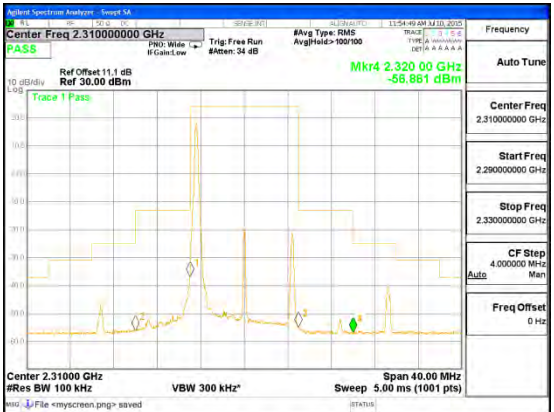


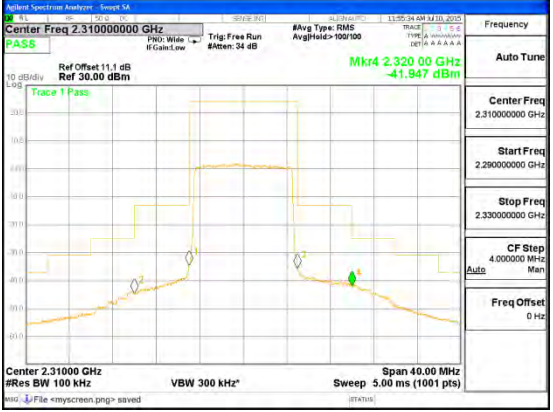

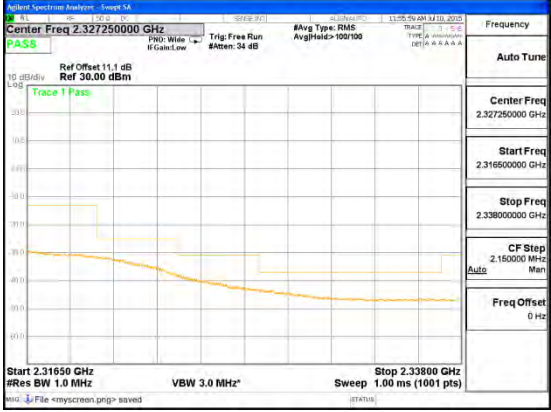
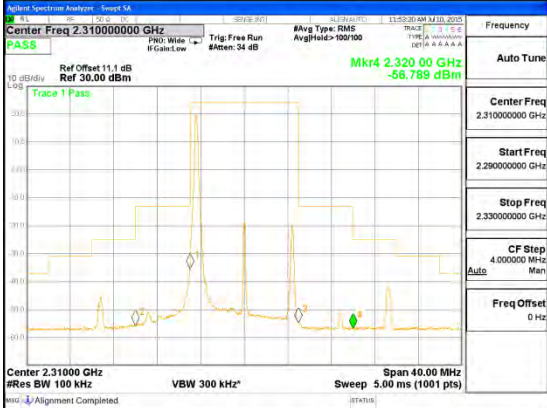




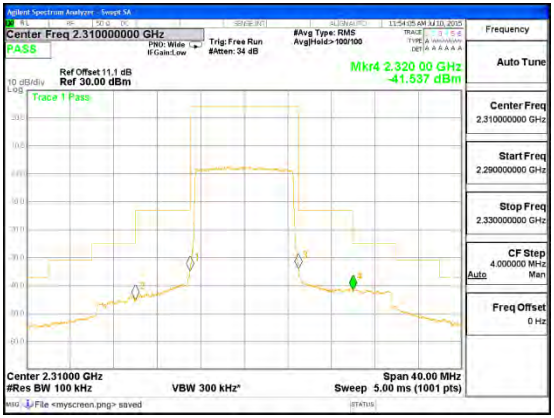
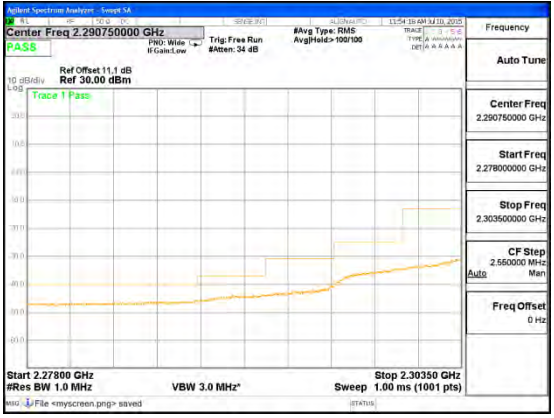
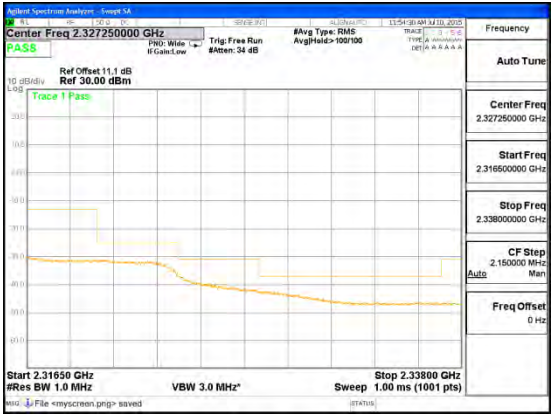
### 9.2.2. EMISSION MASK PLOTS

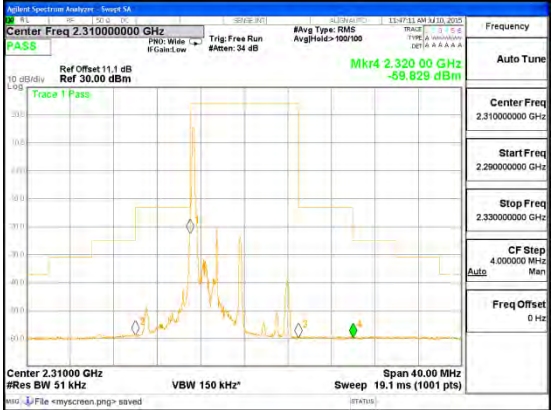

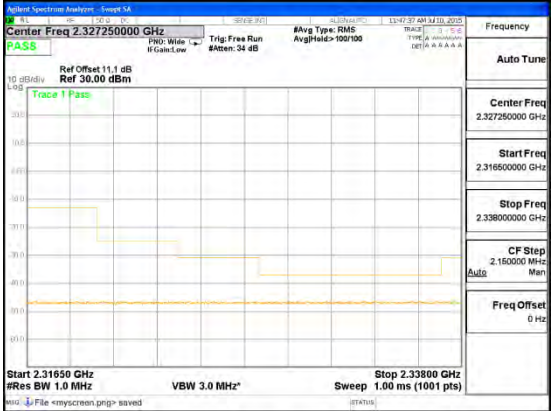
#### LTE Band 30

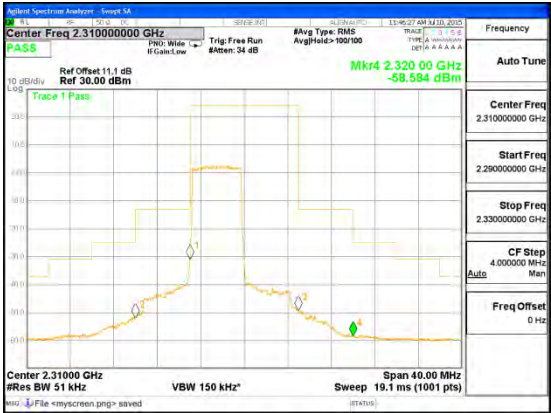
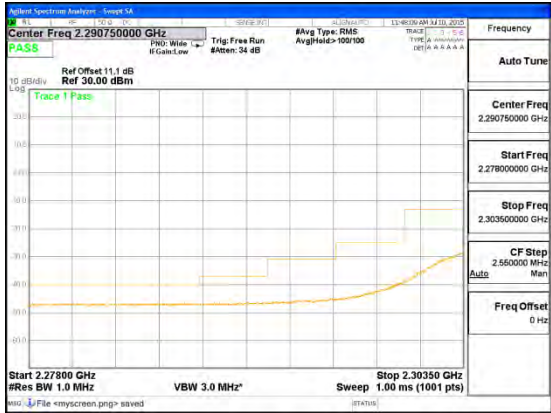


<p>Band LTE30 10MHz 16QAM</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel 1RB.gif</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel 1RB_ZL.gif</p>
<p>Band LTE30 10MHz 16QAM</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel 1RB_ZR.gif</p>	

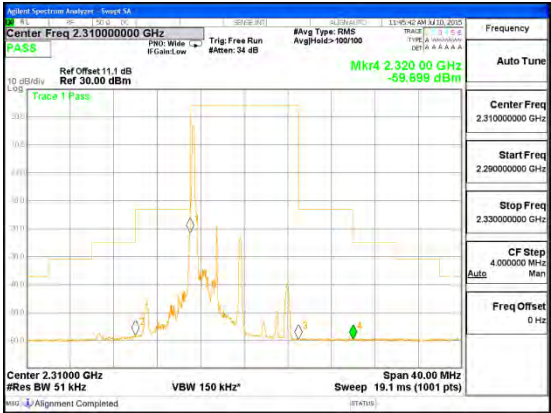


<p>Band                  LTE30                  10MHz                  16QAM</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel FRB.gif</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel FRB_ZL.gif</p>
<p>Band                  LTE30                  10MHz                  16QAM</p>	 <p>Band LTE30 10MHz EM 16QAM Mid Channel FRB_ZR.gif</p>	

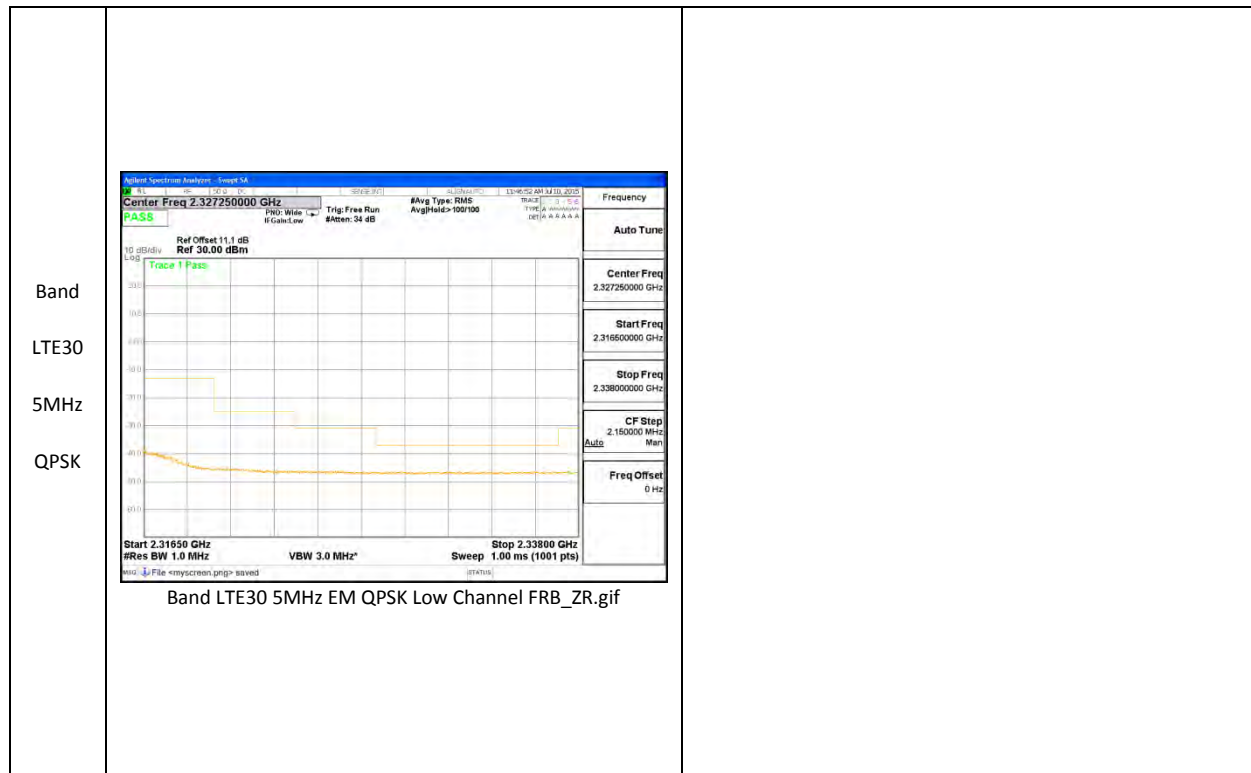
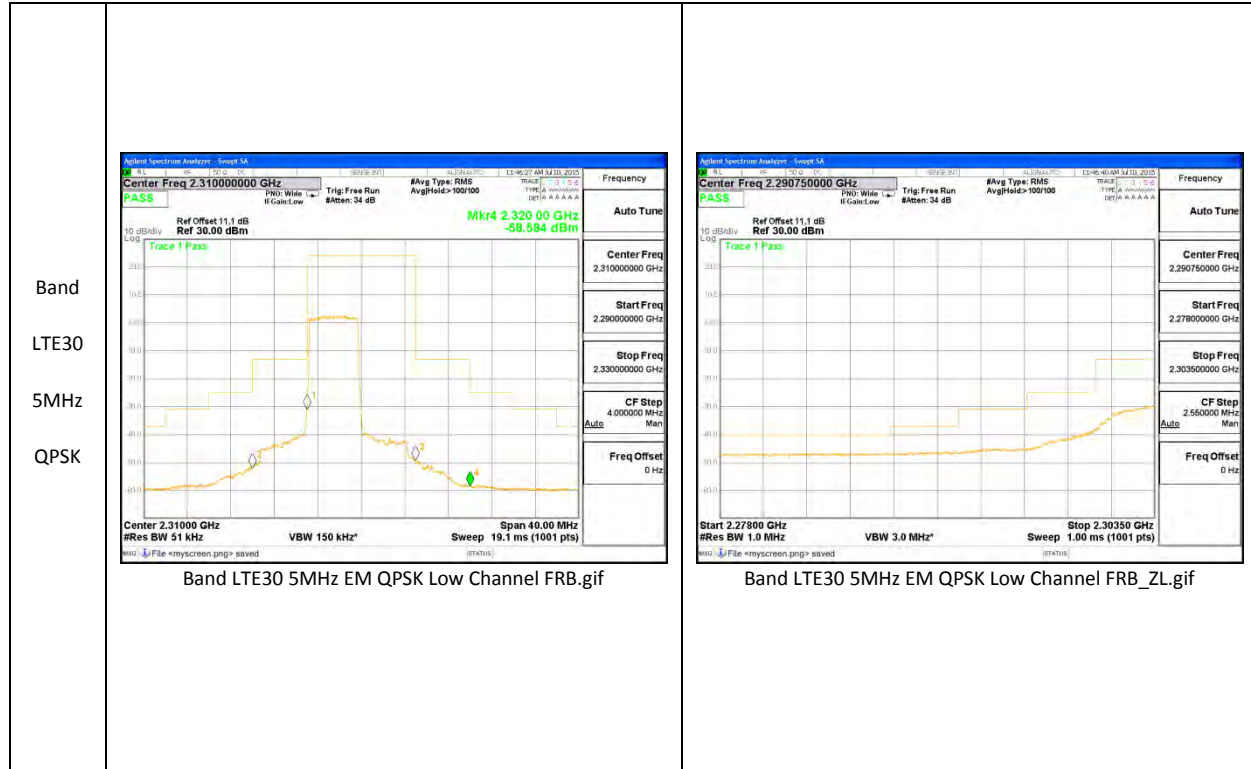
<p>Band                  LTE30                  10MHz                  QPSK</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel 1RB.gif</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel 1RB_ZL.gif</p>
<p>Band                  LTE30                  10MHz                  QPSK</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel 1RB_ZR.gif</p>	

<p>Band          LTE30          10MHz          16QAM</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel FRB.gif</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel FRB_ZL.gif</p>
<p>Band          LTE30          10MHz          16QAM</p>	 <p>Band LTE30 10MHz EM QPSK Mid Channel FRB_ZR.gif</p>	


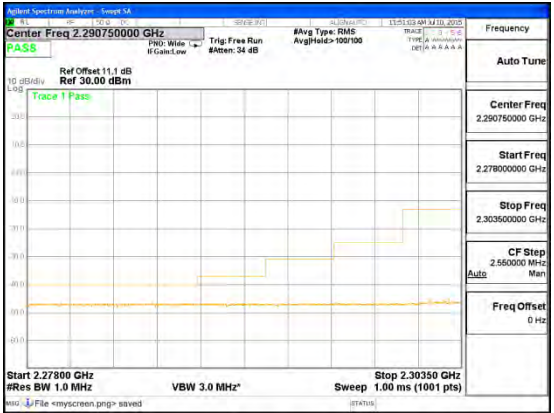
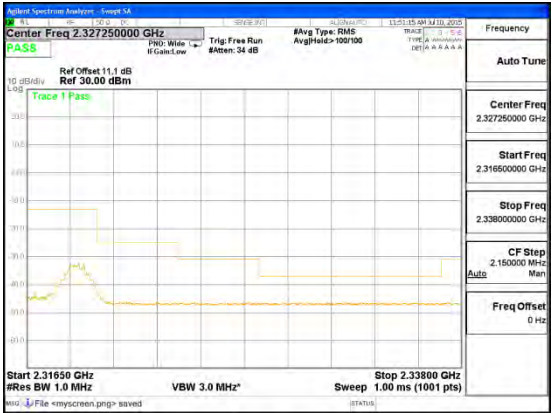
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel 1RB.gif</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel 1RB_ZL.gif</p>
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel 1RB_ZR.gif</p>	

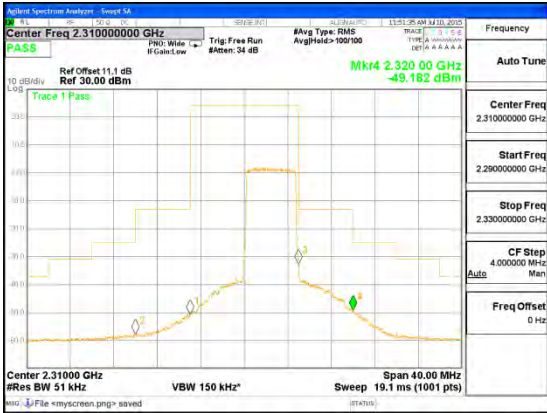

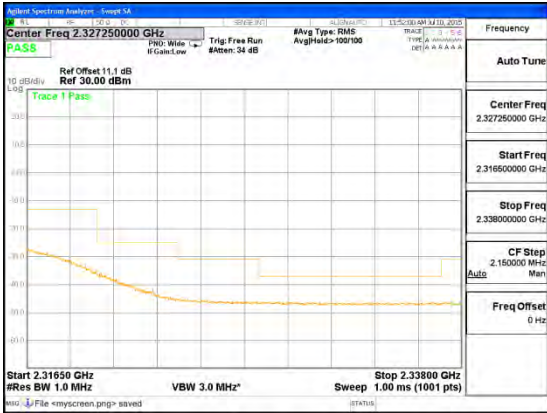
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel FRB.gif</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel FRB_ZL.gif</p>
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel FRB_ZR.gif</p>	

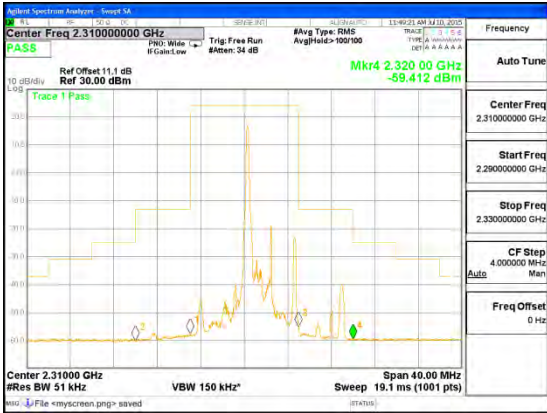

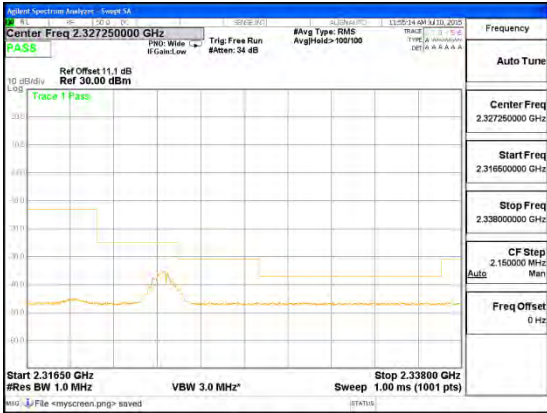
<p>Band                  LTE30                  5MHz                  QPSK</p>	 <p>Band LTE30 5MHz EM QPSK Low Channel 1RB.gif</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel 1RB_ZL.gif</p>
<p>Band                  LTE30                  5MHz                  QPSK</p>	 <p>Band LTE30 5MHz EM 16QAM Low Channel 1RB_ZR.gif</p>	

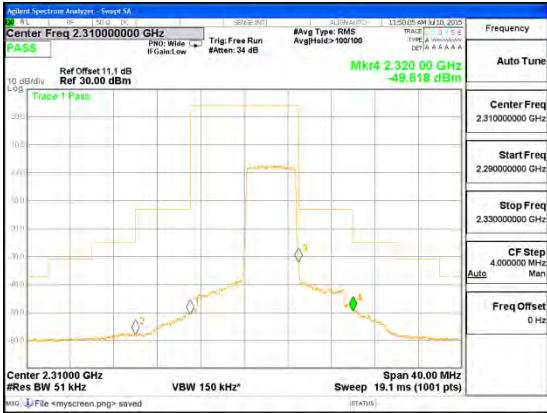

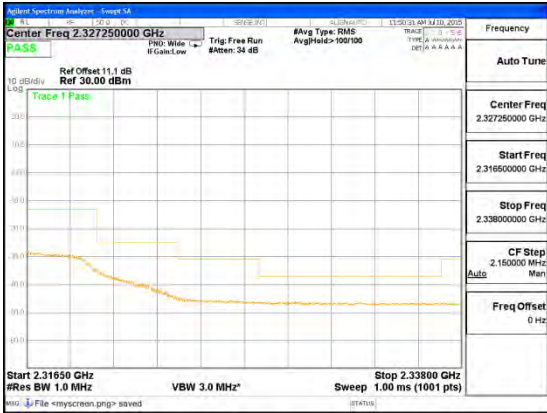




<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel 1RB.gif</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel 1RB_ZL.gif</p>
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel 1RB_ZR.gif</p>	

<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel FRB.gif</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel FRB_ZL.gif</p>
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE30 5MHz EM 16QAM High Channel FRB_ZR.gif</p>	

<p>Band LTE30 5MHz QPSK</p>	 <p>Band LTE30 5MHz EM QPSK High Channel 1RB.gif</p>	 <p>Band LTE30 5MHz EM QPSK High Channel 1RB_ZL.gif</p>
<p>Band LTE30 5MHz QPSK</p>	 <p>Band LTE30 5MHz EM QPSK High Channel 1RB_ZR.gif</p>	

<p>Band                  LTE30                  5MHz                  QPSK</p>	 <p style="text-align: center;">Band LTE30 5MHz EM QPSK High Channel FRB.gif</p>	 <p style="text-align: center;">Band LTE30 5MHz EM QPSK High Channel FRB_ZL.gif</p>
<p>Band                  LTE30                  5MHz                  QPSK</p>	 <p style="text-align: center;">Band LTE30 5MHz EM QPSK High Channel FRB_ZR.gif</p>	

### **9.3. OUT OF BAND EMISSIONS**

#### **RULE PART(S)**

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

Part 27: (m)(4) (4) For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

#### **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**

GSM, WCDMA and LTE

#### **RESULTS**

### 9.3.1. OUT OF BAND EMISSIONS RESULT

#### GSM

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM 850	GPRS	824.2	-21.323	-13	-8.323
		836.6	-20.995	-13	-7.995
		848.8	-21.131	-13	-8.131
	EGPRS	824.2	-21.108	-13	-8.108
		836.6	-21.524	-13	-8.524
		848.8	-21.289	-13	-8.289
GSM 1900	GPRS	1850.2	-20.448	-13	-7.448
		1880	-20.079	-13	-7.079
		1909.8	-20.821	-13	-7.821
	EGPRS	1850.2	-21.13	-13	-8.13
		1880	-20.464	-13	-7.464
		1909.8	-19.688	-13	-6.688

#### WCDMA

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
Band 5	REL99	826.4	-21.521	-13	-8.521
		836.6	-21.204	-13	-8.204
		846.6	-20.62	-13	-7.62
	HSDPA	826.4	-20.729	-13	-7.729
		836.6	-20.958	-13	-7.958
		846.6	-21.161	-13	-8.161
Band 2	REL99	1852.4	-20.216	-13	-7.216
		1880	-21.007	-13	-8.007
		1907.6	-20.339	-13	-7.339
	HSDPA	1852.4	-19.907	-13	-6.907
		1880	-20.088	-13	-7.088
		1907.6	-20.157	-13	-7.157

**LTE Band 2**

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	20	16QAM	1860	-21.697	-13	-8.697
			1880	-22.582	-13	-9.582
			1900	-22.61	-13	-9.61
		QPSK	1860	-22.748	-13	-9.748
			1880	-22.92	-13	-9.92
			1900	-22.22	-13	-9.22
	15	16QAM	1857.5	-22.826	-13	-9.826
			1880	-21.776	-13	-8.776
			1902.5	-23	-13	-10
		QPSK	1857.5	-21.853	-13	-8.853
			1880	-22.129	-13	-9.129
			1902.5	-22.63	-13	-9.63
	10	16QAM	1855	-22.85	-13	-9.85
			1880	-21.941	-13	-8.941
			1905	-22.29	-13	-9.29
		QPSK	1855	-22.341	-13	-9.341
			1880	-22.073	-13	-9.073
			1905	-21.491	-13	-8.491
	5	16QAM	1852.5	-21.944	-13	-8.944
			1880	-22.581	-13	-9.581
			1907.5	-21.236	-13	-8.236
		QPSK	1852.5	-21.95	-13	-8.95
			1880	-22.11	-13	-9.11
			1907.5	-22.345	-13	-9.345

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	3	16QAM	1851.5	-22.375	-13	-9.375
			1880	-21.993	-13	-8.993
			1908.5	-21.603	-13	-8.603
		QPSK	1851.5	-22.012	-13	-9.012
			1880	-22.39	-13	-9.39
			1908.5	-22.107	-13	-9.107
	1.4	16QAM	1850.7	-21.846	-13	-8.846
			1880	-22.592	-13	-9.592
			1909.3	-21.504	-13	-8.504
		QPSK	1850.7	-22.662	-13	-9.662
			1880	-21.461	-13	-8.461
			1909.3	-22.214	-13	-9.214



**LTE Band 4**

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	16QAM	1720	-27.687	-13	-14.687
			1732.5	-26.831	-13	-13.831
			1745	-27.648	-13	-14.648
		QPSK	1720	-27.047	-13	-14.047
			1732.5	-26.84	-13	-13.84
			1745	-27.367	-13	-14.367
	15	16QAM	1717.5	-27.408	-13	-14.408
			1732.5	-27.446	-13	-14.446
			1747.5	-25.714	-13	-12.714
		QPSK	1717.5	-27.322	-13	-14.322
			1732.5	-27.281	-13	-14.281
			1747.5	-27.298	-13	-14.298
	10	16QAM	1715	-27.575	-13	-14.575
			1732.5	-25.696	-13	-12.696
			1750	-27.055	-13	-14.055
		QPSK	1715	-27.607	-13	-14.607
			1732.5	-27.209	-13	-14.209
			1750	-27.101	-13	-14.101
	5	16QAM	1712.5	-27.218	-13	-14.218
			1732.5	-27.005	-13	-14.005
			1752.5	-27.331	-13	-14.331
		QPSK	1712.5	-26.169	-13	-13.169
			1732.5	-26.48	-13	-13.48
			1752.5	-27.282	-13	-14.282

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	3	16QAM	1711.5	-27.88	-13	-14.88
			1732.5	-25.86	-13	-16.32
			1753.5	-25.31	-13	-12.31
		QPSK	1711.5	-27.41	-13	-14.41
			1732.5	-27.17	-13	-14.17
			1753.5	--28.04	-13	-15.041
	1.4	16QAM	1710.7	-27.24	-13	-14.24
			1732.5	-26.92	-13	-13.92
			1754.3	-26.866	-13	-13.866
		QPSK	1710.7	-26.933	-13	-13.933
			1732.5	-27.707	-13	-14.707
			1754.3	-27.246	-13	-14.246

**LTE Band 5**

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	16QAM	829	-22.71	-13	-9.71
			836.5	-22.96	-13	-9.96
			844	-22.44	-13	-9.44
		QPSK	829	-22.24	-13	-9.24
			836.5	-22.34	-13	-9.34
			844	-22.89	-13	-9.89
	5	16QAM	826.5	-22.803	-13	-9.803
			836.5	-22.28	-13	-9.28
			846.5	-22.321	-13	-9.321
		QPSK	826.5	-22.271	-13	-9.271
			836.5	-22.603	-13	-9.603
			846.5	-22.154	-13	-9.154
	3	16QAM	825.5	-21.54	-13	-8.54
			836.5	-22.265	-13	-9.265
			847.5	-21.785	-13	-8.785
		QPSK	825.5	-22.977	-13	-9.977
			836.5	-22.349	-13	-9.349
			847.5	-22.863	-13	-9.863
	1.4	16QAM	824.7	-22.087	-13	-9.087
			836.5	-22.343	-13	-9.343
			848.3	-22.151	-13	-9.151
		QPSK	824.7	-22.541	-13	-9.541
			836.5	-21.857	-13	-8.857
			848.3	-21.576	-13	-8.576

**LTE Band 12**

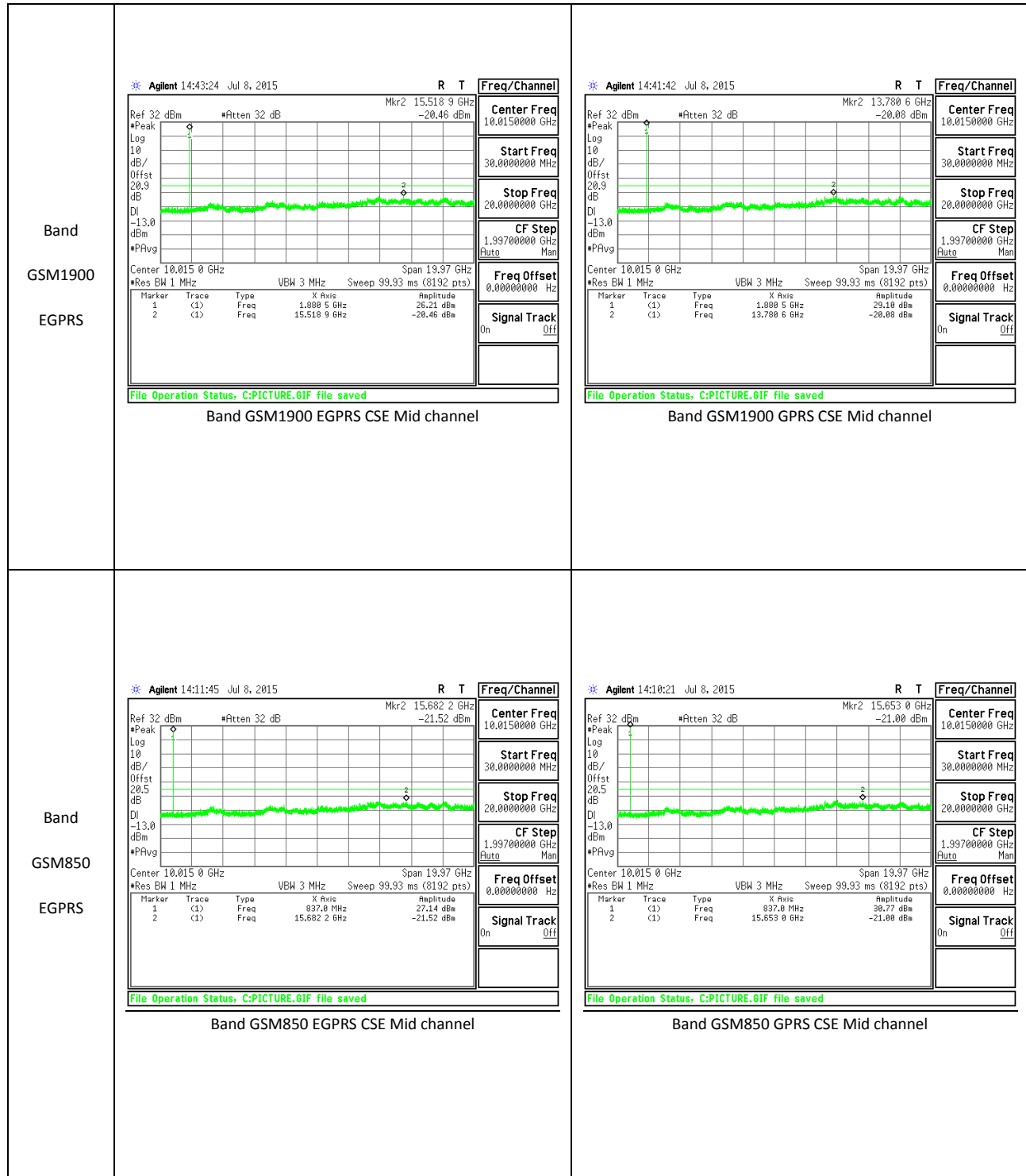
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	10	16QAM	704	-22.64	-13	-9.64
			707.5	-22.51	-13	-9.35
			711	-23	-13	-10
		QPSK	704	-22.52	-13	-9.52
			707.5	-21.64	-13	-8.64
			711	-22.62	-13	-6.231
	5	16QAM	701.5	-22.617	-13	-9.617
			707.5	-22.011	-13	-9.011
			713.5	-22.338	-13	-9.338
		QPSK	701.5	-22.658	-13	-9.658
			707.5	-22.503	-13	-9.503
			713.5	-22.919	-13	-9.919
	3	16QAM	700.5	-22.291	-13	-9.291
			707.5	-22.658	-13	-9.658
			714.5	-22.481	-13	-9.481
		QPSK	700.5	-21.628	-13	-8.628
			707.5	-22.662	-13	-9.662
			714.5	-22.35	-13	-9.35
	1.4	16QAM	699.7	-22.94	-13	-9.94
			707.5	-22.553	-13	-9.553
			715.3	-22.465	-13	-9.465
		QPSK	699.7	-21.255	-13	-8.255
			707.5	-23.443	-13	-10.443
			715.3	-22.815	-13	-9.815

**LTE Band 30**

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE30	10	16QAM	2310	-47.83	-40	-7.83
		QPSK	2310	-46.65	-40	-6.65
	5	16QAM	2307.5	-46.73	-40	-6.73
			2310	-48.61	-40	-8.61
			2312.5	-48.48	-40	-8.48
		QPSK	2307.5	-45.67	-40	-5.67
			2310	-46.08	-40	-6.08
			2312.5	-48.03	-40	-8.03

### 9.3.2. OUT OF BAND EMISSIONS PLOTS

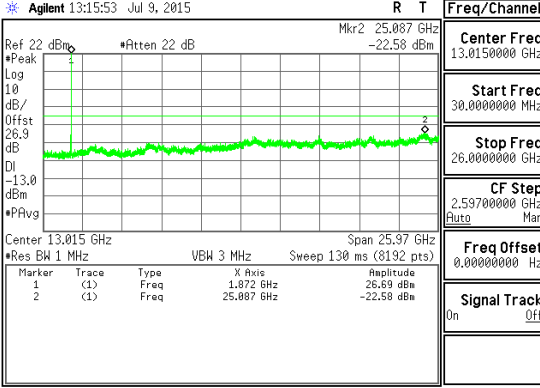
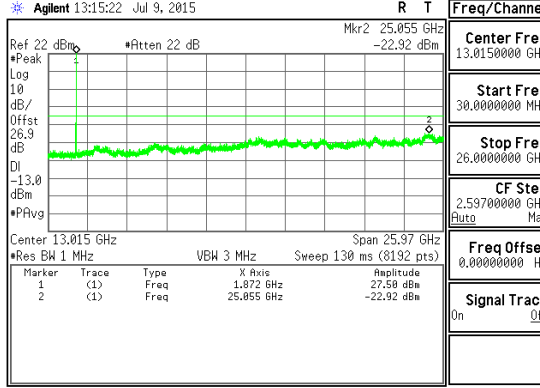
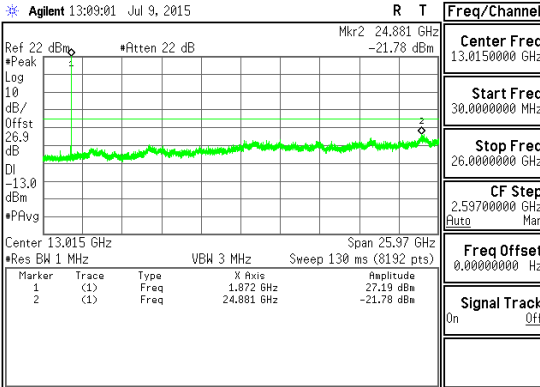
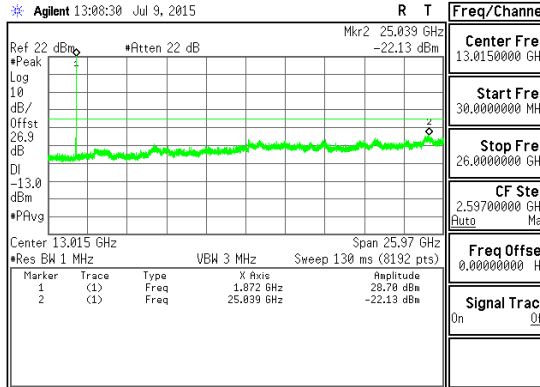
#### GSM



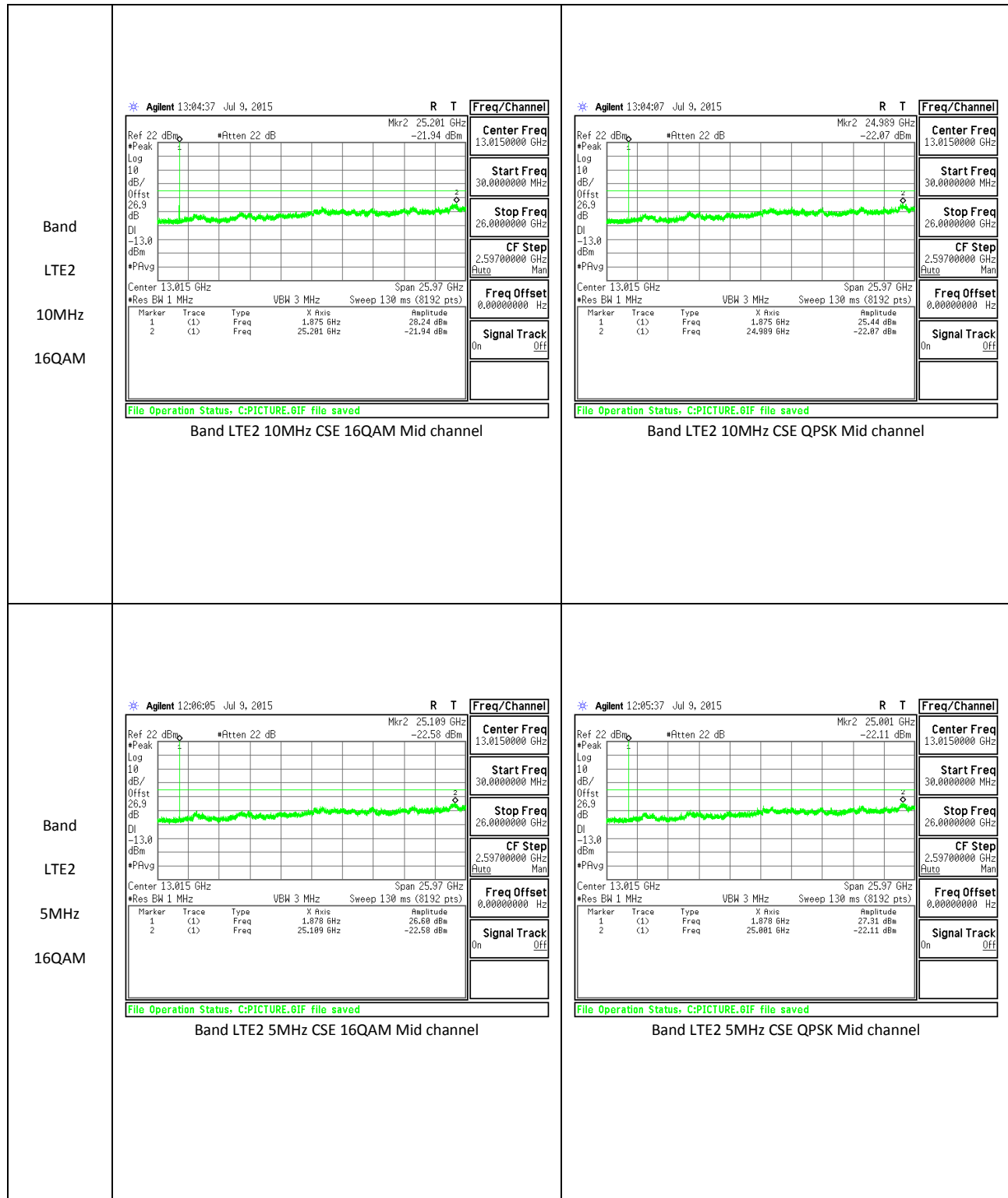
**WCDMA**

<p>Band Band 2 HSDPA</p>	<p>* Agilent 15:36:26 Jul 8, 2015</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>1.888 5 GHz</td> <td>22.99 dBm</td> </tr> <tr> <td>2</td> <td>(1)</td> <td>Freq</td> <td>18.103 2 GHz</td> <td>-20.09 dBm</td> </tr> </tbody> </table> <p>File Operation Status: C:PICTURE.GIF file saved</p> <p>Band WCDMA B2 HSDPA CSE</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	1.888 5 GHz	22.99 dBm	2	(1)	Freq	18.103 2 GHz	-20.09 dBm	<p>* Agilent 15:34:25 Jul 8, 2015</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>1.878 0 GHz</td> <td>22.82 dBm</td> </tr> <tr> <td>2</td> <td>(1)</td> <td>Freq</td> <td>15.645 7 GHz</td> <td>-21.01 dBm</td> </tr> </tbody> </table> <p>File Operation Status: C:PICTURE.GIF file saved</p> <p>Band WCDMA B2 REL99 CSE</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	1.878 0 GHz	22.82 dBm	2	(1)	Freq	15.645 7 GHz	-21.01 dBm
Marker	Trace	Type	X Axis	Amplitude																												
1	(1)	Freq	1.888 5 GHz	22.99 dBm																												
2	(1)	Freq	18.103 2 GHz	-20.09 dBm																												
Marker	Trace	Type	X Axis	Amplitude																												
1	(1)	Freq	1.878 0 GHz	22.82 dBm																												
2	(1)	Freq	15.645 7 GHz	-21.01 dBm																												
<p>Band Band 5 HSDPA</p>	<p>* Agilent 15:58:58 Jul 8, 2015</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>837.0 MHz</td> <td>23.37 dBm</td> </tr> <tr> <td>2</td> <td>(1)</td> <td>Freq</td> <td>18.105 6 GHz</td> <td>-20.96 dBm</td> </tr> </tbody> </table> <p>File Operation Status: C:PICTURE.GIF file saved</p> <p>Band WCDMA B5 HSDPA CSE</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	837.0 MHz	23.37 dBm	2	(1)	Freq	18.105 6 GHz	-20.96 dBm	<p>* Agilent 15:56:58 Jul 8, 2015</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>837.0 MHz</td> <td>23.33 dBm</td> </tr> <tr> <td>2</td> <td>(1)</td> <td>Freq</td> <td>13.202 7 GHz</td> <td>-21.20 dBm</td> </tr> </tbody> </table> <p>File Operation Status: C:PICTURE.GIF file saved</p> <p>Band WCDMA B5 REL99 CSE</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	837.0 MHz	23.33 dBm	2	(1)	Freq	13.202 7 GHz	-21.20 dBm
Marker	Trace	Type	X Axis	Amplitude																												
1	(1)	Freq	837.0 MHz	23.37 dBm																												
2	(1)	Freq	18.105 6 GHz	-20.96 dBm																												
Marker	Trace	Type	X Axis	Amplitude																												
1	(1)	Freq	837.0 MHz	23.33 dBm																												
2	(1)	Freq	13.202 7 GHz	-21.20 dBm																												

**LTE Band 2**

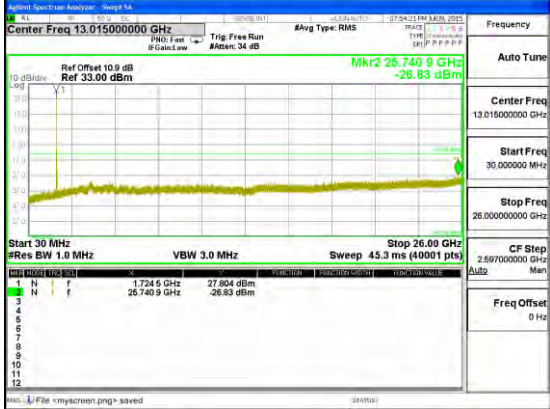
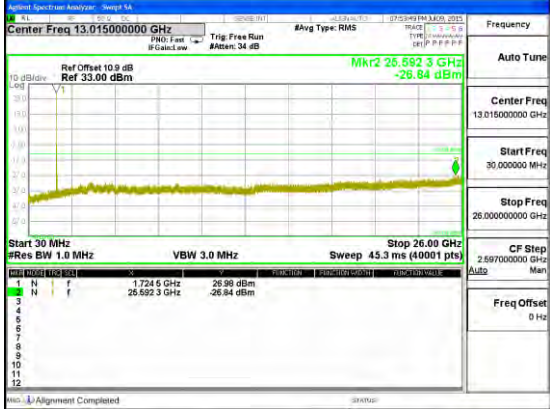
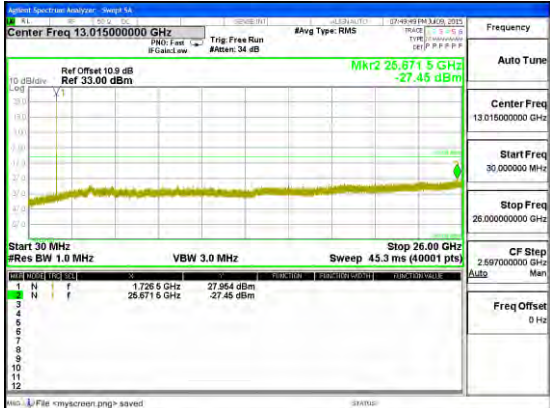
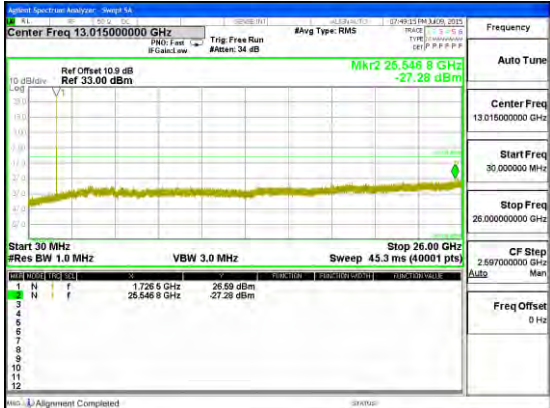
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<p>Band LTE2 15MHz 16QAM</p>	 <p>Agilent 13:09:01 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE2 15MHz CSE 16QAM Mid channel</p>	 <p>Agilent 13:08:30 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE2 15MHz CSE QPSK Mid channel</p>

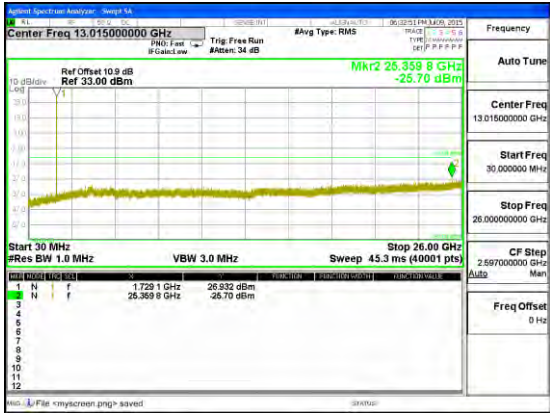
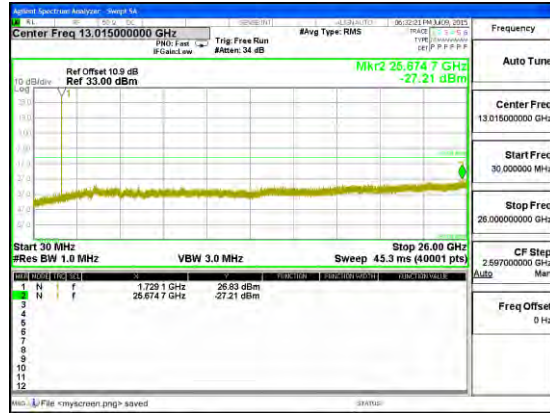
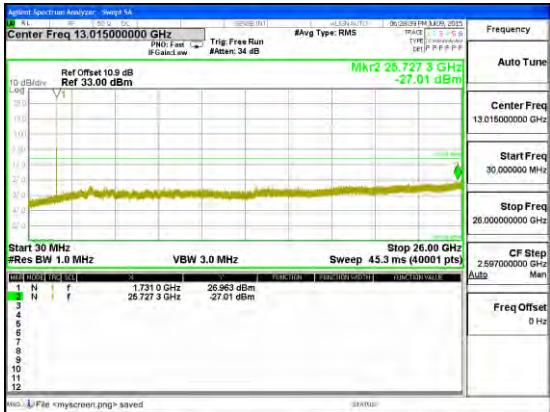
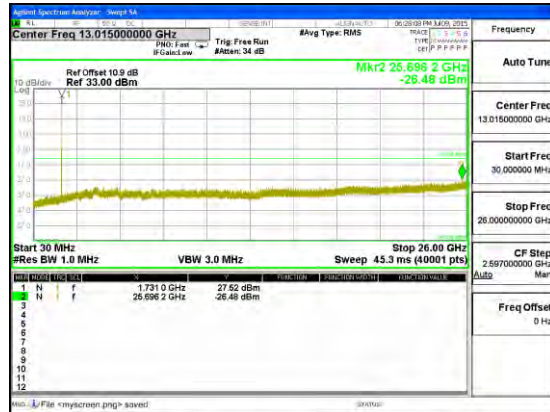


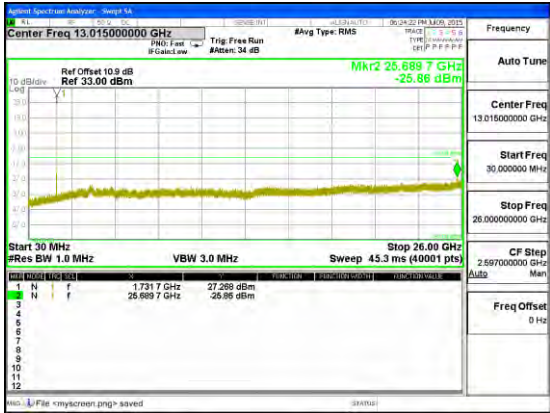
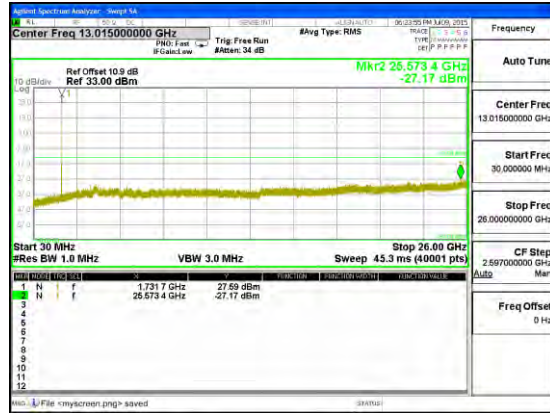
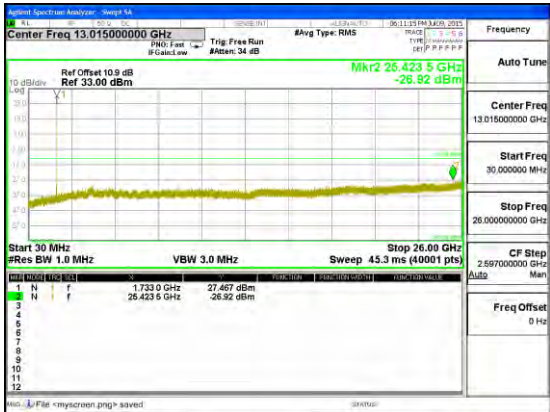
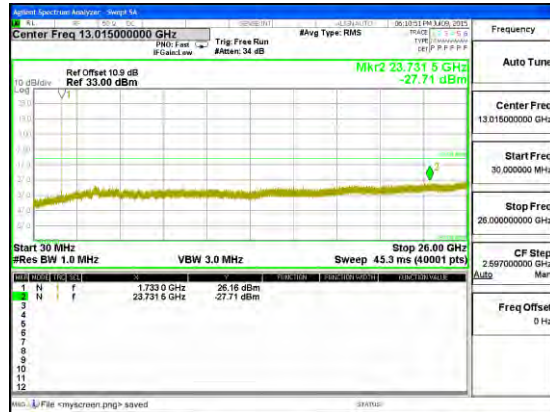


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<p>Band LTE2 1.4MHz 16QAM</p>	<p>File Operation Status: C:PICTURE.0IF file saved</p> <p>Band LTE2 1.4MHz CSE 16QAM Mid channel</p>	<p>File Operation Status: C:PICTURE.0IF file saved</p> <p>Band LTE2 1.4MHz CSE QPSK Mid channel</p>

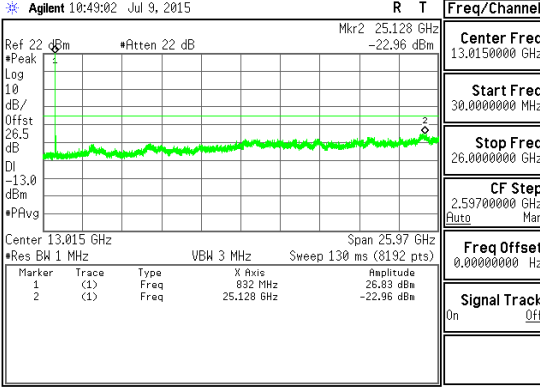
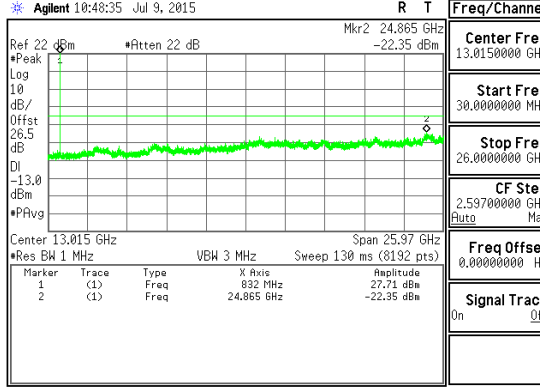
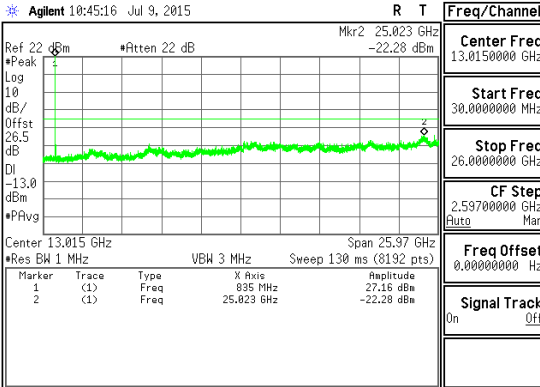
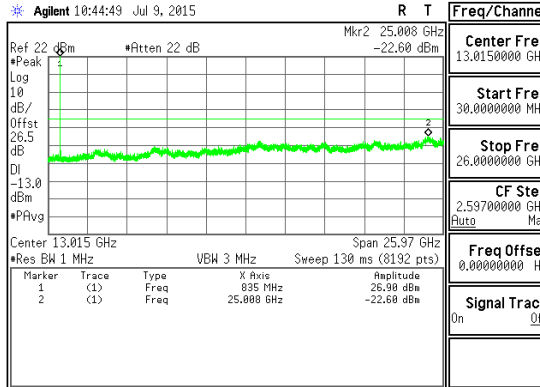
**LTE Band 4**

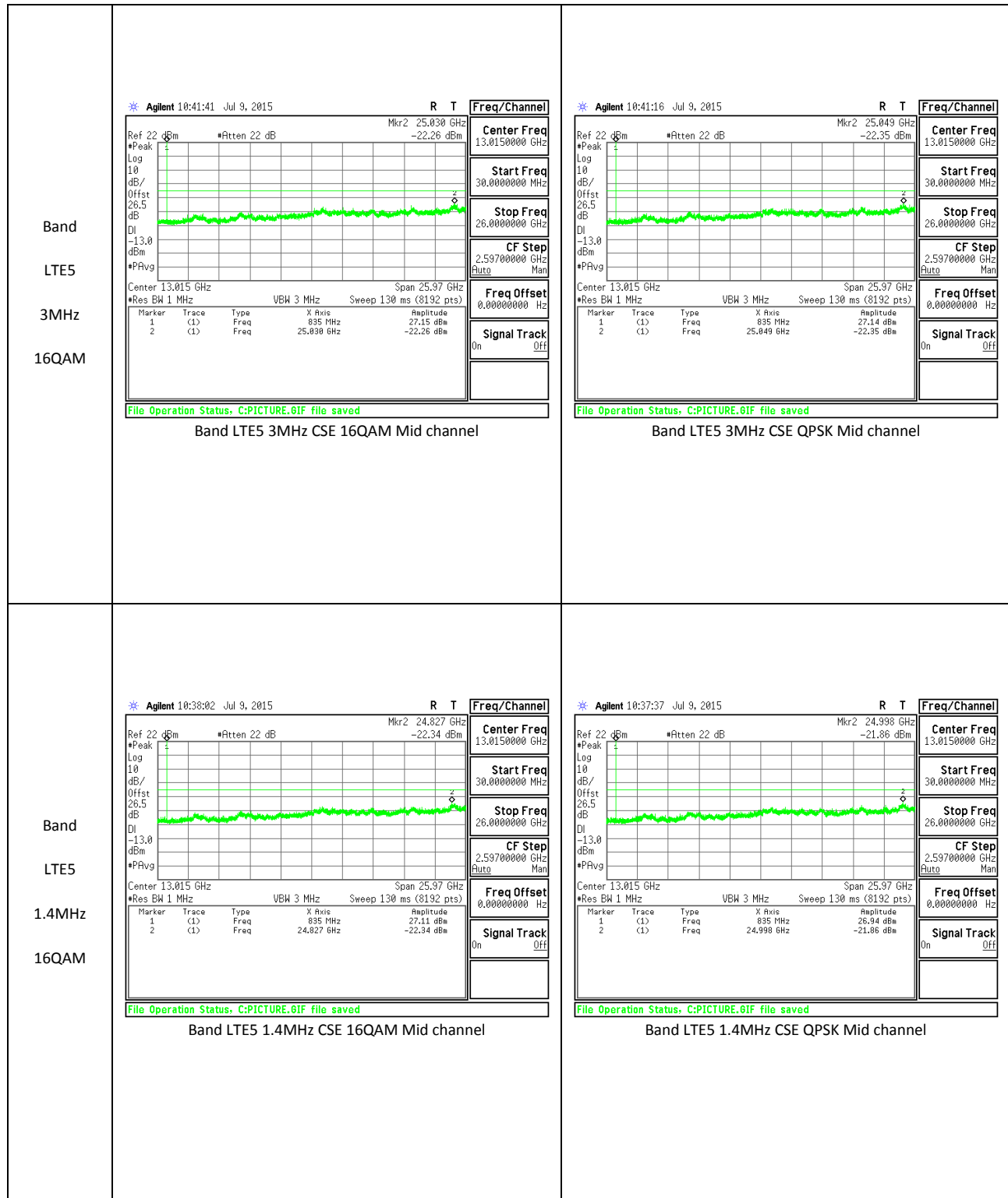
<p>Band LTE4 20MHz 16QAM</p>	 <p style="text-align: center;">Band LTE4 20MHz CSE 16QAM Mid channel</p>	 <p style="text-align: center;">Band LTE4 20MHz CSE QPSK Mid channel</p>
<p>Band LTE4 15MHz 16QAM</p>	 <p style="text-align: center;">Band LTE4 15MHz CSE 16QAM Mid channel</p>	 <p style="text-align: center;">Band LTE4 15MHz CSE QPSK Mid channel</p>

<p>Band LTE4 10MHz 16QAM</p>	 <p>Band LTE4 10MHz CSE 16QAM Mid channel</p>	 <p>Band LTE4 10MHz CSE QPSK Mid channel</p>
<p>Band LTE4 5MHz 16QAM</p>	 <p>Band LTE4 5MHz CSE 16QAM Mid channel</p>	 <p>Band LTE4 5MHz CSE QPSK Mid channel</p>

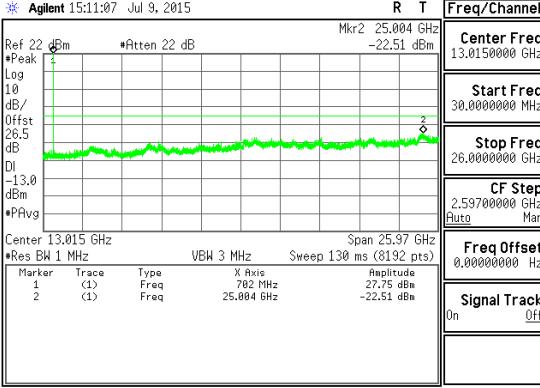
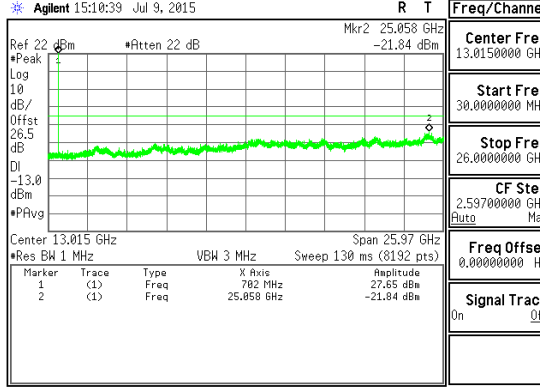
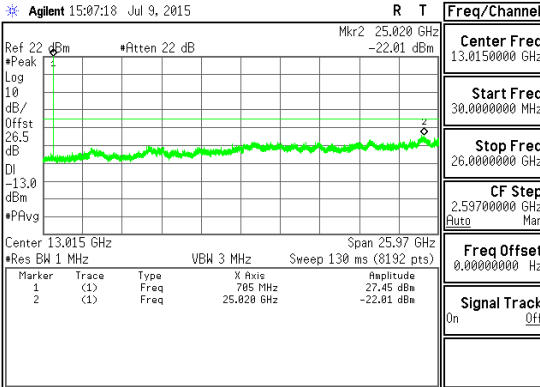
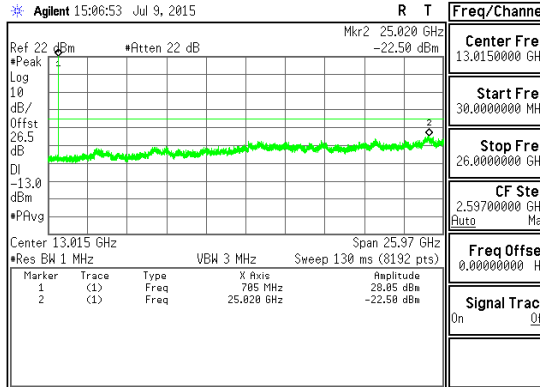
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<p>Band LTE4 1.4MHz 16QAM</p>	 <p style="text-align: center;">Band LTE4 1.4MHz CSE 16QAM Mid channel</p>	 <p style="text-align: center;">Band LTE4 1.4MHz CSE QPSK Mid channel</p>

**LTE Band 5**

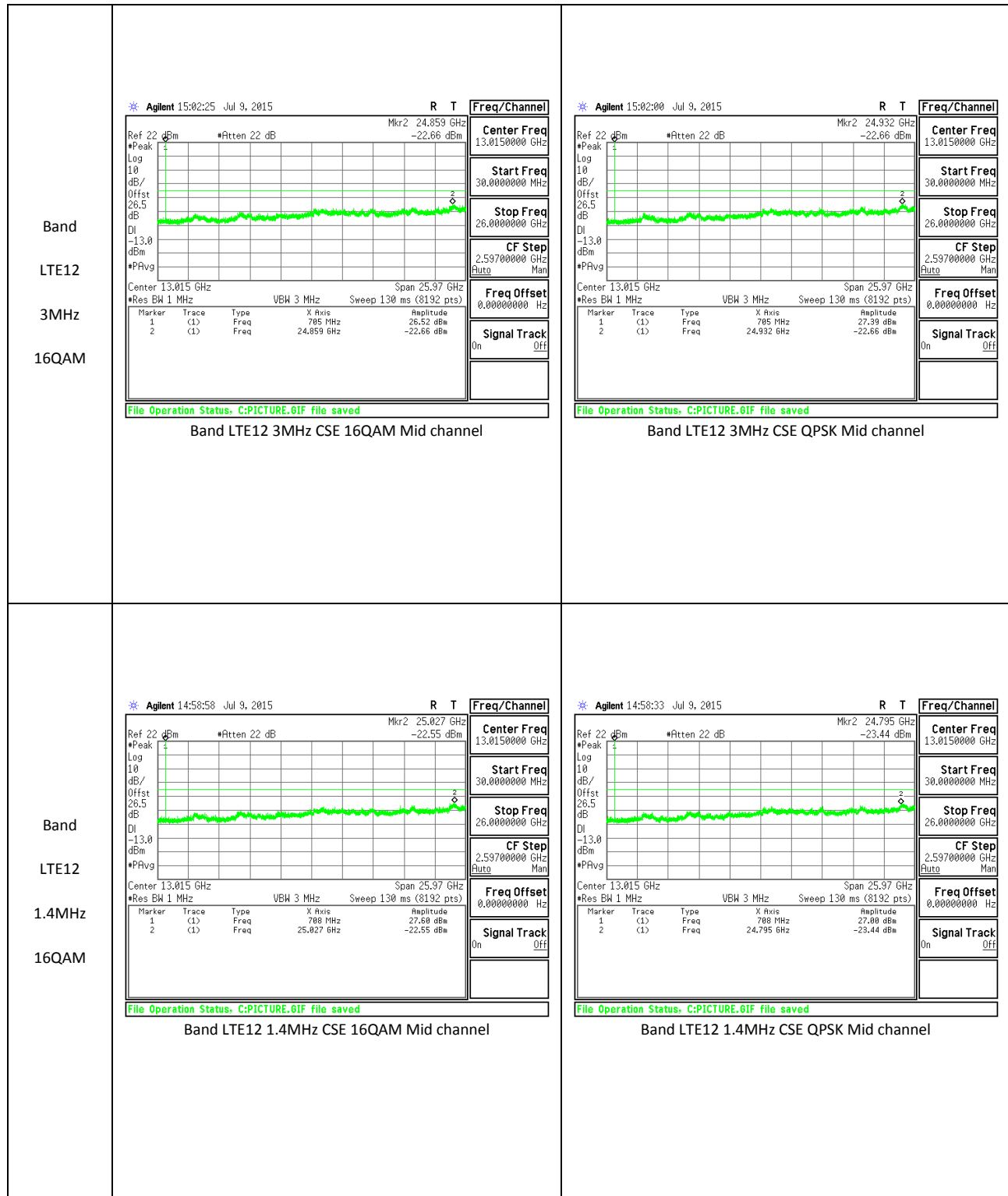
<p>Band LTE5 10MHz 16QAM</p>	 <p>Agilent 10:49:02 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE5 10MHz CSE 16QAM Mid channel</p>	 <p>Agilent 10:48:35 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE5 10MHz CSE QPSK Mid channel</p>
<p>Band LTE5 5MHz 16QAM</p>	 <p>Agilent 10:45:16 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE5 5MHz CSE 16QAM Mid channel</p>	 <p>Agilent 10:44:49 Jul 9, 2015</p> <p>Center Freq 13.0150000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.0000000 GHz</p> <p>CF Step 2.59700000 GHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track Off</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE5 5MHz CSE QPSK Mid channel</p>







**LTE Band 12**

<p>Band LTE12 10MHz 16QAM</p>	 <p>Agilent 15:11:07 Jul 9, 2015</p> <p>Center Freq: 13.0150000 GHz      Start Freq: 30.0000000 MHz      Stop Freq: 26.0000000 GHz      CF Step: 2.59700000 GHz      Freq Offset: 0.00000000 Hz</p> <p>Marker 1: 25.004 GHz, -22.51 dBm</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE12 10MHz CSE 16QAM Mid channel</p>	 <p>Agilent 15:10:39 Jul 9, 2015</p> <p>Center Freq: 13.0150000 GHz      Start Freq: 30.0000000 MHz      Stop Freq: 26.0000000 GHz      CF Step: 2.59700000 GHz      Freq Offset: 0.00000000 Hz</p> <p>Marker 1: 25.058 GHz, -21.84 dBm</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE12 10MHz CSE QPSK Mid channel</p>
<p>Band LTE12 5MHz 16QAM</p>	 <p>Agilent 15:07:18 Jul 9, 2015</p> <p>Center Freq: 13.0150000 GHz      Start Freq: 30.0000000 MHz      Stop Freq: 26.0000000 GHz      CF Step: 2.59700000 GHz      Freq Offset: 0.00000000 Hz</p> <p>Marker 1: 25.020 GHz, -22.01 dBm</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE12 5MHz CSE 16QAM Mid channel</p>	 <p>Agilent 15:06:53 Jul 9, 2015</p> <p>Center Freq: 13.0150000 GHz      Start Freq: 30.0000000 MHz      Stop Freq: 26.0000000 GHz      CF Step: 2.59700000 GHz      Freq Offset: 0.00000000 Hz</p> <p>Marker 1: 25.020 GHz, -22.58 dBm</p> <p>File Operation Status: C:PICTURE.6IF file saved</p> <p>Band LTE12 5MHz CSE QPSK Mid channel</p>





**LTE Band 30**

<p>Band LTE30 10MHz 16QAM</p>	 <p>Band LTE17 10MHz CSE 16QAM Mid channel</p>	 <p>Band LTE17 10MHz CSE QPSK Mid channel</p>
<p>Band LTE30 5MHz 16QAM</p>	 <p>Band LTE17 5MHz CSE 16QAM Mid channel</p>	 <p>Band LTE17 5MHz CSE QPSK Mid channel</p>

## **9.4. FREQUENCY STABILITY**

### **RULE PART(S)**

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213

### **LIMITS**

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  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.

§90.213 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### **TEST PROCEDURE**

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

### **MODES TESTED**

GSM, WCDMA, and LTE

### **RESULTS**

See the following pages.

### 9.4.1. FREQUENCY STABILITY RESULTS

#### GSM 850

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600019	-0.006	2.5
3.80	40	836.600018	-0.006	2.5
3.80	30	836.600017	-0.004	2.5
<b>3.80</b>	<b>20</b>	<b>836.600014</b>	<b>0</b>	<b>2.5</b>
3.80	10	836.600018	-0.006	2.5
3.80	0	836.600019	-0.006	2.5
3.80	-10	836.600023	-0.011	2.5
3.80	-20	836.600016	-0.002	2.5
3.80	-30	836.600016	-0.002	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>3.80</b>	<b>20</b>	<b>836.600014</b>	<b>0</b>	<b>2.5</b>
4.37	20	836.6000129	0.001	2.5
3.23	20	836.6000165	-0.003	2.5

**GSM 1900**

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999975	0.000	2.5
3.80	40	1879.999967	0.004	2.5
3.80	30	1879.999972	0.002	2.5
<b>3.80</b>	<b>20</b>	<b>1879.999976</b>	<b>0</b>	<b>2.5</b>
3.80	10	1879.999980	-0.002	2.5
3.80	0	1879.999982	-0.003	2.5
3.80	-10	1879.999982	-0.004	2.5
3.80	-20	1879.999983	-0.004	2.5
3.80	-30	1879.999982	-0.003	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>3.80</b>	<b>20</b>	<b>1879.999976</b>	<b>0</b>	<b>2.5</b>
4.37	20	1879.999973	0.002	2.5
3.23	20	1879.999979	-0.002	2.5

**LTE Band 4**

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500006	-0.001	2.5
3.80	40	1732.500005	0.000	2.5
3.80	30	1732.500005	0.000	2.5
<b>3.80</b>	<b>20</b>	<b>1732.500005</b>	<b>0</b>	<b>2.5</b>
3.80	10	1732.500004	0.000	2.5
3.80	0	1732.500005	0.000	2.5
3.80	-10	1732.500005	0.000	2.5
3.80	-20	1732.500005	0.000	2.5
3.80	-30	1732.500007	-0.001	2.5

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>3.80</b>	<b>20</b>	<b>1732.500005</b>	<b>0</b>	<b>2.5</b>
4.37	20	1732.500005	0.000	2.5
3.23(End of volt)	20	1732.500005	0.000	2.5

**LTE Band 12**

Reference Frequency: Cellular Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.499997	-0.001	2.5
3.80	40	707.499997	-0.001	2.5
3.80	30	707.499997	-0.001	2.5
<b>3.80</b>	<b>20</b>	<b>707.499996</b>	<b>0</b>	2.5
3.80	10	707.499997	-0.001	2.5
3.80	0	707.499995	0.001	2.5
3.80	-10	707.499997	-0.001	2.5
3.80	-20	707.499996	0.000	2.5
3.80	-30	707.499995	0.001	2.5
Reference Frequency: Cellular Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>3.80</b>	<b>20</b>	<b>707.499996</b>	<b>0</b>	<b>2.5</b>
3.23	20	707.499994	0.003	2.5
4.37	20	707.499997	-0.001	2.5

**LTE Band 30**

Reference Frequency: PCS Mid Channel      2310      MHz @ 20°C Limit: to stay +/- 2.5 ppm =      5775.000      Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2309.999991	0.001	2.5
3.80	40	2309.999992	0.001	2.5
3.80	30	2309.999992	0.001	2.5
<b>3.80</b>	<b>20</b>	<b>2309.999994</b>	<b>0</b>	<b>2.5</b>
3.80	10	2309.999991	0.001	2.5
3.80	0	2309.999991	0.001	2.5
3.80	-10	2309.999993	0.000	2.5
3.80	-20	2309.999992	0.001	2.5
3.80	-30	2309.999990	0.002	2.5

Reference Frequency: PCS Mid Channel      2310      MHz @ 20°C Limit: to stay +/- 2.5 ppm =      5775.000      Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>3.80</b>	<b>20</b>	<b>2309.999994</b>	<b>0</b>	<b>2.5</b>
4.37	20	2309.999989	0.002	2.5
3.23	20	2309.999991	0.001	2.5



## 10. RADIATED TEST RESULTS

### 10.2. RADIATED POWER (ERP & EIRP)

#### RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27

#### LIMITS

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

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

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

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

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

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

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

#### TEST PROCEDURE

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

For peak power measurement with a PSA:

a) Set the RBW  $\geq$  OBW; b) Set VBW  $\geq 3 \times$  RBW; c) Set span  $\geq 2 \times$  RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points  $\geq$  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  $\geq 3 \times$  RBW; d) Set number of points in sweep  $\geq 2 \times$  span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle  $\geq 98$ ; 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

GSM, WCDMA, and LTE

#### TEST RESULTS

**10.1.1. ERP/EIRP Results**

**GSM**

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	30.21	1049.54
		661	1880	29.88	972.75
		810	1909.8	30.15	1035.14
	EGPRS	512	1850.2	26.78	476.43
		661	1880	26.59	456.04
		810	1909.8	26.78	476.43
GSM850	GPRS	128	824.2	28.17	656.15
		190	836.6	28.02	633.87
		251	848.8	28.10	645.65
	EGPRS	128	824.2	24.03	252.93
		190	836.6	24.13	258.82
		251	848.8	24.26	266.69

**WCDMA**

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	26.63	460.26
		9400	1880	25.77	377.57
		9538	1907.6	26.09	406.44
	HSDPA	9262	1852.4	26.67	464.52
		9400	1880	26.04	401.79
		9538	1907.6	26.07	404.58
Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	19.502	89.17
		4183	836.6	20.043	101
		4233	846.6	19.733	94.04
	HSDPA	4132	826.4	19.351	86.12
		4183	836.6	19.411	87.32
		4233	846.6	19.601	91.22

**LTE Band 2**

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	27.73	592.93
			1/0	1880	26.08	405.51
			1/0	1900	26.77	475.34
		16QAM	1/0	1860	26.75	473.15
			1/0	1880	25.1	323.59
			1/0	1900	25.85	384.59
LTE2	15	QPSK	1/0	1857.5	27.85	609.54
			1/0	1880	26.32	428.55
			1/0	1902.5	26.78	476.43
		16QAM	1/0	1857.5	26.88	487.53
			1/0	1880	25.35	342.77
			1/0	1902.5	25.86	385.48
LTE2	10	QPSK	1/0	1855	27.83	606.74
			1/0	1880	26.39	435.51
			1/0	1905	26.8	478.63
		16QAM	1/0	1855	26.83	481.95
			1/0	1880	25.38	345.14
			1/0	1905	25.85	384.59
LTE2	5	QPSK	1/0	1852.5	27.9	616.6
			1/0	1880	25.79	379.31
			1/0	1907.5	26.83	481.95
		16QAM	1/0	1852.5	26.99	500.03
			1/0	1880	24.84	304.79
			1/0	1907.5	25.86	385.48

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	27.90	616.6
			1/0	1880	25.95	393.55
			1/0	1908.5	26.84	483.06
		16QAM	1/0	1851.5	26.98	498.88
			1/0	1880	24.9	309.03
			1/0	1908.5	25.85	384.59
LTE2	1.4	QPSK	1/0	1850.7	27.89	615.18
			1/0	1880	25.80	380.19
			1/0	1909.3	26.83	481.95
		16QAM	1/0	1850.7	26.97	497.74
			1/0	1880	24.79	301.3
			1/0	1909.3	25.87	386.37

**LTE Band 4**

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	26.99425	500.52
			1/0	1732.5	26.53105	449.89
			1/0	1745	26.70785	468.58
		16QAM	1/0	1720	26.10425	407.78
			1/0	1732.5	25.55105	359.01
			1/0	1745	25.59785	362.9
LTE4	15	QPSK	1/0	1717.5	27.01791	503.26
			1/0	1732.5	27.01105	502.46
			1/0	1747.5	26.69419	467.11
		16QAM	1/0	1717.5	26.12791	410.01
			1/0	1732.5	26.02105	400.04
			1/0	1747.5	25.66419	368.48
LTE4	10	QPSK	1/0	1715	26.92105	492.16
			1/0	1732.5	26.86105	485.41
			1/0	1750	26.761262	474.38
		16QAM	1/0	1715	26.05105	402.81
			1/0	1732.5	26.50105	446.79
			1/0	1750	25.711262	372.5
LTE4	5	QPSK	1/0	1712.5	27.00425	501.68
			1/0	1732.5	27.01105	502.46
			1/0	1752.5	26.76785	475.1
		16QAM	1/0	1712.5	26.02425	400.34
			1/0	1732.5	26.11105	408.42
			1/0	1752.5	25.55785	359.57

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	27.01791	503.26
			1/0	1732.5	26.91105	491.03
			1/0	1753.5	26.26419	423.08
		16QAM	1/0	1711.5	26.16791	413.8
			1/0	1732.5	26.06105	403.74
			1/0	1753.5	25.37419	344.68
LTE4	1.4	QPSK	1/0	1710.7	26.92105	492.16
			1/0	1732.5	26.95105	495.57
			1/0	1754.3	26.161262	413.17
		16QAM	1/0	1710.7	26.06105	403.74
			1/0	1732.5	26.06105	403.74
			1/0	1754.3	25.001262	316.32

**LTE Band 5**

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	20.551	113.53
			1/0	836.5	19.721	93.78
			1/0	844	19.211	83.39
		16QAM	1/0	829	19.461	88.33
			1/0	836.5	18.701	74.15
			1/0	844	18.311	67.78
LTE5	5	QPSK	1/0	826.5	20.411	109.93
			1/0	836.5	19.541	89.97
			1/0	846.5	19.391	86.92
		16QAM	1/0	826.5	19.381	86.72
			1/0	836.5	18.581	72.13
			1/0	846.5	18.421	69.52
LTE5	3	QPSK	1/0	825.5	20.371	108.92
			1/0	836.5	19.531	89.76
			1/0	847.5	19.181	82.81
		16QAM	1/0	825.5	19.341	85.92
			1/0	836.5	18.511	70.97
			1/0	847.5	18.211	66.24
LTE5	1.4	QPSK	1/0	824.7	20.391	109.42
			1/0	836.5	19.511	89.35
			1/0	848.3	19.201	83.2
		16QAM	1/0	824.7	19.421	87.52
			1/0	836.5	18.531	71.3
			1/0	848.3	18.301	67.62



**LTE Band 12**

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	10	QPSK	1/0	704	20.861	121.93
			1/0	707.5	21.201	131.86
			1/0	711	21.251	133.38
		16QAM	1/0	704	19.981	99.56
			1/0	707.5	20.221	105.22
			1/0	711	20.271	106.44
LTE12	5	QPSK	1/0	701.5	21.021	126.5
			1/0	707.5	21.081	128.26
			1/0	713.5	21.151	130.35
		16QAM	1/0	701.5	20.101	102.35
			1/0	707.5	20.091	102.12
			1/0	713.5	20.191	104.5
LTE12	3	QPSK	1/0	700.5	21.011	126.21
			1/0	707.5	21.171	130.95
			1/0	714.5	21.241	133.08
		16QAM	1/0	700.5	19.991	99.79
			1/0	707.5	20.001	100.02
			1/0	714.5	20.251	105.95
LTE12	1.4	QPSK	1/0	699.7	21.041	127.09
			1/0	707.5	21.101	128.85
			1/0	715.3	21.251	133.38
		16QAM	1/0	699.7	20.021	100.48
			1/0	707.5	20.061	101.41
			1/0	715.3	20.221	105.22

**LTE Band 17**

**Measured Results**

LTE Band 17 is covered by LTE Band 12 due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

**LTE Band 30**

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE30	10	QPSK	1/0	2310	21	125.89
		16QAM	1/0	2310	20.15	103.51
LTE30	5	QPSK	1/0	2307.5	20.50	112.20
			1/0	2310	20.70	117.49
			1/0	2312.5	20.40	109.65
		16QAM	1/0	2307.5	19.85	96.61
			1/0	2310	20.05	125.89
			1/0	2312.5	19.65	103.51

**10.1.2. ERP/EIRP PLOTS**

**GSM**

Band GSM 1900 EGPRS	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		7/9/2015						
	<b>Test Engineer:</b>		R.Alegre						
	<b>Configuration:</b>		EUT Only						
	<b>Location:</b>		Chamber B						
	<b>Mode:</b>		EGPRS 1900						
	<b>Test Equipment:</b>								
	Receiving: Horn T345 and Chamber B SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	<b>f</b> <b>MHz</b>	<b>SG reading</b> <b>(dBm)</b>	<b>Ant. Pol.</b> <b>(H/V)</b>	<b>Cable Loss</b> <b>(dB)</b>	<b>Antenna Gain</b> <b>(dBi)</b>	<b>EIRP</b> <b>(dBm)</b>	<b>Limit</b> <b>(dBm)</b>	<b>Margin</b> <b>(dB)</b>	<b>Notes</b>
	Low Ch								
	1850.20	5.96	V	0.9	8.0	13.07	33.0	-19.9	
	1850.20	19.67	H	0.9	8.0	26.78	33.0	-6.2	
	Mid Ch								
	1880.00	6.01	V	0.9	8.0	13.12	33.0	-19.9	
	1880.00	19.48	H	0.9	8.0	26.59	33.0	-6.4	
	High Ch								
	1909.80	5.90	V	0.9	8.0	13.01	33.0	-20.0	
	1909.80	19.67	H	0.9	8.0	26.78	33.0	-6.2	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								

Band  GSM  1900  GPRS	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																
	<b>Company:</b>		LG																																																																																														
	<b>Project #:</b>		15I21238																																																																																														
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	<b>Test Equipment:</b>																																																																																																
	Receiving: Horn T345 and Chamber B SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse																																																																																																
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																									
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Band  GSM  850  EGPRS	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber A</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		8/4/2015						
	<b>Test Engineer:</b>		A. Escamilla						
	<b>Configuration:</b>		EUT only						
	<b>Mode:</b>		EGPRS850						
	<b>Test Equipment:</b>		Receiving: Sunol T130, and 5m Chamber A 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
	<b>Low Ch</b>								
824.20	16.28	V	0.9	0.0	15.38	38.5	-23.1		
824.20	24.93	H	0.9	0.0	24.03	38.5	-14.4		
<b>Mid Ch</b>									
836.60	16.55	V	0.9	0.0	15.65	38.5	-22.8		
836.60	25.03	H	0.9	0.0	24.13	38.5	-14.3		
<b>High Ch</b>									
848.80	16.75	V	0.9	0.0	15.85	38.5	-22.6		
848.80	25.16	H	0.9	0.0	24.26	38.5	-14.2		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band  GSM  850  GPRS	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber A</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		8/4/2015						
	<b>Test Engineer:</b>		A. Escamilla						
	<b>Configuration:</b>		EUT only						
	<b>Mode:</b>		GPRS850						
	<b>Test Equipment:</b>								
	Receiving: Sunol T130, and 5m Chamber A N-type Cable								
	Substitution: Dipole T273, 4ft SMA Cable Warehouse.								
	<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
	<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
	Low Ch								
	824.20	21.78	V	0.9	0.0	20.88	38.5	-17.6	
	824.20	29.07	H	0.9	0.0	28.17	38.5	-10.3	
	Mid Ch								
	836.60	20.68	V	0.9	0.0	19.78	38.5	-18.7	
	836.60	28.92	H	0.9	0.0	28.02	38.5	-10.4	
	High Ch								
	848.80	20.97	V	0.9	0.0	20.07	38.5	-18.4	
	848.80	29.00	H	0.9	0.0	28.10	38.5	-10.4	
	Rev. 3.17.11								
	Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

**WCDMA**

Band Band 2 HSDPA	<b>High Frequency Substitution Measurement UL Verification Services, Inc.</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		7/9/2015						
	<b>Test Engineer:</b>		R. Alegre						
	<b>Configuration:</b>		EUT Only						
	<b>Location:</b>		Chamber B						
	<b>Mode:</b>		HSDPA B2						
	<b>Test Equipment:</b>								
	Receiving: Horn T345, and Chamber B SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>EIRP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
	<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBi)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
	<b>Low Ch</b>								
	1852.20	2.64	V	0.9	8.0	9.75	33.0	-23.2	
	1852.20	19.56	H	0.9	8.0	26.67	33.0	-6.3	
	<b>Mid Ch</b>								
	1880.00	2.21	V	0.9	8.0	9.32	33.0	-23.7	
	1880.00	18.93	H	0.9	8.0	26.04	33.0	-7.0	
	<b>High Ch</b>								
	1907.60	2.75	V	0.9	8.0	9.86	33.0	-23.1	
	1907.60	18.96	H	0.9	8.0	26.07	33.0	-6.9	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								

Band Band 2 REL99	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/9/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber B <b>Mode:</b> Rel99 B2								
	<b>Test Equipment:</b> Receiving: Horn T345, and Chamber B SMA Cables Substitution: Horn T59 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								
	1852.20	2.65	V	0.9	8.0	9.76	33.0	-23.2	
	1852.20	19.52	H	0.9	8.0	26.63	33.0	-6.4	
	Mid Ch								
	1880.00	2.23	V	0.9	8.0	9.34	33.0	-23.7	
	1880.00	18.66	H	0.9	8.0	25.77	33.0	-7.2	
High Ch									
1907.60	2.76	V	0.9	8.0	9.87	33.0	-23.1		
1907.60	18.98	H	0.9	8.0	26.09	33.0	-6.9		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									



Band Band 5 HSDPA	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<p><b>Company:</b> LG</p> <p><b>Project #:</b> 15I21238</p> <p><b>Date:</b> 7/9/2015</p> <p><b>Test Engineer:</b> R. Alegre</p> <p><b>Configuration:</b> EUT only</p> <p><b>Mode:</b> WCDMA Band 5 HSDPA</p> <p><b>Test Equipment:</b>                  Receiving: Sunol T243, and 3m Chamber B N-type Cable                  Substitution: Dipole T273, 4ft SMA Cable Warehouse.</p>								
	<b>f</b> MHz	<b>SG reading</b> (dBm)	<b>Ant. Pol.</b> (H/V)	<b>Cable Loss</b> (dB)	<b>Antenna Gain</b> (dBd)	<b>ERP</b> (dBm)	<b>Limit</b> (dBm)	<b>Margin</b> (dB)	<b>Notes</b>
	<b>Low Ch</b>								
	826.40	16.17	V	0.9	0.0	15.32	38.5	-23.1	
	826.40	20.20	H	0.9	0.0	19.35	38.5	-19.1	
	<b>Mid Ch</b>								
	836.60	16.64	V	0.9	0.0	15.79	38.5	-22.7	
	836.60	20.26	H	0.9	0.0	19.41	38.5	-19.0	
	<b>High Ch</b>								
	846.60	16.71	V	0.9	0.0	15.86	38.5	-22.6	
	846.60	20.45	H	0.9	0.0	19.60	38.5	-18.8	
	Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

Band Band 5 REL99	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		7/9/2015						
	<b>Test Engineer:</b>		R. Alegre						
	<b>Configuration:</b>		EUT only						
	<b>Mode:</b>		REL99 B5 FUND						
	<b>Test Equipment:</b>		Receiving: Sunol T243, and 3m Chamber B 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								
826.40	16.27	V	0.9	0.0	15.42	38.5	-23.0		
826.40	20.35	H	0.9	0.0	19.50	38.5	-18.9		
Mid Ch									
836.60	16.78	V	0.9	0.0	15.93	38.5	-22.5		
836.60	20.89	H	0.9	0.0	20.04	38.5	-18.4		
High Ch									
846.60	16.80	V	0.9	0.0	15.95	38.5	-22.5		
846.60	20.58	H	0.9	0.0	19.73	38.5	-18.7		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

**LTE Band 2**

Band  LTE2  20MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																	
	<b>Company:</b>		LG																																																																																															
	<b>Project #:</b>		15I21238																																																																																															
	<b>Date:</b>		7/9/2015																																																																																															
	<b>Test Engineer:</b>		R.Alegre																																																																																															
	<b>Configuration:</b>		EUT Only																																																																																															
	<b>Location:</b>		Chamber B																																																																																															
	<b>Mode:</b>		LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth																																																																																															
	<b>Test Equipment:</b>		Receiving: Horn T345 and Chamber B SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse																																																																																															
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Band  LTE2  20MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																	
	<b>Company:</b>		LG																																																																																															
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Band  LTE2  15MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																					
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**LTE Band 4**

Band  LTE4  20MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																	
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1732.50	11.77	V	0.9	8.2	19.04	30.0	-11.0																																																																																											
1732.50	18.28	H	0.9	8.2	25.55	30.0	-4.4																																																																																											
High Ch																																																																																																		
1745.00	11.55	V	0.9	8.1	18.75	30.0	-11.3																																																																																											
1745.00	18.40	H	0.9	8.1	25.60	30.0	-4.4																																																																																											

Band  LTE4  20MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber C <b>Mode:</b> LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth								
	<b>Test Equipment:</b> Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1720.00	13.56	V	0.9	8.2	20.90	30.0	-9.1	
	1720.00	19.65	H	0.9	8.2	26.99	30.0	-3.0	
	Mid Ch								
	1732.50	12.73	V	0.9	8.2	20.00	30.0	-10.0	
1732.50	19.26	H	0.9	8.2	26.53	30.0	-3.5		
High Ch									
1745.00	12.66	V	0.9	8.1	19.86	30.0	-10.1		
1745.00	19.51	H	0.9	8.1	26.71	30.0	-3.3		



Band  LTE4  15MHz  16QAM	<b>High Frequency Substitution Measurement UL Verification Services, Inc.</b>																																																																																																					
	<b>Company:</b>		LG																																																																																																			
	<b>Project #:</b>		15I21238																																																																																																			
	<b>Date:</b>		7/13/2015																																																																																																			
	<b>Test Engineer:</b>		R.Alegre																																																																																																			
	<b>Configuration:</b>		EUT Only																																																																																																			
	<b>Location:</b>		Chamber C																																																																																																			
	<b>Mode:</b>		LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth																																																																																																			
	<b>Test Equipment:</b>		Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse																																																																																																			
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																														
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1717.50	12.49	V	0.9	8.2	19.84	30.0	-10.2																																																																																															
1717.50	18.78	H	0.9	8.2	26.13	30.0	-3.9																																																																																															
Mid Ch																																																																																																						
1732.50	11.71	V	0.9	8.2	18.98	30.0	-11.0																																																																																															
1732.50	18.75	H	0.9	8.2	26.02	30.0	-4.0																																																																																															
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1747.50	11.44	V	0.9	8.1	18.63	30.0	-11.4																																																																																															
1747.50	18.47	H	0.9	8.1	25.66	30.0	-4.3																																																																																															

Band  LTE4  15MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>									
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber C <b>Mode:</b> LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth									
	<b>Test Equipment:</b> Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse									
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)		
	Low Ch									
	1717.50	13.47	V	0.9	8.2	20.82	30.0	-9.2		
	1717.50	19.67	H	0.9	8.2	27.02	30.0	-3.0		
	Mid Ch									
	1732.50	12.70	V	0.9	8.2	19.97	30.0	-10.0		
1732.50	19.74	H	0.9	8.2	27.01	30.0	-3.0			
High Ch										
1747.50	12.42	V	0.9	8.1	19.61	30.0	-10.4			
1747.50	19.50	H	0.9	8.1	26.69	30.0	-3.3			

Band  LTE4  10MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																					
	<b>Company:</b>		LG																																																																																																			
	<b>Project #:</b>		15I21238																																																																																																			
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	<b>Test Engineer:</b>		R.Alegre																																																																																																			
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																														
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1750.00	11.53	V	0.9	8.1	18.72	30.0	-11.3																																																																																															
1750.00	18.52	H	0.9	8.1	25.71	30.0	-4.3																																																																																															

Band  LTE4  10MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>									
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber C <b>Mode:</b> LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth									
	<b>Test Equipment:</b> Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse									
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)		
	Low Ch									
	1715.00	13.38	V	0.9	8.2	20.65	30.0	-9.3		
	1715.00	19.65	H	0.9	8.2	26.92	30.0	-3.1		
	Mid Ch									
	1732.50	12.75	V	0.9	8.2	20.02	30.0	-10.0		
1732.50	19.59	H	0.9	8.2	26.86	30.0	-3.1			
High Ch										
1750.00	12.59	V	0.9	8.1	19.78	30.0	-10.2			
1750.00	19.57	H	0.9	8.1	26.76	30.0	-3.2			

Band  LTE4  5MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																	
	<b>Company:</b>		LG																																																																																															
	<b>Project #:</b>		15I21238																																																																																															
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	<b>Test Engineer:</b>		R.Alegre																																																																																															
	<b>Configuration:</b>		EUT Only																																																																																															
	<b>Location:</b>		Chamber C																																																																																															
	<b>Mode:</b>		LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth																																																																																															
	<b>Test Equipment:</b>		Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse																																																																																															
	<table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9"><b>Low Ch</b></td> </tr> <tr> <td>1712.50</td> <td>12.54</td> <td>V</td> <td>0.9</td> <td>8.2</td> <td>19.88</td> <td>30.0</td> <td>-10.1</td> <td></td> </tr> <tr> <td>1712.50</td> <td>18.68</td> <td>H</td> <td>0.9</td> <td>8.2</td> <td>26.02</td> <td>30.0</td> <td>-4.0</td> <td></td> </tr> <tr> <td colspan="9"><b>Mid Ch</b></td> </tr> <tr> <td>1732.50</td> <td>11.75</td> <td>V</td> <td>0.9</td> <td>8.2</td> <td>19.02</td> <td>30.0</td> <td>-11.0</td> <td></td> </tr> <tr> <td>1732.50</td> <td>18.84</td> <td>H</td> <td>0.9</td> <td>8.2</td> <td>26.11</td> <td>30.0</td> <td>-3.9</td> <td></td> </tr> <tr> <td colspan="9"><b>High Ch</b></td> </tr> <tr> <td>1752.50</td> <td>11.38</td> <td>V</td> <td>0.9</td> <td>8.1</td> <td>18.58</td> <td>30.0</td> <td>-11.4</td> <td></td> </tr> <tr> <td>1752.50</td> <td>18.36</td> <td>H</td> <td>0.9</td> <td>8.1</td> <td>25.56</td> <td>30.0</td> <td>-4.4</td> <td></td> </tr> </tbody> </table>									f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	<b>Low Ch</b>									1712.50	12.54	V	0.9	8.2	19.88	30.0	-10.1		1712.50	18.68	H	0.9	8.2	26.02	30.0	-4.0		<b>Mid Ch</b>									1732.50	11.75	V	0.9	8.2	19.02	30.0	-11.0		1732.50	18.84	H	0.9	8.2	26.11	30.0	-3.9		<b>High Ch</b>									1752.50	11.38	V	0.9	8.1	18.58	30.0	-11.4		1752.50	18.36	H	0.9	8.1	25.56	30.0	-4.4
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																										
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Band  LTE4  5MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>									
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber C <b>Mode:</b> LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth									
	<b>Test Equipment:</b> Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse									
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)		
	Low Ch									
	1712.50	13.55	V	0.9	8.2	20.89	30.0	-9.1		
	1712.50	19.66	H	0.9	8.2	27.00	30.0	-3.0		
	Mid Ch									
	1732.50	12.74	V	0.9	8.2	20.01	30.0	-10.0		
1732.50	19.74	H	0.9	8.2	27.01	30.0	-3.0			
High Ch										
1752.50	12.57	V	0.9	8.1	19.77	30.0	-10.2			
1752.50	19.57	H	0.9	8.1	26.77	30.0	-3.2			

Band  LTE4  3MHz  16QAM	<b>High Frequency Substitution Measurement UL Verification Services, Inc.</b>																																																																																																					
	<b>Company:</b>		LG																																																																																																			
	<b>Project #:</b>		15I21238																																																																																																			
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	<b>Mode:</b>		LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth																																																																																																			
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Band  LTE4  3MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>																																																																																																					
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1753.50	12.54	V	0.9	8.1	19.73	30.0	-10.3																																																																																															
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Band  LTE4  1.4MHz  16QAM	<b>High Frequency Substitution Measurement UL Verification Services, Inc.</b>																																																																																																					
	<b>Company:</b>		LG																																																																																																			
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Band  LTE4  1.4MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>									
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Location:</b> Chamber C <b>Mode:</b> LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth									
	<b>Test Equipment:</b> Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59, 4ft SMA Cable Warehouse									
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes	
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)		
	Low Ch									
	1710.70	13.50	V	0.9	8.2	20.77	30.0	-9.2		
	1710.70	19.65	H	0.9	8.2	26.92	30.0	-3.1		
	Mid Ch									
	1732.50	12.71	V	0.9	8.2	19.98	30.0	-10.0		
1732.50	19.68	H	0.9	8.2	26.95	30.0	-3.0			
High Ch										
1754.30	12.40	V	0.9	8.1	19.59	30.0	-10.4			
1754.30	18.97	H	0.9	8.1	26.16	30.0	-3.8			

**LTE Band 5**

Band  LTE5  10MHz  16QAM	<b>High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b>		LG						
	<b>Project #:</b>		15I21238						
	<b>Date:</b>		7/11/2015						
	<b>Test Engineer:</b>		R.Alegre						
	<b>Configuration:</b>		EUT only						
	<b>Mode:</b>		LTE_16QAM Band 5 Fundamentals, 10MHz Bandwidth						
	<b>Test Equipment:</b>								
	Receiving: Sunol T185, and 3m Chamber C N-type Cable								
	Substitution: Dipole T273, 4ft SMA Cable Warehouse.								
	<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
	<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
	<b>Low Ch</b>								
	829.00	11.11	V	0.9	0.0	10.21	38.5	-28.2	
	829.00	20.36	H	0.9	0.0	19.46	38.5	-19.0	
	<b>Mid Ch</b>								
	836.50	10.98	V	0.9	0.0	10.08	38.5	-28.4	
	836.50	19.60	H	0.9	0.0	18.70	38.5	-19.7	
	<b>High Ch</b>								
	844.00	10.91	V	0.9	0.0	10.01	38.5	-28.4	
	844.00	19.21	H	0.9	0.0	18.31	38.5	-20.1	
	Rev. 3.17.11								
	Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

Band  LTE5  10MHz  QPSK	<p><b>High Frequency Substitution Measurement</b>  <b>UL Verification Services, Inc. Chamber C</b></p>																																																																																										
<p><b>Company:</b> LG  <b>Project #:</b> 15I21238  <b>Date:</b> 7/11/2015  <b>Test Engineer:</b> R.Alegre  <b>Configuration:</b> EUT only  <b>Mode:</b> LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth</p>																																																																																											
<p><b>Test Equipment:</b>                  Receiving: Sunol T185, and 3m Chamber C N-type Cable                  Substitution: Dipole T273, 4ft SMA Cable Warehouse.</p>																																																																																											
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Band  LTE5  5MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																										
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/11/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT only <b>Mode:</b> LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth																																																																																										
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Band  LTE5  5MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																										
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Band LTE5 3MHz 16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																										
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Band  LTE5  3MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																																						
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Band  LTE5  1.4MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/11/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Mode:</b> LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth								
	<b>Test Equipment:</b> 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	10.92	V	0.9	0.0	10.02	38.5	-28.4	
	824.70	20.32	H	0.9	0.0	19.42	38.5	-19.0	
	Mid Ch								
	836.50	10.93	V	0.9	0.0	10.03	38.5	-28.4	
	836.50	19.43	H	0.9	0.0	18.53	38.5	-19.9	
High Ch									
848.30	10.47	V	0.9	0.0	9.57	38.5	-28.9		
848.30	19.20	H	0.9	0.0	18.30	38.5	-20.1		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band  LTE5  1.4MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/11/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT only <b>Mode:</b> LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth								
	<b>Test Equipment:</b> <b>Receiving:</b> Sunol T185, and 3m Chamber C N-type Cable <b>Substitution:</b> 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	11.90	V	0.9	0.0	11.00	38.5	-27.4	
	824.70	21.29	H	0.9	0.0	20.39	38.5	-18.1	
	Mid Ch								
	836.50	11.91	V	0.9	0.0	11.01	38.5	-27.4	
	836.50	20.41	H	0.9	0.0	19.51	38.5	-18.9	
High Ch									
848.30	11.49	V	0.9	0.0	10.59	38.5	-27.9		
848.30	20.10	H	0.9	0.0	19.20	38.5	-19.2		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

**LTE Band 12**

Band  LTE12  10MHz  16QAM	<b>High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C</b>																																																																																																	
	<b>Company:</b>		LG																																																																																															
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Band  LTE12  5MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Mode:</b> LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth								
	<b>Test Equipment:</b> <b>Receiving:</b> Sunol T185, and 3m Chamber C N-type Cable <b>Substitution:</b> 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								
	701.50	11.52	V	0.9	0.0	10.62	38.5	-27.8	
	701.50	21.00	H	0.9	0.0	20.10	38.5	-18.3	
	Mid Ch								
	707.50	11.51	V	0.9	0.0	10.61	38.5	-27.8	
	707.50	20.99	H	0.9	0.0	20.09	38.5	-18.4	
High Ch									
713.50	12.17	V	0.9	0.0	11.27	38.5	-27.2		
713.50	21.09	H	0.9	0.0	20.19	38.5	-18.3		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band  LTE12  5MHz  QPSK	<b>High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C</b>																																																																																																		
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Band LTE12 3MHz QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																										
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Band  LTE12  1.4MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>									
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 7/13/2015 <b>Test Engineer:</b> R.Alegre <b>Configuration:</b> EUT Only <b>Mode:</b> LTE_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth									
	<b>Test Equipment:</b> 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									
	699.70	11.35	V	0.9	0.0	10.45	38.5	-28.0		
	699.70	20.92	H	0.9	0.0	20.02	38.5	-18.4		
	Mid Ch									
	707.50	11.52	V	0.9	0.0	10.62	38.5	-27.8		
	707.50	20.96	H	0.9	0.0	20.06	38.5	-18.4		
High Ch										
715.30	11.91	V	0.9	0.0	11.01	38.5	-27.4			
715.30	21.12	H	0.9	0.0	20.22	38.5	-18.2			
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm										

Band LTE12  1.4MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>																																																																																										
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**LTE Band 30**

Band  LTE30  10MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 07/10/15 <b>Test Engineer:</b> Jude Semana <b>Configuration:</b> EUT Only (X position) <b>Location:</b> Chamber C <b>Mode:</b> TX, LTE band 30 10MHz, 16QAM								
	<b>Test Equipment:</b> <b>Receiving:</b> Horn T119, and Chamber C SMA Cables <b>Substitution:</b> Horn T60 Substitution, 4ft SMA Cable 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		V	0.9					
			H	0.9					
	Mid Ch								
	2310.00	1.80	V	0.9	9.3	10.25	24.0	-13.7	
	2310.00	11.70	H	0.9	9.3	20.15	24.0	-3.8	
	High Ch		V	0.9	8.0				
		H	0.9	8.0					
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band  LTE30  10MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 07/10/15 <b>Test Engineer:</b> Jude Semana <b>Configuration:</b> EUT Only (X position) <b>Location:</b> Chamber C <b>Mode:</b> TX, LTE band 30 10MHz, QPSK								
	<b>Test Equipment:</b> 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)	Delta (dB)	Notes
	Low Ch								
		0.00	V	0.9	8.0	0.00		0.0	
		0.00	H	0.9	8.0	0.00		0.0	
	Mid Ch								
	2310.00	2.70	V	0.9	9.3	11.10	24.0	-12.9	
	2310.00	12.60	H	0.9	9.3	21.00	24.0	-3.0	
High Ch									
	0.00	V	0.9	8.0	0.00		0.0		
	0.00	H	0.9	8.0	0.00		0.0		

Band  LTE30  5MHz  16QAM	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc. Chamber C</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 07/10/15 <b>Test Engineer:</b> Jude Semana <b>Configuration:</b> EUT Only (X Position) <b>Location:</b> Chamber C <b>Mode:</b> TX, LTE band 30 5MHz, 16QAM								
	<b>Test Equipment:</b> <b>Receiving:</b> Horn T119, and Chamber C SMA Cables <b>Substitution:</b> Horn T60 Substitution, 4ft SMA Cable 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								
	2307.50	1.60	V	0.9	9.3	10.05	24.0	-13.9	
	2307.50	11.40	H	0.9	9.3	19.85	24.0	-4.1	
	Mid Ch								
	2310.00	1.70	V	0.9	9.3	10.15	24.0	-13.8	
	2310.00	11.60	H	0.9	9.3	20.05	24.0	-3.9	
High Ch									
2312.50	1.50	V	0.9	9.3	9.95	24.0	-14.0		
2312.50	11.20	H	0.9	9.3	19.65	24.0	-4.3		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band  LTE30  5MHz  QPSK	<b>High Frequency Substitution Measurement</b> <b>UL Verification Services, Inc.</b>								
	<b>Company:</b> LG <b>Project #:</b> 15I21238 <b>Date:</b> 07/10/15 <b>Test Engineer:</b> Jude Semana <b>Configuration:</b> EUT Only (X Position) <b>Location:</b> Chamber C <b>Mode:</b> TX, LTE band 30 5MHz, QPSK								
	<b>Test Equipment:</b> <b>Receiving:</b> Horn T119, and Chamber C SMA Cables <b>Substitution:</b> 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)	Delta (dB)	Notes
	Low Ch								
	2307.50	2.20	V	0.9	9.4	10.70	24.0	-13.3	
	2307.50	12.00	H	0.9	9.4	20.50	24.0	-3.5	
	Mid Ch								
	2310.00	2.30	V	0.9	9.4	10.80	24.0	-13.2	
	2310.00	12.20	H	0.9	9.4	20.70	24.0	-3.3	
High Ch									
2312.50	2.30	V	0.9	9.4	10.80	24.0	-13.2		
2312.50	11.90	H	0.9	9.4	20.40	24.0	-3.6		

## 10.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §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) (4) For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

### 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

GSM, WCDMA, and LTE

### RESULTS

### 10.2.1. SPURIOUS RADIATION PLOTS

#### GSM

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		X-pos EUT w/ AC Adapter + Headset							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		EGPRS 1900 MHz Harmonics							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1850.2</b>									
3700.40	-20.7	V	3.0	35.9	1.0	-55.6	-13.0	-42.6	
5550.60	-17.7	V	3.0	35.5	1.0	-52.2	-13.0	-39.2	
7400.80	-13.8	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
<b>1900</b>									
<b>Mid Ch, 1880</b>									
3760.00	-20.7	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
5640.00	-17.3	V	3.0	35.5	1.0	-51.8	-13.0	-38.8	
<b>EGPRS</b>									
7520.00	-13.8	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3760.00	-20.5	H	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-17.0	H	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7520.00	-13.7	H	3.0	35.7	1.0	-48.4	-13.0	-35.4	
<b>High Ch, 1909.8</b>									
3819.60	-20.6	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5729.40	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7639.20	-14.1	V	3.0	35.8	1.0	-48.9	-13.0	-35.9	
3819.60	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5729.40	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7639.20	-13.0	H	3.0	35.8	1.0	-47.8	-13.0	-34.8	



UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		X-pos EUT w/ AC Adapter + Headset								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		GPRS 1900 MHz Harmonics								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 1850.2									
	3700.40	-20.5	V	3.0	35.9	1.0	-55.4	-13.0	-42.4	
	5550.60	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
GSM	7400.80	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
	3700.40	-20.8	H	3.0	35.9	1.0	-55.7	-13.0	-42.7	
	5550.60	-12.7	H	3.0	35.5	1.0	-47.1	-13.0	-34.1	
1900	7400.80	-12.6	H	3.0	35.7	1.0	-47.3	-13.0	-34.3	
	Mid Ch, 1880									
GPRS	3760.00	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
	5640.00	-16.9	V	3.0	35.5	1.0	-51.4	-13.0	-38.4	
	7520.00	-13.2	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
	3760.00	-19.4	H	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5640.00	-16.6	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
	7520.00	-13.3	H	3.0	35.7	1.0	-48.0	-13.0	-35.0	
	High Ch, 1909.8									
	3819.60	-20.3	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
	5729.40	-17.0	V	3.0	35.5	1.0	-51.5	-13.0	-38.5	
	7639.20	-13.6	V	3.0	35.8	1.0	-48.4	-13.0	-35.4	
	3819.60	-20.4	H	3.0	35.8	1.0	-55.2	-13.0	-42.2	
	5729.40	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
	7639.20	-12.7	H	3.0	35.8	1.0	-47.5	-13.0	-34.5	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Adapter + Headset								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		EGPRS 850 MHz Harmonics								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 824.2									
	1648.40	-16.3	V	3.0	37.0	1.0	-52.3	-13.0	-39.3	
	2472.60	-17.5	V	3.0	36.4	1.0	-52.9	-13.0	-39.9	
GSM	3296.80	-21.8	V	3.0	36.2	1.0	-56.9	-13.0	-43.9	
	1648.40	-15.7	H	3.0	37.0	1.0	-51.7	-13.0	-38.7	
850	2472.60	-24.2	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
	3296.80	-22.0	H	3.0	36.2	1.0	-57.1	-13.0	-44.1	
EGPRS	Mid Ch, 836.6									
	1673.20	-19.8	V	3.0	37.0	1.0	-55.8	-13.0	-42.8	
	2509.80	-16.9	V	3.0	36.4	1.0	-52.3	-13.0	-39.3	
	3346.40	-21.6	V	3.0	36.1	1.0	-56.7	-13.0	-43.7	
	1673.20	-18.4	H	3.0	37.0	1.0	-54.4	-13.0	-41.4	
	2509.80	-20.7	H	3.0	36.4	1.0	-56.1	-13.0	-43.1	
	High Ch, 848.8									
	1697.60	-21.8	V	3.0	37.0	1.0	-57.8	-13.0	-44.8	
	2546.40	-17.6	V	3.0	36.4	1.0	-53.0	-13.0	-40.0	
	3395.20	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
	1697.60	-19.9	H	3.0	37.0	1.0	-55.8	-13.0	-42.8	
	2546.40	-17.2	H	3.0	36.4	1.0	-52.6	-13.0	-39.6	
	3395.20	-22.0	H	3.0	36.1	1.0	-57.1	-13.0	-44.1	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Adapter + Headset								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		GPRS 850 MHz Harmonics								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 824.2									
Band	1648.40	-14.5	V	3.0	37.0	1.0	-50.6	-13.0	-37.6	
	2472.60	-16.1	V	3.0	36.4	1.0	-51.5	-13.0	-38.5	
	3296.80	-21.9	V	3.0	36.2	1.0	-57.0	-13.0	-44.0	
GSM	1648.40	-14.1	H	3.0	37.0	1.0	-50.1	-13.0	-37.1	
	2472.60	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
850	3296.80	-21.5	H	3.0	36.2	1.0	-56.6	-13.0	-43.6	
	Mid Ch, 836.6									
GPRS	1673.20	-17.9	V	3.0	37.0	1.0	-53.9	-13.0	-40.9	
	2509.80	-15.7	V	3.0	36.4	1.0	-51.1	-13.0	-38.1	
	3346.40	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
	1673.20	-15.5	H	3.0	37.0	1.0	-51.5	-13.0	-38.5	
	2509.80	-19.1	H	3.0	36.4	1.0	-54.5	-13.0	-41.5	
	3346.40	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	
	High Ch, 848.8									
	1697.60	-20.2	V	3.0	37.0	1.0	-56.2	-13.0	-43.2	
	2546.40	-16.5	V	3.0	36.4	1.0	-51.9	-13.0	-38.9	
	3395.20	-20.8	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
	1697.60	-19.0	H	3.0	37.0	1.0	-55.0	-13.0	-42.0	
	2546.40	-16.4	H	3.0	36.4	1.0	-51.9	-13.0	-38.9	
	3395.20	-21.8	H	3.0	36.1	1.0	-56.8	-13.0	-43.8	

**WCDMA**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		X-pos EUT w/ AC Adapter + Headset							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		HSDPA Band 2 Harmonics							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1852.4</b>									
3704.80	-21.4	V	3.0	35.9	1.0	-56.2	-13.0	-43.2	
5557.20	-16.7	V	3.0	35.5	1.0	-51.1	-13.0	-38.1	
7409.60	-14.8	V	3.0	35.7	1.0	-49.5	-13.0	-36.5	
<b>Band 2</b>									
3704.80	-22.1	H	3.0	35.9	1.0	-56.9	-13.0	-43.9	
5557.20	-16.8	H	3.0	35.5	1.0	-51.3	-13.0	-38.3	
7409.60	-13.7	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	
<b>HSDPA</b>									
<b>Mid Ch, 1880</b>									
3760.00	-20.2	V	3.0	35.8	1.0	-55.0	-13.0	-42.0	
5640.00	-15.9	V	3.0	35.5	1.0	-50.4	-13.0	-37.4	
7520.00	-14.1	V	3.0	35.7	1.0	-48.8	-13.0	-35.8	
3760.00	-21.0	H	3.0	35.8	1.0	-55.8	-13.0	-42.8	
5640.00	-16.9	H	3.0	35.5	1.0	-51.4	-13.0	-38.4	
7520.00	-13.1	H	3.0	35.7	1.0	-47.9	-13.0	-34.9	
<b>High Ch, 1907.6</b>									
3815.20	-20.3	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
5722.80	-8.8	V	3.0	35.5	1.0	-43.3	-13.0	-30.3	
7630.40	-13.1	V	3.0	35.8	1.0	-47.9	-13.0	-34.9	
3815.20	-21.1	H	3.0	35.8	1.0	-55.9	-13.0	-42.9	
5722.80	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7630.40	-12.9	H	3.0	35.8	1.0	-47.7	-13.0	-34.7	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		X-pos EUT w/ AC Adapter + Headset							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		Rel99 Band 2 Harmonics							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4									
3704.80	-20.7	V	3.0	35.9	1.0	-55.5	-13.0	-42.5	
5557.20	-16.1	V	3.0	35.5	1.0	-50.5	-13.0	-37.5	
7409.60	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
Band 2									
3704.80	-21.4	H	3.0	35.9	1.0	-56.3	-13.0	-43.3	
5557.20	-16.4	H	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7409.60	-13.2	H	3.0	35.7	1.0	-47.9	-13.0	-34.9	
REL99									
Mid Ch, 1880									
3760.00	-19.2	V	3.0	35.8	1.0	-54.0	-13.0	-41.0	
5640.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7520.00	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3760.00	-20.4	H	3.0	35.8	1.0	-55.2	-13.0	-42.2	
5640.00	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7520.00	-12.7	H	3.0	35.7	1.0	-47.4	-13.0	-34.4	
High Ch, 1907.6									
3815.20	-18.7	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5722.80	-7.5	V	3.0	35.5	1.0	-42.0	-13.0	-29.0	
7630.40	-12.4	V	3.0	35.8	1.0	-47.2	-13.0	-34.2	
3815.20	-20.5	H	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5722.80	-14.2	H	3.0	35.5	1.0	-48.7	-13.0	-35.7	
7630.40	-12.3	H	3.0	35.8	1.0	-47.1	-13.0	-34.1	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT w/ AC Adapter + Headset							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		HSDPA Band 5 Harmonics							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4									
1652.80	-28.0	V	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2479.20	-18.0	V	3.0	36.4	1.0	-53.4	-13.0	-40.4	
3305.60	-21.9	V	3.0	36.1	1.0	-57.1	-13.0	-44.1	
Band 5									
1652.80	-27.8	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2479.20	-16.8	H	3.0	36.4	1.0	-52.2	-13.0	-39.2	
3305.60	-21.9	H	3.0	36.1	1.0	-57.1	-13.0	-44.1	
HSDPA									
Mid Ch, 836.6									
1673.20	-27.3	V	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2509.80	-17.2	V	3.0	36.4	1.0	-52.6	-13.0	-39.6	
3346.40	-21.9	V	3.0	36.1	1.0	-57.0	-13.0	-44.0	
1673.20	-27.5	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2509.80	-16.4	H	3.0	36.4	1.0	-51.8	-13.0	-38.8	
3346.40	-22.2	H	3.0	36.1	1.0	-57.3	-13.0	-44.3	
High Ch, 846.6									
1693.20	-27.8	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2539.80	-17.7	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
3386.40	-21.9	V	3.0	36.1	1.0	-57.0	-13.0	-44.0	
1693.20	-28.2	H	3.0	37.0	1.0	-64.2	-13.0	-51.2	
2539.80	-15.5	H	3.0	36.4	1.0	-50.9	-13.0	-37.9	
3386.40	-21.7	H	3.0	36.1	1.0	-56.8	-13.0	-43.8	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT w/ AC Adapter + Headset							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		Rel99 Band 5 Harmonics							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4									
1652.80	-27.8	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2479.20	-17.6	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
3305.60	-21.6	V	3.0	36.1	1.0	-56.7	-13.0	-43.7	
Band 5									
1652.80	-27.7	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2479.20	-16.7	H	3.0	36.4	1.0	-52.1	-13.0	-39.1	
3305.60	-21.8	H	3.0	36.1	1.0	-57.0	-13.0	-44.0	
REL99									
Mid Ch, 836.6									
1673.20	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2509.80	-17.1	V	3.0	36.4	1.0	-52.5	-13.0	-39.5	
3346.40	-21.5	V	3.0	36.1	1.0	-56.7	-13.0	-43.7	
1673.20	-27.6	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2509.80	-16.3	H	3.0	36.4	1.0	-51.7	-13.0	-38.7	
3346.40	-21.9	H	3.0	36.1	1.0	-57.0	-13.0	-44.0	
High Ch, 846.6									
1693.20	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2539.80	-17.5	V	3.0	36.4	1.0	-52.9	-13.0	-39.9	
3386.40	-22.0	V	3.0	36.1	1.0	-57.1	-13.0	-44.1	
1693.20	-28.1	H	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2539.80	-15.3	H	3.0	36.4	1.0	-50.7	-13.0	-37.7	
3386.40	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	

**LTE Band 2**

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1860</b>									
LTE2	3720.00	-18.7	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
	5580.00	-15.5	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
	7440.00	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
20MHz	3720.00	-19.7	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
	5580.00	-13.9	H	3.0	35.5	1.0	-48.4	-13.0	-35.4	
	7440.00	-11.6	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
16QAM	<b>Mid Ch, 1880</b>									
	3760.00	-20.0	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
	5640.00	-15.5	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
	7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
	3760.00	-20.0	H	3.0	35.8	1.0	-54.8	-13.0	-41.8	
	5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
	7520.00	-10.3	H	3.0	35.7	1.0	-45.1	-13.0	-32.1	
	<b>High Ch, 1900</b>									
	3800.00	-19.7	V	3.0	35.8	1.0	-54.4	-13.0	-41.4	
5700.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6		
7600.00	-11.6	V	3.0	35.8	1.0	-46.3	-13.0	-33.3		
3800.00	-20.0	H	3.0	35.8	1.0	-54.8	-13.0	-41.8		
5700.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1		
7600.00	-11.1	H	3.0	35.8	1.0	-45.9	-13.0	-32.9		



<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1860</b>										
LTE2	3720.00	-18.6	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
	5580.00	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
20MHz	7440.00	-13.3	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
	3720.00	-19.6	H	3.0	35.8	1.0	-54.4	-13.0	-41.4	
QPSK	5580.00	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
	7440.00	-11.4	H	3.0	35.7	1.0	-46.1	-13.0	-33.1	
<b>Mid Ch, 1880</b>										
	3760.00	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
	5640.00	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
	7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
	3760.00	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
	5640.00	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7520.00	-10.2	H	3.0	35.7	1.0	-44.9	-13.0	-31.9	
<b>High Ch, 1900</b>										
	3800.00	-19.7	V	3.0	35.8	1.0	-54.5	-13.0	-41.5	
	5700.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7600.00	-11.5	V	3.0	35.8	1.0	-46.2	-13.0	-33.2	
	3800.00	-19.7	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
	5700.00	-14.5	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
	7600.00	-11.3	H	3.0	35.8	1.0	-46.0	-13.0	-33.0	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 2 Harmonics, 15MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1857.5</b>									
LTE2	3715.00	-18.6	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
	5572.50	-15.5	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
15MHz	7430.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
	3715.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
16QAM	5572.50	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
	7430.00	-11.6	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
	<b>Mid Ch, 1880</b>									
	3760.00	-20.0	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
	5640.00	-15.4	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
	7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
	3760.00	-19.9	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
	5640.00	-15.0	H	3.0	35.5	1.0	-49.5	-13.0	-36.5	
	7520.00	-11.0	H	3.0	35.7	1.0	-45.7	-13.0	-32.7	
	<b>High Ch, 1902.5</b>									
	3805.00	-20.0	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
	5707.50	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7610.00	-11.6	V	3.0	35.8	1.0	-46.3	-13.0	-33.3	
	3805.00	-19.6	H	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5707.50	-15.3	H	3.0	35.5	1.0	-49.8	-13.0	-36.8	
	7610.00	-11.2	H	3.0	35.8	1.0	-45.9	-13.0	-32.9	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1857.5</b>										
LTE2	3715.00	-18.5	V	3.0	35.8	1.0	-53.4	-13.0	-40.4	
	5572.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
	7430.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
15MHz	3715.00	-18.7	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
	5572.50	-14.0	H	3.0	35.5	1.0	-48.5	-13.0	-35.5	
	7430.00	-11.2	H	3.0	35.7	1.0	-45.9	-13.0	-32.9	
QPSK	<b>Mid Ch, 1880</b>									
	3760.00	-19.7	V	3.0	35.8	1.0	-54.5	-13.0	-41.5	
	5640.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
	7520.00	-12.6	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
	3760.00	-19.6	H	3.0	35.8	1.0	-54.4	-13.0	-41.4	
	5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7520.00	-10.1	H	3.0	35.7	1.0	-44.9	-13.0	-31.9	
<b>High Ch, 1902.5</b>										
	3805.00	-19.7	V	3.0	35.8	1.0	-54.5	-13.0	-41.5	
	5707.50	-14.4	V	3.0	35.5	1.0	-48.9	-13.0	-35.9	
	7610.00	-11.3	V	3.0	35.8	1.0	-46.1	-13.0	-33.1	
	3805.00	-19.4	H	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	5707.50	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7610.00	-11.4	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 2 Harmonics, 10MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1855</b>									
LTE2	3710.00	-18.9	V	3.0	35.9	1.0	-53.8	-13.0	-40.8	
	5565.00	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
10MHz	7420.00	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
	3710.00	-19.0	H	3.0	35.9	1.0	-53.8	-13.0	-40.8	
16QAM	5565.00	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
	7420.00	-11.5	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
	<b>Mid Ch, 1880</b>									
	3760.00	-20.0	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
	5640.00	-15.5	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
	7520.00	-12.7	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
	3760.00	-19.5	H	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5640.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7520.00	-10.7	H	3.0	35.7	1.0	-45.4	-13.0	-32.4	
	<b>High Ch, 1905</b>									
	3810.00	-20.2	V	3.0	35.8	1.0	-55.0	-13.0	-42.0	
	5715.00	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
	7620.00	-11.5	V	3.0	35.8	1.0	-46.2	-13.0	-33.2	
	3810.00	-19.3	H	3.0	35.8	1.0	-54.1	-13.0	-41.1	
	5715.00	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
	7620.00	-11.5	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1855</b>										
LTE2	3710.00	-18.5	V	3.0	35.9	1.0	-53.3	-13.0	-40.3	
	5565.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
	7420.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
10MHz	3710.00	-18.9	H	3.0	35.9	1.0	-53.7	-13.0	-40.7	
	5565.00	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
	7420.00	-11.1	H	3.0	35.7	1.0	-45.9	-13.0	-32.9	
<b>Mid Ch, 1880</b>										
QPSK	3760.00	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
	5640.00	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
	7520.00	-12.5	V	3.0	35.7	1.0	-47.3	-13.0	-34.3	
	3760.00	-19.7	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
	5640.00	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7520.00	-10.3	H	3.0	35.7	1.0	-45.1	-13.0	-32.1	
<b>High Ch, 1905</b>										
	3810.00	-19.6	V	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5715.00	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
	7620.00	-11.2	V	3.0	35.8	1.0	-45.9	-13.0	-32.9	
	3810.00	-19.1	H	3.0	35.8	1.0	-53.9	-13.0	-40.9	
	5715.00	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7620.00	-11.5	H	3.0	35.8	1.0	-46.2	-13.0	-33.2	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1852.5</b>									
LTE2	3705.00	-17.6	V	3.0	35.9	1.0	-52.5	-13.0	-39.5	
	5557.50	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
5MHz	7410.00	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
	3705.00	-18.9	H	3.0	35.9	1.0	-53.7	-13.0	-40.7	
16QAM	5557.50	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7410.00	-11.4	H	3.0	35.7	1.0	-46.1	-13.0	-33.1	
	<b>Mid Ch, 1880</b>									
	3760.00	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
	5640.00	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7520.00	-9.9	V	3.0	35.7	1.0	-44.6	-13.0	-31.6	
	3760.00	-18.6	H	3.0	35.8	1.0	-53.4	-13.0	-40.4	
	5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
	7520.00	-10.1	H	3.0	35.7	1.0	-44.9	-13.0	-31.9	
	<b>High Ch, 1907.5</b>									
	3815.00	-20.6	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	-11.2	V	3.0	35.8	1.0	-46.0	-13.0	-33.0	
	3815.00	-19.0	H	3.0	35.8	1.0	-53.8	-13.0	-40.8	
	5722.50	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
	7630.00	-10.8	H	3.0	35.8	1.0	-45.6	-13.0	-32.6	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1852.5</b>									
	3705.00	-17.4	V	3.0	35.9	1.0	-52.2	-13.0	-39.2	
	5557.50	-15.0	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
5MHz	7410.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
	3705.00	-18.8	H	3.0	35.9	1.0	-53.6	-13.0	-40.6	
QPSK	5557.50	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
	7410.00	-11.2	H	3.0	35.7	1.0	-45.9	-13.0	-32.9	
	<b>Mid Ch, 1880</b>									
	3760.00	-19.5	V	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5640.00	-15.6	V	3.0	35.5	1.0	-50.1	-13.0	-37.1	
	7520.00	-9.3	V	3.0	35.7	1.0	-44.0	-13.0	-31.0	
	3760.00	-19.4	H	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	5640.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
	7520.00	-8.0	H	3.0	35.7	1.0	-42.7	-13.0	-29.7	
	<b>High Ch, 1907.5</b>									
	3815.00	-19.4	V	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	5722.50	-12.9	V	3.0	35.5	1.0	-47.4	-13.0	-34.4	
	7630.00	-11.0	V	3.0	35.8	1.0	-45.8	-13.0	-32.8	
	3815.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
	5722.50	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
	7630.00	-11.2	H	3.0	35.8	1.0	-45.9	-13.0	-32.9	

UL Verification Services, Inc.										
Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth								
Band	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										
LTE2	3703.00	-17.9	V	3.0	35.9	1.0	-52.8	-13.0	-39.8	
	5554.50	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
3MHz	7406.00	-13.6	V	3.0	35.7	1.0	-48.4	-13.0	-35.4	
	3703.00	-19.5	H	3.0	35.9	1.0	-54.3	-13.0	-41.3	
16QAM	5554.50	-15.1	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
	7406.00	-11.5	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
Mid Ch, 1880										
	3760.00	-19.8	V	3.0	35.8	1.0	-54.7	-13.0	-41.7	
	5640.00	-14.0	V	3.0	35.5	1.0	-48.5	-13.0	-35.5	
	7520.00	-10.0	V	3.0	35.7	1.0	-44.8	-13.0	-31.8	
	3760.00	-18.5	H	3.0	35.8	1.0	-53.3	-13.0	-40.3	
	5640.00	-14.0	H	3.0	35.5	1.0	-48.5	-13.0	-35.5	
	7520.00	-9.2	H	3.0	35.7	1.0	-43.9	-13.0	-30.9	
High Ch, 1908.5										
	3817.00	-20.3	V	3.0	35.8	1.0	-55.0	-13.0	-42.0	
	5725.50	-13.7	V	3.0	35.5	1.0	-48.2	-13.0	-35.2	
	7634.00	-11.2	V	3.0	35.8	1.0	-46.0	-13.0	-33.0	
	3817.00	-19.3	H	3.0	35.8	1.0	-54.1	-13.0	-41.1	
	5725.50	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
	7634.00	-10.3	H	3.0	35.8	1.0	-45.1	-13.0	-32.1	



<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 1851.5</b>									
LTE2	3703.00	-17.4	V	3.0	35.9	1.0	-52.3	-13.0	-39.3	
	5554.50	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
3MHz	7406.00	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
	3703.00	-18.8	H	3.0	35.9	1.0	-53.6	-13.0	-40.6	
QPSK	5554.50	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
	7406.00	-11.4	H	3.0	35.7	1.0	-46.2	-13.0	-33.2	
	<b>Mid Ch, 1880</b>									
	3760.00	-19.4	V	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	5640.00	-14.4	V	3.0	35.5	1.0	-48.9	-13.0	-35.9	
	7520.00	-9.3	V	3.0	35.7	1.0	-44.0	-13.0	-31.0	
	3760.00	-19.4	H	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	5640.00	-13.7	H	3.0	35.5	1.0	-48.2	-13.0	-35.2	
	7520.00	-8.9	H	3.0	35.7	1.0	-43.6	-13.0	-30.6	
	<b>High Ch, 1908.5</b>									
	3817.00	-19.4	V	3.0	35.8	1.0	-54.1	-13.0	-41.1	
	5725.50	-12.8	V	3.0	35.5	1.0	-47.3	-13.0	-34.3	
	7634.00	-11.0	V	3.0	35.8	1.0	-45.7	-13.0	-32.7	
	3817.00	-18.5	H	3.0	35.8	1.0	-53.3	-13.0	-40.3	
	5725.50	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
	7634.00	-10.2	H	3.0	35.8	1.0	-45.0	-13.0	-32.0	

<b>UL Verification Services, Inc.</b>									
<b>Above 1GHz High Frequency Substitution Measurement</b>									
<b>Company:</b>		LG Electronics							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/14/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT w/ AC Charger + HS							
<b>Location:</b>		Chamber C							
<b>Mode:</b>		LTE_16QAM 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
<b>Band</b>									
<b>Low Ch, 1850.7</b>									
LTE2	3701.40	-17.4	V	3.0	35.9	1.0	-52.3	-13.0	-39.3
	5552.10	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2
	7402.80	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3
1.4MHz	3701.40	-18.9	H	3.0	35.9	1.0	-53.8	-13.0	-40.8
	5552.10	-14.2	H	3.0	35.5	1.0	-48.7	-13.0	-35.7
16QAM	7402.80	-11.4	H	3.0	35.7	1.0	-46.1	-13.0	-33.1
<b>Mid Ch, 1880</b>									
	3760.00	-19.9	V	3.0	35.8	1.0	-54.7	-13.0	-41.7
	5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4
	7520.00	-12.6	V	3.0	35.7	1.0	-47.3	-13.0	-34.3
	3760.00	-18.5	H	3.0	35.8	1.0	-53.3	-13.0	-40.3
	5640.00	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1
	7520.00	-9.5	H	3.0	35.7	1.0	-44.2	-13.0	-31.2
<b>High Ch, 1909.3</b>									
	3818.60	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9
	5727.90	-13.4	V	3.0	35.5	1.0	-47.9	-13.0	-34.9
	7637.20	-10.9	V	3.0	35.8	1.0	-45.6	-13.0	-32.6
	3818.60	-19.2	H	3.0	35.8	1.0	-54.0	-13.0	-41.0
	5727.90	-15.3	H	3.0	35.5	1.0	-49.8	-13.0	-36.8
	7637.20	-10.5	H	3.0	35.8	1.0	-45.3	-13.0	-32.3

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/14/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT w/ AC Charger + HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 2 Harmonics, 1.4MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1850.7</b>										
LTE2	3701.40	-17.3	V	3.0	35.9	1.0	-52.2	-13.0	-39.2	
	5552.10	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
	7402.80	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
1.4MHz	3701.40	-18.7	H	3.0	35.9	1.0	-53.6	-13.0	-40.6	
	5552.10	-14.1	H	3.0	35.5	1.0	-48.6	-13.0	-35.6	
	7402.80	-11.1	H	3.0	35.7	1.0	-45.9	-13.0	-32.9	
QPSK	<b>Mid Ch, 1880</b>									
	3760.00	-19.4	V	3.0	35.8	1.0	-54.3	-13.0	-41.3	
	5640.00	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
	7520.00	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
	3760.00	-19.3	H	3.0	35.8	1.0	-54.1	-13.0	-41.1	
	5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
	7520.00	-9.4	H	3.0	35.7	1.0	-44.1	-13.0	-31.1	
<b>High Ch, 1909.3</b>										
	3818.60	-19.3	V	3.0	35.8	1.0	-54.1	-13.0	-41.1	
	5727.90	-12.7	V	3.0	35.5	1.0	-47.2	-13.0	-34.2	
	7637.20	-10.9	V	3.0	35.8	1.0	-45.6	-13.0	-32.6	
	3818.60	-18.7	H	3.0	35.8	1.0	-53.4	-13.0	-40.4	
	5727.90	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
	7637.20	-11.3	H	3.0	35.8	1.0	-46.0	-13.0	-33.0	

**LTE Band 4**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT + AC Adapter + HS							
<b>Location:</b>		Chamber A							
<b>Mode:</b>		LTE_16QAM Band 4 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
<b>Low Ch, 1720</b>									
Band	3440.00	-20.2	V	3.0	36.0	1.0	-55.2	-13.0	-42.2
	5160.00	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3
LTE4	6880.00	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7
	3440.00	-19.9	H	3.0	36.0	1.0	-54.9	-13.0	-41.9
20MHz	5160.00	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8
	6880.00	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6
<b>Mid Ch, 1732.5</b>									
16QAM	3465.00	-21.2	V	3.0	36.0	1.0	-56.2	-13.0	-43.2
	5197.50	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4
	6930.00	-14.0	V	3.0	35.7	1.0	-48.7	-13.0	-35.7
	3465.00	-20.9	H	3.0	36.0	1.0	-55.9	-13.0	-42.9
	5197.50	-16.0	H	3.0	35.4	1.0	-50.4	-13.0	-37.4
	6930.00	-13.4	H	3.0	35.7	1.0	-48.1	-13.0	-35.1
<b>High Ch, 1745</b>									
	3490.00	-20.2	V	3.0	36.0	1.0	-55.2	-13.0	-42.2
	5235.00	-15.4	V	3.0	35.4	1.0	-49.9	-13.0	-36.9
	6980.00	-13.2	V	3.0	35.7	1.0	-47.8	-13.0	-34.8
	3490.00	-19.9	H	3.0	36.0	1.0	-54.9	-13.0	-41.9
	5235.00	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9
	6980.00	-12.3	H	3.0	35.7	1.0	-46.9	-13.0	-33.9

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
Company:		LG									
Project #:		15I21238									
Date:		7/25/2015									
Test Engineer:		R.Alegre									
Configuration:		EUT + AC Adapter + HS									
Location:		Chamber A									
Mode:		LTE_QPSK Band 4 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, 1720											
Band	3440.00	-20.2	V	3.0	36.0	1.0	-55.2	-13.0	-42.2		
	5160.00	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1		
	6880.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8		
LTE4	3440.00	-20.0	H	3.0	36.0	1.0	-55.0	-13.0	-42.0		
	5160.00	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5		
	6880.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8		
20MHz	Mid Ch, 1732.5										
	3465.00	-21.3	V	3.0	36.0	1.0	-56.3	-13.0	-43.3		
	5197.50	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3		
QPSK	6930.00	-14.0	V	3.0	35.7	1.0	-48.6	-13.0	-35.6		
	3465.00	-20.8	H	3.0	36.0	1.0	-55.8	-13.0	-42.8		
	5197.50	-15.9	H	3.0	35.4	1.0	-50.3	-13.0	-37.3		
	6930.00	-13.4	H	3.0	35.7	1.0	-48.1	-13.0	-35.1		
	High Ch, 1745										
	3490.00	-20.1	V	3.0	36.0	1.0	-55.1	-13.0	-42.1		
5235.00	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8			
6980.00	-12.6	V	3.0	35.7	1.0	-47.3	-13.0	-34.3			
3490.00	-19.8	H	3.0	36.0	1.0	-54.8	-13.0	-41.8			
5235.00	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5			
6980.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8			

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT + AC Adapter + HS							
<b>Location:</b>		Chamber A							
<b>Mode:</b>		LTE_16QAM Band 4 Harmonics, 15MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band									
LTE4									
15MHz									
16QAM									
Low Ch, 1717.5									
3435.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
5152.50	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6870.00	-12.5	V	3.0	35.7	1.0	-47.1	-13.0	-34.1	
3435.00	-20.2	H	3.0	36.1	1.0	-55.2	-13.0	-42.2	
5152.50	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6870.00	-13.1	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
Mid Ch, 1732.5									
3465.00	-20.9	V	3.0	36.0	1.0	-55.9	-13.0	-42.9	
5197.50	-17.5	V	3.0	35.4	1.0	-52.0	-13.0	-39.0	
6930.00	-13.8	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
3465.00	-21.7	H	3.0	36.0	1.0	-56.7	-13.0	-43.7	
5197.50	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6930.00	-13.3	H	3.0	35.7	1.0	-48.0	-13.0	-35.0	
High Ch, 1747.5									
3495.00	-20.3	V	3.0	36.0	1.0	-55.3	-13.0	-42.3	
5242.50	-14.7	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
6990.00	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3495.00	-19.7	H	3.0	36.0	1.0	-54.7	-13.0	-41.7	
5242.50	-15.4	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6990.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
<b>Company:</b>		LG									
<b>Project #:</b>		15I21238									
<b>Date:</b>		7/25/2015									
<b>Test Engineer:</b>		R.Alegre									
<b>Configuration:</b>		EUT + AC Adapter + HS									
<b>Location:</b>		Chamber A									
<b>Mode:</b>		LTE_QPSK Band 4 Harmonics, 15MHz Bandwidth									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Band  LTE4  15MHz  QPSK	Low Ch, 1717.5										
		3435.00	-20.1	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
		5152.50	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
		6870.00	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
		3435.00	-19.5	H	3.0	36.1	1.0	-54.6	-13.0	-41.6	
		5152.50	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
		6870.00	-12.2	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
		Mid Ch, 1732.5									
		3465.00	-21.3	V	3.0	36.0	1.0	-56.4	-13.0	-43.4	
		5197.50	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
		6930.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
		3465.00	-21.2	H	3.0	36.0	1.0	-56.3	-13.0	-43.3	
	5197.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1		
	6930.00	-12.9	H	3.0	35.7	1.0	-47.5	-13.0	-34.5		
	High Ch, 1747.5										
	3495.00	-20.0	V	3.0	36.0	1.0	-55.1	-13.0	-42.1		
	5242.50	-14.5	V	3.0	35.4	1.0	-48.9	-13.0	-35.9		
	6990.00	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2		
	3495.00	-19.0	H	3.0	36.0	1.0	-54.0	-13.0	-41.0		
	5242.50	-15.4	H	3.0	35.4	1.0	-49.9	-13.0	-36.9		
	6990.00	-12.2	H	3.0	35.7	1.0	-46.9	-13.0	-33.9		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
<b>Company:</b>		LG									
<b>Project #:</b>		15I21238									
<b>Date:</b>		7/25/2015									
<b>Test Engineer:</b>		R.Alegre									
<b>Configuration:</b>		EUT + AC Adapter + HS									
<b>Location:</b>		Chamber A									
<b>Mode:</b>		LTE_16QAM Band 4 Harmonics, 10MHz Bandwidth									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Band  LTE4  10MHz  16QAM	Low Ch, 1715										
		3430.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
		5145.00	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
		6860.00	-12.4	V	3.0	35.7	1.0	-47.1	-13.0	-34.1	
		3430.00	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1	
		5145.00	-15.7	H	3.0	35.4	1.0	-50.1	-13.0	-37.1	
		6860.00	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
		Mid Ch, 1732.5									
		3465.00	-20.7	V	3.0	36.0	1.0	-55.7	-13.0	-42.7	
		5197.50	-17.6	V	3.0	35.4	1.0	-52.0	-13.0	-39.0	
		6930.00	-14.0	V	3.0	35.7	1.0	-48.7	-13.0	-35.7	
		3465.00	-21.0	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
		5197.50	-16.9	H	3.0	35.4	1.0	-51.3	-13.0	-38.3	
		6930.00	-13.1	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
		High Ch, 1750									
		3500.00	-20.4	V	3.0	36.0	1.0	-55.4	-13.0	-42.4	
		5250.00	-14.7	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
		7000.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
	3500.00	-19.7	H	3.0	36.0	1.0	-54.7	-13.0	-41.7		
	5250.00	-15.5	H	3.0	35.4	1.0	-50.0	-13.0	-37.0		
	7000.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2		



UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT + AC Adapter + HS								
<b>Location:</b>		Chamber A								
<b>Mode:</b>		LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 1715									
	3430.00	-20.2	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
	5145.00	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3	
LTE4	6860.00	-12.1	V	3.0	35.7	1.0	-46.8	-13.0	-33.8	
	3430.00	-19.7	H	3.0	36.1	1.0	-54.7	-13.0	-41.7	
	5145.00	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
10MHz	6860.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
QPSK	Mid Ch, 1732.5									
	3465.00	-20.7	V	3.0	36.0	1.0	-55.7	-13.0	-42.7	
	5197.50	-16.4	V	3.0	35.4	1.0	-50.8	-13.0	-37.8	
	6930.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
	3465.00	-20.2	H	3.0	36.0	1.0	-55.2	-13.0	-42.2	
	5197.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
	High Ch, 1750									
	6930.00	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
	3500.00	-20.0	V	3.0	36.0	1.0	-55.0	-13.0	-42.0	
	5250.00	-14.4	V	3.0	35.4	1.0	-48.9	-13.0	-35.9	
	7000.00	-12.6	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
	3500.00	-18.9	H	3.0	36.0	1.0	-53.9	-13.0	-40.9	
	5250.00	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
	7000.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT + AC Adapter + HS								
<b>Location:</b>		Chamber A								
<b>Mode:</b>		LTE_16QAM Band 4 Harmonics, 5MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 1712.5									
	3425.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
	5137.50	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
LTE4	6850.00	-12.2	V	3.0	35.7	1.0	-46.8	-13.0	-33.8	
	3425.00	-19.6	H	3.0	36.1	1.0	-54.7	-13.0	-41.7	
5MHz	5137.50	-15.2	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
	6850.00	-12.9	H	3.0	35.7	1.0	-47.5	-13.0	-34.5	
16QAM	Mid Ch, 1732.5									
	3465.00	-21.1	V	3.0	36.0	1.0	-56.1	-13.0	-43.1	
	5197.50	-15.5	V	3.0	35.4	1.0	-49.9	-13.0	-36.9	
	6930.00	-12.3	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
	3465.00	-19.8	H	3.0	36.0	1.0	-54.8	-13.0	-41.8	
	5197.50	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
	6930.00	-13.0	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1752.5										
	3505.00	-20.4	V	3.0	36.0	1.0	-55.4	-13.0	-42.4	
	5257.50	-14.5	V	3.0	35.4	1.0	-48.9	-13.0	-35.9	
	7010.00	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
	3505.00	-19.7	H	3.0	36.0	1.0	-54.7	-13.0	-41.7	
	5257.50	-15.4	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
	7010.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT + AC Adapter + HS								
<b>Location:</b>		Chamber A								
<b>Mode:</b>		LTE_QPSK Band 4 Harmonics, 5MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 1712.5									
	3425.00	-20.1	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
	5137.50	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
LTE4	6850.00	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
	3425.00	-19.8	H	3.0	36.1	1.0	-54.9	-13.0	-41.9	
5MHz	5137.50	-15.3	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
	6850.00	-13.3	H	3.0	35.7	1.0	-47.9	-13.0	-34.9	
QPSK	Mid Ch, 1732.5									
	3465.00	-20.9	V	3.0	36.0	1.0	-56.0	-13.0	-43.0	
	5197.50	-15.6	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
	6930.00	-12.3	V	3.0	35.7	1.0	-47.0	-13.0	-34.0	
	3465.00	-19.5	H	3.0	36.0	1.0	-54.5	-13.0	-41.5	
	5197.50	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
	High Ch, 1752.5									
	3505.00	-20.0	V	3.0	36.0	1.0	-55.0	-13.0	-42.0	
	5257.50	-14.3	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
	7010.00	-12.5	V	3.0	35.7	1.0	-47.2	-13.0	-34.2	
	3505.00	-18.9	H	3.0	36.0	1.0	-53.9	-13.0	-40.9	
	5257.50	-15.2	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
	7010.00	-12.4	H	3.0	35.7	1.0	-47.1	-13.0	-34.1	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement												
<b>Company:</b>		LG										
<b>Project #:</b>		15I21238										
<b>Date:</b>		7/25/2015										
<b>Test Engineer:</b>		R.Alegre										
<b>Configuration:</b>		EUT + AC Adapter + HS										
<b>Location:</b>		Chamber A										
<b>Mode:</b>		LTE_16QAM Band 4 Harmonics, 3MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Band	Low Ch, 1711.5											
		3423.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5		
		5134.50	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4		
	LTE4	6846.00	-12.1	V	3.0	35.7	1.0	-46.8	-13.0	-33.8		
		3423.00	-20.1	H	3.0	36.1	1.0	-55.1	-13.0	-42.1		
	3MHz	5134.50	-15.7	H	3.0	35.4	1.0	-50.2	-13.0	-37.2		
		6846.00	-13.2	H	3.0	35.7	1.0	-47.9	-13.0	-34.9		
	16QAM	Mid Ch, 1732.5										
			3465.00	-20.9	V	3.0	36.0	1.0	-55.9	-13.0	-42.9	
			5197.50	-15.8	V	3.0	35.4	1.0	-50.2	-13.0	-37.2	
			6930.00	-12.3	V	3.0	35.7	1.0	-47.0	-13.0	-34.0	
			3465.00	-20.0	H	3.0	36.0	1.0	-55.0	-13.0	-42.0	
		5197.50	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5		
	6930.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0			
	High Ch, 1753.5											
	3507.00	-20.3	V	3.0	36.0	1.0	-55.3	-13.0	-42.3			
	5260.50	-14.7	V	3.0	35.4	1.0	-49.2	-13.0	-36.2			
	7014.00	-12.9	V	3.0	35.7	1.0	-47.6	-13.0	-34.6			
	3507.00	-19.7	H	3.0	36.0	1.0	-54.7	-13.0	-41.7			
	5260.50	-15.5	H	3.0	35.4	1.0	-50.0	-13.0	-37.0			
	7014.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2			

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT + AC Adapter + HS								
<b>Location:</b>		Chamber A								
<b>Mode:</b>		LTE_QPSK Band 4 Harmonics, 3MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	<b>Low Ch, 1711.5</b>									
	3423.00	-20.2	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
	5134.50	-16.9	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
LTE4	6846.00	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9	
	3423.00	-19.3	H	3.0	36.1	1.0	-54.4	-13.0	-41.4	
3MHz	5134.50	-14.8	H	3.0	35.4	1.0	-49.3	-13.0	-36.3	
	6846.00	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
QPSK	<b>Mid Ch, 1732.5</b>									
	3465.00	-20.8	V	3.0	36.0	1.0	-55.9	-13.0	-42.9	
	5197.50	-15.5	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
	6930.00	-12.4	V	3.0	35.7	1.0	-47.0	-13.0	-34.0	
	3465.00	-19.9	H	3.0	36.0	1.0	-54.9	-13.0	-41.9	
	5197.50	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
	6930.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
	<b>High Ch, 1753.5</b>									
3507.00	-19.8	V	3.0	36.0	1.0	-54.8	-13.0	-41.8		
5260.50	-14.4	V	3.0	35.4	1.0	-48.8	-13.0	-35.8		
7014.00	-12.6	V	3.0	35.7	1.0	-47.3	-13.0	-34.3		
3507.00	-18.9	H	3.0	36.0	1.0	-53.9	-13.0	-40.9		
5260.50	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9		
7014.00	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement												
<b>Company:</b>		LG										
<b>Project #:</b>		15I21238										
<b>Date:</b>		7/25/2015										
<b>Test Engineer:</b>		R.Alegre										
<b>Configuration:</b>		EUT + AC Adapter + HS										
<b>Location:</b>		Chamber A										
<b>Mode:</b>		LTE_16QAM Band 4 Harmonics, 1.4MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Band	<b>Low Ch, 1710.7</b>											
		3421.40	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7		
		5132.10	-16.8	V	3.0	35.4	1.0	-51.3	-13.0	-38.3		
	LTE4		6842.80	-12.4	V	3.0	35.7	1.0	-47.1	-13.0	-34.1	
			3421.40	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3	
	1.4MHz		5132.10	-15.7	H	3.0	35.4	1.0	-50.1	-13.0	-37.1	
		6842.80	-13.1	H	3.0	35.7	1.0	-47.8	-13.0	-34.8		
16QAM	<b>Mid Ch, 1732.5</b>											
		3465.00	-20.8	V	3.0	36.0	1.0	-55.9	-13.0	-42.9		
		5197.50	-15.6	V	3.0	35.4	1.0	-50.0	-13.0	-37.0		
		6930.00	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9		
		3465.00	-19.5	H	3.0	36.0	1.0	-54.6	-13.0	-41.6		
		5197.50	-7.2	H	3.0	35.4	1.0	-41.6	-13.0	-28.6		
		6930.00	-13.1	H	3.0	35.7	1.0	-47.7	-13.0	-34.7		
	<b>High Ch, 1754.3</b>											
		3508.60	-20.6	V	3.0	36.0	1.0	-55.6	-13.0	-42.6		
		5262.90	-14.9	V	3.0	35.4	1.0	-49.3	-13.0	-36.3		
	7017.20	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7			
	3508.60	-19.6	H	3.0	36.0	1.0	-54.6	-13.0	-41.6			
	5262.90	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8			
	7017.20	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2			

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/25/2015							
<b>Test Engineer:</b>		R.Alegre							
<b>Configuration:</b>		EUT + AC Adapter + HS							
<b>Location:</b>		Chamber A							
<b>Mode:</b>		LTE_QPSK Band 4 Harmonics, 1.4MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7									
Band	3421.40	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3
	5132.10	-16.9	V	3.0	35.4	1.0	-51.4	-13.0	-38.4
LTE4	6842.80	-12.2	V	3.0	35.7	1.0	-46.9	-13.0	-33.9
	3421.40	-19.7	H	3.0	36.1	1.0	-54.7	-13.0	-41.7
	5132.10	-15.2	H	3.0	35.4	1.0	-49.6	-13.0	-36.6
1.4MHz	6842.80	-12.6	H	3.0	35.7	1.0	-47.3	-13.0	-34.3
Mid Ch, 1732.5									
QPSK	3465.00	-20.7	V	3.0	36.0	1.0	-55.8	-13.0	-42.8
	5197.50	-15.5	V	3.0	35.4	1.0	-49.9	-13.0	-36.9
	6930.00	-12.1	V	3.0	35.7	1.0	-46.7	-13.0	-33.7
	3465.00	-19.4	H	3.0	36.0	1.0	-54.4	-13.0	-41.4
	5197.50	-6.8	H	3.0	35.4	1.0	-41.2	-13.0	-28.2
	6930.00	-13.0	H	3.0	35.7	1.0	-47.6	-13.0	-34.6
High Ch, 1754.3									
	3508.60	-20.0	V	3.0	36.0	1.0	-54.9	-13.0	-41.9
	5262.90	-14.3	V	3.0	35.4	1.0	-48.7	-13.0	-35.7
	7017.20	-12.6	V	3.0	35.7	1.0	-47.3	-13.0	-34.3
	3508.60	-18.8	H	3.0	36.0	1.0	-53.8	-13.0	-40.8
	5262.90	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9
	7017.20	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0

**LTE Band 5**

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/28/2015							
<b>Test Engineer:</b>		A. Escamilla							
<b>Configuration:</b>		EUT , AC Adapter, HS							
<b>Location:</b>		Chamber B							
<b>Mode:</b>		LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 829</b>									
Band	1658.00	-29.1	V	3.0	37.0	1.0	-65.1	-13.0	-52.1
	2487.00	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9
LTE5	3316.00	-20.8	V	3.0	36.1	1.0	-56.0	-13.0	-43.0
	1658.00	-29.3	H	3.0	37.0	1.0	-65.3	-13.0	-52.3
10MHz	2487.00	-26.1	H	3.0	36.4	1.0	-61.5	-13.0	-48.5
	3316.00	-20.4	H	3.0	36.1	1.0	-55.5	-13.0	-42.5
<b>Mid Ch, 836.5</b>									
16QAM	1673.00	-29.4	V	3.0	37.0	1.0	-65.4	-13.0	-52.4
	2509.50	-23.6	V	3.0	36.4	1.0	-59.0	-13.0	-46.0
	3346.00	-19.8	V	3.0	36.1	1.0	-54.9	-13.0	-41.9
	1673.00	-28.5	H	3.0	37.0	1.0	-64.5	-13.0	-51.5
	2509.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0
	3346.00	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1
<b>High Ch, 844</b>									
	1688.00	-29.5	V	3.0	37.0	1.0	-65.4	-13.0	-52.4
	2532.00	-23.9	V	3.0	36.4	1.0	-59.3	-13.0	-46.3
	3376.00	-20.3	V	3.0	36.1	1.0	-55.4	-13.0	-42.4
	1688.00	-28.7	H	3.0	37.0	1.0	-64.7	-13.0	-51.7
	2532.00	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4
	3376.00	-20.7	H	3.0	36.1	1.0	-55.7	-13.0	-42.7



<b>UL Verification Services, Inc.</b> <b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/28/2015								
<b>Test Engineer:</b>		A. Escamilla								
<b>Configuration:</b>		EUT , AC Adapter, HS								
<b>Location:</b>		Chamber B								
<b>Mode:</b>		LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 829									
	1658.00	-29.2	V	3.0	37.0	1.0	-65.2	-13.0	-52.2	
	2487.00	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
LTE5	3316.00									
	1658.00	-28.9	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
	2487.00	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
10MHz	3316.00									
	Mid Ch, 836.5									
	1673.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
QPSK	2509.50									
	3346.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
	1673.00	-28.8	H	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2509.50										
3346.00										
High Ch, 844										
1688.00										
2532.00										
3376.00										
1688.00										
2532.00										
3376.00										

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement											
Company:		LG									
Project #:		15I21238									
Date:		7/28/2015									
Test Engineer:		A. Escamilla									
Configuration:		EUT , AC Adapter, HS									
Location:		Chamber B									
Mode:		LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Band	Low Ch, 826.5										
		1653.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
		2479.50	-23.7	V	3.0	36.4	1.0	-59.1	-13.0	-46.1	
	LTE5	3306.00	-20.6	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
		1653.00	-29.0	H	3.0	37.0	1.0	-65.0	-13.0	-52.0	
		2479.50	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
	5MHz	3306.00	-21.0	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
		Mid Ch, 836.5									
		1673.00	-29.1	V	3.0	37.0	1.0	-65.1	-13.0	-52.1	
	16QAM	2509.50	-23.3	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
		3346.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
		1673.00	-28.6	H	3.0	37.0	1.0	-64.6	-13.0	-51.6	
		2509.50	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
		3346.00	-20.4	H	3.0	36.1	1.0	-55.5	-13.0	-42.5	
	High Ch, 846.5										
		1693.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
		2539.50	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
		3386.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
	1693.00	-28.8	H	3.0	37.0	1.0	-64.8	-13.0	-51.8		
	2539.50	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5		
	3386.00	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3		

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/28/2015								
<b>Test Engineer:</b>		A. Escamilla								
<b>Configuration:</b>		EUT , AC Adapter, HS								
<b>Location:</b>		Chamber B								
<b>Mode:</b>		LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 826.5									
	1653.00	-29.3	V	3.0	37.0	1.0	-65.3	-13.0	-52.3	
	2479.50	-23.2	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
LTE5	3306.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
	1653.00	-29.0	H	3.0	37.0	1.0	-65.0	-13.0	-52.0	
	2479.50	-25.2	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
5MHz	3306.00	-20.7	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
	Mid Ch, 836.5									
	1673.00	-29.0	V	3.0	37.0	1.0	-65.0	-13.0	-52.0	
QPSK	2509.50	-23.2	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	3346.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
	1673.00	-29.0	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
	2509.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
	3346.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	
	High Ch, 846.5									
	1693.00	-29.0	V	3.0	37.0	1.0	-65.0	-13.0	-52.0	
	2539.50	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
	3386.00	-20.8	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
	1693.00	-29.0	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
	2539.50	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
	3386.00	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement												
<b>Company:</b>		LG										
<b>Project #:</b>		15I21238										
<b>Date:</b>		7/28/2015										
<b>Test Engineer:</b>		A. Escamilla										
<b>Configuration:</b>		EUT , AC Adapter, HS										
<b>Location:</b>		Chamber B										
<b>Mode:</b>		LTE_16QAM Band 5 Harmonics, 3MHz Bandwidth										
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Band	Low Ch, 825.5											
		1651.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9		
		2476.50	-23.8	V	3.0	36.4	1.0	-59.2	-13.0	-46.2		
	LTE5	3302.00	-20.3	V	3.0	36.2	1.0	-55.5	-13.0	-42.5		
		1651.00	-29.1	H	3.0	37.0	1.0	-65.1	-13.0	-52.1		
	3MHz	2476.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0		
		3302.00	-20.4	H	3.0	36.2	1.0	-55.6	-13.0	-42.6		
	16QAM	Mid Ch, 836.5										
			1673.00	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
			2509.50	-23.3	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
			3346.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
			1673.00	-29.2	H	3.0	37.0	1.0	-65.2	-13.0	-52.2	
		2509.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0		
		3346.00	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0		
		High Ch, 847.5										
	1695.00	-29.5	V	3.0	37.0	1.0	-65.4	-13.0	-52.4			
	2542.50	-23.6	V	3.0	36.4	1.0	-59.0	-13.0	-46.0			
	3390.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2			
	1695.00	-28.8	H	3.0	37.0	1.0	-64.8	-13.0	-51.8			
	2542.50	-24.6	H	3.0	36.4	1.0	-60.0	-13.0	-47.0			
	3390.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7			

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/28/2015								
<b>Test Engineer:</b>		A. Escamilla								
<b>Configuration:</b>		EUT , AC Adapter, HS								
<b>Location:</b>		Chamber B								
<b>Mode:</b>		LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	Low Ch, 825.5									
	1651.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
	2476.50	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
LTE5	3302.00	-20.5	V	3.0	36.2	1.0	-55.7	-13.0	-42.7	
	1651.00	-29.7	H	3.0	37.0	1.0	-65.7	-13.0	-52.7	
3MHz	2476.50	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
	3302.00	-20.7	H	3.0	36.2	1.0	-55.9	-13.0	-42.9	
QPSK	Mid Ch, 836.5									
	1673.00	-28.9	V	3.0	37.0	1.0	-64.9	-13.0	-51.9	
	2509.50	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
	3346.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
	1673.00	-29.5	H	3.0	37.0	1.0	-65.4	-13.0	-52.4	
	2509.50	-24.8	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
	High Ch, 847.5									
	1695.00	-29.4	V	3.0	37.0	1.0	-65.4	-13.0	-52.4	
	2542.50	-23.9	V	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	3390.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
	1695.00	-29.1	H	3.0	37.0	1.0	-65.1	-13.0	-52.1	
	2542.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
	3390.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/28/2015							
<b>Test Engineer:</b>		A. Escamilla							
<b>Configuration:</b>		EUT , AC Adapter, HS							
<b>Location:</b>		Chamber B							
<b>Mode:</b>		LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-29.4	V	3.0	37.0	1.0	-65.5	-13.0	-52.5	
2474.10	-24.1	V	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3298.80	-20.9	V	3.0	36.2	1.0	-56.1	-13.0	-43.1	
1649.40	-29.3	H	3.0	37.0	1.0	-65.4	-13.0	-52.4	
2474.10	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3298.80	-20.8	H	3.0	36.2	1.0	-55.9	-13.0	-42.9	
Mid Ch, 836.5									
1673.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2509.50	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3346.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1673.00	-28.9	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
2509.50	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3346.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 848.3									
1696.60	-29.1	V	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2544.90	-23.8	V	3.0	36.4	1.0	-59.2	-13.0	-46.2	
3393.20	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1696.60	-29.1	H	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2544.90	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3393.20	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
<b>Company:</b>		LG							
<b>Project #:</b>		15I21238							
<b>Date:</b>		7/28/2015							
<b>Test Engineer:</b>		A. Escamilla							
<b>Configuration:</b>		EUT , AC Adapter, HS							
<b>Location:</b>		Chamber B							
<b>Mode:</b>		LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 824.7</b>									
Band	1649.40	-29.4	V	3.0	37.0	1.0	-65.4	-13.0	-52.4
	2474.10	-23.4	V	3.0	36.4	1.0	-58.9	-13.0	-45.9
LTE5	3298.80	-20.0	V	3.0	36.2	1.0	-55.1	-13.0	-42.1
	1649.40	-29.7	H	3.0	37.0	1.0	-65.8	-13.0	-52.8
	2474.10	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6
1.4MHz	3298.80	-20.6	H	3.0	36.2	1.0	-55.7	-13.0	-42.7
<b>Mid Ch, 836.5</b>									
QPSK	1673.00	-29.5	V	3.0	37.0	1.0	-65.5	-13.0	-52.5
	2509.50	-23.3	V	3.0	36.4	1.0	-58.7	-13.0	-45.7
	3346.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2
	1673.00	-28.8	H	3.0	37.0	1.0	-64.8	-13.0	-51.8
	2509.50	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7
	3346.00	-20.7	H	3.0	36.1	1.0	-55.8	-13.0	-42.8
<b>High Ch, 848.3</b>									
	1696.60	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8
	2544.90	-23.1	V	3.0	36.4	1.0	-58.5	-13.0	-45.5
	3393.20	-20.0	V	3.0	36.1	1.0	-55.0	-13.0	-42.0
	1696.60	-29.2	H	3.0	37.0	1.0	-65.2	-13.0	-52.2
	2544.90	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6
	3393.20	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4

**LTE Band 12**

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch,704</b>									
LTE12	1408.00	-31.6	V	3.0	37.4	1.0	-68.0	-13.0	-55.0	
	2112.00	-23.5	V	3.0	36.6	1.0	-59.0	-13.0	-46.0	
10MHz	2816.00	-22.9	V	3.0	36.4	1.0	-58.3	-13.0	-45.3	
	1408.00	-29.5	H	3.0	37.4	1.0	-65.9	-13.0	-52.9	
16QAM	2112.00	-25.0	H	3.0	36.6	1.0	-60.5	-13.0	-47.5	
	2816.00	-24.0	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	<b>Mid Ch,707.5</b>									
	1415.00	-31.1	V	3.0	37.3	1.0	-67.5	-13.0	-54.5	
	2122.50	-23.0	V	3.0	36.6	1.0	-58.6	-13.0	-45.6	
	2830.00	-22.1	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
	1415.00	-30.2	H	3.0	37.3	1.0	-66.5	-13.0	-53.5	
	2122.50	-24.7	H	3.0	36.6	1.0	-60.3	-13.0	-47.3	
	2830.00	-23.9	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	<b>High Ch,711</b>									
	1422.00	-31.3	V	3.0	37.3	1.0	-67.7	-13.0	-54.7	
	2133.00	-23.5	V	3.0	36.6	1.0	-59.0	-13.0	-46.0	
	2844.00	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
	1422.00	-29.6	H	3.0	37.3	1.0	-65.9	-13.0	-52.9	
	2133.00	-25.2	H	3.0	36.6	1.0	-60.8	-13.0	-47.8	
	2844.00	-23.7	H	3.0	36.4	1.0	-59.1	-13.0	-46.1	



<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch,704</b>									
LTE12	1408.00	-31.1	V	3.0	37.4	1.0	-67.5	-13.0	-54.5	
	2112.00	-23.0	V	3.0	36.6	1.0	-58.6	-13.0	-45.6	
10MHz	2816.00	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
	1408.00	-29.4	H	3.0	37.4	1.0	-65.8	-13.0	-52.8	
QPSK	2112.00	-24.5	H	3.0	36.6	1.0	-60.0	-13.0	-47.0	
	2816.00	-23.3	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	
	<b>Mid Ch,707.5</b>									
	1415.00	-30.3	V	3.0	37.3	1.0	-66.7	-13.0	-53.7	
	2122.50	-22.8	V	3.0	36.6	1.0	-58.4	-13.0	-45.4	
	2830.00	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
	1415.00	-29.5	H	3.0	37.3	1.0	-65.8	-13.0	-52.8	
	2122.50	-24.9	H	3.0	36.6	1.0	-60.5	-13.0	-47.5	
	2830.00	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
	<b>High Ch,711</b>									
	1422.00	-31.2	V	3.0	37.3	1.0	-67.6	-13.0	-54.6	
	2133.00	-23.8	V	3.0	36.6	1.0	-59.4	-13.0	-46.4	
	2844.00	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
	1422.00	-29.2	H	3.0	37.3	1.0	-65.6	-13.0	-52.6	
	2133.00	-24.9	H	3.0	36.6	1.0	-60.5	-13.0	-47.5	
	2844.00	-23.4	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 701.50</b>									
LTE12	1403.00	-31.4	V	3.0	37.4	1.0	-67.8	-13.0	-54.8	
	2104.50	-23.2	V	3.0	36.6	1.0	-58.7	-13.0	-45.7	
5MHz	2806.00	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
	1403.00	-30.0	H	3.0	37.4	1.0	-66.3	-13.0	-53.3	
16QAM	2104.50	-25.1	H	3.0	36.6	1.0	-60.7	-13.0	-47.7	
	2806.00	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
	<b>Mid Ch, 707.50</b>									
	1415.00	-31.1	V	3.0	37.3	1.0	-67.5	-13.0	-54.5	
	2122.50	-23.1	V	3.0	36.6	1.0	-58.7	-13.0	-45.7	
	2830.00	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
	1415.00	-30.2	H	3.0	37.3	1.0	-66.6	-13.0	-53.6	
	2122.50	-24.8	H	3.0	36.6	1.0	-60.3	-13.0	-47.3	
	2830.00	-23.9	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	<b>High Ch, 713.50</b>									
	1427.00	-31.4	V	3.0	37.3	1.0	-67.7	-13.0	-54.7	
	2140.50	-24.1	V	3.0	36.6	1.0	-59.7	-13.0	-46.7	
	2854.00	-22.6	V	3.0	36.4	1.0	-58.0	-13.0	-45.0	
	1427.00	-29.4	H	3.0	37.3	1.0	-65.7	-13.0	-52.7	
	2140.50	-25.0	H	3.0	36.6	1.0	-60.6	-13.0	-47.6	
	2854.00	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 701.50</b>										
LTE12	1403.00	-31.0	V	3.0	37.4	1.0	-67.4	-13.0	-54.4	
	2104.50	-22.9	V	3.0	36.6	1.0	-58.5	-13.0	-45.5	
5MHz	2806.00	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
	1403.00	-30.1	H	3.0	37.4	1.0	-66.5	-13.0	-53.5	
QPSK	2104.50	-24.9	H	3.0	36.6	1.0	-60.4	-13.0	-47.4	
	2806.00	-23.4	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
<b>Mid Ch, 707.50</b>										
	1415.00	-30.2	V	3.0	37.3	1.0	-66.5	-13.0	-53.5	
	2122.50	-23.0	V	3.0	36.6	1.0	-58.5	-13.0	-45.5	
	2830.00	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
	1415.00	-29.7	H	3.0	37.3	1.0	-66.0	-13.0	-53.0	
	2122.50	-25.0	H	3.0	36.6	1.0	-60.6	-13.0	-47.6	
	2830.00	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
<b>High Ch, 713.50</b>										
	1427.00	-31.2	V	3.0	37.3	1.0	-67.5	-13.0	-54.5	
	2140.50	-23.8	V	3.0	36.6	1.0	-59.3	-13.0	-46.3	
	2854.00	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
	1427.00	-29.3	H	3.0	37.3	1.0	-65.6	-13.0	-52.6	
	2140.50	-25.0	H	3.0	36.6	1.0	-60.5	-13.0	-47.5	
	2854.00	-23.3	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 12 Harmonics, 3MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 700.5</b>									
LTE12	1401.00	-31.1	V	3.0	37.4	1.0	-67.5	-13.0	-54.5	
	2101.50	-23.6	V	3.0	36.6	1.0	-59.2	-13.0	-46.2	
3MHz	2802.00	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
	1401.00	-30.4	H	3.0	37.4	1.0	-66.8	-13.0	-53.8	
16QAM	2101.50	-25.4	H	3.0	36.6	1.0	-60.9	-13.0	-47.9	
	2802.00	-24.0	H	3.0	36.4	1.0	-59.4	-13.0	-46.4	
	<b>Mid Ch, 707.50</b>									
	1415.00	-31.0	V	3.0	37.3	1.0	-67.3	-13.0	-54.3	
	2122.00	-23.4	V	3.0	36.6	1.0	-59.0	-13.0	-46.0	
	2830.00	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
	1415.00	-29.9	H	3.0	37.3	1.0	-66.2	-13.0	-53.2	
	2122.00	-25.5	H	3.0	36.6	1.0	-61.1	-13.0	-48.1	
	2830.00	-23.9	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	<b>High Ch, 714.5</b>									
	1429.00	-31.6	V	3.0	37.3	1.0	-68.0	-13.0	-55.0	
	2143.50	-23.3	V	3.0	36.6	1.0	-58.9	-13.0	-45.9	
	2858.00	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
	1429.00	-29.6	H	3.0	37.3	1.0	-65.9	-13.0	-52.9	
	2143.50	-25.2	H	3.0	36.6	1.0	-60.8	-13.0	-47.8	
	2858.00	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 12 Harmonics, 3MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 700.5</b>										
LTE12	1401.00	-31.2	V	3.0	37.4	1.0	-67.6	-13.0	-54.6	
	2101.50	-23.3	V	3.0	36.6	1.0	-58.9	-13.0	-45.9	
3MHz	2802.00	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
QPSK	1401.00	-30.1	H	3.0	37.4	1.0	-66.4	-13.0	-53.4	
	2101.50	-25.1	H	3.0	36.6	1.0	-60.6	-13.0	-47.6	
	2802.00	-23.5	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
<b>Mid Ch, 707.50</b>										
	1415.00	-30.3	V	3.0	37.3	1.0	-66.6	-13.0	-53.6	
	2122.00	-22.9	V	3.0	36.6	1.0	-58.4	-13.0	-45.4	
	2830.00	-22.6	V	3.0	36.4	1.0	-58.0	-13.0	-45.0	
	1415.00	-29.3	H	3.0	37.3	1.0	-65.7	-13.0	-52.7	
	2122.00	-25.0	H	3.0	36.6	1.0	-60.6	-13.0	-47.6	
	2830.00	-23.3	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	
<b>High Ch, 714.5</b>										
	1429.00	-31.2	V	3.0	37.3	1.0	-67.6	-13.0	-54.6	
	2143.50	-23.7	V	3.0	36.6	1.0	-59.2	-13.0	-46.2	
	2858.00	-22.1	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
	1429.00	-29.5	H	3.0	37.3	1.0	-65.9	-13.0	-52.9	
	2143.50	-24.9	H	3.0	36.6	1.0	-60.5	-13.0	-47.5	
	2858.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		15I21238							
Date:		7/25/2015							
Test Engineer:		R.Alegre							
Configuration:		EUT , AC Adapter /HS							
Location:		Chamber B							
Mode:		LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band									
LTE12									
1.4MHz									
16QAM									
Low Ch, 824.7									
1649.40	0.0	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2474.10	0.0	V	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3298.80	0.0	V	3.0	36.2	1.0	-35.2	-13.0	-22.2	
1649.40	0.0	H	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2474.10	0.0	H	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3298.80	0.0	H	3.0	36.2	1.0	-35.2	-13.0	-22.2	
Mid Ch, 836.5									
1673.00	0.0	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2509.50	0.0	V	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3346.00	0.0	V	3.0	36.1	1.0	-35.1	-13.0	-22.1	
1673.00	0.0	H	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2509.50	0.0	H	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3346.00	0.0	H	3.0	36.1	1.0	-35.1	-13.0	-22.1	
High Ch, 848.3									
1696.60	0.0	V	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2544.90	0.0	V	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3393.20	0.0	V	3.0	36.1	1.0	-35.1	-13.0	-22.1	
1696.60	0.0	H	3.0	37.0	1.0	-36.0	-13.0	-23.0	
2544.90	0.0	H	3.0	36.4	1.0	-35.4	-13.0	-22.4	
3393.20	0.0	H	3.0	36.1	1.0	-35.1	-13.0	-22.1	

<b>UL Verification Services, Inc.</b>										
<b>Above 1GHz High Frequency Substitution Measurement</b>										
<b>Company:</b>		LG								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/25/2015								
<b>Test Engineer:</b>		R.Alegre								
<b>Configuration:</b>		EUT , AC Adapter /HS								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 699.7</b>									
LTE12	1399.40	-30.2	V	3.0	37.4	1.0	-66.5	-13.0	-53.5	
	2099.10	-21.9	V	3.0	36.6	1.0	-57.5	-13.0	-44.5	
1.4MHz	2798.80	-22.0	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
	1399.40	-30.2	H	3.0	37.4	1.0	-66.5	-13.0	-53.5	
QPSK	2099.10	-20.0	H	3.0	36.6	1.0	-55.6	-13.0	-42.6	
	2798.80	-23.0	H	3.0	36.4	1.0	-58.4	-13.0	-45.4	
	<b>Mid Ch, 707.50</b>									
	1415.00	-30.5	V	3.0	37.3	1.0	-66.8	-13.0	-53.8	
	2122.00	-22.5	V	3.0	36.6	1.0	-58.1	-13.0	-45.1	
	2830.00	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
	1415.00	-28.8	H	3.0	37.3	1.0	-65.2	-13.0	-52.2	
	2122.00	-21.9	H	3.0	36.6	1.0	-57.5	-13.0	-44.5	
	2830.00	-23.3	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	<b>High Ch, 715.3</b>									
	1430.60	-30.8	V	3.0	37.3	1.0	-67.2	-13.0	-54.2	
	2145.90	-22.6	V	3.0	36.6	1.0	-58.1	-13.0	-45.1	
	2861.20	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
	1430.60	-28.3	H	3.0	37.3	1.0	-64.7	-13.0	-51.7	
	2145.90	-16.2	H	3.0	36.6	1.0	-51.7	-13.0	-38.7	
	2861.20	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	







Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/8/2015								
<b>Test Engineer:</b>		Jude Semana								
<b>Configuration:</b>		X-pos EUT, AC Charger, Headset								
<b>Location:</b>		Chamber C								
<b>Mode:</b>		LTE_16QAM Band 30 Harmonics, 5MHz Bandwidth								
Band	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	<b>Low Ch, 2307.50</b>									
LTE30	4615.00	-12.9	V	3.0	35.5	1.0	-47.3	-40.0	-7.3	
	6922.50	-10.9	V	3.0	35.7	1.0	-45.7	-40.0	-5.7	
	9230.00	-11.1	V	3.0	36.0	1.0	-46.1	-40.0	-6.1	
5MHz	4615.00	-12.7	H	3.0	35.5	1.0	-47.1	-40.0	-7.1	
	6922.50	-9.7	H	3.0	35.7	1.0	-44.5	-40.0	-4.5	
16QAM	9230.00	-9.5	H	3.0	36.0	1.0	-44.5	-40.0	-4.5	
	<b>Mid Ch, 2310.00</b>									
	4620.00	-12.7	V	3.0	35.4	1.0	-47.1	-40.0	-7.1	
	6930.00	-9.9	V	3.0	35.8	1.0	-44.6	-40.0	-4.6	
	9240.00	-10.6	V	3.0	35.8	1.0	-45.4	-40.0	-5.4	
	4620.00	-11.9	H	3.0	35.4	1.0	-46.3	-40.0	-6.3	
	6930.00	-8.8	H	3.0	35.8	1.0	-43.5	-40.0	-3.5	
	9240.00	-10.2	H	3.0	35.8	1.0	-45.1	-40.0	-5.1	
	<b>High Ch, 2312.50</b>									
	4625.00	-12.4	V	3.0	35.4	1.0	-46.8	-40.0	-6.8	
	6937.50	-8.6	V	3.0	35.8	1.0	-43.4	-40.0	-3.4	
	9250.00	-10.6	V	3.0	35.7	1.0	-45.3	-40.0	-5.3	
	4625.00	-12.2	H	3.0	35.4	1.0	-46.6	-40.0	-6.6	
	6937.50	-9.1	H	3.0	35.8	1.0	-43.9	-40.0	-3.9	
	9250.00	-10.0	H	3.0	35.7	1.0	-44.7	-40.0	-4.7	

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
<b>Company:</b>		LG Electronics								
<b>Project #:</b>		15I21238								
<b>Date:</b>		7/8/2015								
<b>Test Engineer:</b>		Jude Semana								
<b>Configuration:</b>		X-pos EUT, AC Charger, Headset								
<b>Location:</b>		Chamber B								
<b>Mode:</b>		LTE_QPSK Band 30 Harmonics, 5MHz Bandwidth								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band	<b>Low Ch, 2307.50</b>									
	4615.00	-12.8	V	3.0	35.5	1.0	-47.3	-40.0	-7.3	
	6922.50	-10.5	V	3.0	35.7	1.0	-45.2	-40.0	-5.2	
LTE30	9230.00	-10.7	V	3.0	36.0	1.0	-45.7	-40.0	-5.7	
	4615.00	-11.5	H	3.0	35.5	1.0	-45.9	-40.0	-5.9	
	6922.50	-9.0	H	3.0	35.7	1.0	-43.7	-40.0	-3.7	
5MHz	9230.00	-9.9	H	3.0	36.0	1.0	-44.9	-40.0	-4.9	
	<b>Mid Ch, 2310.00</b>									
	4620.00	-13.3	V	3.0	35.4	1.0	-47.7	-40.0	-7.7	
QPSK	6930.00	-10.7	V	3.0	35.8	1.0	-45.5	-40.0	-5.5	
	9240.00	-10.8	V	3.0	35.8	1.0	-45.6	-40.0	-5.6	
	4620.00	-13.0	H	3.0	35.4	1.0	-47.4	-40.0	-7.4	
	6930.00	-10.1	H	3.0	35.8	1.0	-44.9	-40.0	-4.9	
	9240.00	-11.0	H	3.0	35.8	1.0	-45.9	-40.0	-5.9	
	<b>High Ch, 2312.50</b>									
	4625.00	-12.9	V	3.0	35.4	1.0	-47.3	-40.0	-7.3	
	6937.50	-9.4	V	3.0	35.8	1.0	-44.2	-40.0	-4.2	
	9250.00	-10.2	V	3.0	35.7	1.0	-44.9	-40.0	-4.9	
	4625.00	-12.0	H	3.0	35.4	1.0	-46.4	-40.0	-6.4	
	6937.50	-10.1	H	3.0	35.8	1.0	-44.9	-40.0	-4.9	
	9250.00	-9.9	H	3.0	35.7	1.0	-44.6	-40.0	-4.6	