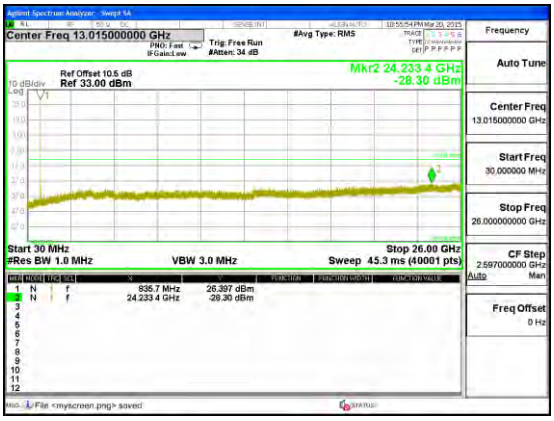
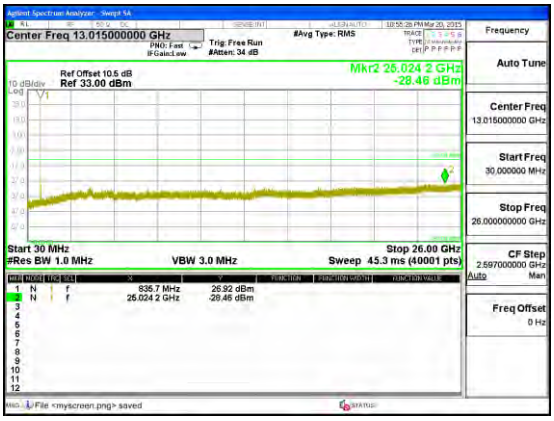
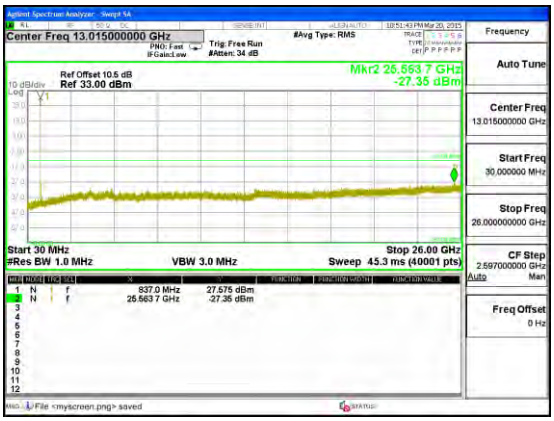
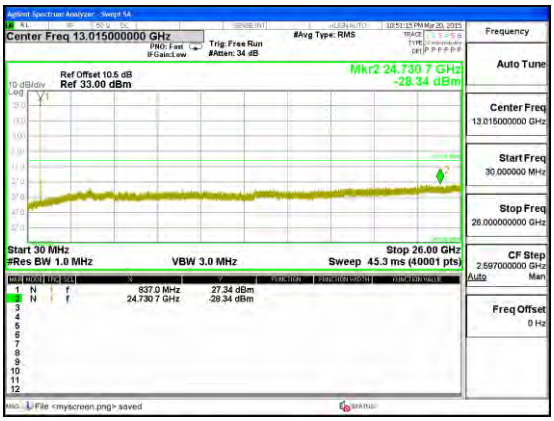
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CSE 16QAM Mid channel	 Band LTE5 3MHz CSE QPSK Mid channel

Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CSE 16QAM Mid channel	 Band LTE5 1.4MHz CSE QPSK Mid channel

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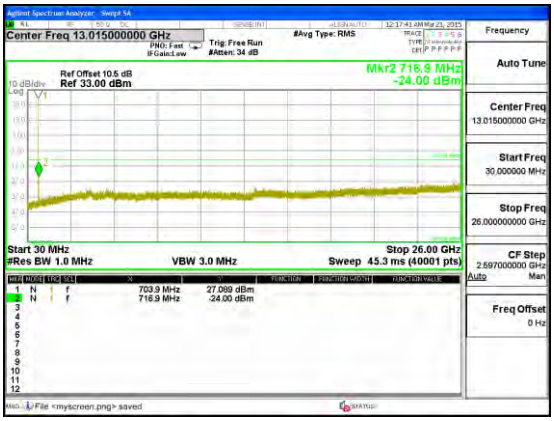
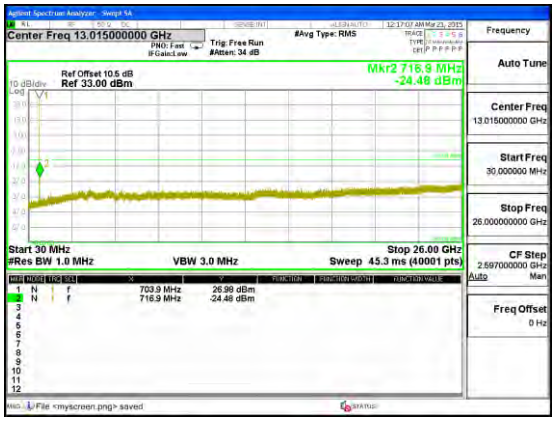
LTE Band 12

Band LTE12 10MHz 16QAM	 Band LTE12 10MHz CSE 16QAM Mid channel	 Band LTE12 10MHz CSE QPSK Mid channel

Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CSE 16QAM Mid channel	 Band LTE12 5MHz CSE QPSK Mid channel

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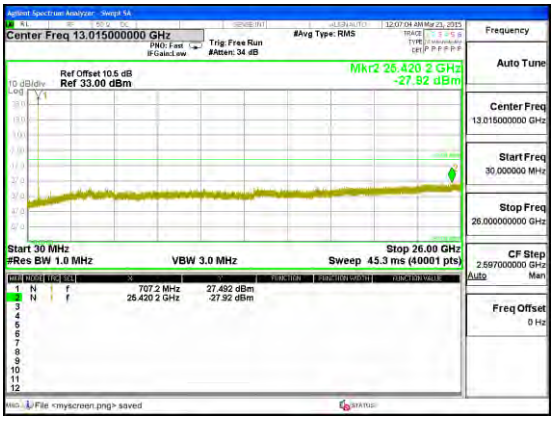
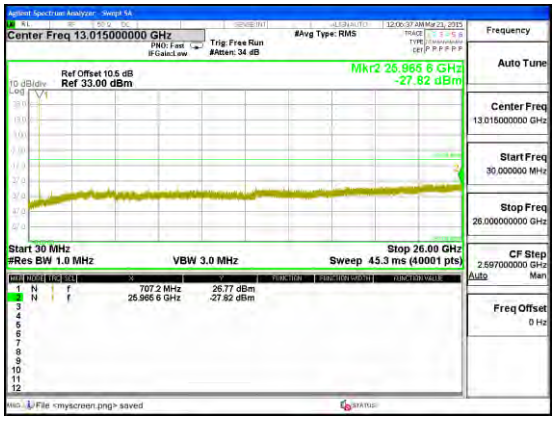
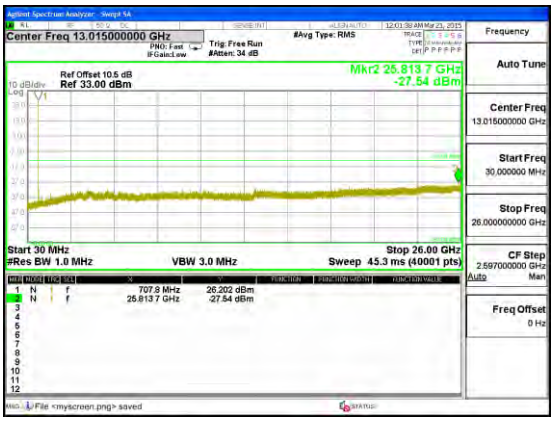
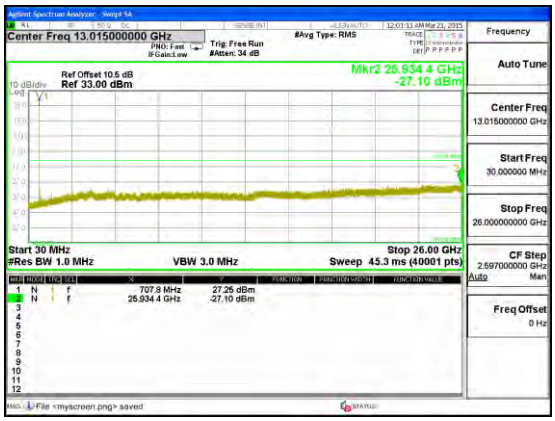
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CSE 16QAM Mid channel	 Band LTE12 3MHz CSE QPSK Mid channel

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

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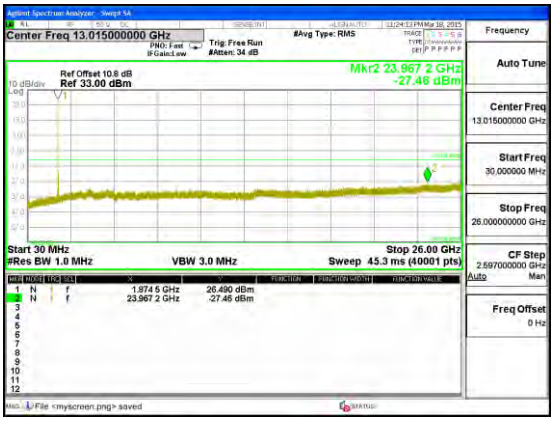
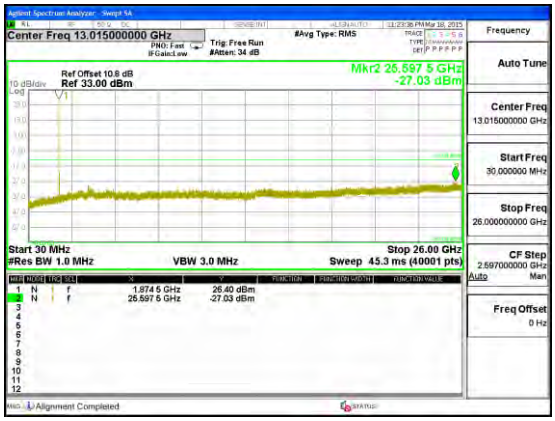
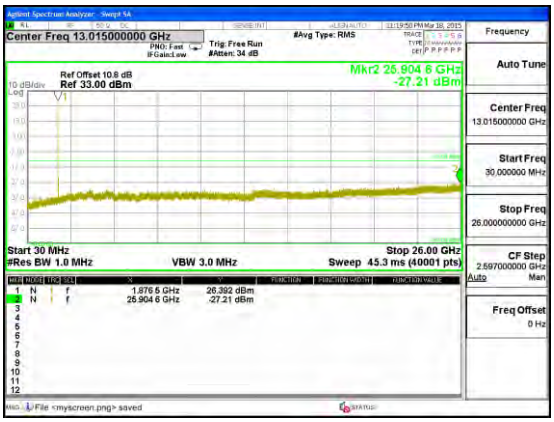
LTE Band 25

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

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

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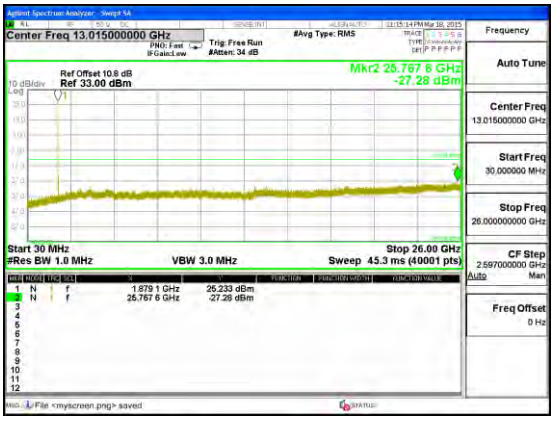
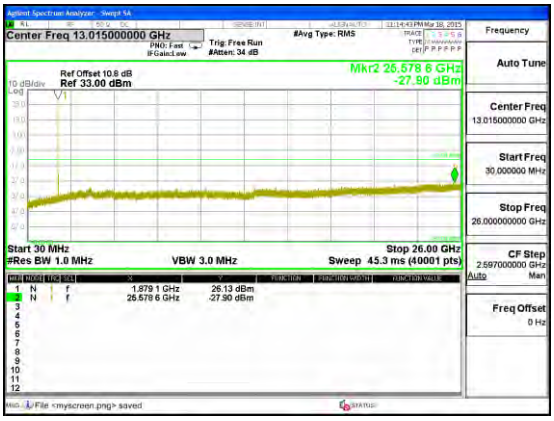
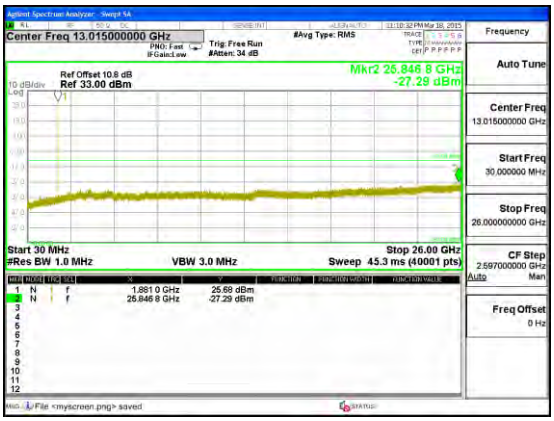
Band LTE25 10MHz 16QAM	 Band LTE25 10MHz CSE 16QAM Mid channel	 Band LTE25 10MHz CSE QPSK Mid channel

Band LTE25 5MHz 16QAM	 Band LTE25 5MHz CSE 16QAM Mid channel	 Band LTE25 5MHz CSE QPSK Mid channel

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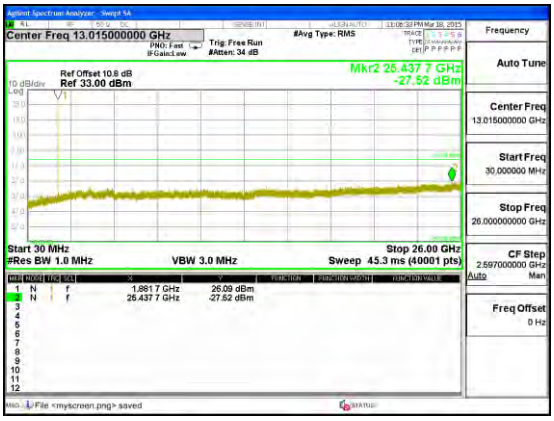
Band LTE25 3MHz 16QAM	 Band LTE25 3MHz CSE 16QAM Mid channel	 Band LTE25 3MHz CSE QPSK Mid channel

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

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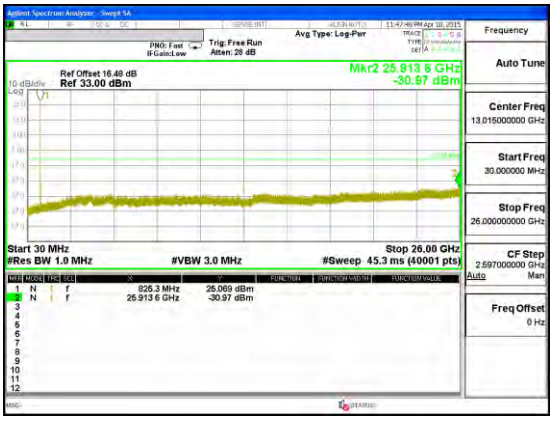
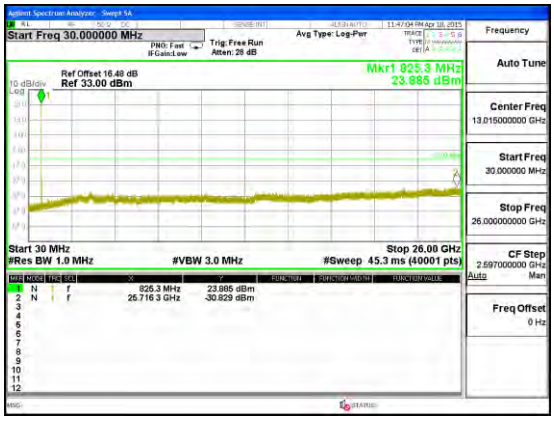
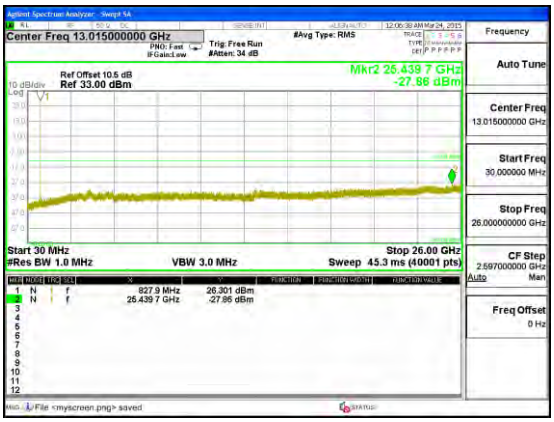
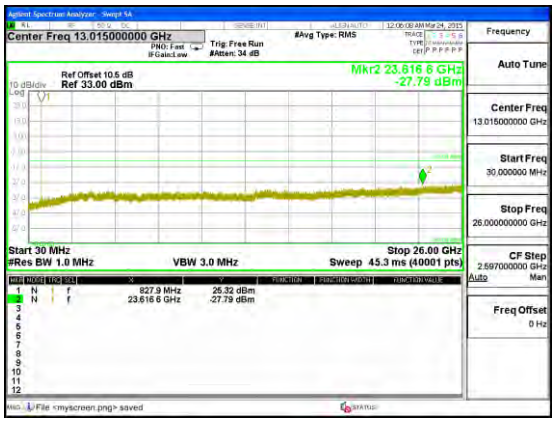
LTE Band 26

Band LTE26 15MHz 16QAM	 Band LTE26 15MHz CSE 16QAM Mid channel	 Band LTE26 10=5MHz CSE QPSK Mid channel

Band LTE26 10MHz 16QAM	 Band LTE26 10MHz CSE 16QAM Mid channel	 Band LTE26 10MHz CSE QPSK Mid channel

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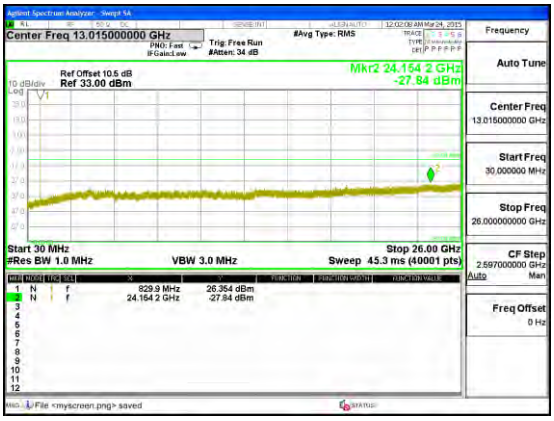
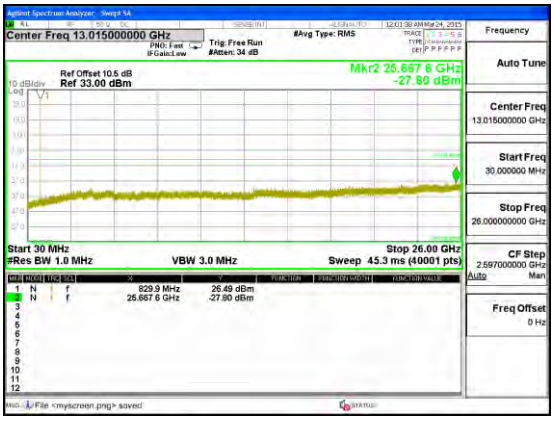
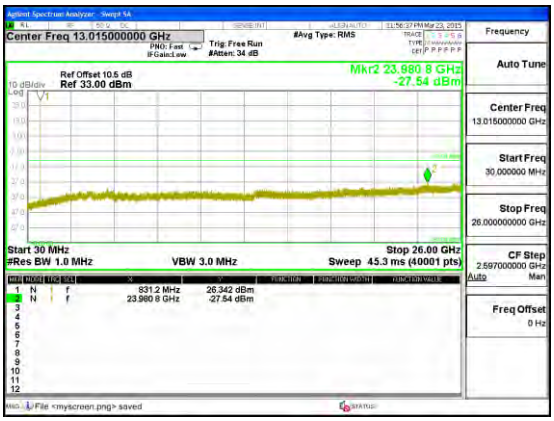
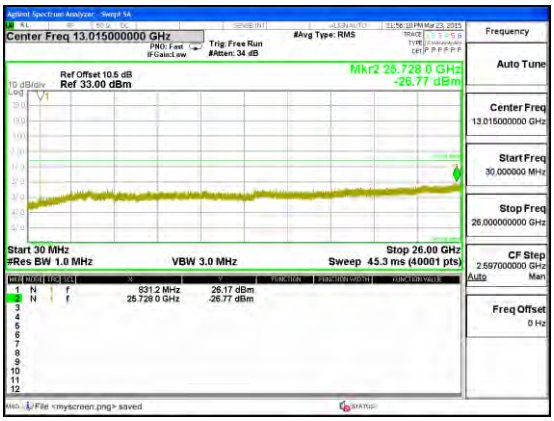
Band LTE26 5MHz 16QAM	 Band LTE26 5MHz CSE 16QAM Mid channel	 Band LTE26 5MHz CSE QPSK Mid channel

Band LTE26 3MHz 16QAM	 Band LTE26 3MHz CSE 16QAM Mid channel	 Band LTE26 3MHz CSE QPSK Mid channel

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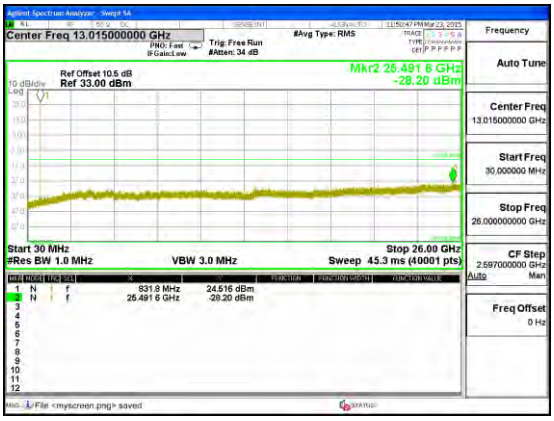
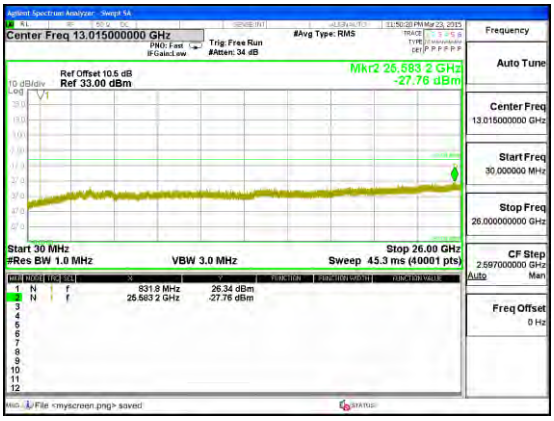
Band LTE26 1.4MHz 16QAM	 Band LTE26 1.4MHz CSE 16QAM Mid channel	 Band LTE26 1.4MHz CSE QPSK Mid channel

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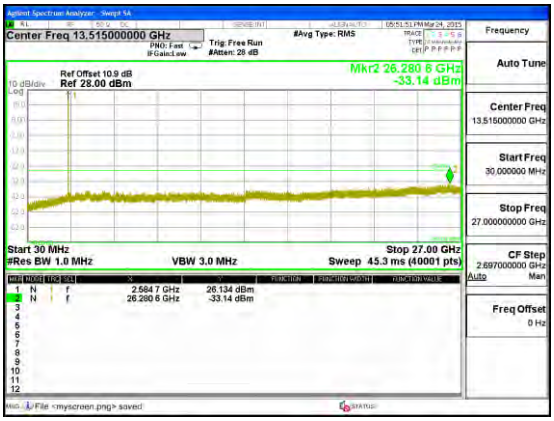
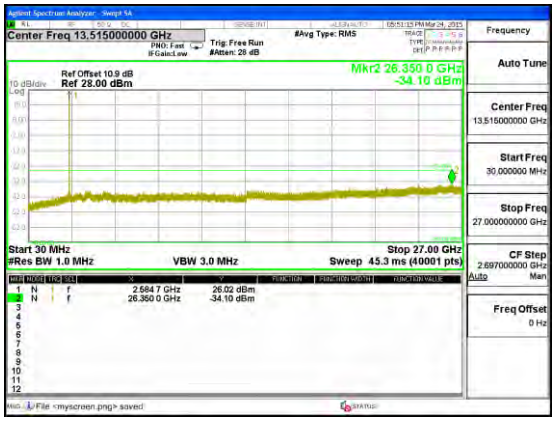
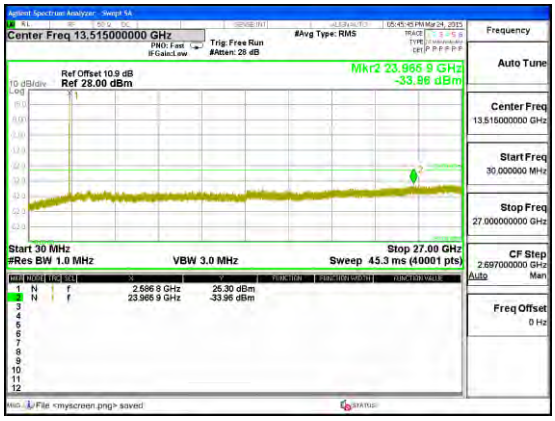
LTE Band 41

Band LTE41 20MHz 16QAM	 Band LTE41 20MHz CSE 16QAM Mid channel	 Band LTE41 20MHz CSE QPSK Mid channel

Band LTE41 15MHz 16QAM	 Band LTE41 15MHz CSE 16QAM Mid channel	 Band LTE41 15MHz CSE QPSK Mid channel

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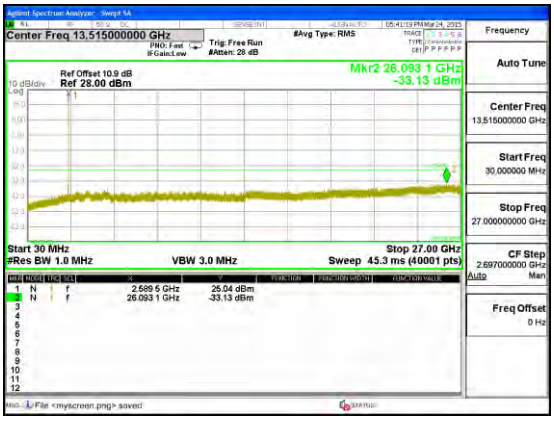
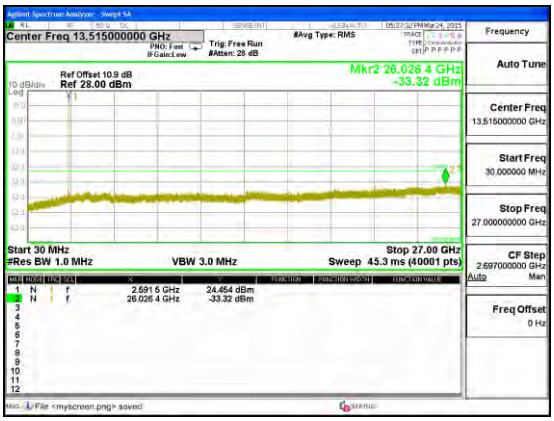
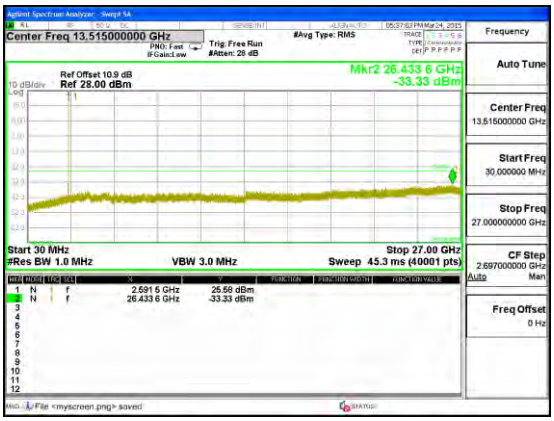
Band LTE41 10MHz 16QAM	 Band LTE41 10MHz CSE 16QAM Mid channel	 Band LTE41 10MHz CSE QPSK Mid channel

Band LTE41 5MHz 16QAM	 Band LTE41 5MHz CSE 16QAM Mid channel	 Band LTE41 5MHz CSE QPSK Mid channel

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10.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

MODES TESTED

GSM, CDMA, WCDM and LTE

RESULTS

See the following pages.

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10.4.1. FREQUENCY STABILITY RESULTS

GSM 850 – MID CHANNEL

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600018	0.003	2.5
3.80	40	836.600020	0.002	2.5
3.80	30	836.600016	0.006	2.5
3.80	***20***	**836.600021**	**0**	***2.5***
3.80	10	836.600026	-0.006	2.5
3.80	0	836.600024	-0.003	2.5
3.80	-10	836.600020	0.001	2.5
3.80	-20	836.600023	-0.002	2.5
3.80	-30	836.600018	0.003	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***836.600021***	***0***	***2.5***
4.37	20	836.6000212	*0.000*	2.5
3.23(End of volt)	20	836.600023	*-0.002*	2.5

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GSM 1900 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	50	1880.000029	0.004	2.5
3.80	40	1880.000023	0.007	2.5
3.80	30	1880.000021	0.009	2.5
3.80	***20***	**1880.000037**	**0**	***2.5***
3.80	10	1880.000033	0.002	2.5
3.80	0	1880.000039	-0.001	2.5
3.80	-10	1880.000038	-0.001	2.5
3.80	-20	1880.000027	0.005	2.5
3.80	-30	1880.000034	0.001	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***1880.000037***	***0***	***2.5***
4.37	20	1880.000034	*0.001*	2.5
3.23(End of volt)	20	1880.000039	*-0.001*	2.5

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LTE Band 4 – MID CHANNEL

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	50	1732.500007	0.000	2.5
3.80	40	1732.499988	0.011	2.5
3.80	30	1732.499989	0.010	2.5
3.80	***20***	**1732.500007**	**0**	***2.5***
3.80	10	1732.500007	0.000	2.5
3.80	0	1732.500006	0.000	2.5
3.80	-10	1732.500006	0.001	2.5
3.80	-20	1732.500007	0.000	2.5
3.80	-30	1732.500006	0.000	2.5

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1732.500007***	***0***	***2.5***
4.37	20	1732.500008	*-0.001*	2.5
3.23(End of volt)	20	1732.500006	*0.000*	2.5

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LTE Band 12 – MID CHANNE

Reference Frequency: PCS Mid Channel		707.5	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		1768.750	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse (MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.80	50	707.500059	0.005	2.5
3.80	40	707.500055	0.010	2.5
3.80	30	707.500061	0.002	2.5
3.80	***20***	**707.500062**	**0**	***2.5***
3.80	10	707.500051	0.016	2.5
3.80	0	707.500052	0.014	2.5
3.80	-10	707.500055	0.011	2.5
3.80	-20	707.500055	0.010	2.5
3.80	-30	707.500054	0.011	2.5

Reference Frequency: PCS Mid Channel		707.5	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		1768.750	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse (MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***707.500062***	***0***	***2.5***
4.37	20	707.5000631	*-0.001*	2.5
3.23(End of volt)	20	707.5000627	*0.000*	2.5

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LTE Band 41 MID CHANNEL

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2593.000031	0.001	2.5
3.80	40	2593.000029	0.002	2.5
3.80	30	2593.000026	0.002	2.5
3.80	***20***	**2593.000033**	**0**	***2.5***
3.80	10	2593.000026	0.002	2.5
3.80	0	2593.000033	0.000	2.5
3.80	-10	2593.000026	0.003	2.5
3.80	-20	2593.000035	-0.001	2.5
3.80	-30	2593.000037	-0.002	2.5

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***2593.000033***	***0***	***2.5***
4.37	20	2593.000029	*0.002*	2.5
3.23(End of volt)	20	2593.00003	*0.001*	2.5

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11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27 and § 90.635.

LIMITS

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

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

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

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

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

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

90.635(b) - The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw). (LTE B26)
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17; PSA setting reference to 971168 D01 v02r02
For peak power measurement with a PSA:
a) Set the RBW ≥ OBW; b) Set VBW ≥ 3 × RBW; c) Set span ≥ 2 x RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points ≥ span/RBW; g) Trace mode = max hold;
For average power measurement with a PSA:
a) Set span to at least 1.5 times the OBW; b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz; c) Set VBW ≥ 3 x RBW; d) Set number of points in sweep ≥ 2 × span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle ≥ 98; h) Use trigger to capture bursts If burst duty cycle < 98; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

MODES TESTED

GSM, CDMA, WCDMA, LTE

TEST RESULTS

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11.1.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	31.83	1524.05
		661	1880	32.2	1659.59
		810	1909.8	32.01	1588.55
	EGPRS	512	1850.2	28.81	760.33
		661	1880	29.21	833.68
		810	1909.8	28.89	774.46
GSM850	GPRS	128	824.2	29.601	912.22
		190	836.6	29.571	905.94
		251	848.8	29.721	937.78
	EGPRS	128	824.2	23.821	241.05
		190	836.6	23.801	239.94
		251	848.8	23.961	248.94

WCDMA

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	25.39	345.94
		9400	1880	25.53	357.27
		9538	1907.6	25.86	385.48
	HSDPA	9262	1852.4	25.35	342.77
		9400	1880	25.51	355.63
		9538	1907.6	25.85	384.59
Band 5	REL99	4132	826.4	20.251	105.95
		4183	836.6	20.401	109.67
		4233	846.6	20.551	113.53
	HSDPA	4132	826.4	20.201	104.74
		4183	836.6	20.381	109.17
		4233	846.6	20.511	112.49

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CDMA

Band	Mode	Channel	f(MHz)	EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	26.5	446.68
		600	1880	26.4	436.52
		1175	1908.75	27	501.19
	EVDO REL. 0	25	1851.25	26.20	416.87
		600	1880	26.69	466.66
		1175	1908.75	27.30	537.03

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
BC0	1xRTT	1013	824.7	23.329	215.23
		384	836.52	22.761	188.84
		777	848.31	22.221	166.76
	EVDO REL. 0	1013	824.7	22.98	198.61
		384	836.52	22.46	176.20
		777	848.31	21.84	152.76

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
BC10	1xRTT	476	817.9	23.679	233.29
		580	820.5	23.471	222.38
		684	823.1	23.483	223
	EVDO REL. 0	476	817.9	23.76	237.68
		580	820.5	23.59	228.56
		684	823.1	23.64	231.21

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11.1.2. LTE ERP/EIRP Results

LTE Band 2

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	25.2526	335.17
			1/0	1880	25.7988	380.08
			1/0	1900	25.595	362.66
		16QAM	1/0	1860	24.4226	276.86
			1/0	1880	24.9688	313.96
			1/0	1900	24.625	290.07
	15	QPSK	1/0	1857.5	25.174325	329.18
			1/0	1880	25.3188	340.31
			1/0	1902.5	25.372225	344.53
		16QAM	1/0	1857.5	24.514325	282.77
			1/0	1880	24.4588	279.18
			1/0	1902.5	24.892225	308.48
	10	QPSK	1/0	1855	24.99605	315.94
			1/0	1880	25.4488	350.65
			1/0	1905	25.22945	333.38
		16QAM	1/0	1855	24.14605	259.78
			1/0	1880	24.4988	281.76
			1/0	1905	24.23945	265.43
	5	QPSK	1/0	1852.5	25.067775	321.2
			1/0	1880	25.5188	356.35
			1/0	1907.5	25.246675	334.71
		16QAM	1/0	1852.5	24.177775	261.68
			1/0	1880	24.5288	283.71
			1/0	1907.5	24.266675	267.1

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	25.128465	325.72
			1/0	1880	25.3288	341.1
			1/0	1908.5	25.049565	319.86
		16QAM	1/0	1851.5	24.178465	261.73
			1/0	1880	24.5888	287.66
			1/0	1908.5	24.069565	255.24
	1.4	QPSK	1/0	1850.7	25.089017	322.78
			1/0	1880	25.2788	337.19
			1/0	1909.3	25.071877	321.5
		16QAM	1/0	1850.7	24.169017	261.16
			1/0	1880	24.5688	286.34
			1/0	1909.3	24.081877	255.97

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LTE Band 4

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	24.6568	292.2
			1/0	1732.5	24.37105	273.59
			1/0	1745	25.9253	391.32
		16QAM	1/0	1720	23.9168	246.42
			1/0	1732.5	23.67105	232.87
			1/0	1745	25.2253	333.07
	15	QPSK	1/0	1717.5	23.82595	241.32
			1/0	1732.5	24.07105	255.33
			1/0	1747.5	24.61615	289.48
		16QAM	1/0	1717.5	23.22595	210.18
			1/0	1732.5	23.43105	220.35
			1/0	1747.5	23.91615	246.39
	10	QPSK	1/0	1715	23.9751	249.75
			1/0	1732.5	24.39105	274.86
			1/0	1750	25.207	331.67
		16QAM	1/0	1715	23.3351	215.53
			1/0	1732.5	23.77105	238.29
			1/0	1750	24.607	288.87
	5	QPSK	1/0	1712.5	23.87425	244.02
			1/0	1732.5	24.41105	276.12
			1/0	1752.5	25.33785	341.81
		16QAM	1/0	1712.5	23.24425	211.07
			1/0	1732.5	23.77105	238.29
			1/0	1752.5	24.79785	301.85

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	23.94791	248.19
			1/0	1732.5	24.42105	276.76
			1/0	1753.5	25.44419	350.28
		16QAM	1/0	1711.5	23.35791	216.67
			1/0	1732.5	23.87105	243.84
			1/0	1753.5	24.79419	301.59
	1.4	QPSK	1/0	1710.7	24.250838	266.12
			1/0	1732.5	24.17105	261.28
			1/0	1754.3	25.421262	348.44
		16QAM	1/0	1710.7	23.650838	231.78
			1/0	1732.5	23.27105	212.38
			1/0	1754.3	24.591262	287.82

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LTE Band 5

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE5	10	QPSK	1/0	829	22.578	181.05
			1/0	836.5	22.16	164.44
			1/0	844	21.82	152.05
		16QAM	1/0	829	21.378	137.34
			1/0	836.5	20.76	119.12
			1/0	844	20.92	123.59
	5	QPSK	1/0	826.5	22.48	177.01
			1/0	836.5	22.1	162.18
			1/0	846.5	21.73	148.94
		16QAM	1/0	826.5	21.378	137.34
			1/0	836.5	20.86	121.9
			1/0	846.5	20.52	112.72
	3	QPSK	1/0	825.5	22.278	168.97
			1/0	836.5	22.21	166.34
			1/0	847.5	21.66	146.55
		16QAM	1/0	825.5	21.178	131.16
			1/0	836.5	21.06	127.64
			1/0	847.5	20.52	112.72
	1.4	QPSK	1/0	824.7	23.778	238.67
			1/0	836.5	21.96	157.04
			1/0	848.3	21.62	145.21
		16QAM	1/0	824.7	22.178	165.12
			1/0	836.5	20.76	119.12
			1/0	848.3	20.42	110.15

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LTE Band 12

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE12	10	QPSK	1/0	704	17.34	54.2
			1/0	707.5	17.6	57.54
			1/0	711	18.2	66.07
		16QAM	1/0	704	16.49	44.57
			1/0	707.5	17.2	52.48
			1/0	711	18	63.1
	5	QPSK	1/0	701.5	17.26	53.21
			1/0	707.5	17.48	55.98
			1/0	713.5	18.03	63.53
		16QAM	1/0	701.5	16.2	41.69
			1/0	707.5	16.5	44.67
			1/0	713.5	17.1	51.29
	3	QPSK	1/0	700.5	16.6	45.71
			1/0	707.5	18.03	63.53
			1/0	714.5	18.84	76.56
		16QAM	1/0	700.5	16.5	44.67
			1/0	707.5	16.9	48.98
			1/0	714.5	17.7	58.88
	1.4	QPSK	1/0	699.7	16.8	47.86
			1/0	707.5	17.92	61.94
			1/0	715.3	18.4	69.18
		16QAM	1/0	699.7	15.8	38.02
			1/0	707.5	16.8	47.86
			1/0	715.3	17.3	53.7

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LTE Band 25

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE25	20	QPSK	1/0	1860	25.0326	318.61
			1/0	1882.5	25.5488	358.82
			1/0	1905	25.655	367.71
		16QAM	1/0	1860	24.0226	252.5
			1/0	1882.5	24.6288	290.32
			1/0	1905	24.725	296.82
	15	QPSK	1/0	1857.5	24.914325	310.05
			1/0	1882.5	25.3488	342.67
			1/0	1907.5	25.632225	365.78
		16QAM	1/0	1857.5	23.964325	249.13
			1/0	1882.5	24.4688	279.82
			1/0	1907.5	24.642225	291.22
	10	QPSK	1/0	1855	24.94605	312.32
			1/0	1882.5	25.4188	348.24
			1/0	1910	25.66945	368.93
		16QAM	1/0	1855	24.01605	252.12
			1/0	1882.5	24.5188	283.06
			1/0	1910	24.81945	303.35
	5	QPSK	1/0	1852.5	24.997775	316.07
			1/0	1882.5	25.5288	357.17
			1/0	1912.5	25.746675	375.55
		16QAM	1/0	1852.5	24.007775	251.64
			1/0	1882.5	24.5388	284.37
			1/0	1912.5	24.876675	307.37

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE25	3	QPSK	1/0	1851.5	24.998465	316.12
			1/0	1882.5	25.6288	365.49
			1/0	1913.5	25.719565	373.21
		16QAM	1/0	1851.5	24.088465	256.36
			1/0	1882.5	24.7088	295.72
			1/0	1913.5	24.829565	304.06
	1.4	QPSK	1/0	1850.7	24.849017	305.42
			1/0	1882.5	25.4988	354.72
			1/0	1914.3	25.701877	371.7
		16QAM	1/0	1850.7	23.979017	249.98
			1/0	1882.5	24.5188	283.06
			1/0	1914.3	24.841877	304.92

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LTE Band 26

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP	
					dBm	mW
LTE26	15	QPSK	1/0	831.5	22.28	169.04
			1/0	836.5	22.278	168.97
			1/0	841.5	22.17	164.82
		16QAM	1/0	831.5	21.18	131.22
			1/0	836.5	21.06	127.64
			1/0	841.5	20.92	123.59
	10	QPSK	1/0	819	22.578	181.05
			1/0	831.5	22.16	164.44
			1/0	844	21.82	152.05
		16QAM	1/0	819	21.378	137.34
			1/0	831.5	20.76	119.12
			1/0	844	20.92	123.59
	5	QPSK	1/0	816.5	22.48	177.01
			1/0	831.5	22.1	162.18
			1/0	846.5	21.73	148.94
		16QAM	1/0	816.5	21.378	137.34
			1/0	831.5	20.86	121.9
			1/0	846.5	20.52	112.72
	3	QPSK	1/0	815.5	22.278	168.97
			1/0	831.5	22.21	166.34
			1/0	847.5	21.66	146.55
		16QAM	1/0	815.5	21.178	131.16
			1/0	831.5	21.06	127.64
			1/0	847.5	20.52	112.72
	1.4	QPSK	1/0	814.7	23.778	238.67
			1/0	831.5	21.96	157.04
			1/0	848.3	21.62	145.21
		16QAM	1/0	814.7	22.178	165.12
			1/0	831.5	20.76	119.12
			1/0	848.3	20.42	110.15

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LTE Band 41

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	EIRP	
					dBm	mW
LTE41	20	QPSK	1/0	2506	21.3498	136.45
			1/0	2593	23.0059	199.8
			1/0	2680	23.1256	205.38
		16QAM	1/0	2506	20.5798	114.28
			1/0	2593	22.3059	170.06
			1/0	2680	22.3256	170.83
	15	QPSK	1/0	2503.5	22.17905	165.16
			1/0	2593	22.8059	190.81
			1/0	2682.5	21.9324	156.04
		16QAM	1/0	2503.5	21.47905	140.57
			1/0	2593	22.2059	166.18
			1/0	2682.5	21.4324	139.07
	10	QPSK	1/0	2501	22.6783	185.28
			1/0	2593	23.7059	234.74
			1/0	2685	23.0392	201.34
		16QAM	1/0	2501	22.0783	161.37
			1/0	2593	23.1059	204.45
			1/0	2685	22.4392	175.36
	5	QPSK	1/0	2498.5	22.973755	198.32
			1/0	2593	24.2059	263.38
			1/0	2687.5	23.976	249.8
		16QAM	1/0	2498.5	22.373755	172.73
			1/0	2593	23.6059	229.4
			1/0	2687.5	23.346	216.07

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11.1.3. ERP/EIRP PLOTS

GSM

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

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: EGPRS 1900

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

Band

GSM 1900

EGPRS

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	19.00	V	0.9	8.0	26.16	33.0	-6.8	
1850.20	21.65	H	0.9	8.0	28.81	33.0	-4.2	
Mid Ch								
1880.00	19.56	V	0.9	8.0	26.72	33.0	-6.3	
1880.00	22.05	H	0.9	8.0	29.21	33.0	-3.8	
High Ch								
1909.80	19.21	V	0.9	8.0	26.37	33.0	-6.6	
1909.80	21.73	H	0.9	8.0	28.89	33.0	-4.1	

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

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Band

GSM 1900

GPRS

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

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: GPRS 1900

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	22.04	V	0.9	8.0	29.20	33.0	-3.8	
1850.20	24.67	H	0.9	8.0	31.83	33.0	-1.2	
Mid Ch								
1880.00	22.57	V	0.9	8.0	29.73	33.0	-3.3	
1880.00	25.04	H	0.9	8.0	32.20	33.0	-0.8	
High Ch								
1909.80	22.31	V	0.9	8.0	29.47	33.0	-3.5	
1909.80	24.85	H	0.9	8.0	32.01	33.0	-1.0	

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

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Band

GSM 850

EGPRS

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: EGPRS850

Test Equipment:
Receiving: Sunol T130, and 5m Chamber A N-type Cable
Substitution: Dipole T276, 4ft SMA Cable (SN: 244639 002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	16.03	V	0.9	0.0	15.13	38.5	-23.3	
824.20	24.72	H	0.9	0.0	23.82	38.5	-14.6	
Mid Ch								
836.60	15.73	V	0.9	0.0	14.83	38.5	-23.6	
836.60	24.70	H	0.9	0.0	23.80	38.5	-14.6	
High Ch								
848.80	14.18	V	0.9	0.0	13.28	38.5	-25.2	
848.80	24.86	H	0.9	0.0	23.96	38.5	-14.5	

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

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Band

GSM850

GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: GPRS850

Test Equipment:
Receiving: Sunol T130, and 5m Chamber A N-type Cable
Substitution: Dipole T276, 4ft SMA Cable (SN: 244639 002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	21.76	V	0.9	0.0	20.86	38.5	-17.6	
824.20	30.50	H	0.9	0.0	29.60	38.5	-8.8	
Mid Ch								
836.60	21.59	V	0.9	0.0	20.69	38.5	-17.8	
836.60	30.47	H	0.9	0.0	29.57	38.5	-8.9	
High Ch								
848.80	19.97	V	0.9	0.0	19.07	38.5	-19.4	
848.80	30.62	H	0.9	0.0	29.72	38.5	-8.7	

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

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WCDMA

Band

Band 2

HSDPA

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

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: HSDPA B2

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	13.33	V	0.9	8.0	20.44	33.0	-12.6	
1852.40	18.24	H	0.9	8.0	25.35	33.0	-7.7	
Mid Ch								
1880.00	14.34	V	0.9	8.0	21.45	33.0	-11.6	
1880.00	18.40	H	0.9	8.0	25.51	33.0	-7.5	
High Ch								
1907.60	13.91	V	0.9	8.0	21.02	33.0	-12.0	
1907.60	18.74	H	0.9	8.0	25.85	33.0	-7.2	

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

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Band

Band 2

REL99

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

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: Rel99 B2

Test Equipment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	13.31	V	0.9	8.0	20.42	33.0	-12.6	
1852.40	18.28	H	0.9	8.0	25.39	33.0	-7.6	
Mid Ch								
1880.00	14.37	V	0.9	8.0	21.48	33.0	-11.5	
1880.00	18.42	H	0.9	8.0	25.53	33.0	-7.5	
High Ch								
1907.60	13.88	V	0.9	8.0	20.99	33.0	-12.0	
1907.60	18.75	H	0.9	8.0	25.86	33.0	-7.1	

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

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Band

Band 5

HSDPA

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: WCDMA Band 5 HSDPA

Test Equipment:
Receiving: Sunol T130, and 3m Chamber A N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	13.79	V	0.9	0.0	12.89	38.5	-25.6	
826.40	21.10	H	0.9	0.0	20.20	38.5	-18.2	
Mid Ch								
836.60	13.75	V	0.9	0.0	12.85	38.5	-25.6	
836.60	21.28	H	0.9	0.0	20.38	38.5	-18.1	
High Ch								
846.60	12.30	V	0.9	0.0	11.40	38.5	-27.0	
846.60	21.41	H	0.9	0.0	20.51	38.5	-17.9	

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

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High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 03/31/15
Test Engineer: R. Alegre
Configuration: EUT only
Mode: REL99 B5 FUND

Test Equipment:
Receiving: Sunol T130, and 3m Chamber A N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

Band

Band 5

REL99

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	13.99	V	0.9	0.0	13.09	38.5	-25.4	
826.40	21.15	H	0.9	0.0	20.25	38.5	-18.2	
Mid Ch								
836.60	13.76	V	0.9	0.0	12.86	38.5	-25.6	
836.60	21.30	H	0.9	0.0	20.40	38.5	-18.0	
High Ch								
846.60	12.36	V	0.9	0.0	11.46	38.5	-27.0	
846.60	21.45	H	0.9	0.0	20.55	38.5	-17.9	

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

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CDMA

Band

BC1

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA EVDO BC1

Test Equipment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 6ft SMA Cable

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.8513	17.8	V	0.90	9.20	26.10	33.0	-6.9	
1.8513	17.9	H	0.90	9.20	26.20	33.0	-6.8	
Mid Ch								
1.8800	17.8	V	0.90	9.20	26.10	33.0	-6.9	
1.8800	18.4	H	0.90	9.20	26.69	33.0	-6.3	
High Ch								
1.9088	18.3	V	0.90	9.10	26.50	33.0	-6.5	
1.9088	19.1	H	0.90	9.10	27.30	33.0	-5.7	

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Band

BC1

1xRTT

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA RTT BC1

Test Equipment:
Receiving: Horn T862, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 6ft SMA Cable

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.8513	17.8	V	0.90	9.20	26.10	33.0	-6.9	
1.8513	18.2	H	0.90	9.20	26.50	33.0	-6.5	
Mid Ch								
1.8800	17.6	V	0.90	9.20	25.90	33.0	-7.1	
1.8800	18.1	H	0.90	9.20	26.40	33.0	-6.6	
High Ch								
1.9088	18.3	V	0.90	9.10	26.50	33.0	-6.5	
1.9088	18.8	H	0.90	9.10	27.00	33.0	-6.0	

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Band

BC0

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA EVDO BC0

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	16.09	V	0.9	0.0	15.19	38.5	-23.3	
824.70	23.88	H	0.9	0.0	22.98	38.5	-15.5	
Mid Ch								
836.52	15.40	V	0.9	0.0	14.50	38.5	-23.9	
836.52	23.36	H	0.9	0.0	22.46	38.5	-16.0	
High Ch								
848.31	14.94	V	0.9	0.0	14.04	38.5	-24.4	
848.31	22.74	H	0.9	0.0	21.84	38.5	-16.6	

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Band

BC0

1xRTT

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA RTT BC0

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	16.09	V	0.9	0.0	15.19	38.5	-23.3	
824.70	24.23	H	0.9	0.0	23.33	38.5	-15.1	
Mid Ch								
836.52	15.30	V	0.9	0.0	14.40	38.5	-24.0	
836.52	23.66	H	0.9	0.0	22.76	38.5	-15.7	
High Ch								
848.31	14.74	V	0.9	0.0	13.84	38.5	-24.6	
848.31	23.12	H	0.9	0.0	22.22	38.5	-16.2	

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Band

BC10

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA EVDO BC10

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
817.90	16.80	V	0.9	0.0	15.90	38.5	-22.5	
817.90	24.66	H	0.9	0.0	23.76	38.5	-14.7	
Mid Ch								
820.50	16.85	V	0.9	0.0	15.95	38.5	-22.5	
820.50	24.49	H	0.9	0.0	23.59	38.5	-14.9	
High Ch								
823.10	16.58	V	0.9	0.0	15.68	38.5	-22.8	
823.10	24.54	H	0.9	0.0	23.64	38.5	-14.8	

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Band

BC10

1xRTT

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Mode: CDMA RTT BC10

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
817.90	16.90	V	0.9	0.0	16.00	38.5	-22.4	-19.3
817.90	24.58	H	0.9	0.0	23.68	38.5	-14.8	-10.2
Mid Ch								
820.50	16.80	V	0.9	0.0	15.90	38.5	-22.5	-19.5
820.50	24.37	H	0.9	0.0	23.47	38.5	-15.0	-10.3
High Ch								
823.10	16.80	V	0.9	0.0	15.90	38.5	-22.5	-19.6
823.10	24.38	H	0.9	0.0	23.48	38.5	-15.0	-10.3

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LTE Band 2

Band

LTE2

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	4.61	V	0.9	7.9	11.59	33.0	-21.4	
1860.00	17.44	H	0.9	7.9	24.42	33.0	-8.6	
Mid Ch								
1880.00	5.04	V	0.9	7.9	12.01	33.0	-21.0	
1880.00	18.00	H	0.9	7.9	24.97	33.0	-8.0	
High Ch								
1900.00	4.84	V	0.9	7.9	11.80	33.0	-21.2	
1900.00	17.67	H	0.9	7.9	24.63	33.0	-8.4	

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Band

LTE2

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	5.60	V	0.9	7.9	12.58	33.0	-20.4	
1860.00	18.27	H	0.9	7.9	25.25	33.0	-7.7	
Mid Ch								
1880.00	6.12	V	0.9	7.9	13.09	33.0	-19.9	
1880.00	18.83	H	0.9	7.9	25.80	33.0	-7.2	
High Ch								
1900.00	6.02	V	0.9	7.9	12.98	33.0	-20.0	
1900.00	18.64	H	0.9	7.9	25.60	33.0	-7.4	

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Band

LTE2

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	4.56	V	0.9	7.9	11.54	33.0	-21.5	
1857.50	17.53	H	0.9	7.9	24.51	33.0	-8.5	
Mid Ch								
1880.00	4.97	V	0.9	7.9	11.94	33.0	-21.1	
1880.00	17.49	H	0.9	7.9	24.46	33.0	-8.5	
High Ch								
1902.50	4.76	V	0.9	7.9	11.72	33.0	-21.3	
1902.50	17.93	H	0.9	7.9	24.89	33.0	-8.1	

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Band

LTE2

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	5.37	V	0.9	7.9	12.35	33.0	-20.6	
1857.50	18.19	H	0.9	7.9	25.17	33.0	-7.8	
Mid Ch								
1880.00	6.01	V	0.9	7.9	12.98	33.0	-20.0	
1880.00	18.35	H	0.9	7.9	25.32	33.0	-7.7	
High Ch								
1902.50	6.02	V	0.9	7.9	12.98	33.0	-20.0	
1902.50	18.41	H	0.9	7.9	25.37	33.0	-7.6	

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Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	4.59	V	0.9	7.9	11.58	33.0	-21.4	
1855.00	17.16	H	0.9	7.9	24.15	33.0	-8.9	
Mid Ch								
1880.00	4.96	V	0.9	7.9	11.93	33.0	-21.1	
1880.00	17.53	H	0.9	7.9	24.50	33.0	-8.5	
High Ch								
1905.00	4.83	V	0.9	7.9	11.80	33.0	-21.2	
1905.00	17.27	H	0.9	7.9	24.24	33.0	-8.8	

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Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	5.31	V	0.9	7.9	12.30	33.0	-20.7	
1855.00	18.01	H	0.9	7.9	25.00	33.0	-8.0	
Mid Ch								
1880.00	5.85	V	0.9	7.9	12.82	33.0	-20.2	
1880.00	18.48	H	0.9	7.9	25.45	33.0	-7.6	
High Ch								
1905.00	5.96	V	0.9	7.9	12.93	33.0	-20.1	
1905.00	18.26	H	0.9	7.9	25.23	33.0	-7.8	

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Band

LTE2

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	4.59	V	0.9	7.9	11.58	33.0	-21.4	
1852.50	17.19	H	0.9	7.9	24.18	33.0	-8.8	
Mid Ch								
1880.00	4.92	V	0.9	7.9	11.89	33.0	-21.1	
1880.00	17.56	H	0.9	7.9	24.53	33.0	-8.5	
High Ch								
1907.50	4.80	V	0.9	7.9	11.78	33.0	-21.2	
1907.50	17.29	H	0.9	7.9	24.27	33.0	-8.7	

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Band

LTE2

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	5.34	V	0.9	7.9	12.33	33.0	-20.7	
1852.50	18.08	H	0.9	7.9	25.07	33.0	-7.9	
Mid Ch								
1880.00	5.87	V	0.9	7.9	12.84	33.0	-20.2	
1880.00	18.55	H	0.9	7.9	25.52	33.0	-7.5	
High Ch								
1907.50	5.98	V	0.9	7.9	12.96	33.0	-20.0	
1907.50	18.27	H	0.9	7.9	25.25	33.0	-7.8	

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Band

LTE2

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	4.54	V	0.9	7.9	11.53	33.0	-21.5	
1851.50	17.19	H	0.9	7.9	24.18	33.0	-8.8	
Mid Ch								
1880.00	4.95	V	0.9	7.9	11.92	33.0	-21.1	
1880.00	17.62	H	0.9	7.9	24.59	33.0	-8.4	
High Ch								
1908.50	4.99	V	0.9	7.9	11.97	33.0	-21.0	
1908.50	17.09	H	0.9	7.9	24.07	33.0	-8.9	

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Band

LTE2

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	5.36	V	0.9	7.9	12.35	33.0	-20.7	
1851.50	18.14	H	0.9	7.9	25.13	33.0	-7.9	
Mid Ch								
1880.00	5.86	V	0.9	7.9	12.83	33.0	-20.2	
1880.00	18.36	H	0.9	7.9	25.33	33.0	-7.7	
High Ch								
1908.50	5.96	V	0.9	7.9	12.94	33.0	-20.1	
1908.50	18.07	H	0.9	7.9	25.05	33.0	-8.0	

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Band

LTE2

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	4.56	V	0.9	7.9	11.55	33.0	-21.5	
1850.70	17.18	H	0.9	7.9	24.17	33.0	-8.8	
Mid Ch								
1880.00	4.99	V	0.9	7.9	11.96	33.0	-21.0	
1880.00	17.60	H	0.9	7.9	24.57	33.0	-8.4	
High Ch								
1909.30	4.99	V	0.9	7.9	11.97	33.0	-21.0	
1909.30	17.10	H	0.9	7.9	24.08	33.0	-8.9	

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Band

LTE2

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	5.38	V	0.9	7.9	12.37	33.0	-20.6	
1850.70	18.10	H	0.9	7.9	25.09	33.0	-7.9	
Mid Ch								
1880.00	5.84	V	0.9	7.9	12.81	33.0	-20.2	
1880.00	18.31	H	0.9	7.9	25.28	33.0	-7.7	
High Ch								
1909.30	6.00	V	0.9	7.9	12.98	33.0	-20.0	
1909.30	18.09	H	0.9	7.9	25.07	33.0	-7.9	

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LTE Band 4

Band

LTE4

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	16.60	V	0.9	8.2	23.92	30.0	-6.1	
1720.00	16.50	H	0.9	8.2	23.82	30.0	-6.2	
Mid Ch								
1732.50	15.80	V	0.9	8.2	23.07	30.0	-6.9	
1732.50	16.40	H	0.9	8.2	23.67	30.0	-6.3	
High Ch								
1745.00	16.30	V	0.9	8.1	23.53	30.0	-6.5	
1745.00	18.00	H	0.9	8.1	25.23	30.0	-4.8	

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Band

LTE4

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	17.34	V	0.9	8.2	24.66	30.0	-5.3	
1720.00	17.20	H	0.9	8.2	24.52	30.0	-5.5	
Mid Ch								
1732.50	16.50	V	0.9	8.2	23.77	30.0	-6.2	
1732.50	17.10	H	0.9	8.2	24.37	30.0	-5.6	
High Ch								
1745.00	17.10	V	0.9	8.1	24.33	30.0	-5.7	
1745.00	18.70	H	0.9	8.1	25.93	30.0	-4.1	

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Band

LTE4

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	13.60	V	0.9	8.2	20.93	30.0	-9.1	
1717.50	15.90	H	0.9	8.2	23.23	30.0	-6.8	
Mid Ch								
1732.50	14.20	V	0.9	8.2	21.47	30.0	-8.5	
1732.50	16.16	H	0.9	8.2	23.43	30.0	-6.6	
High Ch								
1747.50	14.70	V	0.9	8.1	21.92	30.0	-8.1	
1747.50	16.70	H	0.9	8.1	23.92	30.0	-6.1	

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Band

LTE4

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	14.10	V	0.9	8.2	21.43	30.0	-8.6	
1717.50	16.50	H	0.9	8.2	23.83	30.0	-6.2	
Mid Ch								
1732.50	14.80	V	0.9	8.2	22.07	30.0	-7.9	
1732.50	16.80	H	0.9	8.2	24.07	30.0	-5.9	
High Ch								
1747.50	15.20	V	0.9	8.1	22.42	30.0	-7.6	
1747.50	17.40	H	0.9	8.1	24.62	30.0	-5.4	

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Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	13.80	V	0.9	8.2	21.14	30.0	-8.9	
1715.00	16.00	H	0.9	8.2	23.34	30.0	-6.7	
Mid Ch								
1732.50	14.70	V	0.9	8.2	21.97	30.0	-8.0	
1732.50	16.50	H	0.9	8.2	23.77	30.0	-6.2	
High Ch								
1750.00	15.20	V	0.9	8.1	22.41	30.0	-7.6	
1750.00	17.40	H	0.9	8.1	24.61	30.0	-5.4	

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Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	14.40	V	0.9	8.2	21.74	30.0	-8.3	
1715.00	16.64	H	0.9	8.2	23.98	30.0	-6.0	
Mid Ch								
1732.50	15.30	V	0.9	8.2	22.57	30.0	-7.4	
1732.50	17.12	H	0.9	8.2	24.39	30.0	-5.6	
High Ch								
1750.00	15.80	V	0.9	8.1	23.01	30.0	-7.0	
1750.00	18.00	H	0.9	8.1	25.21	30.0	-4.8	

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Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	14.40	V	0.9	8.2	21.74	30.0	-8.3	
1712.50	15.90	H	0.9	8.2	23.24	30.0	-6.8	
Mid Ch								
1732.50	15.20	V	0.9	8.2	22.47	30.0	-7.5	
1732.50	16.50	H	0.9	8.2	23.77	30.0	-6.2	
High Ch								
1752.50	15.90	V	0.9	8.1	23.10	30.0	-6.9	
1752.50	17.60	H	0.9	8.1	24.80	30.0	-5.2	

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Band

LTE4

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	15.10	V	0.9	8.2	22.44	30.0	-7.6	
1712.50	16.53	H	0.9	8.2	23.87	30.0	-6.1	
Mid Ch								
1732.50	15.80	V	0.9	8.2	23.07	30.0	-6.9	
1732.50	17.14	H	0.9	8.2	24.41	30.0	-5.6	
High Ch								
1752.50	16.60	V	0.9	8.1	23.80	30.0	-6.2	
1752.50	18.14	H	0.9	8.1	25.34	30.0	-4.7	

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Band

LTE4

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	15.20	V	0.9	8.2	22.55	30.0	-7.5	
1711.50	16.01	H	0.9	8.2	23.36	30.0	-6.6	
Mid Ch								
1732.50	15.30	V	0.9	8.2	22.57	30.0	-7.4	
1732.50	16.60	H	0.9	8.2	23.87	30.0	-6.1	
High Ch								
1753.50	17.60	V	0.9	8.1	24.79	30.0	-5.2	
1753.50	17.50	H	0.9	8.1	24.69	30.0	-5.3	

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Band

LTE4

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	15.70	V	0.9	8.2	23.05	30.0	-7.0	
1711.50	16.60	H	0.9	8.2	23.95	30.0	-6.1	
Mid Ch								
1732.50	15.90	V	0.9	8.2	23.17	30.0	-6.8	
1732.50	17.15	H	0.9	8.2	24.42	30.0	-5.6	
High Ch								
1753.50	18.25	V	0.9	8.1	25.44	30.0	-4.6	
1753.50	18.00	H	0.9	8.1	25.19	30.0	-4.8	

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Band

LTE4

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 4 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	15.70	V	0.9	8.3	23.05	30.0	-6.9	-21.1
1710.70	16.30	H	0.9	8.3	23.65	30.0	-6.3	-20.6
Mid Ch								
1732.50	15.60	V	0.9	8.2	22.87	30.0	-7.1	-21.7
1732.50	16.00	H	0.9	8.2	23.27	30.0	-6.7	-21.0
High Ch								
1754.30	16.55	V	0.9	8.1	23.74	30.0	-6.3	-21.5
1754.30	17.40	H	0.9	8.1	24.59	30.0	-5.4	-20.6

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Band

LTE4

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	16.50	V	0.9	8.3	23.85	30.0	-6.1	-20.3
1710.70	16.90	H	0.9	8.3	24.25	30.0	-5.7	-20.0
Mid Ch								
1732.50	16.50	V	0.9	8.2	23.77	30.0	-6.2	-20.8
1732.50	16.90	H	0.9	8.2	24.17	30.0	-5.8	-20.1
High Ch								
1754.30	17.44	V	0.9	8.1	24.63	30.0	-5.4	-20.6
1754.30	18.23	H	0.9	8.1	25.42	30.0	-4.6	-19.8

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LTE Band 5

Band

LTE5

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 5 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	14.79	V	0.9	0.0	13.89	38.5	-24.6	
829.00	22.28	H	0.9	0.0	21.38	38.5	-17.1	
Mid Ch								
836.50	14.30	V	0.9	0.0	13.40	38.5	-25.1	
836.50	21.66	H	0.9	0.0	20.76	38.5	-17.7	
High Ch								
844.00	13.94	V	0.9	0.0	13.04	38.5	-25.5	
844.00	21.82	H	0.9	0.0	20.92	38.5	-17.6	

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Band

LTE5

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	16.09	V	0.9	0.0	15.19	38.5	-23.3	
829.00	23.48	H	0.9	0.0	22.58	38.5	-15.9	
Mid Ch								
836.50	15.40	V	0.9	0.0	14.50	38.5	-24.0	
836.50	23.06	H	0.9	0.0	22.16	38.5	-16.3	
High Ch								
844.00	14.94	V	0.9	0.0	14.04	38.5	-24.5	
844.00	22.72	H	0.9	0.0	21.82	38.5	-16.7	

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Band

LTE5

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	14.79	V	0.9	0.0	13.89	38.5	-24.6	
826.50	22.28	H	0.9	0.0	21.38	38.5	-17.1	
Mid Ch								
836.50	14.60	V	0.9	0.0	13.70	38.5	-24.8	
836.50	21.76	H	0.9	0.0	20.86	38.5	-17.6	
High Ch								
846.50	13.94	V	0.9	0.0	13.04	38.5	-25.5	
846.50	21.42	H	0.9	0.0	20.52	38.5	-18.0	

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Band

LTE5

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 5 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	16.00	V	0.9	0.0	15.10	38.5	-23.4	
826.50	23.38	H	0.9	0.0	22.48	38.5	-16.0	
Mid Ch								
836.50	15.70	V	0.9	0.0	14.80	38.5	-23.7	
836.50	23.00	H	0.9	0.0	22.10	38.5	-16.4	
High Ch								
846.50	15.00	V	0.9	0.0	14.10	38.5	-24.4	
846.50	22.63	H	0.9	0.0	21.73	38.5	-16.8	

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Band

LTE5

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 5 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	14.59	V	0.9	0.0	13.69	38.5	-24.8	
825.50	22.08	H	0.9	0.0	21.18	38.5	-17.3	
Mid Ch								
836.50	14.40	V	0.9	0.0	13.50	38.5	-25.0	
836.50	21.96	H	0.9	0.0	21.06	38.5	-17.4	
High Ch								
847.50	12.74	V	0.9	0.0	11.84	38.5	-26.7	
847.50	21.42	H	0.9	0.0	20.52	38.5	-18.0	

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Band

LTE5

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 5 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	15.69	V	0.9	0.0	14.79	38.5	-23.7	
825.50	23.18	H	0.9	0.0	22.28	38.5	-16.2	
Mid Ch								
836.50	15.60	V	0.9	0.0	14.70	38.5	-23.8	
836.50	23.11	H	0.9	0.0	22.21	38.5	-16.3	
High Ch								
847.50	14.66	V	0.9	0.0	13.76	38.5	-24.7	
847.50	22.56	H	0.9	0.0	21.66	38.5	-16.8	

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Band

LTE5

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	15.29	V	0.9	0.0	14.39	38.5	-24.1	
824.70	23.08	H	0.9	0.0	22.18	38.5	-16.3	
Mid Ch								
836.50	14.30	V	0.9	0.0	13.40	38.5	-25.1	
836.50	21.66	H	0.9	0.0	20.76	38.5	-17.7	
High Ch								
848.30	13.64	V	0.9	0.0	12.74	38.5	-25.8	
848.30	21.32	H	0.9	0.0	20.42	38.5	-18.1	

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Band

LTE5

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	16.49	V	0.9	0.0	15.59	38.5	-22.9	
824.70	24.68	H	0.9	0.0	23.78	38.5	-14.7	
Mid Ch								
836.50	15.20	V	0.9	0.0	14.30	38.5	-24.2	
836.50	22.86	H	0.9	0.0	21.96	38.5	-16.5	
High Ch								
848.30	14.79	V	0.9	0.0	13.89	38.5	-24.6	
848.30	22.52	H	0.9	0.0	21.62	38.5	-16.9	

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LTE Band 12

Band

LTE12

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 12 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	8.70	V	0.9	0.0	7.80	38.5	-30.7	
704.00	17.39	H	0.9	0.0	16.49	38.5	-22.0	
Mid Ch								
707.50	8.60	V	0.9	0.0	7.70	38.5	-30.8	
707.50	18.10	H	0.9	0.0	17.20	38.5	-21.3	
High Ch								
711.00	9.00	V	0.9	0.0	8.10	38.5	-30.4	
711.00	18.90	H	0.9	0.0	18.00	38.5	-20.5	

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Band

LTE12

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
704.00	9.70	V	0.9	0.0	8.80	38.5	-29.7	
704.00	18.24	H	0.9	0.0	17.34	38.5	-21.2	
Mid Ch								
707.50	9.70	V	0.9	0.0	8.80	38.5	-29.7	
707.50	18.50	H	0.9	0.0	17.60	38.5	-20.9	
High Ch								
711.00	10.00	V	0.9	0.0	9.10	38.5	-29.4	
711.00	19.10	H	0.9	0.0	18.20	38.5	-20.3	

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Band

LTE12

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	8.50	V	0.9	0.0	7.60	38.5	-30.9	
701.50	17.10	H	0.9	0.0	16.20	38.5	-22.3	
Mid Ch								
707.50	8.80	V	0.9	0.0	7.90	38.5	-30.6	
707.50	17.40	H	0.9	0.0	16.50	38.5	-22.0	
High Ch								
713.50	9.70	V	0.9	0.0	8.80	38.5	-29.7	
713.50	18.00	H	0.9	0.0	17.10	38.5	-21.4	

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Band

LTE12

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 12 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
701.50	9.30	V	0.9	0.0	8.40	38.5	-30.1	
701.50	18.16	H	0.9	0.0	17.26	38.5	-21.2	
Mid Ch								
707.50	9.92	V	0.9	0.0	9.02	38.5	-29.5	
707.50	18.38	H	0.9	0.0	17.48	38.5	-21.0	
High Ch								
713.50	10.73	V	0.9	0.0	9.83	38.5	-28.7	
713.50	18.93	H	0.9	0.0	18.03	38.5	-20.5	

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Band

LTE12

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 12 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
700.50	7.95	V	0.9	0.0	7.05	38.5	-31.5	
700.50	17.40	H	0.9	0.0	16.50	38.5	-22.0	
Mid Ch								
707.50	9.20	V	0.9	0.0	8.30	38.5	-30.2	
707.50	17.80	H	0.9	0.0	16.90	38.5	-21.6	
High Ch								
714.50	10.10	V	0.9	0.0	9.20	38.5	-29.3	
714.50	18.60	H	0.9	0.0	17.70	38.5	-20.8	

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Band

LTE12

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 12 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
700.50	8.98	V	0.9	0.0	8.08	38.5	-30.4	
700.50	17.50	H	0.9	0.0	16.60	38.5	-21.9	
Mid Ch								
707.50	10.18	V	0.9	0.0	9.28	38.5	-29.2	
707.50	18.93	H	0.9	0.0	18.03	38.5	-20.5	
High Ch								
714.50	11.15	V	0.9	0.0	10.25	38.5	-28.3	
714.50	19.74	H	0.9	0.0	18.84	38.5	-19.7	

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Band

LTE12

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
699.70	7.90	V	0.9	0.0	7.00	38.5	-31.5	
699.70	16.70	H	0.9	0.0	15.80	38.5	-22.7	
Mid Ch								
707.50	9.10	V	0.9	0.0	8.20	38.5	-30.3	
707.50	17.70	H	0.9	0.0	16.80	38.5	-21.7	
High Ch								
715.30	10.00	V	0.9	0.0	9.10	38.5	-29.4	
715.30	18.20	H	0.9	0.0	17.30	38.5	-21.2	

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Band

LTE12

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 4/1/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 12 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
699.70	8.80	V	0.9	0.0	7.90	38.5	-30.6	
699.70	17.70	H	0.9	0.0	16.80	38.5	-21.7	
Mid Ch								
707.50	10.08	V	0.9	0.0	9.18	38.5	-29.3	
707.50	18.82	H	0.9	0.0	17.92	38.5	-20.6	
High Ch								
715.30	11.14	V	0.9	0.0	10.24	38.5	-28.3	
715.30	19.30	H	0.9	0.0	18.40	38.5	-20.1	

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LTE Band 25

Band

LTE25

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	3.64	V	0.9	7.9	10.62	33.0	-22.4	
1860.00	17.04	H	0.9	7.9	24.02	33.0	-9.0	
Mid Ch								
1882.50	4.46	V	0.9	7.9	11.43	33.0	-21.6	
1882.50	17.66	H	0.9	7.9	24.63	33.0	-8.4	
High Ch								
1905.00	4.04	V	0.9	7.9	11.00	33.0	-22.0	
1905.00	17.77	H	0.9	7.9	24.73	33.0	-8.3	

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Band

LTE25

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	4.43	V	0.9	7.9	11.41	33.0	-21.6	
1860.00	18.05	H	0.9	7.9	25.03	33.0	-8.0	
Mid Ch								
1882.50	5.40	V	0.9	7.9	12.37	33.0	-20.6	
1882.50	18.58	H	0.9	7.9	25.55	33.0	-7.5	
High Ch								
1905.00	4.97	V	0.9	7.9	11.93	33.0	-21.1	
1905.00	18.70	H	0.9	7.9	25.66	33.0	-7.3	

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Band

LTE25

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	3.60	V	0.9	7.9	10.58	33.0	-22.4	
1857.50	16.98	H	0.9	7.9	23.96	33.0	-9.0	
Mid Ch								
1882.50	4.17	V	0.9	7.9	11.14	33.0	-21.9	
1882.50	17.50	H	0.9	7.9	24.47	33.0	-8.5	
High Ch								
1907.50	4.01	V	0.9	7.9	10.97	33.0	-22.0	
1907.50	17.68	H	0.9	7.9	24.64	33.0	-8.4	

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Band

LTE25

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	4.54	V	0.9	7.9	11.52	33.0	-21.5	
1857.50	17.93	H	0.9	7.9	24.91	33.0	-8.1	
Mid Ch								
1882.50	5.06	V	0.9	7.9	12.03	33.0	-21.0	
1882.50	18.38	H	0.9	7.9	25.35	33.0	-7.7	
High Ch								
1907.50	5.01	V	0.9	7.9	11.97	33.0	-21.0	
1907.50	18.67	H	0.9	7.9	25.63	33.0	-7.4	

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Band

LTE25

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	3.62	V	0.9	7.9	10.61	33.0	-22.4	
1855.00	17.03	H	0.9	7.9	24.02	33.0	-9.0	
Mid Ch								
1882.50	4.19	V	0.9	7.9	11.16	33.0	-21.8	
1882.50	17.55	H	0.9	7.9	24.52	33.0	-8.5	
High Ch								
1910.00	4.00	V	0.9	7.9	10.97	33.0	-22.0	
1910.00	17.85	H	0.9	7.9	24.82	33.0	-8.2	

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Band

LTE25

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	4.50	V	0.9	7.9	11.49	33.0	-21.5	
1855.00	17.96	H	0.9	7.9	24.95	33.0	-8.1	
Mid Ch								
1882.50	5.09	V	0.9	7.9	12.06	33.0	-20.9	
1882.50	18.45	H	0.9	7.9	25.42	33.0	-7.6	
High Ch								
1910.00	5.00	V	0.9	7.9	11.97	33.0	-21.0	
1910.00	18.70	H	0.9	7.9	25.67	33.0	-7.3	

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Band

LTE25

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	3.69	V	0.9	7.9	10.68	33.0	-22.3	
1852.50	17.02	H	0.9	7.9	24.01	33.0	-9.0	
Mid Ch								
1882.50	4.46	V	0.9	7.9	11.43	33.0	-21.6	
1882.50	17.57	H	0.9	7.9	24.54	33.0	-8.5	
High Ch								
1912.50	4.04	V	0.9	7.9	11.02	33.0	-22.0	
1912.50	17.90	H	0.9	7.9	24.88	33.0	-8.1	

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Band

LTE25

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	4.40	V	0.9	7.9	11.39	33.0	-21.6	
1852.50	18.01	H	0.9	7.9	25.00	33.0	-8.0	
Mid Ch								
1882.50	5.42	V	0.9	7.9	12.39	33.0	-20.6	
1882.50	18.56	H	0.9	7.9	25.53	33.0	-7.5	
High Ch								
1912.50	4.99	V	0.9	7.9	11.97	33.0	-21.0	
1912.50	18.77	H	0.9	7.9	25.75	33.0	-7.3	

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Band

LTE25

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	3.67	V	0.9	7.9	10.66	33.0	-22.3	
1851.50	17.10	H	0.9	7.9	24.09	33.0	-8.9	
Mid Ch								
1882.50	4.40	V	0.9	7.9	11.37	33.0	-21.6	
1882.50	17.74	H	0.9	7.9	24.71	33.0	-8.3	
High Ch								
1913.50	4.03	V	0.9	7.9	11.01	33.0	-22.0	
1913.50	17.85	H	0.9	7.9	24.83	33.0	-8.2	

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Band

LTE25

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	4.51	V	0.9	7.9	11.50	33.0	-21.5	
1851.50	18.01	H	0.9	7.9	25.00	33.0	-8.0	
Mid Ch								
1882.50	5.48	V	0.9	7.9	12.45	33.0	-20.6	
1882.50	18.66	H	0.9	7.9	25.63	33.0	-7.4	
High Ch								
1913.50	5.01	V	0.9	7.9	11.99	33.0	-21.0	
1913.50	18.74	H	0.9	7.9	25.72	33.0	-7.3	

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Band

LTE25

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_16QAM Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	3.64	V	0.9	7.9	10.63	33.0	-22.4	
1850.70	16.99	H	0.9	7.9	23.98	33.0	-9.0	
Mid Ch								
1882.50	4.51	V	0.9	7.9	11.48	33.0	-21.5	
1882.50	17.55	H	0.9	7.9	24.52	33.0	-8.5	
High Ch								
1914.30	4.02	V	0.9	7.9	11.00	33.0	-22.0	
1914.30	17.86	H	0.9	7.9	24.84	33.0	-8.2	

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Band

LTE25

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20286
Date: 3/14/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber A
Mode: LTE_QPSK Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T136, and Chamber A SMA Cables
Substitution: Horn T59, 4ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	4.52	V	0.9	7.9	11.51	33.0	-21.5	
1850.70	17.86	H	0.9	7.9	24.85	33.0	-8.2	
Mid Ch								
1882.50	5.49	V	0.9	7.9	12.46	33.0	-20.5	
1882.50	18.53	H	0.9	7.9	25.50	33.0	-7.5	
High Ch								
1914.30	4.98	V	0.9	7.9	11.96	33.0	-21.0	
1914.30	18.72	H	0.9	7.9	25.70	33.0	-7.3	

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LTE Band 26

Band

LTE26

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 26 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
831.50	14.79	V	0.9	0.0	13.89	38.5	-24.6	
831.50	22.08	H	0.9	0.0	21.18	38.5	-17.3	
Mid Ch								
836.50	14.50	V	0.9	0.0	13.60	38.5	-24.9	
836.50	21.96	H	0.9	0.0	21.06	38.5	-17.4	
High Ch								
841.50	13.94	V	0.9	0.0	13.04	38.5	-25.5	
841.50	21.82	H	0.9	0.0	20.92	38.5	-17.6	

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Band

LTE26

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 26 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
831.50	15.99	V	0.9	0.0	15.09	38.5	-23.4	
831.50	23.18	H	0.9	0.0	22.28	38.5	-16.2	
Mid Ch								
836.50	15.63	V	0.9	0.0	14.73	38.5	-23.8	
836.50	23.06	H	0.9	0.0	22.16	38.5	-16.3	
High Ch								
841.50	15.14	V	0.9	0.0	14.24	38.5	-24.3	
841.50	23.07	H	0.9	0.0	22.17	38.5	-16.3	

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Band

LTE26

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 26 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
819.00	14.79	V	0.9	0.0	13.89	50.0	-36.1	
819.00	22.28	H	0.9	0.0	21.38	50.0	-28.6	
Mid Ch								
831.50	14.30	V	0.9	0.0	13.40	38.5	-25.1	
831.50	21.66	H	0.9	0.0	20.76	38.5	-17.7	
High Ch								
844.00	13.94	V	0.9	0.0	13.04	38.5	-25.5	
844.00	21.82	H	0.9	0.0	20.92	38.5	-17.6	

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Band

LTE26

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 26 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
819.00	16.09	V	0.9	0.0	15.19	50.0	-34.8	
819.00	23.48	H	0.9	0.0	22.58	50.0	-27.4	
Mid Ch								
831.50	15.40	V	0.9	0.0	14.50	38.5	-24.0	
831.50	23.06	H	0.9	0.0	22.16	38.5	-16.3	
High Ch								
844.00	14.94	V	0.9	0.0	14.04	38.5	-24.5	
844.00	22.72	H	0.9	0.0	21.82	38.5	-16.7	

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Band

LTE26

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 26 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
816.50	14.79	V	0.9	0.0	13.89	50.0	-36.1	
816.50	22.28	H	0.9	0.0	21.38	50.0	-28.6	
Mid Ch								
831.50	14.60	V	0.9	0.0	13.70	38.5	-24.8	
831.50	21.76	H	0.9	0.0	20.86	38.5	-17.6	
High Ch								
846.50	13.94	V	0.9	0.0	13.04	38.5	-25.5	
846.50	21.42	H	0.9	0.0	20.52	38.5	-18.0	

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Band

LTE26

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 26 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
816.50	16.00	V	0.9	0.0	15.10	50.0	-34.9	
816.50	23.38	H	0.9	0.0	22.48	50.0	-27.5	
Mid Ch								
831.50	15.70	V	0.9	0.0	14.80	38.5	-23.7	
831.50	23.00	H	0.9	0.0	22.10	38.5	-16.4	
High Ch								
846.50	15.00	V	0.9	0.0	14.10	38.5	-24.4	
846.50	22.63	H	0.9	0.0	21.73	38.5	-16.8	

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Band

LTE26

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 26 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
815.50	14.59	V	0.9	0.0	13.69	50.0	-36.3	
815.50	22.08	H	0.9	0.0	21.18	50.0	-28.8	
Mid Ch								
831.50	14.40	V	0.9	0.0	13.50	38.5	-25.0	
831.50	21.96	H	0.9	0.0	21.06	38.5	-17.4	
High Ch								
847.50	12.74	V	0.9	0.0	11.84	38.5	-26.7	
847.50	21.42	H	0.9	0.0	20.52	38.5	-18.0	

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Band

LTE26

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 26 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
815.50	15.69	V	0.9	0.0	14.79	50.0	-35.2	
815.50	23.18	H	0.9	0.0	22.28	50.0	-27.7	
Mid Ch								
831.50	15.60	V	0.9	0.0	14.70	38.5	-23.8	
831.50	23.11	H	0.9	0.0	22.21	38.5	-16.3	
High Ch								
847.50	14.66	V	0.9	0.0	13.76	38.5	-24.7	
847.50	22.56	H	0.9	0.0	21.66	38.5	-16.8	

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Band

LTE26

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_16QAM Band 26 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
814.70	15.29	V	0.9	0.0	14.39	50.0	-35.6	
814.70	23.08	H	0.9	0.0	22.18	50.0	-27.8	
Mid Ch								
831.50	14.30	V	0.9	0.0	13.40	38.5	-25.1	
831.50	21.66	H	0.9	0.0	20.76	38.5	-17.7	
High Ch								
848.30	13.64	V	0.9	0.0	12.74	38.5	-25.8	
848.30	21.32	H	0.9	0.0	20.42	38.5	-18.1	

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Band

LTE26

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT Only
Location: Chamber G
Mode: LTE_QPSK Band 26 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
814.70	16.49	V	0.9	0.0	15.59	50.0	-34.4	
814.70	24.68	H	0.9	0.0	23.78	50.0	-26.2	
Mid Ch								
831.50	15.20	V	0.9	0.0	14.30	38.5	-24.2	
831.50	22.86	H	0.9	0.0	21.96	38.5	-16.5	
High Ch								
848.30	14.79	V	0.9	0.0	13.89	38.5	-24.6	
848.30	22.52	H	0.9	0.0	21.62	38.5	-16.9	

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LTE Band 41

Band

LTE41

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 15I20286
Date: 3/30/2015
Test Engineer: R.Z
Configuration: EUT ONLY
Location: Chamber G
Mode: LTE_16QAM Band 41 Fundamentals, 20MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
2506.00	8.20	V	0.9	9.5	16.78	33.0	-16.2	
2506.00	12.00	H	0.9	9.5	20.58	33.0	-12.4	
Mid Ch								
2593.00	9.50	V	0.9	9.5	18.11	33.0	-14.9	
2593.00	13.70	H	0.9	9.5	22.31	33.0	-10.7	
High Ch								
2680.00	8.30	V	0.9	9.7	17.13	33.0	-15.9	
2680.00	13.50	H	0.9	9.7	22.33	33.0	-10.7	

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