li
#Res BW	/ 1.0 MH	z		#VBV	/ 3.0 MHz		s		25.33 ms (2	20001 pts)		
MSG								STAT	US			

Plot 7-73. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



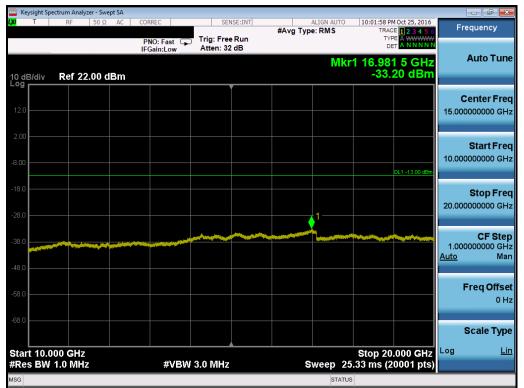
Plot 7-74. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: ZNFM210		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	🕑 LG	Reviewed by: Quality Manager
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Keysight Sp	ectrum Ana											
XI T	RF	50 Ω	AC	CORREC	SEI	SE:INT	#Avg Typ	ALIGN AUTO		M Oct 25, 2016	Fre	equency
	_			PNO: Fast G	Trig: Free Atten: 32		#Avg typ	e: KIVIS	TYP	E 1 2 3 4 5 6 E A WWWW A NNNN		
10 dB/div	Ref 2	2.00 d	Bm					Mł	(r1 1.91 -23.	1 0 GHz 13 dBm		Auto Tun
12.0												enter Fre 500000 G⊦
2.00 8.00										DL1 -13.00 dBm	1.911	Start Fre
18.0 1 — 28.0 —											10.000	Stop Fr 000000 G
.38.0											808. <u>Auto</u>	CF Ste 900000 M M
48.0 58.0											F	req Offs 0
68.0												Scale Ty
Start 1.9 ⁷ Res BW	11 GHz 1.0 MH	z		#VBV	V 3.0 MHz		s	weep 14	Stop 10 .02 ms (1	.000 GHz 6179 pts)	Log	Ĺ
ISG								STATUS	6			

Plot 7-75. Conducted Spurious Plot (Band 2 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-76. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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