FCC 47 CFR PART 22 SUBPART H
FCC 47 CFR PART 24 SUBPART E
FCC 47 CFR PART 27 SUBPART M
FCC 47 CFR PART 90 SUBPART S

CLASS II PERMISSIVE CHANGE

CERTIFICATION TEST REPORT

FOR

CDMA/ LTE Phone + Bluetooth, and DTS b/g/n

MODEL NUMBER: LG-LS660, LGLS660, LS660, LG-LS660P, LGLS660P and LS660P

FCC ID: ZNFLS660

REPORT NUMBER: 14U18507-E1 REVISION A

ISSUE DATE: SEPTEMBER 05, 2014

Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/21/14	Initial issue	D. Coronia
A	09/05/14	Update antenna gain information page 12	D. Coronia

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	**LG ELECTRONICS MOBILECOMM U.S.A., INC.**
EUT DESCRIPTION:	**CDMA/LTE Phone + Bluetooth, and DTS b/g/n.**
MODEL:	**LG-LS660, LGLS660, LS660, LG-LS660P, LGLS660P and LS660P**
SERIAL NUMBER:	**1933723**
DATE TESTED:	**AUGUST 8 -22, 2014**

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27M AND 90S	PASS

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

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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, Part 22, Part 24, Part 27 and Part 90.

Test Procedure: Reference KDB 971168 D01 Power Meas License Digital Systems v02r01 6/7/2013

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	☐ Chamber D
☒ Chamber B	☐ Chamber E
☒ Chamber C	☐ Chamber F

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)

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 18000 MHz	4.94 dB
Radiated Disturbance, 1GHz to 40GHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/ LTE Phone + Bluetooth, and 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 22/24/90						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
BC10	816~824	1xRTT	24.8	301.10	24.68	293.76
	816~824	EVDO REL. 0	24.8	301.10	22.62	182.81
	816~824	EVDO REV. A	24.8	301.10		
BC0	824~849	1xRTT	24.7	295.12	24.93	311.17
	824~849	EVDO REL. 0	24.9	309.03	23.10	204.17
	824~849	EVDO REV. A	24.9	309.03		
BC1	1850~1910	1xRTT	24.2	263.03	27.22	527.23
	1850~1910	EVDO REL. 0	24.0	251.19	25.03	318.42
	1850~1910	EVDO REV. A	24.0	251.19		

5.3. MAXIMUM OUTPUT POWER (LTE)

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

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE41	2496~2690	20MHz	QPSK	23.70	233.88	22.35	171.79
	2496~2690		16QAM	22.70	186.21	21.24	133.05

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE41	2496~2690	15MHz	QPSK	23.70	234.42	22.82	191.43
	2496~2690		16QAM	22.70	186.21	21.83	152.41

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE41	2496~2690	10MHz	QPSK	23.54	225.94	22.87	193.64
	2496~2690		16QAM	22.70	186.21	21.93	155.96

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	824~849	10MHz	QPSK	23.70	234.42	18.95	78.52
	824~849		16QAM	22.70	186.21	18.40	69.18

FCC Part 90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	814~824	10MHz	QPSK	23.70	234.42	20.05	101.16
	814~824		16QAM	22.70	186.21	18.69	73.96

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	824~849	5MHz	QPSK	23.70	234.42	18.96	78.70
	824~849		16QAM	22.70	186.21	18.34	68.23

FCC Part 90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	814~824	5MHz	QPSK	23.70	234.42	19.06	80.54
	814~824		16QAM	22.70	186.21	18.44	69.82

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	824~849	3MHz	QPSK	23.70	234.42	18.26	66.99
	824~849		16QAM	22.70	186.21	17.32	53.95

FCC Part 90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	814~824	3MHz	QPSK	23.70	234.42	18.99	79.25
	814~824		16QAM	22.70	186.21	17.87	61.24

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	824~849	1.4MHz	QPSK	23.70	234.42	21.03	126.77
	824~849		16QAM	22.70	186.21	19.98	99.54

FCC Part 90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE26	814~824	1.4MHz	QPSK	23.70	234.42	20.59	114.55
	814~824		16QAM	22.70	186.21	19.22	83.56

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE25	1850~1915	10MHz	QPSK	23.52	224.91	24.37	273.53
	1850~1915	10MHz	16QAM	22.70	186.21	23.25	211.35

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE25	1850~1915	5MHz	QPSK	23.62	230.14	23.38	217.77
	1850~1915	5MHz	16QAM	22.70	186.21	22.64	183.65

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE25	1850~1915	3MHz	QPSK	23.62	230.14	23.25	211.35
	1850~1915	3MHz	16QAM	22.70	186.21	22.62	182.81

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)
LTE26/BC10/BC0, 814~849MHz	-6.05
BC1/LTE25, 1850~1915MHz	-0.47
LTE41, 2496~2690MHz	1.64

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	STA-U34WRI	N/A	N/A
Earphone	LG	N/A	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

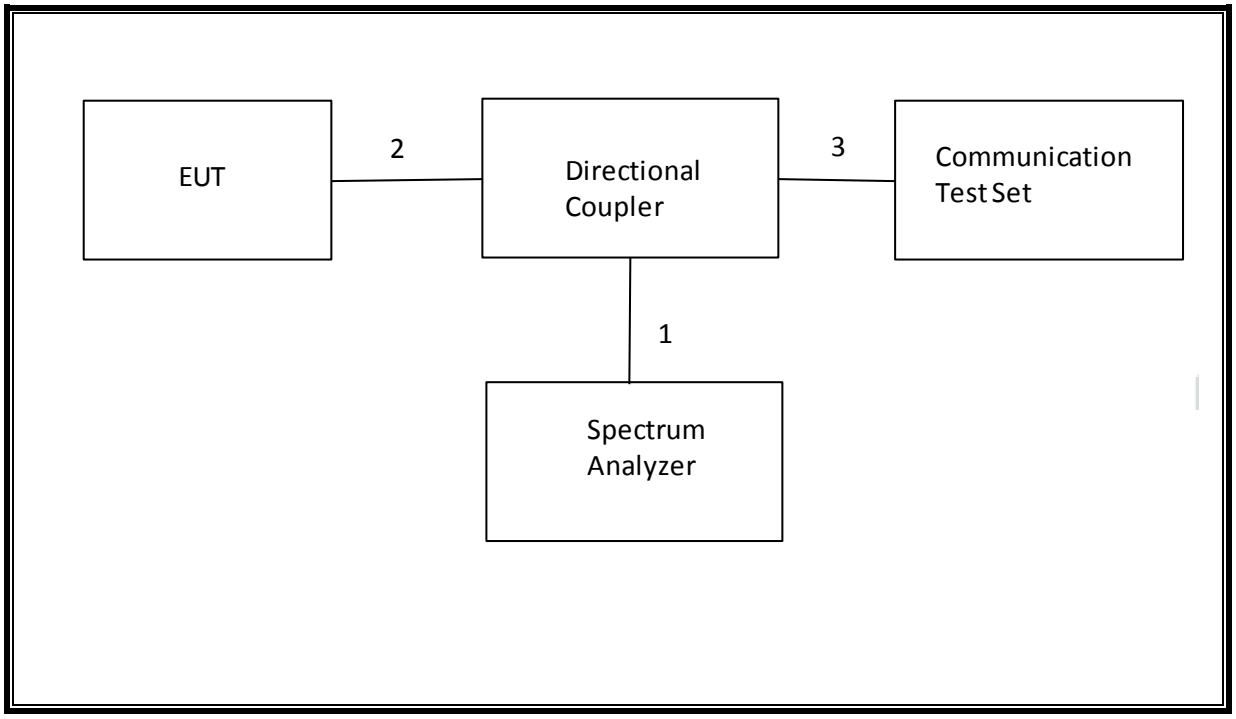
I/O CABLES (RADIATED SETUP)

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	No
2	Jack	1	Headset	Shielded	1m	No
3	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

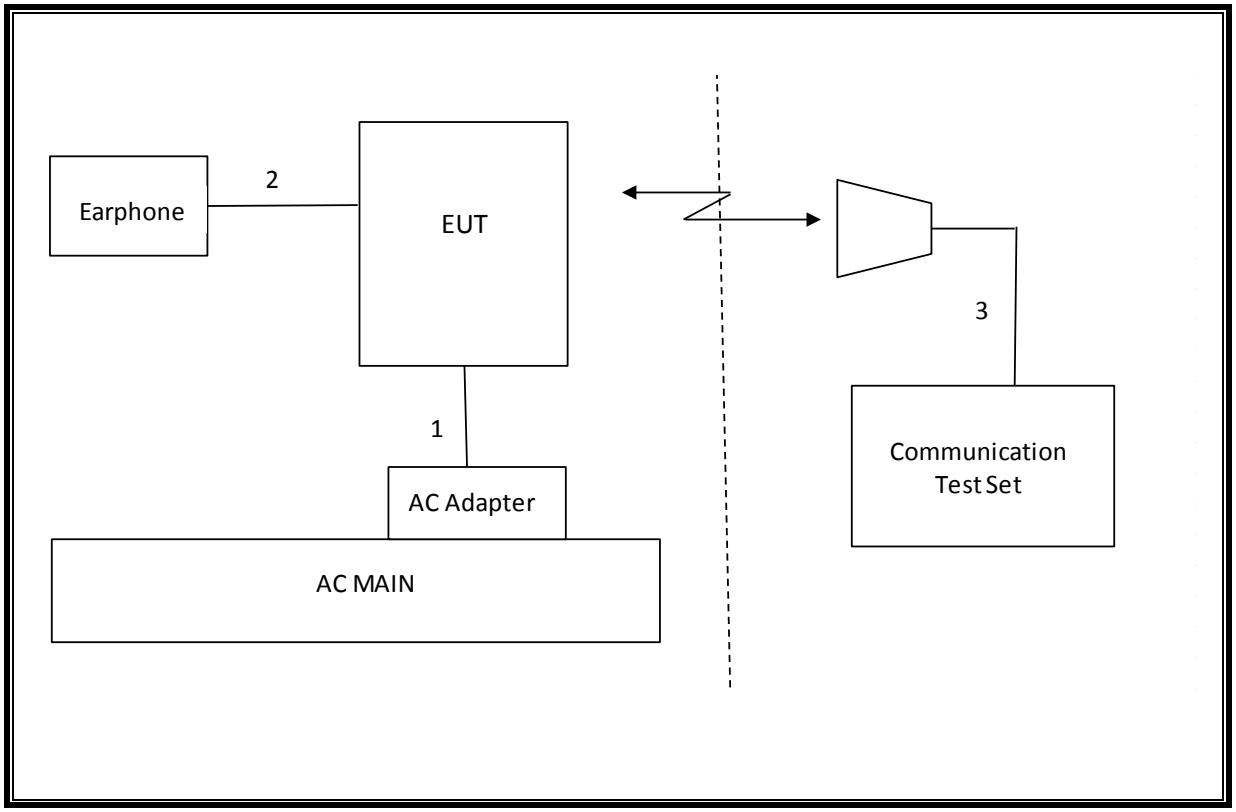
TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	02/26/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	A092308	02/12/15
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/14
Antenna, Horn, 18 GHz	EMCO	3115	C00784	09/25/14
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	01/09/15
Communications Test Set	R&S	CMW500	T159	07/02/15
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	07/17/15
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/14/15
Antenna, Horn, 25.5 GHz	ARA	MWH-1826/B	C00980	11/14/14
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/14

7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
22.917(a) 24.238(a)	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	see orignal
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	see orignal
2.1046	N/A	Conducted output power	N/A		Pass	24.9dBm
27.53(g) 90.691	RSS-139(6.5.1)	Emission Mask	-25dBm		Pass	see orignal
22.355 24.235 27.54	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3)	Frequency Stability	2.5PPM		Pass	see orignal
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm		Pass	24.93dBm
90.635			50dBm	Radiated	Pass	21.03dBm
24.232(c)	RSS-133(6.4) RSS-139(6.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	27.22dBm
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	-21.80dBm

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)

8.1.2. CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.6
		384	836.52	24.7
		777	848.31	24.7
	RC3, SO55 (Loopback)	1013	824.70	24.6
		384	836.52	24.7
		777	848.31	24.7
	RC3, SO32 (+F-SCH)	1013	824.70	24.6
		384	836.52	24.7
		777	848.31	24.7

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	24.2
	RC3, SO55 (Loopback)	25	1851.25	24.1
		600	1880.00	24.2
		1175	1908.75	24.2
	RC3, SO32 (+F-SCH)	25	1851.25	24.1
		600	1880.00	24.2
		1175	1908.75	24.2

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC10	RC1, SO55 (Loopback)	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6
	RC3, SO55 (Loopback)	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6
	RC3, SO32 (+F-SCH)	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6

8.1.3. 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)

8.1.4. 1XEVDO REL 0 OUTPUT POWER RESULT

1xAdvanced

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	24.6
		384	836.52	24.7
		777	848.31	24.7

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC1	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	23.8
		600	1880.00	24.0
		1175	1908.75	24.0

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC10	Fwd11/Rvs8 SO75 (Loopback)	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6

1xEv-Do Rel. 0

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2 kbps (2 slot, QPSK)	1013	824.70	24.7
		384	836.52	24.7
		777	848.31	24.9

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	23.8
		600	1880.00	24.0
		1175	1908.75	24.0

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC10	307.2 kbps (2 slot, QPSK)	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6

8.1.5. 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)

8.1.6. 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	24.7
		384	836.52	24.7
		777	848.31	24.9

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	23.8
		600	1880.00	24.0
		1175	1908.75	24.0

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC10	307.2k, QPSK/ ACK channel is transmitted at all the slots	476	817.90	24.8
		526	820.50	24.7
		564	823.10	24.6

8.2. LTE OUTPUT VERIFICATION

8.2.1. LTE OUTPUT RESULT

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	23.7	23.7	23.7
			1	25	0	23.6	23.7	23.7
			1	49	0	23.6	23.7	23.5
			25	0	1	22.7	22.7	22.7
			25	12	1	22.7	22.7	22.7
			25	25	1	22.7	22.7	22.7
			50	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.7	22.7
			1	25	1	22.5	22.7	22.7
			1	49	1	22.6	22.7	22.5
			25	0	2	21.7	21.7	21.7
			25	12	2	21.7	21.7	21.7
			25	25	2	21.7	21.7	21.7
			50	0	2	21.7	21.7	21.7
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	23.7	23.7	23.7
			1	12	0	23.6	23.7	23.7
			1	24	0	23.5	23.7	23.5
			12	0	1	22.7	22.7	22.7
			12	7	1	22.7	22.7	22.7
			12	13	1	22.7	22.7	22.7
			25	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.6	22.7	22.7
			1	12	1	22.6	22.7	22.7
			1	24	1	22.5	22.7	22.5
			12	0	2	21.7	21.7	21.7
			12	7	2	21.7	21.7	21.7
			12	13	2	21.7	21.7	21.7
			25	0	2	21.7	21.7	21.7

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	23.7	23.7	23.7
			1	8	0	23.6	23.7	23.6
			1	14	0	23.6	23.7	23.4
			8	0	1	22.7	22.7	22.7
			8	4	1	22.7	22.7	22.7
			8	7	1	22.7	22.7	22.7
			15	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.7	22.7
			1	8	1	22.6	22.7	22.6
			1	14	1	22.6	22.7	22.4
			8	0	2	21.7	21.7	21.7
			8	4	2	21.7	21.7	21.7
			8	7	2	21.7	21.7	21.7
			15	0	2	21.7	21.7	21.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26740	26865	26990
						819 MHz	831.5 MHz	844 MHz
LTE Band 26	10	QPSK	1	0	0	23.7	23.7	23.6
			1	25	0	23.6	23.7	23.5
			1	49	0	23.6	23.7	23.7
			25	0	1	22.7	22.7	22.7
			25	12	1	22.7	22.7	22.7
			25	25	1	22.7	22.7	22.7
			50	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.6	22.6
			1	25	1	22.6	22.6	22.4
			1	49	1	22.6	22.6	22.7
			25	0	2	21.7	21.7	21.7
			25	12	2	21.7	21.7	21.7
			25	25	2	21.7	21.7	21.7
			50	0	2	21.7	21.7	21.7
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26715	26865	27015
						816.5 MHz	831.5 MHz	846.5 MHz
LTE Band 26	5	QPSK	1	0	0	23.7	23.7	23.6
			1	12	0	23.7	23.7	23.7
			1	24	0	23.6	23.7	23.7
			12	0	1	22.7	22.7	22.7
			12	7	1	22.7	22.7	22.7
			12	13	1	22.7	22.7	22.7
			25	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.7	22.5
			1	12	1	22.5	22.7	22.6
			1	24	1	22.6	21.7	22.7
			12	0	2	21.7	21.7	21.7
			12	7	2	21.7	21.7	21.7
			12	13	2	21.7	21.7	21.7
			25	0	2	21.7	21.7	21.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26705	26865	27025
						815.5 MHz	831.5 MHz	847.5 MHz
LTE Band 26	3	QPSK	1	0	0	23.7	23.7	23.7
			1	8	0	23.6	23.7	23.7
			1	14	0	23.7	23.7	23.7
			8	0	1	22.7	22.7	22.7
			8	4	1	22.7	22.7	22.7
			8	7	1	22.7	22.7	22.7
			15	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.7	22.7
			1	8	1	22.6	22.6	22.7
			1	14	1	22.6	22.6	22.7
			8	0	2	21.7	21.7	21.7
			8	4	2	21.7	21.7	21.7
			8	7	2	21.7	21.7	21.7
			15	0	2	21.7	21.7	21.7
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26697	26865	27033
						814.7 MHz	831.5 MHz	848.3 MHz
LTE Band 26	1.4	QPSK	1	0	0	23.7	23.7	23.7
			1	3	0	23.7	23.7	23.7
			1	5	0	23.7	23.7	23.7
			3	0	0	23.7	23.7	23.7
			3	1	0	23.7	23.7	23.7
			3	3	0	23.7	23.7	23.7
			6	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.7	22.7	22.7
			1	3	1	22.7	22.7	22.7
			1	5	1	22.7	22.7	22.7
			3	0	1	22.7	22.7	22.7
			3	1	1	22.7	22.7	22.7
			3	3	1	22.7	22.7	22.7
			6	0	2	21.7	21.7	21.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39750	40620	41490
						2506 MHz	2593 MHz	2680 MHz
LTE Band 41	20	QPSK	1	0	0	23.70	23.70	23.70
			1	49	0	23.70	23.70	23.70
			1	99	0	23.70	23.70	23.70
			50	0	1	22.70	22.70	22.70
			50	24	1	22.70	22.70	22.70
			50	50	1	22.70	22.70	22.70
			100	0	1	22.70	22.70	22.70
		16QAM	1	0	1	22.50	22.40	22.70
			1	49	1	22.70	22.30	22.70
			1	99	1	22.60	22.20	22.70
			50	0	2	21.70	21.70	21.70
			50	24	2	21.70	21.70	21.70
			50	50	2	21.70	21.70	21.70
			100	0	2	21.70	21.70	21.70

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39725	40620	41515
						2503.5 MHz	2593 MHz	2682.5 MHz
LTE Band 41	15	QPSK	1	0	0	23.50	23.70	23.40
			1	37	0	23.70	23.70	23.70
			1	74	0	23.70	23.70	23.70
			36	0	1	22.70	22.70	22.70
			36	20	1	22.70	22.70	22.70
			36	39	1	22.70	22.70	22.00
			75	0	1	22.70	22.70	22.00
		16QAM	1	0	1	22.70	22.50	22.10
			1	37	1	22.70	22.50	22.20
			1	74	1	22.70	22.40	22.70
			36	0	2	21.70	21.70	21.70
			36	20	2	21.70	21.70	21.70
			36	39	2	21.70	21.70	21.70
			75	0	2	21.70	21.70	21.70

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39700	40620	41540
						2501 MHz	2593 MHz	2685 MHz
LTE Band 41	10	QPSK	1	0	0	23.50	23.70	23.40
			1	25	0	23.60	23.70	23.50
			1	49	0	23.70	23.70	23.40
			25	0	1	22.70	22.70	22.70
			25	12	1	22.70	22.70	22.70
			25	25	1	22.70	22.70	22.70
			50	0	1	22.70	22.70	22.70
		16QAM	1	0	1	22.70	22.50	22.70
			1	25	1	22.00	22.50	22.70
			1	49	1	22.00	22.40	22.70
			25	0	2	21.70	21.70	21.70
			25	12	2	21.70	21.70	21.70
			25	25	2	21.70	21.70	21.70
			50	0	2	21.70	21.70	21.70

9. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

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

Please refer to project 14U18147 for details.

10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
IC: RSS-132, 4.5; RSS-133, 6.5

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 v02r01 - 06/07/2013)

MODES TESTED

CDMA BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

10.1.1. OCCUPIED BANDWIDTH RESULTS

Please refer to project 14U18147 for details.

10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238 and § 90.691

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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01
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

CDMA BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

RESULTS

Please refer to project 14U18147 for details.

10.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §90.691

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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

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

CDMA BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

RESULTS

Please refer to project 14U18147 for details.

10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, and §27.54

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

MODES TESTED

CDMA BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

RESULTS

Please refer to project 14U18147 for details.

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, and § 90.635.

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.

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

CDMA BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

TEST RESULTS

11.1.1. ERP/EIRP Results

CDMA BC1

Band	Mode	Channel	f(MHz)	EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	27.22	527.23
		600	1880	26.11	408.32
		1175	1908.75	25.43	349.14
	EVDO REL. 0	25	1851.25	24.50	281.84
		600	1880	23.84	242.10
		1175	1908.75	25.03	318.42

CDMA BC0

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
BC0	1xRTT	1013	824.7	24.93	311.17
		384	836.52	22.49	177.42
		777	848.31	24.53	283.79
	EVDO REL. 0	1013	824.7	21.92	155.60
		384	836.52	23.10	204.17
		777	848.31	22.83	191.87

CDMA BC10

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
BC10	1xRTT	476	817.9	23.40	218.78
		580	820.5	24.29	268.53
		684	823.1	24.68	293.76
	EVDO REL. 0	476	817.9	22.62	182.81
		580	820.5	22.34	171.40
		684	823.1	22.09	161.81

11.1.2. LTE ERP/EIRP Results

LTE Band 41

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE41	20	QPSK	1/0	2506	20.48	111.69
			1/0	2593	20.99	125.60
			1/0	2680	22.35	171.79
		16QAM	1/0	2506	21.21	132.13
			1/0	2593	20.88	122.46
			1/0	2680	21.24	133.05

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE41	15	QPSK	1/0	2503.5	22.82	191.43
			1/0	2593	22.60	181.97
			1/0	2682.5	22.63	183.23
		16QAM	1/0	2503.5	21.78	150.66
			1/0	2593	21.79	151.01
			1/0	2682.5	21.83	152.41

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE41	10	QPSK	1/0	2501	21.26	133.66
			1/0	2593	22.28	169.04
			1/0	2685	22.87	193.64
		16QAM	1/0	2501	20.10	102.33
			1/0	2593	21.17	130.92
			1/0	2685	21.93	155.96

LTE Band 26

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE26	10	QPSK	1/0	819	20.05	101.16
			1/0	831.5	18.23	66.53
			1/0	844	18.95	78.52
		16QAM	1/0	819	18.69	73.96
			1/0	831.5	16.49	44.57
			1/0	844	18.40	69.18

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE26	5	QPSK	1/0	816.5	19.06	80.54
			1/0	831.5	18.23	66.53
			1/0	846.5	18.96	78.70
		16QAM	1/0	816.5	18.44	69.82
			1/0	831.5	17.66	58.34
			1/0	846.5	18.34	68.23

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE26	3	QPSK	1/0	815.5	18.99	79.25
			1/0	831.5	17.42	55.21
			1/0	847.5	18.26	66.99
		16QAM	1/0	815.5	17.87	61.25
			1/0	831.5	16.62	45.92
			1/0	847.5	17.32	53.95

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE26	1.4	QPSK	1/0	814.7	20.59	114.55
			1/0	831.5	21.03	126.77
			1/0	848.3	19.36	86.30
		16QAM	1/0	814.7	19.22	83.56
			1/0	831.5	19.98	99.54
			1/0	848.3	18.39	69.02

LTE Band 25

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE25	10	QPSK	1/0	1855	24.37	273.53
			1/0	1882.5	23.88	244.34
			1/0	1910	23.56	226.97
		16QAM	1/0	1855	23.25	211.35
			1/0	1882.5	22.73	187.50
			1/0	1910	22.23	167.11

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE25	5	QPSK	1/0	1852.5	22.98	198.61
			1/0	1882.5	23.20	208.93
			1/0	1912.5	23.38	217.77
		16QAM	1/0	1852.5	19.13	81.85
			1/0	1882.5	22.64	183.65
			1/0	1912.5	22.01	158.85

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE25	3	QPSK	1/0	1851.5	23.25	211.35
			1/0	1882.5	22.65	184.08
			1/0	1913.5	22.37	172.58
		16QAM	1/0	1851.5	22.62	182.81
			1/0	1882.5	21.75	149.62
			1/0	1913.5	21.56	143.22

11.1.3. ERP/EIRP PLOTS

LTE Band 41

Band
LTE41
20MHz
16QAM

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 20MHz 16QAM

Test Equipment:
Receiving: Horn T59, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2506.00	3.69	V	0.9	9.5	12.34	33.0	-20.7	
2506.00	12.56	H	0.9	9.5	21.21	33.0	-11.8	
Mid Ch								
2593.00	3.01	V	0.9	9.5	11.66	33.0	-21.3	
2593.00	12.23	H	0.9	9.5	20.88	33.0	-12.1	
High Ch								
2680.00	3.40	V	0.9	9.6	12.15	33.0	-20.9	
2680.00	12.49	H	0.9	9.6	21.24	33.0	-11.8	

Rev. 3.17.11

Band

LTE41

20MHz

QPSK

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 20MHz QPSK

Test Equipment:
Receiving: Horn T59, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2506.00	2.80	V	0.9	9.5	11.45	33.0	-21.6	
2506.00	11.93	H	0.9	9.5	20.58	33.0	-12.4	
Mid Ch								
2593.00	2.32	V	0.9	9.5	10.97	33.0	-22.0	
2593.00	12.34	H	0.9	9.5	20.99	33.0	-12.0	
High Ch								
2680.00	2.70	V	0.9	9.6	11.45	33.0	-21.6	
2680.00	13.60	H	0.9	9.6	22.35	33.0	-10.7	

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Band

LTE41

15MHz

16QAM

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 15MHz 16QAM

Test Equipment:
Receiving: Horn T72, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2503.50	6.30	V	0.9	9.5	14.95	33.0	-18.1	
2503.50	13.13	H	0.9	9.5	21.78	33.0	-11.2	
Mid Ch								
2593.00	5.43	V	0.9	9.5	14.08	33.0	-18.9	
2593.00	13.14	H	0.9	9.5	21.79	33.0	-11.2	
High Ch								
2682.50	5.31	V	0.9	9.6	14.06	33.0	-18.9	
2682.50	13.08	H	0.9	9.6	21.83	33.0	-11.2	

Rev. 3.17.11

Band

LTE41

15MHz

QPSK

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 15MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2503.50	7.70	V	0.9	9.5	16.35	33.0	-16.7	
2503.50	14.17	H	0.9	9.5	22.82	33.0	-10.2	
Mid Ch								
2593.00	6.52	V	0.9	9.5	15.17	33.0	-17.8	
2593.00	13.95	H	0.9	9.5	22.60	33.0	-10.4	
High Ch								
2682.50	6.31	V	0.9	9.6	15.06	33.0	-17.9	
2682.50	13.88	H	0.9	9.6	22.63	33.0	-10.4	

Rev. 3.17.11

Band

LTE41

10MHz

16QAM

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 10MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2501.00	2.90	V	0.9	9.5	11.55	33.0	-21.5	
2501.00	11.45	H	0.9	9.5	20.10	33.0	-12.9	
Mid Ch								
2593.00	3.00	V	0.9	9.5	11.65	33.0	-21.4	
2593.00	12.52	H	0.9	9.5	21.17	33.0	-11.8	
High Ch								
2685.00	3.60	V	0.9	9.6	12.35	33.0	-20.7	
2685.00	13.18	H	0.9	9.6	21.93	33.0	-11.1	

Rev. 3.17.11

Band

LTE41

10MHz

QPSK

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

Company: LG Electronics
Project #: 14U18507
Date: 08/08/14
Test Engineer: Kelly Ros
Configuration: EUT ONLY / X-orientation
Mode: LTE B41 10MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2501.00	4.90	V	0.9	9.5	13.55	33.0	-19.5	
2501.00	12.61	H	0.9	9.5	21.26	33.0	-11.7	
Mid Ch								
2593.00	4.96	V	0.9	9.5	13.61	33.0	-19.4	
2593.00	13.63	H	0.9	9.5	22.28	33.0	-10.7	
High Ch								
2685.00	5.40	V	0.9	9.6	14.15	33.0	-18.9	
2685.00	14.12	H	0.9	9.6	22.87	33.0	-10.1	

Rev. 3.17.11

LTE Band 26

Band

LTE26

10MHz

16QAM

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 10MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
819.00	12.31	V	0.9	0.0	11.46	38.5	-27.0	
819.00	19.54	H	0.9	0.0	18.69	38.5	-19.8	
Mid Ch								
831.50	11.09	V	0.9	0.0	10.24	38.5	-28.2	
831.50	17.34	H	0.9	0.0	16.49	38.5	-22.0	
High Ch								
844.00	10.41	V	0.9	0.0	9.56	38.5	-28.9	
844.00	19.25	H	0.9	0.0	18.40	38.5	-20.1	

Rev. 3.17.11

Band

LTE26

10MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 10MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
819.00	13.61	V	0.9	0.0	12.76	38.5	-25.7	
819.00	20.90	H	0.9	0.0	20.05	38.5	-18.4	
Mid Ch								
831.50	11.94	V	0.9	0.0	11.09	38.5	-27.4	
831.50	19.08	H	0.9	0.0	18.23	38.5	-20.2	
High Ch								
844.00	11.83	V	0.9	0.0	10.98	38.5	-27.5	
844.00	19.80	H	0.9	0.0	18.95	38.5	-19.5	

Rev. 3.17.11

Band

LTE26

5MHz

16QAM

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 5MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
816.50	10.71	V	0.9	0.0	9.86	50.0	-40.1	
816.50	19.29	H	0.9	0.0	18.44	50.0	-31.6	
Mid Ch								
831.50	12.62	V	0.9	0.0	11.77	50.0	-38.2	
831.50	18.51	H	0.9	0.0	17.66	50.0	-32.3	
High Ch								
846.50	11.38	V	0.9	0.0	10.53	50.0	-39.5	
846.50	19.19	H	0.9	0.0	18.34	50.0	-31.7	

Rev. 3.17.11

Band

LTE26

5MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 5MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
816.50	11.89	V	0.9	0.0	11.04	50.0	-39.0	
816.50	19.91	H	0.9	0.0	19.06	50.0	-30.9	
Mid Ch								
831.50	13.60	V	0.9	0.0	12.75	50.0	-37.3	
831.50	19.08	H	0.9	0.0	18.23	50.0	-31.8	
High Ch								
846.50	12.45	V	0.9	0.0	11.60	50.0	-38.4	
846.50	19.81	H	0.9	0.0	18.96	50.0	-31.0	

Rev. 3.17.11

Band

LTE26

3MHz

16QAM

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 3MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
815.50	11.96	V	0.9	0.0	11.11	50.0	-38.9	
815.50	18.72	H	0.9	0.0	17.87	50.0	-32.1	
Mid Ch								
831.50	9.76	V	0.9	0.0	8.91	50.0	-41.1	
831.50	17.47	H	0.9	0.0	16.62	50.0	-33.4	
High Ch								
847.50	8.54	V	0.9	0.0	7.69	50.0	-42.3	
847.50	18.17	H	0.9	0.0	17.32	50.0	-32.7	

Rev. 3.17.11

Band

LTE26

3MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: LTE26 3MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (SN # 16795)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
815.50	12.87	V	0.9	0.0	12.02	50.0	-38.0	
815.50	19.84	H	0.9	0.0	18.99	50.0	-31.0	
Mid Ch								
831.50	11.01	V	0.9	0.0	10.16	50.0	-39.8	
831.50	18.27	H	0.9	0.0	17.42	50.0	-32.6	
High Ch								
847.50	9.76	V	0.9	0.0	8.91	50.0	-41.1	
847.50	19.11	H	0.9	0.0	18.26	50.0	-31.7	

Rev. 3.17.11

Band

LTE26

1.4MHz

16QAM

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

Company: LG
Project #: 14U18507
Date: 08/22/14
Test Engineer: K. Ros, L. Lara
Configuration: X-Pos EUT
Mode: LTE26 1.4MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
814.70	8.99	V	0.9	0.0	8.14	50.0	-41.9	
814.70	20.07	H	0.9	0.0	19.22	50.0	-30.8	
Mid Ch								
831.50	10.05	V	0.9	0.0	9.21	50.0	-40.8	
831.50	20.83	H	0.9	0.0	19.98	50.0	-30.0	
High Ch								
848.30	8.34	V	0.9	0.0	7.49	50.0	-42.5	
848.30	19.24	H	0.9	0.0	18.39	50.0	-31.6	

Rev. 3.17.11

Band

LTE26

1.4MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/22/14
Test Engineer: K. Ros, L. Lara
Configuration: X-Pos EUT
Mode: LTE26 1.4MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
814.70	10.29	V	0.9	0.0	9.44	50.0	-40.6	
814.70	21.44	H	0.9	0.0	20.59	50.0	-29.4	
Mid Ch								
831.50	11.17	V	0.9	0.0	10.33	50.0	-39.7	
831.50	21.88	H	0.9	0.0	21.03	50.0	-29.0	
High Ch								
848.30	9.24	V	0.9	0.0	8.39	50.0	-41.6	
848.30	20.21	H	0.9	0.0	19.36	50.0	-30.6	

Rev. 3.17.11

LTE Band 25

Band

LTE25

10MHz

16QAM

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

Company:	LG
Project #:	14U18507
Date:	06/24/14
Test Engineer:	K. Ros
Configuration:	X-pos EUT
Mode:	LTE band 25, 10MHz BW
	16QAM

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	14.5	V	0.85	7.90	21.55	33.0	-11.5	
1.855	16.2	H	0.85	7.90	23.25	33.0	-9.8	
Mid Ch								
1.883	13.4	V	0.85	7.90	20.45	33.0	-12.6	
1.883	15.7	H	0.85	7.90	22.73	33.0	-10.3	
High Ch								
1.910	13.9	V	0.85	7.90	20.95	33.0	-12.1	
1.910	15.2	H	0.85	7.90	22.23	33.0	-10.8	

Rev. 3.17.11

Band

LTE25

10MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 10MHz BW
QPSK

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	16.2	V	0.85	7.90	23.25	33.0	-9.8	
1.855	17.3	H	0.85	7.90	24.37	33.0	-8.6	
Mid Ch								
1.883	14.2	V	0.85	7.90	21.22	33.0	-11.8	
1.883	16.8	H	0.85	7.90	23.84	33.0	-9.2	
High Ch								
1.910	14.9	V	0.85	7.90	21.95	33.0	-11.1	
1.910	16.5	H	0.85	7.90	23.56	33.0	-9.4	

Rev. 3.17.11

Band

LTE25

5MHz

16QAM

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

Company: LG
Project #: 14U18507
Date: 06/24/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 5MHz BW
16QAM

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	12.1	V	0.85	7.90	19.13	33.0	-13.9	
1.853	15.2	H	0.85	7.90	22.27	33.0	-10.7	
Mid Ch								
1.883	11.0	V	0.85	7.90	18.01	33.0	-15.0	
1.883	15.6	H	0.85	7.90	22.64	33.0	-10.4	
High Ch								
1.913	11.0	V	0.85	7.90	18.03	33.0	-15.0	
1.913	15.0	H	0.85	7.90	22.01	33.0	-11.0	

Rev. 3.17.11

Band

LTE25

5MHz

QPSK

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 5MHz BW
QPSK

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	13.7	V	0.85	7.90	20.73	33.0	-12.3	
1.853	15.9	H	0.85	7.90	22.98	33.0	-10.0	
Mid Ch								
1.883	12.4	V	0.85	7.90	19.48	33.0	-13.5	
1.883	16.2	H	0.85	7.90	23.20	33.0	-9.8	
High Ch								
1.913	13.2	V	0.85	7.90	20.23	33.0	-12.8	
1.913	16.3	H	0.85	7.90	23.38	33.0	-9.6	

Rev. 3.17.11

Band

LTE25

3MHz

16QAM

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

Company:	LG
Project #:	14U18507
Date:	06/24/14
Test Engineer:	K. Ros
Configuration:	X-pos EUT
Mode:	LTE band 25, 3MHz BW
	16QAM

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	9.7	V	0.85	7.90	16.75	33.0	-16.3	
1.852	15.6	H	0.85	7.90	22.62	33.0	-10.4	
Mid Ch								
1.883	7.2	V	0.85	7.90	14.27	33.0	-18.7	
1.883	14.7	H	0.85	7.90	21.75	33.0	-11.3	
High Ch								
1.914	8.4	V	0.85	7.90	15.45	33.0	-17.6	
1.914	14.5	H	0.85	7.90	21.56	33.0	-11.4	

Rev. 3.17.11

Band
LTE25
3MHz
QPSK

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

Company: LG
Project #: 14U18507
Date: 06/24/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 3MHz BW
QPSK

Test Equipment:
Receiving: Horn T59, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Horn T344 Substitution, 5ft (#16795) SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	10.8	V	0.85	7.90	17.85	33.0	-15.2	
1.852	16.2	H	0.85	7.90	23.25	33.0	-9.8	
Mid Ch								
1.883	8.5	V	0.85	7.90	15.53	33.0	-17.5	
1.883	15.6	H	0.85	7.90	22.65	33.0	-10.4	
High Ch								
1.914	9.7	V	0.85	7.90	16.75	33.0	-16.3	
1.914	15.3	H	0.85	7.90	22.37	33.0	-10.6	

Rev. 3.17.11

CDMA BC1

Band

BC1

EVDO
REL. 0

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT only
Mode: CDMA EVDOR0 BC1

Test Equipment:
Receiving: Horn T136, and Chamber A Cable (Setup this one for testing EUT)
Substitution: Horn T59 Substitution, 5ft SMA Cable (16795) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	8.6	V	0.67	7.90	15.83	33.0	-17.2	
1.851	17.3	H	0.67	7.90	24.50	33.0	-8.5	
Mid Ch								
1.880	11.1	V	0.67	7.90	18.35	33.0	-14.6	
1.880	16.6	H	0.67	7.90	23.84	33.0	-9.2	
High Ch								
1.909	15.3	V	0.67	7.80	22.48	33.0	-10.5	
1.909	17.9	H	0.67	7.80	25.03	33.0	-8.0	

Rev. 3.17.11

Band

BC1

1xRTT

High Frequency Fundamental Measurement
UL Verification Services, Inc. Chamber B

Company: LG
Project #: 14U18507 (LS660_C2PC)
Date: 08/11/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: CDMA RTT BC1

Test Equipment:
Receiving: T345, and Chamber B SMA Cables
Substitution: Horn T72 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.2	V	0.85	9.50	24.80	33.0	-8.2	
1.851	18.6	H	0.85	9.50	27.22	33.0	-5.8	
Mid Ch								
1.880	15.8	V	0.85	9.50	24.43	33.0	-8.6	
1.880	17.5	H	0.85	9.50	26.11	33.0	-6.9	
High Ch								
1.909	16.6	V	0.85	9.60	25.33	33.0	-7.7	
1.909	16.7	H	0.85	9.60	25.43	33.0	-7.6	

Rev. 3.17.11

CDMA BC0

Band

BC0

EVDO
REL. 0

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT only
Mode: EVDO 0 BC0

Test Equipment:
Receiving: Sunol T130, and Chamber A Cable (Setup this one for testing EUT)
Substitution: Dipole T416, 5ft SMA Cable (16795) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	16.09	V	0.9	0.0	15.19	38.5	-23.3	
824.70	22.82	H	0.9	0.0	21.92	38.5	-16.5	
Mid Ch								
836.52	19.47	V	0.9	0.0	18.57	38.5	-19.9	
836.52	24.00	H	0.9	0.0	23.10	38.5	-15.4	
High Ch								
848.31	14.86	V	0.9	0.0	13.97	38.5	-24.5	
848.31	23.73	H	0.9	0.0	22.83	38.5	-15.6	

Rev. 3.17.11

Band

BC0

1xRTT

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

Company: LG
Project #: 14U18507 (LS660_C2PC)
Date: 08/11/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: CDMA RTT BC0

Test Equipment:
Receiving: Sunol T243, and Chamber B Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) 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	19.31	V	0.9	0.0	18.41	38.5	-20.0	
824.70	25.82	H	0.9	0.0	24.93	38.5	-13.5	
Mid Ch								
836.52	16.74	V	0.9	0.0	15.85	38.5	-22.6	
836.52	23.39	H	0.9	0.0	22.49	38.5	-16.0	
High Ch								
848.31	16.76	V	0.9	0.0	15.86	38.5	-22.6	
848.31	25.43	H	0.9	0.0	24.53	38.5	-13.9	

Rev. 3.17.11

CDMA BC10

Band

BC10

EVDO
REL. 0

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT only
Mode: EVDO 0 BC10

Test Equipment:
Receiving: Sunol T130, and Chamber A Cable (Setup this one for testing EUT)
Substitution: Dipole T416, 5ft SMA Cable (16795) 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								
817.90	16.77	V	0.9	0.0	15.87	38.5	-22.6	
817.90	23.52	H	0.9	0.0	22.62	38.5	-15.8	
Mid Ch								
820.50	16.59	V	0.9	0.0	15.69	38.5	-22.8	
820.50	23.24	H	0.9	0.0	22.34	38.5	-16.1	
High Ch								
823.10	16.35	V	0.9	0.0	15.45	38.5	-23.0	
823.10	22.99	H	0.9	0.0	22.09	38.5	-16.4	

Rev. 3.17.11

Band

BC10

1xRTT

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

Company: LG
Project #: 14U18507 (LS660_C2PC)
Date: 08/11/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT
Mode: CDMA RTT BC10

Test Equipment:
Receiving: Sunol T243, and Chamber B Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) 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								
817.90	17.89	V	0.9	0.0	17.00	38.5	-21.5	
817.90	24.30	H	0.9	0.0	23.40	38.5	-15.0	
Mid Ch								
820.50	18.54	V	0.9	0.0	17.64	38.5	-20.8	
820.50	25.19	H	0.9	0.0	24.29	38.5	-14.2	
High Ch								
823.10	17.60	V	0.9	0.0	16.70	38.5	-21.8	
823.10	25.58	H	0.9	0.0	24.68	38.5	-13.8	

Rev. 3.17.11

11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §90.691

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. 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

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 BC0, CDMA BC1, CDMA BC10, LTE Band 25, LTE Band 26, LTE Band 41

RESULTS

SPURIOUS RADIATION PLOTS

CDMA BC1

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT with AC adapter & HS
Mode: EVDO BC01 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	

Band BC1 EVDO REL. 0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
5.554	-16.1	V	3.0	34.7	1.0	-49.8	-13.0	-36.8	
7.405	-14.7	V	3.0	34.9	1.0	-48.6	-13.0	-35.6	
3.703	-18.0	H	3.0	35.4	1.0	-52.4	-13.0	-39.4	
5.554	-15.3	H	3.0	34.7	1.0	-49.0	-13.0	-36.0	
7.405	-14.1	H	3.0	34.9	1.0	-48.0	-13.0	-35.0	
Mid Ch, 1880.0MHz									
3.760	-13.2	V	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.640	-16.0	V	3.0	34.7	1.0	-49.7	-13.0	-36.7	
7.520	-14.3	V	3.0	34.9	1.0	-48.2	-13.0	-35.2	
3.760	-17.0	H	3.0	35.3	1.0	-51.4	-13.0	-38.4	
5.640	-15.2	H	3.0	34.7	1.0	-48.9	-13.0	-35.9	
7.520	-14.0	H	3.0	34.9	1.0	-47.9	-13.0	-34.9	
High Ch, 1908.75 MHz									
3.818	-16.4	V	3.0	35.3	1.0	-50.6	-13.0	-37.6	
5.726	-15.6	V	3.0	34.7	1.0	-49.4	-13.0	-36.4	
7.635	-14.7	V	3.0	34.9	1.0	-48.7	-13.0	-35.7	
3.818	-13.5	H	3.0	35.3	1.0	-47.8	-13.0	-34.8	
5.726	-15.4	H	3.0	34.7	1.0	-49.1	-13.0	-36.1	
7.635	-14.1	H	3.0	34.9	1.0	-48.0	-13.0	-35.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507 (LS660_C2PC)
Date:	08/11/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	CDMA RTT BC1

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band BC1 1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-15.3	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
5.554	-15.3	V	3.0	34.7	1.0	-49.1	-13.0	-36.1	
7.405	-15.0	V	3.0	34.9	1.0	-48.9	-13.0	-35.9	
3.703	-15.8	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
5.554	-15.0	H	3.0	34.7	1.0	-48.7	-13.0	-35.7	
7.405	-13.5	H	3.0	34.9	1.0	-47.4	-13.0	-34.4	
Mid Ch, 1880.00MHz									
3.760	-17.1	V	3.0	35.3	1.0	-51.5	-13.0	-38.5	
5.640	-16.1	V	3.0	34.7	1.0	-49.9	-13.0	-36.9	
7.520	-15.3	V	3.0	34.9	1.0	-49.2	-13.0	-36.2	
3.760	-17.3	H	3.0	35.3	1.0	-51.6	-13.0	-38.6	
5.640	-13.6	H	3.0	34.7	1.0	-47.3	-13.0	-34.3	
7.520	-12.9	H	3.0	34.9	1.0	-46.8	-13.0	-33.8	
High Ch, 1908.75MHz									
3.818	-9.3	V	3.0	35.3	1.0	-43.6	-13.0	-30.6	
5.726	-15.6	V	3.0	34.7	1.0	-49.3	-13.0	-36.3	
7.635	-15.1	V	3.0	34.9	1.0	-49.0	-13.0	-36.0	
3.818	-14.5	H	3.0	35.3	1.0	-48.8	-13.0	-35.8	
5.726	-14.7	H	3.0	34.7	1.0	-48.5	-13.0	-35.5	
7.635	-13.1	H	3.0	34.9	1.0	-47.1	-13.0	-34.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

CDMA BC0

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT with AC adapter & HS
Mode: EVDOR0 BC0 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	

Band: BC0 EVDO REL. 0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.650	-18.7	V	3.0	37.4	1.0	-55.1	-13.0	-42.1	
2.474	-11.3	V	3.0	36.4	1.0	-46.7	-13.0	-33.7	
3.298	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
1.650	-19.5	H	3.0	37.4	1.0	-55.8	-13.0	-42.8	
2.474	-16.3	H	3.0	36.4	1.0	-51.7	-13.0	-38.7	
3.298	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
Mid Ch, 836.52MHz									
1.673	-22.3	V	3.0	37.3	1.0	-58.6	-13.0	-45.6	
2.509	-16.9	V	3.0	36.4	1.0	-52.2	-13.0	-39.2	
3.346	-20.1	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
1.673	-25.8	H	3.0	37.3	1.0	-62.2	-13.0	-49.2	
2.509	-22.7	H	3.0	36.4	1.0	-58.1	-13.0	-45.1	
3.346	-21.0	H	3.0	35.8	1.0	-55.8	-13.0	-42.8	
High Ch, 848.31 MHz									
1.696	-25.4	V	3.0	37.3	1.0	-61.7	-13.0	-48.7	
2.544	-22.8	V	3.0	36.3	1.0	-58.1	-13.0	-45.1	
3.393	-19.9	V	3.0	35.7	1.0	-54.6	-13.0	-41.6	
1.696	-24.8	H	3.0	37.3	1.0	-61.1	-13.0	-48.1	
2.544	-22.4	H	3.0	36.3	1.0	-57.7	-13.0	-44.7	
3.393	-20.7	H	3.0	35.7	1.0	-55.4	-13.0	-42.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Band

BC0

1xRTT

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

Company: LG
Project #: 14U18507 (LS660_C2PC)
Date: 08/11/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger, headset
Mode: CDMA RTT BC10

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.649		V	3.0	37.4	1.0	-36.4	-13.0	-23.4	
2.474		V	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3.299		V	3.0	35.8	1.0	-34.8	-13.0	-21.8	
1.649		H	3.0	37.4	1.0	-36.4	-13.0	-23.4	
2.474		H	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3.299		H	3.0	35.8	1.0	-34.8	-13.0	-21.8	
Mid Ch, 836.52MHz									
1.673	-27.6	V	3.0	37.3	1.0	-64.0	-13.0	-51.0	
2.510	-16.6	V	3.0	36.4	1.0	-51.9	-13.0	-38.9	
3.346	-18.7	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
1.673		H	3.0	37.3	1.0	-36.3	-13.0	-23.3	
2.510		H	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3.346		H	3.0	35.8	1.0	-34.8	-13.0	-21.8	
High Ch, 848.31MHz									
1.697		V	3.0	37.3	1.0	-36.3	-13.0	-23.3	
2.545		V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
3.393		V	3.0	35.7	1.0	-34.7	-13.0	-21.7	
1.697		H	3.0	37.3	1.0	-36.3	-13.0	-23.3	
2.545		H	3.0	36.3	1.0	-35.3	-13.0	-22.3	
3.393		H	3.0	35.7	1.0	-34.7	-13.0	-21.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

CDMA BC10

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

Company: LG
Project #: 14U18507
Date: 08/13/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT with AC adapter & HS
Mode: EVDOR0 BC10 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	

Band: BC10 EVDO REL. 0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 817.9MHz									
1.635	-23.5	V	3.0	37.4	1.0	-59.9	-13.0	-46.9	
2.453	-21.1	V	3.0	36.4	1.0	-56.5	-13.0	-43.5	
3.271	-21.0	V	3.0	35.8	1.0	-55.9	-13.0	-42.9	
1.635	-24.2	H	3.0	37.4	1.0	-60.6	-13.0	-47.6	
2.453	-16.7	H	3.0	36.4	1.0	-52.1	-13.0	-39.1	
3.271	-21.0	H	3.0	35.8	1.0	-55.8	-13.0	-42.8	
Mid Ch, 820.5MHz									
1.641	-21.2	V	3.0	37.4	1.0	-57.6	-13.0	-44.6	
2.461	-5.1	V	3.0	36.4	1.0	-40.5	-13.0	-27.5	
3.280	-20.9	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
1.641	-20.2	H	3.0	37.4	1.0	-56.6	-13.0	-43.6	
2.461	-11.7	H	3.0	36.4	1.0	-47.1	-13.0	-34.1	
3.280	-20.9	H	3.0	35.8	1.0	-55.7	-13.0	-42.7	
High Ch, 823.1 MHz									
1.646	-18.8	V	3.0	37.4	1.0	-55.2	-13.0	-42.2	
2.469	-10.8	V	3.0	36.4	1.0	-46.2	-13.0	-33.2	
3.292	-20.3	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
1.646	-19.8	H	3.0	37.4	1.0	-56.2	-13.0	-43.2	
2.469	-16.6	H	3.0	36.4	1.0	-52.0	-13.0	-39.0	
3.292	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507 (LS660_C2PC)
Date:	08/11/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	CDMA RTT BC10

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band BC10 1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 817.9MHz									
1.636	-28.2	V	3.0	37.4	1.0	-64.6	-13.0	-51.6	
2.454	-13.6	V	3.0	36.4	1.0	-49.0	-13.0	-36.0	
3.272	-20.0	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
1.636	-25.9	H	3.0	37.4	1.0	-62.3	-13.0	-49.3	
2.454	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3.272	-22.2	H	3.0	35.8	1.0	-57.0	-13.0	-44.0	
Mid Ch, 820.5MHz									
1.641	-28.6	V	3.0	37.4	1.0	-65.0	-13.0	-52.0	
2.462	-16.7	V	3.0	36.4	1.0	-52.1	-13.0	-39.1	
3.282	-21.3	V	3.0	35.8	1.0	-56.1	-13.0	-43.1	
1.641	-27.3	H	3.0	37.4	1.0	-63.7	-13.0	-50.7	
2.462	-11.3	H	3.0	36.4	1.0	-46.7	-13.0	-33.7	
3.282	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
High Ch, 823.1MHz									
1.646	-28.3	V	3.0	37.4	1.0	-64.7	-13.0	-51.7	
2.469	-16.9	V	3.0	36.4	1.0	-52.3	-13.0	-39.3	
3.292	-21.2	V	3.0	35.8	1.0	-56.0	-13.0	-43.0	
1.646	-25.7	H	3.0	37.4	1.0	-62.1	-13.0	-49.1	
2.469	-12.0	H	3.0	36.4	1.0	-47.4	-13.0	-34.4	
3.292	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE 25

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 25, 10MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	

Band: LTE25, 10MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1855 MHz)									
3.710	-23.6	V	3.0	30.2	1.0	-52.8	-13.0	-39.8	
5.565	-28.4	V	3.0	28.4	1.0	-55.7	-13.0	-42.7	
7.420	-29.0	V	3.0	26.5	1.0	-54.5	-13.0	-41.5	
3.710	-24.1	H	3.0	30.2	1.0	-53.3	-13.0	-40.3	
5.565	-27.0	H	3.0	28.4	1.0	-54.4	-13.0	-41.4	
7.420	-27.1	H	3.0	26.5	1.0	-52.6	-13.0	-39.6	
Mid Ch, (1882.5 MHz)									
3.765	-15.1	V	3.0	30.1	1.0	-44.2	-13.0	-31.2	
5.648	-30.2	V	3.0	28.3	1.0	-57.5	-13.0	-44.5	
7.530	-28.5	V	3.0	26.3	1.0	-53.8	-13.0	-40.8	
3.765	-22.5	H	3.0	30.1	1.0	-51.6	-13.0	-38.6	
5.648	-29.8	H	3.0	28.3	1.0	-57.1	-13.0	-44.1	
7.530	-27.8	H	3.0	26.3	1.0	-53.1	-13.0	-40.1	
High Ch, (1909.8 MHz)									
3.820	-3.9	V	3.0	30.1	1.0	-33.0	-13.0	-20.0	
5.730	-30.5	V	3.0	28.2	1.0	-57.7	-13.0	-44.7	
7.640	-29.0	V	3.0	26.2	1.0	-54.1	-13.0	-41.1	
3.820	-16.5	H	3.0	30.1	1.0	-45.6	-13.0	-32.6	
5.730	-27.5	H	3.0	28.2	1.0	-54.7	-13.0	-41.7	
7.640	-27.5	H	3.0	26.2	1.0	-52.7	-13.0	-39.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 25, 10MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1855 MHz)									
LTE25	3.710	-23.3	V	3.0	30.2	1.0	-52.5	-13.0	-39.5	
	5.565	-28.6	V	3.0	28.4	1.0	-55.9	-13.0	-42.9	
	7.420	-28.6	V	3.0	26.5	1.0	-54.0	-13.0	-41.0	
10MHz	3.710	-24.1	H	3.0	30.2	1.0	-53.3	-13.0	-40.3	
	5.565	-27.3	H	3.0	28.4	1.0	-54.6	-13.0	-41.6	
	7.420	-27.7	H	3.0	26.5	1.0	-53.1	-13.0	-40.1	
QPSK										
	Mid Ch, (1882.5 MHz)									
	3.765	-15.8	V	3.0	30.1	1.0	-44.9	-13.0	-31.9	
	5.648	-30.7	V	3.0	28.3	1.0	-57.9	-13.0	-44.9	
	7.530	-28.3	V	3.0	26.3	1.0	-53.6	-13.0	-40.6	
	3.765	-22.5	H	3.0	30.1	1.0	-51.7	-13.0	-38.7	
	5.648	-29.8	H	3.0	28.3	1.0	-57.1	-13.0	-44.1	
	7.530	-26.9	H	3.0	26.3	1.0	-52.2	-13.0	-39.2	
	High Ch, (1910 MHz)									
	3.820	-4.3	V	3.0	30.1	1.0	-33.3	-13.0	-20.3	
	5.730	-30.6	V	3.0	28.2	1.0	-57.8	-13.0	-44.8	
	7.640	-28.5	V	3.0	26.2	1.0	-53.7	-13.0	-40.7	
	3.820	-16.7	H	3.0	30.1	1.0	-45.8	-13.0	-32.8	
	5.730	-27.7	H	3.0	28.2	1.0	-54.9	-13.0	-41.9	
	7.640	-27.6	H	3.0	26.2	1.0	-52.8	-13.0	-39.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 25, 5MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1852.5 MHz)									
LTE25	3.705	-12.0	V	3.0	30.2	1.0	-41.2	-13.0	-28.2	
	5.558	-14.0	V	3.0	28.4	1.0	-41.4	-13.0	-28.4	
	7.410	-15.7	V	3.0	26.5	1.0	-41.2	-13.0	-28.2	
5MHz	3.705	-19.7	H	3.0	30.2	1.0	-48.9	-13.0	-35.9	
	5.558	-13.9	H	3.0	28.4	1.0	-41.3	-13.0	-28.3	
	7.410	-14.7	H	3.0	26.5	1.0	-40.2	-13.0	-27.2	
16QAM										
	Mid Ch, (1882.5 MHz)									
	3.765	-7.2	V	3.0	30.1	1.0	-36.4	-13.0	-23.4	
	5.648	-17.6	V	3.0	28.3	1.0	-44.8	-13.0	-31.8	
	7.530	-15.5	V	3.0	26.3	1.0	-40.8	-13.0	-27.8	
	3.765	-17.5	H	3.0	30.1	1.0	-46.6	-13.0	-33.6	
	5.648	-17.7	H	3.0	28.3	1.0	-44.9	-13.0	-31.9	
	7.530	-14.1	H	3.0	26.3	1.0	-39.4	-13.0	-26.4	
	High Ch, (1912.5 MHz)									
	3.825	-15.9	V	3.0	30.1	1.0	-44.9	-13.0	-31.9	
	5.738	-11.0	V	3.0	28.2	1.0	-38.2	-13.0	-25.2	
	7.650	-14.8	V	3.0	26.2	1.0	-39.9	-13.0	-26.9	
	3.825	-6.9	H	3.0	30.1	1.0	-35.9	-13.0	-22.9	
	5.738	-14.7	H	3.0	28.2	1.0	-41.9	-13.0	-28.9	
	7.650	-14.1	H	3.0	26.2	1.0	-39.2	-13.0	-26.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 25, 5MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1852.5 MHz)									
LTE25	3.705	-11.2	V	3.0	30.2	1.0	-40.4	-13.0	-27.4	
	5.558	-14.0	V	3.0	28.4	1.0	-41.4	-13.0	-28.4	
	7.410	-15.8	V	3.0	26.5	1.0	-41.2	-13.0	-28.2	
5MHz	3.705	-19.5	H	3.0	30.2	1.0	-48.7	-13.0	-35.7	
	5.558	-13.2	H	3.0	28.4	1.0	-40.5	-13.0	-27.5	
	7.410	-14.5	H	3.0	26.5	1.0	-40.0	-13.0	-27.0	
QPSK										
	Mid Ch, (1882.5 MHz)									
	3.765	-8.0	V	3.0	30.1	1.0	-37.2	-13.0	-24.2	
	5.648	-17.4	V	3.0	28.3	1.0	-44.7	-13.0	-31.7	
	7.530	-14.9	V	3.0	26.3	1.0	-40.3	-13.0	-27.3	
	3.765	-17.3	H	3.0	30.1	1.0	-46.5	-13.0	-33.5	
	5.648	-17.5	H	3.0	28.3	1.0	-44.8	-13.0	-31.8	
	7.530	-14.7	H	3.0	26.3	1.0	-40.0	-13.0	-27.0	
	High Ch, (1912.5 MHz)									
	3.825	-16.2	V	3.0	30.1	1.0	-45.3	-13.0	-32.3	
	5.738	-11.1	V	3.0	28.2	1.0	-38.3	-13.0	-25.3	
	7.650	-15.0	V	3.0	26.2	1.0	-40.1	-13.0	-27.1	
	3.825	-7.4	H	3.0	30.1	1.0	-36.5	-13.0	-23.5	
	5.738	-14.8	H	3.0	28.2	1.0	-42.0	-13.0	-29.0	
	7.650	-14.1	H	3.0	26.2	1.0	-39.3	-13.0	-26.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 3MHz BW 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1851.5 MHz)									
LTE25	3.703	-7.6	V	3.0	30.2	1.0	-36.8	-13.0	-23.8	
	5.555	-4.4	V	3.0	28.4	1.0	-31.8	-13.0	-18.8	
	7.406	1.5	V	3.0	26.5	1.0	-24.0	-13.0	-11.0	
3MHz	3.703	-7.9	H	3.0	30.2	1.0	-37.1	-13.0	-24.1	
	5.555	-3.9	H	3.0	28.4	1.0	-31.2	-13.0	-18.2	
	7.406	2.4	H	3.0	26.5	1.0	-23.1	-13.0	-10.1	
16QAM										
	Mid Ch, (1882.5 MHz)									
	3.765	-7.4	V	3.0	30.1	1.0	-36.6	-13.0	-23.6	
	5.647	-4.1	V	3.0	28.3	1.0	-31.4	-13.0	-18.4	
	7.530	1.1	V	3.0	26.3	1.0	-24.2	-13.0	-11.2	
	3.765	-7.7	H	3.0	30.1	1.0	-36.8	-13.0	-23.8	
	5.647	-3.5	H	3.0	28.3	1.0	-30.8	-13.0	-17.8	
	7.530	2.1	H	3.0	26.3	1.0	-23.2	-13.0	-10.2	
	High Ch, (1913.5 MHz)									
	3.828	-7.3	V	3.0	30.1	1.0	-36.3	-13.0	-23.3	
	5.741	-3.7	V	3.0	28.2	1.0	-30.9	-13.0	-17.9	
	7.654	1.4	V	3.0	26.1	1.0	-23.7	-13.0	-10.7	
	3.828	-7.5	H	3.0	30.1	1.0	-36.6	-13.0	-23.6	
	5.743	-3.1	H	3.0	28.2	1.0	-30.3	-13.0	-17.3	
	7.654	3.3	H	3.0	26.1	1.0	-21.8	-13.0	-8.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: K. Ros
Configuration: X-pos EUT
Mode: LTE band 25, 3MHz BW QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1851.5 MHz)									
LTE25	3.703	-8.4	V	3.0	30.2	1.0	-37.6	-13.0	-24.6	
	5.555	-4.7	V	3.0	28.4	1.0	-32.1	-13.0	-19.1	
	7.406	-1.8	V	3.0	26.5	1.0	-27.2	-13.0	-14.2	
3MHz	3.703	-6.8	H	3.0	30.2	1.0	-36.0	-13.0	-23.0	
	5.555	-3.8	H	3.0	28.4	1.0	-31.2	-13.0	-18.2	
	7.406	103.8	H	3.0	26.5	1.0	78.4	-13.0	91.4	
QPSK										
	Mid Ch, (1882.5 MHz)									
	3.765	-7.5	V	3.0	30.1	1.0	-36.7	-13.0	-23.7	
	5.648	-4.1	V	3.0	28.3	1.0	-31.4	-13.0	-18.4	
	7.530	1.1	V	3.0	26.3	1.0	-24.3	-13.0	-11.3	
	3.765	-7.7	H	3.0	30.1	1.0	-36.8	-13.0	-23.8	
	5.648	-3.5	H	3.0	28.3	1.0	-30.7	-13.0	-17.7	
	7.530	2.1	H	3.0	26.3	1.0	-23.2	-13.0	-10.2	
	High Ch, (1913.5 MHz)									
	3.828	-7.2	V	3.0	30.1	1.0	-36.3	-13.0	-23.3	
	5.741	-3.7	V	3.0	28.2	1.0	-30.8	-13.0	-17.8	
	7.654	2.3	V	3.0	26.1	1.0	-22.9	-13.0	-9.9	
	3.828	-7.5	H	3.0	30.1	1.0	-36.6	-13.0	-23.6	
	5.743	-3.1	H	3.0	28.2	1.0	-30.3	-13.0	-17.3	
	7.654	3.3	H	3.0	26.1	1.0	-21.8	-13.0	-8.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE 26

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger, headset
Mode: LTE26, 10MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band: LTE26, 10MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 819.0MHz									
1.638	-29.2	V	3.0	37.4	1.0	-65.6	-13.0	-52.6	
2.457	-24.2	V	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.276	-24.2	V	3.0	35.8	1.0	-59.0	-13.0	-46.0	
1.638	-29.9	H	3.0	37.4	1.0	-66.3	-13.0	-53.3	
2.457	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3.276	-24.7	H	3.0	35.8	1.0	-59.5	-13.0	-46.5	
Mid Ch, 831.5MHz									
1.663	-29.4	V	3.0	37.4	1.0	-65.7	-13.0	-52.7	
2.495	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.326	-24.4	V	3.0	35.8	1.0	-59.2	-13.0	-46.2	
1.663	-31.1	H	3.0	37.4	1.0	-67.4	-13.0	-54.4	
2.495	-20.9	H	3.0	36.4	1.0	-56.3	-13.0	-43.3	
3.326	-24.8	H	3.0	35.8	1.0	-59.6	-13.0	-46.6	
High Ch, 844.0MHz									
1.688	-29.0	V	3.0	37.3	1.0	-65.3	-13.0	-52.3	
2.532	-24.2	V	3.0	36.3	1.0	-59.5	-13.0	-46.5	
3.376	-24.5	V	3.0	35.7	1.0	-59.2	-13.0	-46.2	
1.688	-30.9	H	3.0	37.3	1.0	-67.2	-13.0	-54.2	
2.532	-29.4	H	3.0	36.3	1.0	-64.8	-13.0	-51.8	
3.376	-24.1	H	3.0	35.7	1.0	-58.9	-13.0	-45.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507
Date:	08/08/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	LTE26, 10MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26	Low Ch, 819.0MHz									
	1.638	-31.7	V	3.0	37.4	1.0	-68.1	-13.0	-55.1	
10MHz	2.457	-24.1	V	3.0	36.4	1.0	-59.5	-13.0	-46.5	
	3.276	-24.2	V	3.0	35.8	1.0	-59.0	-13.0	-46.0	
	1.638	-29.2	H	3.0	37.4	1.0	-65.6	-13.0	-52.6	
QPSK	2.457	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
	3.276	-24.2	H	3.0	35.8	1.0	-59.0	-13.0	-46.0	
	Mid Ch, 831.5MHz									
	1.663	-28.7	V	3.0	37.4	1.0	-65.0	-13.0	-52.0	
	2.495	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
	3.326	-24.8	V	3.0	35.8	1.0	-59.5	-13.0	-46.5	
	1.663	-31.1	H	3.0	37.4	1.0	-67.5	-13.0	-54.5	
	2.495	-21.4	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
	3.326	-25.0	H	3.0	35.8	1.0	-59.7	-13.0	-46.7	
	High Ch, 844.0MHz									
	1.688	-28.6	V	3.0	37.3	1.0	-65.0	-13.0	-52.0	
	2.532	-24.1	V	3.0	36.3	1.0	-59.5	-13.0	-46.5	
	3.376	-24.5	V	3.0	35.7	1.0	-59.2	-13.0	-46.2	
	1.688	-30.7	H	3.0	37.3	1.0	-67.0	-13.0	-54.0	
	2.532	-28.6	H	3.0	36.3	1.0	-64.0	-13.0	-51.0	
	3.376	-24.0	H	3.0	35.7	1.0	-58.7	-13.0	-45.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507
Date:	08/08/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	LTE26, 5MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band
LTE26
5MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1.633	-29.2	V	3.0	37.4	1.0	-65.6	-13.0	-52.6	
2.450	-23.5	V	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3.266	-24.3	V	3.0	35.8	1.0	-59.1	-13.0	-46.1	
1.633	-28.6	H	3.0	37.4	1.0	-65.0	-13.0	-52.0	
2.450	-23.0	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3.266	-25.0	H	3.0	35.8	1.0	-59.9	-13.0	-46.9	
Mid Ch, 831.5MHz									
1.663	-29.2	V	3.0	37.4	1.0	-65.6	-13.0	-52.6	
2.495	-24.5	V	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3.327	-24.4	V	3.0	35.8	1.0	-59.2	-13.0	-46.2	
1.663	-30.9	H	3.0	37.4	1.0	-67.3	-13.0	-54.3	
2.495	-21.6	H	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3.327	-23.5	H	3.0	35.8	1.0	-58.3	-13.0	-45.3	
High Ch, 846.5MHz									
1.693	-28.2	V	3.0	37.3	1.0	-64.5	-13.0	-51.5	
2.540	-23.5	V	3.0	36.3	1.0	-58.9	-13.0	-45.9	
3.386	-23.6	V	3.0	35.7	1.0	-58.4	-13.0	-45.4	
1.693	-28.7	H	3.0	37.3	1.0	-65.1	-13.0	-52.1	
2.540	-25.7	H	3.0	36.3	1.0	-61.1	-13.0	-48.1	
3.386	-24.9	H	3.0	35.7	1.0	-59.6	-13.0	-46.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger, headset
Mode: LTE26, 5MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band
LTE26
5MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1.633	-28.9	V	3.0	37.4	1.0	-65.3	-13.0	-52.3	
2.450	-23.5	V	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3.266	-24.4	V	3.0	35.8	1.0	-59.2	-13.0	-46.2	
1.633	-28.5	H	3.0	37.4	1.0	-64.9	-13.0	-51.9	
2.450	-23.4	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3.266	-25.0	H	3.0	35.8	1.0	-59.9	-13.0	-46.9	
Mid Ch, 831.5MHz									
1.663	-28.7	V	3.0	37.4	1.0	-65.1	-13.0	-52.1	
2.495	-24.3	V	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.327	-24.5	V	3.0	35.8	1.0	-59.3	-13.0	-46.3	
1.663	-30.5	H	3.0	37.4	1.0	-66.8	-13.0	-53.8	
2.495	-20.9	H	3.0	36.4	1.0	-56.2	-13.0	-43.2	
3.327	-23.6	H	3.0	35.8	1.0	-58.4	-13.0	-45.4	
High Ch, 846.5MHz									
1.693	-27.6	V	3.0	37.3	1.0	-63.9	-13.0	-50.9	
2.540	-22.4	V	3.0	36.3	1.0	-57.8	-13.0	-44.8	
3.386	-23.8	V	3.0	35.7	1.0	-58.5	-13.0	-45.5	
1.693	-28.5	H	3.0	37.3	1.0	-64.8	-13.0	-51.8	
2.540	-25.9	H	3.0	36.3	1.0	-61.3	-13.0	-48.3	
3.386	-24.7	H	3.0	35.7	1.0	-59.4	-13.0	-46.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507
Date:	08/08/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	LTE26, 3MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band: LTE26, 3MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1.631	-31.8	V	3.0	37.4	1.0	-68.2	-13.0	-55.2	
2.447	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3.263	-23.5	V	3.0	35.8	1.0	-58.3	-13.0	-45.3	
1.631	-30.1	H	3.0	37.4	1.0	-66.5	-13.0	-53.5	
2.447	-22.2	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3.263	-25.1	H	3.0	35.8	1.0	-59.9	-13.0	-46.9	
Mid Ch, 831.5MHz									
1.663	-31.0	V	3.0	37.4	1.0	-67.4	-13.0	-54.4	
2.495	-22.9	V	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3.327	-24.7	V	3.0	35.8	1.0	-59.5	-13.0	-46.5	
1.663	-29.9	H	3.0	37.4	1.0	-66.2	-13.0	-53.2	
2.495	-27.5	H	3.0	36.4	1.0	-62.8	-13.0	-49.8	
3.327	-24.8	H	3.0	35.8	1.0	-59.6	-13.0	-46.6	
High Ch, 847.5MHz									
1.695	-30.3	V	3.0	37.3	1.0	-66.6	-13.0	-53.6	
2.543	-24.4	V	3.0	36.3	1.0	-59.7	-13.0	-46.7	
3.391	-23.8	V	3.0	35.7	1.0	-58.5	-13.0	-45.5	
1.695	-30.1	H	3.0	37.3	1.0	-66.4	-13.0	-53.4	
2.543	-22.0	H	3.0	36.3	1.0	-57.3	-13.0	-44.3	
3.391	-24.9	H	3.0	35.7	1.0	-59.6	-13.0	-46.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger, headset
Mode: LTE26, 3MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band
LTE26
3MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1.631	-31.8	V	3.0	37.4	1.0	-68.2	-13.0	-55.2	
2.447	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.263	-23.3	V	3.0	35.8	1.0	-58.1	-13.0	-45.1	
1.631	-29.7	H	3.0	37.4	1.0	-66.1	-13.0	-53.1	
2.447	-21.7	H	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3.263	-23.1	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
Mid Ch, 831.5MHz									
1.663	-31.4	V	3.0	37.4	1.0	-67.7	-13.0	-54.7	
2.495	-22.5	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.327	-24.7	V	3.0	35.8	1.0	-59.4	-13.0	-46.4	
1.663	-31.3	H	3.0	37.4	1.0	-67.7	-13.0	-54.7	
2.495	-21.6	H	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3.327	-24.5	H	3.0	35.8	1.0	-59.3	-13.0	-46.3	
High Ch, 847.5MHz									
1.695	-30.4	V	3.0	37.3	1.0	-66.7	-13.0	-53.7	
2.543	-24.1	V	3.0	36.3	1.0	-59.4	-13.0	-46.4	
3.391	-23.9	V	3.0	35.7	1.0	-58.6	-13.0	-45.6	
1.695	-30.1	H	3.0	37.3	1.0	-66.4	-13.0	-53.4	
2.543	-21.5	H	3.0	36.3	1.0	-56.8	-13.0	-43.8	
3.391	-24.9	H	3.0	35.7	1.0	-59.6	-13.0	-46.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company:	LG
Project #:	14U18507
Date:	08/08/14
Test Engineer:	G. Chan, L. Lee
Configuration:	X-Pos EUT w/ AC charger, headset
Mode:	LTE26, 1.4MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26	Low Ch, 814.7MHz									
	1.629	-31.3	V	3.0	37.4	1.0	-67.7	-13.0	-54.7	
	2.444	-27.2	V	3.0	36.4	1.0	-62.6	-13.0	-49.6	
1.4MHz	3.259	-24.9	V	3.0	35.8	1.0	-59.7	-13.0	-46.7	
	1.629	-28.6	H	3.0	37.4	1.0	-65.0	-13.0	-52.0	
	2.444	-24.7	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
16QAM	3.259	-25.2	H	3.0	35.8	1.0	-60.0	-13.0	-47.0	
	Mid Ch, 831.5MHz									
	1.663	-32.3	V	3.0	37.4	1.0	-68.7	-13.0	-55.7	
	2.495	-16.2	V	3.0	36.4	1.0	-51.6	-13.0	-38.6	
	3.326	-24.9	V	3.0	35.8	1.0	-59.7	-13.0	-46.7	
	1.663	-29.2	H	3.0	37.4	1.0	-65.5	-13.0	-52.5	
	2.495	-18.9	H	3.0	36.4	1.0	-54.3	-13.0	-41.3	
	3.326	43.7	H	3.0	35.8	1.0	8.9	-13.0	21.9	
	High Ch, 848.3MHz									
	1.697	-29.5	V	3.0	37.3	1.0	-65.8	-13.0	-52.8	
	2.545	-18.5	V	3.0	36.3	1.0	-53.8	-13.0	-40.8	
	3.393	-23.2	V	3.0	35.7	1.0	-57.9	-13.0	-44.9	
	1.697	-27.2	H	3.0	37.3	1.0	-63.5	-13.0	-50.5	
	2.545	-23.5	H	3.0	36.3	1.0	-58.8	-13.0	-45.8	
	3.393	-24.8	H	3.0	35.7	1.0	-59.5	-13.0	-46.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/08/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger, headset
Mode: LTE26, 1.4MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	

Band
LTE26
1.4MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 814.7MHz									
1.629	-29.8	V	3.0	37.4	1.0	-66.2	-13.0	-53.2	
2.444	-21.5	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3.259	-24.3	V	3.0	35.8	1.0	-59.2	-13.0	-46.2	
1.629	-28.2	H	3.0	37.4	1.0	-64.6	-13.0	-51.6	
2.444	-21.4	H	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3.259	-25.0	H	3.0	35.8	1.0	-59.8	-13.0	-46.8	
Mid Ch, 831.5MHz									
1.663	-29.6	V	3.0	37.4	1.0	-66.0	-13.0	-53.0	
2.495	-21.5	V	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3.326	-24.4	V	3.0	35.8	1.0	-59.1	-13.0	-46.1	
1.663	-28.9	H	3.0	37.4	1.0	-65.3	-13.0	-52.3	
2.495	-18.1	H	3.0	36.4	1.0	-53.4	-13.0	-40.4	
3.326	-25.1	H	3.0	35.8	1.0	-59.8	-13.0	-46.8	
High Ch, 848.3MHz									
1.697	-29.0	V	3.0	37.3	1.0	-65.3	-13.0	-52.3	
2.545	-20.3	V	3.0	36.3	1.0	-55.7	-13.0	-42.7	
3.393	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
1.697	-27.8	H	3.0	37.3	1.0	-64.1	-13.0	-51.1	
2.545	-28.7	H	3.0	36.3	1.0	-64.0	-13.0	-51.0	
3.393	-24.9	H	3.0	35.7	1.0	-59.6	-13.0	-46.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

LTE 41

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 20MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band: LTE41, 20MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2506 MHz)									
5.012	-10.3	V	3.0	28.9	1.0	-38.2	-25.0	-13.2	
7.518	-8.7	V	3.0	26.3	1.0	-34.0	-25.0	-9.0	
10.553	-11.3	V	3.0	22.9	1.0	-33.2	-25.0	-8.2	
5.012	-10.0	H	3.0	28.9	1.0	-37.9	-25.0	-12.9	
7.518	-10.9	H	3.0	26.3	1.0	-36.3	-25.0	-11.3	
10.553	-12.1	H	3.0	22.9	1.0	-34.1	-25.0	-9.1	
Mid Ch, (2593 MHz)									
5.186	-9.4	V	3.0	28.7	1.0	-37.1	-25.0	-12.1	
7.779	-13.1	V	3.0	26.0	1.0	-38.1	-25.0	-13.1	
10.372	-12.3	V	3.0	23.0	1.0	-34.3	-25.0	-9.3	
5.186	-10.6	H	3.0	28.7	1.0	-38.3	-25.0	-13.3	
7.779	-9.5	H	3.0	26.0	1.0	-34.5	-25.0	-9.5	
10.372	-12.0	H	3.0	23.0	1.0	-34.0	-25.0	-9.0	
High Ch, (2680 MHz)									
5.360	-9.7	V	3.0	28.5	1.0	-37.3	-25.0	-12.3	
8.040	-9.3	V	3.0	25.6	1.0	-33.9	-25.0	-8.9	
10.720	-12.5	V	3.0	22.9	1.0	-34.4	-25.0	-9.4	
5.360	-9.3	H	3.0	28.5	1.0	-36.9	-25.0	-11.9	
8.040	-10.2	H	3.0	25.6	1.0	-34.9	-25.0	-9.9	
10.720	-12.8	H	3.0	22.9	1.0	-34.7	-25.0	-9.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 20MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (2506 MHz)									
LTE41	5.012	-10.4	V	3.0	28.9	1.0	-38.3	-25.0	-13.3	
	7.518	-9.6	V	3.0	26.3	1.0	-34.9	-25.0	-9.9	
	10.553	-9.9	V	3.0	22.9	1.0	-31.8	-25.0	-6.8	
20MHz	5.012	-9.6	H	3.0	28.9	1.0	-37.5	-25.0	-12.5	
	7.518	-10.5	H	3.0	26.3	1.0	-35.8	-25.0	-10.8	
QPSK	10.553	-12.0	H	3.0	22.9	1.0	-33.9	-25.0	-8.9	
	Mid Ch, (2593 MHz)									
	5.186	-9.2	V	3.0	28.7	1.0	-36.9	-25.0	-11.9	
	7.779	-12.6	V	3.0	26.0	1.0	-37.6	-25.0	-12.6	
	10.372	-12.3	V	3.0	23.0	1.0	-34.3	-25.0	-9.3	
	5.186	-10.6	H	3.0	28.7	1.0	-38.4	-25.0	-13.4	
	7.779	-11.0	H	3.0	26.0	1.0	-36.0	-25.0	-11.0	
	10.372	-12.2	H	3.0	23.0	1.0	-34.2	-25.0	-9.2	
	High Ch, (2680 MHz)									
	5.360	-9.0	V	3.0	28.5	1.0	-36.6	-25.0	-11.6	
	8.040	-8.4	V	3.0	25.6	1.0	-33.0	-25.0	-8.0	
	10.720	-11.9	V	3.0	22.9	1.0	-33.8	-25.0	-8.8	
	5.360	-9.2	H	3.0	28.5	1.0	-36.8	-25.0	-11.8	
	8.040	-9.2	H	3.0	25.6	1.0	-33.9	-25.0	-8.9	
	10.720	-12.1	H	3.0	22.9	1.0	-34.0	-25.0	-9.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 15MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band: LTE41, 15MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2503.5 MHz)									
5.007	-8.6	V	3.0	28.9	1.0	-36.5	-25.0	-11.5	
7.511	-6.3	V	3.0	26.3	1.0	-31.6	-25.0	-6.6	
10.014	-12.9	V	3.0	23.1	1.0	-35.0	-25.0	-10.0	
5.007	-9.6	H	3.0	28.9	1.0	-37.5	-25.0	-12.5	
7.511	-10.1	H	3.0	26.3	1.0	-35.4	-25.0	-10.4	
10.014	-11.4	H	3.0	23.1	1.0	-33.5	-25.0	-8.5	
Mid Ch, (2593 MHz)									
5.186	-11.7	V	3.0	28.7	1.0	-39.5	-25.0	-14.5	
7.779	-12.8	V	3.0	26.0	1.0	-37.8	-25.0	-12.8	
10.372	-11.9	V	3.0	23.0	1.0	-33.9	-25.0	-8.9	
5.186	-10.4	H	3.0	28.7	1.0	-38.1	-25.0	-13.1	
7.779	-11.7	H	3.0	26.0	1.0	-36.7	-25.0	-11.7	
10.372	-11.5	H	3.0	23.0	1.0	-33.5	-25.0	-8.5	
High Ch, (2682.5 MHz)									
5.365	-8.1	V	3.0	28.5	1.0	-35.6	-25.0	-10.6	
8.052	-9.7	V	3.0	25.6	1.0	-34.4	-25.0	-9.4	
10.730	-12.8	V	3.0	22.9	1.0	-34.6	-25.0	-9.6	
5.365	-9.2	H	3.0	28.5	1.0	-36.7	-25.0	-11.7	
8.052	-10.4	H	3.0	25.6	1.0	-35.0	-25.0	-10.0	
10.730	-12.6	H	3.0	22.9	1.0	-34.5	-25.0	-9.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 15MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (2503.5 MHz)									
LTE41	5.007	-8.5	V	3.0	28.9	1.0	-36.4	-25.0	-11.4	
	7.511	-3.9	V	3.0	26.3	1.0	-29.2	-25.0	-4.2	
	10.014	-12.9	V	3.0	23.1	1.0	-35.0	-25.0	-10.0	
15MHz	5.007	-9.4	H	3.0	28.9	1.0	-37.3	-25.0	-12.3	
	7.511	-9.6	H	3.0	26.3	1.0	-35.0	-25.0	-10.0	
	10.014	-12.2	H	3.0	23.1	1.0	-34.3	-25.0	-9.3	
QPSK										
	Mid Ch, (2593 MHz)									
	5.186	-12.0	V	3.0	28.7	1.0	-39.7	-25.0	-14.7	
	7.779	-11.0	V	3.0	26.0	1.0	-36.0	-25.0	-11.0	
	10.372	-12.3	V	3.0	23.0	1.0	-34.2	-25.0	-9.2	
	5.186	-10.3	H	3.0	28.7	1.0	-38.0	-25.0	-13.0	
	7.779	-11.4	H	3.0	26.0	1.0	-36.4	-25.0	-11.4	
	10.372	-11.6	H	3.0	23.0	1.0	-33.6	-25.0	-8.6	
	High Ch, (2682.5 MHz)									
	5.365	-7.6	V	3.0	28.5	1.0	-35.2	-25.0	-10.2	
	8.052	-8.5	V	3.0	25.6	1.0	-33.1	-25.0	-8.1	
	10.730	-12.7	V	3.0	22.9	1.0	-34.5	-25.0	-9.5	
	5.365	-8.3	H	3.0	28.5	1.0	-35.8	-25.0	-10.8	
	8.052	-10.6	H	3.0	25.6	1.0	-35.3	-25.0	-10.3	
	10.730	-12.1	H	3.0	22.9	1.0	-34.0	-25.0	-9.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 10MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (2501 MHz)									
LTE41	5.002	-10.7	V	3.0	28.9	1.0	-38.6	-25.0	-13.6	
	7.503	-9.6	V	3.0	26.3	1.0	-34.9	-25.0	-9.9	
	10.004	-12.7	V	3.0	23.1	1.0	-34.8	-25.0	-9.8	
10MHz	5.002	-10.3	H	3.0	28.9	1.0	-38.2	-25.0	-13.2	
	7.503	-12.5	H	3.0	26.3	1.0	-37.9	-25.0	-12.9	
	10.004	-11.1	H	3.0	23.1	1.0	-33.2	-25.0	-8.2	
16QAM										
	Mid Ch, (2593 MHz)									
	5.186	-17.9	V	3.0	28.7	1.0	-45.6	-25.0	-20.6	
	7.779	-10.2	V	3.0	26.0	1.0	-35.2	-25.0	-10.2	
	10.372	-12.3	V	3.0	23.0	1.0	-34.3	-25.0	-9.3	
	5.186	-16.9	H	3.0	28.7	1.0	-44.6	-25.0	-19.6	
	7.779	-11.0	H	3.0	26.0	1.0	-36.0	-25.0	-11.0	
	10.372	-11.4	H	3.0	23.0	1.0	-33.4	-25.0	-8.4	
	High Ch, (2685 MHz)									
	5.375	-8.2	V	3.0	28.5	1.0	-35.7	-25.0	-10.7	
	8.055	-9.3	V	3.0	25.6	1.0	-33.9	-25.0	-8.9	
	10.740	-11.3	V	3.0	22.9	1.0	-33.2	-25.0	-8.2	
	5.375	-11.3	H	3.0	28.5	1.0	-38.9	-25.0	-13.9	
	8.055	-6.5	H	3.0	25.6	1.0	-31.2	-25.0	-6.2	
	10.740	-11.3	H	3.0	22.9	1.0	-33.2	-25.0	-8.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

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

Company: LG
Project #: 14U18507
Date: 08/11/14
Test Engineer: O. Stoelting
Configuration: X-pos EUT, AC adaptor, HS
Mode: TX, LTE band 41, 10MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (2501 MHz)									
LTE41	5.002	-17.7	V	3.0	28.9	1.0	-45.6	-25.0	-20.6	
	7.503	-9.8	V	3.0	26.3	1.0	-35.1	-25.0	-10.1	
	10.004	-13.1	V	3.0	23.1	1.0	-35.2	-25.0	-10.2	
10MHz	5.002	-12.1	H	3.0	28.9	1.0	-40.0	-25.0	-15.0	
	7.503	-12.9	H	3.0	26.3	1.0	-38.2	-25.0	-13.2	
	10.004	-12.4	H	3.0	23.1	1.0	-34.5	-25.0	-9.5	
QPSK										
	Mid Ch, (2593 MHz)									
	5.186	-18.3	V	3.0	28.7	1.0	-46.0	-25.0	-21.0	
	7.779	-10.0	V	3.0	26.0	1.0	-35.0	-25.0	-10.0	
	10.372	-12.3	V	3.0	23.0	1.0	-34.3	-25.0	-9.3	
	5.186	-18.0	H	3.0	28.7	1.0	-45.7	-25.0	-20.7	
	7.779	-11.9	H	3.0	26.0	1.0	-36.9	-25.0	-11.9	
	10.372	-11.6	H	3.0	23.0	1.0	-33.6	-25.0	-8.6	
	High Ch, (2685 MHz)									
	5.375	-9.0	V	3.0	28.5	1.0	-36.5	-25.0	-11.5	
	8.055	-11.3	V	3.0	25.6	1.0	-35.9	-25.0	-10.9	
	10.740	-12.8	V	3.0	22.9	1.0	-34.7	-25.0	-9.7	
	5.375	-11.3	H	3.0	28.5	1.0	-38.8	-25.0	-13.8	
	8.055	-8.1	H	3.0	25.6	1.0	-32.7	-25.0	-7.7	
	10.740	-12.0	H	3.0	22.9	1.0	-33.9	-25.0	-8.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.