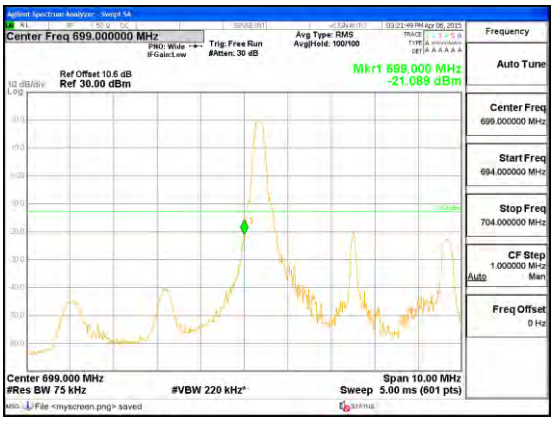
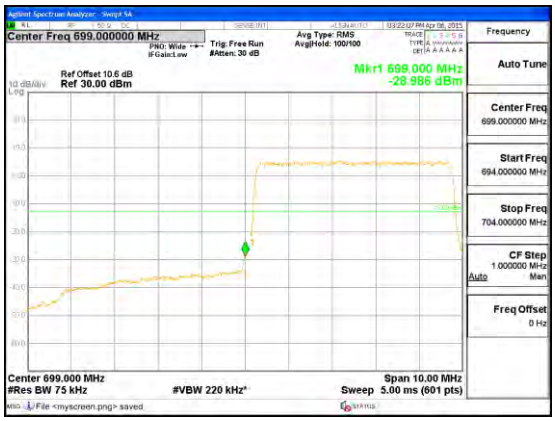
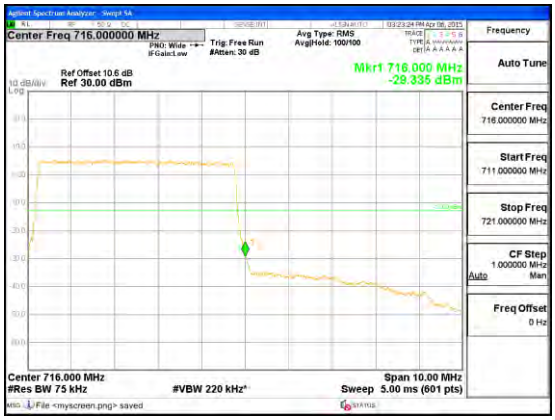
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 5MHz CBE 16QAM High Channel FRB.gif

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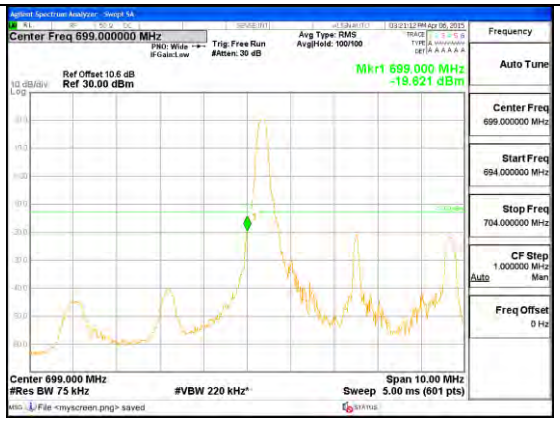
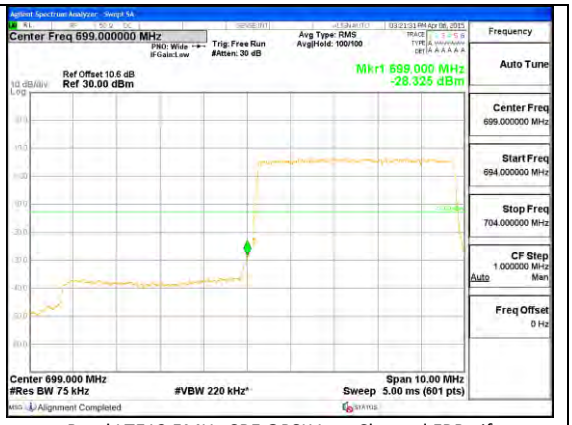
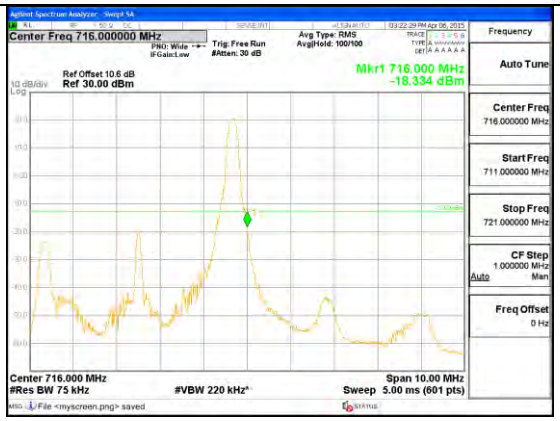
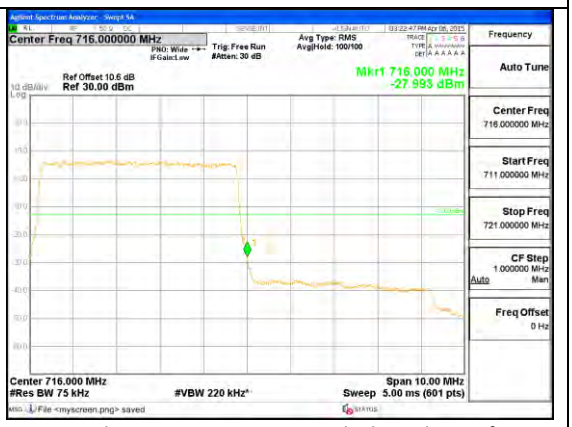
Band LTE12 5MHz QPSK	 Band LTE12 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE12 5MHz CBE QPSK Low Channel FRB.gif
Band LTE12 5MHz QPSK	 Band LTE12 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE12 5MHz CBE QPSK High Channel FRB.gif

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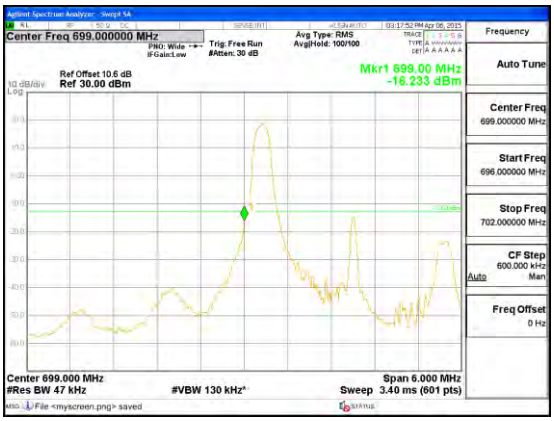
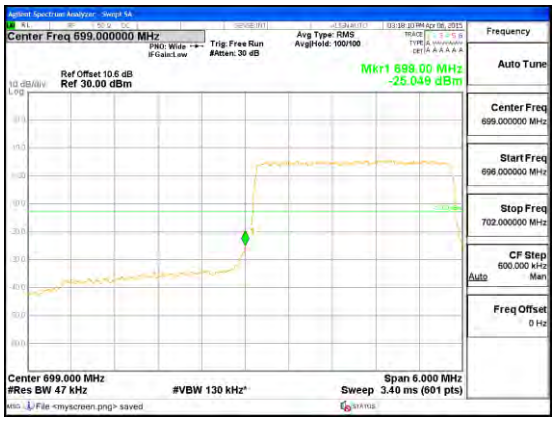
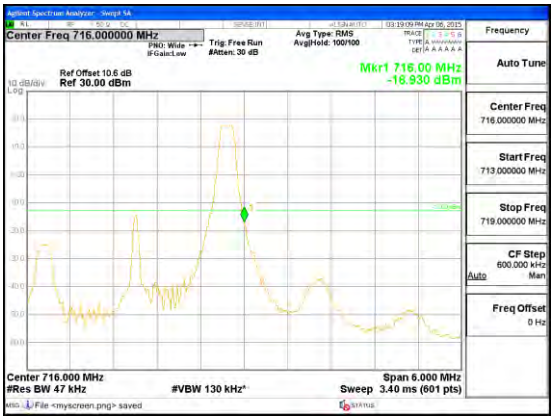
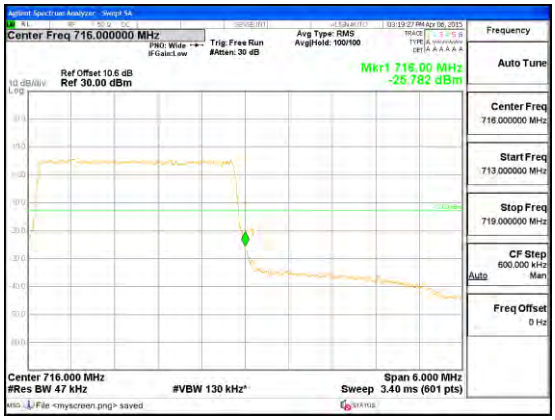
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 3MHz CBE 16QAM High Channel FRB.gif

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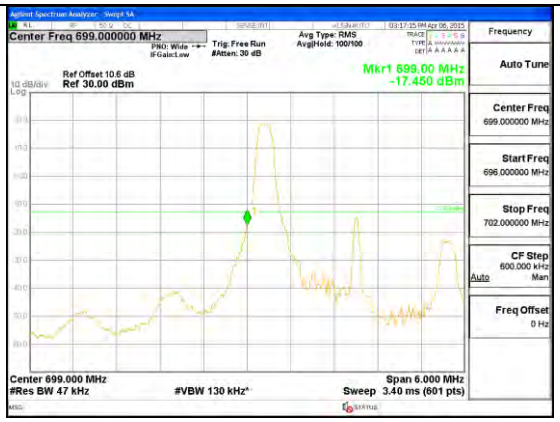
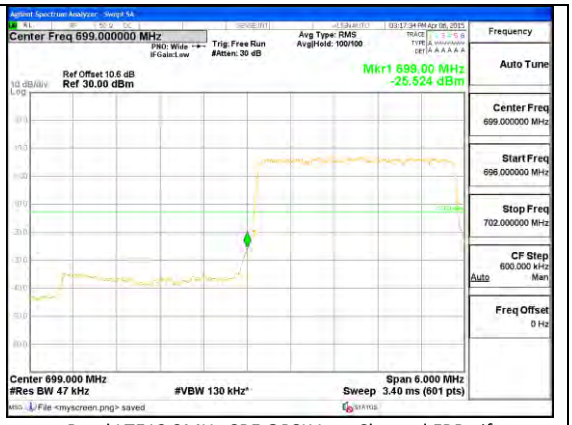
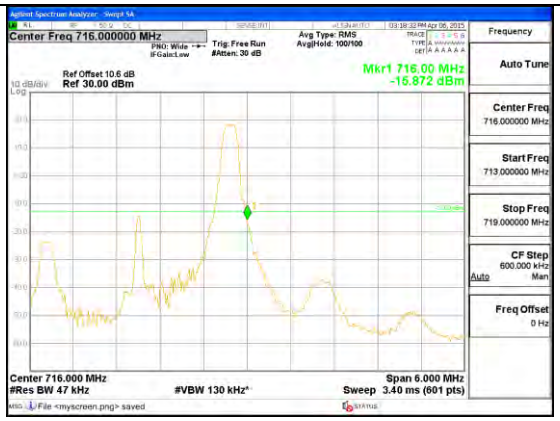
Band LTE12 3MHz QPSK	 Band LTE12 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE12 3MHz CBE QPSK Low Channel FRB.gif
Band LTE12 3MHz QPSK	 Band LTE12 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE12 3MHz CBE QPSK High Channel FRB.gif

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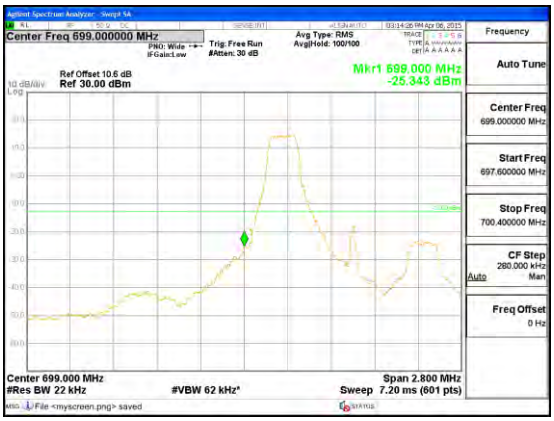
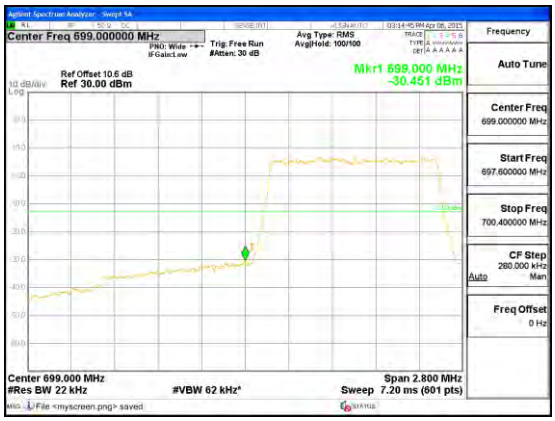
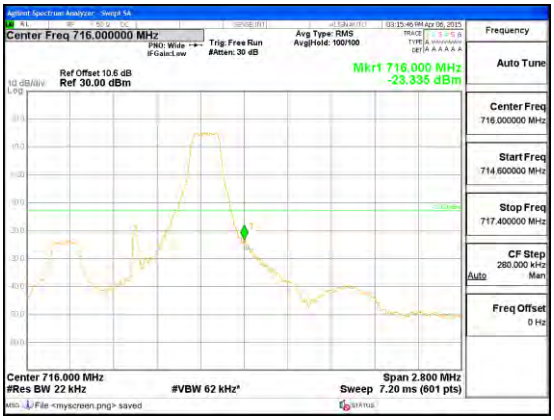
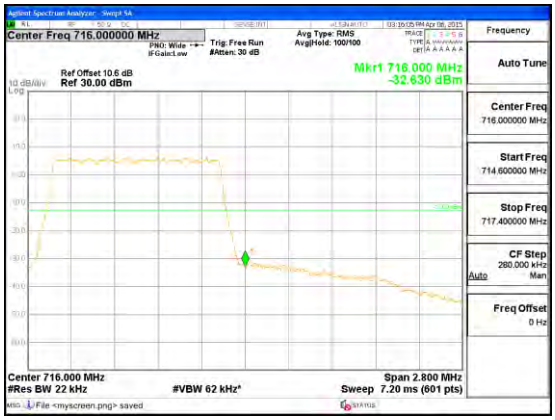
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 1.4MHz CBE 16QAM High Channel FRB.gif

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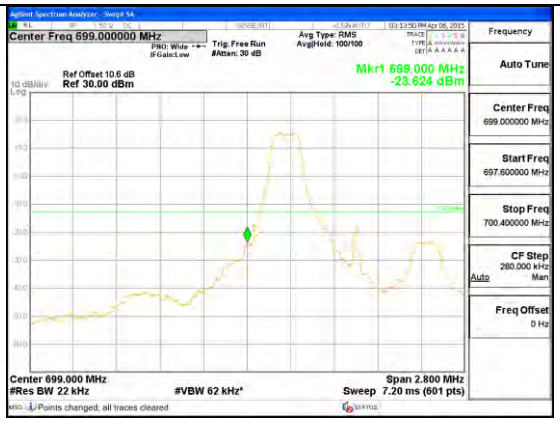
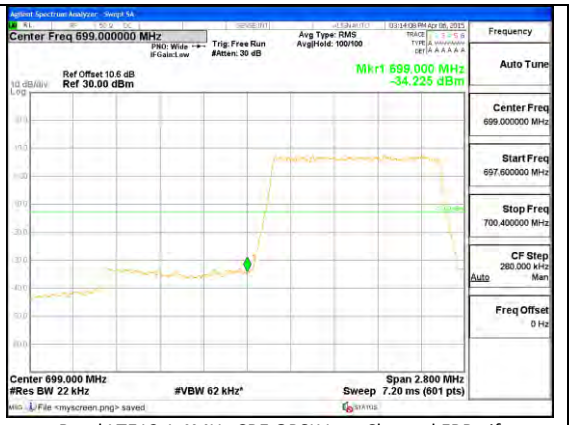
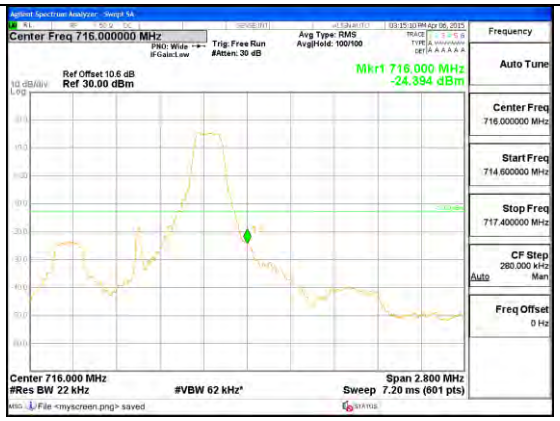
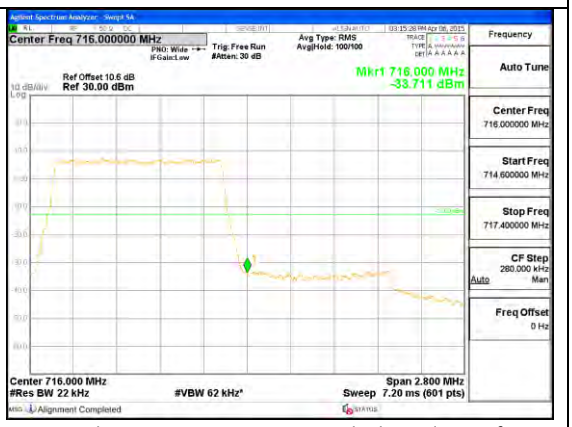
Band LTE12 1.4MHz QPSK	 Band LTE12 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE12 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE12 1.4MHz QPSK	 Band LTE12 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE12 1.4MHz CBE QPSK High Channel FRB.gif

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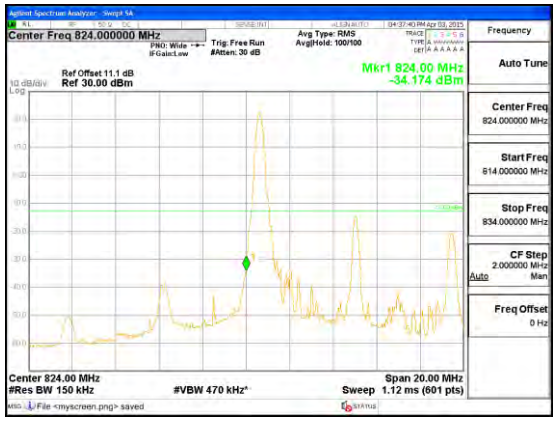
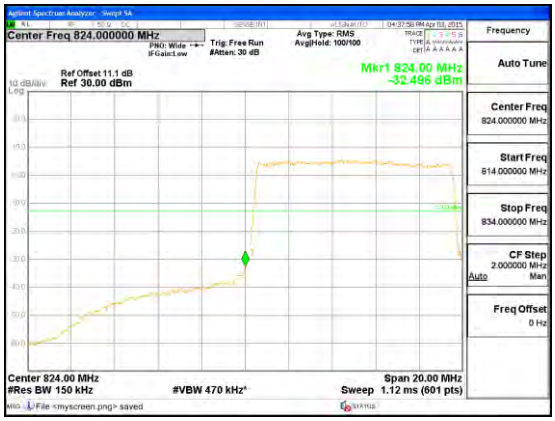
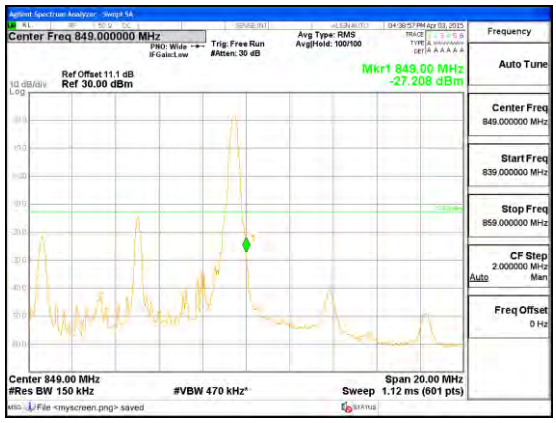
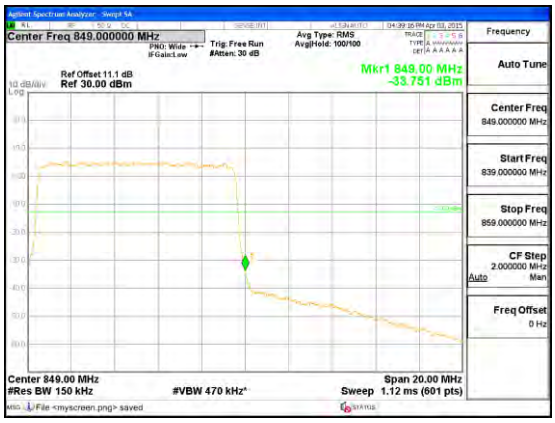
LTE Band 5

Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM High Channel FRB.gif

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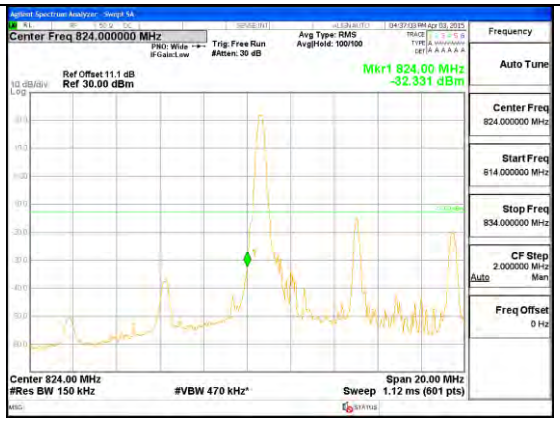
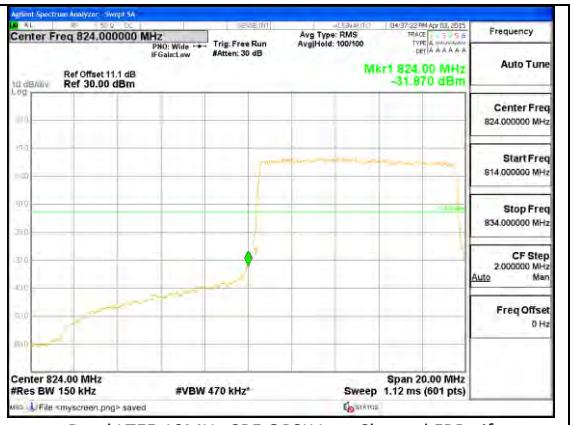
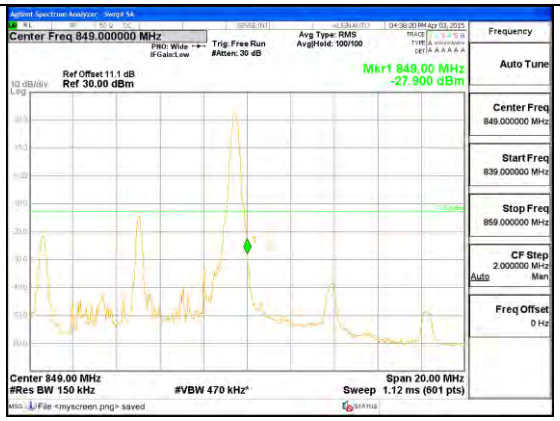
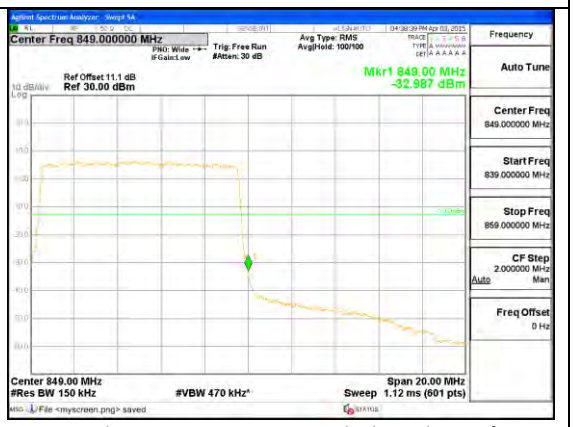
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK Low Channel FRB.gif
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK High Channel FRB.gif

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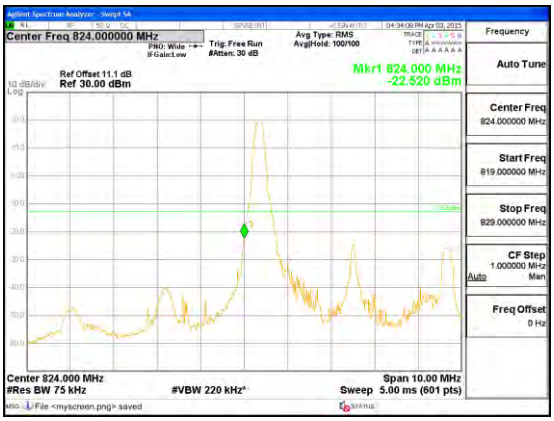
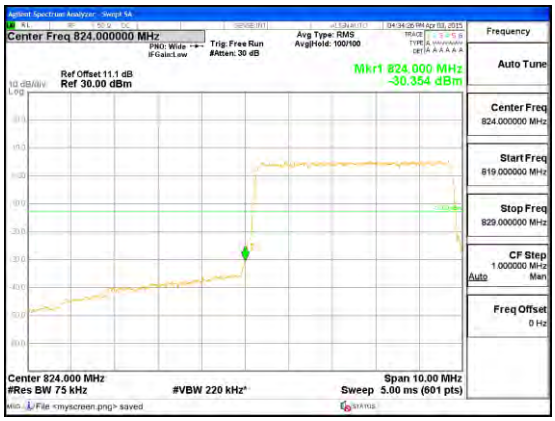
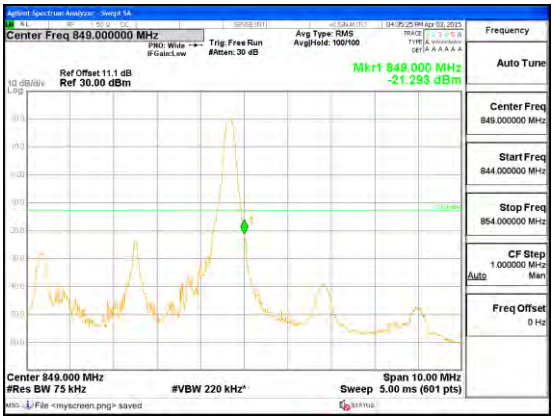
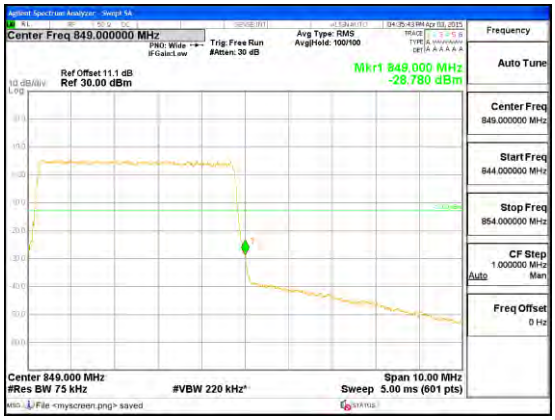
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM High Channel FRB.gif

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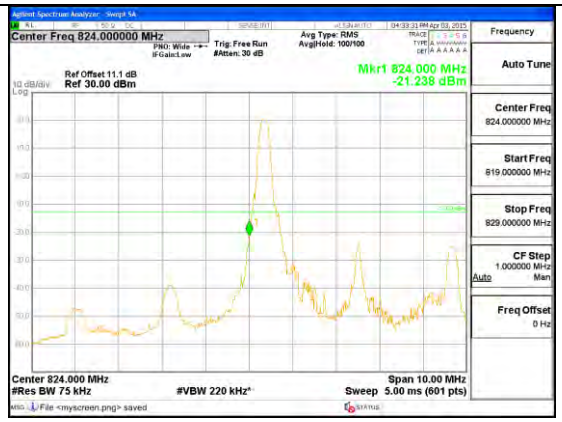
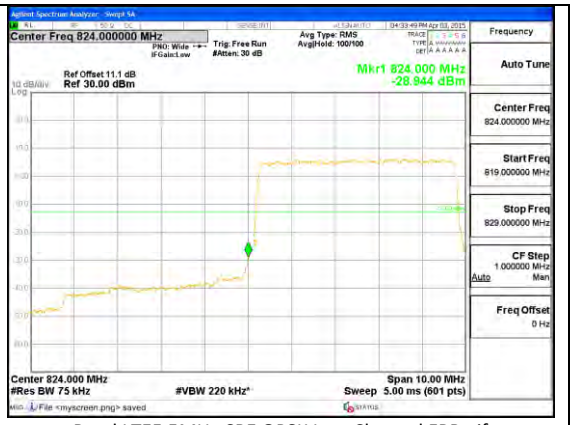
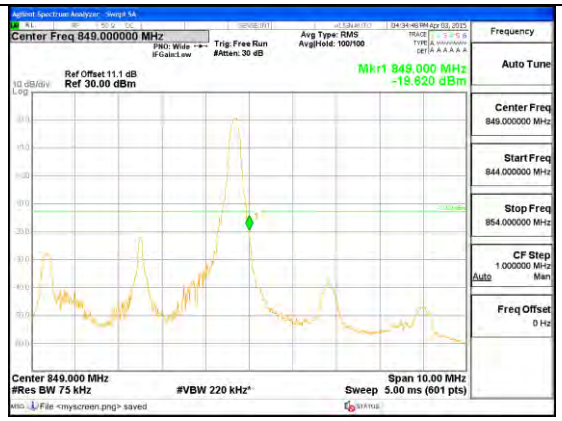
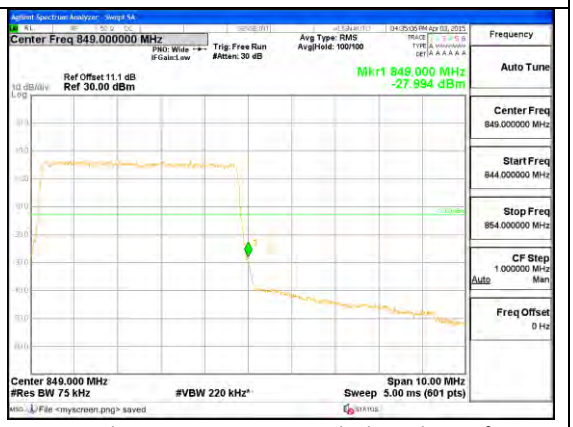
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK Low Channel FRB.gif
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK High Channel FRB.gif

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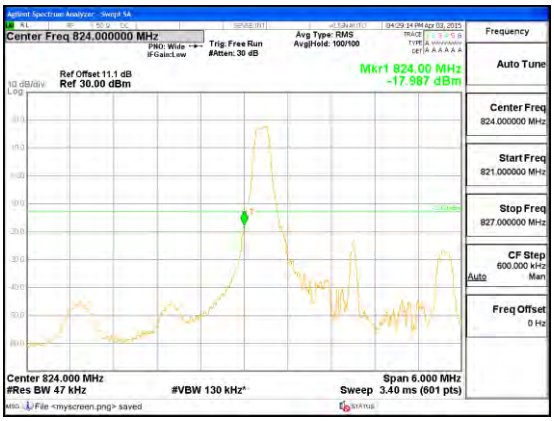
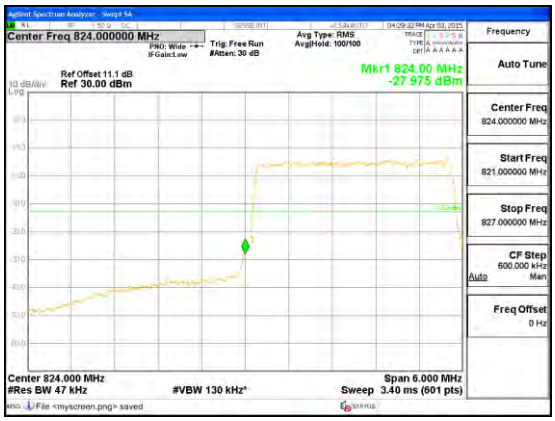
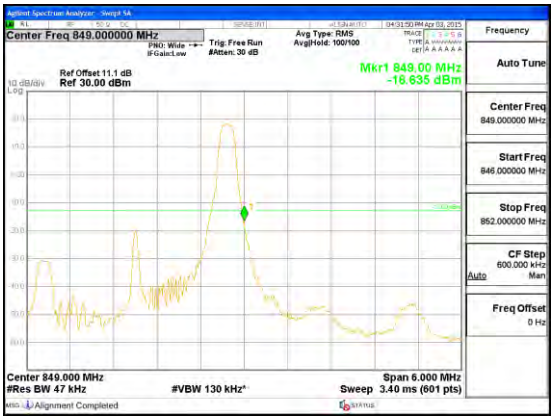
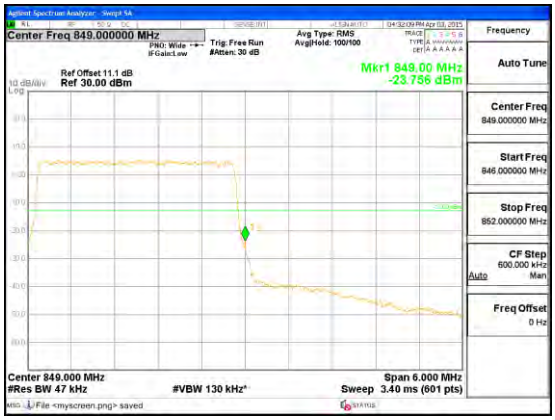
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM High Channel FRB.gif

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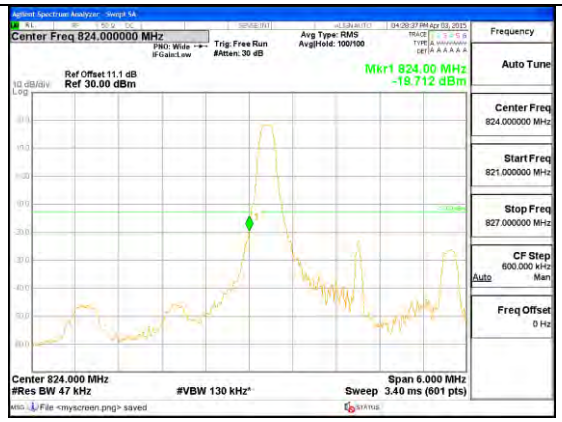
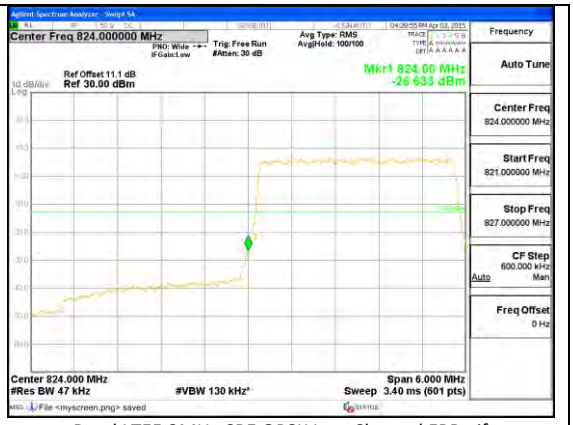
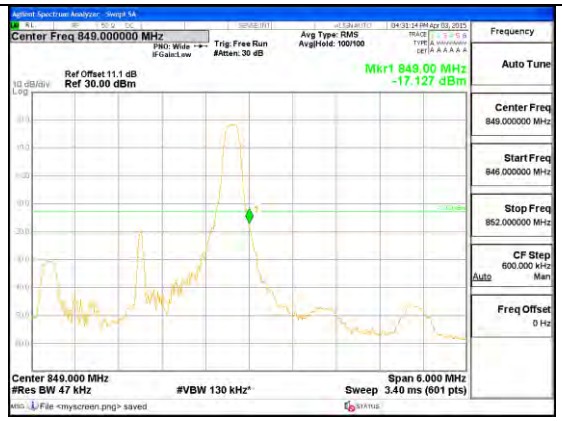
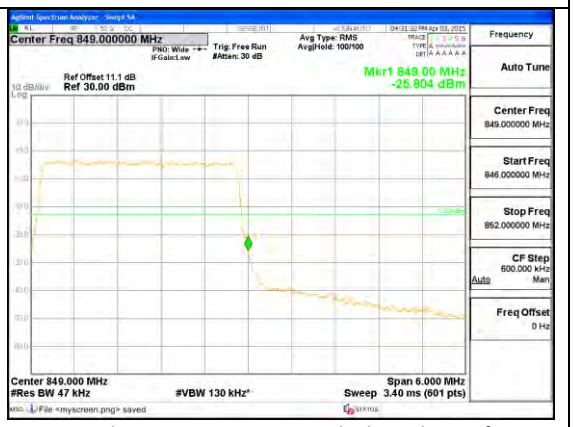
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK Low Channel FRB.gif
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK High Channel FRB.gif

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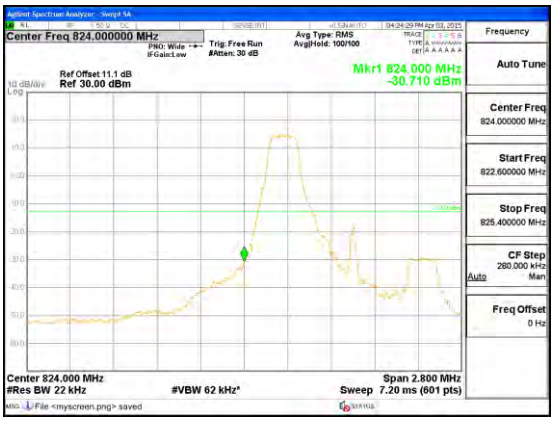
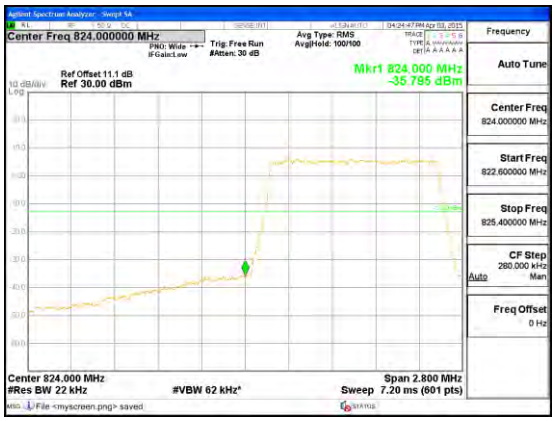
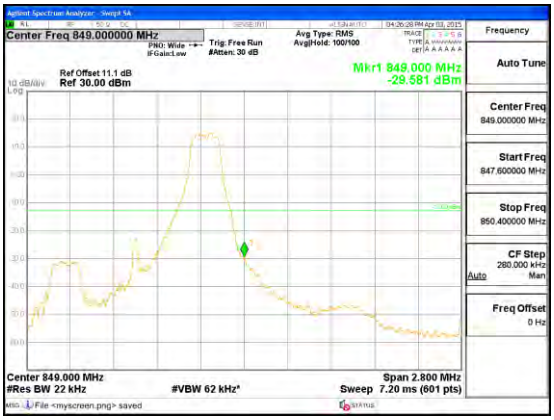
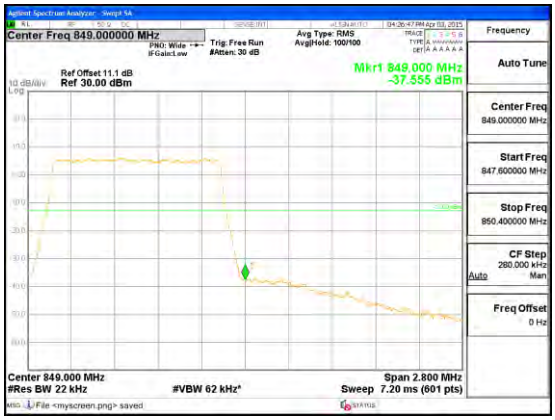
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM High Channel FRB.gif

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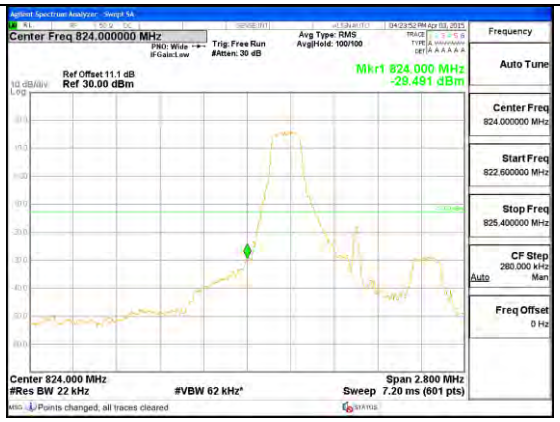
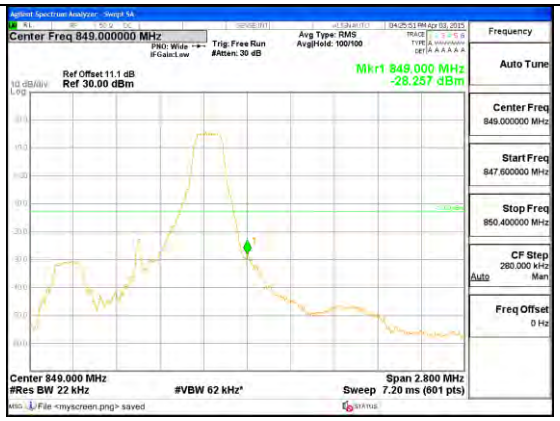
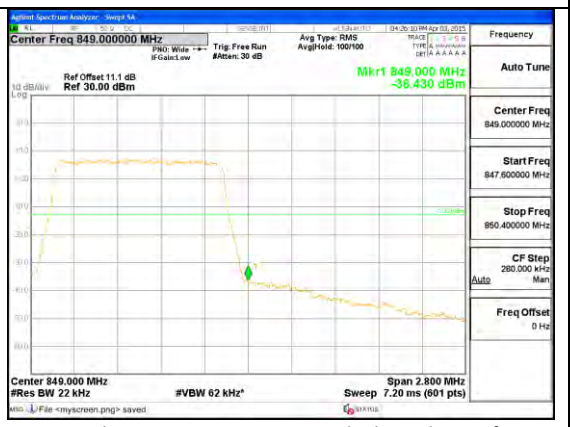
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK High Channel FRB.gif

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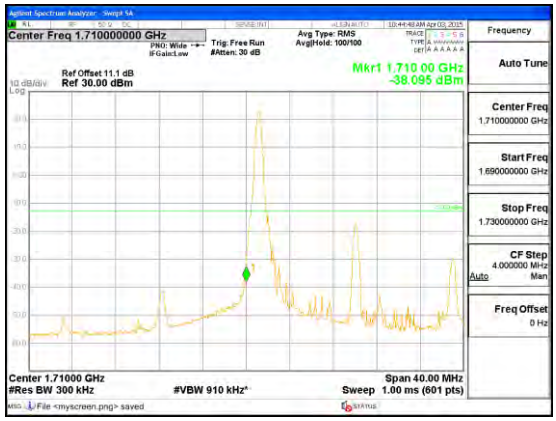
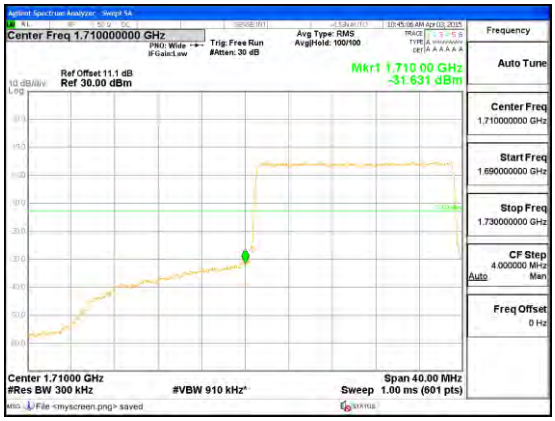
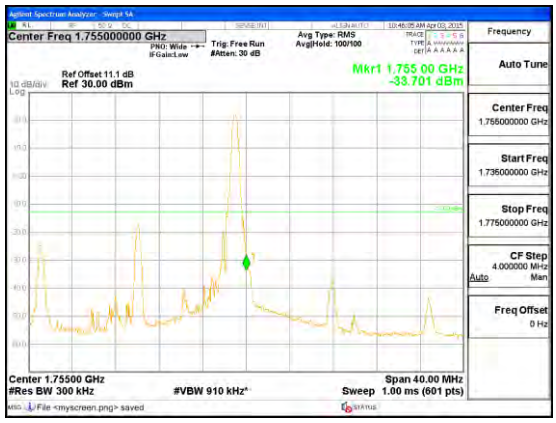
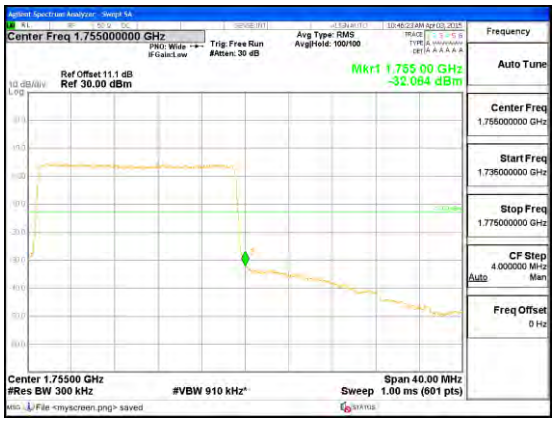
LTE Band 4

Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM High Channel FRB.gif

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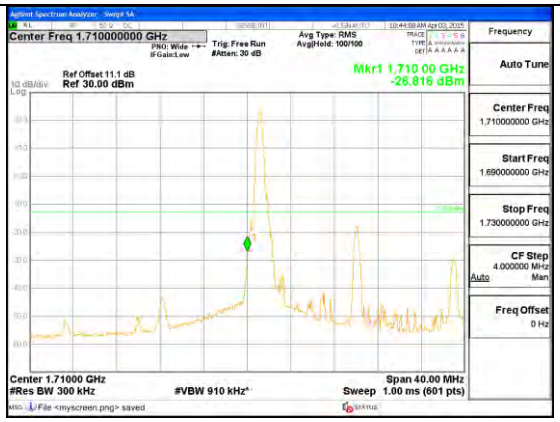
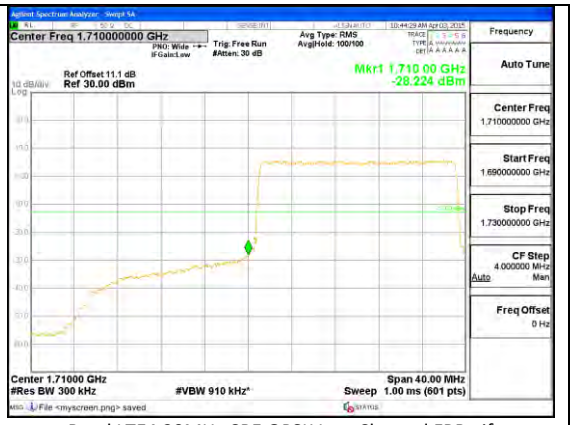
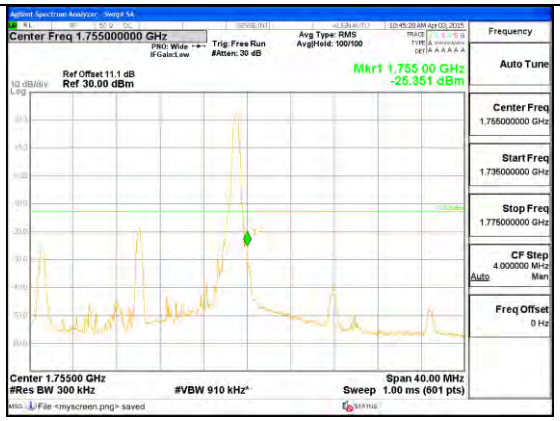
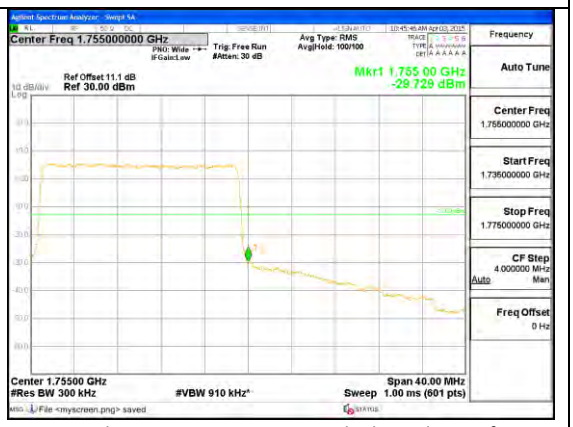
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK Low Channel FRB.gif
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK High Channel FRB.gif

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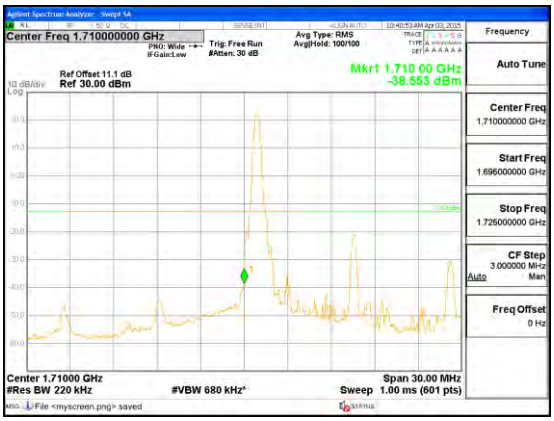
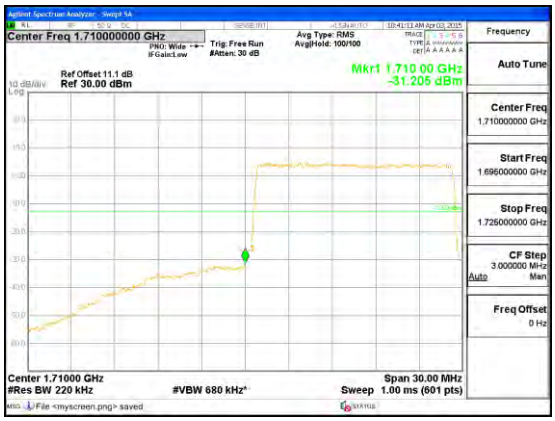
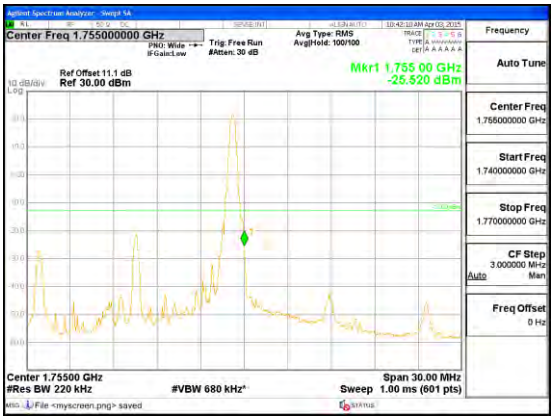
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM High Channel FRB.gif

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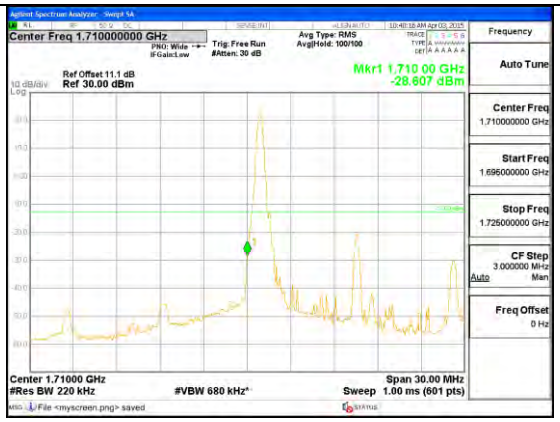
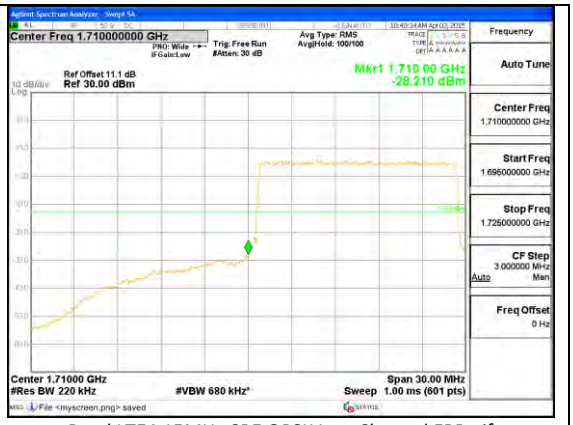
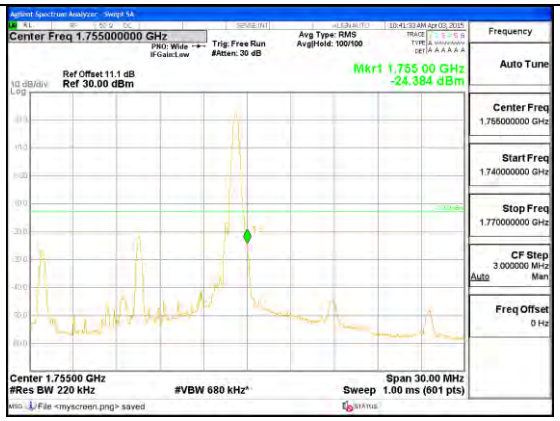
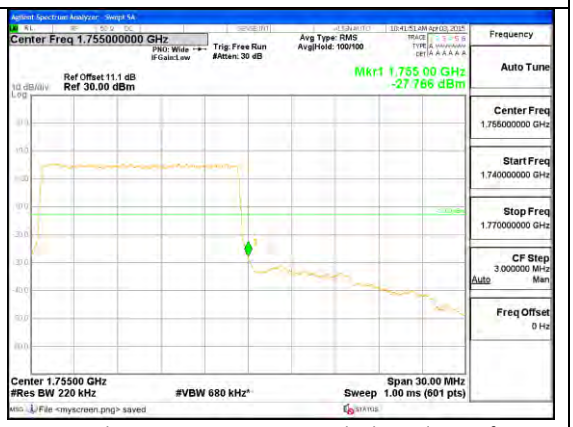
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK Low Channel FRB.gif
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK High Channel FRB.gif

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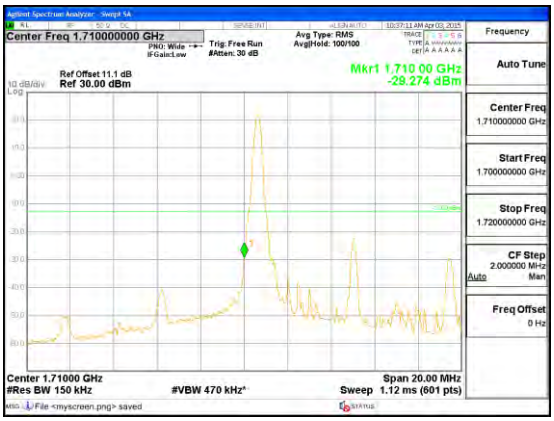
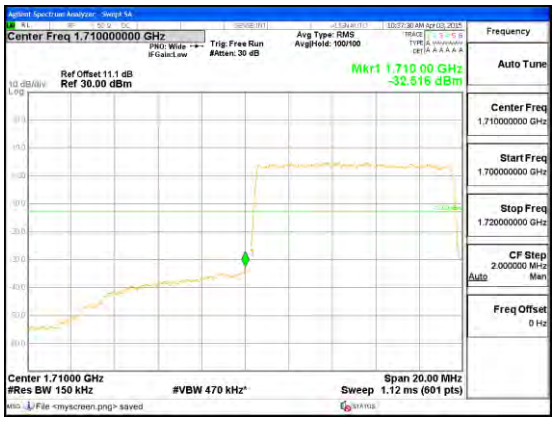
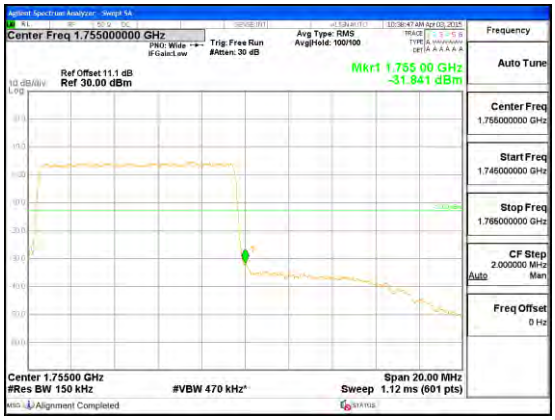
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM High Channel FRB.gif

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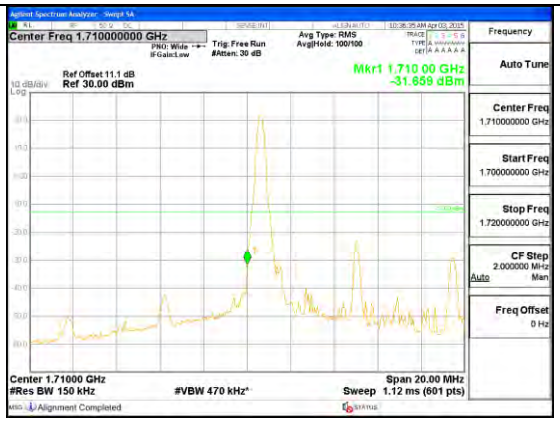
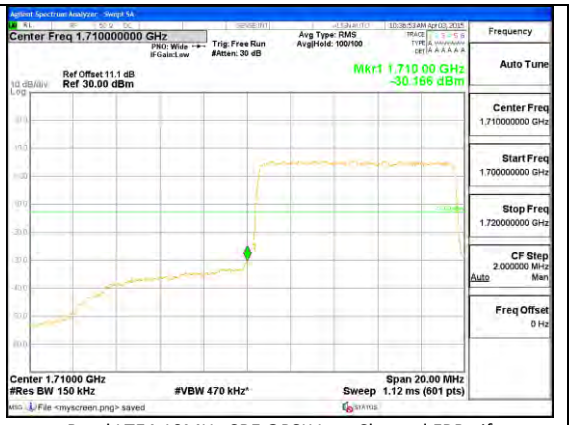
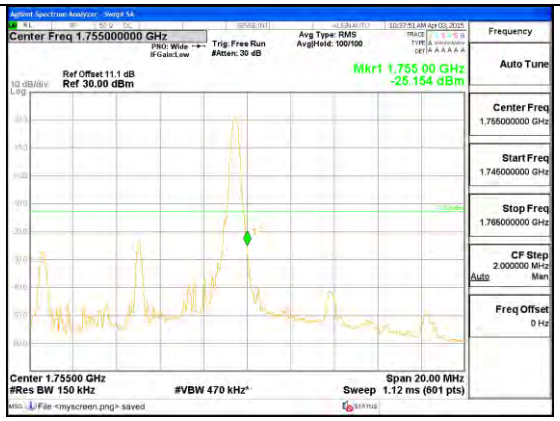
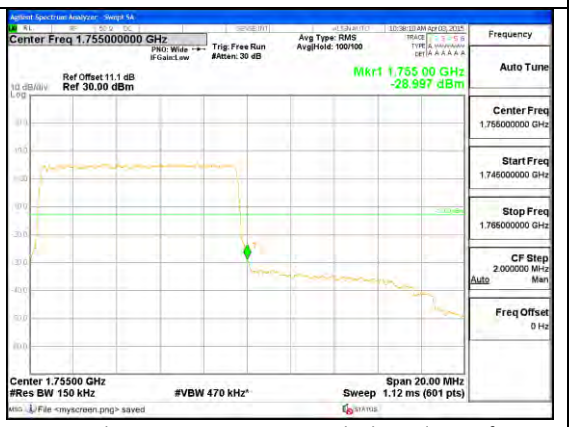
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK Low Channel FRB.gif
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK High Channel FRB.gif

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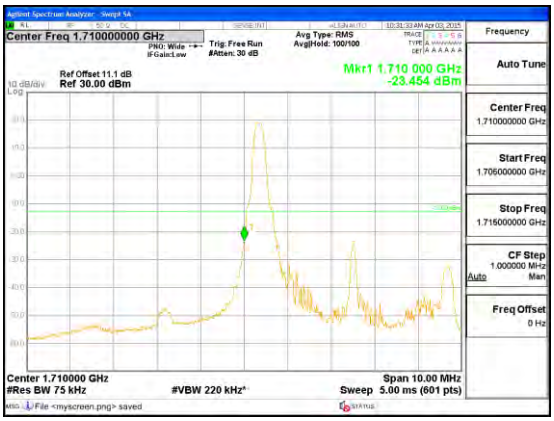
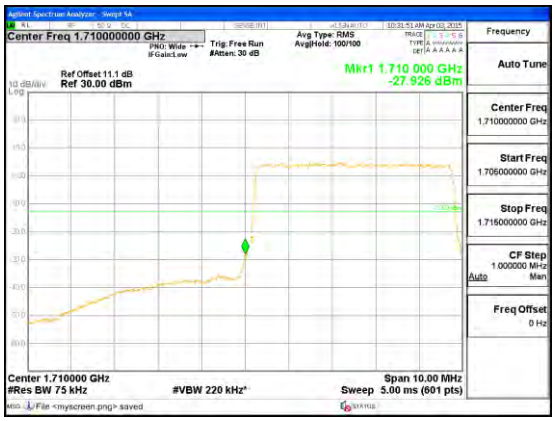
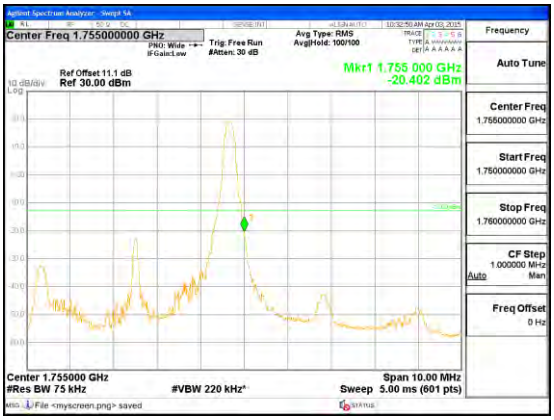
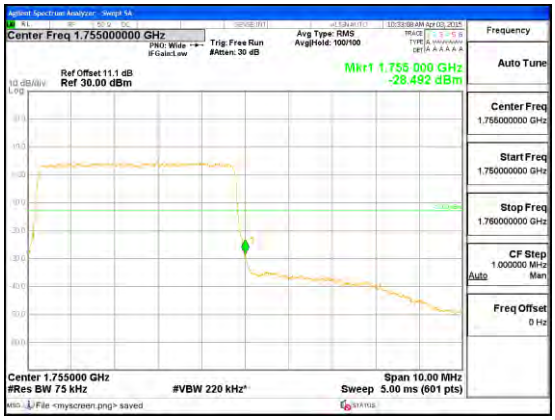
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM High Channel FRB.gif

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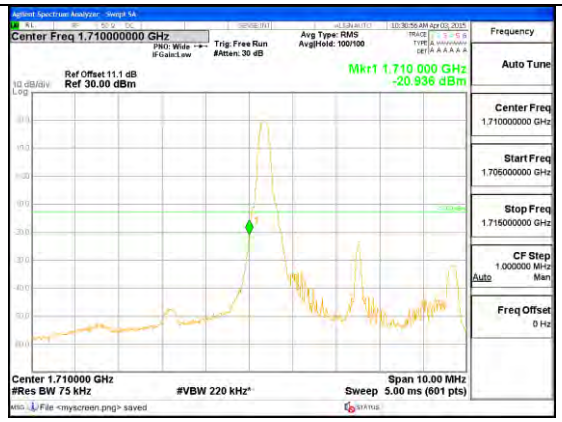
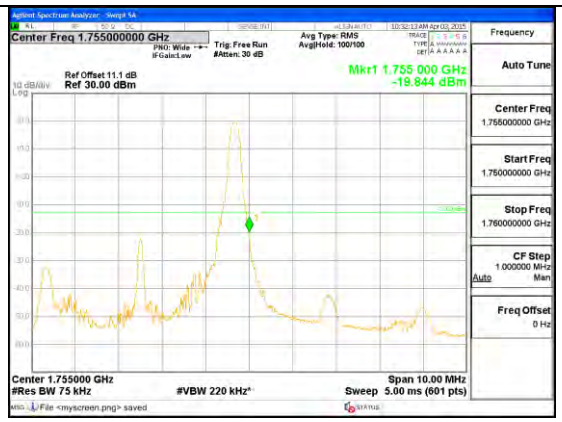
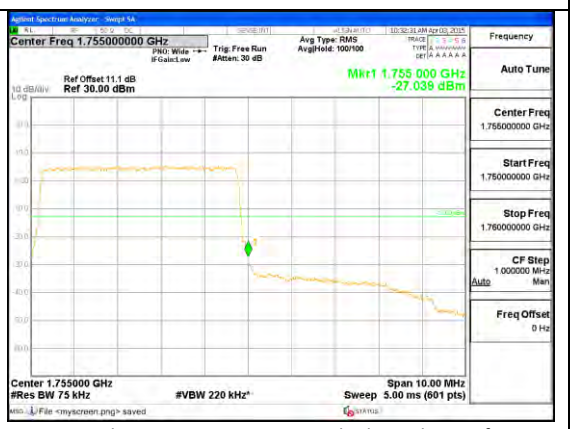
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK Low Channel FRB.gif
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK High Channel FRB.gif

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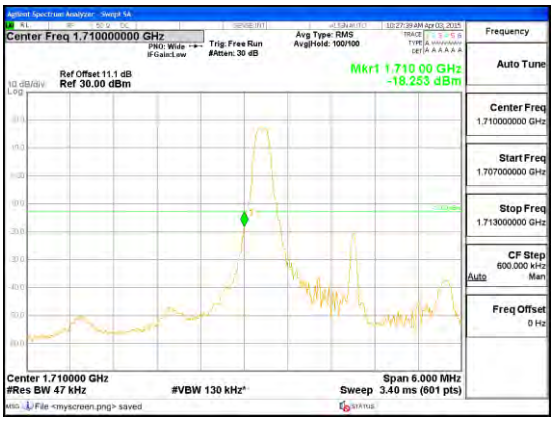
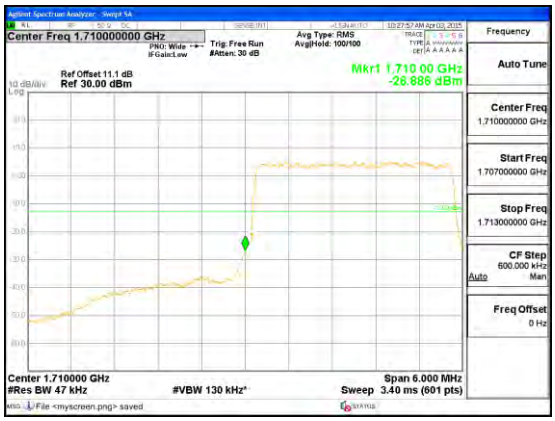
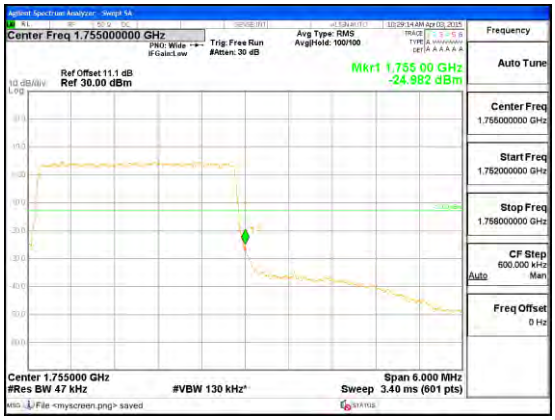
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM High Channel FRB.gif

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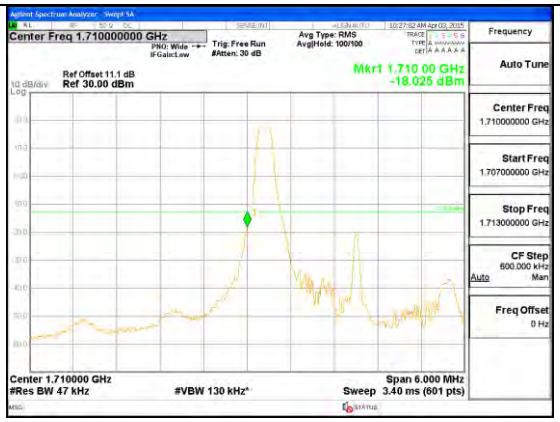
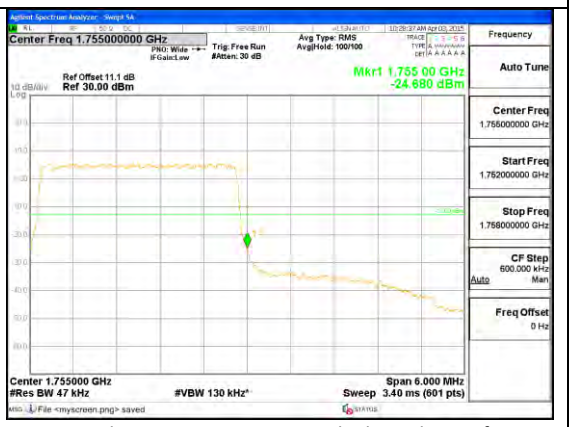
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK Low Channel FRB.gif
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK High Channel FRB.gif

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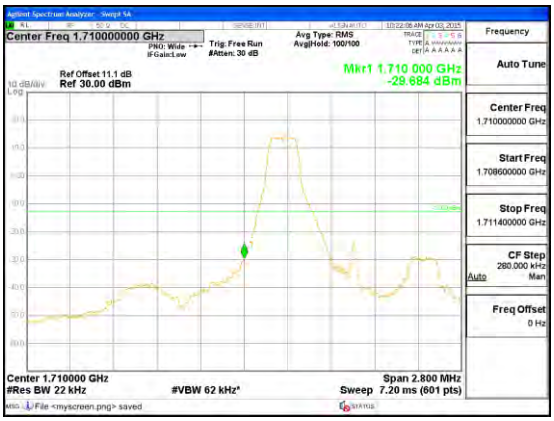
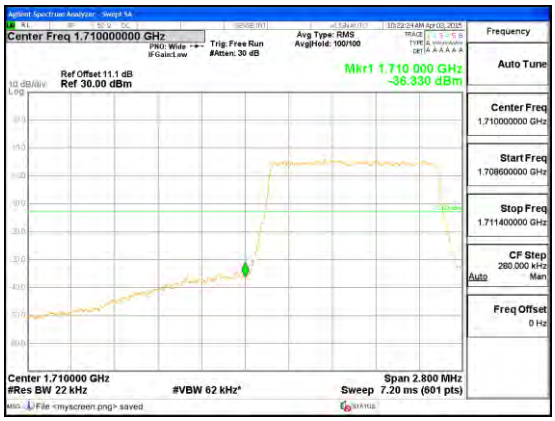
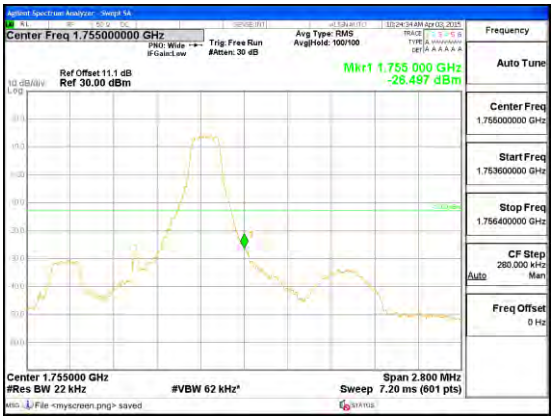
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM High Channel FRB.gif

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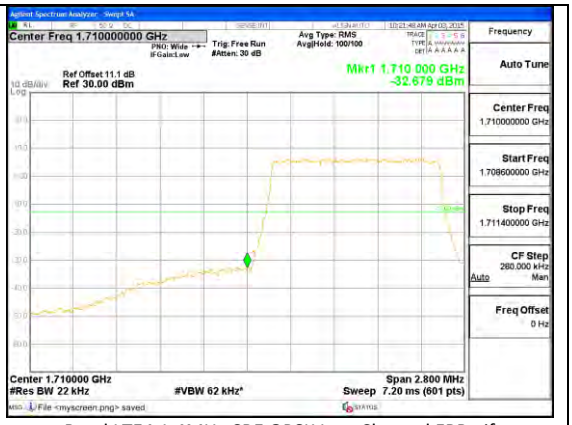
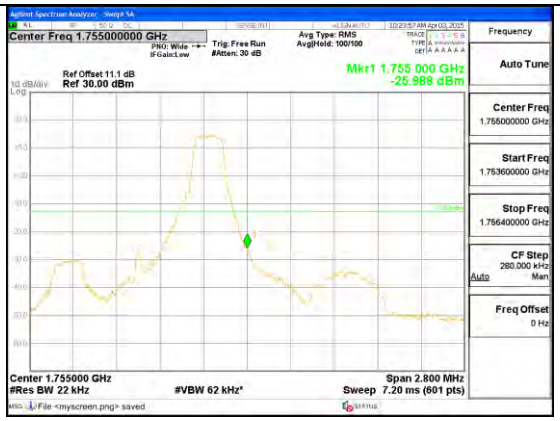
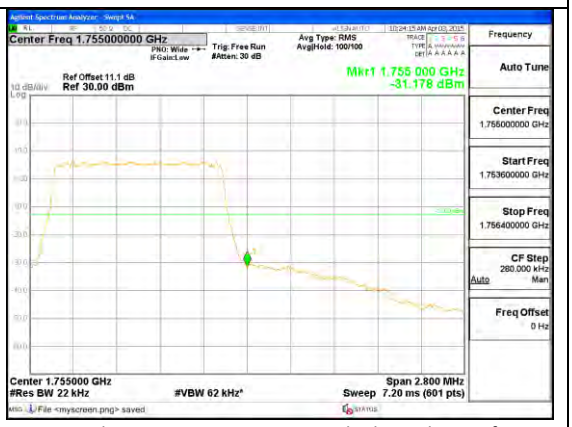
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK High Channel FRB.gif

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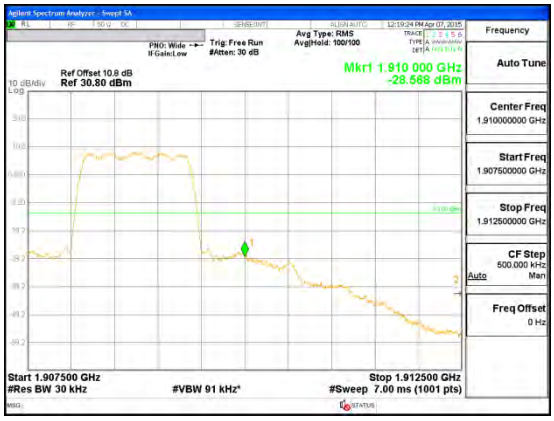
CDMA

Band BC1 EVDO REL. 0	 Band BC1 EVDO Rel. 0 CBE Low channel	 Band BC1 EVDO Rel. 0 CBE High channel
Band BC1 1xRTT	 Band BC1 1xRTT CBE Low channel	 Band BC1 1xRTT CBE High channel

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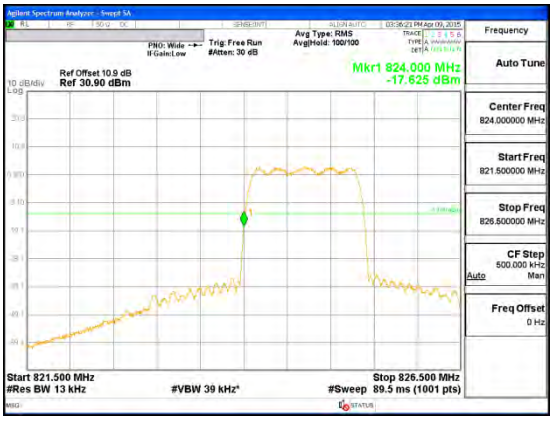
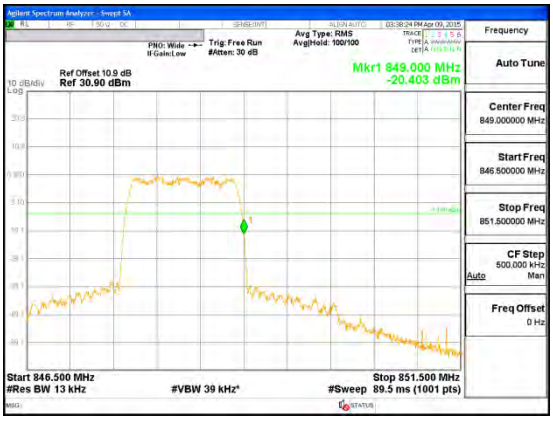
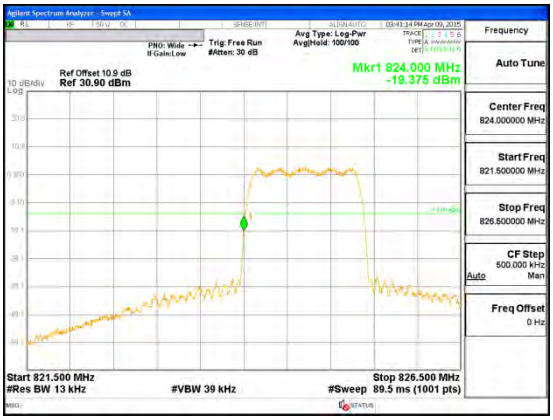
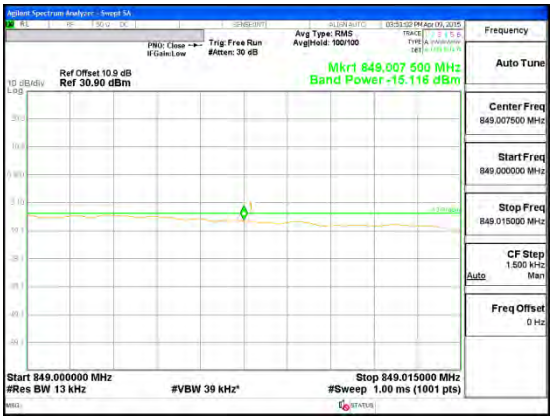
Band BC0 EVDO REL. 0	 Band BC0 EVDO Rel. 0 CBE Low channel	 Band BC0 EVDO Rel. 0 CBE High channel
Band BC0 1xRTT	 Band BC0 1xRTT CBE Low channel	 Band BC0 1xRTT CBE High channel

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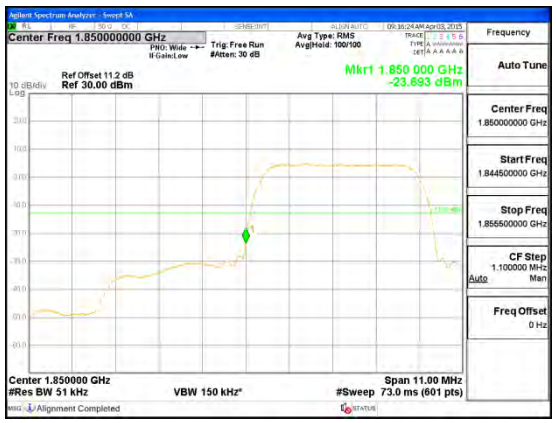
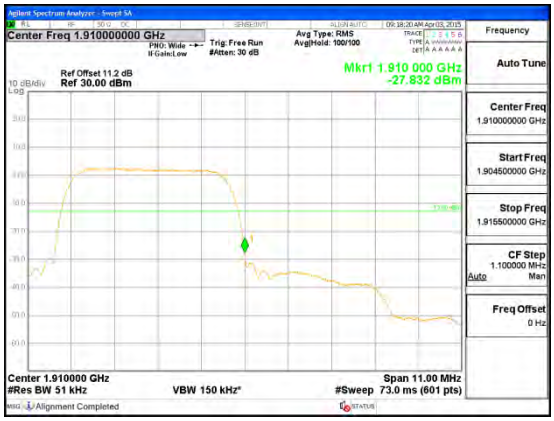
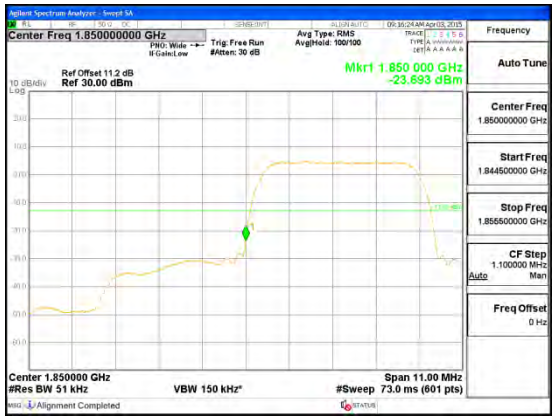
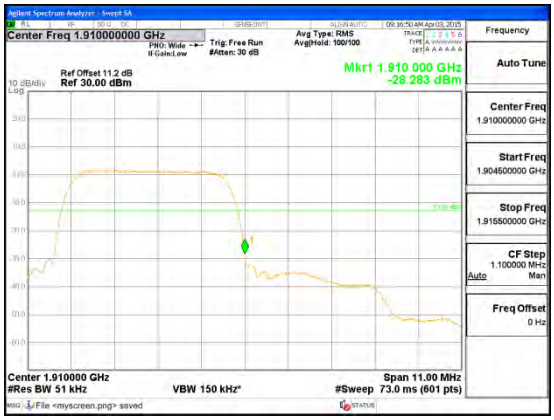
WCDMA

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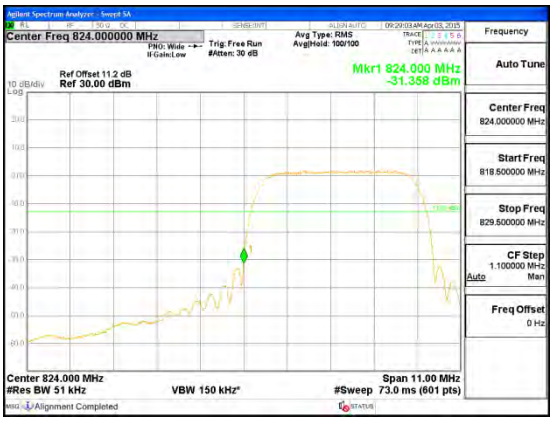
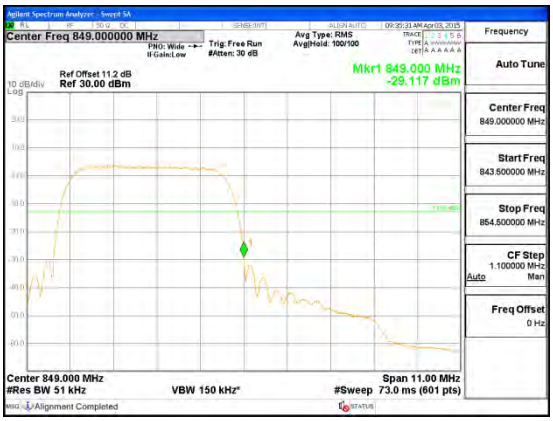
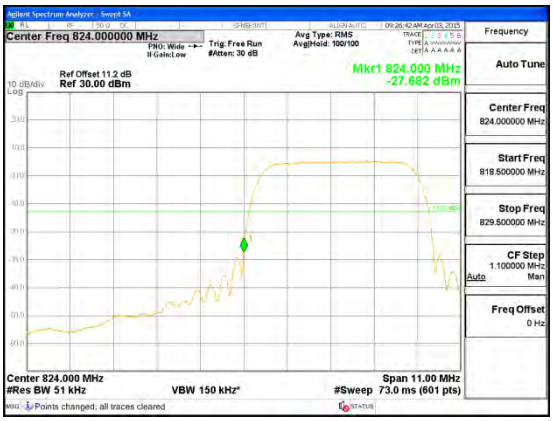
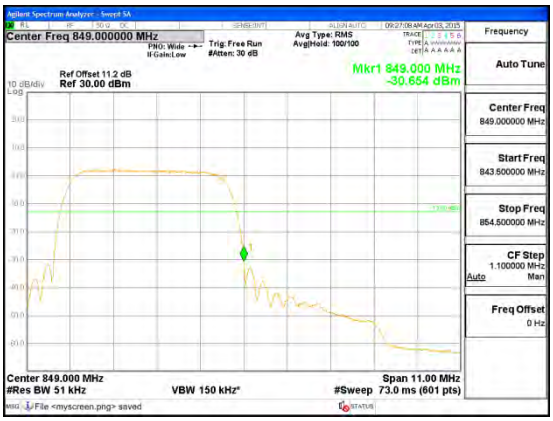
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CBE	 Band WCDMA B5 HSDPA CBE
Band Band 5 REL99	 Band WCDMA B5 REL99 CBE	 Band WCDMA B5 REL99 CBE

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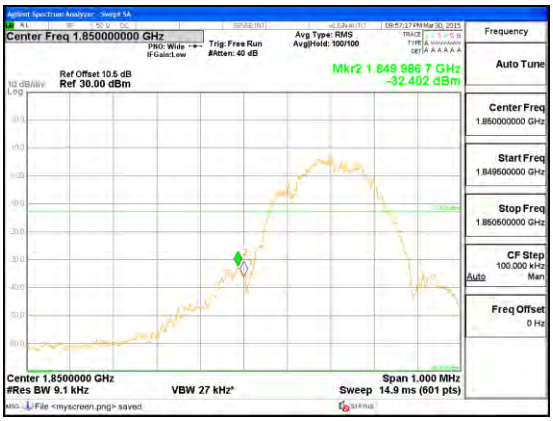
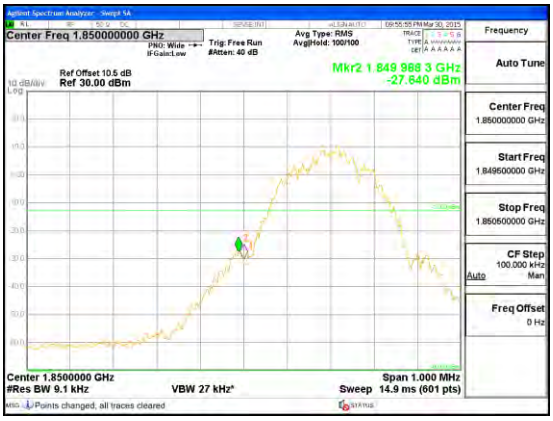
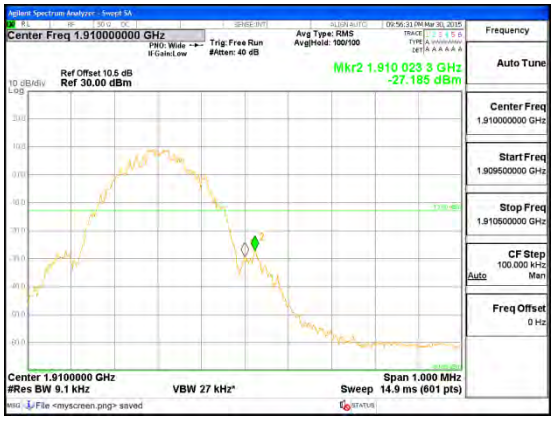
GSM

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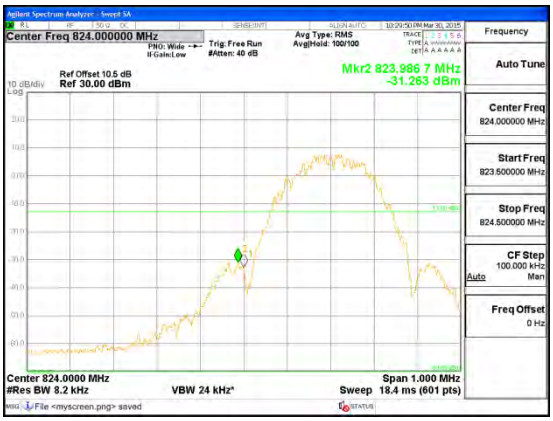
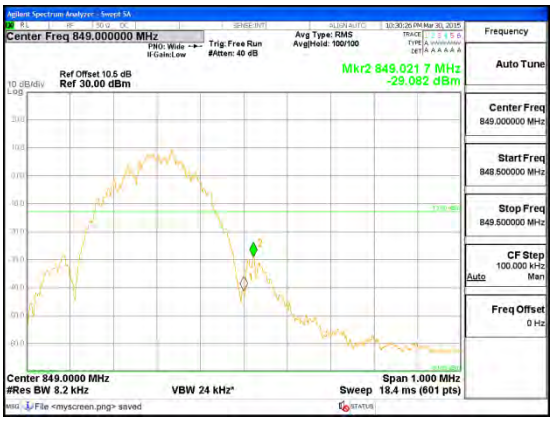
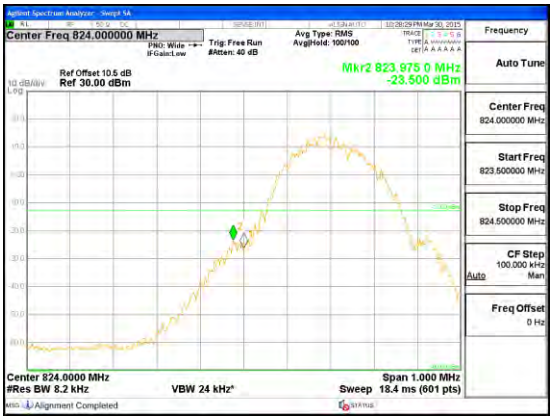
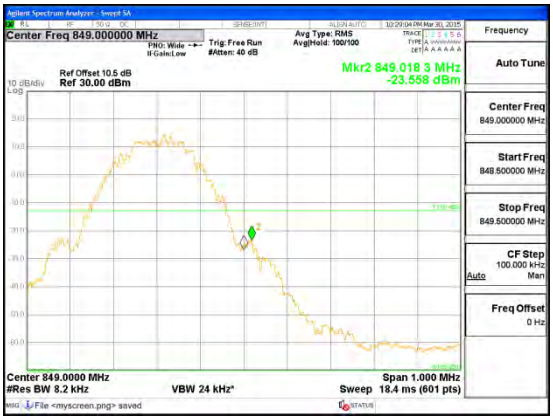
Band GSM850 EGPRS	 Band GSM850 EGPRS CBE Low channel	 Band GSM850 EGPRS CBE High channel
Band GSM850 GPRS	 Band GSM850 GPRS CBE Low channel	 Band GSM850 GPRS CBE High channel

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11.3. 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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

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

RESULTS

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11.3.1. OUT OF BAND EMISSIONS RESULT

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	20	QPSK	1860	-32.82	-13	-19.82
			1882.5	-26.24	-13	-13.24
			1905	-27.81	-13	-14.81
		16QAM	1860	-33.59	-13	-20.59
			1882.5	-27.09	-13	-14.09
			1905	-27.42	-13	-14.42

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	15	QPSK	1857.5	-35.09	-13	-22.09
			1882.5	-27.80	-13	-14.8
			1907.5	-27.56	-13	-14.56
		16QAM	1857.5	-34.88	-13	-21.88
			1882.5	-27.26	-13	-14.26
			1907.5	-27.38	-13	-14.38

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	10	QPSK	1855	-34.89	-13	-21.89
			1882.5	-27.22	-13	-14.22
			1912	-34.96	-13	-21.96
		16QAM	1855	-34.76	-13	-21.76
			1882.5	-27.44	-13	-14.44
			1912	-34.98	-13	-21.98

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	5	QPSK	1852.5	-35.03	-13	-22.03
			1882.5	-27.39	-13	-14.39
			1912.5	-26.69	-13	-13.69
		16QAM	1852.5	-26.89	-13	-13.89
			1882.5	-26.36	-13	-13.36
			1912.5	-27.51	-13	-14.51

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	3	QPSK	1851.5	-27.79	-13	-14.79
			1882.5	-27.57	-13	-14.57
			1913.5	-27.03	-13	-14.03
		16QAM	1851.5	-27.0	-13	-14
			1882.5	-27.72	-13	-14.72
			1913.5	-26.84	-13	-13.84

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	1.4	QPSK	1850.7	-27.58	-13	-14.58
			1882.5	-27.71	-13	-14.71
			1914.3	-26.70	-13	-13.7
		16QAM	1850.7	-27.45	-13	-14.45
			1882.5	-27.70	-13	-14.7
			1914.3	-26.73	-13	-13.73

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE13	10	QPSK	782	-34.93	-13	-21.93
			782	-34.93	-13	-21.93
			782	-34.93	-13	-21.93
		16QAM	782	-34.36	-13	-21.36
			782	-34.36	-13	-21.36
			782	-34.36	-13	-21.36

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE13	5	QPSK	779.5	-34.08	-13	-21.08
			782	-36.94	-13	-23.94
			784.5	-34.91	-13	-21.91
		16QAM	779.5	-27.88	-13	-14.88
			782	-34.17	-13	-21.17
			784.5	-35.14	-13	-22.14

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	10	QPSK	704	-30.47	-13	-17.47
			707.5	-27.66	-13	-14.66
			711	-28.27	-13	-15.27
		16QAM	704	-27.52	-13	-14.52
			707.5	-28.03	-13	-15.03
			711	-27.36	-13	-14.36

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	5	QPSK	701.5	-28.33	-13	-15.33
			707.5	-28.10	-13	-15.1
			713.5	-28.45	-13	-15.45
		16QAM	701.5	-27.54	-13	-14.54
			707.5	-27.68	-13	-14.68
			713.5	-28.49	-13	-15.49

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	3	QPSK	700.5	-27.34	-13	-14.34
			707.5	-25.96	-13	-12.96
			714.5	-28.09	-13	-15.09
		16QAM	700.5	-27.92	-13	-14.92
			707.5	-27.84	-13	-14.84
			714.5	-27.97	-13	-14.97

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	1.4	QPSK	699.7	-27.08	-13	-14.08
			707.5	-26.87	-13	-13.87
			715.3	-27.80	-13	-14.8
		16QAM	699.7	-27.71	-13	-14.71
			707.5	-27.12	-13	-14.12
			715.3	-27.69	-13	-14.69

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-22.86	-13	-9.86
			836.5	-27.41	-13	-14.41
			844	-22.94	-13	-9.94
		16QAM	829	-23.77	-13	-10.77
			836.5	-26.84	-13	-13.84
			844	-22.52	-13	-9.52

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-28.02	-13	-15.02
			836.5	-27.26	-13	-14.26
			846.5	-23.36	-13	-10.36
		16QAM	826.5	-28.20	-13	-15.2
			836.5	-28.60	-13	-15.6
			846.5	-22.42	-13	-9.42

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	3	QPSK	825.5	-27.71	-13	-14.71
			836.5	-28.43	-13	-15.43
			847.5	-22.79	-13	-9.79
		16QAM	825.5	-27.73	-13	-14.73
			836.5	-27.97	-13	-14.97
			847.5	-27.67	-13	-14.67

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	1.4	QPSK	824.7	-29.09	-13	-16.09
			836.5	-27.96	-13	-14.96
			848.3	-28.11	-13	-15.11
		16QAM	824.7	-28.59	-13	-15.59
			836.5	-28.12	-13	-15.12
			848.3	-28.31	-13	-15.31

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	QPSK	1720	-26.81	-13	-13.81
			1732.5	-27.04	-13	-14.04
			1745	-27.09	-13	-14.09
		16QAM	1720	-27.07	-13	-14.07
			1732.5	-27.09	-13	-14.09
			1745	-27.10	-13	-14.1

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	15	QPSK	1717.5	-27.53	-13	-14.53
			1732.5	-27.01	-13	-14.01
			1747.5	-28.67	-13	-15.67
		16QAM	1717.5	-27.52	-13	-14.52
			1732.5	-26.73	-13	-13.73
			1747.5	-26.87	-13	-13.87

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	10	QPSK	1715	-29.71	-13	-16.71
			1732.5	-26.84	-13	-13.84
			1750	-30.13	-13	-17.13
		16QAM	1715	-29.54	-13	-16.54
			1732.5	-27.37	-13	-14.37
			1750	-30.22	-13	-17.22

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	5	QPSK	1712.5	-29.04	-13	-16.04
			1732.5	-27.12	-13	-14.12
			1752.5	-28.87	-13	-15.87
		16QAM	1712.5	-26.83	-13	-13.83
			1732.5	-27.0	-13	-14
			1752.5	-28.22	-13	-15.22

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	3	QPSK	1711.5	-26.43	-13	-13.43
			1732.5	-27.24	-13	-14.24
			1753.5	-27.55	-13	-14.55
		16QAM	1711.5	-26.94	-13	-13.94
			1732.5	-27.67	-13	-14.67
			1753.5	-27.45	-13	-14.45

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	1.4	QPSK	1710.7	-27.21	-13	-14.21
			1732.5	-27.67	-13	-14.67
			1754.3	-27.24	-13	-14.24
		16QAM	1710.7	-26.79	-13	-13.79
			1732.5	-27.33	-13	-14.33
			1754.3	-27.36	-13	-14.36

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Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-24.45	-13	-11.45
		836.6	-24.33	-13	-11.33
		848.8	-25.04	-13	-12.04
	EGPRS	824.2	-24.68	-13	-11.68
		836.6	-25.09	-13	-12.09
		848.8	-24.50	-13	-11.5
GSM1900	GPRS	1850.2	-24.94	-13	-11.94
		1880	-24.95	-13	-11.95
		1909.8	-23.65	-13	-10.65
	EGPRS	1850.2	-24.70	-13	-11.7
		1880	-23.98	-13	-10.98
		1909.8	-24.27	-13	-11.27

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Band 5	REL99	826.4	-34.0	-13	-21
		836.6	-34.25	-13	-21.25
		846.6	-29.22	-13	-16.22
	HSDPA	826.4	-29.56	-13	-16.56
		836.6	-34.04	-13	-21.04
		846.6	-34.12	-13	-21.12
Band 2	REL99	1852.4	-29.78	-13	-16.78
		1880	-34.05	-13	-21.05
		1907.6	-30.39	-13	-17.39
	HSDPA	1852.4	-29.19	-13	-16.19
		1880	-34.68	-13	-21.68
		1907.6	-34.14	-13	-21.14
BC0	1xRTT	824.7	-35.66	-13	-22.66
		836.52	-38.48	-13	-25.48
		848.31	-34.35	-13	-21.35
	EVDO	824.7	-35.84	-13	-22.84
		836.52	-34.29	-13	-21.29
		848.31	-33.81	-13	-20.81
BC1	1xRTT	1851.25	-37.04	-13	-24.04
		1880	-36.39	-13	-23.39
		1908.75	-32.07	-13	-19.07
	EVDO	1851.25	-37.06	-13	-24.06
		1880	-36.43	-13	-23.43
		1908.75	-27.98	-13	-14.98

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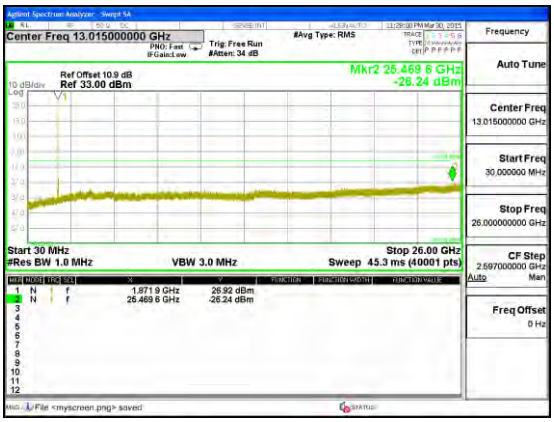
11.3.2. OUT OF BAND EMISSIONS PLOTS

LTE Band 25

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

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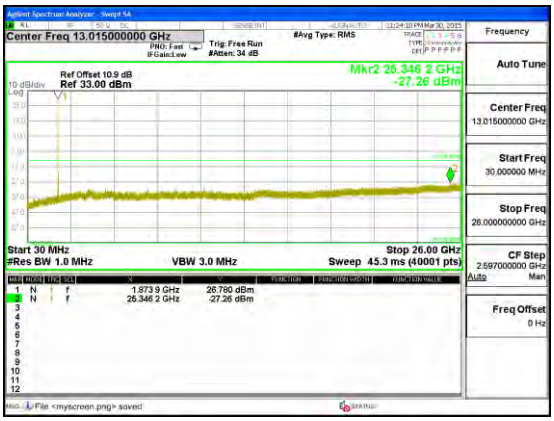
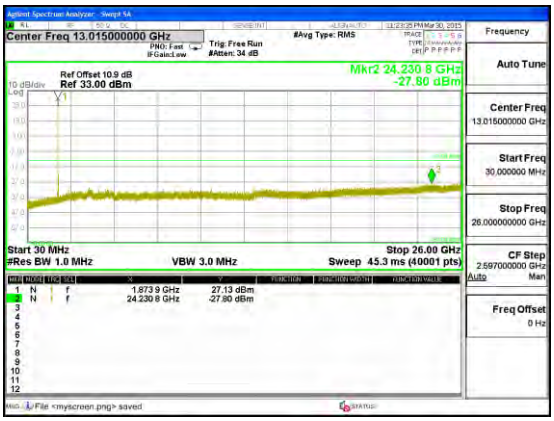
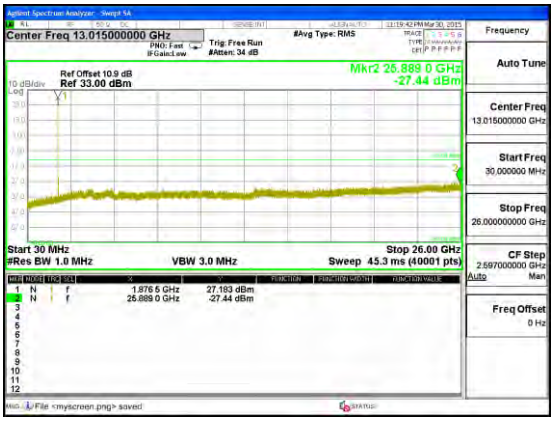
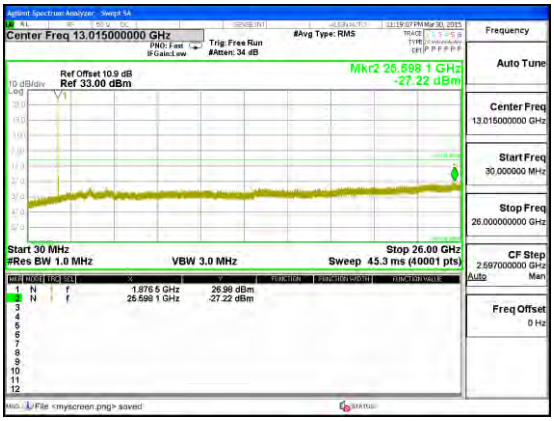
Band LTE25 15MHz 16QAM	 Band LTE25 15MHz CSE 16QAM Mid channel	 Band LTE25 15MHz CSE QPSK Mid channel

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

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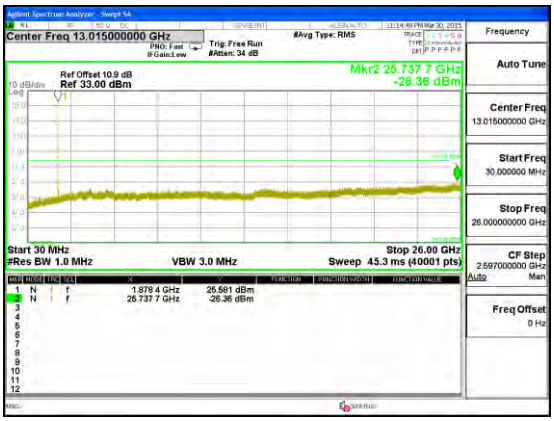
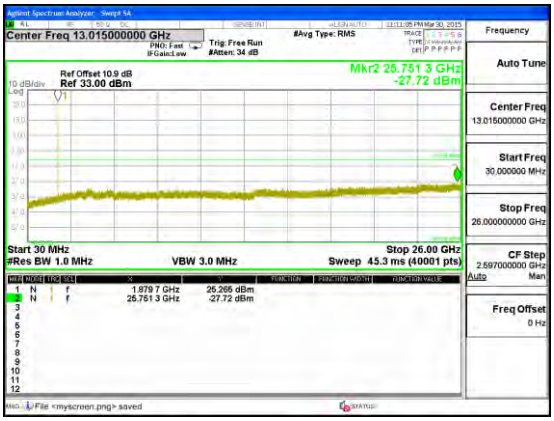
Band LTE25 5MHz 16QAM	 Band LTE25 5MHz CSE 16QAM Mid channel	 Band LTE25 5MHz CSE QPSK Mid channel

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

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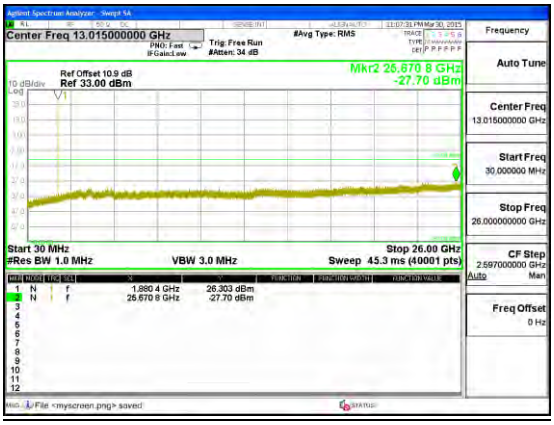
Band LTE25 1.4MHz 16QAM	 Band LTE25 1.4MHz CSE 16QAM Mid channel	 Band LTE25 1.4MHz CSE QPSK Mid channel

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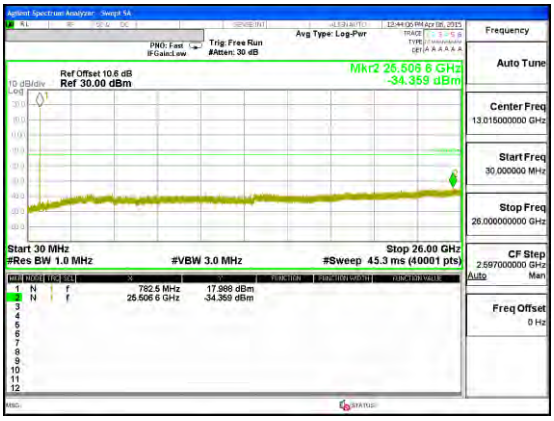
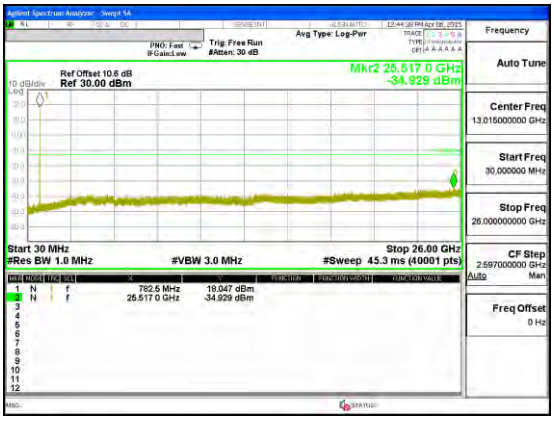
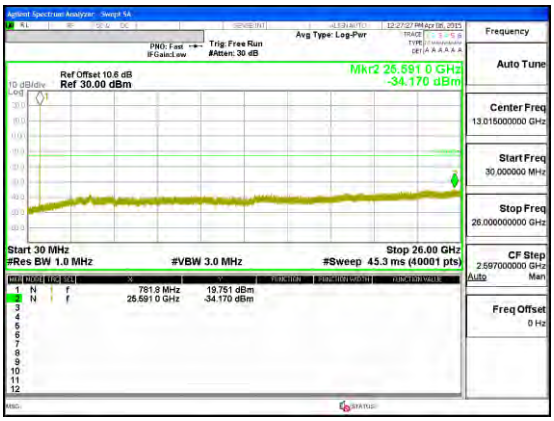
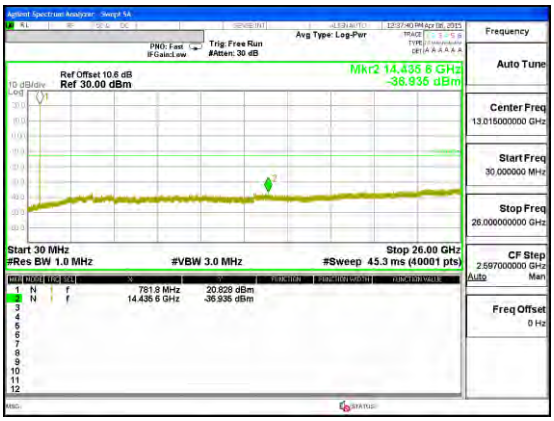
LTE Band 13

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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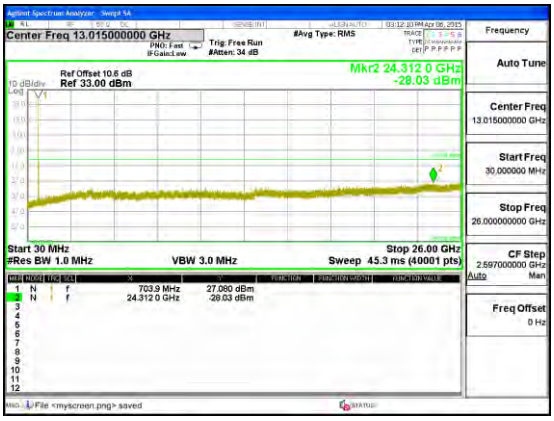
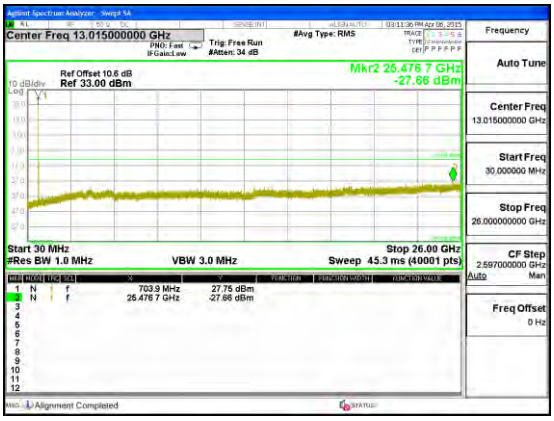
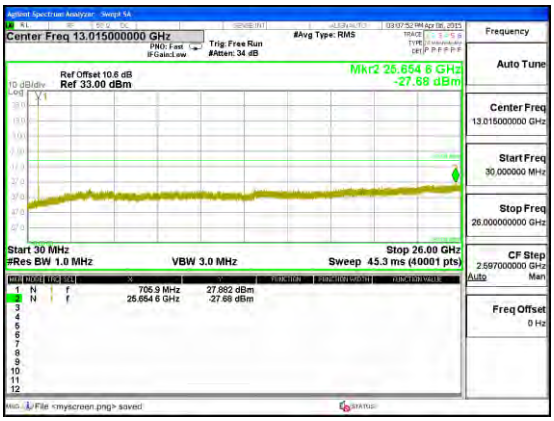
LTE Band 12

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

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

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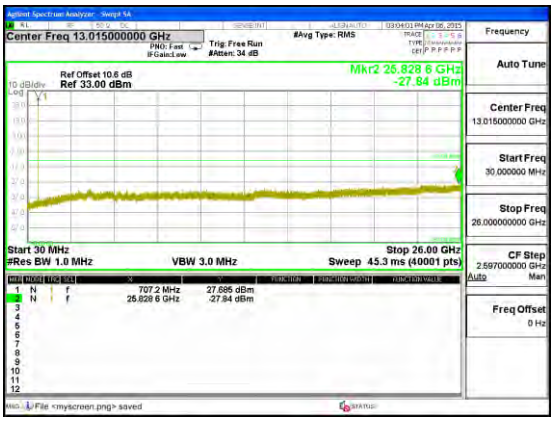
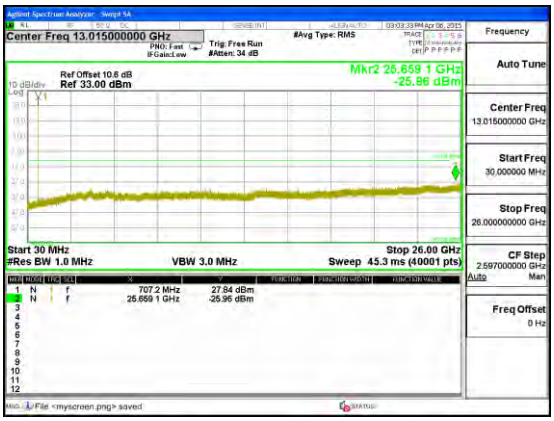
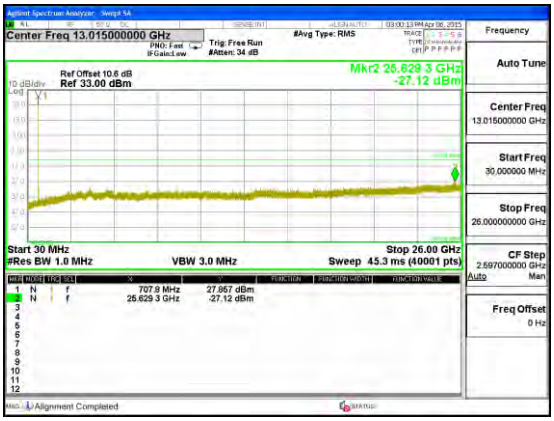
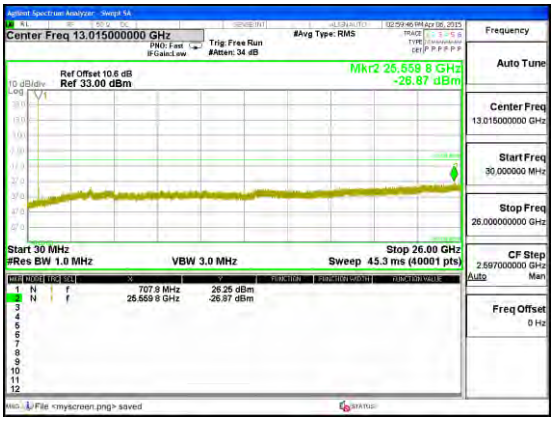
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CSE 16QAM Mid channel	 Band LTE12 3MHz CSE QPSK Mid channel

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

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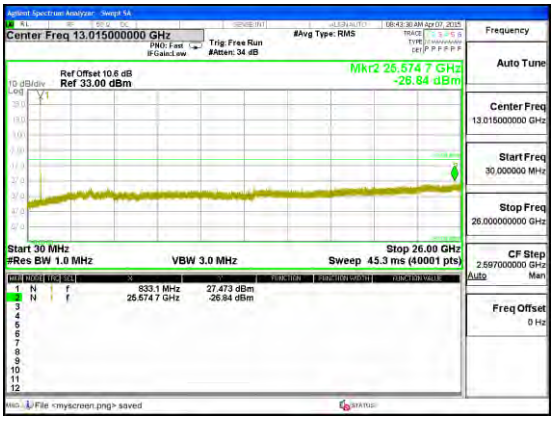
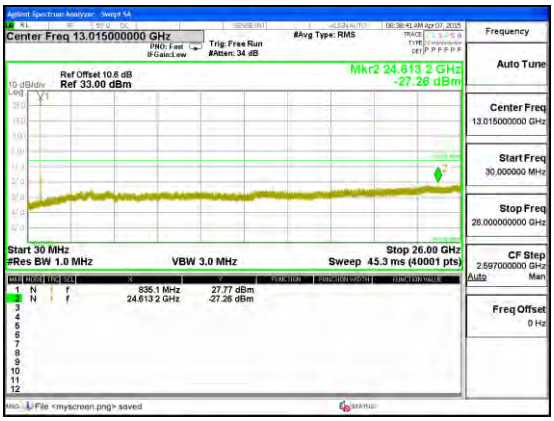
LTE Band 5

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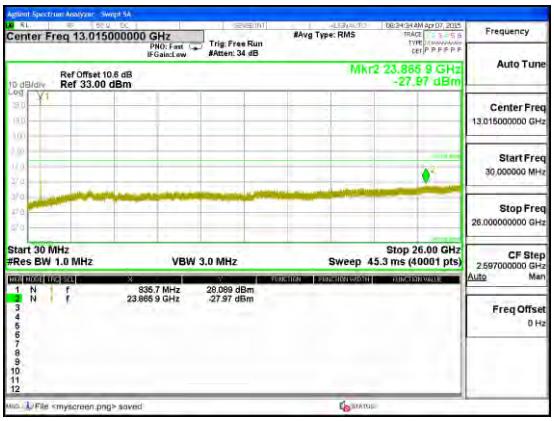
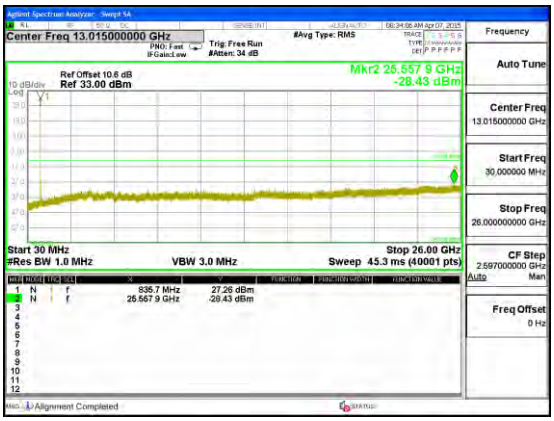
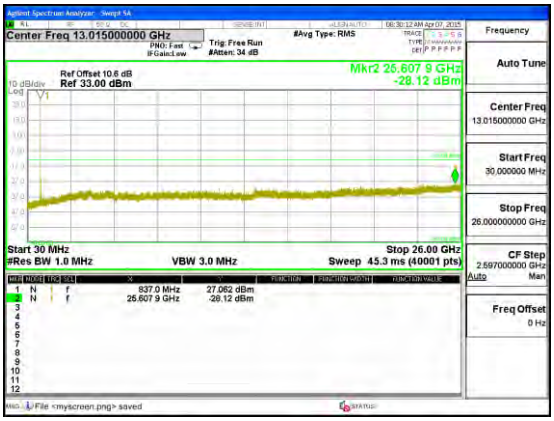
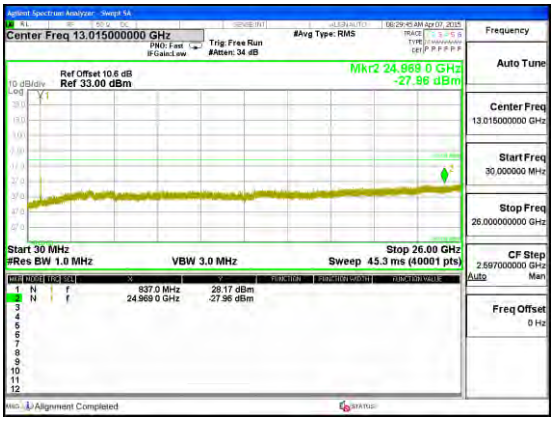
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CSE 16QAM Mid channel	 Band LTE5 3MHz CSE QPSK Mid channel

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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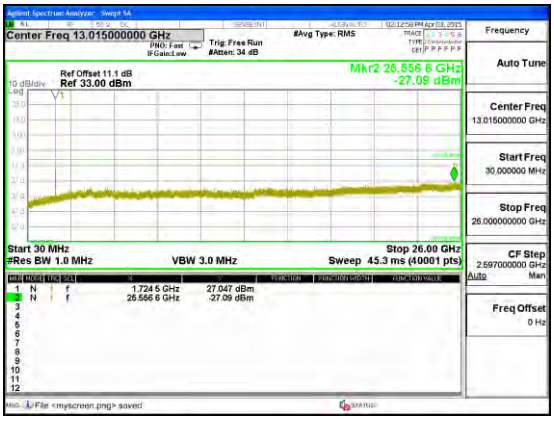
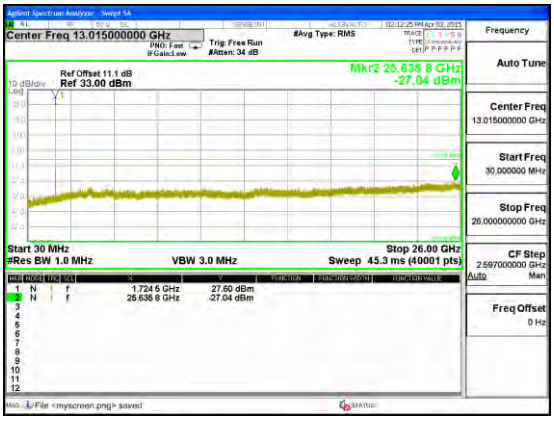
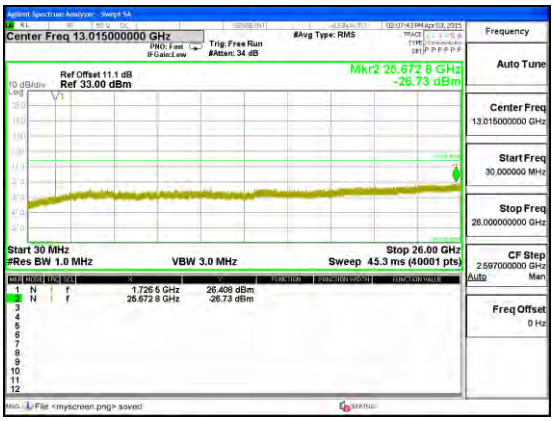
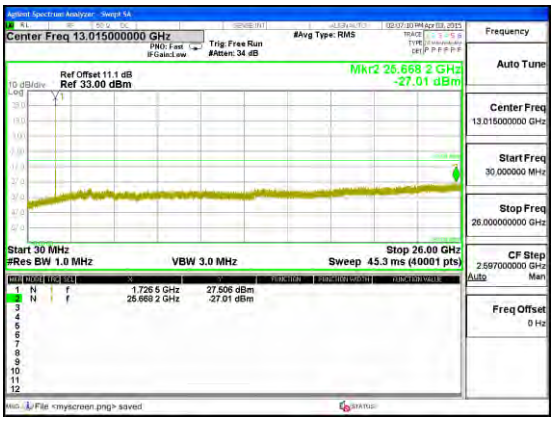
LTE Band 4

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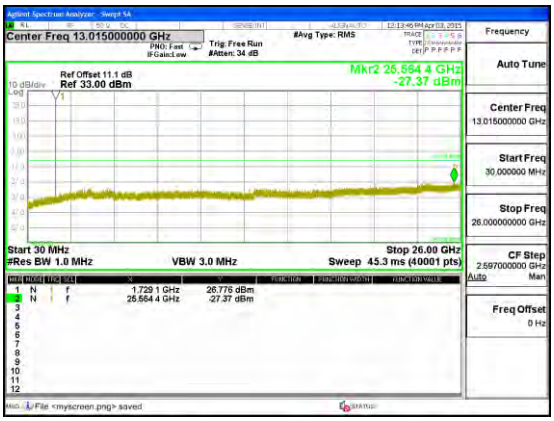
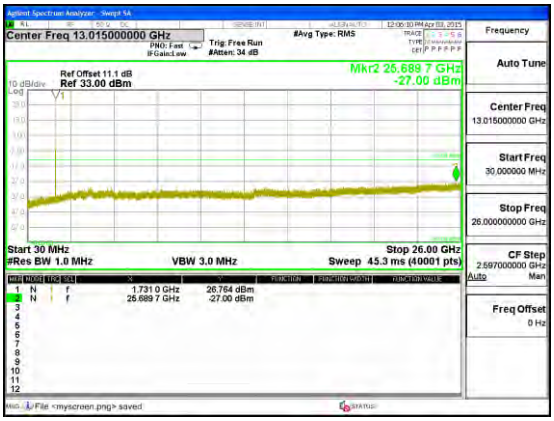
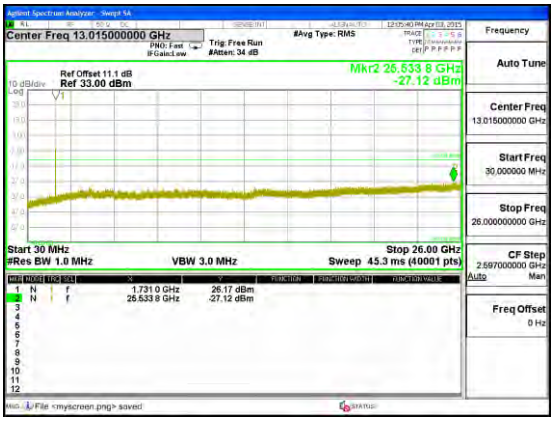
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel

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

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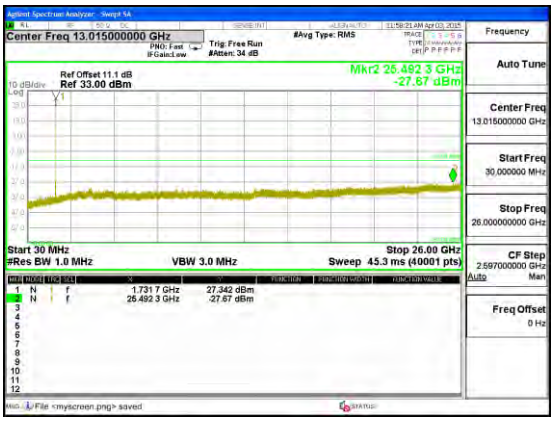
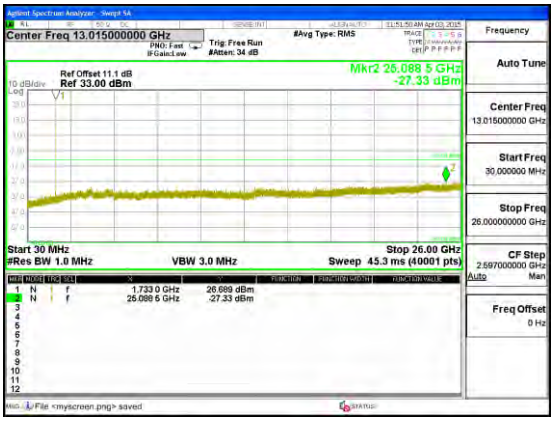
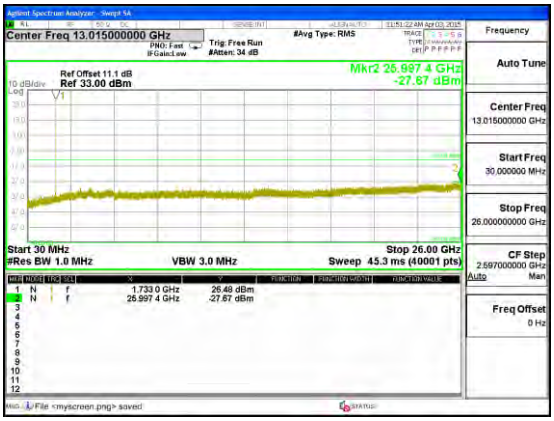
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CSE 16QAM Mid channel	 Band LTE4 3MHz CSE QPSK Mid channel

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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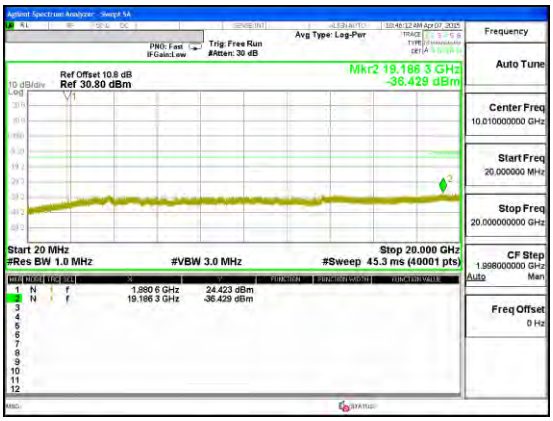
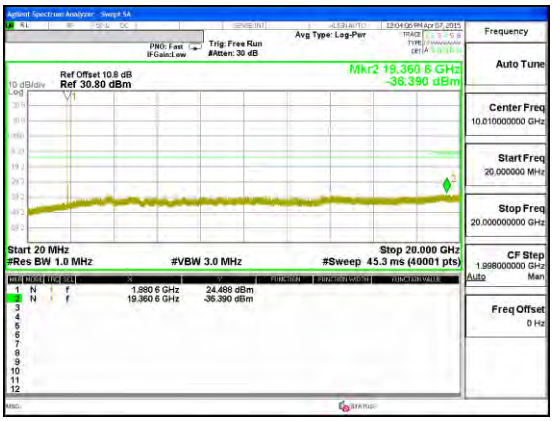
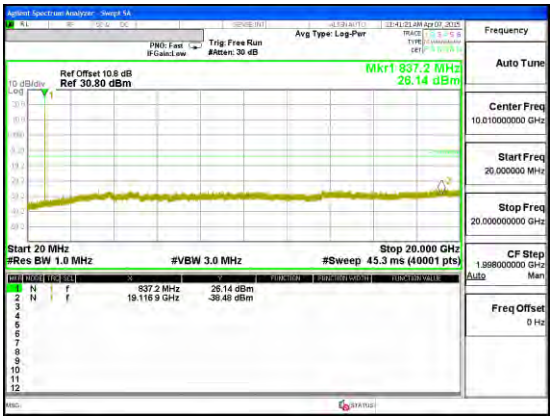
CDMA

Band BC1	 Band BC1 EVDO Rel. 0 CSE Mid channel	 Band BC1 1xRTT CSE Mid channel
Band BC0	 Band BC0 EVDO Rel. 0 CSE Mid channel	 Band BC0 1xRTT CSE Mid channel

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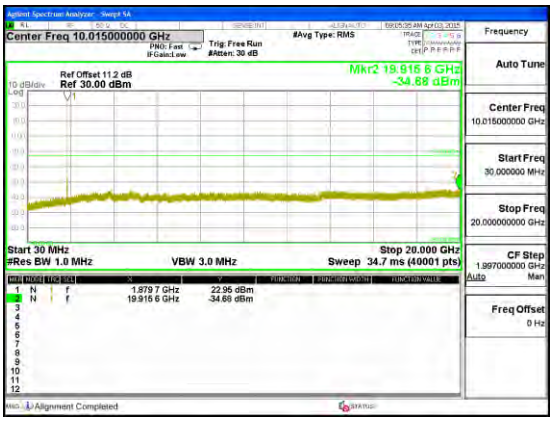
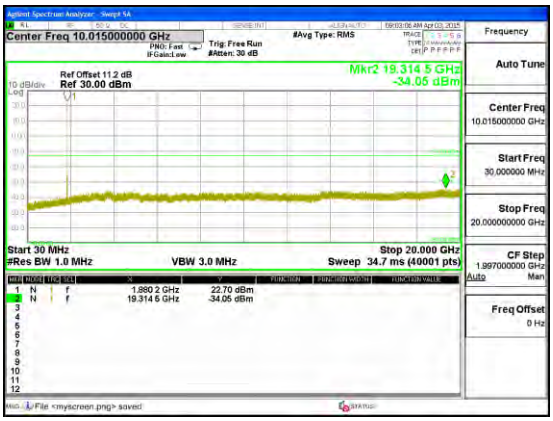
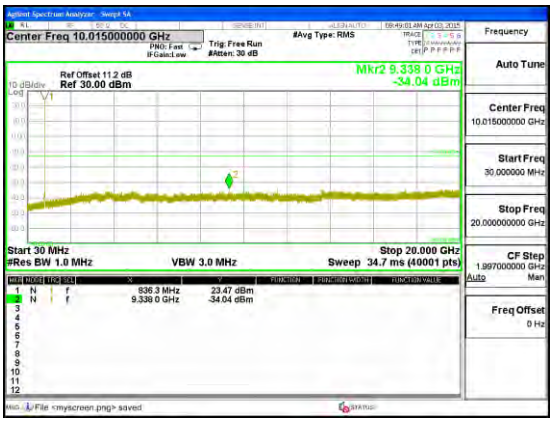
WCDMA

Band Band 2	 Band WCDMA B2 HSDPA CSE	 Band WCDMA B2 REL99 CSE
Band Band 5	 Band WCDMA B5 HSDPA CSE	 Band WCDMA B5 REL99 CSE

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GSM

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

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11.4. 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 v02r02

RESULTS

See the following pages.

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11.4.1. FREQUENCY STABILITY RESULTS

LTE Band 4, Freq: 1732.5MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	50	1732.500000	0.003	2.5
3.80	40	1732.500000	0.003	2.5
3.80	30	1732.500000	0.003	2.5
3.80	***20***	**1732.500006**	**0**	***2.5***
3.80	10	1732.500011	-0.003	2.5
3.80	0	1732.500016	-0.006	2.5
3.80	-10	1732.500000	0.003	2.5
3.80	-20	1732.500000	0.003	2.5
3.80	-30	1732.500000	0.003	2.5

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***1732.500006***	***0***	***2.5***
4.37	20	1732.5	*0.003*	2.5
3.23(End of volt)	20	1732.5	*0.003*	2.5

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LTE BAND 12 – MID CHANNEL (707.5 MHz)

Reference Frequency: Cellular Mid Channel 707.50000678 MHz @ 20°C Limit: to stay +- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.500004	-0.003	2.5
3.80	40	707.499997	0.007	2.5
3.80	30	707.500004	-0.003	2.5
3.80	***20***	***707.500002***	***0***	2.5
3.80	10	707.500003	-0.001	2.5
3.80	0	707.500003	-0.001	2.5
3.80	-10	707.499998	0.006	2.5
3.80	-20	707.499997	0.007	2.5
3.80	-30	707.500003	-0.001	2.5

Reference Frequency: Cellular Mid Channel 707.5 MHz @ 20°C Limit: to stay +- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***707.500002***	***0***	***2.5***
3.23	20	707.500004	*-0.003*	2.5
4.37	20	707.500003	*-0.001*	2.5

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LTE Band 13, Freq: 782 MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel		782	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		1955.000	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	781.999997	-0.001	2.5
3.80	40	781.999997	-0.001	2.5
3.80	30	781.999997	-0.001	2.5
3.80	***20***	**781.999996**	**0**	***2.5***
3.80	10	781.999998	-0.002	2.5
3.80	0	782.000004	-0.009	2.5
3.80	-10	781.999997	-0.001	2.5
3.80	-20	781.999997	-0.001	2.5
3.80	-30	781.999997	-0.001	2.5
		782.0000000	-0.005	

Reference Frequency: PCS Mid Channel		782	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		1955.000	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***781.999996***	***0***	***2.5***
4.37	20	781.9999958	*0.000*	2.5
3.23(End of volt)	20	781.9999974	*-0.002*	2.5

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GPRS 1900, Channel 661 Freq: 1880MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	50	1880.000044	-0.001	2.5
3.80	40	1880.000035	0.004	2.5
3.80	30	1880.000034	0.004	2.5
3.80	***20***	**1880.000041**	**0**	***2.5***
3.80	10	1880.000040	0.000	2.5
3.80	0	1880.000036	0.003	2.5
3.80	-10	1880.000035	0.003	2.5
3.80	-20	1880.000040	0.001	2.5
3.80	-30	1880.000037	0.002	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***	***1880.000041***	***0***	***2.5***
4.37	20	1880.000043	*-0.001*	2.5
3.23(End of volt)	20	1880.000036	*0.003*	2.5

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GPRS 850 CELL BAND, – MID CHANNEL190, Frequency 836.6MHz

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse (MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.80	50	836.600018	0.003	2.5
3.80	40	836.600022	-0.002	2.5
3.80	30	836.600022	-0.002	2.5
3.80	***20***	**836.600021**	**0**	***2.5***
3.80	10	836.600018	0.003	2.5
3.80	0	836.600019	0.002	2.5
3.80	-10	836.600020	0.001	2.5
3.80	-20	836.600018	0.003	2.5
3.80	-30	836.600020	0.001	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measureed with Time Elapse (MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***836.600021***	***0***	***2.5***
4.37	20	836.6000203	*0.000*	2.5
3.23(End of volt)	20	836.6000181	*0.003*	2.5

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12. RADIATED TEST RESULTS

12.1. 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 & 12)

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

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

TEST PROCEDURE

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

For peak power measurement with a PSA:

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

For average power measurement with a PSA:

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

TEST RESULTS

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12.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	25.47	352.37
		9400	1880	25.28	337.29
		9538	1907.6	26.26	422.67
	HSDPA	9262	1852.4	25.36	343.56
		9400	1880	25.03	318.42
		9538	1907.6	26.07	404.58

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	21.38	137.40
		4183	836.6	21.72	148.59
		4233	846.6	21.41	138.36
	HSDPA	4132	826.4	21.34	136.14
		4183	836.6	21.63	145.55
		4233	846.6	21.23	132.74

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Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	31.03	1267.65
		661	1880	30.27	1064.14
		810	1909.8	31.36	1367.73
	EGPRS	512	1850.2	26.92	492.04
		661	1880	28.59	722.77
		810	1909.8	28.47	703.07

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	31.76	1499.68
		190	836.6	31.88	1541.70
		251	848.8	31.03	1267.65
	EGPRS	128	824.2	26.35	431.52
		190	836.6	26.86	485.29
		251	848.8	26.01	399.02

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	26.02	399.94
		600	1880	26.32	428.55
		1175	1908.75	26.60	457.09
	EVDO REL. 0	25	1851.25	26.01	399.02
		600	1880	26.12	409.26
		1175	1908.75	26.50	446.68

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	22.64	183.65
		384	836.52	22.76	188.80
		777	848.31	22.87	193.64
	EVDO REL. 0	1013	824.7	22.57	180.72
		384	836.52	22.78	189.67
		777	848.31	22.74	187.93

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12.1.2. LTE ERP/EIRP Results

LTE Band 25

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	20	QPSK	1/0	1860	26.38	434.51
			1/0	1882.5	25.55	358.92
			1/0	1905	26.05	402.72
		16QAM	1/0	1860	25.67	368.98
			1/0	1882.5	25.12	325.09
			1/0	1905	25.45	350.75
	15	QPSK	1/0	1857.5	26.25	421.7
			1/0	1882.5	26.13	410.2
			1/0	1907.5	26.07	404.58
		16QAM	1/0	1857.5	25.48	353.18
			1/0	1882.5	25.33	341.19
			1/0	1907.5	25.32	340.41
	10	QPSK	1/0	1855	26.34	430.53
			1/0	1882.5	26.09	406.44
			1/0	1912	26	398.11
		16QAM	1/0	1855	25.2	331.13
			1/0	1882.5	24.99	315.5
			1/0	1912	25.35	342.77
	5	QPSK	1/0	1852.5	26	398.11
			1/0	1882.5	26.32	428.55
			1/0	1912.5	26.02	399.94
		16QAM	1/0	1852.5	25.3	338.84
			1/0	1882.5	25.42	348.34
			1/0	1912.5	25.07	321.37

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	3	QPSK	1/0	1851.5	26.41	437.52
			1/0	1882.5	25.85	384.59
			1/0	1913.5	26.24	420.73
		16QAM	1/0	1851.5	25.25	334.97
			1/0	1882.5	25.34	341.98
			1/0	1913.5	25.27	336.51
	1.4	QPSK	1/0	1850.7	26.39	435.51
			1/0	1882.5	25.9	389.05
			1/0	1914.3	26	398.11
		16QAM	1/0	1850.7	26.02	399.94
			1/0	1882.5	24.78	300.61
			1/0	1914.3	24.26	266.69

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LTE Band 13

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE13	10	QPSK	1/0	782	20.28	106.66
			1/0	782	20.28	106.66
			1/0	782	20.28	106.66
		16QAM	1/0	782	19.47	88.51
			1/0	782	19.47	88.51
			1/0	782	19.47	88.51
	5	QPSK	1/0	779.5	20.06	101.39
			1/0	782	20.10	102.33
			1/0	784.5	20.07	101.62
		16QAM	1/0	779.5	19.38	86.70
			1/0	782	19.32	85.51
			1/0	784.5	19.38	86.70

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LTE Band 12

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	10	QPSK	1/0	704	19.41	87.30
			1/0	707.5	20.14	103.28
			1/0	711	21.15	130.32
		16QAM	1/0	704	19.01	79.62
			1/0	707.5	19.29	84.92
			1/0	711	20.72	118.03
	5	QPSK	1/0	701.5	19.82	95.94
			1/0	707.5	20.43	110.41
			1/0	713.5	21.24	133.05
		16QAM	1/0	701.5	19.15	82.22
			1/0	707.5	19.77	94.84
			1/0	713.5	20.60	114.82
	3	QPSK	1/0	700.5	19.81	95.72
			1/0	707.5	20.29	106.91
			1/0	714.5	21.29	134.59
		16QAM	1/0	700.5	19.07	80.72
			1/0	707.5	19.58	90.78
			1/0	714.5	20.71	117.76
	1.4	QPSK	1/0	699.7	20.11	102.57
			1/0	707.5	20.49	111.94
			1/0	715.3	20.09	102.09
		16QAM	1/0	699.7	19.28	84.72
			1/0	707.5	19.80	95.50
			1/0	715.3	19.86	96.83

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LTE Band 5

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	21.95	156.71
			1/0	836.5	22.50	177.87
			1/0	844	22.49	177.46
		16QAM	1/0	829	20.26	106.19
			1/0	836.5	20.75	118.88
			1/0	844	21.18	131.25
	5	QPSK	1/0	826.5	21.99	158.16
			1/0	836.5	22.31	170.26
			1/0	846.5	22.19	165.62
		16QAM	1/0	826.5	20.17	104.02
			1/0	836.5	20.46	111.2
			1/0	846.5	20.53	113.01
	3	QPSK	1/0	825.5	22.09	161.81
			1/0	836.5	22.43	175.02
			1/0	847.5	22.26	168.27
		16QAM	1/0	825.5	20.07	101.62
			1/0	836.5	20.29	106.93
			1/0	847.5	20.83	121.06
	1.4	QPSK	1/0	824.7	21.91	155.24
			1/0	836.5	22.31	170.26
			1/0	848.3	22.48	177.01
		16QAM	1/0	824.7	19.98	99.54
			1/0	836.5	20.18	104.26
			1/0	848.3	20.88	122.46

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	29.51	894.18
			1/0	1732.5	29.06	805.57
			1/0	1745	29.36	864.54
		16QAM	1/0	1720	28.84	766.35
			1/0	1732.5	28.21	662.38
			1/0	1745	28.53	714.14
	15	QPSK	1/0	1717.5	29.23	839.06
			1/0	1732.5	29.03	800.03
			1/0	1747.5	29.25	842.21
		16QAM	1/0	1717.5	28.47	704.35
			1/0	1732.5	28.15	653.29
			1/0	1747.5	28.41	694.1
	10	QPSK	1/0	1715	29.09	811.16
			1/0	1732.5	28.82	762.26
			1/0	1750	28.99	792.73
		16QAM	1/0	1715	28.42	695.19
			1/0	1732.5	28.28	673.14
			1/0	1750	28.19	659.37
	5	QPSK	1/0	1712.5	29.23	838.35
			1/0	1732.5	28.96	787.24
			1/0	1752.5	28.69	740.94
		16QAM	1/0	1712.5	28.47	703.76
			1/0	1732.5	28.14	651.79
			1/0	1752.5	27.78	600.88

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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	29.23	839.06
			1/0	1732.5	28.99	792.69
			1/0	1753.5	28.71	743.74
		16QAM	1/0	1711.5	28.71	744.37
			1/0	1732.5	28.17	656.3
			1/0	1753.5	27.80	603.14
	1.4	QPSK	1/0	1710.7	29.05	803.72
			1/0	1732.5	28.89	774.65
			1/0	1754.3	28.74	748.39
		16QAM	1/0	1710.7	28.30	676.25
			1/0	1732.5	28.12	648.79
			1/0	1754.3	27.86	611.12

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12.1.3. ERP/EIRP DATA

LTE Band 25

Band

LTE25

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 20MHz Bandwidth

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	14.44	V	0.9	8.0	21.55	33.0	-11.5	
1860.00	18.56	H	0.9	8.0	25.67	33.0	-7.3	
Mid Ch								
1882.50	13.93	V	0.9	8.0	21.04	33.0	-12.0	
1882.50	18.01	H	0.9	8.0	25.12	33.0	-7.9	
High Ch								
1905.00	15.17	V	0.9	8.0	22.28	33.0	-10.7	
1905.00	18.34	H	0.9	8.0	25.45	33.0	-7.6	

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Band

LTE25

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	15.38	V	0.9	8.0	22.49	33.0	-10.5	
1860.00	19.27	H	0.9	8.0	26.38	33.0	-6.6	
Mid Ch								
1882.50	14.71	V	0.9	8.0	21.82	33.0	-11.2	
1882.50	18.44	H	0.9	8.0	25.55	33.0	-7.5	
High Ch								
1905.00	15.61	V	0.9	8.0	22.72	33.0	-10.3	
1905.00	18.94	H	0.9	8.0	26.05	33.0	-7.0	

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Band

LTE25

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	14.23	V	0.9	8.0	21.34	33.0	-11.7	
1857.50	18.37	H	0.9	8.0	25.48	33.0	-7.5	
Mid Ch								
1882.50	13.99	V	0.9	8.0	21.10	33.0	-11.9	
1882.50	18.22	H	0.9	8.0	25.33	33.0	-7.7	
High Ch								
1907.50	14.91	V	0.9	8.0	22.02	33.0	-11.0	
1907.50	18.21	H	0.9	8.0	25.32	33.0	-7.7	

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Band

LTE25

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	15.00	V	0.9	8.0	22.11	33.0	-10.9	
1857.50	19.14	H	0.9	8.0	26.25	33.0	-6.8	
Mid Ch								
1882.50	14.71	V	0.9	8.0	21.82	33.0	-11.2	
1882.50	19.02	H	0.9	8.0	26.13	33.0	-6.9	
High Ch								
1907.50	15.62	V	0.9	8.0	22.73	33.0	-10.3	
1907.50	18.96	H	0.9	8.0	26.07	33.0	-6.9	

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Band

LTE25

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	13.85	V	0.9	8.0	20.96	33.0	-12.0	
1855.00	18.09	H	0.9	8.0	25.20	33.0	-7.8	
Mid Ch								
1882.50	13.41	V	0.9	8.0	20.52	33.0	-12.5	
1882.50	17.88	H	0.9	8.0	24.99	33.0	-8.0	
High Ch								
1912.00	15.17	V	0.9	8.0	22.28	33.0	-10.7	
1912.00	18.24	H	0.9	8.0	25.35	33.0	-7.7	

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Band

LTE25

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	15.20	V	0.9	8.0	22.31	33.0	-10.7	
1855.00	19.23	H	0.9	8.0	26.34	33.0	-6.7	
Mid Ch								
1882.50	14.68	V	0.9	8.0	21.79	33.0	-11.2	
1882.50	18.98	H	0.9	8.0	26.09	33.0	-6.9	
High Ch								
1912.00	15.62	V	0.9	8.0	22.73	33.0	-10.3	
1912.00	18.89	H	0.9	8.0	26.00	33.0	-7.0	

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Band

LTE25

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	14.40	V	0.9	8.0	21.51	33.0	-11.5	
1852.50	18.19	H	0.9	8.0	25.30	33.0	-7.7	
Mid Ch								
1882.50	14.11	V	0.9	8.0	21.22	33.0	-11.8	
1882.50	18.31	H	0.9	8.0	25.42	33.0	-7.6	
High Ch								
1912.50	15.21	V	0.9	8.0	22.32	33.0	-10.7	
1912.50	17.96	H	0.9	8.0	25.07	33.0	-7.9	

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Band

LTE25

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	15.05	V	0.9	8.0	22.16	33.0	-10.8	
1852.50	18.89	H	0.9	8.0	26.00	33.0	-7.0	
Mid Ch								
1882.50	15.00	V	0.9	8.0	22.11	33.0	-10.9	
1882.50	19.21	H	0.9	8.0	26.32	33.0	-6.7	
High Ch								
1912.50	15.99	V	0.9	8.0	23.10	33.0	-9.9	
1912.50	18.91	H	0.9	8.0	26.02	33.0	-7.0	

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Band

LTE25

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	14.15	V	0.9	8.0	21.26	33.0	-11.7	
1851.50	18.14	H	0.9	8.0	25.25	33.0	-7.8	
Mid Ch								
1882.50	14.09	V	0.9	8.0	21.20	33.0	-11.8	
1882.50	18.23	H	0.9	8.0	25.34	33.0	-7.7	
High Ch								
1913.50	15.11	V	0.9	8.0	22.22	33.0	-10.8	
1913.50	18.16	H	0.9	8.0	25.27	33.0	-7.7	

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Band

LTE25

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	14.83	V	0.9	8.0	21.94	33.0	-11.1	
1851.50	19.30	H	0.9	8.0	26.41	33.0	-6.6	
Mid Ch								
1882.50	14.65	V	0.9	8.0	21.76	33.0	-11.2	
1882.50	18.74	H	0.9	8.0	25.85	33.0	-7.2	
High Ch								
1913.50	16.18	V	0.9	8.0	23.29	33.0	-9.7	
1913.50	19.13	H	0.9	8.0	26.24	33.0	-6.8	

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Band

LTE25

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	14.26	V	0.9	8.0	21.37	33.0	-11.6	
1850.70	18.91	H	0.9	8.0	26.02	33.0	-7.0	
Mid Ch								
1882.50	13.55	V	0.9	8.0	20.66	33.0	-12.3	
1882.50	17.67	H	0.9	8.0	24.78	33.0	-8.2	
High Ch								
1914.30	14.72	V	0.9	8.0	21.83	33.0	-11.2	
1914.30	17.15	H	0.9	8.0	24.26	33.0	-8.7	

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Band

LTE25

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/1/2015
Test Engineer: Charles Vergonio
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 25 Fundamentals, 1.4MHz Bandwidth

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	15.05	V	0.9	8.0	22.16	33.0	-10.8	
1850.70	19.28	H	0.9	8.0	26.39	33.0	-6.6	
Mid Ch								
1882.50	14.90	V	0.9	8.0	22.01	33.0	-11.0	
1882.50	18.79	H	0.9	8.0	25.90	33.0	-7.1	
High Ch								
1914.30	15.83	V	0.9	8.0	22.94	33.0	-10.1	
1914.30	18.89	H	0.9	8.0	26.00	33.0	-7.0	

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LTE Band 13

Band
LTE13
10MHz
16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 13 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Mid Ch								
782.00	20.37	V	0.9	0.0	19.47	34.8	-15.3	
782.00	6.58	H	0.9	0.0	5.68	34.8	-29.1	

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

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 13 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Mid Ch								
782.00	21.18	V	0.9	0.0	20.28	34.8	-14.5	
782.00	7.45	H	0.9	0.0	6.55	34.8	-28.2	

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

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Band

LTE13

5MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 13 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
779.50	20.28	V	0.9	0.0	19.38	34.8	-15.4	
779.50	6.27	H	0.9	0.0	5.37	34.8	-29.4	
Mid Ch								
782.00	20.22	V	0.9	0.0	19.32	34.8	-15.4	
782.00	6.48	H	0.9	0.0	5.58	34.8	-29.2	
High Ch								
784.50	20.28	V	0.9	0.0	19.38	34.8	-15.4	
784.50	6.56	H	0.9	0.0	5.66	34.8	-29.1	

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

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 13 Fundamentals, 5MHz Bandwidth

Band

LTE13

5MHz

QPSK

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
779.50	20.96	V	0.9	0.0	20.06	34.8	-14.7	
779.50	6.96	H	0.9	0.0	6.06	34.8	-28.7	
Mid Ch								
782.00	21.00	V	0.9	0.0	20.10	34.8	-14.7	
782.00	7.16	H	0.9	0.0	6.26	34.8	-28.5	
High Ch								
784.50	20.97	V	0.9	0.0	20.07	34.8	-14.7	
784.50	7.38	H	0.9	0.0	6.48	34.8	-28.3	

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

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LTE Band 12

Band

LTE12

10MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	19.91	V	0.9	0.0	19.01	38.5	-19.4	
704.00	6.51	H	0.9	0.0	5.61	38.5	-32.8	
Mid Ch								
707.50	20.19	V	0.9	0.0	19.29	38.5	-19.2	
707.50	7.57	H	0.9	0.0	6.67	38.5	-31.8	
High Ch								
711.00	21.62	V	0.9	0.0	20.72	38.5	-17.7	
711.00	9.11	H	0.9	0.0	8.21	38.5	-30.2	

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

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Band

LTE12

10MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 12 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	20.31	V	0.9	0.0	19.41	38.5	-19.0	
704.00	6.71	H	0.9	0.0	5.81	38.5	-32.6	
Mid Ch								
707.50	21.04	V	0.9	0.0	20.14	38.5	-18.3	
707.50	7.83	H	0.9	0.0	6.93	38.5	-31.5	
High Ch								
711.00	22.05	V	0.9	0.0	21.15	38.5	-17.3	
711.00	9.39	H	0.9	0.0	8.49	38.5	-30.0	

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

LTE12

5MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 12 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	20.05	V	0.9	0.0	19.15	38.5	-19.3	
704.00	6.74	H	0.9	0.0	5.84	38.5	-32.6	
Mid Ch								
707.50	20.67	V	0.9	0.0	19.77	38.5	-18.7	
707.50	7.38	H	0.9	0.0	6.48	38.5	-32.0	
High Ch								
711.00	21.50	V	0.9	0.0	20.60	38.5	-17.8	
711.00	8.82	H	0.9	0.0	7.92	38.5	-30.5	

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

LTE12

5MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 12 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	20.72	V	0.9	0.0	19.82	38.5	-18.6	
704.00	6.98	H	0.9	0.0	6.08	38.5	-32.4	
Mid Ch								
707.50	21.33	V	0.9	0.0	20.43	38.5	-18.0	
707.50	8.41	H	0.9	0.0	7.51	38.5	-30.9	
High Ch								
711.00	22.14	V	0.9	0.0	21.24	38.5	-17.2	
711.00	9.15	H	0.9	0.0	8.25	38.5	-30.2	

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

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Band

LTE12

3MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 12 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	19.97	V	0.9	0.0	19.07	38.5	-19.4	
700.50	6.51	H	0.9	0.0	5.61	38.5	-32.8	
Mid Ch								
707.50	20.48	V	0.9	0.0	19.58	38.5	-18.9	
707.50	7.39	H	0.9	0.0	6.49	38.5	-32.0	
High Ch								
714.50	21.61	V	0.9	0.0	20.71	38.5	-17.7	
714.50	8.92	H	0.9	0.0	8.02	38.5	-30.4	

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

LTE12

3MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 12 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	20.71	V	0.9	0.0	19.81	38.5	-18.6	
700.50	6.94	H	0.9	0.0	6.04	38.5	-32.4	
Mid Ch								
707.50	21.19	V	0.9	0.0	20.29	38.5	-18.2	
707.50	8.11	H	0.9	0.0	7.21	38.5	-31.2	
High Ch								
714.50	22.19	V	0.9	0.0	21.29	38.5	-17.2	
714.50	9.49	H	0.9	0.0	8.59	38.5	-29.9	

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

LTE12

1.4MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 12 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	20.18	V	0.9	0.0	19.28	38.5	-19.2	
699.70	6.71	H	0.9	0.0	5.81	38.5	-32.6	
Mid Ch								
707.50	20.70	V	0.9	0.0	19.80	38.5	-18.6	
707.50	7.52	H	0.9	0.0	6.62	38.5	-31.8	
High Ch								
715.30	20.76	V	0.9	0.0	19.86	38.5	-18.6	
715.30	7.91	H	0.9	0.0	7.01	38.5	-31.4	

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

LTE12

1.4MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 12 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	21.01	V	0.9	0.0	20.11	38.5	-18.3	
699.70	7.41	H	0.9	0.0	6.51	38.5	-31.9	
Mid Ch								
707.50	21.39	V	0.9	0.0	20.49	38.5	-18.0	
707.50	8.19	H	0.9	0.0	7.29	38.5	-31.2	
High Ch								
715.30	20.99	V	0.9	0.0	20.09	38.5	-18.4	
715.30	8.41	H	0.9	0.0	7.51	38.5	-30.9	

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

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LTE Band 5

Band
LTE5
10MHz
16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 5 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
829.00	21.16	V	0.9	0.0	20.26	38.5	-18.2	
829.00	5.71	H	0.9	0.0	4.81	38.5	-33.6	
Mid Ch								
836.50	21.65	V	0.9	0.0	20.75	38.5	-17.7	
836.50	6.59	H	0.9	0.0	5.69	38.5	-32.8	
High Ch								
844.00	22.08	V	0.9	0.0	21.18	38.5	-17.3	
844.00	7.41	H	0.9	0.0	6.51	38.5	-31.9	

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

LTE5

10MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
829.00	22.85	V	0.9	0.0	21.95	38.5	-16.5	
829.00	7.51	H	0.9	0.0	6.61	38.5	-31.8	
Mid Ch								
836.50	23.40	V	0.9	0.0	22.50	38.5	-15.9	
836.50	8.01	H	0.9	0.0	7.11	38.5	-31.3	
High Ch								
844.00	23.39	V	0.9	0.0	22.49	38.5	-16.0	
844.00	7.78	H	0.9	0.0	6.88	38.5	-31.6	

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

5MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	21.07	V	0.9	0.0	20.17	38.5	-18.3	
826.50	5.61	H	0.9	0.0	4.71	38.5	-33.7	
Mid Ch								
836.50	21.36	V	0.9	0.0	20.46	38.5	-18.0	
836.50	6.39	H	0.9	0.0	5.49	38.5	-33.0	
High Ch								
846.50	21.43	V	0.9	0.0	20.53	38.5	-17.9	
846.50	6.81	H	0.9	0.0	5.91	38.5	-32.5	

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

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 5 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	22.89	V	0.9	0.0	21.99	38.5	-16.5	
826.50	7.51	H	0.9	0.0	6.61	38.5	-31.8	
Mid Ch								
836.50	23.21	V	0.9	0.0	22.31	38.5	-16.1	
836.50	7.42	H	0.9	0.0	6.52	38.5	-31.9	
High Ch								
846.50	23.09	V	0.9	0.0	22.19	38.5	-16.3	
846.50	7.42	H	0.9	0.0	6.52	38.5	-31.9	

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

LTE5

3MHz

16QAM

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 5 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	20.97	V	0.9	0.0	20.07	38.5	-18.4	
826.50	5.41	H	0.9	0.0	4.51	38.5	-33.9	
Mid Ch								
836.50	21.19	V	0.9	0.0	20.29	38.5	-18.2	
836.50	5.83	H	0.9	0.0	4.93	38.5	-33.5	
High Ch								
846.50	21.73	V	0.9	0.0	20.83	38.5	-17.6	
846.50	7.01	H	0.9	0.0	6.11	38.5	-32.3	

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

3MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 5 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	22.99	V	0.9	0.0	22.09	38.5	-16.4	
826.50	7.66	H	0.9	0.0	6.76	38.5	-31.7	
Mid Ch								
836.50	23.33	V	0.9	0.0	22.43	38.5	-16.0	
836.50	7.61	H	0.9	0.0	6.71	38.5	-31.7	
High Ch								
846.50	23.16	V	0.9	0.0	22.26	38.5	-16.2	
846.50	7.71	H	0.9	0.0	6.81	38.5	-31.6	

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: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	20.88	V	0.9	0.0	19.98	38.5	-18.5	
826.50	5.53	H	0.9	0.0	4.63	38.5	-33.8	
Mid Ch								
836.50	21.08	V	0.9	0.0	20.18	38.5	-18.3	
836.50	6.36	H	0.9	0.0	5.46	38.5	-33.0	
High Ch								
846.50	21.78	V	0.9	0.0	20.88	38.5	-17.6	
846.50	7.41	H	0.9	0.0	6.51	38.5	-31.9	

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

LTE5

1.4MHz

QPSK

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

Company: LG
Project #: 15I20405
Date: 04/04/15
Test Engineer: Charles Vergonio
Configuration: EUT Only Z Position
Mode: LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.50	22.81	V	0.9	0.0	21.91	38.5	-16.5	
826.50	7.49	H	0.9	0.0	6.59	38.5	-31.9	
Mid Ch								
836.50	23.21	V	0.9	0.0	22.31	38.5	-16.1	
836.50	7.77	H	0.9	0.0	6.87	38.5	-31.6	
High Ch								
846.50	23.38	V	0.9	0.0	22.48	38.5	-16.0	
846.50	7.49	H	0.9	0.0	6.59	38.5	-31.9	

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

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LTE Band 4

Band

LTE4

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/7/2015
Test Engineer: R.Alegre
Configuration: EUT Only (RF Radiated 1)
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	16.64	V	0.9	8.2	23.98	30.0	-6.0	
1720.00	21.50	H	0.9	8.2	28.84	30.0	-1.2	
Mid Ch								
1732.50	17.15	V	0.9	8.2	24.42	30.0	-5.6	
1732.50	20.94	H	0.9	8.2	28.21	30.0	-1.8	
High Ch								
1745.00	17.31	V	0.9	8.1	24.51	30.0	-5.5	
1745.00	21.34	H	0.9	8.1	28.54	30.0	-1.5	

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Band

LTE4

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/7/2015
Test Engineer: R.Alegre
Configuration: EUT Only (RF Radiated 1)
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	17.67	V	0.9	8.2	25.01	30.0	-5.0	
1720.00	22.17	H	0.9	8.2	29.51	30.0	-0.5	
Mid Ch								
1732.50	18.33	V	0.9	8.2	25.60	30.0	-4.4	
1732.50	21.79	H	0.9	8.2	29.06	30.0	-0.9	
High Ch								
1745.00	17.95	V	0.9	8.1	25.15	30.0	-4.9	
1745.00	22.17	H	0.9	8.1	29.37	30.0	-0.6	

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Band

LTE4

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	16.77	V	0.9	8.2	24.12	30.0	-5.9	
1717.50	21.13	H	0.9	8.2	28.48	30.0	-1.5	
Mid Ch								
1732.50	17.29	V	0.9	8.2	24.56	30.0	-5.4	
1732.50	20.88	H	0.9	8.2	28.15	30.0	-1.8	
High Ch								
1747.50	17.08	V	0.9	8.1	24.27	30.0	-5.7	
1747.50	21.22	H	0.9	8.1	28.41	30.0	-1.6	

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Band

LTE4

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	17.64	V	0.9	8.2	24.99	30.0	-5.0	
1717.50	21.89	H	0.9	8.2	29.24	30.0	-0.8	
Mid Ch								
1732.50	18.17	V	0.9	8.2	25.44	30.0	-4.6	
1732.50	21.76	H	0.9	8.2	29.03	30.0	-1.0	
High Ch								
1747.50	17.88	V	0.9	8.1	25.07	30.0	-4.9	
1747.50	22.06	H	0.9	8.1	29.25	30.0	-0.7	

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Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	16.49	V	0.9	8.2	23.76	30.0	-6.2	
1715.00	21.15	H	0.9	8.2	28.42	30.0	-1.6	
Mid Ch								
1732.50	16.92	V	0.9	8.2	24.19	30.0	-5.8	
1732.50	21.01	H	0.9	8.2	28.28	30.0	-1.7	
High Ch								
1750.00	17.01	V	0.9	8.1	24.20	30.0	-5.8	
1750.00	21.00	H	0.9	8.1	28.19	30.0	-1.8	

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Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	17.58	V	0.9	8.2	24.85	30.0	-5.1	
1715.00	21.82	H	0.9	8.2	29.09	30.0	-0.9	
Mid Ch								
1732.50	18.06	V	0.9	8.2	25.33	30.0	-4.7	
1732.50	21.55	H	0.9	8.2	28.82	30.0	-1.2	
High Ch								
1750.00	17.78	V	0.9	8.1	24.97	30.0	-5.0	
1750.00	21.80	H	0.9	8.1	28.99	30.0	-1.0	

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Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	16.63	V	0.9	8.2	23.97	30.0	-6.0	
1712.50	21.13	H	0.9	8.2	28.47	30.0	-1.5	
Mid Ch								
1732.50	16.96	V	0.9	8.2	24.23	30.0	-5.8	
1732.50	20.87	H	0.9	8.2	28.14	30.0	-1.9	
High Ch								
1752.50	16.83	V	0.9	8.1	24.03	30.0	-6.0	
1752.50	20.59	H	0.9	8.1	27.79	30.0	-2.2	

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Band

LTE4

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	17.54	V	0.9	8.2	24.88	30.0	-5.1	
1712.50	21.89	H	0.9	8.2	29.23	30.0	-0.8	
Mid Ch								
1732.50	17.84	V	0.9	8.2	25.11	30.0	-4.9	
1732.50	21.69	H	0.9	8.2	28.96	30.0	-1.0	
High Ch								
1752.50	17.64	V	0.9	8.1	24.84	30.0	-5.2	
1752.50	21.50	H	0.9	8.1	28.70	30.0	-1.3	

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Band

LTE4

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	16.56	V	0.9	8.2	23.91	30.0	-6.1	
1711.50	21.37	H	0.9	8.2	28.72	30.0	-1.3	
Mid Ch								
1732.50	16.97	V	0.9	8.2	24.24	30.0	-5.8	
1732.50	20.90	H	0.9	8.2	28.17	30.0	-1.8	
High Ch								
1753.50	16.93	V	0.9	8.1	24.12	30.0	-5.9	
1753.50	20.61	H	0.9	8.1	27.80	30.0	-2.2	

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Band

LTE4

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20405
Date: 4/9/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	17.49	V	0.9	8.2	24.84	30.0	-5.2	
1711.50	21.89	H	0.9	8.2	29.24	30.0	-0.8	
Mid Ch								
1732.50	17.91	V	0.9	8.2	25.18	30.0	-4.8	
1732.50	21.72	H	0.9	8.2	28.99	30.0	-1.0	
High Ch								
1753.50	17.77	V	0.9	8.1	24.96	30.0	-5.0	
1753.50	21.52	H	0.9	8.1	28.71	30.0	-1.3	

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