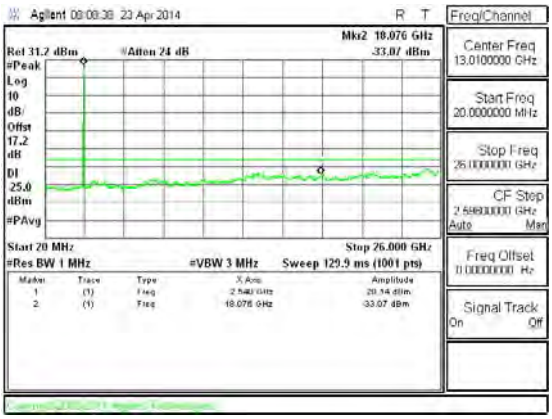
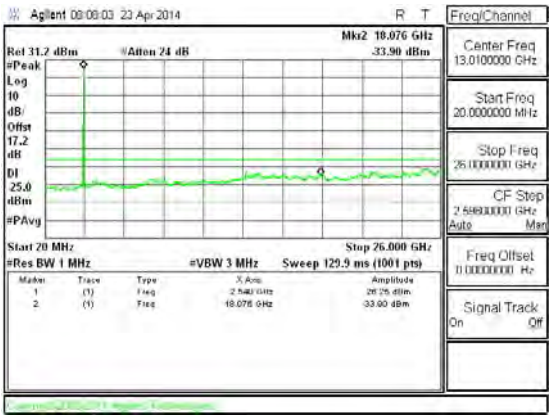
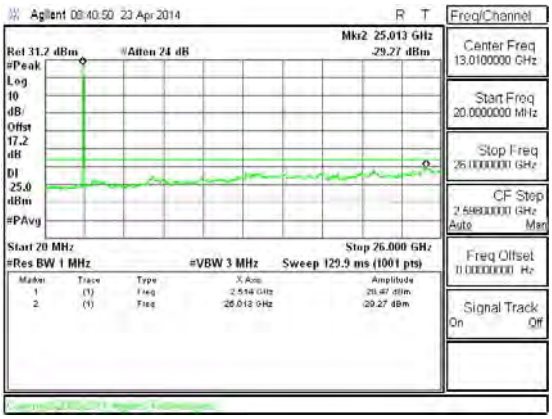
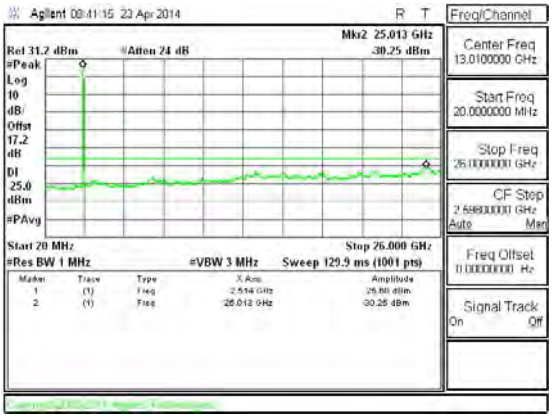
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CSE 16QAM Mid channel	 Band LTE7 5MHz CSE QPSK Mid channel
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CSE 16QAM Mid channel	 Band LTE7 20MHz CSE QPSK Mid channel

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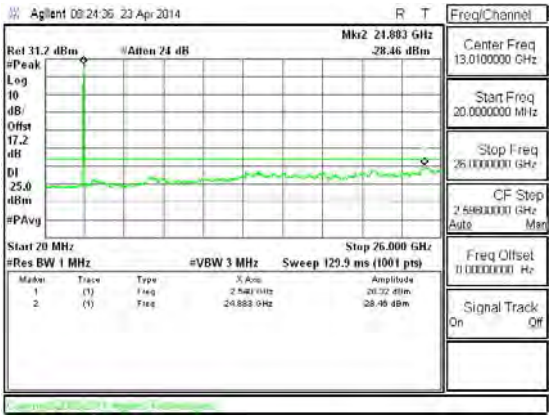
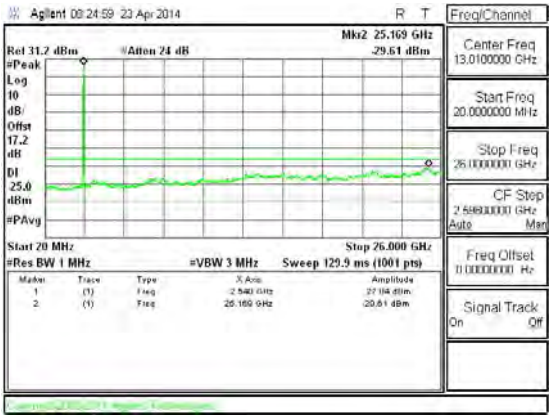
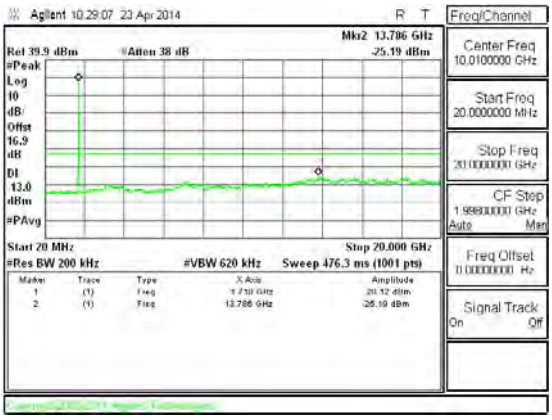
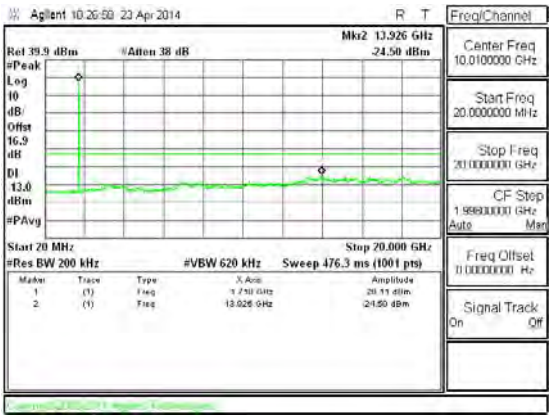
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CSE 16QAM Mid channel	 Band LTE7 15MHz CSE QPSK Mid channel

Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CSE 16QAM Mid channel	 Band LTE4 20MHz CSE QPSK Mid channel

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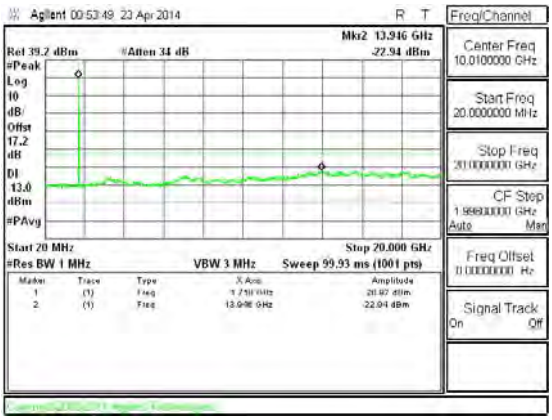
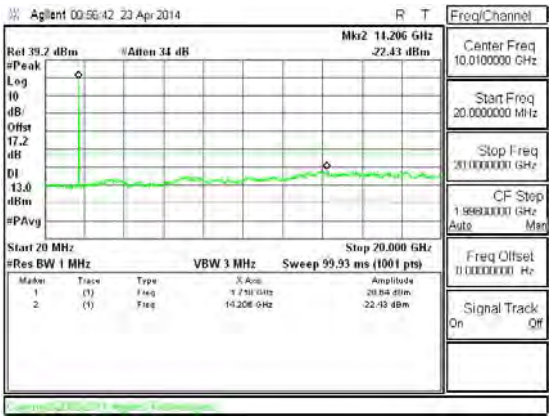
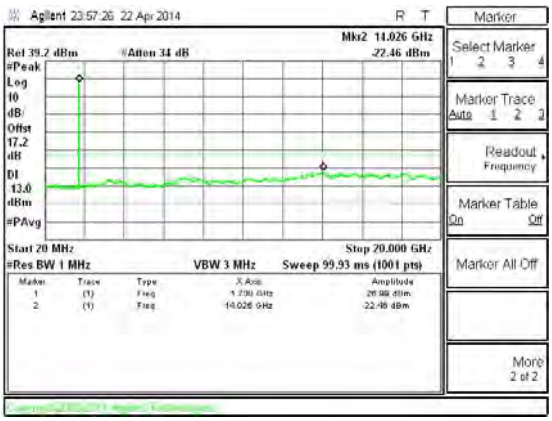
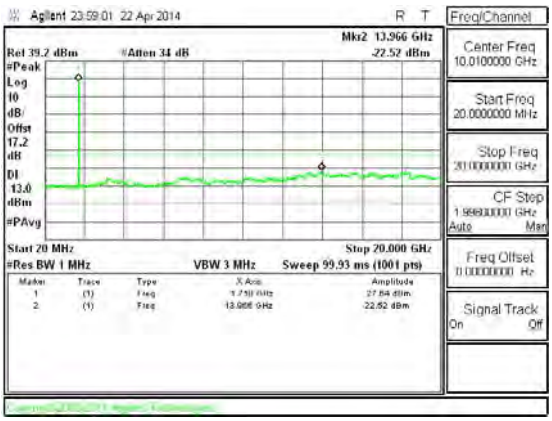
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CSE 16QAM Mid channel	 Band LTE4 15MHz CSE QPSK Mid channel
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel

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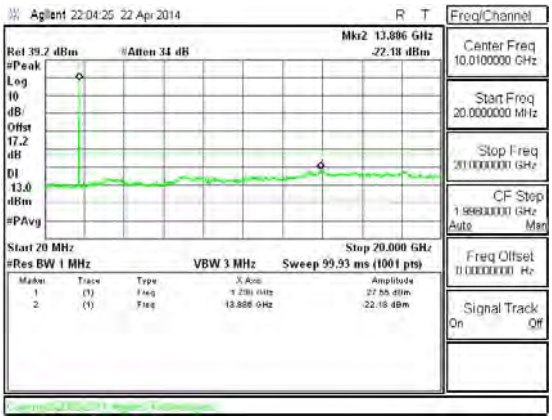
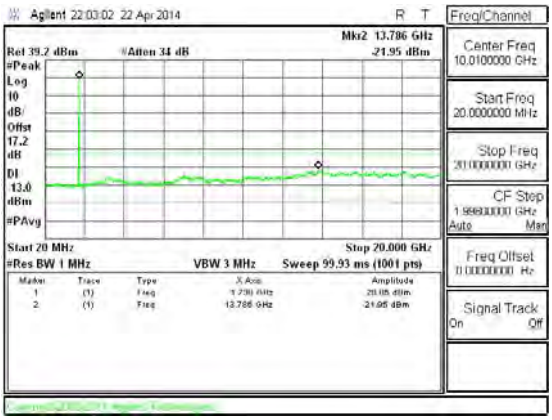
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CSE 16QAM Mid channel	 Band LTE4 5MHz CSE QPSK Mid channel

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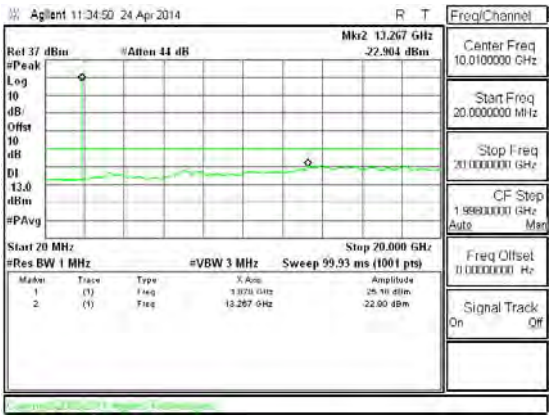
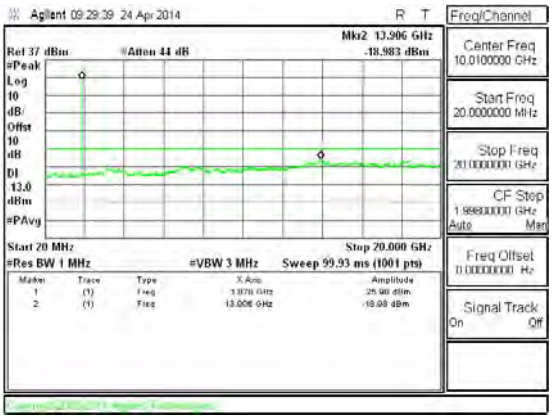
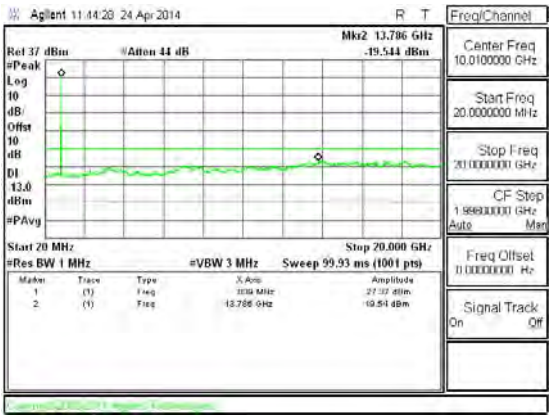
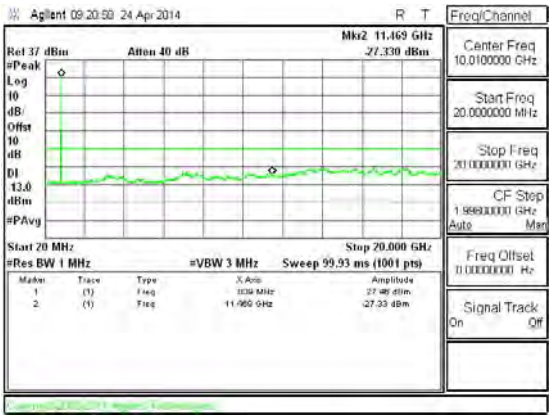
Band BC1 EVDO REL. 0	 Band BC1 EVDO Rel. 0 CSE Mid channel	 Band BC1 1xRTT CSE Mid channel

Band BC0 EVDO REL. 0	 Band BC0 EVDO Rel. 0 CSE Mid channel	 Band BC0 1xRTT CSE Mid channel

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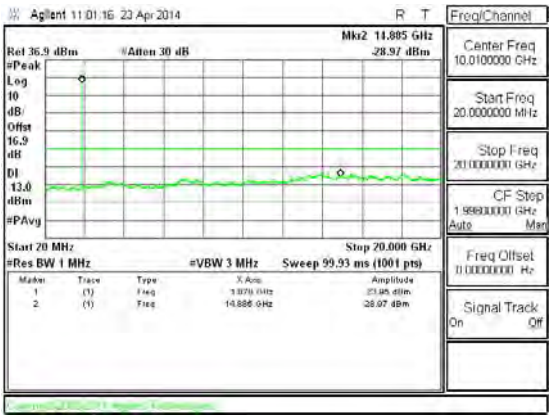
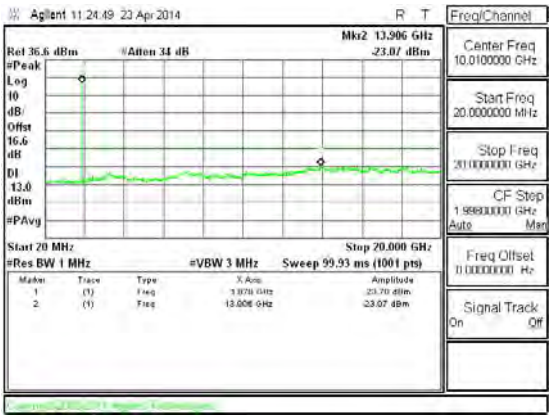
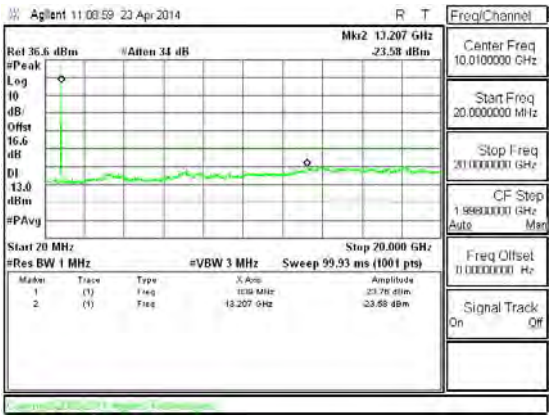
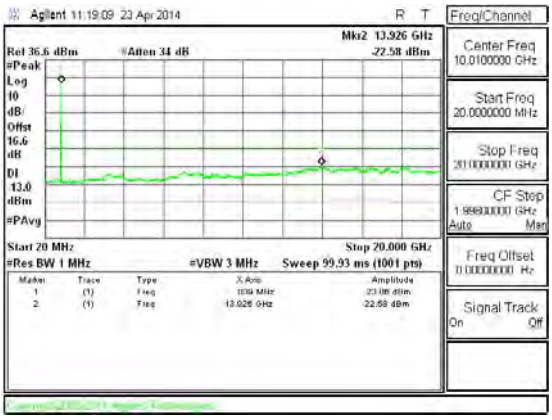
Band Band 2 HSDPA	 Band WCDMA B2 HSDPA CSE	 Band WCDMA B2 REL99 CSE

Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CSE	 Band WCDMA B5 REL99 CSE

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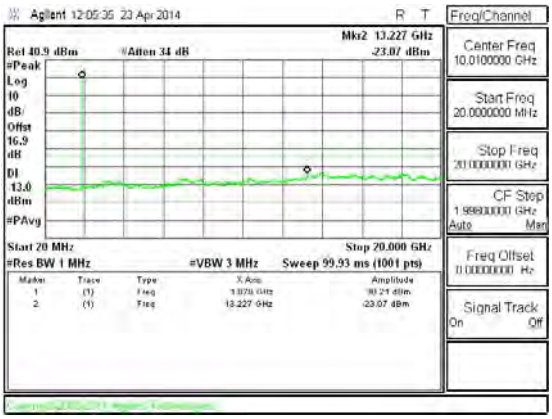
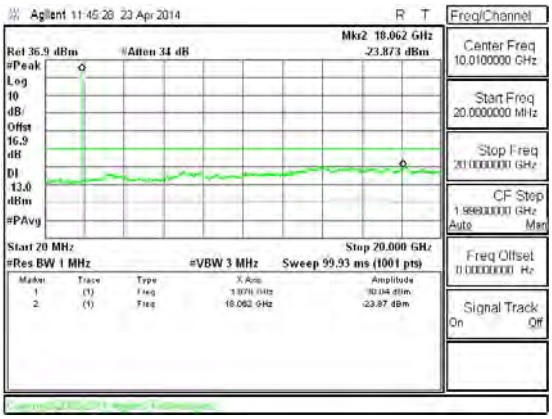
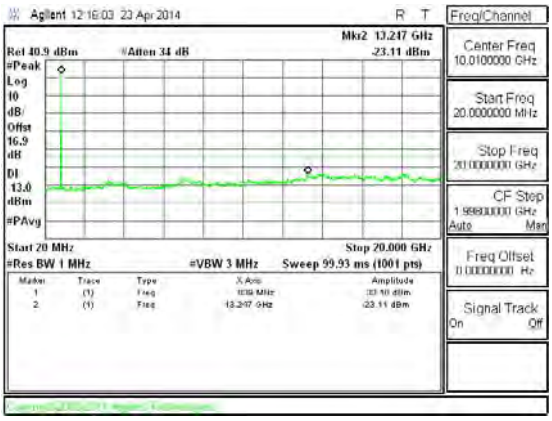
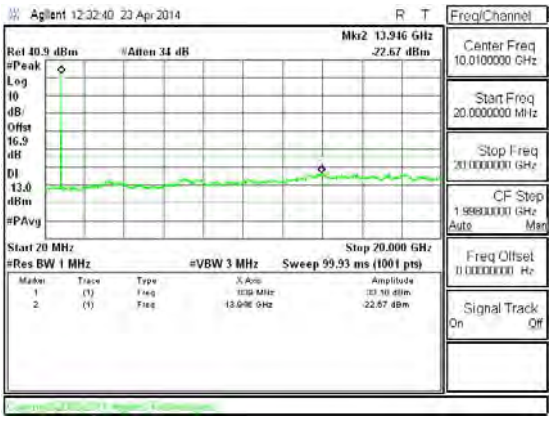
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CSE Mid channel	 Band GSM1900 GPRS CSE Mid channel
Band GSM850 EGPRS	 Band GSM850 EGPRS CSE Mid channel	 Band GSM850 GPRS CSE Mid channel

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10.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

SOP

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached. Reference power supply voltage for these tests is 3.8Vdc.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case). The test voltage ranges from 3.30 to 4.3 VDC.

RESULTS

See the following pages.

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10.4.1. FREQUENCY STABILITY RESULTS

LTE4 Channel 20175 Freq: 1732.5 MHz– MID CHANNEL

Reference Frequency: LTE4 Channel 20175 Freq : 1732.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.25 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500009	-0.001	2.5
3.80	40	1732.500013	-0.003	2.5
3.80	30	1732.500015	-0.004	2.5
3.80	***20***	***1732.500008***	***0***	***2.5***
3.80	10	1732.500009	-0.001	2.5
3.80	0	1732.500016	-0.005	2.5
3.80	-10	1732.500014	-0.003	2.5
3.80	-20	1732.500009	-0.001	2.5
3.80	-30	1732.500013	-0.003	2.5

Reference Frequency: LTE4 Channel 20175 Freq : 1732.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.25 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1732.500008***	***0***	***2.5***
3.30	20	1732.500010	*-0.001*	2.5
4.30	20	1732.500012	-0.002	2.5

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LTE13 Channel 21100 Freq: 2535 MHz– MID CHANNEL

Reference Frequency: LTE13 Channel 23230 Freq : 782 MHz @ 20°C Limit: to stay +- 2.5 ppm = 1955.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	782.000012	-0.001	2.5
3.80	40	782.000011	0.000	2.5
3.80	30	782.000009	0.003	2.5
3.80	***20***	***782.000011***	***0***	***2.5***
3.80	10	782.000012	-0.001	2.5
3.80	0	782.000010	0.001	2.5
3.80	-10	782.000007	0.005	2.5
3.80	-20	782.000009	0.003	2.5
3.80	-30	782.000008	0.004	2.5

Reference Frequency: LTE13 Channel 23230 Freq : 2782MHz @ 20°C Limit: to stay +- 2.5 ppm = 1955.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***2535.000009***	***0***	***2.5***
3.30	20	2535.000011	*-0.003*	2.5
4.30	20	2535.000012	-0.004	2.5

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LTE7 Channel 21100 Freq: 2535 MHz– MID CHANNEL

Reference Frequency: LTE7 Channel 21100 Freq : 2535 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2535.000023	-0.001	2.5
3.80	40	2535.000028	-0.003	2.5
3.80	30	2535.000025	-0.002	2.5
3.80	***20***	***2535.000021***	***0***	***2.5***
3.80	10	2535.000030	-0.004	2.5
3.80	0	2535.000024	-0.001	2.5
3.80	-10	2535.000017	0.002	2.5
3.80	-20	2535.000021	0.000	2.5
3.80	-30	2535.000027	-0.002	2.5

Reference Frequency: LTE7 Channel 21100 Freq : 2535 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***2535.000021***	***0***	***2.5***
3.30	20	2535.000026	*-0.002*	2.5
4.30	20	2535.000024	-0.001	2.5

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GSM1900, Channel 661 Freq: 1880MHz– MID CHANNEL

Reference Frequency: GSM1900 Channel 661 Freq : 1880MHz @ 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	1800.00006	-0.003	2.5
3.80	40	1800.000062	-0.004	2.5
3.80	30	1800.000059	-0.003	2.5
3.80	***20***	***1800.000054***	***0***	***2.5***
3.80	10	1800.000065	-0.006	2.5
3.80	0	1800.000065	-0.006	2.5
3.80	-10	1800.000063	-0.005	2.5
3.80	-20	1800.000063	-0.005	2.5
3.80	-30	1800.000060	-0.003	2.5

Reference Frequency: GSM1900 Channel 661 Freq : 1880MHz @ 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***	***1800.000052***	***0***	***2.5***
4.30	20	1800.000051	*0.001*	2.5
3.30	20	1800.000053	0.000	2.5

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GSM850, Channel 190 Freq: 836.6MHz– MID CHANNEL

Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.6000232	-0.002	2.5
3.80	40	836.6000224	-0.001	2.5
3.80	30	836.6000256	-0.003	2.5
3.80	***20***	***836.600020***	***0***	***2.5***
3.80	10	836.6000219	-0.001	2.5
3.80	0	836.6000202	0.000	2.5
3.80	-10	836.6000222	-0.001	2.5
3.80	-20	836.600026	-0.003	2.5
3.80	-30	836.600025	-0.002	2.5

Reference Frequency: GSM1900 Channel 661 Freq : 1880MHz @ 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***	***836.600020***	***0***	***2.5***
4.30	20	836.6000211	*0.000*	2.5
3.30	20	836.6000236	-0.002	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, and § 90.635.

LIMITS

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

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	21.084	128.35
		600	1880	21.05	127.35
		1175	1908.75	20.82	120.78
	EVDO REL. 0	25	1851.25	19.92	98.17
		600	1880	21.8	151.36
		1175	1908.75	20.44	110.66

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	21.121	129.45
		384	836.52	21.389	137.69
		777	848.31	21.831	152.44
	EVDO REL. 0	1013	824.7	20.251	105.95
		384	836.52	20.001	100.02
		777	848.31	21.392	137.78

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Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	20.9	123.03
		9400	1880	21.4	138.04
		9538	1907.6	20.81	120.5
	HSDPA	9262	1852.4	21.25	133.35
		9400	1880	22.87	193.64
		9538	1907.6	22.58	181.13

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	17.711	59.03
		4183	836.6	18.281	67.31
		4233	846.6	18.581	72.13
	HSDPA	4132	826.4	18.101	64.58
		4183	836.6	18.921	78
		4233	846.6	18.681	73.81

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	25.88	387.26
		661	1880	29.33	857.04
		810	1909.8	27.6	575.44
	EGPRS	512	1850.2	24.6	288.4
		661	1880	27.09	511.68
		810	1909.8	26.44	440.55

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	26.611	458.25
		190	836.6	26.801	478.74
		251	848.8	27.551	568.98
	EGPRS	128	824.2	25.351	342.85
		190	836.6	24.491	281.25
		251	848.8	24.891	308.39

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11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE13	10	QPSK	1/0	782	18.00	63.10
			1/0	782	18.00	63.10
			1/0	782	18.00	63.10
		16QAM	1/0	782	17.70	58.88
			1/0	782	17.70	58.88
			1/0	782	17.70	58.88

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	20	QPSK	1/0	2510	18.07	64.12
			1/0	2535	18.80	75.86
			1/0	2560	17.50	56.23
		16QAM	1/0	2510	17.27	53.33
			1/0	2535	18.00	63.10
			1/0	2560	16.70	46.77

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	15	QPSK	1/0	2507.5	18.80	75.86
			1/0	2535	18.70	74.13
			1/0	2562.5	18.70	74.13
		16QAM	1/0	2507.5	18.30	67.61
			1/0	2535	18.80	75.86
			1/0	2562.5	16.60	45.71

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	10	QPSK	1/0	2505	18.72	74.47
			1/0	2535	18.20	66.07
			1/0	2565	17.55	56.89
		16QAM	1/0	2505	17.92	61.94
			1/0	2535	17.22	52.72
			1/0	2565	16.75	47.32

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	5	QPSK	1/0	2502.5	18.62	72.78
			1/0	2535	17.72	59.16
			1/0	2567.5	17.34	54.20
		16QAM	1/0	2502.5	17.82	60.53
			1/0	2535	16.62	45.92
			1/0	2567.5	15.55	35.89

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	20.84	121.34
			1/0	1732.5	21.84	152.76
			1/0	1745	22.84	192.31
		16QAM	1/0	1720	20.04	100.93
			1/0	1732.5	20.94	124.17
			1/0	1745	21.94	156.31

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	15	QPSK	1/0	1717.5	21.44	139.32
			1/0	1732.5	22.49	177.42
			1/0	1747.5	22.74	187.93

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		16QAM	1/0	1717.5	20.54	113.24
			1/0	1732.5	21.64	145.88
			1/0	1747.5	21.64	145.88

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	21.74	149.28
			1/0	1732.5	22.25	167.88
			1/0	1750	22.65	184.08
		16QAM	1/0	1715	20.84	121.34
			1/0	1732.5	21.55	142.89
			1/0	1750	21.85	153.11

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	21.76	149.97
			1/0	1732.5	22.18	165.20
			1/0	1752.5	22.82	191.43
		16QAM	1/0	1712.5	20.74	118.58
			1/0	1732.5	21.45	139.64
			1/0	1752.5	21.17	130.92

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11.1.3. ERP/EIRP DATA

Band

LTE13

10MHz

16QAM

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG
Project #: 14U17502
Date: 05/08/14
Test Engineer: R. Alegre
Configuration: X position
Mode: LTE_B13_10MHz_16QAM

Test Equipment:
Receiving: Sunol T130, and Chamber A Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
Mid Ch								
782.000	12.17	V	0.9	0.0	11.27	34.8	-23.5	
782.000	18.91	H	0.9	0.0	18.01	34.8	-16.8	
Mid Ch								
NEW								

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Band

LTE13

10MHz

QPSK

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG
Project #: 14U17502
Date: 05/08/14
Test Engineer: R. Alegre
Configuration: X position
Mode: LTE_B13_10MHz_QPSK

Test Equipment:
Receiving: Sunol T130, and Chamber A Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
Mid Ch								
782.000	13.13	V	0.9	0.0	12.23	34.8	-22.6	
782.000	19.76	H	0.9	0.0	18.86	34.8	-15.9	
Mid Ch								
NEW								

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Band

LTE7

20MHz

16QAM

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE B7 20M 16QAM

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) 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								
2510.00	3.00	V	0.9	9.5	11.57	38.5	-26.9	
2510.00	6.60	H	0.9	9.5	15.17	38.5	-23.3	
Mid Ch								
2535.00	2.63	V	0.9	9.5	11.23	38.5	-27.2	
2535.00	7.61	H	0.9	9.5	16.21	38.5	-22.2	
High Ch								
2560.00	1.90	V	0.9	9.7	10.70	38.5	-27.8	
2560.00	5.70	H	0.9	9.7	14.50	38.5	-24.0	

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Band

LTE7

20MHz

QPSK

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE B7 20M QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) 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								
2510.00	3.80	V	0.9	9.5	12.37	38.5	-26.1	
2510.00	7.50	H	0.9	9.5	16.07	38.5	-22.4	
Mid Ch								
2535.00	3.43	V	0.9	9.5	12.03	38.5	-26.4	
2535.00	8.41	H	0.9	9.5	17.01	38.5	-21.4	
High Ch								
2560.00	2.70	V	0.9	9.7	11.50	38.5	-27.0	
2560.00	6.50	H	0.9	9.7	15.30	38.5	-23.2	

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Band

LTE7

15MHz

16QAM

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE B7 15M 16QAM

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	2.60	V	0.9	9.5	11.20	33.0	-21.8	
2507.50	7.60	H	0.9	9.5	16.20	33.0	-16.8	
Mid Ch								
2535.00	2.93	V	0.9	9.5	11.53	33.0	-21.5	
2535.00	7.41	H	0.9	9.5	16.01	33.0	-17.0	
High Ch								
2562.50	1.80	V	0.9	9.6	10.50	33.0	-22.5	
2562.50	5.70	H	0.9	9.6	14.40	33.0	-18.6	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

15MHz

QPSK

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE B7 15M QPSK

Test Equipment:

Receiving: Horn T345, and Chamber B SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	3.50	V	0.9	9.5	12.10	33.0	-20.9	
2507.50	8.20	H	0.9	9.5	16.80	33.0	-16.2	
Mid Ch								
2535.00	3.69	V	0.9	9.5	12.29	33.0	-20.7	
2535.00	8.31	H	0.9	9.5	16.91	33.0	-16.1	
High Ch								
2562.50	2.80	V	0.9	9.6	11.50	33.0	-21.5	
2562.50	6.80	H	0.9	9.6	15.50	33.0	-17.5	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

10MHz

16QAM

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	TX, LTE band 7, 10MHz, 16QAM

Test Equipment:

Receiving: Horn T345, and Chamber B SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	2.90	V	0.9	9.5	11.52	33.0	-21.5	
2505.00	7.30	H	0.9	9.5	15.92	33.0	-17.1	
Mid Ch								
2535.00	3.43	V	0.9	9.5	12.05	33.0	-21.0	
2535.00	6.81	H	0.9	9.5	15.43	33.0	-17.6	
High Ch								
2565.00	1.80	V	0.9	9.5	10.45	33.0	-22.6	
2565.00	5.90	H	0.9	9.5	14.55	33.0	-18.5	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

10MHz

QPSK

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	TX, LTE band 7, 10MHz, QPSK

Test Equipment:

Receiving: Horn T345, and Chamber B SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	3.71	V	0.9	9.5	12.33	33.0	-20.7	
2505.00	8.10	H	0.9	9.5	16.72	33.0	-16.3	
Mid Ch								
2535.00	4.13	V	0.9	9.5	12.75	33.0	-20.3	
2535.00	7.71	H	0.9	9.5	16.33	33.0	-16.7	
High Ch								
2565.00	2.60	V	0.9	9.5	11.25	33.0	-21.8	
2565.00	6.70	H	0.9	9.5	15.35	33.0	-17.7	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

5MHz

16QAM

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE band 7, 5MHz, 16QAM

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	2.50	V	0.9	9.5	11.12	33.0	-21.9	
2502.50	7.20	H	0.9	9.5	15.82	33.0	-17.2	
Mid Ch								
2535.00	3.03	V	0.9	9.5	11.65	33.0	-21.4	
2535.00	6.21	H	0.9	9.5	14.83	33.0	-18.2	
High Ch								
2567.50	2.20	V	0.9	9.5	10.85	33.0	-22.2	
2567.50	5.60	H	0.9	9.5	14.25	33.0	-18.8	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

5MHz

QPSK

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE band 7, 5MHz, QPSK

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	3.30	V	0.9	9.5	11.92	33.0	-21.1	
2502.50	8.00	H	0.9	9.5	16.62	33.0	-16.4	
Mid Ch								
2535.00	3.83	V	0.9	9.5	12.45	33.0	-20.6	
2535.00	7.31	H	0.9	9.5	15.93	33.0	-17.1	
High Ch								
2567.50	3.10	V	0.9	9.5	11.75	33.0	-21.3	
2567.50	6.50	H	0.9	9.5	15.15	33.0	-17.9	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE4

20MHz

16QAM

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE_B4_20MHz_16QAM

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.720	9.7	V	0.85	8.29	17.14	30.0	-12.9	
1.720	12.6	H	0.85	8.29	20.04	30.0	-10.0	
Mid Ch								
1.732	11.7	V	0.85	8.29	19.13	30.0	-10.9	
1.732	13.5	H	0.85	8.29	20.94	30.0	-9.1	
High Ch								
1.745	12.6	V	0.85	8.29	20.04	30.0	-10.0	
1.745	14.5	H	0.85	8.29	21.94	30.0	-8.1	

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Band

LTE4

20MHz

QPSK

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE_B4_20MHz_QPSK

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.720	10.5	V	0.85	8.29	17.94	30.0	-12.1	
1.720	13.4	H	0.85	8.29	20.84	30.0	-9.2	
Mid Ch								
1.732	12.5	V	0.85	8.29	19.93	30.0	-10.1	
1.732	14.4	H	0.85	8.29	21.84	30.0	-8.2	
High Ch								
1.745	13.4	V	0.85	8.29	20.84	30.0	-9.2	
1.745	15.4	H	0.85	8.29	22.84	30.0	-7.2	

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Band

LTE4

15MHz

16QAM

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE_B4_15MHz_16QAM

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.718	9.6	V	0.85	8.29	17.04	30.0	-13.0	
1.718	13.1	H	0.85	8.29	20.54	30.0	-9.5	
Mid Ch								
1.732	12.1	V	0.85	8.29	19.53	30.0	-10.5	
1.732	14.2	H	0.85	8.29	21.64	30.0	-8.4	
High Ch								
1.748	12.7	V	0.85	8.29	20.14	30.0	-9.9	
1.748	14.2	H	0.85	8.29	21.64	30.0	-8.4	

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Band

LTE4

15MHz

QPSK

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE_B4_15MHz_QPSK

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.718	10.4	V	0.85	8.29	17.84	30.0	-12.2	
1.718	14.0	H	0.85	8.29	21.44	30.0	-8.6	
Mid Ch								
1.732	13.0	V	0.85	8.29	20.43	30.0	-9.6	
1.732	15.1	H	0.85	8.29	22.49	30.0	-7.5	
High Ch								
1.748	13.6	V	0.85	8.29	21.04	30.0	-9.0	
1.748	15.3	H	0.85	8.29	22.74	30.0	-7.3	

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Band

LTE4

10MHz

16QAM

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE_B4_10MHz_16QAM

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	10.20	V	0.9	8.3	17.64	30.0	-12.4	
1715.00	13.40	H	0.9	8.3	20.84	30.0	-9.2	
Mid Ch								
1732.50	12.19	V	0.9	8.2	19.54	30.0	-10.5	
1732.50	14.20	H	0.9	8.2	21.55	30.0	-8.5	
High Ch								
1750.00	11.70	V	0.9	8.2	19.05	30.0	-11.0	
1750.00	14.50	H	0.9	8.2	21.85	30.0	-8.2	

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

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Band

LTE4

10MHz

QPSK

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	K.Kedida
Configuration:	EUT only, X position
Mode:	LTE_B4_10MHz_QPSK

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	10.70	V	0.9	8.3	18.14	30.0	-11.9	
1715.00	14.30	H	0.9	8.3	21.74	30.0	-8.3	
Mid Ch								
1732.50	13.09	V	0.9	8.2	20.44	30.0	-9.6	
1732.50	14.90	H	0.9	8.2	22.25	30.0	-7.8	
High Ch								
1750.00	12.80	V	0.9	8.2	20.15	30.0	-9.9	
1750.00	15.30	H	0.9	8.2	22.65	30.0	-7.3	

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

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Band

LTE4

5MHz

16QAM

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: Oren/Kiya
Configuration: EUT only, X position
Mode: LTE_B4_5MHz_16QAM

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.713	10.0	V	0.85	8.29	17.44	30.0	-12.6	
1.713	13.3	H	0.85	8.29	20.74	30.0	-9.3	
Mid Ch								
1.733	12.0	V	0.85	8.29	19.44	30.0	-10.6	
1.733	14.0	H	0.85	8.29	21.45	30.0	-8.6	
High Ch								
1.753	11.1	V	0.85	7.92	18.17	30.0	-11.8	
1.753	14.1	H	0.85	7.92	21.17	30.0	-8.8	

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Band

LTE4

5MHz

QPSK

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, X position
Mode: LTE_B4_5MHz_QPSK

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.713	10.9	V	0.85	8.29	18.33	30.0	-11.7	
1.713	14.3	H	0.85	8.29	21.76	30.0	-8.2	
Mid Ch								
1.733	13.3	V	0.85	8.29	20.78	30.0	-9.2	
1.733	14.7	H	0.85	8.29	22.18	30.0	-7.8	
High Ch								
1.753	12.4	V	0.85	7.92	19.47	30.0	-10.5	
1.753	15.8	H	0.85	7.92	22.82	30.0	-7.2	

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Band

BC1

EVDO
REL. 0

High Frequency Fundamental Measurement
Compliance Certification Services Chamber D

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT, X Position
Mode: CDMA EVDOR0 BC1

Test Equipment:
Receiving: T712, and Chamber D SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	7.7	V	0.5	6.6	13.79	33.0	-19.2	
1.851	13.8	H	0.5	6.6	19.92	33.0	-13.1	
Mid Ch								
1.880	5.6	V	0.5	6.5	11.64	33.0	-21.4	
1.880	15.8	H	0.5	6.5	21.80	33.0	-11.2	
High Ch								
1.909	7.0	V	0.5	6.2	12.70	33.0	-20.3	
1.909	14.7	H	0.5	6.2	20.44	33.0	-12.6	

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Band

BC1

1xRTT

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

Company: LG
Project #: 14U17501
Date: 4\29\14
Test Engineer: D. Soper
Configuration: EUT, X Position
Mode: CDMA RTT BC1

Test Equipment:
Receiving: Horn T712, and Chamber D SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.25	7.91	V	0.5	6.6	14.01	33.0	-19.0	
1851.25	14.98	H	0.5	6.6	21.08	33.0	-11.9	
Mid Ch								
1880.00	6.50	V	0.5	6.5	12.50	33.0	-20.5	
1880.00	15.05	H	0.5	6.5	21.05	33.0	-12.0	
High Ch								
1908.75	6.23	V	0.5	6.2	11.93	33.0	-21.1	
1908.75	15.12	H	0.5	6.2	20.82	33.0	-12.2	

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Band

BC0

EVDO
REL. 0

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

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT, X Position
Mode: CDMA EVDOR0 BC0

Test Equipment:
Receiving: Sunol T407, and 3m Chamber D N-type Cable
Substitution: Dipole S/N: 00022724, 2ft SMA Cable (SN # 8000701).

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	13.67	V	0.3	0.0	13.37	38.5	-25.1	
824.70	20.55	H	0.3	0.0	20.25	38.5	-18.2	
Mid Ch								
836.52	14.45	V	0.3	0.0	14.15	38.5	-24.3	
836.52	20.30	H	0.3	0.0	20.00	38.5	-18.4	
High Ch								
848.31	14.07	V	0.3	0.0	13.77	38.5	-24.7	
848.31	21.69	H	0.3	0.0	21.39	38.5	-17.1	

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

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Band

BC0

1xRTT

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

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT, X Position
Mode: CDMA RTT BC0

Test Equipment:
Receiving: Sunol T407, and 3m Chamber D N-type Cable
Substitution: Dipole S/N: 00022724, 2ft SMA Cable (SN # 8000701).

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	14.92	V	0.3	0.0	14.62	38.5	-23.8	
824.70	21.42	H	0.3	0.0	21.12	38.5	-17.3	
Mid Ch								
836.52	14.75	V	0.3	0.0	14.45	38.5	-24.0	
836.52	21.69	H	0.3	0.0	21.39	38.5	-17.1	
High Ch								
848.31	14.29	V	0.3	0.0	13.99	38.5	-24.5	
848.31	22.13	H	0.3	0.0	21.83	38.5	-16.6	

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

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Band

Band 2

HSDPA

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

Company: LG
Project #: 14U17502
Date: 04/23/14
Test Engineer: Oren/Kiya
Configuration: EUT only, X position
Mode: WCDMA_HSDPA_1900

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	7.46	V	0.85	7.9	14.46	33.0	-18.5	
1852.40	14.25	H	0.85	7.9	21.25	33.0	-11.8	
Mid Ch								
1880.00	8.72	V	0.85	7.9	15.72	33.0	-17.3	
1880.00	15.87	H	0.85	7.9	22.87	33.0	-10.1	
High Ch								
1907.60	9.88	V	0.85	7.9	16.88	33.0	-16.1	
1907.60	15.58	H	0.85	7.9	22.58	33.0	-10.4	

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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 C

Company: LG
Project #: 14U17502
Date: 04/23/14
Test Engineer: K.Kedida
Configuration: EUT only, X Position
Mode: WCDMA_Rel 99_1900

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	8.13	V	0.85	7.9	15.13	33.0	-17.9	
1852.40	13.90	H	0.85	7.9	20.90	33.0	-12.1	
Mid Ch								
1880.00	8.50	V	0.85	7.9	15.50	33.0	-17.5	
1880.00	14.40	H	0.85	7.9	21.40	33.0	-11.6	
High Ch								
1907.60	7.93	V	0.85	7.9	14.93	33.0	-18.1	
1907.60	13.81	H	0.85	7.9	20.81	33.0	-12.2	

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Note: For Band 4 EIRP limit is 30dBm

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Band

Band 5

HSDPA

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

Company: LG
Project #: 14U17502
Date: 04/24/14
Test Engineer: R. Alegre
Configuration: EUT, Y Position
Mode: WCDMA_HSDPA_850

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	11.45	V	0.9	0.0	10.55	38.5	-27.9	
826.40	19.00	H	0.9	0.0	18.10	38.5	-20.3	
Mid Ch								
836.60	13.79	V	0.9	0.0	12.89	38.5	-25.6	
836.60	19.82	H	0.9	0.0	18.92	38.5	-19.5	
High Ch								
846.60	15.98	V	0.9	0.0	15.08	38.5	-23.4	
846.60	19.58	H	0.9	0.0	18.68	38.5	-19.8	

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

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Band

Band 5

REL99

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

Company: LG
Project #: 14U17502
Date: 04/24/14
Test Engineer: R. Alegre
Configuration: EUT, Y Position
Mode: WCDMA_Rel99_850

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	11.37	V	0.9	0.0	10.47	38.5	-28.0	
826.40	18.61	H	0.9	0.0	17.71	38.5	-20.7	
Mid Ch								
836.60	13.82	V	0.9	0.0	12.92	38.5	-25.5	
836.60	19.18	H	0.9	0.0	18.28	38.5	-20.2	
High Ch								
846.60	15.87	V	0.9	0.0	14.97	38.5	-23.5	
846.60	19.48	H	0.9	0.0	18.58	38.5	-19.9	

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

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Band

GSM1900

EGPRS

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

Company:	LG
Project #:	14U17502
Date:	04/23/14
Test Engineer:	Oren/Kiya
Configuration:	EUT only, X position
Mode:	EGPRS 1900MHz

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	11.05	V	0.85	7.9	18.05	33.0	-15.0	
1850.20	17.60	H	0.85	7.9	24.60	33.0	-8.4	
Mid Ch								
1880.00	12.87	V	0.85	7.9	19.87	33.0	-13.1	
1880.00	20.09	H	0.85	7.9	27.09	33.0	-5.9	
High Ch								
1909.80	14.53	V	0.85	7.9	21.53	33.0	-11.5	
1909.80	19.44	H	0.85	7.9	26.44	33.0	-6.6	

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

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Band

GSM1900

GPRS

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

Company: LG
Project #: 14U17502
Date: 04/23/14
Test Engineer: Oren/Kiya
Configuration: EUT only, X position
Mode: GPRS 1900MHz

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	12.24	V	0.85	7.9	19.24	33.0	-13.8	
1850.20	18.88	H	0.85	7.9	25.88	33.0	-7.1	
Mid Ch								
1880.00	14.25	V	0.85	7.9	21.25	33.0	-11.8	
1880.00	22.33	H	0.85	7.9	29.33	33.0	-3.7	
High Ch								
1909.80	15.80	V	0.85	7.9	22.80	33.0	-10.2	
1909.80	20.60	H	0.85	7.9	27.60	33.0	-5.4	

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

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Band

GSM850

EGPRS

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17502
Date: 04/24/14
Test Engineer: R. Alegre
Configuration: EUT, Y Position
Mode: EGRPS 850MHz

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	18.16	V	0.9	0.0	17.26	38.5	-21.2	
824.20	26.25	H	0.9	0.0	25.35	38.5	-13.1	
Mid Ch								
836.60	21.45	V	0.9	0.0	20.55	38.5	-17.9	
836.60	25.39	H	0.9	0.0	24.49	38.5	-14.0	
High Ch								
848.80	23.88	V	0.9	0.0	22.98	38.5	-15.5	
848.80	25.79	H	0.9	0.0	24.89	38.5	-13.6	

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Band

GSM850

GPRS

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17502
Date: 04/24/14
Test Engineer: R. Alegre
Configuration: EUT, Y Position
Mode: GRPS 850MHz

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	19.35	V	0.9	0.0	18.45	38.5	-20.0	
824.20	27.51	H	0.9	0.0	26.61	38.5	-11.8	
Mid Ch								
836.60	22.80	V	0.9	0.0	21.90	38.5	-16.5	
836.60	27.70	H	0.9	0.0	26.80	38.5	-11.6	
High Ch								
848.80	25.26	V	0.9	0.0	24.36	38.5	-14.1	
848.80	28.45	H	0.9	0.0	27.55	38.5	-10.9	

Rev. 3.17.11

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11.2. RADIATED POWER WITH WPC CHARGER AND COVER

Band

GSM850 GPRS

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: D. Soper
Configuration: EUT / Wireless Charger
Mode: GRPS 850MHz

Test Equipment:
Receiving: Sunol T243, and 3m Chamber A N-type Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	15.23	V	0.9	0.0	14.33	38.5	-24.1	
824.20	26.50	H	0.9	0.0	25.60	38.5	-12.8	
Mid Ch								
836.60	19.92	V	0.9	0.0	19.02	38.5	-19.4	
836.60	26.91	H	0.9	0.0	26.01	38.5	-12.4	
High Ch								
848.80	17.70	V	0.9	0.0	16.80	38.5	-21.6	
848.80	28.43	H	0.9	0.0	27.53	38.5	-10.9	

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Band

GSM1900 GPRS

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	D. Soper
Configuration:	EUT / Wireless Charger
Mode:	GPRS 1900MHz

Test Equipment:
Receiving: Horn T345, 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 (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	9.98	V	0.85	7.9	16.98	33.0	-16.0	
1850.20	20.58	H	0.85	7.9	27.58	33.0	-5.4	
Mid Ch								
1880.00	16.62	V	0.85	7.9	23.62	33.0	-9.4	
1880.00	21.96	H	0.85	7.9	28.96	33.0	-4.0	
High Ch								
1909.80	14.63	V	0.85	7.9	21.63	33.0	-11.4	
1909.80	21.79	H	0.85	7.9	28.79	33.0	-4.2	

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

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Band

B2
HSDPA

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

Company:	LG
Project #:	14U17502
Date:	05/12/14
Test Engineer:	Charles Vergonio
Configuration:	EUT/Wireless Charger, X position
Mode:	WCDMA_HSDPA_1900

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	10.11	V	0.85	7.9	17.11	33.0	-15.9	
1852.40	14.57	H	0.85	7.9	21.57	33.0	-11.4	
Mid Ch								
1880.00	9.70	V	0.85	7.9	16.70	33.0	-16.3	
1880.00	15.38	H	0.85	7.9	22.38	33.0	-10.6	
High Ch								
1907.60	10.06	V	0.85	7.9	17.06	33.0	-15.9	
1907.60	15.48	H	0.85	7.9	22.48	33.0	-10.5	

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

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Band

B5
HSDPA

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: Charles Vergonio
Configuration: EUT/Wireless Charger, Y Position
Mode: WCDMA_HSDPA_850

Test Equipment:
Receiving: Sunol T477, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	12.65	V	0.9	0.0	11.75	38.5	-26.7	
826.40	19.49	H	0.9	0.0	18.59	38.5	-19.9	
Mid Ch								
836.60	13.06	V	0.9	0.0	12.16	38.5	-26.3	
836.60	19.69	H	0.9	0.0	18.79	38.5	-19.7	
High Ch								
846.60	13.06	V	0.9	0.0	12.16	38.5	-26.3	
846.60	19.58	H	0.9	0.0	18.68	38.5	-19.8	

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

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Band

B4 LTE
QPSK

High Frequency Fundamental Measurement
Compliance Certification Services Chamber D

Company: LG Electronics
Project #: 14U17502
Date: 05/09/14
Test Engineer: D. Soper
Configuration: EUT / Wireless Charger / X position
Mode: LTE_B4_20MHz_QPSK

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.720	11.2	V	0.85	8.29	18.67	30.0	-11.3	
1.720	11.6	H	0.85	8.29	19.01	30.0	-11.0	
Mid Ch								
1.732	10.3	V	0.85	8.29	17.70	30.0	-12.3	
1.732	13.0	H	0.85	8.29	20.45	30.0	-9.6	
High Ch								
1.745	12.2	V	0.85	8.29	19.65	30.0	-10.4	
1.745	14.2	H	0.85	8.29	21.61	30.0	-8.4	

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Band

B7 LTE
QPSK

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: K.Kedida
Configuration: EUT only, Z position
Mode: LTE band 7, 5MHz, QPSK

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	4.30	V	0.9	9.5	12.92	33.0	-20.1	
2502.50	10.00	H	0.9	9.5	18.62	33.0	-14.4	
Mid Ch								
2535.00	4.30	V	0.9	9.5	12.92	33.0	-20.1	
2535.00	9.10	H	0.9	9.5	17.72	33.0	-15.3	
High Ch								
2567.50	4.00	V	0.9	9.5	12.65	33.0	-20.4	
2567.50	8.69	H	0.9	9.5	17.34	33.0	-15.7	

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

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Band

B13
LTE
QPSK

High Frequency Substitution Measurement
Compliance Certification Services Chamber D

Company: LG Electronics
Project #: 14U17502
Date: 05/09/14
Test Engineer: D. Soper
Configuration: EUT / Wireless Charger / X position
Mode: LTE_B13_10MHz_QPSK

Test Equipment:
Receiving: Sunol T407, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
Mid Ch								
782.000	12.72	V	0.9	0.0	11.82	34.8	-23.0	
782.000	19.43	H	0.9	0.0	18.53	34.8	-16.3	
Mid Ch								
NEW								

Rev. 3.17.11

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Band

BC0
RTT

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

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT / Wireless Charger
Mode: CDMA RTT BC0

Test Equipment:
Receiving: Sunol T243, and 3m Chamber A N-type Cable
Substitution: Dipole S/N: 00022724, 2ft SMA Cable (SN # 8000701).

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	14.19	V	0.3	0.0	13.89	38.5	-24.6	
824.70	21.11	H	0.3	0.0	20.81	38.5	-17.6	
Mid Ch								
836.52	13.40	V	0.3	0.0	13.10	38.5	-25.3	
836.52	19.60	H	0.3	0.0	19.30	38.5	-19.1	
High Ch								
848.31	14.67	V	0.3	0.0	14.37	38.5	-24.1	
848.31	22.01	H	0.3	0.0	21.71	38.5	-16.7	

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

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Band

BC1
RTT

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

Company: LG
Project #: 14U17502
Date: 05/12/14
Test Engineer: D. Soper
Configuration: EUT / Wireless Charger
Mode: CDMA RTT BC1

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.25	12.39	V	0.5	6.6	18.49	33.0	-14.5	
1851.25	14.63	H	0.5	6.6	20.73	33.0	-12.3	
Mid Ch								
1880.00	13.85	V	0.5	6.5	19.85	33.0	-13.2	
1880.00	14.70	H	0.5	6.5	20.70	33.0	-12.3	
High Ch								
1908.75	12.87	V	0.5	6.2	18.57	33.0	-14.4	
1908.75	15.23	H	0.5	6.2	20.93	33.0	-12.1	

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11.3. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

GSM 850/1900; WCDMA B2/B5; CDMA2000 BC0/BC1; LTE B4/B7/B13

RESULTS

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11.3.1. SPURIOUS RADIATION DATA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/08/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 13, 10MHz BW, 16QAM

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

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE13										
	Mid Ch, (782 MHz)									
10MHz	1.564	-25.2	V	3.0	30.7	1.0	-54.9	-13.0	-41.9	
	2.346	-26.4	V	3.0	28.9	1.0	-54.3	-13.0	-41.3	
16QAM	3.128	-29.1	V	3.0	26.8	1.0	-54.9	-13.0	-41.9	
	1.564	-29.5	H	3.0	30.7	1.0	-59.2	-13.0	-46.2	
	2.346	-28.0	H	3.0	28.9	1.0	-55.8	-13.0	-42.8	
	3.128	-27.8	H	3.0	26.8	1.0	-53.6	-13.0	-40.6	

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

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Band

LTE13

10MHz

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/08/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 13, 10MHz BW, QPSK

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Ch. (782 MHz)									
1.564	-24.9	V	3.0	30.7	1.0	-54.6	-13.0	-41.6	
2.346	-26.0	V	3.0	28.9	1.0	-53.8	-13.0	-40.8	
3.128	-28.5	V	3.0	26.8	1.0	-54.4	-13.0	-41.4	
1.564	-29.1	H	3.0	30.7	1.0	-58.8	-13.0	-45.8	
2.346	-27.9	H	3.0	28.9	1.0	-55.8	-13.0	-42.8	
3.128	-27.7	H	3.0	26.8	1.0	-53.6	-13.0	-40.6	

Rev. 03.03.09

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC Charger and headphones
Mode: TX, LTE band 7, 20MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 27

Band
LTE7
20MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2510 MHz)									
5.020	-28.8	V	3.0	28.9	1.0	-56.7	-25.0	-31.7	
7.530	-26.5	V	3.0	26.3	1.0	-51.8	-25.0	-26.8	
10.040	-26.1	V	3.0	23.1	1.0	-48.2	-25.0	-23.2	
5.020	-28.1	H	3.0	28.9	1.0	-56.0	-25.0	-31.0	
7.530	-26.6	H	3.0	26.3	1.0	-52.0	-25.0	-27.0	
10.040	-24.8	H	3.0	23.1	1.0	-46.9	-25.0	-21.9	
Mid Ch, (2535MHz)									
5.070	-30.0	V	3.0	28.8	1.0	-57.8	-25.0	-32.8	
7.650	-28.3	V	3.0	26.2	1.0	-53.4	-25.0	-28.4	
10.140	-24.6	V	3.0	23.1	1.0	-46.6	-25.0	-21.6	
5.070	-28.4	H	3.0	28.8	1.0	-56.3	-25.0	-31.3	
7.650	-25.2	H	3.0	26.2	1.0	-50.4	-25.0	-25.4	
10.140	-25.5	H	3.0	23.1	1.0	-47.5	-25.0	-22.5	
High Ch, (2560 MHz)									
5.120	-30.2	V	3.0	28.8	1.0	-58.0	-25.0	-33.0	
7.680	-26.5	V	3.0	26.1	1.0	-51.6	-25.0	-26.6	
10.240	-26.2	V	3.0	23.0	1.0	-48.2	-25.0	-23.2	
5.120	-28.4	H	3.0	28.8	1.0	-56.2	-25.0	-31.2	
7.680	-25.9	H	3.0	26.1	1.0	-51.0	-25.0	-26.0	
10.240	-22.7	H	3.0	23.0	1.0	-44.8	-25.0	-19.8	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC Charger and headphones
Mode: TX, LTE band 7, 20MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 27

Band
LTE7
20MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2510 MHz)									
5.020	-28.6	V	3.0	28.9	1.0	-56.5	-25.0	-31.5	
7.530	-26.4	V	3.0	26.3	1.0	-51.7	-25.0	-26.7	
10.040	-26.1	V	3.0	23.1	1.0	-48.2	-25.0	-23.2	
5.020	-27.3	H	3.0	28.9	1.0	-55.1	-25.0	-30.1	
7.530	-26.7	H	3.0	26.3	1.0	-52.0	-25.0	-27.0	
10.040	-25.7	H	3.0	23.1	1.0	-47.8	-25.0	-22.8	
Mid Ch, (2535MHz)									
5.070	-29.9	V	3.0	28.8	1.0	-57.7	-25.0	-32.7	
7.650	-26.9	V	3.0	26.2	1.0	-52.1	-25.0	-27.1	
10.140	-24.4	V	3.0	23.1	1.0	-46.5	-25.0	-21.5	
5.070	-28.8	H	3.0	28.8	1.0	-56.6	-25.0	-31.6	
7.650	-25.2	H	3.0	26.2	1.0	-50.4	-25.0	-25.4	
10.140	-25.4	H	3.0	23.1	1.0	-47.5	-25.0	-22.5	
High Ch, (2560 MHz)									
5.120	-29.9	V	3.0	28.8	1.0	-57.7	-25.0	-32.7	
7.680	-26.5	V	3.0	26.1	1.0	-51.7	-25.0	-26.7	
10.240	-26.2	V	3.0	23.0	1.0	-48.2	-25.0	-23.2	
5.120	-28.7	H	3.0	28.8	1.0	-56.4	-25.0	-31.4	
7.680	-25.7	H	3.0	26.1	1.0	-50.8	-25.0	-25.8	
10.240	-25.2	H	3.0	23.0	1.0	-47.2	-25.0	-22.2	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/05/14
Test Engineer: D. Soper, O. Stoelting
Configuration: Z- position EUT with AC charger and HS
Mode: TX, LTE band 7, 15MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 27

Band

LTE7

15MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2507.5 MHz)									
5.014	-28.9	V	3.0	28.9	1.0	-56.8	-25.0	-31.8	
7.521	-27.4	V	3.0	26.3	1.0	-52.7	-25.0	-27.7	
10.028	-25.4	V	3.0	23.1	1.0	-47.5	-25.0	-22.5	
5.014	-27.6	H	3.0	28.9	1.0	-55.5	-25.0	-30.5	
7.521	-26.3	H	3.0	26.3	1.0	-51.6	-25.0	-26.6	
10.028	-23.9	H	3.0	23.1	1.0	-46.0	-25.0	-21.0	
Mid Ch, (2535 MHz)									
5.070	-30.2	V	3.0	28.8	1.0	-58.0	-25.0	-33.0	
7.650	-27.0	V	3.0	26.2	1.0	-52.2	-25.0	-27.2	
10.140	-25.7	V	3.0	23.1	1.0	-47.7	-25.0	-22.7	
5.070	-28.0	H	3.0	28.8	1.0	-55.8	-25.0	-30.8	
7.650	-25.1	H	3.0	26.2	1.0	-50.2	-25.0	-25.2	
10.140	-24.1	H	3.0	23.1	1.0	-46.1	-25.0	-21.1	
High Ch, (2562.5 MHz)									
5.124	-30.7	V	3.0	28.8	1.0	-58.5	-25.0	-33.5	
7.686	-26.6	V	3.0	26.1	1.0	-51.7	-25.0	-26.7	
10.248	-25.9	V	3.0	23.0	1.0	-48.0	-25.0	-23.0	
5.124	-28.1	H	3.0	28.8	1.0	-55.9	-25.0	-30.9	
7.686	-25.6	H	3.0	26.1	1.0	-50.7	-25.0	-25.7	
10.248	-25.1	H	3.0	23.0	1.0	-47.1	-25.0	-22.1	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/05/14
Test Engineer: D. Soper, O. Stoelting
Configuration: Z- position EUT with AC charger and HS
Mode: TX, LTE band 7, 15MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 27

Band
LTE7
15MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2507 MHz)									
5.014	-28.0	V	3.0	28.9	1.0	-55.9	-25.0	-30.9	
7.521	-27.9	V	3.0	26.3	1.0	-53.2	-25.0	-28.2	
10.028	-26.1	V	3.0	23.1	1.0	-48.2	-25.0	-23.2	
5.014	-27.1	H	3.0	28.9	1.0	-55.0	-25.0	-30.0	
7.521	-26.4	H	3.0	26.3	1.0	-51.7	-25.0	-26.7	
10.028	-25.0	H	3.0	23.1	1.0	-47.1	-25.0	-22.1	
Mid Ch, (2535 MHz)									
5.070	-30.6	V	3.0	28.8	1.0	-58.4	-25.0	-33.4	
7.650	-26.5	V	3.0	26.2	1.0	-51.6	-25.0	-26.6	
10.140	-25.6	V	3.0	23.1	1.0	-47.7	-25.0	-22.7	
5.070	-28.0	H	3.0	28.8	1.0	-55.8	-25.0	-30.8	
7.650	-25.8	H	3.0	26.2	1.0	-51.0	-25.0	-26.0	
10.140	-24.8	H	3.0	23.1	1.0	-46.9	-25.0	-21.9	
High Ch, (2562.5 MHz)									
5.124	-31.1	V	3.0	28.8	1.0	-58.8	-25.0	-33.8	
7.686	-26.6	V	3.0	26.1	1.0	-51.7	-25.0	-26.7	
10.248	-25.6	V	3.0	23.0	1.0	-47.6	-25.0	-22.6	
5.124	-28.0	H	3.0	28.8	1.0	-55.8	-25.0	-30.8	
7.686	-25.8	H	3.0	26.1	1.0	-50.9	-25.0	-25.9	
10.248	-25.0	H	3.0	23.0	1.0	-47.0	-25.0	-22.0	

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

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

Company:	LG
Project #:	14U17502
Date:	05/05/14
Test Engineer:	D. Soper, O. Stoelting
Configuration:	Z- position EUT with AC charger and HS
Mode:	TX, LTE BAND 7, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	FCC Part 27

Band

LTE7

10MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2505MHz)									
5.010	-8.4	V	3.0	34.8	1.0	-42.2	-25.0	-17.2	
7.515	-11.8	V	3.0	34.9	1.0	-45.7	-25.0	-20.7	
10.020	-9.8	V	3.0	35.4	1.0	-44.2	-25.0	-19.2	
5.010	-12.6	H	3.0	34.8	1.0	-46.4	-25.0	-21.4	
7.515	-16.0	H	3.0	34.9	1.0	-49.9	-25.0	-24.9	
10.020	-13.3	H	3.0	35.4	1.0	-47.7	-25.0	-22.7	
Mid Channel (2535MHz)									
5.070	-9.8	V	3.0	34.7	1.0	-43.5	-25.0	-18.5	
7.605	-12.8	V	3.0	34.9	1.0	-46.8	-25.0	-21.8	
10.122	-10.1	V	3.0	35.3	1.0	-44.4	-25.0	-19.4	
5.070	-4.3	H	3.0	34.7	1.0	-38.0	-25.0	-13.0	
7.605	-11.0	H	3.0	34.9	1.0	-44.9	-25.0	-19.9	
10.122	-9.3	H	3.0	35.3	1.0	-43.6	-25.0	-18.6	
High Channel (2565MHz)									
5.130	-4.2	V	3.0	34.7	1.0	-37.9	-25.0	-12.9	
7.689	-12.9	V	3.0	35.0	1.0	-46.9	-25.0	-21.9	
10.260	-9.7	V	3.0	35.2	1.0	-43.9	-25.0	-18.9	
5.130	-6.0	H	3.0	34.7	1.0	-39.8	-25.0	-14.8	
7.689	-8.3	H	3.0	35.0	1.0	-42.2	-25.0	-17.2	
10.260	-9.1	H	3.0	35.2	1.0	-43.4	-25.0	-18.4	

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

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA
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Band

LTE7

10MHz

QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/05/14
Test Engineer: D. Soper, O. Stoelting
Configuration: Z- position EUT with AC charger and HS
Mode: TX, LTE BAND 7, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2505MHz)									
5.010	-8.8	V	3.0	34.8	1.0	-42.6	-25.0	-17.6	
7.515	-12.1	V	3.0	34.9	1.0	-46.1	-25.0	-21.1	
10.020	-9.2	V	3.0	35.4	1.0	-43.6	-25.0	-18.6	
5.010	-12.8	H	3.0	34.8	1.0	-46.6	-25.0	-21.6	
7.515	-15.9	H	3.0	34.9	1.0	-49.8	-25.0	-24.8	
10.020	-12.9	H	3.0	35.4	1.0	-47.3	-25.0	-22.3	
Mid Channel (2535MHz)									
5.070	-9.7	V	3.0	34.7	1.0	-43.4	-25.0	-18.4	
7.605	-12.4	V	3.0	34.9	1.0	-46.3	-25.0	-21.3	
10.122	-9.4	V	3.0	35.3	1.0	-43.7	-25.0	-18.7	
5.070	-3.4	H	3.0	34.7	1.0	-37.2	-25.0	-12.2	
7.605	-11.7	H	3.0	34.9	1.0	-45.6	-25.0	-20.6	
10.122	-8.9	H	3.0	35.3	1.0	-43.2	-25.0	-18.2	
High Channel (2565MHz)									
5.130	-5.4	V	3.0	34.7	1.0	-39.1	-25.0	-14.1	
7.689	-12.4	V	3.0	35.0	1.0	-46.4	-25.0	-21.4	
10.260	-9.4	V	3.0	35.2	1.0	-43.7	-25.0	-18.7	
5.130	-6.1	H	3.0	34.7	1.0	-39.8	-25.0	-14.8	
7.689	-7.2	H	3.0	35.0	1.0	-41.1	-25.0	-16.1	
10.260	-9.2	H	3.0	35.2	1.0	-43.4	-25.0	-18.4	

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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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Band

LTE7

5MHz

16QAM

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG Electronics
Project #:	14U17502
Date:	05/09/14
Test Engineer:	Daniel Soper
Configuration:	EUT / Wireless Charger / Headset
Mode:	LTE7 / 5MHz BW / QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2502.5MHz)									
5.005	-5.3	V	3.0	35.3	1.0	-39.6	-25.0	-14.6	
7.508	-20.4	V	3.0	35.7	1.0	-55.1	-25.0	-30.1	
10.010	-15.1	V	3.0	35.5	1.0	-49.7	-25.0	-24.7	
5.005	-2.6	H	3.0	35.3	1.0	-36.9	-25.0	-11.9	
7.508	-20.6	H	3.0	35.7	1.0	-55.3	-25.0	-30.3	
10.010	-16.1	H	3.0	35.5	1.0	-50.7	-25.0	-25.7	
Mid Channel (2535MHz)									
5.007	-5.8	V	3.0	35.3	1.0	-40.1	-25.0	-15.1	
7.605	-20.2	V	3.0	35.7	1.0	-54.9	-25.0	-29.9	
10.140	-17.3	V	3.0	35.4	1.0	-51.8	-25.0	-26.8	
5.007	-1.2	H	3.0	35.3	1.0	-35.5	-25.0	-10.5	
7.605	-17.7	H	3.0	35.7	1.0	-52.4	-25.0	-27.4	
10.140	-16.9	H	3.0	35.4	1.0	-51.3	-25.0	-26.3	
High Channel (2567.5MHz)									
5.135	-2.9	V	3.0	35.3	1.0	-37.2	-25.0	-12.2	
7.703	-13.9	V	3.0	35.7	1.0	-48.6	-25.0	-23.6	
10.270	-12.9	V	3.0	35.3	1.0	-47.2	-25.0	-22.2	
5.135	4.0	H	3.0	35.3	1.0	-30.4	-25.0	-5.4	
7.703	-16.4	H	3.0	35.7	1.0	-51.1	-25.0	-26.1	
10.270	-17.2	H	3.0	35.3	1.0	-51.5	-25.0	-26.5	

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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
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Band

LTE7

5MHz

QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG Electronics
Project #:	14U17502
Date:	05/09/14
Test Engineer:	Daniel Soper
Configuration:	EUT / Wireless Charger / Headset
Mode:	LTE7 / 5MHz BW / QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2502.5MHz)									
5.005	-5.4	V	3.0	35.3	1.0	-39.7	-25.0	-14.7	
7.508	-20.9	V	3.0	35.7	1.0	-55.6	-25.0	-30.6	
10.010	-14.0	V	3.0	35.5	1.0	-48.5	-25.0	-23.5	
5.005	-3.9	H	3.0	35.3	1.0	-38.2	-25.0	-13.2	
7.508	-20.4	H	3.0	35.7	1.0	-55.1	-25.0	-30.1	
10.010	-15.5	H	3.0	35.5	1.0	-50.0	-25.0	-25.0	
Mid Channel (2535MHz)									
5.007	-6.1	V	3.0	35.3	1.0	-40.4	-25.0	-15.4	
7.605	-19.7	V	3.0	35.7	1.0	-54.4	-25.0	-29.4	
10.140	-17.3	V	3.0	35.4	1.0	-51.8	-25.0	-26.8	
5.007	-1.7	H	3.0	35.3	1.0	-36.0	-25.0	-11.0	
7.605	-19.1	H	3.0	35.7	1.0	-53.8	-25.0	-28.8	
10.140	-16.7	H	3.0	35.4	1.0	-51.2	-25.0	-26.2	
High Channel (2567.5MHz)									
5.135	-2.5	V	3.0	35.3	1.0	-36.8	-25.0	-11.8	
7.703	-13.6	V	3.0	35.7	1.0	-48.2	-25.0	-23.2	
10.270	-12.8	V	3.0	35.3	1.0	-47.1	-25.0	-22.1	
5.135	3.8	H	3.0	35.3	1.0	-30.5	-25.0	-5.5	
7.703	-15.0	H	3.0	35.7	1.0	-49.7	-25.0	-24.7	
10.270	-17.2	H	3.0	35.3	1.0	-51.6	-25.0	-26.6	

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

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

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 4, 20MHz BW, 16QAM

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

Band
LTE4
20MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1720 MHz)									
3.440	-28.4	V	3.0	30.4	1.0	-57.8	-13.0	-44.8	
5.160	-29.8	V	3.0	28.7	1.0	-57.6	-13.0	-44.6	
6.880	-28.4	V	3.0	27.1	1.0	-54.5	-13.0	-41.5	
3.440	-28.5	H	3.0	30.4	1.0	-57.9	-13.0	-44.9	
5.160	-28.6	H	3.0	28.7	1.0	-56.4	-13.0	-43.4	
6.880	-27.6	H	3.0	27.1	1.0	-53.8	-13.0	-40.8	
Mid Ch, (1732.5 MHz)									
3.465	-28.2	V	3.0	30.4	1.0	-57.6	-13.0	-44.6	
5.198	-30.1	V	3.0	28.7	1.0	-57.8	-13.0	-44.8	
6.930	-28.6	V	3.0	27.1	1.0	-54.6	-13.0	-41.6	
3.465	-27.7	H	3.0	30.4	1.0	-57.1	-13.0	-44.1	
5.198	-29.3	H	3.0	28.7	1.0	-57.0	-13.0	-44.0	
6.930	-28.2	H	3.0	27.1	1.0	-54.3	-13.0	-41.3	
High Ch, (1745 MHz)									
3.490	-28.7	V	3.0	30.4	1.0	-58.1	-13.0	-45.1	
5.235	-29.9	V	3.0	28.7	1.0	-57.5	-13.0	-44.5	
6.980	-27.2	V	3.0	27.0	1.0	-53.2	-13.0	-40.2	
3.490	-28.4	H	3.0	30.4	1.0	-57.8	-13.0	-44.8	
5.235	-27.9	H	3.0	28.7	1.0	-55.6	-13.0	-42.6	
6.980	-27.4	H	3.0	27.0	1.0	-53.4	-13.0	-40.4	

Rev. 03.03.09

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 4, 20MHz BW, QPSK

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

Band
LTE4
20MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1720 MHz)									
3.440	-28.0	V	3.0	30.4	1.0	-57.4	-13.0	-44.4	
5.160	-29.5	V	3.0	28.7	1.0	-57.3	-13.0	-44.3	
6.880	-27.9	V	3.0	27.1	1.0	-54.0	-13.0	-41.0	
3.440	-28.8	H	3.0	30.4	1.0	-58.2	-13.0	-45.2	
5.160	-28.4	H	3.0	28.7	1.0	-56.2	-13.0	-43.2	
6.880	-27.2	H	3.0	27.1	1.0	-53.3	-13.0	-40.3	
Mid Ch, (1732.5 MHz)									
3.465	-28.6	V	3.0	30.4	1.0	-58.0	-13.0	-45.0	
5.198	-29.9	V	3.0	28.7	1.0	-57.6	-13.0	-44.6	
6.930	-28.2	V	3.0	27.1	1.0	-54.2	-13.0	-41.2	
3.465	-28.5	H	3.0	30.4	1.0	-57.9	-13.0	-44.9	
5.198	-28.2	H	3.0	28.7	1.0	-55.9	-13.0	-42.9	
6.930	-27.2	H	3.0	27.1	1.0	-53.2	-13.0	-40.2	
High Ch, (1745 MHz)									
3.490	-28.3	V	3.0	30.4	1.0	-57.7	-13.0	-44.7	
5.235	-29.5	V	3.0	28.7	1.0	-57.2	-13.0	-44.2	
6.980	-27.2	V	3.0	27.0	1.0	-53.2	-13.0	-40.2	
3.490	-28.4	H	3.0	30.4	1.0	-57.8	-13.0	-44.8	
5.235	-27.9	H	3.0	28.7	1.0	-55.5	-13.0	-42.5	
6.980	-27.2	H	3.0	27.0	1.0	-53.3	-13.0	-40.3	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 4, 15MHz BW, 16QAM

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

Band
LTE4
15MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1717.5 MHz)									
3.435	-28.6	V	3.0	30.4	1.0	-58.0	-13.0	-45.0	
5.153	-29.9	V	3.0	28.7	1.0	-57.6	-13.0	-44.6	
6.870	-29.5	V	3.0	27.1	1.0	-55.6	-13.0	-42.6	
3.435	-27.9	H	3.0	30.4	1.0	-57.4	-13.0	-44.4	
5.153	-29.1	H	3.0	28.7	1.0	-56.8	-13.0	-43.8	
6.870	-26.9	H	3.0	27.1	1.0	-53.1	-13.0	-40.1	
Mid Ch, (1732.5 MHz)									
3.465	-28.5	V	3.0	30.4	1.0	-57.9	-13.0	-44.9	
5.198	-29.2	V	3.0	28.7	1.0	-56.9	-13.0	-43.9	
6.930	-27.5	V	3.0	27.1	1.0	-53.6	-13.0	-40.6	
3.465	-30.0	H	3.0	30.4	1.0	-59.4	-13.0	-46.4	
5.198	-29.2	H	3.0	28.7	1.0	-56.9	-13.0	-43.9	
6.930	-26.8	H	3.0	27.1	1.0	-52.8	-13.0	-39.8	
High Ch, (1747.5 MHz)									
3.495	-27.8	V	3.0	30.4	1.0	-57.2	-13.0	-44.2	
5.243	-31.0	V	3.0	28.7	1.0	-58.6	-13.0	-45.6	
6.990	-25.9	V	3.0	27.0	1.0	-51.9	-13.0	-38.9	
3.495	-29.8	H	3.0	30.4	1.0	-59.2	-13.0	-46.2	
5.243	-29.2	H	3.0	28.7	1.0	-56.9	-13.0	-43.9	
6.990	-27.3	H	3.0	27.0	1.0	-53.3	-13.0	-40.3	

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UL VERIFICATION SERVICES INC.
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FAX: (510) 661-0888

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT with AC adapter
Mode: TX, LTE band 4, 15MHz BW, QPSK

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

Band
LTE4
15MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1717.5 MHz)									
3.435	-28.1	V	3.0	30.4	1.0	-57.5	-13.0	-44.5	
5.153	-29.4	V	3.0	28.7	1.0	-57.1	-13.0	-44.1	
6.870	-28.0	V	3.0	27.1	1.0	-54.1	-13.0	-41.1	
3.435	-28.2	H	3.0	30.4	1.0	-57.6	-13.0	-44.6	
5.153	-28.7	H	3.0	28.7	1.0	-56.5	-13.0	-43.5	
6.870	-27.5	H	3.0	27.1	1.0	-53.6	-13.0	-40.6	
Mid Ch, (1732.5 MHz)									
3.465	-28.1	V	3.0	30.4	1.0	-57.5	-13.0	-44.5	
5.198	-30.2	V	3.0	28.7	1.0	-57.9	-13.0	-44.9	
6.930	-27.7	V	3.0	27.1	1.0	-53.7	-13.0	-40.7	
3.465	-28.6	H	3.0	30.4	1.0	-58.0	-13.0	-45.0	
5.198	-28.1	H	3.0	28.7	1.0	-55.8	-13.0	-42.8	
6.930	-26.9	H	3.0	27.1	1.0	-52.9	-13.0	-39.9	
High Ch, (1747.5 MHz)									
3.495	-27.6	V	3.0	30.4	1.0	-56.9	-13.0	-43.9	
5.243	-29.9	V	3.0	28.7	1.0	-57.6	-13.0	-44.6	
6.990	-27.8	V	3.0	27.0	1.0	-53.8	-13.0	-40.8	
3.495	-28.5	H	3.0	30.4	1.0	-57.9	-13.0	-44.9	
5.243	-28.9	H	3.0	28.7	1.0	-56.5	-13.0	-43.5	
6.990	-27.2	H	3.0	27.0	1.0	-53.2	-13.0	-40.2	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 10MHz BW, 16QAM

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

Band
LTE4
10MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715 MHz)									
3.430	-29.1	V	3.0	30.4	1.0	-58.5	-13.0	-45.5	
5.145	-28.3	V	3.0	28.8	1.0	-56.1	-13.0	-43.1	
6.860	-30.7	V	3.0	27.1	1.0	-56.8	-13.0	-43.8	
3.430	-30.9	H	3.0	30.4	1.0	-60.3	-13.0	-47.3	
5.145	-28.5	H	3.0	28.8	1.0	-56.3	-13.0	-43.3	
6.860	-29.0	H	3.0	27.1	1.0	-55.1	-13.0	-42.1	
Mid Ch, (1732.5 MHz)									
3.465	-29.2	V	3.0	30.4	1.0	-58.6	-13.0	-45.6	
5.198	-28.8	V	3.0	28.7	1.0	-56.5	-13.0	-43.5	
6.930	-28.2	V	3.0	27.1	1.0	-54.2	-13.0	-41.2	
3.465	-28.6	H	3.0	30.4	1.0	-58.0	-13.0	-45.0	
5.198	-26.8	H	3.0	28.7	1.0	-54.5	-13.0	-41.5	
6.930	-27.9	H	3.0	27.1	1.0	-54.0	-13.0	-41.0	
High Ch, (1750 MHz)									
3.500	-28.8	V	3.0	30.4	1.0	-58.1	-13.0	-45.1	
5.250	-30.7	V	3.0	28.7	1.0	-58.4	-13.0	-45.4	
7.000	-28.7	V	3.0	27.0	1.0	-54.7	-13.0	-41.7	
3.500	-30.5	H	3.0	30.4	1.0	-59.9	-13.0	-46.9	
5.250	-28.8	H	3.0	28.7	1.0	-56.4	-13.0	-43.4	
7.000	-28.3	H	3.0	27.0	1.0	-54.3	-13.0	-41.3	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 10MHz BW, QPSK

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

Band
LTE4
10MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715 MHz)									
3.430	-29.5	V	3.0	30.4	1.0	-59.0	-13.0	-46.0	
5.145	-29.1	V	3.0	28.8	1.0	-56.8	-13.0	-43.8	
6.860	-29.3	V	3.0	27.1	1.0	-55.4	-13.0	-42.4	
3.430	-29.7	H	3.0	30.4	1.0	-59.1	-13.0	-46.1	
5.145	-28.0	H	3.0	28.8	1.0	-55.7	-13.0	-42.7	
6.860	-28.1	H	3.0	27.1	1.0	-54.2	-13.0	-41.2	
Mid Ch, (1732.5 MHz)									
3.465	-27.9	V	3.0	30.4	1.0	-57.3	-13.0	-44.3	
5.198	-29.2	V	3.0	28.7	1.0	-56.9	-13.0	-43.9	
6.930	-28.2	V	3.0	27.1	1.0	-54.2	-13.0	-41.2	
3.465	-28.5	H	3.0	30.4	1.0	-57.9	-13.0	-44.9	
5.198	-26.5	H	3.0	28.7	1.0	-54.2	-13.0	-41.2	
6.930	-27.1	H	3.0	27.1	1.0	-53.2	-13.0	-40.2	
High Ch, (1750 MHz)									
3.500	-29.6	V	3.0	30.4	1.0	-59.0	-13.0	-46.0	
5.250	-29.8	V	3.0	28.7	1.0	-57.5	-13.0	-44.5	
7.000	-27.6	V	3.0	27.0	1.0	-53.6	-13.0	-40.6	
3.500	-30.1	H	3.0	30.4	1.0	-59.5	-13.0	-46.5	
5.250	-28.1	H	3.0	28.7	1.0	-55.7	-13.0	-42.7	
7.000	-27.4	H	3.0	27.0	1.0	-53.4	-13.0	-40.4	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 5MHz BW, 16 QAM

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

Band
LTE4
5MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5 MHz)									
3.425	-27.7	V	3.0	30.4	1.0	-57.1	-13.0	-44.1	
5.138	-30.2	V	3.0	28.8	1.0	-58.0	-13.0	-45.0	
6.850	-29.7	V	3.0	27.1	1.0	-55.8	-13.0	-42.8	
3.425	-27.5	H	3.0	30.4	1.0	-56.9	-13.0	-43.9	
5.138	-29.1	H	3.0	28.8	1.0	-56.9	-13.0	-43.9	
6.850	-29.0	H	3.0	27.1	1.0	-55.1	-13.0	-42.1	
Mid Ch, (1732.5 MHz)									
3.465	-27.5	V	3.0	30.4	1.0	-56.9	-13.0	-43.9	
5.198	-30.1	V	3.0	28.7	1.0	-57.8	-13.0	-44.8	
6.930	-27.6	V	3.0	27.1	1.0	-53.6	-13.0	-40.6	
3.465	-28.6	H	3.0	30.4	1.0	-58.0	-13.0	-45.0	
5.198	-28.6	H	3.0	28.7	1.0	-56.3	-13.0	-43.3	
6.930	-26.7	H	3.0	27.1	1.0	-52.7	-13.0	-39.7	
High Ch, (1752.5 MHz)									
3.505	-26.9	V	3.0	30.4	1.0	-56.2	-13.0	-43.2	
5.258	-30.1	V	3.0	28.6	1.0	-57.7	-13.0	-44.7	
7.010	-27.5	V	3.0	27.0	1.0	-53.5	-13.0	-40.5	
3.505	-28.4	H	3.0	30.4	1.0	-57.7	-13.0	-44.7	
5.258	-27.8	H	3.0	28.6	1.0	-55.4	-13.0	-42.4	
7.010	-27.5	H	3.0	27.0	1.0	-53.5	-13.0	-40.5	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/06/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 5MHz BW, QPSK

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

Band: LTE4 5MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5 MHz)									
3.425	-27.4	V	3.0	30.4	1.0	-56.8	-13.0	-43.8	
5.138	-30.2	V	3.0	28.8	1.0	-58.0	-13.0	-45.0	
6.850	-29.5	V	3.0	27.1	1.0	-55.6	-13.0	-42.6	
3.425	-27.5	H	3.0	30.4	1.0	-57.0	-13.0	-44.0	
5.138	-28.9	H	3.0	28.8	1.0	-56.6	-13.0	-43.6	
6.850	-28.0	H	3.0	27.1	1.0	-54.1	-13.0	-41.1	
Mid Ch, (1732.5 MHz)									
3.465	-27.9	V	3.0	30.4	1.0	-57.3	-13.0	-44.3	
5.198	-30.0	V	3.0	28.7	1.0	-57.7	-13.0	-44.7	
6.930	-27.3	V	3.0	27.1	1.0	-53.4	-13.0	-40.4	
3.465	-28.3	H	3.0	30.4	1.0	-57.7	-13.0	-44.7	
5.198	-28.5	H	3.0	28.7	1.0	-56.2	-13.0	-43.2	
6.930	-26.7	H	3.0	27.1	1.0	-52.7	-13.0	-39.7	
High Ch, (1752.5 MHz)									
3.505	-26.8	V	3.0	30.4	1.0	-56.2	-13.0	-43.2	
5.258	-29.9	V	3.0	28.6	1.0	-57.6	-13.0	-44.6	
7.010	-28.2	V	3.0	27.0	1.0	-54.2	-13.0	-41.2	
3.505	-28.3	H	3.0	30.4	1.0	-57.7	-13.0	-44.7	
5.258	-27.8	H	3.0	28.6	1.0	-55.5	-13.0	-42.5	
7.010	-27.4	H	3.0	27.0	1.0	-53.4	-13.0	-40.4	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT with AC adapter & HS
Mode: EVDO BC1 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	Part 24

Band

BC1

EVDO
REL. 0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-12.1	V	3.0	35.4	1.0	-46.5	-13.0	-33.5	
5.554	-17.3	V	3.0	34.7	1.0	-51.1	-13.0	-38.1	
7.405	-18.9	V	3.0	34.9	1.0	-52.8	-13.0	-39.8	
3.703	-12.7	H	3.0	35.4	1.0	-47.1	-13.0	-34.1	
5.554	-17.1	H	3.0	34.7	1.0	-50.8	-13.0	-37.8	
7.405	-17.2	H	3.0	34.9	1.0	-51.1	-13.0	-38.1	
Mid Ch, 1880.0MHz									
3.760	-15.2	V	3.0	35.3	1.0	-49.6	-13.0	-36.6	
5.640	-17.6	V	3.0	34.7	1.0	-51.3	-13.0	-38.3	
7.520	-15.9	V	3.0	34.9	1.0	-49.8	-13.0	-36.8	
3.760	-13.9	H	3.0	35.3	1.0	-48.2	-13.0	-35.2	
5.640	-19.8	H	3.0	34.7	1.0	-53.5	-13.0	-40.5	
7.520	-15.3	H	3.0	34.9	1.0	-49.3	-13.0	-36.3	
High Ch, 1908.75 MHz									
3.818	-16.3	V	3.0	35.3	1.0	-50.5	-13.0	-37.5	
5.726	-15.1	V	3.0	34.7	1.0	-48.8	-13.0	-35.8	
7.635	-13.0	V	3.0	34.9	1.0	-47.0	-13.0	-34.0	
3.818	-14.0	H	3.0	35.3	1.0	-48.3	-13.0	-35.3	
5.726	-18.0	H	3.0	34.7	1.0	-51.7	-13.0	-38.7	
7.635	-17.5	H	3.0	34.9	1.0	-51.5	-13.0	-38.5	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/02/14
Test Engineer: O. Stoelting, D. Soper
Configuration: EUT with AC charger & HS
Mode: CDMA RTT BC1

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band
BC1
1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25 MHz									
3.703	-8.9	V	3.0	35.4	1.0	-43.3	-13.0	-30.3	
5.554	-19.9	V	3.0	34.7	1.0	-53.6	-13.0	-40.6	
7.405	-16.5	V	3.0	34.9	1.0	-50.5	-13.0	-37.5	
3.703	-12.5	H	3.0	35.4	1.0	-46.9	-13.0	-33.9	
5.554	-21.4	H	3.0	34.7	1.0	-55.2	-13.0	-42.2	
7.405	-18.5	H	3.0	34.9	1.0	-52.4	-13.0	-39.4	
Mid Ch, 1880 MHz									
3.760	-12.9	V	3.0	35.3	1.0	-47.2	-13.0	-34.2	
5.640	-22.2	V	3.0	34.7	1.0	-55.9	-13.0	-42.9	
7.520	-15.0	V	3.0	34.9	1.0	-48.9	-13.0	-35.9	
3.760	-13.5	H	3.0	35.3	1.0	-47.9	-13.0	-34.9	
5.640	-8.8	H	3.0	34.7	1.0	-42.5	-13.0	-29.5	
7.520	-6.3	H	3.0	34.9	1.0	-40.2	-13.0	-27.2	
High Ch, 1908.75 MHz									
3.818	-21.1	V	3.0	35.3	1.0	-55.4	-13.0	-42.4	
5.726	-19.8	V	3.0	34.7	1.0	-53.5	-13.0	-40.5	
7.635	-19.7	V	3.0	34.9	1.0	-53.7	-13.0	-40.7	
3.818	-19.0	H	3.0	35.3	1.0	-53.3	-13.0	-40.3	
5.726	-20.4	H	3.0	34.7	1.0	-54.1	-13.0	-41.1	
7.635	-18.7	H	3.0	34.9	1.0	-52.6	-13.0	-39.6	

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

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

Company: LG
Project #: 14U17502
Date: 5\6\14
Test Engineer: D. Soper
Configuration: EUT with AC adapter & HS
Mode: EVDOR0 BC0 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	Part 24

Band

BC0

EVDO
REL. 0

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.650	-31.5	V	3.0	37.4	1.0	-67.8	-13.0	-54.8	
2.474	-25.5	V	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3.298	-26.4	V	3.0	35.8	1.0	-61.2	-13.0	-48.2	
1.650	-30.5	H	3.0	37.4	1.0	-66.9	-13.0	-53.9	
2.474	-19.0	H	3.0	36.4	1.0	-54.4	-13.0	-41.4	
3.298	-26.6	H	3.0	35.8	1.0	-61.4	-13.0	-48.4	
Mid Ch, 836.52MHz									
1.673	-24.7	V	3.0	37.3	1.0	-61.0	-13.0	-48.0	
2.509	-27.8	V	3.0	36.4	1.0	-63.1	-13.0	-50.1	
3.346	-25.9	V	3.0	35.8	1.0	-60.7	-13.0	-47.7	
1.673	-25.2	H	3.0	37.3	1.0	-61.6	-13.0	-48.6	
2.509	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3.346	-26.0	H	3.0	35.8	1.0	-60.8	-13.0	-47.8	
High Ch, 848.31 MHz									
1.696	-8.4	V	3.0	37.3	1.0	-44.7	-13.0	-31.7	
2.544	-16.1	V	3.0	36.3	1.0	-51.5	-13.0	-38.5	
3.393	-13.8	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
1.696	5.3	H	3.0	37.3	1.0	-31.0	-13.0	-18.0	
2.544	-9.3	H	3.0	36.3	1.0	-44.6	-13.0	-31.6	
3.393	-13.4	H	3.0	35.7	1.0	-48.1	-13.0	-35.1	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17501
Date: 05/02/14
Test Engineer: O. Stoelting, D. Soper
Configuration: EUT with AC charger & HS
Mode: CDMA RTT BC0

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band
BC0
1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1.648	-33.5	V	3.0	37.4	1.0	-69.9	-13.0	-56.9	
2.473	-25.8	V	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3.297	-27.4	V	3.0	35.8	1.0	-62.2	-13.0	-49.2	
1.648	-33.8	H	3.0	37.4	1.0	-70.2	-13.0	-57.2	
2.473	-30.2	H	3.0	36.4	1.0	-65.6	-13.0	-52.6	
3.297	-27.9	H	3.0	35.8	1.0	-62.7	-13.0	-49.7	
Mid Ch, 836.52MHz									
1.673	-18.8	V	3.0	37.3	1.0	-55.1	-13.0	-42.1	
2.510	-28.5	V	3.0	36.4	1.0	-63.8	-13.0	-50.8	
3.346	-27.6	V	3.0	35.8	1.0	-62.3	-13.0	-49.3	
1.673	-11.2	H	3.0	37.3	1.0	-47.6	-13.0	-34.6	
2.510	-18.2	H	3.0	36.4	1.0	-53.6	-13.0	-40.6	
3.346	-27.7	H	3.0	35.8	1.0	-62.5	-13.0	-49.5	
High Ch, 848.31MHz									
1.697	-33.5	V	3.0	37.3	1.0	-69.8	-13.0	-56.8	
2.545	-29.3	V	3.0	36.3	1.0	-64.7	-13.0	-51.7	
3.393	-27.5	V	3.0	35.7	1.0	-62.2	-13.0	-49.2	
1.697	-33.7	H	3.0	37.3	1.0	-70.0	-13.0	-57.0	
2.545	-30.9	H	3.0	36.3	1.0	-66.2	-13.0	-53.2	
3.393	-27.7	H	3.0	35.7	1.0	-62.4	-13.0	-49.4	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: Tx, 1900MHz HSDPA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band

Band 2

HSDPA

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.705	-19.1	V	3.0	35.4	1.0	-53.5	-13.0	-40.5	
5.557	-14.1	V	3.0	34.7	1.0	-47.8	-13.0	-34.8	
7.409	-13.6	V	3.0	34.9	1.0	-47.5	-13.0	-34.5	
3.705	-18.3	H	3.0	35.4	1.0	-52.7	-13.0	-39.7	
5.557	-14.2	H	3.0	34.7	1.0	-47.9	-13.0	-34.9	
7.409	-12.6	H	3.0	34.9	1.0	-46.6	-13.0	-33.6	
Mid Ch, 1880MHz									
3.760	-17.8	V	3.0	35.3	1.0	-52.2	-13.0	-39.2	
5.640	-14.8	V	3.0	34.7	1.0	-48.5	-13.0	-35.5	
7.520	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.760	-17.7	H	3.0	35.3	1.0	-52.0	-13.0	-39.0	
5.640	-16.1	H	3.0	34.7	1.0	-49.8	-13.0	-36.8	
7.520	-12.5	H	3.0	34.9	1.0	-46.5	-13.0	-33.5	
High Ch, 1907.6MHz									
3.815	-18.0	V	3.0	35.3	1.0	-52.3	-13.0	-39.3	
5.723	-13.8	V	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.630	-12.6	V	3.0	34.9	1.0	-46.6	-13.0	-33.6	
3.815	-11.6	H	3.0	35.3	1.0	-45.9	-13.0	-32.9	
5.723	-12.1	H	3.0	34.7	1.0	-45.9	-13.0	-32.9	
7.630	-12.5	H	3.0	34.9	1.0	-46.4	-13.0	-33.4	

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Band

Band 2

REL99

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: Tx, 1900MHz Rel 99

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.705	-18.4	V	3.0	35.4	1.0	-52.8	-13.0	-39.8	
5.557	-14.6	V	3.0	34.7	1.0	-48.3	-13.0	-35.3	
7.409	-13.6	V	3.0	34.9	1.0	-47.5	-13.0	-34.5	
3.705	-18.7	H	3.0	35.4	1.0	-53.1	-13.0	-40.1	
5.557	-13.4	H	3.0	34.7	1.0	-47.1	-13.0	-34.1	
7.409	-12.5	H	3.0	34.9	1.0	-46.4	-13.0	-33.4	
Mid Ch, 1880MHz									
3.760	-17.7	V	3.0	35.3	1.0	-52.0	-13.0	-39.0	
5.640	-14.9	V	3.0	34.7	1.0	-48.6	-13.0	-35.6	
7.520	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
3.760	-17.6	H	3.0	35.3	1.0	-51.9	-13.0	-38.9	
5.640	-15.2	H	3.0	34.7	1.0	-48.9	-13.0	-35.9	
7.520	-12.2	H	3.0	34.9	1.0	-46.1	-13.0	-33.1	
High Ch, 1907.6MHz									
3.815	-17.3	V	3.0	35.3	1.0	-51.6	-13.0	-38.6	
5.723	-13.7	V	3.0	34.7	1.0	-47.5	-13.0	-34.5	
7.630	-13.1	V	3.0	34.9	1.0	-47.1	-13.0	-34.1	
3.815	-11.5	H	3.0	35.3	1.0	-45.8	-13.0	-32.8	
5.723	-12.3	H	3.0	34.7	1.0	-46.0	-13.0	-33.0	
7.630	-12.0	H	3.0	34.9	1.0	-45.9	-13.0	-32.9	

Rev. 03.03.09

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Band

Band 5

HSDPA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: WCDMA_HSDPA_ 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.40MHz									
1.652	-27.4	V	3.0	37.4	1.0	-63.7	-13.0	-50.7	
2.479	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3.306	-21.1	V	3.0	35.8	1.0	-55.9	-13.0	-42.9	
1.652	-27.0	H	3.0	37.4	1.0	-63.4	-13.0	-50.4	
2.479	-24.2	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.306	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
Mid Ch, 836.6MHz									
1.673	-27.0	V	3.0	37.3	1.0	-63.4	-13.0	-50.4	
2.510	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3.346	-21.1	V	3.0	35.8	1.0	-55.8	-13.0	-42.8	
1.673	-28.4	H	3.0	37.3	1.0	-64.8	-13.0	-51.8	
2.510	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3.346	-21.2	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
High Ch, 846.6MHz									
1.693	-22.6	V	3.0	37.3	1.0	-58.9	-13.0	-45.9	
2.539	-22.2	V	3.0	36.3	1.0	-57.5	-13.0	-44.5	
3.386	-20.7	V	3.0	35.7	1.0	-55.4	-13.0	-42.4	
1.693	-26.3	H	3.0	37.3	1.0	-62.6	-13.0	-49.6	
2.539	-18.4	H	3.0	36.3	1.0	-53.8	-13.0	-40.8	
3.386	-20.3	H	3.0	35.7	1.0	-55.0	-13.0	-42.0	

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

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

Company:	LG
Project #:	14U17502
Date:	05/03/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	WCDMA_Rel 99_ 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band

Band 5

REL99

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.40MHz									
1.652	-27.1	V	3.0	37.4	1.0	-63.5	-13.0	-50.5	
2.479	-23.2	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3.306	-21.3	V	3.0	35.8	1.0	-56.1	-13.0	-43.1	
1.652	-26.8	H	3.0	37.4	1.0	-63.2	-13.0	-50.2	
2.479	-23.3	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3.306	-20.9	H	3.0	35.8	1.0	-55.7	-13.0	-42.7	
Mid Ch, 836.6MHz									
1.673	-26.8	V	3.0	37.3	1.0	-63.2	-13.0	-50.2	
2.510	-22.5	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.346	-20.9	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
1.673	-27.3	H	3.0	37.3	1.0	-63.7	-13.0	-50.7	
2.510	-23.3	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3.346	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
High Ch, 846.6MHz									
1.693	-23.5	V	3.0	37.3	1.0	-59.8	-13.0	-46.8	
2.539	-22.9	V	3.0	36.3	1.0	-58.2	-13.0	-45.2	
3.386	-19.9	V	3.0	35.7	1.0	-54.7	-13.0	-41.7	
1.693	-25.8	H	3.0	37.3	1.0	-62.1	-13.0	-49.1	
2.539	-17.8	H	3.0	36.3	1.0	-53.2	-13.0	-40.2	
3.386	-20.7	H	3.0	35.7	1.0	-55.5	-13.0	-42.5	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: EGPRS 1900

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	Part 24

Band

GSM1900

EGPRS

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850MHz									
3.700	-18.7	V	3.0	35.4	1.0	-53.1	-13.0	-40.1	
5.550	-15.1	V	3.0	34.7	1.0	-48.8	-13.0	-35.8	
7.400	-14.1	V	3.0	34.9	1.0	-48.0	-13.0	-35.0	
3.700	-18.4	H	3.0	35.4	1.0	-52.8	-13.0	-39.8	
5.550	-16.5	H	3.0	34.7	1.0	-50.2	-13.0	-37.2	
7.400	-10.9	H	3.0	34.9	1.0	-44.8	-13.0	-31.8	
Mid Ch, 1880.0MHz									
3.760	-18.2	V	3.0	35.3	1.0	-52.6	-13.0	-39.6	
5.640	-16.2	V	3.0	34.7	1.0	-50.0	-13.0	-37.0	
7.520	-13.9	V	3.0	34.9	1.0	-47.8	-13.0	-34.8	
3.760	-17.6	H	3.0	35.3	1.0	-51.9	-13.0	-38.9	
5.640	-15.1	H	3.0	34.7	1.0	-48.9	-13.0	-35.9	
7.520	-12.3	H	3.0	34.9	1.0	-46.2	-13.0	-33.2	
High Ch, 1909.8 MHz									
3.820	-19.1	V	3.0	35.3	1.0	-53.3	-13.0	-40.3	
5.729	-16.2	V	3.0	34.7	1.0	-50.0	-13.0	-37.0	
7.639	-13.7	V	3.0	35.0	1.0	-47.7	-13.0	-34.7	
3.820	-15.3	H	3.0	35.3	1.0	-49.6	-13.0	-36.6	
5.729	-14.3	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.639	-13.1	H	3.0	35.0	1.0	-47.0	-13.0	-34.0	

Rev. 03.03.09

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

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: GPRS 1900

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T343 8449B	Filter 1	Part 24

Band

GSM1900

GPRS

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850MHz									
3.700	-18.3	V	3.0	35.4	1.0	-52.7	-13.0	-39.7	
5.550	-15.4	V	3.0	34.7	1.0	-49.1	-13.0	-36.1	
7.400	-14.1	V	3.0	34.9	1.0	-48.0	-13.0	-35.0	
3.700	-18.2	H	3.0	35.4	1.0	-52.6	-13.0	-39.6	
5.550	-15.7	H	3.0	34.7	1.0	-49.4	-13.0	-36.4	
7.400	-11.9	H	3.0	34.9	1.0	-45.8	-13.0	-32.8	
Mid Ch, 1880.0MHz									
3.760	-18.5	V	3.0	35.3	1.0	-52.9	-13.0	-39.9	
5.640	-15.7	V	3.0	34.7	1.0	-49.4	-13.0	-36.4	
7.520	-13.9	V	3.0	34.9	1.0	-47.9	-13.0	-34.9	
3.760	-17.1	H	3.0	35.3	1.0	-51.4	-13.0	-38.4	
5.640	-15.7	H	3.0	34.7	1.0	-49.5	-13.0	-36.5	
7.520	-12.4	H	3.0	34.9	1.0	-46.4	-13.0	-33.4	
High Ch, 1909.8 MHz									
3.820	-19.3	V	3.0	35.3	1.0	-53.5	-13.0	-40.5	
5.729	-16.4	V	3.0	34.7	1.0	-50.1	-13.0	-37.1	
7.639	-13.7	V	3.0	35.0	1.0	-47.7	-13.0	-34.7	
3.820	-15.0	H	3.0	35.3	1.0	-49.3	-13.0	-36.3	
5.729	-14.4	H	3.0	34.7	1.0	-48.2	-13.0	-35.2	
7.639	-12.8	H	3.0	35.0	1.0	-46.7	-13.0	-33.7	

Rev. 03.03.09

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: EGPRS 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band

GSM850

EGPRS

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1.648	-27.5	V	3.0	37.4	1.0	-63.9	-13.0	-50.9	
2.473	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3.297	-21.5	V	3.0	35.8	1.0	-56.3	-13.0	-43.3	
1.648	-27.6	H	3.0	37.4	1.0	-64.0	-13.0	-51.0	
2.473	-24.2	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.297	-20.8	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	
Mid Ch, 836.6MHz									
1.673	-27.4	V	3.0	37.3	1.0	-63.7	-13.0	-50.7	
2.510	-23.5	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3.346	-20.8	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
1.673	-27.9	H	3.0	37.3	1.0	-64.2	-13.0	-51.2	
2.510	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3.346	-20.8	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	
High Ch, 848.8MHz									
1.698	-24.8	V	3.0	37.3	1.0	-61.1	-13.0	-48.1	
2.547	-21.7	V	3.0	36.3	1.0	-57.1	-13.0	-44.1	
3.395	-19.4	V	3.0	35.7	1.0	-54.1	-13.0	-41.1	
1.698	-23.7	H	3.0	37.3	1.0	-60.0	-13.0	-47.0	
2.547	-19.8	H	3.0	36.3	1.0	-55.1	-13.0	-42.1	
3.395	-20.2	H	3.0	35.7	1.0	-54.9	-13.0	-41.9	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17502
Date: 05/03/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: GPRS 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T34 8449B	Filter 1	Part 24

Band

GSM850

GPRS

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1.648	-26.7	V	3.0	37.4	1.0	-63.0	-13.0	-50.0	
2.473	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3.297	-21.3	V	3.0	35.8	1.0	-56.1	-13.0	-43.1	
1.648	-27.8	H	3.0	37.4	1.0	-64.2	-13.0	-51.2	
2.473	-23.7	H	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3.297	-20.6	H	3.0	35.8	1.0	-55.4	-13.0	-42.4	
Mid Ch, 836.6MHz									
1.673	-26.8	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
2.510	-22.4	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3.346	-21.5	V	3.0	35.8	1.0	-56.3	-13.0	-43.3	
1.673	-27.9	H	3.0	37.3	1.0	-64.2	-13.0	-51.2	
2.510	-23.4	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	
3.346	-20.3	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
High Ch, 848.8MHz									
1.698	-24.0	V	3.0	37.3	1.0	-60.3	-13.0	-47.3	
2.547	-22.6	V	3.0	36.3	1.0	-57.9	-13.0	-44.9	
3.395	-20.0	V	3.0	35.7	1.0	-54.7	-13.0	-41.7	
1.698	-25.8	H	3.0	37.3	1.0	-62.1	-13.0	-49.1	
2.547	-18.8	H	3.0	36.3	1.0	-54.1	-13.0	-41.1	
3.395	-21.2	H	3.0	35.7	1.0	-55.9	-13.0	-42.9	

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

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