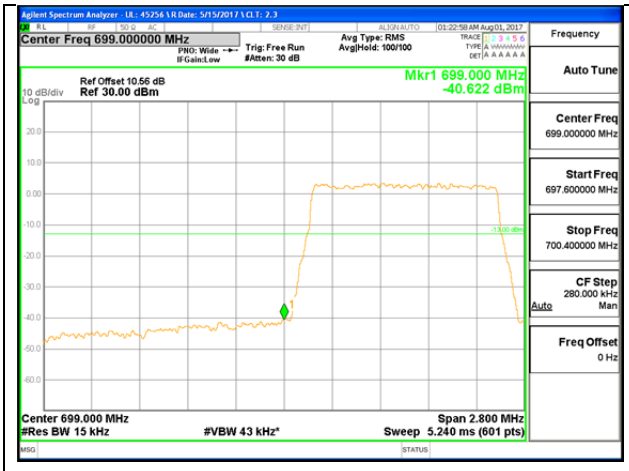
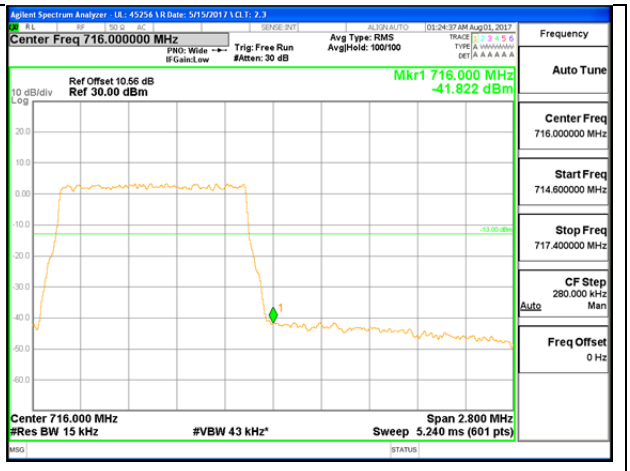


LTE B12 1.4MHz 16QAM Low Channel FRB



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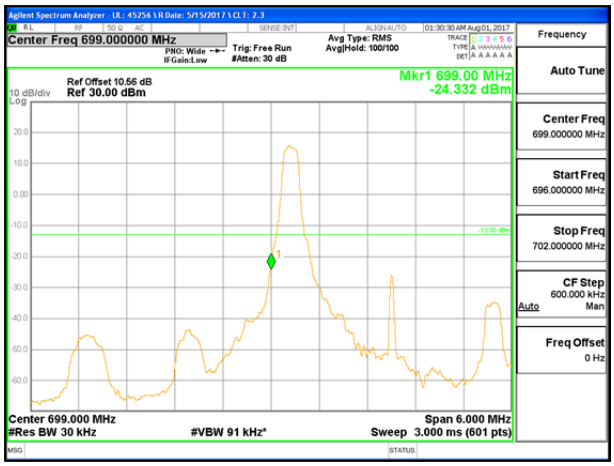
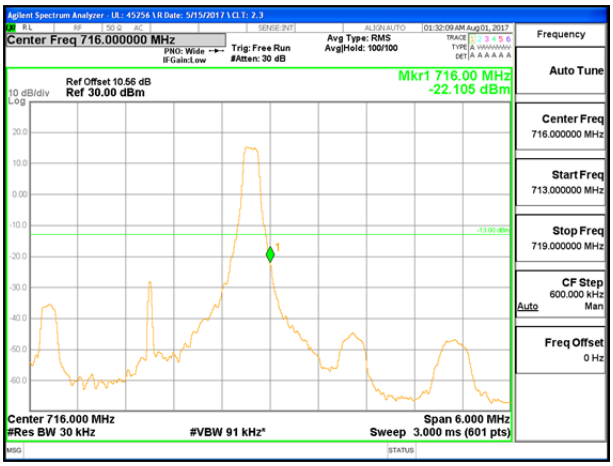


LTE B12 3MHz QPSK Low Channel 1RB



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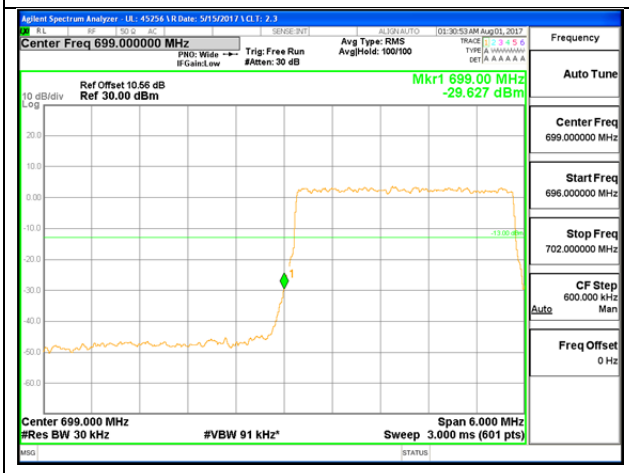

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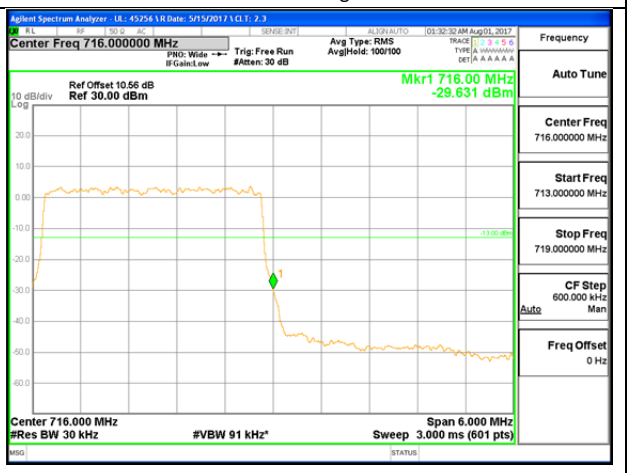

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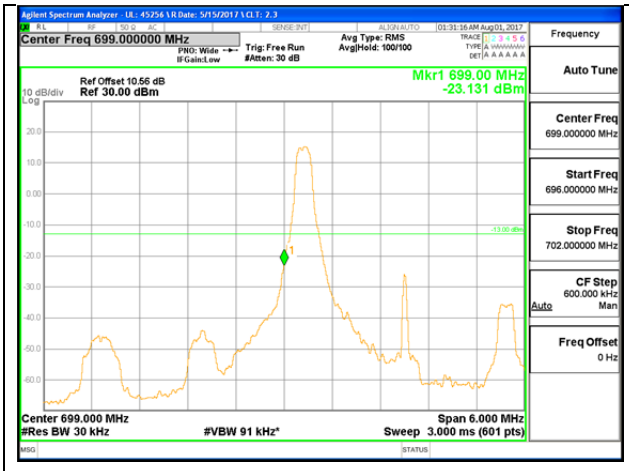

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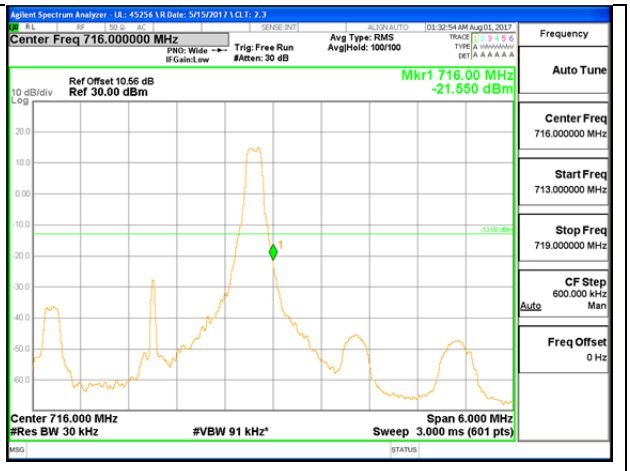

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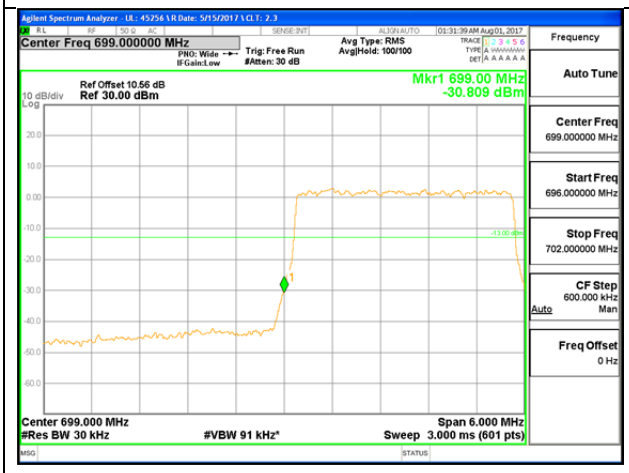

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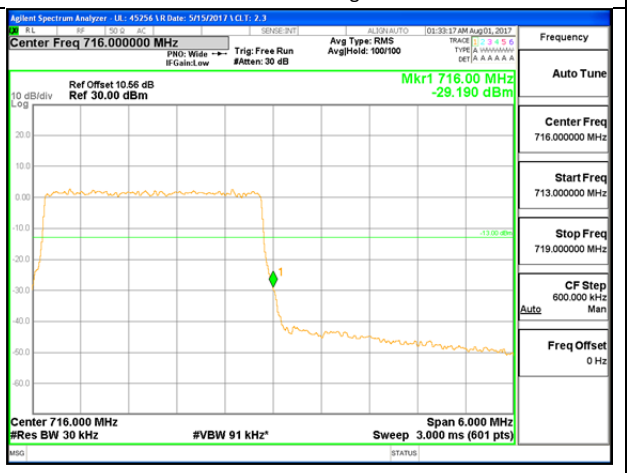

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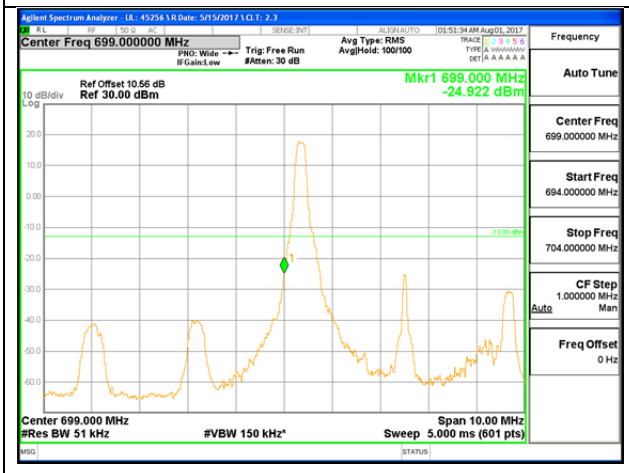
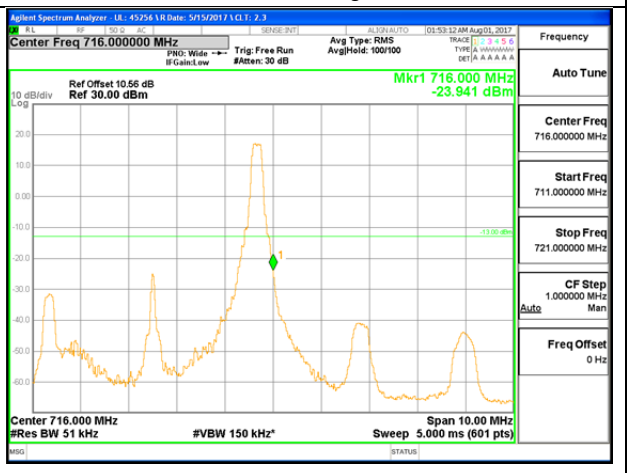


LTE B12 5MHz QPSK Low Channel 1RB



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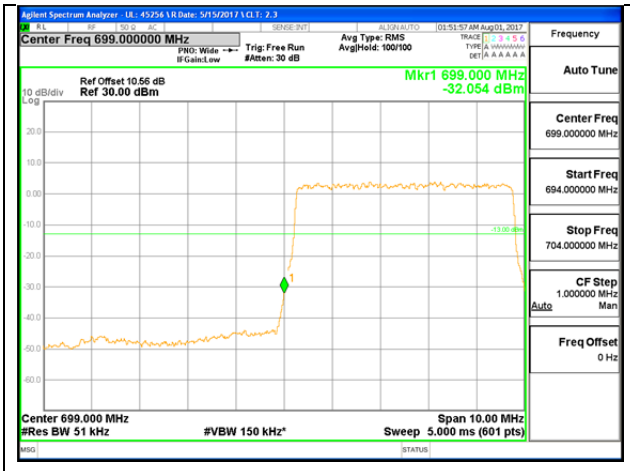

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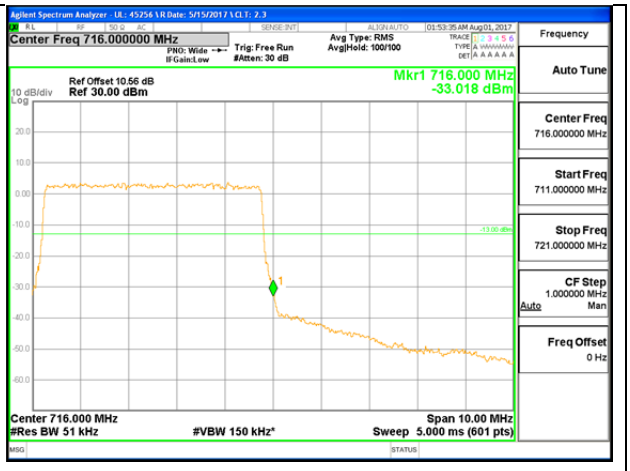

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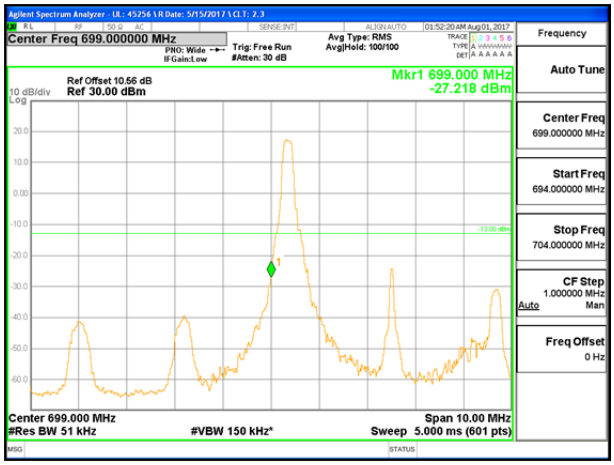

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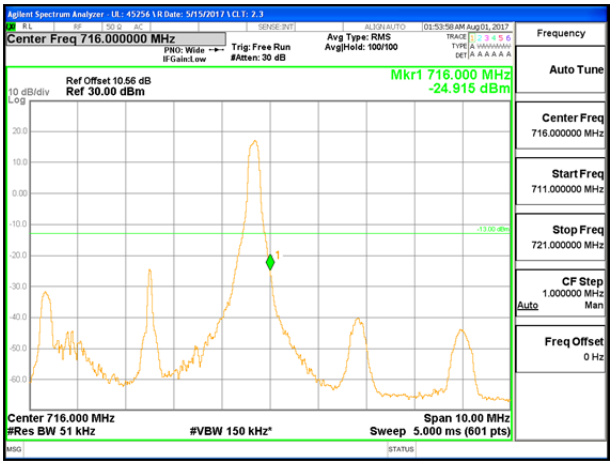

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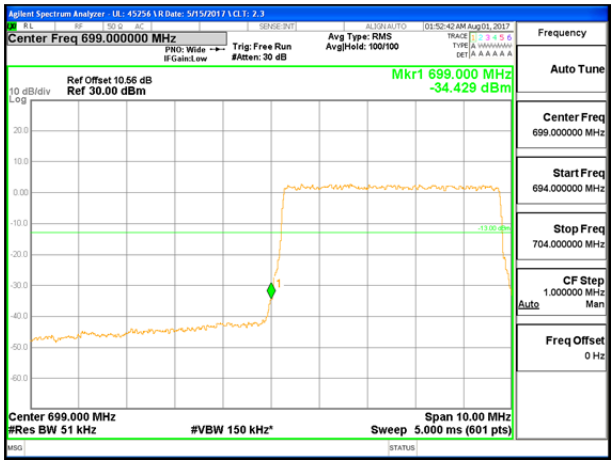

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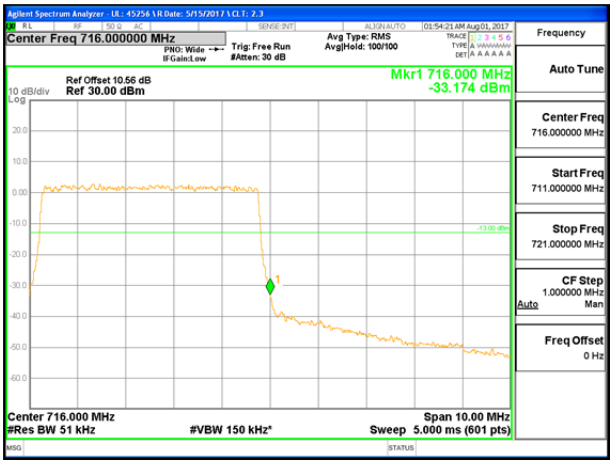

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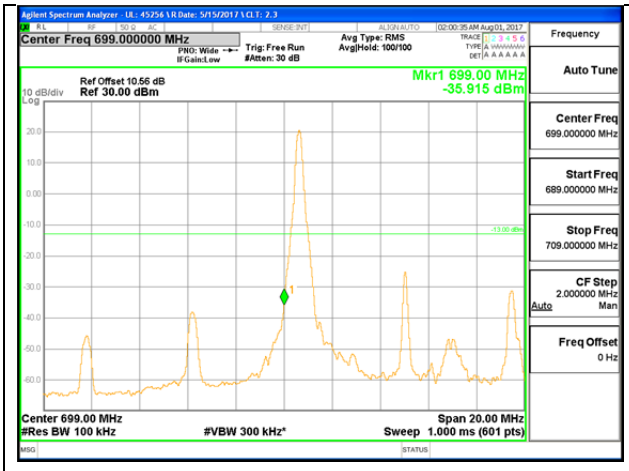
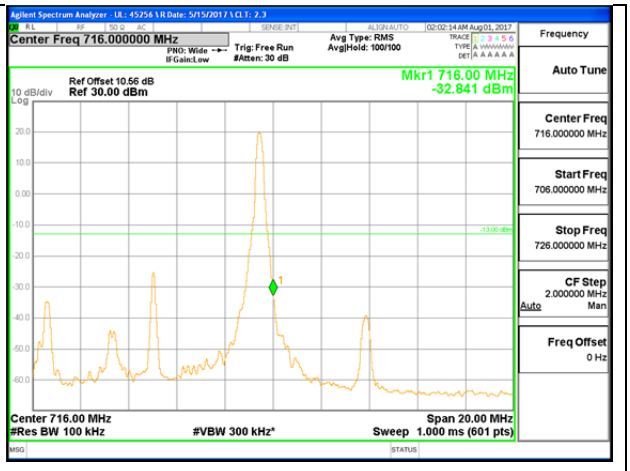


LTE B12 10MHz QPSK Low Channel 1RB



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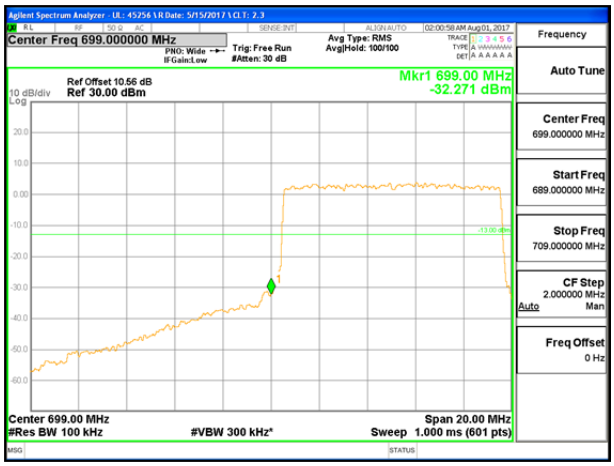

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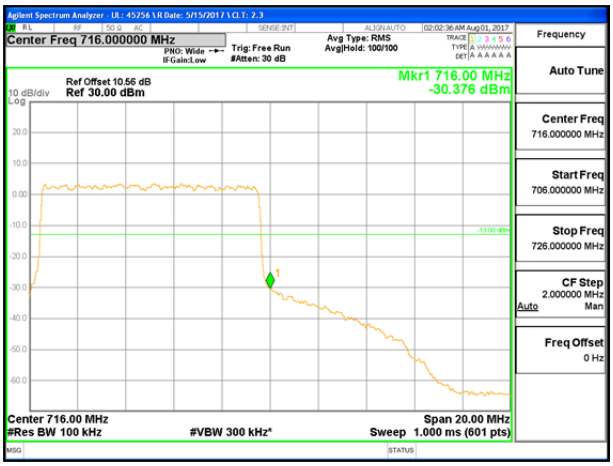

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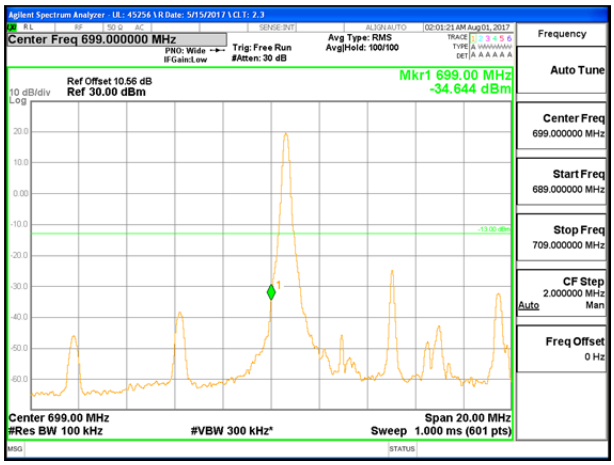

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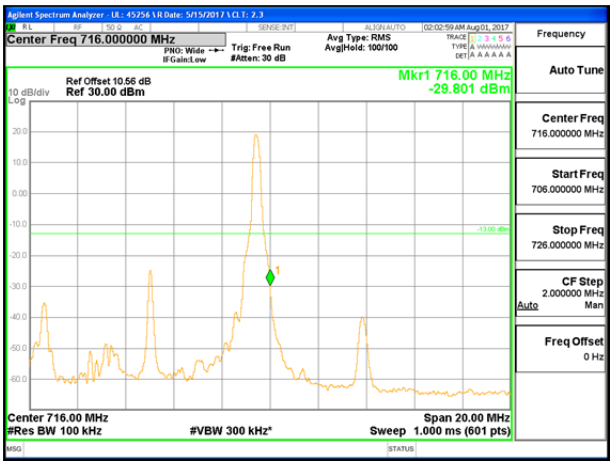

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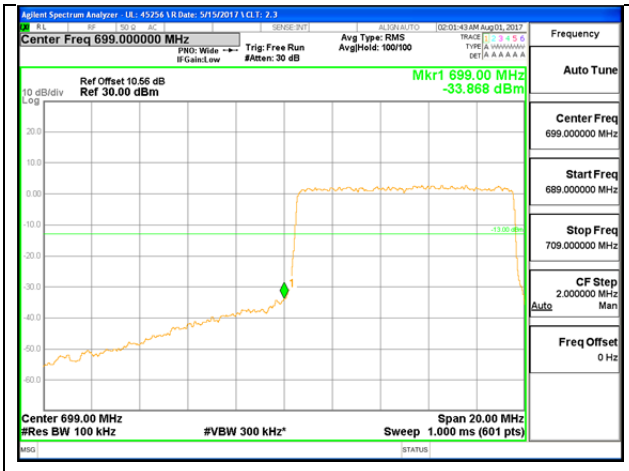
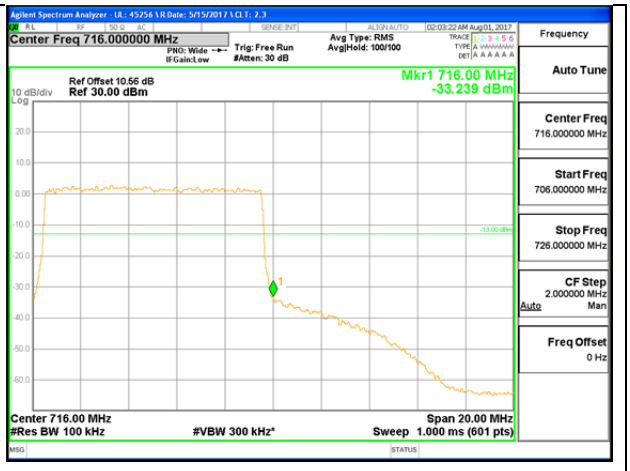
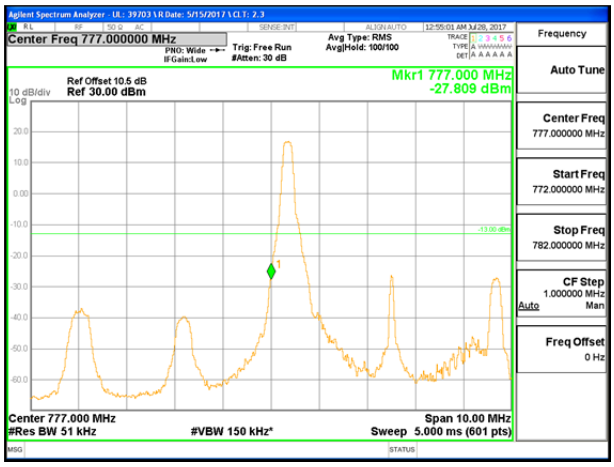


LTE B12 10MHz 16QAM Low Channel FRB

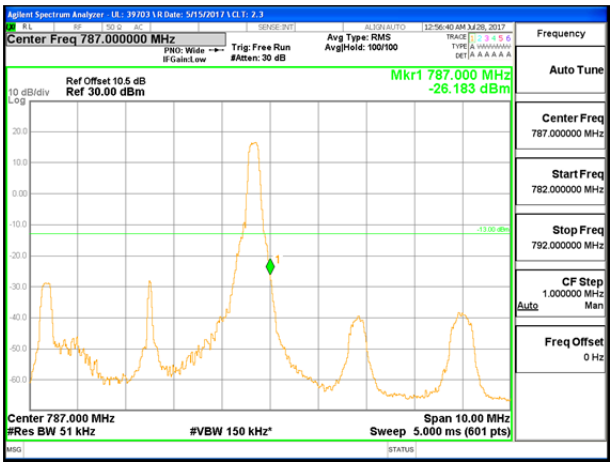


LTE B12 10MHz 16QAM High Channel FRB

LTE Band 13



LTE B13 5MHz QPSK Low Channel 1RB



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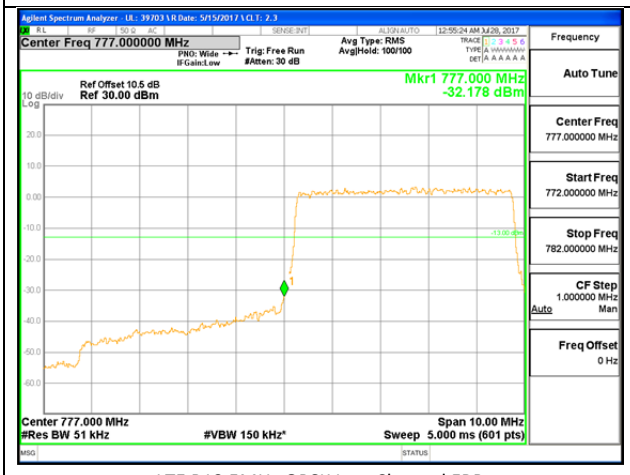

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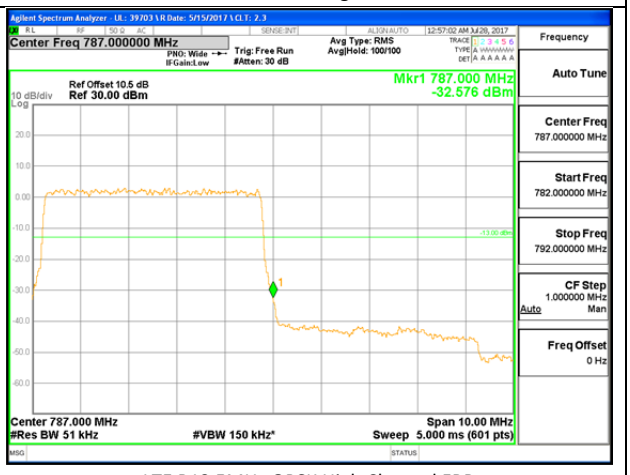

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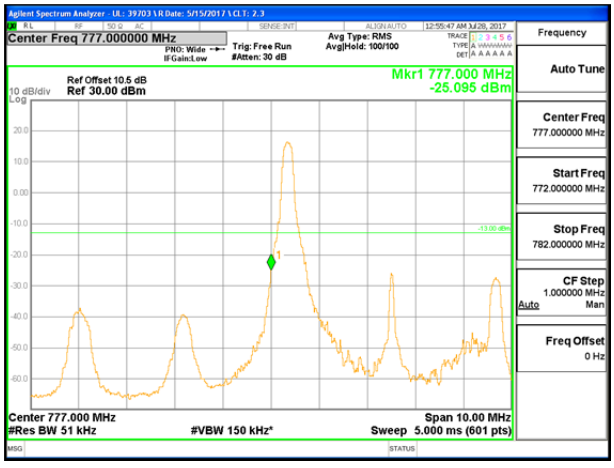
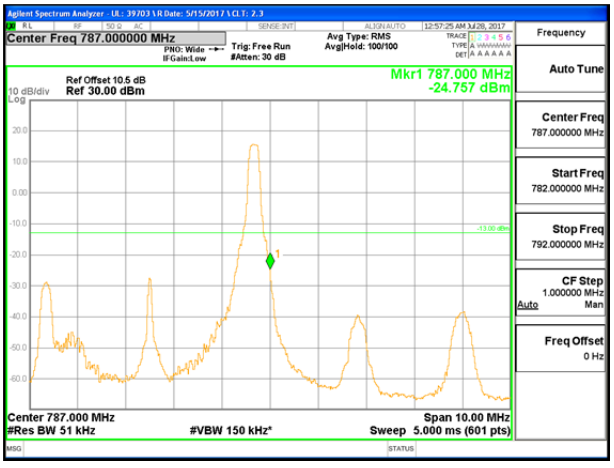


LTE B13 5MHz 16QAM Low Channel 1RB



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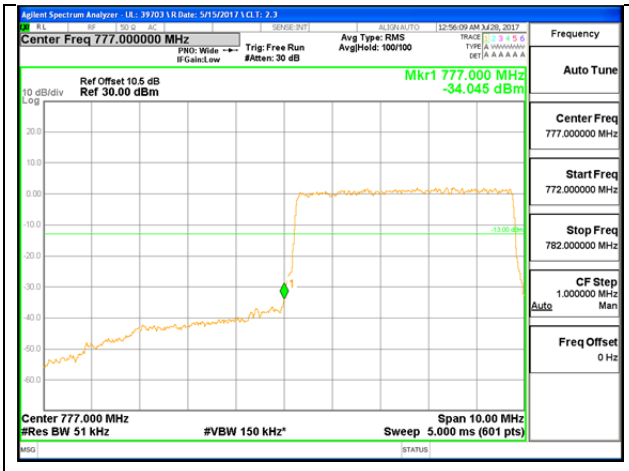
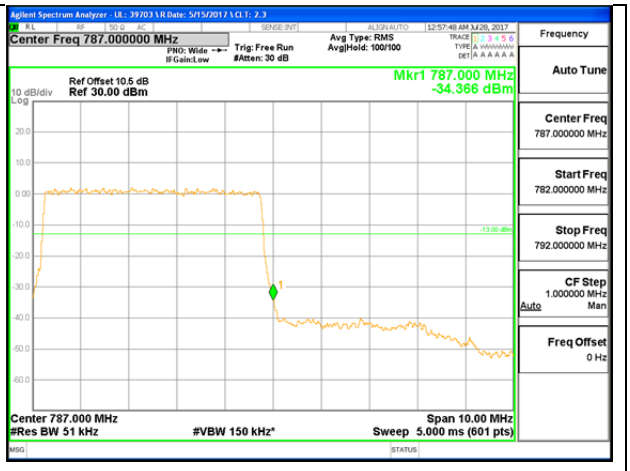
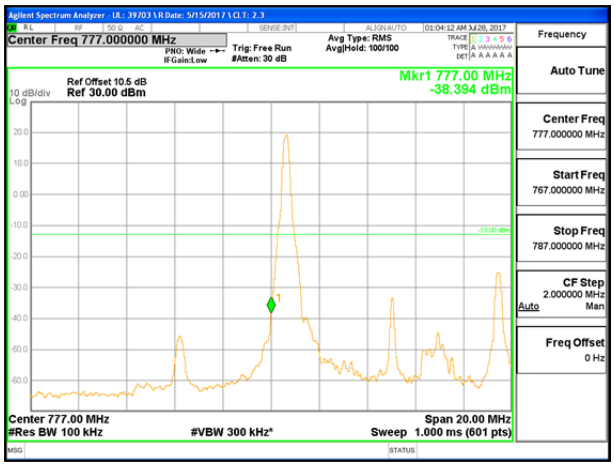


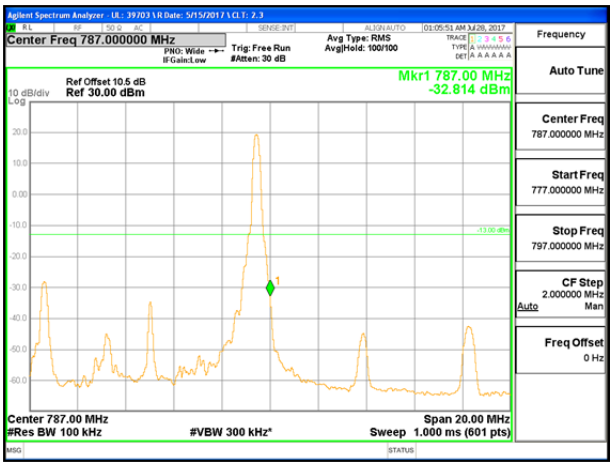
LTE B13 5MHz 16QAM Low Channel FRB



LTE B13 5MHz 16QAM High Channel FRB



LTE B13 10MHz QPSK Low Channel 1RB



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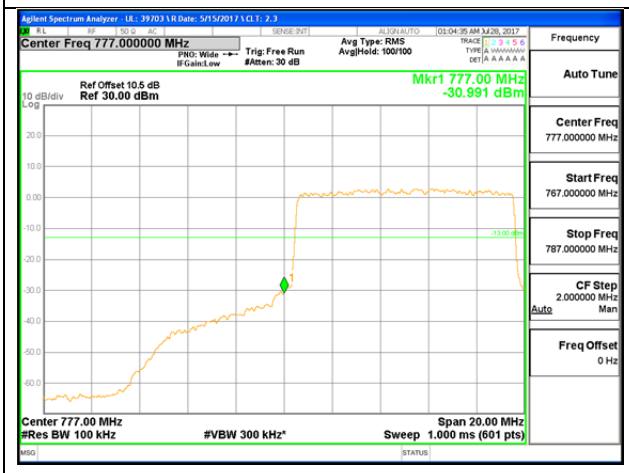
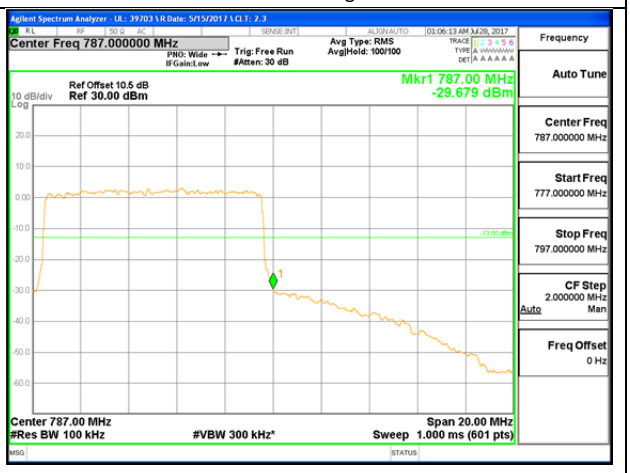


LTE B13 10MHz QPSK Low Channel FRB



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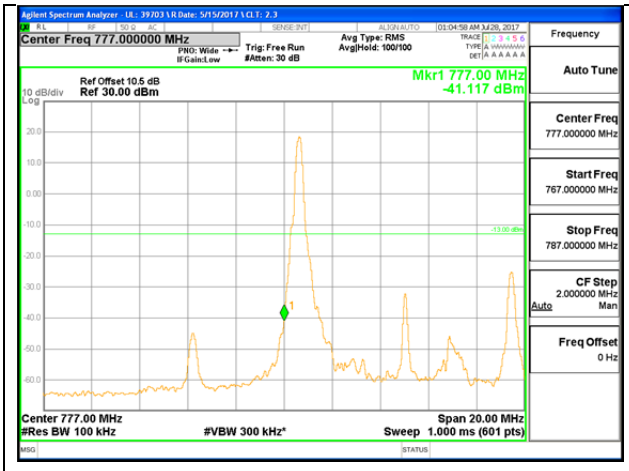
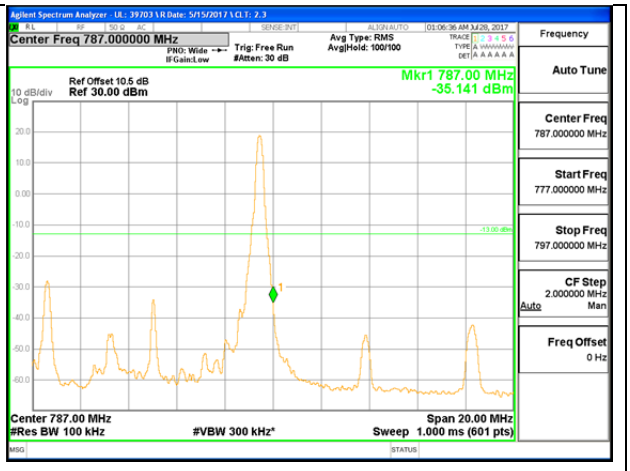
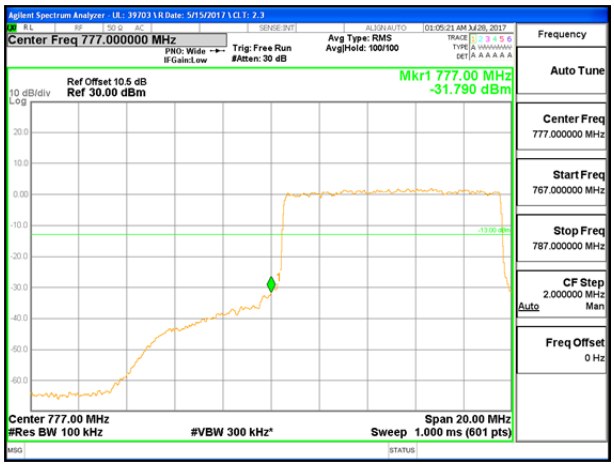


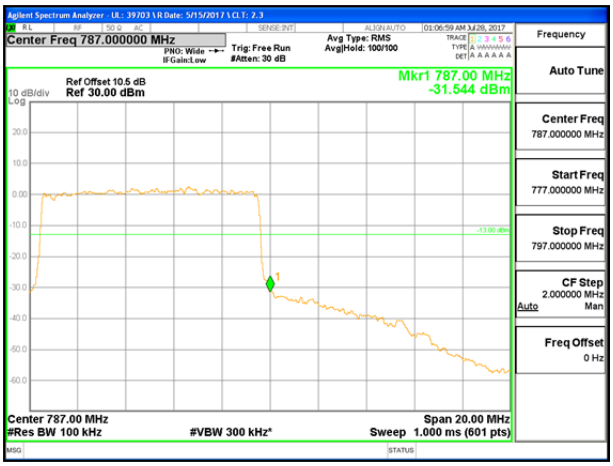
LTE B13 10MHz 16QAM Lo Channel 1RB



LTE B13 10MHz 16QAM High Channel 1RB



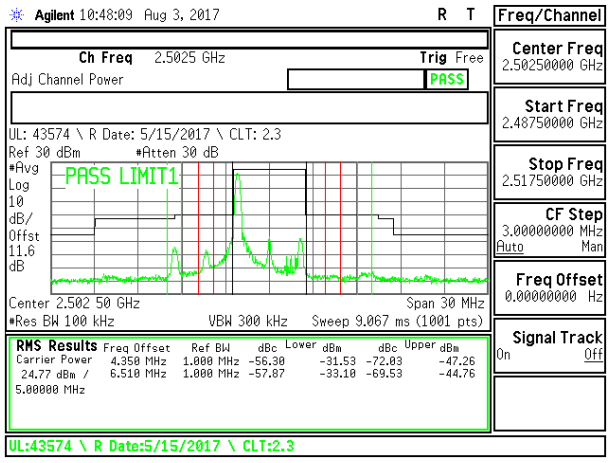
LTE B13 10MHz 16QAM Low Channel FRB



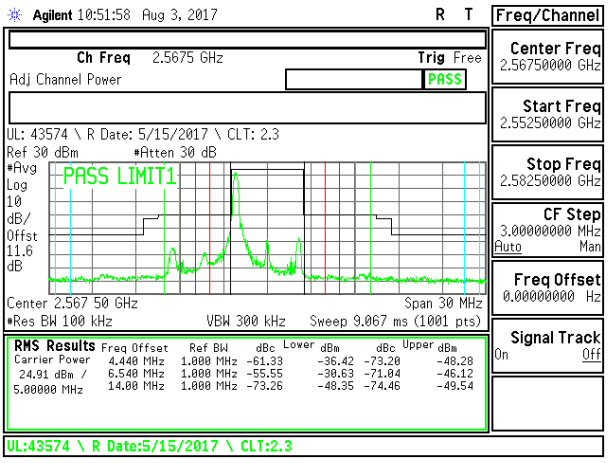
LTE B13 10MHz 16QAM High Channel FRB

14.2. EMISSION MASK PLOTS

LTE Band 7



LTE B7 5MHz QPSK Low Channel 1RB



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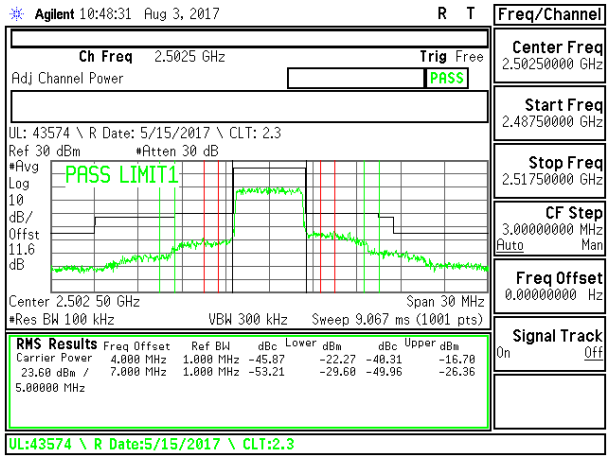

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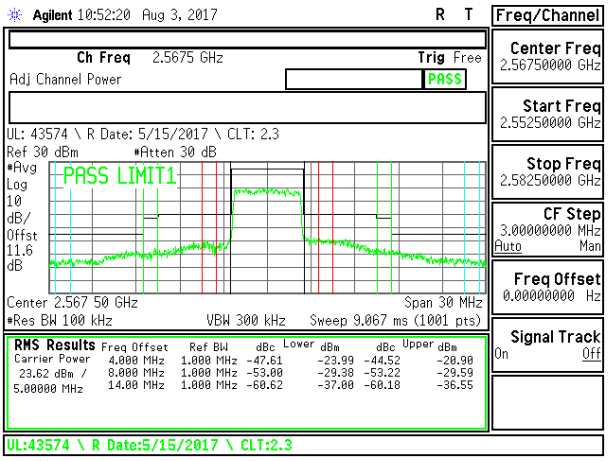

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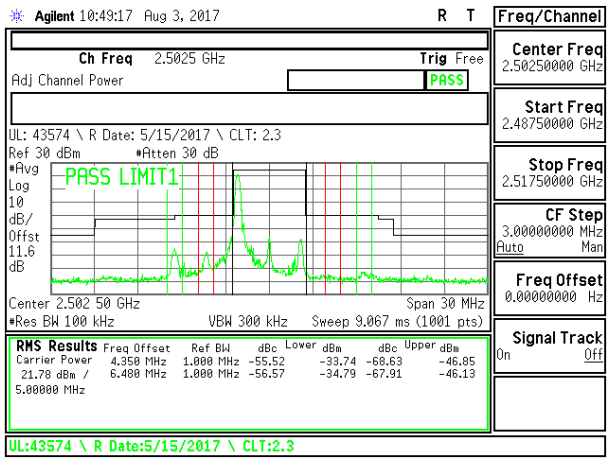
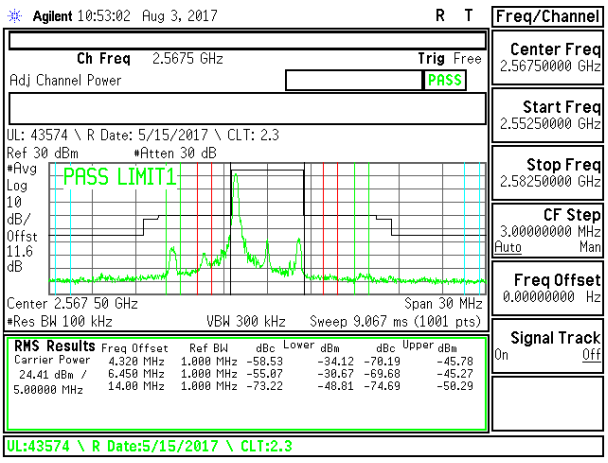
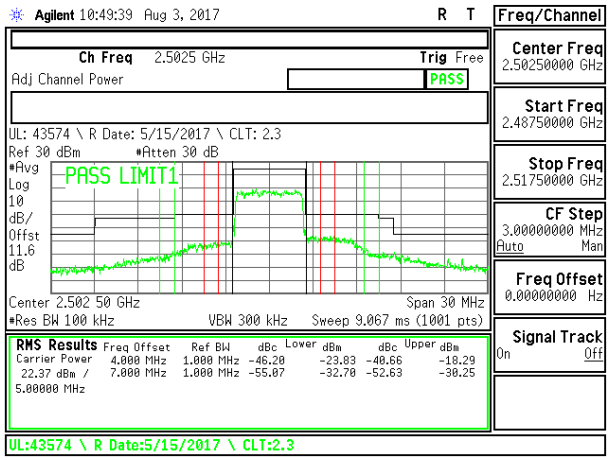


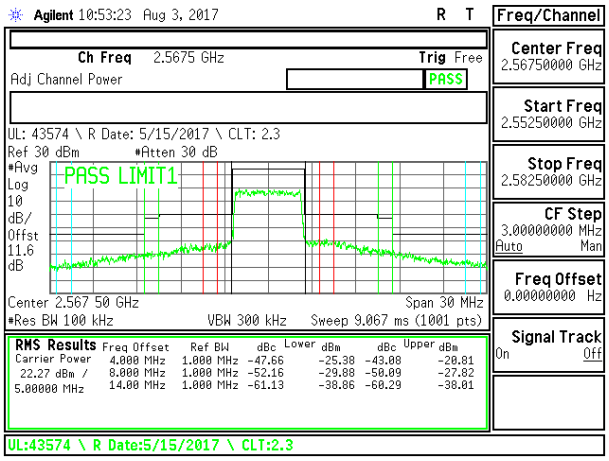
LTE B7 5MHz 16QAM Low Channel 1RB



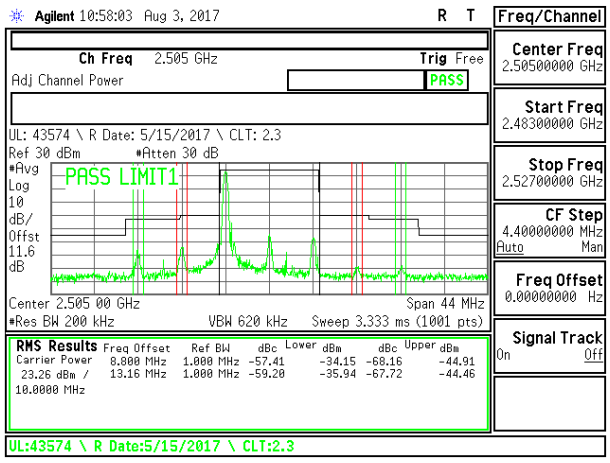
LTE B7 5MHz 16QAM High Channel 1RB



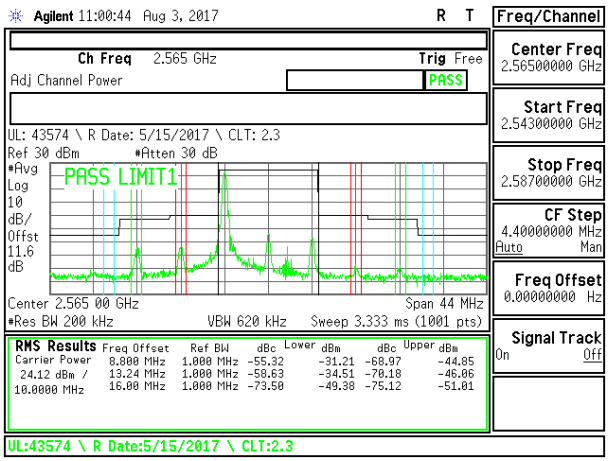
LTE B7 5MHz 16QAM Low Channel FRB



LTE B7 5MHz 16QAM High Channel FRB



LTE B7 10MHz QPSK Low Channel 1RB



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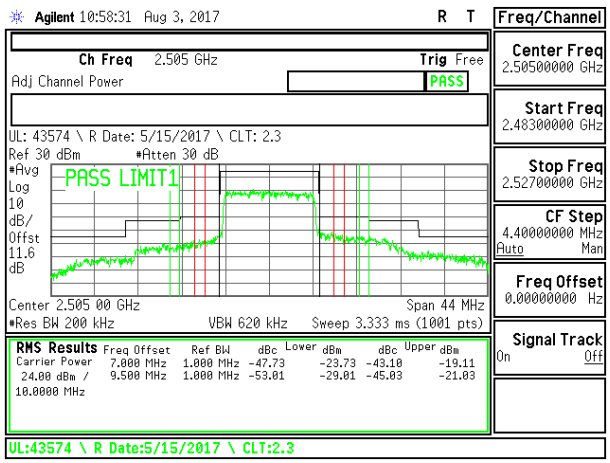
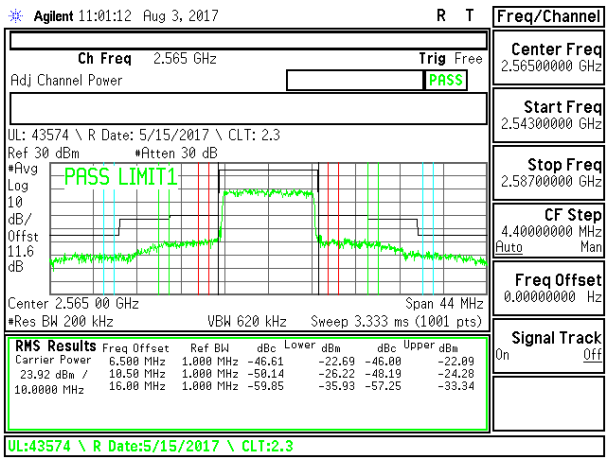
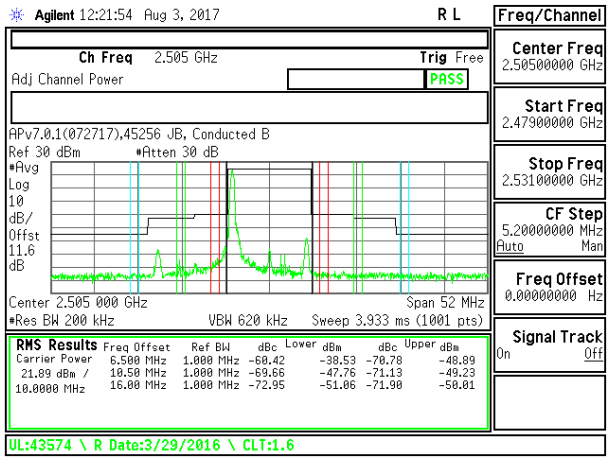


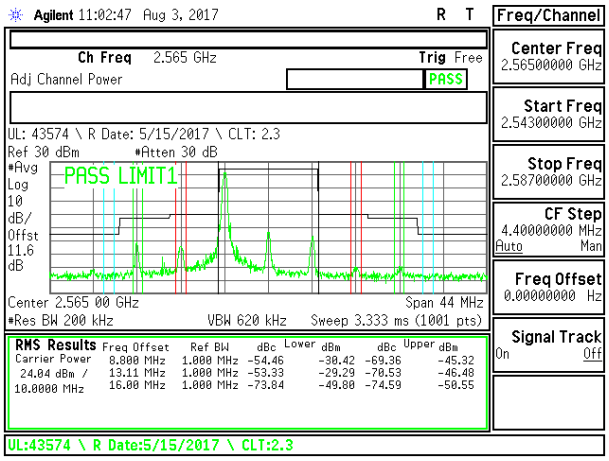
LTE B7 10MHz QPSK Low Channel FRB



LTE B7 10MHz QPSK High Channel FRB



LTE B7 10MHz 16QAM Low Channel 1RB



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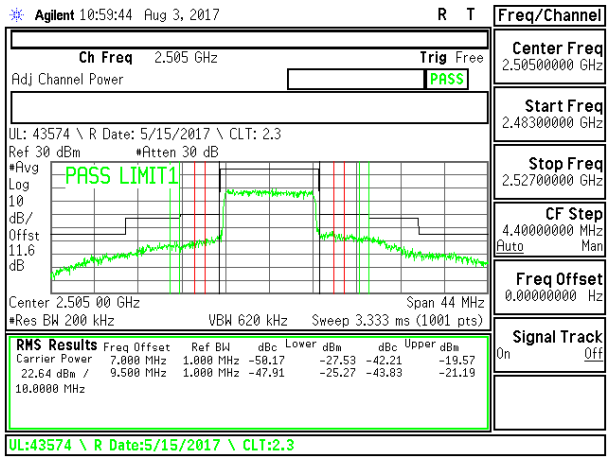
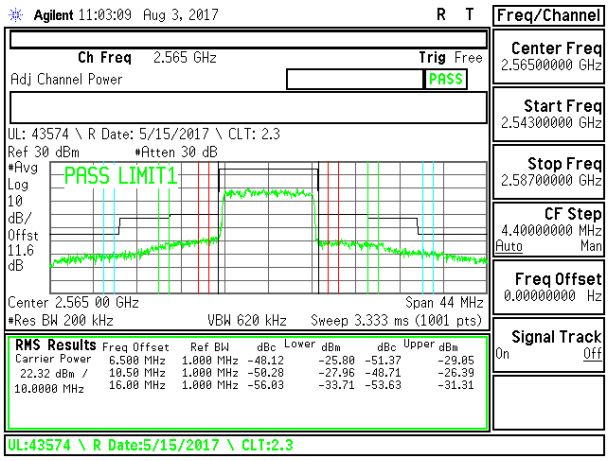


LTE B7 10MHz 16QAM Low Channel FRB



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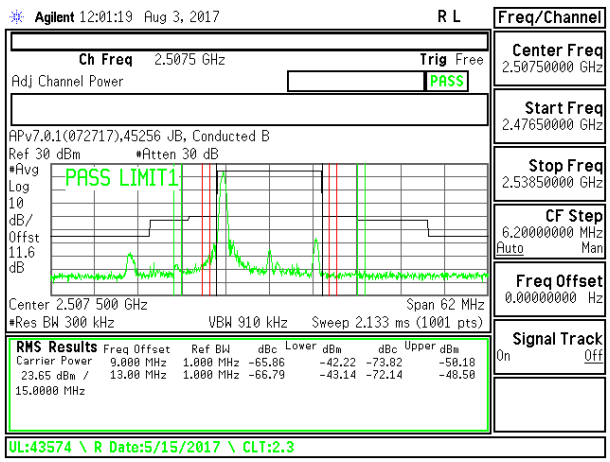
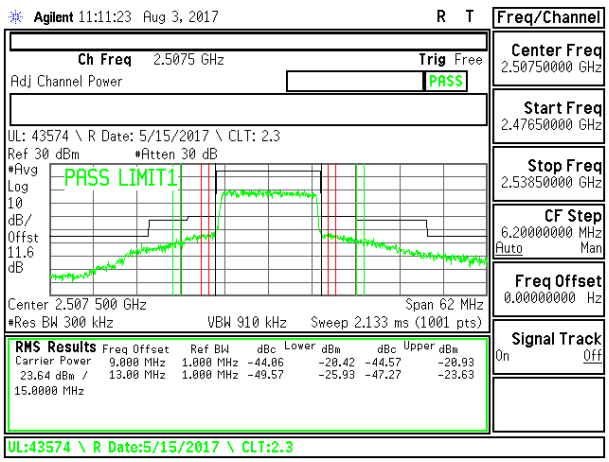


LTE B7 15MHz QPSK Low Channel 1RB



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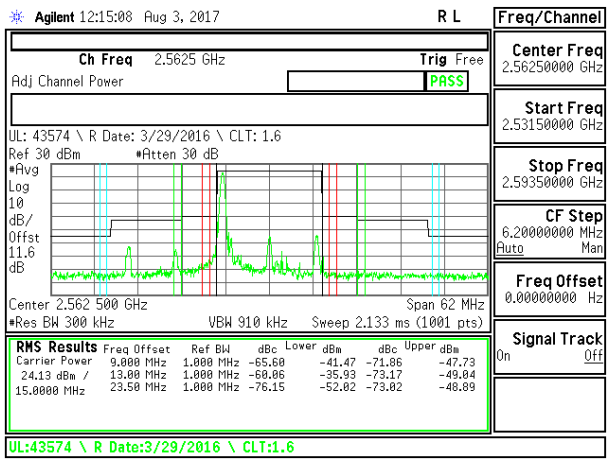

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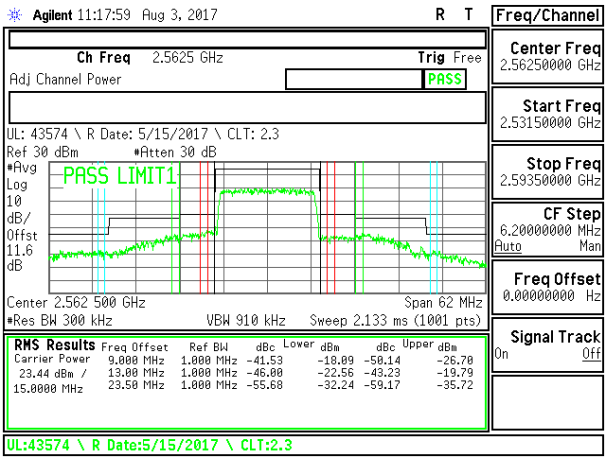

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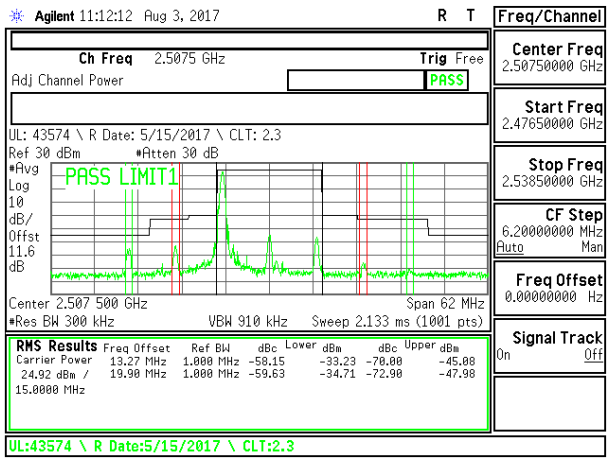

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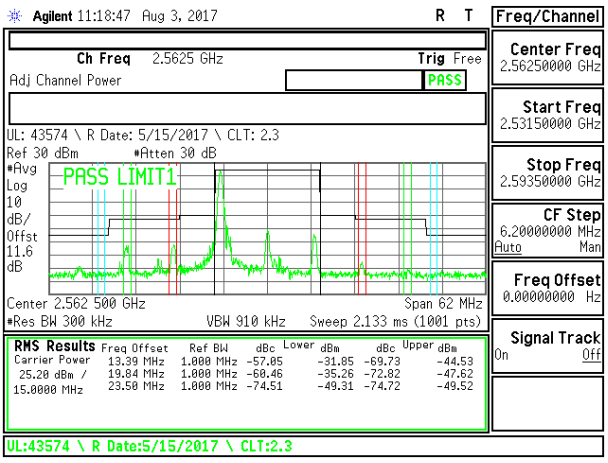

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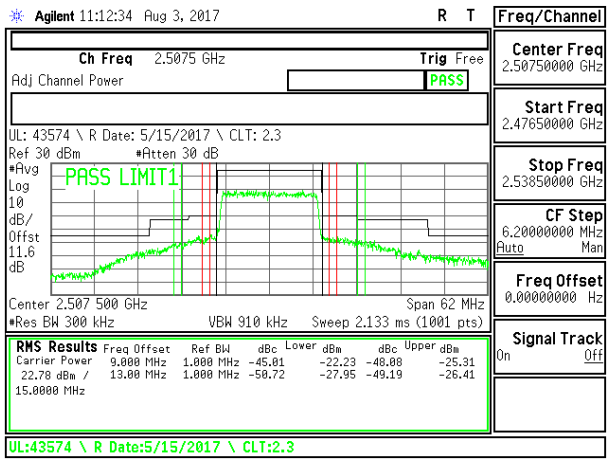

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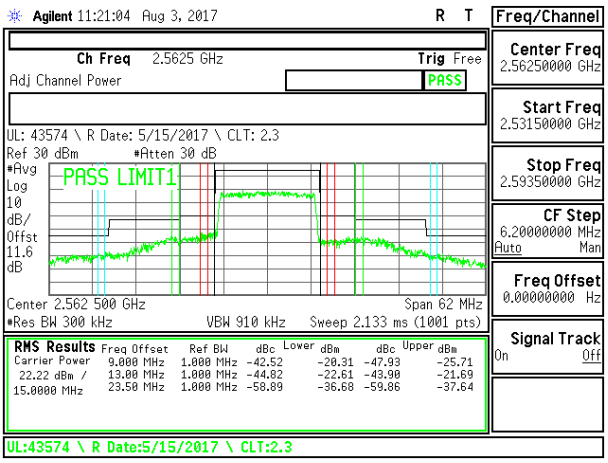

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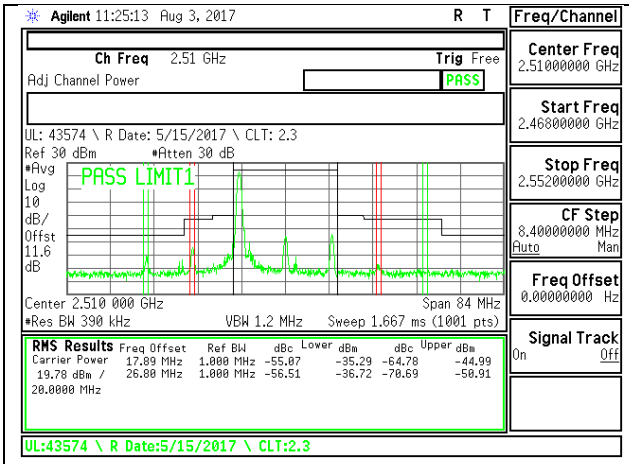

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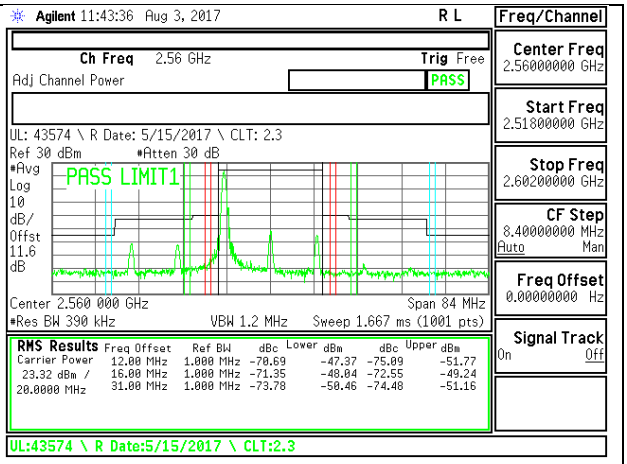

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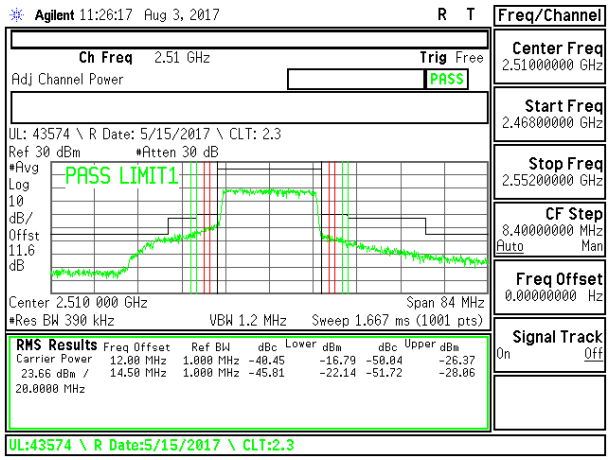

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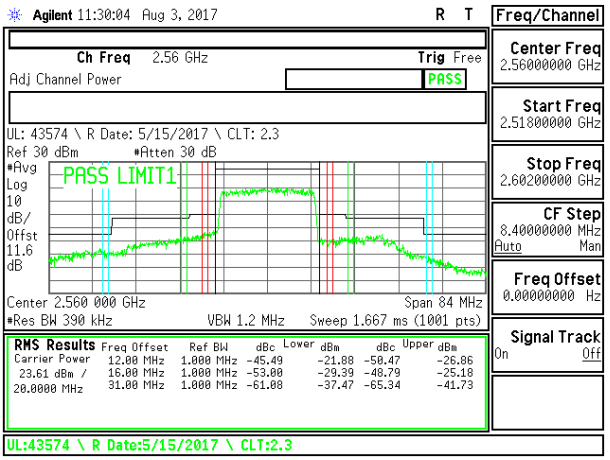

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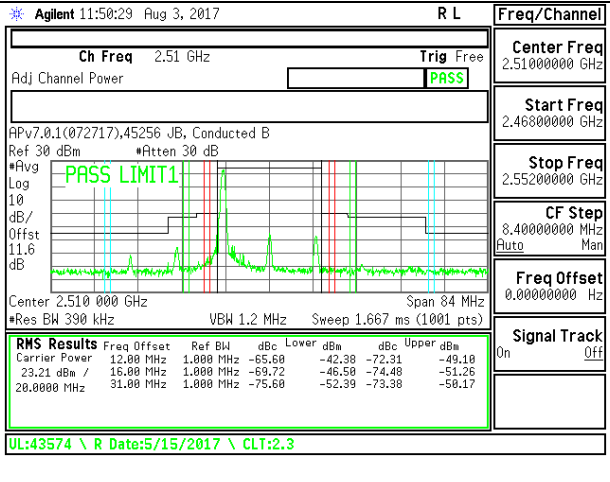

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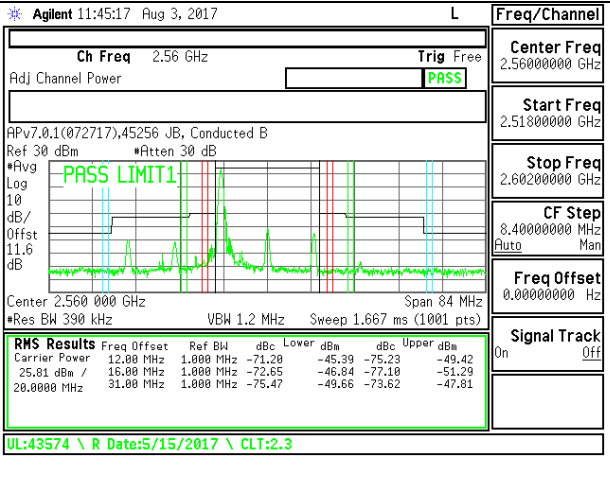

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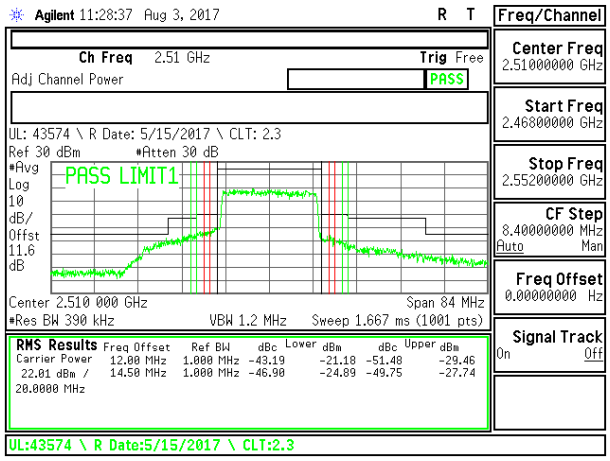
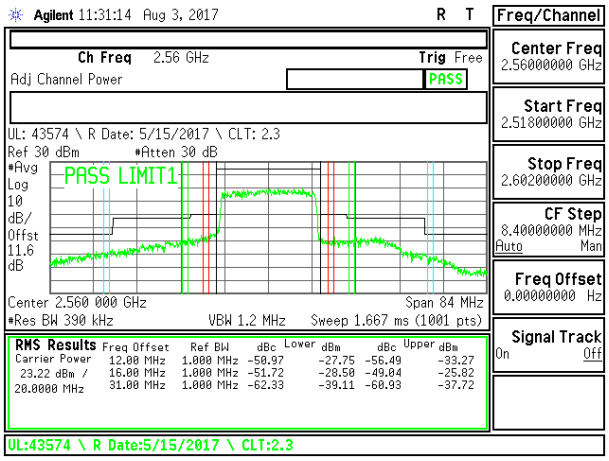
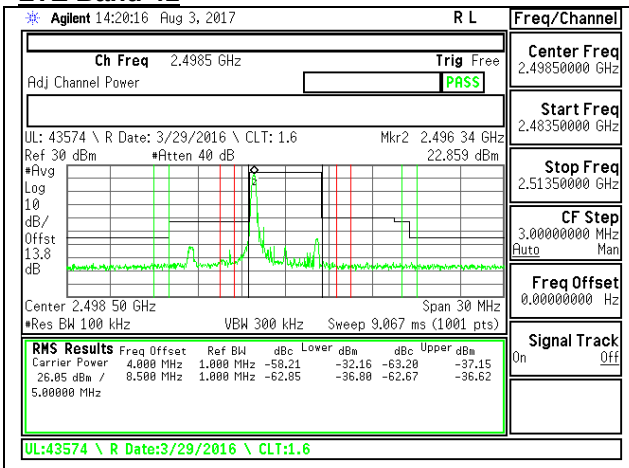


LTE B7 20MHz 16QAM Low Channel FRB

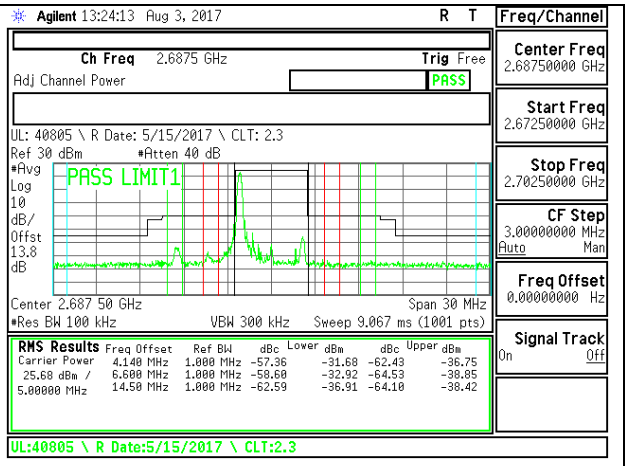


LTE B7 20MHz 16QAM High Channel FRB

LTE Band 41



LTE B41 5MHz QPSK Low Channel 1RB



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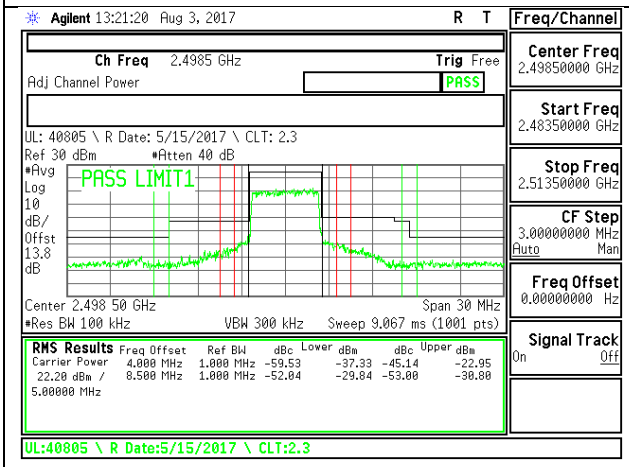

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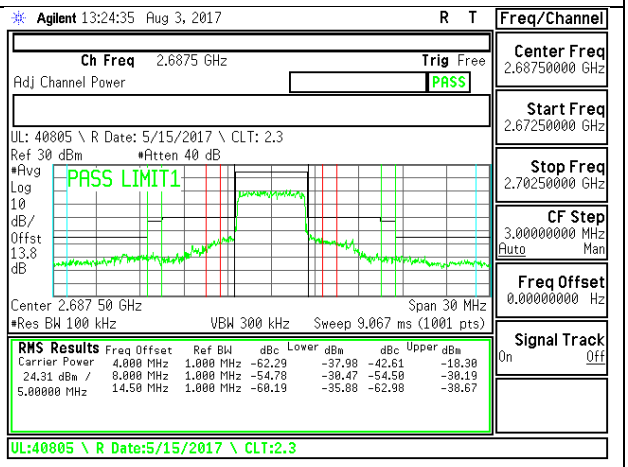

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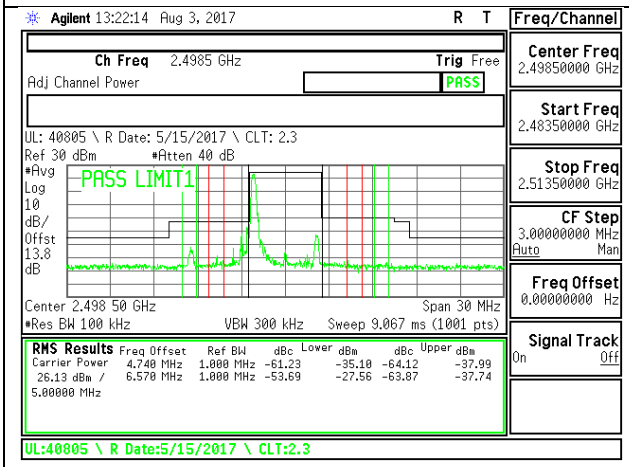

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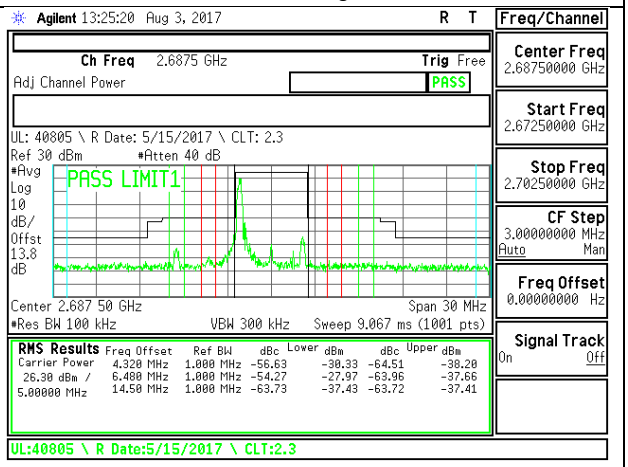

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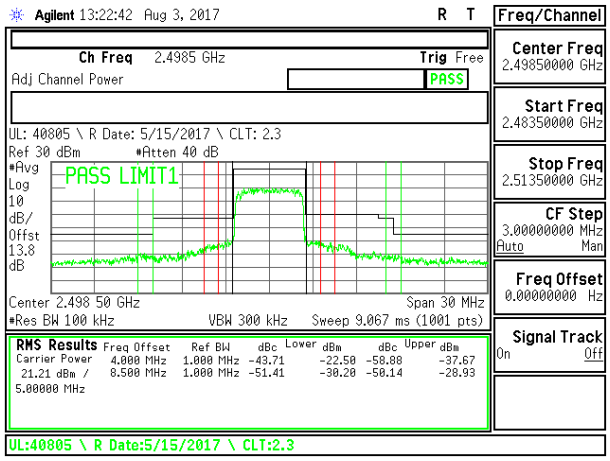

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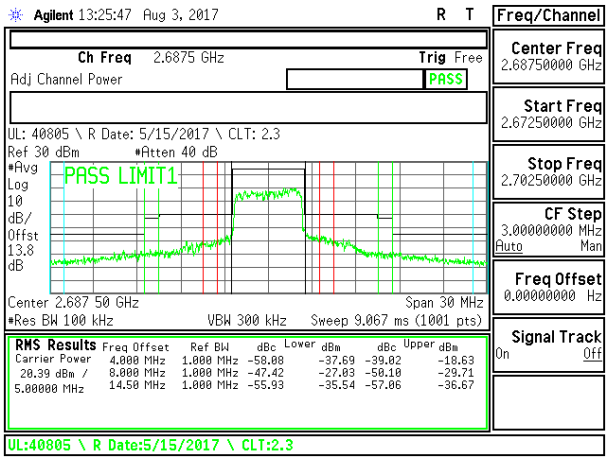
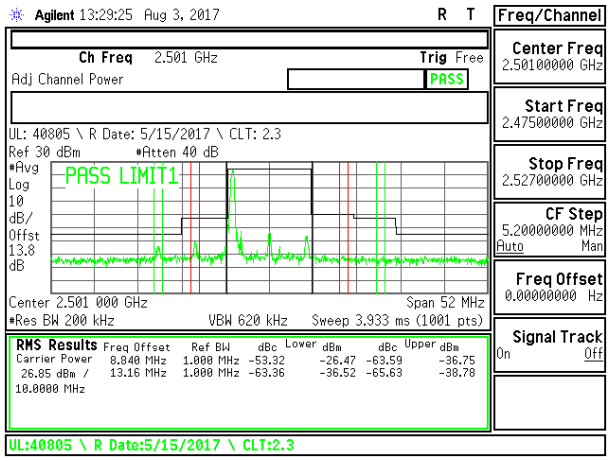
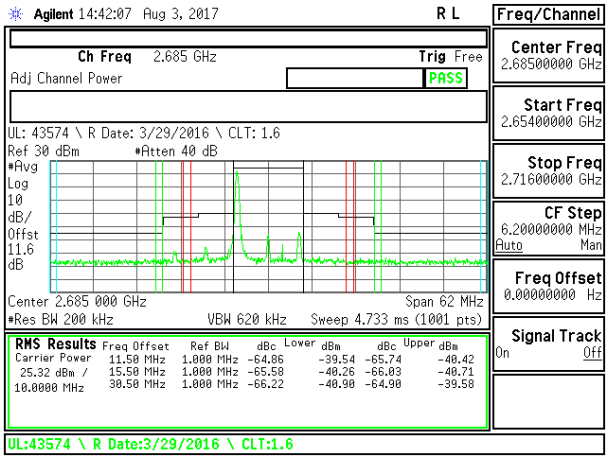


LTE B41 5MHz 16QAM High Channel FRB



LTE B41 10MHz QPSK Low Channel 1RB



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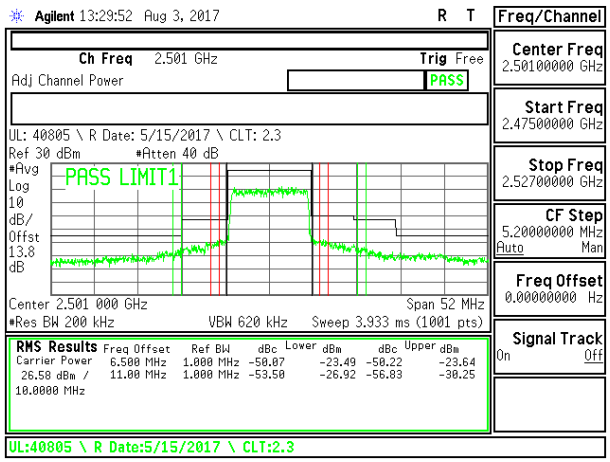

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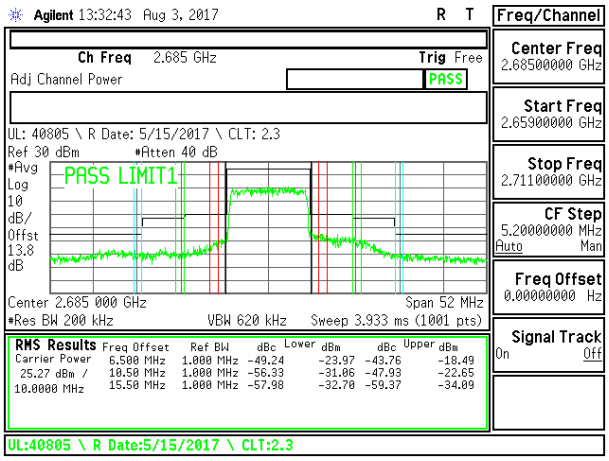

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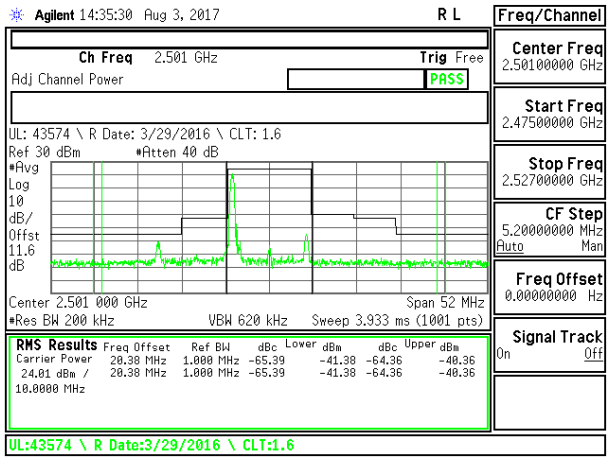

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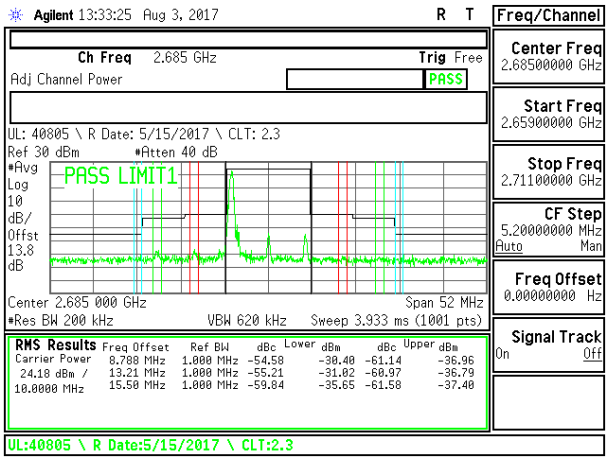
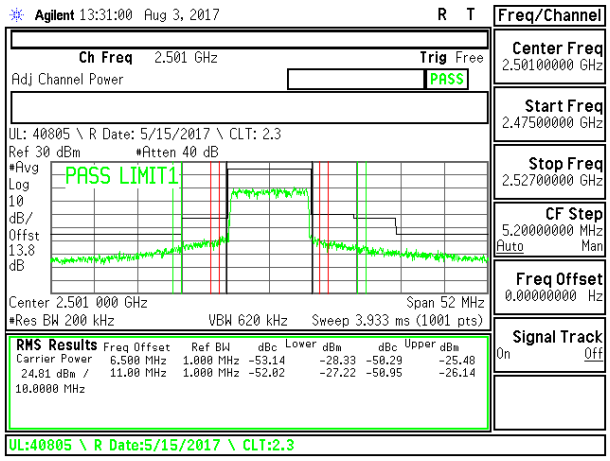
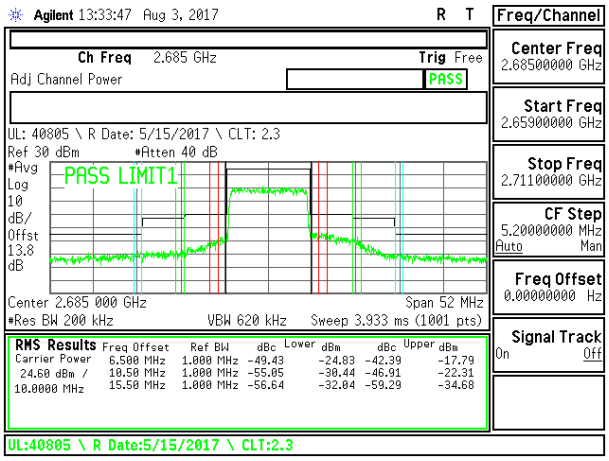


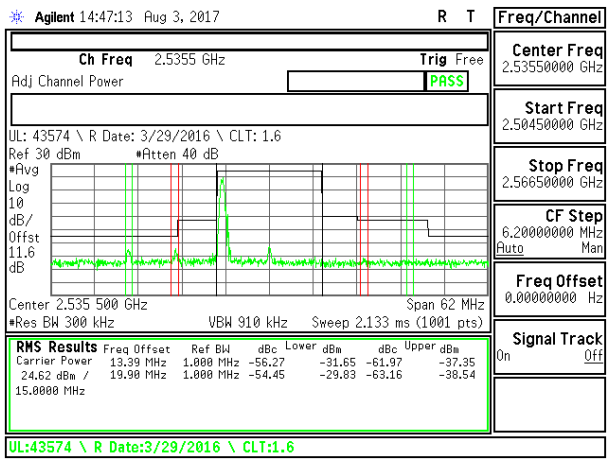
LTE B41 10MHz 16QAM High Channel 1RB



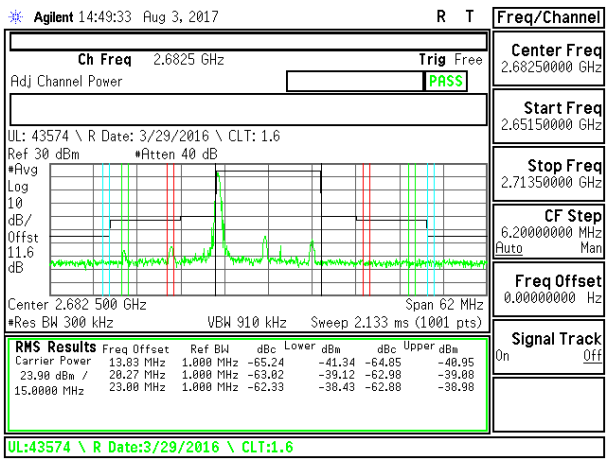
LTE B41 10MHz 16QAM Low Channel FRB



LTE B41 10MHz 16QAM High Channel FRB



LTE B41 15MHz QPSK Low Channel 1RB



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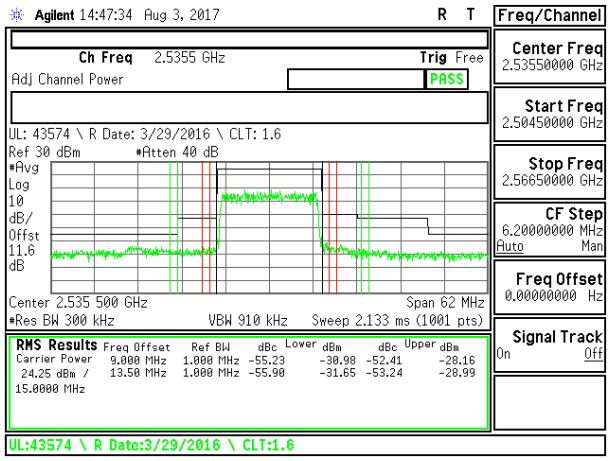
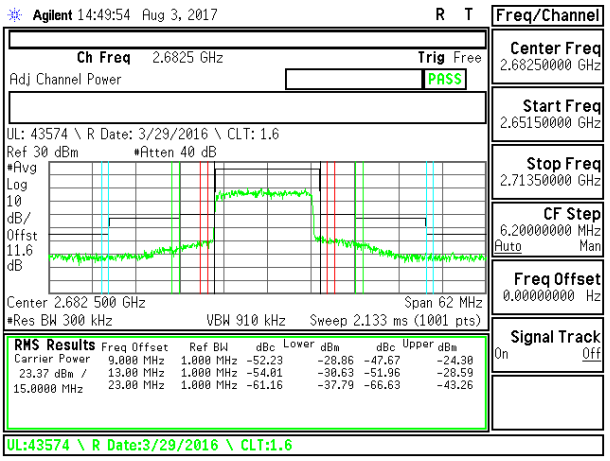
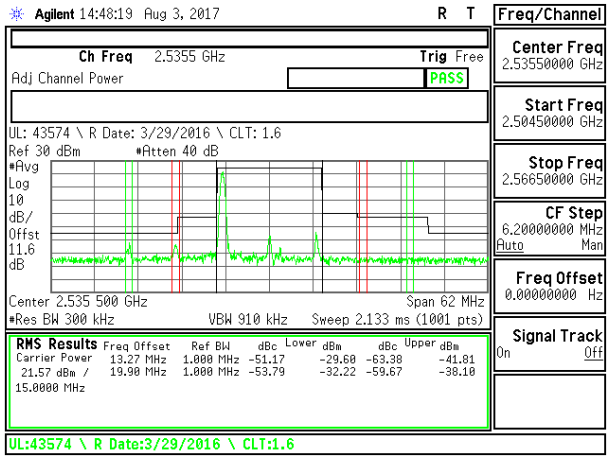


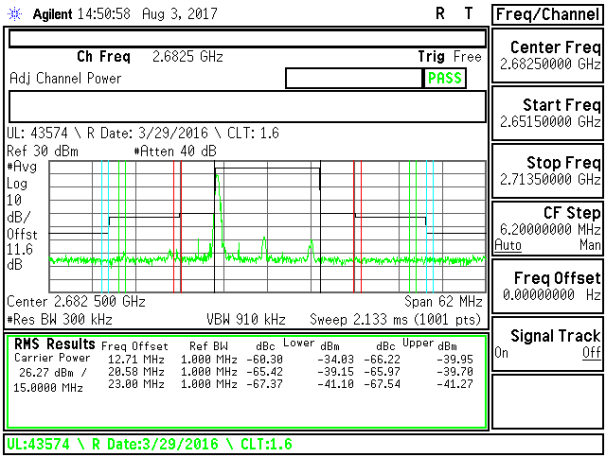
LTE B41 15MHz QPSK Low Channel FRB



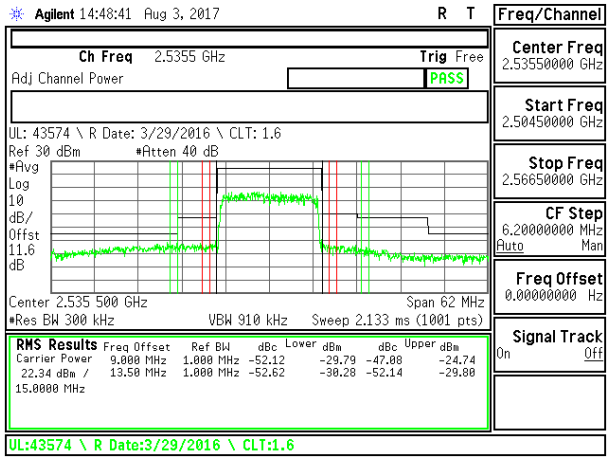
LTE B41 15MHz QPSK High Channel FRB



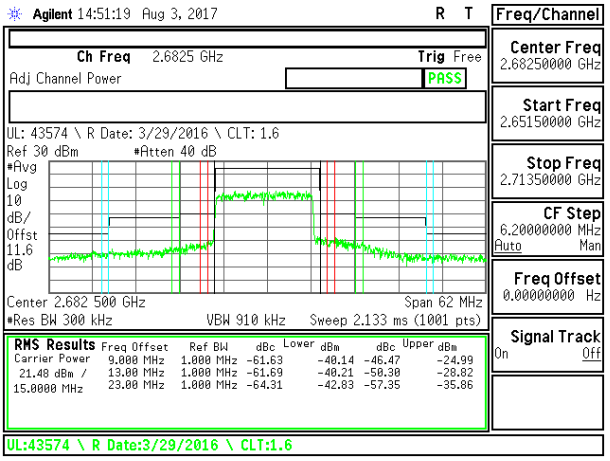
LTE B41 15MHz 16QAM Low Channel 1RB



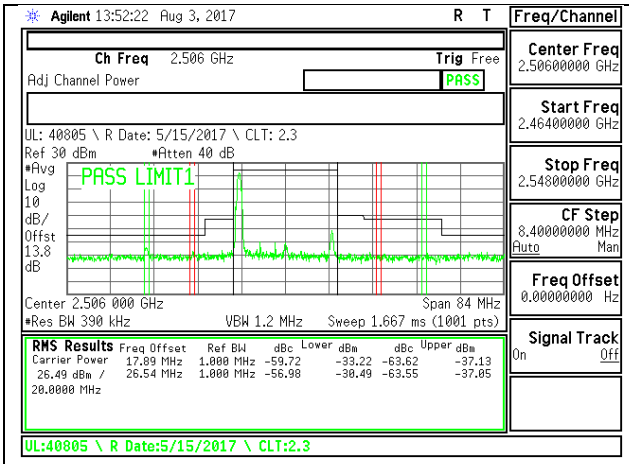
LTE B41 15MHz 16QAM High Channel 1RB



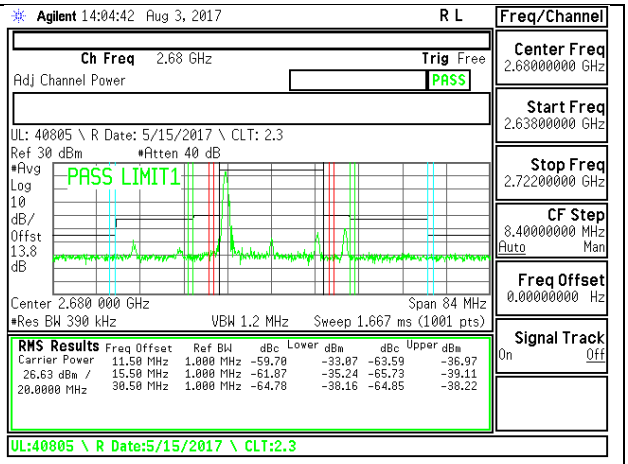
LTE B41 15MHz 16QAM Low Channel FRB



LTE B41 15MHz 16QAM High Channel FRB



LTE B41 20MHz QPSK Low Channel 1RB



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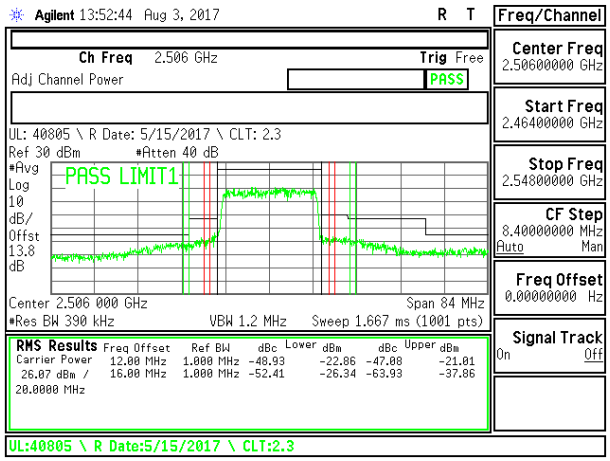
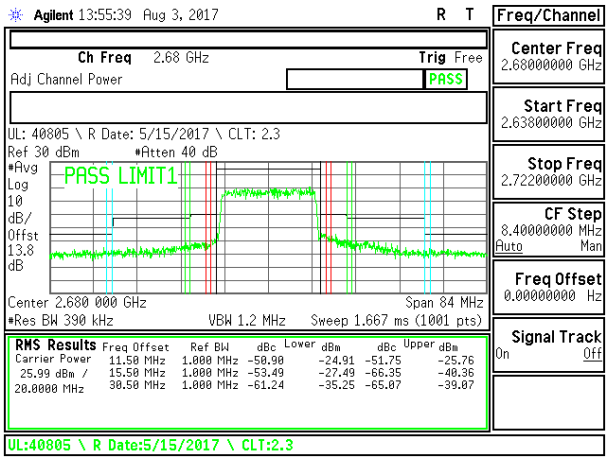
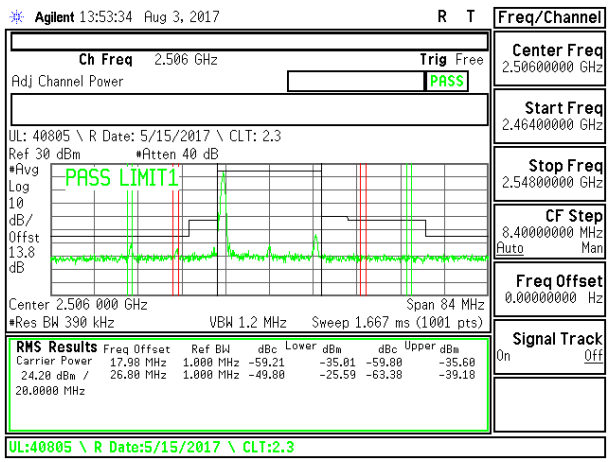


LTE B41 20MHz QPSK Low Channel FRB



LTE B41 20MHz QPSK High Channel FRB



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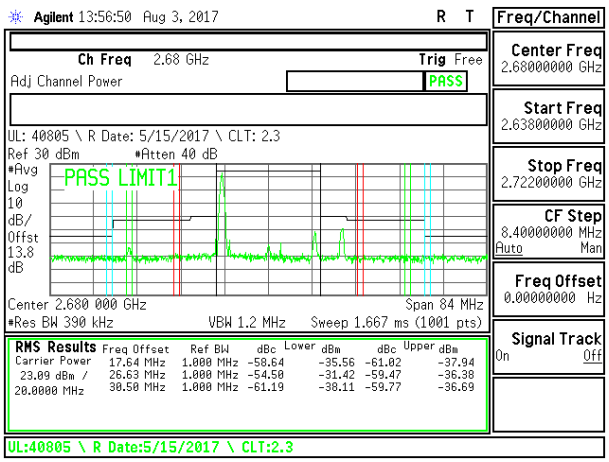
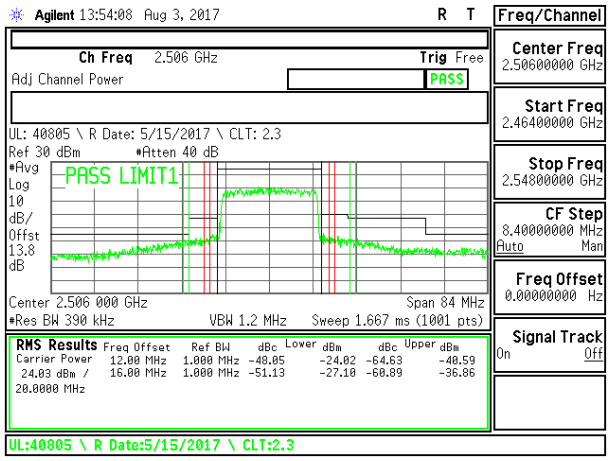
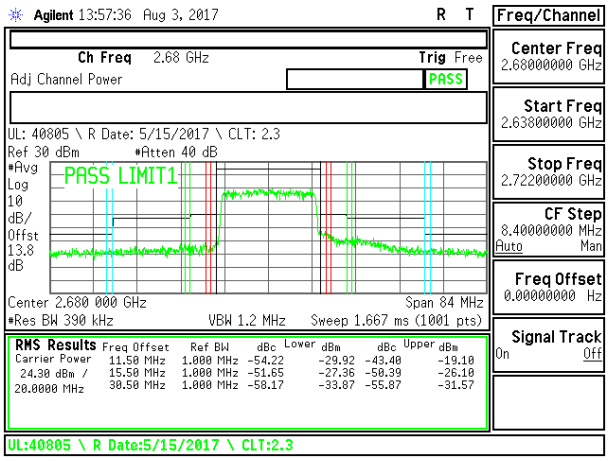


LTE B41 20MHz 16QAM High Channel 1RB



LTE B41 20MHz 16QAM Low Channel FRB



LTE B41 20MHz 16QAM High Channel FRB

15. OUT OF BAND EMISSIONS

RULE PART(S)

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

FCC 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 that 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

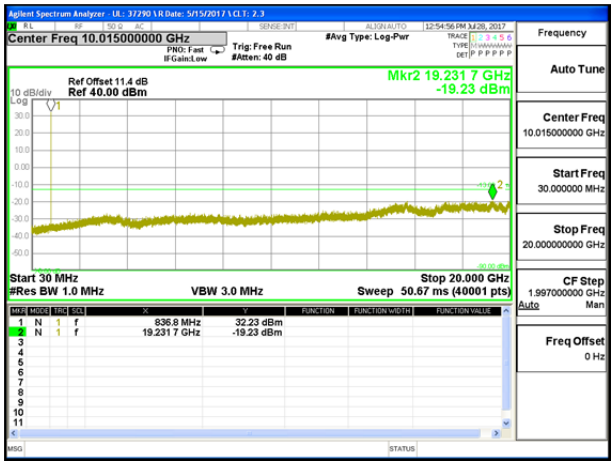
Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in a maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

RESULTS

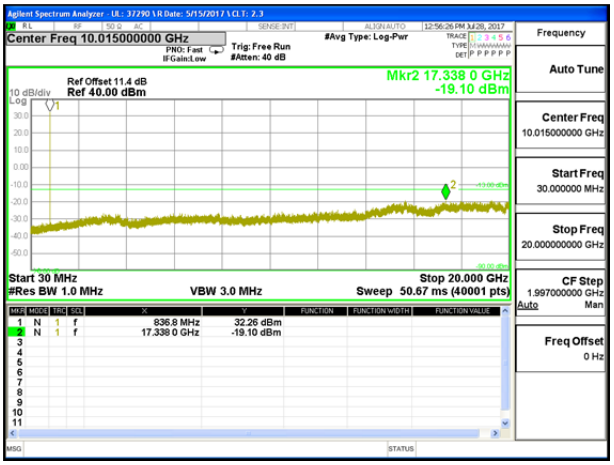
15.1. OUT OF BAND EMISSIONS RESULT AND PLOTS

GSM

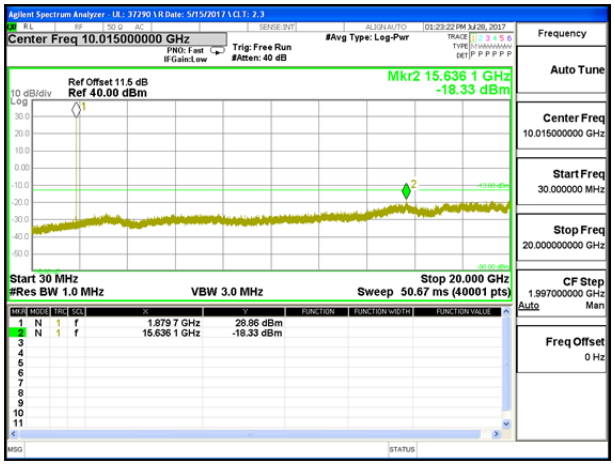
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM 850	GPRS	824.2	-18.89	-13	-5.89
		836.6	-19.23	-13	-6.23
		848.8	-18.88	-13	-5.88
	EGPRS	824.2	-16.71	-13	-3.71
		836.6	-19.10	-13	-6.10
		848.8	-18.69	-13	-5.69
GSM 1900	GPRS	1850.2	-18.85	-13	-5.85
		1880	-18.33	-13	-5.33
		1909.8	-17.94	-13	-4.94
	EGPRS	1850.2	-18.67	-13	-5.67
		1880	-19.11	-13	-6.11
		1909.8	-18.85	-13	-5.85



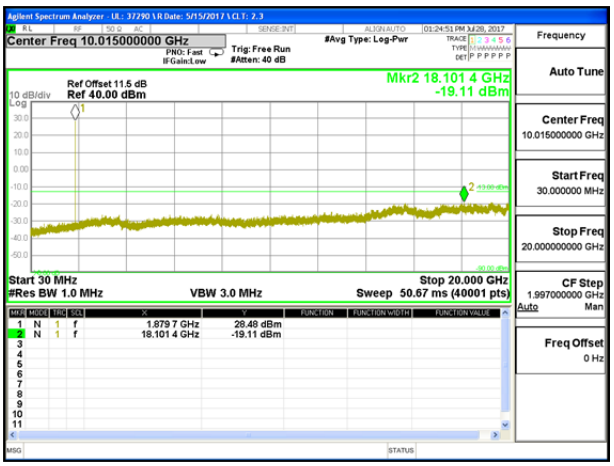
GSM850 GPRS Middle Channel



GSM850 EGPRS Middle Channel



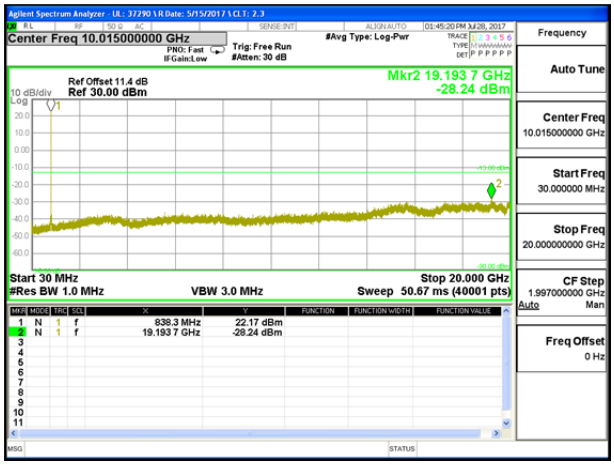
GSM1900 GPRS Middle Channel



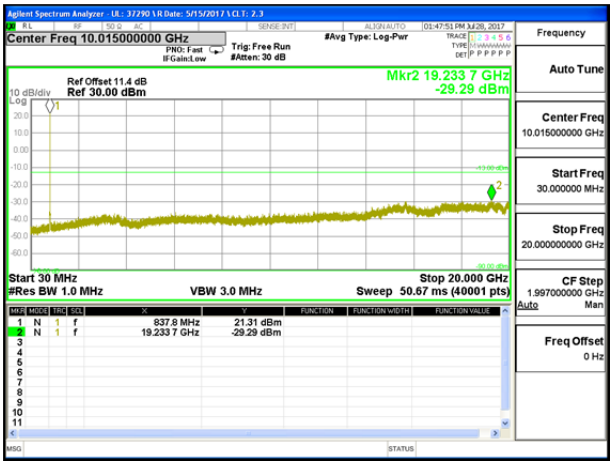
GSM1900 EGPRS Middle Channel

WCDMA

Band	Mode	f (MHz)	Spur (dBm)	99% BW (MHz)	Delta (dB)
Band 5	REL99	826.4	-28.11	-13	-15.11
		836.6	-28.24	-13	-15.24
		846.6	-28.31	-13	-15.31
	HSDPA	826.4	-28.78	-13	-15.78
		836.6	-29.29	-13	-16.29
		846.6	-28.56	-13	-15.56



B5 REL99 Middle Channel

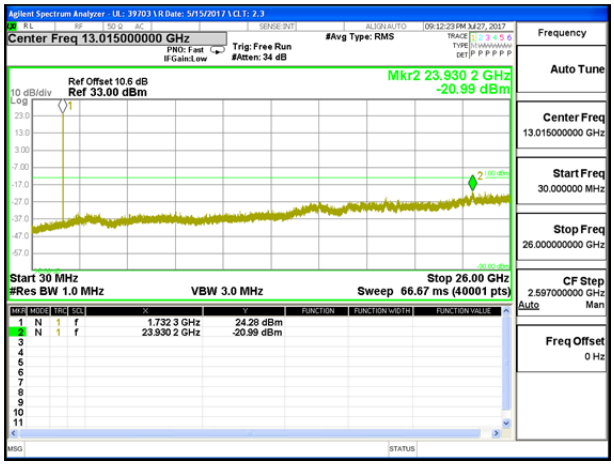


B5 HSDPA Middle Channel

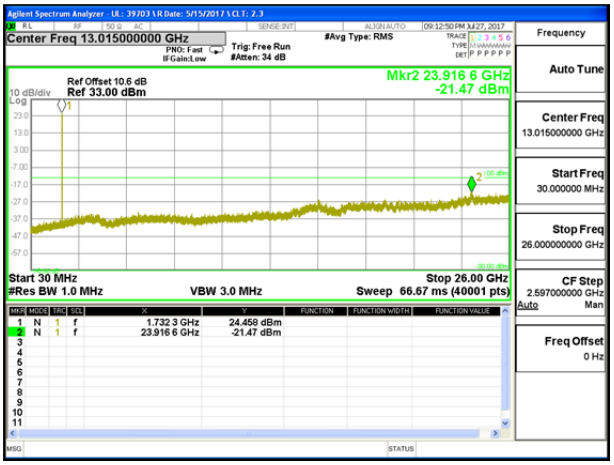
LTE Band 4

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	1.4	QPSK	1710.7	-21.55	-13	-8.55
			1732.5	-20.99	-13	-7.99
			1754.3	-21.02	-13	-8.02
		16QAM	1710.7	-20.76	-13	-7.76
			1732.5	-21.47	-13	-8.47
			1754.3	-21.52	-13	-8.52
	3	QPSK	1711.5	-21.61	-13	-8.61
			1732.5	-21.68	-13	-8.68
			1753.5	-21.43	-13	-8.43
		16QAM	1711.5	-20.84	-13	-7.84
			1732.5	-20.89	-13	-7.89
			1753.5	-21.24	-13	-8.24
	5	QPSK	1712.5	-21.19	-13	-8.19
			1732.5	-21.86	-13	-8.86
			1752.5	-21.94	-13	-8.94
		16QAM	1712.5	-21.85	-13	-8.85
			1732.5	-20.69	-13	-7.69
			1752.5	-21.76	-13	-8.76
	10	QPSK	1715	-21.38	-13	-8.38
			1732.5	-21.27	-13	-8.27
			1750	-21.34	-13	-8.34
		16QAM	1715	-20.93	-13	-7.93
			1732.5	-20.46	-13	-7.46
			1750	-21.45	-13	-8.45

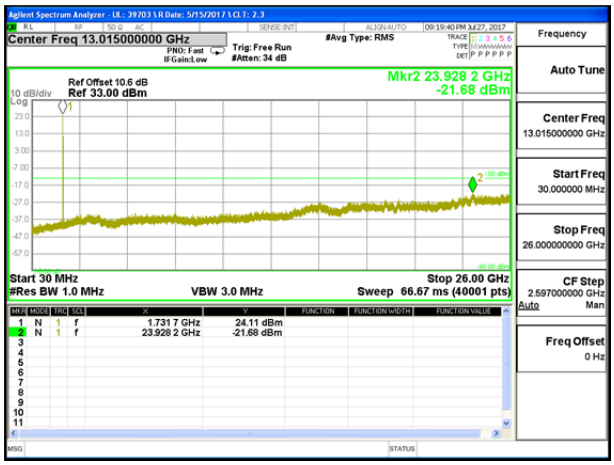
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	15	QPSK	1717.5	-30.39	-13	-17.39
			1732.5	-30.07	-13	-17.07
			1747.5	-30.02	-13	-17.02
		16QAM	1717.5	-30.43	-13	-17.43
			1732.5	-29.91	-13	-16.91
			1747.5	-29.87	-13	-16.87
	20	QPSK	1720	-21.26	-13	-8.26
			1732.5	-21.63	-13	-8.63
			1745	-21.05	-13	-8.05
		16QAM	1720	-21.44	-13	-8.44
			1732.5	-21.95	-13	-8.95
			1745	-20.24	-13	-7.24



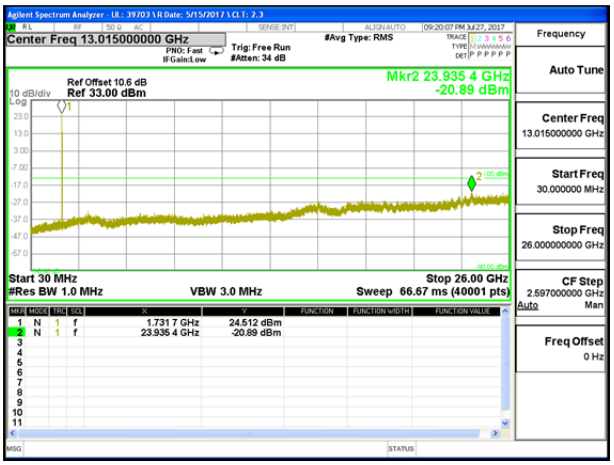
LTE B4 1.4MHz QPSK Middle Channel



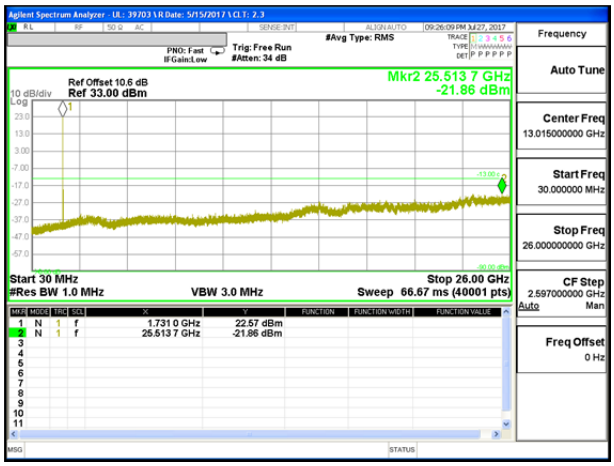
LTE B4 1.4MHz 16QAM Middle Channel



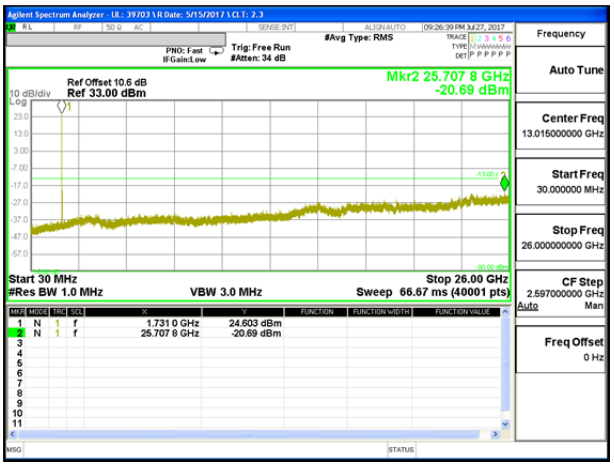
LTE B4 3MHz QPSK Middle Channel



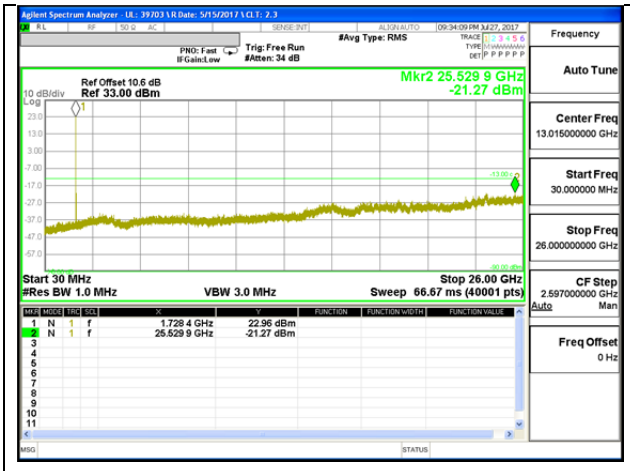
LTE B4 3MHz 16QAM Middle Channel



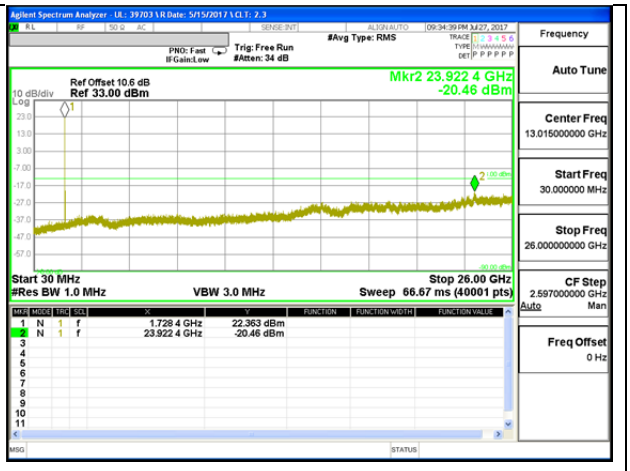
LTE B4 5MHz QPSK Middle Channel



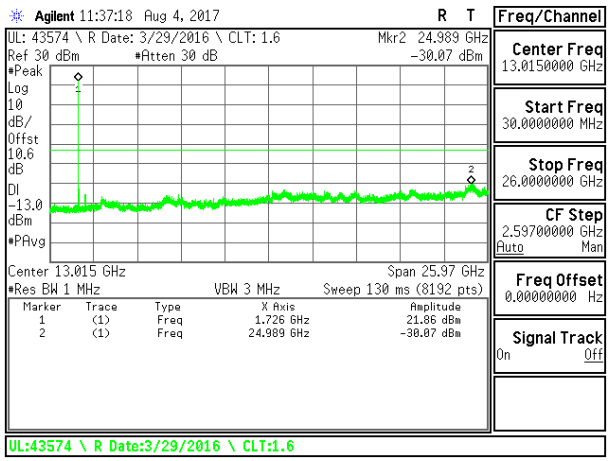
LTE B4 5MHz 16QAM Middle Channel



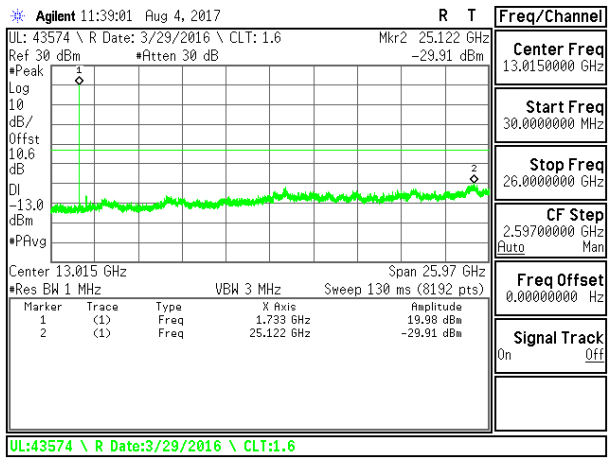
LTE B4 10MHz QPSK Middle Channel



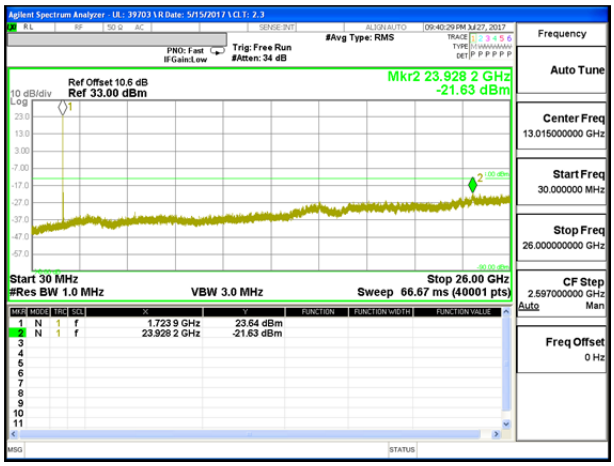
LTE B4 10MHz 16QAM Middle Channel



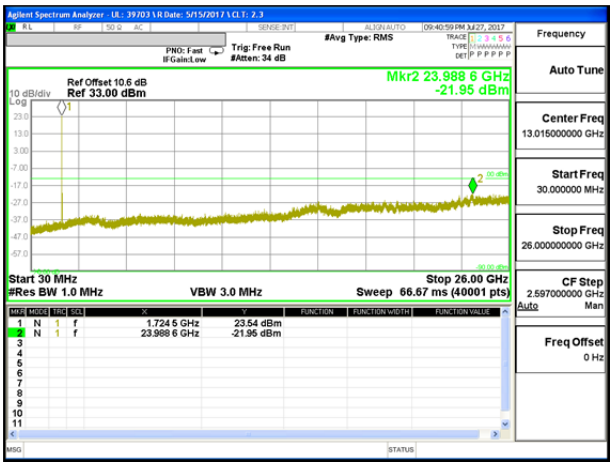
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel



LTE B4 20MHz QPSK Middle Channel



LTE B4 20MHz 16QAM Middle Channel

LTE Band 5

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	1.4	QPSK	824.7	-33.57	-13	-20.57
			836.5	-33.80	-13	-20.80
			848.3	-33.73	-13	-20.73
		16QAM	824.7	-33.66	-13	-20.66
			836.5	-33.78	-13	-20.78
			848.3	-33.67	-13	-20.67
	3	QPSK	825.5	-33.54	-13	-20.54
			836.5	-33.69	-13	-20.69
			847.5	-33.85	-13	-20.85
		16QAM	825.5	-34.06	-13	-21.06
			836.5	-33.30	-13	-20.3
			847.5	-34.15	-13	-21.15
	5	QPSK	826.5	-21.65	-13	-8.65
			836.5	-21.97	-13	-8.97
			846.5	-21.08	-13	-8.08
		16QAM	826.5	-20.89	-13	-7.89
			836.5	-22.27	-13	-9.27
			846.5	-21.68	-13	-8.68
	10	QPSK	829	-21.5	-13	-8.5
			836.5	-21.21	-13	-8.21
			844	-21.56	-13	-8.56
		16QAM	829	-20.94	-13	-7.94
			836.5	-21.40	-13	-8.4
			844	-21.65	-13	-8.65