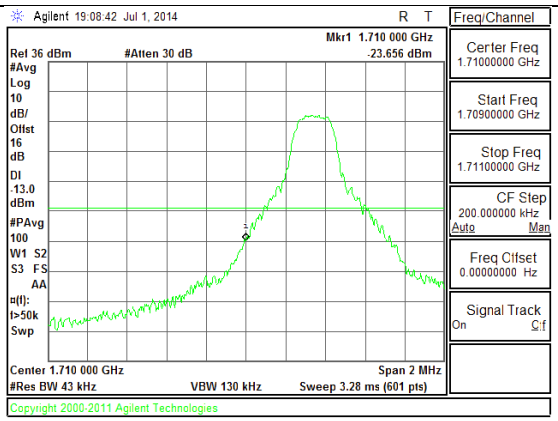
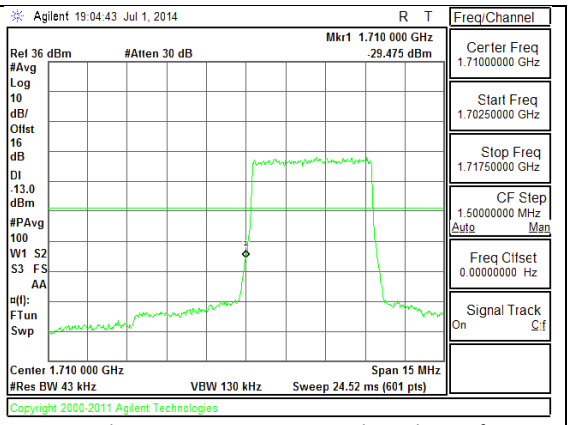
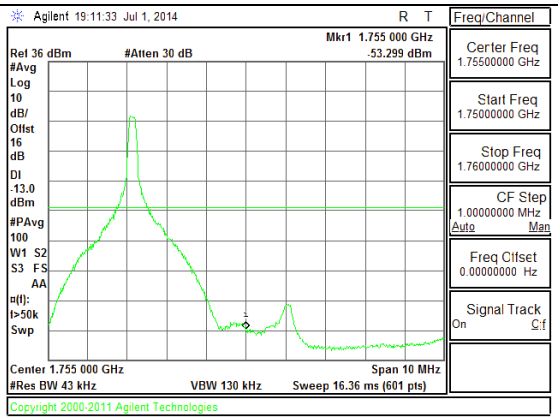
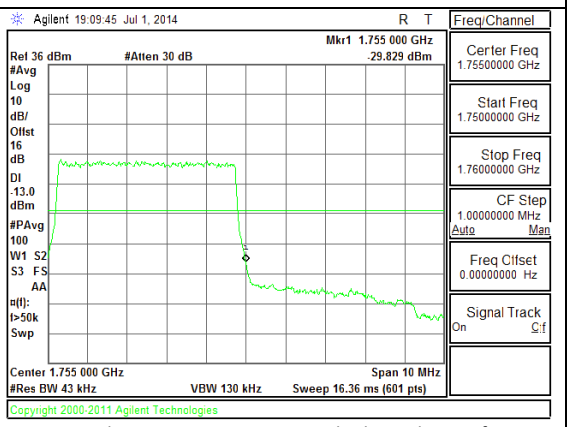
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK Low Channel FRB.gif
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK High Channel FRB.gif

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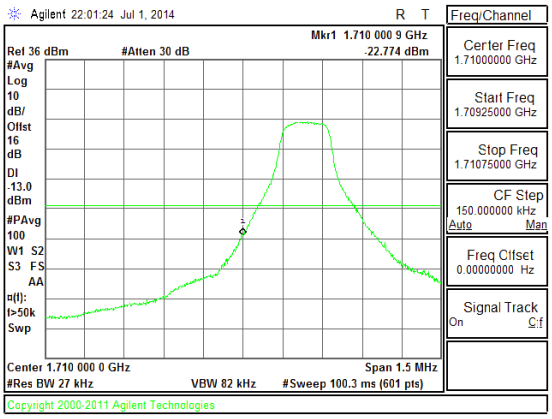
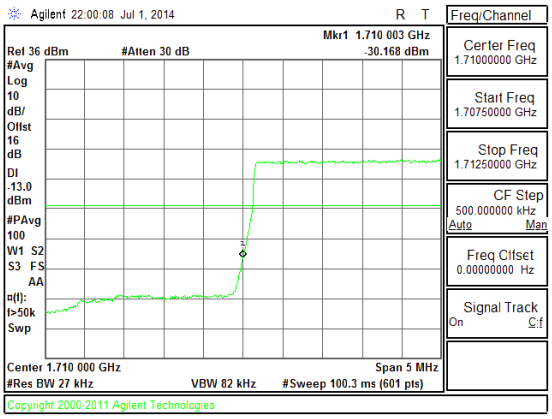
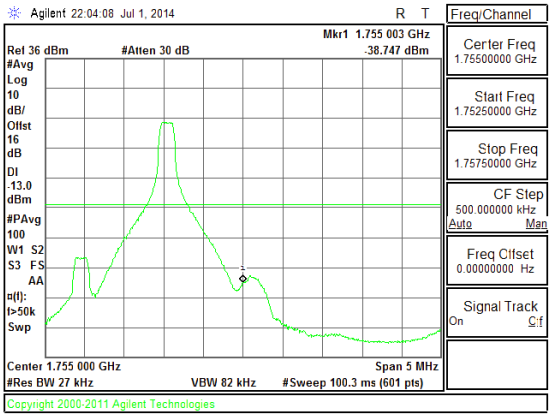
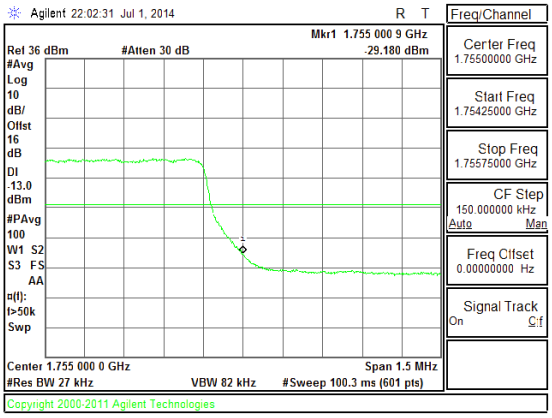
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM High Channel FRB.gif

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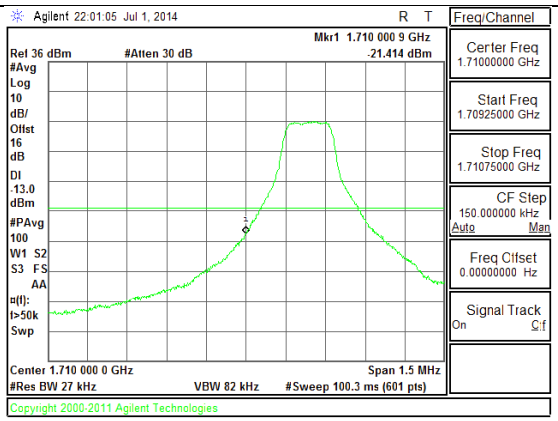
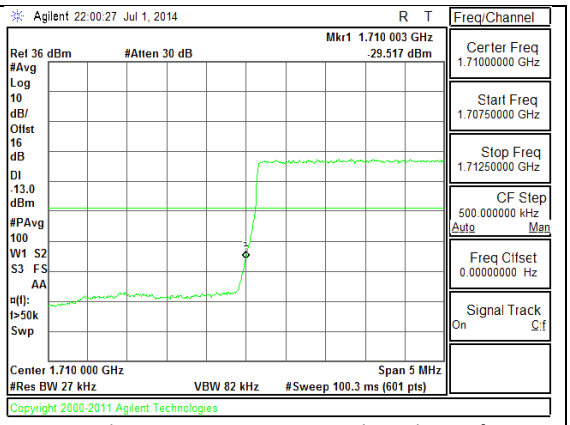
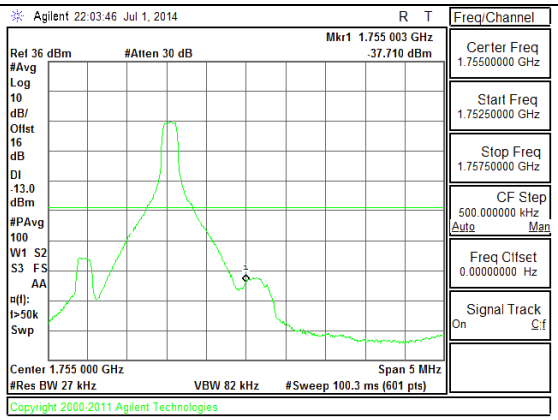
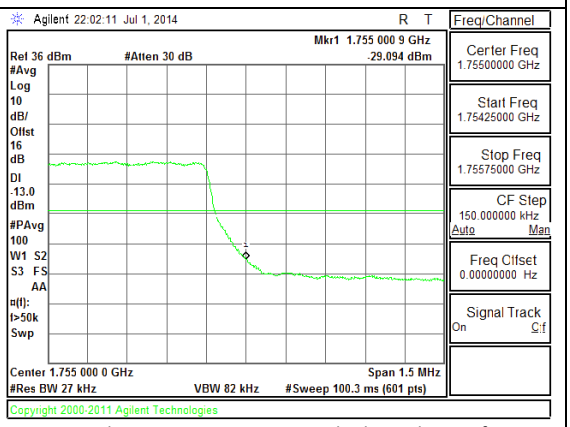
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK Low Channel FRB.gif
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK High Channel FRB.gif

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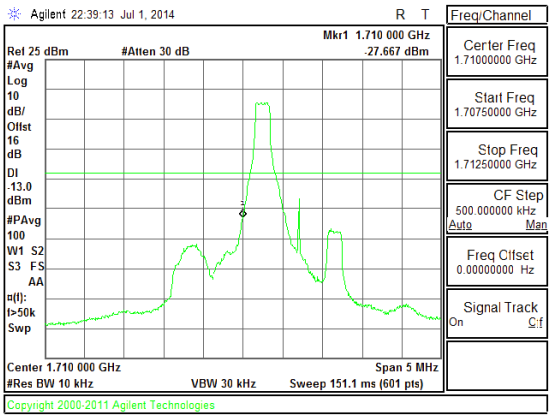
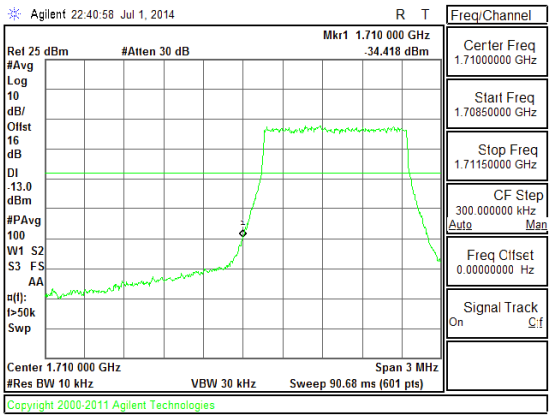
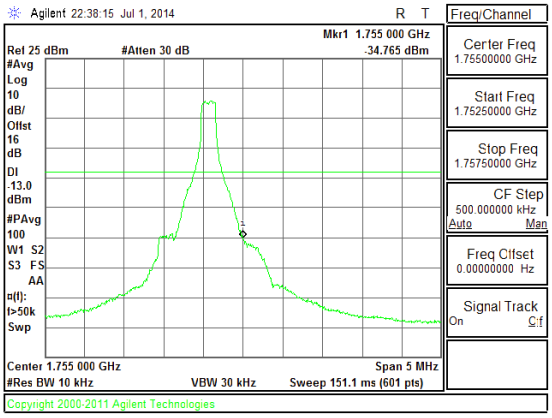
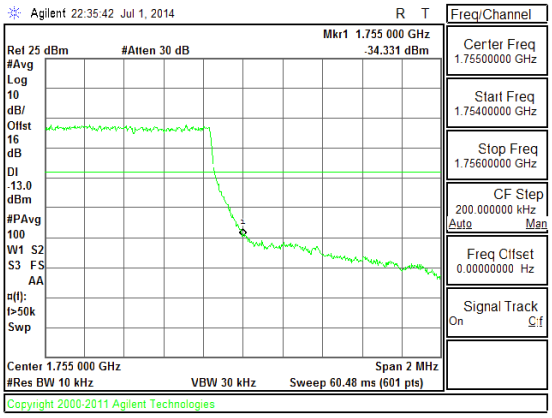
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM High Channel FRB.gif

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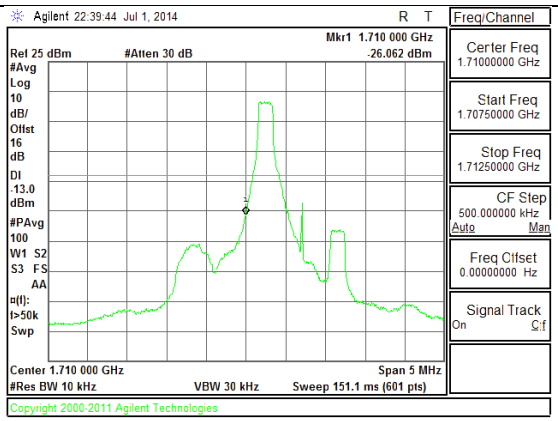
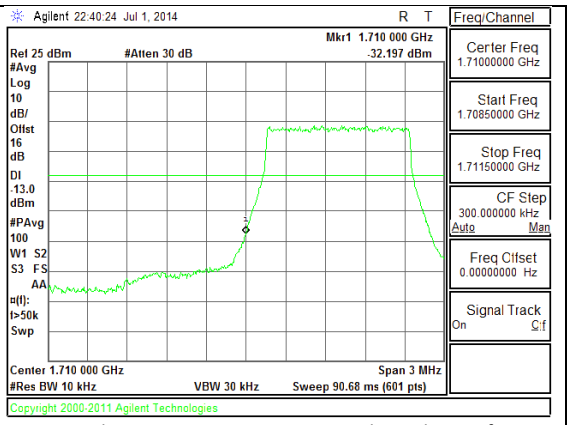
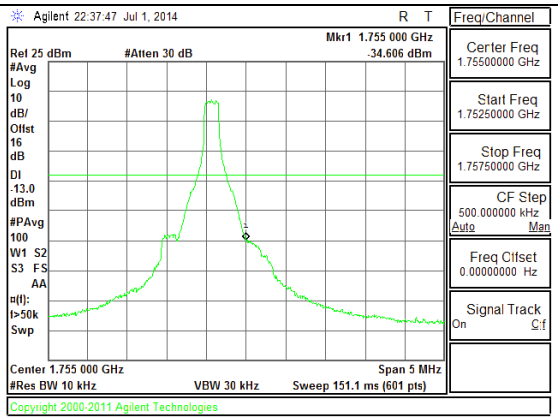
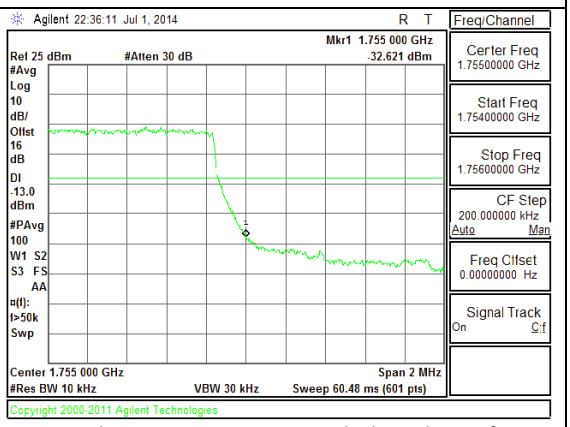
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK High Channel FRB.gif

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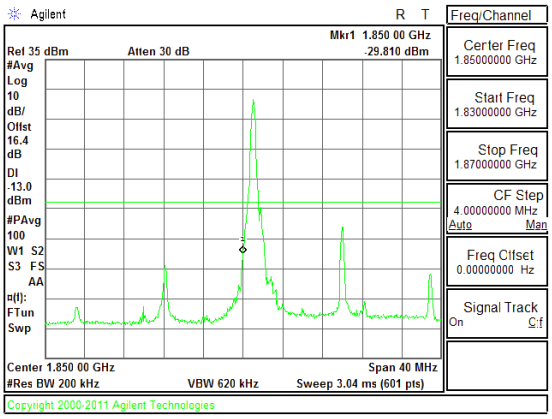
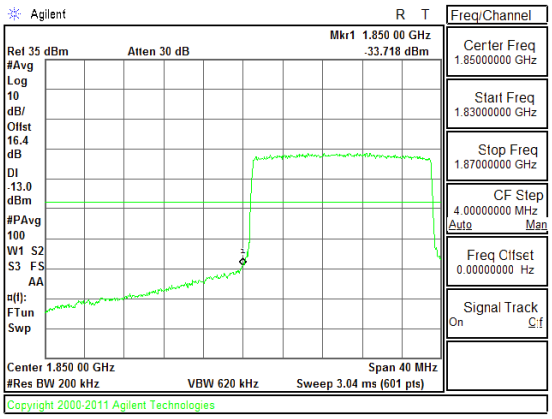
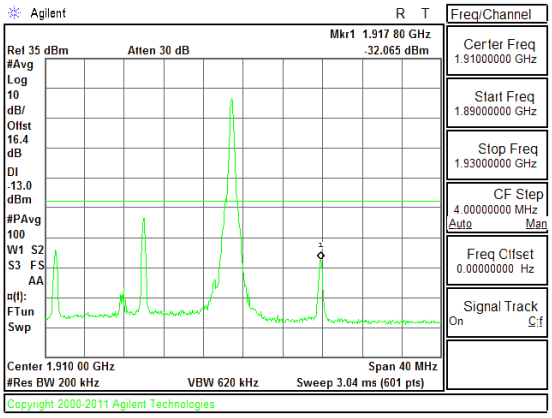
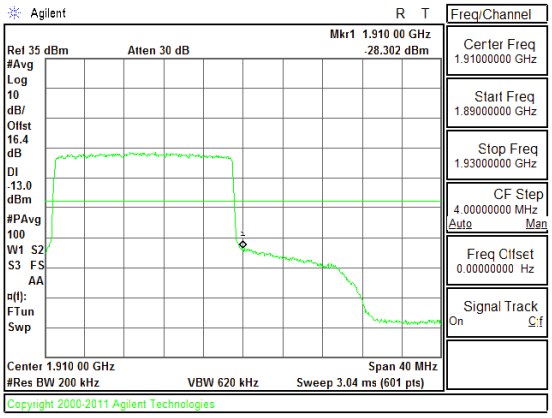
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM High Channel FRB.gif

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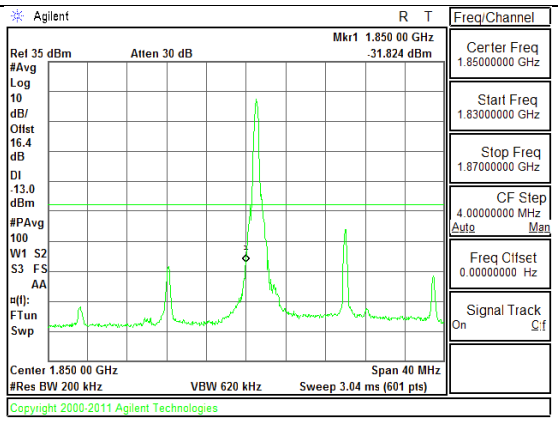
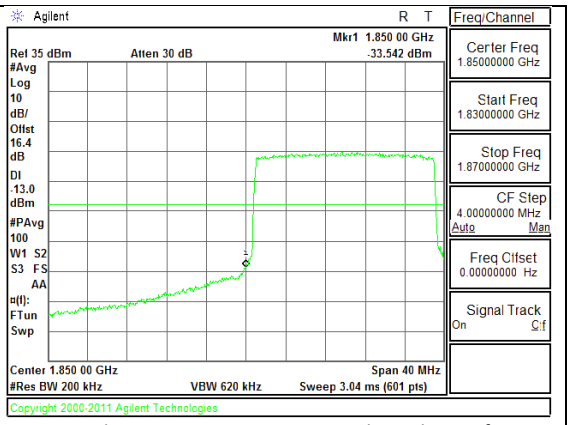
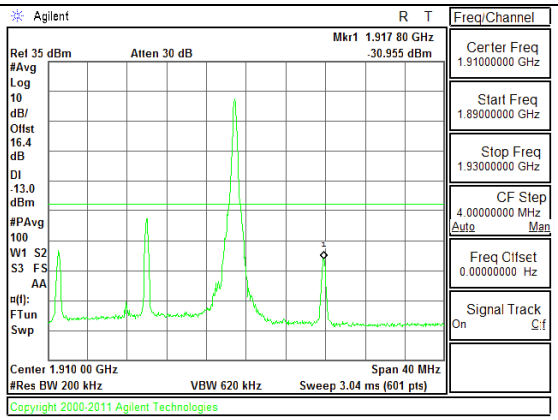
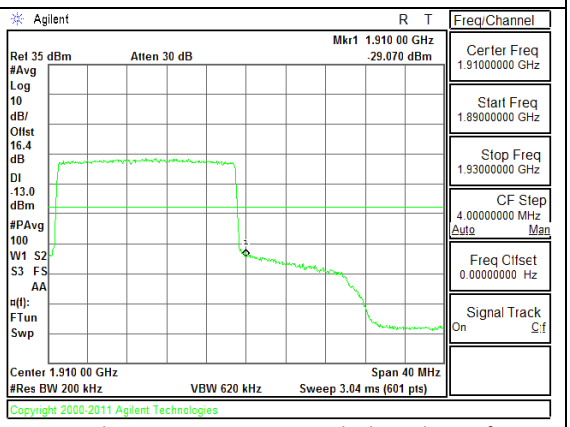
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK Low Channel FRB.gif
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK High Channel FRB.gif

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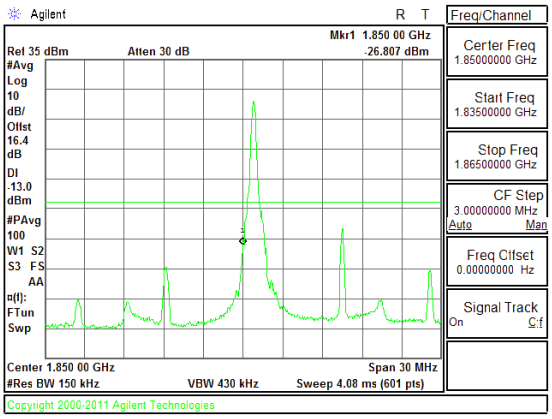
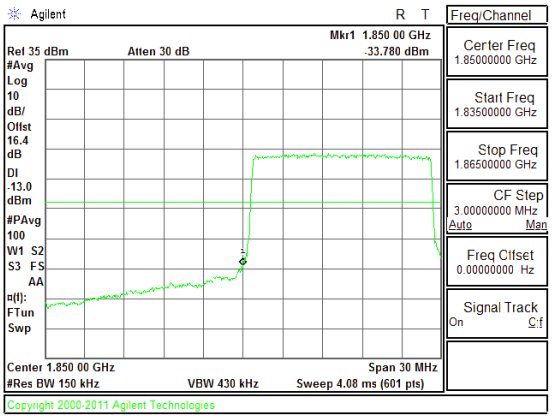
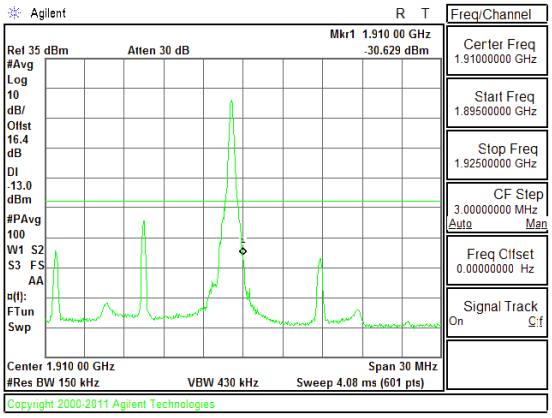
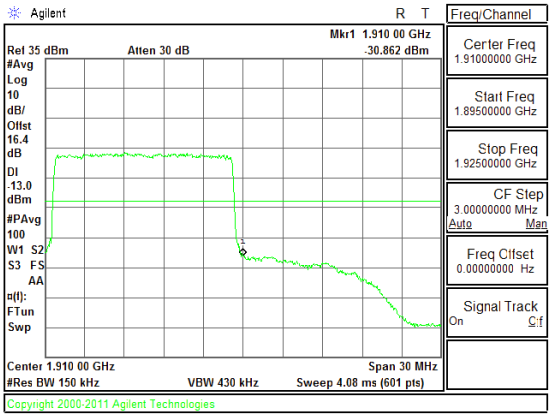
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM High Channel FRB.gif

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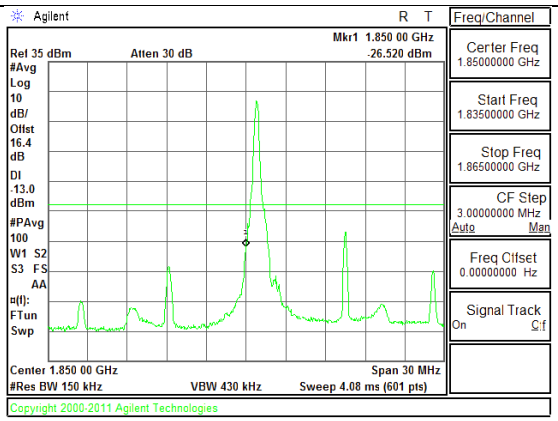
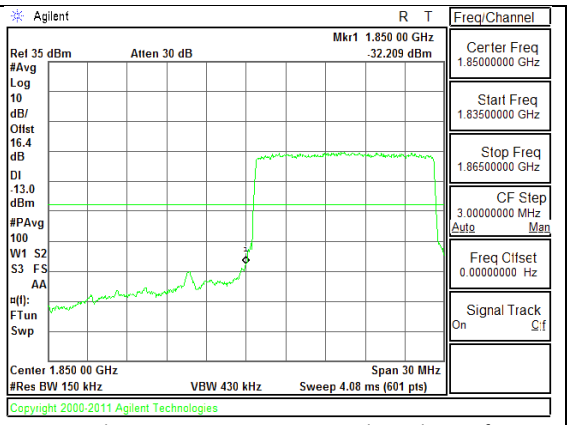
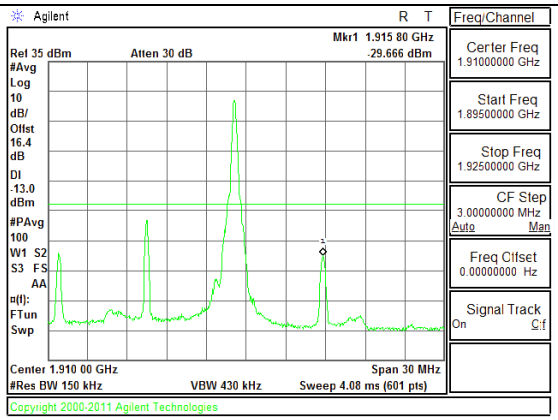
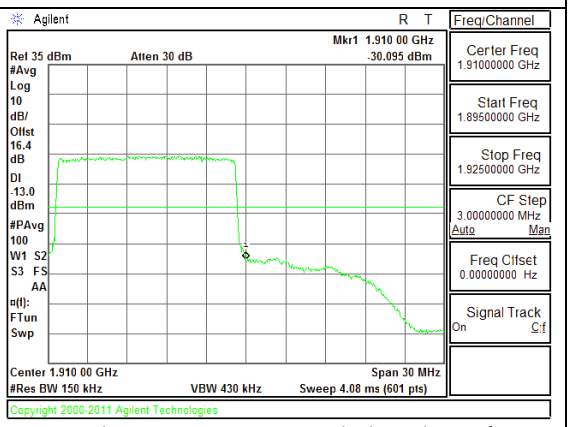
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK Low Channel FRB.gif
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK High Channel FRB.gif

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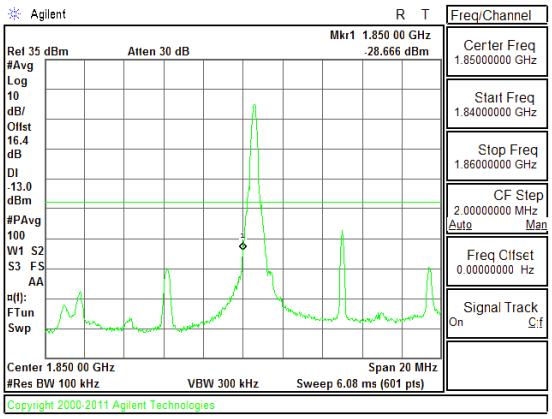
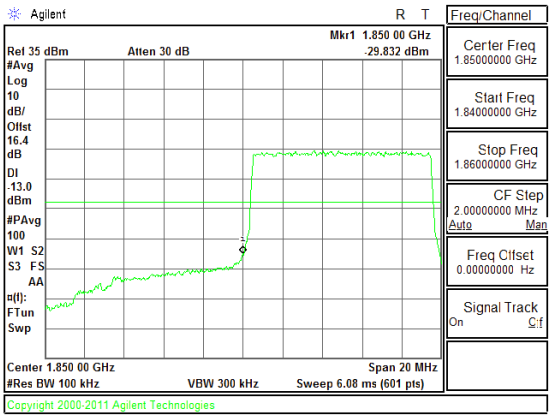
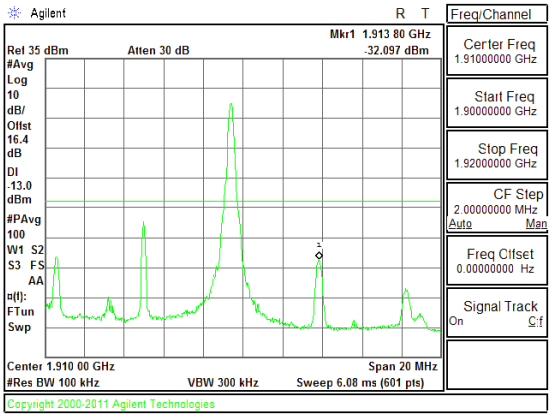
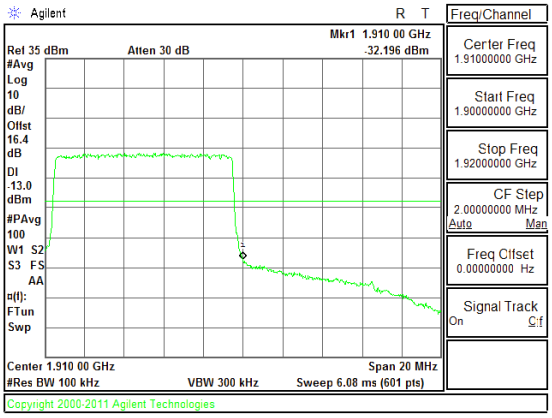
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

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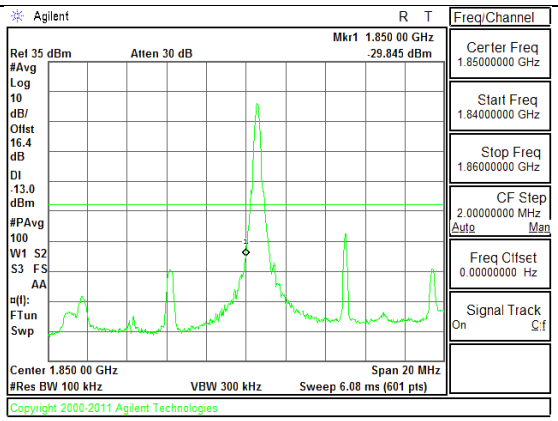
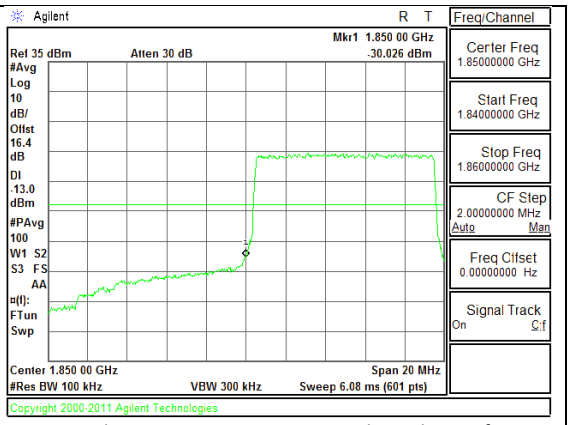
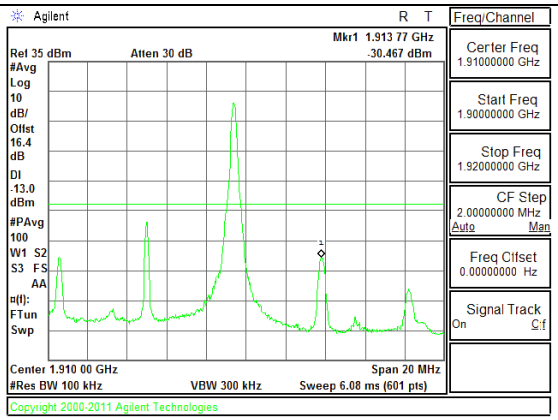
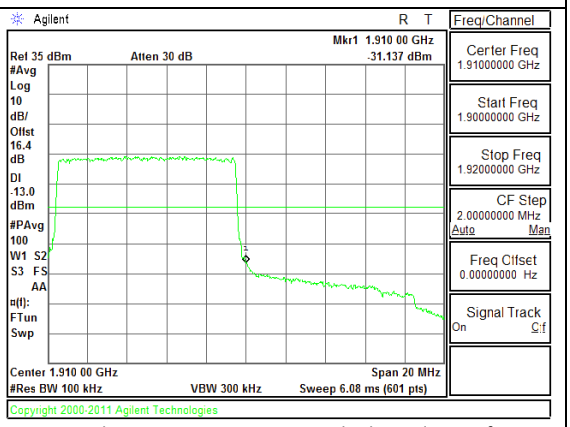
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK Low Channel FRB.gif
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK High Channel FRB.gif

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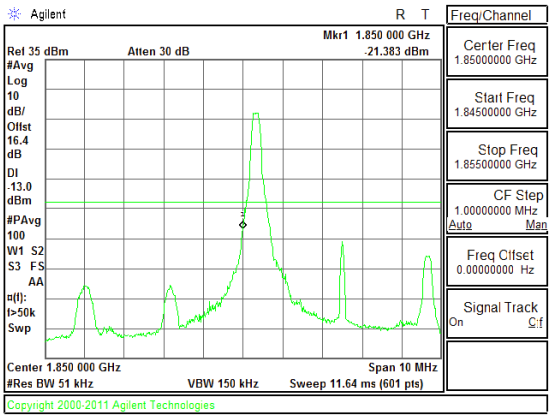
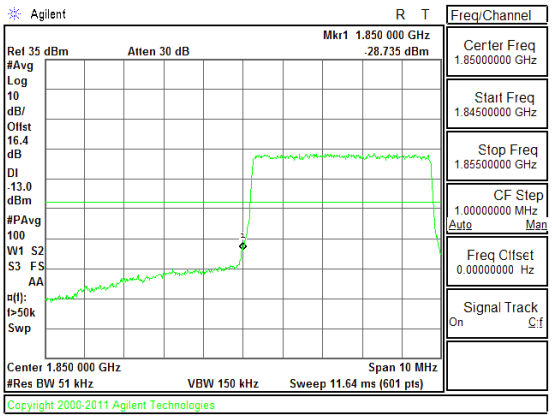
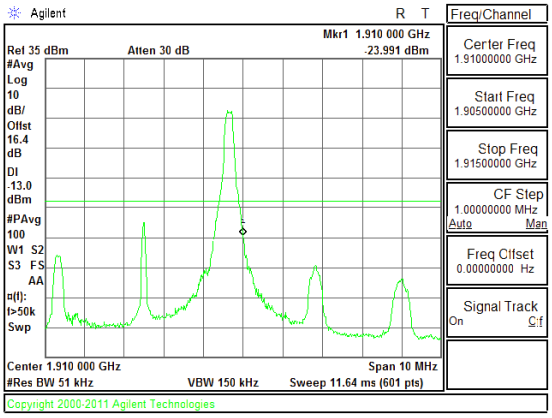
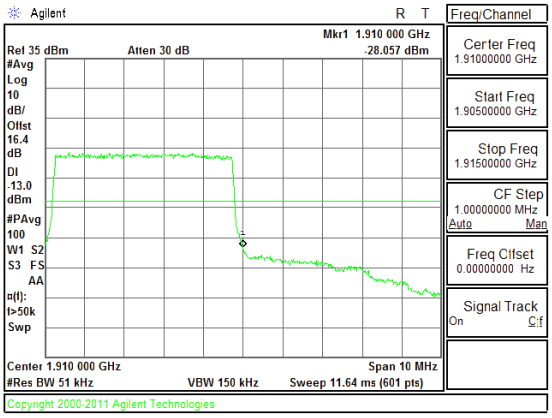
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM High Channel FRB.gif

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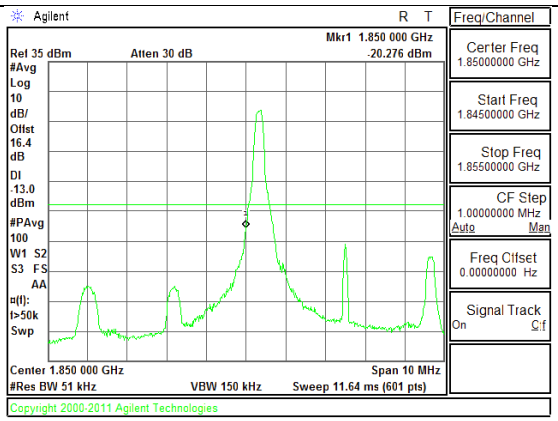
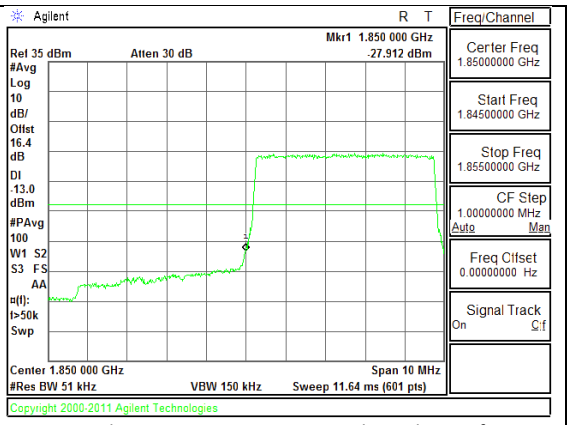
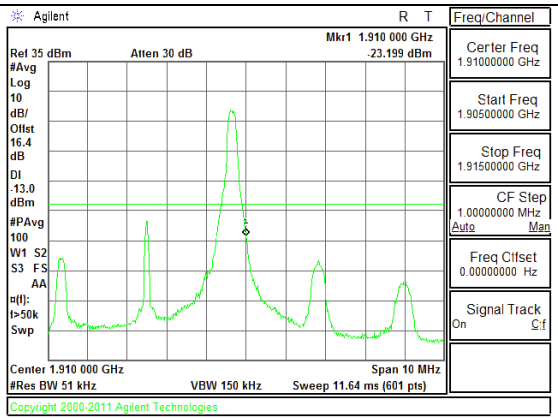
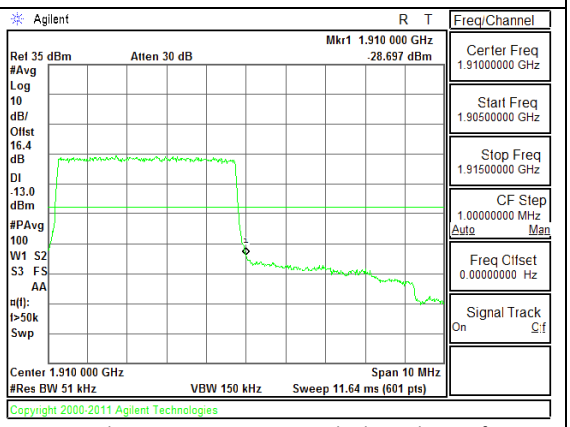
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK Low Channel FRB.gif
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK High Channel FRB.gif

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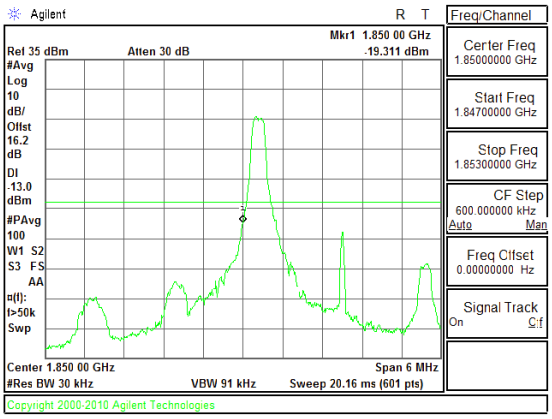
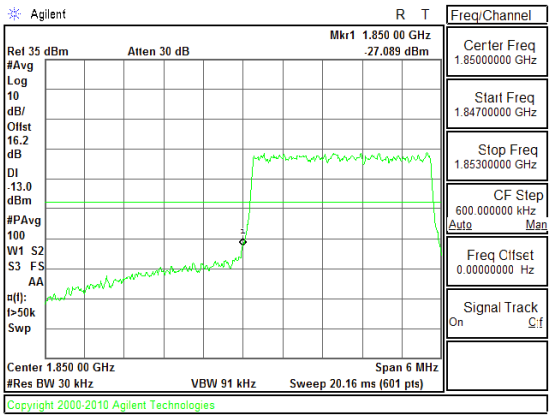
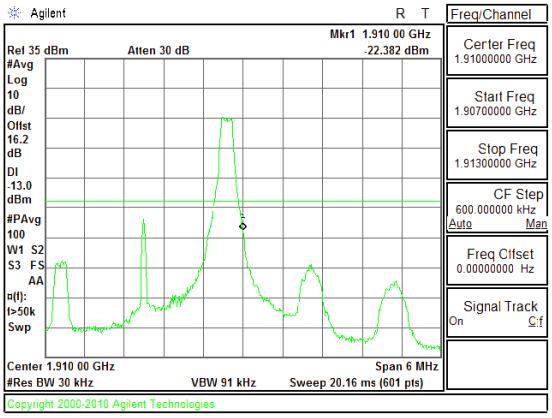
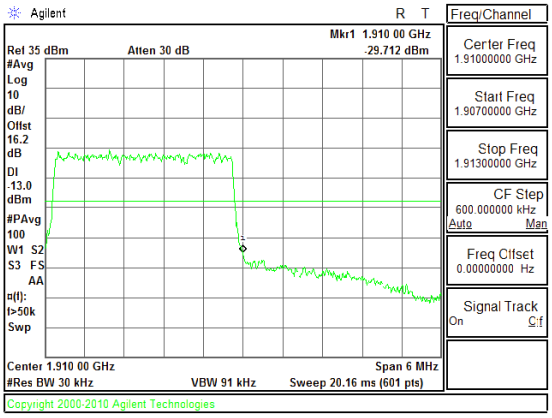
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM High Channel FRB.gif

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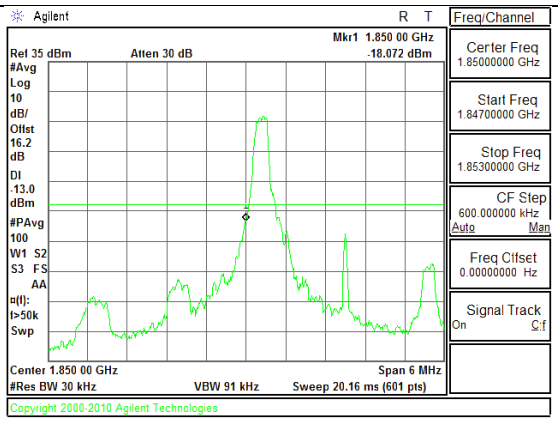
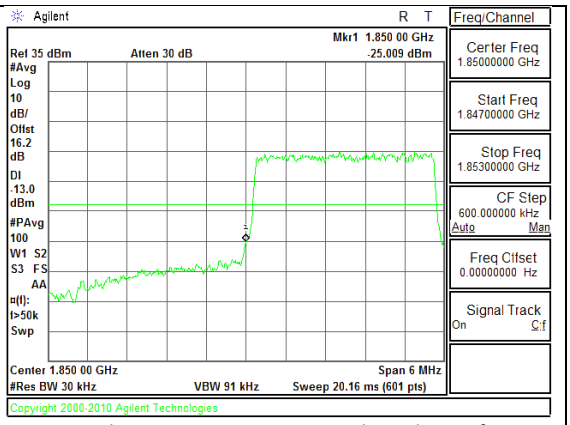
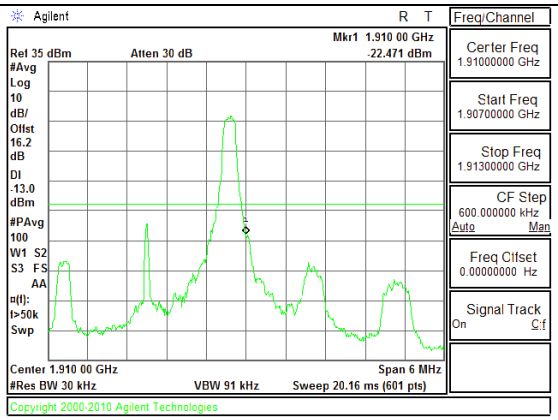
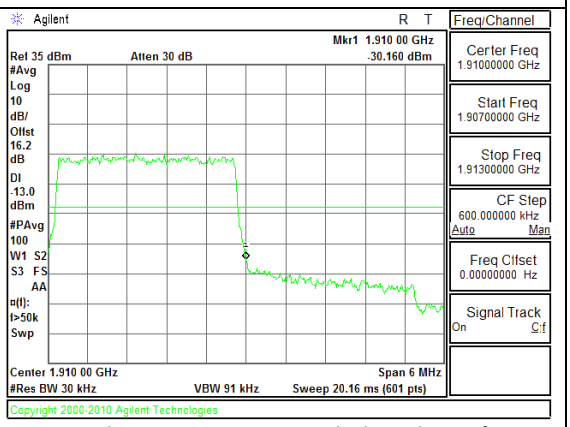
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK Low Channel FRB.gif
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK High Channel FRB.gif

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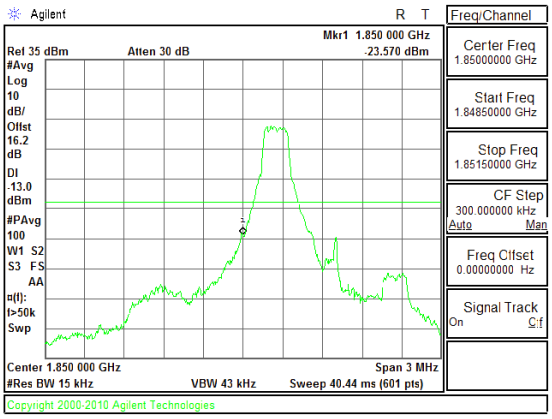
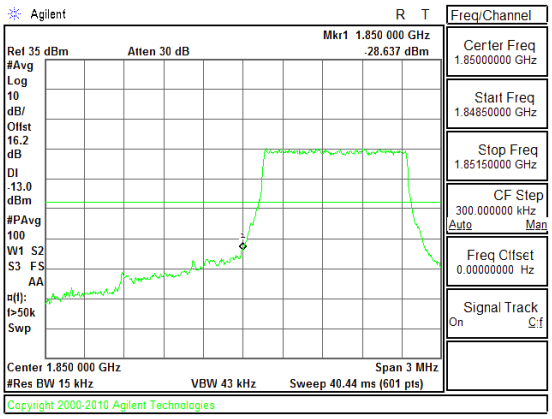
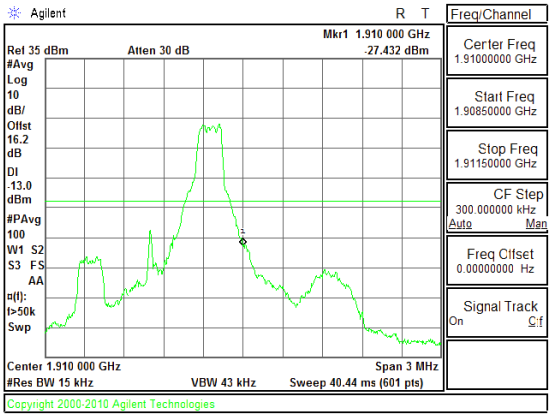
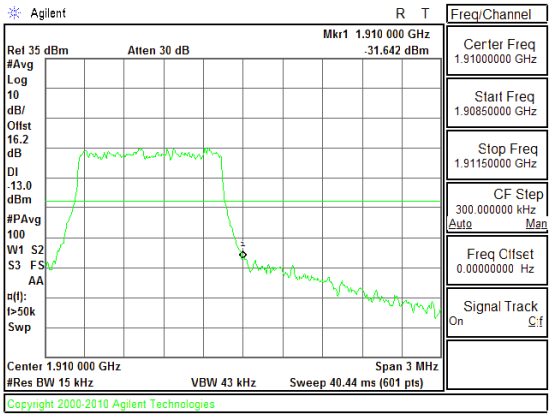
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM High Channel FRB.gif

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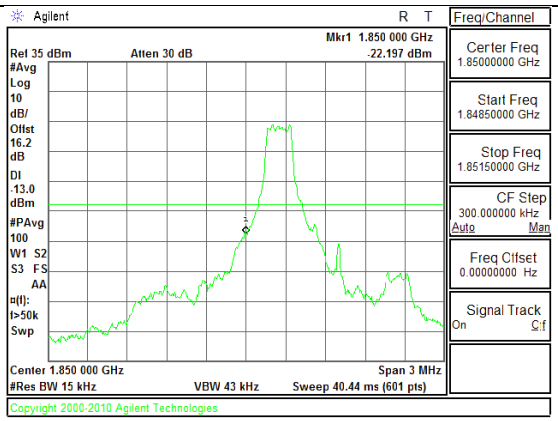
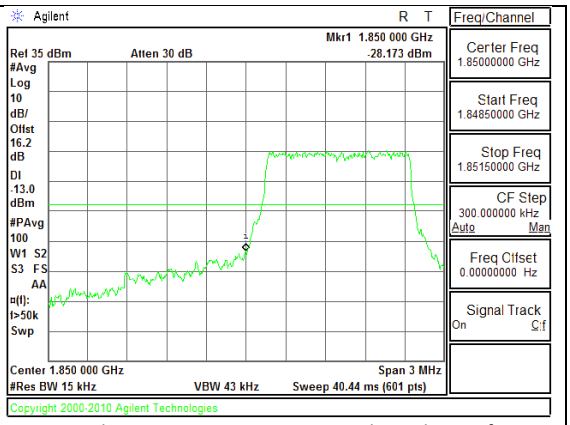
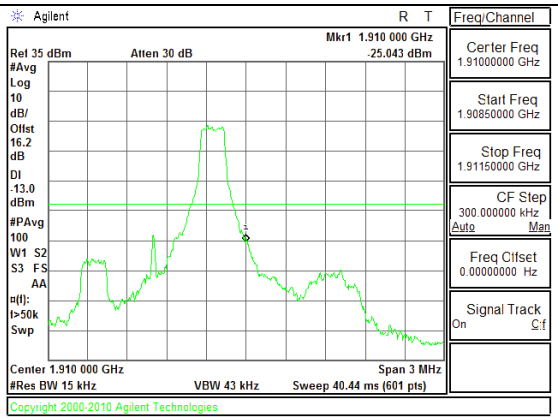
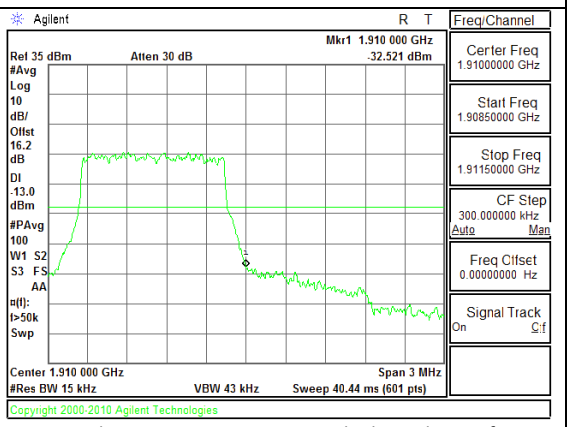
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK High Channel FRB.gif

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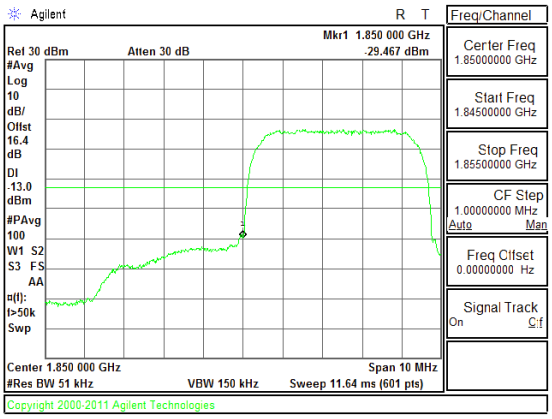
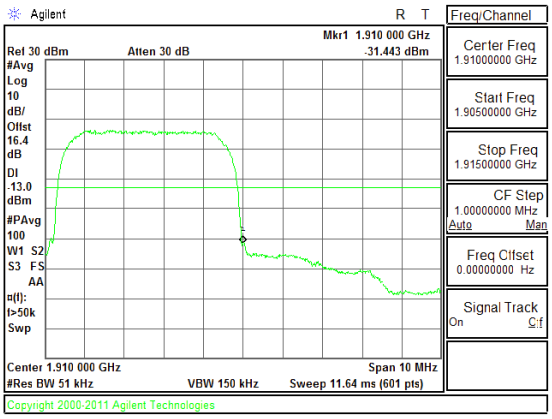
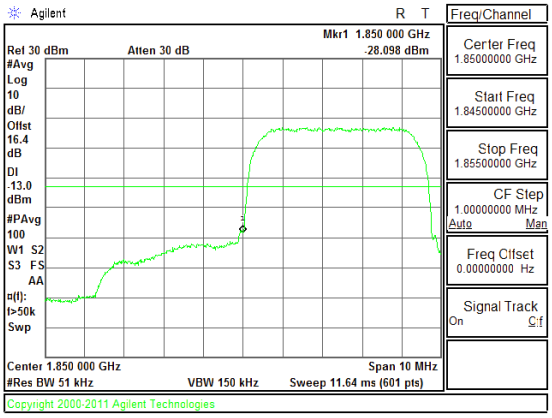
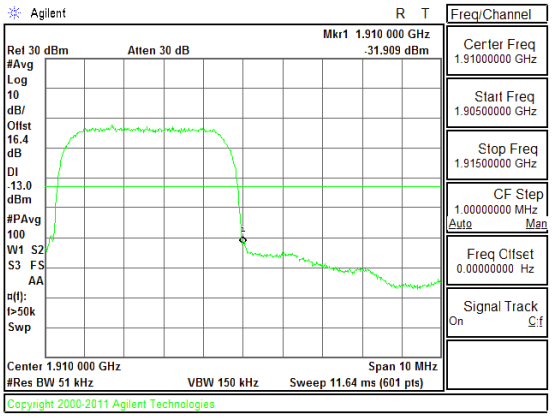
Band Band 2 HSDPA	 Band WCDMA B2 HSDPA CBE	 Band WCDMA B2 HSDPA CBE
Band Band 2 REL99	 Band WCDMA B2 REL99 CBE	 Band WCDMA B2 REL99 CBE

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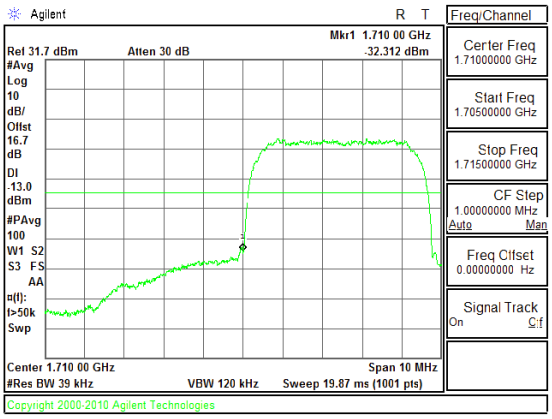
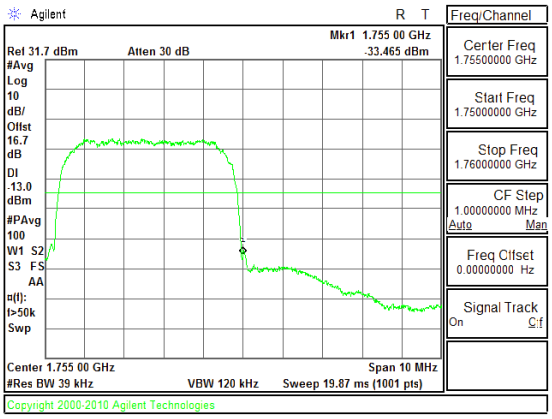
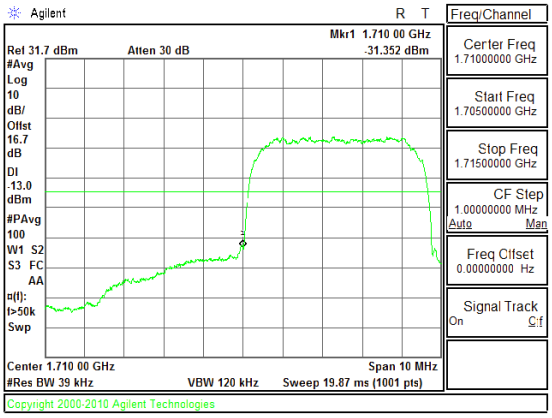
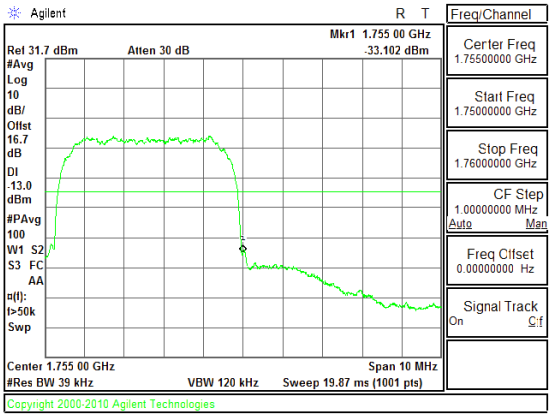
Band Band 4 HSDPA	 Band WCDMA B4 HSDPA CBE	 Band WCDMA B4 HSDPA CBE
Band Band 4 REL99	 Band WCDMA B4 REL99 CBE	 Band WCDMA B4 REL99 CBE

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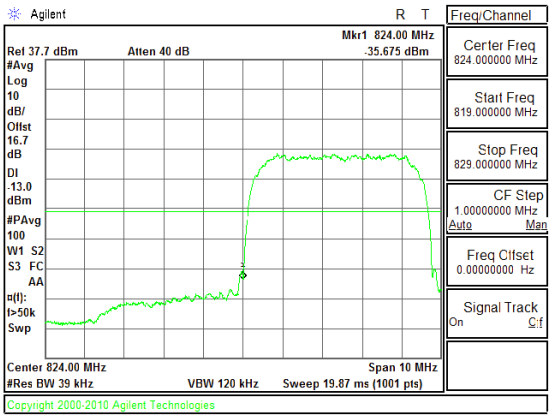
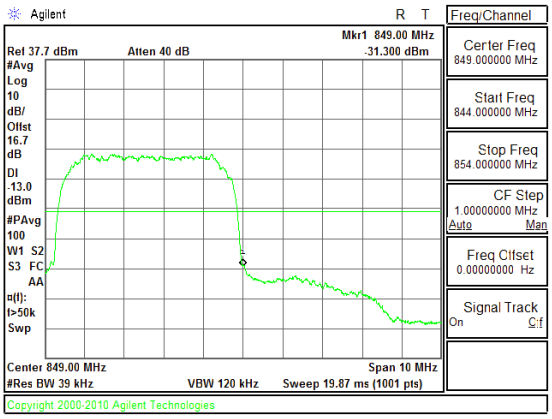
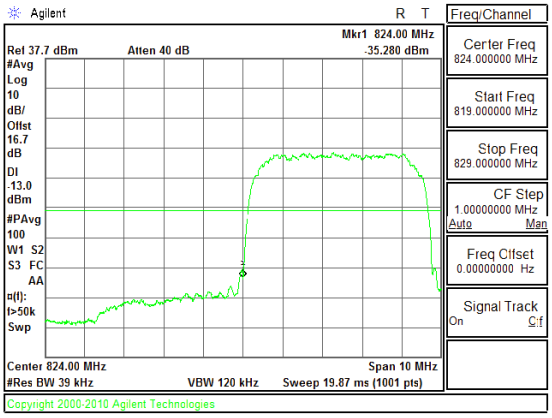
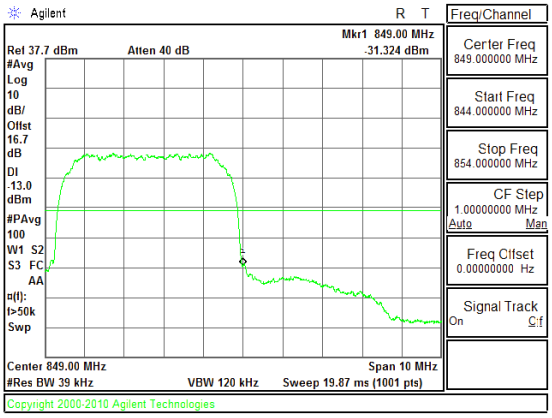
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CBE	 Band WCDMA B5 HSDPA CBE
Band Band 5 REL99	 Band WCDMA B5 REL99 CBE	 Band WCDMA B5 REL99 CBE

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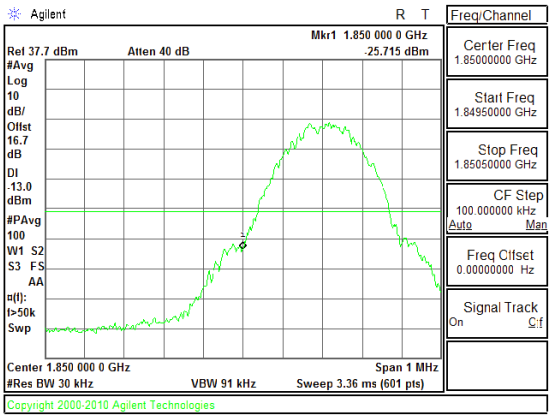
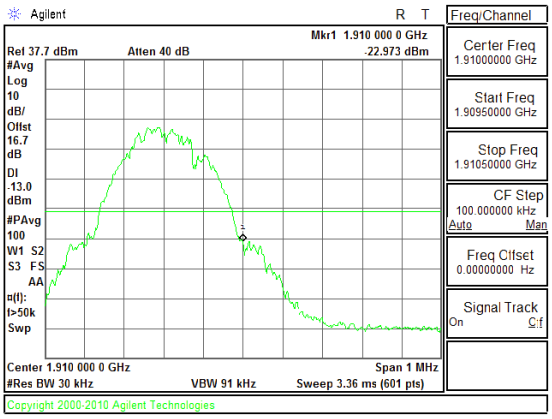
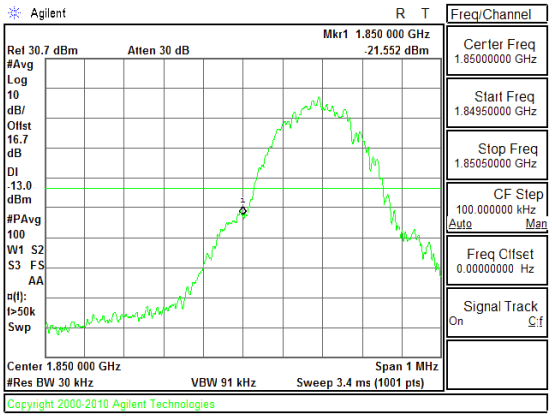
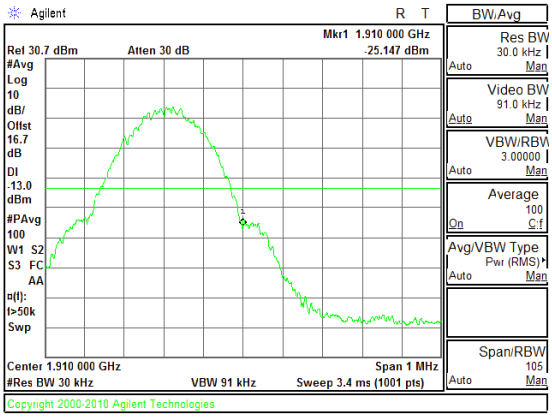
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CBE Low channel	 Band GSM1900 EGPRS CBE High channel
Band GSM1900 GPRS	 Band GSM1900 GPRS CBE Low channel	 Band GSM1900 GPRS CBE High channel

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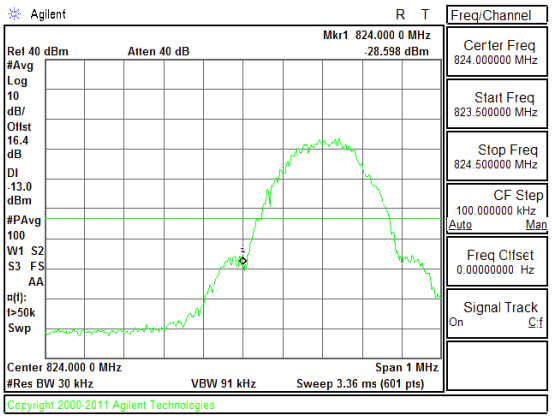
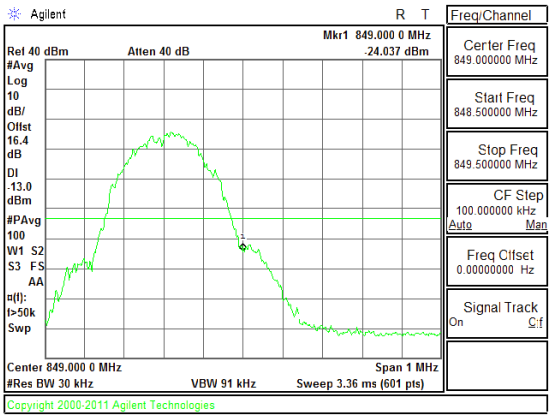
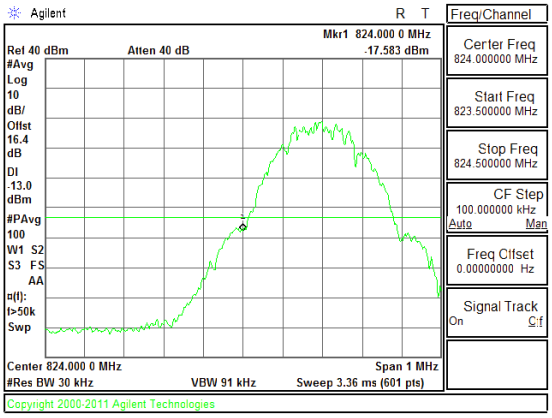
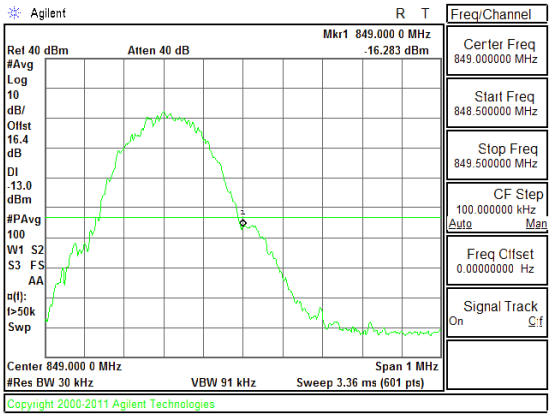
Band GSM850 EGPRS	 Band GSM850 EGPRS CBE Low channel	 Band GSM850 EGPRS CBE High channel
Band GSM850 GPRS	 Band GSM850 GPRS CBE Low channel	 Band GSM850 GPRS CBE High channel

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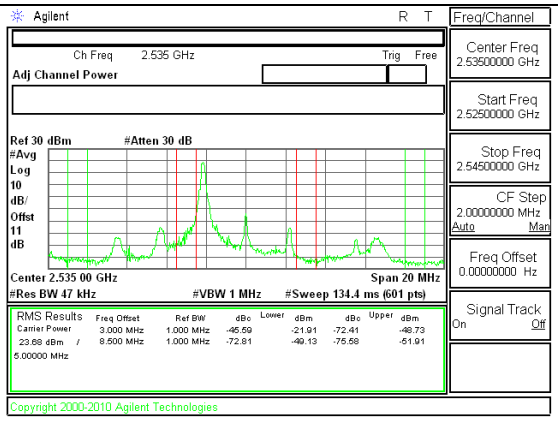
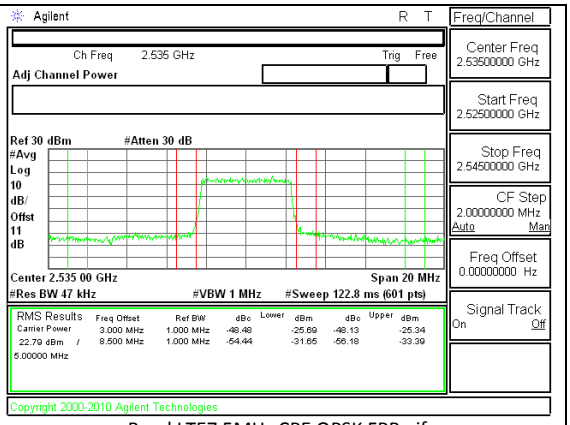
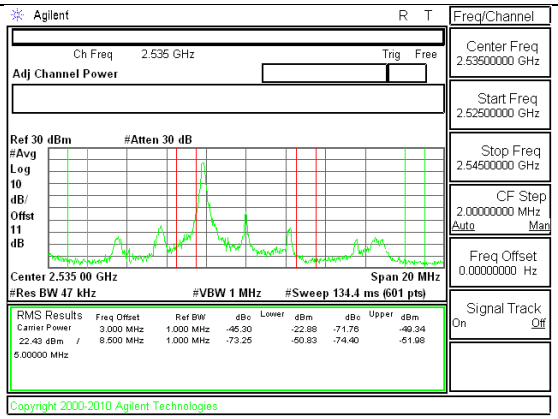
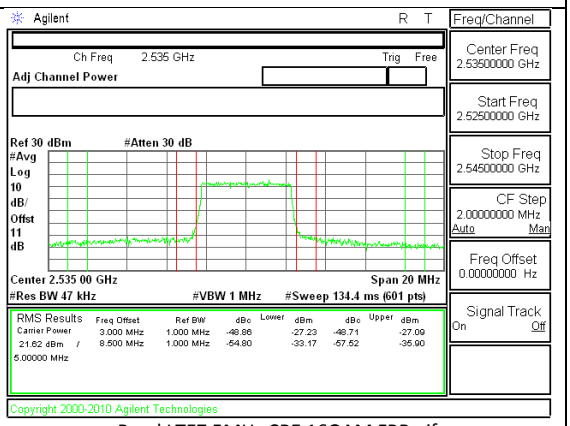
10.2.2. EMISSION MASK PLOTS

Band LTE7 5MHz QPSK	 Band LTE7 5MHz CBE QPSK 1RB.gif	 Band LTE7 5MHz CBE QPSK FRB.gif
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CBE 16QAM 1RB.gif	 Band LTE7 5MHz CBE 16QAM FRB.gif

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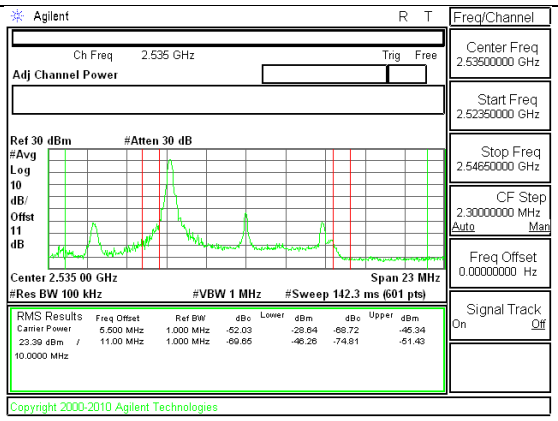
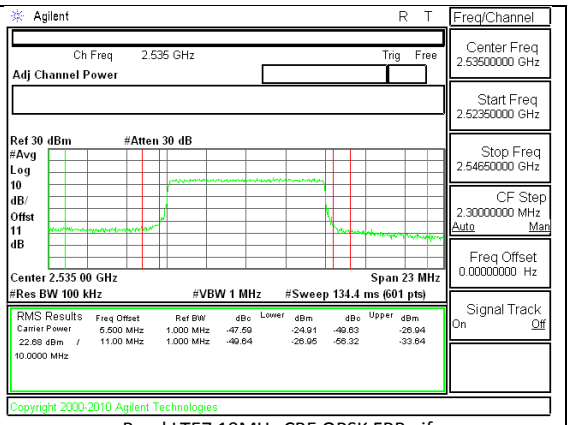
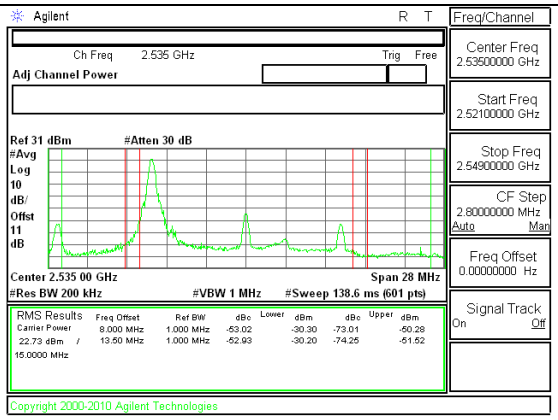
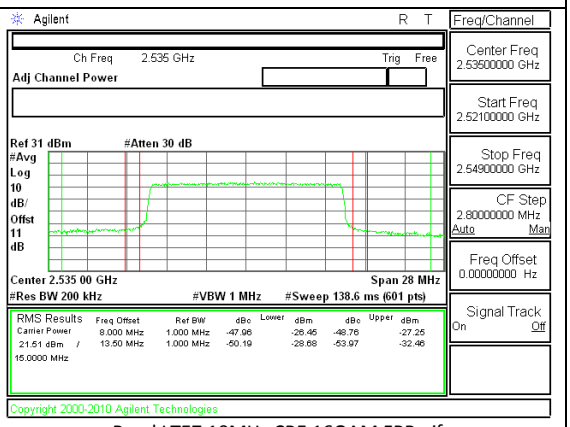
Band LTE7 10MHz QPSK	 Band LTE7 10MHz CBE QPSK 1RB.gif	 Band LTE7 10MHz CBE QPSK FRB.gif
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CBE 16QAM 1RB.gif	 Band LTE7 10MHz CBE 16QAM FRB.gif

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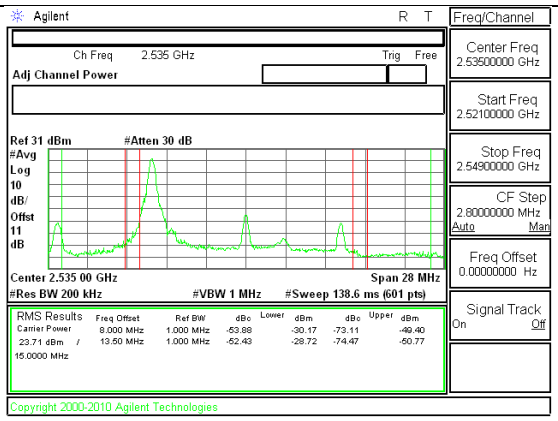
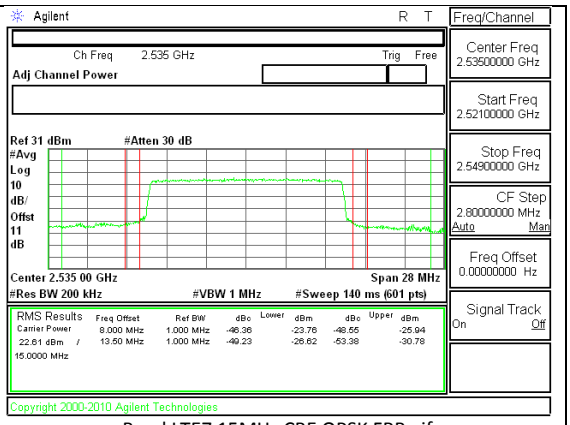
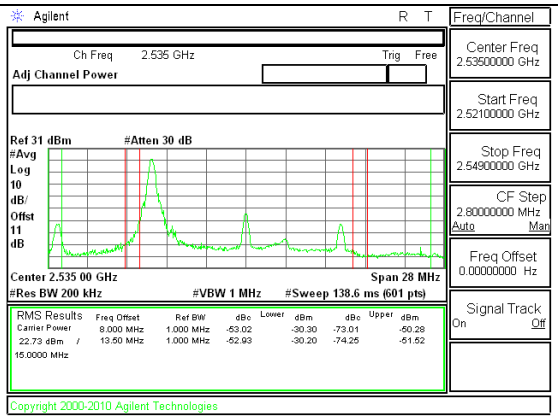
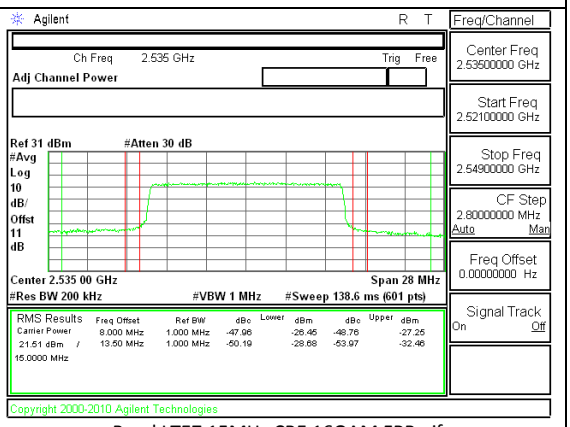
Band LTE7 15MHz QPSK	 Band LTE7 15MHz CBE QPSK 1RB.gif	 Band LTE7 15MHz CBE QPSK FRB.gif
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CBE 16QAM 1RB.gif	 Band LTE7 15MHz CBE 16QAM FRB.gif

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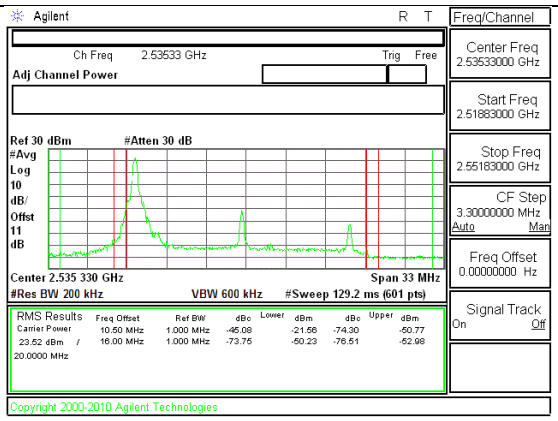
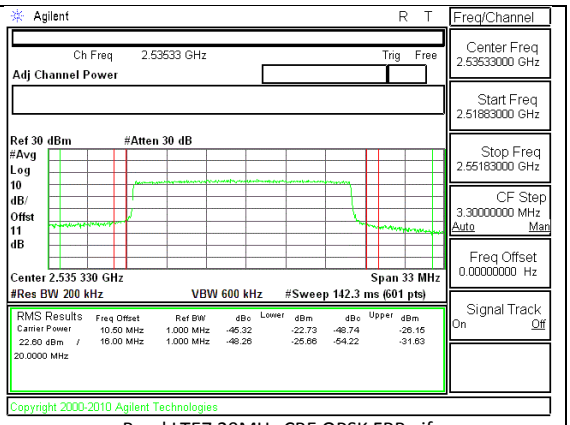
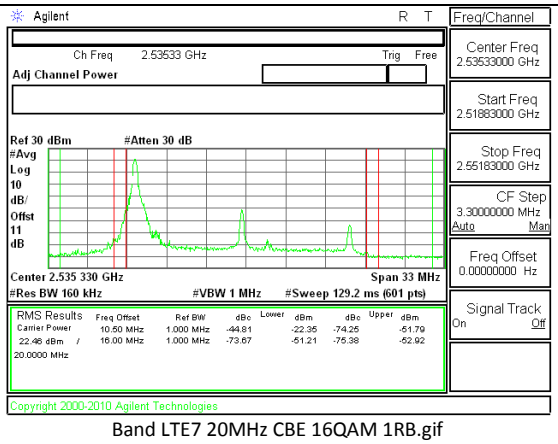
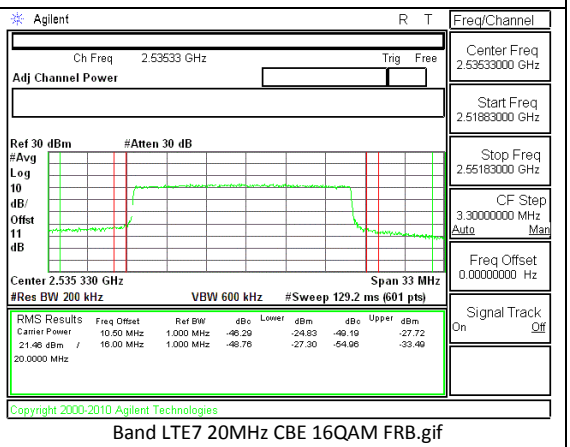
Band LTE7 20MHz QPSK	 Band LTE7 20MHz CBE QPSK 1RB.gif	 Band LTE7 20MHz CBE QPSK FRB.gif
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CBE 16QAM 1RB.gif	 Band LTE7 20MHz CBE 16QAM FRB.gif

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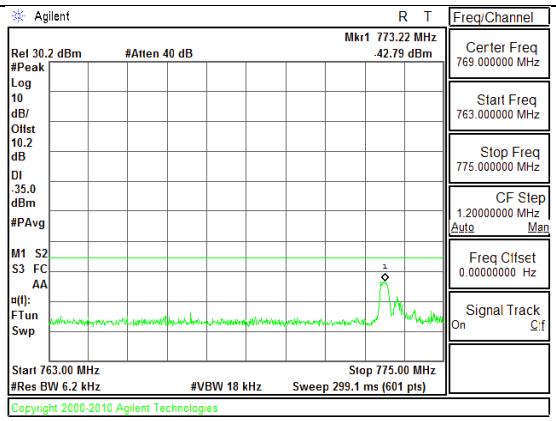
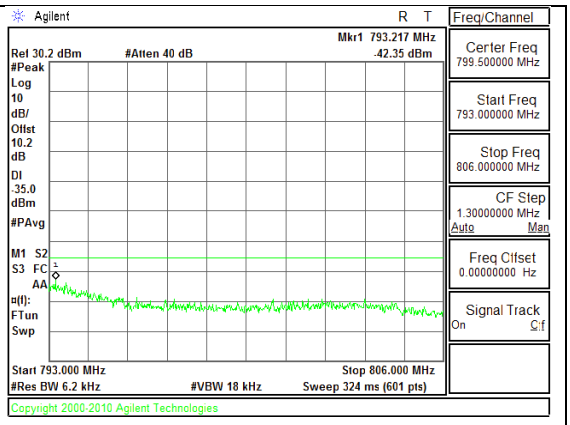
Band LTE13 10MHz QPSK

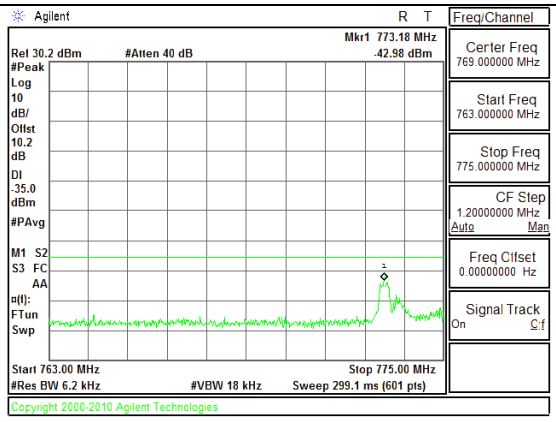


QPSK low band edge.gif

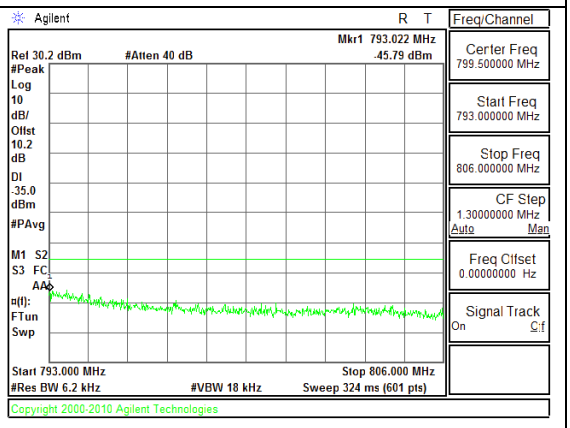


QPSK high band edge.gif

Band LTE13 10MHz 16QAM

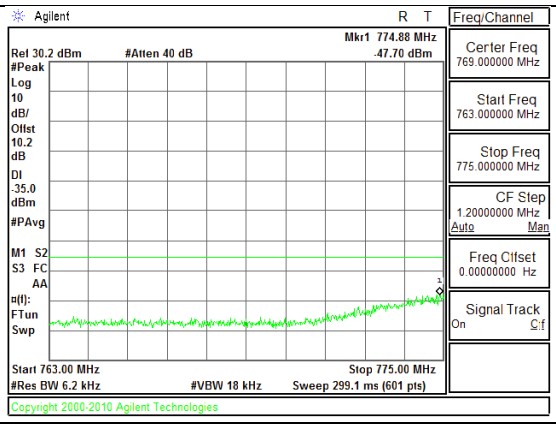


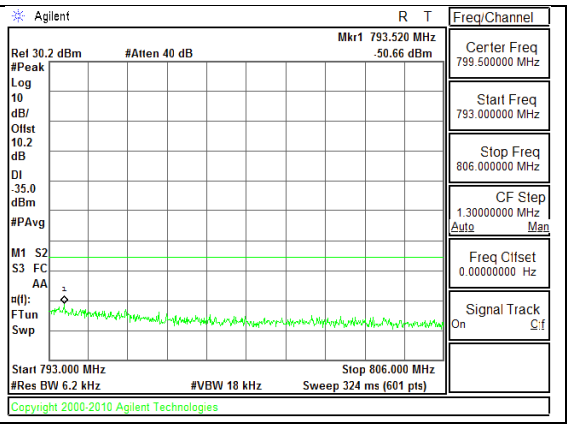
16QAM low band edge.gif



16QAM high band edge.gif

Band LTE13 5MHz QPSK





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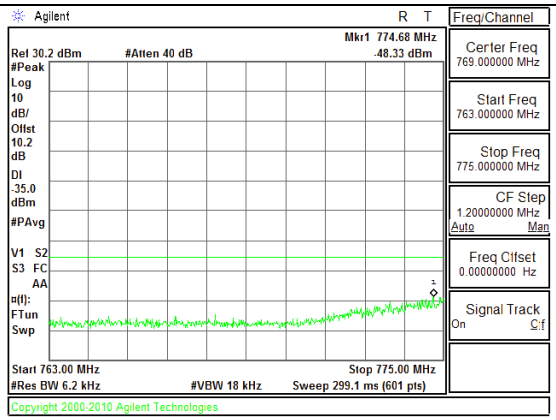
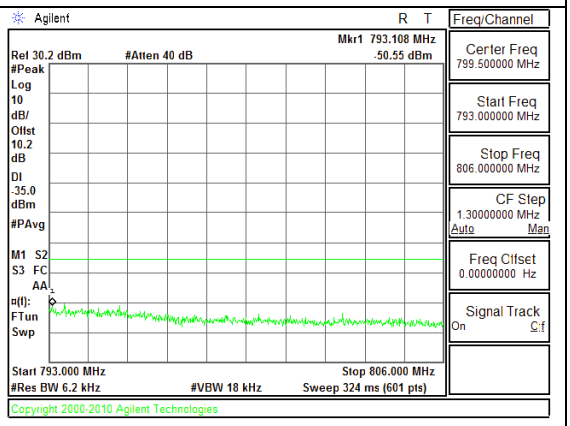
	QPSK low band edge.gif	QPSK high band edge.gif
Band LTE13 5MHz 16QAM	 16QAM low band edge.gif	 16QAM high band edge.gif

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10.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

RESULTS

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10.3.1. OUT OF BAND EMISSIONS RESULT

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-16.76	-13	-3.76
		836.6	-16.54	-13	-3.54
		848.8	-20.56	-13	-7.56
	EGPRS	824.2	-17.9	-13	-4.9
		836.6	-16.82	-13	-3.82
		848.8	-16.23	-13	-3.23
GSM1900	GPRS	1850.2	-20.05	-13	-7.05
		1880	-18.93	-13	-5.93
		1909.8	-20.88	-13	-7.88
	EGPRS	1850.2	-19.17	-13	-6.17
		1880	-20.4	-13	-7.4
		1909.8	-19.5	-13	-6.5
Band 5	REL99	826.4	-19	-13	-6
		836.6	-20.34	-13	-7.34
		846.6	-20.44	-13	-7.44
	HSDPA	826.4	-19.04	-13	-6.04
		836.6	-20.01	-13	-7.01
		846.6	-18.75	-13	-5.75
Band 2	REL99	1852.4	-26.21	-13	-13.21
		1880	-26.94	-13	-13.94
		1907.6	-27.13	-13	-14.13
	HSDPA	1852.4	-27.32	-13	-14.32
		1880	-26.77	-13	-13.77
		1907.6	-25.44	-13	-12.44
Band 4	REL99	1712.4	-29.38	-13	-16.38
		1732.6	-29.74	-13	-16.74
		1752.6	-29.92	-13	-16.92
	HSDPA	1712.4	-19.53	-13	-6.53
		1732.6	-19.29	-13	-6.29
		1752.6	-18.77	-13	-5.77

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	10	QPSK	709	-23.01	-13	-10.01
			710	-23.43	-13	-10.43
			711	-22.66	-13	-9.66
		16QAM	709	-22.69	-13	-9.69
			710	-22.88	-13	-9.88
			711	-22.33	-13	-9.33

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	5	QPSK	706.5	-22.25	-13	-9.25
			710	-22.92	-13	-9.92
			713.5	-21.76	-13	-8.76
		16QAM	706.5	-23.07	-13	-10.07
			710	-22.75	-13	-9.75
			713.5	-22.55	-13	-9.55

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE13	10	QPSK	782	-22.7	-13	-9.7
		16QAM	782	-22.87	-13	-9.87

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE13	5	QPSK	779.5	-22.76	-13	-9.76
			782	-23.86	-13	-10.86
			784.5	-22.76	-13	-9.76
		16QAM	779.5	-24.96	-13	-11.96
			782	-23.56	-13	-10.56
			784.5	-23.35	-13	-10.35

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	20	QPSK	2510	-29.16	-25	-4.16
			2535	-28.74	-25	-3.74
			2560	-29.02	-25	-4.02
		16QAM	2510	-29	-25	-4
			2535	-29.1	-25	-4.1
			2560	-28.92	-25	-3.92

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	15	QPSK	2507.5	-30.68	-25	-5.68
			2535	-27.58	-25	-2.58
			2562.5	-28.97	-25	-3.97
		16QAM	2507.5	-30.24	-25	-5.24
			2535	-30.99	-25	-5.99
			2562.5	-28.49	-25	-3.49

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	10	QPSK	2505	-28.09	-25	-3.09
			2535	-27.01	-25	-2.01
			2565	-26.98	-25	-1.98
		16QAM	2505	-29.35	-25	-4.35
			2535	-27.06	-25	-2.06
			2565	-27.11	-25	-2.11

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	5	QPSK	2502.5	-36.07	-25	-11.07
			2535	-36.47	-25	-11.47
			2567.5	-36.84	-25	-11.84
		16QAM	2502.5	-35.91	-25	-10.91
			2535	-36.31	-25	-11.31
			2567.5	-34.75	-25	-9.75

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-30.05	-13	-17.05
			836.5	-28.92	-13	-15.92
			844	-30.06	-13	-17.06
		16QAM	829	-29.02	-13	-16.02
			836.5	-29.35	-13	-16.35
			844	-29.67	-13	-16.67

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-28.25	-13	-15.25
			836.5	-30.37	-13	-17.37
			846.5	-30.59	-13	-17.59
		16QAM	826.5	-29.75	-13	-16.75
			836.5	-29.28	-13	-16.28
			846.5	-29.05	-13	-16.05

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	3	QPSK	825.5	-28.42	-13	-15.42
			836.5	-28.78	-13	-15.78
			847.5	-31.6	-13	-18.6
		16QAM	825.5	-29.96	-13	-16.96
			836.5	-30.99	-13	-17.99
			847.5	-30.13	-13	-17.13

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	1.4	QPSK	824.7	-30.93	-13	-17.93
			836.5	-31.15	-13	-18.15
			848.3	-30.48	-13	-17.48
		16QAM	824.7	-29.87	-13	-16.87
			836.5	-30.27	-13	-17.27
			848.3	-30.07	-13	-17.07

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	QPSK	1720	-17.62	-13	-4.62
			1732.5	-17.45	-13	-4.45
			1745	-17.17	-13	-4.17
		16QAM	1720	-16.94	-13	-3.94
			1732.5	-18.12	-13	-5.12
			1745	-16.83	-13	-3.83

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	15	QPSK	1717.5	-17.47	-13	-4.47
			1732.5	-17.37	-13	-4.37
			1747.5	-17.94	-13	-4.94
		16QAM	1717.5	-18.09	-13	-5.09
			1732.5	-17.02	-13	-4.02
			1747.5	-17.66	-13	-4.66

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	10	QPSK	1715	-27.66	-13	-14.66
			1732.5	-29.13	-13	-16.13
			1750	-28.91	-13	-15.91
		16QAM	1715	-28.5	-13	-15.5
			1732.5	-28.02	-13	-15.02
			1750	-28.11	-13	-15.11

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	5	QPSK	1712.5	-27.82	-13	-14.82
			1732.5	-28.5	-13	-15.5
			1752.5	-27.16	-13	-14.16
		16QAM	1712.5	-27.83	-13	-14.83
			1732.5	-28.6	-13	-15.6
			1752.5	-28.08	-13	-15.08

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	3	QPSK	1711.5	-26.67	-13	-13.67
			1732.5	-28.44	-13	-15.44
			1753.5	-28.18	-13	-15.18
		16QAM	1711.5	-26.97	-13	-13.97
			1732.5	-27.08	-13	-14.08
			1753.5	-28.2	-13	-15.2

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	1.4	QPSK	1710.7	-28.78	-13	-15.78
			1732.5	-26.83	-13	-13.83
			1754.3	-28.2	-13	-15.2
		16QAM	1710.7	-27.95	-13	-14.95
			1732.5	-28.05	-13	-15.05
			1754.3	-27.11	-13	-14.11

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	20	QPSK	1860	-26.91	-13	-13.91
			1880	-27.21	-13	-14.21
			1900	-26.78	-13	-13.78
		16QAM	1860	-27.69	-13	-14.69
			1880	-26.43	-13	-13.43
			1900	-27.74	-13	-14.74

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	15	QPSK	1857.5	-27.61	-13	-14.61
			1880	-27.38	-13	-14.38
			1902.5	-27.14	-13	-14.14
		16QAM	1857.5	-27.32	-13	-14.32
			1880	-27.16	-13	-14.16
			1902.5	-30.1	-13	-17.1

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	10	QPSK	1855	-26.87	-13	-13.87
			1880	-27.23	-13	-14.23
			1905	-25.04	-13	-12.04
		16QAM	1855	-26.62	-13	-13.62
			1880	-26.89	-13	-13.89
			1905	-27.25	-13	-14.25

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	5	QPSK	1852.5	-26.39	-13	-13.39
			1880	-27.75	-13	-14.75
			1907.5	-29.6	-13	-16.6
		16QAM	1852.5	-27.12	-13	-14.12
			1880	-26.62	-13	-13.62
			1907.5	-26.39	-13	-13.39

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	3	QPSK	1851.5	-30.54	-13	-17.54
			1880	-30.61	-13	-17.61
			1908.5	-30.16	-13	-17.16
		16QAM	1851.5	-30.97	-13	-17.97
			1880	-29.44	-13	-16.44
			1908.5	-30.41	-13	-17.41

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	1.4	QPSK	1850.7	-31.96	-13	-18.96
			1880	-30.11	-13	-17.11
			1909.3	-29.94	-13	-16.94
		16QAM	1850.7	-28.47	-13	-15.47
			1880	-29.47	-13	-16.47
			1909.3	-29.36	-13	-16.36

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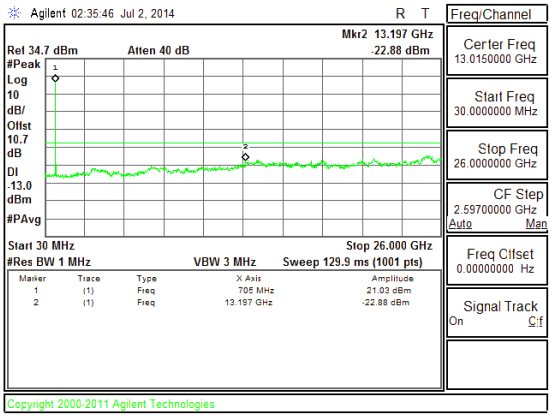
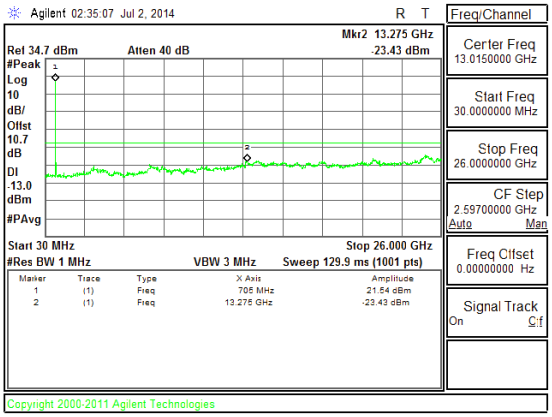
10.3.2. OUT OF BAND EMISSIONS PLOTS

Band LTE17 10MHz 16QAM

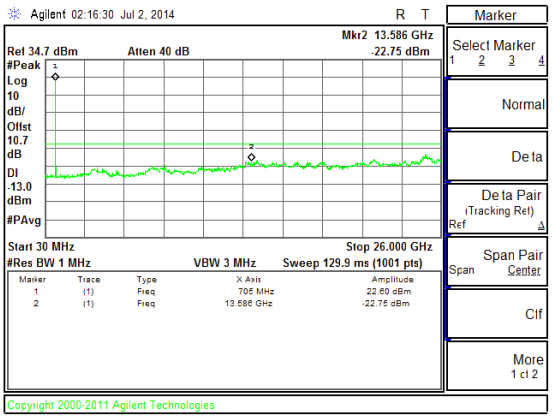


Band LTE17 10MHz CSE 16QAM Mid channel

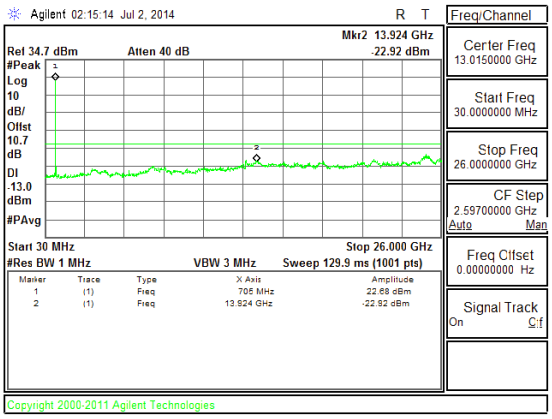


Band LTE17 10MHz CSE QPSK Mid channel

Band LTE17 5MHz 16QAM



Band LTE17 5MHz CSE 16QAM Mid channel



Band LTE17 5MHz CSE QPSK Mid channel

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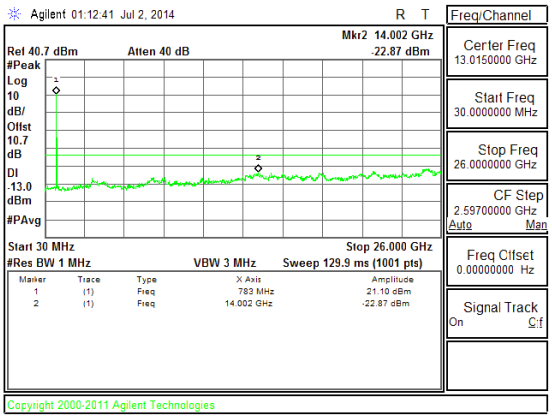
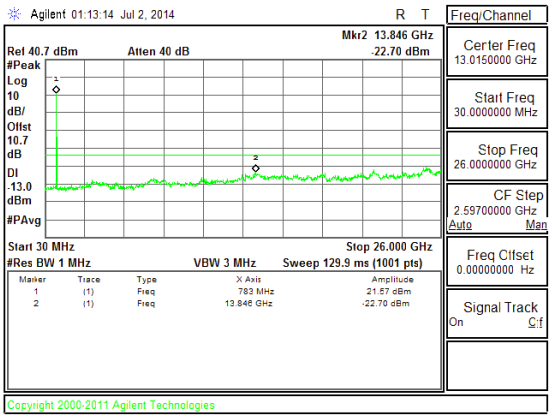
Band LTE13 10MHz 16QAM

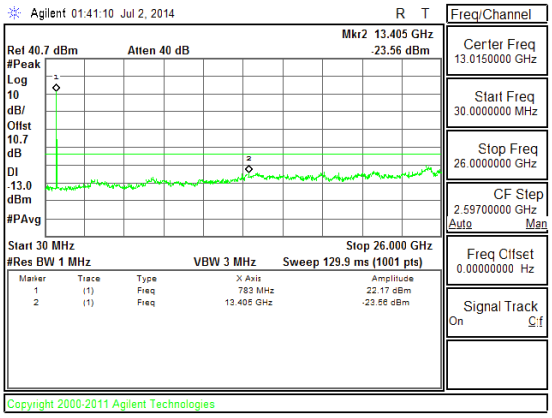


Band LTE13 10MHz CSE 16QAM High channel

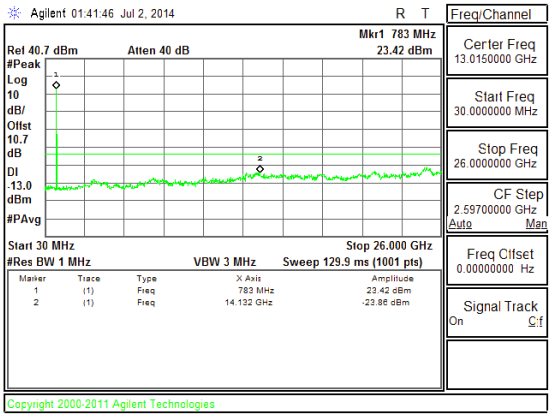


Band LTE13 10MHz CSE QPSK High channel

Band LTE13 5MHz 16QAM



Band LTE13 5MHz CSE 16QAM Mid channel



Band LTE13 5MHz CSE QPSK Mid channel

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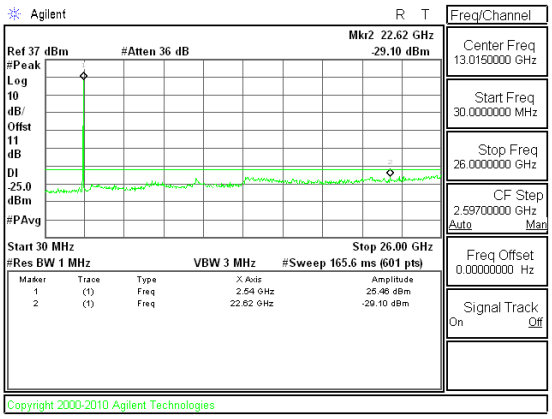
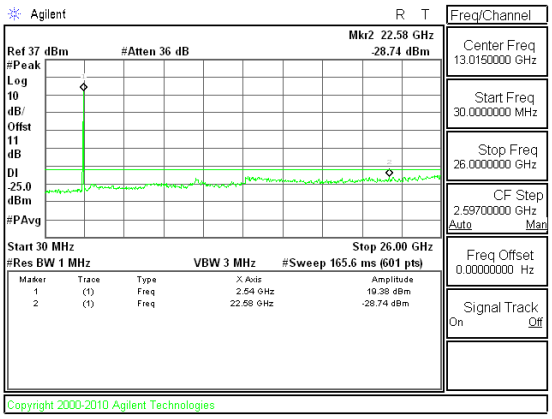
Band LTE7 20MHz 16QAM

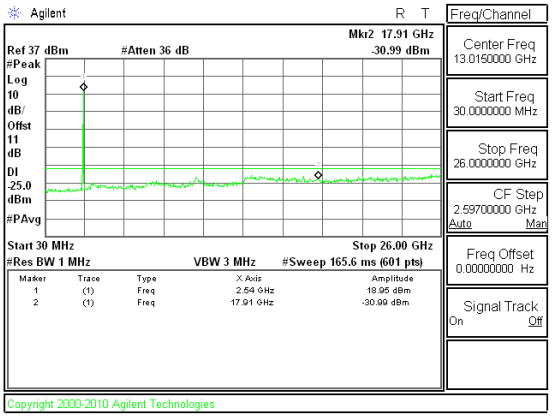


Band LTE7 20MHz CSE 16QAM Mid channel

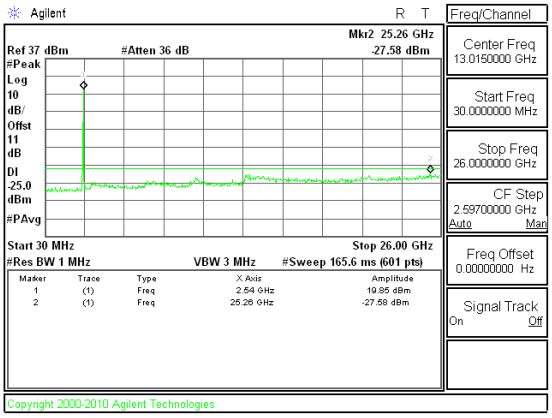


Band LTE7 20MHz CSE QPSK Mid channel

Band LTE7 15MHz 16QAM



Band LTE7 15MHz CSE 16QAM Mid channel



Band LTE7 15MHz CSE QPSK Mid channel

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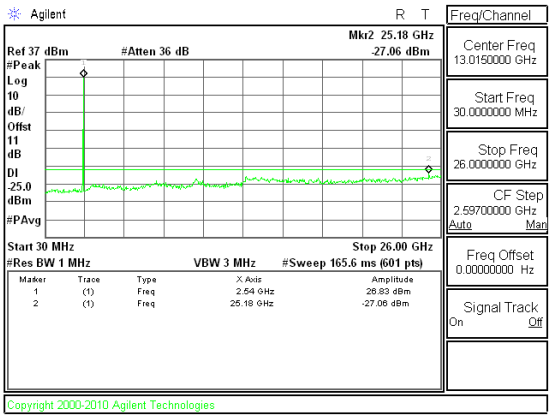
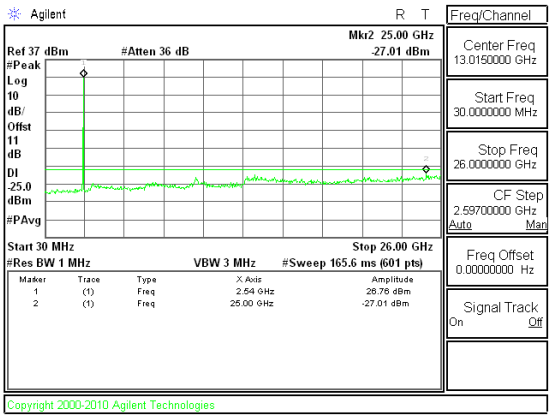
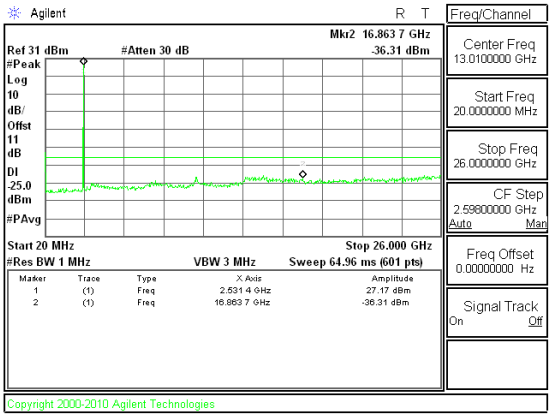
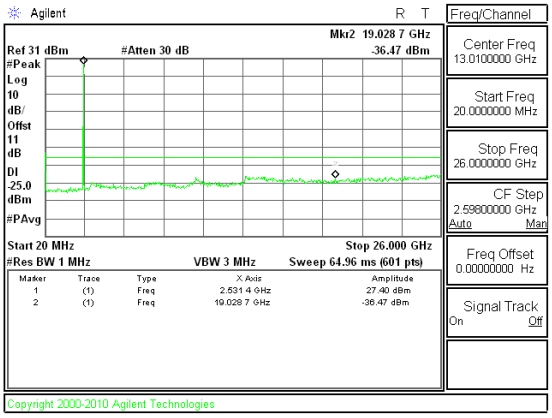
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CSE 16QAM Mid channel	 Band LTE7 10MHz CSE QPSK Mid channel
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CSE 16QAM Mid channel	 Band LTE7 5MHz CSE QPSK Mid channel

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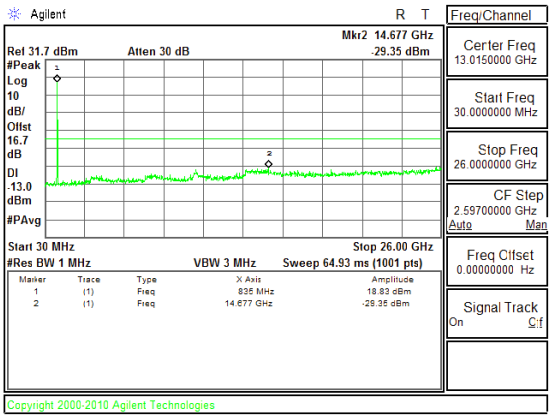
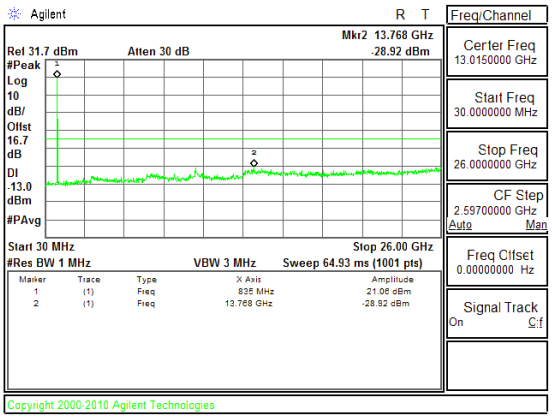
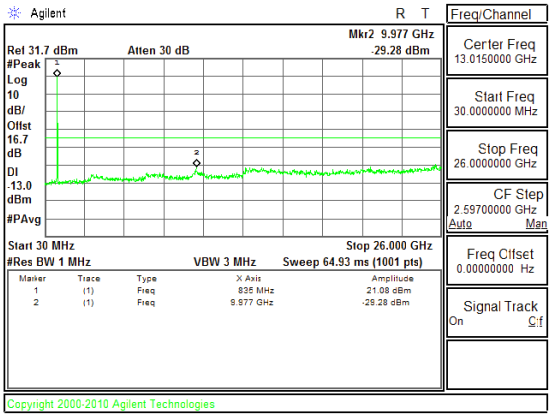
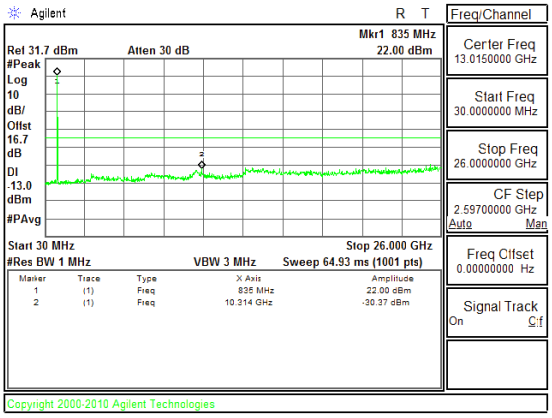
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CSE 16QAM Mid channel	 Band LTE5 10MHz CSE QPSK Mid channel
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CSE 16QAM Mid channel	 Band LTE5 5MHz CSE QPSK Mid channel

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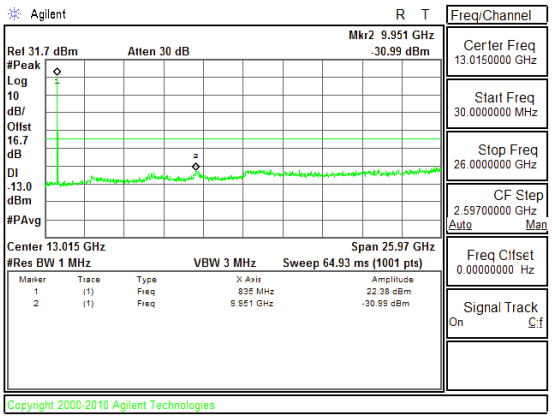
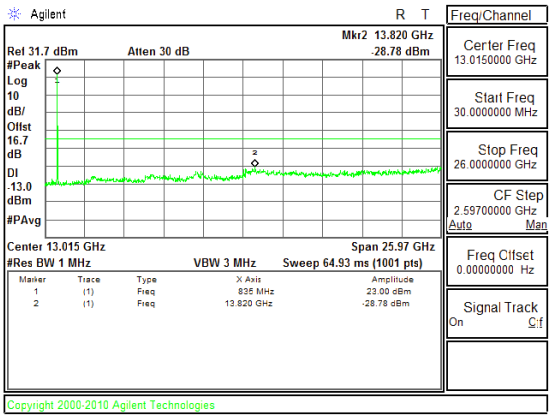
Band LTE5 3MHz 16QAM

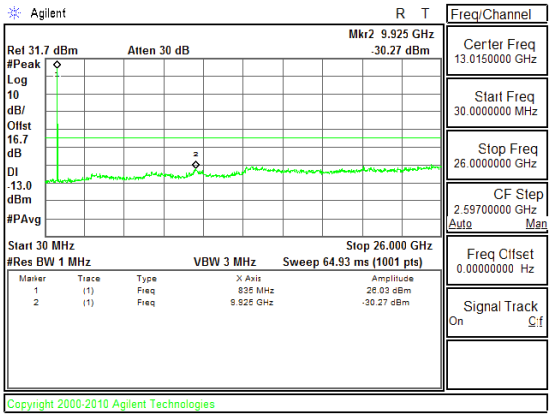


Band LTE5 3MHz CSE 16QAM Mid channel

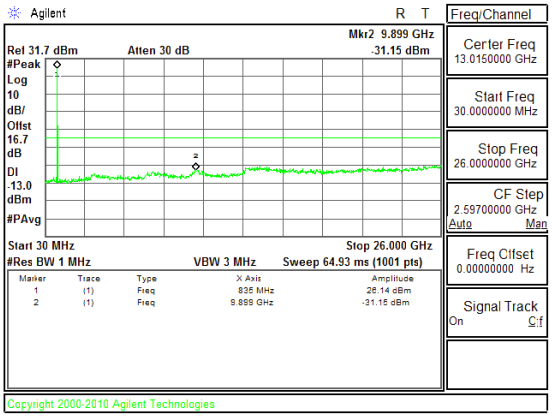


Band LTE5 3MHz CSE QPSK Mid channel

Band LTE5 1.4MHz 16QAM



Band LTE5 1.4MHz CSE 16QAM Mid channel



Band LTE5 1.4MHz CSE QPSK Mid channel

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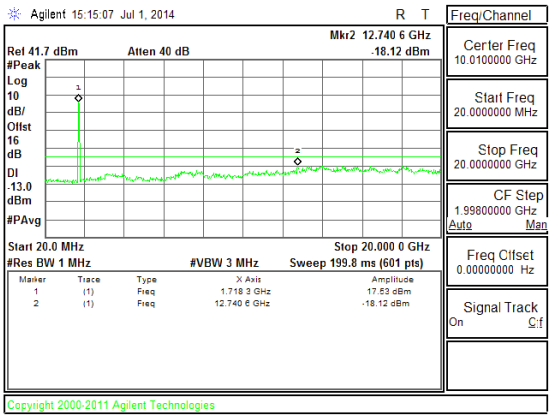
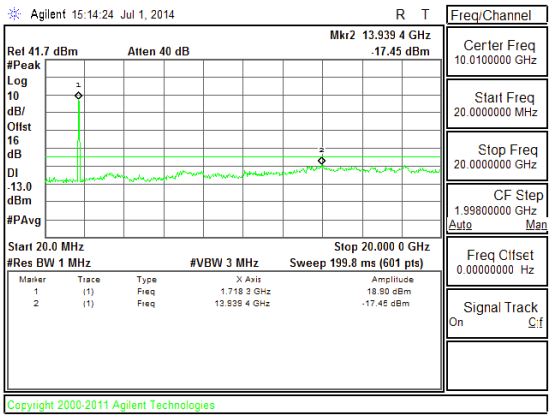
Band LTE4 20MHz 16QAM

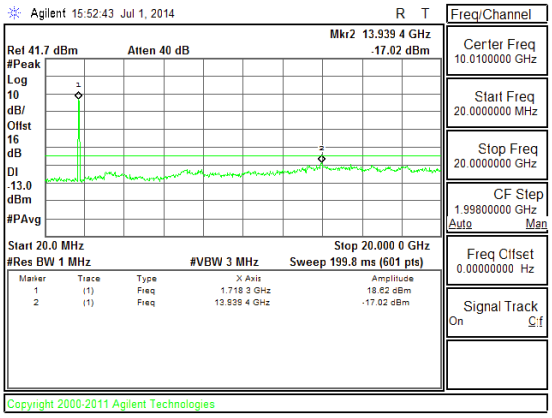


Band LTE4 20MHz CSE 16QAM Mid channel

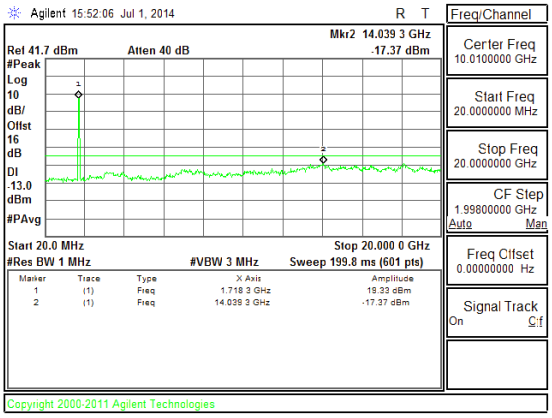


Band LTE4 20MHz CSE QPSK Mid channel

Band LTE4 15MHz 16QAM



Band LTE4 15MHz CSE 16QAM Mid channel



Band LTE4 15MHz CSE QPSK Mid channel

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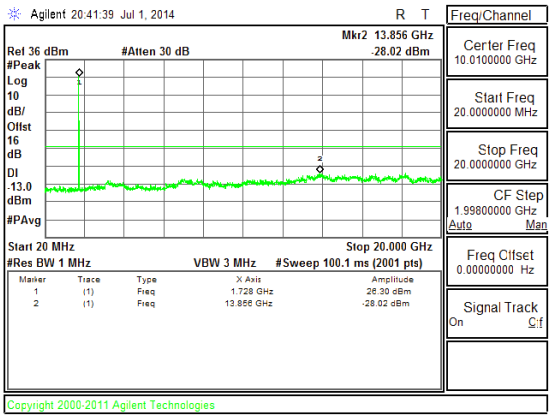
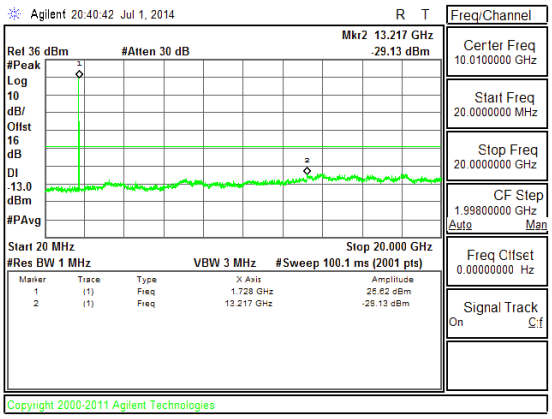
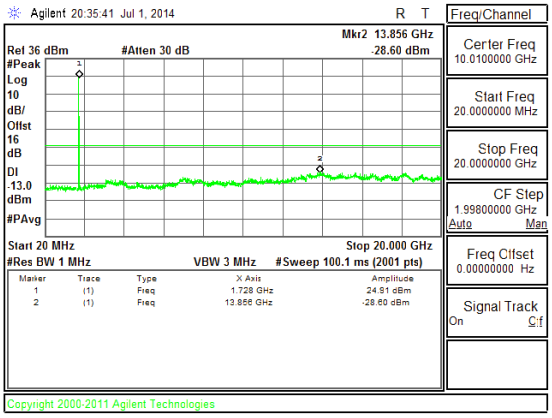
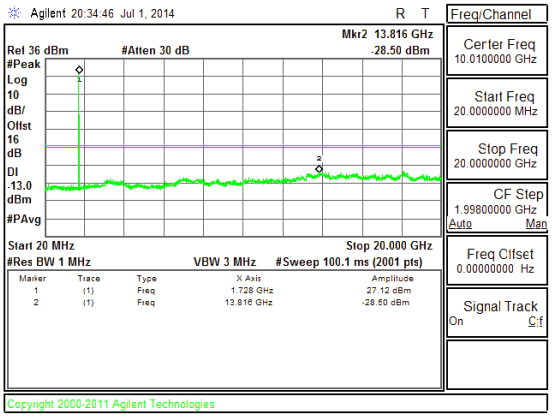
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CSE 16QAM Mid channel	 Band LTE4 5MHz CSE QPSK Mid channel

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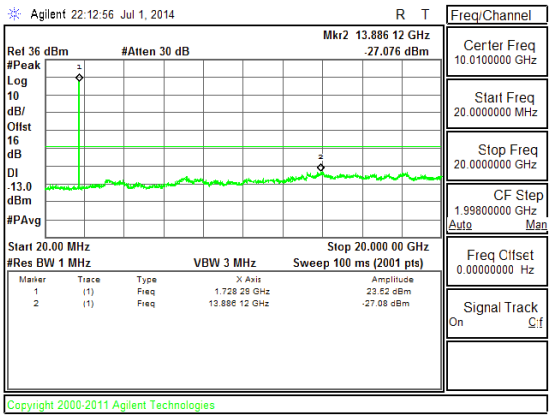
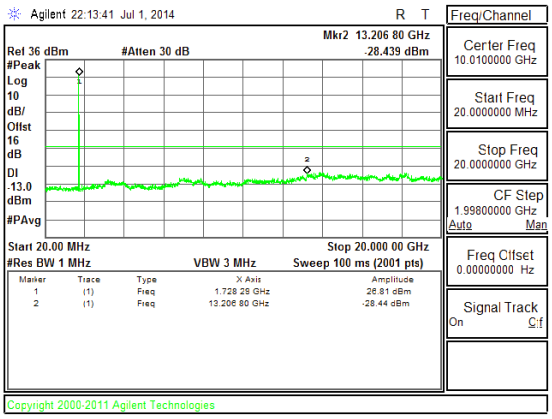
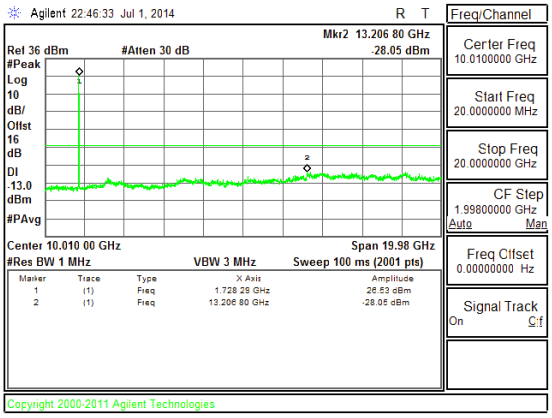
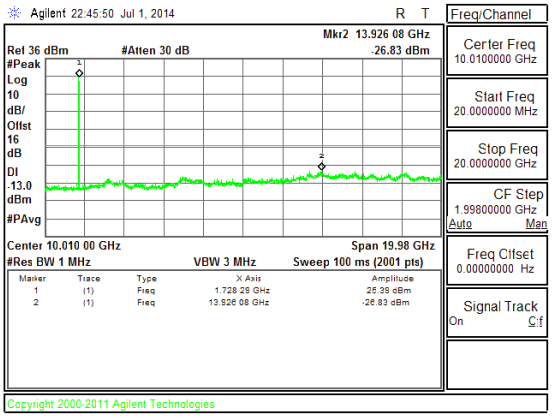
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CSE 16QAM Mid channel	 Band LTE4 3MHz CSE QPSK Mid channel
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CSE 16QAM Mid channel	 Band LTE4 1.4MHz CSE QPSK Mid channel

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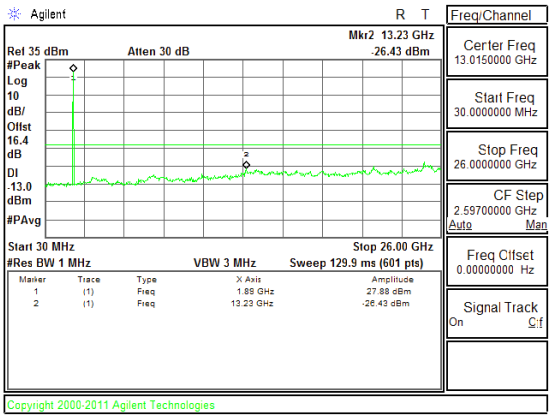
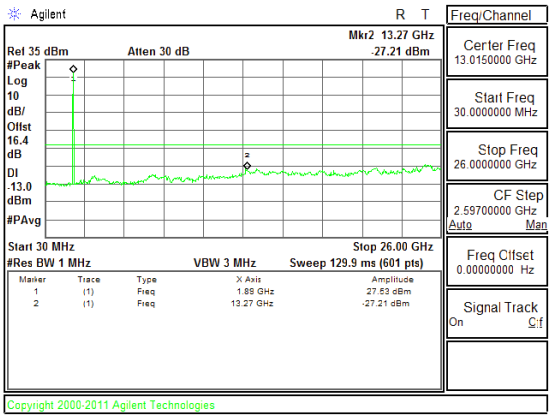
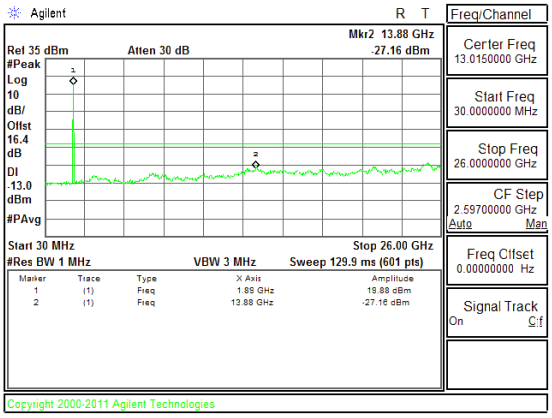
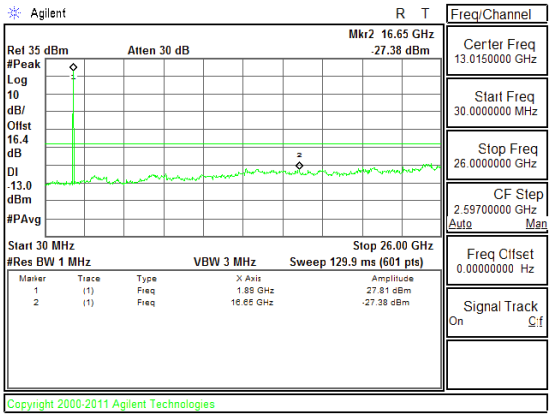
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CSE 16QAM Mid channel	 Band LTE2 20MHz CSE QPSK Mid channel
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CSE 16QAM Mid channel	 Band LTE2 15MHz CSE QPSK Mid channel

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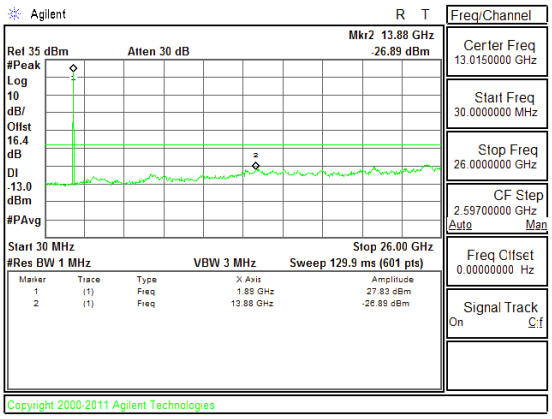
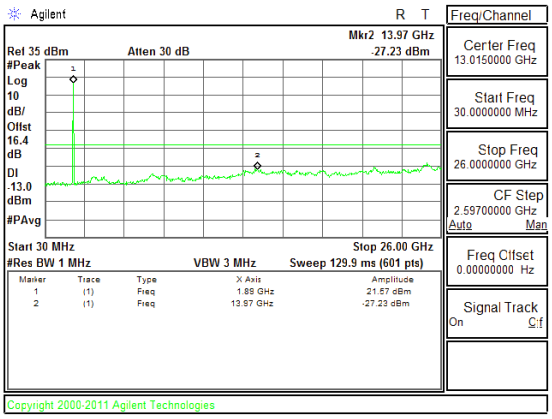
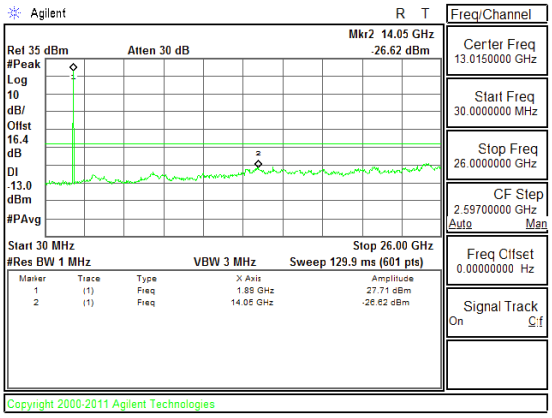
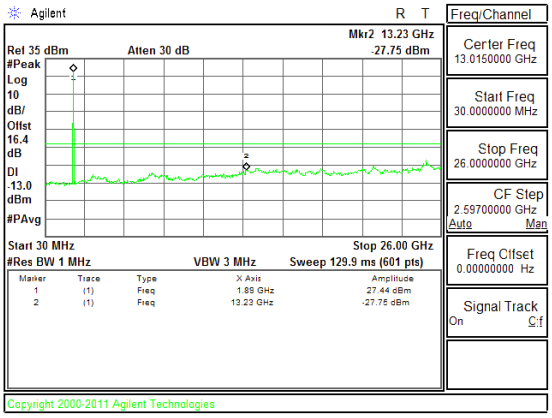
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CSE 16QAM Mid channel	 Band LTE2 10MHz CSE QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CSE 16QAM Mid channel	 Band LTE2 5MHz CSE QPSK Mid channel

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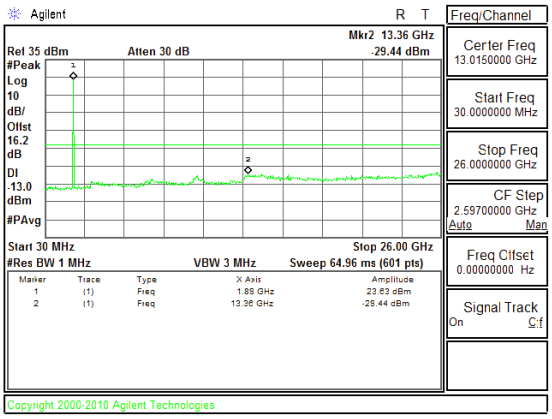
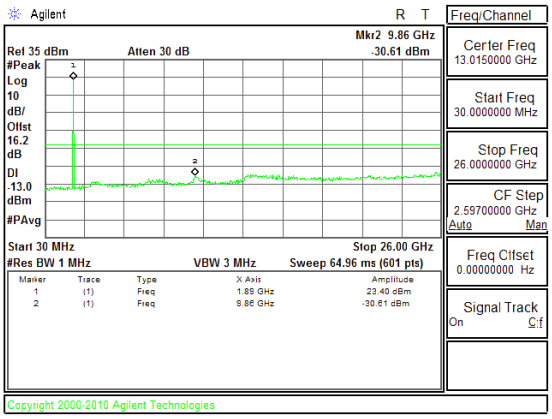
Band LTE2 3MHz 16QAM

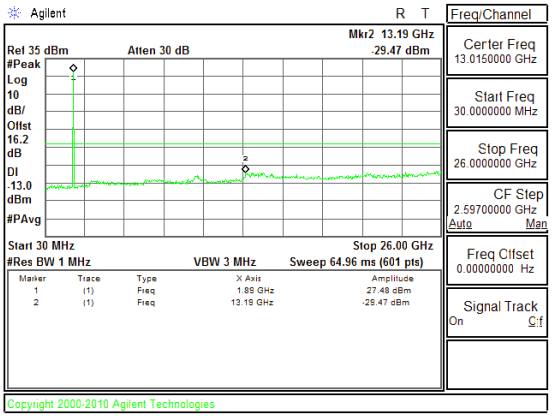


Band LTE2 3MHz CSE 16QAM Mid channel

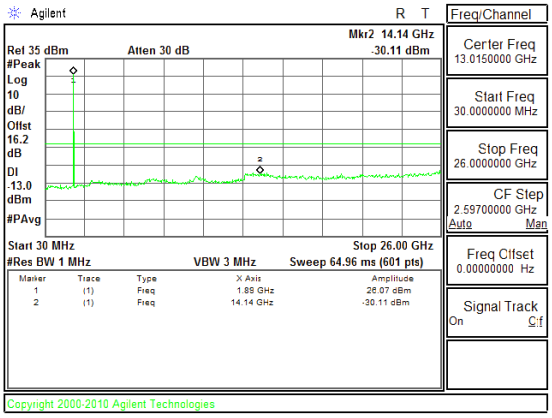


Band LTE2 3MHz CSE QPSK Mid channel

Band LTE2 1.4MHz 16QAM



Band LTE2 1.4MHz CSE 16QAM Mid channel



Band LTE2 1.4MHz CSE QPSK Mid channel

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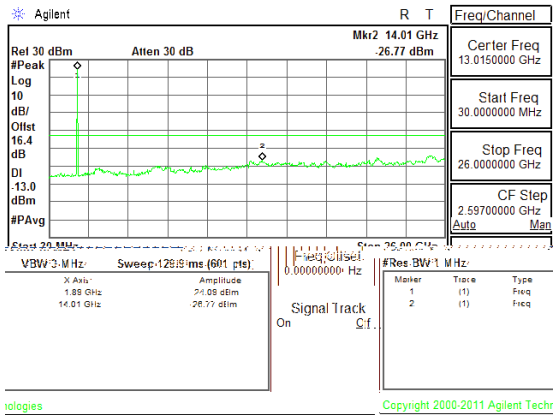
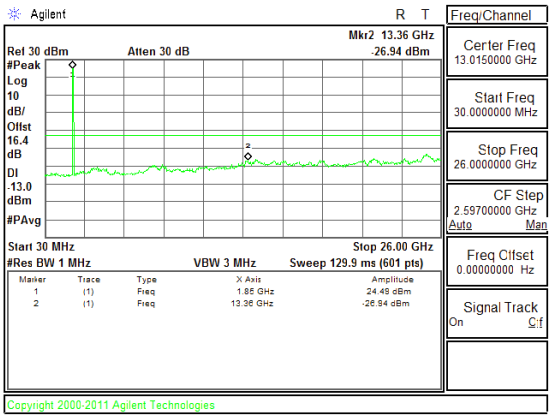
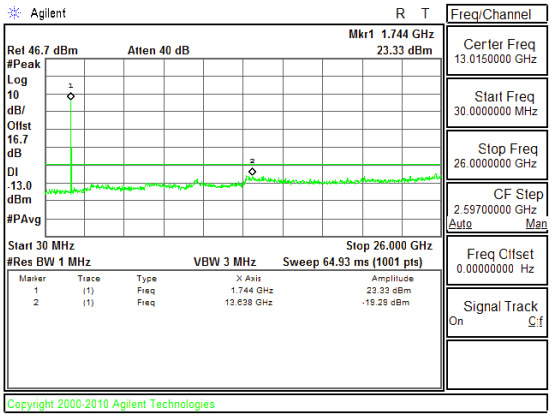
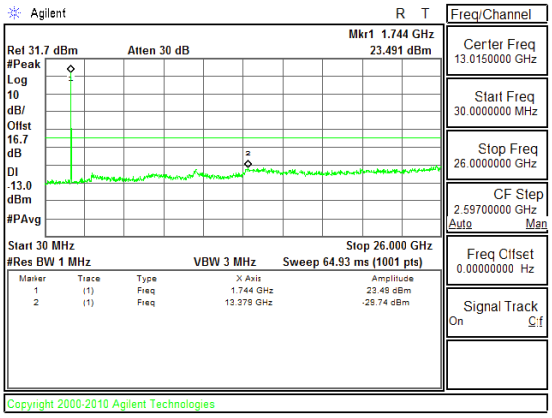
Band Band 2 HSDPA	 Band WCDMA B2 HSDPA CSE	 Band WCDMA B2 REL99 CSE
Band Band 4 HSDPA	 Band WCDMA B4 HSDPA CSE	 Band WCDMA B4 REL99 CSE

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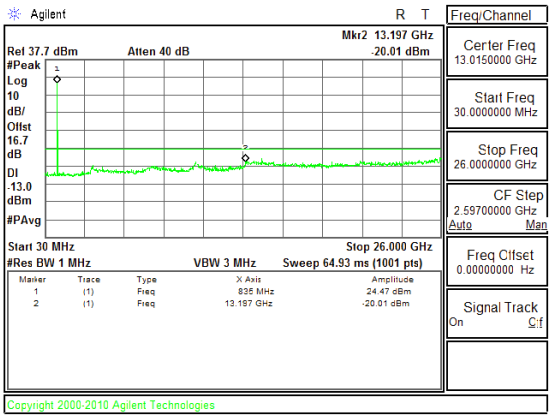
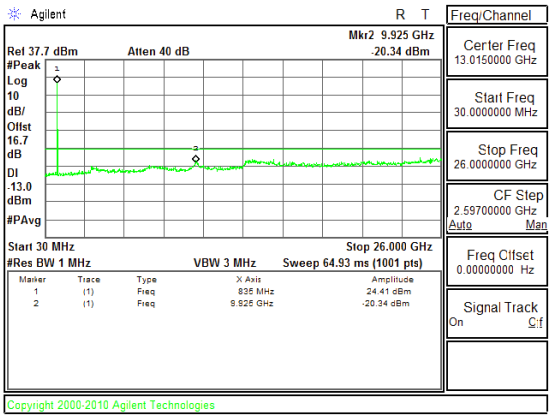
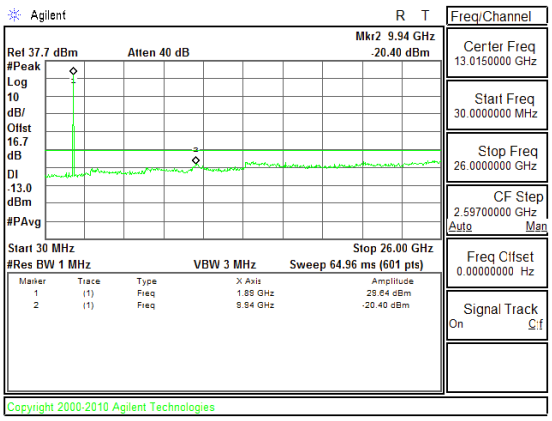
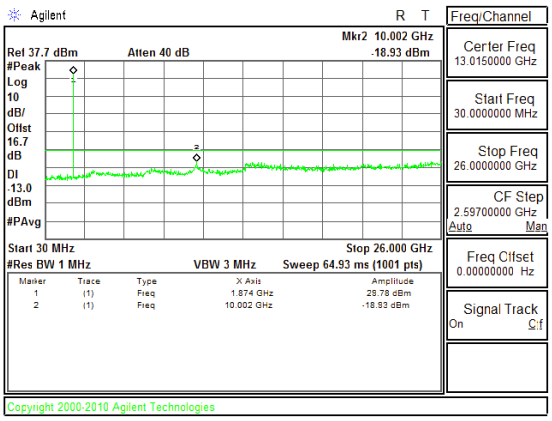
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CSE	 Band WCDMA B5 REL99 CSE

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

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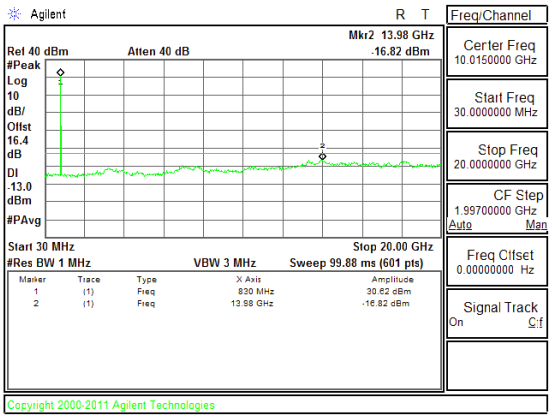
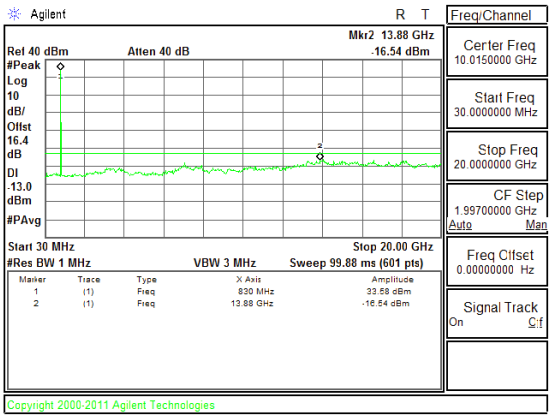
Band GSM850 EGPRS	 Band GSM850 EGPRS CSE Mid channel	 Band GSM850 GPRS CSE Mid channel

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10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §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

RESULTS

See the following pages.

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10.4.1. FREQUENCY STABILITY RESULTS

BAND II, Channel 9400 Freq: 1880MHz– MID CHANNEL

Reference Frequency: PC S Mid Channel 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	1880.000007	0.000	2.5
3.80	40	1880.000006	0.001	2.5
3.80	30	1880.000007	0.000	2.5
3.80	***20***	***1880.000007***	***0***	***2.5***
3.80	10	1880.000007	0.000	2.5
3.80	0	1880.000008	0.000	2.5
3.80	-10	1880.000006	0.001	2.5
3.80	-20	1880.000006	0.000	2.5
3.80	-30	1880.000007	0.000	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1880.000006***	***0***	***2.5***
4.18	20	1880.000006	*0.000*	2.5
3.42	20	1880.000007	*-0.001*	2.5

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BAND V, Channel 4183, Freq: 836.6MHz – MID CHANNEL

Reference Frequency: Cell Mid Channel 836.6 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600004	-0.001	2.5
3.80	40	836.600002	0.001	2.5
3.80	30	836.599996	0.008	2.5
3.80	***20***	***836.600003***	***0***	***2.5***
3.80	10	836.600002	0.001	2.5
3.80	0	836.600004	-0.001	2.5
3.80	-10	836.599997	0.007	2.5
3.80	-20	836.600005	-0.002	2.5
3.80	-30	836.600004	-0.001	2.5

Reference Frequency: Mid Channel 836.6 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
			Delta (ppm)	Limit (ppm)
3.80	***20***	***836.599998***	***0.00000***	***2.5***
4.18	20	836.600003	*-0.00574*	2.5
3.42	20	836.599997	*0.00096*	2.5

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BAND 4, Freq: 836.6MHz – MID CHANNEL

Reference Frequency: Cell Mid Channel 1732.6 MHz @ 20ºC Limit: +- 2.5 ppm = 4331.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.600000	0.00346	2.5
3.80	40	1732.600000	0.00346	2.5
3.80	30	1732.600000	0.00346	2.5
3.80	***20***	1732.600006	***0.00000***	***2.5***
3.80	10	1732.600000	0.00346	2.5
3.80	0	1732.600000	0.00346	2.5
3.80	-10	1732.600000	0.00346	2.5
3.80	-20	1732.600000	0.00346	2.5
3.80	-30	1732.600000	0.00346	2.5

Reference Frequency: Cell Mid Channel 1732.6 MHz @ 20ºC Limit: +- 2.5 ppm = 4331.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
			Delta (ppm)	Limit (ppm)
3.80	***20***	1732.600006	***0.00000***	***2.5***
4.18	20	1732.600007	*-0.00058*	2.5
3.42	20	1732.600008	*-0.00115*	2.5

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LTE BAND 7, Channel 21100, Freq: 2535.0MHz – MID CHANNEL

Reference Frequency: Cell Mid Channel 2535.0 MHz @ 20ºC Limit: +- 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	2535.000015	-0.009	2.5
3.80	40	2534.999986	0.002	2.5
3.80	30	2535.000013	-0.008	2.5
3.80	***20***	***2534.999992***	***0***	***2.5***
3.80	10	2535.000014	-0.009	2.5
3.80	0	2535.000014	-0.009	2.5
3.80	-10	2535.000017	-0.010	2.5
3.80	-20	2535.000013	-0.008	2.5
3.80	-30	2535.000016	-0.009	2.5

Reference Frequency: Mid Channel 836.6 MHz @ 20ºC Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse	Delta (ppm)	Limit (ppm)
3.80	***20***	***2535.000013***	***0.00000***	***2.5***
4.18	20	2534.999992	*0.02579*	2.5
3.42	20	2534.999992	*0.02568*	2.5

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LTE BAND 13, Channel 23230 Freq: 782.0MHz– MID CHANNEL

Reference Frequency: Cell Mid Channel 782MHz @ 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	781.9999935	0.003	2.5
3.80	40	781.9999959	0.000	2.5
3.80	30	781.999997	-0.002	2.5
3.80	***20***	***781.999996***	***0***	***2.5***
3.80	10	781.999997	-0.001	2.5
3.80	0	781.9999959	-0.001	2.5
3.80	-10	781.9999957	0.000	2.5
3.80	-20	781.999996	0.000	2.5
3.80	-30	781.999995	0.001	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***781.999986***	***0***	***2.5***
4.18	20	***782.000014***	*-0.015*	2.5
3.42	20	781.9999955	*-0.005*	2.5

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LTE BAND 17, Channel 23790 Freq: 710.0MHz– MID CHANNEL

Reference Frequency: Cell Mid Channel 782MHz @ 20°C Limit: to stay +- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	710.000004	-0.001	2.5
3.80	40	710.000004	-0.001	2.5
3.80	30	710.000004	-0.001	2.5
3.80	***20***	***710.000004***	***0***	***2.5***
3.80	10	710.000005	-0.001	2.5
3.80	0	710.000005	-0.003	2.5
3.80	-10	710.000005	-0.002	2.5
3.80	-20	710.000003	0.000	2.5
3.80	-30	710.000004	-0.001	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***710.000004***	***0***	***2.5***
4.18	20	***710.000004***	*0.000*	2.5
3.42	20	710.000004	*0.000*	2.5

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11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.

LIMITS

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

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

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

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

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

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17; PSA setting reference to 971168 D01 v02r01

For peak power measurement with a PSA:

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

For average power measurement with a PSA:

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

TEST RESULTS

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11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	26.273	423.94
		9400	1880	25.651	367.37
		9538	1907.6	26.152	412.29
	HSDPA	9262	1852.4	25.677	369.57
		9400	1880	25.081	322.18
		9538	1907.6	25.302	339

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 4	REL99	1312	1712.4	24.696	294.85
		1413	1732.6	24.06	254.68
		1513	1752.6	24.834	304.37
	HSDPA	1312	1712.4	24.97	314.05
		1413	1732.6	23.71	234.96
		1513	1752.6	24.94	311.89

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	22.464	176.36
		4183	836.6	23.251	211.4
		4233	846.6	22.832	191.96
	HSDPA	4132	826.4	23.031	200.96
		4183	836.6	23.564	227.2
		4233	846.6	23.199	208.88

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	30.635	1157.44
		661	1880	31.152	1303.77
		810	1909.8	30.665	1165.47
	EGPRS	512	1850.2	27.66	583.45
		661	1880	28.237	666.35
		810	1909.8	27.707	589.79

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Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	30.859	1218.71
		190	836.6	31.925	1557.76
		251	848.8	31.534	1423.64
	EGPRS	128	824.2	26.612	458.35
		190	836.6	27.134	516.89
		251	848.8	27.118	514.99

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11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	10	QPSK	1/0	709	19.407	87.24
			1/0	710	19.496	89.04
			1/0	711	19.658	92.43
		16QAM	1/0	709	18.187	65.87
			1/0	710	18.236	66.62
			1/0	711	18.388	68.99

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	5	QPSK	1/0	706.5	19.377	86.64
			1/0	710	19.726	93.89
			1/0	713.5	19.728	93.93
		16QAM	1/0	706.5	18.287	67.41
			1/0	710	18.716	74.4
			1/0	713.5	18.758	75.13

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE13	10	QPSK	1/0	782	18.976	79
			1/0	782	18.976	79
			1/0	782	18.976	79
		16QAM	1/0	782	17.916	61.89
			1/0	782	17.916	61.89
			1/0	782	17.916	61.89

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE13	5	QPSK	1/0	779.5	18.313	67.81
			1/0	782	18.766	75.27
			1/0	784.5	18.511	70.97
		16QAM	1/0	779.5	17.343	54.24
			1/0	782	17.446	55.54
			1/0	784.5	17.351	54.34

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	20	QPSK	1/0	2510	25.82	381.94
			1/0	2535	26.82	480.84
			1/0	2560	26.36	432.51
		16QAM	1/0	2510	24.87	306.9
			1/0	2535	25.6	363.08
			1/0	2560	25.22	332.66

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	15	QPSK	1/0	2507.5	25.86	385.48
			1/0	2535	26.98	498.88
			1/0	2562.5	26.5	446.68
		16QAM	1/0	2507.5	24.89	308.32
			1/0	2535	25.66	368.13
			1/0	2562.5	25.49	354

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	10	QPSK	1/0	2505	26.28	424.62
			1/0	2535	27.08	510.5
			1/0	2565	26.85	484.17
		16QAM	1/0	2505	25.13	325.84
			1/0	2535	26.13	410.2
			1/0	2565	25.76	376.7

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	5	QPSK	1/0	2502.5	25.77	377.57
			1/0	2535	26.72	469.89
			1/0	2567.5	26.52	448.75
		16QAM	1/0	2502.5	25.09	322.85
			1/0	2535	25.85	384.59
			1/0	2567.5	25.76	376.7

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	21.392	137.78
			1/0	836.5	22.756	188.63
			1/0	844	21.995	158.31
		16QAM	1/0	829	20.952	124.51
			1/0	836.5	21.486	140.8
			1/0	844	21.195	131.67

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	21.732	149
			1/0	836.5	22.546	179.72
			1/0	846.5	22.085	161.62
		16QAM	1/0	826.5	20.442	110.71
			1/0	836.5	21.406	138.23
			1/0	846.5	21.095	128.68

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	3	QPSK	1/0	825.5	21.552	142.96
			1/0	836.5	22.286	169.28
			1/0	847.5	21.855	153.29
		16QAM	1/0	825.5	20.722	118.09
			1/0	836.5	21.646	146.08
			1/0	847.5	21.025	126.62

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	1.4	QPSK	1/0	824.7	22.632	183.32
			1/0	836.5	23.306	214.09
			1/0	848.3	22.695	185.99
		16QAM	1/0	824.7	21.752	149.69
			1/0	836.5	22.526	178.9
			1/0	848.3	21.715	148.42

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	24.66	292.42
			1/0	1732.5	25.86	385.48
			1/0	1745	25.79	379.31
		16QAM	1/0	1720	23.94	247.74
			1/0	1732.5	25.12	325.09
			1/0	1745	24.86	306.2

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	15	QPSK	1/0	1717.5	24.99	315.5
			1/0	1732.5	26.07	404.58
			1/0	1747.5	25.67	368.98
		16QAM	1/0	1717.5	24.09	256.45
			1/0	1732.5	25.29	338.06
			1/0	1747.5	24.73	297.17

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	25.04	319.15
			1/0	1732.5	26.08	405.51
			1/0	1750	26.35	431.52
		16QAM	1/0	1715	24.12	258.23
			1/0	1732.5	25.23	333.43
			1/0	1750	25.53	357.27

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	24.74	297.85
			1/0	1732.5	25.18	329.61
			1/0	1752.5	24.93	311.17
		16QAM	1/0	1712.5	23.37	217.27
			1/0	1732.5	24.02	252.35
			1/0	1752.5	23.63	230.67

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	24.15	260.02
			1/0	1732.5	25.08	322.11
			1/0	1753.5	24.2	263.03
		16QAM	1/0	1711.5	22.88	194.09
			1/0	1732.5	23.97	249.46
			1/0	1753.5	23.41	219.28

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	1.4	QPSK	1/0	1710.7	24.07	255.27
			1/0	1732.5	25.11	324.34
			1/0	1754.3	23.54	225.94
		16QAM	1/0	1710.7	23.23	210.38
			1/0	1732.5	23.99	250.61
			1/0	1754.3	22.38	172.98

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	20	QPSK	1/0	1860	26.41	437.52
			1/0	1880	25.94	392.64
			1/0	1900	26.41	437.52
		16QAM	1/0	1860	25.05	319.89
			1/0	1880	24.91	309.74
			1/0	1900	25.41	347.54

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	15	QPSK	1/0	1857.5	26.39	435.51
			1/0	1880	25.61	363.92
			1/0	1902.5	26.03	400.87
		16QAM	1/0	1857.5	25.35	342.77
			1/0	1880	24.35	272.27
			1/0	1902.5	25.36	343.56

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	10	QPSK	1/0	1855	26.31	427.56
			1/0	1880	25.75	375.84
			1/0	1905	26.1	407.38
		16QAM	1/0	1855	25.48	353.18
			1/0	1880	24.44	277.97
			1/0	1905	24.91	309.74

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	5	QPSK	1/0	1852.5	26.28	424.62
			1/0	1880	25.76	376.7
			1/0	1907.5	26.24	420.73
		16QAM	1/0	1852.5	25.5	354.81
			1/0	1880	24.69	294.44
			1/0	1907.5	25.04	319.15

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	25.93	391.74
			1/0	1880	24.82	303.39
			1/0	1908.5	25.41	347.54
		16QAM	1/0	1851.5	24.69	294.44
			1/0	1880	23.87	243.78
			1/0	1908.5	24.47	279.9

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	1.4	QPSK	1/0	1850.7	26.17	414
			1/0	1880	25.16	328.1
			1/0	1909.3	25.78	378.44
		16QAM	1/0	1850.7	25.07	321.37
			1/0	1880	24.31	269.77
			1/0	1909.3	24.83	304.09

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11.1.3. ERP/EIRP DATA

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE17 10MHz 16QAM

Band
LTE17
10MHz
16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
709.00	12.26	V	0.9	0.0	11.36	34.8	-23.4	
709.00	19.09	H	0.9	0.0	18.19	34.8	-16.6	
Mid Ch								
710.00	12.25	V	0.9	0.0	11.35	34.8	-23.4	
710.00	19.14	H	0.9	0.0	18.24	34.8	-16.5	
High Ch								
711.00	12.37	V	0.9	0.0	11.47	34.8	-23.3	
711.00	19.29	H	0.9	0.0	18.39	34.8	-16.4	

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

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Band

LTE17

10MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE17 10MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
709.00	13.46	V	0.9	0.0	12.56	34.8	-22.2	
709.00	20.31	H	0.9	0.0	19.41	34.8	-15.4	
Mid Ch								
710.00	13.33	V	0.9	0.0	12.43	34.8	-22.4	
710.00	20.40	H	0.9	0.0	19.50	34.8	-15.3	
High Ch								
711.00	13.57	V	0.9	0.0	12.67	34.8	-22.1	
711.00	20.56	H	0.9	0.0	19.66	34.8	-15.1	

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

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Band

LTE17

5MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE17 5MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
706.50	12.56	V	0.9	0.0	11.66	34.8	-23.1	
706.50	19.19	H	0.9	0.0	18.29	34.8	-16.5	
Mid Ch								
710.00	12.89	V	0.9	0.0	11.99	34.8	-22.8	
710.00	19.62	H	0.9	0.0	18.72	34.8	-16.1	
High Ch								
713.50	12.97	V	0.9	0.0	12.07	34.8	-22.7	
713.50	19.66	H	0.9	0.0	18.76	34.8	-16.0	

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

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Band

LTE17

5MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE17 5MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
706.50	13.56	V	0.9	0.0	12.66	34.8	-22.1	
706.50	20.28	H	0.9	0.0	19.38	34.8	-15.4	
Mid Ch								
710.00	13.81	V	0.9	0.0	12.91	34.8	-21.9	
710.00	20.63	H	0.9	0.0	19.73	34.8	-15.1	
High Ch								
713.50	13.87	V	0.9	0.0	12.97	34.8	-21.8	
713.50	20.63	H	0.9	0.0	19.73	34.8	-15.1	

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

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Band

LTE13

10MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE13 10MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
782.00	8.18	V	0.9	0.0	7.28	34.8	-27.5	
782.00	18.82	H	0.9	0.0	17.92	34.8	-16.9	
Mid Ch								
782.00	8.18	V	0.9	0.0	7.28	34.8	-27.5	
782.00	18.82	H	0.9	0.0	17.92	34.8	-16.9	
High Ch								
782.00	8.18	V	0.9	0.0	7.28	34.8	-27.5	
782.00	18.82	H	0.9	0.0	17.92	34.8	-16.9	

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

LTE13

10MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE13 10MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
782.00	9.16	V	0.9	0.0	8.26	34.8	-26.5	
782.00	19.88	H	0.9	0.0	18.98	34.8	-15.8	
Mid Ch								
782.00	9.16	V	0.9	0.0	8.26	34.8	-26.5	
782.00	19.88	H	0.9	0.0	18.98	34.8	-15.8	
High Ch								
782.00	9.16	V	0.9	0.0	8.26	34.8	-26.5	
782.00	19.88	H	0.9	0.0	18.98	34.8	-15.8	

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

LTE13

5MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE13 5MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
779.50	12.55	V	0.9	0.0	11.65	34.8	-23.2	
779.50	18.24	H	0.9	0.0	17.34	34.8	-17.5	
Mid Ch								
782.00	12.81	V	0.9	0.0	11.91	34.8	-22.9	
782.00	18.35	H	0.9	0.0	17.45	34.8	-17.4	
High Ch								
784.50	12.92	V	0.9	0.0	12.02	34.8	-22.8	
784.50	18.25	H	0.9	0.0	17.35	34.8	-17.4	

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

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Band

LTE13

5MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE13 5MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
779.50	13.25	V	0.9	0.0	12.35	34.8	-22.5	
779.50	19.21	H	0.9	0.0	18.31	34.8	-16.5	
Mid Ch								
782.00	13.85	V	0.9	0.0	12.95	34.8	-21.8	
782.00	19.67	H	0.9	0.0	18.77	34.8	-16.0	
High Ch								
784.50	13.82	V	0.9	0.0	12.92	34.8	-21.9	
784.50	19.41	H	0.9	0.0	18.51	34.8	-16.3	

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

LTE7

20MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 20MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2510.00	7.46	V	0.9	9.4	15.96	33.0	-17.0	
2510.00	16.37	H	0.9	9.4	24.87	33.0	-8.1	
Mid Ch								
2535.00	7.67	V	0.9	9.4	16.17	33.0	-16.8	
2535.00	17.10	H	0.9	9.4	25.60	33.0	-7.4	
High Ch								
2560.00	7.38	V	0.9	9.4	15.88	33.0	-17.1	
2560.00	16.72	H	0.9	9.4	25.22	33.0	-7.8	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE7

20MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 20MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2510.00	7.76	V	0.9	9.4	16.26	33.0	-16.7	
2510.00	17.32	H	0.9	9.4	25.82	33.0	-7.2	
Mid Ch								
2535.00	8.25	V	0.9	9.4	16.75	33.0	-16.3	
2535.00	18.32	H	0.9	9.4	26.82	33.0	-6.2	
High Ch								
2560.00	7.88	V	0.9	9.4	16.38	33.0	-16.6	
2560.00	17.86	H	0.9	9.4	26.36	33.0	-6.6	

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

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Band

LTE7

15MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 15MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	6.86	V	0.9	9.4	15.36	33.0	-17.6	
2507.50	16.39	H	0.9	9.4	24.89	33.0	-8.1	
Mid Ch								
2535.00	7.16	V	0.9	9.4	15.66	33.0	-17.3	
2535.00	17.16	H	0.9	9.4	25.66	33.0	-7.3	
High Ch								
2562.50	7.08	V	0.9	9.4	15.58	33.0	-17.4	
2562.50	16.99	H	0.9	9.4	25.49	33.0	-7.5	

Rev. 3.17.11
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: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 15MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	7.56	V	0.9	9.4	16.06	33.0	-16.9	
2507.50	17.36	H	0.9	9.4	25.86	33.0	-7.1	
Mid Ch								
2535.00	8.23	V	0.9	9.4	16.73	33.0	-16.3	
2535.00	18.48	H	0.9	9.4	26.98	33.0	-6.0	
High Ch								
2562.50	7.78	V	0.9	9.4	16.28	33.0	-16.7	
2562.50	18.00	H	0.9	9.4	26.50	33.0	-6.5	

Rev. 3.17.11
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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 10MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	13.36	V	0.9	9.4	21.86	33.0	-11.1	
2505.00	16.63	H	0.9	9.4	25.13	33.0	-7.9	
Mid Ch								
2535.00	13.76	V	0.9	9.4	22.26	33.0	-10.7	
2535.00	17.63	H	0.9	9.4	26.13	33.0	-6.9	
High Ch								
2565.00	13.58	V	0.9	9.4	22.08	33.0	-10.9	
2565.00	17.26	H	0.9	9.4	25.76	33.0	-7.2	

Rev. 3.17.11
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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 10MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	14.46	V	0.9	9.4	22.96	33.0	-10.0	
2505.00	17.78	H	0.9	9.4	26.28	33.0	-6.7	
Mid Ch								
2535.00	14.77	V	0.9	9.4	23.27	33.0	-9.7	
2535.00	18.58	H	0.9	9.4	27.08	33.0	-5.9	
High Ch								
2565.00	14.58	V	0.9	9.4	23.08	33.0	-9.9	
2565.00	18.35	H	0.9	9.4	26.85	33.0	-6.2	

Rev. 3.17.11
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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 5MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	14.46	V	0.9	9.4	22.96	33.0	-10.0	
2502.50	16.59	H	0.9	9.4	25.09	33.0	-7.9	
Mid Ch								
2535.00	14.68	V	0.9	9.4	23.18	33.0	-9.8	
2535.00	17.35	H	0.9	9.4	25.85	33.0	-7.2	
High Ch								
2567.50	14.78	V	0.9	9.4	23.28	33.0	-9.7	
2567.50	17.26	H	0.9	9.4	25.76	33.0	-7.2	

Rev. 3.17.11
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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 7 5MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	14.86	V	0.9	9.4	23.36	33.0	-9.6	
2502.50	17.27	H	0.9	9.4	25.77	33.0	-7.2	
Mid Ch								
2535.00	15.29	V	0.9	9.4	23.79	33.0	-9.2	
2535.00	18.22	H	0.9	9.4	26.72	33.0	-6.3	
High Ch								
2567.50	15.18	V	0.9	9.4	23.68	33.0	-9.3	
2567.50	18.02	H	0.9	9.4	26.52	33.0	-6.5	

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

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Band

LTE5

10MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 10MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
829.00	17.30	V	0.9	0.0	16.40	38.5	-22.0	
829.00	21.85	H	0.9	0.0	20.95	38.5	-17.5	
Mid Ch								
836.50	17.57	V	0.9	0.0	16.68	38.5	-21.8	
836.50	22.39	H	0.9	0.0	21.49	38.5	-17.0	
High Ch								
844.00	16.43	V	0.9	0.0	15.53	38.5	-22.9	
844.00	22.09	H	0.9	0.0	21.20	38.5	-17.3	

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

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Band

LTE5

10MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 10MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
829.00	17.40	V	0.9	0.0	16.50	38.5	-21.9	
829.00	22.29	H	0.9	0.0	21.39	38.5	-17.1	
Mid Ch								
836.50	18.57	V	0.9	0.0	17.68	38.5	-20.8	
836.50	23.66	H	0.9	0.0	22.76	38.5	-15.7	
High Ch								
844.00	16.93	V	0.9	0.0	16.03	38.5	-22.4	
844.00	22.89	H	0.9	0.0	22.00	38.5	-16.5	

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

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Band

LTE5

5MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 5MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
826.50	16.40	V	0.9	0.0	15.50	38.5	-22.9	
826.50	21.34	H	0.9	0.0	20.44	38.5	-18.0	
Mid Ch								
836.50	17.12	V	0.9	0.0	16.23	38.5	-22.2	
836.50	22.31	H	0.9	0.0	21.41	38.5	-17.0	
High Ch								
846.50	15.93	V	0.9	0.0	15.03	38.5	-23.4	
846.50	21.99	H	0.9	0.0	21.10	38.5	-17.4	

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

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Band

LTE5

5MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 5MHz QPSK

Test Equipment:
Receiving: Horn T345, and Chamber B SMA Cables
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								
826.50	17.60	V	0.9	0.0	16.70	38.5	-21.7	
826.50	22.63	H	0.9	0.0	21.73	38.5	-16.7	
Mid Ch								
836.50	18.19	V	0.9	0.0	17.30	38.5	-21.2	
836.50	23.45	H	0.9	0.0	22.55	38.5	-15.9	
High Ch								
846.50	16.83	V	0.9	0.0	15.93	38.5	-22.5	
846.50	22.98	H	0.9	0.0	22.09	38.5	-16.4	

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

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Band

LTE5

3MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 3MHz 16QAM

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
825.50	16.40	V	0.9	0.0	15.50	38.5	-22.9	
825.50	21.62	H	0.9	0.0	20.72	38.5	-17.7	
Mid Ch								
836.50	17.03	V	0.9	0.0	16.14	38.5	-22.3	
836.50	22.55	H	0.9	0.0	21.65	38.5	-16.8	
High Ch								
847.50	15.53	V	0.9	0.0	14.63	38.5	-23.8	
847.50	21.92	H	0.9	0.0	21.03	38.5	-17.4	

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

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Band

LTE5

3MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Ros
Configuration: EUT only, x-pos
Mode: LTE5 3MHz QPSK

Test Equipment:
Receiving: Hybrid T243, and Chamber B SMA Cables
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								
825.50	17.60	V	0.9	0.0	16.70	38.5	-21.7	
825.50	22.45	H	0.9	0.0	21.55	38.5	-16.9	
Mid Ch								
836.50	18.11	V	0.9	0.0	17.22	38.5	-21.2	
836.50	23.19	H	0.9	0.0	22.29	38.5	-16.2	
High Ch								
847.50	16.83	V	0.9	0.0	15.93	38.5	-22.5	
847.50	22.75	H	0.9	0.0	21.86	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

LTE5

1.4MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: LTE5 1.4 16QAM

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	17.09	V		0.0	17.09	38.5	-21.4	
824.70	21.75	H		0.0	21.75	38.5	-16.7	
Mid Ch								
836.50	16.90	V		0.0	16.91	38.5	-21.5	
836.50	22.53	H		0.0	22.53	38.5	-15.9	
High Ch								
848.30	14.72	V		0.0	14.72	38.5	-23.7	
848.30	21.71	H		0.0	21.72	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

LTE5

1.4MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: LTE5 1.4 QPSK

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	18.03	V		0.0	18.03	38.5	-20.4	
824.70	22.63	H		0.0	22.63	38.5	-15.8	
Mid Ch								
836.50	17.82	V		0.0	17.83	38.5	-20.6	
836.50	23.31	H		0.0	23.31	38.5	-15.1	
High Ch								
848.30	15.61	V		0.0	15.61	38.5	-22.8	
848.30	22.69	H		0.0	22.70	38.5	-15.8	

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

LTE4

20MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 20MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	14.20	V	0.9	8.2	21.50	30.0	-8.5	
1720.00	16.64	H	0.9	8.2	23.94	30.0	-6.1	
Mid Ch								
1732.50	16.60	V	0.9	8.2	23.90	30.0	-6.1	
1732.50	17.82	H	0.9	8.2	25.12	30.0	-4.9	
High Ch								
1745.00	16.10	V	0.9	8.2	23.40	30.0	-6.6	
1745.00	17.56	H	0.9	8.2	24.86	30.0	-5.1	

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

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Band

LTE4

20MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 20MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	15.10	V	0.9	8.2	22.40	30.0	-7.6	
1720.00	17.36	H	0.9	8.2	24.66	30.0	-5.3	
Mid Ch								
1732.50	17.46	V	0.9	8.2	24.76	30.0	-5.2	
1732.50	18.56	H	0.9	8.2	25.86	30.0	-4.1	
High Ch								
1745.00	17.10	V	0.9	8.2	24.40	30.0	-5.6	
1745.00	18.49	H	0.9	8.2	25.79	30.0	-4.2	

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

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Band

LTE4

15MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 15MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	13.80	V	0.9	8.2	21.10	30.0	-8.9	
1717.50	16.79	H	0.9	8.2	24.09	30.0	-5.9	
Mid Ch								
1732.50	16.19	V	0.9	8.2	23.49	30.0	-6.5	
1732.50	17.99	H	0.9	8.2	25.29	30.0	-4.7	
High Ch								
1747.50	15.30	V	0.9	8.2	22.60	30.0	-7.4	
1747.50	17.43	H	0.9	8.2	24.73	30.0	-5.3	

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

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Band

LTE4

15MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 15MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	14.90	V	0.9	8.2	22.20	30.0	-7.8	
1717.50	17.69	H	0.9	8.2	24.99	30.0	-5.0	
Mid Ch								
1732.50	17.21	V	0.9	8.2	24.51	30.0	-5.5	
1732.50	18.77	H	0.9	8.2	26.07	30.0	-3.9	
High Ch								
1747.50	16.50	V	0.9	8.2	23.80	30.0	-6.2	
1747.50	18.37	H	0.9	8.2	25.67	30.0	-4.3	

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

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Band

LTE4

10MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 10MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	13.10	V	0.9	8.2	20.40	30.0	-9.6	
1715.00	16.82	H	0.9	8.2	24.12	30.0	-5.9	
Mid Ch								
1732.50	15.42	V	0.9	8.2	22.72	30.0	-7.3	
1732.50	17.93	H	0.9	8.2	25.23	30.0	-4.8	
High Ch								
1750.00	15.40	V	0.9	8.2	22.70	30.0	-7.3	
1750.00	18.23	H	0.9	8.2	25.53	30.0	-4.5	

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: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 10MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	13.90	V	0.9	8.2	21.20	30.0	-8.8	
1715.00	17.74	H	0.9	8.2	25.04	30.0	-5.0	
Mid Ch								
1732.50	16.25	V	0.9	8.2	23.55	30.0	-6.5	
1732.50	18.78	H	0.9	8.2	26.08	30.0	-3.9	
High Ch								
1750.00	16.10	V	0.9	8.2	23.40	30.0	-6.6	
1750.00	19.05	H	0.9	8.2	26.35	30.0	-3.7	

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

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Band

LTE4

5MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 5MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	13.10	V	0.9	8.2	20.40	30.0	-9.6	
1712.50	16.07	H	0.9	8.2	23.37	30.0	-6.6	
Mid Ch								
1732.50	14.86	V	0.9	8.2	22.16	30.0	-7.8	
1732.50	16.72	H	0.9	8.2	24.02	30.0	-6.0	
High Ch								
1752.50	14.20	V	0.9	8.2	21.50	30.0	-8.5	
1752.50	16.33	H	0.9	8.2	23.63	30.0	-6.4	

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

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Band

LTE4

5MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 5MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	14.30	V	0.9	8.2	21.60	30.0	-8.4	
1712.50	17.44	H	0.9	8.2	24.74	30.0	-5.3	
Mid Ch								
1732.50	15.99	V	0.9	8.2	23.29	30.0	-6.7	
1732.50	17.88	H	0.9	8.2	25.18	30.0	-4.8	
High Ch								
1752.50	15.40	V	0.9	8.2	22.70	30.0	-7.3	
1752.50	17.63	H	0.9	8.2	24.93	30.0	-5.1	

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

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Band

LTE4

3MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 3MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	12.60	V	0.9	8.2	19.90	30.0	-10.1	
1711.50	15.58	H	0.9	8.2	22.88	30.0	-7.1	
Mid Ch								
1732.50	14.90	V	0.9	8.2	22.20	30.0	-7.8	
1732.50	16.67	H	0.9	8.2	23.97	30.0	-6.0	
High Ch								
1753.50	14.00	V	0.9	8.2	21.30	30.0	-8.7	
1753.50	16.11	H	0.9	8.2	23.41	30.0	-6.6	

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

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Band

LTE4

3MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 3MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	13.80	V	0.9	8.2	21.10	30.0	-8.9	
1711.50	16.85	H	0.9	8.2	24.15	30.0	-5.9	
Mid Ch								
1732.50	16.05	V	0.9	8.2	23.35	30.0	-6.7	
1732.50	17.78	H	0.9	8.2	25.08	30.0	-4.9	
High Ch								
1753.50	14.80	V	0.9	8.2	22.10	30.0	-7.9	
1753.50	16.90	H	0.9	8.2	24.20	30.0	-5.8	

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

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Band

LTE4

1.4MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 1.4MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	6.40	V	0.9	8.2	13.70	30.0	-16.3	
1710.70	15.93	H	0.9	8.2	23.23	30.0	-6.8	
Mid Ch								
1732.50	8.38	V	0.9	8.2	15.68	30.0	-14.3	
1732.50	16.69	H	0.9	8.2	23.99	30.0	-6.0	
High Ch								
1754.30	6.50	V	0.9	8.2	13.80	30.0	-16.2	
1754.30	15.08	H	0.9	8.2	22.38	30.0	-7.6	

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

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Band

LTE4

1.4MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 4 1.4MHz QPSK FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	7.30	V	0.9	8.2	14.60	33.0	-18.4	
1710.70	16.77	H	0.9	8.2	24.07	33.0	-8.9	
Mid Ch								
1732.50	9.58	V	0.9	8.2	16.88	33.0	-16.1	
1732.50	17.81	H	0.9	8.2	25.11	33.0	-7.9	
High Ch								
1754.30	7.70	V	0.9	8.2	15.00	33.0	-18.0	
1754.30	16.24	H	0.9	8.2	23.54	33.0	-9.5	

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

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Band

LTE2

20MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 20MHz 16QAM FUND

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	9.50	V	0.9	7.9	16.50	33.0	-16.5	
1860.00	18.95	H	0.9	7.0	25.05	33.0	-8.0	
Mid Ch								
1880.00	9.05	V	0.9	7.9	16.05	33.0	-17.0	
1880.00	17.91	H	0.9	7.9	24.91	33.0	-8.1	
High Ch								
1900.00	8.60	V	0.9	7.9	15.60	33.0	-17.4	
1900.00	18.41	H	0.9	7.9	25.41	33.0	-7.6	

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

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Band

LTE2

20MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 20MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	10.10	V	0.9	7.9	17.10	33.0	-15.9	
1860.00	19.41	H	0.9	7.9	26.41	33.0	-6.6	
Mid Ch								
1880.00	10.10	V	0.9	7.9	17.10	33.0	-15.9	
1880.00	18.94	H	0.9	7.9	25.94	33.0	-7.1	
High Ch								
1900.00	9.70	V	0.9	7.9	16.70	33.0	-16.3	
1900.00	19.41	H	0.9	7.9	26.41	33.0	-6.6	

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

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Band

LTE2

15MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 15MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	9.10	V	0.9	7.9	16.10	33.0	-16.9	
1857.50	18.35	H	0.9	7.9	25.35	33.0	-7.7	
Mid Ch								
1880.00	8.57	V	0.9	7.9	15.57	33.0	-17.4	
1880.00	17.35	H	0.9	7.9	24.35	33.0	-8.7	
High Ch								
1902.50	8.80	V	0.9	7.9	15.80	33.0	-17.2	
1902.50	18.36	H	0.9	7.9	25.36	33.0	-7.6	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE2

15MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 15MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	9.80	V	0.9	7.9	16.80	33.0	-16.2	
1857.50	19.39	H	0.9	7.9	26.39	33.0	-6.6	
Mid Ch								
1880.00	9.46	V	0.9	7.9	16.46	33.0	-16.5	
1880.00	18.61	H	0.9	7.9	25.61	33.0	-7.4	
High Ch								
1902.50	9.00	V	0.9	7.9	16.00	33.0	-17.0	
1902.50	19.03	H	0.9	7.9	26.03	33.0	-7.0	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE2

10MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 10MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	10.20	V	0.9	7.9	17.20	33.0	-15.8	
1855.00	18.48	H	0.9	7.9	25.48	33.0	-7.5	
Mid Ch								
1880.00	9.65	V	0.9	7.9	16.65	33.0	-16.4	
1880.00	17.44	H	0.9	7.9	24.44	33.0	-8.6	
High Ch								
1905.00	9.20	V	0.9	7.9	16.20	33.0	-16.8	
1905.00	17.91	H	0.9	7.9	24.91	33.0	-8.1	

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

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Band

LTE2

10MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 10MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	10.40	V	0.9	7.9	17.40	33.0	-15.6	
1855.00	19.31	H	0.9	7.9	26.31	33.0	-6.7	
Mid Ch								
1880.00	10.35	V	0.9	7.9	17.35	33.0	-15.7	
1880.00	18.75	H	0.9	7.9	25.75	33.0	-7.2	
High Ch								
1905.00	9.80	V	0.9	7.9	16.80	33.0	-16.2	
1905.00	19.10	H	0.9	7.9	26.10	33.0	-6.9	

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Note: For Band 4 EIRP limit is 30dBm

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Band

LTE2

5MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 5MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	15.10	V	0.9	7.9	22.10	33.0	-10.9	
1852.50	18.50	H	0.9	7.9	25.50	33.0	-7.5	
Mid Ch								
1880.00	14.77	V	0.9	7.9	21.77	33.0	-11.2	
1880.00	17.69	H	0.9	7.9	24.69	33.0	-8.3	
High Ch								
1907.50	14.20	V	0.9	7.9	21.20	33.0	-11.8	
1907.50	18.04	H	0.9	7.9	25.04	33.0	-8.0	

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

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Band

LTE2

5MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 5MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	16.10	V	0.9	7.9	23.10	33.0	-9.9	
1852.50	19.28	H	0.9	7.9	26.28	33.0	-6.7	
Mid Ch								
1880.00	16.06	V	0.9	7.9	23.06	33.0	-9.9	
1880.00	18.76	H	0.9	7.9	25.76	33.0	-7.2	
High Ch								
1907.50	15.60	V	0.9	7.9	22.60	33.0	-10.4	
1907.50	19.24	H	0.9	7.9	26.24	33.0	-6.8	

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

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Band

LTE2

3MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 3MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	16.30	V	0.9	7.9	23.30	33.0	-9.7	
1851.50	17.69	H	0.9	7.9	24.69	33.0	-8.3	
Mid Ch								
1880.00	15.96	V	0.9	7.9	22.96	33.0	-10.0	
1880.00	16.87	H	0.9	7.9	23.87	33.0	-9.1	
High Ch								
1908.50	15.70	V	0.9	7.9	22.70	33.0	-10.3	
1908.50	17.47	H	0.9	7.9	24.47	33.0	-8.5	

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

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Band

LTE2

3MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 3MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	17.40	V	0.9	7.9	24.40	33.0	-8.6	
1851.50	18.93	H	0.9	7.9	25.93	33.0	-7.1	
Mid Ch								
1880.00	16.85	V	0.9	7.9	23.85	33.0	-9.2	
1880.00	17.82	H	0.9	7.9	24.82	33.0	-8.2	
High Ch								
1908.50	16.50	V	0.9	7.9	23.50	33.0	-9.5	
1908.50	18.41	H	0.9	7.9	25.41	33.0	-7.6	

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

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Band

LTE2

1.4MHz

16QAM

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 1.4MHz 16QAM FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	14.30	V	0.9	7.9	21.30	33.0	-11.7	
1850.70	18.07	H	0.9	7.9	25.07	33.0	-7.9	
Mid Ch								
1880.00	14.02	V	0.9	7.9	21.02	33.0	-12.0	
1880.00	17.31	H	0.9	7.9	24.31	33.0	-8.7	
High Ch								
1909.30	13.60	V	0.9	7.9	20.60	33.0	-12.4	
1909.30	17.83	H	0.9	7.9	24.83	33.0	-8.2	

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

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Band

LTE2

1.4MHz

QPSK

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: K. Ros
Configuration: EUT only, X-pos
Mode: LTE 2 1.4MHz QPSK FUND

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	15.50	V	0.9	7.9	22.50	33.0	-10.5	
1850.70	19.17	H	0.9	7.9	26.17	33.0	-6.8	
Mid Ch								
1880.00	15.01	V	0.9	7.9	22.01	33.0	-11.0	
1880.00	18.16	H	0.9	7.9	25.16	33.0	-7.8	
High Ch								
1909.30	14.70	V	0.9	7.9	21.70	33.0	-11.3	
1909.30	18.78	H	0.9	7.9	25.78	33.0	-7.2	

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

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Band

Band 2

HSDPA

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K.Huynh
Configuration: EUT
Mode: HSDPA B2

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	17.79	V	0.9	7.9	24.79	33.0	-8.2	
1852.40	18.68	H	0.9	7.9	25.68	33.0	-7.3	
Mid Ch								
1880.00	17.73	V	0.9	7.9	24.73	33.0	-8.3	
1880.00	18.08	H	0.9	7.9	25.08	33.0	-7.9	
High Ch								
1907.60	15.60	V	0.9	7.9	22.60	33.0	-10.4	
1907.60	18.30	H	0.9	7.9	25.30	33.0	-7.7	

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

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Band

Band 2

REL99

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K.Huynh
Configuration: EUT
Mode: REL99 B2

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	18.45	V	0.9	7.9	25.45	33.0	-7.5	
1852.40	19.27	H	0.9	7.9	26.27	33.0	-6.7	
Mid Ch								
1880.00	18.02	V	0.9	7.9	25.02	33.0	-8.0	
1880.00	18.65	H	0.9	7.9	25.65	33.0	-7.3	
High Ch								
1907.60	16.44	V	0.9	7.9	23.44	33.0	-9.6	
1907.60	19.15	H	0.9	7.9	26.15	33.0	-6.8	

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

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Band

Band 4

HSDPA

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K.Huynh
Configuration: EUT
Mode: HSDPA B4

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.40	17.58	V	0.9	7.9	24.58	33.0	-8.4	
1712.40	17.97	H	0.9	7.9	24.97	33.0	-8.0	
Mid Ch								
1732.60	16.71	V	0.9	7.9	23.71	33.0	-9.3	
1732.60	16.69	H	0.9	7.9	23.69	33.0	-9.3	
High Ch								
1752.60	15.28	V	0.9	7.9	22.28	33.0	-10.7	
1752.60	17.94	H	0.9	7.9	24.94	33.0	-8.1	

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

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Band

Band 4

REL99

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K.Huynh
Configuration: EUT
Mode: REL99 B4

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.40	15.22	V	0.9	7.9	22.22	33.0	-10.8	
1712.40	17.70	H	0.9	7.9	24.70	33.0	-8.3	
Mid Ch								
1732.60	16.30	V	0.9	7.9	23.30	33.0	-9.7	
1732.60	17.06	H	0.9	7.9	24.06	33.0	-8.9	
High Ch								
1752.60	15.56	V	0.9	7.9	22.56	33.0	-10.4	
1752.60	17.83	H	0.9	7.9	24.83	33.0	-8.2	

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

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Band

Band 5

HSDPA

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

Company: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: HSDPA B5

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	18.55	V	0.5	0.0	18.05	38.5	-20.4	
826.40	23.53	H	0.5	0.0	23.03	38.5	-15.4	
Mid Ch								
836.60	18.52	V	0.5	0.0	18.02	38.5	-20.4	
836.60	24.06	H	0.5	0.0	23.56	38.5	-14.9	
High Ch								
846.60	16.51	V	0.5	0.0	16.07	38.5	-22.4	
846.60	23.70	H	0.5	0.0	23.20	38.5	-15.3	

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: Sony
Project #: 14U17933
Date: 08/13/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: REL 99 B5

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	17.88	V	0.5	0.0	17.39	38.5	-21.1	
826.40	22.96	H	0.5	0.0	22.46	38.5	-16.0	
Mid Ch								
836.60	17.91	V	0.5	0.0	17.41	38.5	-21.0	
836.60	23.75	H	0.5	0.0	23.25	38.5	-15.2	
High Ch								
846.60	16.80	V	0.5	0.0	16.30	38.5	-22.2	
846.60	23.33	H	0.5	0.0	22.83	38.5	-15.6	

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

GSM1900

EGPRS

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Huynh, T. Oeur
Configuration: EUT
Mode: EGPRS1900

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	19.05	V	0.9	7.9	26.05	33.0	-7.0	
1850.20	20.66	H	0.9	7.9	27.66	33.0	-5.3	
Mid Ch								
1880.00	19.23	V	0.9	7.9	26.23	33.0	-6.8	
1880.00	21.24	H	0.9	7.9	28.24	33.0	-4.8	
High Ch								
1909.80	19.63	V	0.9	7.9	26.63	33.0	-6.4	
1909.80	20.71	H	0.9	7.9	27.71	33.0	-5.3	

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 B

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: K. Huynh, T. Oeur
Configuration: EUT
Mode: GPRS1900

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 (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	22.52	V	0.9	7.9	29.52	33.0	-3.5	
1850.20	23.64	H	0.9	7.9	30.64	33.0	-2.4	
Mid Ch								
1880.00	22.26	V	0.9	7.9	29.26	33.0	-3.7	
1880.00	24.15	H	0.9	7.9	31.15	33.0	-1.8	
High Ch								
1909.80	22.24	V	0.9	7.9	29.24	33.0	-3.8	
1909.80	23.67	H	0.9	7.9	30.67	33.0	-2.3	

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

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Band

GSM850

EGPRS

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: EGPRS 850

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	20.17	V	0.9	0.0	19.27	38.5	-19.2	
824.20	27.51	H	0.9	0.0	26.61	38.5	-11.8	
Mid Ch								
836.60	20.89	V	0.9	0.0	19.99	38.5	-18.5	
836.60	28.03	H	0.9	0.0	27.13	38.5	-11.3	
High Ch								
848.80	21.03	V	0.9	0.0	20.13	38.5	-18.3	
848.80	28.02	H	0.9	0.0	27.12	38.5	-11.3	

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

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Band

GSM850

GPRS

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

Company: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: T. Oeur, K. Huynh
Configuration: EUT
Mode: GPRS 850

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	25.74	V	0.9	0.0	24.84	38.5	-13.6	
824.20	31.76	H	0.9	0.0	30.86	38.5	-7.6	
Mid Ch								
836.60	25.97	V	0.9	0.0	25.07	38.5	-13.4	
836.60	32.82	H	0.9	0.0	31.93	38.5	-6.5	
High Ch								
848.80	26.31	V	0.9	0.0	25.42	38.5	-13.0	
848.80	32.43	H	0.9	0.0	31.53	38.5	-6.9	

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

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11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

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

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

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.

RESULTS

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11.2.1. SPURIOUS RADIATION DATA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 14U17933
Date: 08/15/14
Test Engineer: O. Stoelting
Configuration: X Position, EUT w/ AC Adaptor and HS
Mode: LTE17 10M 16QAM HARM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE17

10MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,709MHz									
1.418	-28.3	V	3.0	37.8	1.0	-65.0	-13.0	-52.0	
2.127	-31.9	V	3.0	36.7	1.0	-67.6	-13.0	-54.6	
2.836	-30.5	V	3.0	36.2	1.0	-65.7	-13.0	-52.7	
1.418	-27.7	H	3.0	37.8	1.0	-64.5	-13.0	-51.5	
2.127	-32.8	H	3.0	36.7	1.0	-68.5	-13.0	-55.5	
2.836	-31.2	H	3.0	36.2	1.0	-66.3	-13.0	-53.3	
Mid Ch,710MHz									
1.420	-25.4	V	3.0	37.8	1.0	-62.2	-13.0	-49.2	
2.130	-31.9	V	3.0	36.7	1.0	-67.6	-13.0	-54.6	
2.840	-30.4	V	3.0	36.2	1.0	-65.6	-13.0	-52.6	
1.420	-24.6	H	3.0	37.8	1.0	-61.4	-13.0	-48.4	
2.130	-32.8	H	3.0	36.7	1.0	-68.4	-13.0	-55.4	
2.840	-31.1	H	3.0	36.2	1.0	-66.3	-13.0	-53.3	
High Ch, 711MHz									
1.422	-24.8	V	3.0	37.8	1.0	-61.6	-13.0	-48.6	
2.133	-31.8	V	3.0	36.7	1.0	-67.5	-13.0	-54.5	
2.844	-30.5	V	3.0	36.2	1.0	-65.7	-13.0	-52.7	
1.422	-24.4	H	3.0	37.8	1.0	-61.2	-13.0	-48.2	
2.133	-32.8	H	3.0	36.7	1.0	-68.4	-13.0	-55.4	
2.844	-31.1	H	3.0	36.2	1.0	-66.3	-13.0	-53.3	

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: Sony
Project #: 14U17933
Date: 08/15/14
Test Engineer: O. Stoelting
Configuration: X Position, EUT w/ AC Adaptor and HS
Mode: LTE17 10M QPSK HARM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE17

10MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,709MHz									
1.418	-27.7	V	3.0	37.8	1.0	-64.4	-13.0	-51.4	
2.127	-31.8	V	3.0	36.7	1.0	-67.5	-13.0	-54.5	
2.836	-30.6	V	3.0	36.2	1.0	-65.8	-13.0	-52.8	
1.418	-27.0	H	3.0	37.8	1.0	-63.7	-13.0	-50.7	
2.127	-32.9	H	3.0	36.7	1.0	-68.6	-13.0	-55.6	
2.836	-31.2	H	3.0	36.2	1.0	-66.3	-13.0	-53.3	
Mid Ch,710MHz									
1.420	-24.9	V	3.0	37.8	1.0	-61.7	-13.0	-48.7	
2.130	-31.9	V	3.0	36.7	1.0	-67.5	-13.0	-54.5	
2.840	-30.5	V	3.0	36.2	1.0	-65.7	-13.0	-52.7	
1.420	-24.2	H	3.0	37.8	1.0	-61.0	-13.0	-48.0	
2.130	-32.9	H	3.0	36.7	1.0	-68.6	-13.0	-55.6	
2.840	-30.9	H	3.0	36.2	1.0	-66.1	-13.0	-53.1	
High Ch, 711MHz									
1.422	-24.6	V	3.0	37.8	1.0	-61.3	-13.0	-48.3	
2.133	-32.0	V	3.0	36.7	1.0	-67.7	-13.0	-54.7	
2.844	-30.4	V	3.0	36.2	1.0	-65.6	-13.0	-52.6	
1.422	-23.9	H	3.0	37.8	1.0	-60.7	-13.0	-47.7	
2.133	-32.5	H	3.0	36.7	1.0	-68.2	-13.0	-55.2	
2.844	-31.0	H	3.0	36.2	1.0	-66.2	-13.0	-53.2	

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: Sony
Project #: 14U17933
Date: 08/15/14
Test Engineer: O. Stoelting
Configuration: X Position, EUT w/ AC Adaptor and HS
Mode: LTE17 5M 16QAM HARM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE17

5MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,706.5MHz									
1.413	-28.1	V	3.0	37.8	1.0	-64.8	-13.0	-51.8	
2.120	-32.0	V	3.0	36.7	1.0	-67.7	-13.0	-54.7	
2.283	-32.0	V	3.0	36.6	1.0	-67.5	-13.0	-54.5	
1.413	-30.0	H	3.0	37.8	1.0	-66.8	-13.0	-53.8	
2.120	-32.8	H	3.0	36.7	1.0	-68.5	-13.0	-55.5	
2.283	-33.0	H	3.0	36.6	1.0	-68.6	-13.0	-55.6	
Mid Ch,710MHz									
1.420	-24.4	V	3.0	37.8	1.0	-61.2	-13.0	-48.2	
2.130	-31.6	V	3.0	36.7	1.0	-67.3	-13.0	-54.3	
2.840	-30.6	V	3.0	36.2	1.0	-65.7	-13.0	-52.7	
1.420	-25.1	H	3.0	37.8	1.0	-61.9	-13.0	-48.9	
2.130	-32.7	H	3.0	36.7	1.0	-68.4	-13.0	-55.4	
2.840	-31.1	H	3.0	36.2	1.0	-66.2	-13.0	-53.2	
High Ch, 713.5MHz									
1.427	-25.5	V	3.0	37.7	1.0	-62.3	-13.0	-49.3	
2.141	-31.9	V	3.0	36.7	1.0	-67.6	-13.0	-54.6	
2.854	-30.1	V	3.0	36.2	1.0	-65.3	-13.0	-52.3	
1.427	-27.4	H	3.0	37.7	1.0	-64.1	-13.0	-51.1	
2.141	-31.6	H	3.0	36.7	1.0	-67.3	-13.0	-54.3	
2.854	-29.7	H	3.0	36.2	1.0	-64.8	-13.0	-51.8	

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:	Sony
Project #:	14U17933
Date:	08/15/14
Test Engineer:	O. Stoelting
Configuration:	X Position, EUT w/ AC Adaptor and HS
Mode:	LTE17 5M QPSK HARM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE17

5MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch,706.5MHz									
1.413	-27.7	V	3.0	37.8	1.0	-64.5	-13.0	-51.5	
2.120	-32.1	V	3.0	36.7	1.0	-67.8	-13.0	-54.8	
2.283	-31.9	V	3.0	36.6	1.0	-67.5	-13.0	-54.5	
1.413	-29.9	H	3.0	37.8	1.0	-66.7	-13.0	-53.7	
2.120	-32.8	H	3.0	36.7	1.0	-68.5	-13.0	-55.5	
2.283	-33.1	H	3.0	36.6	1.0	-68.7	-13.0	-55.7	
Mid Ch,710MHz									
1.420	-24.1	V	3.0	37.8	1.0	-60.8	-13.0	-47.8	
2.130	-31.6	V	3.0	36.7	1.0	-67.3	-13.0	-54.3	
2.840	-30.4	V	3.0	36.2	1.0	-65.5	-13.0	-52.5	
1.420	-25.3	H	3.0	37.8	1.0	-62.0	-13.0	-49.0	
2.130	-32.8	H	3.0	36.7	1.0	-68.4	-13.0	-55.4	
2.840	-31.1	H	3.0	36.2	1.0	-66.2	-13.0	-53.2	
High Ch, 713.5MHz									
1.427	-25.2	V	3.0	37.7	1.0	-61.9	-13.0	-48.9	
2.141	-31.8	V	3.0	36.7	1.0	-67.5	-13.0	-54.5	
2.854	-30.0	V	3.0	36.2	1.0	-65.1	-13.0	-52.1	
1.427	-27.0	H	3.0	37.7	1.0	-63.7	-13.0	-50.7	
2.141	-30.8	H	3.0	36.7	1.0	-66.5	-13.0	-53.5	
2.854	-30.9	H	3.0	36.2	1.0	-66.1	-13.0	-53.1	

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: Sony
Project #: 14U17933
Date: 08/15/15
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE13 10MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band
LTE13
10MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782.0MHz									
1.564		V	3.0	37.5	1.0		-13.0	13.0	
2.346		V	3.0	36.5	1.0		-13.0	13.0	
3.128		V	3.0	36.0	1.0		-13.0	13.0	
1.564		H	3.0	37.5	1.0		-13.0	13.0	
2.346		H	3.0	36.5	1.0		-13.0	13.0	
3.128		H	3.0	36.0	1.0		-13.0	13.0	
Mid Ch, 782.0MHz									
1.564	-39.9	V	3.0	37.5	1.0	-76.4	-13.0	-63.4	
2.346	-32.4	V	3.0	36.5	1.0	-67.9	-13.0	-54.9	
3.128	-32.0	V	3.0	36.0	1.0	-66.9	-13.0	-53.9	
1.564	-39.9	H	3.0	37.5	1.0	-76.4	-13.0	-63.4	
2.346	-28.8	H	3.0	36.5	1.0	-64.3	-13.0	-51.3	
3.128	-32.3	H	3.0	36.0	1.0	-67.3	-13.0	-54.3	
High Ch, 782.0MHz									
1.564		V	3.0	37.5	1.0		-13.0	13.0	
2.346		V	3.0	36.5	1.0		-13.0	13.0	
3.128		V	3.0	36.0	1.0		-13.0	13.0	
1.564		H	3.0	37.5	1.0		-13.0	13.0	
2.346		H	3.0	36.5	1.0		-13.0	13.0	
3.128		H	3.0	36.0	1.0		-13.0	13.0	

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: Sony
Project #: 14U17933
Date: 08/15/15
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE13 10MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band
LTE13
10MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782.0MHz									
1.564		V	3.0	37.5	1.0		-13.0	13.0	
2.346		V	3.0	36.5	1.0		-13.0	13.0	
3.128		V	3.0	36.0	1.0		-13.0	13.0	
1.564		H	3.0	37.5	1.0		-13.0	13.0	
2.346		H	3.0	36.5	1.0		-13.0	13.0	
3.128		H	3.0	36.0	1.0		-13.0	13.0	
Mid Ch, 782.0MHz									
1.564	-39.7	V	3.0	37.5	1.0	-76.2	-13.0	-63.2	
2.346	-31.5	V	3.0	36.5	1.0	-67.0	-13.0	-54.0	
3.128	-32.1	V	3.0	36.0	1.0	-67.1	-13.0	-54.1	
1.564	-37.4	H	3.0	37.5	1.0	-73.9	-13.0	-60.9	
2.346	-33.7	H	3.0	36.5	1.0	-69.2	-13.0	-56.2	
3.128	-31.9	H	3.0	36.0	1.0	-66.9	-13.0	-53.9	
High Ch, 782.0MHz									
1.564		V	3.0	37.5	1.0		-13.0	13.0	
2.346		V	3.0	36.5	1.0		-13.0	13.0	
3.128		V	3.0	36.0	1.0		-13.0	13.0	
1.564		H	3.0	37.5	1.0		-13.0	13.0	
2.346		H	3.0	36.5	1.0		-13.0	13.0	
3.128		H	3.0	36.0	1.0		-13.0	13.0	

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: Sony
Project #: 14U17933
Date: 08/15/15
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE13 5MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE13

5MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1.559	-35.3	V	3.0	37.5	1.0	-71.8	-13.0	-58.8	
2.339	-28.9	V	3.0	36.5	1.0	-64.4	-13.0	-51.4	
3.118	-30.9	V	3.0	36.0	1.0	-65.9	-13.0	-52.9	
1.559	-39.6	H	3.0	37.5	1.0	-76.2	-13.0	-63.2	
2.339	-25.3	H	3.0	36.5	1.0	-60.9	-13.0	-47.9	
3.118	-31.9	H	3.0	36.0	1.0	-66.8	-13.0	-53.8	
Mid Ch, 782.0MHz									
1.564	-33.7	V	3.0	37.5	1.0	-70.3	-13.0	-57.3	
2.346	-29.0	V	3.0	36.5	1.0	-64.5	-13.0	-51.5	
3.128	-32.1	V	3.0	36.0	1.0	-67.1	-13.0	-54.1	
1.564	-39.9	H	3.0	37.5	1.0	-76.4	-13.0	-63.4	
2.346	-28.9	H	3.0	36.5	1.0	-64.5	-13.0	-51.5	
3.128	-32.4	H	3.0	36.0	1.0	-67.4	-13.0	-54.4	
High Ch, 784.5MHz									
1.569	-30.6	V	3.0	37.5	1.0	-67.1	-13.0	-54.1	
2.354	-27.6	V	3.0	36.5	1.0	-63.1	-13.0	-50.1	
3.138	-30.0	V	3.0	36.0	1.0	-64.9	-13.0	-51.9	
1.569	-28.3	H	3.0	37.5	1.0	-64.8	-13.0	-51.8	
2.354	-32.4	H	3.0	36.5	1.0	-67.9	-13.0	-54.9	
3.138	-32.1	H	3.0	36.0	1.0	-67.1	-13.0	-54.1	

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: Sony
Project #: 14U17933
Date: 08/15/15
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE13 5MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE13

5MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1.559	-34.8	V	3.0	37.5	1.0	-71.4	-13.0	-58.4	
2.339	-28.3	V	3.0	36.5	1.0	-63.8	-13.0	-50.8	
3.118	-30.6	V	3.0	36.0	1.0	-65.5	-13.0	-52.5	
1.559	-39.5	H	3.0	37.5	1.0	-76.0	-13.0	-63.0	
2.339	-24.8	H	3.0	36.5	1.0	-60.4	-13.0	-47.4	
3.118	-31.9	H	3.0	36.0	1.0	-66.9	-13.0	-53.9	
Mid Ch, 782.0MHz									
1.564	-32.3	V	3.0	37.5	1.0	-68.8	-13.0	-55.8	
2.346	-27.6	V	3.0	36.5	1.0	-63.1	-13.0	-50.1	
3.128	-31.8	V	3.0	36.0	1.0	-66.8	-13.0	-53.8	
1.564	-39.9	H	3.0	37.5	1.0	-76.5	-13.0	-63.5	
2.346	-28.5	H	3.0	36.5	1.0	-64.0	-13.0	-51.0	
3.128	-32.2	H	3.0	36.0	1.0	-67.1	-13.0	-54.1	
High Ch, 784.5MHz									
1.569	-29.6	V	3.0	37.5	1.0	-66.1	-13.0	-53.1	
2.354	-28.0	V	3.0	36.5	1.0	-63.5	-13.0	-50.5	
3.138	-29.0	V	3.0	36.0	1.0	-64.0	-13.0	-51.0	
1.569	-27.5	H	3.0	37.5	1.0	-64.0	-13.0	-51.0	
2.354	-31.4	H	3.0	36.5	1.0	-66.9	-13.0	-53.9	
3.138	-31.9	H	3.0	36.0	1.0	-66.9	-13.0	-53.9	

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

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Band

LTE13

5MHz

16QAM
GPS band
emission

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 14U17933
Date: 09/04/14
Test Engineer: R. Alegre
Configuration: EUT w/ AC Adaptor and HS
Mode: LTE13_5MHz_ 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Channel (782 MHz)									
5MHz BW									
1.564	-26.5	H	3.0	30.7	1.0	-56.2	-40.0	-16.2	RBW: 1MHz Span: 1559-1610 MHz
1.564	-50.4	H	3.0	30.7	1.0	-80.1	-50.0	-30.1	RBW: 700 Hz Span: 1559-1610 MHz
1.564	-27.7	V	3.0	30.7	1.0	-57.4	-40.0	-17.4	RBW: 1MHz Span: 1559-1610 MHz
1.564	-54.1	V	3.0	30.7	1.0	-83.8	-50.0	-33.8	RBW: 700 Hz Span: 1559-1610 MHz

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

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Band

LTE13

5MHz

QPSK GPS band emission

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 14U17933
Date: 09/04/14
Test Engineer: R. Alegre
Configuration: EUT w/ AC Adaptor and HS
Mode: LTE13_5MHz_QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Channel (782 MHz)									
5MHz BW									
1.564	-21.6	H	3.0	30.7	1.0	-51.3	-40.0	-11.3	RBW: 1MHz Span: 1559-1610 MHz
1.564	-51.1	H	3.0	30.7	1.0	-80.8	-50.0	-30.8	RBW: 700 Hz Span: 1559-1610 MHz
1.564	-27.6	V	3.0	30.7	1.0	-57.3	-40.0	-17.3	RBW: 1MHz Span: 1559-1610 MHz
1.564	-53.3	V	3.0	30.7	1.0	-83.0	-50.0	-33.0	RBW: 700 Hz Span: 1559-1610 MHz

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

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Band

LTE13

10MHz

16QAM
GPS band
emission

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 14U17933
Date: 09/04/14
Test Engineer: R. Alegre
Configuration: EUT w/ AC Adaptor and HS
Mode: LTE13_10MHz_16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Channel (782 MHz)									
10MHz BW									
1.564	-25.4	H	3.0	30.7	1.0	-55.1	-40.0	-15.1	RBW: 1MHz Span: 1559-1610 MHz
1.564	-48.9	H	3.0	30.7	1.0	-78.6	-50.0	-28.6	RBW: 700 Hz Span: 1559-1610 MHz
1.564	-25.7	V	3.0	30.7	1.0	-55.4	-40.0	-15.4	RBW: 1MHz Span: 1559-1610 MHz
1.564	-49.9	V	3.0	30.7	1.0	-79.6	-50.0	-29.6	RBW: 700 Hz Span: 1559-1610 MHz

Rev. 03.03.09
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Band

LTE13

10MHz

QPSK GPS band emission

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 14U17933
Date: 09/04/14
Test Engineer: R. Alegre
Configuration: EUT w/ AC Adaptor and HS
Mode: LTE13_10MHz_ QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Channel (782 MHz)									
10MHz BW									
1.564	-24.9	H	3.0	30.7	1.0	-54.6	-40.0	-14.6	RBW: 1MHz Span: 1559-1610 MHz
1.564	-48.4	H	3.0	30.7	1.0	-78.1	-50.0	-28.1	RBW: 700 Hz Span: 1559-1610 MHz
1.564	-25.7	V	3.0	30.7	1.0	-55.4	-40.0	-15.4	RBW: 1MHz Span: 1559-1610 MHz
1.564	-50.1	V	3.0	30.7	1.0	-79.8	-50.0	-29.8	RBW: 700 Hz Span: 1559-1610 MHz

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 20MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE7

20MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510.0MHz									
5.020	-28.4	V	3.0	34.8	1.0	-62.2	-25.0	-37.2	
7.530	-24.0	V	3.0	34.9	1.0	-58.0	-25.0	-33.0	
10.040	-22.4	V	3.0	35.3	1.0	-56.8	-25.0	-31.8	
5.020	-28.0	H	3.0	34.8	1.0	-61.7	-25.0	-36.7	
7.530	-23.0	H	3.0	34.9	1.0	-56.9	-25.0	-31.9	
10.040	-21.0	H	3.0	35.3	1.0	-55.3	-25.0	-30.3	
Mid Ch, 2535.0MHz									
5.070	-25.8	V	3.0	34.7	1.0	-59.6	-25.0	-34.6	
7.605	-23.7	V	3.0	34.9	1.0	-57.6	-25.0	-32.6	
10.140	-22.1	V	3.0	35.3	1.0	-56.4	-25.0	-31.4	
5.070	-19.2	H	3.0	34.7	1.0	-52.9	-25.0	-27.9	
7.605	-22.8	H	3.0	34.9	1.0	-56.7	-25.0	-31.7	
10.140	-21.5	H	3.0	35.3	1.0	-55.8	-25.0	-30.8	
High Ch, 2560.0MHz									
5.120	-20.6	V	3.0	34.7	1.0	-54.3	-25.0	-29.3	
7.680	-23.0	V	3.0	35.0	1.0	-57.0	-25.0	-32.0	
10.240	-21.9	V	3.0	35.2	1.0	-56.2	-25.0	-31.2	
5.120	-24.1	H	3.0	34.7	1.0	-57.8	-25.0	-32.8	
7.680	-22.2	H	3.0	35.0	1.0	-56.1	-25.0	-31.1	
10.240	-21.2	H	3.0	35.2	1.0	-55.5	-25.0	-30.5	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 20MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE7

20MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510.0MHz									
5.020	-28.6	V	3.0	34.8	1.0	-62.4	-25.0	-37.4	
7.530	-24.0	V	3.0	34.9	1.0	-57.9	-25.0	-32.9	
10.040	-22.4	V	3.0	35.3	1.0	-56.7	-25.0	-31.7	
5.020	-27.6	H	3.0	34.8	1.0	-61.3	-25.0	-36.3	
7.530	-23.0	H	3.0	34.9	1.0	-56.9	-25.0	-31.9	
10.040	-21.7	H	3.0	35.3	1.0	-56.0	-25.0	-31.0	
Mid Ch, 2535.0MHz									
5.070	-26.3	V	3.0	34.7	1.0	-60.0	-25.0	-35.0	
7.605	-23.6	V	3.0	34.9	1.0	-57.6	-25.0	-32.6	
10.140	-22.1	V	3.0	35.3	1.0	-56.4	-25.0	-31.4	
5.070	-20.4	H	3.0	34.7	1.0	-54.2	-25.0	-29.2	
7.605	-22.8	H	3.0	34.9	1.0	-56.7	-25.0	-31.7	
10.140	-21.4	H	3.0	35.3	1.0	-55.7	-25.0	-30.7	
High Ch, 2560.0MHz									
5.120	-21.1	V	3.0	34.7	1.0	-54.8	-25.0	-29.8	
7.680	-23.0	V	3.0	35.0	1.0	-57.0	-25.0	-32.0	
10.240	-21.8	V	3.0	35.2	1.0	-56.1	-25.0	-31.1	
5.120	-25.3	H	3.0	34.7	1.0	-59.0	-25.0	-34.0	
7.680	-22.1	H	3.0	35.0	1.0	-56.1	-25.0	-31.1	
10.240	-21.2	H	3.0	35.2	1.0	-55.5	-25.0	-30.5	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 15MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band
LTE7
15MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5.015	-21.9	V	3.0	34.8	1.0	-55.7	-25.0	-30.7	
7.523	-21.4	V	3.0	34.9	1.0	-55.4	-25.0	-30.4	
10.030	-22.4	V	3.0	35.3	1.0	-56.7	-25.0	-31.7	
5.015	-25.4	H	3.0	34.8	1.0	-59.2	-25.0	-34.2	
7.523	-22.1	H	3.0	34.9	1.0	-56.0	-25.0	-31.0	
10.030	-21.6	H	3.0	35.3	1.0	-55.9	-25.0	-30.9	
Mid Ch, 2535.0MHz									
5.070	-22.1	V	3.0	34.7	1.0	-55.8	-25.0	-30.8	
7.605	-22.9	V	3.0	34.9	1.0	-56.9	-25.0	-31.9	
10.140	-22.3	V	3.0	35.3	1.0	-56.6	-25.0	-31.6	
5.070	-28.3	H	3.0	34.7	1.0	-62.0	-25.0	-37.0	
7.605	-22.7	H	3.0	34.9	1.0	-56.7	-25.0	-31.7	
10.140	-21.4	H	3.0	35.3	1.0	-55.7	-25.0	-30.7	
High Ch, 2562.5MHz									
5.125	-21.1	V	3.0	34.7	1.0	-54.9	-25.0	-29.9	
7.688	-20.0	V	3.0	35.0	1.0	-54.0	-25.0	-29.0	
10.250	-21.8	V	3.0	35.2	1.0	-56.1	-25.0	-31.1	
5.125	-26.4	H	3.0	34.7	1.0	-60.1	-25.0	-35.1	
7.688	-20.7	H	3.0	35.0	1.0	-54.6	-25.0	-29.6	
10.250	-21.3	H	3.0	35.2	1.0	-55.6	-25.0	-30.6	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 15MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band
LTE7
15MHz
QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5.015	-21.2	V	3.0	34.8	1.0	-54.9	-25.0	-29.9	
7.523	-20.9	V	3.0	34.9	1.0	-54.9	-25.0	-29.9	
10.030	-22.4	V	3.0	35.3	1.0	-56.8	-25.0	-31.8	
5.015	-24.0	H	3.0	34.8	1.0	-57.7	-25.0	-32.7	
7.523	-22.8	H	3.0	34.9	1.0	-56.7	-25.0	-31.7	
10.030	-21.6	H	3.0	35.3	1.0	-55.9	-25.0	-30.9	
Mid Ch, 2535.0MHz									
5.070	-21.3	V	3.0	34.7	1.0	-55.0	-25.0	-30.0	
7.605	-22.5	V	3.0	34.9	1.0	-56.5	-25.0	-31.5	
10.140	-22.2	V	3.0	35.3	1.0	-56.5	-25.0	-31.5	
5.070	-28.7	H	3.0	34.7	1.0	-62.5	-25.0	-37.5	
7.605	-22.5	H	3.0	34.9	1.0	-56.4	-25.0	-31.4	
10.140	-21.5	H	3.0	35.3	1.0	-55.7	-25.0	-30.7	
High Ch, 2562.5MHz									
5.125	-20.3	V	3.0	34.7	1.0	-54.0	-25.0	-29.0	
7.688	-20.3	V	3.0	35.0	1.0	-54.3	-25.0	-29.3	
10.250	-21.8	V	3.0	35.2	1.0	-56.0	-25.0	-31.0	
5.125	-25.9	H	3.0	34.7	1.0	-59.6	-25.0	-34.6	
7.688	-20.1	H	3.0	35.0	1.0	-54.1	-25.0	-29.1	
10.250	-21.2	H	3.0	35.2	1.0	-55.4	-25.0	-30.4	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 10MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE7

10MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505.0MHz									
5.010	-21.5	V	3.0	34.8	1.0	-55.3	-25.0	-30.3	
7.515	-22.7	V	3.0	34.9	1.0	-56.6	-25.0	-31.6	
10.020	-23.3	V	3.0	35.4	1.0	-57.7	-25.0	-32.7	
5.010	-28.5	H	3.0	34.8	1.0	-62.3	-25.0	-37.3	
7.515	-24.1	H	3.0	34.9	1.0	-58.1	-25.0	-33.1	
10.020	-22.5	H	3.0	35.4	1.0	-56.9	-25.0	-31.9	
Mid Ch, 2535.0MHz									
5.070	-22.5	V	3.0	34.7	1.0	-56.3	-25.0	-31.3	
7.605	-22.9	V	3.0	34.9	1.0	-56.9	-25.0	-31.9	
10.140	-22.1	V	3.0	35.3	1.0	-56.4	-25.0	-31.4	
5.070	-23.2	H	3.0	34.7	1.0	-56.9	-25.0	-31.9	
7.605	-22.7	H	3.0	34.9	1.0	-56.7	-25.0	-31.7	
10.140	-21.6	H	3.0	35.3	1.0	-55.9	-25.0	-30.9	
High Ch, 2565.0MHz									
5.130	-22.5	V	3.0	34.7	1.0	-56.2	-25.0	-31.2	
7.695	-22.9	V	3.0	35.0	1.0	-56.8	-25.0	-31.8	
10.260	-21.7	V	3.0	35.2	1.0	-55.9	-25.0	-30.9	
5.130	-21.4	H	3.0	34.7	1.0	-55.2	-25.0	-30.2	
7.695	-17.8	H	3.0	35.0	1.0	-51.8	-25.0	-26.8	
10.260	-21.2	H	3.0	35.2	1.0	-55.4	-25.0	-30.4	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 10MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE7

10MHz

QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505.0MHz									
5.010	-21.0	V	3.0	34.8	1.0	-54.8	-25.0	-29.8	
7.515	-21.0	V	3.0	34.9	1.0	-54.9	-25.0	-29.9	
10.020	-23.3	V	3.0	35.4	1.0	-57.7	-25.0	-32.7	
5.010	-29.0	H	3.0	34.8	1.0	-62.8	-25.0	-37.8	
7.515	-24.2	H	3.0	34.9	1.0	-58.2	-25.0	-33.2	
10.020	-22.6	H	3.0	35.4	1.0	-56.9	-25.0	-31.9	
Mid Ch, 2535.0MHz									
5.070	-22.2	V	3.0	34.7	1.0	-55.9	-25.0	-30.9	
7.605	-22.9	V	3.0	34.9	1.0	-56.9	-25.0	-31.9	
10.140	-22.2	V	3.0	35.3	1.0	-56.5	-25.0	-31.5	
5.070	-22.6	H	3.0	34.7	1.0	-56.3	-25.0	-31.3	
7.605	-22.8	H	3.0	34.9	1.0	-56.8	-25.0	-31.8	
10.140	-21.5	H	3.0	35.3	1.0	-55.8	-25.0	-30.8	
High Ch, 2565.0MHz									
5.130	-21.4	V	3.0	34.7	1.0	-55.2	-25.0	-30.2	
7.695	-23.1	V	3.0	35.0	1.0	-57.1	-25.0	-32.1	
10.260	-21.6	V	3.0	35.2	1.0	-55.9	-25.0	-30.9	
5.130	-21.7	H	3.0	34.7	1.0	-55.4	-25.0	-30.4	
7.695	-21.5	H	3.0	35.0	1.0	-55.4	-25.0	-30.4	
10.260	-21.2	H	3.0	35.2	1.0	-55.4	-25.0	-30.4	

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: Sony
Project #: 14U17933
Date: 08/14/14
Test Engineer: G. Chan, L. Lee
Configuration: X-Pos EUT w/ AC charger
Mode: LTE7 5MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 27

Band

LTE7

5MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2502.5MHz									
5.005	-23.0	V	3.0	34.8	1.0	-56.7	-25.0	-31.7	
7.508	-20.1	V	3.0	34.9	1.0	-54.0	-25.0	-29.0	
10.010	-22.5	V	3.0	35.4	1.0	-56.9	-25.0	-31.9	
5.005	-26.4	H	3.0	34.8	1.0	-60.2	-25.0	-35.2	
7.508	-20.4	H	3.0	34.9	1.0	-54.3	-25.0	-29.3	
10.010	-21.6	H	3.0	35.4	1.0	-56.0	-25.0	-31.0	
Mid Ch, 2535.0MHz									
5.070	-22.2	V	3.0	34.7	1.0	-55.9	-25.0	-30.9	
7.605	-21.6	V	3.0	34.9	1.0	-55.5	-25.0	-30.5	
10.140	-22.3	V	3.0	35.3	1.0	-56.6	-25.0	-31.6	
5.070	-18.4	H	3.0	34.7	1.0	-52.2	-25.0	-27.2	
7.605	-19.8	H	3.0	34.9	1.0	-53.8	-25.0	-28.8	
10.140	-21.5	H	3.0	35.3	1.0	-55.8	-25.0	-30.8	
High Ch, 2567.5MHz									
5.135	-24.2	V	3.0	34.7	1.0	-57.9	-25.0	-32.9	
7.703	-23.0	V	3.0	35.0	1.0	-56.9	-25.0	-31.9	
10.270	-21.8	V	3.0	35.2	1.0	-56.0	-25.0	-31.0	
5.135	-21.2	H	3.0	34.7	1.0	-54.9	-25.0	-29.9	
7.703	-20.9	H	3.0	35.0	1.0	-54.9	-25.0	-29.9	
10.270	-21.1	H	3.0	35.2	1.0	-55.3	-25.0	-30.3	

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

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