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/LTE + BLUETOOTH, DTS b/g/n

MODEL NUMBER: LG-US550, LGUS550, US550

FCC ID: ZNFUS550

REPORT NUMBER: 15I19900-E1

ISSUE DATE: MARCH 12, 2015

Prepared for
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NVLAP LAB CODE 200065-0

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--	03/12/15	Initial Issue	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS b/g/n
MODEL:	LG-US550, LGUS550, US550
SERIAL NUMBER:	80465E0D (Radiated and Conducted)
DATE TESTED:	FEBRUARY 19 - MARCH 2, 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.

Approved & Released For
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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 GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS b/g/n.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted and 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	24.3	269.15	19.55	90.16
	824~849	EVDO REL. 0	24.3	269.15	20.24	105.68
	824~849	EVDO REV. A	24.3	269.15		
BC1	1850~1910	1xRTT	24.3	269.15	25.33	341.19
	1850~1910	EVDO REL. 0	24.2	263.03	24.43	277.33
	1850~1910	EVDO REV. A	24.2	263.03		

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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)
LTE25	1850~1915	20MHz	QPSK	23.5	223.87	25.25	334.58
			16QAM	22.5	177.83	25.09	322.48
		15MHz	QPSK	23.7	234.42	25.24	333.81
			16QAM	22.7	186.21	24.60	288.4
		10MHz	QPSK	23.3	213.80	25.03	318.42
			16QAM	22.7	186.21	24.63	290.4
		5MHz	QPSK	23.5	223.87	24.94	311.53
			16QAM	22.4	173.78	24.55	285.1
		3MHz	QPSK	23.2	208.93	25.21	331.51
			16QAM	22.7	186.21	24.65	291.74
		1.4MHz	QPSK	23.0	199.53	24.85	305.49
			16QAM	22.7	186.21	24.35	272.27

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE17	704~716	10MHz	QPSK	23.2	208.93	16.61	45.81
			16QAM	22.7	186.21	16.27	42.36
		5MHz	QPSK	23.2	208.93	16.19	41.59
			16QAM	22.3	169.82	15.71	37.24

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FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	10MHz	QPSK	23.4	218.78	16.61	45.81
			16QAM	22.7	186.21	16.27	42.36
		5MHz	QPSK	23.7	234.42	16.19	41.59
			16QAM	22.7	186.21	15.71	37.24
		3MHz	QPSK	23.7	234.42	16.19	41.59
			16QAM	22.7	186.21	15.71	37.24
		1.4MHz	QPSK	23.3	213.80	16.41	43.75
			16QAM	22.7	186.21	15.76	37.67

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	23.3	213.80	20.88	122.49
			16QAM	22.7	186.21	19.83	96.18
		5MHz	QPSK	23.7	234.42	20.37	108.92
			16QAM	22.7	186.21	19.29	84.94
		3MHz	QPSK	23.3	213.80	20.75	118.88
			16QAM	22.7	186.21	19.86	96.85
		1.4MHz	QPSK	23.2	208.93	20.50	112.23
			16QAM	22.7	186.21	20.20	104.74

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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	23.2	208.93	22.87	193.81
			16QAM	22.7	186.21	21.86	153.46
		15MHz	QPSK	23.2	208.93	23.99	250.78
			16QAM	22.7	186.21	23.69	234.04
		10MHz	QPSK	23.1	204.17	24.05	254.22
			16QAM	22.6	181.97	23.80	240
		5MHz	QPSK	23.7	234.42	23.98	250.11
			16QAM	22.7	186.21	23.13	205.65
		3MHz	QPSK	23.1	204.17	24.13	259.11
			16QAM	22.7	186.21	23.86	243.5
		1.4MHz	QPSK	23.1	204.17	24.09	256.32
			16QAM	22.7	186.21	23.82	240.87

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	23.7	234.42	26.22	418.77
			16QAM	22.7	186.21	25.77	377.55
		15MHz	QPSK	23.7	234.42	25.55	358.91
			16QAM	22.7	186.21	25.02	317.47
		10MHz	QPSK	23.7	234.42	25.13	325.82
			16QAM	22.7	186.21	24.54	284.43
		5MHz	QPSK	23.7	234.42	25.55	358.67
			16QAM	22.2	165.96	24.27	267.12
		3MHz	QPSK	23.3	213.80	25.88	386.99
			16QAM	22.7	186.21	25.42	348.1
		1.4MHz	QPSK	23.3	213.80	25.96	394.18
			16QAM	22.7	186.21	24.08	255.68

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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 BC1 / LTE 2, 1850~1910MHz	-0.42
LTE 4, 1710~1755MHz	-5.19
CDMA BC0 / LTE 5, 824~849MHz	-5.25
LTE 12 699~716MHz	-4.69
LTE 17 699~716MHz	-4.69
LTE 25, 1850~1915MHz	-1.68

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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-01WR	RD4X0891946	N/A
Earphone	LG	LG-US550	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

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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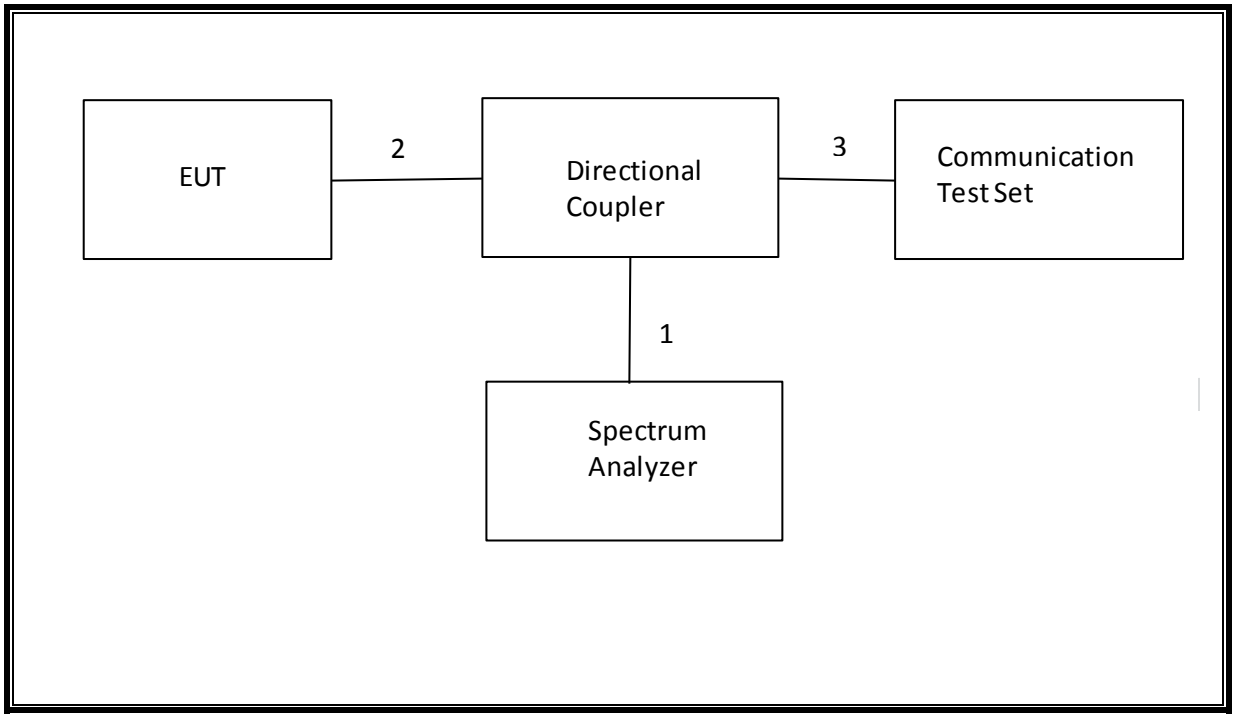
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



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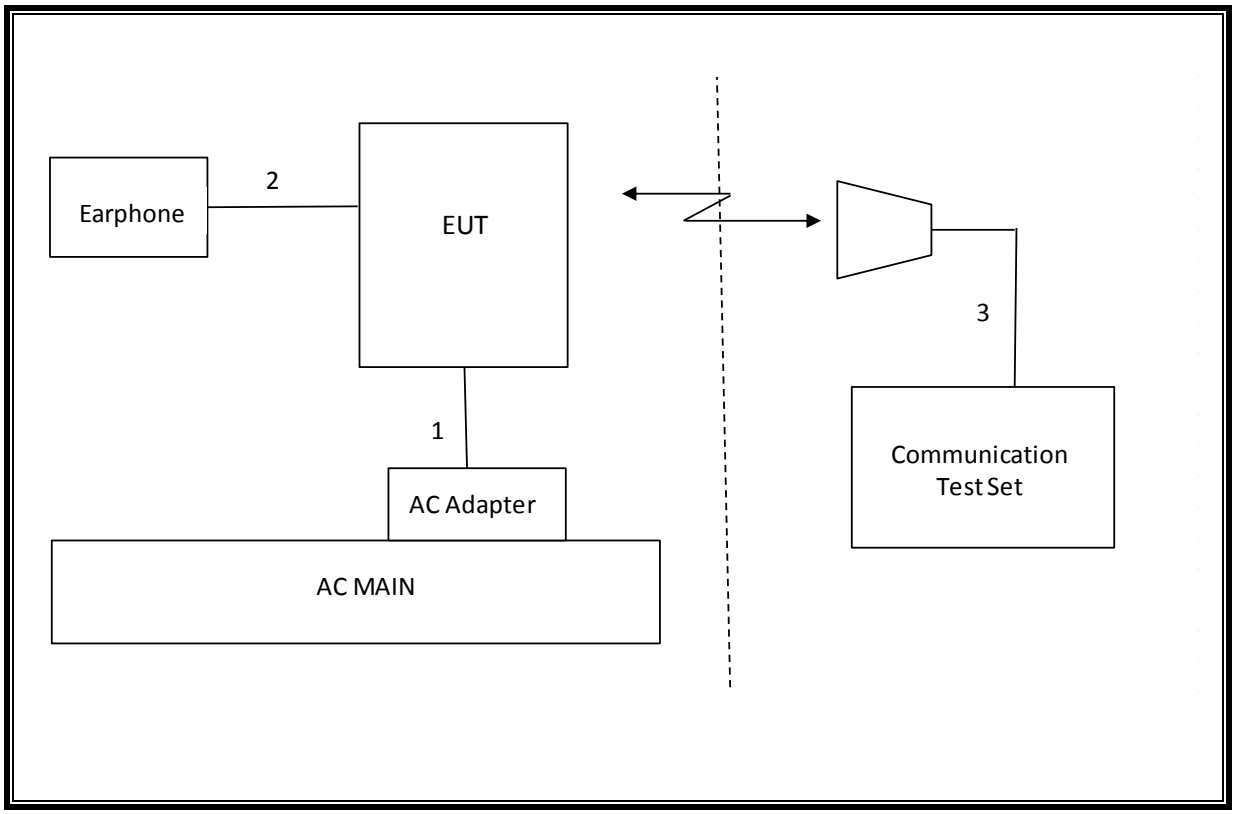
SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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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	T177	05/01/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	04/22/15
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/15
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	T80	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
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/11/16
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-2640/B	C00589	05/09/15

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:

1. LTE Band 4 and 12 added 1.4MHz and 3MHz bandwidth without hardware change.
2. LTE Band 25 added 1.4MHz, 3MHz, 10MHz, 15MHz, and 20MHz bandwidth without hardware change.

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	17.85 MHz
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	-18.27 dBm
2.1046	N/A	Conducted output power	N/A		Pass	24.3 dBm
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	20.9 dBm
27.50(c)(10)	N/A		34.77 dBm		Pass	16.6 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	26.2 dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	24.1 dBm
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	-31.2 dBm

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8.1. CDMA2000

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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8.1.2. CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.3
		384	836.52	24.2
		777	848.31	24.2
	RC3, SO55 (Loopback)	1013	824.70	24.3
		384	836.52	24.3
		777	848.31	24.3
	RC3, SO32 (+F-SCH)	1013	824.70	24.4
		384	836.52	24.3
		777	848.31	24.4

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	24.1
		600	1880.00	24.2
		1175	1908.75	24.1
	RC3, SO55 (Loopback)	25	1851.25	24.1
		600	1880.00	24.2
		1175	1908.75	24.1
	RC3, SO32 (+F-SCH)	25	1851.25	24.2
		600	1880.00	24.3
		1175	1908.75	24.1

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8.2. 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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8.2.1. 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	24.3
		384	836.52	24.3
		777	848.31	24.2

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	24.1
		600	1880.00	24.2
		1175	1908.75	24.2

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8.3. 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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8.3.1. 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	24.3
		384	836.52	24.3
		777	848.31	24.2

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	24.1
		600	1880.00	24.2
		1175	1908.75	24.2

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8.5. LTE OUTPUT VERIFICATION

8.5.1. LTE OUTPUT RESULT

LTE Band 25

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26140	26365	26590
						1860 MHz	1882.5 MHz	1905 MHz
LTE Band 25	20	QPSK	1	0	0	23.4	23.5	23.3
			1	49	0	23.3	23.2	23.2
			1	99	0	23.2	23.1	23.3
			50	0	1	22.2	22.2	22.2
			50	25	1	22.1	22.0	22.1
			50	49	1	22.1	21.9	22.1
			100	0	1	22.1	22.1	22.2
		16QAM	1	0	1	22.1	22.5	22.3
			1	49	1	22.3	22.1	22.2
			1	99	1	22.1	22.0	22.3
			50	0	2	21.2	21.3	21.2
			50	25	2	21.0	21.0	21.0
			50	49	2	21.2	21.0	21.1
			100	0	2	21.1	21.0	21.0

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26115	26365	26615
						1857.5 MHz	1882.5 MHz	1907.5 MHz
LTE Band 25	15	QPSK	1	0	0	23.1	23.5	23.2
			1	37	0	23.3	23.7	23.5
			1	74	0	23.0	23.2	23.3
			36	0	1	22.1	22.1	22.1
			36	18	1	22.1	22.0	22.1
			36	35	1	22.0	21.9	22.1
			75	0	1	22.0	22.0	22.2
		16QAM	1	0	1	22.2	22.7	22.7
			1	37	1	22.0	22.2	22.7
			1	74	1	22.0	22.2	22.7
			36	0	2	21.0	21.1	20.9
			36	18	2	21.0	21.1	20.9
			36	35	2	21.0	21.0	21.0
			75	0	2	21.0	21.0	21.0

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26090	26365	26640
						1855 MHz	1882.5 MHz	1910 MHz
LTE Band 25	10	QPSK	1	0	0	23.1	23.1	23.1
			1	24	0	23.0	23.0	23.3
			1	49	0	22.8	23.1	23.1
			25	0	1	22.0	22.0	22.1
			25	12	1	22.0	22.0	22.2
			25	24	1	22.1	21.9	22.1
			50	0	1	22.0	21.9	22.1
		16QAM	1	0	1	22.7	22.4	22.3
			1	24	1	22.7	22.6	22.5
			1	49	1	22.7	22.7	22.5
			25	0	2	20.8	21.1	21.2
			25	12	2	20.9	21.1	21.3
			25	24	2	20.9	21.0	21.2
			50	0	2	20.9	20.9	21.1

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26065	26365	26665
						1852.5 MHz	1882.5 MHz	1912.5 MHz
LTE Band 25	5	QPSK	1	0	0	22.8	23.1	23.3
			1	12	0	23.1	23.5	23.4
			1	24	0	22.8	23.0	23.2
			12	0	1	22.0	22.0	22.2
			12	6	1	22.0	21.9	22.2
			12	11	1	22.0	21.9	22.2
			25	0	1	22.0	21.9	22.1
		16QAM	1	0	1	21.8	22.0	22.3
			1	12	1	22.3	22.0	22.4
			1	24	1	22.0	21.9	22.5
			12	0	2	21.0	21.2	21.3
			12	6	2	20.9	21.0	21.2
			12	11	2	21.0	21.0	21.3
			25	0	2	21.0	20.8	20.9

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26055	26365	26675
						1851.5 MHz	1882.5 MHz	1913.5 MHz
LTE Band 25	3	QPSK	1	0	0	23.0	23.1	23.0
			1	7	0	23.1	23.2	23.0
			1	14	0	22.9	22.8	23.1
			6	0	1	22.0	21.9	22.2
			6	3	1	22.0	21.9	22.1
			6	5	1	22.0	21.9	22.1
			15	0	1	22.2	21.9	22.2
		16QAM	1	0	1	22.7	22.3	22.1
			1	7	1	22.3	22.1	22.5
			1	14	1	22.2	22.1	22.0
			6	0	2	21.2	20.7	21.3
			6	3	2	21.0	21.0	21.2
			6	5	2	21.0	20.8	21.3
			15	0	2	21.0	20.9	21.0

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26047	26365	26683
						1850.7 MHz	1882.5 MHz	1914.3 MHz
LTE Band 25	1.4	QPSK	1	0	0	22.8	22.8	23.0
			1	2	0	23.0	23.0	23.1
			1	5	0	22.9	22.8	23.0
			3	0	0	22.9	22.9	23.2
			3	1	0	22.9	22.9	23.2
			3	2	0	23.1	23.0	23.2
			6	0	1	21.9	21.8	22.0
		16QAM	1	0	1	22.4	22.5	21.7
			1	2	1	22.7	22.7	21.7
			1	5	1	22.6	22.5	22.2
			3	0	1	22.1	21.7	21.8
			3	1	1	21.8	21.8	22.1
			3	2	1	21.9	21.7	22.4
			6	0	2	20.9	21.1	21.0

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LTE Band 17

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	10	QPSK	1	0	0	23.2
			1	25	0	23.1
			1	49	0	23.0
			25	0	1	22.3
			25	12	1	22.2
			25	25	1	22.2
			50	0	1	22.1
		16QAM	1	0	1	22.7
			1	25	1	22.7
			1	49	1	22.3
			25	0	2	21.3
			25	12	2	21.1
			25	25	2	21.1
			50	0	2	21.1

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	5	QPSK	1	0	0	22.9
			1	12	0	23.2
			1	24	0	22.8
			12	0	1	22.1
			12	7	1	22.1
			12	13	1	22.1
			25	0	1	22.1
		16QAM	1	0	1	22.1
			1	12	1	22.3
			1	24	1	21.7
			12	0	2	21.2
			12	7	2	21.1
			12	13	2	21.2
			25	0	2	21.2

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LTE Band 12

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23060	23095	23130
						704 MHz	707.5 MHz	711 MHz
LTE Band 12	10	QPSK	1	0	0	23.1	23.2	23.4
			1	25	0	23.1	23.3	23.3
			1	49	0	23.1	23.3	23.3
			25	0	1	22.2	22.4	22.5
			25	12	1	22.2	22.3	22.4
			25	25	1	22.2	22.3	22.4
			50	0	1	22.3	22.3	22.4
		16QAM	1	0	1	22.4	22.7	22.7
			1	25	1	22.7	22.7	22.6
			1	49	1	22.7	22.7	22.5
			25	0	2	21.1	21.3	21.7
			25	12	2	21.2	21.2	21.4
			25	25	2	21.1	21.3	21.5
			50	0	2	21.1	21.3	21.3

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23035	23095	23155
						701.5 MHz	707.5 MHz	713.5 MHz
LTE Band 12	5	QPSK	1	0	0	22.9	23.4	23.3
			1	12	0	23.3	23.7	23.5
			1	24	0	23.0	23.2	23.3
			12	0	1	22.1	22.3	22.3
			12	7	1	22.2	22.3	22.2
			12	13	1	22.2	22.3	22.3
			25	0	1	22.2	22.3	22.3
		16QAM	1	0	1	21.9	22.5	22.7
			1	12	1	22.3	22.7	22.7
			1	24	1	22.2	22.4	22.6
			12	0	2	21.0	21.4	21.3
			12	7	2	21.2	21.4	21.2
			12	13	2	21.3	21.3	21.3
			25	0	2	21.2	21.2	21.3

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23025	23095	23165
						700.5 MHz	707.5 MHz	714.5 MHz
LTE Band 12	3	QPSK	1	0	0	23.0	23.4	23.1
			1	8	0	23.1	23.7	23.4
			1	14	0	23.1	23.2	23.2
			8	0	1	22.2	22.3	22.3
			8	4	1	22.1	22.3	22.3
			8	7	1	22.1	22.3	22.3
			15	0	1	22.1	22.3	22.3
		16QAM	1	0	1	22.5	22.7	22.6
			1	8	1	22.7	22.7	22.7
			1	14	1	22.5	22.7	22.5
			8	0	2	20.9	21.0	21.4
			8	4	2	21.0	21.2	21.4
			8	7	2	21.1	21.0	21.4
			15	0	2	21.1	21.3	21.2

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23017	23095	23173
						699.7 MHz	707.5 MHz	715.3 MHz
LTE Band 12	1.4	QPSK	1	0	0	23.0	23.1	23.2
			1	3	0	23.0	23.1	23.3
			1	5	0	23.0	23.3	23.1
			3	0	0	23.0	23.2	23.3
			3	1	0	23.1	23.4	23.3
			3	3	0	23.1	23.3	23.3
			6	0	1	22.1	22.3	22.3
		16QAM	1	0	1	22.7	22.7	22.3
			1	3	1	22.7	22.7	22.7
			1	5	1	22.7	22.7	21.8
			3	0	1	22.5	22.2	22.6
			3	1	1	22.3	22.0	22.3
			3	3	1	22.7	22.3	22.2
			6	0	2	21.3	21.3	21.4

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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	23.3	23.2	23.3
			1	25	0	23.3	23.1	23.3
			1	49	0	23.2	23.3	23.3
			25	0	1	22.4	22.4	22.5
			25	12	1	22.4	22.4	22.4
			25	25	1	22.3	22.5	22.4
			50	0	1	22.3	22.4	22.4
		16QAM	1	0	1	22.7	22.7	22.4
			1	25	1	22.7	22.7	22.7
			1	49	1	22.7	22.7	22.7
			25	0	2	21.3	21.4	21.6
			25	12	2	21.4	21.4	21.5
			25	25	2	21.3	21.4	21.5
			50	0	2	21.3	21.4	21.4

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	23.1	23.3	23.3
			1	12	0	23.4	23.7	23.7
			1	24	0	23.1	23.3	23.3
			12	0	1	22.3	22.4	22.4
			12	7	1	22.3	22.3	22.4
			12	13	1	22.3	22.3	22.4
			25	0	1	22.4	22.4	22.3
		16QAM	1	0	1	21.9	22.3	22.7
			1	12	1	22.5	22.3	22.7
			1	24	1	22.1	22.3	22.7
			12	0	2	21.4	21.5	21.5
			12	7	2	21.3	21.3	21.5
			12	13	2	21.3	21.4	21.4
			25	0	2	21.3	21.5	21.3

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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	23.2	23.2	23.2
			1	8	0	23.3	23.2	23.2
			1	14	0	23.2	23.2	23.2
			8	0	1	22.3	22.3	22.3
			8	4	1	22.3	22.3	22.3
			8	7	1	22.3	22.3	22.4
			15	0	1	22.3	22.3	22.4
		16QAM	1	0	1	22.7	22.6	22.2
			1	8	1	22.7	22.7	22.7
			1	14	1	22.7	22.6	22.7
			8	0	2	21.3	21.1	21.4
			8	4	2	21.4	21.1	21.4
			8	7	2	21.3	21.1	21.5
			15	0	2	21.4	21.3	21.3

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	23.1	23.1	23.1
			1	3	0	23.2	23.1	23.2
			1	5	0	23.2	23.0	23.2
			3	0	0	23.2	23.2	23.3
			3	1	0	23.1	23.2	23.4
			3	3	0	23.2	23.3	23.3
			6	0	1	22.2	22.2	22.4
		16QAM	1	0	1	21.9	22.7	22.4
			1	3	1	22.2	22.5	22.4
			1	5	1	22.6	22.7	22.2
			3	0	1	22.6	22.1	22.7
			3	1	1	22.2	22.2	22.5
			3	3	1	22.2	22.1	22.5
			6	0	2	21.5	21.2	21.4

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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	23.0	23.2	23.0
			1	49	0	23.1	23.0	22.9
			1	99	0	22.9	22.9	22.8
			50	0	1	22.2	22.3	22.1
			50	25	1	22.1	22.1	22.0
			50	49	1	22.1	21.9	22.0
			100	0	1	22.2	22.1	22.0
		16QAM	1	0	1	22.5	22.5	22.6
			1	49	1	22.5	22.2	22.7
			1	99	1	22.6	22.0	22.5
			50	0	2	21.1	21.3	21.0
			50	25	2	21.0	21.1	21.0
			50	49	2	21.1	21.0	20.9
			100	0	2	21.1	21.1	21.0

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	23.1	23.2	23.0
			1	37	0	22.9	23.0	23.0
			1	74	0	23.0	22.9	22.8
			36	0	1	22.0	22.0	22.1
			36	18	1	22.0	22.0	22.0
			36	35	1	22.0	22.0	22.0
			75	0	1	22.0	22.1	22.0
		16QAM	1	0	1	22.7	22.7	22.7
			1	37	1	22.7	22.5	22.7
			1	74	1	22.3	22.7	22.3
			36	0	2	21.0	21.3	21.0
			36	18	2	21.0	21.2	21.1
			36	35	2	21.0	21.2	21.0
			75	0	2	21.0	21.1	21.0

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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	23.1	23.1	23.1
			1	24	0	22.9	23.0	22.7
			1	49	0	23.0	23.0	22.8
			25	0	1	22.0	22.1	22.0
			25	12	1	22.0	22.0	22.0
			25	24	1	22.0	22.0	21.9
			50	0	1	22.0	22.0	21.9
		16QAM	1	0	1	22.6	22.4	22.4
			1	24	1	22.4	22.4	22.1
			1	49	1	22.6	22.7	21.9
			25	0	2	20.9	21.2	21.1
			25	12	2	21.0	21.1	21.1
			25	24	2	21.0	21.1	21.2
			50	0	2	21.0	21.1	21.0

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	22.7	23.0	22.9
			1	12	0	23.6	23.7	23.3
			1	24	0	23.6	22.9	22.9
			12	0	1	21.9	22.0	21.9
			12	6	1	21.9	21.9	22.0
			12	11	1	21.9	22.0	22.0
			25	0	1	21.9	22.0	21.9
		16QAM	1	0	1	22.0	22.2	22.7
			1	12	1	22.2	22.0	22.5
			1	24	1	22.0	22.2	21.9
			12	0	2	21.0	21.2	21.1
			12	6	2	21.0	21.1	21.1
			12	11	2	21.0	20.9	21.1
			25	0	2	20.9	21.1	20.9

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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	22.8	23.0	23.0
			1	7	0	22.8	23.1	23.1
			1	14	0	22.7	23.1	22.8
			6	0	1	22.0	22.1	22.0
			6	3	1	22.0	22.1	22.0
			6	5	1	22.0	22.1	22.0
			15	0	1	22.0	22.1	22.0
		16QAM	1	0	1	22.1	22.0	22.6
			1	7	1	21.8	22.0	22.7
			1	14	1	22.7	22.0	22.7
			6	0	2	21.1	20.9	21.4
			6	3	2	21.0	21.0	21.4
			6	5	2	21.0	21.0	21.4
			15	0	2	21.0	21.1	21.1

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	22.7	22.9	22.8
			1	2	0	22.7	23.1	22.8
			1	5	0	22.7	23.0	22.8
			3	0	0	22.8	22.9	22.9
			3	1	0	22.9	23.1	22.9
			3	2	0	22.9	23.0	23.1
			6	0	1	22.0	21.9	22.0
		16QAM	1	0	1	22.1	22.6	22.0
			1	2	1	22.2	22.7	21.9
			1	5	1	21.7	22.7	22.3
			3	0	1	21.8	21.8	21.9
			3	1	1	21.8	21.9	22.5
			3	2	1	21.8	22.1	22.5
			6	0	2	20.7	20.7	21.3

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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	23.6	23.7	23.4
			1	49	0	23.3	23.3	23.3
			1	99	0	23.1	23.2	23.3
			50	0	1	22.4	22.4	22.4
			50	24	1	22.4	22.3	22.2
			50	50	1	22.3	22.2	22.1
			100	0	1	22.3	22.2	22.1
		16QAM	1	0	1	22.7	22.4	22.7
			1	49	1	22.5	22.7	22.7
			1	99	1	22.4	22.7	22.6
			50	0	2	21.3	21.3	21.4
			50	24	2	21.3	21.2	21.2
			50	50	2	21.3	21.1	21.2
			100	0	2	21.2	21.2	21.2

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	23.1	23.2	23.1
			1	37	0	23.2	23.7	23.3
			1	74	0	23.5	23.2	23.2
			36	0	1	22.3	22.3	22.2
			36	20	1	22.3	22.2	22.2
			36	39	1	22.3	22.3	22.1
			75	0	1	22.2	22.2	22.1
		16QAM	1	0	1	22.7	22.7	22.7
			1	37	1	22.7	22.6	22.7
			1	74	1	22.7	22.2	22.7
			36	0	2	21.1	21.4	21.2
			36	20	2	21.2	21.3	21.1
			36	39	2	21.1	21.3	21.1
			75	0	2	21.2	21.3	21.2

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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	23.2	23.2	23.1
			1	25	0	23.2	23.1	23.2
			1	49	0	23.1	23.1	23.3
			25	0	1	22.2	22.3	22.2
			25	12	1	22.2	22.2	22.2
			25	25	1	22.2	22.2	22.2
			50	0	1	22.2	22.2	22.2
		16QAM	1	0	1	22.7	22.7	22.5
			1	25	1	22.7	22.4	22.5
			1	49	1	22.7	22.7	22.7
			25	0	2	21.1	21.3	21.3
			25	12	2	21.1	21.3	21.4
			25	25	2	21.1	21.2	21.5
			50	0	2	21.0	21.2	21.2

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	22.8	23.2	23.1
			1	12	0	23.4	23.7	23.2
			1	24	0	22.8	23.0	23.1
			12	0	1	21.9	22.0	22.1
			12	6	1	22.0	21.9	22.1
			12	11	1	22.0	22.0	22.1
			25	0	1	22.0	22.1	22.1
		16QAM	1	0	1	21.9	22.2	22.0
			1	12	1	22.0	22.1	22.0
			1	24	1	22.0	22.1	22.0
			12	0	2	20.7	21.2	21.0
			12	6	2	20.7	21.2	21.1
			12	11	2	20.7	21.2	21.2
			25	0	2	21.1	20.8	21.0

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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	22.9	23.1	23.1
			1	8	0	23.1	23.2	23.3
			1	14	0	23.0	23.1	23.2
			8	0	1	22.1	22.2	22.1
			8	4	1	22.1	22.1	22.2
			8	7	1	22.1	22.1	22.1
			15	0	1	22.1	22.2	22.2
		16QAM	1	0	1	22.1	22.5	22.7
			1	8	1	22.6	22.6	22.5
			1	14	1	22.5	22.6	22.6
			8	0	2	21.1	21.0	21.3
			8	4	2	21.0	21.0	21.4
			8	7	2	21.0	21.0	21.4
			15	0	2	21.0	21.2	21.2

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	23.0	23.3	23.1
			1	3	0	23.0	23.1	23.2
			1	5	0	22.9	23.0	23.1
			3	0	0	23.1	23.1	23.3
			3	1	0	23.1	23.1	23.3
			3	3	0	23.0	23.2	23.3
			6	0	1	22.1	22.2	22.3
		16QAM	1	0	1	22.7	22.5	22.7
			1	3	1	22.7	22.7	21.8
			1	5	1	22.7	22.2	22.7
			3	0	1	22.0	22.2	22.3
			3	1	1	21.9	22.6	22.3
			3	3	1	22.3	22.2	22.5
			6	0	2	21.3	21.2	21.4

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9. PEAK TO AVERAGE RATIO

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

TEST SPEC

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

9.1. CONDUCTED PEAK TO AVERAGE RESULT

PAR Measurement					
Cell Bandwidth	**Channel (MHz)**	**Mode**	**Peak (dBm)**	**Average (dBm)**	**Delta**
LTE4 1.4M	1732.5	QPSK	26.36	20.85	5.51
		16QAM	26.34	20.03	6.31
LTE4 3M		QPSK	26.5	20.84	5.66
		16QAM	26.43	19.82	6.61

PAR Measurement					
Cell Bandwidth	**Channel (MHz)**	**Mode**	**Peak (dBm)**	**Average (dBm)**	**Delta**
LTE12 1.4M	707.5	QPSK	27.73	21.9	5.83
		16QAM	27.87	21.28	6.59
LTE12 3M		QPSK	27.97	21.94	6.03
		16QAM	27.79	20.73	7.06

PAR Measurement					
Cell Bandwidth	**Channel (MHz)**	**Mode**	**Peak (dBm)**	**Average (dBm)**	**Delta**
LTE25 1.4M	1882.5	QPSK	26.35	20.6	5.75
		16QAM	26.47	19.83	6.64
LTE25 3M		QPSK	26.54	20.65	5.89
		16QAM	26.53	19.62	6.91
LTE25 10M		QPSK	26.37	20.49	5.88
		16QAM	26.29	19.42	6.87
LTE25 15M		QPSK	25.2	20.51	4.69
		16QAM	25.58	19.76	5.82
LTE25 20M		QPSK	24.58	20.55	4.03
		16QAM	24.89	19.47	5.42

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10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

MODES TESTED

LTE

RESULTS

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10.1.1. LTE OCCUPIED BANDWIDTH RESULTS

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	20	QPSK	100/0	1860	17.810	19.210
			100/0	1882.5	17.850	19.370
			100/0	1905	17.820	19.250
		16QAM	100/0	1860	17.810	19.190
			100/0	1882.5	17.820	19.320
			100/0	1905	17.830	19.170
	15	QPSK	75/0	1857.5	13.400	14.660
			75/0	1882.5	13.430	14.490
			75/0	1907.5	13.400	14.530
		16QAM	75/0	1857.5	13.440	14.530
			75/0	1882.5	13.420	14.430
			75/0	1907.5	13.380	14.460
	10	QPSK	50/0	1855	8.970	9.722
			50/0	1882.5	8.958	9.697
			50/0	1910	8.952	9.837
		16QAM	50/0	1855	8.950	9.675
			50/0	1882.5	8.962	9.939
			50/0	1910	8.984	9.712
	3	QPSK	15/0	1851.5	2.692	2.964
			15/0	1882.5	2.693	2.979
			15/0	1913.5	2.690	2.956
		16QAM	15/0	1851.5	2.692	2.956
			15/0	1882.5	2.690	2.935
			15/0	1913.5	2.688	2.952
	1.4	QPSK	6/0	1850.7	1.079	1.240
			6/0	1882.5	1.086	1.286
			6/0	1914.3	1.086	1.285
		16QAM	6/0	1850.7	1.090	1.296
			6/0	1882.5	1.088	1.277
			6/0	1914.3	1.088	1.297

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Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE12	3	QPSK	15/0	700.5	2.694	2.969
			15/0	707.5	2.686	2.950
			15/0	714.5	2.683	2.962
		16QAM	15/0	700.5	2.692	2.976
			15/0	707.5	2.681	2.970
			15/0	714.5	2.688	2.984
	1.4	QPSK	6/0	699.7	1.084	1.252
			6/0	707.5	1.083	1.254
			6/0	715.3	1.083	1.254
		16QAM	6/0	699.7	1.090	1.287
			6/0	707.5	1.092	1.255
			6/0	715.3	1.092	1.284

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	3	QPSK	15/0	1711.5	2.692	2.981
			15/0	1732.5	2.684	2.969
			15/0	1753.5	2.694	2.977
		16QAM	15/0	1711.5	2.684	2.968
			15/0	1732.5	2.683	2.941
			15/0	1753.5	2.684	2.969
	1.4	QPSK	6/0	1710.7	1.086	1.263
			6/0	1732.5	1.085	1.269
			6/0	1754.3	1.085	1.272
		16QAM	6/0	1710.7	1.09	1.288
			6/0	1732.5	1.088	1.277
			6/0	1754.3	1.086	1.271

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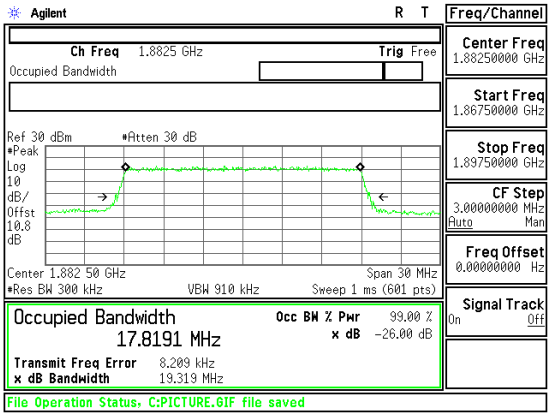
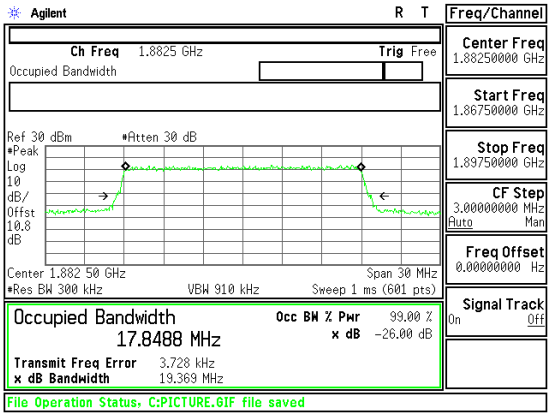
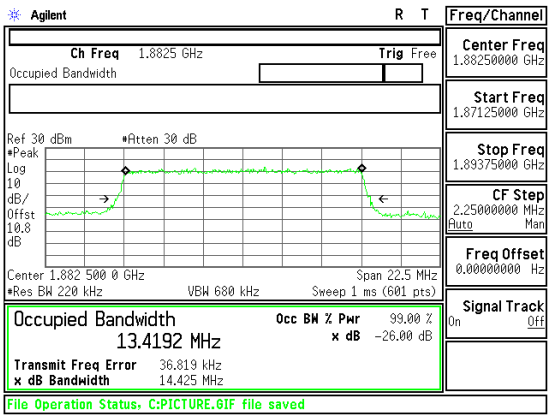
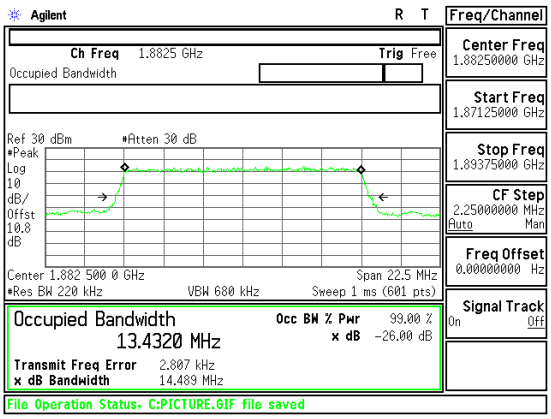
10.1.1. OCCUPIED BANDWIDTH PLOTS

LTE Band 25

Band LTE25 20MHz 16QAM	 Band LTE25 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE25 15MHz 16QAM	 Band LTE25 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 15MHz OBW QPSK Mid Channel FRB.gif

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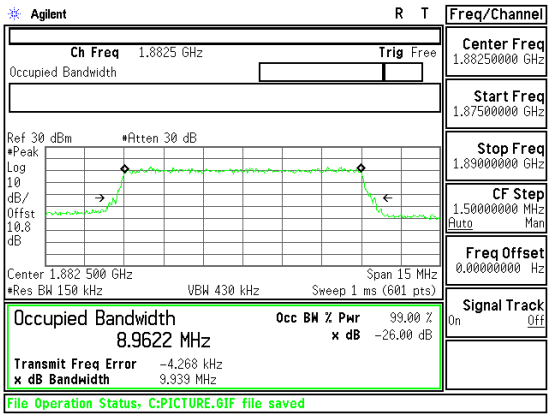
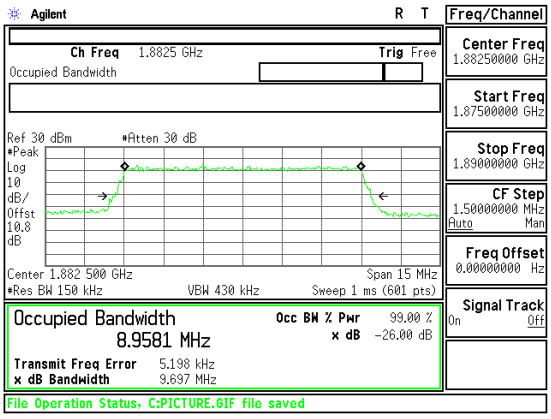
Band LTE25 10MHz 16QAM

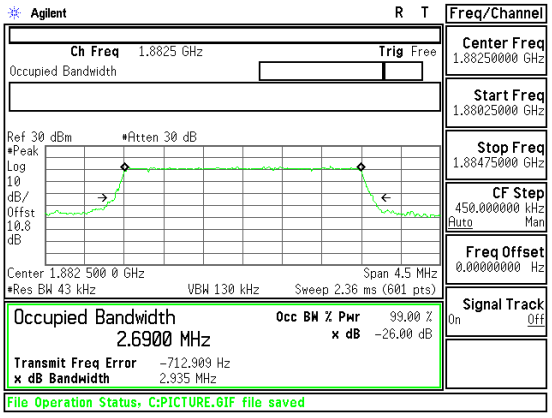


Band LTE25 10MHz OBW 16QAM Mid Channel FRB.gif

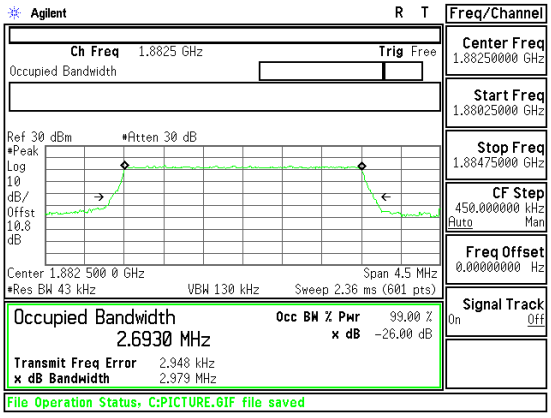


Band LTE25 10MHz OBW QPSK Mid Channel FRB.gif

Band LTE25 3MHz 16QAM



Band LTE25 3MHz OBW 16QAM Mid Channel FRB.gif



Band LTE25 3MHz OBW QPSK Mid Channel FRB.gif

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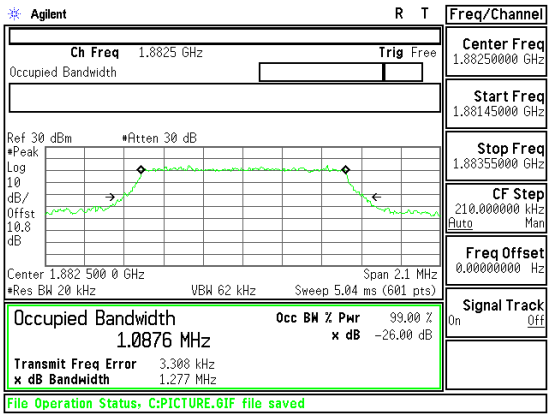
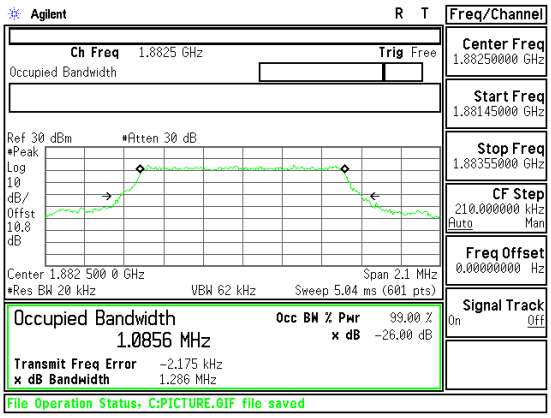
Band LTE25 1.4MHz 16QAM	 Band LTE25 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 1.4MHz OBW QPSK Mid Channel FRB.gif

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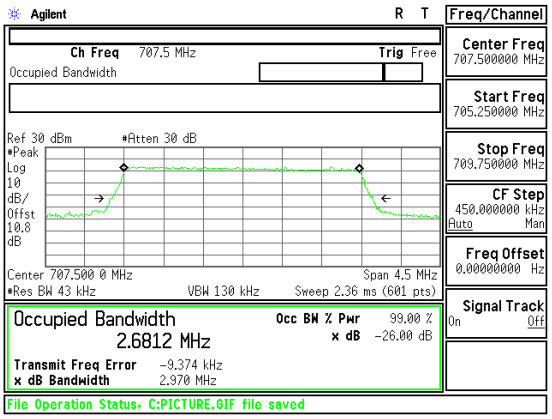
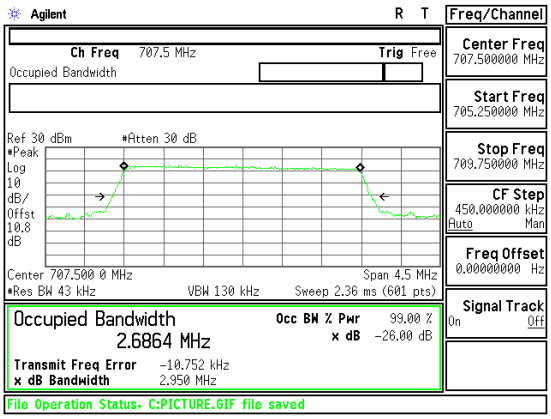
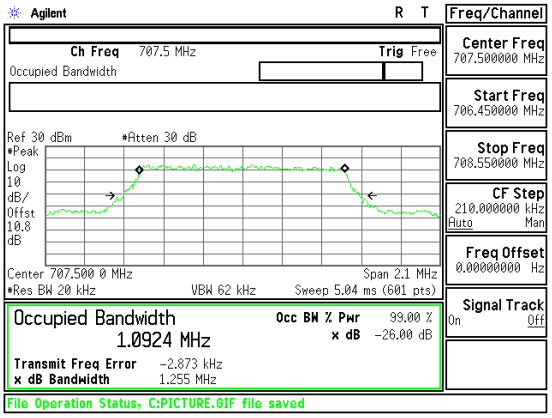
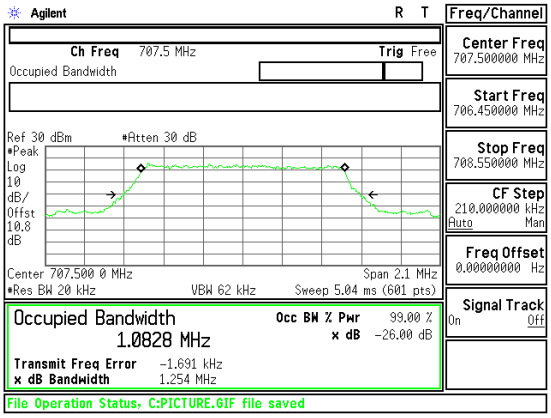
LTE Band 12

Band LTE12 3MHz 16QAM	 Band LTE12 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 1.4MHz OBW QPSK Mid Channel FRB.gif

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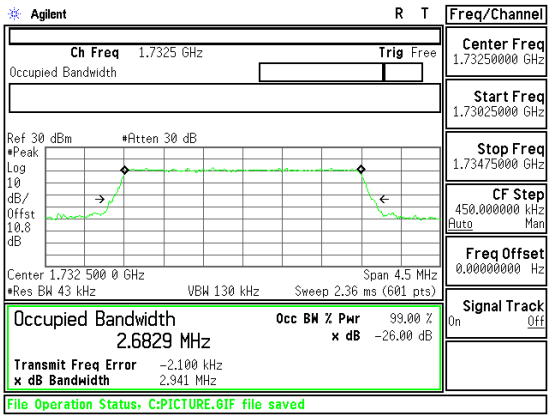
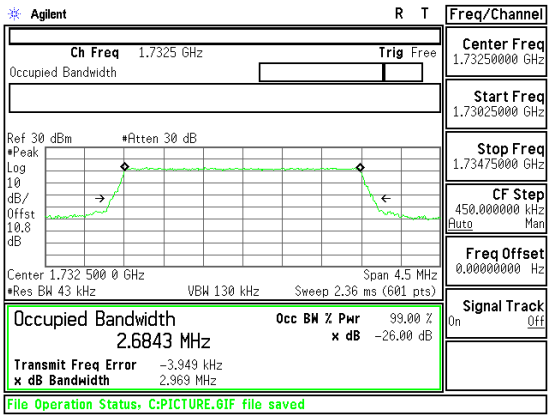
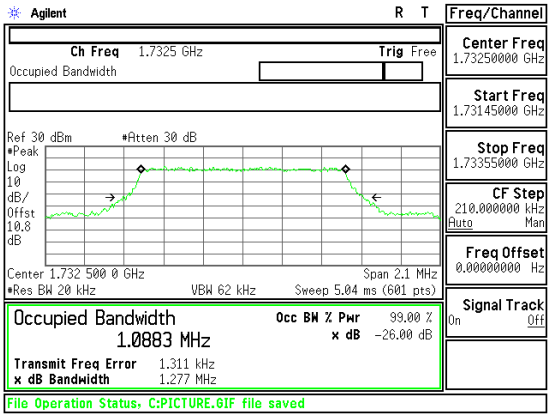
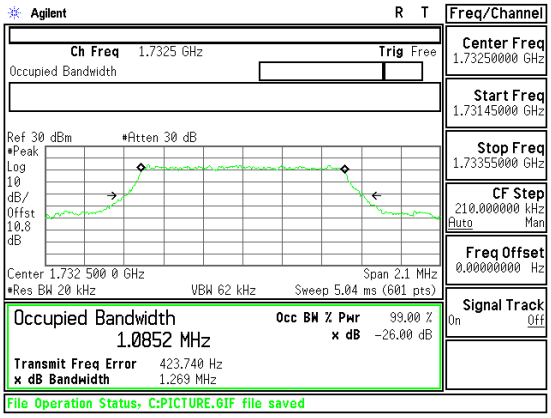
LTE Band 4

Band LTE4 3MHz 16QAM	 Band LTE4 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 1.4MHz OBW QPSK Mid Channel FRB.gif

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10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238, and §27. 53

LIMITS

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

Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

MODES TESTED

LTE

RESULTS

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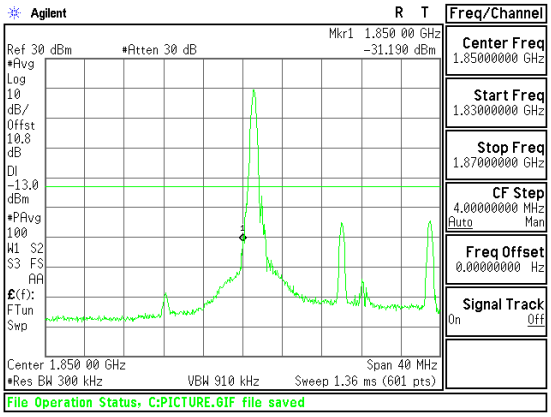
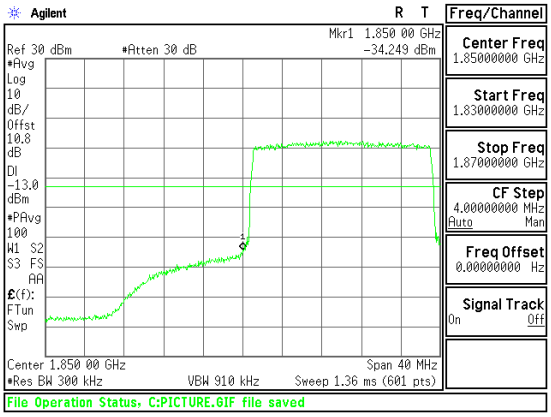
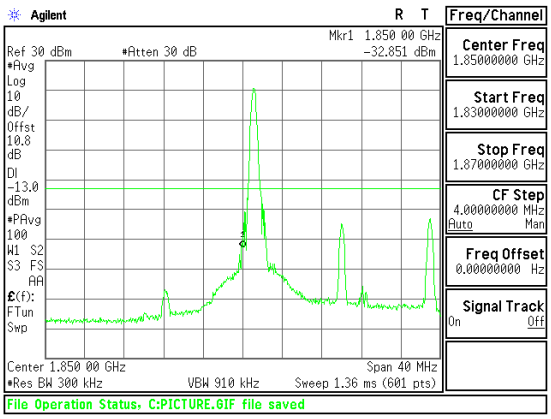
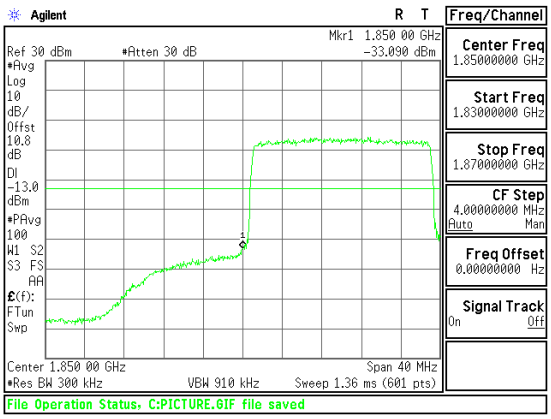
10.2.1. BAND EDGE PLOTS

LTE Band 25

Band LTE25 20MHz 16QAM	 Band LTE25 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 20MHz QPSK	 Band LTE25 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 20MHz CBE QPSK Low Channel FRB.gif

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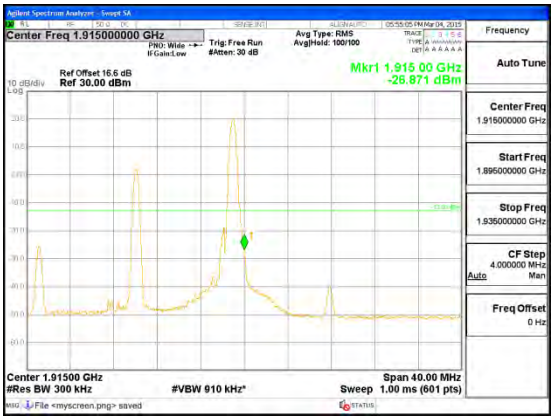
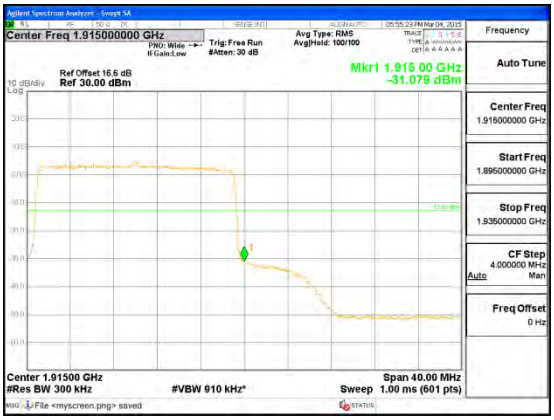
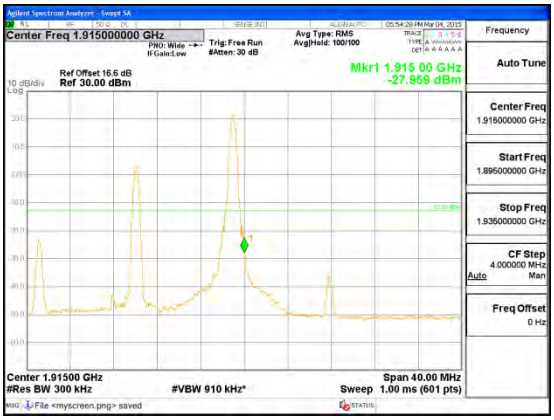
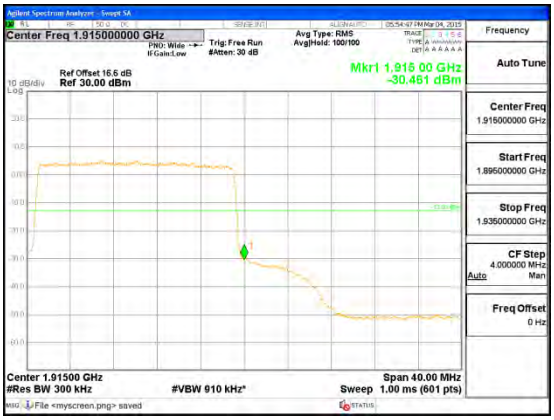
Band LTE25 20MHz 16QAM	 Band LTE25 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 20MHz CBE 16QAM High Channel FRB.gif
Band LTE25 20MHz QPSK	 Band LTE25 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 20MHz CBE QPSK High Channel FRB.gif

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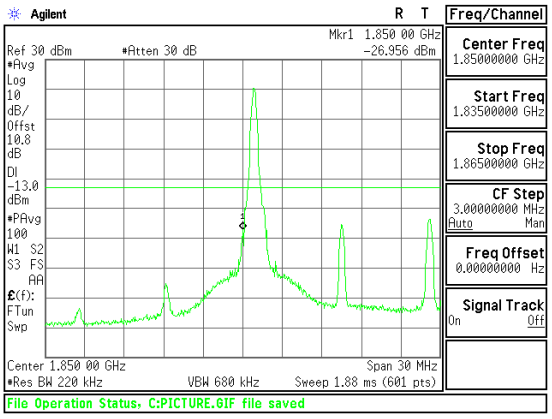
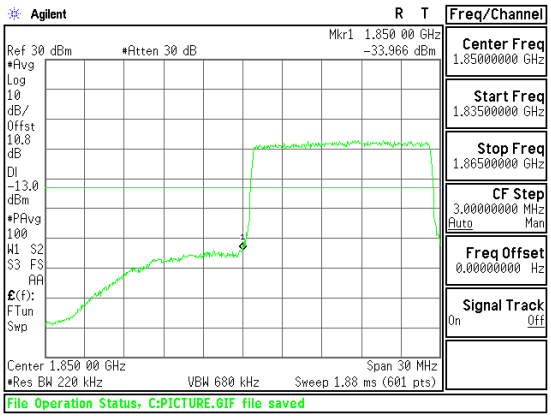
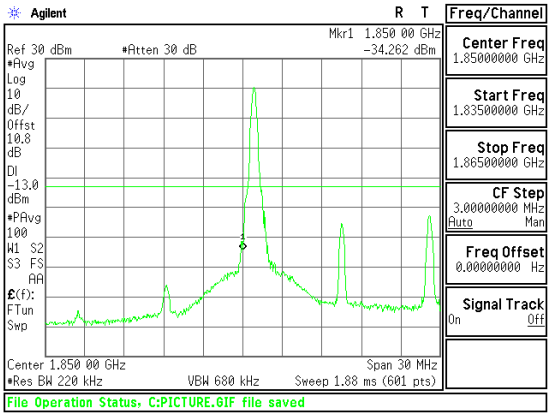
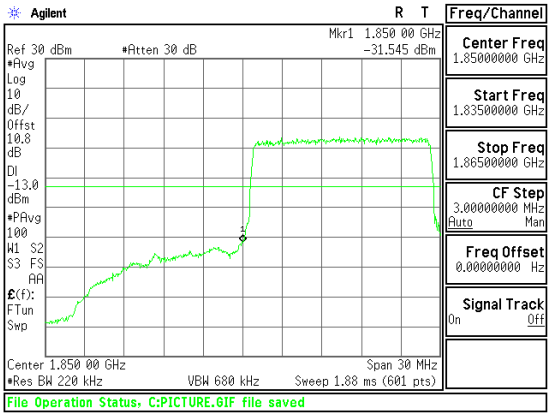
Band LTE25 15MHz 16QAM	 Band LTE25 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 15MHz QPSK	 Band LTE25 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 15MHz CBE QPSK Low Channel FRB.gif

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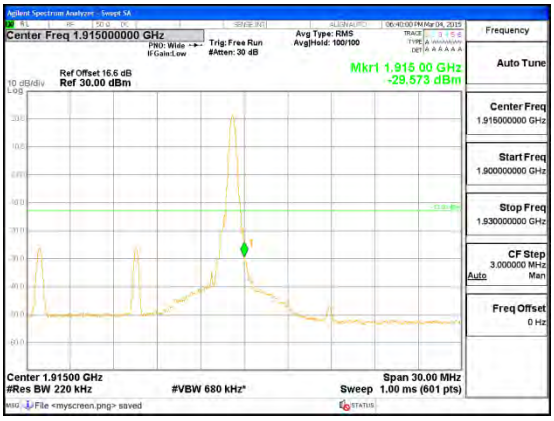
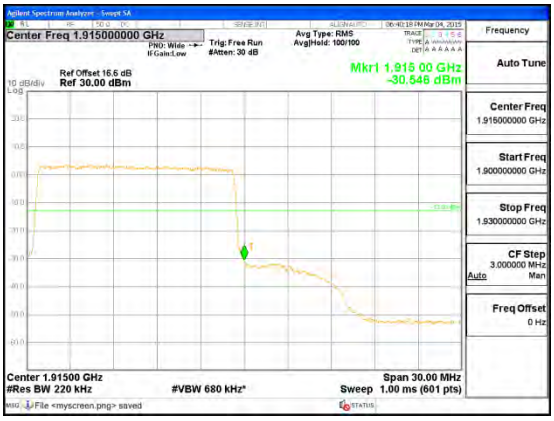
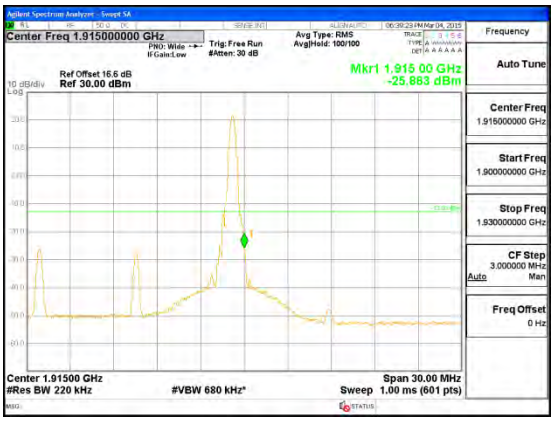
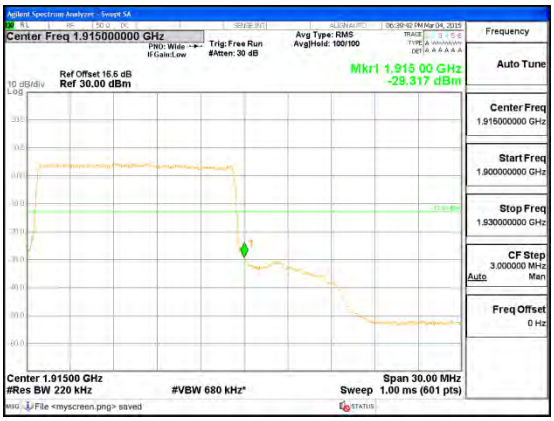
Band LTE25 15MHz 16QAM	 Band LTE25 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 15MHz CBE 16QAM High Channel FRB.gif
Band LTE25 15MHz QPSK	 Band LTE25 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 15MHz CBE QPSK High Channel FRB.gif

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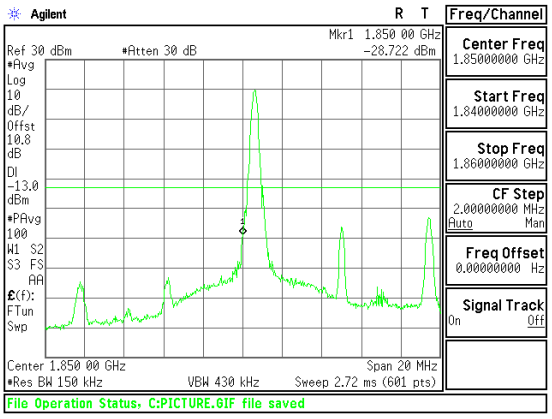
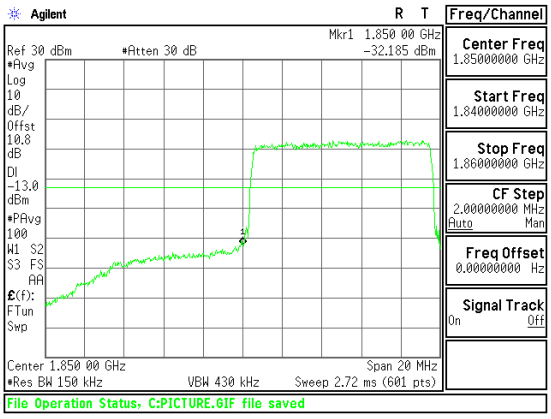
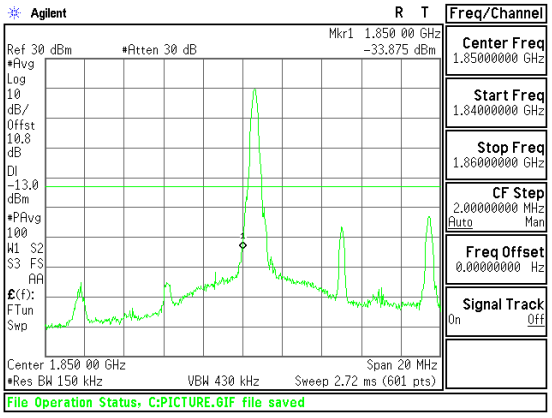
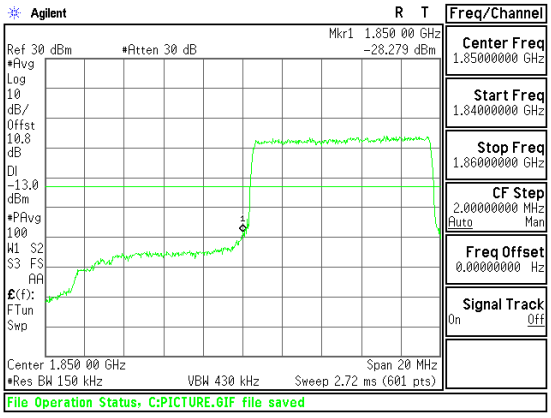
Band LTE25 10MHz 16QAM	 Band LTE25 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 10MHz QPSK	 Band LTE25 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 10MHz CBE QPSK Low Channel FRB.gif

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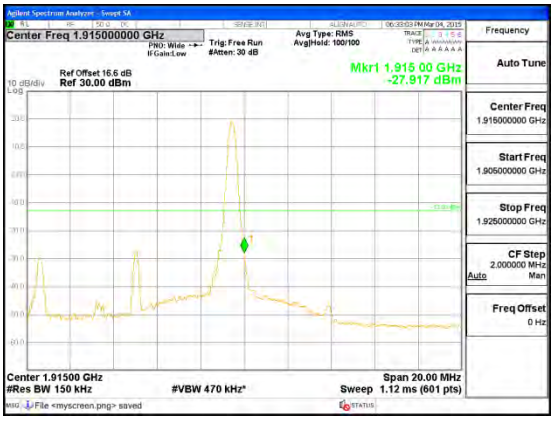
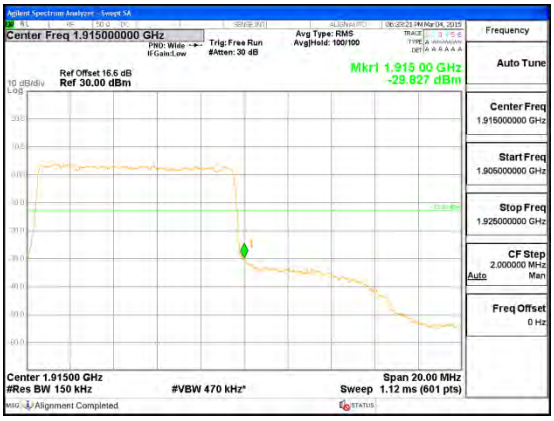
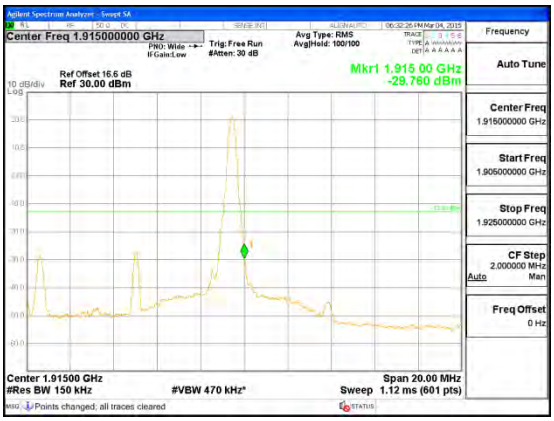
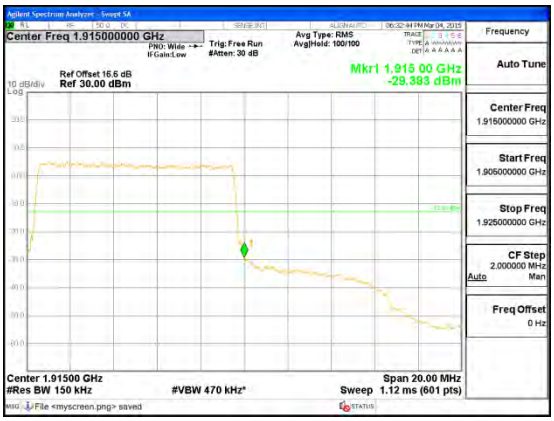
Band LTE25 10MHz 16QAM	 Band LTE25 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 10MHz CBE 16QAM High Channel FRB.gif
Band LTE25 10MHz QPSK	 Band LTE25 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 10MHz CBE QPSK High Channel FRB.gif

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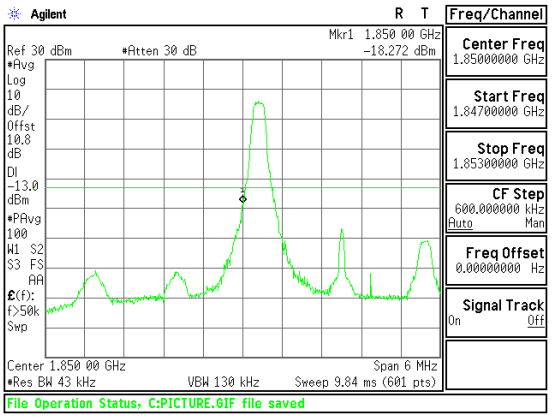
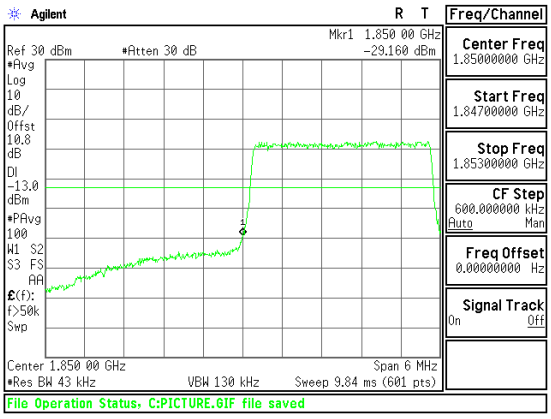
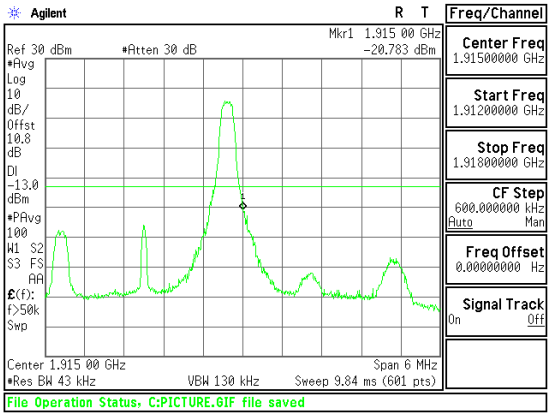
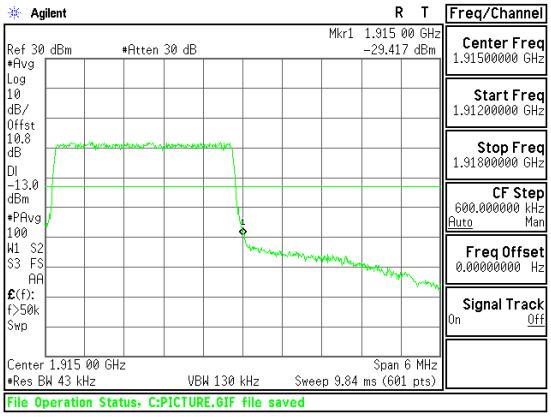
Band LTE25 3MHz 16QAM	 Band LTE25 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 3MHz 16QAM	 Band LTE25 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 3MHz CBE 16QAM High Channel FRB.gif

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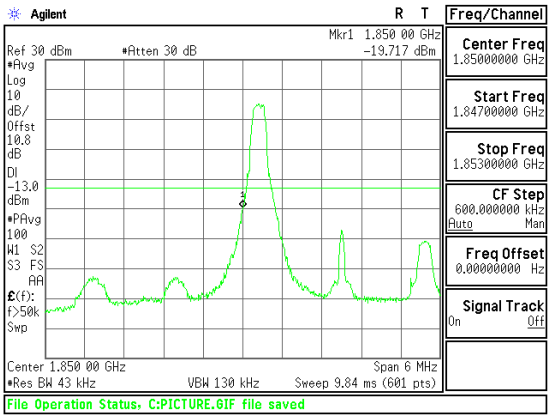
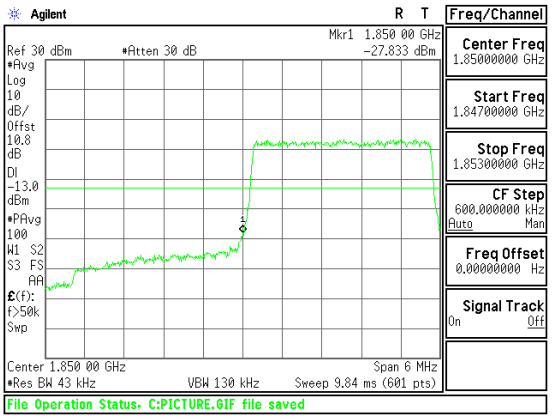
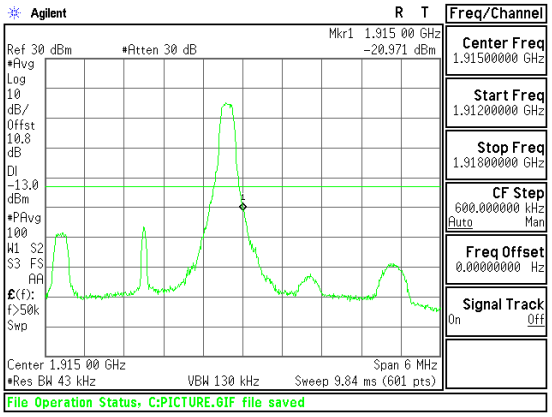
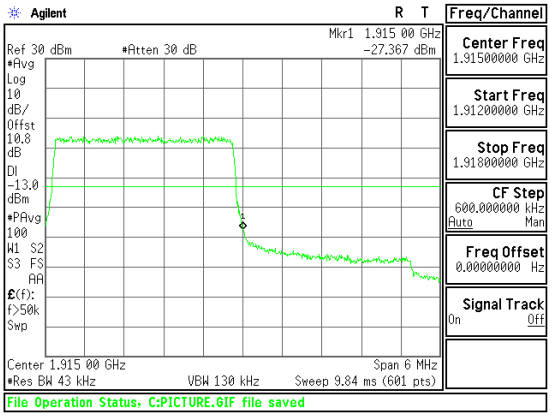
Band LTE25 3MHz QPSK	 Band LTE25 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 3MHz CBE QPSK Low Channel FRB.gif
Band LTE25 3MHz QPSK	 Band LTE25 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 3MHz CBE QPSK High Channel FRB.gif

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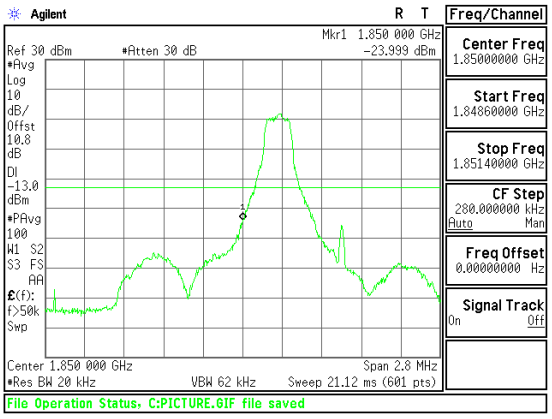
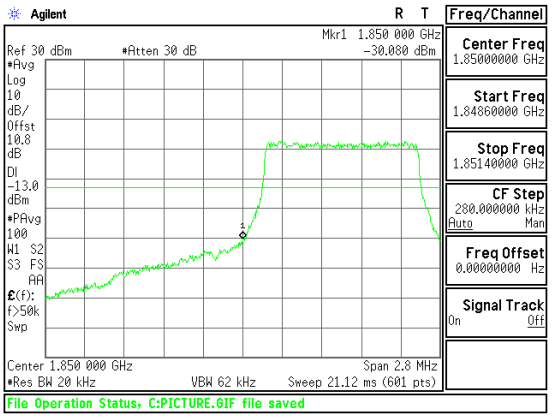
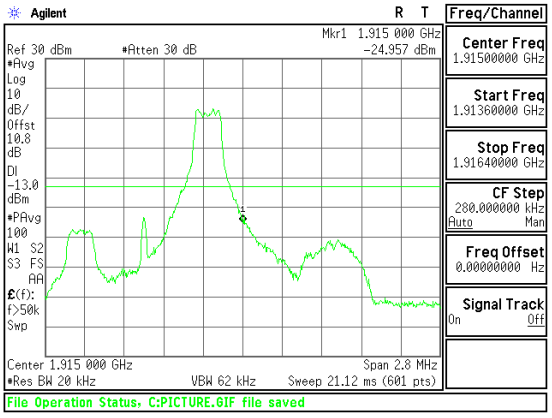
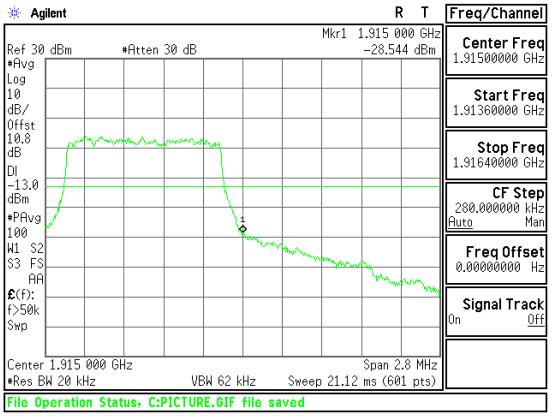
Band LTE25 1.4MHz 16QAM	 Band LTE25 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 1.4MHz 16QAM	 Band LTE25 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 1.4MHz CBE 16QAM High Channel FRB.gif

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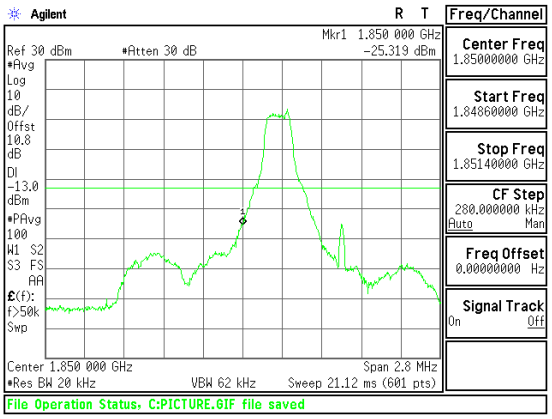
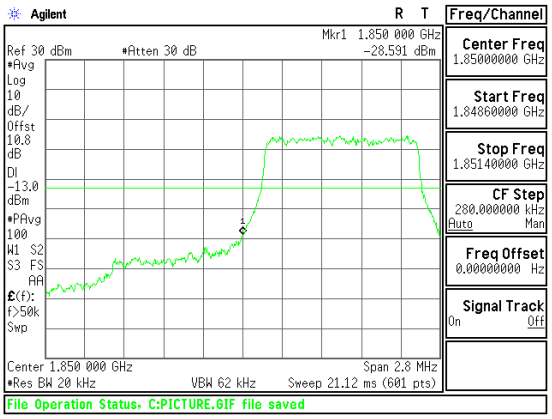
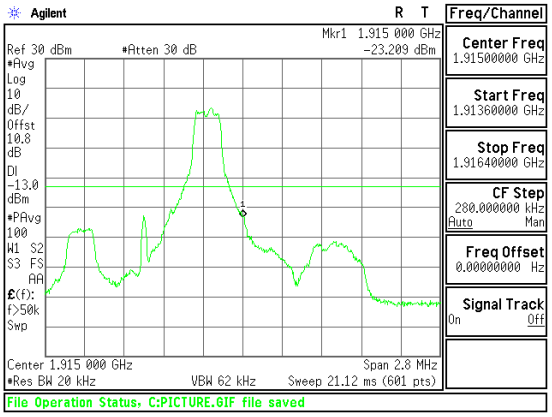
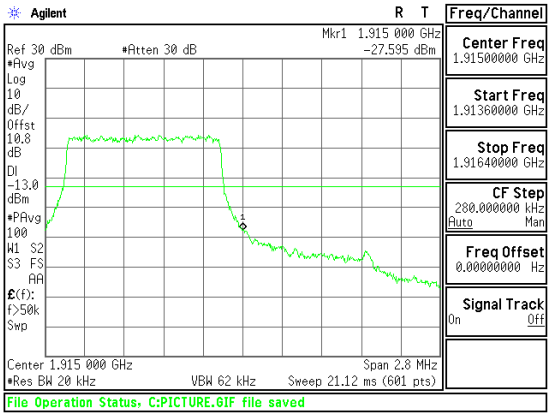
Band LTE25 1.4MHz QPSK	 Band LTE25 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE25 1.4MHz QPSK	 Band LTE25 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 1.4MHz CBE QPSK High Channel FRB.gif

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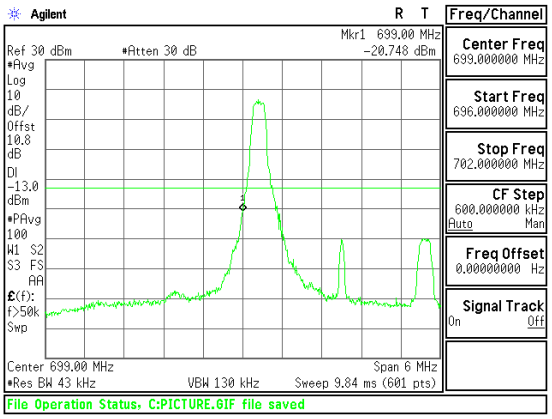
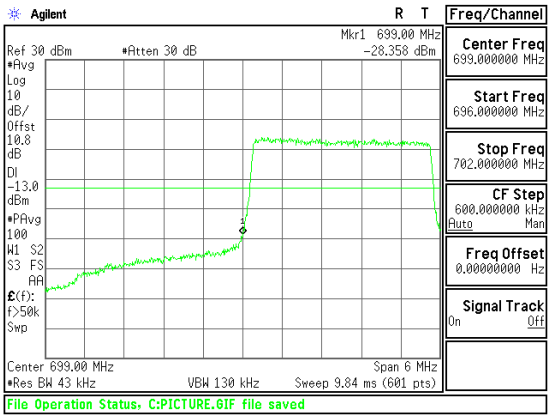
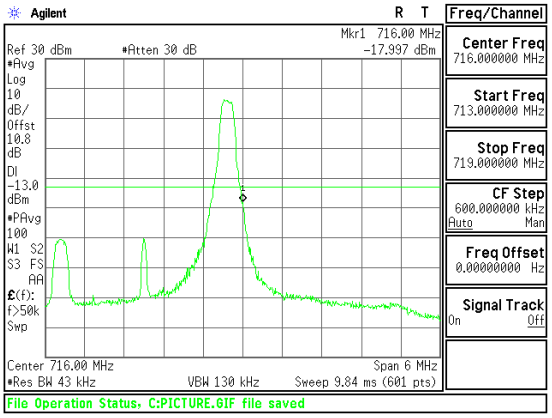
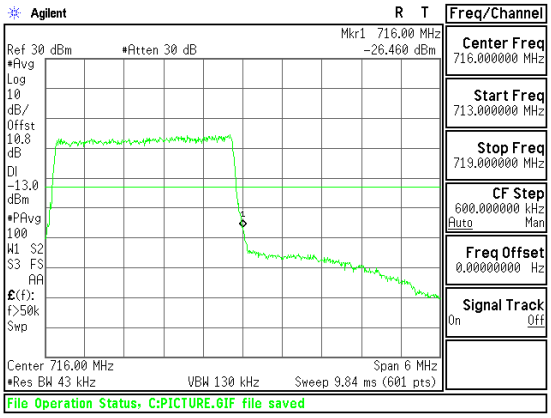
LTE Band 12

Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 3MHz CBE 16QAM High Channel FRB.gif

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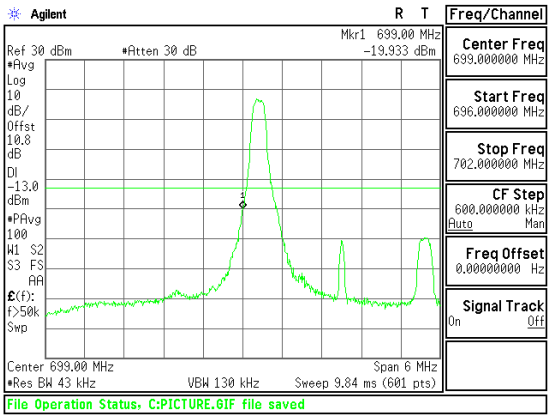
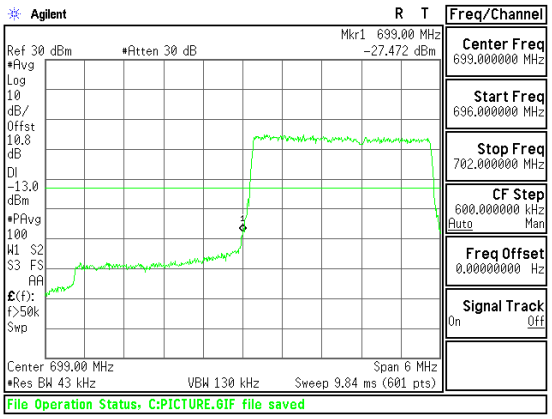
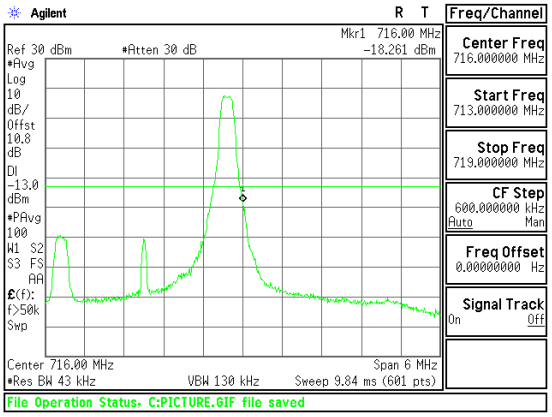
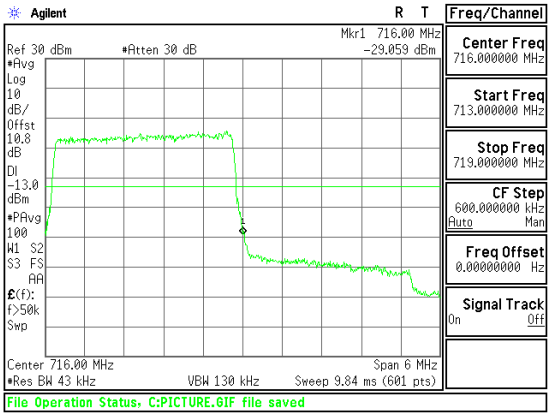
Band LTE12 3MHz QPSK	 Band LTE12 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE12 3MHz CBE QPSK Low Channel FRB.gif
Band LTE12 3MHz QPSK	 Band LTE12 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE12 3MHz CBE QPSK High Channel FRB.gif

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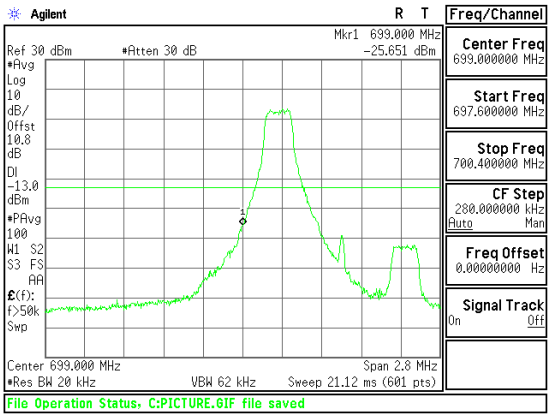
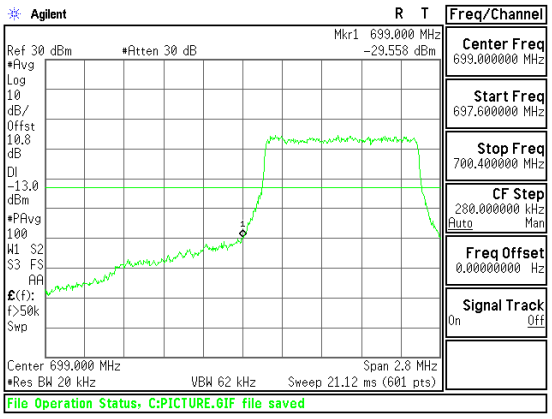
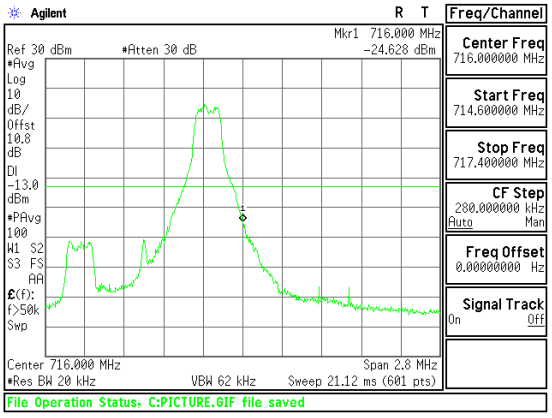
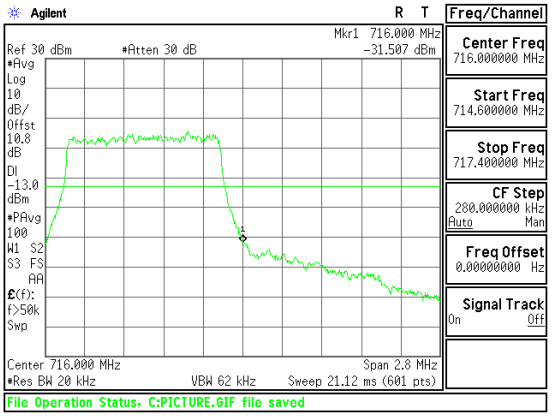
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 1.4MHz CBE 16QAM High Channel FRB.gif

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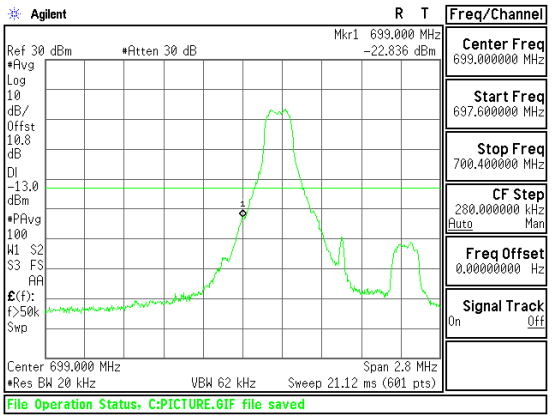
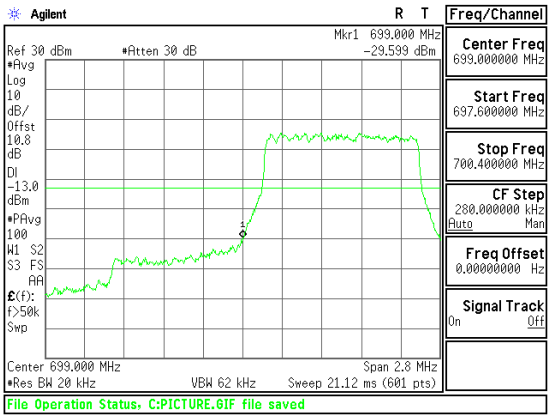
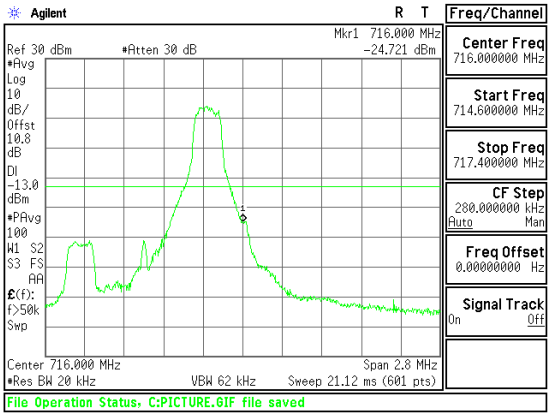
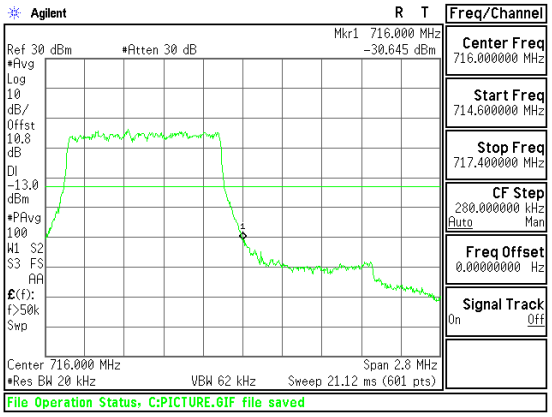
Band LTE12 1.4MHz QPSK	 Band LTE12 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE12 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE12 1.4MHz QPSK	 Band LTE12 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE12 1.4MHz CBE QPSK High Channel FRB.gif

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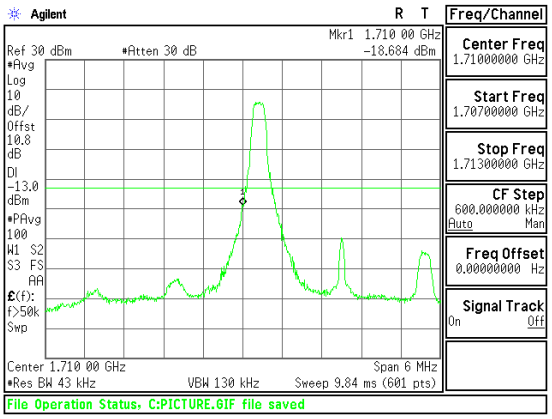
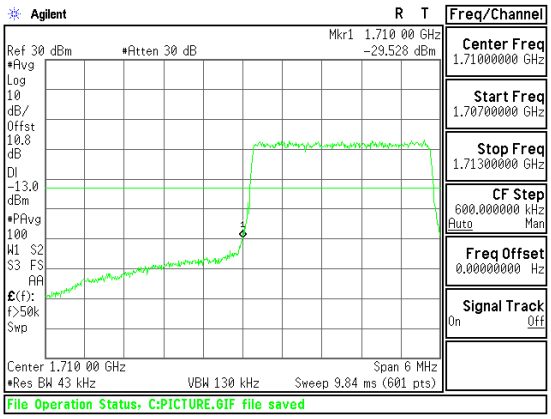
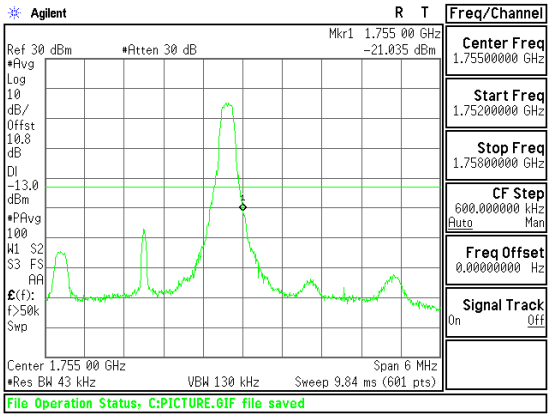
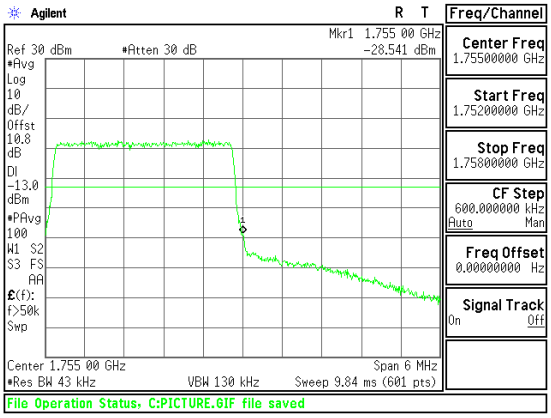
LTE Band 4

Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM High Channel FRB.gif

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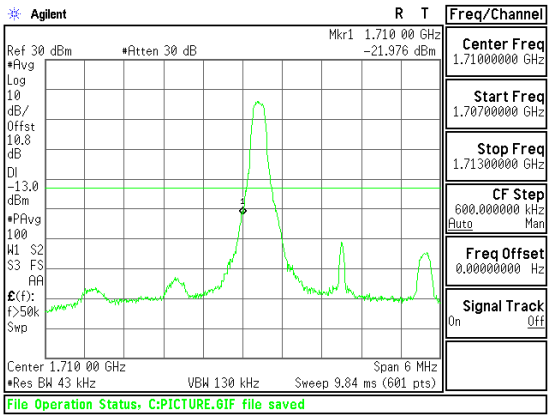
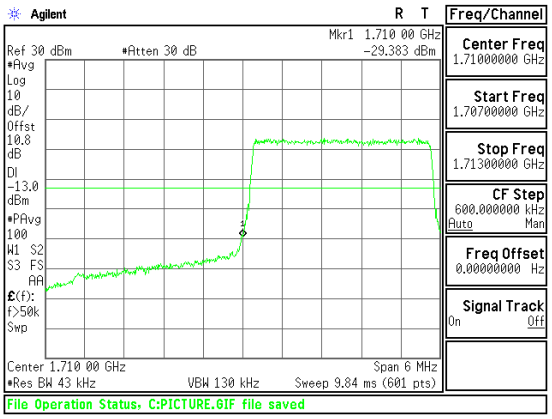
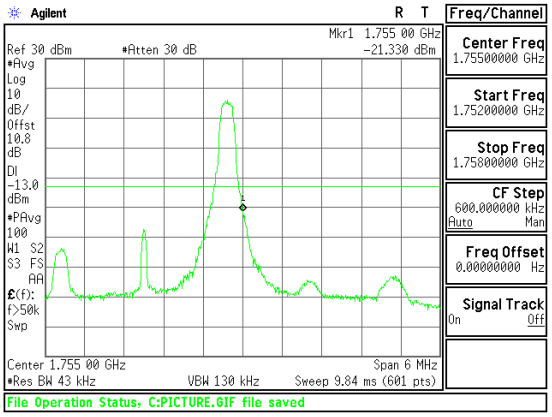
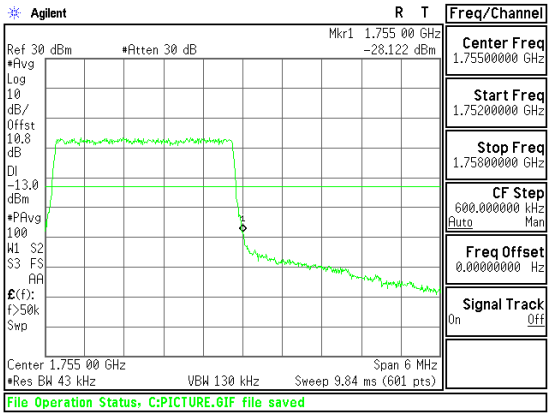
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK Low Channel FRB.gif
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK High Channel FRB.gif

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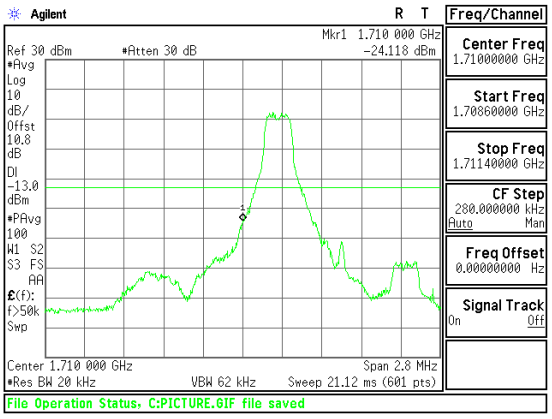
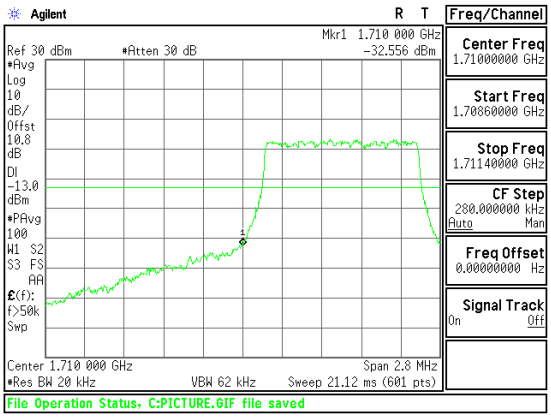
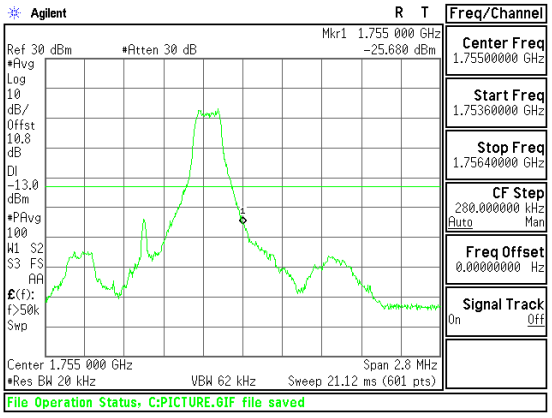
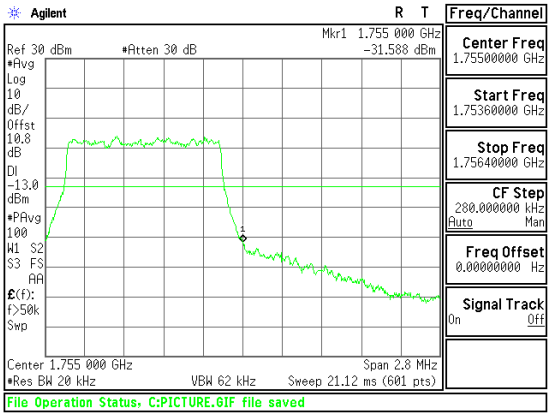
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM High Channel FRB.gif

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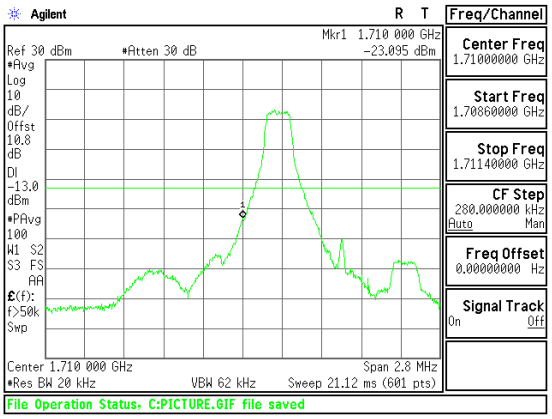
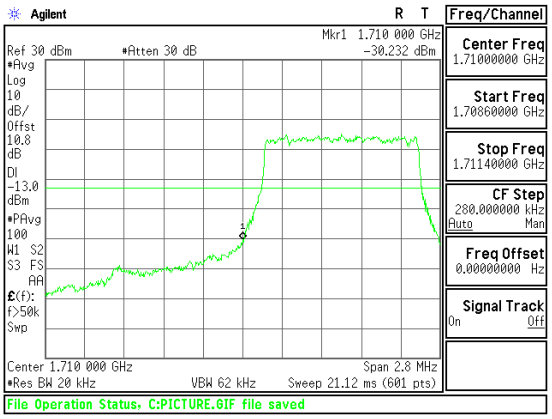
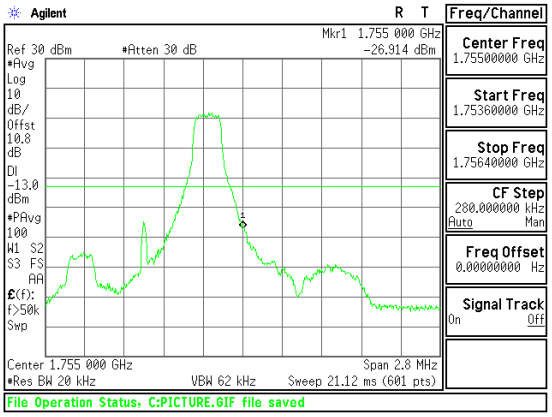
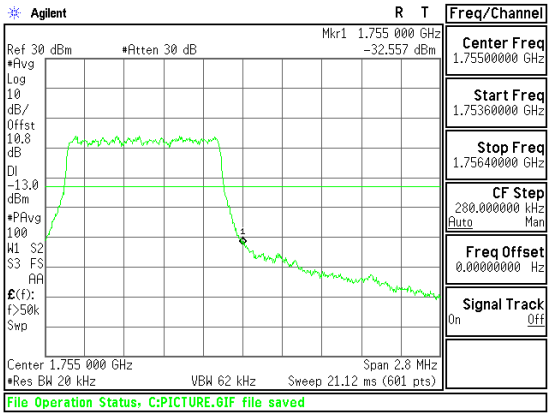
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK High Channel FRB.gif

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10.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, and §27.53

LIMITS

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

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

MODES TESTED

LTE

RESULTS

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10.3.1. OUT OF BAND EMISSIONS RESULT

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	20	QPSK	1860	-29.61	-13	-16.61
			1882.5	-29.85	-13	-16.85
			1905	-30.16	-13	-17.16
		16QAM	1860	-30.35	-13	-17.35
			1882.5	-30.51	-13	-17.51
			1905	-30.18	-13	-17.18
	15	QPSK	1857.5	-30.52	-13	-17.52
			1882.5	-30.27	-13	-17.27
			1907.5	-30.25	-13	-17.25
		16QAM	1857.5	-30.18	-13	-17.18
			1882.5	-30.49	-13	-17.49
			1907.5	-29.53	-13	-16.53
	10	QPSK	1855	-30.06	-13	-17.06
			1882.5	-30.38	-13	-17.38
			1910	-30.05	-13	-17.95
		16QAM	1855	-30.28	-13	-17.28
			1882.5	-29.76	-13	-16.76
			1910	-29.66	-13	-16.66
	3	QPSK	1851.5	-29.65	-13	-16.65
			1882.5	-29.35	-13	-16.35
			1913.5	-29.51	-13	-16.51
		16QAM	1851.5	-30.62	-13	-17.62
			1882.5	-30.39	-13	-17.39
			1913.5	-30.30	-13	-17.30
	1.4	QPSK	1850.7	-29.72	-13	-16.72
			1882.5	-30.38	-13	-17.38
			1914.3	-30.17	-13	-17.17
		16QAM	1850.7	-29.94	-13	-16.94
			1882.5	-30.10	-13	-17.10
			1914.3	-29.23	-13	-16.23

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	3	QPSK	700.5	-30.371	-13	-17.371
			707.5	-30.186	-13	-17.186
			714.5	-30.411	-13	-17.411
		16QAM	700.5	-29.067	-13	-16.067
			707.5	-30.472	-13	-17.472
			714.5	-30.256	-13	-17.256
	1.4	QPSK	699.7	-30.000	-13	-17.000
			707.5	-29.418	-13	-16.418
			715.3	-29.902	-13	-16.902
		16QAM	699.7	-30.618	-13	-17.618
			707.5	-30.134	-13	-17.134
			715.3	-29.620	-13	-16.620

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	3	QPSK	1711.5	-29.034	-13	-16.034
			1732.5	-30.132	-13	-17.132
			1753.5	-30.543	-13	-17.543
		16QAM	1711.5	-29.732	-13	-16.732
			1732.5	-29.585	-13	-16.585
			1753.5	-29.752	-13	-16.752
	1.4	QPSK	1710.7	-30.651	-13	-17.651
			1732.5	-30.447	-13	-17.447
			1754.3	-30.253	-13	-17.253
		16QAM	1710.7	-30.148	-13	-17.148
			1732.5	-30.497	-13	-17.497
			1754.3	-29.403	-13	-16.403

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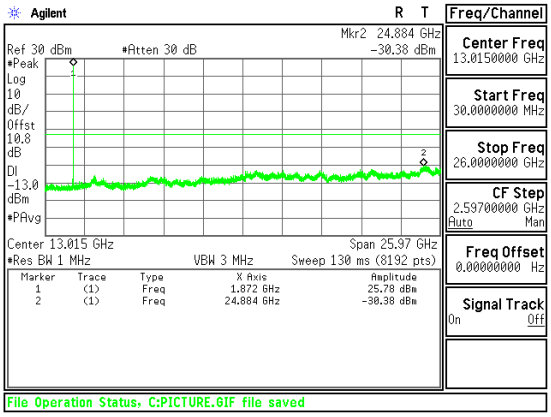
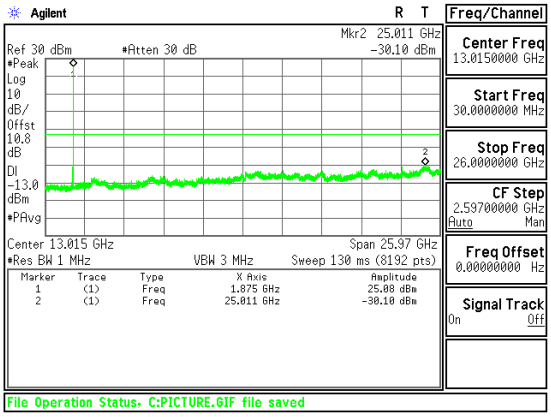
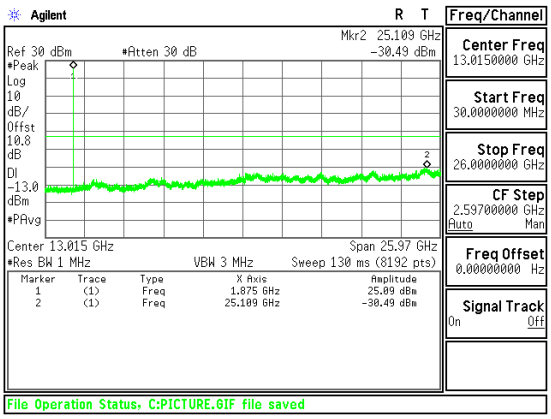
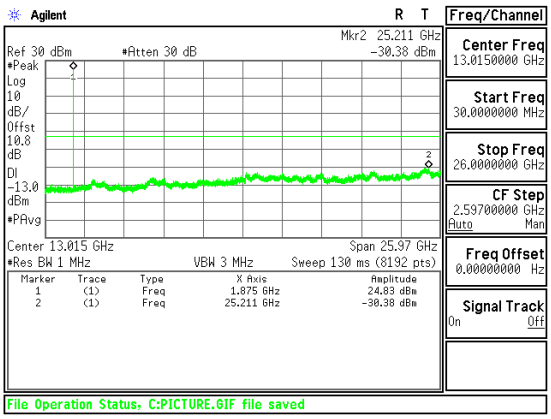
10.3.2. OUT OF BAND EMISSIONS PLOTS

LTE Band 25

Band LTE25 20MHz 16QAM	 Band LTE25 20MHz CSE 16QAM Mid channel	 Band LTE25 20MHz CSE QPSK Mid channel
Band LTE25 15MHz 16QAM	 Band LTE25 15MHz CSE 16QAM Mid channel	 Band LTE25 15MHz CSE QPSK Mid channel

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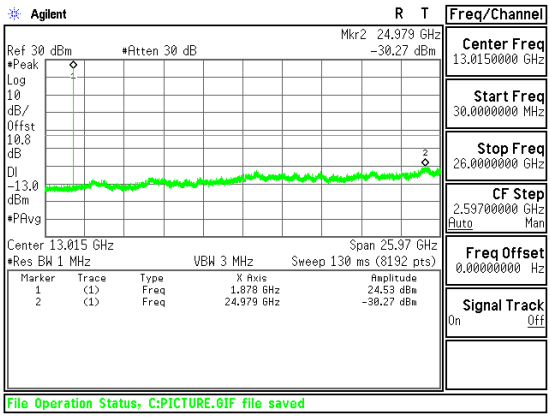
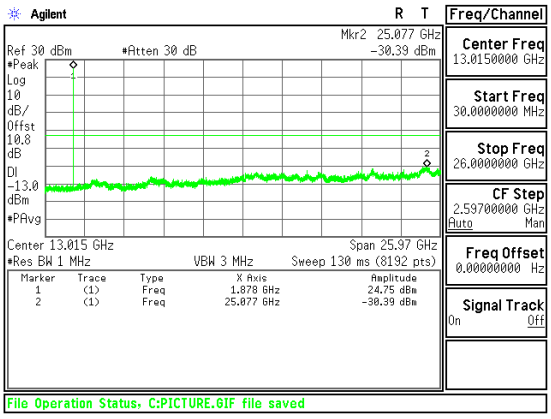
Band LTE25 10MHz 16QAM

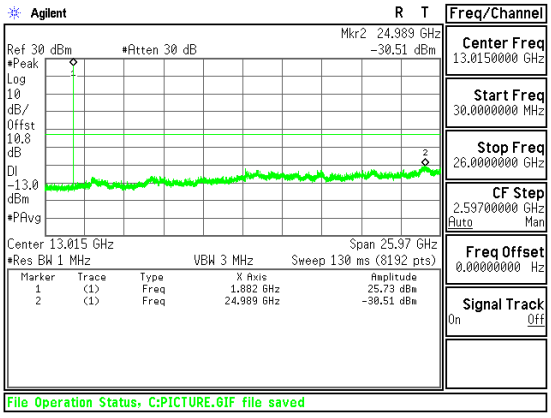


Band LTE25 10MHz CSE 16QAM Mid channel

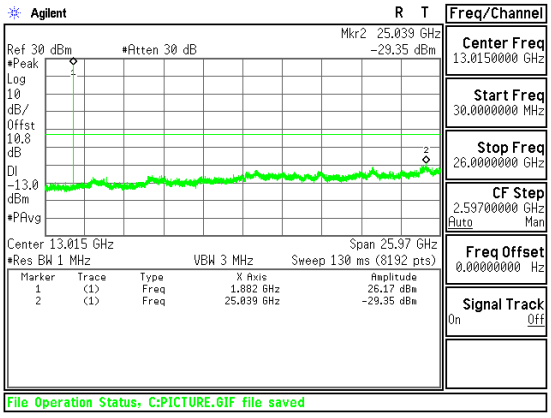


Band LTE25 10MHz CSE QPSK Mid channel

Band LTE25 3MHz 16QAM



Band LTE25 3MHz CSE 16QAM Mid channel



Band LTE25 3MHz CSE QPSK Mid channel

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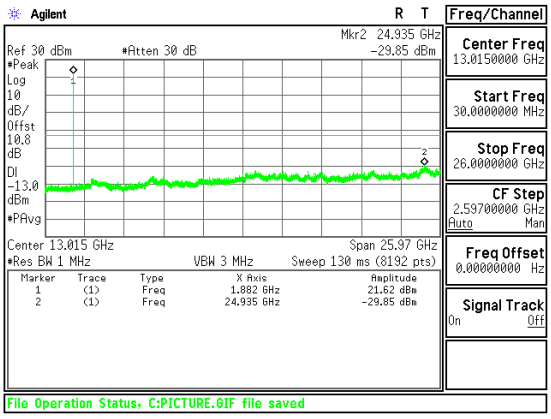
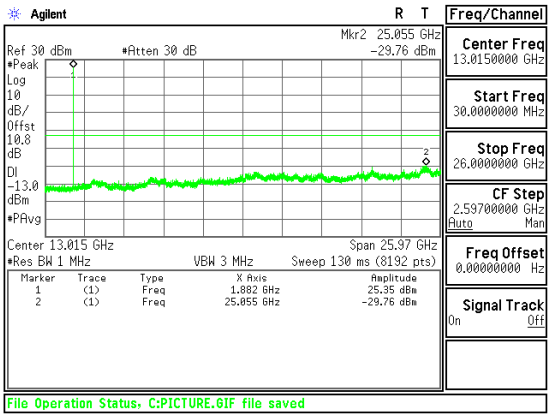
Band LTE25 1.4MHz 16QAM	 Band LTE25 1.4MHz CSE 16QAM Mid channel	 Band LTE25 1.4MHz CSE QPSK Mid channel

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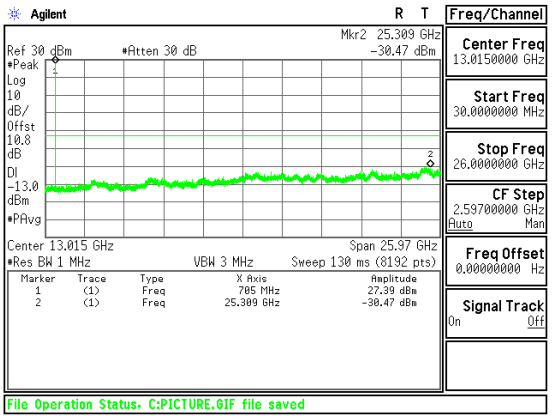
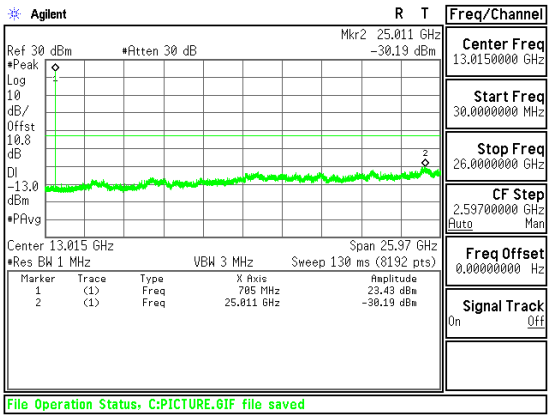
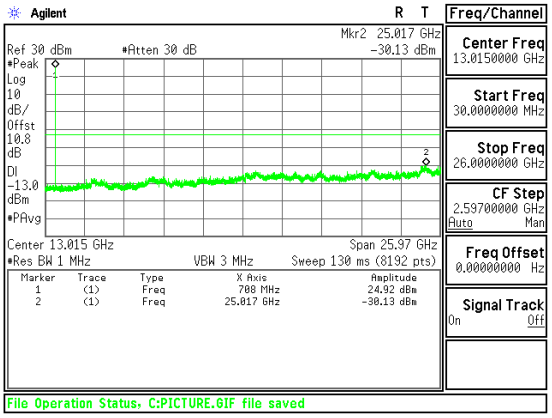
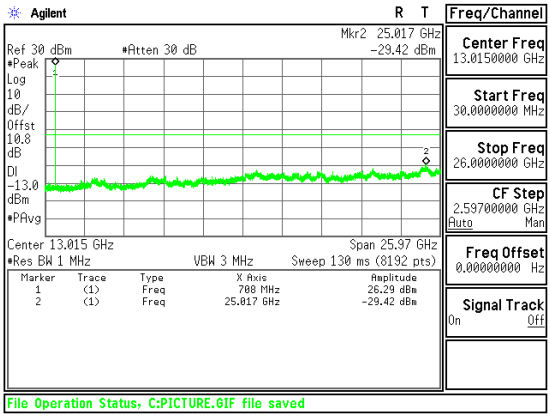
LTE Band 12

Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CSE 16QAM Mid channel	 Band LTE12 3MHz CSE QPSK Mid channel
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CSE 16QAM Mid channel	 Band LTE12 1.4MHz CSE QPSK Mid channel

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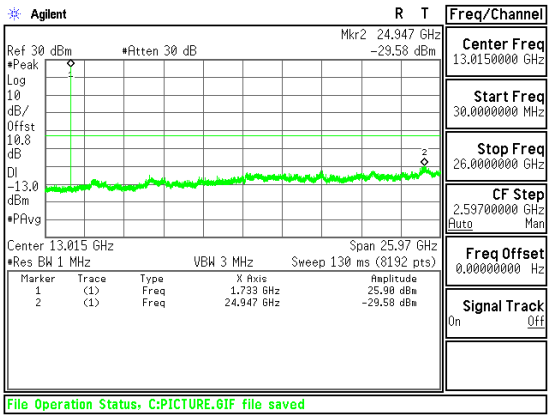
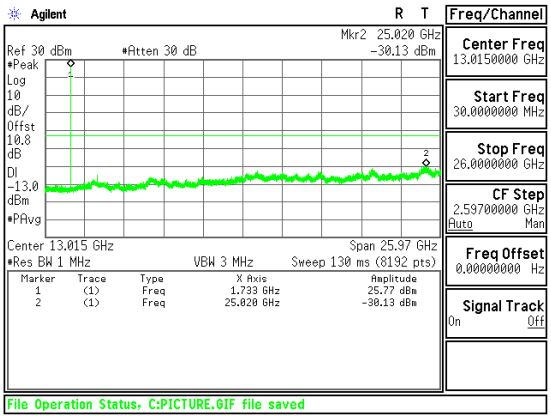
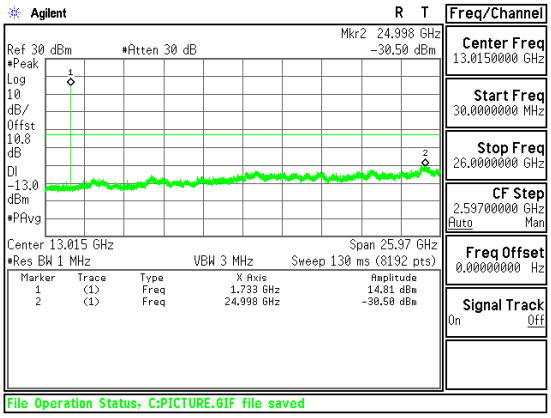
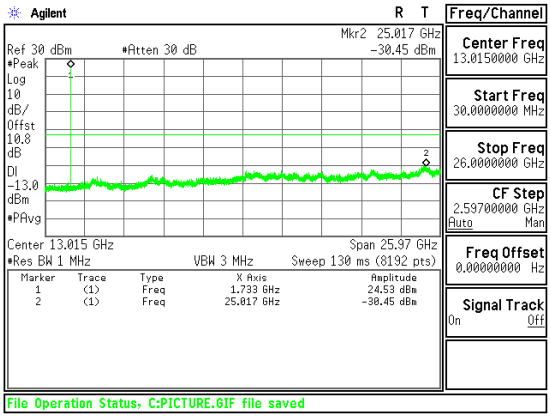
LTE Band 4

Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CSE 16QAM Mid channel	 Band LTE4 3MHz CSE QPSK Mid channel
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CSE 16QAM Mid channel	 Band LTE4 1.4MHz CSE QPSK Mid channel

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11. RADIATED TEST RESULTS

11.1. 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)

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 and LTE

TEST RESULTS

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11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	25.05	319.89
		600	1880	25.33	341.19
		1175	1908.75	25.04	318.79
	EVDO REL. 0	25	1851.25	24.43	277.33
		600	1880	24.17	261.22
		1175	1908.75	24.40	275.42

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	17.57	57.15
		384	836.52	19.41	87.24
		777	848.31	19.55	90.16
	EVDO REL. 0	1013	824.7	18.07	64.12
		384	836.52	19.97	99.31
		777	848.31	20.24	105.68

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11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	20	QPSK	1/0	1860	24.84	304.79
			1/0	1882.5	24.43	277.33
			1/0	1905	25.25	334.58
		16QAM	1/0	1860	23.75	237.14
			1/0	1882.5	24.15	260.02
			1/0	1905	25.09	322.48
	15	QPSK	1/0	1857.5	24.83	304.09
			1/0	1882.5	25.11	324.34
			1/0	1907.5	25.24	333.81
		16QAM	1/0	1857.5	24.60	288.4
			1/0	1882.5	24.41	276.06
			1/0	1907.5	24.34	271.33
	10	QPSK	1/0	1855	24.59	287.74
			1/0	1882.5	25.03	318.42
			1/0	1910	25.01	316.59
		16QAM	1/0	1855	23.75	237.14
			1/0	1882.5	24.63	290.4
			1/0	1910	23.97	249.17
	5	QPSK	1/0	1852.5	24.92	310.46
			1/0	1882.5	24.76	299.23
			1/0	1912.5	24.94	311.53
		16QAM	1/0	1852.5	24.55	285.1
			1/0	1882.5	23.87	243.78
			1/0	1912.5	24.24	265.16

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	3	QPSK	1/0	1851.5	24.98	314.77
			1/0	1882.5	24.63	290.4
			1/0	1913.5	25.21	331.51
		16QAM	1/0	1851.5	24.65	291.74
			1/0	1882.5	23.4	218.78
			1/0	1913.5	24.26	267.61
	1.4	QPSK	1/0	1850.7	24.85	305.49
			1/0	1882.5	24.49	281.19
			1/0	1914.3	24.64	290.74
		16QAM	1/0	1850.7	24.35	272.27
			1/0	1882.5	24.3	269.15
			1/0	1914.3	23.74	236.32

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	10	QPSK	1/0	709	15.75	37.58
			1/0	710	15.5	35.48
			1/0	711	16.61	45.81
		16QAM	1/0	709	14.92	31.05
			1/0	710	15.4	34.67
			1/0	711	16.27	42.36
	5	QPSK	1/0	706.5	15.61	36.39
			1/0	710	16.08	40.55
			1/0	713.5	16.19	41.59
		16QAM	1/0	706.5	14.75	29.85
			1/0	710	15.22	33.27
			1/0	713.5	15.71	37.24

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	10	QPSK	1/0	704	15.75	37.58
			1/0	707.5	15.5	35.48
			1/0	711	16.61	45.81
		16QAM	1/0	704	14.92	31.05
			1/0	707.5	15.40	34.67
			1/0	711	16.27	42.36
	5	QPSK	1/0	701.5	15.61	36.39
			1/0	707.5	16.08	40.55
			1/0	713.5	16.19	41.59
		16QAM	1/0	701.5	14.75	29.85
			1/0	707.5	15.22	33.27
			1/0	713.5	15.71	37.24
	3	QPSK	1/0	700.5	15.61	36.39
			1/0	707.5	16.08	40.55
			1/0	714.5	16.19	41.59
		16QAM	1/0	700.5	14.75	29.85
			1/0	707.5	15.22	33.27
			1/0	714.5	15.71	37.24
	1.4	QPSK	1/0	699.7	15.83	38.28
			1/0	707.5	16.3	42.66
			1/0	715.3	16.41	43.75
		16QAM	1/0	699.7	14.80	30.2
			1/0	707.5	15.27	33.65
			1/0	715.3	15.76	37.67

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	19.37	86.52
			1/0	836.5	19.73	93.99
			1/0	844	20.88	122.49
		16QAM	1/0	829	18.44	69.84
			1/0	836.5	18.65	73.3
			1/0	844	19.83	96.18
	5	QPSK	1/0	826.5	19.24	83.97
			1/0	836.5	19.91	97.97
			1/0	846.5	20.37	108.92
		16QAM	1/0	826.5	18.30	67.62
			1/0	836.5	18.88	77.29
			1/0	846.5	19.29	84.94
	3	QPSK	1/0	825.5	19.02	79.82
			1/0	836.5	19.91	97.97
			1/0	847.5	20.75	118.88
		16QAM	1/0	825.5	18.17	65.63
			1/0	836.5	18.81	76.05
			1/0	847.5	19.86	96.85
	1.4	QPSK	1/0	824.7	20.50	112.23
			1/0	836.5	19.97	99.33
			1/0	848.3	19.65	92.28
		16QAM	1/0	824.7	20.20	104.74
			1/0	836.5	19.59	91.01
			1/0	848.3	19.39	86.92

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	22.87	193.81
			1/0	1732.5	22.31	170.22
			1/0	1745	22.68	185.54
		16QAM	1/0	1720	21.53	142.36
			1/0	1732.5	21.86	153.46
			1/0	1745	22.18	165.36
	15	QPSK	1/0	1717.5	23.99	250.78
			1/0	1732.5	23.90	245.47
			1/0	1747.5	23.93	246.9
		16QAM	1/0	1717.5	23.69	234.04
			1/0	1732.5	23.11	204.65
			1/0	1747.5	23.20	208.7
	10	QPSK	1/0	1715	24.05	254.22
			1/0	1732.5	23.11	204.65
			1/0	1750	23.49	223.15
		16QAM	1/0	1715	23.80	240
			1/0	1732.5	21.89	154.53
			1/0	1750	22.19	165.42
	5	QPSK	1/0	1712.5	23.98	250.11
			1/0	1732.5	23.65	231.74
			1/0	1752.5	23.84	241.93
		16QAM	1/0	1712.5	23.13	205.65
			1/0	1732.5	22.69	185.78
			1/0	1752.5	22.97	198.01

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	24.13	259.11
			1/0	1732.5	23.74	236.59
			1/0	1753.5	23.94	247.92
		16QAM	1/0	1711.5	23.86	243.5
			1/0	1732.5	23.20	208.93
			1/0	1753.5	23.58	228.2
	1.4	QPSK	1/0	1710.7	24.09	256.32
			1/0	1732.5	23.71	234.97
			1/0	1754.3	23.94	247.76
		16QAM	1/0	1710.7	23.82	240.87
			1/0	1732.5	23.31	214.29
			1/0	1754.3	23.45	221.32

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	25.13	326.02
			1/0	1880	26.22	418.77
			1/0	1900	25.66	367.87
		16QAM	1/0	1860	24.06	254.83
			1/0	1880	25.77	377.55
			1/0	1900	24.87	306.69
	15	QPSK	1/0	1857.5	25.04	319.34
			1/0	1880	25.55	358.91
			1/0	1902.5	25.29	337.83
		16QAM	1/0	1857.5	24.27	267.39
			1/0	1880	25.01	316.94
			1/0	1902.5	25.02	317.47
	10	QPSK	1/0	1855	24.18	261.91
			1/0	1880	25.13	325.82
			1/0	1905	24.79	301.09
		16QAM	1/0	1855	23.51	224.47
			1/0	1880	24.54	284.43
			1/0	1905	23.16	206.87
	5	QPSK	1/0	1852.5	24.84	304.97
			1/0	1880	24.92	310.44
			1/0	1907.5	25.55	358.67
		16QAM	1/0	1852.5	23.86	243.36
			1/0	1880	24.07	255.26
			1/0	1907.5	24.27	267.12

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	24.95	312.79
			1/0	1880	25.46	351.54
			1/0	1908.5	25.88	386.99
		16QAM	1/0	1851.5	23.89	245.05
			1/0	1880	24.82	303.38
			1/0	1908.5	25.42	348.1
	1.4	QPSK	1/0	1850.7	24.60	288.57
			1/0	1880	25.35	342.75
			1/0	1909.3	25.96	394.18
		16QAM	1/0	1850.7	23.77	238.37
			1/0	1880	23.96	248.87
			1/0	1909.3	24.08	255.68

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11.1.3. ERP/EIRP PLOTS

LTE Band 25

Band

LTE25

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 25 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	12.43	V	0.9	9.2	20.73	30.0	-9.3	
1860.00	15.45	H	0.9	9.2	23.75	30.0	-6.3	
Mid Ch								
1882.50	12.23	V	0.9	9.1	20.43	30.0	-9.6	
1882.50	15.95	H	0.9	9.1	24.15	30.0	-5.9	
High Ch								
1905.00	12.00	V	0.9	9.1	20.20	30.0	-9.8	
1905.00	16.89	H	0.9	9.1	25.09	30.0	-4.9	

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Band

LTE25

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 25 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	13.03	V	0.9	9.2	21.33	30.0	-8.7	
1860.00	16.54	H	0.9	9.2	24.84	30.0	-5.2	
Mid Ch								
1882.50	13.31	V	0.9	9.1	21.51	30.0	-8.5	
1882.50	16.23	H	0.9	9.1	24.43	30.0	-5.6	
High Ch								
1905.00	13.40	V	0.9	9.1	21.60	30.0	-8.4	
1905.00	17.05	H	0.9	9.1	25.25	30.0	-4.8	

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Band

LTE25

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	10.93	V	0.9	9.2	19.23	30.0	-10.8	
1857.50	16.30	H	0.9	9.2	24.60	30.0	-5.4	
Mid Ch								
1882.50	11.40	V	0.9	9.1	19.60	30.0	-10.4	
1882.50	16.21	H	0.9	9.1	24.41	30.0	-5.6	
High Ch								
1907.50	11.80	V	0.9	9.1	20.00	30.0	-10.0	
1907.50	16.14	H	0.9	9.1	24.34	30.0	-5.7	

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Band

LTE25

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	11.83	V	0.9	9.2	20.13	30.0	-9.9	
1857.50	16.53	H	0.9	9.2	24.83	30.0	-5.2	
Mid Ch								
1882.50	12.05	V	0.9	9.1	20.25	30.0	-9.8	
1882.50	16.91	H	0.9	9.1	25.11	30.0	-4.9	
High Ch								
1907.50	12.40	V	0.9	9.1	20.60	30.0	-9.4	
1907.50	17.04	H	0.9	9.1	25.24	30.0	-4.8	

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Band

LTE25

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	10.97	V	0.9	9.2	19.27	30.0	-10.7	
1855.00	15.45	H	0.9	9.2	23.75	30.0	-6.3	
Mid Ch								
1882.50	11.51	V	0.9	9.1	19.71	30.0	-10.3	
1882.50	16.43	H	0.9	9.1	24.63	30.0	-5.4	
High Ch								
1910.00	11.40	V	0.9	9.1	19.60	30.0	-10.4	
1910.00	15.77	H	0.9	9.1	23.97	30.0	-6.0	

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Band

LTE25

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	11.57	V	0.9	9.2	19.87	30.0	-10.1	
1855.00	16.29	H	0.9	9.2	24.59	30.0	-5.4	
Mid Ch								
1882.50	12.14	V	0.9	9.1	20.34	30.0	-9.7	
1882.50	16.83	H	0.9	9.1	25.03	30.0	-5.0	
High Ch								
1910.00	12.43	V	0.9	9.1	20.63	30.0	-9.4	
1910.00	16.81	H	0.9	9.1	25.01	30.0	-5.0	

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Band

LTE25

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	14.03	V	0.9	9.2	22.33	30.0	-7.7	
1852.50	16.25	H	0.9	9.2	24.55	30.0	-5.5	
Mid Ch								
1882.50	12.51	V	0.9	9.1	20.71	30.0	-9.3	
1882.50	15.67	H	0.9	9.1	23.87	30.0	-6.1	
High Ch								
1912.50	13.41	V	0.9	9.1	21.61	30.0	-8.4	
1912.50	16.04	H	0.9	9.1	24.24	30.0	-5.8	

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Band

LTE25

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	14.33	V	0.9	9.2	22.63	30.0	-7.4	
1852.50	16.62	H	0.9	9.2	24.92	30.0	-5.1	
Mid Ch								
1882.50	13.55	V	0.9	9.1	21.75	30.0	-8.3	
1882.50	16.56	H	0.9	9.1	24.76	30.0	-5.2	
High Ch								
1912.50	14.45	V	0.9	9.1	22.65	30.0	-7.4	
1912.50	16.74	H	0.9	9.1	24.94	30.0	-5.1	

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Band

LTE25

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	12.49	V	0.9	9.2	20.79	30.0	-9.2	
1850.70	16.05	H	0.9	9.2	24.35	30.0	-5.7	
Mid Ch								
1882.50	12.15	V	0.9	9.1	20.35	30.0	-9.7	
1882.50	16.10	H	0.9	9.1	24.30	30.0	-5.7	
High Ch								
1914.30	12.81	V	0.9	9.1	21.01	30.0	-9.0	
1914.30	15.54	H	0.9	9.1	23.74	30.0	-6.3	

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Band

LTE25

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	12.99	V	0.9	9.2	21.29	30.0	-8.7	
1850.70	16.55	H	0.9	9.2	24.85	30.0	-5.2	
Mid Ch								
1882.50	12.84	V	0.9	9.1	21.04	30.0	-9.0	
1882.50	16.29	H	0.9	9.1	24.49	30.0	-5.5	
High Ch								
1914.30	13.70	V	0.9	9.1	21.90	30.0	-8.1	
1914.30	16.44	H	0.9	9.1	24.64	30.0	-5.4	

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LTE Band 17

Band

LTE17

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 12 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
709.00	6.74	V	0.9	0.0	5.84	34.8	-28.9	
709.00	15.82	H	0.9	0.0	14.92	34.8	-19.9	
Mid Ch								
710.00	7.23	V	0.9	0.0	6.33	34.8	-28.4	
710.00	16.30	H	0.9	0.0	15.40	34.8	-19.4	
High Ch								
711.00	8.92	V	0.9	0.0	8.02	34.8	-26.8	
711.00	17.17	H	0.9	0.0	16.27	34.8	-18.5	

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Band

LTE17

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 17 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
709.00	7.47	V	0.9	0.0	6.57	34.8	-28.2	
709.00	16.65	H	0.9	0.0	15.75	34.8	-19.0	
Mid Ch								
710.00	7.93	V	0.9	0.0	7.03	34.8	-27.7	
710.00	16.40	H	0.9	0.0	15.50	34.8	-19.3	
High Ch								
711.00	9.67	V	0.9	0.0	8.77	34.8	-26.0	
711.00	17.51	H	0.9	0.0	16.61	34.8	-18.2	

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Band

LTE17

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 17 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
706.50	6.60	V	0.9	0.0	5.70	34.8	-29.1	
706.50	15.65	H	0.9	0.0	14.75	34.8	-20.0	
Mid Ch								
710.00	7.38	V	0.9	0.0	6.48	34.8	-28.3	
710.00	16.12	H	0.9	0.0	15.22	34.8	-19.6	
High Ch								
713.50	9.30	V	0.9	0.0	8.40	34.8	-26.4	
713.50	16.61	H	0.9	0.0	15.71	34.8	-19.1	

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Band

LTE17

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 17 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
706.50	7.57	V	0.9	0.0	6.67	34.8	-28.1	
706.50	16.51	H	0.9	0.0	15.61	34.8	-19.2	
Mid Ch								
710.00	7.52	V	0.9	0.0	6.62	34.8	-28.2	
710.00	16.98	H	0.9	0.0	16.08	34.8	-18.7	
High Ch								
713.50	8.96	V	0.9	0.0	8.06	34.8	-26.7	
713.50	17.09	H	0.9	0.0	16.19	34.8	-18.6	

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LTE Band 12

Band

LTE12

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 12 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
704.00	6.74	V	0.9	0.0	5.84	34.8	-28.9	
704.00	15.82	H	0.9	0.0	14.92	34.8	-19.9	
Mid Ch								
707.50	7.23	V	0.9	0.0	6.33	34.8	-28.4	
707.50	16.30	H	0.9	0.0	15.40	34.8	-19.4	
High Ch								
711.00	8.92	V	0.9	0.0	8.02	34.8	-26.8	
711.00	17.17	H	0.9	0.0	16.27	34.8	-18.5	

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Band

LTE12

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
704.00	7.47	V	0.9	0.0	6.57	34.8	-28.2	
704.00	16.65	H	0.9	0.0	15.75	34.8	-19.0	
Mid Ch								
707.50	7.93	V	0.9	0.0	7.03	34.8	-27.7	
707.50	16.40	H	0.9	0.0	15.50	34.8	-19.3	
High Ch								
711.00	9.67	V	0.9	0.0	8.77	34.8	-26.0	
711.00	17.51	H	0.9	0.0	16.61	34.8	-18.2	

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Band

LTE12

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
701.50	6.60	V	0.9	0.0	5.70	34.8	-29.1	
701.50	15.65	H	0.9	0.0	14.75	34.8	-20.0	
Mid Ch								
707.50	7.38	V	0.9	0.0	6.48	34.8	-28.3	
707.50	16.12	H	0.9	0.0	15.22	34.8	-19.6	
High Ch								
713.50	9.30	V	0.9	0.0	8.40	34.8	-26.4	
713.50	16.61	H	0.9	0.0	15.71	34.8	-19.1	

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Band

LTE12

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 12 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
701.50	7.57	V	0.9	0.0	6.67	34.8	-28.1	
701.50	16.51	H	0.9	0.0	15.61	34.8	-19.2	
Mid Ch								
707.50	7.52	V	0.9	0.0	6.62	34.8	-28.2	
707.50	16.98	H	0.9	0.0	16.08	34.8	-18.7	
High Ch								
713.50	8.96	V	0.9	0.0	8.06	34.8	-26.7	
713.50	17.09	H	0.9	0.0	16.19	34.8	-18.6	

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Band

LTE12

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 12 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
700.50	6.60	V	0.9	0.0	5.70	34.8	-29.1	
700.50	15.65	H	0.9	0.0	14.75	34.8	-20.0	
Mid Ch								
707.50	7.38	V	0.9	0.0	6.48	34.8	-28.3	
707.50	16.12	H	0.9	0.0	15.22	34.8	-19.6	
High Ch								
714.50	9.30	V	0.9	0.0	8.40	34.8	-26.4	
714.50	16.61	H	0.9	0.0	15.71	34.8	-19.1	

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Band

LTE12

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 12 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
700.50	7.57	V	0.9	0.0	6.67	34.8	-28.1	
700.50	16.51	H	0.9	0.0	15.61	34.8	-19.2	
Mid Ch								
707.50	7.52	V	0.9	0.0	6.62	34.8	-28.2	
707.50	16.98	H	0.9	0.0	16.08	34.8	-18.7	
High Ch								
714.50	8.96	V	0.9	0.0	8.06	34.8	-26.7	
714.50	17.09	H	0.9	0.0	16.19	34.8	-18.6	

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Band

LTE12

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
699.70	6.65	V	0.9	0.0	5.75	34.8	-29.0	
699.70	15.70	H	0.9	0.0	14.80	34.8	-20.0	
Mid Ch								
707.50	7.43	V	0.9	0.0	6.53	34.8	-28.2	
707.50	16.17	H	0.9	0.0	15.27	34.8	-19.5	
High Ch								
715.30	9.35	V	0.9	0.0	8.45	34.8	-26.3	
715.30	16.66	H	0.9	0.0	15.76	34.8	-19.0	

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Band

LTE12

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 12 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, and 8ft 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								
699.70	7.79	V	0.9	0.0	6.89	34.8	-27.9	
699.70	16.73	H	0.9	0.0	15.83	34.8	-18.9	
Mid Ch								
707.50	7.74	V	0.9	0.0	6.84	34.8	-27.9	
707.50	17.20	H	0.9	0.0	16.30	34.8	-18.5	
High Ch								
715.30	9.18	V	0.9	0.0	8.28	34.8	-26.5	
715.30	17.31	H	0.9	0.0	16.41	34.8	-18.4	

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LTE Band 5

Band

LTE5

10MHz

16QAM

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 10MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
829.00	9.96	V	0.9	0.0	9.06	38.5	-29.4	
829.00	19.34	H	0.9	0.0	18.44	38.5	-20.0	
Mid Ch								
836.50	10.74	V	0.9	0.0	9.84	38.5	-28.6	
836.50	19.55	H	0.9	0.0	18.65	38.5	-19.8	
High Ch								
844.00	10.66	V	0.9	0.0	9.76	38.5	-28.7	
844.00	20.73	H	0.9	0.0	19.83	38.5	-18.6	

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. Chamber A

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 10MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
829.00	10.98	V	0.9	0.0	10.08	38.5	-28.4	
829.00	20.27	H	0.9	0.0	19.37	38.5	-19.1	
Mid Ch								
836.50	11.84	V	0.9	0.0	10.94	38.5	-27.5	
836.50	20.63	H	0.9	0.0	19.73	38.5	-18.7	
High Ch								
844.00	11.84	V	0.9	0.0	10.94	38.5	-27.5	
844.00	21.78	H	0.9	0.0	20.88	38.5	-17.6	

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

5MHz

16QAM

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 5MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
826.50	10.60	V	0.9	0.0	9.70	38.5	-28.7	
826.50	19.20	H	0.9	0.0	18.30	38.5	-20.1	
Mid Ch								
836.50	11.05	V	0.9	0.0	10.15	38.5	-28.3	
836.50	19.78	H	0.9	0.0	18.88	38.5	-19.6	
High Ch								
846.50	10.77	V	0.9	0.0	9.87	38.5	-28.6	
846.50	20.19	H	0.9	0.0	19.29	38.5	-19.2	

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

5MHz

QPSK

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 5MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
826.50	11.63	V	0.9	0.0	10.73	38.5	-27.7	
826.50	20.14	H	0.9	0.0	19.24	38.5	-19.2	
Mid Ch								
836.50	11.96	V	0.9	0.0	11.06	38.5	-27.4	
836.50	20.81	H	0.9	0.0	19.91	38.5	-18.5	
High Ch								
846.50	10.89	V	0.9	0.0	9.99	38.5	-28.5	
846.50	21.27	H	0.9	0.0	20.37	38.5	-18.1	

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

3MHz

16QAM

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 3MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
825.50	10.31	V	0.9	0.0	9.41	38.5	-29.0	
825.50	19.07	H	0.9	0.0	18.17	38.5	-20.3	
Mid Ch								
836.50	11.09	V	0.9	0.0	10.19	38.5	-28.3	
836.50	19.71	H	0.9	0.0	18.81	38.5	-19.6	
High Ch								
847.50	11.09	V	0.9	0.0	10.19	38.5	-28.3	
847.50	20.76	H	0.9	0.0	19.86	38.5	-18.6	

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

3MHz

QPSK

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 3MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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								
825.50	11.28	V	0.9	0.0	10.38	38.5	-28.1	
825.50	19.92	H	0.9	0.0	19.02	38.5	-19.4	
Mid Ch								
836.50	11.88	V	0.9	0.0	10.98	38.5	-27.5	
836.50	20.81	H	0.9	0.0	19.91	38.5	-18.5	
High Ch								
847.50	12.25	V	0.9	0.0	11.35	38.5	-27.1	
847.50	21.65	H	0.9	0.0	20.75	38.5	-17.7	

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

1.4MHz

16QAM

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 1.4MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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	11.25	V	0.9	0.0	10.35	38.5	-28.1	
824.70	21.10	H	0.9	0.0	20.20	38.5	-18.2	
Mid Ch								
836.50	11.07	V	0.9	0.0	10.17	38.5	-28.3	
836.50	20.49	H	0.9	0.0	19.59	38.5	-18.9	
High Ch								
848.30	11.45	V	0.9	0.0	10.55	38.5	-27.9	
848.30	20.29	H	0.9	0.0	19.39	38.5	-19.1	

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

1.4MHz

QPSK

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

Company: LG
Project #: 15I19900
Date: 02/23/15
Test Engineer: Jude Semana
Configuration: EUT Only
Mode: LTE5 1.4MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft 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	11.74	V	0.9	0.0	10.84	38.5	-27.6	
824.70	21.40	H	0.9	0.0	20.50	38.5	-17.9	
Mid Ch								
836.50	12.05	V	0.9	0.0	11.15	38.5	-27.3	
836.50	20.87	H	0.9	0.0	19.97	38.5	-18.5	
High Ch								
848.30	11.71	V	0.9	0.0	10.81	38.5	-27.6	
848.30	20.55	H	0.9	0.0	19.65	38.5	-18.8	

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

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LTE Band 4

Band

LTE4

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	12.82	V	0.9	8.2	20.14	30.0	-9.9	
1720.00	14.22	H	0.9	8.2	21.53	30.0	-8.5	
Mid Ch								
1732.50	12.72	V	0.9	8.2	19.99	30.0	-10.0	
1732.50	14.59	H	0.9	8.2	21.86	30.0	-8.1	
High Ch								
1745.00	13.02	V	0.9	8.1	20.25	30.0	-9.8	
1745.00	14.96	H	0.9	8.1	22.18	30.0	-7.8	

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Band

LTE4

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	13.94	V	0.9	8.2	21.26	30.0	-8.7	
1720.00	15.56	H	0.9	8.2	22.87	30.0	-7.1	
Mid Ch								
1732.50	14.18	V	0.9	8.2	21.45	30.0	-8.5	
1732.50	15.04	H	0.9	8.2	22.31	30.0	-7.7	
High Ch								
1745.00	14.22	V	0.9	8.1	21.45	30.0	-8.6	
1745.00	15.46	H	0.9	8.1	22.68	30.0	-7.3	

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Band

LTE4

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	15.32	V	0.9	8.2	22.65	30.0	-7.4	
1717.50	16.37	H	0.9	8.2	23.69	30.0	-6.3	
Mid Ch								
1732.50	13.88	V	0.9	8.2	21.15	30.0	-8.8	
1732.50	15.84	H	0.9	8.2	23.11	30.0	-6.9	
High Ch								
1747.50	12.52	V	0.9	8.1	19.74	30.0	-10.3	
1747.50	15.98	H	0.9	8.1	23.20	30.0	-6.8	

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Band

LTE4

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	15.62	V	0.9	8.2	22.95	30.0	-7.1	
1717.50	16.67	H	0.9	8.2	23.99	30.0	-6.0	
Mid Ch								
1732.50	14.28	V	0.9	8.2	21.55	30.0	-8.4	
1732.50	16.63	H	0.9	8.2	23.90	30.0	-6.1	
High Ch								
1747.50	13.62	V	0.9	8.1	20.84	30.0	-9.2	
1747.50	16.71	H	0.9	8.1	23.93	30.0	-6.1	

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Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	14.82	V	0.9	8.2	22.16	30.0	-7.8	
1715.00	16.47	H	0.9	8.2	23.80	30.0	-6.2	
Mid Ch								
1732.50	13.22	V	0.9	8.2	20.49	30.0	-9.5	
1732.50	14.62	H	0.9	8.2	21.89	30.0	-8.1	
High Ch								
1750.00	13.62	V	0.9	8.1	20.83	30.0	-9.2	
1750.00	14.98	H	0.9	8.1	22.19	30.0	-7.8	

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Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	15.36	V	0.9	8.2	22.70	30.0	-7.3	
1715.00	16.72	H	0.9	8.2	24.05	30.0	-5.9	
Mid Ch								
1732.50	14.32	V	0.9	8.2	21.59	30.0	-8.4	
1732.50	15.84	H	0.9	8.2	23.11	30.0	-6.9	
High Ch								
1750.00	14.02	V	0.9	8.1	21.23	30.0	-8.8	
1750.00	16.28	H	0.9	8.1	23.49	30.0	-6.5	

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Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	14.54	V	0.9	8.2	21.89	30.0	-8.1	
1712.50	15.79	H	0.9	8.2	23.13	30.0	-6.9	
Mid Ch								
1732.50	13.49	V	0.9	8.2	20.76	30.0	-9.2	
1732.50	15.42	H	0.9	8.2	22.69	30.0	-7.3	
High Ch								
1752.50	14.00	V	0.9	8.1	21.20	30.0	-8.8	
1752.50	15.77	H	0.9	8.1	22.97	30.0	-7.0	

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Band

LTE4

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	15.10	V	0.9	8.2	22.45	30.0	-7.6	
1712.50	16.64	H	0.9	8.2	23.98	30.0	-6.0	
Mid Ch								
1732.50	14.37	V	0.9	8.2	21.64	30.0	-8.4	
1732.50	16.38	H	0.9	8.2	23.65	30.0	-6.3	
High Ch								
1752.50	14.87	V	0.9	8.1	22.07	30.0	-7.9	
1752.50	16.64	H	0.9	8.1	23.84	30.0	-6.2	

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Band

LTE4

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	14.69	V	0.9	8.2	22.04	30.0	-8.0	
1711.50	16.52	H	0.9	8.2	23.86	30.0	-6.1	
Mid Ch								
1732.50	13.84	V	0.9	8.2	21.11	30.0	-8.9	
1732.50	15.93	H	0.9	8.2	23.20	30.0	-6.8	
High Ch								
1753.50	13.92	V	0.9	8.1	21.12	30.0	-8.9	
1753.50	16.39	H	0.9	8.1	23.58	30.0	-6.4	

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Band

LTE4

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	15.32	V	0.9	8.2	22.67	30.0	-7.3	
1711.50	16.79	H	0.9	8.2	24.13	30.0	-5.9	
Mid Ch								
1732.50	14.42	V	0.9	8.2	21.69	30.0	-8.3	
1732.50	16.47	H	0.9	8.2	23.74	30.0	-6.3	
High Ch								
1753.50	14.72	V	0.9	8.1	21.92	30.0	-8.1	
1753.50	16.75	H	0.9	8.1	23.94	30.0	-6.1	

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Band

LTE4

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	8.62	V	0.9	8.3	15.97	30.0	-14.0	
1710.70	16.47	H	0.9	8.3	23.82	30.0	-6.2	
Mid Ch								
1732.50	8.21	V	0.9	8.2	15.48	30.0	-14.5	
1732.50	16.04	H	0.9	8.2	23.31	30.0	-6.7	
High Ch								
1754.30	9.72	V	0.9	8.1	16.91	30.0	-13.1	
1754.30	16.26	H	0.9	8.1	23.45	30.0	-6.5	

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Band

LTE4

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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	9.55	V	0.9	8.3	16.90	30.0	-13.1	
1710.70	16.74	H	0.9	8.3	24.09	30.0	-5.9	
Mid Ch								
1732.50	9.33	V	0.9	8.2	16.60	30.0	-13.4	
1732.50	16.44	H	0.9	8.2	23.71	30.0	-6.3	
High Ch								
1754.30	10.74	V	0.9	8.1	17.93	30.0	-12.1	
1754.30	16.75	H	0.9	8.1	23.94	30.0	-6.1	

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LTE Band 2

Band

LTE2

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	17.15	V	3.5	9.3	22.90	33.0	-10.1	
1860.00	18.31	H	3.5	9.3	24.06	33.0	-8.9	
Mid Ch								
1880.00	17.15	V	3.5	9.2	22.80	33.0	-10.2	
1880.00	20.12	H	3.5	9.2	25.77	33.0	-7.2	
High Ch								
1900.00	18.03	V	3.5	9.0	23.57	33.0	-9.4	
1900.00	19.33	H	3.5	9.0	24.87	33.0	-8.1	

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Band

LTE2

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	18.63	V	3.5	9.3	24.38	33.0	-8.6	
1860.00	19.38	H	3.5	9.3	25.13	33.0	-7.9	
Mid Ch								
1880.00	18.45	V	3.5	9.2	24.10	33.0	-8.9	
1880.00	20.57	H	3.5	9.2	26.22	33.0	-6.8	
High Ch								
1900.00	18.78	V	3.5	9.0	24.32	33.0	-8.7	
1900.00	20.12	H	3.5	9.0	25.66	33.0	-7.3	

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Band

LTE2

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	18.52	V	3.5	9.3	24.27	33.0	-8.7	
1857.50	18.21	H	3.5	9.3	23.96	33.0	-9.0	
Mid Ch								
1880.00	16.95	V	3.5	9.2	22.60	33.0	-10.4	
1880.00	19.36	H	3.5	9.2	25.01	33.0	-8.0	
High Ch								
1902.50	18.08	V	3.5	9.0	23.62	33.0	-9.4	
1902.50	19.48	H	3.5	9.0	25.02	33.0	-8.0	

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Band

LTE2

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	19.20	V	3.5	9.3	24.95	33.0	-8.0	
1857.50	19.29	H	3.5	9.3	25.04	33.0	-8.0	
Mid Ch								
1880.00	18.18	V	3.5	9.2	23.83	33.0	-9.2	
1880.00	19.90	H	3.5	9.2	25.55	33.0	-7.5	
High Ch								
1902.50	18.92	V	3.5	9.0	24.46	33.0	-8.5	
1902.50	19.75	H	3.5	9.0	25.29	33.0	-7.7	

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Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	17.76	V	3.5	9.3	23.51	33.0	-9.5	
1855.00	16.88	H	3.5	9.3	22.63	33.0	-10.4	
Mid Ch								
1880.00	10.51	V	3.5	9.2	16.16	33.0	-16.8	
1880.00	18.89	H	3.5	9.2	24.54	33.0	-8.5	
High Ch								
1905.00	16.90	V	3.5	9.0	22.44	33.0	-10.6	
1905.00	17.62	H	3.5	9.0	23.16	33.0	-9.8	

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Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	18.43	V	3.5	9.3	24.18	33.0	-8.8	
1855.00	17.66	H	3.5	9.3	23.41	33.0	-9.6	
Mid Ch								
1880.00	10.93	V	3.5	9.2	16.58	33.0	-16.4	
1880.00	19.48	H	3.5	9.2	25.13	33.0	-7.9	
High Ch								
1905.00	17.72	V	3.5	9.0	23.26	33.0	-9.7	
1905.00	19.25	H	3.5	9.0	24.79	33.0	-8.2	

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Band

LTE2

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	16.25	V	3.5	9.3	22.00	33.0	-11.0	
1852.50	18.11	H	3.5	9.3	23.86	33.0	-9.1	
Mid Ch								
1880.00	18.14	V	3.5	9.2	23.79	33.0	-9.2	
1880.00	18.42	H	3.5	9.2	24.07	33.0	-8.9	
High Ch								
1907.50	17.05	V	3.5	9.0	22.59	33.0	-10.4	
1907.50	18.73	H	3.5	9.0	24.27	33.0	-8.7	

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Band

LTE2

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	17.89	V	3.5	9.3	23.64	33.0	-9.4	
1852.50	19.09	H	3.5	9.3	24.84	33.0	-8.2	
Mid Ch								
1880.00	18.22	V	3.5	9.2	23.87	33.0	-9.1	
1880.00	19.27	H	3.5	9.2	24.92	33.0	-8.1	
High Ch								
1907.50	17.97	V	3.5	9.0	23.51	33.0	-9.5	
1907.50	20.01	H	3.5	9.0	25.55	33.0	-7.5	

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Band

LTE2

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	17.56	V	3.5	9.3	23.31	33.0	-9.7	
1851.50	18.14	H	3.5	9.3	23.89	33.0	-9.1	
Mid Ch								
1880.00	18.41	V	3.5	9.2	24.06	33.0	-8.9	
1880.00	19.17	H	3.5	9.2	24.82	33.0	-8.2	
High Ch								
1908.50	16.97	V	3.5	9.0	22.51	33.0	-10.5	
1908.50	19.88	H	3.5	9.0	25.42	33.0	-7.6	

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Band

LTE2

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	18.59	V	3.5	9.3	24.34	33.0	-8.7	
1851.50	19.20	H	3.5	9.3	24.95	33.0	-8.0	
Mid Ch								
1880.00	18.57	V	3.5	9.2	24.22	33.0	-8.8	
1880.00	19.81	H	3.5	9.2	25.46	33.0	-7.5	
High Ch								
1908.50	17.59	V	3.5	9.0	23.13	33.0	-9.9	
1908.50	20.34	H	3.5	9.0	25.88	33.0	-7.1	

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Band

LTE2

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	16.90	V	3.5	9.3	22.65	33.0	-10.3	
1850.70	18.02	H	3.5	9.3	23.77	33.0	-9.2	
Mid Ch								
1880.00	17.63	V	3.5	9.2	23.28	33.0	-9.7	
1880.00	18.31	H	3.5	9.2	23.96	33.0	-9.0	
High Ch								
1909.30	16.41	V	3.5	9.0	21.95	33.0	-11.1	
1909.30	18.54	H	3.5	9.0	24.08	33.0	-8.9	

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Band

LTE2

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/23/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T60, Chamber G SMA Cables

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	17.64	V	3.5	9.3	23.39	33.0	-9.6	
1850.70	18.85	H	3.5	9.3	24.60	33.0	-8.4	
Mid Ch								
1880.00	17.58	V	3.5	9.2	23.23	33.0	-9.8	
1880.00	19.70	H	3.5	9.2	25.35	33.0	-7.7	
High Ch								
1909.30	17.43	V	3.5	9.0	22.97	33.0	-10.0	
1909.30	20.42	H	3.5	9.0	25.96	33.0	-7.0	

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CDMA

Band

BC1

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: CDMA EVDO 1900MHz Fundamentals

Test Equpment:
Receiving: Horn T862 and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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								
1851.00	16.13	V	0.9	9.2	24.43	38.5	-14.1	
1851.00	15.68	H	0.9	9.2	23.98	38.5	-14.5	
Mid Ch								
1880.00	15.91	V	0.9	9.1	24.11	38.5	-14.4	
1880.00	15.97	H	0.9	9.1	24.17	38.5	-14.3	
High Ch								
1908.75	15.70	V	0.9	9.1	23.90	38.5	-14.6	
1908.75	16.20	H	0.9	9.1	24.40	38.5	-14.1	

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Band

BC1

1xRTT

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: CDMA 1XRTT 1900MHz Fundamentals

Test Equpment:
Receiving: Horn T862 and Chamber G SMA Cables
Substitution: Horn T60 Substitution, and 8ft 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								
1851.00	15.53	V	0.9	9.2	23.83	38.5	-14.7	
1851.00	16.75	H	0.9	9.2	25.05	38.5	-13.5	
Mid Ch								
1880.00	15.65	V	0.9	9.1	23.85	38.5	-14.7	
1880.00	17.13	H	0.9	9.1	25.33	38.5	-13.2	
High Ch								
1908.75	15.90	V	0.9	9.1	24.10	38.5	-14.4	
1908.75	16.84	H	0.9	9.1	25.04	38.5	-13.5	

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Band

BC0

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: CDMA EVDO 850MHz Fundamentals

Test Equpment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 8ft 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	12.00	V	0.9	0.0	11.10	38.5	-27.4	
824.70	18.97	H	0.9	0.0	18.07	38.5	-20.4	
Mid Ch								
836.52	14.12	V	0.9	0.0	13.22	38.5	-25.3	
836.52	20.87	H	0.9	0.0	19.97	38.5	-18.5	
High Ch								
848.31	13.83	V	0.9	0.0	12.93	38.5	-25.6	
848.31	21.14	H	0.9	0.0	20.24	38.5	-18.3	

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Band

BC0

1xRTT

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: CDMA 1XRTT 850MHz Fundamentals

Test Equipment:
Receiving: Sunol T899, and Chamber G Cable
Substitution: Dipole S/N: 00022117, 8ft 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	9.70	V	0.9	0.0	8.80	38.5	-29.7	
824.70	18.47	H	0.9	0.0	17.57	38.5	-20.9	
Mid Ch								
836.52	11.85	V	0.9	0.0	10.95	38.5	-27.6	
836.52	20.31	H	0.9	0.0	19.41	38.5	-19.1	
High Ch								
848.31	10.91	V	0.9	0.0	10.01	38.5	-28.5	
848.31	20.45	H	0.9	0.0	19.55	38.5	-19.0	

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11.2. 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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11.2.1. SPURIOUS RADIATION PLOTS

LTE Band 25

Band

LTE25

20MHz

16QAM

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_16QAM Band 25 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	-13.3	V	3.0	35.9	1.0	-48.1	-13.0	-35.1	
5580.00	-13.8	V	3.0	35.5	1.0	-48.3	-13.0	-35.3	
7440.00	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3720.00	-14.9	H	3.0	35.9	1.0	-49.7	-13.0	-36.7	
5580.00	-18.1	H	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7440.00	-15.6	H	3.0	35.7	1.0	-50.3	-13.0	-37.3	
Mid Ch, 1882.5									
3765.00	-19.9	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5647.50	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
7530.00	-17.1	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3765.00	-19.7	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
5647.50	-19.1	H	3.0	35.5	1.0	-53.6	-13.0	-40.6	
7530.00	-16.6	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
High Ch, 1905									
3810.00	-18.3	V	3.0	35.8	1.0	-53.1	-13.0	-40.1	
5715.00	-19.4	V	3.0	35.5	1.0	-53.9	-13.0	-40.9	
7620.00	-16.9	V	3.0	35.8	1.0	-51.6	-13.0	-38.6	
3810.00	-18.2	H	3.0	35.8	1.0	-53.0	-13.0	-40.0	
5715.00	-18.3	H	3.0	35.5	1.0	-52.8	-13.0	-39.8	
7620.00	-16.0	H	3.0	35.8	1.0	-50.8	-13.0	-37.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 25 Harmonics, 20MHz Bandwidth

Band
LTE25
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, 1860									
3720.00	-13.8	V	3.0	35.9	1.0	-48.6	-13.0	-35.6	
5580.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7440.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3720.00	-13.6	H	3.0	35.9	1.0	-48.4	-13.0	-35.4	
5580.00	-17.4	H	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7440.00	-17.1	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
Mid Ch, 1882.5									
3765.00	-18.1	V	3.0	35.8	1.0	-53.0	-13.0	-40.0	
5647.50	-19.0	V	3.0	35.5	1.0	-53.5	-13.0	-40.5	
7530.00	-16.6	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3765.00	-18.5	H	3.0	35.8	1.0	-53.3	-13.0	-40.3	
5647.50	-19.1	H	3.0	35.5	1.0	-53.6	-13.0	-40.6	
7530.00	-17.0	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
High Ch, 1905									
3810.00	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5715.00	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
7620.00	-16.7	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
3810.00	-17.8	H	3.0	35.8	1.0	-52.6	-13.0	-39.6	
5715.00	-17.8	H	3.0	35.5	1.0	-52.3	-13.0	-39.3	
7620.00	-15.8	H	3.0	35.8	1.0	-50.6	-13.0	-37.6	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_16QAM Band 25 Harmonics, 15MHz Bandwidth

Band
LTE25
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	-14.7	V	3.0	35.9	1.0	-49.5	-13.0	-36.5	
5572.50	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7430.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3715.00	-15.2	H	3.0	35.9	1.0	-50.0	-13.0	-37.0	
5572.50	-18.7	H	3.0	35.5	1.0	-53.2	-13.0	-40.2	
7430.00	-15.7	H	3.0	35.7	1.0	-50.4	-13.0	-37.4	
Mid Ch, 1882.5									
3765.00	-20.2	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
5647.50	-16.1	V	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7530.00	-16.8	V	3.0	35.7	1.0	-51.6	-13.0	-38.6	
3765.00	-18.0	H	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5647.50	-18.1	H	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7530.00	-16.8	H	3.0	35.7	1.0	-51.6	-13.0	-38.6	
High Ch, 1907.5									
3815.00	-19.5	V	3.0	35.8	1.0	-54.3	-13.0	-41.3	
5722.50	-14.0	V	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7630.00	-17.4	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
3815.00	-22.2	H	3.0	35.8	1.0	-57.0	-13.0	-44.0	
5722.50	-17.6	H	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7630.00	-17.1	H	3.0	35.8	1.0	-51.8	-13.0	-38.8	

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Band

LTE25

15MHz

QPSK

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 25 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	-14.5	V	3.0	35.9	1.0	-49.3	-13.0	-36.3	
5572.50	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7430.00	-15.9	V	3.0	35.7	1.0	-50.6	-13.0	-37.6	
3715.00	-14.1	H	3.0	35.9	1.0	-48.9	-13.0	-35.9	
5572.50	-18.7	H	3.0	35.5	1.0	-53.2	-13.0	-40.2	
7430.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1882.5									
3765.00	-20.6	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5647.50	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7530.00	-17.3	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3765.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5647.50	-18.9	H	3.0	35.5	1.0	-53.4	-13.0	-40.4	
7530.00	-16.5	H	3.0	35.7	1.0	-51.3	-13.0	-38.3	
High Ch, 1907.5									
3815.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5722.50	-13.5	V	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7630.00	-17.3	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
3815.00	-21.2	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
5722.50	-16.7	H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
7630.00	-17.1	H	3.0	35.8	1.0	-51.9	-13.0	-38.9	

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 25 Harmonics, 10MHz Bandwidth

Band
LTE25
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	-12.7	V	3.0	35.9	1.0	-47.5	-13.0	-34.5	
5565.00	-15.5	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7420.00	-15.3	V	3.0	35.7	1.0	-50.0	-13.0	-37.0	
3710.00	-10.3	H	3.0	35.9	1.0	-45.1	-13.0	-32.1	
5565.00	-15.2	H	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7420.00	-13.2	H	3.0	35.7	1.0	-48.0	-13.0	-35.0	
Mid Ch, 1882.5									
3765.00	-13.3	V	3.0	35.8	1.0	-48.1	-13.0	-35.1	
5647.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7530.00	-14.1	V	3.0	35.7	1.0	-48.8	-13.0	-35.8	
3765.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5647.50	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7530.00	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
High Ch, 1910									
3820.00	-15.2	V	3.0	35.8	1.0	-50.0	-13.0	-37.0	
5730.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7640.00	-13.8	V	3.0	35.8	1.0	-48.6	-13.0	-35.6	
3820.00	-16.6	H	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5730.00	-15.3	H	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7640.00	-12.5	H	3.0	35.8	1.0	-47.2	-13.0	-34.2	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 25 Harmonics, 10MHz Bandwidth

Band
LTE25
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, 1855									
3710.00	-11.5	V	3.0	35.9	1.0	-46.4	-13.0	-33.4	
5565.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7420.00	-14.2	V	3.0	35.7	1.0	-48.9	-13.0	-35.9	
3710.00	-12.5	H	3.0	35.9	1.0	-47.3	-13.0	-34.3	
5565.00	-13.9	H	3.0	35.5	1.0	-48.4	-13.0	-35.4	
7420.00	-12.6	H	3.0	35.7	1.0	-47.4	-13.0	-34.4	
Mid Ch, 1882.5									
3765.00	-15.6	V	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5647.50	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7530.00	-14.6	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3765.00	-14.4	H	3.0	35.8	1.0	-49.2	-13.0	-36.2	
5647.50	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7530.00	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1910									
3820.00	-17.6	V	3.0	35.8	1.0	-52.3	-13.0	-39.3	
5730.00	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7640.00	-13.7	V	3.0	35.8	1.0	-48.5	-13.0	-35.5	
3820.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5730.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7640.00	-12.7	H	3.0	35.8	1.0	-47.5	-13.0	-34.5	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_16QAM Band 25 Harmonics, 5MHz Bandwidth

Band
LTE25
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, 1852.5									
3705.00	-12.3	V	3.0	35.9	1.0	-47.2	-13.0	-34.2	
5557.50	-18.6	V	3.0	35.5	1.0	-53.1	-13.0	-40.1	
7410.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3705.00	-16.8	H	3.0	35.9	1.0	-51.7	-13.0	-38.7	
5557.50	-16.6	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7410.00	-16.0	H	3.0	35.7	1.0	-50.7	-13.0	-37.7	
Mid Ch, 1882.5									
3765.00	-18.5	V	3.0	35.8	1.0	-53.4	-13.0	-40.4	
5647.50	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7530.00	-18.1	V	3.0	35.7	1.0	-52.9	-13.0	-39.9	
3765.00	-14.7	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5647.50	-16.6	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
7530.00	-16.4	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1912.5									
3825.00	-21.6	V	3.0	35.8	1.0	-56.4	-13.0	-43.4	
5737.50	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7650.00	-17.1	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
3825.00	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5737.50	-19.3	H	3.0	35.5	1.0	-53.8	-13.0	-40.8	
7650.00	-16.5	H	3.0	35.8	1.0	-51.3	-13.0	-38.3	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 25 Harmonics, 5MHz Bandwidth

Band LTE25 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, 1852.5									
3705.00	-13.8	V	3.0	35.9	1.0	-48.6	-13.0	-35.6	
5557.50	-18.6	V	3.0	35.5	1.0	-53.1	-13.0	-40.1	
7410.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3705.00	-17.2	H	3.0	35.9	1.0	-52.0	-13.0	-39.0	
5557.50	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7410.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
Mid Ch, 1882.5									
3765.00	-18.6	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5647.50	-16.4	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7530.00	-17.1	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3765.00	-16.2	H	3.0	35.8	1.0	-51.0	-13.0	-38.0	
5647.50	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7530.00	-16.3	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	
High Ch, 1912.5									
3825.00	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
5737.50	-14.0	V	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7650.00	-16.7	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
3825.00	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
5737.50	-18.2	H	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7650.00	-14.9	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 25 Harmonics, 3MHz Bandwidth

Band
LTE25
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, 1851.5									
3703.00	-13.5	V	3.0	35.9	1.0	-48.3	-13.0	-35.3	
5554.50	-15.1	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7406.00	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3703.00	-14.2	H	3.0	35.9	1.0	-49.0	-13.0	-36.0	
5554.50	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7406.00	-13.8	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	
Mid Ch, 1882.5									
3765.00	-11.8	V	3.0	35.8	1.0	-46.6	-13.0	-33.6	
5647.50	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7530.00	-13.5	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
3765.00	-13.6	H	3.0	35.8	1.0	-48.5	-13.0	-35.5	
5647.50	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7530.00	-13.5	H	3.0	35.7	1.0	-48.2	-13.0	-35.2	
High Ch, 1913.5									
3827.00	-15.2	V	3.0	35.8	1.0	-50.0	-13.0	-37.0	
5740.50	-12.5	V	3.0	35.5	1.0	-47.0	-13.0	-34.0	
7654.00	-13.4	V	3.0	35.8	1.0	-48.1	-13.0	-35.1	
3827.00	-14.8	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5740.50	-14.4	H	3.0	35.5	1.0	-48.9	-13.0	-35.9	
7654.00	-12.5	H	3.0	35.8	1.0	-47.3	-13.0	-34.3	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 25 Harmonics, 3MHz Bandwidth

Band
LTE25
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, 1851.5									
3703.00	-12.2	V	3.0	35.9	1.0	-47.0	-13.0	-34.0	
5554.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7406.00	-15.1	V	3.0	35.7	1.0	-49.8	-13.0	-36.8	
3703.00	-17.3	H	3.0	35.9	1.0	-52.1	-13.0	-39.1	
5554.50	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7406.00	-13.5	H	3.0	35.7	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1882.5									
3765.00	-14.7	V	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5647.50	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7530.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3765.00	-12.3	H	3.0	35.8	1.0	-47.1	-13.0	-34.1	
5647.50	-15.1	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7530.00	-13.6	H	3.0	35.7	1.0	-48.4	-13.0	-35.4	
High Ch, 1913.5									
3827.00	-13.5	V	3.0	35.8	1.0	-48.3	-13.0	-35.3	
5740.50	-13.1	V	3.0	35.5	1.0	-47.6	-13.0	-34.6	
7654.00	-13.8	V	3.0	35.8	1.0	-48.6	-13.0	-35.6	
3827.00	-15.6	H	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5740.50	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7654.00	-12.1	H	3.0	35.8	1.0	-46.8	-13.0	-33.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 25 Harmonics, 1.4MHz Bandwidth

Band
LTE25
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	-8.9	V	3.0	35.9	1.0	-43.8	-13.0	-30.8	
5552.10	-15.2	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7402.80	-14.7	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3701.40	-8.9	H	3.0	35.9	1.0	-43.7	-13.0	-30.7	
5552.10	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7402.80	-13.6	H	3.0	35.7	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1882.5									
3765.00	-13.6	V	3.0	35.8	1.0	-44.7	-13.0	-31.7	
5647.50	-16.5	V	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7530.00	-14.2	V	3.0	35.7	1.0	-48.9	-13.0	-35.9	
3765.00	-11.4	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	
5647.50	-15.0	H	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7530.00	-13.9	H	3.0	35.7	1.0	-48.6	-13.0	-35.6	
High Ch, 1914.3									
3828.60	-10.3	V	3.0	35.8	1.0	-45.0	-13.0	-32.0	
5742.90	-14.5	V	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7657.20	-13.5	V	3.0	35.8	1.0	-48.3	-13.0	-35.3	
3828.60	-9.1	H	3.0	35.8	1.0	-43.9	-13.0	-30.9	
5742.90	-13.5	H	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7657.20	-12.9	H	3.0	35.8	1.0	-47.6	-13.0	-34.6	

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Band

LTE25

1.4MHz

QPSK

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 25 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	-9.4	V	3.0	35.9	1.0	-44.2	-13.0	-31.2	
5552.10	-15.6	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7402.80	-14.4	V	3.0	35.7	1.0	-49.2	-13.0	-36.2	
3701.40	-9.9	H	3.0	35.9	1.0	-44.7	-13.0	-31.7	
5552.10	-14.8	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7402.80	-14.1	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	
Mid Ch, 1882.5									
3765.00	-14.0	V	3.0	35.8	1.0	-48.8	-13.0	-35.8	
5647.50	-15.7	V	3.0	35.5	1.0	-50.2	-13.0	-37.2	
7530.00	-12.7	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3765.00	-11.1	H	3.0	35.8	1.0	-45.9	-13.0	-32.9	
5647.50	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7530.00	-13.1	H	3.0	35.7	1.0	-47.8	-13.0	-34.8	
High Ch, 1914.3									
3828.60	-11.8	V	3.0	35.8	1.0	-46.6	-13.0	-33.6	
5742.90	-13.3	V	3.0	35.5	1.0	-47.8	-13.0	-34.8	
7657.20	-13.8	V	3.0	35.8	1.0	-48.5	-13.0	-35.5	
3828.60	-9.2	H	3.0	35.8	1.0	-43.9	-13.0	-30.9	
5742.90	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7657.20	-13.2	H	3.0	35.8	1.0	-48.0	-13.0	-35.0	

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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LTE Band 17

UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 17 Harmonics, 10MHz Bandwidth

Band
LTE17
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,704									
1408.00	-16.6	V	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-15.1	V	3.0	36.6	1.0	-50.7	-13.0	-37.7	
2816.00	-22.5	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
1408.00	-16.6	H	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-15.2	H	3.0	36.6	1.0	-50.8	-13.0	-37.8	
2816.00	-23.2	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
Mid Ch,707.5									
1415.00	-5.5	V	3.0	37.3	1.0	-41.9	-13.0	-28.9	
2122.50	-18.3	V	3.0	36.6	1.0	-53.9	-13.0	-40.9	
2830.00	-21.3	V	3.0	36.4	1.0	-56.7	-13.0	-43.7	
1415.00	-16.6	H	3.0	37.3	1.0	-53.0	-13.0	-40.0	
2122.50	-14.7	H	3.0	36.6	1.0	-50.2	-13.0	-37.2	
2830.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
High Ch,711									
1422.00	-7.3	V	3.0	37.3	1.0	-43.6	-13.0	-30.6	
2133.00	-14.6	V	3.0	36.6	1.0	-50.2	-13.0	-37.2	
2844.00	-20.6	V	3.0	36.4	1.0	-56.0	-13.0	-43.0	
1422.00	-8.2	H	3.0	37.3	1.0	-44.5	-13.0	-31.5	
2133.00	-13.0	H	3.0	36.6	1.0	-48.6	-13.0	-35.6	
2844.00	-22.5	H	3.0	36.4	1.0	-57.8	-13.0	-44.8	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 17 Harmonics, 10MHz Bandwidth

Band
LTE17
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,704									
1408.00	-16.6	V	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-14.7	V	3.0	36.6	1.0	-50.3	-13.0	-37.3	
2816.00	-22.1	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
1408.00	-16.2	H	3.0	37.4	1.0	-52.5	-13.0	-39.5	
2112.00	-15.8	H	3.0	36.6	1.0	-51.4	-13.0	-38.4	
2816.00	-23.0	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	
Mid Ch,707.5									
1415.00	-6.5	V	3.0	37.3	1.0	-42.8	-13.0	-29.8	
2122.50	-18.4	V	3.0	36.6	1.0	-54.0	-13.0	-41.0	
2830.00	-20.8	V	3.0	36.4	1.0	-56.2	-13.0	-43.2	
1415.00	-17.0	H	3.0	37.3	1.0	-53.3	-13.0	-40.3	
2122.50	-17.4	H	3.0	36.6	1.0	-53.0	-13.0	-40.0	
2830.00	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	
High Ch,711									
1422.00	-7.5	V	3.0	37.3	1.0	-43.9	-13.0	-30.9	
2133.00	-14.4	V	3.0	36.6	1.0	-49.9	-13.0	-36.9	
2844.00	-20.3	V	3.0	36.4	1.0	-55.7	-13.0	-42.7	
1422.00	-10.2	H	3.0	37.3	1.0	-46.6	-13.0	-33.6	
2133.00	-12.6	H	3.0	36.6	1.0	-48.2	-13.0	-35.2	
2844.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 17 Harmonics, 5MHz Bandwidth

Band
LTE17
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, 706.5									
1413.00	-15.6	V	3.0	37.4	1.0	-52.0	-13.0	-39.0	
2119.50	-19.1	V	3.0	36.6	1.0	-54.7	-13.0	-41.7	
2826.00	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
1413.00	-14.4	H	3.0	37.4	1.0	-50.8	-13.0	-37.8	
2119.50	-15.8	H	3.0	36.6	1.0	-51.3	-13.0	-38.3	
2826.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
Mid Ch, 710									
1420.00	-7.8	V	3.0	37.3	1.0	-44.1	-13.0	-31.1	
2130.00	-14.8	V	3.0	36.6	1.0	-50.4	-13.0	-37.4	
2840.00	-20.5	V	3.0	36.4	1.0	-55.9	-13.0	-42.9	
1420.00	-11.6	H	3.0	37.3	1.0	-48.0	-13.0	-35.0	
2130.00	-13.9	H	3.0	36.6	1.0	-49.5	-13.0	-36.5	
2840.00	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
High Ch, 713.5									
1427.00	-5.8	V	3.0	37.3	1.0	-42.1	-13.0	-29.1	
2140.50	-15.4	V	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2854.00	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
1427.00	-14.8	H	3.0	37.3	1.0	-51.2	-13.0	-38.2	
2140.50	-17.8	H	3.0	36.6	1.0	-53.3	-13.0	-40.3	
2854.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 17 Harmonics, 5MHz Bandwidth

Band
LTE17
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, 706.5									
1413.00	-18.3	V	3.0	37.4	1.0	-54.7	-13.0	-41.7	
2119.50	-17.0	V	3.0	36.6	1.0	-52.6	-13.0	-39.6	
2826.00	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
1413.00	-15.7	H	3.0	37.4	1.0	-52.0	-13.0	-39.0	
2119.50	-15.5	H	3.0	36.6	1.0	-51.0	-13.0	-38.0	
2826.00	-23.1	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	
Mid Ch, 710									
1420.00	-8.1	V	3.0	37.3	1.0	-44.5	-13.0	-31.5	
2130.00	-15.9	V	3.0	36.6	1.0	-51.4	-13.0	-38.4	
2840.00	-20.9	V	3.0	36.4	1.0	-56.3	-13.0	-43.3	
1420.00	-12.0	H	3.0	37.3	1.0	-48.4	-13.0	-35.4	
2130.00	-14.6	H	3.0	36.6	1.0	-50.1	-13.0	-37.1	
2840.00	-22.1	H	3.0	36.4	1.0	-57.5	-13.0	-44.5	
High Ch, 713.5									
1427.00	-5.6	V	3.0	37.3	1.0	-42.0	-13.0	-29.0	
2140.50	-15.5	V	3.0	36.6	1.0	-51.1	-13.0	-38.1	
2854.00	-21.2	V	3.0	36.4	1.0	-56.6	-13.0	-43.6	
1427.00	-15.1	H	3.0	37.3	1.0	-51.5	-13.0	-38.5	
2140.50	-16.6	H	3.0	36.6	1.0	-52.2	-13.0	-39.2	
2854.00	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	

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LTE Band 12

UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth

Band
LTE12
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,704									
1408.00	-16.6	V	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-15.1	V	3.0	36.6	1.0	-50.7	-13.0	-37.7	
2816.00	-22.5	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
1408.00	-16.6	H	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-15.2	H	3.0	36.6	1.0	-50.8	-13.0	-37.8	
2816.00	-23.2	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
Mid Ch,707.5									
1415.00	-5.5	V	3.0	37.3	1.0	-41.9	-13.0	-28.9	
2122.50	-18.3	V	3.0	36.6	1.0	-53.9	-13.0	-40.9	
2830.00	-21.3	V	3.0	36.4	1.0	-56.7	-13.0	-43.7	
1415.00	-16.6	H	3.0	37.3	1.0	-53.0	-13.0	-40.0	
2122.50	-14.7	H	3.0	36.6	1.0	-50.2	-13.0	-37.2	
2830.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
High Ch,711									
1422.00	-7.3	V	3.0	37.3	1.0	-43.6	-13.0	-30.6	
2133.00	-14.6	V	3.0	36.6	1.0	-50.2	-13.0	-37.2	
2844.00	-20.6	V	3.0	36.4	1.0	-56.0	-13.0	-43.0	
1422.00	-8.2	H	3.0	37.3	1.0	-44.5	-13.0	-31.5	
2133.00	-13.0	H	3.0	36.6	1.0	-48.6	-13.0	-35.6	
2844.00	-22.5	H	3.0	36.4	1.0	-57.8	-13.0	-44.8	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth

Band
LTE12
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,704									
1408.00	-16.6	V	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2112.00	-14.7	V	3.0	36.6	1.0	-50.3	-13.0	-37.3	
2816.00	-22.1	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
1408.00	-16.2	H	3.0	37.4	1.0	-52.5	-13.0	-39.5	
2112.00	-15.8	H	3.0	36.6	1.0	-51.4	-13.0	-38.4	
2816.00	-23.0	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	
Mid Ch,707.5									
1415.00	-6.5	V	3.0	37.3	1.0	-42.8	-13.0	-29.8	
2122.50	-18.4	V	3.0	36.6	1.0	-54.0	-13.0	-41.0	
2830.00	-20.8	V	3.0	36.4	1.0	-56.2	-13.0	-43.2	
1415.00	-17.0	H	3.0	37.3	1.0	-53.3	-13.0	-40.3	
2122.50	-17.4	H	3.0	36.6	1.0	-53.0	-13.0	-40.0	
2830.00	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	
High Ch,711									
1422.00	-7.5	V	3.0	37.3	1.0	-43.9	-13.0	-30.9	
2133.00	-14.4	V	3.0	36.6	1.0	-49.9	-13.0	-36.9	
2844.00	-20.3	V	3.0	36.4	1.0	-55.7	-13.0	-42.7	
1422.00	-10.2	H	3.0	37.3	1.0	-46.6	-13.0	-33.6	
2133.00	-12.6	H	3.0	36.6	1.0	-48.2	-13.0	-35.2	
2844.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth

Band
LTE12
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, 701.50									
1403.00	-15.6	V	3.0	37.4	1.0	-52.0	-13.0	-39.0	
2104.50	-19.1	V	3.0	36.6	1.0	-54.7	-13.0	-41.7	
2806.00	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
1403.00	-14.4	H	3.0	37.4	1.0	-50.8	-13.0	-37.8	
2104.50	-15.8	H	3.0	36.6	1.0	-51.3	-13.0	-38.3	
2806.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
Mid Ch, 707.50									
1415.00	-7.8	V	3.0	37.3	1.0	-44.1	-13.0	-31.1	
2122.50	-14.8	V	3.0	36.6	1.0	-50.4	-13.0	-37.4	
2830.00	-20.5	V	3.0	36.4	1.0	-55.9	-13.0	-42.9	
1415.00	-11.6	H	3.0	37.3	1.0	-48.0	-13.0	-35.0	
2122.50	-13.9	H	3.0	36.6	1.0	-49.5	-13.0	-36.5	
2830.00	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
High Ch, 713.50									
1427.00	-5.8	V	3.0	37.3	1.0	-42.1	-13.0	-29.1	
2140.50	-15.4	V	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2854.00	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
1427.00	-14.8	H	3.0	37.3	1.0	-51.2	-13.0	-38.2	
2140.50	-17.8	H	3.0	36.6	1.0	-53.3	-13.0	-40.3	
2854.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth

Band
LTE12
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, 701.50									
1403.00	-18.3	V	3.0	37.4	1.0	-54.7	-13.0	-41.7	
2104.50	-17.0	V	3.0	36.6	1.0	-52.6	-13.0	-39.6	
2806.00	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
1403.00	-15.7	H	3.0	37.4	1.0	-52.0	-13.0	-39.0	
2104.50	-15.5	H	3.0	36.6	1.0	-51.0	-13.0	-38.0	
2806.00	-23.1	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	
Mid Ch, 707.50									
1415.00	-8.1	V	3.0	37.3	1.0	-44.5	-13.0	-31.5	
2122.50	-15.9	V	3.0	36.6	1.0	-51.4	-13.0	-38.4	
2830.00	-20.9	V	3.0	36.4	1.0	-56.3	-13.0	-43.3	
1415.00	-12.0	H	3.0	37.3	1.0	-48.4	-13.0	-35.4	
2122.50	-14.6	H	3.0	36.6	1.0	-50.1	-13.0	-37.1	
2830.00	-22.1	H	3.0	36.4	1.0	-57.5	-13.0	-44.5	
High Ch, 713.50									
1427.00	-5.6	V	3.0	37.3	1.0	-42.0	-13.0	-29.0	
2140.50	-15.5	V	3.0	36.6	1.0	-51.1	-13.0	-38.1	
2854.00	-21.2	V	3.0	36.4	1.0	-56.6	-13.0	-43.6	
1427.00	-15.1	H	3.0	37.3	1.0	-51.5	-13.0	-38.5	
2140.50	-16.6	H	3.0	36.6	1.0	-52.2	-13.0	-39.2	
2854.00	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 12 Harmonics, 3MHz Bandwidth

Band
LTE12
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, 700.5									
1401.00	-15.6	V	3.0	37.4	1.0	-52.0	-13.0	-39.0	
2101.50	-17.6	V	3.0	36.6	1.0	-53.1	-13.0	-40.1	
2802.00	-21.7	V	3.0	36.4	1.0	-57.1	-13.0	-44.1	
1401.00	-14.9	H	3.0	37.4	1.0	-51.3	-13.0	-38.3	
2101.50	-15.5	H	3.0	36.6	1.0	-51.0	-13.0	-38.0	
2802.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
Mid Ch, 707.50									
1415.00	-5.6	V	3.0	37.3	1.0	-42.0	-13.0	-29.0	
2122.00	-11.5	V	3.0	36.6	1.0	-47.1	-13.0	-34.1	
2830.00	-18.8	V	3.0	36.4	1.0	-54.2	-13.0	-41.2	
1415.00	-8.1	H	3.0	37.3	1.0	-44.5	-13.0	-31.5	
2122.00	-11.7	H	3.0	36.6	1.0	-47.2	-13.0	-34.2	
2830.00	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
High Ch, 714.5									
1429.00	-8.3	V	3.0	37.3	1.0	-44.6	-13.0	-31.6	
2143.50	-17.9	V	3.0	36.6	1.0	-53.4	-13.0	-40.4	
2858.00	-21.6	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
1429.00	-13.0	H	3.0	37.3	1.0	-49.3	-13.0	-36.3	
2143.50	-14.5	H	3.0	36.6	1.0	-50.0	-13.0	-37.0	
2858.00	-23.0	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 12 Harmonics, 3MHz Bandwidth

Band
LTE12
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, 700.5									
1401.00	-15.7	V	3.0	37.4	1.0	-52.1	-13.0	-39.1	
2101.50	-18.4	V	3.0	36.6	1.0	-53.9	-13.0	-40.9	
2802.00	-21.5	V	3.0	36.4	1.0	-56.9	-13.0	-43.9	
1401.00	-14.9	H	3.0	37.4	1.0	-51.3	-13.0	-38.3	
2101.50	-15.1	H	3.0	36.6	1.0	-50.6	-13.0	-37.6	
2802.00	-23.3	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	
Mid Ch, 707.50									
1415.00	-5.6	V	3.0	37.3	1.0	-41.9	-13.0	-28.9	
2122.00	-12.0	V	3.0	36.6	1.0	-47.6	-13.0	-34.6	
2830.00	-18.4	V	3.0	36.4	1.0	-53.8	-13.0	-40.8	
1415.00	-8.5	H	3.0	37.3	1.0	-44.9	-13.0	-31.9	
2122.00	-11.5	H	3.0	36.6	1.0	-47.1	-13.0	-34.1	
2830.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
High Ch, 714.5									
1429.00	-8.3	V	3.0	37.3	1.0	-44.6	-13.0	-31.6	
2143.50	-17.0	V	3.0	36.6	1.0	-52.5	-13.0	-39.5	
2858.00	-21.8	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
1429.00	-13.4	H	3.0	37.3	1.0	-49.7	-13.0	-36.7	
2143.50	-14.5	H	3.0	36.6	1.0	-50.1	-13.0	-37.1	
2858.00	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 12 Harmonics, 1.4MHz Bandwidth

Band
LTE12
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, 699.7									
1399.40	-15.2	V	3.0	37.4	1.0	-51.5	-13.0	-38.5	
2099.10	-17.0	V	3.0	36.6	1.0	-52.6	-13.0	-39.6	
2798.80	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
1399.40	-15.4	H	3.0	37.4	1.0	-51.8	-13.0	-38.8	
2099.10	-14.5	H	3.0	36.6	1.0	-50.1	-13.0	-37.1	
2798.80	-22.8	H	3.0	36.4	1.0	-58.2	-13.0	-45.2	
Mid Ch, 707.50									
1415.00	-10.1	V	3.0	37.3	1.0	-46.5	-13.0	-33.5	
2122.00	-12.9	V	3.0	36.6	1.0	-48.5	-13.0	-35.5	
2830.00	-21.6	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
1415.00	-7.2	H	3.0	37.3	1.0	-43.6	-13.0	-30.6	
2122.00	-14.4	H	3.0	36.6	1.0	-49.9	-13.0	-36.9	
2830.00	-22.2	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	
High Ch, 715.3									
1430.60	-5.2	V	3.0	37.3	1.0	-41.6	-13.0	-28.6	
2145.90	-13.1	V	3.0	36.6	1.0	-48.7	-13.0	-35.7	
2861.20	-21.1	V	3.0	36.4	1.0	-56.5	-13.0	-43.5	
1430.60	-9.9	H	3.0	37.3	1.0	-46.2	-13.0	-33.2	
2145.90	-15.4	H	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2861.20	-22.8	H	3.0	36.4	1.0	-58.2	-13.0	-45.2	

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UL Verification Services Chamber
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth

Band
LTE12
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, 699.7									
1399.40	-18.2	V	3.0	37.4	1.0	-54.6	-13.0	-41.6	
2099.10	-17.6	V	3.0	36.6	1.0	-53.2	-13.0	-40.2	
2798.80	-21.2	V	3.0	36.4	1.0	-56.6	-13.0	-43.6	
1399.40	-14.8	H	3.0	37.4	1.0	-51.1	-13.0	-38.1	
2099.10	-15.0	H	3.0	36.6	1.0	-50.6	-13.0	-37.6	
2798.80	-22.8	H	3.0	36.4	1.0	-58.1	-13.0	-45.1	
Mid Ch, 707.50									
1415.00	-10.9	V	3.0	37.3	1.0	-47.3	-13.0	-34.3	
2122.00	-15.4	V	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2830.00	-21.1	V	3.0	36.4	1.0	-56.4	-13.0	-43.4	
1415.00	-6.9	H	3.0	37.3	1.0	-43.3	-13.0	-30.3	
2122.00	-15.3	H	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2830.00	-22.6	H	3.0	36.4	1.0	-58.0	-13.0	-45.0	
High Ch, 715.3									
1430.60	-5.7	V	3.0	37.3	1.0	-42.0	-13.0	-29.0	
2145.90	-14.2	V	3.0	36.6	1.0	-49.8	-13.0	-36.8	
2861.20	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
1430.60	-10.8	H	3.0	37.3	1.0	-47.1	-13.0	-34.1	
2145.90	-15.4	H	3.0	36.6	1.0	-50.9	-13.0	-37.9	
2861.20	-22.2	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	

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LTE Band 5

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

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth

Band LTE5 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, 829									
1658.00	-6.2	V	3.0	37.0	1.0	-42.3	-13.0	-29.3	
2487.00	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3316.00	-21.0	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1658.00	-7.3	H	3.0	37.0	1.0	-43.3	-13.0	-30.3	
2487.00	-23.4	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3316.00	-21.6	H	3.0	36.1	1.0	-56.8	-13.0	-43.8	
Mid Ch, 836.5									
1673.00	3.3	V	3.0	37.0	1.0	-32.7	-13.0	-19.7	
2509.50	-12.5	V	3.0	36.4	1.0	-47.9	-13.0	-34.9	
3346.00	-16.9	V	3.0	36.1	1.0	-52.0	-13.0	-39.0	
1673.00	-1.6	H	3.0	37.0	1.0	-37.6	-13.0	-24.6	
2509.50	-21.9	H	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3346.00	-19.2	H	3.0	36.1	1.0	-54.3	-13.0	-41.3	
High Ch, 844									
1688.00	1.8	V	3.0	37.0	1.0	-34.2	-13.0	-21.2	
2532.00	-17.8	V	3.0	36.4	1.0	-53.2	-13.0	-40.2	
3376.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1688.00	-4.8	H	3.0	37.0	1.0	-40.8	-13.0	-27.8	
2532.00	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3376.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
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	-7.1	V	3.0	37.0	1.0	-43.1	-13.0	-30.1	
2487.00	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3316.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1658.00	-7.3	H	3.0	37.0	1.0	-43.3	-13.0	-30.3	
2487.00	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3316.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	
Mid Ch, 836.5									
1673.00	2.4	V	3.0	37.0	1.0	-33.6	-13.0	-20.6	
2509.50	-12.2	V	3.0	36.4	1.0	-47.6	-13.0	-34.6	
3346.00	-18.6	V	3.0	36.1	1.0	-53.7	-13.0	-40.7	
1673.00	-1.7	H	3.0	37.0	1.0	-37.7	-13.0	-24.7	
2509.50	-22.4	H	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3346.00	-20.8	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
High Ch, 844									
1688.00	1.7	V	3.0	37.0	1.0	-34.3	-13.0	-21.3	
2532.00	-17.5	V	3.0	36.4	1.0	-52.9	-13.0	-39.9	
3376.00	-21.4	V	3.0	36.1	1.0	-56.5	-13.0	-43.5	
1688.00	-4.7	H	3.0	37.0	1.0	-40.7	-13.0	-27.7	
2532.00	-24.3	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3376.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
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	0.0	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2479.50	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3306.00	-20.0	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1653.00	-4.0	H	3.0	37.0	1.0	-40.0	-13.0	-27.0	
2479.50	-21.2	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3306.00	-19.1	H	3.0	36.1	1.0	-54.2	-13.0	-41.2	
Mid Ch, 836.5									
1673.00	4.1	V	3.0	37.0	1.0	-31.9	-13.0	-18.9	
2509.50	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
3346.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1673.00	-3.7	H	3.0	37.0	1.0	-39.7	-13.0	-26.7	
2509.50	-24.0	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3346.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
High Ch, 846.5									
1693.00	0.1	V	3.0	37.0	1.0	-35.9	-13.0	-22.9	
2539.50	-14.6	V	3.0	36.4	1.0	-50.0	-13.0	-37.0	
3386.00	-20.0	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
1693.00	-3.7	H	3.0	37.0	1.0	-39.7	-13.0	-26.7	
2539.50	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
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 Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
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	0.3	V	3.0	37.0	1.0	-35.8	-13.0	-22.8	
2479.50	-22.0	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
3306.00	-20.8	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
1653.00	-4.8	H	3.0	37.0	1.0	-40.8	-13.0	-27.8	
2479.50	-21.1	H	3.0	36.4	1.0	-56.6	-13.0	-43.6	
3306.00	-20.4	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
Mid Ch, 836.5									
1673.00	3.3	V	3.0	37.0	1.0	-32.7	-13.0	-19.7	
2509.50	-16.8	V	3.0	36.4	1.0	-52.2	-13.0	-39.2	
3346.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1673.00	-3.8	H	3.0	37.0	1.0	-39.8	-13.0	-26.8	
2509.50	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3346.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 846.5									
1693.00	-0.1	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2539.50	-13.9	V	3.0	36.4	1.0	-49.3	-13.0	-36.3	
3386.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1693.00	-3.3	H	3.0	37.0	1.0	-39.2	-13.0	-26.2	
2539.50	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3386.00	-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 Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
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	0.3	V	3.0	37.0	1.0	-35.7	-13.0	-22.7	
2476.50	-18.9	V	3.0	36.4	1.0	-54.4	-13.0	-41.4	
3302.00	-18.7	V	3.0	36.2	1.0	-53.9	-13.0	-40.9	
1651.00	-5.7	H	3.0	37.0	1.0	-41.7	-13.0	-28.7	
2476.50	-22.1	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3302.00	-19.5	H	3.0	36.2	1.0	-54.7	-13.0	-41.7	
Mid Ch, 836.5									
1673.00	2.8	V	3.0	37.0	1.0	-33.2	-13.0	-20.2	
2509.50	-16.3	V	3.0	36.4	1.0	-51.8	-13.0	-38.8	
3346.00	-19.2	V	3.0	36.1	1.0	-54.3	-13.0	-41.3	
1673.00	-2.1	H	3.0	37.0	1.0	-38.1	-13.0	-25.1	
2509.50	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3346.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	
High Ch, 847.5									
1695.00	4.8	V	3.0	37.0	1.0	-31.2	-13.0	-18.2	
2542.50	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
3390.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1695.00	-1.8	H	3.0	37.0	1.0	-37.7	-13.0	-24.7	
2542.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3390.00	-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 Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
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	0.0	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2476.50	-19.7	V	3.0	36.4	1.0	-55.1	-13.0	-42.1	
3302.00	-19.0	V	3.0	36.2	1.0	-54.1	-13.0	-41.1	
1651.00	-6.2	H	3.0	37.0	1.0	-42.3	-13.0	-29.3	
2476.50	-21.5	H	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3302.00	-19.8	H	3.0	36.2	1.0	-54.9	-13.0	-41.9	
Mid Ch, 836.5									
1673.00	2.3	V	3.0	37.0	1.0	-33.7	-13.0	-20.7	
2509.50	-15.9	V	3.0	36.4	1.0	-51.3	-13.0	-38.3	
3346.00	-20.2	V	3.0	36.1	1.0	-55.4	-13.0	-42.4	
1673.00	-2.7	H	3.0	37.0	1.0	-38.7	-13.0	-25.7	
2509.50	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	
3346.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	
High Ch, 847.5									
1695.00	3.7	V	3.0	37.0	1.0	-32.3	-13.0	-19.3	
2542.50	-17.8	V	3.0	36.4	1.0	-53.2	-13.0	-40.2	
3390.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1695.00	-2.7	H	3.0	37.0	1.0	-38.7	-13.0	-25.7	
2542.50	-24.7	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
3390.00	-20.8	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 Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth

Band LTE5 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, 824.7									
1649.40	-1.1	V	3.0	37.0	1.0	-37.1	-13.0	-24.1	
2474.10	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3298.80	-21.4	V	3.0	36.2	1.0	-56.6	-13.0	-43.6	
1649.40	-7.8	H	3.0	37.0	1.0	-43.8	-13.0	-30.8	
2474.10	-22.3	H	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3298.80	-22.2	H	3.0	36.2	1.0	-57.3	-13.0	-44.3	
Mid Ch, 836.5									
1673.00	-0.7	V	3.0	37.0	1.0	-36.7	-13.0	-23.7	
2509.50	-20.8	V	3.0	36.4	1.0	-56.2	-13.0	-43.2	
3346.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1673.00	-6.3	H	3.0	37.0	1.0	-42.3	-13.0	-29.3	
2509.50	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3346.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 848.3									
1696.60	0.5	V	3.0	37.0	1.0	-35.5	-13.0	-22.5	
2544.90	-19.1	V	3.0	36.4	1.0	-54.5	-13.0	-41.5	
3393.20	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1696.60	-6.6	H	3.0	37.0	1.0	-42.6	-13.0	-29.6	
2544.90	-24.8	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
3393.20	-21.4	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/25/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT AC charger and HS
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	-1.4	V	3.0	37.0	1.0	-37.4	-13.0	-24.4	
2474.10	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3298.80	-21.0	V	3.0	36.2	1.0	-56.2	-13.0	-43.2	
1649.40	-9.5	H	3.0	37.0	1.0	-45.6	-13.0	-32.6	
2474.10	-22.8	H	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3298.80	-22.3	H	3.0	36.2	1.0	-57.5	-13.0	-44.5	
Mid Ch, 836.5									
1673.00	-1.9	V	3.0	37.0	1.0	-37.9	-13.0	-24.9	
2509.50	-19.3	V	3.0	36.4	1.0	-54.7	-13.0	-41.7	
3346.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1673.00	-6.3	H	3.0	37.0	1.0	-42.3	-13.0	-29.3	
2509.50	-22.7	H	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3346.00	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
High Ch, 848.3									
1696.60	0.2	V	3.0	37.0	1.0	-35.8	-13.0	-22.8	
2544.90	-18.7	V	3.0	36.4	1.0	-54.1	-13.0	-41.1	
3393.20	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1696.60	-7.5	H	3.0	37.0	1.0	-43.5	-13.0	-30.5	
2544.90	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3393.20	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	

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LTE Band 4

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-4.6	V	3.0	36.0	1.0	-39.6	-13.0	-26.6	
5160.00	-18.8	V	3.0	35.4	1.0	-53.3	-13.0	-40.3	
6880.00	-18.0	V	3.0	35.7	1.0	-52.6	-13.0	-39.6	
3440.00	-5.6	H	3.0	36.0	1.0	-40.7	-13.0	-27.7	
5160.00	-19.5	H	3.0	35.4	1.0	-53.9	-13.0	-40.9	
6880.00	-16.4	H	3.0	35.7	1.0	-51.0	-13.0	-38.0	
Mid Ch, 1732.5									
3465.00	-7.2	V	3.0	36.0	1.0	-42.2	-13.0	-29.2	
5197.50	-17.9	V	3.0	35.4	1.0	-52.3	-13.0	-39.3	
6930.00	-18.3	V	3.0	35.7	1.0	-53.0	-13.0	-40.0	
3465.00	-14.0	H	3.0	36.0	1.0	-49.0	-13.0	-36.0	
5197.50	-17.7	H	3.0	35.4	1.0	-52.1	-13.0	-39.1	
6930.00	-16.7	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
High Ch, 1745									
3490.00	-9.3	V	3.0	36.0	1.0	-44.3	-13.0	-31.3	
5235.00	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6980.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3490.00	-11.5	H	3.0	36.0	1.0	-46.5	-13.0	-33.5	
5235.00	-18.8	H	3.0	35.4	1.0	-53.2	-13.0	-40.2	
6980.00	-16.9	H	3.0	35.7	1.0	-51.6	-13.0	-38.6	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-4.8	V	3.0	36.0	1.0	-39.8	-13.0	-26.8	
5160.00	-18.5	V	3.0	35.4	1.0	-53.0	-13.0	-40.0	
6880.00	-16.9	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3440.00	-6.0	H	3.0	36.0	1.0	-41.1	-13.0	-28.1	
5160.00	-19.1	H	3.0	35.4	1.0	-53.5	-13.0	-40.5	
6880.00	-16.8	H	3.0	35.7	1.0	-51.5	-13.0	-38.5	
Mid Ch, 1732.5									
3465.00	-6.0	V	3.0	36.0	1.0	-41.1	-13.0	-28.1	
5197.50	-18.5	V	3.0	35.4	1.0	-52.9	-13.0	-39.9	
6930.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3465.00	-12.9	H	3.0	36.0	1.0	-47.9	-13.0	-34.9	
5197.50	-17.5	H	3.0	35.4	1.0	-51.9	-13.0	-38.9	
6930.00	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	
High Ch, 1745									
3490.00	-5.4	V	3.0	36.0	1.0	-40.4	-13.0	-27.4	
5235.00	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6980.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3490.00	-9.7	H	3.0	36.0	1.0	-44.7	-13.0	-31.7	
5235.00	-18.4	H	3.0	35.4	1.0	-52.8	-13.0	-39.8	
6980.00	-16.4	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-5.5	V	3.0	36.1	1.0	-40.5	-13.0	-27.5	
5152.50	-18.7	V	3.0	35.4	1.0	-53.2	-13.0	-40.2	
6870.00	-18.1	V	3.0	35.7	1.0	-52.7	-13.0	-39.7	
3435.00	-2.6	H	3.0	36.1	1.0	-37.7	-13.0	-24.7	
5152.50	-17.2	H	3.0	35.4	1.0	-51.7	-13.0	-38.7	
6870.00	-16.8	H	3.0	35.7	1.0	-51.5	-13.0	-38.5	
Mid Ch, 1732.5									
3465.00	-3.8	V	3.0	36.0	1.0	-38.9	-13.0	-25.9	
5197.50	-14.7	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6930.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3465.00	-3.2	H	3.0	36.0	1.0	-38.2	-13.0	-25.2	
5197.50	-18.3	H	3.0	35.4	1.0	-52.7	-13.0	-39.7	
6930.00	-17.5	H	3.0	35.7	1.0	-52.2	-13.0	-39.2	
High Ch, 1747.5									
3495.00	-12.4	V	3.0	36.0	1.0	-47.4	-13.0	-34.4	
5242.50	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6990.00	-18.4	V	3.0	35.7	1.0	-53.1	-13.0	-40.1	
3495.00	-5.3	H	3.0	36.0	1.0	-40.3	-13.0	-27.3	
5242.50	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6990.00	-17.0	H	3.0	35.7	1.0	-51.7	-13.0	-38.7	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 15MHz Bandwidth

Band
LTE4
15MHz
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, 1717.5									
3435.00	-4.6	V	3.0	36.1	1.0	-39.6	-13.0	-26.6	
5152.50	-18.9	V	3.0	35.4	1.0	-53.4	-13.0	-40.4	
6870.00	-18.2	V	3.0	35.7	1.0	-52.8	-13.0	-39.8	
3435.00	-2.9	H	3.0	36.1	1.0	-37.9	-13.0	-24.9	
5152.50	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6870.00	-15.8	H	3.0	35.7	1.0	-50.5	-13.0	-37.5	
Mid Ch, 1732.5									
3465.00	-4.0	V	3.0	36.0	1.0	-39.1	-13.0	-26.1	
5197.50	-14.8	V	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6930.00	-17.9	V	3.0	35.7	1.0	-52.6	-13.0	-39.6	
3465.00	-4.3	H	3.0	36.0	1.0	-39.3	-13.0	-26.3	
5197.50	-18.4	H	3.0	35.4	1.0	-52.8	-13.0	-39.8	
6930.00	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	
High Ch, 1747.5									
3495.00	-8.3	V	3.0	36.0	1.0	-43.3	-13.0	-30.3	
5242.50	-16.2	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6990.00	-17.2	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3495.00	-6.9	H	3.0	36.0	1.0	-41.9	-13.0	-28.9	
5242.50	-13.9	H	3.0	35.4	1.0	-48.4	-13.0	-35.4	
6990.00	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-8.9	V	3.0	36.1	1.0	-43.9	-13.0	-30.9	
5145.00	-14.6	V	3.0	35.4	1.0	-49.0	-13.0	-36.0	
6860.00	-17.9	V	3.0	35.7	1.0	-52.6	-13.0	-39.6	
3430.00	-7.3	H	3.0	36.1	1.0	-42.4	-13.0	-29.4	
5145.00	-19.0	H	3.0	35.4	1.0	-53.4	-13.0	-40.4	
6860.00	-16.0	H	3.0	35.7	1.0	-50.6	-13.0	-37.6	
Mid Ch, 1732.5									
3465.00	-6.6	V	3.0	36.0	1.0	-41.7	-13.0	-28.7	
5197.50	-13.8	V	3.0	35.4	1.0	-48.2	-13.0	-35.2	
6930.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3465.00	-5.5	H	3.0	36.0	1.0	-40.6	-13.0	-27.6	
5197.50	-18.3	H	3.0	35.4	1.0	-52.7	-13.0	-39.7	
6930.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1750									
3500.00	-9.8	V	3.0	36.0	1.0	-44.8	-13.0	-31.8	
5250.00	-15.0	V	3.0	35.4	1.0	-49.5	-13.0	-36.5	
7000.00	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3500.00	-8.4	H	3.0	36.0	1.0	-43.4	-13.0	-30.4	
5250.00	-18.2	H	3.0	35.4	1.0	-52.6	-13.0	-39.6	
7000.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth

Band
LTE4
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, 1715									
3430.00	-6.6	V	3.0	36.1	1.0	-41.7	-13.0	-28.7	
5145.00	-14.1	V	3.0	35.4	1.0	-48.5	-13.0	-35.5	
6860.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3430.00	-6.6	H	3.0	36.1	1.0	-41.6	-13.0	-28.6	
5145.00	-20.4	H	3.0	35.4	1.0	-54.9	-13.0	-41.9	
6860.00	-15.9	H	3.0	35.7	1.0	-50.6	-13.0	-37.6	
Mid Ch, 1732.5									
3465.00	-6.3	V	3.0	36.0	1.0	-41.4	-13.0	-28.4	
5197.50	-14.3	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
6930.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3465.00	-7.3	H	3.0	36.0	1.0	-42.4	-13.0	-29.4	
5197.50	-18.7	H	3.0	35.4	1.0	-53.1	-13.0	-40.1	
6930.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1750									
3500.00	-8.2	V	3.0	36.0	1.0	-43.2	-13.0	-30.2	
5250.00	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
7000.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3500.00	-9.3	H	3.0	36.0	1.0	-44.3	-13.0	-31.3	
5250.00	-17.7	H	3.0	35.4	1.0	-52.1	-13.0	-39.1	
7000.00	-16.0	H	3.0	35.7	1.0	-50.7	-13.0	-37.7	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-10.4	V	3.0	36.1	1.0	-45.4	-13.0	-32.4	
5137.50	-14.4	V	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6850.00	-16.4	V	3.0	35.7	1.0	-51.1	-13.0	-38.1	
3425.00	-10.3	H	3.0	36.1	1.0	-45.4	-13.0	-32.4	
5137.50	-12.7	H	3.0	35.4	1.0	-47.2	-13.0	-34.2	
6850.00	-15.9	H	3.0	35.7	1.0	-50.5	-13.0	-37.5	
Mid Ch, 1732.5									
3465.00	-7.8	V	3.0	36.0	1.0	-42.8	-13.0	-29.8	
5197.50	-11.9	V	3.0	35.4	1.0	-46.3	-13.0	-33.3	
6930.00	-17.8	V	3.0	35.7	1.0	-52.5	-13.0	-39.5	
3465.00	-4.6	H	3.0	36.0	1.0	-39.7	-13.0	-26.7	
5197.50	-13.7	H	3.0	35.4	1.0	-48.1	-13.0	-35.1	
6930.00	-15.7	H	3.0	35.7	1.0	-50.4	-13.0	-37.4	
High Ch, 1752.5									
3505.00	-8.1	V	3.0	36.0	1.0	-43.1	-13.0	-30.1	
5257.50	-14.8	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
7010.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3505.00	-7.8	H	3.0	36.0	1.0	-42.8	-13.0	-29.8	
5257.50	-17.8	H	3.0	35.4	1.0	-52.2	-13.0	-39.2	
7010.00	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 5MHz Bandwidth

Band
LTE4
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, 1712.5									
3425.00	-10.1	V	3.0	36.1	1.0	-45.2	-13.0	-32.2	
5137.50	-13.2	V	3.0	35.4	1.0	-47.7	-13.0	-34.7	
6850.00	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3425.00	-10.8	H	3.0	36.1	1.0	-45.8	-13.0	-32.8	
5137.50	-13.0	H	3.0	35.4	1.0	-47.4	-13.0	-34.4	
6850.00	-17.0	H	3.0	35.7	1.0	-51.6	-13.0	-38.6	
Mid Ch, 1732.5									
3465.00	-8.9	V	3.0	36.0	1.0	-43.9	-13.0	-30.9	
5197.50	-13.8	V	3.0	35.4	1.0	-48.2	-13.0	-35.2	
8655.00	-5.1	V	3.0	35.7	1.0	-39.8	-13.0	-26.8	
3457.50	-9.3	H	3.0	36.0	1.0	-44.3	-13.0	-31.3	
5197.50	-15.3	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6930.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1752.5									
3505.00	-10.7	V	3.0	36.0	1.0	-45.7	-13.0	-32.7	
5257.50	-14.4	V	3.0	35.4	1.0	-48.8	-13.0	-35.8	
7010.00	-18.2	V	3.0	35.7	1.0	-52.9	-13.0	-39.9	
3505.00	-11.5	H	3.0	36.0	1.0	-46.5	-13.0	-33.5	
5257.50	-15.2	H	3.0	35.4	1.0	-49.6	-13.0	-36.6	
7010.00	-16.4	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 3MHz Bandwidth

Band
LTE4
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, 1711.5									
3423.00	-8.7	V	3.0	36.1	1.0	-43.7	-13.0	-30.7	
5134.50	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6846.00	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3423.00	-6.2	H	3.0	36.1	1.0	-41.2	-13.0	-28.2	
5134.50	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6846.00	-13.5	H	3.0	35.7	1.0	-48.1	-13.0	-35.1	
Mid Ch, 1732.5									
3465.00	-6.5	V	3.0	36.0	1.0	-41.5	-13.0	-28.5	
5197.50	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6930.00	-14.0	V	3.0	35.7	1.0	-48.7	-13.0	-35.7	
3465.00	-10.8	H	3.0	36.0	1.0	-45.8	-13.0	-32.8	
5197.50	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6930.00	-13.9	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	
High Ch, 1753.5									
3507.00	-6.7	V	3.0	36.0	1.0	-41.7	-13.0	-28.7	
5260.50	-15.5	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
7014.00	-14.0	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3507.00	-4.1	H	3.0	36.0	1.0	-39.1	-13.0	-26.1	
5260.50	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7014.00	-13.5	H	3.0	35.7	1.0	-48.2	-13.0	-35.2	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 3MHz Bandwidth

Band LTE4 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, 1711.5									
3423.00	-9.5	V	3.0	36.1	1.0	-44.6	-13.0	-31.6	
5134.50	-15.2	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6846.00	-15.1	V	3.0	35.7	1.0	-49.7	-13.0	-36.7	
3423.00	-7.8	H	3.0	36.1	1.0	-42.9	-13.0	-29.9	
5134.50	-13.1	H	3.0	35.4	1.0	-47.5	-13.0	-34.5	
6846.00	-13.5	H	3.0	35.7	1.0	-48.2	-13.0	-35.2	
Mid Ch, 1732.5									
3465.00	-7.8	V	3.0	36.0	1.0	-42.9	-13.0	-29.9	
5197.50	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6930.00	-14.7	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3465.00	-10.3	H	3.0	36.0	1.0	-45.3	-13.0	-32.3	
5197.50	-14.2	H	3.0	35.4	1.0	-48.6	-13.0	-35.6	
6930.00	-13.3	H	3.0	35.7	1.0	-48.0	-13.0	-35.0	
High Ch, 1753.5									
3507.00	-8.3	V	3.0	36.0	1.0	-43.3	-13.0	-30.3	
5260.50	-17.0	V	3.0	35.4	1.0	-51.5	-13.0	-38.5	
7014.00	-14.1	V	3.0	35.7	1.0	-48.8	-13.0	-35.8	
3507.00	-4.3	H	3.0	36.0	1.0	-39.3	-13.0	-26.3	
5260.50	-14.1	H	3.0	35.4	1.0	-48.6	-13.0	-35.6	
7014.00	-14.1	H	3.0	35.7	1.0	-48.8	-13.0	-35.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 1.4MHz Bandwidth

Band LTE4 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, 1710.7									
3421.40	-10.3	V	3.0	36.1	1.0	-45.4	-13.0	-32.4	
5132.10	-15.1	V	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6842.80	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3421.40	-10.1	H	3.0	36.1	1.0	-45.1	-13.0	-32.1	
5132.10	-14.9	H	3.0	35.4	1.0	-49.3	-13.0	-36.3	
6842.80	-13.7	H	3.0	35.7	1.0	-48.4	-13.0	-35.4	
Mid Ch, 1732.5									
3465.00	-6.6	V	3.0	36.0	1.0	-41.6	-13.0	-28.6	
5197.50	-15.9	V	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.00	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
3465.00	-11.4	H	3.0	36.0	1.0	-46.4	-13.0	-33.4	
5197.50	-15.8	H	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.00	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1754.3									
3508.60	-6.7	V	3.0	36.0	1.0	-41.7	-13.0	-28.7	
5262.90	-16.6	V	3.0	35.4	1.0	-51.0	-13.0	-38.0	
7017.20	-14.1	V	3.0	35.7	1.0	-48.8	-13.0	-35.8	
3508.60	-2.3	H	3.0	36.0	1.0	-37.3	-13.0	-24.3	
5262.90	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
7017.20	-13.2	H	3.0	35.7	1.0	-47.8	-13.0	-34.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 1.4MHz Bandwidth

Band LTE4 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, 1710.7									
3421.40	-10.1	V	3.0	36.1	1.0	-45.2	-13.0	-32.2	
5132.10	-13.8	V	3.0	35.4	1.0	-48.2	-13.0	-35.2	
6842.80	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3421.40	-11.8	H	3.0	36.1	1.0	-46.9	-13.0	-33.9	
5132.10	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
6842.80	-13.5	H	3.0	35.7	1.0	-48.1	-13.0	-35.1	
Mid Ch, 1732.5									
3465.00	-9.1	V	3.0	36.0	1.0	-44.2	-13.0	-31.2	
5197.50	-17.3	V	3.0	35.4	1.0	-51.7	-13.0	-38.7	
6930.00	-14.8	V	3.0	35.7	1.0	-49.5	-13.0	-36.5	
3465.00	-13.8	H	3.0	36.0	1.0	-48.9	-13.0	-35.9	
5197.50	-16.1	H	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6930.00	-12.2	H	3.0	35.7	1.0	-46.9	-13.0	-33.9	
High Ch, 1754.3									
3508.60	-8.4	V	3.0	36.0	1.0	-43.4	-13.0	-30.4	
5262.90	-16.7	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
7017.20	-14.9	V	3.0	35.7	1.0	-49.6	-13.0	-36.6	
3508.60	-3.1	H	3.0	36.0	1.0	-38.1	-13.0	-25.1	
5262.90	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7017.20	-13.8	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	

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LTE Band 2

Band

LTE2

20MHz

16QAM

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-13.3	V	3.0	35.9	1.0	-48.1	-13.0	-35.1	
5580.00	-13.8	V	3.0	35.5	1.0	-48.3	-13.0	-35.3	
7440.00	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3720.00	-14.9	H	3.0	35.9	1.0	-49.7	-13.0	-36.7	
5580.00	-18.1	H	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7440.00	-15.6	H	3.0	35.7	1.0	-50.3	-13.0	-37.3	
Mid Ch, 1880									
3760.00	-19.9	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5640.00	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
7520.00	-17.1	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3760.00	-19.7	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
5640.00	-19.1	H	3.0	35.5	1.0	-53.6	-13.0	-40.6	
7520.00	-16.6	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
High Ch, 1900									
3800.00	-18.3	V	3.0	35.8	1.0	-53.1	-13.0	-40.1	
5700.00	-19.4	V	3.0	35.5	1.0	-53.9	-13.0	-40.9	
7600.00	-16.9	V	3.0	35.8	1.0	-51.6	-13.0	-38.6	
3800.00	-18.2	H	3.0	35.8	1.0	-53.0	-13.0	-40.0	
5700.00	-18.3	H	3.0	35.5	1.0	-52.8	-13.0	-39.8	
7600.00	-16.0	H	3.0	35.8	1.0	-50.8	-13.0	-37.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth

Band LTE2 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, 1860									
3720.00	-13.8	V	3.0	35.9	1.0	-48.6	-13.0	-35.6	
5580.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7440.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3720.00	-13.6	H	3.0	35.9	1.0	-48.4	-13.0	-35.4	
5580.00	-17.4	H	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7440.00	-17.1	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
Mid Ch, 1880									
3760.00	-18.1	V	3.0	35.8	1.0	-53.0	-13.0	-40.0	
5640.00	-19.0	V	3.0	35.5	1.0	-53.5	-13.0	-40.5	
7520.00	-16.6	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3760.00	-18.5	H	3.0	35.8	1.0	-53.3	-13.0	-40.3	
5640.00	-19.1	H	3.0	35.5	1.0	-53.6	-13.0	-40.6	
7520.00	-17.0	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
High Ch, 1900									
3800.00	-17.0	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
5700.00	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
7600.00	-16.7	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
3800.00	-17.8	H	3.0	35.8	1.0	-52.6	-13.0	-39.6	
5700.00	-17.8	H	3.0	35.5	1.0	-52.3	-13.0	-39.3	
7600.00	-15.8	H	3.0	35.8	1.0	-50.6	-13.0	-37.6	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, 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	-14.7	V	3.0	35.9	1.0	-49.5	-13.0	-36.5	
5572.50	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7430.00	-17.6	V	3.0	35.7	1.0	-52.3	-13.0	-39.3	
3715.00	-15.2	H	3.0	35.9	1.0	-50.0	-13.0	-37.0	
5572.50	-18.7	H	3.0	35.5	1.0	-53.2	-13.0	-40.2	
7430.00	-15.7	H	3.0	35.7	1.0	-50.4	-13.0	-37.4	
Mid Ch, 1880									
3760.00	-20.2	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
5640.00	-16.1	V	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7520.00	-16.8	V	3.0	35.7	1.0	-51.6	-13.0	-38.6	
3760.00	-18.0	H	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5640.00	-18.1	H	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7520.00	-16.8	H	3.0	35.7	1.0	-51.6	-13.0	-38.6	
High Ch, 1902.5									
3805.00	-19.5	V	3.0	35.8	1.0	-54.3	-13.0	-41.3	
5707.50	-14.0	V	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7610.00	-17.4	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
3805.00	-22.2	H	3.0	35.8	1.0	-57.0	-13.0	-44.0	
5707.50	-17.6	H	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7610.00	-17.1	H	3.0	35.8	1.0	-51.8	-13.0	-38.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth

Band
LTE2
15MHz
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, 1857.5									
3715.00	-14.5	V	3.0	35.9	1.0	-49.3	-13.0	-36.3	
5572.50	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7430.00	-15.9	V	3.0	35.7	1.0	-50.6	-13.0	-37.6	
3715.00	-14.1	H	3.0	35.9	1.0	-48.9	-13.0	-35.9	
5572.50	-18.7	H	3.0	35.5	1.0	-53.2	-13.0	-40.2	
7430.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1880									
3760.00	-20.6	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5640.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7520.00	-17.3	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3760.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5640.00	-18.9	H	3.0	35.5	1.0	-53.4	-13.0	-40.4	
7520.00	-16.5	H	3.0	35.7	1.0	-51.3	-13.0	-38.3	
High Ch, 1902.5									
3805.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5707.50	-13.5	V	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7610.00	-17.3	V	3.0	35.8	1.0	-52.1	-13.0	-39.1	
3805.00	-21.2	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
5707.50	-16.7	H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
7610.00	-17.1	H	3.0	35.8	1.0	-51.9	-13.0	-38.9	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
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	-12.7	V	3.0	35.9	1.0	-47.5	-13.0	-34.5	
5565.00	-15.5	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7420.00	-15.3	V	3.0	35.7	1.0	-50.0	-13.0	-37.0	
3710.00	-10.3	H	3.0	35.9	1.0	-45.1	-13.0	-32.1	
5565.00	-15.2	H	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7420.00	-13.2	H	3.0	35.7	1.0	-48.0	-13.0	-35.0	
Mid Ch, 1880									
3760.00	-13.3	V	3.0	35.8	1.0	-48.1	-13.0	-35.1	
5640.00	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7520.00	-14.1	V	3.0	35.7	1.0	-48.8	-13.0	-35.8	
3760.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5640.00	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7520.00	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
High Ch, 1905									
3810.00	-15.2	V	3.0	35.8	1.0	-50.0	-13.0	-37.0	
5715.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7620.00	-13.8	V	3.0	35.8	1.0	-48.6	-13.0	-35.6	
3810.00	-16.6	H	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5715.00	-15.3	H	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7620.00	-12.5	H	3.0	35.8	1.0	-47.2	-13.0	-34.2	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth

Band
LTE2
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, 1855									
3710.00	-11.5	V	3.0	35.9	1.0	-46.4	-13.0	-33.4	
5565.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7420.00	-14.2	V	3.0	35.7	1.0	-48.9	-13.0	-35.9	
3710.00	-12.5	H	3.0	35.9	1.0	-47.3	-13.0	-34.3	
5565.00	-13.9	H	3.0	35.5	1.0	-48.4	-13.0	-35.4	
7420.00	-12.6	H	3.0	35.7	1.0	-47.4	-13.0	-34.4	
Mid Ch, 1880									
3760.00	-15.6	V	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5640.00	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-14.6	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3760.00	-14.4	H	3.0	35.8	1.0	-49.2	-13.0	-36.2	
5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1905									
3810.00	-17.6	V	3.0	35.8	1.0	-52.3	-13.0	-39.3	
5715.00	-14.6	V	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7620.00	-13.7	V	3.0	35.8	1.0	-48.5	-13.0	-35.5	
3810.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5715.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7620.00	-12.7	H	3.0	35.8	1.0	-47.5	-13.0	-34.5	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth

Band
LTE2
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, 1852.5									
3705.00	-12.3	V	3.0	35.9	1.0	-47.2	-13.0	-34.2	
5557.50	-18.6	V	3.0	35.5	1.0	-53.1	-13.0	-40.1	
7410.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3705.00	-16.8	H	3.0	35.9	1.0	-51.7	-13.0	-38.7	
5557.50	-16.6	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7410.00	-16.0	H	3.0	35.7	1.0	-50.7	-13.0	-37.7	
Mid Ch, 1880									
3760.00	-18.5	V	3.0	35.8	1.0	-53.4	-13.0	-40.4	
5640.00	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7520.00	-18.1	V	3.0	35.7	1.0	-52.9	-13.0	-39.9	
3760.00	-14.7	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5640.00	-16.6	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
7520.00	-16.4	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1907.5									
3815.00	-21.6	V	3.0	35.8	1.0	-56.4	-13.0	-43.4	
5722.50	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7630.00	-17.1	V	3.0	35.8	1.0	-51.8	-13.0	-38.8	
3815.00	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5722.50	-19.3	H	3.0	35.5	1.0	-53.8	-13.0	-40.8	
7630.00	-16.5	H	3.0	35.8	1.0	-51.3	-13.0	-38.3	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: R.Z
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth

Band LTE2 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, 1852.5									
3705.00	-13.8	V	3.0	35.9	1.0	-48.6	-13.0	-35.6	
5557.50	-18.6	V	3.0	35.5	1.0	-53.1	-13.0	-40.1	
7410.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3705.00	-17.2	H	3.0	35.9	1.0	-52.0	-13.0	-39.0	
5557.50	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7410.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
Mid Ch, 1880									
3760.00	-18.6	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5640.00	-16.4	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7520.00	-17.1	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3760.00	-16.2	H	3.0	35.8	1.0	-51.0	-13.0	-38.0	
5640.00	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7520.00	-16.3	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	
High Ch, 1907.5									
3815.00	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
5722.50	-14.0	V	3.0	35.5	1.0	-48.5	-13.0	-35.5	
7630.00	-16.7	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
3815.00	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
5722.50	-18.2	H	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7630.00	-14.9	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth

Band
LTE2
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, 1850.7									
3701.40	-13.5	V	3.0	35.9	1.0	-48.3	-13.0	-35.3	
5552.10	-15.1	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7402.80	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3701.40	-14.2	H	3.0	35.9	1.0	-49.0	-13.0	-36.0	
5552.10	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7402.80	-13.8	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	
Mid Ch, 1880									
3760.00	-11.8	V	3.0	35.8	1.0	-46.6	-13.0	-33.6	
5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7520.00	-13.5	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
3760.00	-13.6	H	3.0	35.8	1.0	-48.5	-13.0	-35.5	
5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-13.5	H	3.0	35.7	1.0	-48.2	-13.0	-35.2	
High Ch, 1909.3									
3818.60	-15.2	V	3.0	35.8	1.0	-50.0	-13.0	-37.0	
5727.90	-12.5	V	3.0	35.5	1.0	-47.0	-13.0	-34.0	
7637.20	-13.4	V	3.0	35.8	1.0	-48.1	-13.0	-35.1	
3818.60	-14.8	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5727.90	-14.4	H	3.0	35.5	1.0	-48.9	-13.0	-35.9	
7637.20	-12.5	H	3.0	35.8	1.0	-47.3	-13.0	-34.3	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth

Band LTE2 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, 1851.5									
3703.00	-12.2	V	3.0	35.9	1.0	-47.0	-13.0	-34.0	
5554.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7406.00	-15.1	V	3.0	35.7	1.0	-49.8	-13.0	-36.8	
3703.00	-17.3	H	3.0	35.9	1.0	-52.1	-13.0	-39.1	
5554.50	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7406.00	-13.5	H	3.0	35.7	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1880									
3760.00	-14.7	V	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7520.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3760.00	-12.3	H	3.0	35.8	1.0	-47.1	-13.0	-34.1	
5640.00	-15.1	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7520.00	-13.6	H	3.0	35.7	1.0	-48.4	-13.0	-35.4	
High Ch, 1908.5									
3817.00	-13.5	V	3.0	35.8	1.0	-48.3	-13.0	-35.3	
5725.50	-13.1	V	3.0	35.5	1.0	-47.6	-13.0	-34.6	
7634.00	-13.8	V	3.0	35.8	1.0	-48.6	-13.0	-35.6	
3817.00	-15.6	H	3.0	35.8	1.0	-50.4	-13.0	-37.4	
5725.50	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7634.00	-12.1	H	3.0	35.8	1.0	-46.8	-13.0	-33.8	

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
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	-8.9	V	3.0	35.9	1.0	-43.8	-13.0	-30.8	
5552.10	-15.2	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7402.80	-14.7	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3701.40	-8.9	H	3.0	35.9	1.0	-43.7	-13.0	-30.7	
5552.10	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7402.80	-13.6	H	3.0	35.7	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1880									
3760.00	-13.6	V	3.0	35.8	1.0	-44.7	-13.0	-31.7	
5640.00	-16.5	V	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7520.00	-14.2	V	3.0	35.7	1.0	-48.9	-13.0	-35.9	
3760.00	-11.4	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	
5640.00	-15.0	H	3.0	35.5	1.0	-49.5	-13.0	-36.5	
7520.00	-13.9	H	3.0	35.7	1.0	-48.6	-13.0	-35.6	
High Ch, 1909.3									
3818.60	-10.3	V	3.0	35.8	1.0	-45.0	-13.0	-32.0	
5727.90	-14.5	V	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7637.20	-13.5	V	3.0	35.8	1.0	-48.3	-13.0	-35.3	
3818.60	-9.1	H	3.0	35.8	1.0	-43.9	-13.0	-30.9	
5727.90	-13.5	H	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7637.20	-12.9	H	3.0	35.8	1.0	-47.6	-13.0	-34.6	

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Band

LTE2

1.4MHz

QPSK

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

Company: LG Electronics
Project #: 15I19900
Date: 2/24/2015
Test Engineer: O. Stoelting
Configuration: X-pos EUT , AC Adapter, Headset
Location: Chamber A
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	-9.4	V	3.0	35.9	1.0	-44.2	-13.0	-31.2	
5552.10	-15.6	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7402.80	-14.4	V	3.0	35.7	1.0	-49.2	-13.0	-36.2	
3701.40	-9.9	H	3.0	35.9	1.0	-44.7	-13.0	-31.7	
5552.10	-14.8	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7402.80	-14.1	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	
Mid Ch, 1880									
3760.00	-14.0	V	3.0	35.8	1.0	-48.8	-13.0	-35.8	
5640.00	-15.7	V	3.0	35.5	1.0	-50.2	-13.0	-37.2	
7520.00	-12.7	V	3.0	35.7	1.0	-47.5	-13.0	-34.5	
3760.00	-11.1	H	3.0	35.8	1.0	-45.9	-13.0	-32.9	
5640.00	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-13.1	H	3.0	35.7	1.0	-47.8	-13.0	-34.8	
High Ch, 1909.3									
3818.60	-11.8	V	3.0	35.8	1.0	-46.6	-13.0	-33.6	
5727.90	-13.3	V	3.0	35.5	1.0	-47.8	-13.0	-34.8	
7637.20	-13.8	V	3.0	35.8	1.0	-48.5	-13.0	-35.5	
3818.60	-9.2	H	3.0	35.8	1.0	-43.9	-13.0	-30.9	
5727.90	-13.4	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7637.20	-13.2	H	3.0	35.8	1.0	-48.0	-13.0	-35.0	

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CDMA

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

Company: LG Electronics
Project #: 15I19900
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 EVDO

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	-10.8	V	3.0	35.9	1.0	-45.7	-13.0	-32.7	
5553.75	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7405.00	-12.4	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
3702.50	-7.8	H	3.0	35.9	1.0	-42.6	-13.0	-29.6	
5553.75	-13.5	H	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7405.00	-11.3	H	3.0	35.7	1.0	-46.0	-13.0	-33.0	
Mid Ch, 1880									
3760.00	-14.9	V	3.0	35.8	1.0	-49.7	-13.0	-36.7	
5640.00	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3760.00	-11.0	H	3.0	35.8	1.0	-45.8	-13.0	-32.8	
5640.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7520.00	-11.4	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
High Ch, 1908.75									
3817.50	-16.2	V	3.0	35.8	1.0	-51.0	-13.0	-38.0	
5726.25	-14.1	V	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7635.00	-11.9	V	3.0	35.8	1.0	-46.6	-13.0	-33.6	
3817.50	-14.6	H	3.0	35.8	1.0	-49.4	-13.0	-36.4	
5726.25	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7635.00	-11.2	H	3.0	35.8	1.0	-46.0	-13.0	-33.0	

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

Company: LG Electronics
Project #: 15I19900
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	-10.5	V	3.0	35.9	1.0	-45.3	-13.0	-32.3	
5553.75	-13.0	V	3.0	35.5	1.0	-47.5	-13.0	-34.5	
7405.00	-12.7	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3702.50	-8.8	H	3.0	35.9	1.0	-43.6	-13.0	-30.6	
5553.75	-14.2	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
7405.00	-10.2	H	3.0	35.7	1.0	-45.0	-13.0	-32.0	
Mid Ch, 1880									
3760.00	-15.5	V	3.0	35.8	1.0	-50.3	-13.0	-37.3	
5640.00	-15.5	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-14.8	V	3.0	35.7	1.0	-49.6	-13.0	-36.6	
3760.00	-12.5	H	3.0	35.8	1.0	-47.3	-13.0	-34.3	
5640.00	-12.6	H	3.0	35.5	1.0	-47.1	-13.0	-34.1	
7520.00	-13.1	H	3.0	35.7	1.0	-47.8	-13.0	-34.8	
High Ch, 1908.75									
3817.50	-16.6	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
5726.25	-11.9	V	3.0	35.5	1.0	-46.4	-13.0	-33.4	
7635.00	-12.5	V	3.0	35.8	1.0	-47.2	-13.0	-34.2	
3817.50	-15.5	H	3.0	35.8	1.0	-50.3	-13.0	-37.3	
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	-46.2	-13.0	-33.2	

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

Company: LG Electronics
Project #: 15I19900
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 EVDO

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	-6.4	V	3.0	37.4	1.0	-42.8	-13.0	-29.8	
2474.10	-23.7	V	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3298.80	-19.7	V	3.0	35.8	1.0	-54.5	-13.0	-41.5	
1649.40	-11.8	H	3.0	37.4	1.0	-48.2	-13.0	-35.2	
2474.10	-20.6	H	3.0	36.4	1.0	-56.0	-13.0	-43.0	
3298.80	-18.3	H	3.0	35.8	1.0	-53.1	-13.0	-40.1	
Mid Ch, 836.52									
1673.04	-7.8	V	3.0	37.3	1.0	-44.1	-13.0	-31.1	
2509.56	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3346.08	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
1673.04	-9.7	H	3.0	37.3	1.0	-46.0	-13.0	-33.0	
2509.56	-21.7	H	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3346.08	-19.3	H	3.0	35.8	1.0	-54.1	-13.0	-41.1	
High Ch, 848.31									
1696.62	-7.9	V	3.0	37.3	1.0	-44.2	-13.0	-31.2	
2544.93	-23.8	V	3.0	36.3	1.0	-59.1	-13.0	-46.1	
3393.24	-20.1	V	3.0	35.7	1.0	-54.8	-13.0	-41.8	
1696.62	-9.2	H	3.0	37.3	1.0	-45.5	-13.0	-32.5	
2544.93	-21.9	H	3.0	36.3	1.0	-57.2	-13.0	-44.2	
3393.24	-19.2	H	3.0	35.7	1.0	-53.9	-13.0	-40.9	

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

Company: LG Electronics
Project #: 15I19900
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	-5.6	V	3.0	37.4	1.0	-42.0	-13.0	-29.0	
2474.10	-21.3	V	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3298.80	-20.0	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
1649.40	-13.3	H	3.0	37.4	1.0	-49.7	-13.0	-36.7	
2474.10	-22.0	H	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3298.80	-18.1	H	3.0	35.8	1.0	-52.9	-13.0	-39.9	
Mid Ch, 836.52									
1673.04	-7.5	V	3.0	37.3	1.0	-43.8	-13.0	-30.8	
2509.56	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3346.08	-20.3	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
1673.04	-10.6	H	3.0	37.3	1.0	-46.9	-13.0	-33.9	
2509.56	-21.8	H	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3346.08	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
High Ch, 848.31									
1696.62	-6.8	V	3.0	37.3	1.0	-43.1	-13.0	-30.1	
2544.93	-24.1	V	3.0	36.3	1.0	-59.4	-13.0	-46.4	
3393.24	-20.2	V	3.0	35.7	1.0	-54.9	-13.0	-41.9	
1696.62	-9.7	H	3.0	37.3	1.0	-46.0	-13.0	-33.0	
2544.93	-22.6	H	3.0	36.3	1.0	-57.9	-13.0	-44.9	
3393.24	-18.9	H	3.0	35.7	1.0	-53.6	-13.0	-40.6	

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