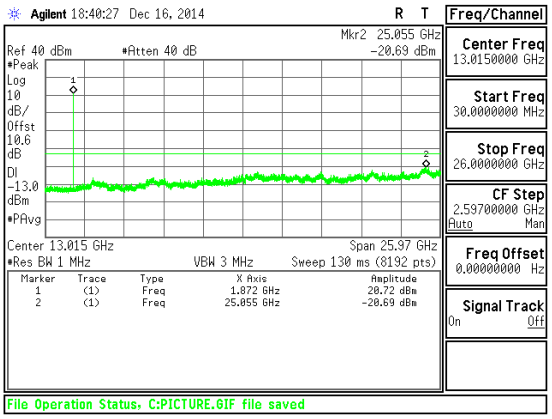
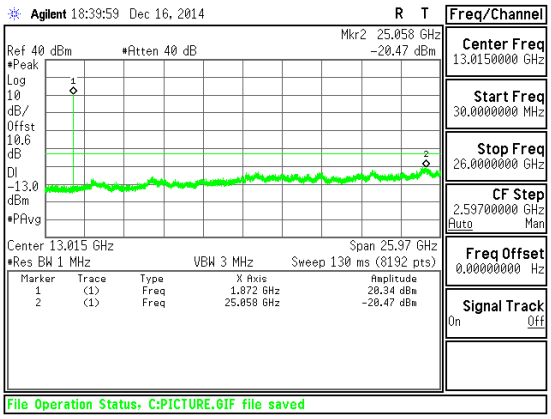
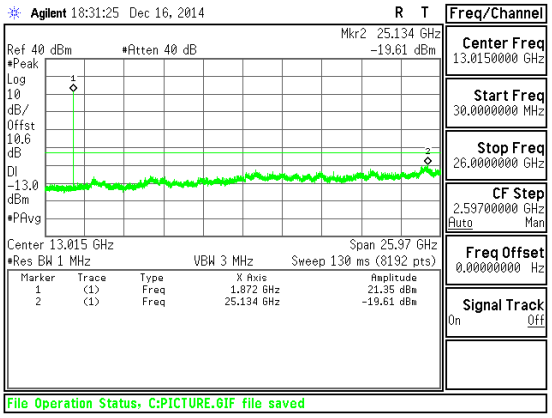
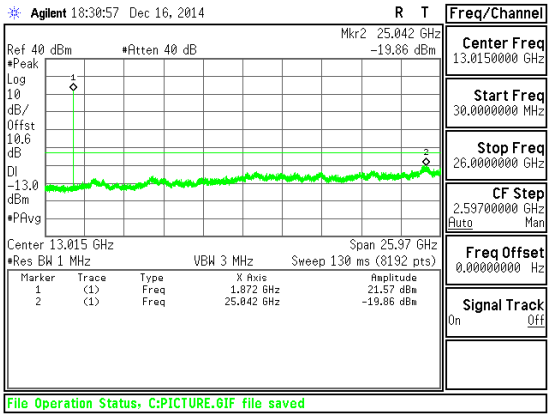
LTE Band 2

Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CSE 16QAM Mid channel	 Band LTE2 20MHz CSE QPSK Mid channel
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CSE 16QAM Mid channel	 Band LTE2 15MHz CSE QPSK Mid channel

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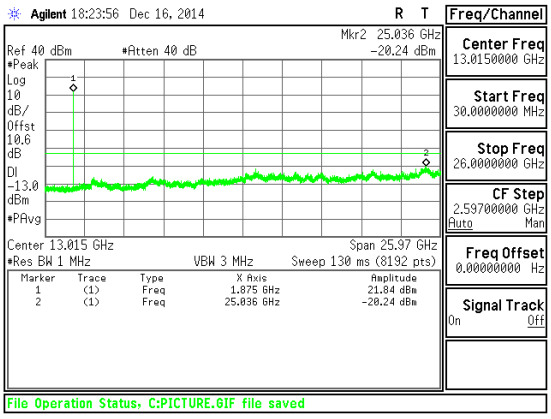
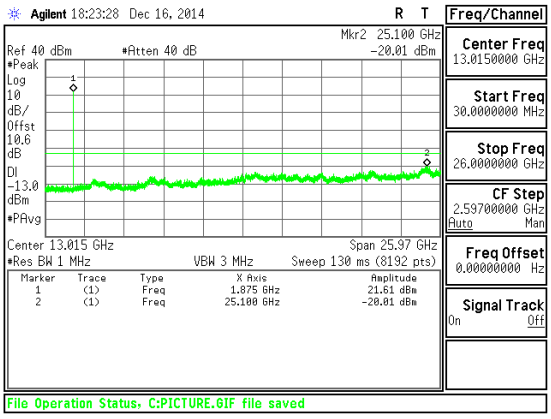
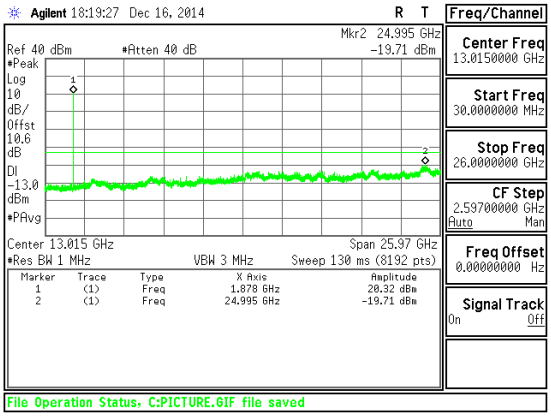
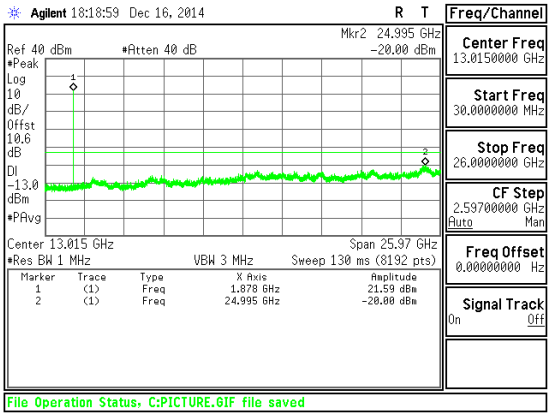
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CSE 16QAM Mid channel	 Band LTE2 10MHz CSE QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CSE 16QAM Mid channel	 Band LTE2 5MHz CSE QPSK Mid channel

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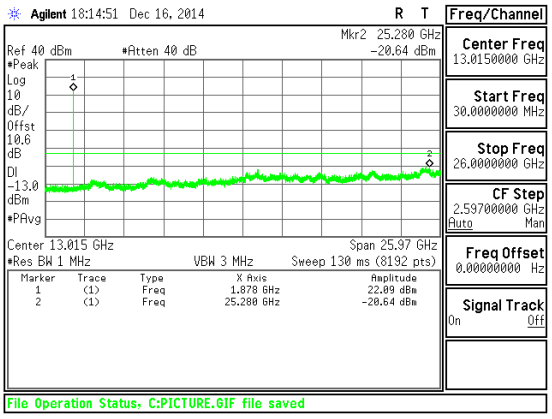
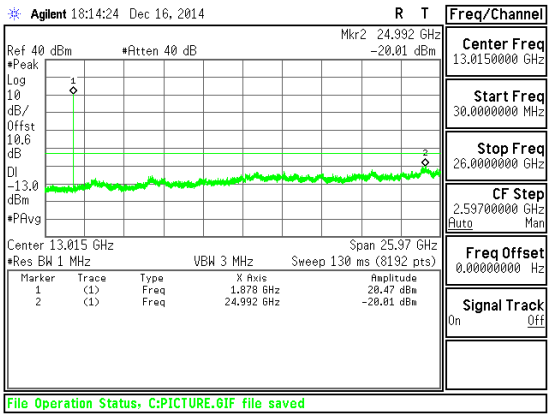
Band LTE2 3MHz 16QAM

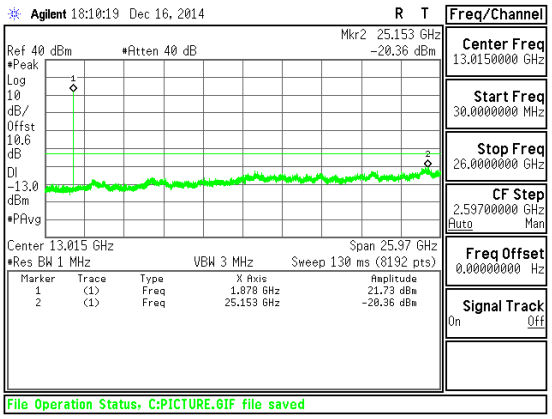


Band LTE2 3MHz CSE 16QAM Mid channel

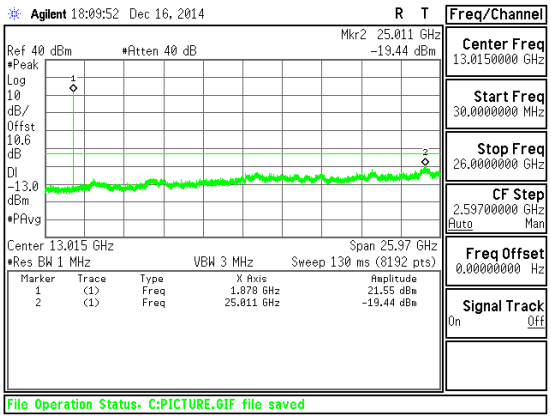


Band LTE2 3MHz CSE QPSK Mid channel

Band LTE2 1.4MHz 16QAM



Band LTE2 1.4MHz CSE 16QAM Mid channel



Band LTE2 1.4MHz CSE QPSK Mid channel

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1.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

MODES TESTED

LTE Band 25, 12, 5, 4, and 2.

RESULTS

See the following pages.

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1.4.1. FREQUENCY STABILITY RESULTS

LTE BAND 2 – MID CHANNEL (1880.0 MHz)

Reference Frequency: Cellular Mid Channel 1879.999998MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999971	0.002	2.5
3.80	40	1879.999973	0.001	2.5
3.80	30	1879.999975	0.000	2.5
3.80	***20***	***1879.999975***	***0***	2.5
3.80	10	1879.999989	-0.007	2.5
3.80	0	1879.999991	-0.008	2.5
3.80	-10	1879.999985	-0.005	2.5
3.80	-20	1879.999977	-0.001	2.5
3.80	-30	1879.999978	-0.001	2.5

Reference Frequency: Cellular Mid Channel 1879.999998MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1879.999998***	***0***	***2.5***
3.23	20	1879.999992	*0.003*	2.5
4.37	20	1879.999994	*0.002*	2.5

LTE BAND 4 – MID CHANNEL (1732.5 MHz)

Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500016	0.003	2.5
3.80	40	1732.500018	0.002	2.5
3.80	30	1732.500018	0.002	2.5
3.80	***20***	***1732.500021***	***0***	2.5
3.80	10	1732.500016	0.003	2.5
3.80	0	1732.500016	0.003	2.5
3.80	-10	1732.500014	0.004	2.5
3.80	-20	1732.500015	0.003	2.5
3.80	-30	1732.500015	0.003	2.5

Reference Frequency: Cellular Mid Channel 1732.500021MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1732.500021***	***0***	***2.5***
3.23	20	1732.500011	*0.006*	2.5
4.37	20	1732.500014	*0.004*	2.5

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LTE BAND 12 – MID CHANNEL (707.5 MHz)

Reference Frequency: Cellular Mid Channel 707.499994MHz @ 20°C Limit: to stay +- 2.5 ppm = 1768.749 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.499463	0.164	2.5
3.80	40	707.499421	0.223	2.5
3.80	30	707.499474	0.148	2.5
3.80	***20***	**707.499579**	***0***	2.5
3.80	10	707.499638	-0.083	2.5
3.80	0	707.499555	0.034	2.5
3.80	-10	707.499568	0.016	2.5
3.80	-20	707.499502	0.109	2.5
3.80	-30	707.499587	-0.011	2.5

Reference Frequency: Cellular Mid Channel 707.499994MHz @ 20°C Limit: to stay +- 2.5 ppm = 1768.749 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***707.499579***	***0***	***2.5***
3.23	20	707.499461	*0.167*	2.5
4.37	20	707.499446	*0.188*	2.5

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LTE BAND 25 – MID CHANNEL (1882.5MHz)

Reference Frequency: Cellular Mid Channel 1882.500027MHz @ 20°C Limit: to stay +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1882.500019	0.004	2.5
3.80	40	1882.500021	0.003	2.5
3.80	30	1882.500022	0.003	2.5
3.80	***20***	***1882.500027***	***0***	2.5
3.80	10	1882.500026	0.001	2.5
3.80	0	1882.500030	-0.002	2.5
3.80	-10	1882.500032	-0.003	2.5
3.80	-20	1882.500032	-0.003	2.5
3.80	-30	1882.500035	-0.004	2.5

Reference Frequency: Cellular Mid Channel 1882.500027MHz @ 20°C Limit: to stay +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1882.500027***	***0***	***2.5***
3.23	20	1882.500018	*0.005*	2.5
4.37	20	1882.500016	*0.006*	2.5

LTE BAND 5 – MID CHANNEL (836.5 MHz) 12/14/2014

Reference Frequency: Cellular Mid Channel 836.500007MHz @ 20°C Limit: to stay +- 2.5 ppm = 2091.249 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.499300	0.178	2.5
3.80	40	836.499309	0.167	2.5
3.80	30	836.499474	-0.030	2.5
3.80	***20***	836.499449	***0***	2.5
3.80	10	836.499629	-0.215	2.5
3.80	0	836.499496	-0.056	2.5
3.80	-10	836.499562	-0.135	2.5
3.80	-20	836.499478	-0.035	2.5
3.80	-30	836.499632	-0.219	2.5

Reference Frequency: Cellular Mid Channel 836.500007MHz @ 20°C Limit: to stay +- 2.5 ppm = 2091.249 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***836.499449***	***0***	***2.5***
3.23	20	836.499268	*0.216*	2.5
4.37	20	836.499565	*-0.139*	2.5

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2. RADIATED TEST RESULTS

10.2. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS

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

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

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

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

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

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 v02r01

For peak power measurement with a PSA:

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

For average power measurement with a PSA:

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

MODES TESTED

CDMA, LTE Band 25, 17, 12, 5,4, and 2

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TEST RESULTS

2.1.1. ERP/EIRP Results

CDMA

3. Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	25.23	333.43
		600	1880	25.07	321.37
		1175	1908.75	24.2	263.03
	EVDO REL. 0	25	1851.25	23.81	240.44
		600	1880	23.9	245.47
		1175	1908.75	23.11	204.64

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	21.65	146.25
		384	836.52	21.59	144.24
		777	848.31	21.67	146.93
	EVDO REL. 0	1013	824.7	21.4	138.04
		384	836.52	21.59	144.21
		777	848.31	21.26	133.66

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3.1.1. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	5	QPSK	1/0	1852.5	25.04	319.15
			1/0	1882.5	25.04	319.15
			1/0	1912.5	25.39	345.94
		16QAM	1/0	1852.5	24.01	251.77
			1/0	1882.5	24.07	255.27
			1/0	1912.5	24.62	289.73

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	10	QPSK	1/0	709	15.47	35.24
			1/0	710	15.56	35.97
			1/0	711	15.48	35.32
		16QAM	1/0	709	14.29	26.85
			1/0	710	14.48	28.05
			1/0	711	14.86	30.62
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	5	QPSK	1/0	706.5	15.37	34.43
			1/0	710	15.44	34.99
			1/0	713.5	15.6	36.31
		16QAM	1/0	706.5	14.28	26.79
			1/0	710	14.45	27.86
			1/0	713.5	14.66	29.24

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	10	QPSK	1/0	704	15.49	35.4
			1/0	707.5	15.59	36.22
			1/0	711	15.74	37.5
		16QAM	1/0	704	14.42	27.67
			1/0	707.5	14.46	27.93
			1/0	711	14.97	31.41
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	5	QPSK	1/0	701.5	15.58	36.14
			1/0	707.5	15.56	35.97
			1/0	713.5	15.77	37.76
		16QAM	1/0	701.5	14.59	28.77
			1/0	707.5	14.58	28.71
			1/0	713.5	14.95	31.26

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	20.351	108.42
			1/0	836.5	20.381	109.17
			1/0	844	20.351	108.42
		16QAM	1/0	829	19.411	87.32
			1/0	836.5	19.381	86.72
			1/0	844	19.281	84.74
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	20.001	100.02
			1/0	836.5	20.021	100.48
			1/0	846.5	20.051	101.18
		16QAM	1/0	826.5	19.641	92.07
			1/0	836.5	19.041	80.19
			1/0	846.5	19.641	92.07

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	3	QPSK	1/0	825.5	20.441	110.69
			1/0	836.5	20.411	109.93
			1/0	847.5	20.081	101.88
		16QAM	1/0	825.5	19.791	95.3
			1/0	836.5	19.421	87.52
			1/0	847.5	19.021	79.82
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	1.4	QPSK	1/0	824.7	19.841	96.41
			1/0	836.5	20.081	101.88
			1/0	848.3	20.011	100.25
		16QAM	1/0	824.7	19.481	88.74
			1/0	836.5	19.501	89.15
			1/0	848.3	19.281	84.74

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	25.41	347.54
			1/0	1732.5	26.29	425.6
			1/0	1745	25.95	393.55
		16QAM	1/0	1720	24.08	255.86
			1/0	1732.5	25.22	332.66
			1/0	1745	24.59	287.74
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	15	QPSK	1/0	1717.5	25.27	336.51
			1/0	1732.5	24.27	267.3
			1/0	1747.5	24.94	311.89
		16QAM	1/0	1717.5	24.3	269.15
			1/0	1732.5	23.41	219.28
			1/0	1747.5	24.22	264.24

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	24.27	267.3
			1/0	1732.5	25	316.23
			1/0	1750	25	316.23
		16QAM	1/0	1715	23.21	209.41
			1/0	1732.5	23.85	242.66
			1/0	1750	23.97	249.46
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	24.24	265.46
			1/0	1732.5	24.96	313.33
			1/0	1752.5	24.96	313.33
		16QAM	1/0	1712.5	23.32	214.78
			1/0	1732.5	24.03	252.93
			1/0	1752.5	23.93	247.17

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	24.732	297.3
			1/0	1880	25.02	317.69
			1/0	1900	24.966	313.76
		16QAM	1/0	1860	23.682	233.45
			1/0	1880	24.25	266.07
			1/0	1900	24.216	264
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	15	QPSK	1/0	1857.5	24.552	285.23
			1/0	1880	24.8	302
			1/0	1902.5	24.556	285.5
		16QAM	1/0	1857.5	23.912	246.15
			1/0	1880	23.88	244.34
			1/0	1902.5	23.48	222.84

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	10	QPSK	1/0	1855	24.532	283.92
			1/0	1880	24.74	297.85
			1/0	1905	24.706	295.53
		16QAM	1/0	1855	23.782	238.89
			1/0	1880	23.65	231.74
			1/0	1905	23.776	238.56
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	5	QPSK	1/0	1852.5	24.452	278.74
			1/0	1880	24.05	254.1
			1/0	1907.5	24.306	269.53
		16QAM	1/0	1852.5	23.472	222.43
			1/0	1880	23.36	216.77
			1/0	1907.5	23.376	217.57
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	24.232	264.97
			1/0	1880	24.97	314.05
			1/0	1908.5	24.176	261.58
		16QAM	1/0	1851.5	23.442	220.9
			1/0	1880	23.91	246.04
			1/0	1908.5	23.576	227.82
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	1.4	QPSK	1/0	1850.7	24.692	294.58
			1/0	1880	24.7	295.12
			1/0	1909.3	24.026	252.7
		16QAM	1/0	1850.7	23.922	246.72
			1/0	1880	23.51	224.39
			1/0	1909.3	22.906	195.25

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3.1.2. ERP/EIRP PLOTS

CDMA

Band

BC1

EVDO

High Frequency Fundamental Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014280)
Mode: CDMA EVDO BC1

Test Equipment:
Receiving: T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.85125	15.1	V	0.85	8.01	22.29	33.0	-10.7	
1.85125	16.7	H	0.85	8.01	23.81	33.0	-9.2	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.83	33.0	-12.2	
1.880	16.7	H	0.85	8.01	23.90	33.0	-9.1	
High Ch								
1.90875	16.5	V	0.85	8.01	23.68	33.0	-9.3	
1.90875	16.0	H	0.85	8.01	23.11	33.0	-9.9	

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Band

BC1

1xRTT

High Frequency Fundamental Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014280)
Mode: CDMA RTT BC1

Test Equipment:
Receiving: T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.85125	15.3	V	0.85	8.01	22.41	33.0	-10.6	
1.85125	18.1	H	0.85	8.01	25.23	33.0	-7.8	
Mid Ch								
1.880	16.1	V	0.85	8.01	23.27	33.0	-9.7	
1.880	17.9	H	0.85	8.01	25.07	33.0	-7.9	
High Ch								
1.90875	17.0	V	0.85	8.01	24.20	33.0	-8.8	
1.90875	16.6	H	0.85	8.01	23.75	33.0	-9.3	

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Band

BC0

High Frequency Substitution Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/23/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014276)
Mode: CDMA EVDO BC0

Test Equipment:
Receiving: Sunol T185, and Chamber C Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	12.96	V	0.9	0.0	12.06	38.5	-26.4	
824.70	22.30	H	0.9	0.0	21.40	38.5	-17.0	
Mid Ch								
836.52	14.44	V	0.9	0.0	13.54	38.5	-24.9	
836.52	22.49	H	0.9	0.0	21.59	38.5	-16.9	
High Ch								
848.31	14.08	V	0.9	0.0	13.18	38.5	-25.3	
848.31	22.16	H	0.9	0.0	21.26	38.5	-17.2	

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Band

BC0

1xRTT

High Frequency Substitution Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/21/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: CDMA RTT BC0

Test Equipment:
Receiving: Sunol T185, and Chamber C Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	14.47	V	0.9	0.0	13.57	38.5	-24.9	
824.70	22.55	H	0.9	0.0	21.65	38.5	-16.8	
Mid Ch								
836.52	14.92	V	0.9	0.0	14.02	38.5	-24.4	
836.52	22.49	H	0.9	0.0	21.59	38.5	-16.9	
High Ch								
848.31	14.55	V	0.9	0.0	13.65	38.5	-24.8	
848.31	22.57	H	0.9	0.0	21.67	38.5	-16.8	

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LTE Band 25

Band

LTE25

5MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT only X-position
Mode: LTE Band 25_5MHz_16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.853	16.9	H	0.85	8.01	24.01	33.0	-9.0	
Mid Ch								
1.883	14.0	V	0.85	8.01	21.18	33.0	-11.8	
1.883	16.9	H	0.85	8.01	24.07	33.0	-8.9	
High Ch								
1.913	15.1	V	0.85	8.01	22.23	33.0	-10.8	
1.913	17.5	H	0.85	8.01	24.62	33.0	-8.4	

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Band

LTE25

5MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber C

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT only X-position
Mode: LTE Band 25_5MHz_QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	15.1	V	0.85	8.01	22.23	33.0	-10.8	
1.853	17.9	H	0.85	8.01	25.04	33.0	-8.0	
Mid Ch								
1.883	15.0	V	0.85	8.01	22.11	33.0	-10.9	
1.883	17.9	H	0.85	8.01	25.04	33.0	-8.0	
High Ch								
1.913	15.5	V	0.85	8.01	22.68	33.0	-10.3	
1.913	18.2	H	0.85	8.01	25.39	33.0	-7.6	

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LTE Band 17

Band

LTE17

10MHz

16QAM

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/2014
Test Engineer: R. Alegre
Configuration: EUT only
Location: Chamber C
Mode: LTE_16QAM Band 17 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
709.00	9.28	V	0.9	0.0	8.38	34.8	-26.4	
709.00	15.19	H	0.9	0.0	14.29	34.8	-20.5	
Mid Ch								
710.00	9.34	V	0.9	0.0	8.44	34.8	-26.3	
710.00	15.38	H	0.9	0.0	14.48	34.8	-20.3	
High Ch								
711.00	9.20	V	0.9	0.0	8.30	34.8	-26.5	
711.00	15.76	H	0.9	0.0	14.86	34.8	-19.9	

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

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Band

LTE17

10MHz

QPSK

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/2014
Test Engineer: R. Alegre
Configuration: EUT only
Location: Chamber C
Mode: LTE_QPSK Band 17 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
709.00	10.18	V	0.9	0.0	9.28	34.8	-25.5	
709.00	16.37	H	0.9	0.0	15.47	34.8	-19.3	
Mid Ch								
710.00	10.37	V	0.9	0.0	9.47	34.8	-25.3	
710.00	16.46	H	0.9	0.0	15.56	34.8	-19.2	
High Ch								
711.00	10.00	V	0.9	0.0	9.10	34.8	-25.7	
711.00	16.38	H	0.9	0.0	15.48	34.8	-19.3	

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

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Band

LTE17

5MHz

16QAM

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/2014
Test Engineer: R. Alegre
Configuration: EUT only
Location: Chamber C
Mode: LTE_16QAM Band 17 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
706.50	9.16	V	0.9	0.0	8.26	34.8	-26.5	
706.50	15.18	H	0.9	0.0	14.28	34.8	-20.5	
Mid Ch								
710.00	9.46	V	0.9	0.0	8.56	34.8	-26.2	
710.00	15.35	H	0.9	0.0	14.45	34.8	-20.3	
High Ch								
713.50	9.05	V	0.9	0.0	8.15	34.8	-26.6	
713.50	15.56	H	0.9	0.0	14.66	34.8	-20.1	

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

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Band

LTE17

5MHz

QPSK

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/2014
Test Engineer: R. Alegre
Configuration: EUT only
Location: Chamber C
Mode: LTE_QPSK Band 17 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
706.50	10.07	V	0.9	0.0	9.17	34.8	-25.6	
706.50	16.27	H	0.9	0.0	15.37	34.8	-19.4	
Mid Ch								
710.00	10.42	V	0.9	0.0	9.52	34.8	-25.3	
710.00	16.34	H	0.9	0.0	15.44	34.8	-19.3	
High Ch								
713.50	10.02	V	0.9	0.0	9.12	34.8	-25.7	
713.50	16.50	H	0.9	0.0	15.60	34.8	-19.2	

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

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LTE Band 12

Band

LTE12

10MHz

16QAM

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

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 12 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	10.06	V	0.9	0.0	9.16	34.8	-25.6	
704.00	15.32	H	0.9	0.0	14.42	34.8	-20.4	
Mid Ch								
707.50	10.08	V	0.9	0.0	9.18	34.8	-25.6	
707.50	15.36	H	0.9	0.0	14.46	34.8	-20.3	
High Ch								
711.00	9.97	V	0.9	0.0	9.07	34.8	-25.7	
711.00	15.87	H	0.9	0.0	14.97	34.8	-19.8	

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

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Band

LTE12

10MHz

QPSK

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

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	11.08	V	0.9	0.0	10.18	34.8	-24.6	
704.00	16.39	H	0.9	0.0	15.49	34.8	-19.3	
Mid Ch								
707.50	11.04	V	0.9	0.0	10.14	34.8	-24.6	
707.50	16.49	H	0.9	0.0	15.59	34.8	-19.2	
High Ch								
711.00	11.12	V	0.9	0.0	10.22	34.8	-24.6	
711.00	16.64	H	0.9	0.0	15.74	34.8	-19.0	

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

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Band

LTE12

5MHz

16QAM

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

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	10.11	V	0.9	0.0	9.21	34.8	-25.6	
701.50	15.49	H	0.9	0.0	14.59	34.8	-20.2	
Mid Ch								
707.50	10.16	V	0.9	0.0	9.26	34.8	-25.5	
707.50	15.48	H	0.9	0.0	14.58	34.8	-20.2	
High Ch								
713.50	10.25	V	0.9	0.0	9.35	34.8	-25.4	
713.50	15.85	H	0.9	0.0	14.95	34.8	-19.8	

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

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Band

LTE12

5MHz

QPSK

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

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 12 Fundamentals, 5MHz Bandwidth

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	11.15	V	0.9	0.0	10.25	34.8	-24.5	
701.50	16.48	H	0.9	0.0	15.58	34.8	-19.2	
Mid Ch								
707.50	11.08	V	0.9	0.0	10.18	34.8	-24.6	
707.50	16.46	H	0.9	0.0	15.56	34.8	-19.2	
High Ch								
713.50	11.13	V	0.9	0.0	10.23	34.8	-24.5	
713.50	16.67	H	0.9	0.0	15.77	34.8	-19.0	

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

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LTE Band 5

Band

LTE5

10MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 10MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
829.00	10.40	V	0.9	0.0	9.50	38.5	-28.9	
829.00	20.31	H	0.9	0.0	19.41	38.5	-19.0	
Mid Ch								
836.50	10.66	V	0.9	0.0	9.76	38.5	-28.7	
836.50	20.28	H	0.9	0.0	19.38	38.5	-19.1	
High Ch								
844.00	10.65	V	0.9	0.0	9.75	38.5	-28.7	
844.00	20.18	H	0.9	0.0	19.28	38.5	-19.2	

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

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Band

LTE5

10MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 10MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
829.00	11.30	V	0.9	0.0	10.40	38.5	-28.0	
829.00	21.25	H	0.9	0.0	20.35	38.5	-18.1	
Mid Ch								
836.50	11.60	V	0.9	0.0	10.70	38.5	-27.7	
836.50	21.28	H	0.9	0.0	20.38	38.5	-18.1	
High Ch								
844.00	11.68	V	0.9	0.0	10.78	38.5	-27.7	
844.00	21.25	H	0.9	0.0	20.35	38.5	-18.1	

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

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Band

LTE5

5MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 5MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	10.12	V	0.9	0.0	9.22	38.5	-29.2	
826.50	20.54	H	0.9	0.0	19.64	38.5	-18.8	
Mid Ch								
836.50	10.55	V	0.9	0.0	9.65	38.5	-28.8	
836.50	19.94	H	0.9	0.0	19.04	38.5	-19.4	
High Ch								
846.50	10.31	V	0.9	0.0	9.41	38.5	-29.0	
846.50	20.54	H	0.9	0.0	19.64	38.5	-18.8	

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

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Band

LTE5

5MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 5MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	10.93	V	0.9	0.0	10.03	38.5	-28.4	
826.50	20.90	H	0.9	0.0	20.00	38.5	-18.4	
Mid Ch								
836.50	11.36	V	0.9	0.0	10.46	38.5	-28.0	
836.50	20.92	H	0.9	0.0	20.02	38.5	-18.4	
High Ch								
846.50	11.24	V	0.9	0.0	10.34	38.5	-28.1	
846.50	20.95	H	0.9	0.0	20.05	38.5	-18.4	

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

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Band

LTE5

3MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 3MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
825.50	10.41	V	0.9	0.0	9.51	38.5	-28.9	
825.50	20.69	H	0.9	0.0	19.79	38.5	-18.7	
Mid Ch								
836.50	10.84	V	0.9	0.0	9.94	38.5	-28.5	
836.50	20.32	H	0.9	0.0	19.42	38.5	-19.0	
High Ch								
847.50	10.82	V	0.9	0.0	9.92	38.5	-28.5	
847.50	19.92	H	0.9	0.0	19.02	38.5	-19.4	

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

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Band

LTE5

3MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 3MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
825.50	11.40	V	0.9	0.0	10.50	38.5	-27.9	
825.50	21.34	H	0.9	0.0	20.44	38.5	-18.0	
Mid Ch								
836.50	11.76	V	0.9	0.0	10.86	38.5	-27.6	
836.50	21.31	H	0.9	0.0	20.41	38.5	-18.0	
High Ch								
847.50	11.37	V	0.9	0.0	10.47	38.5	-28.0	
847.50	20.98	H	0.9	0.0	20.08	38.5	-18.4	

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

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Band

LTE5

1.4MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 1.4MHz 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	10.29	V	0.9	0.0	9.39	38.5	-29.1	
824.70	20.38	H	0.9	0.0	19.48	38.5	-19.0	
Mid Ch								
836.50	10.83	V	0.9	0.0	9.93	38.5	-28.5	
836.50	20.40	H	0.9	0.0	19.50	38.5	-18.9	
High Ch								
848.30	10.33	V	0.9	0.0	9.43	38.5	-29.0	
848.30	20.18	H	0.9	0.0	19.28	38.5	-19.2	

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

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Band

LTE5

1.4MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/16/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE5 1.4MHz QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber C N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	11.28	V	0.9	0.0	10.38	38.5	-28.1	
824.70	20.74	H	0.9	0.0	19.84	38.5	-18.6	
Mid Ch								
836.50	11.61	V	0.9	0.0	10.71	38.5	-27.7	
836.50	20.98	H	0.9	0.0	20.08	38.5	-18.4	
High Ch								
848.30	11.34	V	0.9	0.0	10.44	38.5	-28.0	
848.30	20.91	H	0.9	0.0	20.01	38.5	-18.4	

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

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LTE Band 4

Band

LTE4

10MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 10MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 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								
1715.00	4.14	V	0.9	8.3	11.58	30.0	-18.4	
1715.00	15.77	H	0.9	8.3	23.21	30.0	-6.8	
Mid Ch								
1732.50	3.37	V	0.9	8.2	10.72	30.0	-19.3	
1732.50	16.50	H	0.9	8.2	23.85	30.0	-6.2	
High Ch								
1750.00	4.28	V	0.9	8.2	11.63	30.0	-18.4	
1750.00	16.62	H	0.9	8.2	23.97	30.0	-6.0	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE4

10MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 10MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 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								
1715.00	5.42	V	0.9	8.3	12.86	30.0	-17.1	
1715.00	16.83	H	0.9	8.3	24.27	30.0	-5.7	
Mid Ch								
1732.50	4.34	V	0.9	8.2	11.69	30.0	-18.3	
1732.50	17.65	H	0.9	8.2	25.00	30.0	-5.0	
High Ch								
1750.00	5.34	V	0.9	8.2	12.69	30.0	-17.3	
1750.00	17.65	H	0.9	8.2	25.00	30.0	-5.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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Band

LTE4

5MHz

16QAM

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

Company: LG
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 5MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 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								
1712.50	4.12	V	0.9	8.3	11.56	30.0	-18.4	
1712.50	15.88	H	0.9	8.3	23.32	30.0	-6.7	
Mid Ch								
1732.50	3.34	V	0.9	8.2	10.69	30.0	-19.3	
1732.50	16.68	H	0.9	8.2	24.03	30.0	-6.0	
High Ch								
1752.50	4.33	V	0.9	8.2	11.68	30.0	-18.3	
1752.50	16.58	H	0.9	8.2	23.93	30.0	-6.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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Band

LTE4

5MHz

QPSK

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

Company: LG
Project #: 14I19592
Date: 12/17/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 5MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 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								
1712.50	5.44	V	0.9	8.3	12.88	30.0	-17.1	
1712.50	16.80	H	0.9	8.3	24.24	30.0	-5.8	
Mid Ch								
1732.50	4.39	V	0.9	8.2	11.74	30.0	-18.3	
1732.50	17.61	H	0.9	8.2	24.96	30.0	-5.0	
High Ch								
1752.50	5.25	V	0.9	8.2	12.60	30.0	-17.4	
1752.50	17.61	H	0.9	8.2	24.96	30.0	-5.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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LTE Band 2

Band

LTE2

20MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_20MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.860	15.4	V	0.85	8.01	22.61	33.0	-10.4	
1.860	16.5	H	0.85	8.01	23.68	33.0	-9.3	
Mid Ch								
1.880	15.3	V	0.85	8.01	22.48	33.0	-10.5	
1.880	17.1	H	0.85	8.01	24.25	33.0	-8.8	
High Ch								
1.900	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.900	17.1	H	0.85	8.01	24.22	33.0	-8.8	

Rev. 3.17.11

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Band

LTE2

20MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_20MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.860	16.3	V	0.85	8.01	23.46	33.0	-9.5	
1.860	17.6	H	0.85	8.01	24.73	33.0	-8.3	
Mid Ch								
1.880	15.9	V	0.85	8.01	23.05	33.0	-9.9	
1.880	17.9	H	0.85	8.01	25.02	33.0	-8.0	
High Ch								
1.900	16.5	V	0.85	8.01	23.62	33.0	-9.4	
1.900	17.8	H	0.85	8.01	24.97	33.0	-8.0	

Rev. 3.17.11

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Band

LTE2

15MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_15MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.858	13.6	V	0.85	8.01	20.81	33.0	-12.2	
1.858	16.8	H	0.85	8.01	23.91	33.0	-9.1	
Mid Ch								
1.880	12.9	V	0.85	8.01	20.08	33.0	-12.9	
1.880	16.7	H	0.85	8.01	23.88	33.0	-9.1	
High Ch								
1.903	13.1	V	0.85	8.01	20.30	33.0	-12.7	
1.903	16.3	H	0.85	8.01	23.48	33.0	-9.5	

Rev. 3.17.11

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Band

LTE2

15MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_15MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.858	14.4	V	0.85	8.01	21.54	33.0	-11.5	
1.858	17.4	H	0.85	8.01	24.55	33.0	-8.4	
Mid Ch								
1.880	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.880	17.6	H	0.85	8.01	24.80	33.0	-8.2	
High Ch								
1.903	14.3	V	0.85	8.01	21.47	33.0	-11.5	
1.903	17.4	H	0.85	8.01	24.56	33.0	-8.4	

Rev. 3.17.11

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Band

LTE2

10MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_10MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	15.0	V	0.85	8.01	22.12	33.0	-10.9	
1.855	16.6	H	0.85	8.01	23.78	33.0	-9.2	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.880	16.5	H	0.85	8.01	23.65	33.0	-9.4	
High Ch								
1.905	14.9	V	0.85	8.01	22.04	33.0	-11.0	
1.905	16.6	H	0.85	8.01	23.78	33.0	-9.2	

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Band

LTE2

10MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_10MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	15.8	V	0.85	8.01	22.98	33.0	-10.0	
1.855	17.4	H	0.85	8.01	24.53	33.0	-8.5	
Mid Ch								
1.880	15.3	V	0.85	8.01	22.49	33.0	-10.5	
1.880	17.6	H	0.85	8.01	24.74	33.0	-8.3	
High Ch								
1.905	15.9	V	0.85	8.01	23.08	33.0	-9.9	
1.905	17.5	H	0.85	8.01	24.71	33.0	-8.3	

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Band

LTE2

5MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_5MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	14.6	V	0.85	8.01	21.72	33.0	-11.3	
1.853	16.3	H	0.85	8.01	23.47	33.0	-9.5	
Mid Ch								
1.880	13.8	V	0.85	8.01	20.91	33.0	-12.1	
1.880	16.2	H	0.85	8.01	23.36	33.0	-9.6	
High Ch								
1.908	14.4	V	0.85	8.01	21.55	33.0	-11.4	
1.908	16.2	H	0.85	8.01	23.38	33.0	-9.6	

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Band

LTE2

5MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_5MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	15.6	V	0.85	8.01	22.79	33.0	-10.2	
1.853	17.3	H	0.85	8.01	24.45	33.0	-8.5	
Mid Ch								
1.880	14.5	V	0.85	8.01	21.69	33.0	-11.3	
1.880	16.9	H	0.85	8.01	24.05	33.0	-9.0	
High Ch								
1.908	15.4	V	0.85	8.01	22.57	33.0	-10.4	
1.908	17.1	H	0.85	8.01	24.31	33.0	-8.7	

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Band

LTE2

3MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.852	16.3	H	0.85	8.01	23.44	33.0	-9.6	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.86	33.0	-12.1	
1.880	16.8	H	0.85	8.01	23.91	33.0	-9.1	
High Ch								
1.909	14.0	V	0.85	8.01	21.15	33.0	-11.8	
1.909	16.4	H	0.85	8.01	23.58	33.0	-9.4	

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Band

LTE2

3MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.852	17.1	H	0.85	8.01	24.23	33.0	-8.8	
Mid Ch								
1.880	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.880	17.8	H	0.85	8.01	24.97	33.0	-8.0	
High Ch								
1.909	14.9	V	0.85	8.01	22.07	33.0	-10.9	
1.909	17.0	H	0.85	8.01	24.18	33.0	-8.8	

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Band

LTE2

3MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.852	16.3	H	0.85	8.01	23.44	33.0	-9.6	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.86	33.0	-12.1	
1.880	16.8	H	0.85	8.01	23.91	33.0	-9.1	
High Ch								
1.909	14.0	V	0.85	8.01	21.15	33.0	-11.8	
1.909	16.4	H	0.85	8.01	23.58	33.0	-9.4	

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High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_QPSK

Band

LTE2

3MHz

QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.852	17.1	H	0.85	8.01	24.23	33.0	-8.8	
Mid Ch								
1.880	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.880	17.8	H	0.85	8.01	24.97	33.0	-8.0	
High Ch								
1.909	14.9	V	0.85	8.01	22.07	33.0	-10.9	
1.909	17.0	H	0.85	8.01	24.18	33.0	-8.8	

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Band

LTE2

3MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.852	16.3	H	0.85	8.01	23.44	33.0	-9.6	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.86	33.0	-12.1	
1.880	16.8	H	0.85	8.01	23.91	33.0	-9.1	
High Ch								
1.909	14.0	V	0.85	8.01	21.15	33.0	-11.8	
1.909	16.4	H	0.85	8.01	23.58	33.0	-9.4	

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High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_QPSK

Band

LTE2

3MHz

QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.852	17.1	H	0.85	8.01	24.23	33.0	-8.8	
Mid Ch								
1.880	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.880	17.8	H	0.85	8.01	24.97	33.0	-8.0	
High Ch								
1.909	14.9	V	0.85	8.01	22.07	33.0	-10.9	
1.909	17.0	H	0.85	8.01	24.18	33.0	-8.8	

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Band

LTE2

3MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.852	16.3	H	0.85	8.01	23.44	33.0	-9.6	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.86	33.0	-12.1	
1.880	16.8	H	0.85	8.01	23.91	33.0	-9.1	
High Ch								
1.909	14.0	V	0.85	8.01	21.15	33.0	-11.8	
1.909	16.4	H	0.85	8.01	23.58	33.0	-9.4	

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Band

LTE2

3MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.852	17.1	H	0.85	8.01	24.23	33.0	-8.8	
Mid Ch								
1.880	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.880	17.8	H	0.85	8.01	24.97	33.0	-8.0	
High Ch								
1.909	14.9	V	0.85	8.01	22.07	33.0	-10.9	
1.909	17.0	H	0.85	8.01	24.18	33.0	-8.8	

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Band

LTE2

3MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	13.9	V	0.85	8.01	21.09	33.0	-11.9	
1.852	16.3	H	0.85	8.01	23.44	33.0	-9.6	
Mid Ch								
1.880	13.7	V	0.85	8.01	20.86	33.0	-12.1	
1.880	16.8	H	0.85	8.01	23.91	33.0	-9.1	
High Ch								
1.909	14.0	V	0.85	8.01	21.15	33.0	-11.8	
1.909	16.4	H	0.85	8.01	23.58	33.0	-9.4	

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Band

LTE2

3MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band_2_3MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	15.9	V	0.85	8.01	23.07	33.0	-9.9	
1.852	17.1	H	0.85	8.01	24.23	33.0	-8.8	
Mid Ch								
1.880	15.1	V	0.85	8.01	22.22	33.0	-10.8	
1.880	17.8	H	0.85	8.01	24.97	33.0	-8.0	
High Ch								
1.909	14.9	V	0.85	8.01	22.07	33.0	-10.9	
1.909	17.0	H	0.85	8.01	24.18	33.0	-8.8	

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Band

LTE2

1.4MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	15.2	V	0.85	8.01	22.38	33.0	-10.6	
1.851	16.8	H	0.85	8.01	23.92	33.0	-9.1	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.27	33.0	-11.7	
1.880	16.4	H	0.85	8.01	23.51	33.0	-9.5	
High Ch								
1.909	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.909	15.7	H	0.85	8.01	22.91	33.0	-10.1	

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Band

LTE2

1.4MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.1	V	0.85	8.01	23.29	33.0	-9.7	
1.851	17.5	H	0.85	8.01	24.69	33.0	-8.3	
Mid Ch								
1.880	15.4	V	0.85	8.01	22.60	33.0	-10.4	
1.880	17.5	H	0.85	8.01	24.70	33.0	-8.3	
High Ch								
1.909	15.4	V	0.85	8.01	22.55	33.0	-10.4	
1.909	16.9	H	0.85	8.01	24.03	33.0	-9.0	

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Band

LTE2

1.4MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	15.2	V	0.85	8.01	22.38	33.0	-10.6	
1.851	16.8	H	0.85	8.01	23.92	33.0	-9.1	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.27	33.0	-11.7	
1.880	16.4	H	0.85	8.01	23.51	33.0	-9.5	
High Ch								
1.909	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.909	15.7	H	0.85	8.01	22.91	33.0	-10.1	

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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Band

LTE2

1.4MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.1	V	0.85	8.01	23.29	33.0	-9.7	
1.851	17.5	H	0.85	8.01	24.69	33.0	-8.3	
Mid Ch								
1.880	15.4	V	0.85	8.01	22.60	33.0	-10.4	
1.880	17.5	H	0.85	8.01	24.70	33.0	-8.3	
High Ch								
1.909	15.4	V	0.85	8.01	22.55	33.0	-10.4	
1.909	16.9	H	0.85	8.01	24.03	33.0	-9.0	

Rev. 3.17.11

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Band

LTE2

1.4MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	15.2	V	0.85	8.01	22.38	33.0	-10.6	
1.851	16.8	H	0.85	8.01	23.92	33.0	-9.1	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.27	33.0	-11.7	
1.880	16.4	H	0.85	8.01	23.51	33.0	-9.5	
High Ch								
1.909	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.909	15.7	H	0.85	8.01	22.91	33.0	-10.1	

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Band

LTE2

1.4MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.1	V	0.85	8.01	23.29	33.0	-9.7	
1.851	17.5	H	0.85	8.01	24.69	33.0	-8.3	
Mid Ch								
1.880	15.4	V	0.85	8.01	22.60	33.0	-10.4	
1.880	17.5	H	0.85	8.01	24.70	33.0	-8.3	
High Ch								
1.909	15.4	V	0.85	8.01	22.55	33.0	-10.4	
1.909	16.9	H	0.85	8.01	24.03	33.0	-9.0	

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Band

LTE2

1.4MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	15.2	V	0.85	8.01	22.38	33.0	-10.6	
1.851	16.8	H	0.85	8.01	23.92	33.0	-9.1	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.27	33.0	-11.7	
1.880	16.4	H	0.85	8.01	23.51	33.0	-9.5	
High Ch								
1.909	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.909	15.7	H	0.85	8.01	22.91	33.0	-10.1	

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Band

LTE2

1.4MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.1	V	0.85	8.01	23.29	33.0	-9.7	
1.851	17.5	H	0.85	8.01	24.69	33.0	-8.3	
Mid Ch								
1.880	15.4	V	0.85	8.01	22.60	33.0	-10.4	
1.880	17.5	H	0.85	8.01	24.70	33.0	-8.3	
High Ch								
1.909	15.4	V	0.85	8.01	22.55	33.0	-10.4	
1.909	16.9	H	0.85	8.01	24.03	33.0	-9.0	

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Band

LTE2

1.4MHz

16QAM

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	15.2	V	0.85	8.01	22.38	33.0	-10.6	
1.851	16.8	H	0.85	8.01	23.92	33.0	-9.1	
Mid Ch								
1.880	14.1	V	0.85	8.01	21.27	33.0	-11.7	
1.880	16.4	H	0.85	8.01	23.51	33.0	-9.5	
High Ch								
1.909	14.1	V	0.85	8.01	21.29	33.0	-11.7	
1.909	15.7	H	0.85	8.01	22.91	33.0	-10.1	

Rev. 3.17.11

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Band

LTE2

1.4MHz

QPSK

High Frequency Fundamental Measurement
UL Verification Services Chamber B

Company: LG Electronics
Project #: 14I19592
Date: 12/16/14
Test Engineer: L. Lara
Configuration: EUT only X-position (SN: 2014284)
Mode: LTE Band 2_1.4MHz_QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.1	V	0.85	8.01	23.29	33.0	-9.7	
1.851	17.5	H	0.85	8.01	24.69	33.0	-8.3	
Mid Ch								
1.880	15.4	V	0.85	8.01	22.60	33.0	-10.4	
1.880	17.5	H	0.85	8.01	24.70	33.0	-8.3	
High Ch								
1.909	15.4	V	0.85	8.01	22.55	33.0	-10.4	
1.909	16.9	H	0.85	8.01	24.03	33.0	-9.0	

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3.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

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

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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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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

RESULTS

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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3.2.1. SPURIOUS RADIATION PLOTS

CDMA

UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: CDMA EVDO BC1

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band

BC1

EVDO

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-10.6	V	3.0	35.4	1.0	-45.0	-13.0	-32.0	
5.554	-13.3	V	3.0	34.7	1.0	-47.1	-13.0	-34.1	
7.405	-8.7	V	3.0	34.9	1.0	-42.6	-13.0	-29.6	
3.703	-7.3	H	3.0	35.4	1.0	-41.7	-13.0	-28.7	
5.554	-15.9	H	3.0	34.7	1.0	-49.6	-13.0	-36.6	
7.405	-11.1	H	3.0	34.9	1.0	-45.0	-13.0	-32.0	
Mid Ch, 1880.0MHz									
3.760	-10.8	V	3.0	35.3	1.0	-45.2	-13.0	-32.2	
5.640	-8.8	V	3.0	34.7	1.0	-42.5	-13.0	-29.5	
7.520	-11.8	V	3.0	34.9	1.0	-45.7	-13.0	-32.7	
3.760	-7.9	H	3.0	35.3	1.0	-42.2	-13.0	-29.2	
5.640	-15.9	H	3.0	34.7	1.0	-49.6	-13.0	-36.6	
7.520	-10.9	H	3.0	34.9	1.0	-44.8	-13.0	-31.8	
High Ch, 1908.75 MHz									
3.818	-10.7	V	3.0	35.3	1.0	-45.0	-13.0	-32.0	
5.726	-6.0	V	3.0	34.7	1.0	-39.8	-13.0	-26.8	
7.635	-12.1	V	3.0	34.9	1.0	-46.1	-13.0	-33.1	
3.818	-8.9	H	3.0	35.3	1.0	-43.2	-13.0	-30.2	
5.726	-14.3	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.635	-9.3	H	3.0	34.9	1.0	-43.2	-13.0	-30.2	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: RTT BC1

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band

BC1

1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25 MHz									
3.703	-11.5	V	3.0	35.4	1.0	-45.9	-13.0	-32.9	
5.554	-14.6	V	3.0	34.7	1.0	-48.3	-13.0	-35.3	
7.405	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.703	-10.8	H	3.0	35.4	1.0	-45.2	-13.0	-32.2	
5.554	-15.3	H	3.0	34.7	1.0	-49.0	-13.0	-36.0	
7.405	-11.0	H	3.0	34.9	1.0	-44.9	-13.0	-31.9	
Mid Ch, 1880 MHz									
3.760	-12.7	V	3.0	35.3	1.0	-47.0	-13.0	-34.0	
5.640	-12.2	V	3.0	34.7	1.0	-46.0	-13.0	-33.0	
7.520	-12.1	V	3.0	34.9	1.0	-46.1	-13.0	-33.1	
3.760	-11.3	H	3.0	35.3	1.0	-45.7	-13.0	-32.7	
5.640	-15.5	H	3.0	34.7	1.0	-49.3	-13.0	-36.3	
7.520	-10.1	H	3.0	34.9	1.0	-44.0	-13.0	-31.0	
High Ch, 1908.75 MHz									
3.818	-10.3	V	3.0	35.3	1.0	-44.5	-13.0	-31.5	
5.726	-9.1	V	3.0	34.7	1.0	-42.9	-13.0	-29.9	
7.635	-11.8	V	3.0	34.9	1.0	-45.7	-13.0	-32.7	
3.818	-9.8	H	3.0	35.3	1.0	-44.1	-13.0	-31.1	
5.726	-13.8	H	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.635	-10.6	H	3.0	34.9	1.0	-44.6	-13.0	-31.6	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/23/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014276)
Mode: CDMA EVDO BC0

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 22

Band

BC0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.650	-19.7	V	3.0	37.4	1.0	-56.1	-13.0	-43.1	
2.474	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
3.298	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
1.650	-16.6	H	3.0	37.4	1.0	-53.0	-13.0	-40.0	
2.474	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3.298	-20.1	H	3.0	35.8	1.0	-54.9	-13.0	-41.9	
Mid Ch, 836.52MHz									
1.673	-18.4	V	3.0	37.3	1.0	-54.7	-13.0	-41.7	
2.509	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.346	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
1.673	-15.9	H	3.0	37.3	1.0	-52.2	-13.0	-39.2	
2.509	-24.3	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3.346	-20.6	H	3.0	35.8	1.0	-55.4	-13.0	-42.4	
High Ch, 848.31 MHz									
1.696	-16.9	V	3.0	37.3	1.0	-53.2	-13.0	-40.2	
2.544	-23.6	V	3.0	36.3	1.0	-58.9	-13.0	-45.9	
3.393	-20.2	V	3.0	35.7	1.0	-54.9	-13.0	-41.9	
1.696	-15.7	H	3.0	37.3	1.0	-52.0	-13.0	-39.0	
2.544	-24.1	H	3.0	36.3	1.0	-59.5	-13.0	-46.5	
3.393	-21.3	H	3.0	35.7	1.0	-56.0	-13.0	-43.0	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/23/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014276)
Mode: RTT BC0

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band

BC0

1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1.648	-21.5	V	3.0	37.4	1.0	-57.9	-13.0	-44.9	
2.473	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3.297	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
1.648	-19.0	H	3.0	37.4	1.0	-55.4	-13.0	-42.4	
2.473	-24.3	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.297	-20.9	H	3.0	35.8	1.0	-55.7	-13.0	-42.7	
Mid Ch, 836.52MHz									
1.673	-20.1	V	3.0	37.3	1.0	-56.4	-13.0	-43.4	
2.510	-23.2	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3.346	-21.1	V	3.0	35.8	1.0	-55.8	-13.0	-42.8	
1.673	-17.4	H	3.0	37.3	1.0	-53.7	-13.0	-40.7	
2.510	-24.2	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3.346	-20.9	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	
High Ch, 848.31MHz									
1.697	-18.9	V	3.0	37.3	1.0	-55.2	-13.0	-42.2	
2.545	-22.9	V	3.0	36.3	1.0	-58.2	-13.0	-45.2	
3.393	-21.0	V	3.0	35.7	1.0	-55.7	-13.0	-42.7	
1.697	-16.7	H	3.0	37.3	1.0	-53.0	-13.0	-40.0	
2.545	-24.8	H	3.0	36.3	1.0	-60.1	-13.0	-47.1	
3.393	-21.4	H	3.0	35.7	1.0	-56.1	-13.0	-43.1	

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

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LTE Band 25

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Mode: TX, LTE band 25, 5MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

Band

LTE25

5MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1852.5 MHz)									
3.705	-16.0	V	3.0	30.2	1.0	-45.2	-13.0	-32.2	
5.558	-14.2	V	3.0	28.4	1.0	-41.6	-13.0	-28.6	
7.410	-14.1	V	3.0	26.5	1.0	-39.6	-13.0	-26.6	
3.705	-15.9	H	3.0	30.2	1.0	-45.1	-13.0	-32.1	
5.558	-13.9	H	3.0	28.4	1.0	-41.2	-13.0	-28.2	
7.410	-13.2	H	3.0	26.5	1.0	-38.7	-13.0	-25.7	
Mid Ch, (1882.5 MHz)									
3.765	-17.7	V	3.0	30.1	1.0	-46.8	-13.0	-33.8	
5.648	-14.5	V	3.0	28.3	1.0	-41.8	-13.0	-28.8	
7.530	-15.2	V	3.0	26.3	1.0	-40.5	-13.0	-27.5	
3.765	-17.1	H	3.0	30.1	1.0	-46.3	-13.0	-33.3	
5.648	-14.7	H	3.0	28.3	1.0	-42.0	-13.0	-29.0	
7.530	-13.7	H	3.0	26.3	1.0	-39.0	-13.0	-26.0	
High Ch, (1912.5 MHz)									
3.825	-17.4	V	3.0	30.1	1.0	-46.5	-13.0	-33.5	
5.738	-14.0	V	3.0	28.2	1.0	-41.2	-13.0	-28.2	
7.650	-13.8	V	3.0	26.2	1.0	-38.9	-13.0	-25.9	
3.825	-16.5	H	3.0	30.1	1.0	-45.6	-13.0	-32.6	
5.738	-14.0	H	3.0	28.2	1.0	-41.2	-13.0	-28.2	
7.650	-13.0	H	3.0	26.2	1.0	-38.1	-13.0	-25.1	

Rev. 03.03.09

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Mode: TX, LTE band 25, 5MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

Band

LTE25

5MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1852.5 MHz)									
3.705	-16.5	V	3.0	30.2	1.0	-45.7	-13.0	-32.7	
5.558	-14.4	V	3.0	28.4	1.0	-41.8	-13.0	-28.8	
7.410	-14.9	V	3.0	26.5	1.0	-40.4	-13.0	-27.4	
3.705	-16.1	H	3.0	30.2	1.0	-45.3	-13.0	-32.3	
5.558	-13.4	H	3.0	28.4	1.0	-40.7	-13.0	-27.7	
7.410	-13.2	H	3.0	26.5	1.0	-38.7	-13.0	-25.7	
Mid Ch. (1882.5 MHz)									
3.765	-17.0	V	3.0	30.1	1.0	-46.2	-13.0	-33.2	
5.648	-13.7	V	3.0	28.3	1.0	-41.0	-13.0	-28.0	
7.530	-15.4	V	3.0	26.3	1.0	-40.7	-13.0	-27.7	
3.765	-17.7	H	3.0	30.1	1.0	-46.8	-13.0	-33.8	
5.648	-14.3	H	3.0	28.3	1.0	-41.5	-13.0	-28.5	
7.530	-13.7	H	3.0	26.3	1.0	-39.0	-13.0	-26.0	
High Ch. (1912.5 MHz)									
3.825	-17.6	V	3.0	30.1	1.0	-46.7	-13.0	-33.7	
5.738	-14.5	V	3.0	28.2	1.0	-41.7	-13.0	-28.7	
7.650	-14.3	V	3.0	26.2	1.0	-39.5	-13.0	-26.5	
3.825	-16.0	H	3.0	30.1	1.0	-45.1	-13.0	-32.1	
5.738	-11.9	H	3.0	28.2	1.0	-39.1	-13.0	-26.1	
7.650	-13.5	H	3.0	26.2	1.0	-38.6	-13.0	-25.6	

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LTE Band 17

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_16QAM Band 17 Harmonics, 10MHz Bandwidth

Band
LTE17
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 706.5									
1413.00	-24.6	V	3.0	37.4	1.0	-61.0	-13.0	-48.0	
2119.50	-18.2	V	3.0	36.6	1.0	-53.8	-13.0	-40.8	
2826.00	-18.1	V	3.0	36.4	1.0	-53.5	-13.0	-40.5	
1413.00	-23.3	H	3.0	37.4	1.0	-59.7	-13.0	-46.7	
2119.50	-19.4	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2826.00	-18.8	H	3.0	36.4	1.0	-54.2	-13.0	-41.2	
Mid Ch, 710									
1420.00	-24.6	V	3.0	37.3	1.0	-60.9	-13.0	-47.9	
2130.00	-18.1	V	3.0	36.6	1.0	-53.6	-13.0	-40.6	
2840.00	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
1420.00	-23.2	H	3.0	37.3	1.0	-59.5	-13.0	-46.5	
2130.00	-19.5	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2840.00	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	
High Ch, 713.5									
1427.00	-24.4	V	3.0	37.3	1.0	-60.8	-13.0	-47.8	
2140.50	-18.2	V	3.0	36.6	1.0	-53.8	-13.0	-40.8	
2854.00	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
1427.00	-23.9	H	3.0	37.3	1.0	-60.2	-13.0	-47.2	
2140.50	-19.8	H	3.0	36.6	1.0	-55.3	-13.0	-42.3	
2854.00	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_QPSK Band 17 Harmonics, 10MHz Bandwidth

Band
LTE17
10MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 706.5									
1413.00	-24.6	V	3.0	37.4	1.0	-61.0	-13.0	-48.0	
2119.50	-17.6	V	3.0	36.6	1.0	-53.2	-13.0	-40.2	
2826.00	-17.8	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
1413.00	-23.4	H	3.0	37.4	1.0	-59.7	-13.0	-46.7	
2119.50	-19.5	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2826.00	-19.2	H	3.0	36.4	1.0	-54.6	-13.0	-41.6	
Mid Ch, 710									
1420.00	-24.3	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2130.00	-18.3	V	3.0	36.6	1.0	-53.8	-13.0	-40.8	
2840.00	-17.9	V	3.0	36.4	1.0	-53.3	-13.0	-40.3	
1420.00	-22.9	H	3.0	37.3	1.0	-59.3	-13.0	-46.3	
2130.00	-19.4	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2840.00	-18.8	H	3.0	36.4	1.0	-54.2	-13.0	-41.2	
High Ch, 713.5									
1427.00	-24.8	V	3.0	37.3	1.0	-61.1	-13.0	-48.1	
2140.50	-18.5	V	3.0	36.6	1.0	-54.0	-13.0	-41.0	
2854.00	-17.7	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
1427.00	-22.7	H	3.0	37.3	1.0	-59.1	-13.0	-46.1	
2140.50	-19.8	H	3.0	36.6	1.0	-55.3	-13.0	-42.3	
2854.00	-18.8	H	3.0	36.4	1.0	-54.2	-13.0	-41.2	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_16QAM Band 17 Harmonics, 5MHz Bandwidth

Band
LTE17
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 706.5									
1413.00	-24.6	V	3.0	37.4	1.0	-60.9	-13.0	-47.9	
2119.50	-18.4	V	3.0	36.6	1.0	-54.0	-13.0	-41.0	
2826.00	-17.8	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
1413.00	-23.4	H	3.0	37.4	1.0	-59.8	-13.0	-46.8	
2119.50	-19.3	H	3.0	36.6	1.0	-54.9	-13.0	-41.9	
2826.00	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	
Mid Ch, 710									
1420.00	-24.3	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2130.00	-18.7	V	3.0	36.6	1.0	-54.2	-13.0	-41.2	
2840.00	-18.5	V	3.0	36.4	1.0	-53.9	-13.0	-40.9	
1420.00	-23.5	H	3.0	37.3	1.0	-59.9	-13.0	-46.9	
2130.00	-19.8	H	3.0	36.6	1.0	-55.4	-13.0	-42.4	
2840.00	-19.6	H	3.0	36.4	1.0	-55.0	-13.0	-42.0	
High Ch, 713.5									
1427.00	-24.4	V	3.0	37.3	1.0	-60.8	-13.0	-47.8	
2140.50	-18.7	V	3.0	36.6	1.0	-54.3	-13.0	-41.3	
2854.00	-17.5	V	3.0	36.4	1.0	-52.9	-13.0	-39.9	
1427.00	-22.3	H	3.0	37.3	1.0	-58.7	-13.0	-45.7	
2140.50	-19.6	H	3.0	36.6	1.0	-55.2	-13.0	-42.2	
2854.00	-18.1	H	3.0	36.4	1.0	-53.5	-13.0	-40.5	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_QPSK Band 17 Harmonics, 5MHz Bandwidth

Band
LTE17
5MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 706.5									
1413.00	-24.1	V	3.0	37.4	1.0	-60.5	-13.0	-47.5	
2119.50	-18.5	V	3.0	36.6	1.0	-54.0	-13.0	-41.0	
2826.00	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
1413.00	-23.2	H	3.0	37.4	1.0	-59.6	-13.0	-46.6	
2119.50	-19.8	H	3.0	36.6	1.0	-55.4	-13.0	-42.4	
2826.00	-19.1	H	3.0	36.4	1.0	-54.5	-13.0	-41.5	
Mid Ch, 710									
1420.00	-24.3	V	3.0	37.3	1.0	-60.6	-13.0	-47.6	
2130.00	-18.8	V	3.0	36.6	1.0	-54.4	-13.0	-41.4	
2840.00	-17.1	V	3.0	36.4	1.0	-52.5	-13.0	-39.5	
1420.00	-23.1	H	3.0	37.3	1.0	-59.5	-13.0	-46.5	
2130.00	-20.6	H	3.0	36.6	1.0	-56.2	-13.0	-43.2	
2840.00	-18.2	H	3.0	36.4	1.0	-53.6	-13.0	-40.6	
High Ch, 713.5									
1427.00	-24.3	V	3.0	37.3	1.0	-60.6	-13.0	-47.6	
2140.50	-18.5	V	3.0	36.6	1.0	-54.1	-13.0	-41.1	
2854.00	-18.2	V	3.0	36.4	1.0	-53.5	-13.0	-40.5	
1427.00	-23.3	H	3.0	37.3	1.0	-59.6	-13.0	-46.6	
2140.50	-19.5	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2854.00	-18.9	H	3.0	36.4	1.0	-54.3	-13.0	-41.3	

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LTE Band 12

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth

Band
LTE12
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,704									
1408.00	-24.2	V	3.0	37.4	1.0	-60.6	-13.0	-47.6	
2112.00	-18.6	V	3.0	36.6	1.0	-54.2	-13.0	-41.2	
2816.00	-18.6	V	3.0	36.4	1.0	-54.0	-13.0	-41.0	
1408.00	-23.1	H	3.0	37.4	1.0	-59.5	-13.0	-46.5	
2112.00	-19.4	H	3.0	36.6	1.0	-54.9	-13.0	-41.9	
2816.00	-19.2	H	3.0	36.4	1.0	-54.5	-13.0	-41.5	
Mid Ch,707.5									
1415.00	-24.5	V	3.0	37.3	1.0	-60.8	-13.0	-47.8	
2122.50	-18.6	V	3.0	36.6	1.0	-54.2	-13.0	-41.2	
2830.00	-18.4	V	3.0	36.4	1.0	-53.8	-13.0	-40.8	
1415.00	-23.5	H	3.0	37.3	1.0	-59.8	-13.0	-46.8	
2122.50	-19.0	H	3.0	36.6	1.0	-54.6	-13.0	-41.6	
2830.00	-19.3	H	3.0	36.4	1.0	-54.7	-13.0	-41.7	
High Ch,711									
1422.00	-24.4	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2133.00	-18.1	V	3.0	36.6	1.0	-53.7	-13.0	-40.7	
2844.00	-17.7	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
1422.00	-23.0	H	3.0	37.3	1.0	-59.4	-13.0	-46.4	
2133.00	-19.9	H	3.0	36.6	1.0	-55.5	-13.0	-42.5	
2844.00	-19.1	H	3.0	36.4	1.0	-54.5	-13.0	-41.5	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth

Band
LTE12
10MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,704									
1408.00	-24.6	V	3.0	37.4	1.0	-61.0	-13.0	-48.0	
2112.00	-18.8	V	3.0	36.6	1.0	-54.3	-13.0	-41.3	
2816.00	-18.0	V	3.0	36.4	1.0	-53.4	-13.0	-40.4	
1408.00	-22.9	H	3.0	37.4	1.0	-59.3	-13.0	-46.3	
2112.00	-19.3	H	3.0	36.6	1.0	-54.9	-13.0	-41.9	
2816.00	-19.2	H	3.0	36.4	1.0	-54.6	-13.0	-41.6	
Mid Ch,707.5									
1415.00	-24.4	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2122.50	-18.3	V	3.0	36.6	1.0	-53.8	-13.0	-40.8	
2830.00	-18.4	V	3.0	36.4	1.0	-53.8	-13.0	-40.8	
1415.00	-23.1	H	3.0	37.3	1.0	-59.4	-13.0	-46.4	
2122.50	-19.6	H	3.0	36.6	1.0	-55.1	-13.0	-42.1	
2830.00	-19.3	H	3.0	36.4	1.0	-54.6	-13.0	-41.6	
High Ch,711									
1422.00	-24.4	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2133.00	-18.5	V	3.0	36.6	1.0	-54.1	-13.0	-41.1	
2844.00	-17.7	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
1422.00	-23.4	H	3.0	37.3	1.0	-59.7	-13.0	-46.7	
2133.00	-19.4	H	3.0	36.6	1.0	-55.0	-13.0	-42.0	
2844.00	-19.0	H	3.0	36.4	1.0	-54.3	-13.0	-41.3	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth

Band
LTE12
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 701.50									
1403.00	-24.3	V	3.0	37.4	1.0	-60.6	-13.0	-47.6	
2104.50	-19.3	V	3.0	36.6	1.0	-54.9	-13.0	-41.9	
2806.00	-18.4	V	3.0	36.4	1.0	-53.7	-13.0	-40.7	
1403.00	-23.5	H	3.0	37.4	1.0	-59.9	-13.0	-46.9	
2104.50	-20.6	H	3.0	36.6	1.0	-56.1	-13.0	-43.1	
2806.00	-19.5	H	3.0	36.4	1.0	-54.8	-13.0	-41.8	
Mid Ch, 707.50									
1415.00	-24.4	V	3.0	37.3	1.0	-60.8	-13.0	-47.8	
2122.50	-18.6	V	3.0	36.6	1.0	-54.2	-13.0	-41.2	
2830.00	-17.9	V	3.0	36.4	1.0	-53.3	-13.0	-40.3	
1415.00	-23.7	H	3.0	37.3	1.0	-60.0	-13.0	-47.0	
2122.50	-19.1	H	3.0	36.6	1.0	-54.6	-13.0	-41.6	
2830.00	-19.1	H	3.0	36.4	1.0	-54.4	-13.0	-41.4	
High Ch, 713.50									
1427.00	-24.7	V	3.0	37.3	1.0	-61.0	-13.0	-48.0	
2140.50	-18.6	V	3.0	36.6	1.0	-54.2	-13.0	-41.2	
2854.00	-18.5	V	3.0	36.4	1.0	-53.9	-13.0	-40.9	
1427.00	-23.1	H	3.0	37.3	1.0	-59.4	-13.0	-46.4	
2140.50	-19.7	H	3.0	36.6	1.0	-55.2	-13.0	-42.2	
2854.00	-19.0	H	3.0	36.4	1.0	-54.4	-13.0	-41.4	

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UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/18/14
Test Engineer: Jude Semana
Configuration: EUT , AC Adapter
Location: Chamber B
Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth

Band
LTE12
5MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 701.50									
1403.00	-24.0	V	3.0	37.4	1.0	-60.4	-13.0	-47.4	
2104.50	-18.6	V	3.0	36.6	1.0	-54.1	-13.0	-41.1	
2806.00	-18.3	V	3.0	36.4	1.0	-53.7	-13.0	-40.7	
1403.00	-23.3	H	3.0	37.4	1.0	-59.7	-13.0	-46.7	
2104.50	-19.7	H	3.0	36.6	1.0	-55.2	-13.0	-42.2	
2806.00	-19.3	H	3.0	36.4	1.0	-54.7	-13.0	-41.7	
Mid Ch, 707.50									
1415.00	-24.6	V	3.0	37.3	1.0	-61.0	-13.0	-48.0	
2122.50	-17.8	V	3.0	36.6	1.0	-53.4	-13.0	-40.4	
2830.00	-18.0	V	3.0	36.4	1.0	-53.4	-13.0	-40.4	
1415.00	-23.0	H	3.0	37.3	1.0	-59.4	-13.0	-46.4	
2122.50	-20.0	H	3.0	36.6	1.0	-55.5	-13.0	-42.5	
2830.00	-18.6	H	3.0	36.4	1.0	-54.0	-13.0	-41.0	
High Ch, 713.50									
1427.00	-24.4	V	3.0	37.3	1.0	-60.7	-13.0	-47.7	
2140.50	-18.3	V	3.0	36.6	1.0	-53.8	-13.0	-40.8	
2854.00	-18.2	V	3.0	36.4	1.0	-53.6	-13.0	-40.6	
1427.00	-23.4	H	3.0	37.3	1.0	-59.7	-13.0	-46.7	
2140.50	-19.1	H	3.0	36.6	1.0	-54.7	-13.0	-41.7	
2854.00	-19.1	H	3.0	36.4	1.0	-54.5	-13.0	-41.5	

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LTE Band 5

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth

Band
LTE5
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2487.00	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3316.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1658.00	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2487.00	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3316.00	-22.3	H	3.0	36.1	1.0	-57.4	-13.0	-44.4	
Mid Ch, 836.5									
1673.00	-27.8	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
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	-27.5	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2509.50	-24.6	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
3346.00	-21.8	H	3.0	36.1	1.0	-57.0	-13.0	-44.0	
High Ch, 844									
1688.00	-27.5	V	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2532.00	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3376.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1688.00	-27.5	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2532.00	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3376.00	-22.2	H	3.0	36.1	1.0	-57.3	-13.0	-44.3	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth

Band LTE5 10MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-27.9	V	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2487.00	-23.1	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3316.00	-21.1	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1658.00	-27.6	H	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2487.00	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3316.00	-21.2	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
Mid Ch, 836.5									
1673.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2509.50	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3346.00	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1673.00	-26.9	H	3.0	37.0	1.0	-62.9	-13.0	-49.9	
2509.50	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3346.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 844									
1688.00	-27.2	V	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2532.00	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3376.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1688.00	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2532.00	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3376.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth

Band
LTE5
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5									
1653.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2479.50	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3306.00	-20.8	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1653.00	-28.2	H	3.0	37.0	1.0	-64.2	-13.0	-51.2	
2479.50	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3306.00	-21.7	H	3.0	36.1	1.0	-56.9	-13.0	-43.9	
Mid Ch, 836.5									
1673.00	-27.7	V	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2509.50	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3346.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-28.0	H	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2509.50	-24.7	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
3346.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
High Ch, 846.5									
1693.00	-28.2	V	3.0	37.0	1.0	-64.2	-13.0	-51.2	
2539.50	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
3386.00	-20.3	V	3.0	36.1	1.0	-55.4	-13.0	-42.4	
1693.00	-27.9	H	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2539.50	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3386.00	-22.2	H	3.0	36.1	1.0	-57.2	-13.0	-44.2	

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Band

LTE5

5MHz

QPSK

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: 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
Low Ch, 826.5									
1653.00	-26.9	V	3.0	37.0	1.0	-63.0	-13.0	-50.0	
2479.50	-22.8	V	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3306.00	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1653.00	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2479.50	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3306.00	-20.9	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
Mid Ch, 836.5									
1673.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2509.50	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3346.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1673.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2509.50	-24.5	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3346.00	-21.0	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 846.5									
1693.00	-26.8	V	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2539.50	-23.3	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
3386.00	-21.4	V	3.0	36.1	1.0	-56.5	-13.0	-43.5	
1693.00	-27.5	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2539.50	-24.8	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
3386.00	-22.2	H	3.0	36.1	1.0	-57.3	-13.0	-44.3	

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

Company: LG Electronics
Project #: 14I19592
Date: 12.18.14
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth

Band
LTE5
3MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2476.50	-24.1	V	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3302.00	-21.4	V	3.0	36.2	1.0	-56.6	-13.0	-43.6	
1651.00	-27.9	H	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2476.50	-25.0	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3302.00	-21.9	H	3.0	36.2	1.0	-57.0	-13.0	-44.0	
Mid Ch, 836.5									
1673.00	-28.4	V	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2509.50	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3346.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-27.8	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2509.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3346.00	-21.4	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	
High Ch, 847.5									
1695.00	-27.4	V	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2542.50	-22.9	V	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3390.00	-21.2	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1695.00	-27.6	H	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2542.50	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3390.00	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	

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

Company: LG Electronics
Project #: 14I19592
Date: 12.18.14
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth

Band
LTE5
3MHz
QPSK

f MHz	G readin (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-28.1	V	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2476.50	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3302.00	-21.2	V	3.0	36.2	1.0	-56.4	-13.0	-43.4	
1651.00	-27.6	H	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2476.50	-24.3	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3302.00	-21.5	H	3.0	36.2	1.0	-56.6	-13.0	-43.6	
Mid Ch, 836.5									
1673.00	-27.8	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2509.50	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3346.00	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1673.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2509.50	-25.4	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3346.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 847.5									
1695.00	-27.9	V	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2542.50	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3390.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1695.00	-27.5	H	3.0	37.0	1.0	-63.5	-13.0	-50.5	
2542.50	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3390.00	-21.0	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth

Band
LTE5
1.4MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-28.3	V	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2474.10	-23.8	V	3.0	36.4	1.0	-59.3	-13.0	-46.3	
3298.80	-21.1	V	3.0	36.2	1.0	-56.2	-13.0	-43.2	
1649.40	-28.2	H	3.0	37.0	1.0	-64.2	-13.0	-51.2	
2474.10	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3298.80	-21.4	H	3.0	36.2	1.0	-56.5	-13.0	-43.5	
Mid Ch, 836.5									
1673.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2509.50	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
3346.00	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1673.00	-27.8	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2509.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3346.00	-20.4	H	3.0	36.1	1.0	-55.5	-13.0	-42.5	
High Ch, 848.3									
1696.60	-27.7	V	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2544.90	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3393.20	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1696.60	-28.1	H	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2544.90	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3393.20	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth

Band
LTE5
1.4MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-27.8	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2474.10	-23.4	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3298.80	-21.3	V	3.0	36.2	1.0	-56.4	-13.0	-43.4	
1649.40	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2474.10	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3298.80	-21.5	H	3.0	36.2	1.0	-56.7	-13.0	-43.7	
Mid Ch, 836.5									
1673.00	-27.4	V	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2509.50	-23.0	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3346.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2509.50	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3346.00	-20.4	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
High Ch, 848.3									
1696.60	-27.9	V	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2544.90	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3393.20	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1696.60	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2544.90	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3393.20	-21.0	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	

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LTE Band 4

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_16QAM Band 4 Harmonics, 10MHz Bandwidth

Band
LTE4
10MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-21.8	V	3.0	36.1	1.0	-56.9	-13.0	-43.9	
5145.00	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6860.00	-14.1	V	3.0	35.7	1.0	-48.7	-13.0	-35.7	
3430.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
5145.00	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6860.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
Mid Ch, 1732.5									
3465.00	-21.4	V	3.0	36.0	1.0	-56.4	-13.0	-43.4	
5197.50	-17.1	V	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6930.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3465.00	-20.4	H	3.0	36.0	1.0	-55.4	-13.0	-42.4	
5197.50	-16.2	H	3.0	35.4	1.0	-50.6	-13.0	-37.6	
6930.00	-12.0	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
High Ch, 1750									
3500.00	-21.8	V	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5250.00	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
7000.00	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3500.00	-21.8	H	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5250.00	-15.8	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
7000.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth

Band LTE4 10MHz QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-21.2	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
5145.00	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6860.00	-14.0	V	3.0	35.7	1.0	-48.7	-13.0	-35.7	
3430.00	-21.2	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
5145.00	-15.9	H	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6860.00	-12.0	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
Mid Ch, 1732.5									
3465.00	-21.6	V	3.0	36.0	1.0	-56.7	-13.0	-43.7	
5197.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-13.9	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3465.00	-20.9	H	3.0	36.0	1.0	-55.9	-13.0	-42.9	
5197.50	-16.1	H	3.0	35.4	1.0	-50.6	-13.0	-37.6	
6930.00	-11.7	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
High Ch, 1750									
3500.00	-20.6	V	3.0	36.0	1.0	-55.6	-13.0	-42.6	
5250.00	-16.0	V	3.0	35.4	1.0	-50.4	-13.0	-37.4	
7000.00	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
3500.00	-20.5	H	3.0	36.0	1.0	-55.5	-13.0	-42.5	
5250.00	-16.6	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
7000.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_16QAM Band 4 Harmonics, 5MHz Bandwidth

Band
LTE4
5MHz
16QAM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
5137.50	-17.3	V	3.0	35.4	1.0	-51.7	-13.0	-38.7	
6850.00	-13.9	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
3425.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	
5137.50	-17.2	H	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6850.00	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
Mid Ch, 1732.5									
3465.00	-21.7	V	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5197.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-13.4	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
3465.00	-21.0	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5197.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
High Ch, 1752.5									
3505.00	-21.1	V	3.0	36.0	1.0	-56.1	-13.0	-43.1	
5257.50	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3	
7010.00	-13.3	V	3.0	35.7	1.0	-48.0	-13.0	-35.0	
3505.00	-21.7	H	3.0	36.0	1.0	-56.7	-13.0	-43.7	
5257.50	-15.8	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
7010.00	-11.8	H	3.0	35.7	1.0	-46.5	-13.0	-33.5	

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

Company: LG Electronics
Project #: 14I19592
Date: 12/18/2014
Test Engineer: R. Alegre
Configuration: EUT/AC Charger/HS
Location: Chamber C
Mode: LTE_QPSK Band 4 Harmonics, 5MHz Bandwidth

Band
LTE4
5MHz
QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-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	
6850.00	-12.7	V	3.0	35.7	1.0	-47.4	-13.0	-34.4	
3425.00	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	
5137.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6850.00	-12.6	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
Mid Ch, 1732.5									
3465.00	-21.7	V	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5197.50	-15.9	V	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6930.00	-13.6	V	3.0	35.7	1.0	-48.3	-13.0	-35.3	
3465.00	-20.9	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5197.50	-16.2	H	3.0	35.4	1.0	-50.6	-13.0	-37.6	
6930.00	-11.7	H	3.0	35.7	1.0	-46.3	-13.0	-33.3	
High Ch, 1752.5									
3505.00	-21.0	V	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5257.50	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
7010.00	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3505.00	-21.1	H	3.0	36.0	1.0	-56.1	-13.0	-43.1	
5257.50	-15.9	H	3.0	35.4	1.0	-50.3	-13.0	-37.3	
7010.00	-11.4	H	3.0	35.7	1.0	-46.0	-13.0	-33.0	

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LTE Band 2

UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_20M_16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band

LTE2

20MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860MHz									
3.720	-17.3	V	3.0	35.4	1.0	-51.7	-13.0	-38.7	
5.580	-16.6	V	3.0	34.7	1.0	-50.4	-13.0	-37.4	
7.440	-10.5	V	3.0	34.9	1.0	-44.4	-13.0	-31.4	
3.720	-10.1	H	3.0	35.4	1.0	-44.5	-13.0	-31.5	
5.580	-14.3	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.440	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
Mid Ch, 1880.0MHz									
3.760	-18.8	V	3.0	35.3	1.0	-53.1	-13.0	-40.1	
5.640	-14.2	V	3.0	34.7	1.0	-48.0	-13.0	-35.0	
7.520	-12.4	V	3.0	34.9	1.0	-46.4	-13.0	-33.4	
3.760	-15.5	H	3.0	35.3	1.0	-49.8	-13.0	-36.8	
5.640	-13.7	H	3.0	34.7	1.0	-47.4	-13.0	-34.4	
7.520	-12.0	H	3.0	34.9	1.0	-45.9	-13.0	-32.9	
High Ch, 1900 MHz									
3.800	-15.5	V	3.0	35.3	1.0	-49.8	-13.0	-36.8	
5.700	-14.4	V	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.600	-12.2	V	3.0	34.9	1.0	-46.2	-13.0	-33.2	
3.800	-9.3	H	3.0	35.3	1.0	-43.6	-13.0	-30.6	
5.700	-14.5	H	3.0	34.7	1.0	-48.2	-13.0	-35.2	
7.600	-11.8	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_20M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
20MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860MHz									
3.720	-17.4	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
5.580	-16.1	V	3.0	34.7	1.0	-49.8	-13.0	-36.8	
7.440	-9.0	V	3.0	34.9	1.0	-42.9	-13.0	-29.9	
3.720	-9.0	H	3.0	35.4	1.0	-43.4	-13.0	-30.4	
5.580	-13.7	H	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.440	-11.2	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	
Mid Ch, 1880.0MHz									
3.760	-19.3	V	3.0	35.3	1.0	-53.7	-13.0	-40.7	
5.640	-14.3	V	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.520	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.760	-14.8	H	3.0	35.3	1.0	-49.1	-13.0	-36.1	
5.640	-14.7	H	3.0	34.7	1.0	-48.5	-13.0	-35.5	
7.520	-11.8	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
High Ch, 1900 MHz									
3.800	-15.2	V	3.0	35.3	1.0	-49.5	-13.0	-36.5	
5.700	-14.0	V	3.0	34.7	1.0	-47.7	-13.0	-34.7	
7.600	-12.7	V	3.0	34.9	1.0	-46.6	-13.0	-33.6	
3.800	-9.3	H	3.0	35.3	1.0	-43.6	-13.0	-30.6	
5.700	-13.9	H	3.0	34.7	1.0	-47.6	-13.0	-34.6	
7.600	-11.9	H	3.0	34.9	1.0	-45.8	-13.0	-32.8	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_15M_16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
15MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5MHz									
3.715	-17.7	V	3.0	35.4	1.0	-52.1	-13.0	-39.1	
5.572	-16.6	V	3.0	34.7	1.0	-50.3	-13.0	-37.3	
7.424	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.715	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
5.572	-14.8	H	3.0	34.7	1.0	-48.5	-13.0	-35.5	
7.424	-12.0	H	3.0	34.9	1.0	-46.0	-13.0	-33.0	
Mid Ch, 1880.0MHz									
3.760	-18.5	V	3.0	35.3	1.0	-52.8	-13.0	-39.8	
5.640	-13.7	V	3.0	34.7	1.0	-47.4	-13.0	-34.4	
7.520	-12.7	V	3.0	34.9	1.0	-46.6	-13.0	-33.6	
3.760	-13.3	H	3.0	35.3	1.0	-47.6	-13.0	-34.6	
5.640	-14.0	H	3.0	34.7	1.0	-47.7	-13.0	-34.7	
7.520	-11.6	H	3.0	34.9	1.0	-45.5	-13.0	-32.5	
High Ch, 1902.5 MHz									
3.805	-14.7	V	3.0	35.3	1.0	-49.0	-13.0	-36.0	
5.707	-13.2	V	3.0	34.7	1.0	-46.9	-13.0	-33.9	
7.610	-12.4	V	3.0	34.9	1.0	-46.4	-13.0	-33.4	
3.805	-13.1	H	3.0	35.3	1.0	-47.4	-13.0	-34.4	
5.707	-12.5	H	3.0	34.7	1.0	-46.2	-13.0	-33.2	
7.610	-11.3	H	3.0	34.9	1.0	-45.3	-13.0	-32.3	

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

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_15M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
15MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5MHz									
3.715	-18.0	V	3.0	35.4	1.0	-52.4	-13.0	-39.4	
5.572	-16.1	V	3.0	34.7	1.0	-49.8	-13.0	-36.8	
7.424	-12.9	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.715	-15.0	H	3.0	35.4	1.0	-49.4	-13.0	-36.4	
5.572	-15.3	H	3.0	34.7	1.0	-49.0	-13.0	-36.0	
7.424	-11.9	H	3.0	34.9	1.0	-45.8	-13.0	-32.8	
Mid Ch, 1880.0MHz									
3.760	-18.1	V	3.0	35.3	1.0	-52.4	-13.0	-39.4	
5.640	-14.2	V	3.0	34.7	1.0	-47.9	-13.0	-34.9	
7.520	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	
3.760	-13.5	H	3.0	35.3	1.0	-47.9	-13.0	-34.9	
5.640	-13.8	H	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.520	-11.2	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	
High Ch, 1902.5 MHz									
3.805	-14.7	V	3.0	35.3	1.0	-49.0	-13.0	-36.0	
5.707	-11.7	V	3.0	34.7	1.0	-45.5	-13.0	-32.5	
7.610	-11.9	V	3.0	34.9	1.0	-45.8	-13.0	-32.8	
3.805	-13.2	H	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.707	-12.5	H	3.0	34.7	1.0	-46.2	-13.0	-33.2	
7.610	-11.4	H	3.0	34.9	1.0	-45.4	-13.0	-32.4	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_10M_16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
10MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855.0MHz									
3.735	-10.0	V	3.0	35.4	1.0	-44.3	-13.0	-31.3	
5.615	-14.5	V	3.0	34.7	1.0	-48.2	-13.0	-35.2	
7.495	-10.2	V	3.0	34.9	1.0	-44.1	-13.0	-31.1	
3.735	-9.2	H	3.0	35.4	1.0	-43.6	-13.0	-30.6	
5.615	-15.2	H	3.0	34.7	1.0	-48.9	-13.0	-35.9	
7.495	-11.8	H	3.0	34.9	1.0	-45.8	-13.0	-32.8	
Mid Ch, 1880.0MHz									
3.760	-16.0	V	3.0	35.3	1.0	-50.4	-13.0	-37.4	
5.640	-15.7	V	3.0	34.7	1.0	-49.4	-13.0	-36.4	
7.520	-12.4	V	3.0	34.9	1.0	-46.3	-13.0	-33.3	
3.760	-15.5	H	3.0	35.3	1.0	-49.9	-13.0	-36.9	
5.640	-13.2	H	3.0	34.7	1.0	-46.9	-13.0	-33.9	
7.520	-11.6	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
High Ch, 1908 MHz									
3.816	-13.0	V	3.0	35.3	1.0	-47.3	-13.0	-34.3	
5.724	-9.9	V	3.0	34.7	1.0	-43.6	-13.0	-30.6	
7.632	-12.7	V	3.0	34.9	1.0	-46.7	-13.0	-33.7	
3.816	-13.2	H	3.0	35.3	1.0	-47.4	-13.0	-34.4	
5.724	-12.2	H	3.0	34.7	1.0	-46.0	-13.0	-33.0	
7.632	-11.3	H	3.0	34.9	1.0	-45.2	-13.0	-32.2	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_10M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 22

Band
LTE2
10MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855.0MHz									
3.735	-10.0	V	3.0	35.4	1.0	-44.4	-13.0	-31.4	
5.615	-15.1	V	3.0	34.7	1.0	-48.9	-13.0	-35.9	
7.495	-11.2	V	3.0	34.9	1.0	-45.1	-13.0	-32.1	
3.735	-9.0	H	3.0	35.4	1.0	-43.4	-13.0	-30.4	
5.615	-14.3	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.495	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
Mid Ch, 1880.0MHz									
3.760	-17.3	V	3.0	35.3	1.0	-51.6	-13.0	-38.6	
5.640	-15.0	V	3.0	34.7	1.0	-48.7	-13.0	-35.7	
7.520	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	
3.760	-17.7	H	3.0	35.3	1.0	-52.0	-13.0	-39.0	
5.640	-14.2	H	3.0	34.7	1.0	-47.9	-13.0	-34.9	
7.520	-11.9	H	3.0	34.9	1.0	-45.8	-13.0	-32.8	
High Ch, 1908 MHz									
3.816	-13.9	V	3.0	35.3	1.0	-48.2	-13.0	-35.2	
5.724	-10.2	V	3.0	34.7	1.0	-43.9	-13.0	-30.9	
7.632	-12.3	V	3.0	34.9	1.0	-46.3	-13.0	-33.3	
3.816	-14.5	H	3.0	35.3	1.0	-48.8	-13.0	-35.8	
5.724	-11.8	H	3.0	34.7	1.0	-45.5	-13.0	-32.5	
7.632	-11.1	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	

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

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_5M_16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
5MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.705	-11.8	V	3.0	35.4	1.0	-46.2	-13.0	-33.2	
5.557	-12.8	V	3.0	34.7	1.0	-46.5	-13.0	-33.5	
7.409	-10.0	V	3.0	34.9	1.0	-43.9	-13.0	-30.9	
3.705	-10.2	H	3.0	35.4	1.0	-44.6	-13.0	-31.6	
5.557	-14.3	H	3.0	34.7	1.0	-48.0	-13.0	-35.0	
7.409	-5.4	H	3.0	34.9	1.0	-39.3	-13.0	-26.3	
Mid Ch, 1880.0MHz									
3.760	-12.6	V	3.0	35.3	1.0	-46.9	-13.0	-33.9	
5.640	-10.6	V	3.0	34.7	1.0	-44.4	-13.0	-31.4	
7.520	-12.7	V	3.0	34.9	1.0	-46.6	-13.0	-33.6	
3.760	-13.2	H	3.0	35.3	1.0	-47.6	-13.0	-34.6	
5.640	-14.3	H	3.0	34.7	1.0	-48.0	-13.0	-35.0	
7.520	-11.2	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	
High Ch, 1907.6 MHz									
3.820	-12.7	V	3.0	35.3	1.0	-47.0	-13.0	-34.0	
5.723	-12.5	V	3.0	34.7	1.0	-46.2	-13.0	-33.2	
7.630	-11.7	V	3.0	34.9	1.0	-45.6	-13.0	-32.6	
3.820	-12.9	H	3.0	35.3	1.0	-47.2	-13.0	-34.2	
5.723	-12.1	H	3.0	34.7	1.0	-45.8	-13.0	-32.8	
7.630	-11.6	H	3.0	34.9	1.0	-45.5	-13.0	-32.5	

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

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_5M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
5MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.0MHz									
3.702	-11.2	V	3.0	35.4	1.0	-45.6	-13.0	-32.6	
5.553	-13.5	V	3.0	34.7	1.0	-47.2	-13.0	-34.2	
7.404	-10.9	V	3.0	34.9	1.0	-44.9	-13.0	-31.9	
3.702	-9.5	H	3.0	35.4	1.0	-43.9	-13.0	-30.9	
5.553	-14.3	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.404	-5.8	H	3.0	34.9	1.0	-39.7	-13.0	-26.7	
Mid Ch, 1880.0MHz									
3.760	-13.2	V	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.640	-11.6	V	3.0	34.7	1.0	-45.3	-13.0	-32.3	
7.520	-12.2	V	3.0	34.9	1.0	-46.1	-13.0	-33.1	
3.760	-13.2	H	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.640	-14.9	H	3.0	34.7	1.0	-48.6	-13.0	-35.6	
7.520	-10.9	H	3.0	34.9	1.0	-44.9	-13.0	-31.9	
High Ch, 1908 MHz									
3.816	-13.1	V	3.0	35.3	1.0	-47.4	-13.0	-34.4	
5.724	-12.5	V	3.0	34.7	1.0	-46.3	-13.0	-33.3	
7.632	-11.9	V	3.0	34.9	1.0	-45.8	-13.0	-32.8	
3.816	-13.8	H	3.0	35.3	1.0	-48.1	-13.0	-35.1	
5.724	-11.6	H	3.0	34.7	1.0	-45.3	-13.0	-32.3	
7.632	-11.4	H	3.0	34.9	1.0	-45.4	-13.0	-32.4	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_5M_16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band

LTE2

3MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3.703	-11.8	V	3.0	35.4	1.0	-46.2	-13.0	-33.2	
5.554	-13.3	V	3.0	34.7	1.0	-47.0	-13.0	-34.0	
7.406	-11.5	V	3.0	34.9	1.0	-45.4	-13.0	-32.4	
3.703	-10.4	H	3.0	35.4	1.0	-44.8	-13.0	-31.8	
5.554	-14.7	H	3.0	34.7	1.0	-48.4	-13.0	-35.4	
7.406	-5.3	H	3.0	34.9	1.0	-39.2	-13.0	-26.2	
Mid Ch, 1880.0MHz									
3.760	-14.2	V	3.0	35.3	1.0	-48.5	-13.0	-35.5	
5.640	-15.9	V	3.0	34.7	1.0	-49.6	-13.0	-36.6	
7.520	-12.7	V	3.0	34.9	1.0	-46.6	-13.0	-33.6	
3.760	-15.2	H	3.0	35.3	1.0	-49.6	-13.0	-36.6	
5.640	-14.6	H	3.0	34.7	1.0	-48.3	-13.0	-35.3	
7.520	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
High Ch, 1908.5 MHz									
3.817	-13.0	V	3.0	35.3	1.0	-47.3	-13.0	-34.3	
5.725	-14.4	V	3.0	34.7	1.0	-48.2	-13.0	-35.2	
7.634	-11.8	V	3.0	34.9	1.0	-45.7	-13.0	-32.7	
3.817	-12.5	H	3.0	35.3	1.0	-46.8	-13.0	-33.8	
5.725	-12.1	H	3.0	34.7	1.0	-45.9	-13.0	-32.9	
7.634	-8.6	H	3.0	34.9	1.0	-42.5	-13.0	-29.5	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_5M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
3MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3.703	-12.1	V	3.0	35.4	1.0	-46.5	-13.0	-33.5	
5.554	-13.5	V	3.0	34.7	1.0	-47.2	-13.0	-34.2	
7.406	-11.5	V	3.0	34.9	1.0	-45.4	-13.0	-32.4	
3.703	-10.4	H	3.0	35.4	1.0	-44.8	-13.0	-31.8	
5.554	-14.3	H	3.0	34.7	1.0	-48.0	-13.0	-35.0	
7.406	-5.9	H	3.0	34.9	1.0	-39.9	-13.0	-26.9	
Mid Ch, 1880.0MHz									
3.760	-13.2	V	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.640	-16.3	V	3.0	34.7	1.0	-50.0	-13.0	-37.0	
7.520	-12.9	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.760	-15.1	H	3.0	35.3	1.0	-49.5	-13.0	-36.5	
5.640	-14.8	H	3.0	34.7	1.0	-48.6	-13.0	-35.6	
7.520	-11.5	H	3.0	34.9	1.0	-45.4	-13.0	-32.4	
High Ch, 1908.5 MHz									
3.817	-12.8	V	3.0	35.3	1.0	-47.1	-13.0	-34.1	
5.725	-13.6	V	3.0	34.7	1.0	-47.4	-13.0	-34.4	
7.634	-11.3	V	3.0	34.9	1.0	-45.3	-13.0	-32.3	
3.817	-13.1	H	3.0	35.3	1.0	-47.4	-13.0	-34.4	
5.725	-12.0	H	3.0	34.7	1.0	-45.7	-13.0	-32.7	
7.634	-7.2	H	3.0	34.9	1.0	-41.2	-13.0	-28.2	

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

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

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_1.4M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
1.4MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.0MHz									
3.702	-10.9	V	3.0	35.4	1.0	-45.3	-13.0	-32.3	
5.553	-14.6	V	3.0	34.7	1.0	-48.4	-13.0	-35.4	
7.404	-11.5	V	3.0	34.9	1.0	-45.4	-13.0	-32.4	
3.702	-9.4	H	3.0	35.4	1.0	-43.8	-13.0	-30.8	
5.553	-16.0	H	3.0	34.7	1.0	-49.7	-13.0	-36.7	
7.404	-10.4	H	3.0	34.9	1.0	-44.3	-13.0	-31.3	
Mid Ch, 1880.0MHz									
3.760	-9.8	V	3.0	35.3	1.0	-44.2	-13.0	-31.2	
5.640	-12.9	V	3.0	34.7	1.0	-46.7	-13.0	-33.7	
7.520	-12.2	V	3.0	34.9	1.0	-46.1	-13.0	-33.1	
3.760	-8.3	H	3.0	35.3	1.0	-42.6	-13.0	-29.6	
5.640	-11.1	H	3.0	34.7	1.0	-44.8	-13.0	-31.8	
7.520	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
High Ch, 1908 MHz									
3.816	-9.0	V	3.0	35.3	1.0	-43.3	-13.0	-30.3	
5.724	-8.9	V	3.0	34.7	1.0	-42.6	-13.0	-29.6	
7.632	-12.3	V	3.0	34.9	1.0	-46.2	-13.0	-33.2	
3.816	-9.5	H	3.0	35.3	1.0	-43.8	-13.0	-30.8	
5.724	-13.7	H	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.632	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	

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

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UL Verification Services Chamber C
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 14I19592
Date: 12/17/14
Test Engineer: L. Lara
Configuration: EUT w/ AC Adapter + HS, X-position (SN: 2014280)
Mode: LTE2_1.4M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band
LTE2
1.4MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.0MHz									
3.702	-11.3	V	3.0	35.4	1.0	-45.7	-13.0	-32.7	
5.553	-14.1	V	3.0	34.7	1.0	-47.8	-13.0	-34.8	
7.404	-11.5	V	3.0	34.9	1.0	-45.4	-13.0	-32.4	
3.702	-10.2	H	3.0	35.4	1.0	-44.6	-13.0	-31.6	
5.553	-16.2	H	3.0	34.7	1.0	-49.9	-13.0	-36.9	
7.404	-10.8	H	3.0	34.9	1.0	-44.7	-13.0	-31.7	
Mid Ch, 1880.0MHz									
3.760	-10.9	V	3.0	35.3	1.0	-45.2	-13.0	-32.2	
5.640	-13.1	V	3.0	34.7	1.0	-46.8	-13.0	-33.8	
7.520	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.760	-9.5	H	3.0	35.3	1.0	-43.8	-13.0	-30.8	
5.640	-12.3	H	3.0	34.7	1.0	-46.0	-13.0	-33.0	
7.520	-11.6	H	3.0	34.9	1.0	-45.5	-13.0	-32.5	
High Ch, 1908 MHz									
3.816	-9.0	V	3.0	35.3	1.0	-43.3	-13.0	-30.3	
5.724	-8.9	V	3.0	34.7	1.0	-42.6	-13.0	-29.6	
7.632	-12.5	V	3.0	34.9	1.0	-46.4	-13.0	-33.4	
3.816	-9.4	H	3.0	35.3	1.0	-43.6	-13.0	-30.6	
5.724	-13.8	H	3.0	34.7	1.0	-47.6	-13.0	-34.6	
7.632	-11.1	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	

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

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