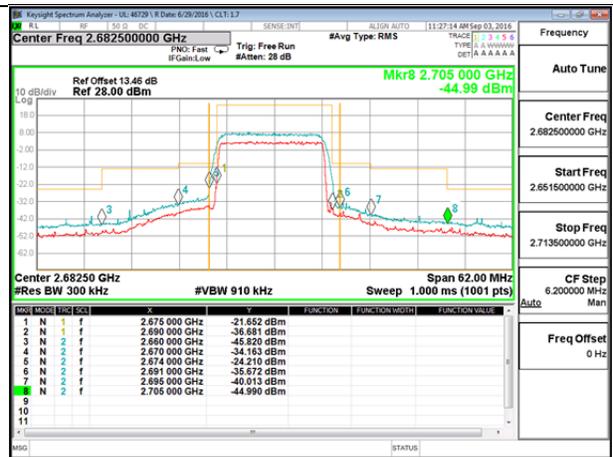
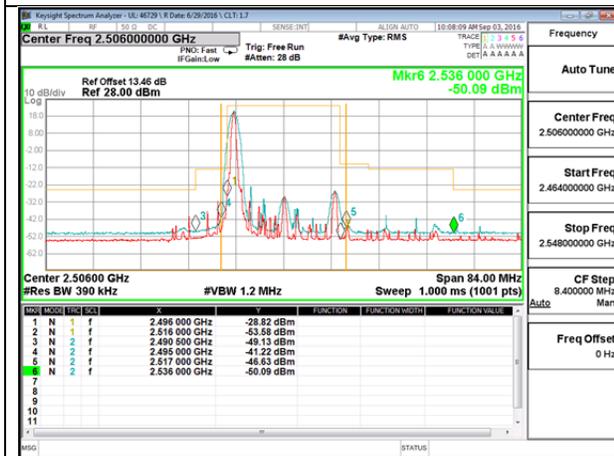


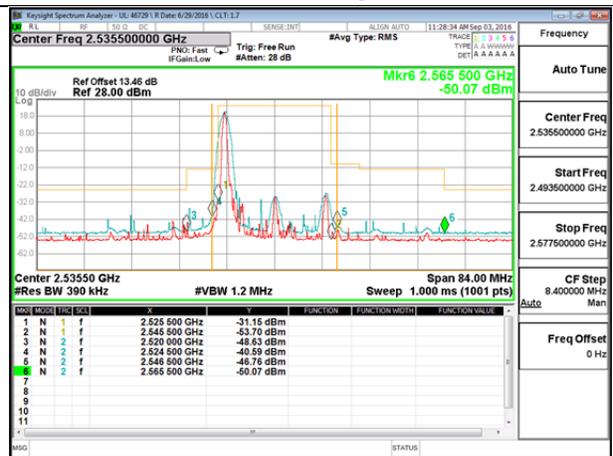
LTE B41 15MHz 16QAM Low Channel FRB



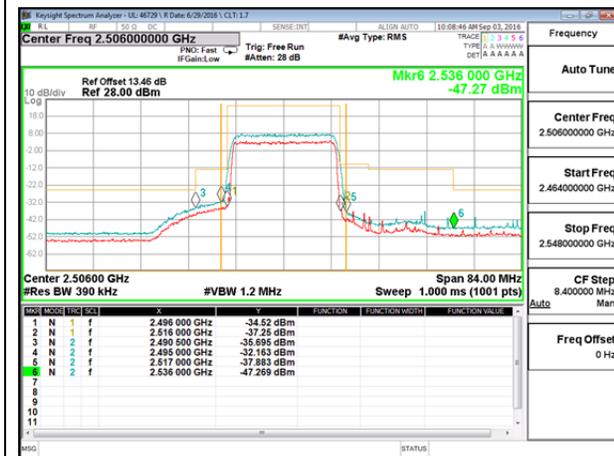
LTE B41 15MHz 16QAM High Channel FRB



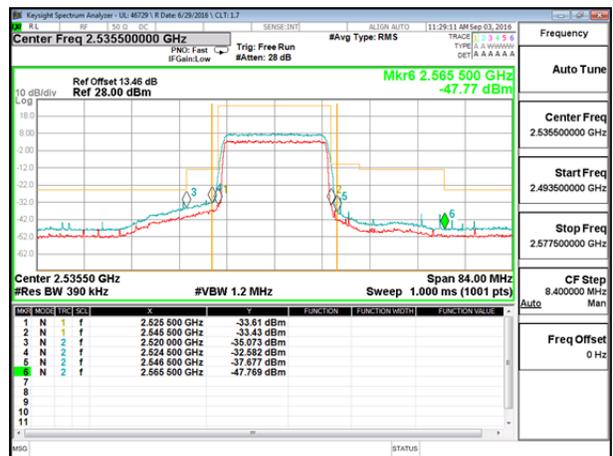
LTE B41 20MHz QPSK Low Channel 1RB



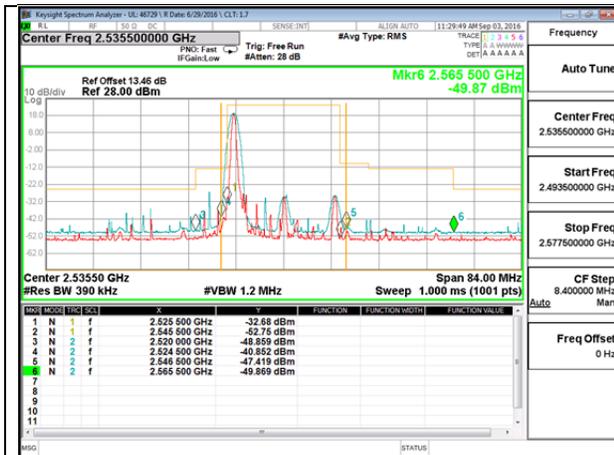
LTE B41 20MHz QPSK High Channel 1RB



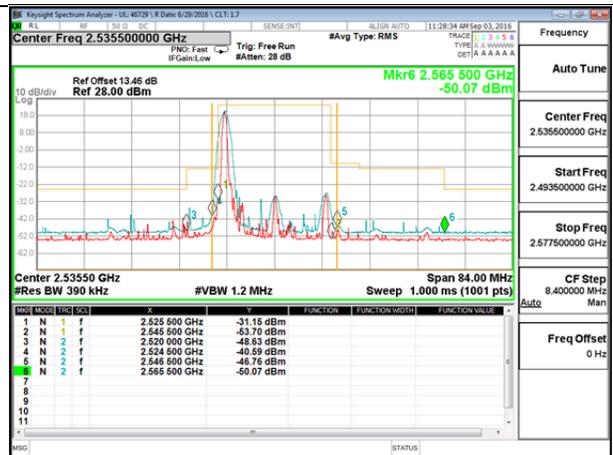
LTE B41 20MHz QPSK Low Channel FRB



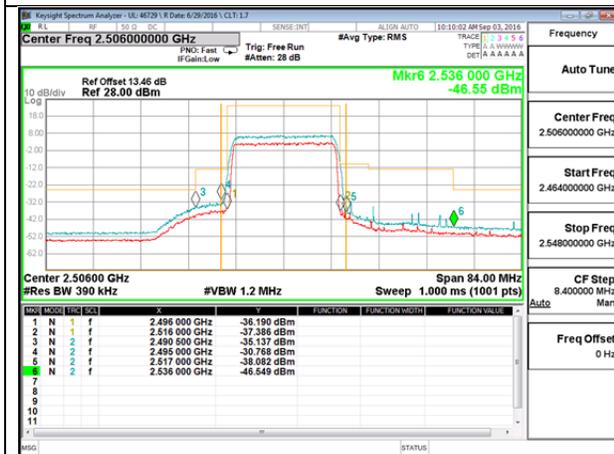
LTE B41 20MHz QPSK High Channel FRB



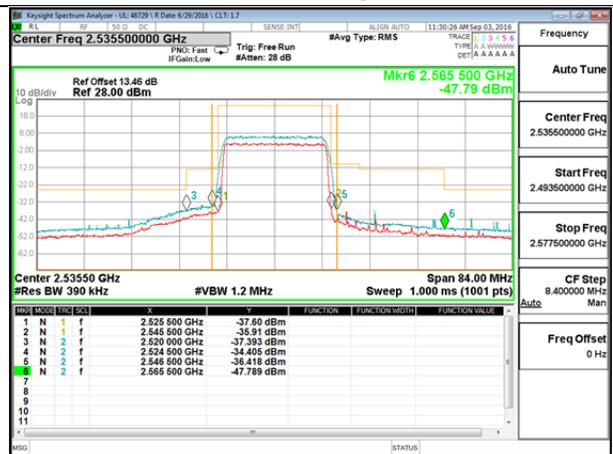
LTE B41 20MHz 16QAM Low Channel 1RB



LTE B41 20MHz 16QAM High Channel 1RB



LTE B41 20MHz 16QAM Low Channel FRB



LTE B41 20MHz 16QAM High Channel FRB

9.4. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, and §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 a maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

RESULTS

9.4.1. OUT OF BAND EMISSIONS RESULT AND PLOTS

GSM Data

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-23.02	-13	-10.02
		836.6	-23.66	-13	-10.66
		848.8	-23.20	-13	-10.20
	EGPRS	824.2	-23.59	-13	-10.59
		836.6	-23.45	-13	-10.45
		848.8	-24.39	-13	-11.39
GSM1900	GPRS	1850.2	-23.74	-13	-10.74
		1880.0	-23.42	-13	-10.42
		1909.8	-23.43	-13	-10.43
	EGPRS	1850.2	-22.90	-13	-9.90
		1880.0	-24.00	-13	-11.00
		1909.8	-22.91	-13	-9.91

GSM Plots



WCDMA Data

Band	Mode	f (MHz)	Spur (dBm)	99% BW	Delta (dB)
Band 2	REL99	1852.4	-33.95	-13	-20.95
		1880	-34.04	-13	-21.04
		1907.6	-33.95	-13	-20.95
	HSDPA	1852.4	-33.99	-13	-20.99
		1880	-33.83	-13	-20.83
		1907.6	-33.19	-13	-20.19
Band 4	REL99	1712.4	-33.88	-13	-20.88
		1732.6	-33.44	-13	-20.44
		1752.6	-33.51	-13	-20.51
	HSDPA	1712.4	-34.03	-13	-21.03
		1732.6	-34.13	-13	-21.13
		1752.6	-34.15	-13	-21.15

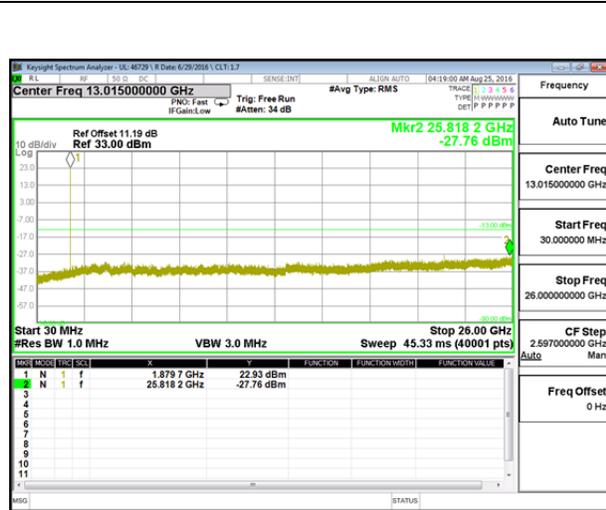
WCDMA Plots



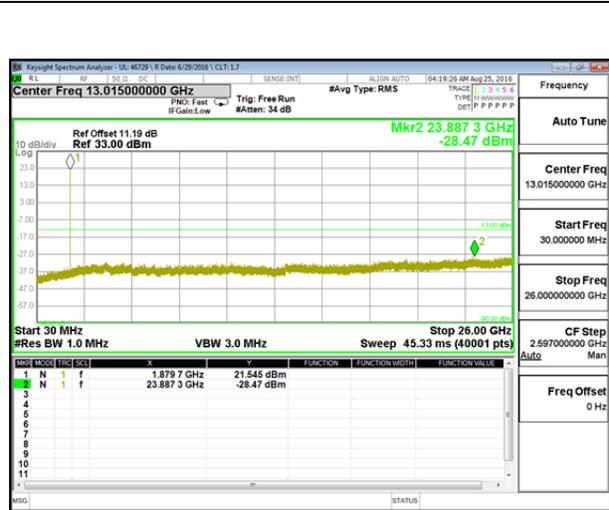
LTE Band 2 Data

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	1850.7	-27.97	-13	-14.97
		1880.0	-27.76	-13	-14.76
		1909.3	-27.26	-13	-14.26
	16QAM	1850.7	-27.11	-13	-14.11
		1880.0	-28.47	-13	-15.47
		1909.3	-27.59	-13	-14.59
3	QPSK	1851.5	-28.24	-13	-15.24
		1880.0	-27.63	-13	-14.63
		1908.5	-28.26	-13	-15.26
	16QAM	1851.5	-27.60	-13	-14.60
		1880.0	-27.91	-13	-14.91
		1908.5	-28.46	-13	-15.46
5	QPSK	1852.5	-27.11	-13	-14.11
		1880.0	-28.11	-13	-15.11
		1907.5	-28.66	-13	-15.66
	16QAM	1852.5	-27.85	-13	-14.85
		1880.0	-27.02	-13	-14.02
		1907.5	-27.93	-13	-14.93
10	QPSK	1855.0	-28.51	-13	-15.51
		1880.0	-27.90	-13	-14.90
		1905.0	-28.03	-13	-15.03
	16QAM	1855.0	-27.94	-13	-14.94
		1880.0	-28.37	-13	-15.37
		1905.0	-28.05	-13	-15.05
15	QPSK	1857.5	-27.75	-13	-14.75
		1880.0	-27.05	-13	-14.05
		1902.5	-27.76	-13	-14.76
	16QAM	1857.5	-27.64	-13	-14.64
		1880.0	-27.86	-13	-14.86
		1902.5	-27.56	-13	-14.56
20	QPSK	1860.0	-27.42	-13	-14.42
		1880.0	-27.63	-13	-14.63
		1900.0	-27.67	-13	-14.67
	16QAM	1860.0	-27.96	-13	-14.96
		1880.0	-28.04	-13	-15.04
		1900.0	-28.19	-13	-15.19

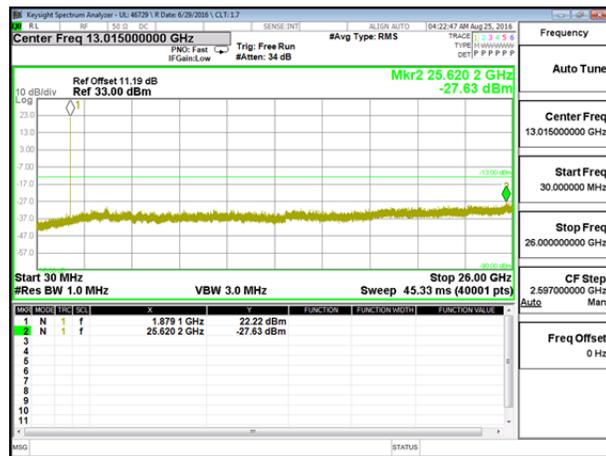
LTE Band 2 Plots



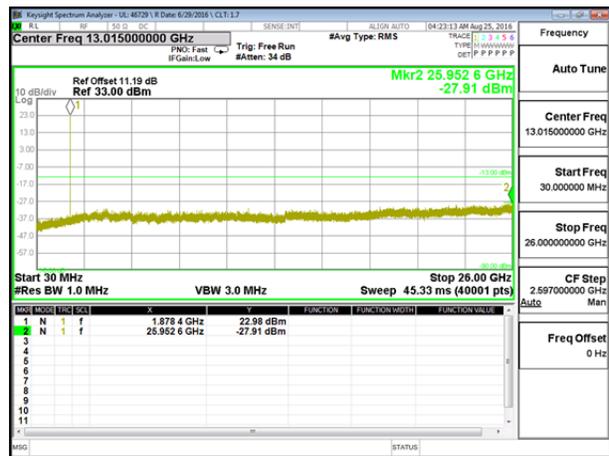
LTE B2 1.4MHz QPSK Middle Channel



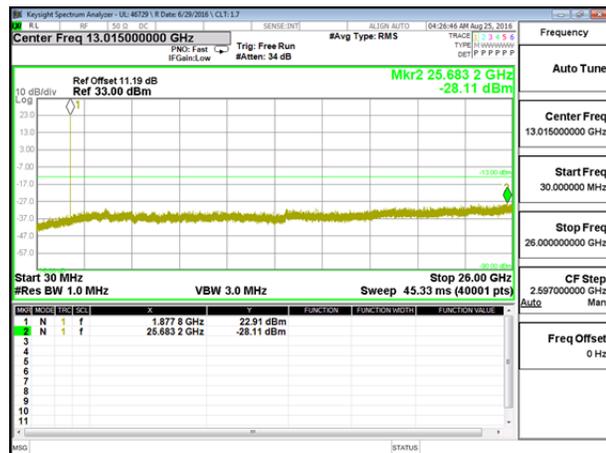
LTE B2 1.4MHz 16QAM Middle Channel



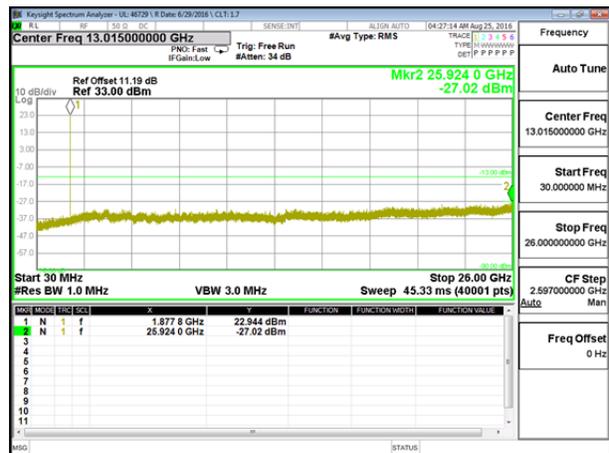
LTE B2 3MHz QPSK Middle Channel



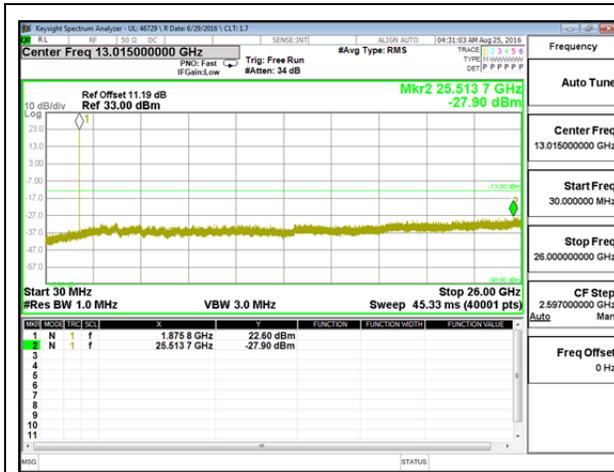
LTE B2 3MHz 16QAM Middle Channel



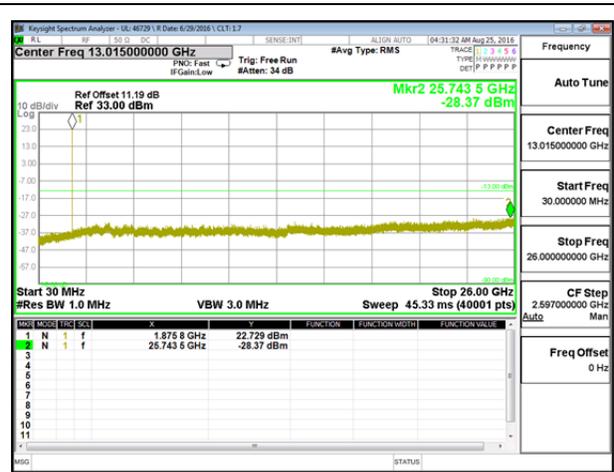
LTE B2 5MHz QPSK Middle Channel



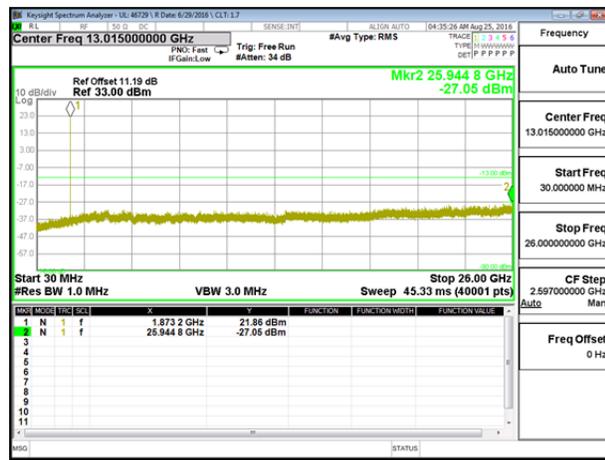
LTE B2 5MHz 16QAM Middle Channel



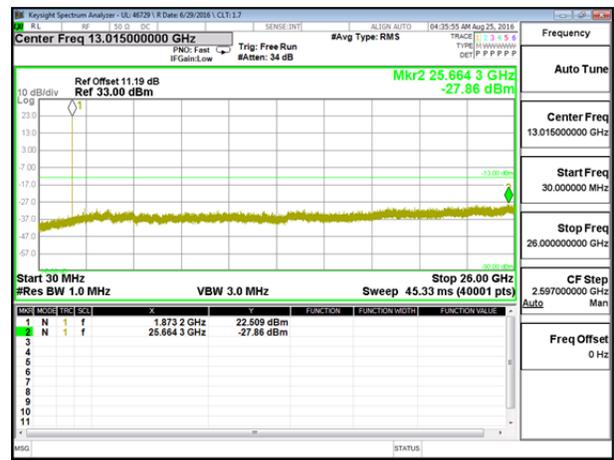
LTE B2 10MHz QPSK Middle Channel



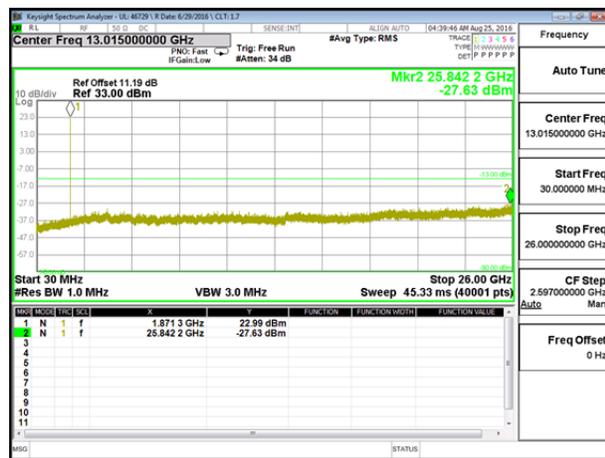
LTE B2 10MHz 16QAM Middle Channel



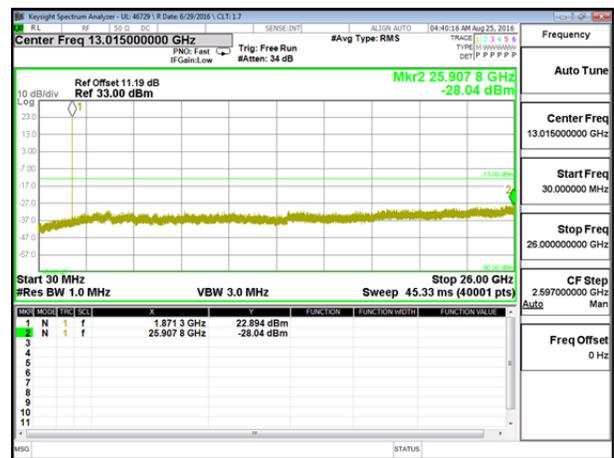
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



LTE B2 20MHz QPSK Middle Channel

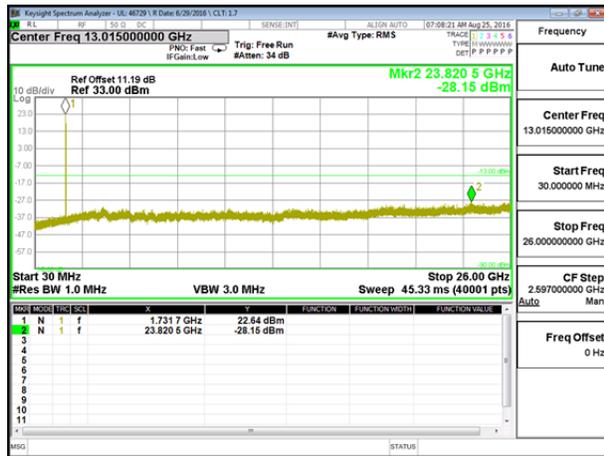


LTE B2 20MHz 16QAM Middle Channel

LTE Band 4 Data

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	1710.7	-28.40	-13	-15.40
		1732.5	-28.15	-13	-15.15
		1754.3	-27.38	-13	-14.38
	16QAM	1710.7	-28.57	-13	-15.57
		1732.5	-27.54	-13	-14.54
		1754.3	-28.47	-13	-15.47
3	QPSK	1711.5	-27.82	-13	-14.82
		1732.5	-27.92	-13	-14.92
		1753.5	-27.95	-13	-14.95
	16QAM	1711.5	-28.66	-13	-15.66
		1732.5	-26.91	-13	-13.91
		1753.5	-28.14	-13	-15.14
5	QPSK	1712.5	-27.53	-13	-14.53
		1732.5	-27.77	-13	-14.77
		1752.5	-28.21	-13	-15.21
	16QAM	1712.5	-27.20	-13	-14.20
		1732.5	-27.16	-13	-14.16
		1752.5	-26.75	-13	-13.75
10	QPSK	1715.0	-27.36	-13	-14.36
		1732.5	-27.91	-13	-14.91
		1750.0	-28.16	-13	-15.16
	16QAM	1715.0	-27.97	-13	-14.97
		1732.5	-27.64	-13	-14.64
		1750.0	-27.84	-13	-14.84
15	QPSK	1717.5	-27.37	-13	-14.37
		1732.5	-28.33	-13	-15.33
		1747.5	-27.82	-13	-14.82
	16QAM	1717.5	-28.39	-13	-15.39
		1732.5	-27.83	-13	-14.83
		1747.5	-27.84	-13	-14.84
20	QPSK	1720.0	-28.37	-13	-15.37
		1732.5	-28.04	-13	-15.04
		1745.0	-27.40	-13	-14.40
	16QAM	1720.0	-28.19	-13	-15.19
		1732.5	-27.94	-13	-14.94
		1745.0	-27.10	-13	-14.10

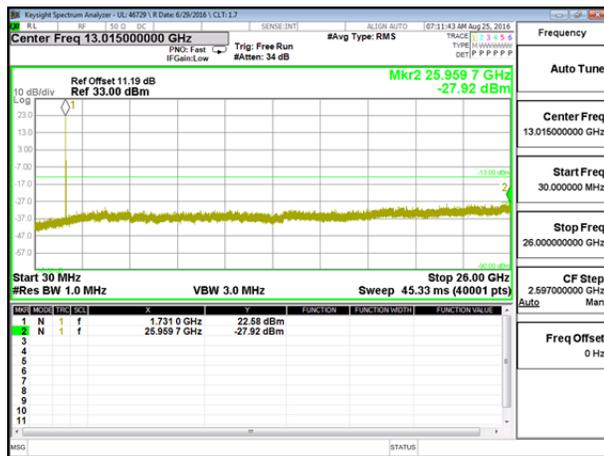
LTE Band 4 Plots



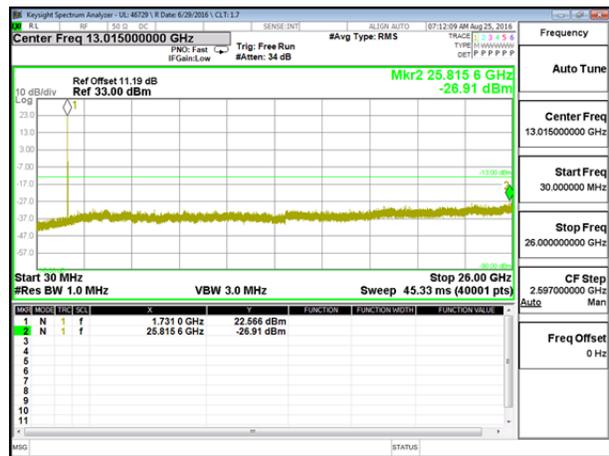
LTE B4 1.4MHz QPSK Middle Channel



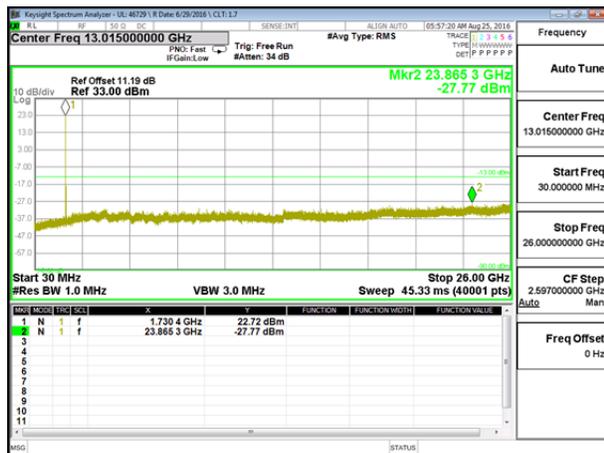
LTE B4 1.4MHz 16QAM Middle Channel



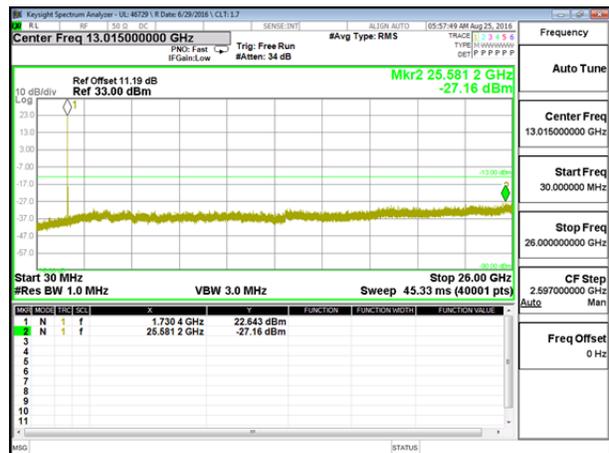
LTE B4 3MHz QPSK Middle Channel



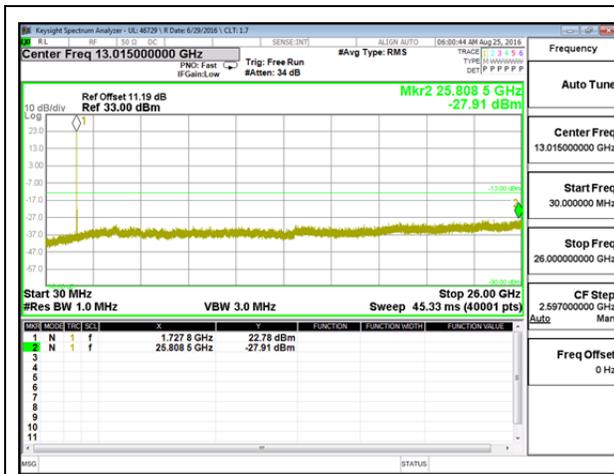
LTE B4 3MHz 16QAM Middle Channel



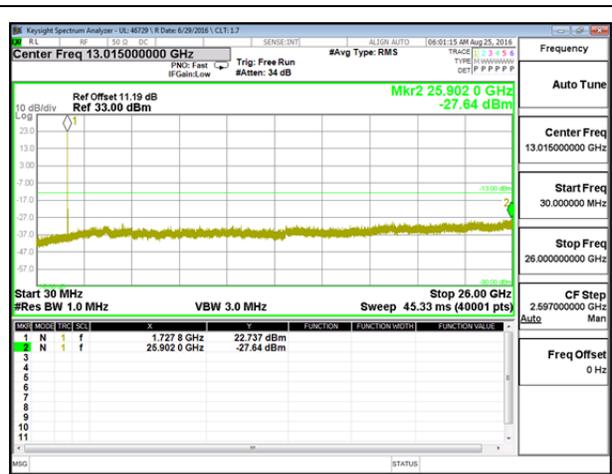
LTE B4 5MHz QPSK Middle Channel



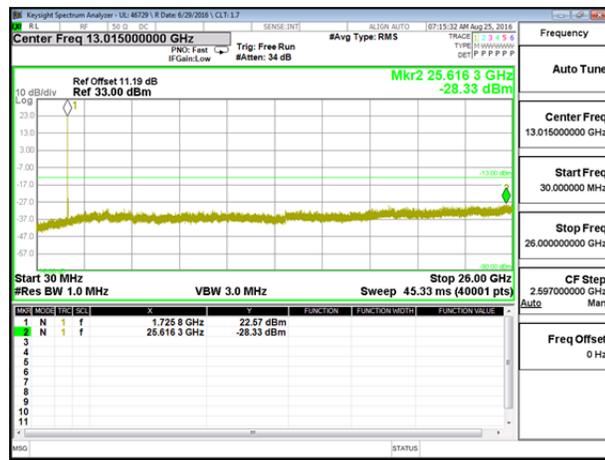
LTE B4 5MHz 16QAM Middle Channel



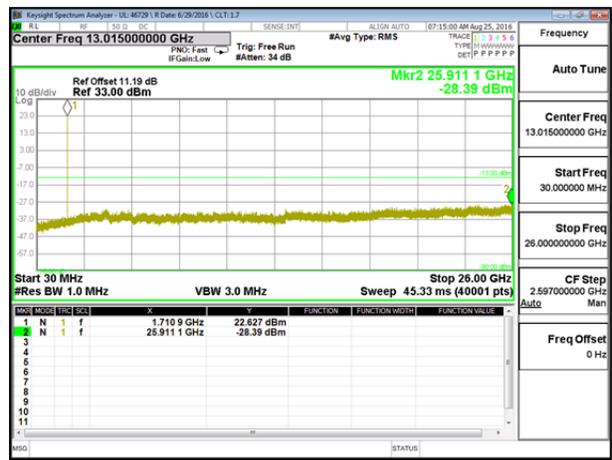
LTE B4 10MHz QPSK Middle Channel



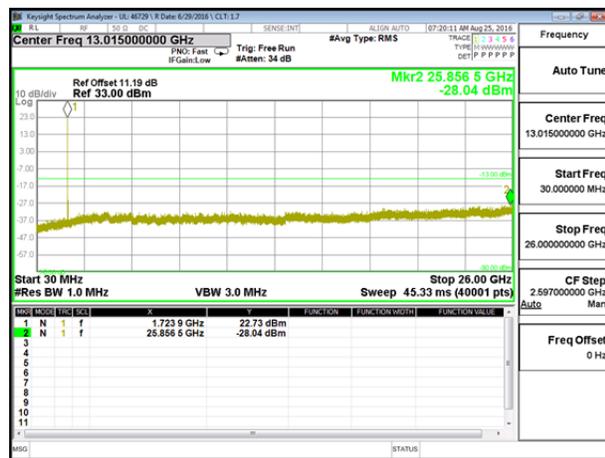
LTE B4 10MHz 16QAM Middle Channel



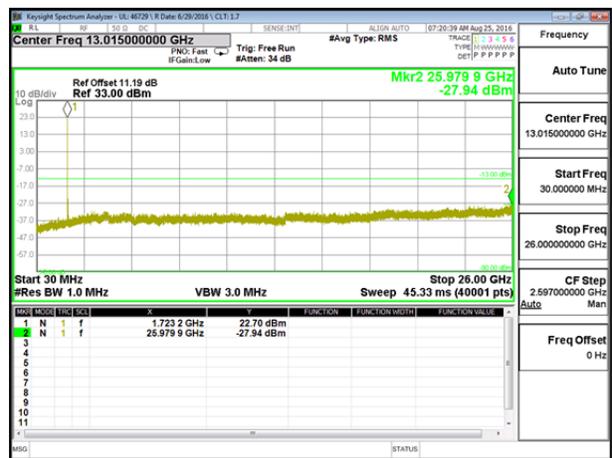
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel



LTE B4 20MHz QPSK Middle Channel

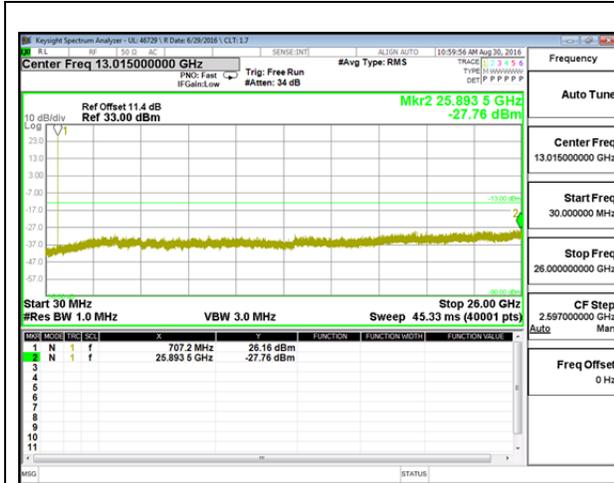


LTE B4 20MHz 16QAM Middle Channel

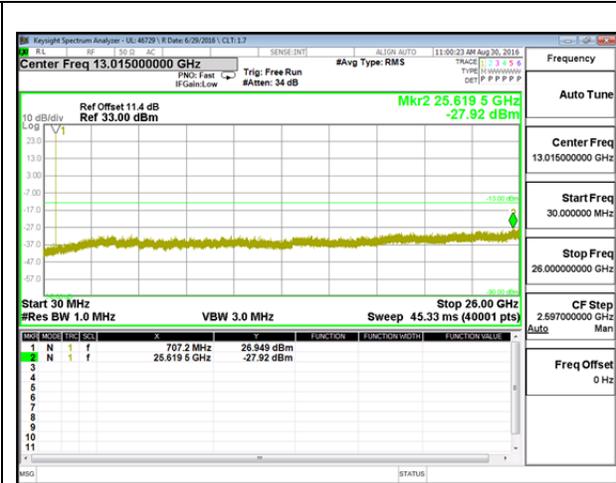
LTE Band 12 Data

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	699.7	-27.48	-13	-14.48
		707.5	-27.76	-13	-14.76
		715.3	-27.50	-13	-14.50
	16QAM	699.7	-28.15	-13	-15.15
		707.5	-27.92	-13	-14.92
		715.3	-27.95	-13	-14.95
3	QPSK	700.5	-28.15	-13	-15.15
		707.5	-27.84	-13	-14.84
		714.5	-25.35	-13	-12.35
	16QAM	700.5	-27.32	-13	-14.32
		707.5	-27.06	-13	-14.06
		714.5	-27.71	-13	-14.71
5	QPSK	701.5	-28.41	-13	-15.41
		707.5	-27.75	-13	-14.75
		713.5	-28.04	-13	-15.04
	16QAM	701.5	-28.04	-13	-15.04
		707.5	-28.10	-13	-15.10
		713.5	-28.02	-13	-15.02
10	QPSK	704.0	-28.14	-13	-15.14
		707.5	-27.10	-13	-14.10
		711.0	-27.48	-13	-14.48
	16QAM	704.0	-27.76	-13	-14.76
		707.5	-27.62	-13	-14.62
		711.0	-28.34	-13	-15.34

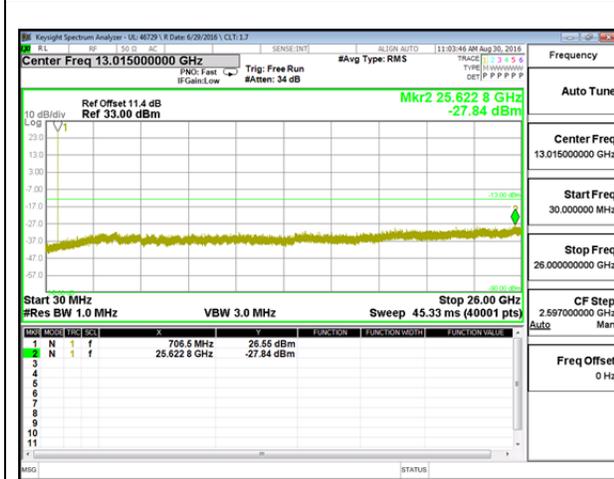
LTE Band 12 Plots



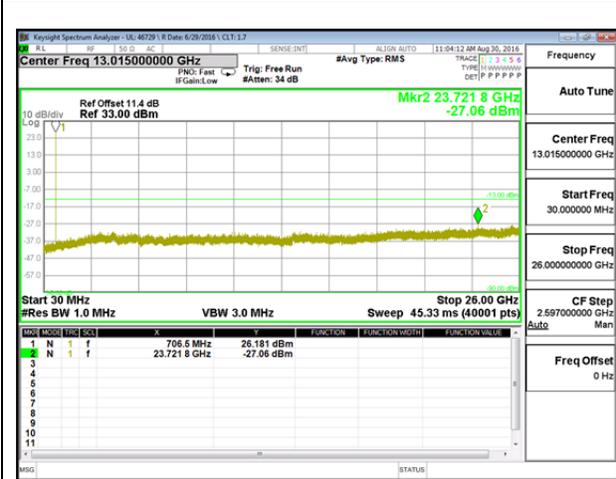
LTE B12 1.4MHz QPSK Middle Channel



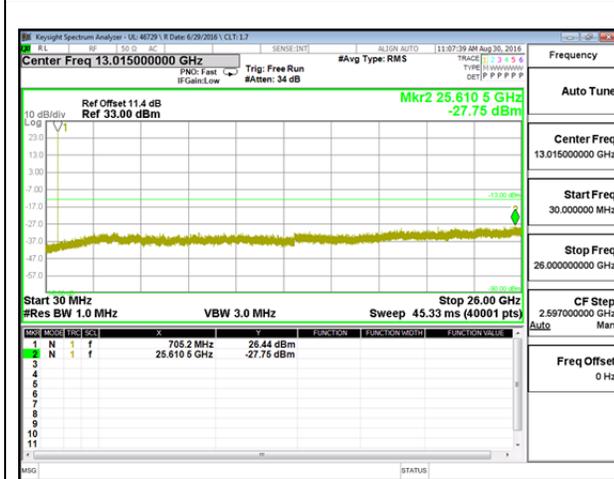
LTE B12 1.4MHz 16QAM Middle Channel



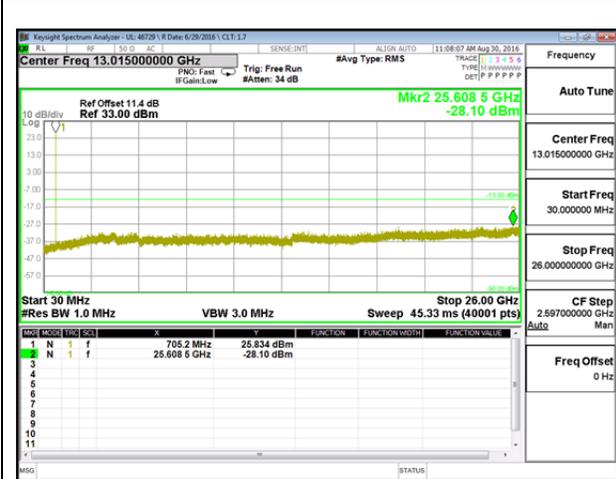
LTE B12 3MHz QPSK Middle Channel



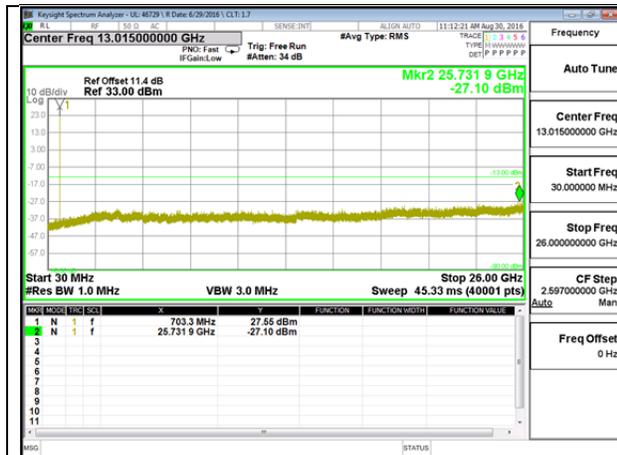
LTE B12 3MHz 16QAM Middle Channel



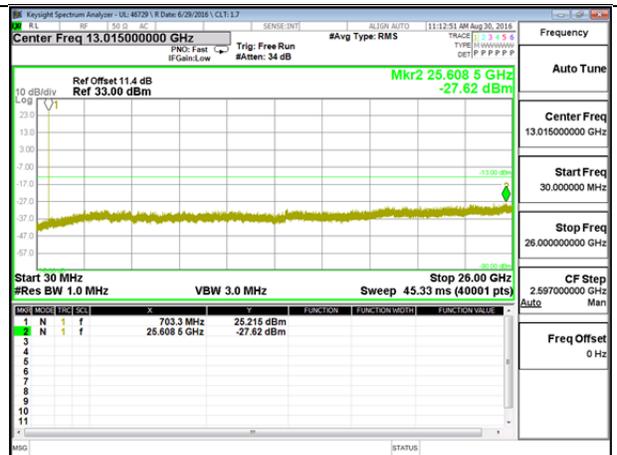
LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel



LTE B12 10MHz QPSK Middle Channel

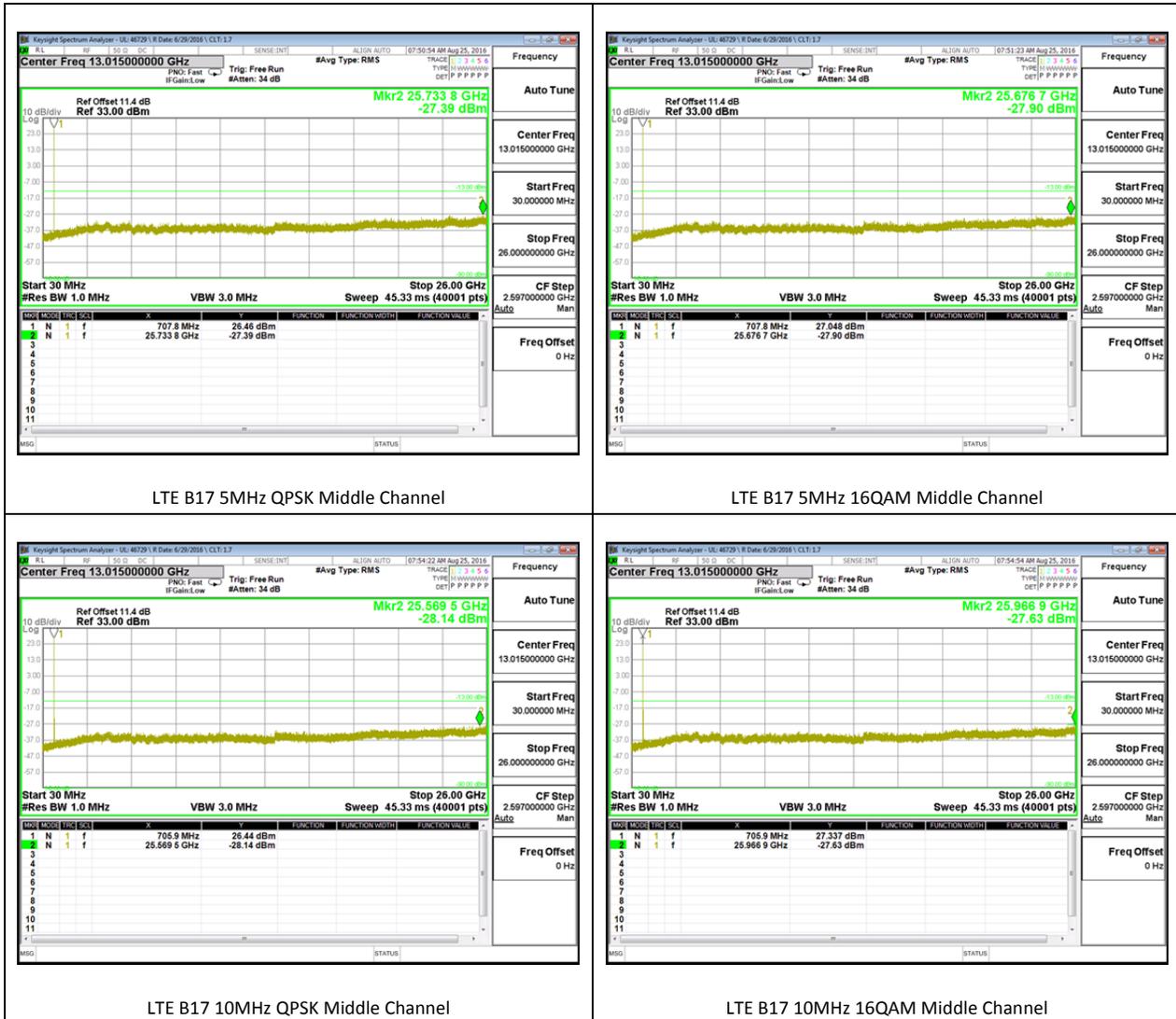


LTE B12 10MHz 16QAM Middle Channel

LTE Band 17 Data

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
5	QPSK	706.5	-27.61	-13	-14.61
		710.0	-27.39	-13	-14.39
		713.5	-27.50	-13	-14.50
	16QAM	706.5	-27.41	-13	-14.41
		710.0	-27.90	-13	-14.90
		713.5	-27.31	-13	-14.31
10	QPSK	709.0	-28.21	-13	-15.21
		710.0	-28.14	-13	-15.14
		711.0	-27.34	-13	-14.34
	16QAM	709.0	-27.72	-13	-14.72
		710.0	-27.63	-13	-14.63
		711.0	-27.42	-13	-14.42

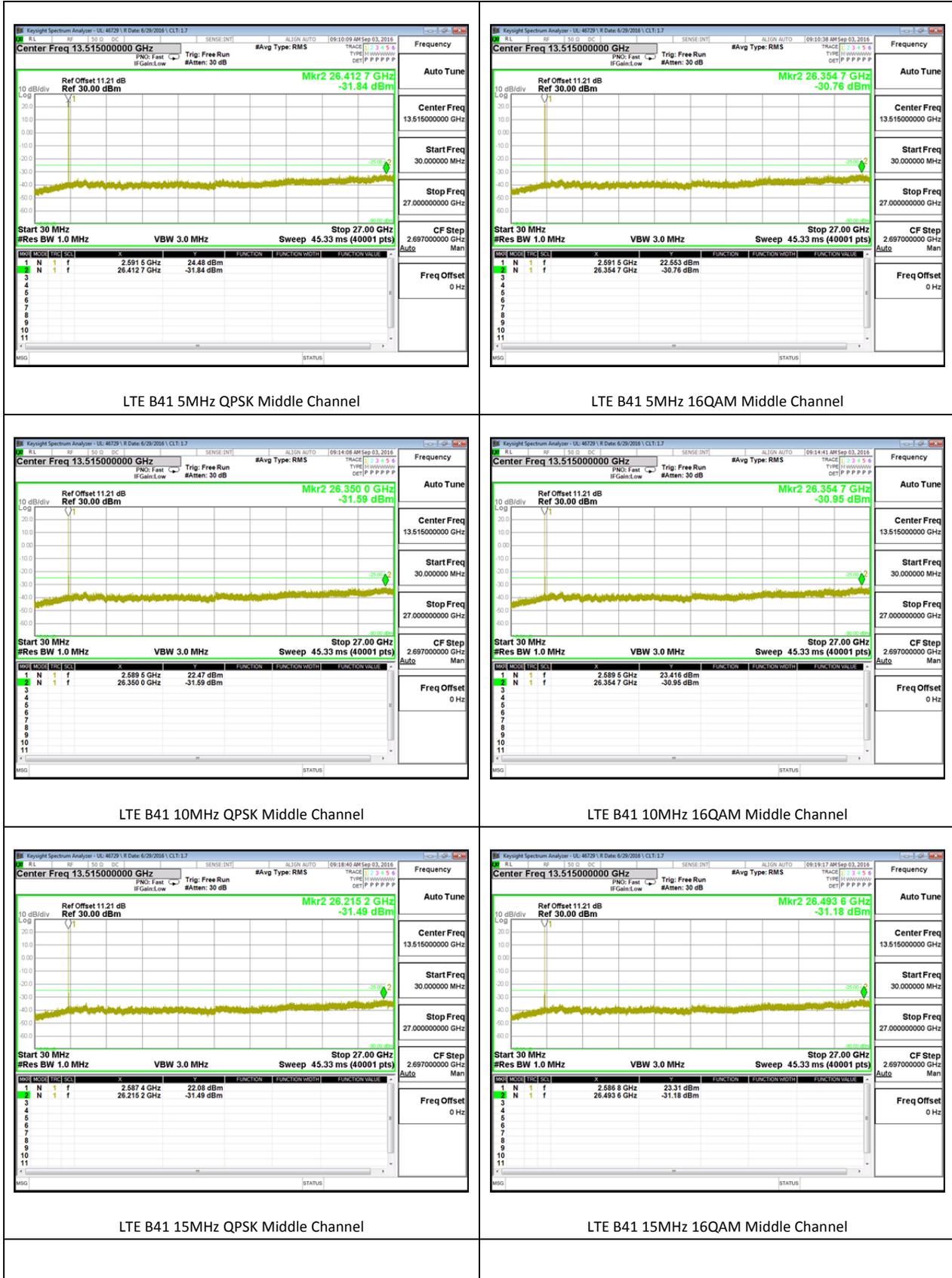
LTE Band 17 Plots

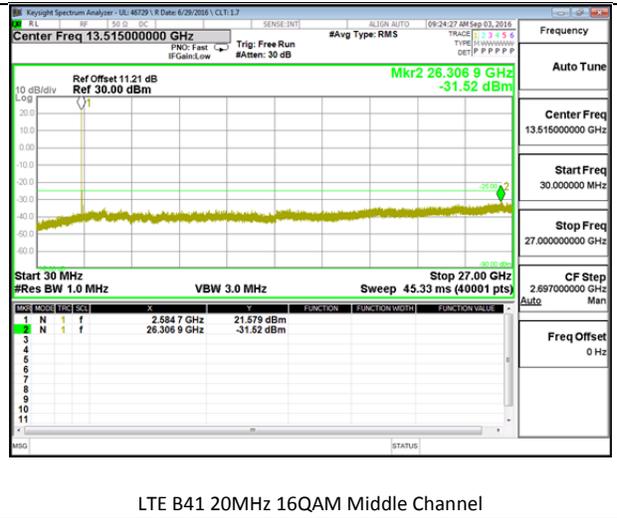
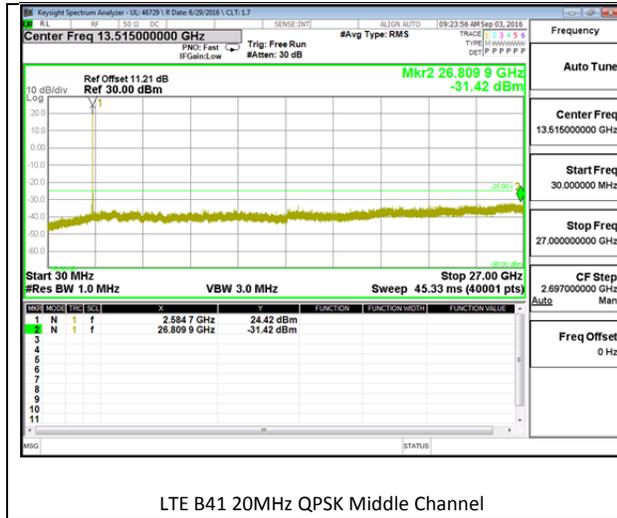


LTE Band 41 Data

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
5	QPSK	2498.5	-31.58	-25	-18.58
		2593.0	-31.84	-25	-18.84
		2687.5	-31.60	-25	-18.60
	16QAM	2498.5	-31.61	-25	-18.61
		2593.0	-30.76	-25	-17.76
		2687.5	-30.84	-25	-17.84
10	QPSK	2501.0	-30.97	-25	-17.97
		2593.0	-31.59	-25	-18.59
		2685.0	-31.03	-25	-18.03
	16QAM	2501.0	-31.33	-25	-18.33
		2593.0	-30.95	-25	-17.95
		2685.0	-31.29	-25	-18.29
15	QPSK	2503.5	-31.43	-25	-18.43
		2593.0	-31.49	-25	-18.49
		2682.5	-31.01	-25	-18.01
	16QAM	2503.5	-31.43	-25	-18.43
		2593.0	-31.18	-25	-18.18
		2682.5	-31.42	-25	-18.42
20	QPSK	2506.0	-31.18	-25	-18.18
		2593.0	-31.42	-25	-18.42
		2680.0	-31.47	-25	-18.47
	16QAM	2506.0	-31.36	-25	-18.36
		2593.0	-31.52	-25	-18.52
		2680.0	-31.77	-25	-18.77

LTE Band 41 Plots





LTE B41 20MHz QPSK Middle Channel

LTE B41 20MHz 16QAM Middle Channel

9.5. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

RESULTS

Test Information

Date: 2016-09-09

Tester: Ron Reichard

9.5.1. GSM 850

GPRS

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600033	0.004	2.5
3.80	40	836.600034	0.002	2.5
3.80	30	836.600031	0.005	2.5
3.80	20	836.600036	0	2.5
3.80	10	836.600035	0.001	2.5
3.80	0	836.600036	0.000	2.5
3.80	-10	836.600037	-0.002	2.5
3.80	-20	836.600038	-0.003	2.5
3.80	-30	836.600038	-0.003	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.600036	0	2.5
4.20	20	836.6000341	0.002	2.5
3.60	20	836.600034	0.002	2.5

EGPRS

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600038	0.002	2.5
3.80	40	836.600035	0.005	2.5
3.80	30	836.600031	0.010	2.5
3.80	20	836.600039	0	2.5
3.80	10	836.600040	-0.001	2.5
3.80	0	836.600042	-0.003	2.5
3.80	-10	836.600044	-0.005	2.5
3.80	-20	836.600047	-0.009	2.5
3.80	-30	836.600049	-0.012	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.600039	0	2.5
4.20	20	836.6000408	-0.002	2.5
3.60	20	836.6000417	-0.003	2.5

9.5.2. LTE2

QPSK, 20 MHz Bandwidth

Reference Frequency: PCS Mid Channel Limit: to stay +/- 2.5 ppm =				
		1880	MHz @ 20°C	
		4700.000	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1880.000006	0.000	2.5
3.80	40	1880.000005	0.001	2.5
3.80	30	1879.999994	0.006	2.5
3.80	20	1880.000006	0	2.5
3.80	10	1880.000007	-0.001	2.5
3.80	0	1880.000007	0.000	2.5
3.80	-10	1880.000009	-0.001	2.5
3.80	-20	1880.000007	0.000	2.5
3.80	-30	1880.000007	-0.001	2.5

Reference Frequency: PCS Mid Channel Limit: to stay +/- 2.5 ppm =				
		1880	MHz @ 20°C	
		4700.000	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1880.000006	0	2.5
4.20	20	1880.000005	0.000	2.5
3.60	20	1880.000007	0.000	2.5

16QAM, 20 MHz Bandwidth

Reference Frequency: PCS Mid Channel Limit: to stay +/- 2.5 ppm =				
		1880	MHz @ 20°C	
		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	0.014	2.5
3.80	40	1880.000016	0.000	2.5
3.80	30	1880.000015	0.000	2.5
3.80	20	1880.000015	0	2.5
3.80	10	1880.000018	-0.001	2.5
3.80	0	1880.000016	0.000	2.5
3.80	-10	1880.000017	-0.001	2.5
3.80	-20	1880.000017	-0.001	2.5
3.80	-30	1880.000016	-0.001	2.5

Reference Frequency: PCS Mid Channel Limit: to stay +/- 2.5 ppm =				
		1880	MHz @ 20°C	
		4700.000	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1880.000015	0	2.5
4.20	20	1880.000015	0.000	2.5
3.60	20	1880.000016	0.000	2.5

9.5.3. LTE4

QPSK, 20MHz Bandwidth

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.499995	0.000	2.5
3.80	40	1732.499994	0.001	2.5
3.80	30	1732.499994	0.001	2.5
3.80	20	1732.499996	0	2.5
3.80	10	1732.500006	-0.006	2.5
3.80	0	1732.500004	-0.005	2.5
3.80	-10	1732.500007	-0.006	2.5
3.80	-20	1732.500006	-0.006	2.5
3.80	-30	1732.500007	-0.007	2.5

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.499996	0	2.5
4.20	20	1732.500005	-0.005	2.5
3.60	20	1732.500006	-0.006	2.5

16QAM, 20MHz Bandwidth

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500005	-0.009	2.5
3.80	40	1732.499991	0.000	2.5
3.80	30	1732.499991	0.000	2.5
3.80	20	1732.499990	0	2.5
3.80	10	1732.499992	-0.001	2.5
3.80	0	1732.499991	0.000	2.5
3.80	-10	1732.499992	-0.001	2.5
3.80	-20	1732.499992	-0.001	2.5
3.80	-30	1732.499992	-0.001	2.5

Reference Frequency: PCS Mid Channel 1732.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.499990	0	2.5
4.20	20	1732.499992	-0.001	2.5
3.60	20	1732.499992	-0.001	2.5

9.5.4. LTE12

QPSK, 10 MHz Bandwidth

Reference Frequency: PCS Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.499997	0.000	2.5
3.80	40	707.499997	0.001	2.5
3.80	30	707.499997	0.001	2.5
3.80	20	707.499997	0	2.5
3.80	10	707.500003	-0.008	2.5
3.80	0	707.499997	0.001	2.5
3.80	-10	707.500002	-0.007	2.5
3.80	-20	707.500003	-0.008	2.5
3.80	-30	707.500003	-0.008	2.5

Reference Frequency: PCS Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	707.499997	0	2.5
4.20	20	707.4999977	-0.001	2.5
3.60	20	707.4999974	0.000	2.5

16QAM, 10 MHz Bandwidth

Reference Frequency: PCS Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	707.500003	0.020	2.5
3.80	40	707.500017	0.001	2.5
3.80	30	707.500017	0.000	2.5
3.80	20	707.500017	0	2.5
3.80	10	707.500017	-0.001	2.5
3.80	0	707.500018	-0.001	2.5
3.80	-10	707.500019	-0.003	2.5
3.80	-20	707.499987	0.043	2.5
3.80	-30	707.500018	-0.002	2.5

Reference Frequency: PCS Mid Channel 707.5 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 1768.750 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	707.500017	0	2.5
4.20	20	707.5000181	-0.002	2.5
3.60	20	707.5000173	0.000	2.5

9.5.5. LTE17

QPSK, 10 MHz Bandwidth

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	709.999997	0.009	2.5
3.80	40	710.000004	-0.001	2.5
3.80	30	709.999996	0.010	2.5
3.80	20	710.000003	0	2.5
3.80	10	710.000003	0.001	2.5
3.80	0	710.000003	0.000	2.5
3.80	-10	710.000003	0.000	2.5
3.80	-20	710.000003	0.000	2.5
3.80	-30	710.000004	-0.001	2.5

Reference Frequency: PCS Mid Channel 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	710.000003	0	2.5
4.20	20	710.000003	0.000	2.5
3.60	20	710.000028	0.001	2.5

16QAM, 10 MHz Bandwidth

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	710.000009	-0.026	2.5
3.80	40	709.999986	0.007	2.5
3.80	30	709.999990	0.001	2.5
3.80	20	709.999991	0	2.5
3.80	10	709.999991	-0.001	2.5
3.80	0	709.999991	-0.001	2.5
3.80	-10	709.999991	-0.001	2.5
3.80	-20	710.000018	-0.039	2.5
3.80	-30	709.999990	0.001	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	709.999991	0	2.5
4.20	20	709.999919	-0.002	2.5
3.60	20	709.999913	-0.001	2.5

9.5.6. LTE41

QPSK, 20 MHz Bandwidth

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2592.999966	0.025	2.5
3.80	40	2592.999978	0.020	2.5
3.80	30	2593.000026	0.001	2.5
3.80	20	2593.000030	0	2.5
3.80	10	2593.000030	0.000	2.5
3.80	0	2593.000054	-0.009	2.5
3.80	-10	2593.000061	-0.012	2.5
3.80	-20	2593.000046	-0.006	2.5
3.80	-30	2593.000036	-0.002	2.5

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	2593.000030	0	2.5
4.20	20	2593.00003	0.000	2.5
3.60	20	2593.00003	0.000	2.5

16QAM, 20 MHz Bandwidth

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2592.999968	0.024	2.5
3.80	40	2592.999967	0.025	2.5
3.80	30	2593.000021	0.004	2.5
3.80	20	2593.000031	0	2.5
3.80	10	2593.000032	0.000	2.5
3.80	0	2593.000056	-0.009	2.5
3.80	-10	2593.000054	-0.009	2.5
3.80	-20	2593.000056	-0.009	2.5
3.80	-30	2593.000030	0.001	2.5

Reference Frequency: PCS Mid Channel 2593 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	2593.000031	0	2.5
4.20	20	2593.000031	0.000	2.5
3.60	20	2593.000033	-0.001	2.5

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, and §27.

LIMITS

22.913 (a) - The ERPs 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 (handheld 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 (handheld devices) are limited to 3 watts ERP; (LTE B17)

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

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

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

TEST PROCEDURE

ANSI / TIA / EIA 603D 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.