FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART F
FCC CFR47 PART 27 SUBPART L

C2PC CERTIFICATION TEST REPORT

FOR

CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n

MODEL NUMBER: LG-VW820, VW820, LGVW820

FCC ID: ZNFVW820

REPORT NUMBER: 15I20287-E1 REVISION A

ISSUE DATE: APRIL 02, 2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	03/18/15	Initial Issue	D. Coronia
A	04/02/15	Updated LTE Band 5 information page 13, 38 & 51-52	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n
MODEL:	LG-VW820, VW820, LGVW820
SERIAL NUMBER:	2064706 (Radiated)
DATE TESTED:	March 2-11, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27F and 27L	PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22, FCC CFR Part 24, and FCC CFR 47 Part 27.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☐ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☒ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)

(Path loss = Signal generator output – PSA reading with substitution antenna)

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4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n

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5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum radiated ERP / EIRP output powers as follows:

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
BC0	824~849	1xRTT			22.97	198.15
	824~849	EVDO REL. 0			23.27	212.32
	824~849	EVDO REV. A				
BC1	1850~1910	1xRTT			23.69	233.88
	1850~1910	EVDO REL. 0			24.17	261.22
	1850~1910	EVDO REV. A				

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5.3. MAXIMUM OUTPUT POWER (LTE)

The transmitter has a maximum peak conducted and radiated ERP/EIRP output powers as follows:

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	20MHz	QPSK			24.32	270.40
	1850~1910	20MHz	16QAM			23.04	201.37

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	15MHz	QPSK			24.62	289.73
	1850~1910	15MHz	16QAM			24.44	277.97

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	10MHz	QPSK			24.39	274.79
	1850~1910	10MHz	16QAM			24.22	264.24

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	5MHz	QPSK			24.04	253.51
	1850~1910	5MHz	16QAM			23.56	226.99

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FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	3MHz	QPSK			24.18	261.82
	1850~1910	3MHz	16QAM			23.48	222.84

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	1.4MHz	QPSK			23.89	244.91
	1850~1910	1.4MHz	16QAM			23.27	212.32

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FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	20MHz	QPSK			26.66	463.45
	1710~1755	20MHz	16QAM			25.80	380.19

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	15MHz	QPSK			26.26	422.67
	1710~1755	15MHz	16QAM			26.17	414.00

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	10MHz	QPSK			25.54	358.10
	1710~1755	10MHz	16QAM			25.34	341.98

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	5MHz	QPSK			25.85	384.59
	1710~1755	5MHz	16QAM			25.35	342.77

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	3MHz	QPSK			25.65	367.28
	1710~1755	3MHz	16QAM			24.68	293.76

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FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	1.4MHz	QPSK			25.88	387.26
	1710~1755	1.4MHz	16QAM			25.07	321.37

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FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	10MHz	QPSK			21.04	127.06
	824~849	10MHz	16QAM			20.27	106.41

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	5MHz	QPSK			22.66	184.50
	824~849	5MHz	16QAM			22.29	169.43

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	3MHz	QPSK			22.67	184.93
	824~849	3MHz	16QAM			22.39	173.38

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	1.4MHz	QPSK			22.46	176.20
	824~849	1.4MHz	16QAM			22.40	173.78

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FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	10MHz	QPSK			23.48	222.84
	777~787	10MHz	16QAM			22.42	174.58

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	5MHz	QPSK			23.05	201.84
	777~787	5MHz	16QAM			21.90	154.88

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5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
CDMA BC0 / LTE 5, 824~849MHz	-1.7
CDMA BC1 / LTE 2, 1850~1910MHz	2.8
LTE 4, 1710~1755MHz	2.0
LTE 13, 777~787	-2.9

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-02WR	RA4Y1033301	N/A
Earphone	LG	N/A	N/A	N/A

I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	USB	1	AC Adapter	Un-shielded	1.2m	NA
2	Jack	1	Headset	Shielded	1m	NA
3	RF In/out	1	Communication Test Set	Un-shielded	2m	NA

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

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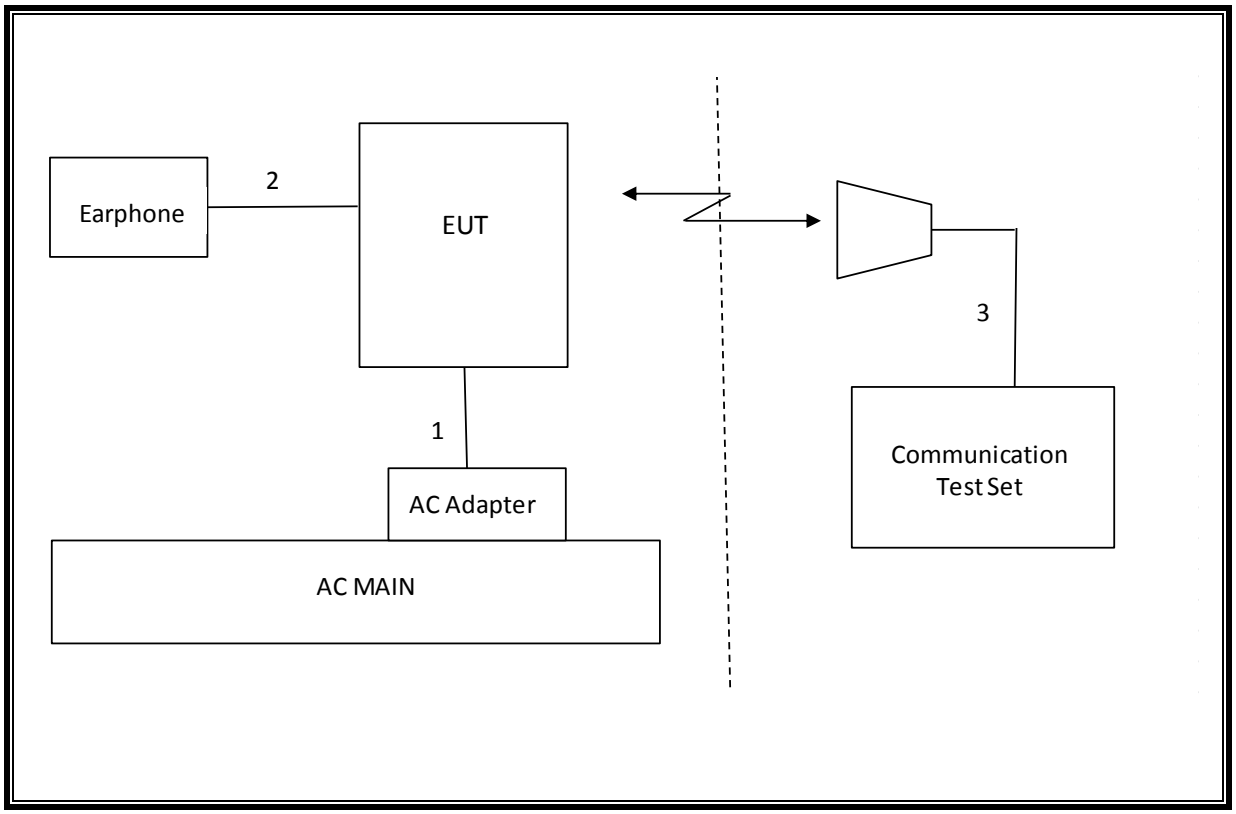
SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	09/05/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	04/22/15
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 18 GHz	EMCO	3115	C00784	10/25/15
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	05/11/15
Communications Test Set	R&S	CMW500	T159	07/02/15
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	06/18/15
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/14/16
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	12/17/15

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

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7. SUMMARY TABLE

C2PC reason: Please see LG FCC Class II cover letter for details.

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Note
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	See original
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	see original
27.53(m)	RSS-199(4.5)		-25dBm		Pass	See original
22.355 24.235 27.54 90.213	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3) RSS-199(4.3)	Frequency Stability	2.5PPM		Pass	See original
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	24.59dBm
27.50(b)(10)	N/A		34.77 dBm		Pass	23.48dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	24.44dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	26.66dBm
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-42.4dBm

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8. RF POWER OUTPUT VERIFICATION

8.1. CDMA

8.1.1. 1xRTT

TEST PROCEDURE

This procedure assumes the Agilest 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

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CDMA2000 OUTPUT POWER RESULT

Band	Mode	Channel	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	23.7
		384	836.52	23.8
		777	848.31	23.8
	RC3, SO55 (Loopback)	1013	824.70	23.8
		384	836.52	23.8
		777	848.31	23.9
	RC3, SO32 (+F-SCH)	1013	824.70	23.7
		384	836.52	23.8
		777	848.31	23.9

Band	Mode	Channel	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	23.6
		600	1880.00	23.7
		1175	1908.75	23.6
	RC3, SO55 (Loopback)	25	1851.25	23.7
		600	1880.00	23.7
		1175	1908.75	23.8
	RC3, SO32 (+F-SCH)	25	1851.25	23.5
		600	1880.00	23.6
		1175	1908.75	23.7

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8.1.2. 1xEV-DO Release 0

TEST PROCEDURE

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

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8.1.3. 1XEVDO REL 0 OUTPUT POWER RESULT

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2 kbps (2 slot, QPSK)	1013	824.70	23.8
		384	836.52	23.8
		777	848.31	23.9

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	23.5
		600	1880.00	23.8
		1175	1908.75	23.8

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8.1.4. 1xEV-DO Rev. A

TEST PROCEDURE

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Release A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2

> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Release A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2

> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

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8.1.5. 1xEVDO REV A OUTPUT RESULT

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	23.9
		384	836.52	23.9
		777	848.31	24.0

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	23.6
		600	1880.00	24.0
		1175	1908.75	23.7

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8.2. LTE OUTPUT VERIFICATION

8.2.1. LTE OUTPUT RESULT

LTE Band 2

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18700	18900	19100
						1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	22.5	22.7	22.7
			1	49	0	22.6	22.7	22.5
			1	99	0	22.4	22.7	22.5
			50	0	1	21.6	21.5	21.6
			50	24	1	21.4	21.5	21.5
			50	50	1	21.5	21.4	21.3
			100	0	1	21.4	21.5	21.5
		16QAM	1	0	1	21.1	21.3	21.7
			1	49	1	21.1	21.4	21.5
			1	99	1	21.1	21.5	21.5
			50	0	2	20.6	20.6	20.6
			50	24	2	20.5	20.6	20.4
			50	50	2	20.5	20.5	20.4
			100	0	2	20.5	20.5	20.6

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18675	18900	19125
						1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	22.3	22.3	22.6
			1	37	0	22.7	22.7	22.4
			1	74	0	22.4	22.4	22.6
			36	0	1	21.4	21.5	21.5
			36	20	1	21.4	21.4	21.4
			36	39	1	21.4	21.4	21.4
			75	0	1	21.4	21.4	21.4
		16QAM	1	0	1	21.4	21.6	21.5
			1	37	1	21.4	21.6	21.1
			1	74	1	21.2	21.7	21.3
			36	0	2	20.4	20.5	20.5
			36	20	2	20.3	20.4	20.4
			36	39	2	20.4	20.4	20.4
			75	0	2	20.4	20.4	20.4

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18650	18900	19150
						1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	22.4	22.6	22.7
			1	25	0	22.3	22.6	22.4
			1	49	0	22.3	22.5	22.6
			25	0	1	21.4	21.5	21.4
			25	12	1	21.4	21.4	21.5
			25	25	1	21.4	21.5	21.5
			50	0	1	21.5	21.5	21.5
		16QAM	1	0	1	21.4	21.6	21.6
			1	25	1	21.5	21.6	21.6
			1	49	1	21.4	21.3	21.4
			25	0	2	20.4	20.6	20.5
			25	12	2	20.4	20.5	20.5
			25	25	2	20.4	20.6	20.5
			50	0	2	20.4	20.5	20.4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18625	18900	19175
						1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	22.1	22.6	22.1
			1	12	0	22.6	22.6	22.4
			1	24	0	22.2	22.5	22.4
			12	0	1	21.3	21.5	21.4
			12	7	1	21.4	21.5	21.5
			12	13	1	21.4	21.5	21.5
			25	0	1	21.3	21.5	21.5
		16QAM	1	0	1	20.7	21.1	21.2
			1	12	1	20.8	21.0	21.1
			1	24	1	20.8	21.2	21.0
			12	0	2	20.4	20.5	20.6
			12	7	2	20.4	20.5	20.6
			12	13	2	20.4	20.6	20.6
			25	0	2	20.6	20.5	20.6

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18615	18900	19185
						1851.5 MHz	1880 MHz	1908.5 MHz
LTE Band 2	3	QPSK	1	0	0	22.18	22.40	22.31
			1	7	0	22.17	22.70	22.46
			1	14	0	22.19	22.25	22.48
			6	0	1	21.16	21.35	21.36
			6	3	1	21.27	21.39	21.40
			6	5	1	21.18	21.29	21.37
			15	0	1	21.21	21.38	21.38
		16QAM	1	0	1	21.32	21.35	21.39
			1	7	1	21.35	21.35	21.67
			1	14	1	21.42	21.70	21.60
			6	0	2	20.39	20.17	20.42
			6	3	2	20.29	19.98	20.59
			6	5	2	20.34	20.28	20.48
			15	0	2	20.23	20.35	20.42

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18607	18900	19193
						1850.7 MHz	1880 MHz	1909.3 MHz
LTE Band 2	1.4	QPSK	1	0	0	22.12	22.25	22.43
			1	2	0	22.24	22.33	22.44
			1	5	0	22.25	22.19	22.63
			3	0	0	22.06	22.38	22.40
			3	1	0	22.23	22.41	22.51
			3	2	0	22.24	22.41	22.52
			6	0	1	21.19	21.34	21.43
		16QAM	1	0	1	21.70	20.70	21.70
			1	2	1	21.70	21.70	21.70
			1	5	1	21.70	21.29	21.70
			3	0	1	20.87	21.02	20.89
			3	1	1	20.78	21.51	21.24
			3	2	1	20.70	21.17	21.27
			6	0	2	20.11	20.38	20.45

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LTE Band 4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20050	20175	20300
						1720 MHz	1732.5 MHz	1745 MHz
LTE Band 4	20	QPSK	1	0	0	23.46	23.30	23.39
			1	49	0	23.46	23.44	23.17
			1	99	0	23.26	23.48	23.23
			50	0	1	22.38	22.61	22.41
			50	24	1	22.38	22.44	22.25
			50	50	1	22.35	22.38	22.22
			100	0	1	22.38	22.47	22.38
		16QAM	1	0	1	22.63	22.56	22.63
			1	49	1	22.58	22.70	22.70
			1	99	1	22.41	22.58	22.40
			50	0	2	21.44	21.62	21.39
			50	24	2	21.41	21.40	21.23
			50	50	2	21.37	21.45	21.16
			100	0	2	21.39	21.55	21.34

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20025	20175	20325
						1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE Band 4	15	QPSK	1	0	0	23.43	23.36	23.49
			1	37	0	23.30	23.70	23.17
			1	74	0	23.15	23.43	23.08
			36	0	1	22.29	22.53	22.35
			36	20	1	22.26	22.38	22.19
			36	39	1	22.32	22.22	22.22
			75	0	1	22.29	22.32	22.25
		16QAM	1	0	1	22.69	22.70	22.56
			1	37	1	22.70	22.55	22.59
			1	74	1	22.70	22.19	22.16
			36	0	2	21.24	21.58	21.25
			36	20	2	21.28	21.46	21.10
			36	39	2	21.27	21.23	21.17
			75	0	2	21.33	21.35	21.28

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20000	20175	20350
						1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	23.44	23.45	23.21
			1	25	0	23.15	23.37	23.28
			1	49	0	23.30	23.13	23.20
			25	0	1	22.38	22.52	22.16
			25	12	1	22.31	22.44	22.21
			25	25	1	22.31	22.32	22.30
			50	0	1	22.29	22.40	22.26
		16QAM	1	0	1	22.65	22.11	22.25
			1	25	1	22.70	22.07	22.70
			1	49	1	22.47	22.42	22.70
			25	0	2	21.34	21.39	21.15
			25	12	2	21.33	21.35	21.18
			25	25	2	21.25	21.26	21.15
			50	0	2	21.25	21.33	21.14

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19975	20175	20375
						1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	23.10	23.21	23.00
			1	12	0	23.28	23.70	23.50
			1	24	0	23.04	23.11	22.94
			12	0	1	22.29	22.44	22.39
			12	7	1	22.26	22.49	22.33
			12	13	1	22.28	22.33	22.23
			25	0	1	22.27	22.45	22.33
		16QAM	1	0	1	22.01	22.50	22.68
			1	12	1	22.63	22.36	22.70
			1	24	1	21.79	22.65	22.70
			12	0	2	21.41	21.49	21.37
			12	7	2	21.37	21.29	21.37
			12	13	2	21.20	21.19	21.42
			25	0	2	21.49	21.53	21.36

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19965	20175	20385
						1711.5 MHz	1732.5 MHz	1753.5 MHz
LTE Band 4	3	QPSK	1	0	0	23.13	23.40	23.44
			1	7	0	23.24	23.70	23.30
			1	14	0	23.11	23.28	23.14
			6	0	1	22.31	22.40	22.49
			6	3	1	22.33	22.41	22.38
			6	5	1	22.32	22.39	22.28
			15	0	1	22.35	22.40	22.30
		16QAM	1	0	1	22.70	22.69	22.62
			1	7	1	22.09	22.53	22.54
			1	14	1	22.33	22.56	22.70
			6	0	2	21.31	20.91	21.58
			6	3	2	21.03	21.23	21.35
			6	5	2	21.10	21.31	21.45
			15	0	2	21.18	21.31	21.42

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19957	20175	20393
						1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	1.4	QPSK	1	0	0	23.24	23.10	23.03
			1	2	0	23.31	23.25	23.25
			1	5	0	23.19	23.16	23.42
			3	0	0	23.29	23.28	23.25
			3	1	0	23.37	23.53	23.33
			3	2	0	23.30	23.40	23.34
			6	0	1	22.28	22.35	22.32
		16QAM	1	0	1	22.70	22.66	22.70
			1	2	1	22.69	22.04	22.47
			1	5	1	22.70	22.06	22.60
			3	0	1	22.25	22.35	22.05
			3	1	1	22.16	22.49	22.21
			3	2	1	22.17	22.14	22.00
			6	0	2	21.50	21.59	21.70

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LTE Band 5

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20450	20525	20600
						829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	23.29	23.24	23.19
			1	25	0	23.35	22.85	23.37
			1	49	0	23.29	23.36	23.28
			25	0	1	22.33	22.35	22.38
			25	12	1	22.33	22.23	22.40
			25	25	1	22.37	22.25	22.44
			50	0	1	22.34	22.25	22.40
		16QAM	1	0	1	22.70	22.70	22.70
			1	25	1	21.93	21.94	22.29
			1	49	1	22.42	22.50	22.53
			25	0	2	21.16	21.29	21.28
			25	12	2	21.18	21.11	21.26
			25	25	2	21.12	21.09	21.25
			50	0	2	21.20	21.15	21.20

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20425	20525	20625
						826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	23.05	23.63	23.27
			1	12	0	23.61	23.70	23.22
			1	24	0	23.01	23.29	23.01
			12	0	1	22.27	22.27	22.36
			12	7	1	22.32	21.98	22.25
			12	13	1	22.48	21.97	22.29
			25	0	1	22.27	22.19	22.28
		16QAM	1	0	1	22.03	22.70	22.54
			1	12	1	21.97	22.70	22.29
			1	24	1	22.70	22.70	22.70
			12	0	2	21.24	21.16	21.22
			12	7	2	21.25	21.21	21.14
			12	13	2	20.98	21.06	21.20
			25	0	2	21.22	21.20	21.33

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20415	20525	20635
						825.5 MHz	836.5 MHz	847.5 MHz
LTE Band 5	3	QPSK	1	0	0	23.20	23.29	23.23
			1	7	0	23.39	23.26	23.25
			1	14	0	23.20	23.23	23.07
			6	0	1	22.32	22.19	22.48
			6	3	1	22.38	22.31	22.28
			6	5	1	22.36	22.29	22.21
			15	0	1	22.34	22.29	22.27
		16QAM	1	0	1	22.34	22.35	22.44
			1	7	1	22.58	22.70	22.23
			1	14	1	22.54	22.56	22.27
			6	0	2	21.45	21.01	21.59
			6	3	2	21.56	21.12	21.49
			6	5	2	21.43	21.01	21.44
			15	0	2	21.45	21.27	21.32

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20407	20525	20643
						824.7 MHz	836.5 MHz	848.3 MHz
LTE Band 5	1.4	QPSK	1	0	0	23.11	23.13	23.15
			1	2	0	23.15	23.24	23.18
			1	5	0	23.15	23.20	23.19
			3	0	0	23.18	23.34	23.12
			3	1	0	23.24	23.31	23.18
			3	2	0	23.18	23.33	23.20
			6	0	1	22.22	22.20	22.18
		16QAM	1	0	1	22.70	22.67	22.12
			1	2	1	22.70	22.70	22.38
			1	5	1	22.67	21.99	22.70
			3	0	1	21.76	22.09	22.10
			3	1	1	21.80	22.15	22.18
			3	2	1	22.08	21.88	22.18
			6	0	2	20.99	21.43	21.11

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LTE Band 13

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23230 782 MHz
LTE Band 13	10	QPSK	1	0	0	23.33
			1	25	0	23.36
			1	49	0	23.18
			25	0	1	22.37
			25	12	1	22.38
			25	25	1	22.38
			50	0	1	22.34
		16QAM	1	0	1	22.37
			1	25	1	22.37
			1	49	1	22.35
			25	0	2	21.40
			25	12	2	21.21
			25	25	2	21.33
			50	0	2	21.30

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23230 782 MHz
LTE Band 13	5	QPSK	1	0	0	23.55
			1	12	0	23.70
			1	24	0	23.49
			12	0	1	22.43
			12	6	1	22.47
			12	11	1	22.50
			25	0	1	22.42
		16QAM	1	0	1	22.32
			1	12	1	22.24
			1	24	1	22.25
			12	0	2	21.50
			12	6	2	21.29
			12	11	2	21.53
			25	0	2	21.35

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9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, and §27.

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50(b) - (10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP. (LTE B13)

27.50(c) - (10) Portable stations (hand-held devices) are limited to 3 watts ERP; (LTE B17)

27.50(d) - (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.(Band 4)

27.50(h) - (2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power (LTE B41 & 7).

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17; PSA setting reference to 971168 D01 v02r02

For peak power measurement with a PSA:

a) Set the RBW ≥ OBW; b) Set VBW ≥ 3 × RBW; c) Set span ≥ 2 x RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points ≥ span/RBW; g) Trace mode = max hold;

For average power measurement with a PSA:

a) Set span to at least 1.5 times the OBW; b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz; c) Set VBW ≥ 3 x RBW; d) Set number of points in sweep ≥ 2 × span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle ≥ 98; h) Use trigger to capture bursts If burst duty cycle < 98; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

MODES TESTED

CDMA, LTE

TEST RESULTS

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9.1.1. ERP/EIRP Results

CDMA

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	24.01	251.67
		600	1880	23.69	234.14
		1175	1908.75	23.913	246.23
	EVDO REL. 0	25	1851.25	23.55	226.46
		600	1880	24.17	261.22
		1175	1908.75	24.59	287.74

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	22.18	165.23
		384	836.52	22.97	198.11
		777	848.31	23.60	229.03
	EVDO REL. 0	1013	824.7	22.30	169.82
		384	836.52	23.27	212.32
		777	848.31	23.70	234.42

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9.1.2. LTE ERP/EIRP Results

LTE Band 13

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE13	10	QPSK	1/0			
			1/0	782	23.48	222.84
			1/0			
		16QAM	1/0			
			1/0	782	22.42	174.58
			1/0			
	5	QPSK	1/0	779.5	23.05	201.84
			1/0	782	22.65	184.08
			1/0	784.5	22.60	181.97
		16QAM	1/0	779.5	21.9	154.88
			1/0	782	21.76	149.97
			1/0	784.5	21.74	149.28

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LTE Band 5

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	20.81	120.50
			1/0	836.5	20.92	123.59
			1/0	844	21.04	127.06
		16QAM	1/0	829	19.91	97.95
			1/0	836.5	20.42	110.15
			1/0	844	20.27	106.41
	5	QPSK	1/0	826.5	22.55	179.89
			1/0	836.5	22.66	184.5
			1/0	846.5	21.939	156.28
		16QAM	1/0	826.5	22.01	158.85
			1/0	836.5	22.29	169.43
			1/0	846.5	21.459	139.93
	3	QPSK	1/0	825.5	22.67	184.93
			1/0	836.5	22.53	179.06
			1/0	847.5	21.269	133.94
		16QAM	1/0	825.5	22.39	173.38
			1/0	836.5	21.99	158.12
			1/0	847.5	20.109	102.54
	1.4	QPSK	1/0	824.7	21.83	152.41
			1/0	836.5	21.54	142.56
			1/0	848.3	22.459	176.16
		16QAM	1/0	824.7	21.46	139.96
			1/0	836.5	21.11	129.12
			1/0	848.3	22.399	173.74

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LTE Band 4

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	25.26305	335.97
			1/0	1732.5	25.575	360.99
			1/0	1745	26.659	463.34
		16QAM	1/0	1720	23.73305	236.21
			1/0	1732.5	24.225	264.55
			1/0	1745	25.799	380.1
	15	QPSK	1/0	1717.5	25.08305	322.33
			1/0	1732.5	25.935	392.19
			1/0	1747.5	26.259	422.57
		16QAM	1/0	1717.5	24.107	257.45
			1/0	1732.5	24.835	304.44
			1/0	1747.5	26.169	413.9
	10	QPSK	1/0	1715	25.447	350.51
			1/0	1732.5	25.435	349.54
			1/0	1750	25.539	358.01
		16QAM	1/0	1715	24.867	306.69
			1/0	1732.5	25.335	341.59
			1/0	1750	25.169	328.78
	5	QPSK	1/0	1712.5	24.977	314.56
			1/0	1732.5	25.845	384.15
			1/0	1752.5	25.659	368.04
		16QAM	1/0	1712.5	23.767	238.07
			1/0	1732.5	24.505	282.16
			1/0	1752.5	25.349	342.69

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	23.667	232.65
			1/0	1732.5	25.645	366.86
			1/0	1753.5	24.422	276.82
		16QAM	1/0	1711.5	23.007	199.85
			1/0	1732.5	24.675	293.43
			1/0	1753.5	24.242	265.58
	1.4	QPSK	1/0	1710.7	25.137	326.36
			1/0	1732.5	25.875	386.81
			1/0	1754.3	24.419	276.63
		16QAM	1/0	1710.7	24.18305	262
			1/0	1732.5	25.065	321
			1/0	1754.3	23.539	225.89

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LTE Band 2

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	24.213	263.82
			1/0	1880	24.321	270.46
			1/0	1900	23.379	217.72
		16QAM	1/0	1860	22.853	192.89
			1/0	1880	23.041	201.42
			1/0	1900	23.02	200.45
	15	QPSK	1/0	1857.5	24.153	260.2
			1/0	1880	23.921	246.66
			1/0	1902.5	24.619	289.67
		16QAM	1/0	1857.5	23.953	248.48
			1/0	1880	23.261	211.88
			1/0	1902.5	24.439	277.91
	10	QPSK	1/0	1855	23.663	232.43
			1/0	1880	24.391	274.85
			1/0	1905	24.219	264.18
		16QAM	1/0	1855	22.873	193.78
			1/0	1880	24.221	264.3
			1/0	1905	23.439	220.75
	5	QPSK	1/0	1852.5	23.693	234.05
			1/0	1880	24.041	253.57
			1/0	1907.5	23.759	237.63
		16QAM	1/0	1852.5	22.283	169.16
			1/0	1880	22.501	177.87
			1/0	1907.5	23.559	226.93

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	23.923	246.77
			1/0	1880	24.141	259.48
			1/0	1908.5	24.179	261.76
		16QAM	1/0	1851.5	23.363	216.92
			1/0	1880	23.221	209.94
			1/0	1908.5	23.479	222.79
	1.4	QPSK	1/0	1850.7	23.663	232.43
			1/0	1880	22.961	197.74
			1/0	1909.3	23.889	244.85
		16QAM	1/0	1850.7	23.268	212.23
			1/0	1880	22.271	168.69
			1/0	1909.3	22.369	172.54

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9.1.3. ERP/EIRP PLOTS

CDMA

Band

BC1

High Frequency Fundamental Measurement
UL Verification Services Chamber G

Company: LG Electronics
Project #: 15I20187
Date: 03/02/15
Test Engineer: R. Z
Configuration: EUT only X-position
Mode: CDMA EVDO BC1

Test Equipment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, 6ft SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.85125	10.3	V	0.90	9.25	18.66	33.0	-14.3	
1.85125	15.2	H	0.90	9.25	23.55	33.0	-9.5	
Mid Ch								
1.880	11.1	V	0.90	9.15	19.32	33.0	-13.7	
1.880	15.9	H	0.90	9.15	24.17	33.0	-8.8	
High Ch								
1.90875	11.1	V	0.90	9.05	19.30	33.0	-13.7	
1.90875	16.4	H	0.90	9.05	24.59	33.0	-8.4	

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Band

BC1

1xRTT

High Frequency Fundamental Measurement
UL Verification Services Chamber G

Company: LG Electronics
Project #: 15I20187
Date: 03/02/15
Test Engineer: R. Z
Configuration: EUT only X-position
Mode: CDMA RTT BC1

Test Equipment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, 6ft SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.85125	10.4	V	0.90	9.25	18.78	33.0	-14.2	
1.85125	15.7	H	0.90	9.25	24.01	33.0	-9.0	
Mid Ch								
1.880	11.3	V	0.90	9.15	19.52	33.0	-13.5	
1.880	15.4	H	0.90	9.15	23.69	33.0	-9.3	
High Ch								
1.90875	12.2	V	0.90	9.05	20.40	33.0	-12.6	
1.90875	15.8	H	0.90	9.05	23.91	33.0	-9.1	

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Band

BC0

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG Electronics
Project #: 15I20187
Date: 03/02/15
Test Engineer: R. Z
Configuration: EUT only X-position
Mode: CDMA EVDO BC0

Test Equipment:
Receiving: T899, and Chamber G Cable
Substitution: Dipole T273, 6ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	16.15	V	0.6	0.0	15.55	38.5	-22.9	
824.70	22.90	H	0.6	0.0	22.30	38.5	-16.1	
Mid Ch								
836.52	16.51	V	0.6	0.0	15.91	38.5	-22.5	
836.52	23.87	H	0.6	0.0	23.27	38.5	-15.2	
High Ch								
848.31	15.46	V	0.6	0.0	14.86	38.5	-23.6	
848.31	24.30	H	0.6	0.0	23.70	38.5	-14.8	

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Band

BC0

1xRTT

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG Electronics
Project #: 15I20187
Date: 03/02/15
Test Engineer: R. Z
Configuration: EUT only X-position
Mode: CDMA RTT BC0

Test Equipment:
Receiving: T899, and Chamber G Cable
Substitution: Dipole T273, 6ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	15.51	V	0.6	0.0	14.91	38.5	-23.5	
824.70	22.78	H	0.6	0.0	22.18	38.5	-16.3	
Mid Ch								
836.52	16.01	V	0.6	0.0	15.41	38.5	-23.0	
836.52	23.57	H	0.6	0.0	22.97	38.5	-15.5	
High Ch								
848.31	15.20	V	0.6	0.0	14.60	38.5	-23.8	
848.31	24.20	H	0.6	0.0	23.60	38.5	-14.9	

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LTE Band 13

Band

LTE13

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber A

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Mode: LTE13 10MHz 16QAM

Test Equipment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
N/A		V	0.9	0.0		38.5		
		H	0.9	0.0		38.5		
Mid Ch								
782.00	13.47	V	0.9	0.0	12.62	38.5	-25.8	
782.00	23.27	H	0.9	0.0	22.42	38.5	-16.0	
High Ch								
N/A		V	0.9	0.0		38.5		
N/A		H	0.9	0.0		38.5		

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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Band

LTE13

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber A

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Mode: LTE13 10MHz 16QAM

Test Equipment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
N/A		V	0.9	0.0		38.5		
		H	0.9	0.0		38.5		
Mid Ch								
782.00	13.47	V	0.9	0.0	12.62	38.5	-25.8	
782.00	23.27	H	0.9	0.0	22.42	38.5	-16.0	
High Ch								
		V	0.9	0.0		38.5		
		H	0.9	0.0		38.5		

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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Band

LTE13

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber A

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Mode: LTE_B13_5MHz_16QAM

Test Equipment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
779.500	12.95	V	0.9	0.0	12.05	33.0	-20.9	
779.500	22.80	H	0.9	0.0	21.90	33.0	-11.1	
Mid Ch								
782.000	12.38	V	0.9	0.0	11.48	33.0	-21.5	
782.000	22.66	H	0.9	0.0	21.76	33.0	-11.2	
High Ch								
784.500	12.32	V	0.9	0.0	11.42	33.0	-21.6	
784.500	22.64	H	0.9	0.0	21.74	33.0	-11.3	

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Band

LTE13

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber A

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Mode: LTE_B13_5MHz_QPSK

Test Equipment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
779.500	13.85	V	0.9	0.0	12.95	33.0	-20.0	
779.500	23.95	H	0.9	0.0	23.05	33.0	-9.9	
Mid Ch								
782.000	13.98	V	0.9	0.0	13.08	33.0	-19.9	
782.000	23.55	H	0.9	0.0	22.65	33.0	-10.3	
High Ch								
784.500	13.83	V	0.9	0.0	12.93	33.0	-20.1	
784.500	23.50	H	0.9	0.0	22.60	33.0	-10.4	

Rev. 3.17.11

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LTE Band 5

Band

LTE5

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20187
Date: 4/2/2015
Test Engineer: Charles Vergonio
Configuration: EUT only
Mode: LTE5 16QAM 10M

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T276, 4ft SMA Cable (SN: 244639 002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
829.00	10.81	V	0.9	0.0	9.91	38.5	-28.5	
829.00	20.81	H	0.9	0.0	19.91	38.5	-18.5	
Mid Ch								
836.50	11.89	V	0.9	0.0	10.99	38.5	-27.5	
836.50	21.32	H	0.9	0.0	20.42	38.5	-18.0	
High Ch								
844.00	11.68	V	0.9	0.0	10.78	38.5	-27.7	
844.00	21.17	H	0.9	0.0	20.27	38.5	-18.2	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

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Band

LTE5

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 4/2/2015
Test Engineer: Charles Vergonio
Configuration: X-pos EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Hybrid T185, and Chamber C SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	11.96	V	0.9	0.0	11.06	38.5	-27.4	
829.00	21.71	H	0.9	0.0	20.81	38.5	-17.7	
Mid Ch								
836.50	12.66	V	0.9	0.0	11.76	38.5	-26.7	
836.50	21.82	H	0.9	0.0	20.92	38.5	-17.6	
High Ch								
844.00	12.57	V	0.9	0.0	11.67	38.5	-26.8	
844.00	21.94	H	0.9	0.0	21.04	38.5	-17.5	

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Band

LTE5

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	13.15	V	0.9	0.0	12.25	38.5	-26.3	
826.50	22.91	H	0.9	0.0	22.01	38.5	-16.5	
Mid Ch								
836.50	13.76	V	0.9	0.0	12.86	38.5	-25.6	
836.50	23.19	H	0.9	0.0	22.29	38.5	-16.2	
High Ch								
846.50	13.03	V	0.9	0.0	12.13	38.5	-26.4	
846.50	22.36	H	0.9	0.0	21.46	38.5	-17.0	

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Band

LTE5

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 5 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	13.84	V	0.9	0.0	12.94	38.5	-25.6	
826.50	23.45	H	0.9	0.0	22.55	38.5	-16.0	
Mid Ch								
836.50	15.24	V	0.9	0.0	14.34	38.5	-24.2	
836.50	23.56	H	0.9	0.0	22.66	38.5	-15.8	
High Ch								
846.50	14.01	V	0.9	0.0	13.11	38.5	-25.4	
846.50	22.84	H	0.9	0.0	21.94	38.5	-16.6	

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Band

LTE5

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 5 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	13.55	V	0.9	0.0	12.65	38.5	-25.9	
825.50	23.29	H	0.9	0.0	22.39	38.5	-16.1	
Mid Ch								
836.50	15.43	V	0.9	0.0	14.53	38.5	-24.0	
836.50	22.89	H	0.9	0.0	21.99	38.5	-16.5	
High Ch								
847.50	12.38	V	0.9	0.0	11.48	38.5	-27.0	
847.50	21.01	H	0.9	0.0	20.11	38.5	-18.4	

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Band

LTE5

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 5 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	14.19	V	0.9	0.0	13.29	38.5	-25.2	
825.50	23.57	H	0.9	0.0	22.67	38.5	-15.8	
Mid Ch								
836.50	15.98	V	0.9	0.0	15.08	38.5	-23.4	
836.50	23.43	H	0.9	0.0	22.53	38.5	-16.0	
High Ch								
847.50	13.73	V	0.9	0.0	12.83	38.5	-25.7	
847.50	22.17	H	0.9	0.0	21.27	38.5	-17.2	

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Band

LTE5

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	15.90	V	0.9	0.0	15.00	38.5	-23.5	
824.70	22.36	H	0.9	0.0	21.46	38.5	-17.0	
Mid Ch								
836.50	16.56	V	0.9	0.0	15.66	38.5	-22.8	
836.50	22.01	H	0.9	0.0	21.11	38.5	-17.4	
High Ch								
848.30	13.13	V	0.9	0.0	12.23	38.5	-26.3	
848.30	23.30	H	0.9	0.0	22.40	38.5	-16.1	

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Band

LTE5

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/11/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Hybrid T130, and Chamber A SMA Cables
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	16.72	V	0.9	0.0	15.82	38.5	-22.7	
824.70	22.73	H	0.9	0.0	21.83	38.5	-16.7	
Mid Ch								
836.50	16.58	V	0.9	0.0	15.68	38.5	-22.8	
836.50	22.44	H	0.9	0.0	21.54	38.5	-17.0	
High Ch								
848.30	13.31	V	0.9	0.0	12.41	38.5	-26.1	
848.30	23.36	H	0.9	0.0	22.46	38.5	-16.0	

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LTE Band 4

Band

LTE4

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	15.77	V	0.9	8.4	23.27	30.0	-6.7	
1720.00	16.24	H	0.9	8.4	23.73	30.0	-6.3	
Mid Ch								
1732.50	15.68	V	0.9	8.4	23.18	30.0	-6.8	
1732.50	16.73	H	0.9	8.4	24.23	30.0	-5.8	
High Ch								
1745.00	16.83	V	0.9	8.4	24.33	30.0	-5.7	
1745.00	18.30	H	0.9	8.4	25.80	30.0	-4.2	

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Band

LTE4

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	16.94	V	0.9	8.4	24.44	30.0	-5.6	
1720.00	17.77	H	0.9	8.4	25.26	30.0	-4.7	
Mid Ch								
1732.50	17.22	V	0.9	8.4	24.72	30.0	-5.3	
1732.50	18.08	H	0.9	8.4	25.58	30.0	-4.4	
High Ch								
1745.00	17.20	V	0.9	8.4	24.70	30.0	-5.3	
1745.00	19.16	H	0.9	8.4	26.66	30.0	-3.3	

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Band

LTE4

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	16.20	V	0.9	8.4	23.70	30.0	-6.3	
1717.50	16.61	H	0.9	8.4	24.11	30.0	-5.9	
Mid Ch								
1732.50	16.22	V	0.9	8.4	23.72	30.0	-6.3	
1732.50	17.34	H	0.9	8.4	24.84	30.0	-5.2	
High Ch								
1747.50	14.59	V	0.9	8.4	22.09	30.0	-7.9	
1747.50	18.67	H	0.9	8.4	26.17	30.0	-3.8	

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Band

LTE4

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	17.42	V	0.9	8.4	24.92	30.0	-5.1	
1717.50	17.59	H	0.9	8.4	25.08	30.0	-4.9	
Mid Ch								
1732.50	17.50	V	0.9	8.4	25.00	30.0	-5.0	
1732.50	18.44	H	0.9	8.4	25.94	30.0	-4.1	
High Ch								
1747.50	14.62	V	0.9	8.4	22.12	30.0	-7.9	
1747.50	18.76	H	0.9	8.4	26.26	30.0	-3.7	

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Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	17.34	V	0.9	8.4	24.84	30.0	-5.2	
1715.00	17.37	H	0.9	8.4	24.87	30.0	-5.1	
Mid Ch								
1732.50	16.46	V	0.9	8.4	23.96	30.0	-6.0	
1732.50	17.84	H	0.9	8.4	25.34	30.0	-4.7	
High Ch								
1750.00	15.88	V	0.9	8.4	23.38	30.0	-6.6	
1750.00	17.67	H	0.9	8.4	25.17	30.0	-4.8	

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Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	17.71	V	0.9	8.4	25.21	30.0	-4.8	
1715.00	17.95	H	0.9	8.4	25.45	30.0	-4.6	
Mid Ch								
1732.50	17.54	V	0.9	8.4	25.04	30.0	-5.0	
1732.50	17.94	H	0.9	8.4	25.44	30.0	-4.6	
High Ch								
1750.00	16.29	V	0.9	8.4	23.79	30.0	-6.2	
1750.00	18.04	H	0.9	8.4	25.54	30.0	-4.5	

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Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	15.88	V	0.9	8.4	23.38	30.0	-6.6	
1712.50	16.27	H	0.9	8.4	23.77	30.0	-6.2	
Mid Ch								
1732.50	16.06	V	0.9	8.4	23.56	30.0	-6.4	
1732.50	17.01	H	0.9	8.4	24.51	30.0	-5.5	
High Ch								
1752.50	16.30	V	0.9	8.4	23.80	30.0	-6.2	
1752.50	17.85	H	0.9	8.4	25.35	30.0	-4.7	

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Band

LTE4

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	17.09	V	0.9	8.4	24.59	30.0	-5.4	
1712.50	17.48	H	0.9	8.4	24.98	30.0	-5.0	
Mid Ch								
1732.50	17.38	V	0.9	8.4	24.88	30.0	-5.1	
1732.50	18.35	H	0.9	8.4	25.85	30.0	-4.2	
High Ch								
1752.50	16.38	V	0.9	8.4	23.88	30.0	-6.1	
1752.50	18.16	H	0.9	8.4	25.66	30.0	-4.3	

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Band

LTE4

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	10.90	V	0.9	8.4	18.40	30.0	-11.6	
1711.50	15.51	H	0.9	8.4	23.01	30.0	-7.0	
Mid Ch								
1732.50	16.40	V	0.9	8.4	23.90	30.0	-6.1	
1732.50	17.18	H	0.9	8.4	24.68	30.0	-5.3	
High Ch								
1753.50	16.74	V	0.9	8.4	24.24	30.0	-5.8	
1753.50	13.87	H	0.9	8.4	21.37	30.0	-8.6	

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Band

LTE4

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	11.37	V	0.9	8.4	18.87	30.0	-11.1	
1711.50	16.17	H	0.9	8.4	23.67	30.0	-6.3	
Mid Ch								
1732.50	16.61	V	0.9	8.4	24.11	30.0	-5.9	
1732.50	18.15	H	0.9	8.4	25.65	30.0	-4.4	
High Ch								
1753.50	16.92	V	0.9	8.4	24.42	30.0	-5.6	
1753.50	14.54	H	0.9	8.4	22.04	30.0	-8.0	

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Band

LTE4

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	16.22	V	0.9	8.4	23.72	30.0	-6.3	
1710.70	16.69	H	0.9	8.4	24.18	30.0	-5.8	
Mid Ch								
1732.50	14.44	V	0.9	8.4	21.94	30.0	-8.1	
1732.50	17.57	H	0.9	8.4	25.07	30.0	-4.9	
High Ch								
1754.30	13.82	V	0.9	8.4	21.32	30.0	-8.7	
1754.30	16.04	H	0.9	8.4	23.54	30.0	-6.5	

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Band

LTE4

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	17.08	V	0.9	8.4	24.58	30.0	-5.4	
1710.70	17.64	H	0.9	8.4	25.14	30.0	-4.9	
Mid Ch								
1732.50	15.01	V	0.9	8.4	22.51	30.0	-7.5	
1732.50	18.38	H	0.9	8.4	25.88	30.0	-4.1	
High Ch								
1754.30	14.65	V	0.9	8.4	22.15	30.0	-7.8	
1754.30	16.92	H	0.9	8.4	24.42	30.0	-5.6	

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LTE Band 2

Band

LTE2

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	14.32	V	0.9	8.5	21.92	33.0	-11.1	
1860.00	15.25	H	0.9	8.5	22.85	33.0	-10.1	
Mid Ch								
1880.00	14.08	V	0.9	8.5	21.68	33.0	-11.3	
1880.00	15.44	H	0.9	8.5	23.04	33.0	-10.0	
High Ch								
1900.00	15.42	V	0.9	8.5	23.02	33.0	-10.0	
1900.00	15.19	H	0.9	8.5	22.79	33.0	-10.2	

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Band

LTE2

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	14.92	V	0.9	8.5	22.52	33.0	-10.5	
1860.00	16.61	H	0.9	8.5	24.21	33.0	-8.8	
Mid Ch								
1880.00	14.93	V	0.9	8.5	22.53	33.0	-10.5	
1880.00	16.72	H	0.9	8.5	24.32	33.0	-8.7	
High Ch								
1900.00	15.55	V	0.9	8.5	23.15	33.0	-9.8	
1900.00	15.78	H	0.9	8.5	23.38	33.0	-9.6	

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Band

LTE2

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	14.39	V	0.9	8.5	21.99	33.0	-11.0	
1857.50	16.35	H	0.9	8.5	23.95	33.0	-9.0	
Mid Ch								
1880.00	13.91	V	0.9	8.5	21.51	33.0	-11.5	
1880.00	15.66	H	0.9	8.5	23.26	33.0	-9.7	
High Ch								
1902.50	14.49	V	0.9	8.5	22.09	33.0	-10.9	
1902.50	16.84	H	0.9	8.5	24.44	33.0	-8.6	

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Band

LTE2

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	15.32	V	0.9	8.5	22.92	33.0	-10.1	
1857.50	16.55	H	0.9	8.5	24.15	33.0	-8.8	
Mid Ch								
1880.00	15.12	V	0.9	8.5	22.72	33.0	-10.3	
1880.00	16.32	H	0.9	8.5	23.92	33.0	-9.1	
High Ch								
1902.50	14.95	V	0.9	8.5	22.55	33.0	-10.5	
1902.50	17.02	H	0.9	8.5	24.62	33.0	-8.4	

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Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	14.32	V	0.9	8.5	21.92	33.0	-11.1	
1855.00	15.27	H	0.9	8.5	22.87	33.0	-10.1	
Mid Ch								
1880.00	14.53	V	0.9	8.5	22.13	33.0	-10.9	
1880.00	16.62	H	0.9	8.5	24.22	33.0	-8.8	
High Ch								
1905.00	13.92	V	0.9	8.5	21.52	33.0	-11.5	
1905.00	15.84	H	0.9	8.5	23.44	33.0	-9.6	

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Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	15.22	V	0.9	8.5	22.82	33.0	-10.2	
1855.00	16.06	H	0.9	8.5	23.66	33.0	-9.3	
Mid Ch								
1880.00	15.21	V	0.9	8.5	22.81	33.0	-10.2	
1880.00	16.79	H	0.9	8.5	24.39	33.0	-8.6	
High Ch								
1905.00	15.68	V	0.9	8.5	23.28	33.0	-9.7	
1905.00	16.62	H	0.9	8.5	24.22	33.0	-8.8	

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Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	14.32	V	0.9	8.5	21.92	33.0	-11.1	
1855.00	15.27	H	0.9	8.5	22.87	33.0	-10.1	
Mid Ch								
1880.00	14.53	V	0.9	8.5	22.13	33.0	-10.9	
1880.00	16.62	H	0.9	8.5	24.22	33.0	-8.8	
High Ch								
1905.00	13.92	V	0.9	8.5	21.52	33.0	-11.5	
1905.00	15.84	H	0.9	8.5	23.44	33.0	-9.6	

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Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	15.22	V	0.9	8.5	22.82	33.0	-10.2	
1855.00	16.06	H	0.9	8.5	23.66	33.0	-9.3	
Mid Ch								
1880.00	15.21	V	0.9	8.5	22.81	33.0	-10.2	
1880.00	16.79	H	0.9	8.5	24.39	33.0	-8.6	
High Ch								
1905.00	15.68	V	0.9	8.5	23.28	33.0	-9.7	
1905.00	16.62	H	0.9	8.5	24.22	33.0	-8.8	

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Band

LTE2

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	14.05	V	0.9	8.5	21.65	33.0	-11.4	
1852.50	14.68	H	0.9	8.5	22.28	33.0	-10.7	
Mid Ch								
1880.00	14.35	V	0.9	8.5	21.95	33.0	-11.0	
1880.00	14.90	H	0.9	8.5	22.50	33.0	-10.5	
High Ch								
1907.50	14.13	V	0.9	8.5	21.73	33.0	-11.3	
1907.50	15.96	H	0.9	8.5	23.56	33.0	-9.4	

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Band

LTE2

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	15.16	V	0.9	8.5	22.76	33.0	-10.2	
1852.50	16.09	H	0.9	8.5	23.69	33.0	-9.3	
Mid Ch								
1880.00	15.49	V	0.9	8.5	23.09	33.0	-9.9	
1880.00	16.44	H	0.9	8.5	24.04	33.0	-9.0	
High Ch								
1907.50	14.24	V	0.9	8.5	21.84	33.0	-11.2	
1907.50	16.16	H	0.9	8.5	23.76	33.0	-9.2	

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Band

LTE2

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	14.56	V	0.9	8.5	22.16	33.0	-10.8	
1851.50	15.76	H	0.9	8.5	23.36	33.0	-9.6	
Mid Ch								
1880.00	14.62	V	0.9	8.5	22.22	33.0	-10.8	
1880.00	15.62	H	0.9	8.5	23.22	33.0	-9.8	
High Ch								
1908.50	14.54	V	0.9	8.5	22.14	33.0	-10.9	
1908.50	15.88	H	0.9	8.5	23.48	33.0	-9.5	

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Band

LTE2

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	15.08	V	0.9	8.5	22.68	33.0	-10.3	
1851.50	16.32	H	0.9	8.5	23.92	33.0	-9.1	
Mid Ch								
1880.00	15.30	V	0.9	8.5	22.90	33.0	-10.1	
1880.00	16.54	H	0.9	8.5	24.14	33.0	-8.9	
High Ch								
1908.50	15.74	V	0.9	8.5	23.34	33.0	-9.7	
1908.50	16.58	H	0.9	8.5	24.18	33.0	-8.8	

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Band

LTE2

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	15.67	V	0.9	8.5	23.27	33.0	-9.7	
1850.70	15.65	H	0.9	8.5	23.25	33.0	-9.7	
Mid Ch								
1880.00	13.89	V	0.9	8.5	21.49	33.0	-11.5	
1880.00	14.67	H	0.9	8.5	22.27	33.0	-10.7	
High Ch								
1909.30	14.50	V	0.9	8.5	22.10	33.0	-10.9	
1909.30	14.77	H	0.9	8.5	22.37	33.0	-10.6	

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Band

LTE2

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20187
Date: 3/9/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T72, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	15.76	V	0.9	8.5	23.36	33.0	-9.6	
1850.70	16.06	H	0.9	8.5	23.66	33.0	-9.3	
Mid Ch								
1880.00	14.83	V	0.9	8.5	22.43	33.0	-10.6	
1880.00	15.36	H	0.9	8.5	22.96	33.0	-10.0	
High Ch								
1909.30	15.62	V	0.9	8.5	23.22	33.0	-9.8	
1909.30	16.29	H	0.9	8.5	23.89	33.0	-9.1	

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27.53

LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than 43+10Log(P)dB at the channel edge and (55+10Log(P)dB) at 5.5MHz from the channel edges.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). 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 emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). 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 emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

CDMA and LTE

RESULTS

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9.2.1. SPURIOUS RADIATION PLOTS

CDMA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20187
Date: 3/2/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: CDMA EVDO BC1 Harmonics

Band BC1

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25									
3702.50	-17.9	V	3.0	35.9	1.0	-52.8	-13.0	-39.8	
5553.75	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7405.00	-12.6	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3702.50	-17.1	H	3.0	35.9	1.0	-52.0	-13.0	-39.0	
5553.75	-14.9	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7405.00	-11.3	H	3.0	35.7	1.0	-46.0	-13.0	-33.0	
Mid Ch, 1880									
3760.00	-17.1	V	3.0	35.8	1.0	-51.9	-13.0	-38.9	
5640.00	-15.6	V	3.0	35.5	1.0	-50.1	-13.0	-37.1	
7520.00	-12.4	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
3760.00	-15.5	H	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-11.8	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
High Ch, 1908.75									
3817.50	-16.6	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5726.25	-14.3	V	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7635.00	-12.4	V	3.0	35.8	1.0	-47.2	-13.0	-34.2	
3817.50	-15.0	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	
5726.25	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7635.00	-11.1	H	3.0	35.8	1.0	-45.9	-13.0	-32.9	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20187
Date: 3/2/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: CDMA 1xRTT BC1 Harmonics

Band BC1 1xRTT

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25									
3702.50	-17.3	V	3.0	35.9	1.0	-52.1	-13.0	-39.1	
5553.75	-14.3	V	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7405.00	-11.8	V	3.0	35.7	1.0	-46.6	-13.0	-33.6	
3702.50	-18.6	H	3.0	35.9	1.0	-53.5	-13.0	-40.5	
5553.75	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7405.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
Mid Ch, 1880									
3760.00	-17.7	V	3.0	35.8	1.0	-52.5	-13.0	-39.5	
5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7520.00	-12.5	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3760.00	-17.8	H	3.0	35.8	1.0	-52.6	-13.0	-39.6	
5640.00	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-11.5	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
High Ch, 1908.75									
3817.50	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5726.25	-14.1	V	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7635.00	-12.2	V	3.0	35.8	1.0	-46.9	-13.0	-33.9	
3817.50	-17.6	H	3.0	35.8	1.0	-52.3	-13.0	-39.3	
5726.25	-15.1	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7635.00	-11.4	H	3.0	35.8	1.0	-46.1	-13.0	-33.1	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20187
Date: 3/2/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: CDMA EVDO BC0 Harmonics

Band BC0

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-16.6	V	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2474.10	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3298.80	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
1649.40	-17.7	H	3.0	37.4	1.0	-54.1	-13.0	-41.1	
2474.10	-12.7	H	3.0	36.4	1.0	-48.1	-13.0	-35.1	
3298.80	-20.1	H	3.0	35.8	1.0	-54.9	-13.0	-41.9	
Mid Ch, 836.52									
1673.04	-15.7	V	3.0	37.3	1.0	-52.0	-13.0	-39.0	
2509.56	-20.6	V	3.0	36.4	1.0	-56.0	-13.0	-43.0	
3346.08	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
1673.04	-17.6	H	3.0	37.3	1.0	-53.9	-13.0	-40.9	
2509.56	-12.1	H	3.0	36.4	1.0	-47.5	-13.0	-34.5	
3346.08	-19.9	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
High Ch, 848.31									
1696.62	-18.2	V	3.0	37.3	1.0	-54.5	-13.0	-41.5	
2544.93	-20.7	V	3.0	36.3	1.0	-56.0	-13.0	-43.0	
3393.24	-19.7	V	3.0	35.7	1.0	-54.4	-13.0	-41.4	
1696.62	-16.8	H	3.0	37.3	1.0	-53.1	-13.0	-40.1	
2544.93	-13.3	H	3.0	36.3	1.0	-48.6	-13.0	-35.6	
3393.24	-20.1	H	3.0	35.7	1.0	-54.8	-13.0	-41.8	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20187
Date: 3/2/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: CDMA 1xRTT BC0 Harmonics

Band

BC0

1xRTT

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-17.7	V	3.0	37.4	1.0	-54.1	-13.0	-41.1	
2474.10	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3298.80	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
1649.40	-15.9	H	3.0	37.4	1.0	-52.3	-13.0	-39.3	
2474.10	-18.8	H	3.0	36.4	1.0	-54.2	-13.0	-41.2	
3298.80	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
Mid Ch, 836.52									
1673.04	-17.3	V	3.0	37.3	1.0	-53.6	-13.0	-40.6	
2509.56	-20.9	V	3.0	36.4	1.0	-56.3	-13.0	-43.3	
3346.08	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
1673.04	-16.7	H	3.0	37.3	1.0	-53.0	-13.0	-40.0	
2509.56	-20.1	H	3.0	36.4	1.0	-55.5	-13.0	-42.5	
3346.08	-19.6	H	3.0	35.8	1.0	-54.4	-13.0	-41.4	
High Ch, 848.31									
1696.62	-19.6	V	3.0	37.3	1.0	-55.9	-13.0	-42.9	
2544.93	-20.8	V	3.0	36.3	1.0	-56.1	-13.0	-43.1	
3393.24	-19.8	V	3.0	35.7	1.0	-54.5	-13.0	-41.5	
1696.62	-17.8	H	3.0	37.3	1.0	-54.1	-13.0	-41.1	
2544.93	-18.6	H	3.0	36.3	1.0	-53.9	-13.0	-40.9	
3393.24	-19.6	H	3.0	35.7	1.0	-54.3	-13.0	-41.3	

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LTE Band 13

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth

Band

LTE13

10MHz

16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	-8.7	V	3.0	37.1	1.0	-44.9	-13.0	-31.9	
2346.00	-22.5	V	3.0	36.5	1.0	-58.0	-13.0	-45.0	
3128.00	-20.7	V	3.0	36.3	1.0	-56.0	-13.0	-43.0	
1564.00	-11.3	H	3.0	37.1	1.0	-47.4	-13.0	-34.4	
2346.00	-23.4	H	3.0	36.5	1.0	-58.9	-13.0	-45.9	
3128.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	
Mid Ch, 782									
1564.00	-8.7	V	3.0	37.1	1.0	-44.9	-13.0	-31.9	
2346.00	-22.5	V	3.0	36.5	1.0	-58.0	-13.0	-45.0	
3128.00	-20.7	V	3.0	36.3	1.0	-56.0	-13.0	-43.0	
1564.00	-11.3	H	3.0	37.1	1.0	-47.4	-13.0	-34.4	
2346.00	-23.4	H	3.0	36.5	1.0	-58.9	-13.0	-45.9	
3128.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	
High Ch, 782									
1564.00	-8.7	V	3.0	37.1	1.0	-44.9	-13.0	-31.9	
2346.00	-22.5	V	3.0	36.5	1.0	-58.0	-13.0	-45.0	
3128.00	-20.7	V	3.0	36.3	1.0	-56.0	-13.0	-43.0	
1564.00	-11.3	H	3.0	37.1	1.0	-47.4	-13.0	-34.4	
2346.00	-23.4	H	3.0	36.5	1.0	-58.9	-13.0	-45.9	
3128.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	

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Band

LTE5

10MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	-8.8	V	3.0	37.1	1.0	-45.0	-13.0	-32.0	
2346.00	-22.4	V	3.0	36.5	1.0	-57.9	-13.0	-44.9	
3128.00	-20.6	V	3.0	36.3	1.0	-55.9	-13.0	-42.9	
1564.00	-11.0	H	3.0	37.1	1.0	-47.1	-13.0	-34.1	
2346.00	-24.0	H	3.0	36.5	1.0	-59.5	-13.0	-46.5	
3128.00	-20.7	H	3.0	36.3	1.0	-56.0	-13.0	-43.0	
Mid Ch, 782									
1564.00	-8.8	V	3.0	37.1	1.0	-45.0	-13.0	-32.0	
2346.00	-22.4	V	3.0	36.5	1.0	-57.9	-13.0	-44.9	
3128.00	-20.6	V	3.0	36.3	1.0	-55.9	-13.0	-42.9	
1564.00	-11.0	H	3.0	37.1	1.0	-47.1	-13.0	-34.1	
2346.00	-24.0	H	3.0	36.5	1.0	-59.5	-13.0	-46.5	
3128.00	-20.7	H	3.0	36.3	1.0	-56.0	-13.0	-43.0	
High Ch, 782									
1564.00	-8.8	V	3.0	37.1	1.0	-45.0	-13.0	-32.0	
2346.00	-22.4	V	3.0	36.5	1.0	-57.9	-13.0	-44.9	
3128.00	-20.6	V	3.0	36.3	1.0	-55.9	-13.0	-42.9	
1564.00	-11.0	H	3.0	37.1	1.0	-47.1	-13.0	-34.1	
2346.00	-24.0	H	3.0	36.5	1.0	-59.5	-13.0	-46.5	
3128.00	-20.7	H	3.0	36.3	1.0	-56.0	-13.0	-43.0	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth

Band
LTE13
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-9.8	V	3.0	37.1	1.0	-45.9	-13.0	-32.9	
2338.50	-22.6	V	3.0	36.5	1.0	-58.1	-13.0	-45.1	
3118.00	-20.5	V	3.0	36.3	1.0	-55.8	-13.0	-42.8	
1559.00	-12.2	H	3.0	37.1	1.0	-48.4	-13.0	-35.4	
2338.50	-24.0	H	3.0	36.5	1.0	-59.5	-13.0	-46.5	
3118.00	-20.4	H	3.0	36.3	1.0	-55.7	-13.0	-42.7	
Mid Ch, 782									
1564.00	-10.7	V	3.0	37.1	1.0	-46.9	-13.0	-33.9	
2346.00	-22.7	V	3.0	36.5	1.0	-58.2	-13.0	-45.2	
3128.00	-21.0	V	3.0	36.3	1.0	-56.3	-13.0	-43.3	
1564.00	-12.6	H	3.0	37.1	1.0	-48.7	-13.0	-35.7	
2346.00	-23.9	H	3.0	36.5	1.0	-59.4	-13.0	-46.4	
3128.00	-21.4	H	3.0	36.3	1.0	-56.7	-13.0	-43.7	
High Ch, 784.5									
1569.00	-10.9	V	3.0	37.1	1.0	-47.0	-13.0	-34.0	
2353.50	-22.7	V	3.0	36.5	1.0	-58.2	-13.0	-45.2	
3138.00	-20.4	V	3.0	36.3	1.0	-55.7	-13.0	-42.7	
1569.00	-12.5	H	3.0	37.1	1.0	-48.7	-13.0	-35.7	
2353.50	-24.6	H	3.0	36.5	1.0	-60.1	-13.0	-47.1	
3138.00	-21.2	H	3.0	36.3	1.0	-56.5	-13.0	-43.5	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth

Band
LTE13
5MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-10.1	V	3.0	37.1	1.0	-46.2	-13.0	-33.2	
2338.50	-22.3	V	3.0	36.5	1.0	-57.8	-13.0	-44.8	
3118.00	-20.3	V	3.0	36.3	1.0	-55.6	-13.0	-42.6	
1559.00	-11.5	H	3.0	37.1	1.0	-47.6	-13.0	-34.6	
2338.50	-23.8	H	3.0	36.5	1.0	-59.3	-13.0	-46.3	
3118.00	-20.7	H	3.0	36.3	1.0	-56.0	-13.0	-43.0	
Mid Ch, 782									
1564.00	-10.2	V	3.0	37.1	1.0	-46.3	-13.0	-33.3	
2346.00	-22.7	V	3.0	36.5	1.0	-58.2	-13.0	-45.2	
3128.00	-20.7	V	3.0	36.3	1.0	-56.0	-13.0	-43.0	
1564.00	-12.4	H	3.0	37.1	1.0	-48.5	-13.0	-35.5	
2346.00	-23.6	H	3.0	36.5	1.0	-59.1	-13.0	-46.1	
3128.00	-20.8	H	3.0	36.3	1.0	-56.1	-13.0	-43.1	
High Ch, 784.5									
1569.00	-10.6	V	3.0	37.1	1.0	-46.7	-13.0	-33.7	
2353.50	-22.5	V	3.0	36.5	1.0	-58.0	-13.0	-45.0	
3138.00	-20.2	V	3.0	36.3	1.0	-55.5	-13.0	-42.5	
1569.00	-12.9	H	3.0	37.1	1.0	-49.0	-13.0	-36.0	
2353.50	-24.3	H	3.0	36.5	1.0	-59.8	-13.0	-46.8	
3138.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	

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LTE Band 5

Band

LTE5

10MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-21.8	V	3.0	37.0	1.0	-57.8	-13.0	-44.8	
2487.00	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3316.00	-19.7	V	3.0	36.1	1.0	-54.8	-13.0	-41.8	
1658.00	-19.1	H	3.0	37.0	1.0	-55.1	-13.0	-42.1	
2487.00	-20.1	H	3.0	36.4	1.0	-55.5	-13.0	-42.5	
3316.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
Mid Ch, 836.5									
1673.00	-22.8	V	3.0	37.0	1.0	-58.8	-13.0	-45.8	
2509.50	-21.1	V	3.0	36.4	1.0	-56.5	-13.0	-43.5	
3346.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1673.00	-19.6	H	3.0	37.0	1.0	-55.6	-13.0	-42.6	
2509.50	-17.4	H	3.0	36.4	1.0	-52.8	-13.0	-39.8	
3346.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 844									
1688.00	-20.7	V	3.0	37.0	1.0	-56.7	-13.0	-43.7	
2532.00	-21.6	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3376.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1688.00	-18.0	H	3.0	37.0	1.0	-54.0	-13.0	-41.0	
2532.00	-19.2	H	3.0	36.4	1.0	-54.6	-13.0	-41.6	
3376.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth

Band LTE5 10MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-21.9	V	3.0	37.0	1.0	-57.9	-13.0	-44.9	
2487.00	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3316.00	-19.1	V	3.0	36.1	1.0	-54.2	-13.0	-41.2	
1658.00	-18.2	H	3.0	37.0	1.0	-54.2	-13.0	-41.2	
2487.00	-19.7	H	3.0	36.4	1.0	-55.1	-13.0	-42.1	
3316.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	
Mid Ch, 836.5									
1673.00	-21.2	V	3.0	37.0	1.0	-57.2	-13.0	-44.2	
2509.50	-20.9	V	3.0	36.4	1.0	-56.3	-13.0	-43.3	
3346.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.00	-19.4	H	3.0	37.0	1.0	-55.4	-13.0	-42.4	
2509.50	-18.0	H	3.0	36.4	1.0	-53.4	-13.0	-40.4	
3346.00	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3	
High Ch, 844									
1688.00	-21.2	V	3.0	37.0	1.0	-57.2	-13.0	-44.2	
2532.00	-21.6	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3376.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1688.00	-18.1	H	3.0	37.0	1.0	-54.1	-13.0	-41.1	
2532.00	-17.8	H	3.0	36.4	1.0	-53.2	-13.0	-40.2	
3376.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber C
Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth

Band
LTE5
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5									
1653.00	-20.0	V	3.0	37.0	1.0	-56.0	-13.0	-43.0	
2479.50	-21.5	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3306.00	-20.7	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
1653.00	-19.6	H	3.0	37.0	1.0	-55.6	-13.0	-42.6	
2479.50	-19.7	H	3.0	36.4	1.0	-55.2	-13.0	-42.2	
3306.00	-20.9	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
Mid Ch, 836.5									
1673.00	-20.0	V	3.0	37.0	1.0	-56.0	-13.0	-43.0	
2509.50	-21.0	V	3.0	36.4	1.0	-56.4	-13.0	-43.4	
3346.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1673.00	-20.0	H	3.0	37.0	1.0	-56.0	-13.0	-43.0	
2509.50	-18.4	H	3.0	36.4	1.0	-53.8	-13.0	-40.8	
3346.00	-20.7	H	3.0	36.1	1.0	-55.8	-13.0	-42.8	
High Ch, 846.5									
1693.00	-20.1	V	3.0	37.0	1.0	-56.1	-13.0	-43.1	
2539.50	-21.6	V	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3386.00	-20.8	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
1693.00	-19.1	H	3.0	37.0	1.0	-55.1	-13.0	-42.1	
2539.50	-18.3	H	3.0	36.4	1.0	-53.7	-13.0	-40.7	
3386.00	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber C
Mode: LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth

Band LTE5 5MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5									
1653.00	-19.0	V	3.0	37.0	1.0	-55.0	-13.0	-42.0	
2479.50	-21.3	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3306.00	-20.4	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1653.00	-19.2	H	3.0	37.0	1.0	-55.2	-13.0	-42.2	
2479.50	-19.5	H	3.0	36.4	1.0	-55.0	-13.0	-42.0	
3306.00	-20.4	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
Mid Ch, 836.5									
1673.00	-21.0	V	3.0	37.0	1.0	-57.0	-13.0	-44.0	
2509.50	-20.4	V	3.0	36.4	1.0	-55.8	-13.0	-42.8	
3346.00	-20.0	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
1673.00	-19.9	H	3.0	37.0	1.0	-55.9	-13.0	-42.9	
2509.50	-18.0	H	3.0	36.4	1.0	-53.4	-13.0	-40.4	
3346.00	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
High Ch, 846.5									
1693.00	-18.7	V	3.0	37.0	1.0	-54.7	-13.0	-41.7	
2539.50	-21.6	V	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3386.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1693.00	-17.9	H	3.0	37.0	1.0	-53.9	-13.0	-40.9	
2539.50	-18.1	H	3.0	36.4	1.0	-53.5	-13.0	-40.5	
3386.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 3MHz Bandwidth

Band LTE5 3MHz 16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-19.8	V	3.0	37.0	1.0	-55.8	-13.0	-42.8	
2476.50	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3302.00	-20.1	V	3.0	36.2	1.0	-55.2	-13.0	-42.2	
1651.00	-17.0	H	3.0	37.0	1.0	-53.1	-13.0	-40.1	
2476.50	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	
3302.00	-20.6	H	3.0	36.2	1.0	-55.8	-13.0	-42.8	
Mid Ch, 836.5									
1673.00	-21.7	V	3.0	37.0	1.0	-57.7	-13.0	-44.7	
2509.50	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3346.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1673.00	-19.1	H	3.0	37.0	1.0	-55.1	-13.0	-42.1	
2509.50	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	
3346.00	-20.9	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
High Ch, 847.5									
1695.00	-20.5	V	3.0	37.0	1.0	-56.5	-13.0	-43.5	
2542.50	-22.1	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3390.00	-20.3	V	3.0	36.1	1.0	-55.4	-13.0	-42.4	
1695.00	-19.8	H	3.0	37.0	1.0	-55.8	-13.0	-42.8	
2542.50	-20.9	H	3.0	36.4	1.0	-56.4	-13.0	-43.4	
3390.00	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth

Band
LTE5
3MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-19.4	V	3.0	37.0	1.0	-55.5	-13.0	-42.5	
2476.50	-21.2	V	3.0	36.4	1.0	-56.6	-13.0	-43.6	
3302.00	-20.2	V	3.0	36.2	1.0	-55.3	-13.0	-42.3	
1651.00	-17.2	H	3.0	37.0	1.0	-53.3	-13.0	-40.3	
2476.50	-19.8	H	3.0	36.4	1.0	-55.2	-13.0	-42.2	
3302.00	-20.5	H	3.0	36.2	1.0	-55.7	-13.0	-42.7	
Mid Ch, 836.5									
1673.00	-21.3	V	3.0	37.0	1.0	-57.3	-13.0	-44.3	
2509.50	-21.3	V	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3346.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1673.00	-18.1	H	3.0	37.0	1.0	-54.1	-13.0	-41.1	
2509.50	-19.0	H	3.0	36.4	1.0	-54.4	-13.0	-41.4	
3346.00	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
High Ch, 847.5									
1695.00	-20.0	V	3.0	37.0	1.0	-56.0	-13.0	-43.0	
2542.50	-21.5	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3390.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1695.00	-19.9	H	3.0	37.0	1.0	-55.9	-13.0	-42.9	
2542.50	-20.8	H	3.0	36.4	1.0	-56.3	-13.0	-43.3	
3390.00	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	

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Band

LTE5

1.4MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-19.0	V	3.0	37.0	1.0	-55.0	-13.0	-42.0	
2474.10	-21.7	V	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3298.80	-20.5	V	3.0	36.2	1.0	-55.6	-13.0	-42.6	
1649.40	-19.0	H	3.0	37.0	1.0	-55.0	-13.0	-42.0	
2474.10	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3298.80	-20.0	H	3.0	36.2	1.0	-55.2	-13.0	-42.2	
Mid Ch, 836.5									
1673.00	-20.5	V	3.0	37.0	1.0	-56.5	-13.0	-43.5	
2509.50	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3346.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-18.9	H	3.0	37.0	1.0	-54.9	-13.0	-41.9	
2509.50	-22.6	H	3.0	36.4	1.0	-58.0	-13.0	-45.0	
3346.00	-20.1	H	3.0	36.1	1.0	-55.2	-13.0	-42.2	
High Ch, 848.3									
1696.60	-20.3	V	3.0	37.0	1.0	-56.3	-13.0	-43.3	
2544.90	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
3393.20	-21.1	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1696.60	-19.8	H	3.0	37.0	1.0	-55.8	-13.0	-42.8	
2544.90	-21.7	H	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3393.20	-20.7	H	3.0	36.1	1.0	-55.8	-13.0	-42.8	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth

Band LTE5 1.4MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-18.9	V	3.0	37.0	1.0	-55.0	-13.0	-42.0	
2474.10	-20.5	V	3.0	36.4	1.0	-55.9	-13.0	-42.9	
3298.80	-20.1	V	3.0	36.2	1.0	-55.2	-13.0	-42.2	
1649.40	-11.8	H	3.0	37.0	1.0	-47.8	-13.0	-34.8	
2474.10	-16.6	H	3.0	36.4	1.0	-52.0	-13.0	-39.0	
3298.80	-18.8	H	3.0	36.2	1.0	-54.0	-13.0	-41.0	
Mid Ch, 836.5									
1673.00	-21.5	V	3.0	37.0	1.0	-57.5	-13.0	-44.5	
2509.50	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3346.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1673.00	-19.2	H	3.0	37.0	1.0	-55.2	-13.0	-42.2	
2509.50	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	
3346.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	
High Ch, 848.3									
1696.60	-19.3	V	3.0	37.0	1.0	-55.3	-13.0	-42.3	
2544.90	-22.6	V	3.0	36.4	1.0	-58.0	-13.0	-45.0	
3393.20	-21.0	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1696.60	-19.1	H	3.0	37.0	1.0	-55.1	-13.0	-42.1	
2544.90	-20.6	H	3.0	36.4	1.0	-56.0	-13.0	-43.0	
3393.20	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	

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LTE Band 4

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 20MHz Bandwidth

Band LTE4 20MHz 16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720									
3440.00	-14.6	V	3.0	36.0	1.0	-49.7	-13.0	-36.7	
5160.00	-15.1	V	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6880.00	-13.2	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3440.00	-9.5	H	3.0	36.0	1.0	-44.6	-13.0	-31.6	
5160.00	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6880.00	-12.8	H	3.0	35.7	1.0	-47.5	-13.0	-34.5	
Mid Ch, 1732.5									
3465.00	-17.2	V	3.0	36.0	1.0	-52.3	-13.0	-39.3	
5197.50	-14.8	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
6930.00	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3465.00	-10.4	H	3.0	36.0	1.0	-45.4	-13.0	-32.4	
5197.50	-14.3	H	3.0	35.4	1.0	-48.7	-13.0	-35.7	
6930.00	-12.6	H	3.0	35.7	1.0	-47.3	-13.0	-34.3	
High Ch, 1745									
3490.00	-19.3	V	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5235.00	-15.7	V	3.0	35.4	1.0	-50.1	-13.0	-37.1	
6980.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3490.00	-10.7	H	3.0	36.0	1.0	-45.7	-13.0	-32.7	
5235.00	-15.4	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6980.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 20MHz Bandwidth

Band LTE4 20MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720									
3440.00	-14.3	V	3.0	36.0	1.0	-49.4	-13.0	-36.4	
5160.00	-15.3	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6880.00	-12.8	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3440.00	-8.3	H	3.0	36.0	1.0	-43.4	-13.0	-30.4	
5160.00	-14.9	H	3.0	35.4	1.0	-49.3	-13.0	-36.3	
6880.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0	
Mid Ch, 1732.5									
3465.00	-16.9	V	3.0	36.0	1.0	-52.0	-13.0	-39.0	
5197.50	-14.3	V	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3465.00	-8.8	H	3.0	36.0	1.0	-43.8	-13.0	-30.8	
5197.50	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6930.00	-12.4	H	3.0	35.7	1.0	-47.1	-13.0	-34.1	
High Ch, 1745									
3490.00	-11.2	V	3.0	36.0	1.0	-46.2	-13.0	-33.2	
5235.00	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6980.00	-12.8	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3490.00	-10.5	H	3.0	36.0	1.0	-45.5	-13.0	-32.5	
5235.00	-15.0	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6980.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 15MHz Bandwidth

Band
LTE4
15MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5									
3435.00	-14.8	V	3.0	36.1	1.0	-49.9	-13.0	-36.9	
5152.50	-14.4	V	3.0	35.4	1.0	-48.9	-13.0	-35.9	
6870.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3435.00	-8.5	H	3.0	36.1	1.0	-43.6	-13.0	-30.6	
5152.50	-15.5	H	3.0	35.4	1.0	-50.0	-13.0	-37.0	
6870.00	-12.2	H	3.0	35.7	1.0	-46.9	-13.0	-33.9	
Mid Ch, 1732.5									
3465.00	-13.4	V	3.0	36.0	1.0	-48.5	-13.0	-35.5	
5197.50	-15.6	V	3.0	35.4	1.0	-50.1	-13.0	-37.1	
6930.00	-13.7	V	3.0	35.7	1.0	-48.4	-13.0	-35.4	
3465.00	-9.8	H	3.0	36.0	1.0	-44.8	-13.0	-31.8	
5197.50	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6930.00	-12.8	H	3.0	35.7	1.0	-47.5	-13.0	-34.5	
High Ch, 1747.5									
3495.00	-14.4	V	3.0	36.0	1.0	-49.4	-13.0	-36.4	
5242.50	-15.0	V	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6990.00	-13.8	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
3495.00	-8.0	H	3.0	36.0	1.0	-43.1	-13.0	-30.1	
5242.50	-14.7	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6990.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	

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Band

LTE4

15MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5									
3435.00	-13.9	V	3.0	36.1	1.0	-49.0	-13.0	-36.0	
5152.50	-16.0	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6870.00	-13.4	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3435.00	-8.6	H	3.0	36.1	1.0	-43.7	-13.0	-30.7	
5152.50	-14.8	H	3.0	35.4	1.0	-49.3	-13.0	-36.3	
6870.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
Mid Ch, 1732.5									
3465.00	-14.0	V	3.0	36.0	1.0	-49.1	-13.0	-36.1	
5197.50	-14.9	V	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6930.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3465.00	-10.2	H	3.0	36.0	1.0	-45.2	-13.0	-32.2	
5197.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-12.4	H	3.0	35.7	1.0	-47.1	-13.0	-34.1	
High Ch, 1747.5									
3495.00	-14.9	V	3.0	36.0	1.0	-49.9	-13.0	-36.9	
5242.50	-15.3	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6990.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3495.00	-8.8	H	3.0	36.0	1.0	-43.8	-13.0	-30.8	
5242.50	-14.7	H	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6990.00	-12.2	H	3.0	35.7	1.0	-46.9	-13.0	-33.9	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 10MHz Bandwidth

Band
LTE4
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-12.1	V	3.0	36.1	1.0	-47.2	-13.0	-34.2	
5145.00	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6860.00	-13.7	V	3.0	35.7	1.0	-48.4	-13.0	-35.4	
3430.00	-7.7	H	3.0	36.1	1.0	-42.8	-13.0	-29.8	
5145.00	-15.3	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6860.00	-12.4	H	3.0	35.7	1.0	-47.1	-13.0	-34.1	
Mid Ch, 1732.5									
3465.00	-14.5	V	3.0	36.0	1.0	-49.6	-13.0	-36.6	
5197.50	-15.8	V	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.00	-13.4	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
3465.00	-11.3	H	3.0	36.0	1.0	-46.3	-13.0	-33.3	
5197.50	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6930.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
High Ch, 1750									
3500.00	-13.9	V	3.0	36.0	1.0	-48.9	-13.0	-35.9	
5250.00	-14.8	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
7000.00	-14.0	V	3.0	35.7	1.0	-48.7	-13.0	-35.7	
3500.00	-6.8	H	3.0	36.0	1.0	-41.9	-13.0	-28.9	
5250.00	-14.9	H	3.0	35.4	1.0	-49.3	-13.0	-36.3	
7000.00	-12.7	H	3.0	35.7	1.0	-47.3	-13.0	-34.3	

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Band

LTE4

10MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-12.4	V	3.0	36.1	1.0	-47.5	-13.0	-34.5	
5145.00	-15.5	V	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6860.00	-12.8	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3430.00	-8.6	H	3.0	36.1	1.0	-43.6	-13.0	-30.6	
5145.00	-14.5	H	3.0	35.4	1.0	-48.9	-13.0	-35.9	
6860.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0	
Mid Ch, 1732.5									
3465.00	-14.3	V	3.0	36.0	1.0	-49.4	-13.0	-36.4	
5197.50	-14.5	V	3.0	35.4	1.0	-49.0	-13.0	-36.0	
6930.00	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3465.00	-10.7	H	3.0	36.0	1.0	-45.7	-13.0	-32.7	
5197.50	-14.7	H	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6930.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
High Ch, 1750									
3500.00	-13.2	V	3.0	36.0	1.0	-48.2	-13.0	-35.2	
5250.00	-15.6	V	3.0	35.4	1.0	-50.1	-13.0	-37.1	
7000.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3500.00	-7.8	H	3.0	36.0	1.0	-42.9	-13.0	-29.9	
5250.00	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
7000.00	-12.1	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 5MHz Bandwidth

Band LTE4 5MHz 16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-11.6	V	3.0	36.1	1.0	-46.6	-13.0	-33.6	
5137.50	-15.4	V	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6850.00	-12.9	V	3.0	35.7	1.0	-47.6	-13.0	-34.6	
3425.00	-8.7	H	3.0	36.1	1.0	-43.7	-13.0	-30.7	
5137.50	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6850.00	-12.1	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
Mid Ch, 1732.5									
3465.00	-13.9	V	3.0	36.0	1.0	-48.9	-13.0	-35.9	
5197.50	-15.8	V	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.00	-12.7	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3465.00	-11.8	H	3.0	36.0	1.0	-46.8	-13.0	-33.8	
5197.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
High Ch, 1752.5									
3505.00	-13.0	V	3.0	36.0	1.0	-48.0	-13.0	-35.0	
5257.50	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
7010.00	-13.4	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3505.00	-9.3	H	3.0	36.0	1.0	-44.3	-13.0	-31.3	
5257.50	-15.4	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
7010.00	-11.8	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	

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Band

LTE4

5MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-12.5	V	3.0	36.1	1.0	-47.5	-13.0	-34.5	
5137.50	-15.9	V	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6850.00	-13.5	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
3425.00	-8.4	H	3.0	36.1	1.0	-43.4	-13.0	-30.4	
5137.50	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6850.00	-11.9	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	
Mid Ch, 1732.5									
3465.00	-14.0	V	3.0	36.0	1.0	-49.0	-13.0	-36.0	
5197.50	-15.7	V	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6930.00	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3465.00	-11.2	H	3.0	36.0	1.0	-46.2	-13.0	-33.2	
5197.50	-14.7	H	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6930.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
High Ch, 1752.5									
3505.00	-11.6	V	3.0	36.0	1.0	-46.6	-13.0	-33.6	
5257.50	-15.0	V	3.0	35.4	1.0	-49.5	-13.0	-36.5	
7010.00	-13.0	V	3.0	35.7	1.0	-47.6	-13.0	-34.6	
3505.00	-9.5	H	3.0	36.0	1.0	-44.5	-13.0	-31.5	
5257.50	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
7010.00	-12.1	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	

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Band

LTE4

3MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5									
3423.00	-9.5	V	3.0	36.1	1.0	-44.5	-13.0	-31.5	
5134.50	-15.6	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
6846.00	-12.8	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3423.00	-7.4	H	3.0	36.1	1.0	-42.4	-13.0	-29.4	
5134.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6846.00	-12.6	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
Mid Ch, 1732.5									
3465.00	-12.6	V	3.0	36.0	1.0	-47.7	-13.0	-34.7	
5197.50	-15.3	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6930.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3465.00	-10.2	H	3.0	36.0	1.0	-45.2	-13.0	-32.2	
5197.50	-14.7	H	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6930.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
High Ch, 1753.5									
3507.00	-11.1	V	3.0	36.0	1.0	-46.1	-13.0	-33.1	
5260.50	-15.9	V	3.0	35.4	1.0	-50.4	-13.0	-37.4	
7014.00	-12.7	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3507.00	-8.1	H	3.0	36.0	1.0	-43.1	-13.0	-30.1	
5260.50	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
7014.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	

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Band

LTE4

3MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5									
3423.00	-10.1	V	3.0	36.1	1.0	-45.2	-13.0	-32.2	
5134.50	-13.9	V	3.0	35.4	1.0	-48.3	-13.0	-35.3	
6846.00	-13.4	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
3423.00	-8.4	H	3.0	36.1	1.0	-43.4	-13.0	-30.4	
5134.50	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6846.00	-12.6	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
Mid Ch, 1732.5									
3465.00	-13.3	V	3.0	36.0	1.0	-48.4	-13.0	-35.4	
5197.50	-14.5	V	3.0	35.4	1.0	-49.0	-13.0	-36.0	
6930.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3465.00	-10.5	H	3.0	36.0	1.0	-45.5	-13.0	-32.5	
5197.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0	
High Ch, 1753.5									
3507.00	-11.0	V	3.0	36.0	1.0	-46.0	-13.0	-33.0	
5260.50	-15.1	V	3.0	35.4	1.0	-49.6	-13.0	-36.6	
7014.00	-12.4	V	3.0	35.7	1.0	-47.0	-13.0	-34.0	
3507.00	-9.2	H	3.0	36.0	1.0	-44.2	-13.0	-31.2	
5260.50	-15.3	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
7014.00	-11.4	H	3.0	35.7	1.0	-46.1	-13.0	-33.1	

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Band

LTE4

1.4MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7									
3421.40	-14.7	V	3.0	36.1	1.0	-49.7	-13.0	-36.7	
5132.10	-15.6	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
6842.80	-12.7	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3421.40	-6.9	H	3.0	36.1	1.0	-41.9	-13.0	-28.9	
5132.10	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6842.80	-11.7	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1732.5									
3465.00	-12.8	V	3.0	36.0	1.0	-47.9	-13.0	-34.9	
5197.50	-14.6	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6930.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3465.00	-11.6	H	3.0	36.0	1.0	-46.7	-13.0	-33.7	
5197.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-12.0	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
High Ch, 1754.3									
3508.60	-8.1	V	3.0	36.0	1.0	-43.1	-13.0	-30.1	
5262.90	-14.8	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
7017.20	-13.3	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3508.60	-7.6	H	3.0	36.0	1.0	-42.6	-13.0	-29.6	
5262.90	-14.6	H	3.0	35.4	1.0	-49.0	-13.0	-36.0	
7017.20	-11.8	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	

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Band

LTE4

1.4MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7									
3421.40	-14.0	V	3.0	36.1	1.0	-49.0	-13.0	-36.0	
5132.10	-15.2	V	3.0	35.4	1.0	-49.6	-13.0	-36.6	
6842.80	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3421.40	-8.0	H	3.0	36.1	1.0	-43.1	-13.0	-30.1	
5132.10	-14.5	H	3.0	35.4	1.0	-48.9	-13.0	-35.9	
6842.80	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
Mid Ch, 1732.5									
3465.00	-13.3	V	3.0	36.0	1.0	-48.4	-13.0	-35.4	
5197.50	-14.9	V	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6930.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3465.00	-11.0	H	3.0	36.0	1.0	-46.1	-13.0	-33.1	
5197.50	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6930.00	-12.0	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
High Ch, 1754.3									
3508.60	-10.2	V	3.0	36.0	1.0	-45.2	-13.0	-32.2	
5262.90	-14.9	V	3.0	35.4	1.0	-49.4	-13.0	-36.4	
7017.20	-13.1	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3508.60	-9.1	H	3.0	36.0	1.0	-44.1	-13.0	-31.1	
5262.90	-13.7	H	3.0	35.4	1.0	-48.1	-13.0	-35.1	
7017.20	-11.8	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	

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LTE Band 2

Band

LTE2

20MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860									
3720.00	-17.9	V	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5580.00	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7440.00	-12.1	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
3720.00	-19.2	H	3.0	35.8	1.0	-54.0	-13.0	-41.0	
5580.00	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7440.00	-11.4	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
Mid Ch, 1880									
3760.00	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3760.00	-17.6	H	3.0	35.8	1.0	-52.4	-13.0	-39.4	
5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-12.0	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
High Ch, 1900									
3800.00	-16.6	V	3.0	35.8	1.0	-51.3	-13.0	-38.3	
5700.00	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7600.00	-12.6	V	3.0	35.8	1.0	-47.4	-13.0	-34.4	
3800.00	-17.1	H	3.0	35.8	1.0	-51.9	-13.0	-38.9	
5700.00	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7600.00	-11.8	H	3.0	35.8	1.0	-46.5	-13.0	-33.5	

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Band

LTE2

20MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860									
3720.00	-17.7	V	3.0	35.8	1.0	-52.6	-13.0	-39.6	
5580.00	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7440.00	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
3720.00	-17.9	H	3.0	35.8	1.0	-52.7	-13.0	-39.7	
5580.00	-12.9	H	3.0	35.5	1.0	-47.4	-13.0	-34.4	
7440.00	-11.1	H	3.0	35.7	1.0	-45.9	-13.0	-32.9	
Mid Ch, 1880									
3760.00	-17.7	V	3.0	35.8	1.0	-52.5	-13.0	-39.5	
5640.00	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-12.0	V	3.0	35.7	1.0	-46.7	-13.0	-33.7	
3760.00	-17.5	H	3.0	35.8	1.0	-52.3	-13.0	-39.3	
5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7520.00	-11.3	H	3.0	35.7	1.0	-46.1	-13.0	-33.1	
High Ch, 1900									
3800.00	-16.1	V	3.0	35.8	1.0	-50.9	-13.0	-37.9	
5700.00	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7600.00	-12.6	V	3.0	35.8	1.0	-47.4	-13.0	-34.4	
3800.00	-15.7	H	3.0	35.8	1.0	-50.5	-13.0	-37.5	
5700.00	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7600.00	-11.6	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 15MHz Bandwidth

Band LTE2 15MHz 16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5									
3715.00	-18.0	V	3.0	35.8	1.0	-52.9	-13.0	-39.9	
5572.50	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7430.00	-12.5	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3715.00	-17.3	H	3.0	35.8	1.0	-52.1	-13.0	-39.1	
5572.50	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7430.00	-11.6	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1880									
3760.00	-17.2	V	3.0	35.8	1.0	-52.0	-13.0	-39.0	
5640.00	-15.0	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7520.00	-11.6	V	3.0	35.7	1.0	-46.4	-13.0	-33.4	
3760.00	-16.0	H	3.0	35.8	1.0	-50.8	-13.0	-37.8	
5640.00	-13.9	H	3.0	35.5	1.0	-48.4	-13.0	-35.4	
7520.00	-11.6	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
High Ch, 1902.5									
3805.00	-16.7	V	3.0	35.8	1.0	-51.5	-13.0	-38.5	
5707.50	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7610.00	-12.4	V	3.0	35.8	1.0	-47.2	-13.0	-34.2	
3805.00	-15.8	H	3.0	35.8	1.0	-50.6	-13.0	-37.6	
5707.50	-14.2	H	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7610.00	-11.6	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

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Band

LTE2

15MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5									
3715.00	-17.8	V	3.0	35.8	1.0	-52.7	-13.0	-39.7	
5572.50	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7430.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3715.00	-17.0	H	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5572.50	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7430.00	-11.3	H	3.0	35.7	1.0	-46.0	-13.0	-33.0	
Mid Ch, 1880									
3760.00	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5640.00	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-12.5	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3760.00	-15.5	H	3.0	35.8	1.0	-50.3	-13.0	-37.3	
5640.00	-14.5	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7520.00	-11.5	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
High Ch, 1902.5									
3805.00	-16.4	V	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5707.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7610.00	-12.1	V	3.0	35.8	1.0	-46.9	-13.0	-33.9	
3805.00	-14.7	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5707.50	-14.0	H	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7610.00	-11.2	H	3.0	35.8	1.0	-46.0	-13.0	-33.0	

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 10MHz Bandwidth

Band
LTE2
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855									
3710.00	-18.5	V	3.0	35.9	1.0	-53.3	-13.0	-40.3	
5565.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7420.00	-12.5	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
3710.00	-17.0	H	3.0	35.9	1.0	-51.9	-13.0	-38.9	
5565.00	-14.7	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7420.00	-11.5	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1880									
3760.00	-16.5	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5640.00	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7520.00	-12.4	V	3.0	35.7	1.0	-47.1	-13.0	-34.1	
3760.00	-17.0	H	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5640.00	-14.5	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7520.00	-11.8	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
High Ch, 1905									
3810.00	-15.4	V	3.0	35.8	1.0	-50.2	-13.0	-37.2	
5715.00	-13.6	V	3.0	35.5	1.0	-48.1	-13.0	-35.1	
7620.00	-11.0	V	3.0	35.8	1.0	-45.7	-13.0	-32.7	
3810.00	-15.5	H	3.0	35.8	1.0	-50.3	-13.0	-37.3	
5715.00	-14.5	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7620.00	-11.4	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	

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Band

LTE2

10MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855									
3710.00	-16.9	V	3.0	35.9	1.0	-51.8	-13.0	-38.8	
5565.00	-14.5	V	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7420.00	-12.8	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3710.00	-15.5	H	3.0	35.9	1.0	-50.4	-13.0	-37.4	
5565.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7420.00	-11.7	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880									
3760.00	-16.7	V	3.0	35.8	1.0	-51.5	-13.0	-38.5	
5640.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3760.00	-15.9	H	3.0	35.8	1.0	-50.7	-13.0	-37.7	
5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7520.00	-10.8	H	3.0	35.7	1.0	-45.6	-13.0	-32.6	
High Ch, 1905									
3810.00	-14.6	V	3.0	35.8	1.0	-49.4	-13.0	-36.4	
5715.00	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7620.00	-12.2	V	3.0	35.8	1.0	-46.9	-13.0	-33.9	
3810.00	-14.4	H	3.0	35.8	1.0	-49.2	-13.0	-36.2	
5715.00	-14.4	H	3.0	35.5	1.0	-48.9	-13.0	-35.9	
7620.00	-11.6	H	3.0	35.8	1.0	-46.4	-13.0	-33.4	

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Band

LTE2

5MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5									
3705.00	-18.8	V	3.0	35.9	1.0	-53.6	-13.0	-40.6	
5557.50	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7410.00	-12.8	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3705.00	-17.2	H	3.0	35.9	1.0	-52.1	-13.0	-39.1	
5557.50	-13.5	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7410.00	-11.5	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
Mid Ch, 1880									
3760.00	-16.9	V	3.0	35.8	1.0	-51.7	-13.0	-38.7	
5640.00	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7520.00	-13.2	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3760.00	-16.7	H	3.0	35.8	1.0	-51.5	-13.0	-38.5	
5640.00	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7520.00	-12.0	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
High Ch, 1907.5									
3815.00	-15.8	V	3.0	35.8	1.0	-50.6	-13.0	-37.6	
5722.50	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7630.00	-12.6	V	3.0	35.8	1.0	-47.3	-13.0	-34.3	
3815.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5722.50	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7630.00	-11.9	H	3.0	35.8	1.0	-46.7	-13.0	-33.7	

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Band

LTE2

5MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5									
3705.00	-17.3	V	3.0	35.9	1.0	-52.1	-13.0	-39.1	
5557.50	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7410.00	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
3705.00	-16.9	H	3.0	35.9	1.0	-51.8	-13.0	-38.8	
5557.50	-14.3	H	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7410.00	-11.4	H	3.0	35.7	1.0	-46.1	-13.0	-33.1	
Mid Ch, 1880									
3760.00	-16.4	V	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5640.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7520.00	-12.7	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3760.00	-16.6	H	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5640.00	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7520.00	-12.1	H	3.0	35.7	1.0	-46.9	-13.0	-33.9	
High Ch, 1907.5									
3815.00	-14.5	V	3.0	35.8	1.0	-49.3	-13.0	-36.3	
5722.50	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7630.00	-12.4	V	3.0	35.8	1.0	-47.1	-13.0	-34.1	
3815.00	-17.0	H	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5722.50	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7630.00	-11.5	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

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Band

LTE2

3MHz

16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5									
3703.00	-18.0	V	3.0	35.9	1.0	-52.8	-13.0	-39.8	
5554.50	-15.5	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7406.00	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
3703.00	-17.9	H	3.0	35.9	1.0	-52.8	-13.0	-39.8	
5554.50	-15.1	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7406.00	-11.8	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	
Mid Ch, 1880									
3760.00	-17.3	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
5640.00	-15.0	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7520.00	-12.7	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3760.00	-17.2	H	3.0	35.8	1.0	-52.0	-13.0	-39.0	
5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-11.7	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	
High Ch, 1908.5									
3817.00	-16.2	V	3.0	35.8	1.0	-51.0	-13.0	-38.0	
5725.50	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7634.00	-12.1	V	3.0	35.8	1.0	-46.8	-13.0	-33.8	
3817.00	-14.9	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	
5725.50	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7634.00	-11.3	H	3.0	35.8	1.0	-46.1	-13.0	-33.1	

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Band

LTE2

3MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5									
3703.00	-17.4	V	3.0	35.9	1.0	-52.2	-13.0	-39.2	
5554.50	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7406.00	-12.1	V	3.0	35.7	1.0	-46.8	-13.0	-33.8	
3703.00	-17.8	H	3.0	35.9	1.0	-52.7	-13.0	-39.7	
5554.50	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7406.00	-11.7	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880									
3760.00	-16.9	V	3.0	35.8	1.0	-51.7	-13.0	-38.7	
5640.00	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3760.00	-16.8	H	3.0	35.8	1.0	-51.6	-13.0	-38.6	
5640.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7520.00	-11.6	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
High Ch, 1908.5									
3817.00	-16.3	V	3.0	35.8	1.0	-51.1	-13.0	-38.1	
5725.50	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7634.00	-11.4	V	3.0	35.8	1.0	-46.1	-13.0	-33.1	
3817.00	-15.3	H	3.0	35.8	1.0	-50.1	-13.0	-37.1	
5725.50	-13.7	H	3.0	35.5	1.0	-48.2	-13.0	-35.2	
7634.00	-11.5	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 1.4MHz Bandwidth

Band LTE2 1.4MHz 16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7									
3701.40	-17.4	V	3.0	35.9	1.0	-52.2	-13.0	-39.2	
5552.10	-15.0	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7402.80	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
3701.40	-17.3	H	3.0	35.9	1.0	-52.2	-13.0	-39.2	
5552.10	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7402.80	-11.7	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880									
3760.00	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5640.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7520.00	-12.9	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3760.00	-16.3	H	3.0	35.8	1.0	-51.1	-13.0	-38.1	
5640.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7520.00	-11.7	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	
High Ch, 1909.3									
3818.60	-17.3	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
5727.90	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7637.20	-12.6	V	3.0	35.8	1.0	-47.3	-13.0	-34.3	
3818.60	-15.1	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	
5727.90	-14.0	H	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7637.20	-11.4	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	

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Band

LTE2

1.4MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20187
Date: 3/4/2015
Test Engineer: R.Z
Configuration: EUT , AC Adapter and Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7									
3701.40	-17.7	V	3.0	35.9	1.0	-52.5	-13.0	-39.5	
5552.10	-14.5	V	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7402.80	-11.8	V	3.0	35.7	1.0	-46.5	-13.0	-33.5	
3701.40	-17.1	H	3.0	35.9	1.0	-52.0	-13.0	-39.0	
5552.10	-13.8	H	3.0	35.5	1.0	-48.3	-13.0	-35.3	
7402.80	-11.6	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1880									
3760.00	-16.4	V	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5640.00	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-12.8	V	3.0	35.7	1.0	-47.6	-13.0	-34.6	
3760.00	-15.6	H	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5640.00	-13.6	H	3.0	35.5	1.0	-48.1	-13.0	-35.1	
7520.00	-11.6	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
High Ch, 1909.3									
3818.60	-16.8	V	3.0	35.8	1.0	-51.6	-13.0	-38.6	
5727.90	-15.0	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7637.20	-12.8	V	3.0	35.8	1.0	-47.5	-13.0	-34.5	
3818.60	-14.2	H	3.0	35.8	1.0	-49.0	-13.0	-36.0	
5727.90	-14.2	H	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7637.20	-11.5	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	

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