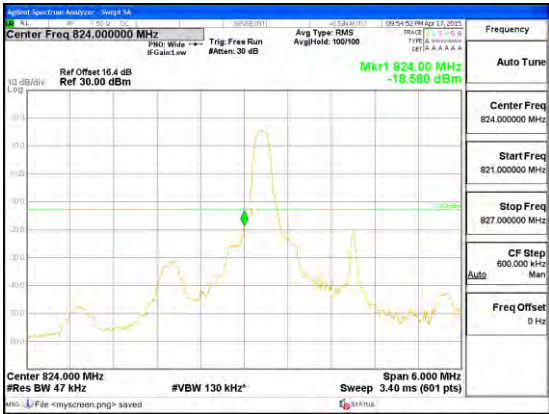
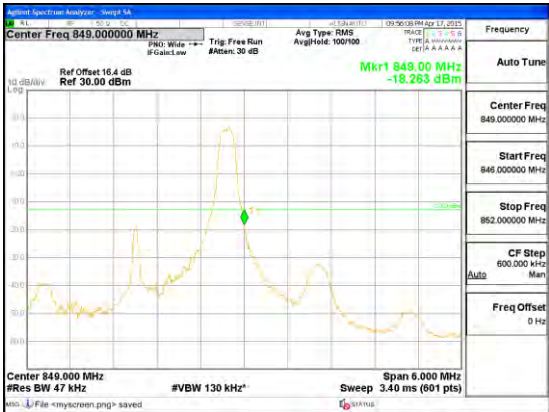
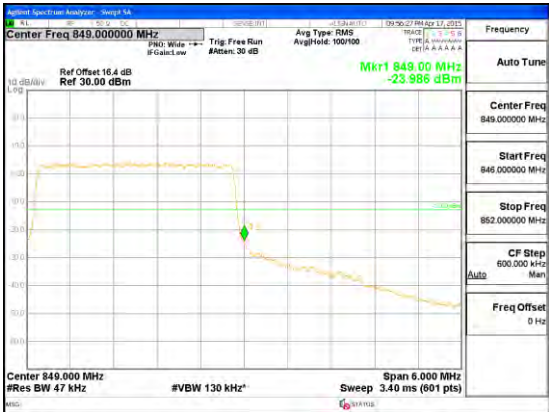
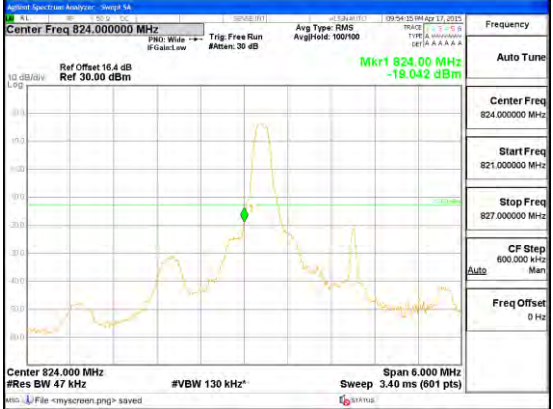
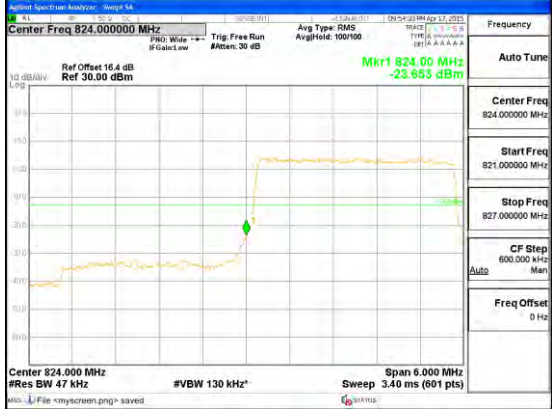
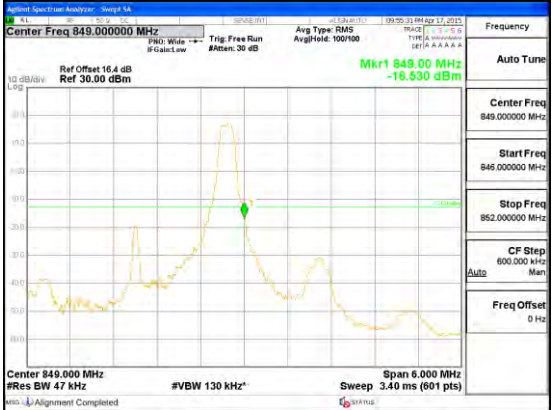
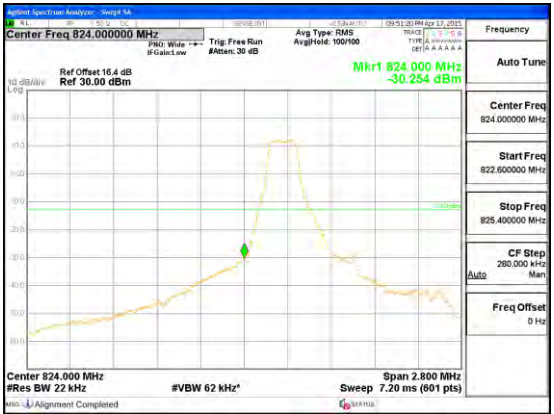
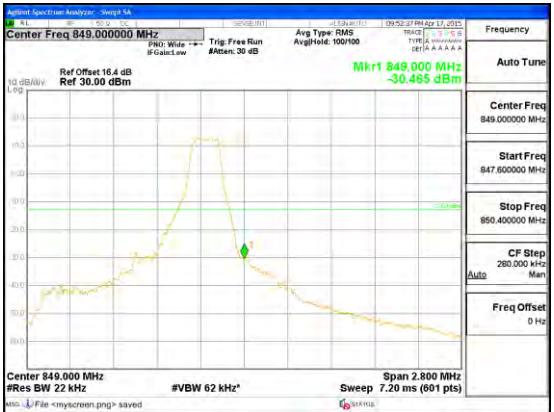
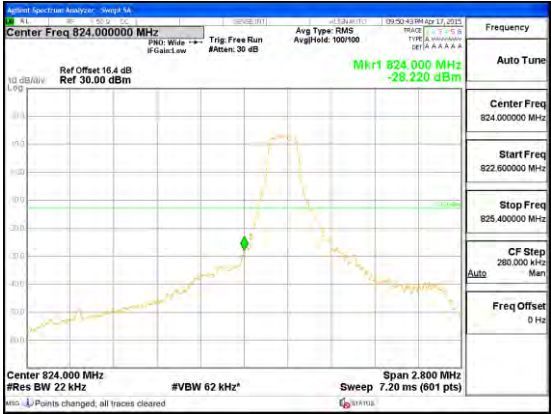
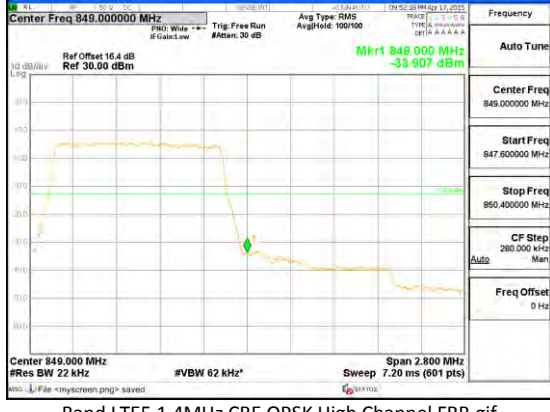


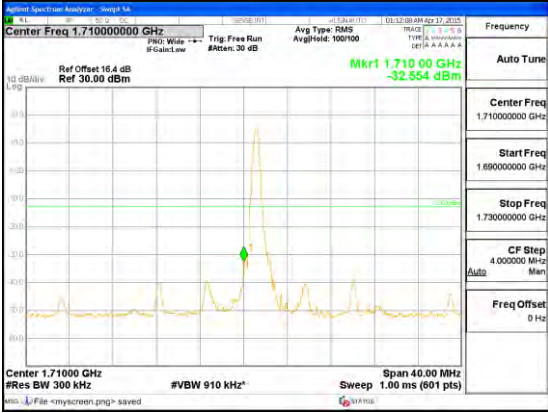
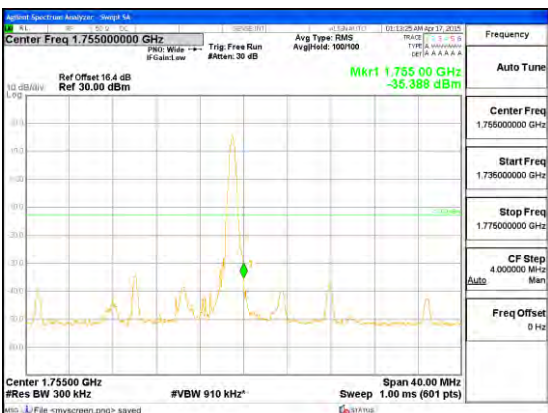
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM High Channel FRB.gif

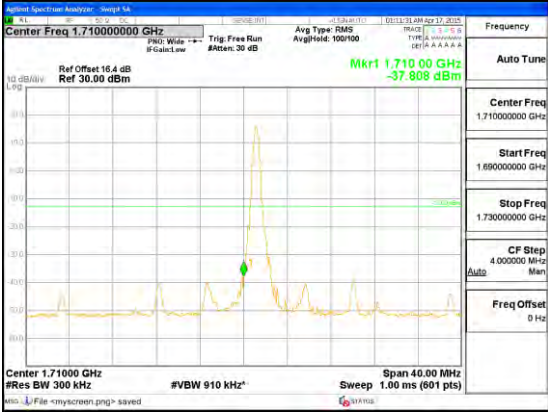
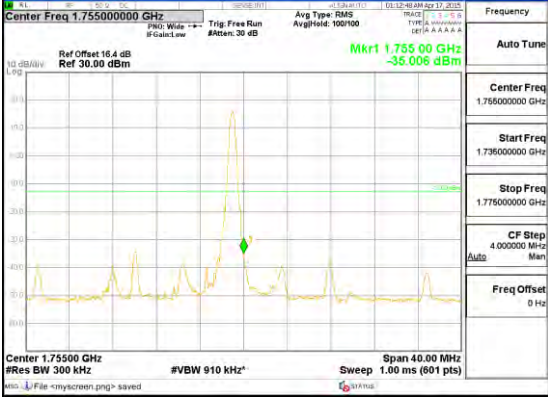
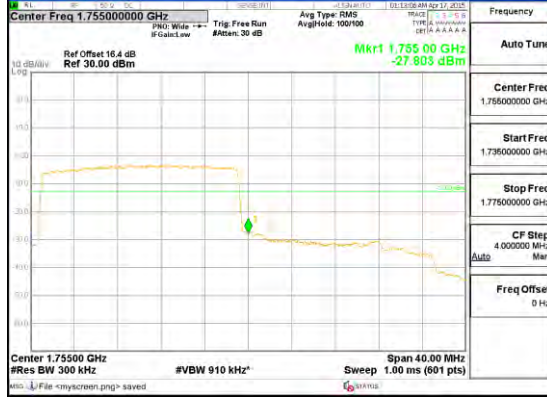
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Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK High Channel FRB.gif

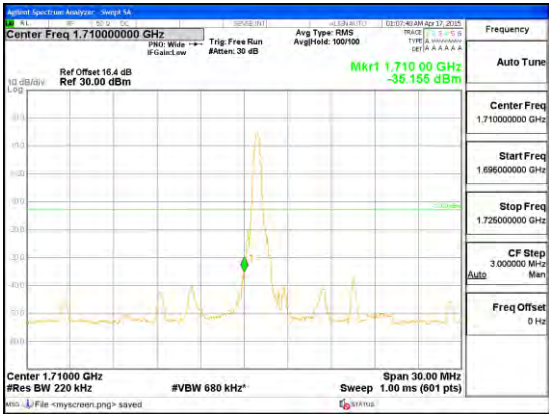
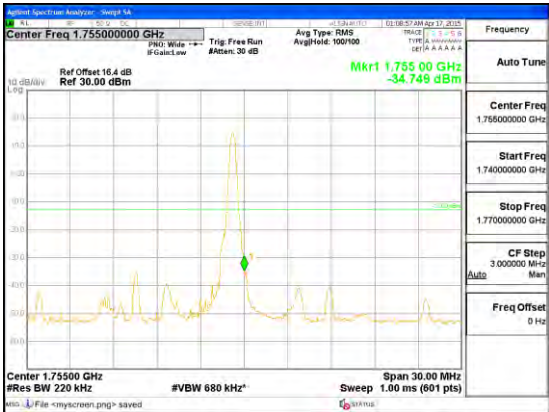
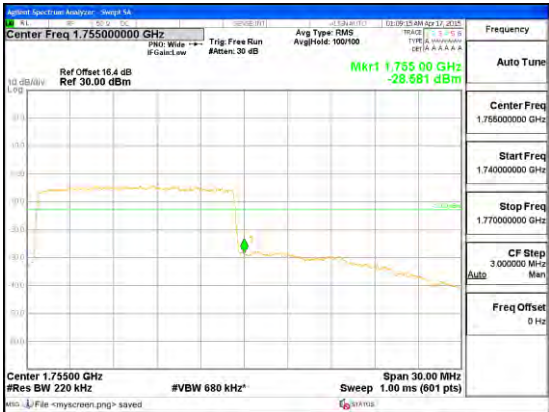
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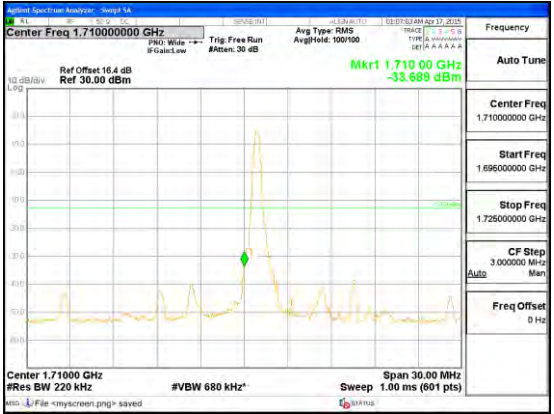
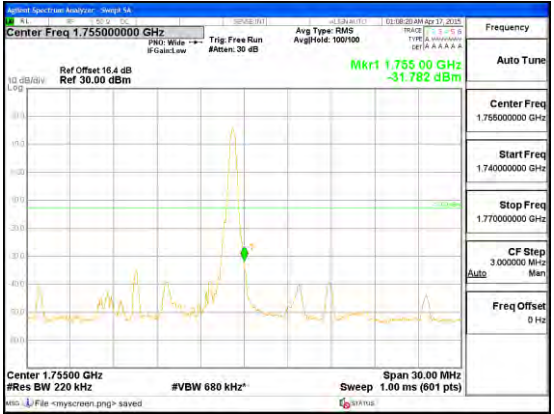
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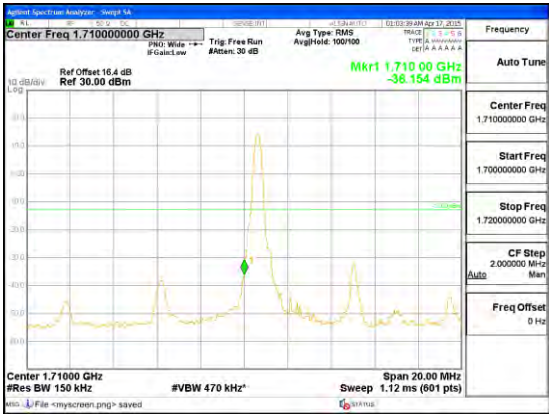
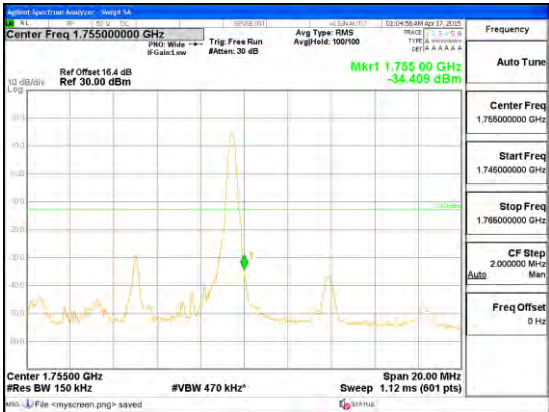
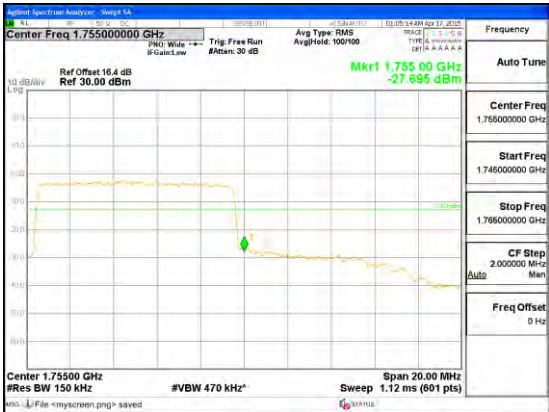
LTE Band 4

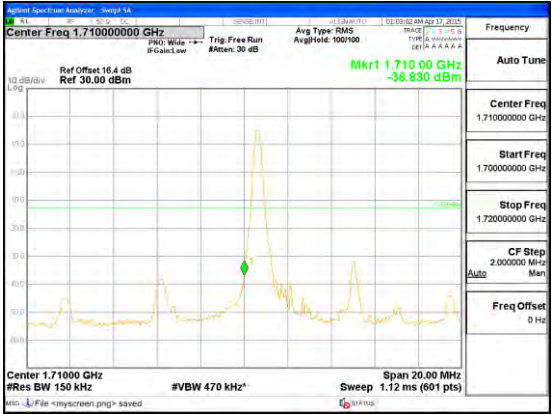
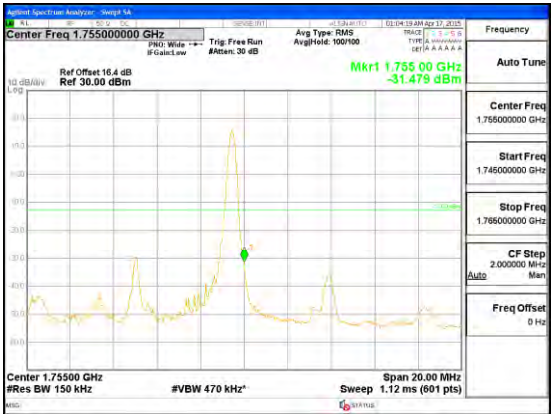
and LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM High Channel FRB.gif

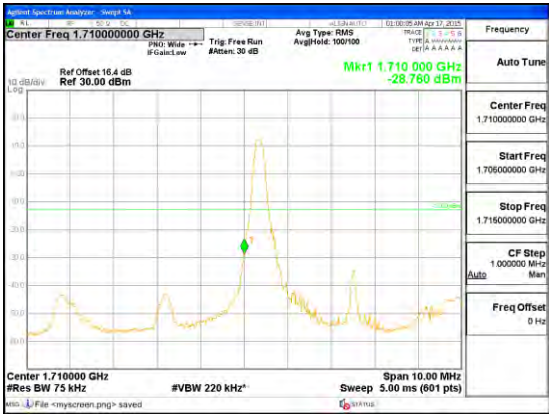
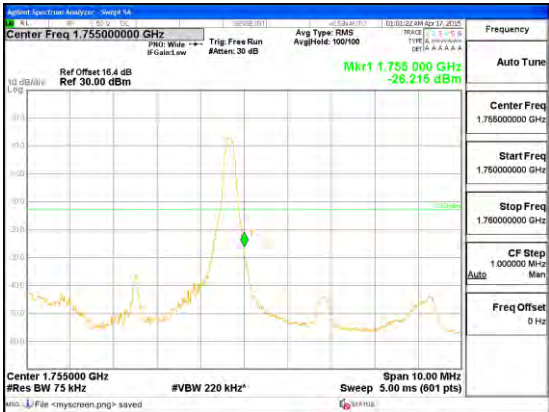
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK Low Channel FRB.gif
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK High Channel FRB.gif

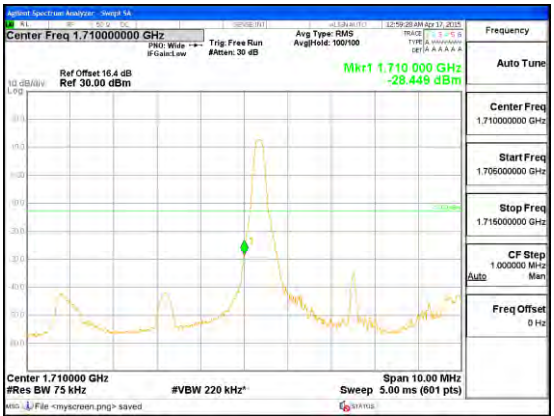
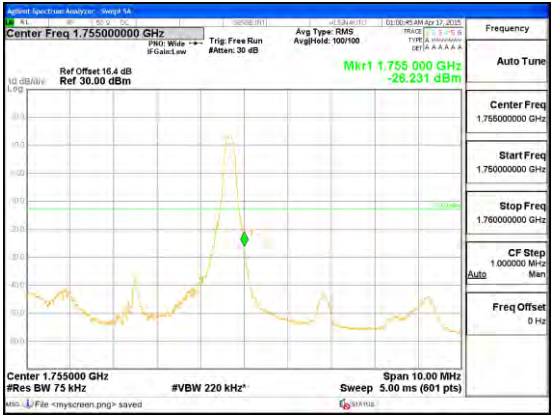
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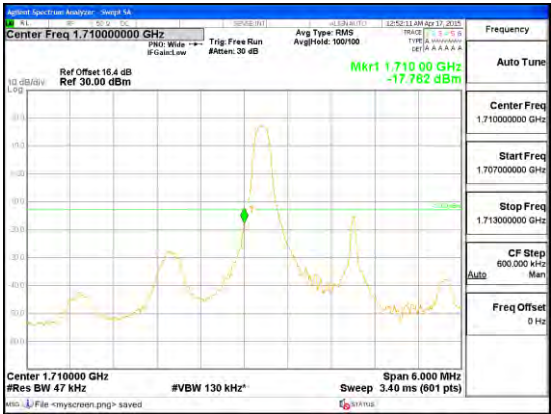
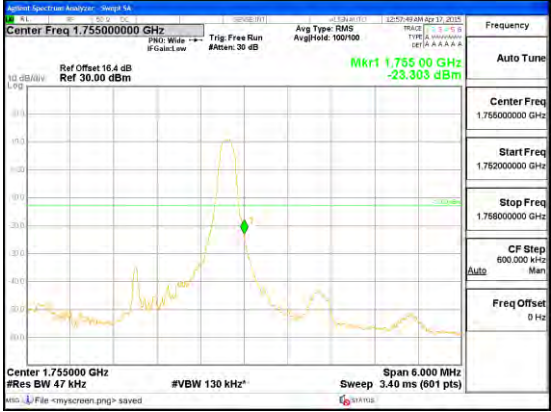
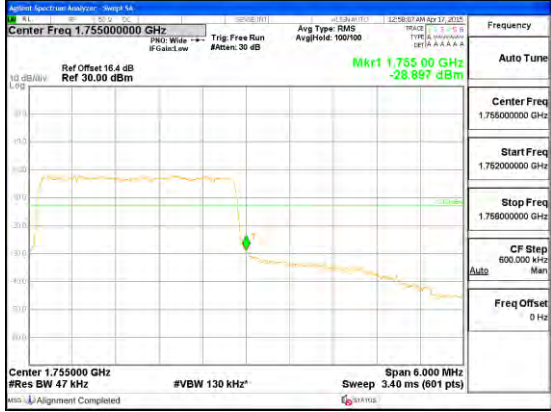
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Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK High Channel FRB.gif

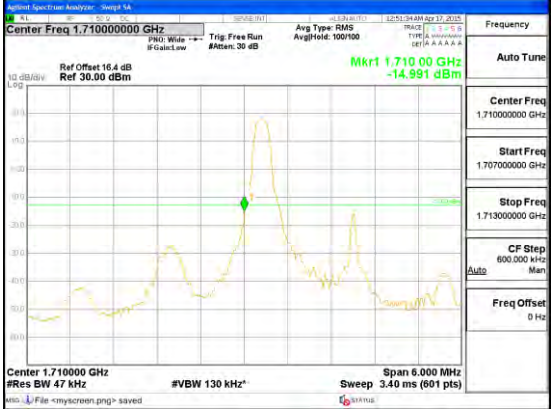
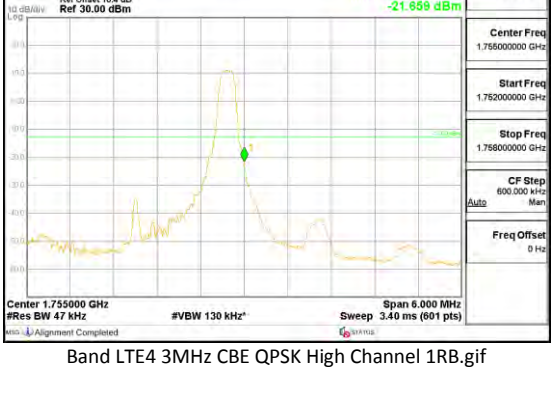
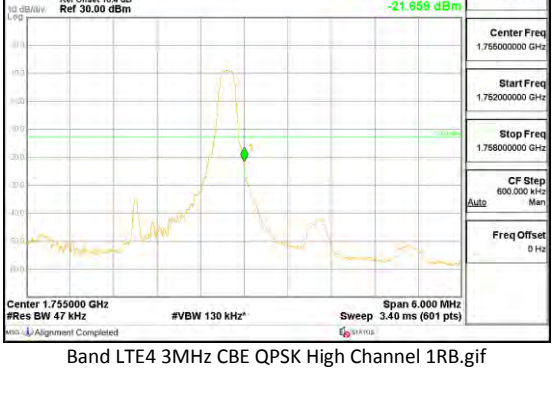
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Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM High Channel FRB.gif

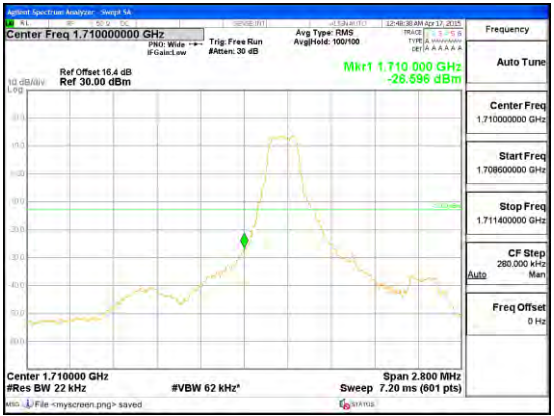
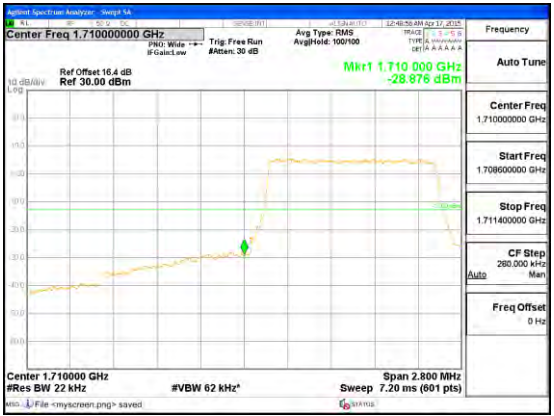
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK Low Channel FRB.gif
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK High Channel FRB.gif

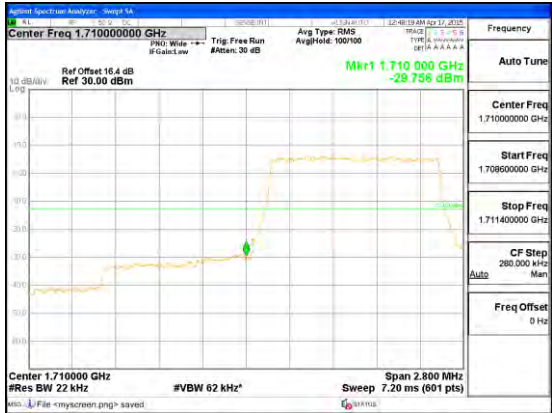
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM High Channel FRB.gif

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

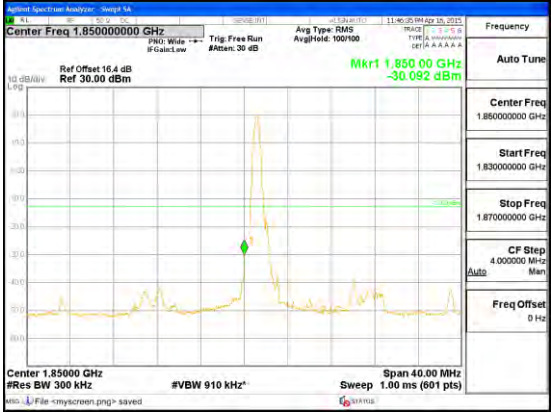
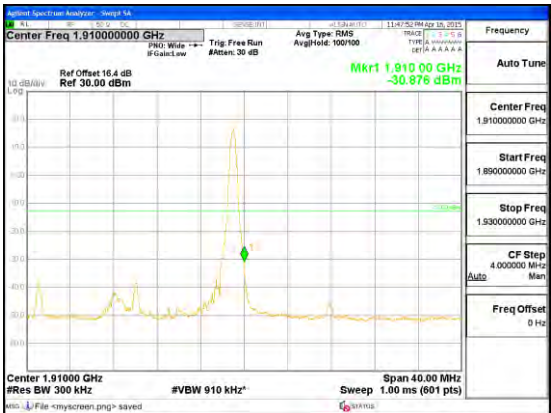
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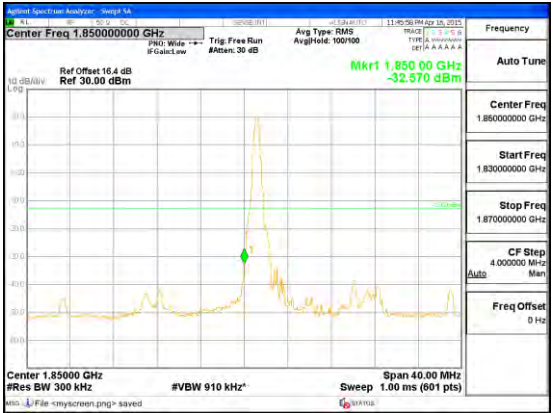
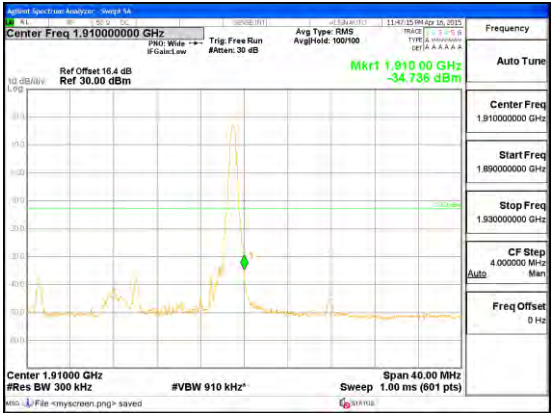
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel 1RB.gif
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel FRB.gif
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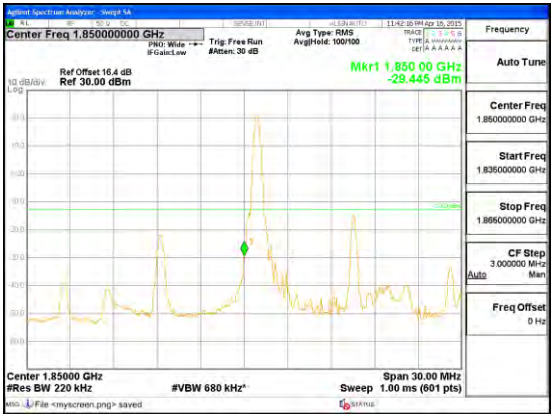
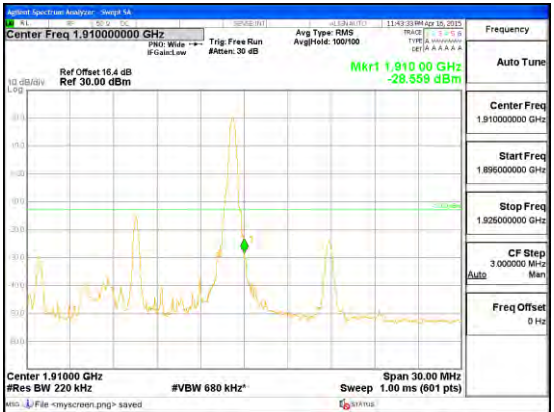
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM High Channel FRB.gif

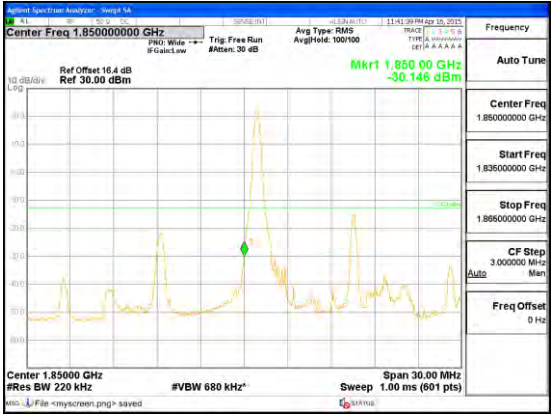
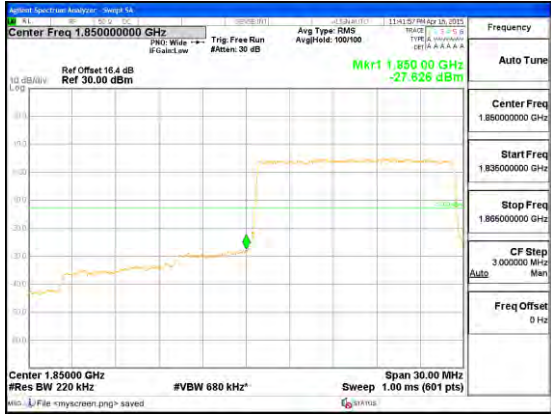
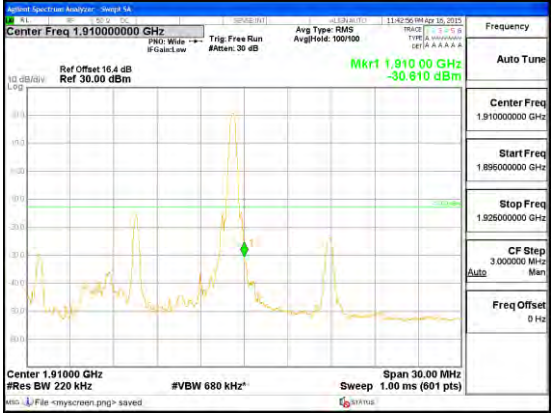
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK High Channel FRB.gif

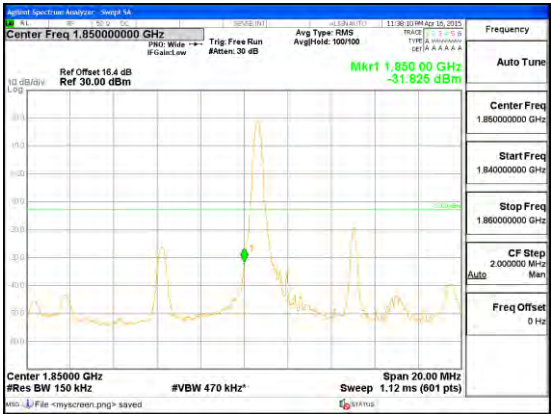
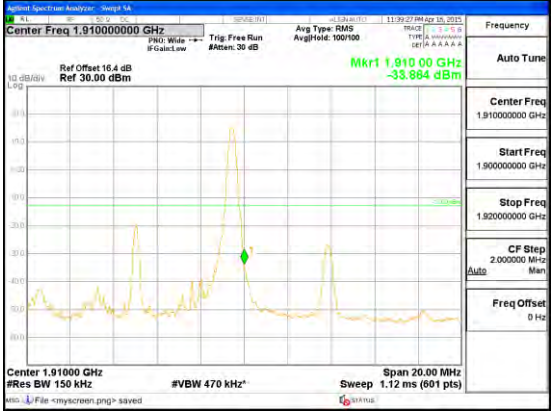
LTE Band 2

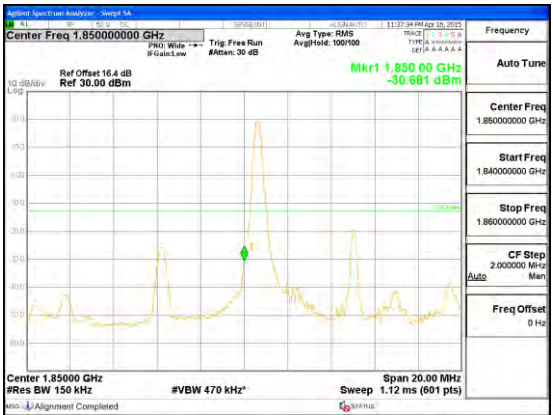
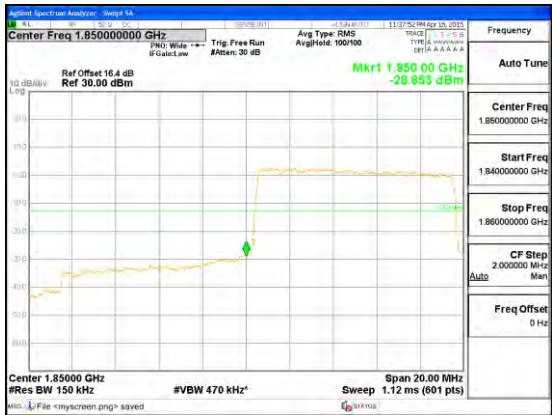
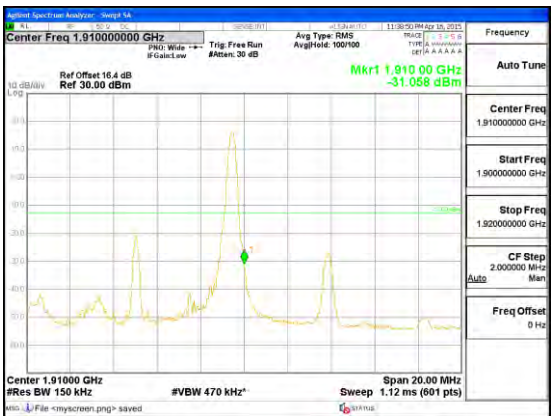
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM High Channel FRB.gif

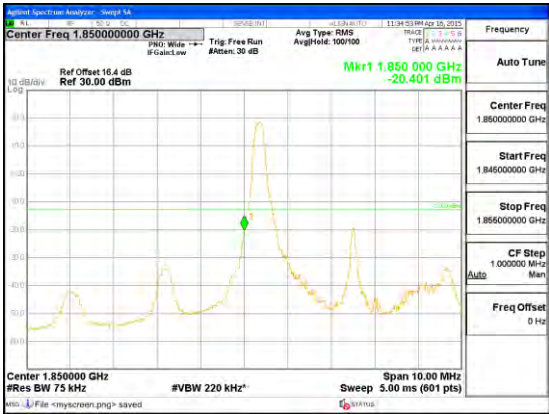
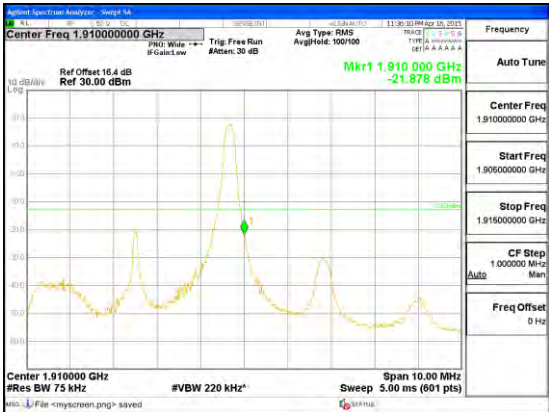
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK Low Channel FRB.gif
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK High Channel FRB.gif

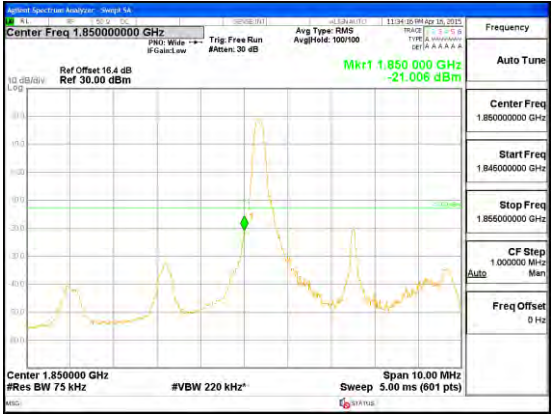
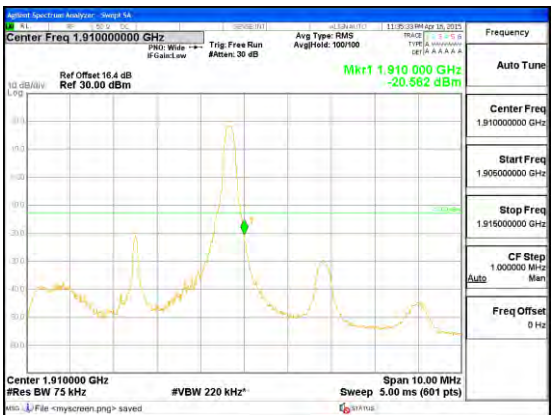
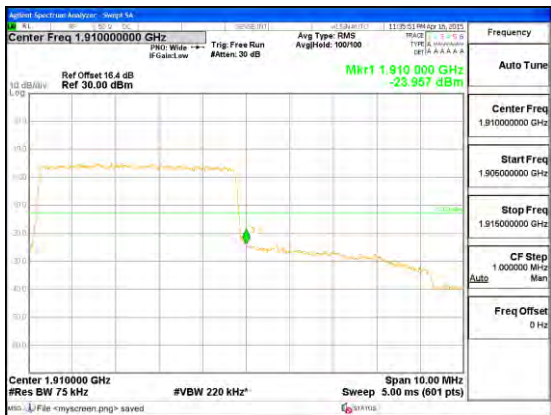
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Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM High Channel FRB.gif

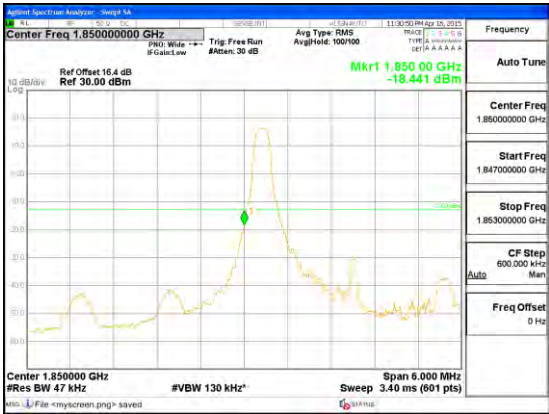
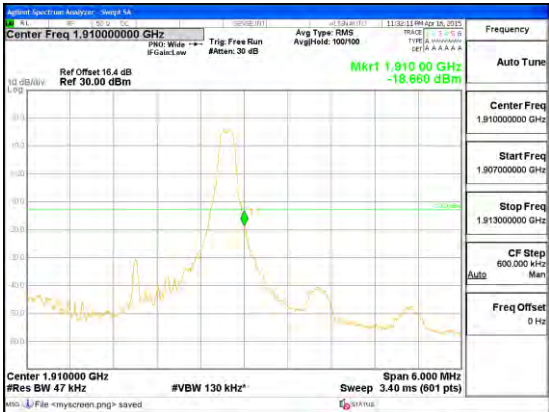
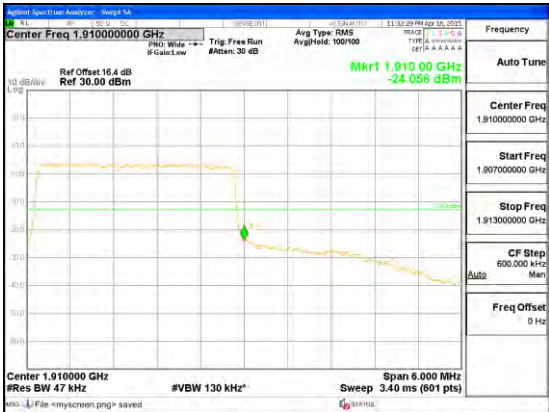
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK Low Channel FRB.gif
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK High Channel FRB.gif

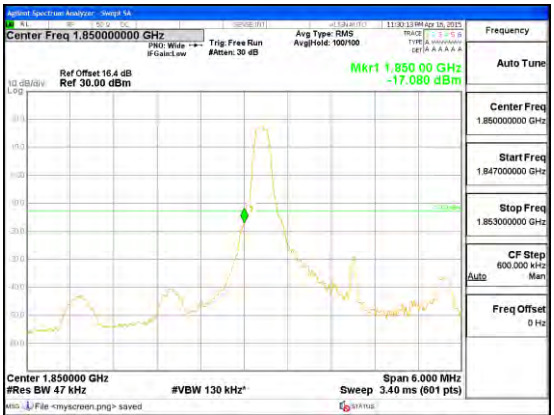
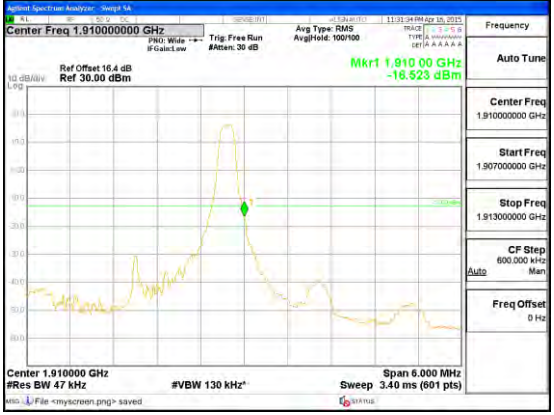
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

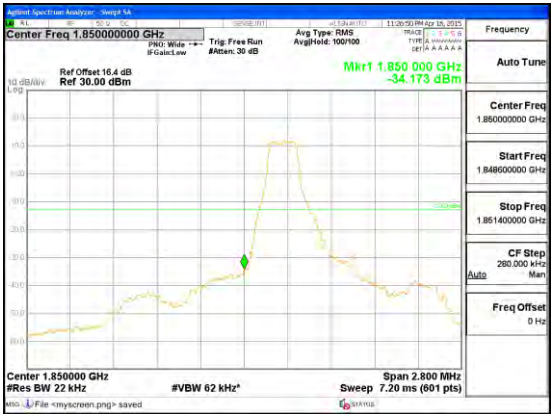
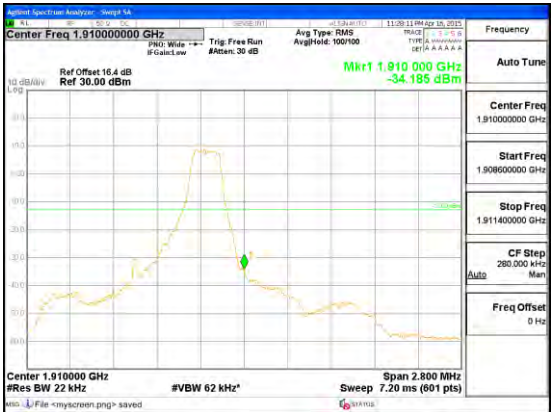
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK Low Channel FRB.gif
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK High Channel FRB.gif

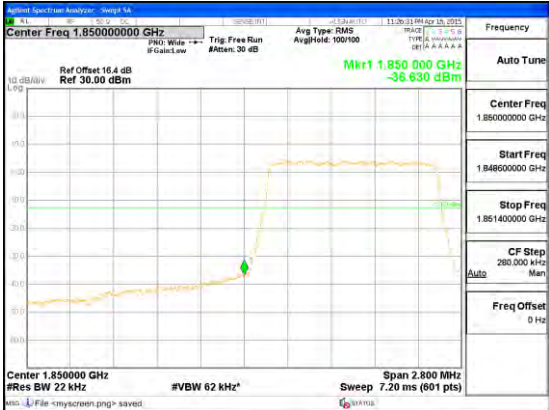
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Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM High Channel FRB.gif

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

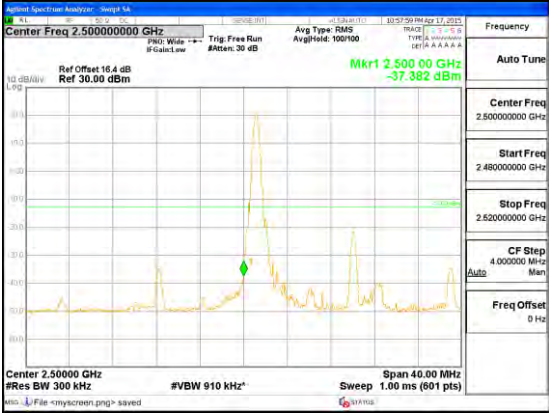
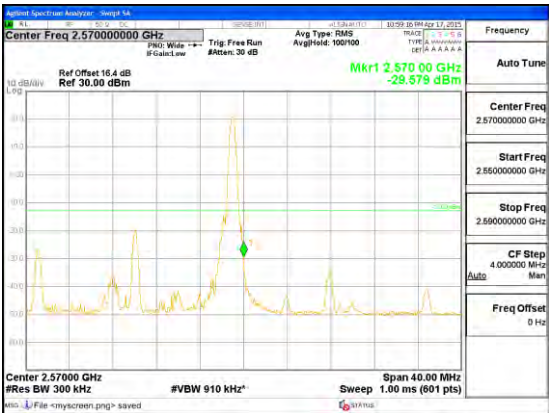
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM High Channel FRB.gif

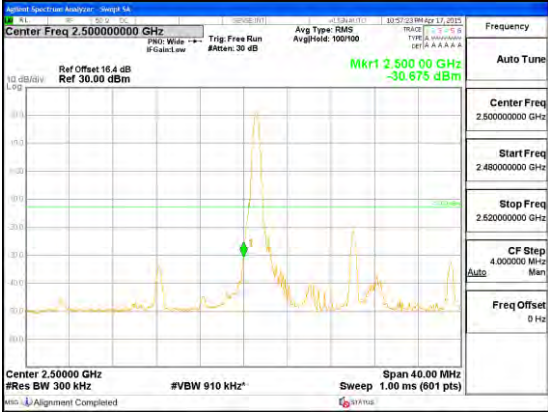
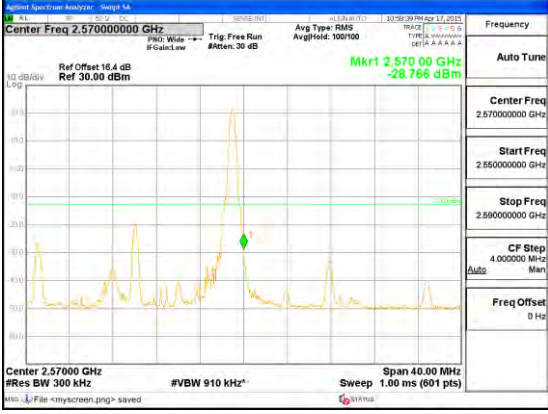
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK Low Channel FRB.gif
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK High Channel FRB.gif

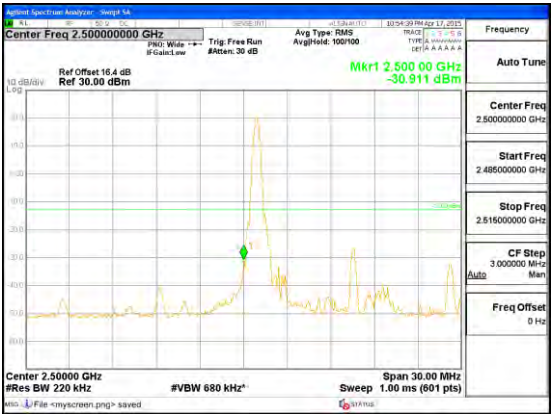
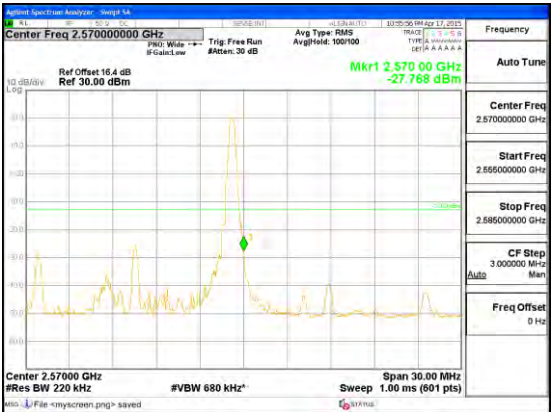
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Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM High Channel FRB.gif

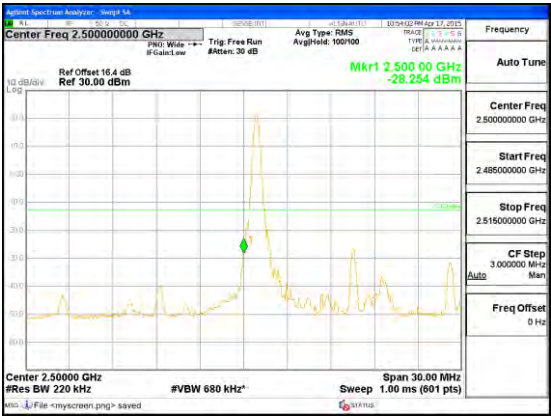
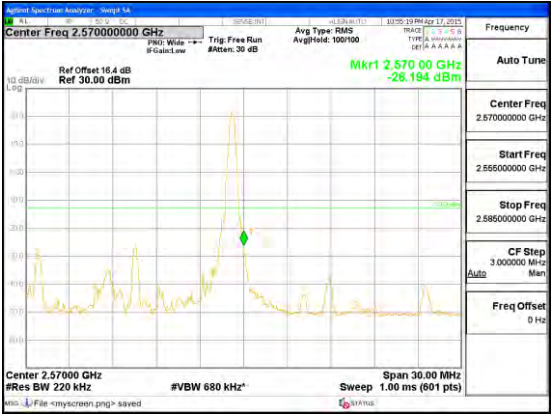
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK High Channel FRB.gif

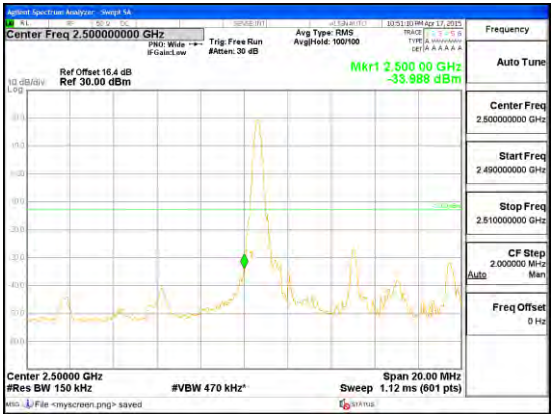
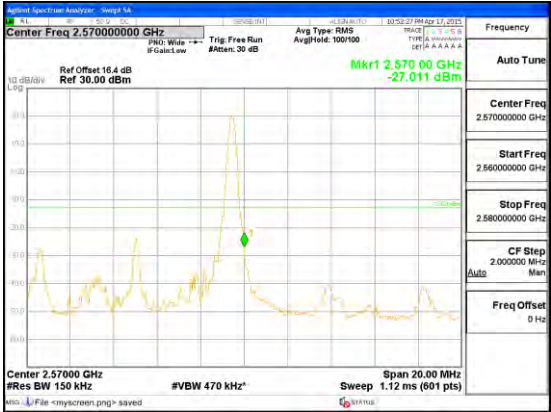
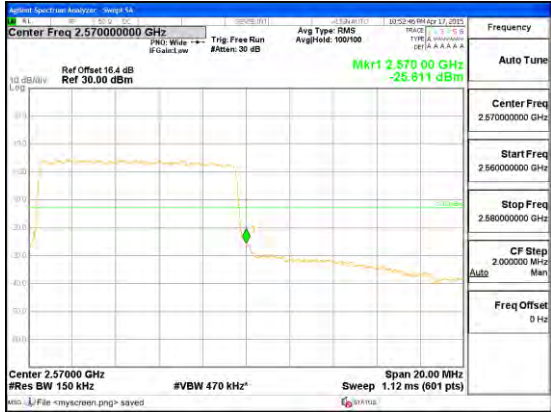
LTE Band 7

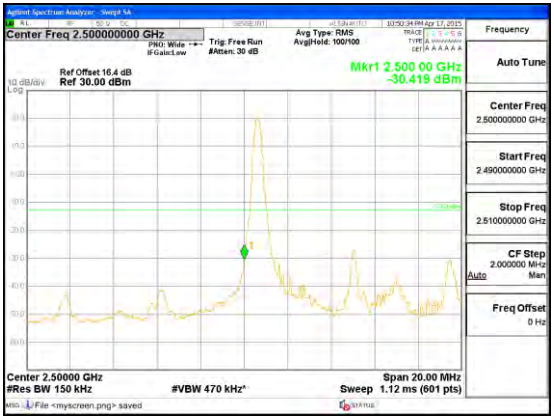
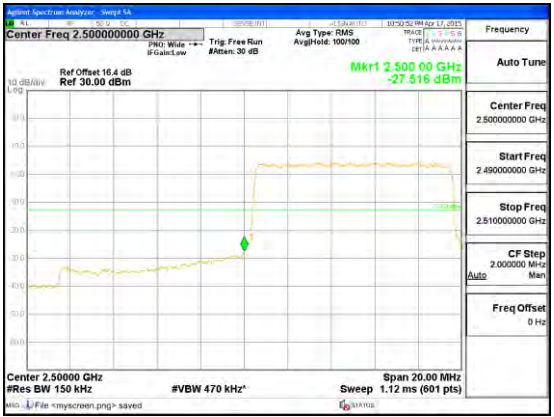
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 20MHz CBE 16QAM High Channel FRB.gif

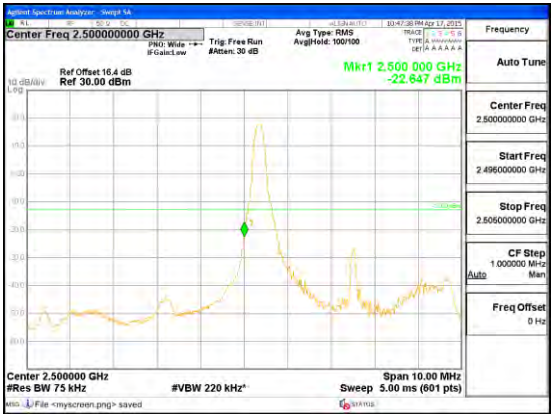
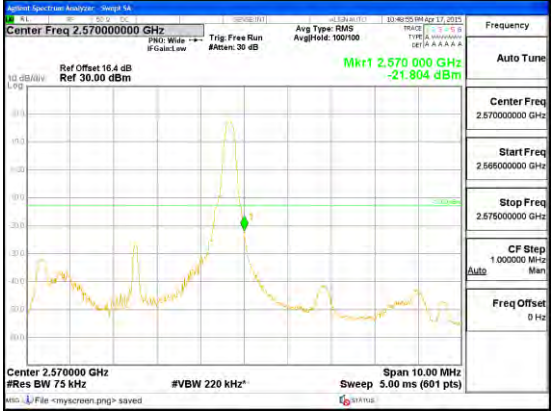
Band LTE7 20MHz QPSK	 Band LTE7 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 20MHz CBE QPSK Low Channel FRB.gif
Band LTE7 20MHz QPSK	 Band LTE7 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 20MHz CBE QPSK High Channel FRB.gif

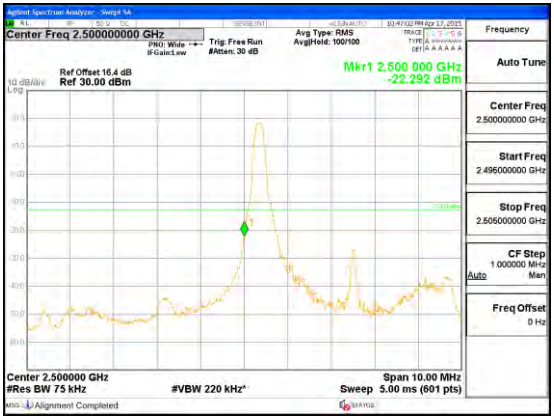
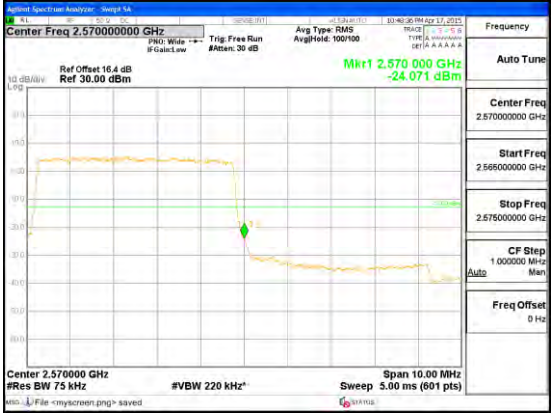
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 15MHz CBE 16QAM High Channel FRB.gif

Band LTE7 15MHz QPSK	 Band LTE7 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 15MHz CBE QPSK Low Channel FRB.gif
Band LTE7 15MHz QPSK	 Band LTE7 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 15MHz CBE QPSK High Channel FRB.gif

Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 10MHz CBE 16QAM High Channel FRB.gif

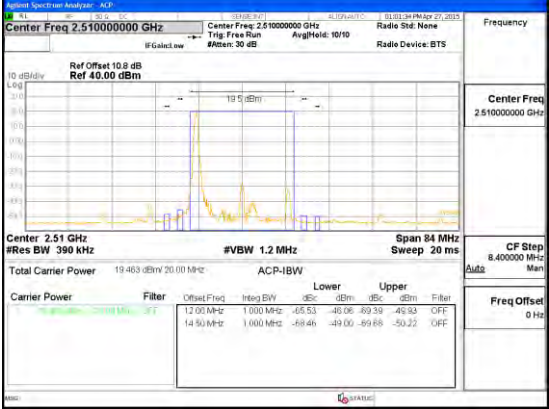
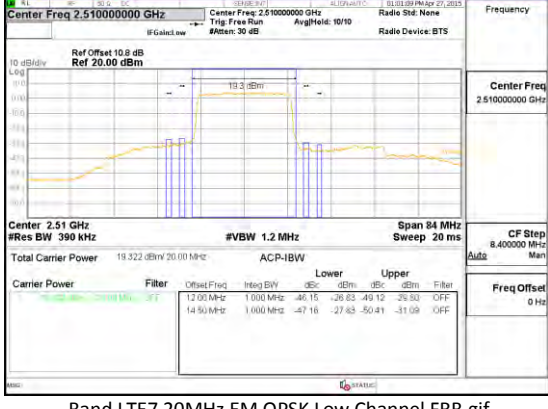
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Band LTE7 10MHz QPSK	 Band LTE7 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 10MHz CBE QPSK High Channel FRB.gif

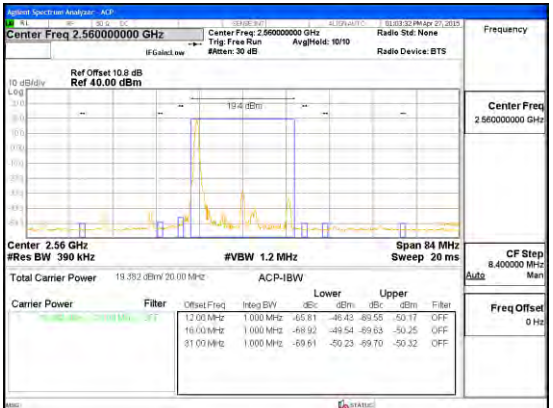
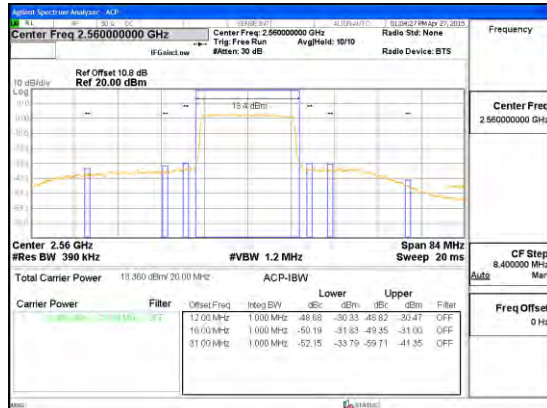
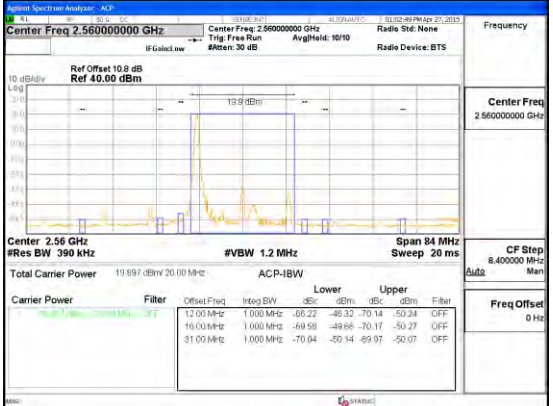
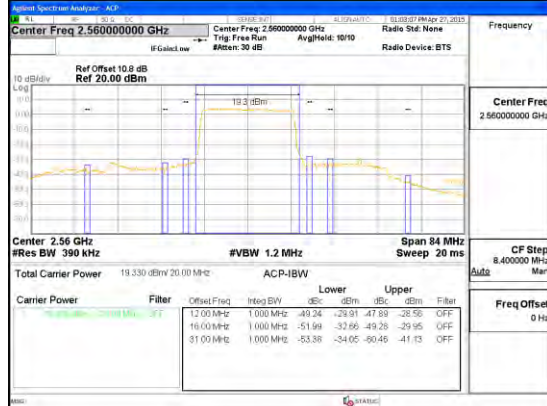
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Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 5MHz CBE 16QAM High Channel FRB.gif

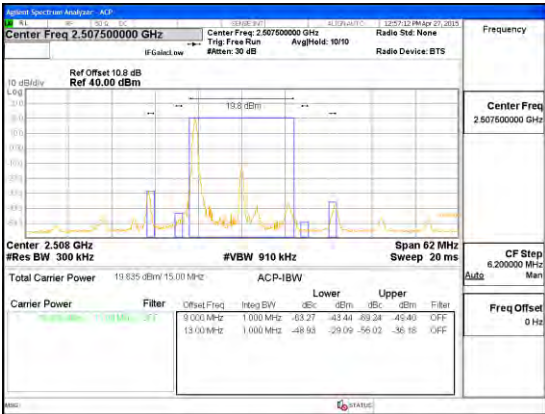
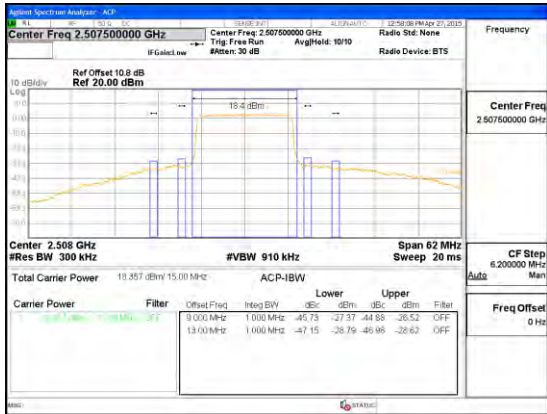
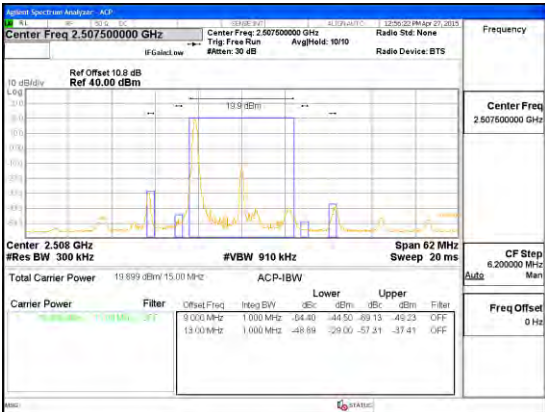
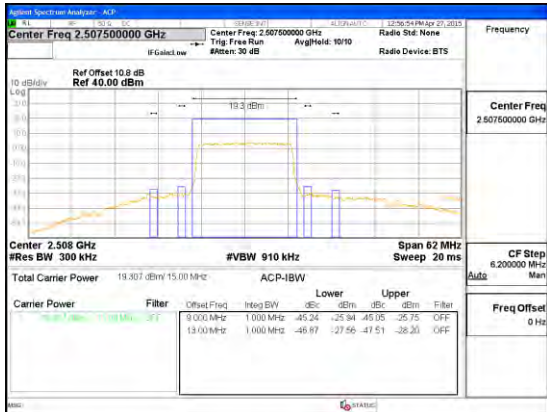
Band LTE7 5MHz QPSK	 Band LTE7 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 5MHz CBE QPSK Low Channel FRB.gif
Band LTE7 5MHz QPSK	 Band LTE7 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 5MHz CBE QPSK High Channel FRB.gif

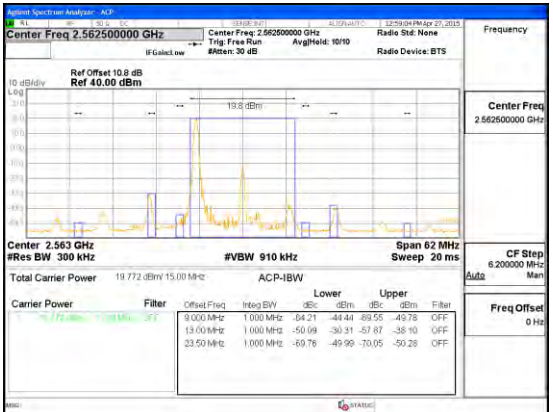
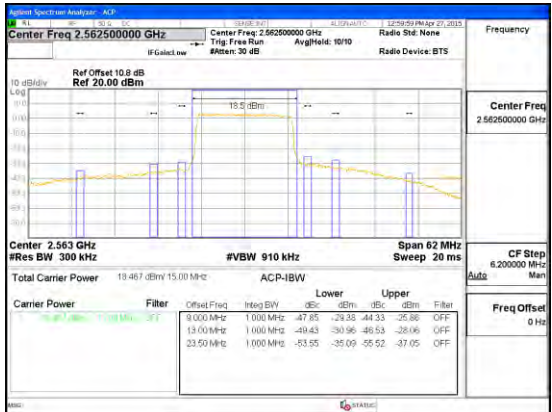
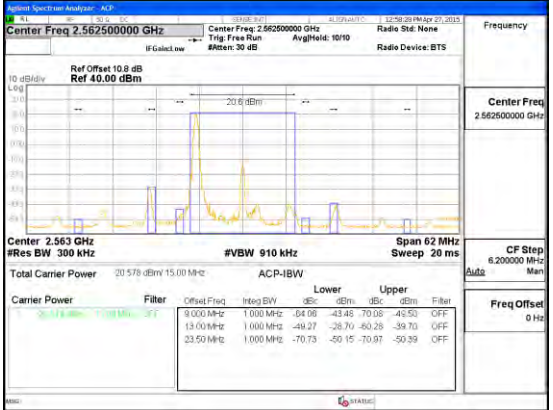
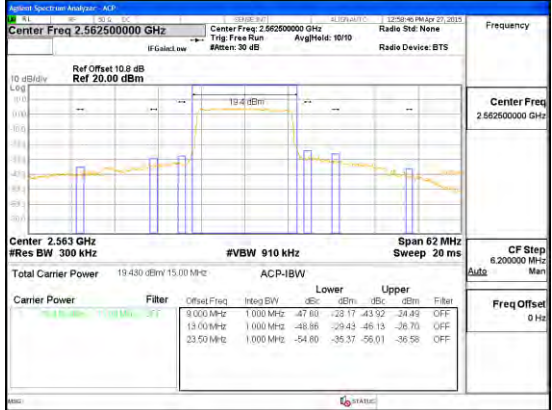
10.2.1. EMISSION MASK PLOTS

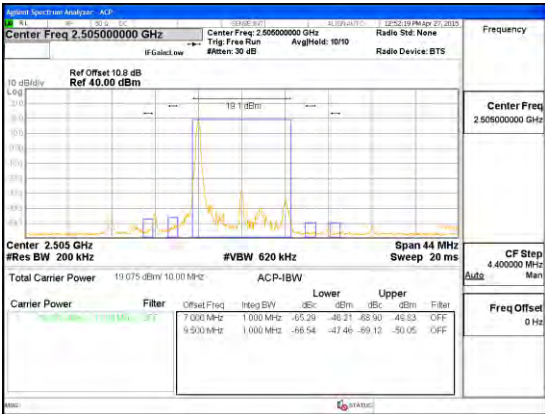
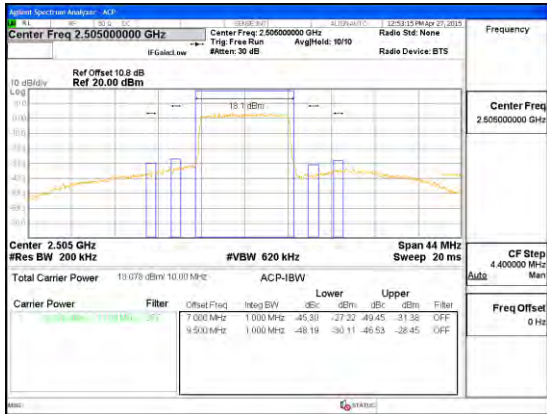
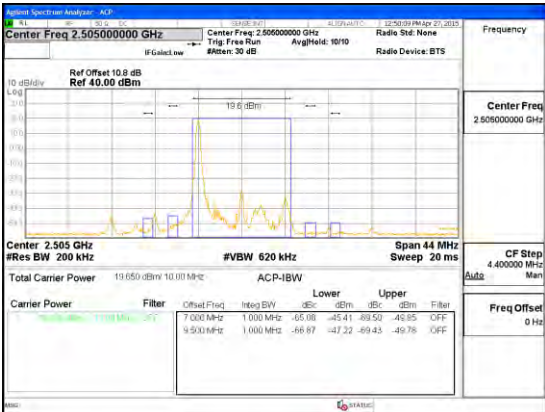
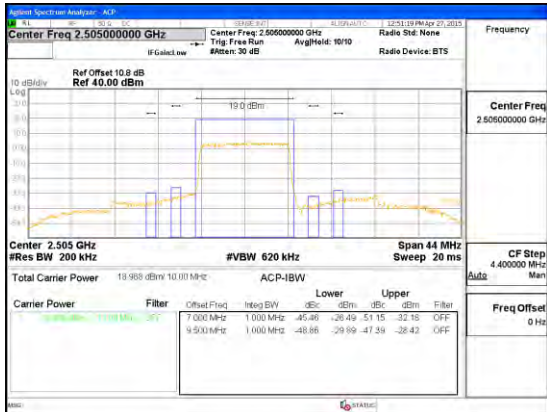
LTE Band 7

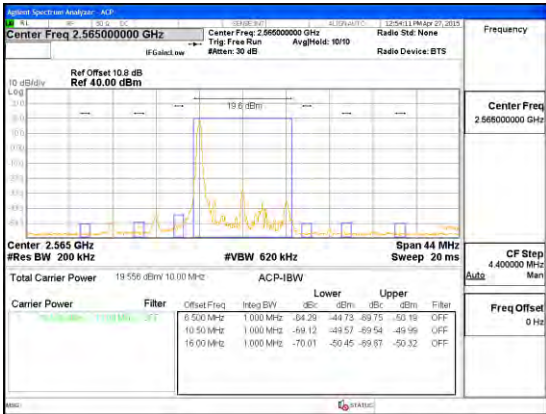
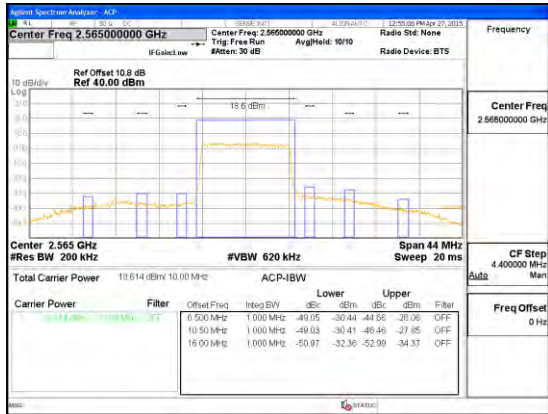
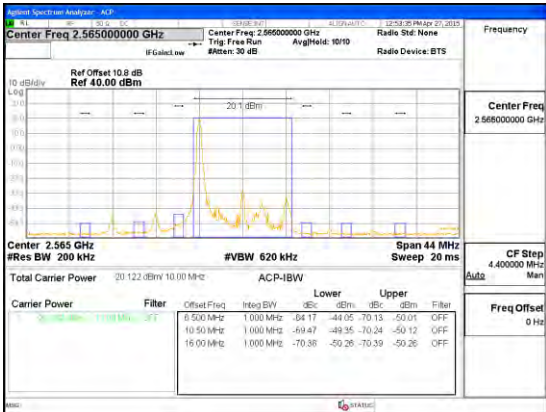
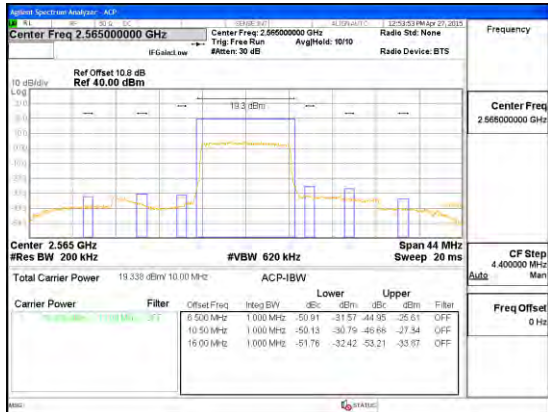
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz EM 16QAM Low Channel 1RB.gif	 Band LTE7 20MHz EM 16QAM Low Channel FRB.gif
Band LTE7 20MHz QPSK	 Band LTE7 20MHz EM QPSK Low Channel 1RB.gif	 Band LTE7 20MHz EM QPSK Low Channel FRB.gif

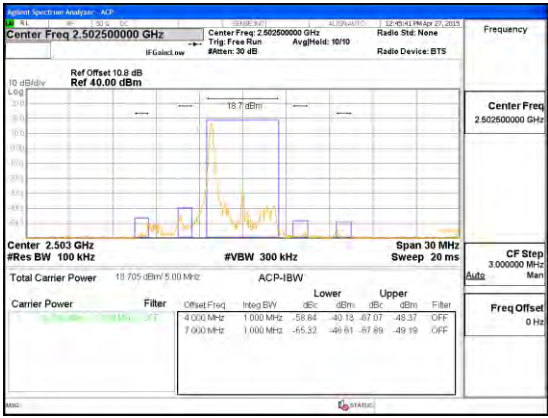
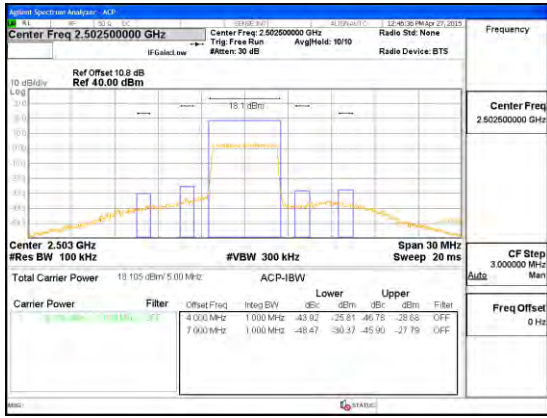
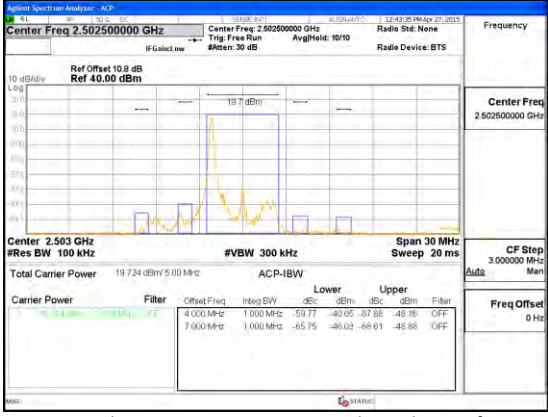
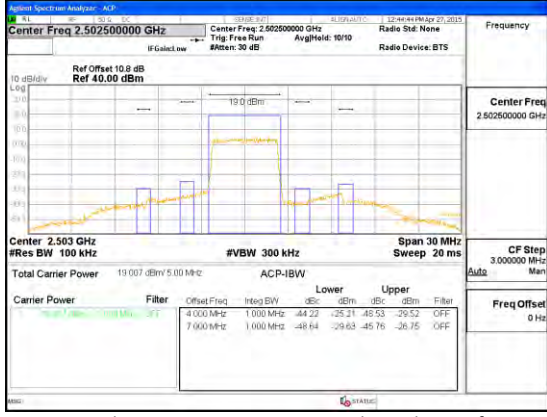
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz EM 16QAM High Channel 1RB.gif	 Band LTE7 20MHz EM 16QAM High Channel FRB.gif
Band LTE7 20MHz QPSK	 Band LTE7 20MHz EM QPSK High Channel 1RB.gif	 Band LTE7 20MHz EM QPSK High Channel FRB.gif

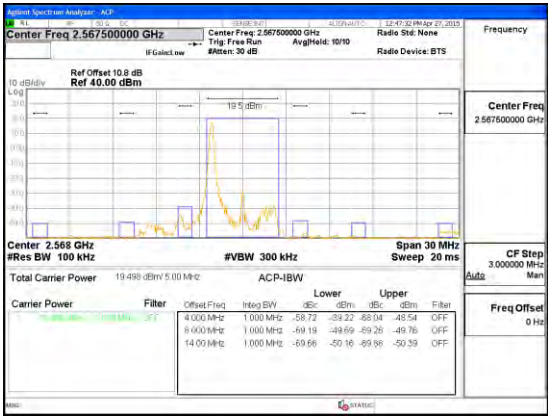
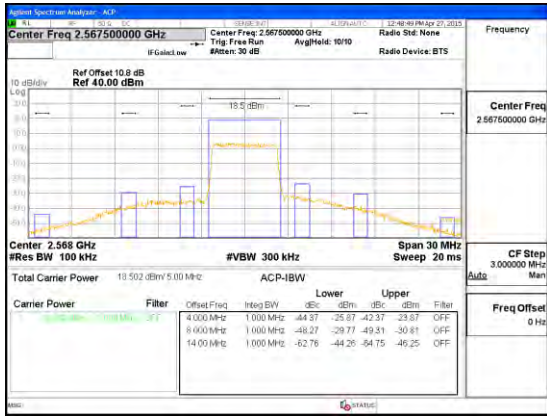
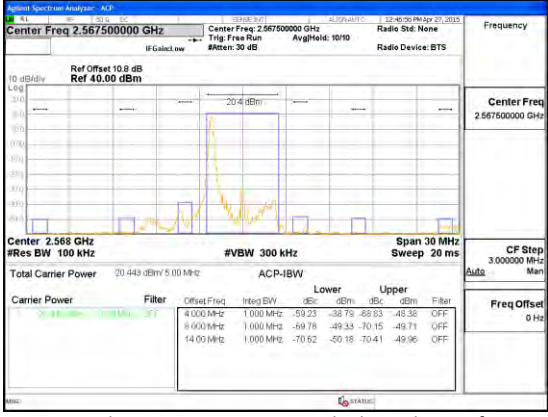
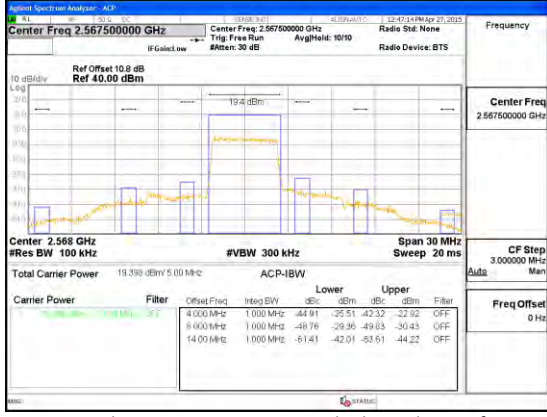
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz EM 16QAM Low Channel 1RB.gif	 Band LTE7 15MHz EM 16QAM Low Channel FRB.gif
Band LTE7 15MHz QPSK	 Band LTE7 15MHz EM QPSK Low Channel 1RB.gif	 Band LTE7 15MHz EM QPSK Low Channel FRB.gif

Band LTE7 15MHz 16QAM	 Band LTE7 15MHz EM 16QAM High Channel 1RB.gif	 Band LTE7 15MHz EM 16QAM High Channel FRB.gif
Band LTE7 15MHz QPSK	 Band LTE7 15MHz EM QPSK High Channel 1RB.gif	 Band LTE7 15MHz EM QPSK High Channel FRB.gif

Band LTE7 10MHz 16QAM	 Band LTE7 10MHz EM 16QAM Low Channel 1RB.gif	 Band LTE7 10MHz EM 16QAM Low Channel FRB.gif
Band LTE7 10MHz QPSK	 Band LTE7 10MHz EM QPSK Low Channel 1RB.gif	 Band LTE7 10MHz EM QPSK Low Channel FRB.gif

Band LTE7 10MHz 16QAM	 Band LTE7 10MHz EM 16QAM High Channel 1RB.gif	 Band LTE7 10MHz EM 16QAM High Channel FRB.gif
Band LTE7 10MHz QPSK	 Band LTE7 10MHz EM QPSK High Channel 1RB.gif	 Band LTE7 10MHz EM QPSK High Channel FRB.gif

Band LTE7 5MHz 16QAM	 Band LTE7 5MHz EM 16QAM Low Channel 1RB.gif	 Band LTE7 5MHz EM 16QAM Low Channel FRB.gif
Band LTE7 5MHz QPSK	 Band LTE7 5MHz EM QPSK Low Channel 1RB.gif	 Band LTE7 5MHz EM QPSK Low Channel FRB.gif

Band LTE7 5MHz 16QAM	 Band LTE7 5MHz EM 16QAM High Channel 1RB.gif	 Band LTE7 5MHz EM 16QAM High Channel FRB.gif
Band LTE7 5MHz QPSK	 Band LTE7 5MHz EM QPSK High Channel 1RB.gif	 Band LTE7 5MHz EM QPSK High Channel FRB.gif

10.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

Part 27: (m)(4) (4) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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.

MODES TESTED

GSM, WCDMA and LTE

RESULTS

10.3.1. OUT OF BAND EMISSIONS RESULT

GSM

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM 850	GPRS	824.2	-18.722	-13	-5.722
		836.6	-18.674	-13	-5.674
		848.8	-18.723	-13	-5.723
	EGPRS	824.2	-19.306	-13	-6.306
		836.6	-18.911	-13	-5.911
		848.8	-18.667	-13	-5.667
GSM 1900	GPRS	1850.2	-18.206	-13	-5.206
		1880	-19.296	-13	-6.296
		1909.8	-18.504	-13	-5.504
	EGPRS	1850.2	-18.369	-13	-5.369
		1880	-17.094	-13	-4.094
		1909.8	-19.044	-13	-6.044

WCDMA

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
Band 5	REL99	826.4	-28.95	-13	-15.95
		836.6	-28.89	-13	-15.89
		846.6	-29.51	-13	-16.51
	HSDPA	826.4	-28.05	-13	-15.05
		836.6	-28.77	-13	-15.77
		846.6	-29.164	-13	-16.164
Band 2	REL99	1852.4	-27.88	-13	-14.88
		1880	-28.37	-13	-15.37
		1907.6	-28.90	-13	-15.90
	HSDPA	1852.4	-29.26	-13	-14.745
		1880	-27.74	-13	-14.74
		1907.6	-28.07	-13	-15.07

LTE Band 12

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	10	QPSK	704	-22.36	-13	-9.36
			707.5	-21.96	-13	-8.96
			711	-21.924	-13	-8.924
		16QAM	704	-21.16	-13	-8.16
			707.5	-21.79	-13	-8.79
			711	-21.896	-13	-8.896
	5	QPSK	701.5	-21.74	-13	-8.74
			707.5	-21.53	-13	-8.53
			713.5	-21.24	-13	-8.24
		16QAM	701.5	-22.44	-13	-9.44
			707.5	-21.736	-13	-8.736
			713.5	-21.745	-13	-8.745
	3	QPSK	700.5	-21.362	-13	-8.362
			707.5	-21.68	-13	-8.68
			714.5	-20.93	-13	-7.93
		16QAM	700.5	-22.617	-13	-9.617
			707.5	-21.725	-13	-8.725
			714.5	-21.877	-13	-8.877
	1.4	QPSK	699.7	-22.131	-13	-9.131
			707.5	-22.55	-13	-9.55
			715.3	-22.229	-13	-9.229
		16QAM	699.7	-22.475	-13	-9.475
			707.5	-21.599	-13	-8.599
			715.3	-22.753	-13	-9.753

LTE Band 17

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE 17	10	QPSK	709	-22.39	-13	-9.39
			710	-21.652	-13	-8.652
			711	-22.26	-13	-9.26
		16QAM	709	-21.796	-13	-8.796
			710	-22.15	-13	-9.15
			711	-22.30	-13	-9.3
	5	QPSK	706.5	-21.72	-13	-8.72
			710	-21.65	-13	-8.65
			713.5	-21.36	-13	-8.36
		16QAM	706.5	-22.37	-13	-9.37
			710	-22.154	-13	-9.154
			713.5	-21.96	-13	-8.96

LTE Band 5

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-22.174	-13	-9.174
			836.5	-22.45	-13	-9.45
			844	-22.009	-13	-9.009
		16QAM	829	-22.58	-13	-9.58
			836.5	-22.05	-13	-9.05
			844	-22.01	-13	-9.01
	5	QPSK	826.5	-22.07	-13	-9.07
			836.5	-21.977	-13	-8.977
			846.5	-21.57	-13	-8.57
		16QAM	826.5	-22.36	-13	-9.36
			836.5	-22.26	-13	-9.26
			846.5	-22.65	-13	-9.65
	3	QPSK	825.5	-23.14	-13	-10.14
			836.5	-22.21	-13	-9.21
			847.5	-22.30	-13	-9.32
		16QAM	825.5	-23.137	-13	-10.137
			836.5	-22.212	-13	-9.212
			847.5	-22.301	-13	-9.301
	1.4	QPSK	824.7	-21.852	-13	-8.852
			836.5	-21.107	-13	-8.107
			848.3	-21.86	-13	-8.86
		16QAM	824.7	-22.662	-13	-9.662
			836.5	-22.415	-13	-9.415
			848.3	-22.758	-13	-9.758

LTE Band 4

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	QPSK	1720	-21.909	-13	-8.909
			1732.5	-21.253	-13	-8.253
			1745	-22.909	-13	-9.909
		16QAM	1720	-20.565	-13	-7.565
			1732.5	-16.293	-13	-3.293
			1745	-20.178	-13	-7.178
	15	QPSK	1717.5	-21.388	-13	-8.388
			1732.5	-21.222	-13	-8.222
			1747.5	-22.286	-13	-9.286
		16QAM	1717.5	-21.293	-13	-8.293
			1732.5	-21.717	-13	-8.717
			1747.5	-22.131	-13	-9.131
	10	QPSK	1715	-21.33	-13	-8.33
			1732.5	-21.93	-13	-8.93
			1750	-21.30	-13	-8.32
		16QAM	1715	-22.04	-13	-9.04
			1732.5	-20.34	-13	-8.27
			1750	-21.27	-13	-8.27
	5	QPSK	1712.5	-21.378	-13	-8.378
			1732.5	-22.06	-13	-9.06
			1752.5	-21.18	-13	-8.18
		16QAM	1712.5	-22.04	-13	-9.04
			1732.5	-20.34	-13	-7.34
			1752.5	-21.27	-13	-8.27

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	3	QPSK	1711.5	-22.489	-13	-9.489
			1732.5	-22.02	-13	-9.02
			1753.5	-22.221	-13	-9.221
		16QAM	1711.5	-21.44	-13	-8.44
			1732.5	-22.046	-13	-9.046
			1753.5	-21.558	-13	-8.558
	1.4	QPSK	1710.7	-22.24	-13	-9.24
			1732.5	-21.82	-13	-8.82
			1754.3	-21.906	-13	-8.906
		16QAM	1710.7	-21.785	-13	-8.785
			1732.5	-21.874	-13	-8.874
			1754.3	-21.328	-13	-8.328

LTE Band 2

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	20	QPSK	1860	-22.25	-13	-9.25
			1880	-22.204	-13	-9.204
			1900	-22.402	-13	-9.402
		16QAM	1860	-21.997	-13	-8.997
			1880	-21.891	-13	-8.891
			1900	-21.876	-13	-8.876
	15	QPSK	1857.5	-21.921	-13	-8.921
			1880	-21.056	-13	-8.056
			1902.5	-21.275	-13	-8.275
		16QAM	1857.5	-21.82	-13	-8.82
			1880	-15.025	-13	-2.025
			1902.5	-21.476	-13	-8.476
	10	QPSK	1855	-22.89	-13	-9.89
			1880	-22.263	-13	-9.263
			1905	-22.136	-13	-9.136
		16QAM	1855	-22.094	-13	-9.094
			1880	-22.15	-13	-9.15
			1905	-21.853	-13	-8.853
	5	QPSK	1852.5	-22.235	-13	-9.235
			1880	-21.56	-13	-8.56
			1907.5	-22.86	-13	-9.86
		16QAM	1852.5	-21.87	-13	-8.87
			1880	-21.90	-13	-8.09
			1907.5	-22.34	-13	-9.34

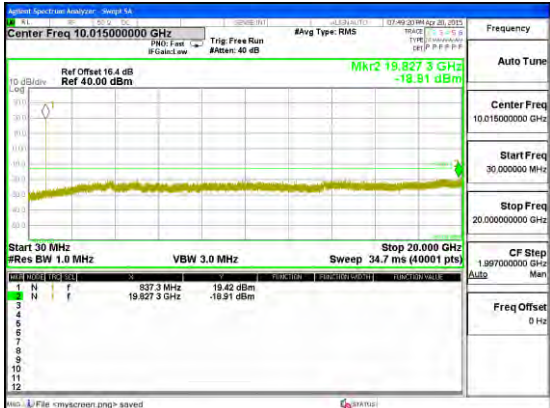
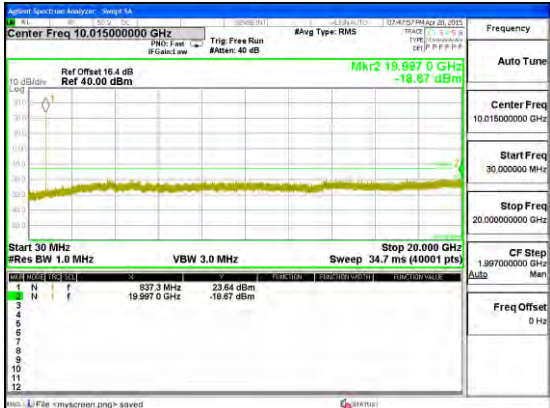
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	3	QPSK	1851.5	-21.163	-13	-8.163
			1880	-22.101	-13	-9.101
			1908.5	-21.911	-13	-8.911
		16QAM	1851.5	-21.653	-13	-8.653
			1880	-21.96	-13	-8.96
			1908.5	-21.881	-13	-8.881
	1.4	QPSK	1850.7	-21.376	-13	-8.376
			1880	-21.728	-13	-8.728
			1909.3	-21.592	-13	-8.592
		16QAM	1850.7	-22.317	-13	-9.317
			1880	-21.999	-13	-8.999
			1909.3	-21.76	-13	-8.76

LTE Band 7

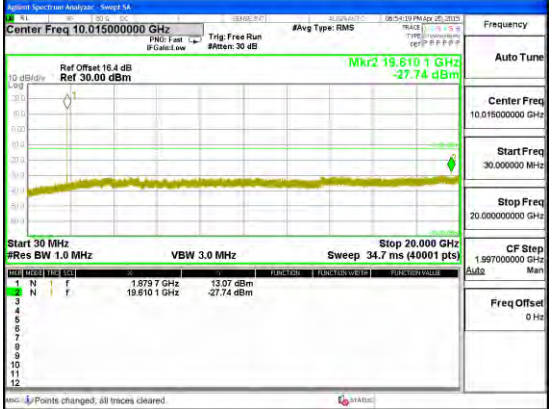
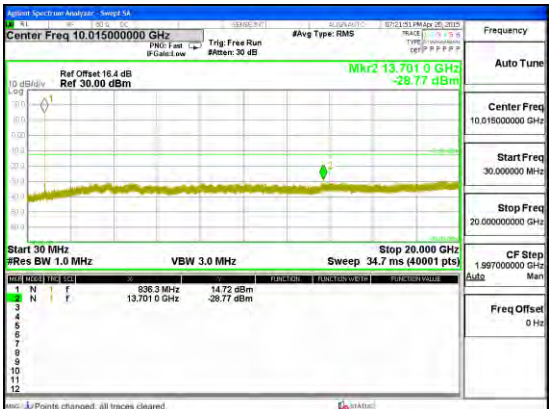
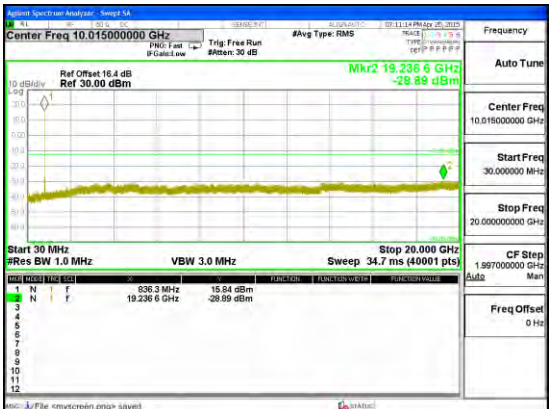
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	20	QPSK	2510	-28.094	-25	-3.094
			2535	-28.359	-25	-3.359
			2560	-28.411	-25	-3.411
		16QAM	2510	-28.284	-25	-3.284
			2535	-28.077	-25	-3.077
			2560	-28.859	-25	-3.859
	15	QPSK	2507.5	-27.619	-25	-2.619
			2535	-27.953	-25	-2.953
			2562.5	-28.396	-25	-3.396
		16QAM	2507.5	-28.326	-25	-3.326
			2535	-28.586	-25	-3.586
			2562.5	-28.258	-25	-3.258
	10	QPSK	2505	-29.017	-25	-4.017
			2535	-28.956	-25	-3.956
			2565	-28.656	-25	-3.656
		16QAM	2505	-28.202	-25	-3.202
			2535	-28.398	-25	-3.398
			2565	-28.531	-25	-3.531
	5	QPSK	2502.5	-29.137	-25	-4.137
			2535	-28.615	-25	-3.615
			2567.5	-28.452	-25	-3.452
		16QAM	2502.5	-27.405	-25	-2.405
			2535	-28.359	-25	-3.359
			2567.5	-28.781	-25	-3.781

10.3.2. OUT OF BAND EMISSIONS PLOTS

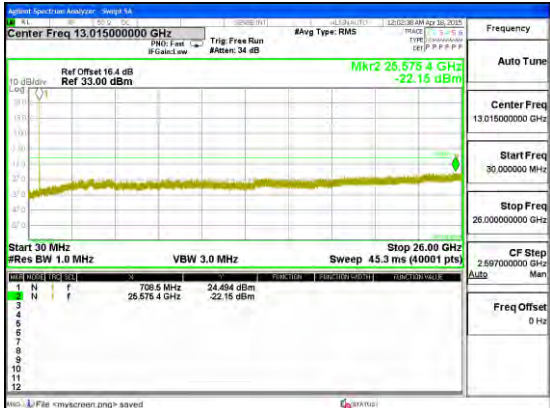
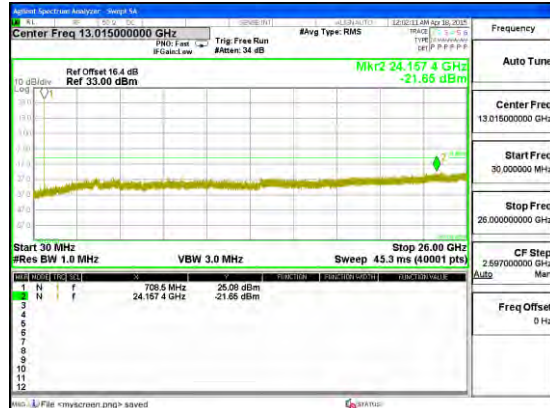
GSM

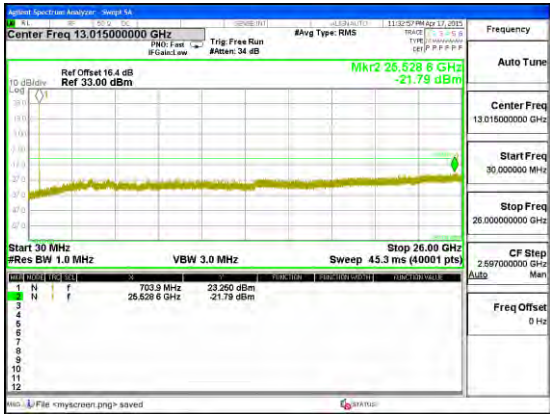
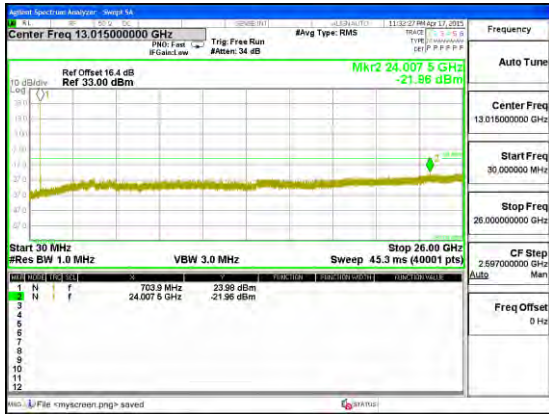
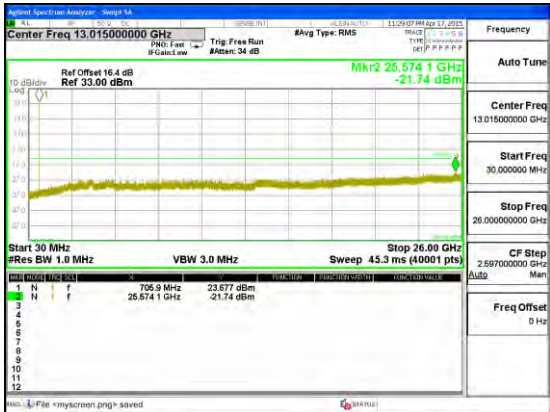
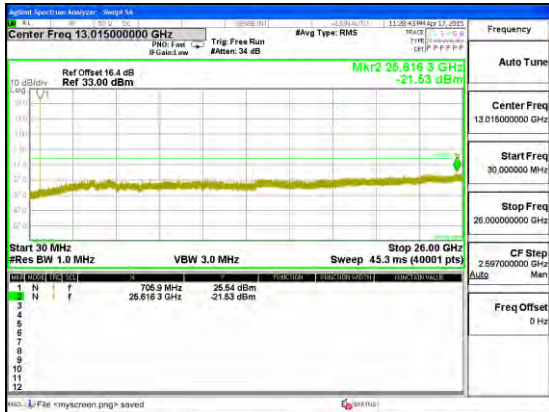
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Band GSM850 EGPRS	 Band GSM850 EGPRS CSE Mid channel	 Band GSM850 GPRS CSE Mid channel

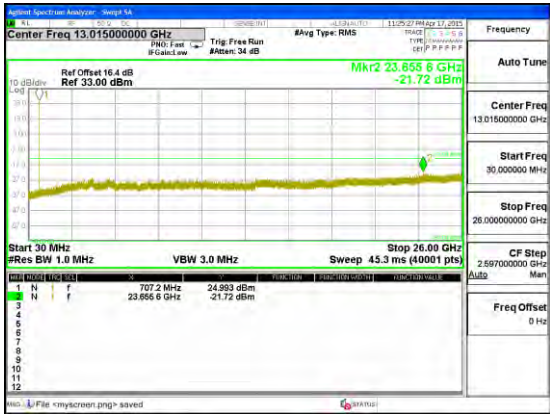
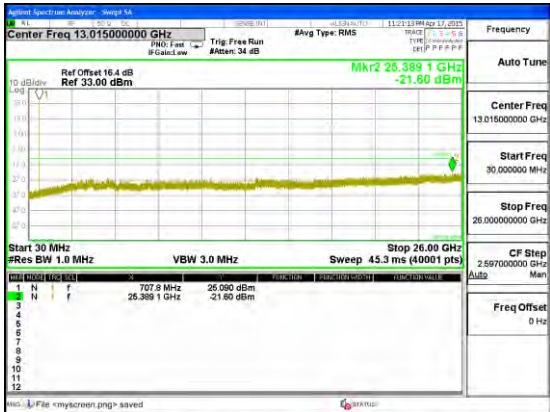
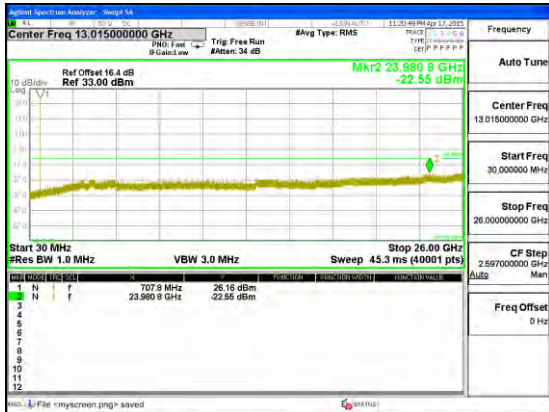
WCDMA

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

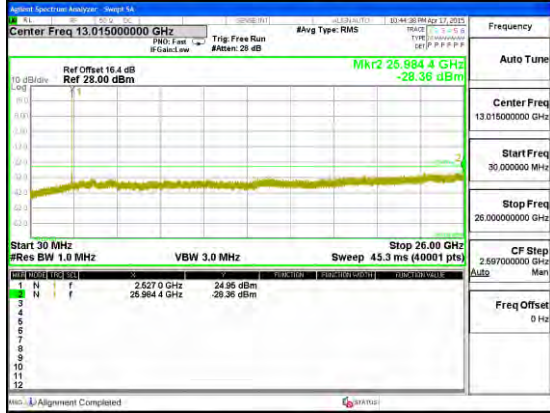
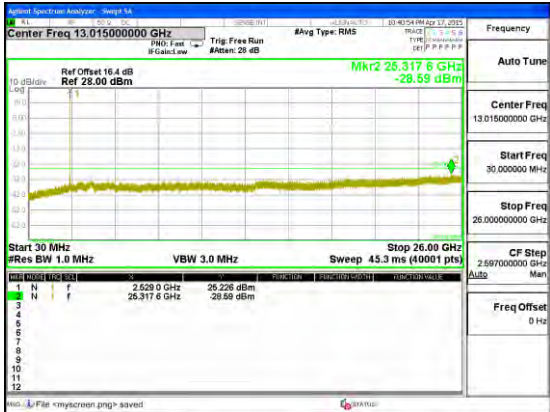
LTE Band 17

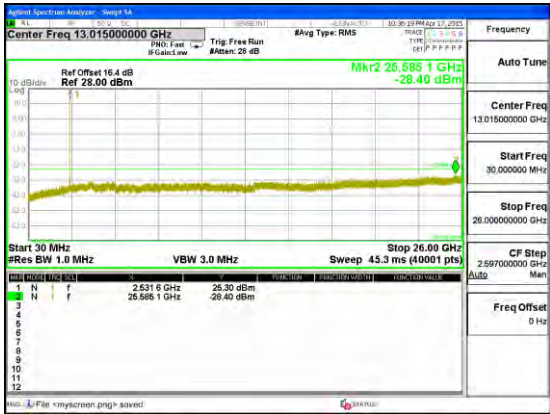
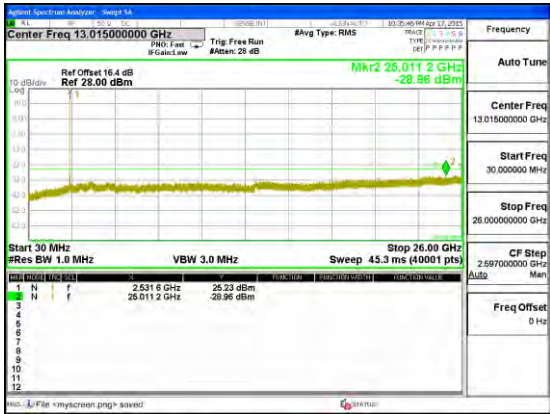
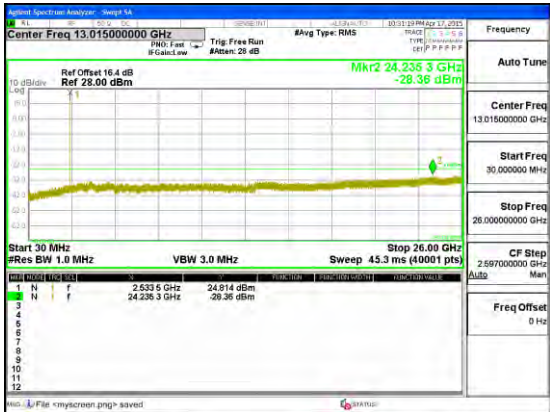
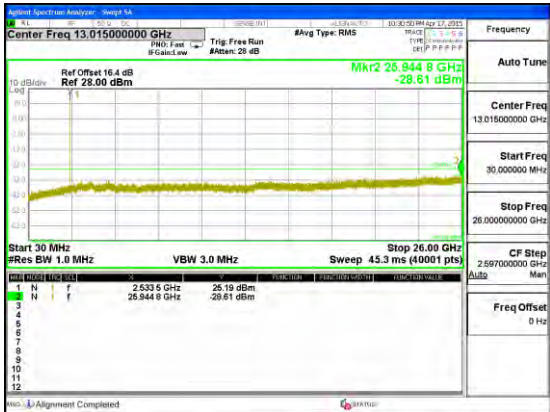
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CSE 16QAM Mid channel	 Band LTE17 10MHz CSE QPSK Mid channel
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CSE 16QAM Mid channel	 Band LTE17 5MHz CSE QPSK Mid channel

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

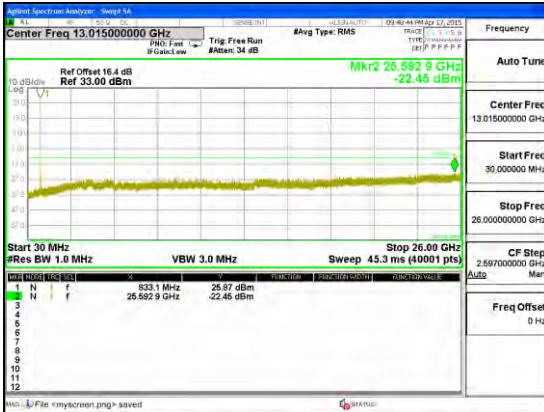
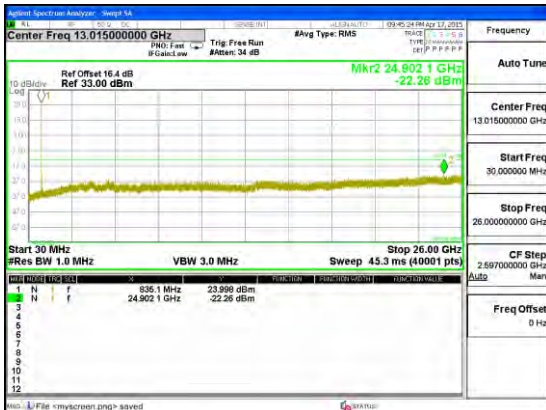
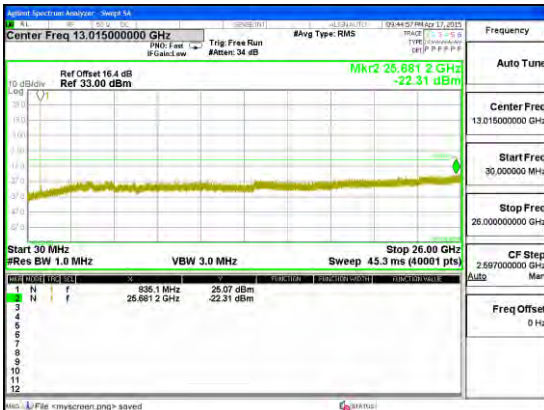
Band LTE12 3MHz 16QAM	 Band LTE12 3MHz CSE 16QAM Mid channel	 Band LTE12 3MHz CSE QPSK Mid channel
Band LTE12 1.4MHz 16QAM	 Band LTE12 1.4MHz CSE 16QAM Mid channel	 Band LTE12 1.4MHz CSE QPSK Mid channel

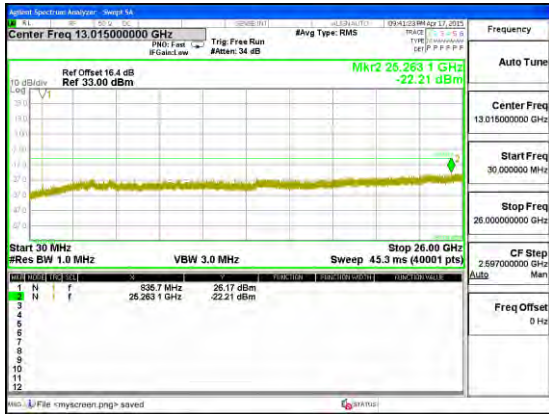
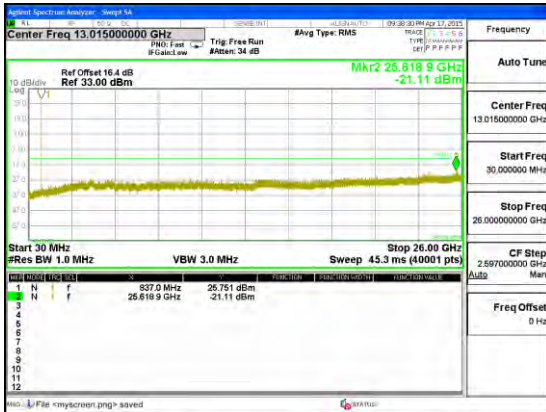
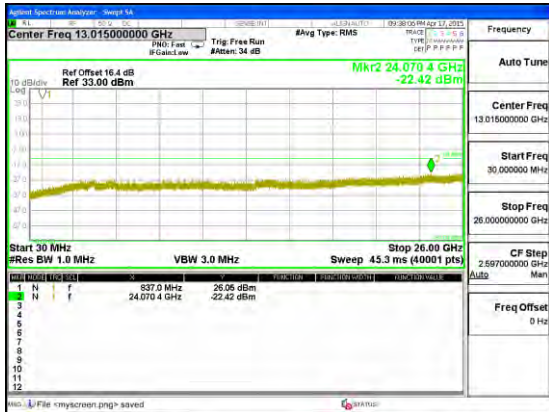
LTE Band 7

Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CSE 16QAM Mid channel	 Band LTE7 20MHz CSE QPSK Mid channel
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CSE 16QAM Mid channel	 Band LTE7 15MHz CSE QPSK Mid channel

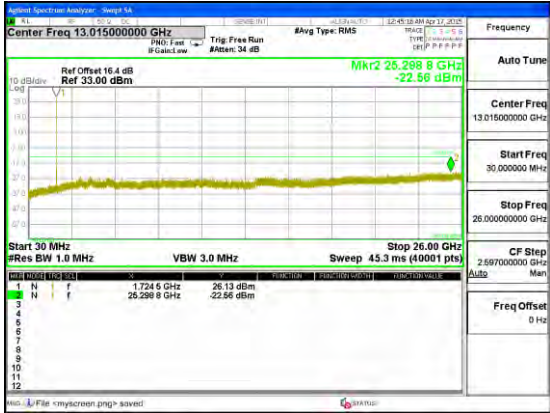
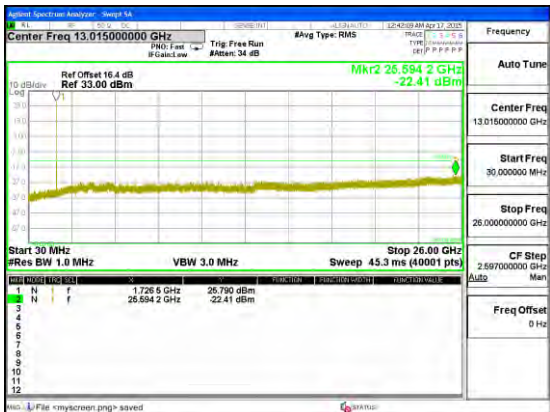
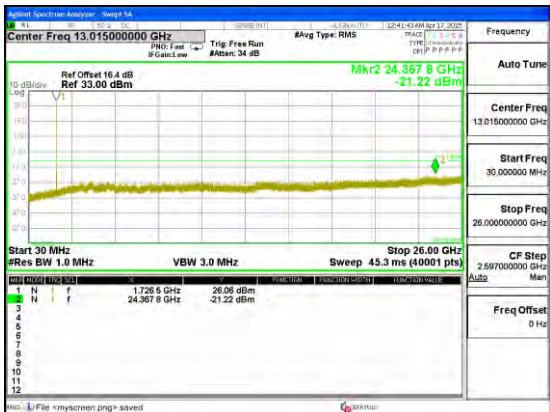
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CSE 16QAM Mid channel	 Band LTE7 10MHz CSE QPSK Mid channel
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CSE 16QAM Mid channel	 Band LTE7 5MHz CSE QPSK Mid channel

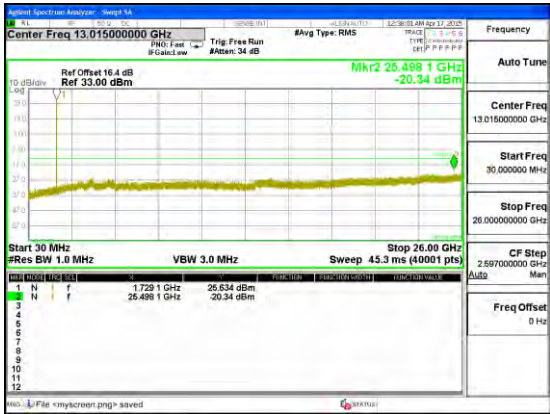
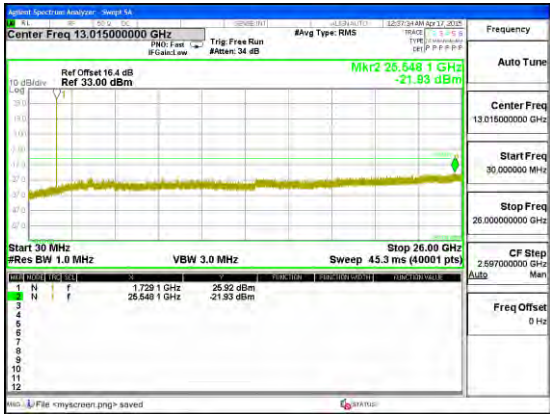
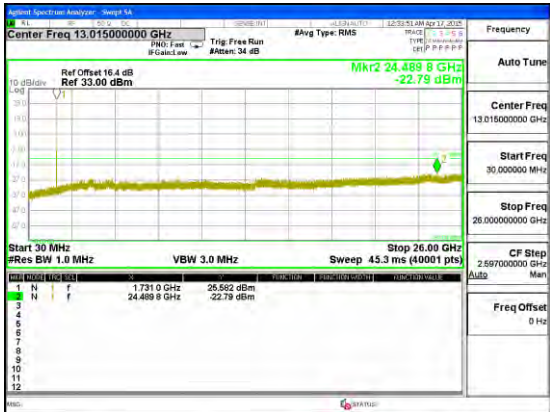
LTE Band 5

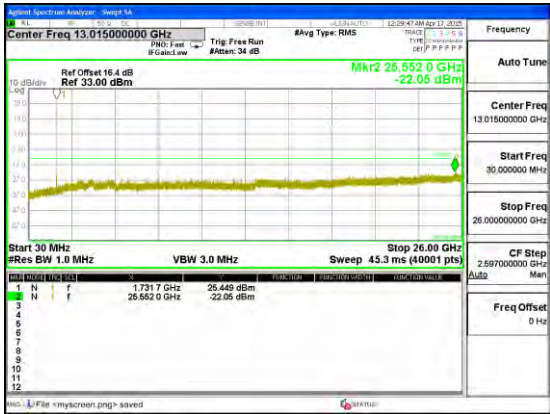
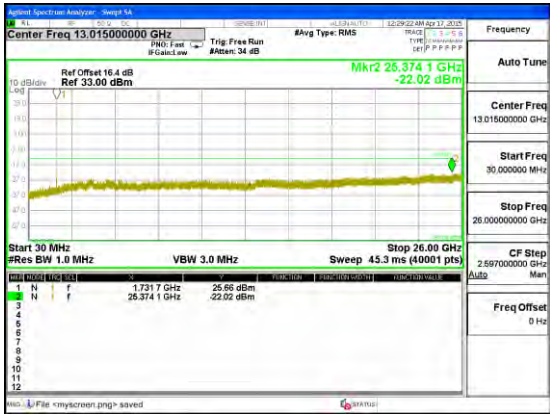
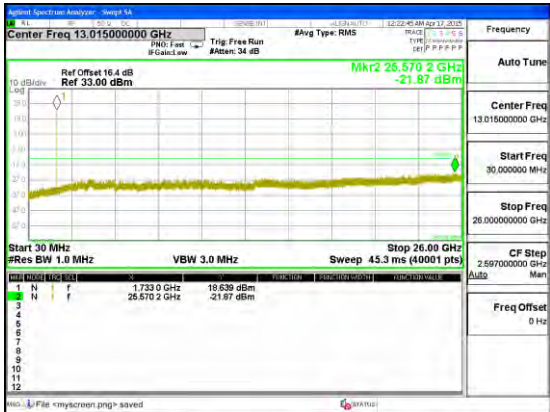
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CSE 16QAM Mid channel	 Band LTE5 10MHz CSE QPSK Mid channel
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CSE 16QAM Mid channel	 Band LTE5 5MHz CSE QPSK Mid channel

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

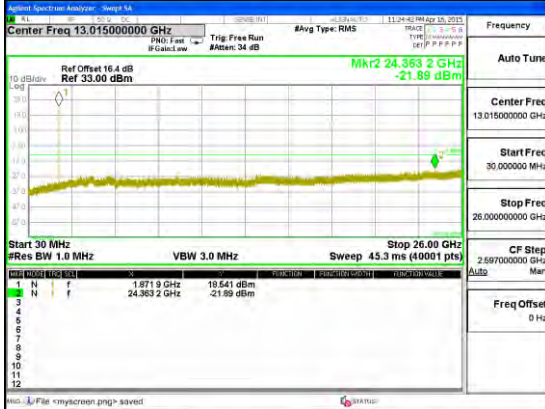
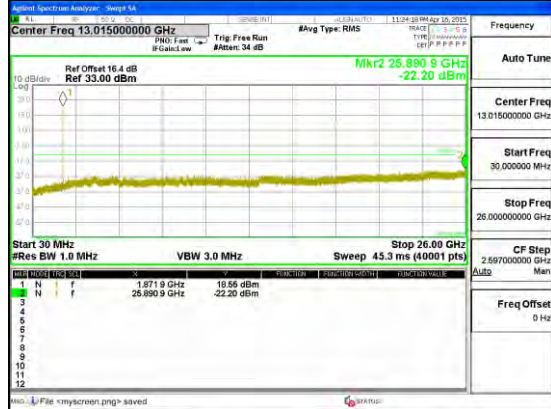
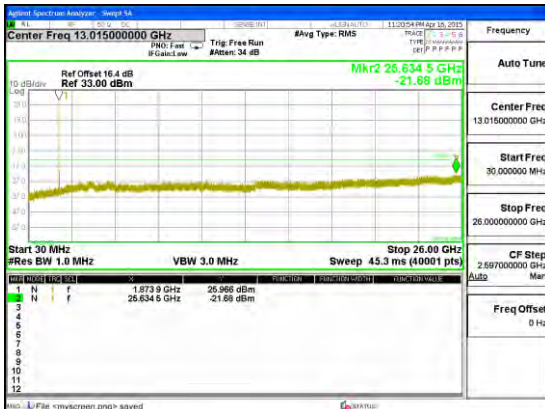
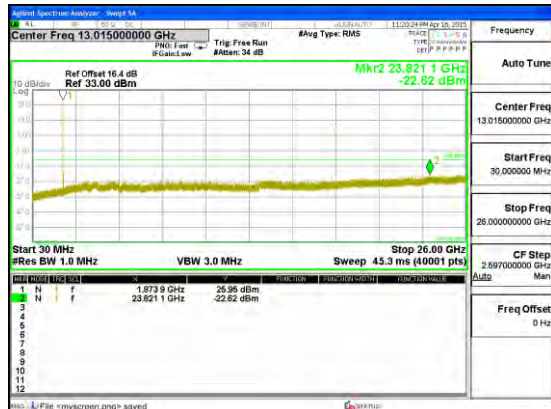
LTE Band 4

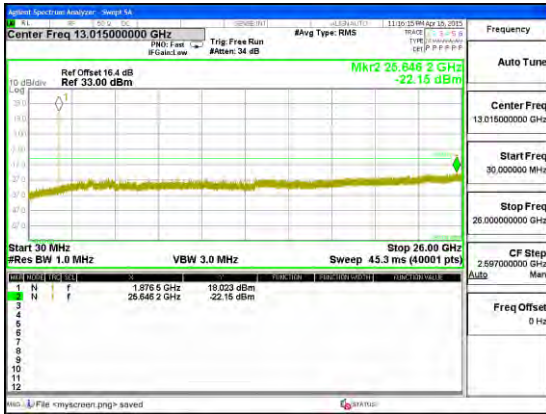
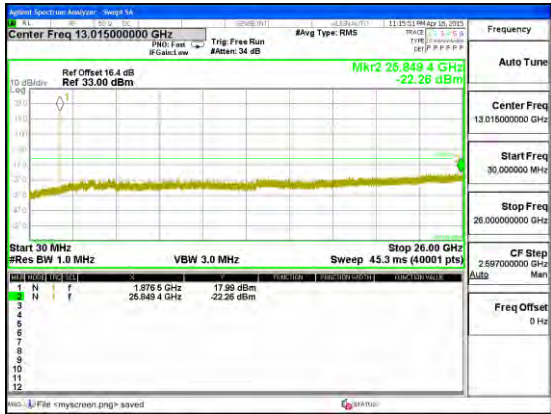
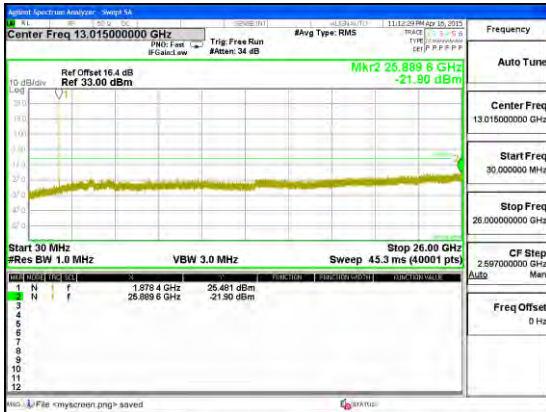
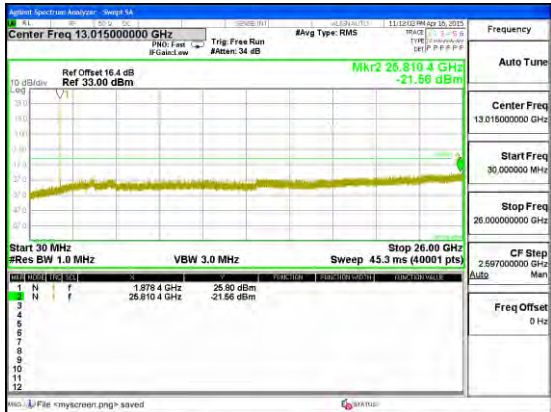
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CSE 16QAM Mid channel	 Band LTE4 20MHz CSE QPSK Mid channel
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CSE 16QAM Mid channel	 Band LTE4 15MHz CSE QPSK Mid channel

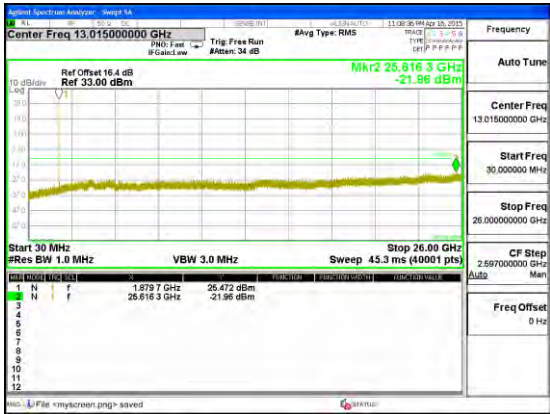
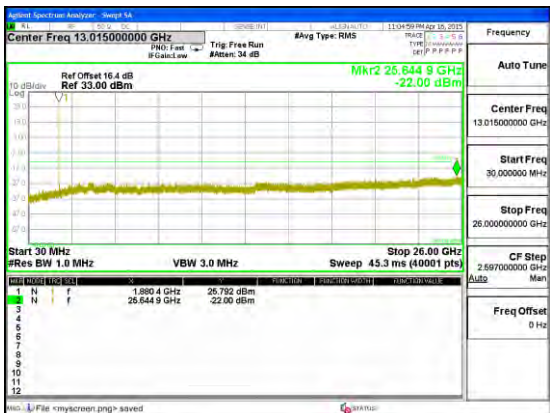
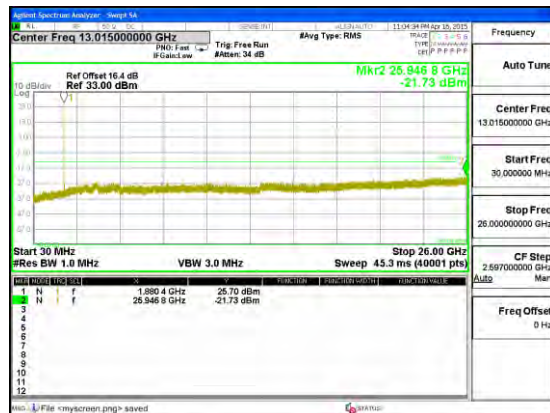
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CSE 16QAM Mid channel	 Band LTE4 5MHz CSE QPSK Mid channel

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

LTE Band 2

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

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

Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CSE 16QAM Mid channel	 Band LTE2 3MHz CSE QPSK Mid channel
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CSE 16QAM Mid channel	 Band LTE2 1.4MHz CSE QPSK Mid channel

10.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

MODES TESTED

GSM, WCDMA and LTE

RESULTS

10.4.1. FREQUENCY STABILITY RESULTS

LTE 2 QPSK 5MHz- MID CHANNEL (1880 MHz)

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 Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999990	0.010	2.5
3.80	40	1879.999990	0.010	2.5
3.80	30	1879.999989	0.010	2.5
3.80	20	1880.000008	0	2.5
3.80	10	1880.000009	0.000	2.5
3.80	0	1880.000009	0.000	2.5
3.80	-10	1880.000009	0.000	2.5
3.80	-20	1880.000009	0.000	2.5
3.80	-30	1880.000010	-0.001	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1880.000008	0	2.5
4.37	20	1880.000001	-0.001	2.5
3.23(End of volt)	20	1880.000008	0.000	2.5

LTE 4 QPSK 5MHz- MID CHANNEL (1732.5 MHz)

Reference Frequency: Cellular Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.499992	0.004	2.5
3.80	40	1732.499994	0.004	2.5
3.80	30	1732.499994	0.003	2.5
3.80	20	1732.500000	0	2.5
3.80	10	1732.500007	-0.004	2.5
3.80	0	1732.500006	-0.003	2.5
3.80	-10	1732.500007	-0.004	2.5
3.80	-20	1732.500008	-0.004	2.5
3.80	-30	1732.500001	-0.001	2.5

Reference Frequency: Cellular Mid Channel 1732.500012MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.500000	0	2.5
3.23	20	1732.500008	-0.004	2.5
4.37	20	1732.500006	-0.003	2.5

LTE 5 QPSK 5MHz-- MID CHANNEL (836.5 MHz)

Reference Frequency: PCS Mid Channel 836.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.499996	0.009	2.5
3.80	40	836.499997	0.008	2.5
3.80	30	836.499999	0.005	2.5
3.80	20	836.500003	0	2.5
3.80	10	836.500005	-0.002	2.5
3.80	0	836.500006	-0.003	2.5
3.80	-10	836.500004	-0.001	2.5
3.80	-20	836.500005	-0.002	2.5
3.80	-30	836.500005	-0.002	2.5

Reference Frequency: PCS Mid Channel 836.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.500003	0	2.5
4.37	20	836.500005	-0.002	2.5
3.23(End of volt)	20	836.500033	0.000	2.5

LTE Band 7 QPSK5 MHz :- MID CHANNEL (2535 MHz)

Reference Frequency: Cellular Mid Channel 2535.000019 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2534.999989	0.000	2.5
3.80	40	2534.999991	0.000	2.5
3.80	30	2534.999990	0.000	2.5
3.80	20	2534.999990	0	2.5
3.80	10	2534.999991	0.000	2.5
3.80	0	2534.999993	-0.001	2.5
3.80	-10	2534.999993	-0.001	2.5
3.80	-20	2534.999993	-0.001	2.5
3.80	-30	2534.999992	-0.001	2.5

Reference Frequency: Cellular Mid Channel 2535.000019 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	2534.999990	0	2.5
4.30	20	2534.999991	0.000	2.5
3.23	20	2535.000000	0	2.5

LTE17 QPSK 5 MHz BW – MID CHANNEL(710 MHz)

Reference Frequency: PCS Mid Channel 710 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	709.999991	0.004	2.5
3.80	40	709.999995	-0.001	2.5
3.80	30	709.999993	0.001	2.5
3.80	20	709.999994	0	2.5
3.80	10	709.999993	0.002	2.5
3.80	0	709.999995	-0.001	2.5
3.80	-10	709.999993	0.001	2.5
3.80	-20	709.999994	0.000	2.5
3.80	-30	709.999992	0.003	2.5

Reference Frequency: PCS Mid Channel 710 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	709.999994	0	2.5
4.37	20	709.9999937	0.001	2.5
3.23	20	709.9999944	-0.001	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27

LIMITS

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

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

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

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

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

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

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 $\geq$ OBW; b) Set VBW $\geq 3 \times$ RBW; c) Set span $\geq 2 \times$ RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points $\geq$ 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 $\geq 3 \times$ RBW; d) Set number of points in sweep $\geq 2 \times$ span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle ≥ 98 ; h) Use trigger to capture bursts If burst duty cycle < 98 ; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

MODES TESTED

GSM, WCDMA and LTE

TEST RESULTS

11.1.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	30.03	1006.93
		661	1880	28.65	732.82
		810	1909.8	30.69	1172.20
	EGPRS	512	1850.2	27.41	550.81
		661	1880	27.38	547.02
		810	1909.8	27.27	533.33
Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	28.29	674.53
		190	836.6	28.77	753.36
		251	848.8	28.74	748.17
	EGPRS	128	824.2	24.04	253.51
		190	836.6	24.52	283.14
		251	848.8	24.23	264.85

WCDMA

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	23.94	247.74
		9400	1880	23.16	207.01
		9538	1907.6	22.69	185.78
	HSDPA	9262	1852.4	22.61	182.39
		9400	1880	21.94	156.31
		9538	1907.6	21.91	155.24
Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	20.46	111.17
		4183	836.6	18.69	73.96
		4233	846.6	21.04	127.06
	HSDPA	4132	826.4	18.94	78.34
		4183	836.6	17.37	54.58
		4233	846.6	18.50	70.79

11.1.2. LTE ERP/EIRP Results

LTE Band 12

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	10	QPSK	1/0	704	15.601	36.32
			1/0	707.5	15.001	31.63
			1/0	711	15.271	33.66
		16QAM	1/0	704	15.101	32.37
			1/0	707.5	14.511	28.26
			1/0	711	14.571	28.65
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	5	QPSK	1/0	701.5	14.791	30.14
			1/0	707.5	15.101	32.37
			1/0	713.5	15.691	37.08
		16QAM	1/0	701.5	14.141	25.95
			1/0	707.5	13.801	23.99
			1/0	713.5	15.061	32.07
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	3	QPSK	1/0	700.5	13.901	24.55
			1/0	707.5	15.661	36.82
			1/0	714.5	15.191	33.04
		16QAM	1/0	700.5	14.501	28.19
			1/0	707.5	14.361	27.3
			1/0	714.5	14.241	26.55
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE12	1.4	QPSK	1/0	699.7	14.501	28.19
			1/0	707.5	15.661	36.82
			1/0	715.3	15.201	33.12
		16QAM	1/0	699.7	14.091	25.65
			1/0	707.5	14.361	27.3
			1/0	715.3	14.791	30.14

LTE Band 17

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	10	QPSK	1/0	709	14.58	28.71
			1/0	710	15.28	33.73
			1/0	711	14.92	31.05
		16QAM	1/0	709	13.89	24.49
			1/0	710	14.1	25.7
			1/0	711	14.3	26.92
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	5	QPSK	1/0	706.5	14.96	31.33
			1/0	710	15.45	35.08
			1/0	713.5	15.6	36.31
		16QAM	1/0	706.5	13.71	23.5
			1/0	710	13.84	24.21
			1/0	713.5	15.04	31.92

LTE Band 5

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	17.731	59.31
			1/0	836.5	18.131	65.03
			1/0	844	19.331	85.72
		16QAM	1/0	829	16.901	48.99
			1/0	836.5	17.661	58.36
			1/0	844	18.731	74.66
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	19.06	80.54
			1/0	836.5	19.01	79.62
			1/0	846.5	19.77	94.84
		16QAM	1/0	826.5	18.27	67.14
			1/0	836.5	18.25	66.83
			1/0	846.5	18.94	78.34
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	3	QPSK	1/0	825.5	19.14	82.04
			1/0	836.5	19.13	81.85
			1/0	847.5	19.75	94.41
		16QAM	1/0	825.5	19.06	80.54
			1/0	836.5	19.01	79.62
			1/0	847.5	19.77	94.84
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	1.4	QPSK	1/0	824.7	19.04	80.17
			1/0	836.5	19.24	83.95
			1/0	848.3	19.55	90.16
		16QAM	1/0	824.7	18.14	65.16
			1/0	836.5	18.35	68.39
			1/0	848.3	18.81	76.03

LTE Band 4

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	20	QPSK	1/0	1720	16.69425	46.71
			1/0	1732.5	18.37105	68.72
			1/0	1745	17.01785	50.33
		16QAM	1/0	1720	16.03425	40.13
			1/0	1732.5	17.55105	56.9
			1/0	1745	16.20785	41.76
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	15	QPSK	1/0	1717.5	16.48791	44.54
			1/0	1732.5	18.02105	63.4
			1/0	1747.5	17.11419	51.45
		16QAM	1/0	1717.5	15.85791	38.53
			1/0	1732.5	17.23105	52.86
			1/0	1747.5	16.28419	42.5
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	16.44105	44.07
			1/0	1732.5	17.91105	61.82
			1/0	1750	17.091262	51.18
		16QAM	1/0	1715	15.75105	37.59
			1/0	1732.5	17.13105	51.65
			1/0	1750	16.261262	42.28
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	15.99425	39.76
			1/0	1732.5	17.60105	57.56
			1/0	1752.5	18.55785	71.74
		16QAM	1/0	1712.5	15.37425	34.47
			1/0	1732.5	16.83105	48.21
			1/0	1752.5	17.87785	61.35

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	3	QPSK	1/0	1711.5	15.97791	39.61
			1/0	1732.5	17.60105	57.56
			1/0	1753.5	18.68419	73.86
		16QAM	1/0	1711.5	15.40791	34.74
			1/0	1732.5	16.87105	48.65
			1/0	1753.5	17.95419	62.43
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	1.4	QPSK	1/0	1710.7	16.01105	39.91
			1/0	1732.5	17.03105	50.48
			1/0	1754.3	18.581262	72.13
		16QAM	1/0	1710.7	15.32105	34.05
			1/0	1732.5	16.35105	43.16
			1/0	1754.3	17.801262	60.27

LTE Band 2

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW

LTE2	20	QPSK	1/0	1860	22.05	160.32
			1/0	1880	22.54	179.47
			1/0	1900	23.1	204.17
		16QAM	1/0	1860	21.13	129.72
			1/0	1880	21.65	146.22
			1/0	1900	22.36	172.19
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	15	QPSK	1/0	1857.5	21.96	157.04
			1/0	1880	22.36	172.19
			1/0	1902.5	22.69	185.78
		16QAM	1/0	1857.5	21.01	126.18
			1/0	1880	21.61	144.88
			1/0	1902.5	21.85	153.11
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	10	QPSK	1/0	1855	21.87	153.82
			1/0	1880	22.56	180.3
			1/0	1905	22.16	164.44
		16QAM	1/0	1855	20.91	123.31
			1/0	1880	21.62	145.21
			1/0	1905	21.35	136.46
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	5	QPSK	1/0	1852.5	21.83	152.41
			1/0	1880	22.33	171
			1/0	1907.5	21.84	152.76
		16QAM	1/0	1852.5	20.96	124.74
			1/0	1880	21.51	141.58
			1/0	1907.5	21.02	126.47

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	3	QPSK	1/0	1851.5	21.8	151.36

			1/0	1880	22.53	179.06
			1/0	1908.5	21.8	151.36
		16QAM	1/0	1851.5	20.91	123.31
			1/0	1880	21.66	146.55
			1/0	1908.5	21.04	127.06
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	1.4	QPSK	1/0	1850.7	21.71	148.25
			1/0	1880	22.35	171.79
			1/0	1909.3	21.82	152.05
		16QAM	1/0	1850.7	20.78	119.67
			1/0	1880	21.43	139
			1/0	1909.3	21.02	126.47

LTE Band 7

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	20	QPSK	1/0	2510	18.794	75.75

		16QAM	1/0	2535	20.074	101.72
			1/0	2560	20.203	104.79
			1/0	2510	18.034	63.59
			1/0	2535	19.594	91.08
			1/0	2560	19.703	93.39
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	15	QPSK	1/0	2507.5	19.134	81.92
			1/0	2535	19.854	96.69
			1/0	2562.5	20.403	109.72
		16QAM	1/0	2507.5	18.734	74.71
			1/0	2535	19.574	90.66
			1/0	2562.5	20.003	100.07
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	10	QPSK	1/0	2505	20.124	102.9
			1/0	2535	20.564	113.87
			1/0	2565	20.803	120.31
		16QAM	1/0	2505	19.304	85.19
			1/0	2535	20.794	120.06
			1/0	2565	21.003	125.98
Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	5	QPSK	1/0	2502.5	18.594	72.34
			1/0	2535	19.794	95.37
			1/0	2567.5	19.803	95.57
		16QAM	1/0	2502.5	17.834	60.73
			1/0	2535	19.224	83.64
			1/0	2567.5	19.403	87.16

11.1.3. ERP/EIRP PLOTS

GSM

Band

GSM

1900

EGPRS

High Frequency Substitution Measurement

UL Verification Services, Inc.

Company: Sony

Project #: 15J20225

Date: 4/20/2015

Test Engineer: R. Alegre

Configuration: EUT only

Mode: EGPRS 1900

Test Equipment:

Receiving: Horn T119, and Chamber C SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	8.74	V	0.9	8.0	15.90	33.0	-17.1	
1850.20	20.25	H	0.9	8.0	27.41	33.0	-5.6	
Mid Ch								
1880.00	8.37	V	0.9	8.0	15.53	33.0	-17.5	
1880.00	20.22	H	0.9	8.0	27.38	33.0	-5.6	
High Ch								
1909.80	8.26	V	0.9	8.0	15.42	33.0	-17.6	
1909.80	20.11	H	0.9	8.0	27.27	33.0	-5.7	

Rev. 3.17.11

Note: For Band 4 EIRP limit is 30dBm

Band GSM 1900 GPRS	High Frequency Substitution Measurement UL Verification Services, Inc. Company: Sony Project #: 15J20225 Date: 5/4/2015 Test Engineer: D. Mun Configuration: EUT only X-Pos Mode: GPRS 1900 Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1850.20	10.91	V	0.9	8.0	18.07	33.0	-14.9	
	1850.20	22.87	H	0.9	8.0	30.03	33.0	-3.0	
	Mid Ch								
	1880.00	11.55	V	0.9	8.0	18.71	33.0	-14.3	
	1880.00	21.49	H	0.9	8.0	28.65	33.0	-4.4	
	High Ch								
	1909.80	11.40	V	0.9	8.0	18.56	33.0	-14.4	
	1909.80	23.53	H	0.9	8.0	30.69	33.0	-2.3	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band GSM 850 EGPRS	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C Company: Sony Project #: 15J20225 Date: 04/29/15 Test Engineer: David Mun Configuration: EUT Z-position Mode: EGPRS850 Test Equipment: Receiving: Hybrid T185, and Chamber C N-type Cable Substitution: Dipole T273, 8ft SMA Cable Warehouse.								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	824.20	24.94	V	0.9	0.0	24.04	38.5	-14.4	
	824.20	13.20	H	0.9	0.0	12.30	38.5	-26.1	
	Mid Ch								
	836.60	25.42	V	0.9	0.0	24.52	38.5	-13.9	
	836.60	13.32	H	0.9	0.0	12.42	38.5	-26.0	
	High Ch								
	848.80	25.13	V	0.9	0.0	24.23	38.5	-14.2	
	848.80	13.66	H	0.9	0.0	12.76	38.5	-25.7	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band GSM 850 GPRS	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C Company: Sony Project #: 15J20225 Date: 04/29/15 Test Engineer: David Mun Configuration: EUT Z-position Mode: GPRS850 Test Equipment: Receiving: Hybrid T185, and Chamber C N-type Cable Substitution: Dipole T273, 8ft SMA Cable Warehouse.								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	824.20	29.19	V	0.9	0.0	28.29	38.5	-10.2	
	824.20	13.90	H	0.9	0.0	13.00	38.5	-25.4	
	Mid Ch								
	836.60	29.67	V	0.9	0.0	28.77	38.5	-9.7	
	836.60	13.71	H	0.9	0.0	12.81	38.5	-25.6	
	High Ch								
	848.80	29.64	V	0.9	0.0	28.74	38.5	-9.7	
	848.80	13.96	H	0.9	0.0	13.06	38.5	-25.4	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

WCDMA

Band

Band 2

HSDPA

High Frequency Substitution Measurement UL Verification Services, Inc.								
Company:	Sony							
Project #:	15J20225							
Date:	5/4/2015							
Test Engineer:	D. Mun							
Configuration:	EUT Only							
Location:	Chamber C							
Mode:	HSDPA B2							
Test Equipment:								
Receiving: Horn T119, and Chamber C SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	5.64	V	0.9	8.0	12.75	33.0	-20.3	
1852.40	15.50	H	0.9	8.0	22.61	33.0	-10.4	
Mid Ch								
1880.00	5.51	V	0.9	8.0	12.62	33.0	-20.4	
1880.00	14.83	H	0.9	8.0	21.94	33.0	-11.1	
High Ch								
1907.60	5.86	V	0.9	8.0	12.97	33.0	-20.0	
1907.60	14.80	H	0.9	8.0	21.91	33.0	-11.1	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								

Band

Band 2

REL99

High Frequency Substitution Measurement

UL Verification Services, Inc.

Company:

Project #:

Date:

Test Engineer:

Configuration:

Location:

Mode:

Sony

15J20225

5/4/2015

D. Mun

EUT Only

Chamber C

Rel99 B2

Test Equipment:

Receiving: Horn T119, and Chamber C SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	5.77	V	0.9	8.0	12.88	33.0	-20.1	
1852.40	16.83	H	0.9	8.0	23.94	33.0	-9.1	
Mid Ch								
1880.00	5.59	V	0.9	8.0	12.70	33.0	-20.3	
1880.00	16.05	H	0.9	8.0	23.16	33.0	-9.8	
High Ch								
1907.60	5.72	V	0.9	8.0	12.83	33.0	-20.2	
1907.60	15.58	H	0.9	8.0	22.69	33.0	-10.3	

Rev. 3.17.11

Note: For Band 4 EIRP limit is 30dBm

Band Band 5 HSDPA	High Frequency Substitution Measurement UL Verification Services, Inc. Company: Sony Project #: 15J20225 Date: 05/04/15 Test Engineer: David Mun Configuration: EUT only Mode: HSDPA B5 FUND Test Equipment: Receiving: Sunol T185, and 3m Chamber C N-type Cable Substitution: Dipole T273, 4ft SMA Cable Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>826.40</td> <td>19.84</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>18.94</td> <td>38.5</td> <td>-19.5</td> <td></td> </tr> <tr> <td>826.40</td> <td>6.62</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>5.72</td> <td>38.5</td> <td>-32.7</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.60</td> <td>18.27</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>17.37</td> <td>38.5</td> <td>-21.1</td> <td></td> </tr> <tr> <td>836.60</td> <td>7.00</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>6.10</td> <td>38.5</td> <td>-32.3</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>846.60</td> <td>19.40</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>18.50</td> <td>38.5</td> <td>-19.9</td> <td></td> </tr> <tr> <td>846.60</td> <td>8.13</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>7.23</td> <td>38.5</td> <td>-31.2</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									826.40	19.84	V	0.9	0.0	18.94	38.5	-19.5		826.40	6.62	H	0.9	0.0	5.72	38.5	-32.7		Mid Ch									836.60	18.27	V	0.9	0.0	17.37	38.5	-21.1		836.60	7.00	H	0.9	0.0	6.10	38.5	-32.3		High Ch									846.60	19.40	V	0.9	0.0	18.50	38.5	-19.9		846.60	8.13	H	0.9	0.0	7.23	38.5	-31.2	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																			
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Band Band 5 REL99	High Frequency Substitution Measurement UL Verification Services, Inc. Company: Sony Project #: 15J20225 Date: 05/04/15 Test Engineer: David Mun Configuration: EUT only Mode: HSDPA B5 FUND Test Equipment: Receiving: Sunoi T185, and 3m Chamber C N-type Cable Substitution: Dipole T273, 4ft SMA Cable Warehouse.								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	826.40	21.36	V	0.9	0.0	20.46	38.5	-18.0	
	826.40	6.62	H	0.9	0.0	5.72	38.5	-32.7	
	Mid Ch								
	836.60	19.59	V	0.9	0.0	18.69	38.5	-19.8	
	836.60	7.00	H	0.9	0.0	6.10	38.5	-32.3	
	High Ch								
	846.60	21.94	V	0.9	0.0	21.04	38.5	-17.4	
	846.60	8.13	H	0.9	0.0	7.23	38.5	-31.2	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

LTE Band 12

Band LTE12 10MHz 16QAM	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C Company: Sony Project #: 15J20225 Date: 4/28/2015 Test Engineer: David Mun Configuration: EUT Z-position Mode: LTE12 10 MHz 16-QAM Test Equipment: Receiving: Sunol T185, and 3m Chamber C N-type Cable Substitution: Dipole T273, 4ft SMA Cable Warehouse.								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	704.00	16.00	V	0.9	0.0	15.10	38.5	-23.3	
	704.00	2.40	H	0.9	0.0	1.50	38.5	-36.9	
	Mid Ch								
	707.50	15.41	V	0.9	0.0	14.51	38.5	-23.9	
	707.50	2.35	H	0.9	0.0	1.45	38.5	-37.0	
	High Ch								
	711.00	15.47	V	0.9	0.0	14.57	38.5	-23.9	
	711.00	2.31	H	0.9	0.0	1.41	38.5	-37.0	
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band LTE12 10MHz QPSK	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber C																																																																																																	
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	Project #: 15J20225																																																																																																	
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