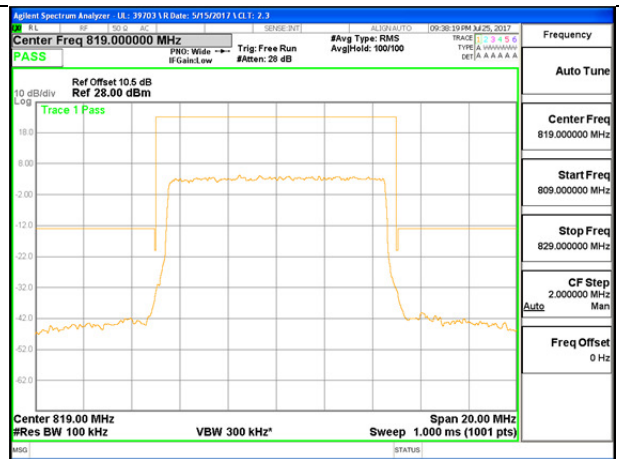
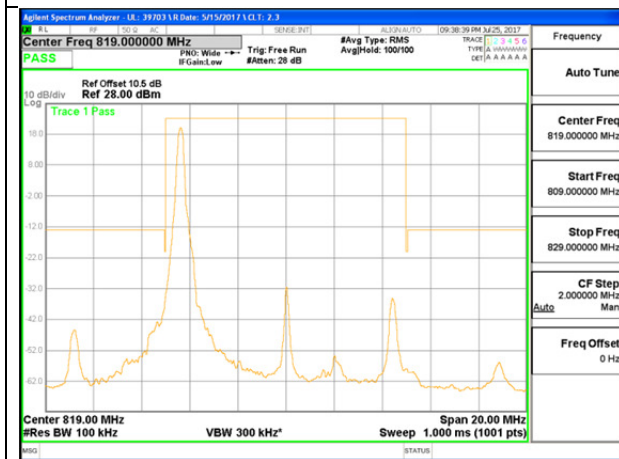


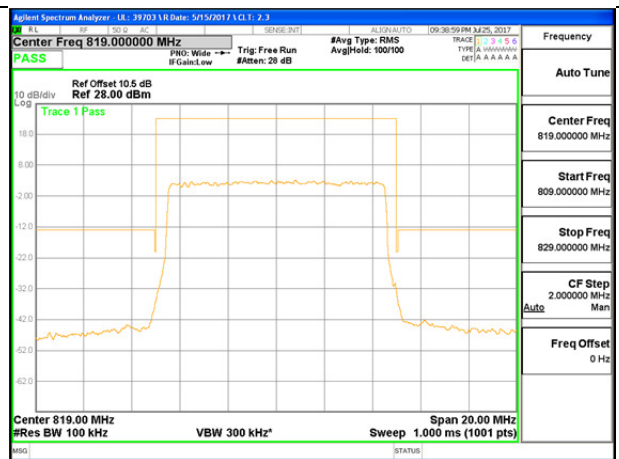
LTE B26 10 MHz QPSK Low Channel 1RB



LTE B26 10 MHz QPSK Low Channel FRB

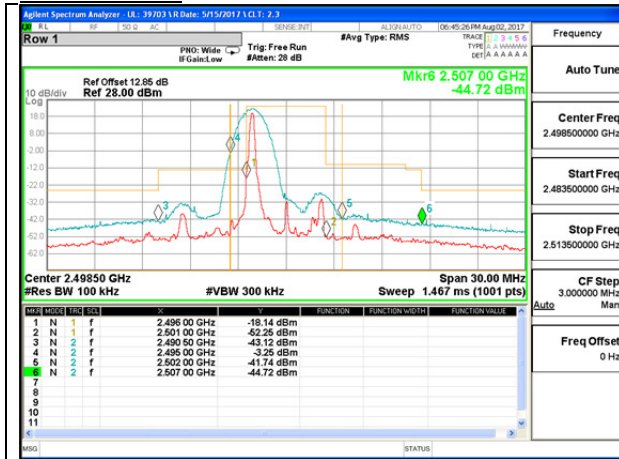


LTE B26 10 MHz 16QAM Low Channel 1RB

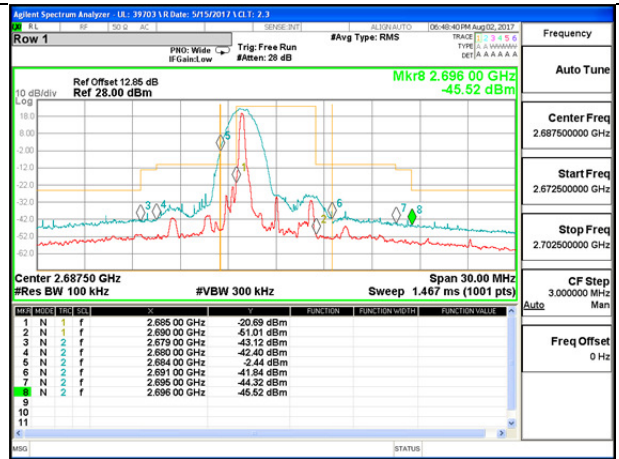


LTE B26 10 MHz 16QAM Low Channel FRB

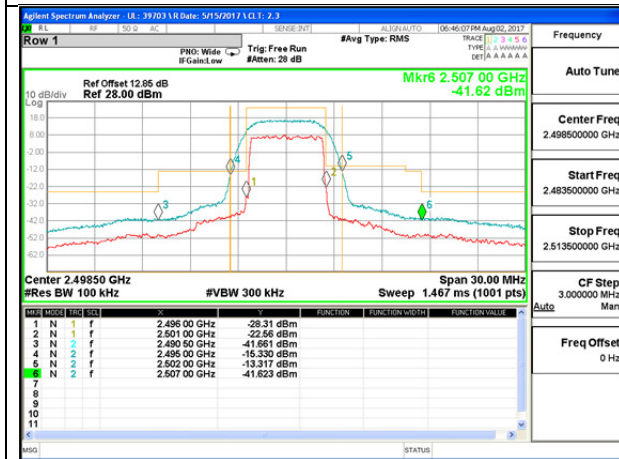
LTE Band 41



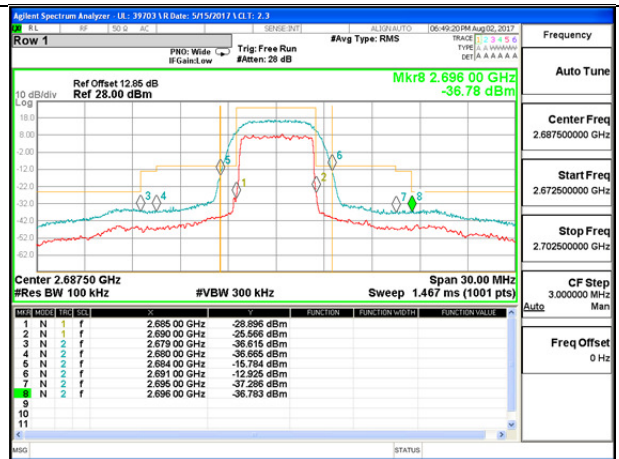
LTE B41 5MHz QPSK Low Channel 1RB



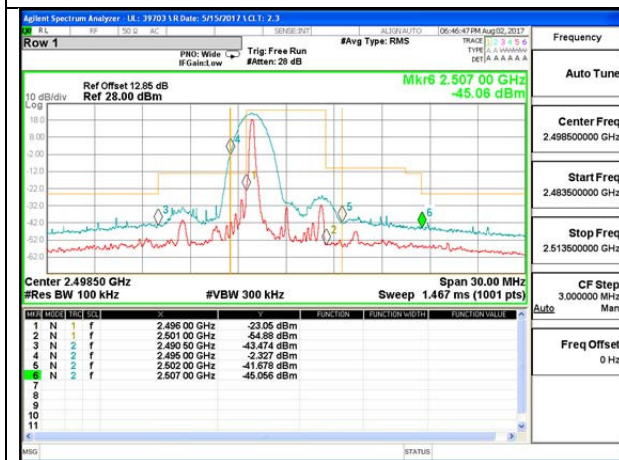
LTE B41 5MHz QPSK High Channel 1RB



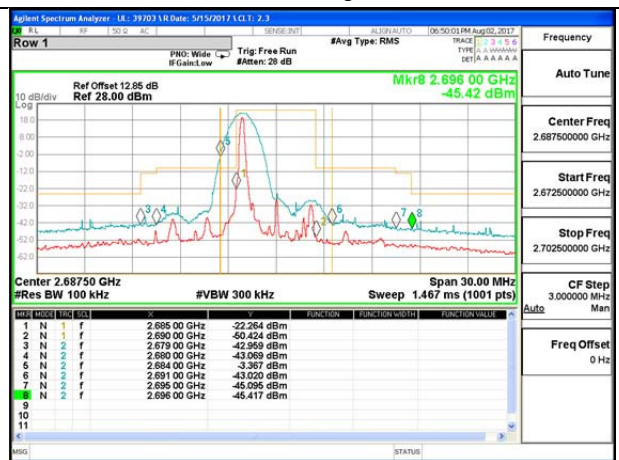
LTE B41 5MHz QPSK Low Channel FRB



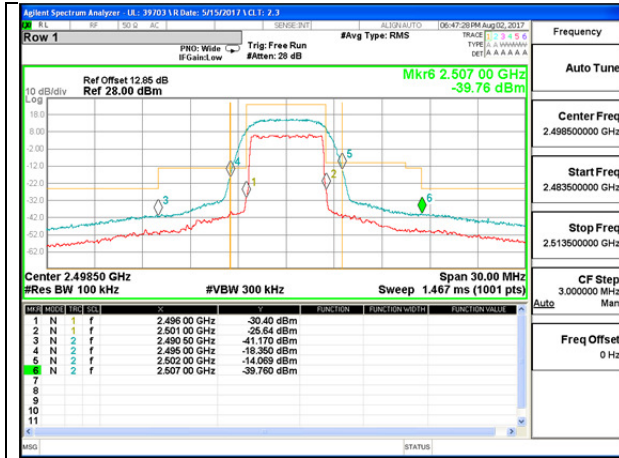
LTE B41 5MHz QPSK High Channel FRB



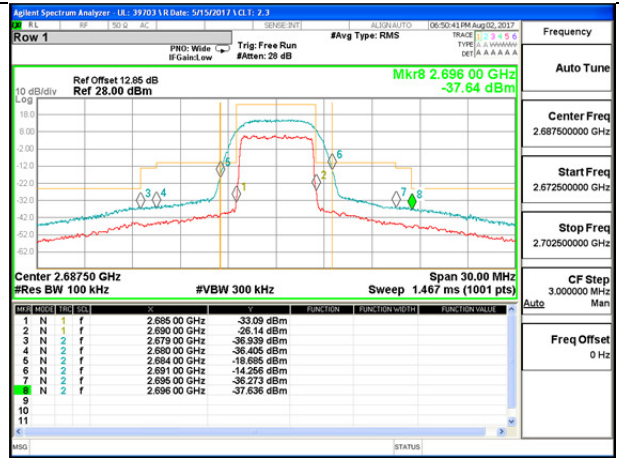
LTE B41 5MHz 16QAM Low Channel 1RB



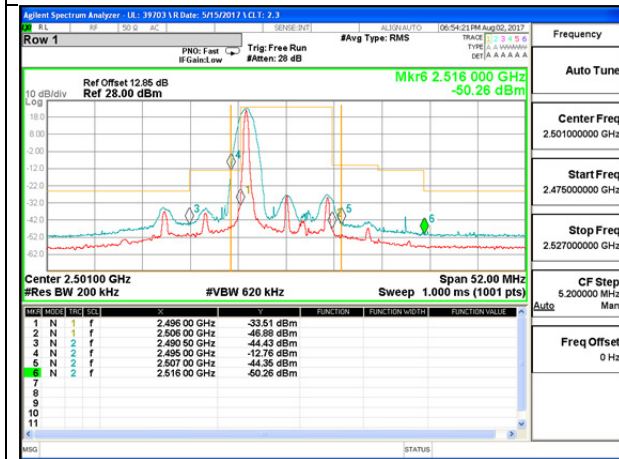
LTE B41 5MHz 16QAM High Channel 1RB



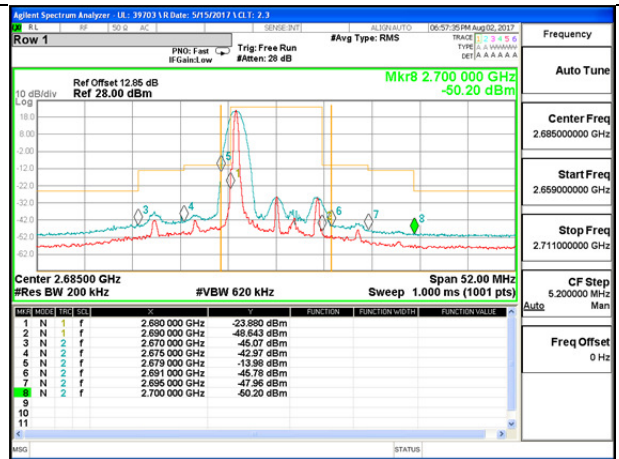
LTE B41 5MHz 16QAM Low Channel FRB



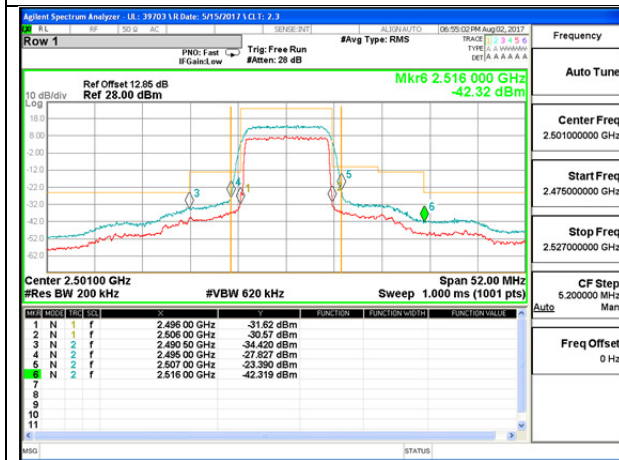
LTE B41 5MHz 16QAM High Channel FRB



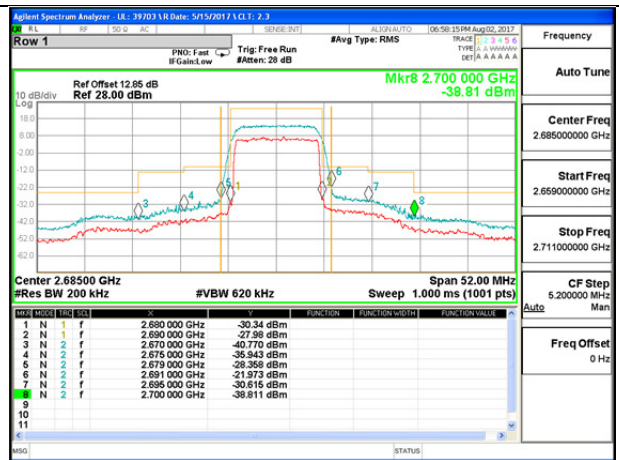
LTE B41 10MHz QPSK Low Channel 1RB



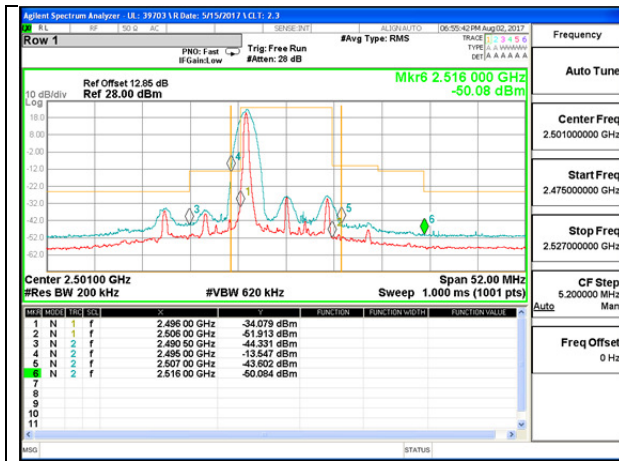
LTE B41 10MHz QPSK High Channel 1RB



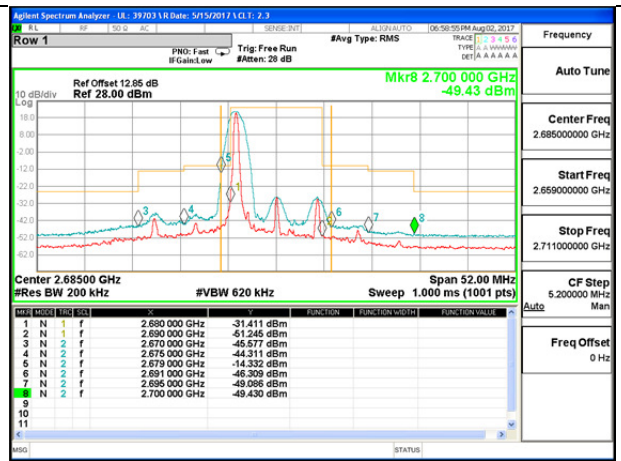
LTE B41 10MHz QPSK Low Channel FRB



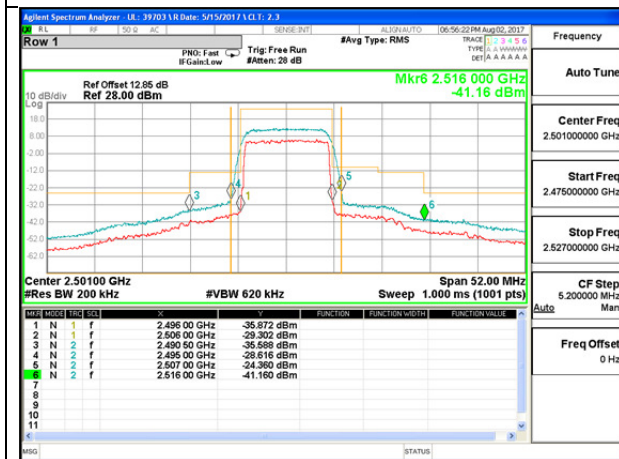
LTE B41 10MHz QPSK High Channel FRB



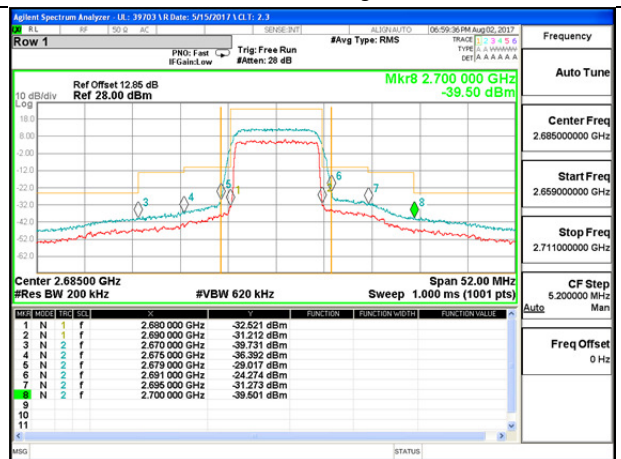
LTE B41 10MHz 16QAM Low Channel 1RB



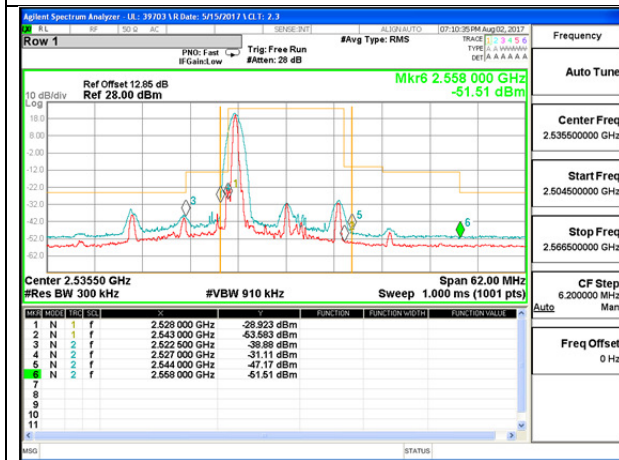
LTE B41 10MHz 16QAM High Channel 1RB



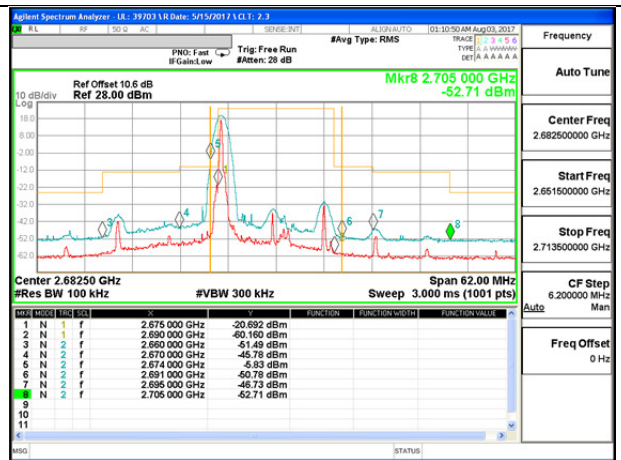
LTE B41 10MHz 16QAM Low Channel FRB



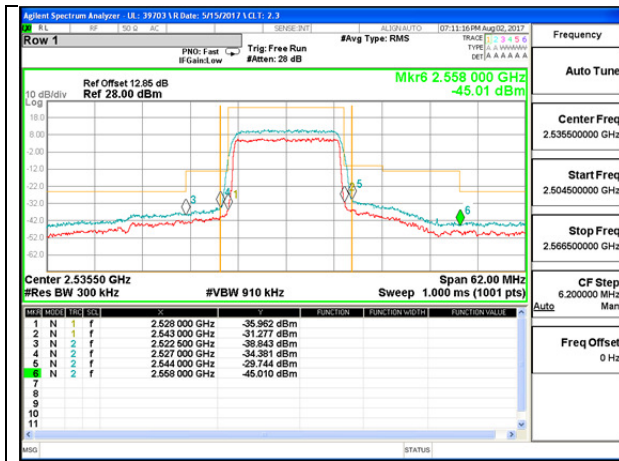
LTE B41 10MHz 16QAM High Channel FRB



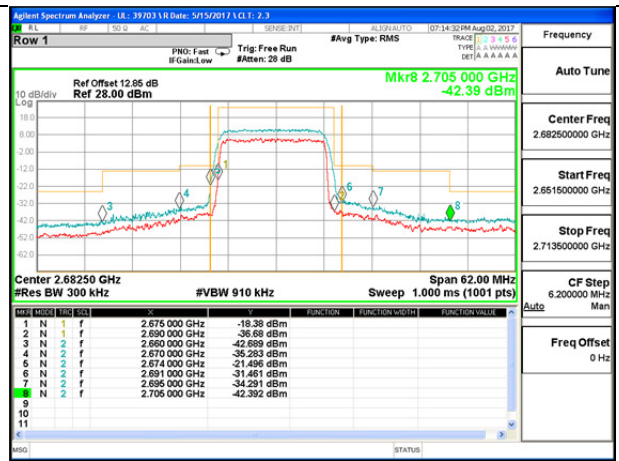
LTE B41 15MHz QPSK Low Channel 1RB



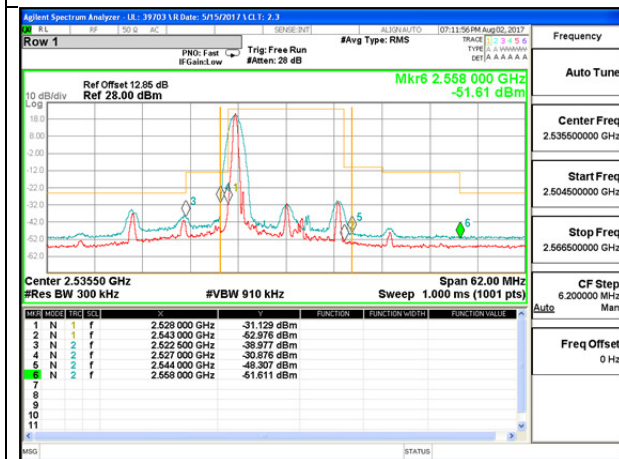
LTE B41 15MHz QPSK High Channel 1RB



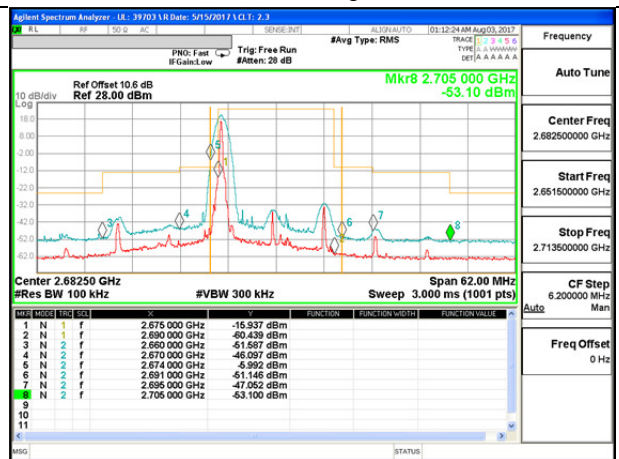
LTE B41 15MHz QPSK Low Channel FRB



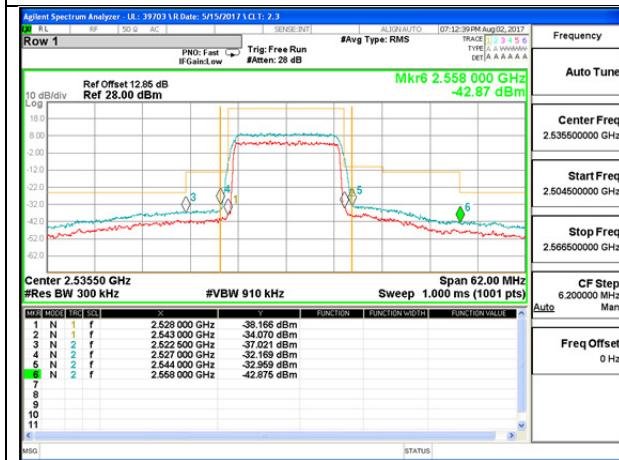
LTE B41 15MHz QPSK High Channel FRB



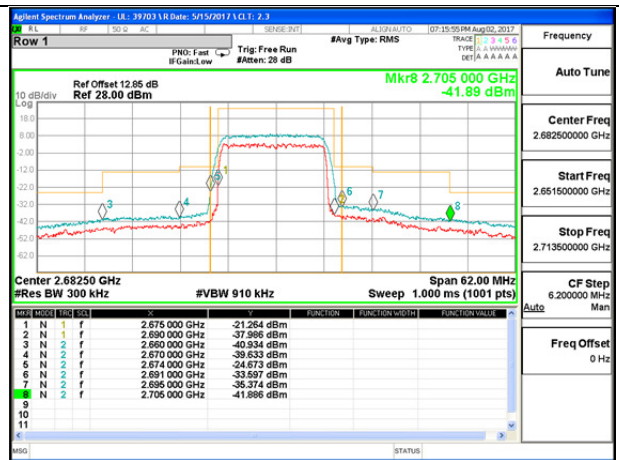
LTE B41 15MHz 16QAM Low Channel 1RB



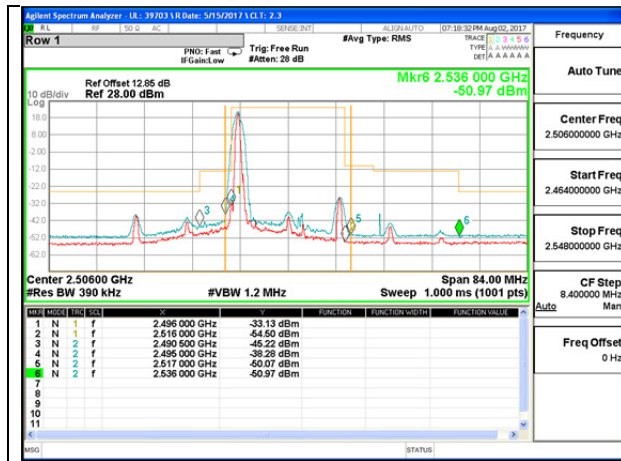
LTE B41 15MHz 16QAM High Channel 1RB



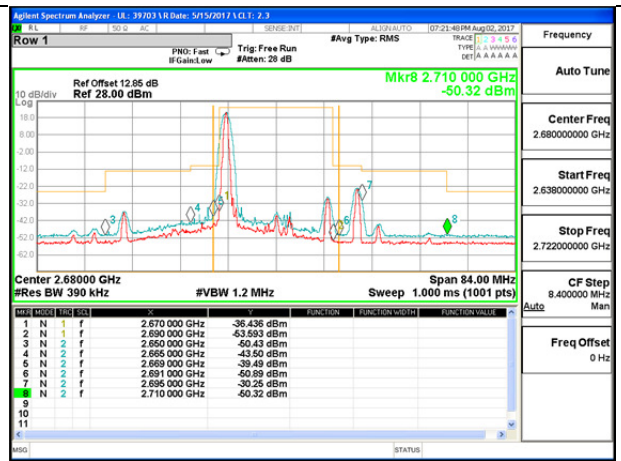
LTE B41 15MHz 16QAM Low Channel FRB



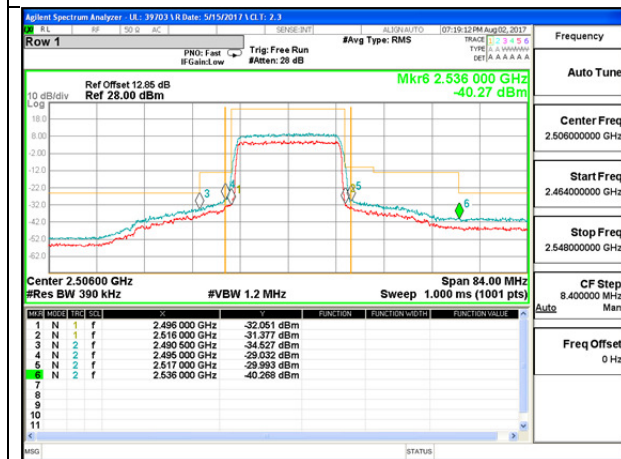
LTE B41 15MHz 16QAM High Channel FRB



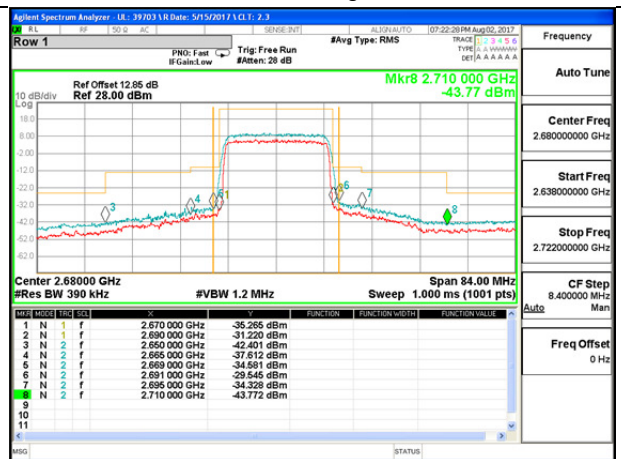
LTE B41 20MHz QPSK Low Channel 1RB



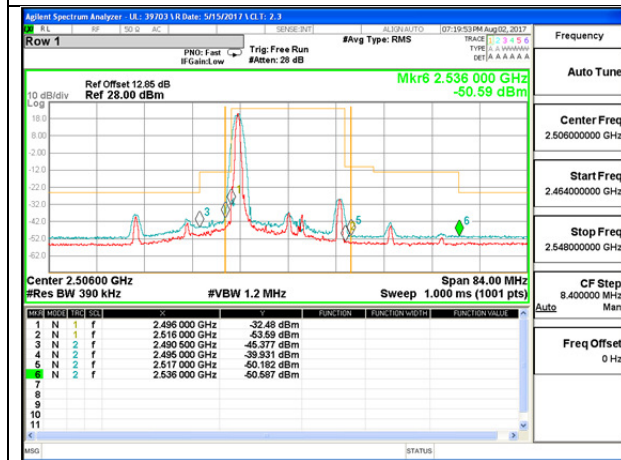
LTE B41 20MHz QPSK High Channel 1RB



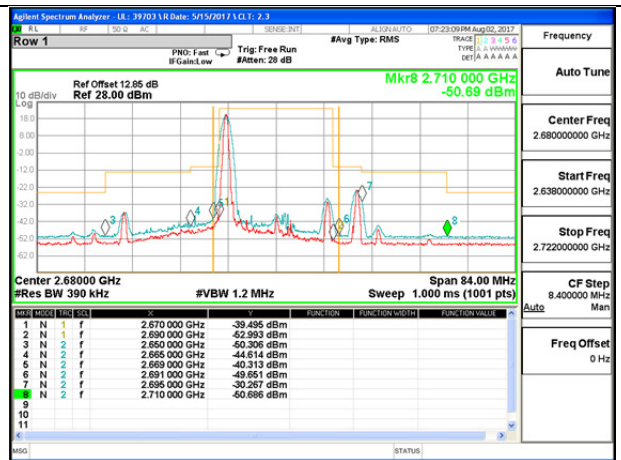
LTE B41 20MHz QPSK Low Channel FRB



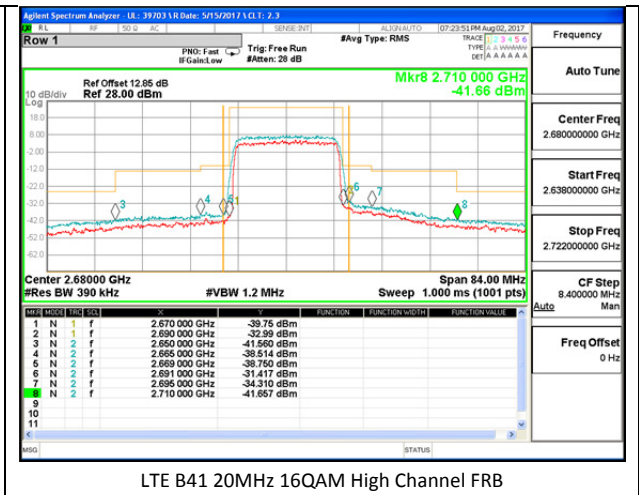
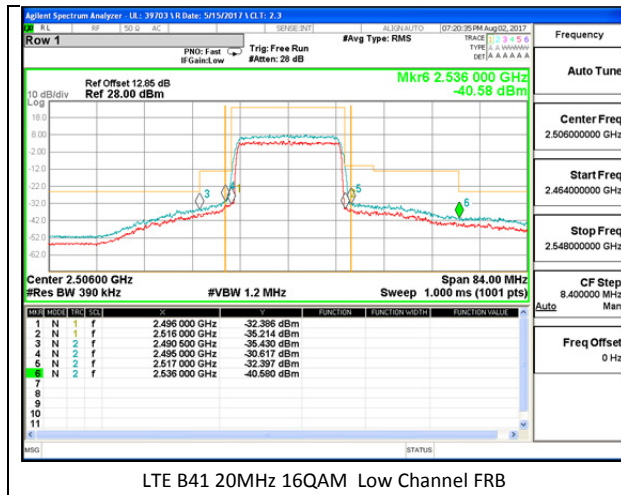
LTE B41 20MHz QPSK High Channel FRB



LTE B41 20MHz 16QAM Low Channel 1RB



LTE B41 20MHz 16QAM High Channel 1RB



16. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53 and §90.691

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

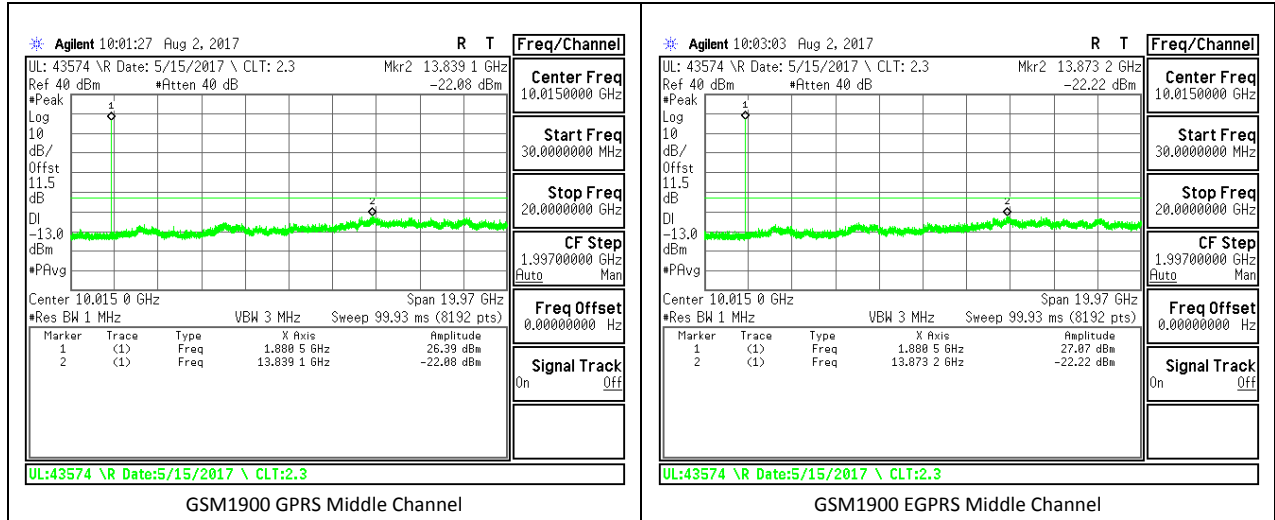
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in a maximum hold mode using a peak detector to ensure that the worst-case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

RESULTS

16.1. OUT OF BAND EMISSIONS RESULT AND PLOTS

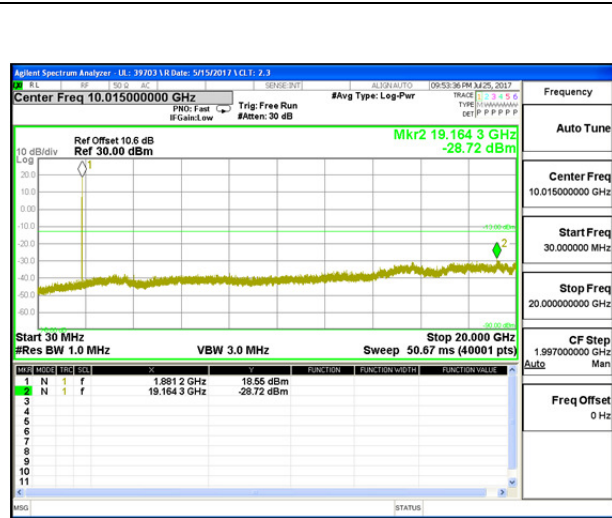
GSM

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM 1900	GPRS	1850.2	-22.11	-13	-9.11
		1880	-22.08	-13	-9.08
		1909.8	-22.09	-13	-9.09
	EGPRS	1850.2	-22.39	-13	-9.39
		1880	-22.22	-13	-9.22
		1909.8	-21.4	-13	-8.40

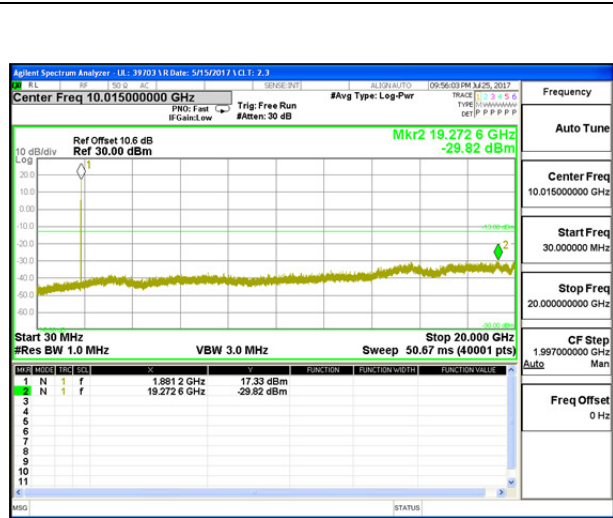


WCDMA

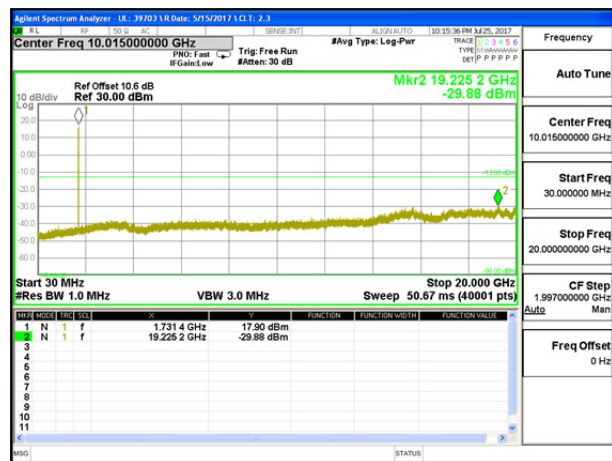
Band	Mode	f (MHz)	Spur (dBm)	99% BW (MHz)	Delta (dB)
Band 2	REL99	1852.4	-29.73	-13	-16.73
		1880	-28.72	-13	-15.72
		1907.6	-29.61	-13	-16.61
	HSDPA	1852.4	-29.18	-13	-16.18
		1880	-29.82	-13	-16.82
		1907.6	-30.16	-13	-17.16
Band 4	REL99	1712.4	-29.65	-13	-16.65
		1732.6	-29.88	-13	-16.88
		1752.6	-29.18	-13	-16.18
	HSDPA	1712.4	-29.69	-13	-16.69
		1732.6	-29.63	-13	-16.63
		1752.6	-29.26	-13	-16.26
Band 5	REL99	826.4	-22.16	-13	-9.16
		836.6	-22.43	-13	-9.43
		846.6	-22.21	-13	-9.21
	HSDPA	826.4	-22.45	-13	-9.45
		836.6	-22.12	-13	-9.12
		846.6	-21.80	-13	-8.80



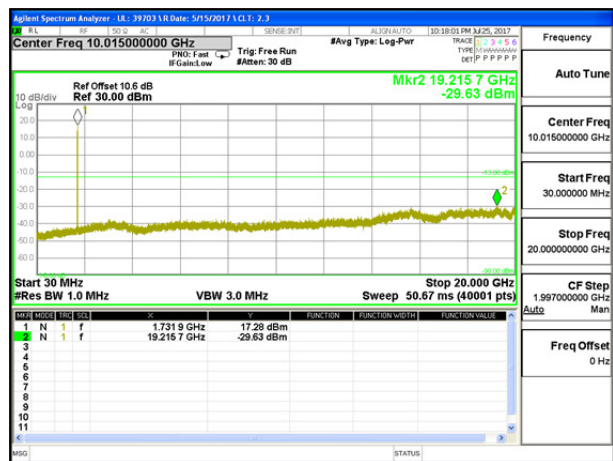
B2 REL99 Middle Channel



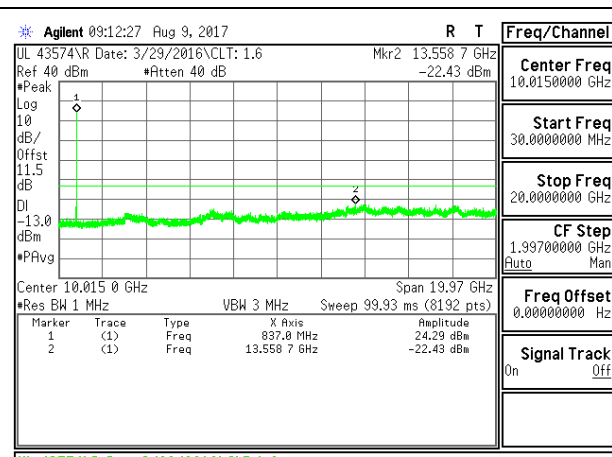
B2 HSDPA Middle Channel



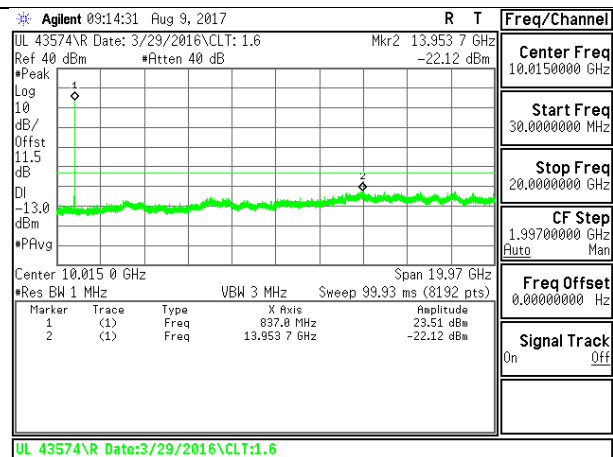
B4 REL99 Middle Channel



B4 HSDPA Middle Channel



B5 REL99 Middle Channel

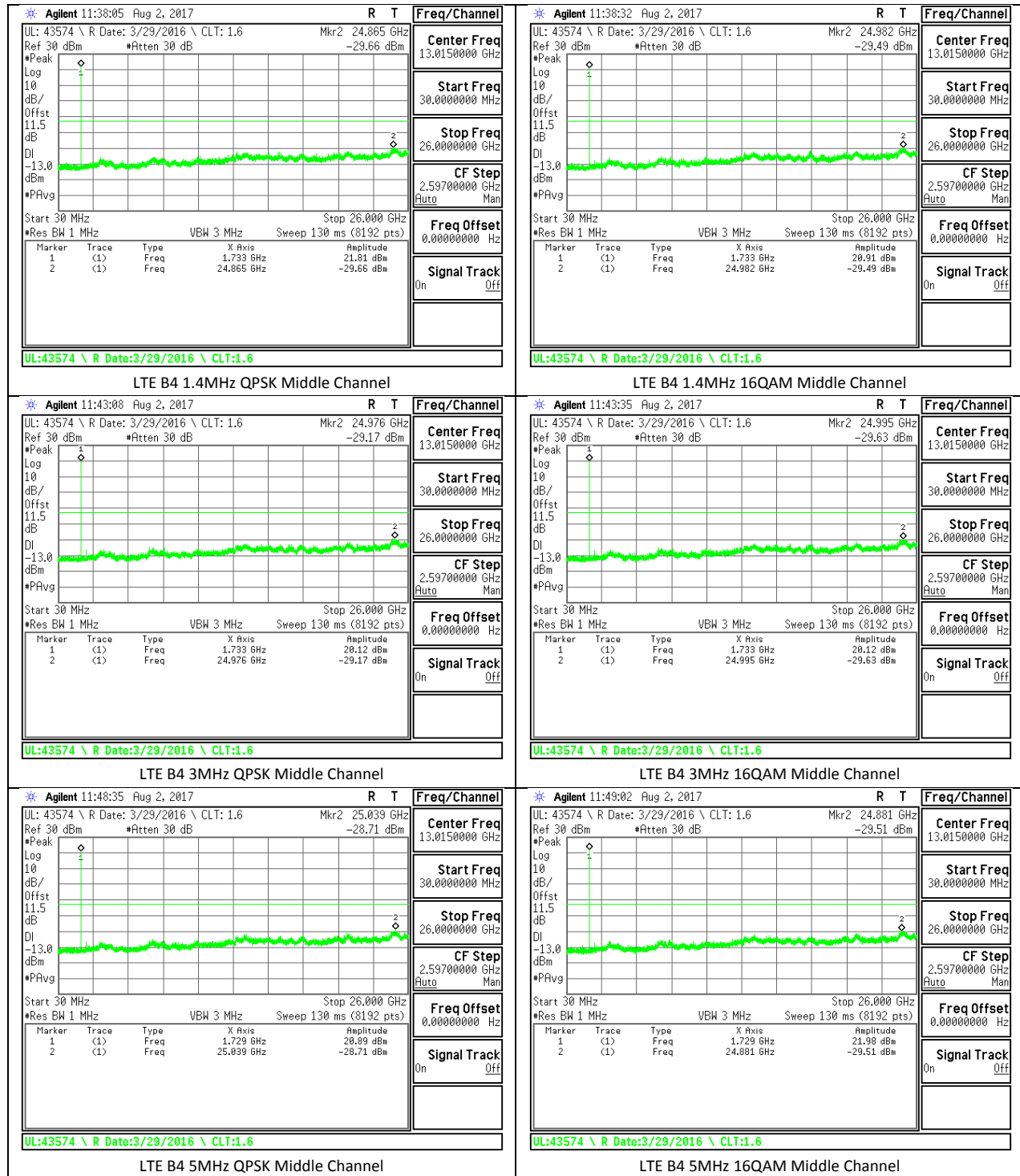


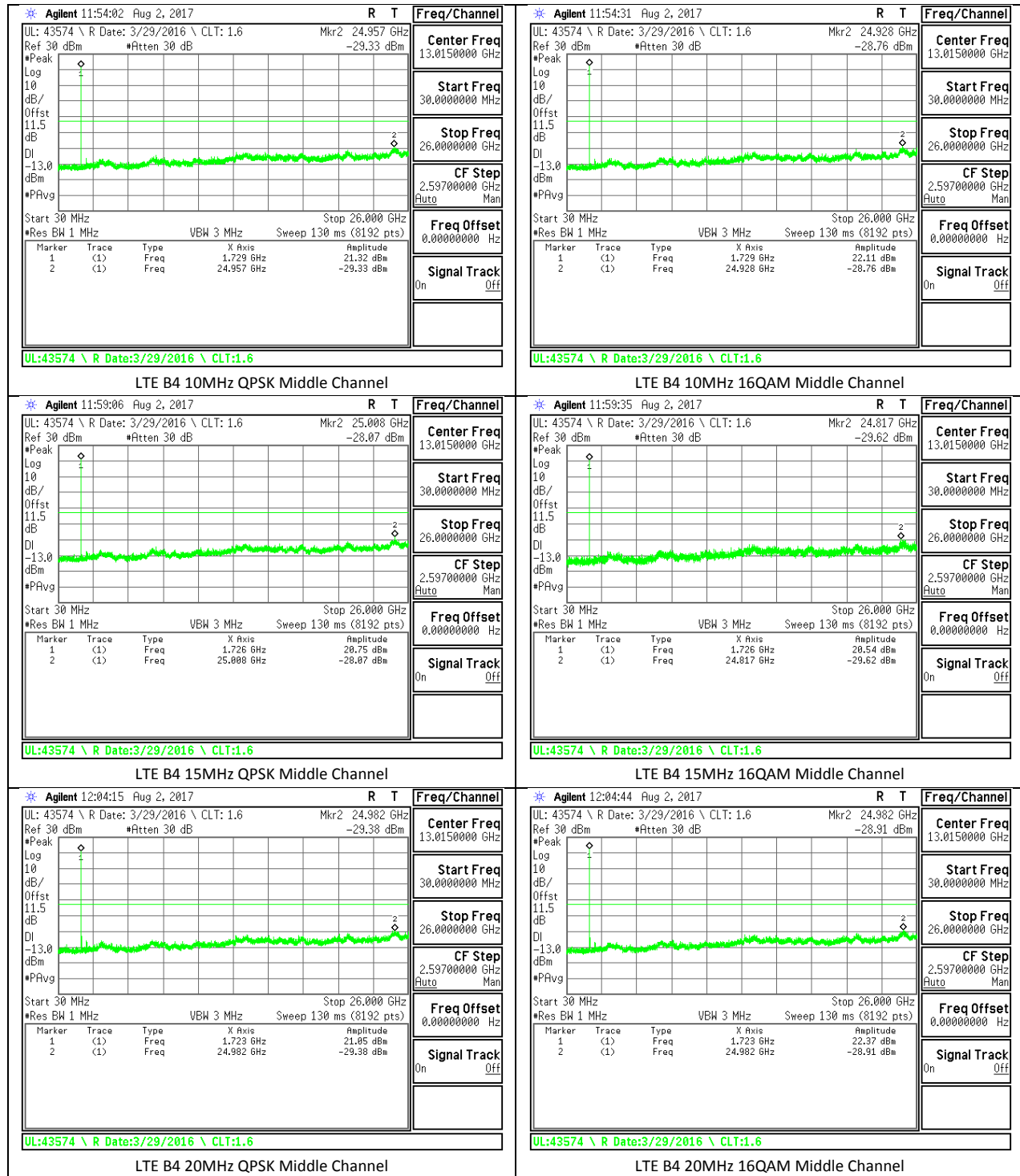
B5 HSDPA Middle Channel

LTE Band 4

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	1.4	QPSK	1710.7	-29.51	-13	-16.51
			1732.5	-29.66	-13	-16.66
			1754.3	-28.72	-13	-15.72
		16QAM	1710.7	-29.25	-13	-16.25
			1732.5	-29.48	-13	-16.48
			1754.3	-29.64	-13	-16.64
	3	QPSK	1711.5	-28.75	-13	-15.75
			1732.5	-29.17	-13	-16.17
			1753.5	-30.03	-13	-17.03
		16QAM	1711.5	-29.2	-13	-16.20
			1732.5	-29.63	-13	-16.63
			1753.5	-29.9	-13	-16.9
	5	QPSK	1712.5	-29.24	-13	-16.24
			1732.5	-28.71	-13	-15.71
			1752.5	-29.64	-13	-16.64
		16QAM	1712.5	-28.87	-13	-15.87
			1732.5	-29.51	-13	-16.51
			1752.5	-29.14	-13	-16.14
	10	QPSK	1715	-28.59	-13	-15.59
			1732.5	-29.33	-13	-16.33
			1750	-28.67	-13	-15.67
		16QAM	1715	-27.4	-13	-14.40
			1732.5	-28.32	-13	-15.32
			1750	-29.08	-13	-16.08

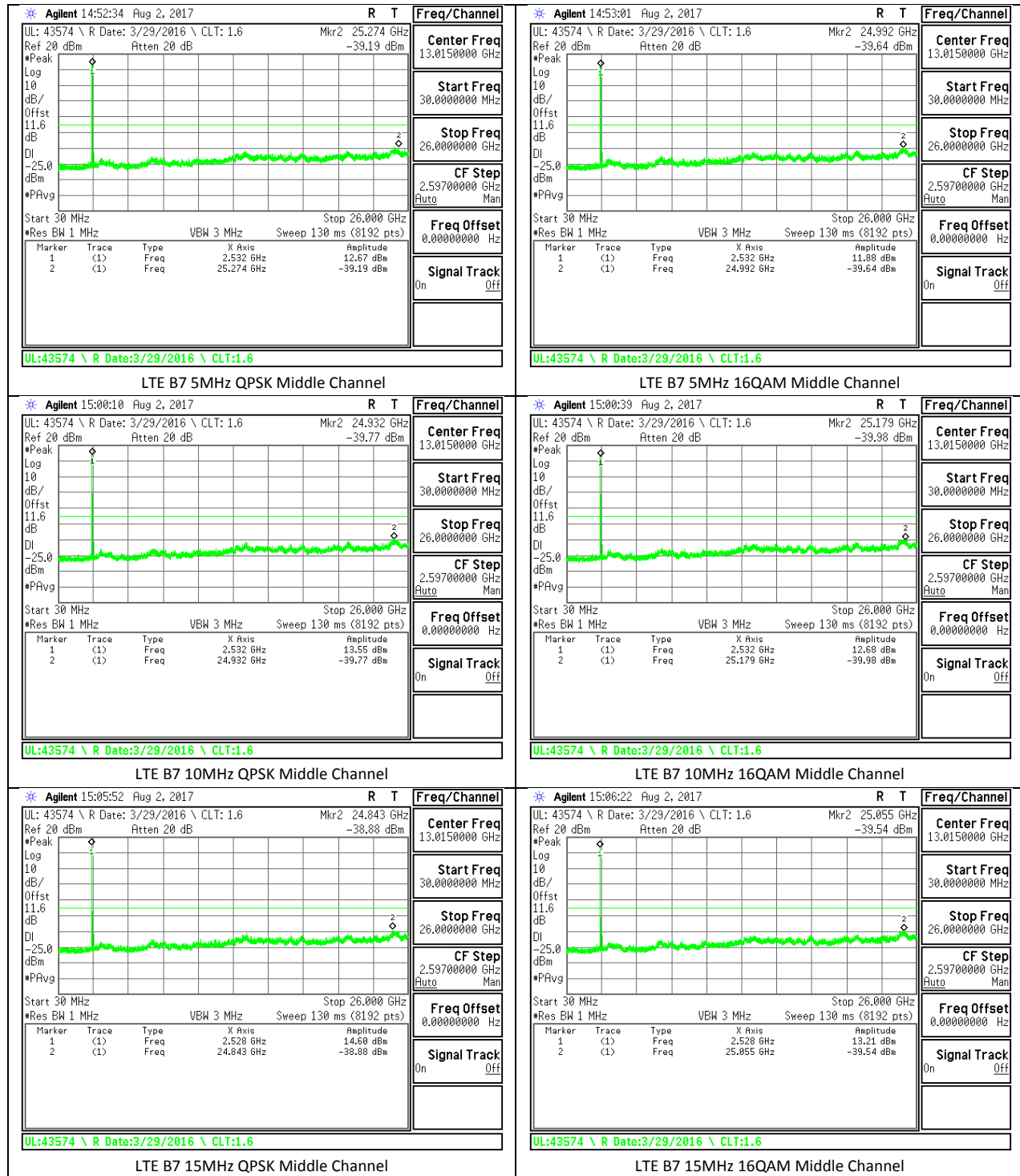
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	15	QPSK	1717.5	-26.13	-13	-13.13
			1732.5	-26.36	-13	-13.36
			1747.5	-27.58	-13	-14.58
		16QAM	1717.5	-23.95	-13	-10.95
			1732.5	-27.52	-13	-14.52
			1747.5	-24.8	-13	-11.80
	20	QPSK	1720	-25.92	-13	-12.92
			1732.5	-27.36	-13	-14.36
			1745	-29.17	-13	-16.17
		16QAM	1720	-24.41	-13	-11.41
			1732.5	-27.04	-13	-14.04
			1745	-25.82	-13	-12.82

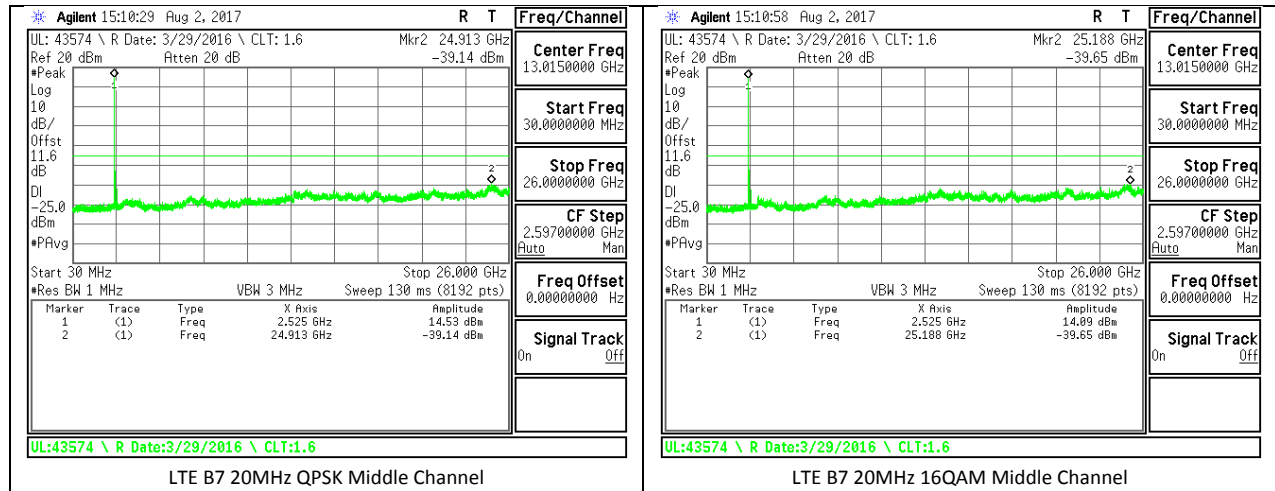




LTE Band 7

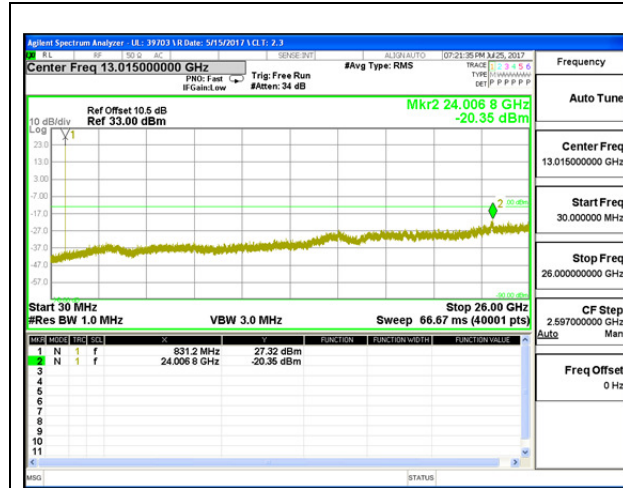
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	5	QPSK	2502.5	-33.55	-25	-8.55
			2535	-39.19	-25	-14.19
			2567.5	-39.51	-25	-14.51
		16QAM	2502.5	-39.62	-25	-14.62
			2535	-39.64	-25	-14.64
			2567.5	-39.68	-25	-14.68
	10	QPSK	2505	-39.46	-25	-14.46
			2535	-39.77	-25	-14.77
			2565	-39.63	-25	-14.63
		16QAM	2505	-39.38	-25	-14.38
			2535	-33.59	-25	-8.59
			2565	-39.2	-25	-14.20
	15	QPSK	2507.5	-37.59	-25	-12.59
			2535	-38.88	-25	-13.88
			2562.5	-34.74	-25	-9.74
		16QAM	2507.5	-33.45	-25	-8.45
			2535	-37.05	-25	-12.05
			2562.5	-39.09	-25	-14.09
	20	QPSK	2510	-34.79	-25	-9.79
			2535	-32.98	-25	-7.98
			2560	-33.7	-25	-8.70
16QAM		2510	-35.18	-25	-10.18	
		2535	-32.42	-25	-7.42	
		2560	-33.37	-25	-8.37	



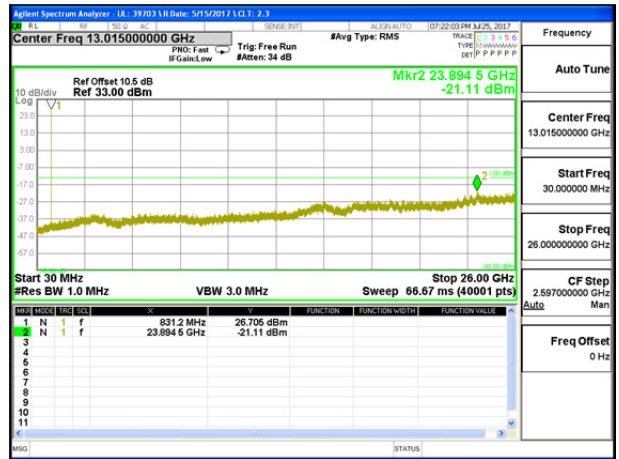


LTE Band 26

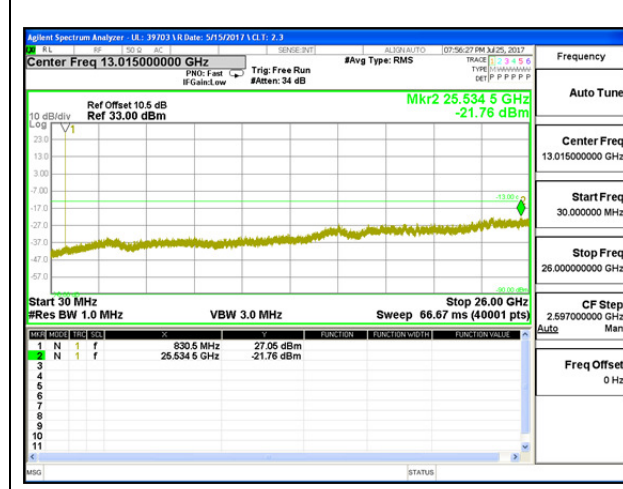
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE26	1.4	QPSK	814.7	-20.81	-13	-7.81
			831.5	-20.35	-13	-7.35
			848.3	-21.68	-13	-8.68
		16QAM	814.7	-20.94	-13	-7.94
			831.5	-21.11	-13	-8.11
			848.3	-21.20	-13	-8.20
	3	QPSK	815.5	-21.48	-13	-8.48
			831.5	-21.76	-13	-8.76
			847.5	-21.64	-13	-8.64
		16QAM	815.5	-21.02	-13	-8.02
			831.5	-21.59	-13	-8.59
			847.5	-21.47	-13	-8.47
	5	QPSK	816.5	-21.33	-13	-8.33
			831.5	-21.38	-13	-8.38
			846.5	-21.84	-13	-8.84
		16QAM	816.5	-20.12	-13	-7.12
			831.5	-21.76	-13	-8.76
			846.5	-20.56	-13	-7.56
	10	QPSK	816.5	-20.94	-13	-7.94
			831.5	-21.75	-13	-8.75
			846.5	-20.73	-13	-7.73
		16QAM	819	-20.44	-13	-7.44
			831.5	-21.77	-13	-8.77
			844	-20.99	-13	-7.99
15	QPSK	831.5	-21.46	-13	-8.46	
		836.5	-21.74	-13	-8.74	
		841.5	-21.82	-13	-8.82	
	16QAM	831.5	-21.39	-13	-8.39	
		836.5	-21.47	-13	-8.47	
		841.5	-19.51	-13	-6.51	



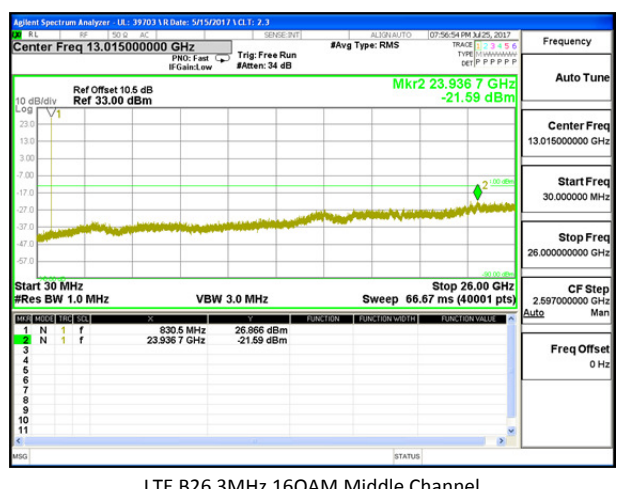
LTE B26 1.4MHz QPSK Middle Channel



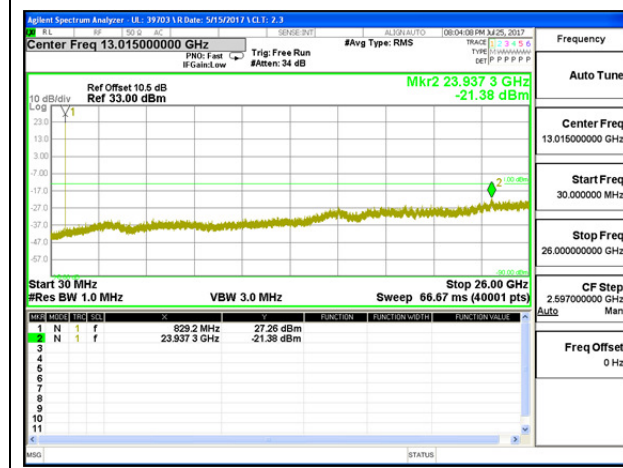
LTE B26 1.4MHz 16QAM Middle Channel



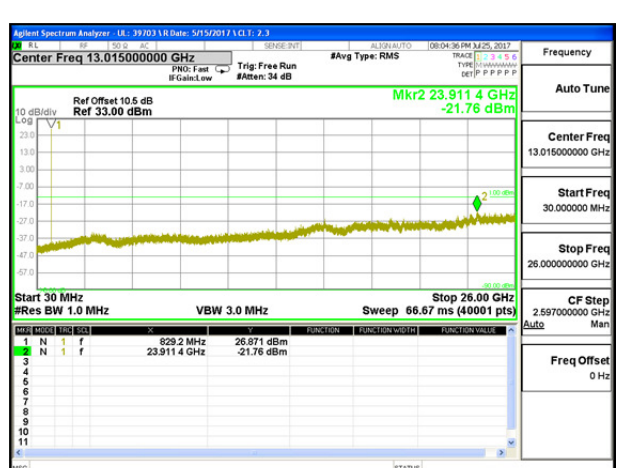
LTE B26 3MHz QPSK Middle Channel



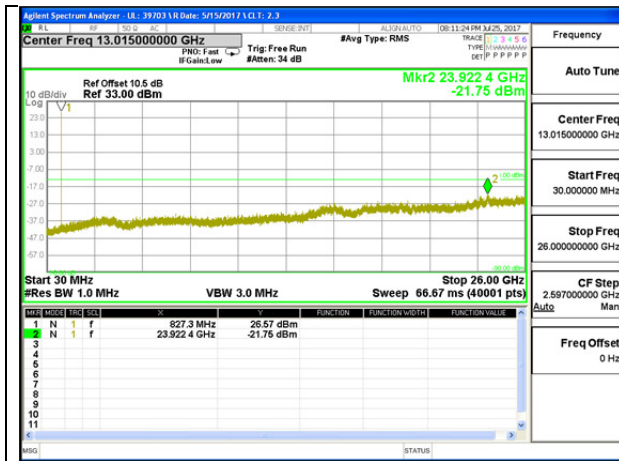
LTE B26 3MHz 16QAM Middle Channel



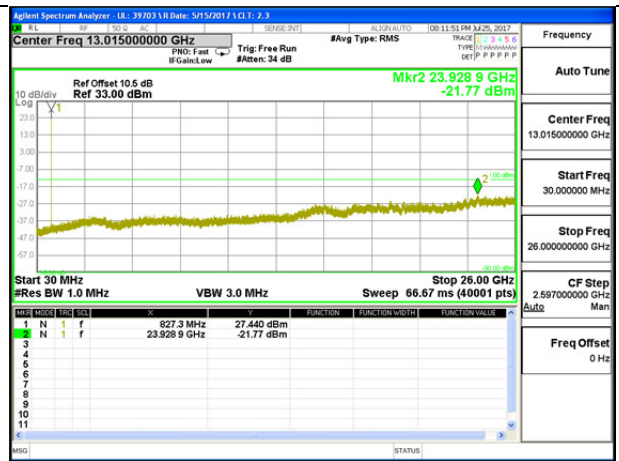
LTE B26 5MHz QPSK Middle Channel



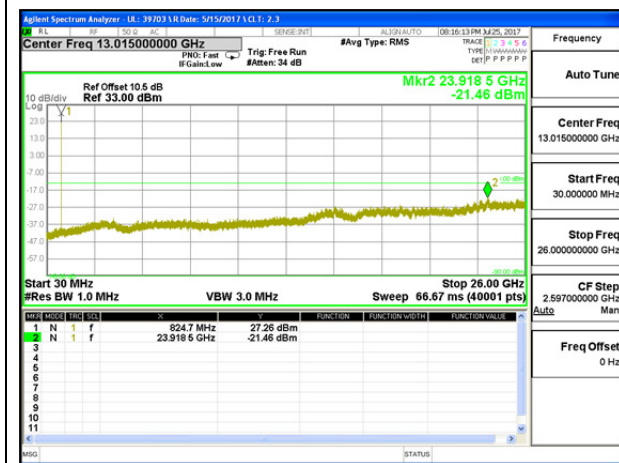
LTE B26 5MHz 16QAM Middle Channel



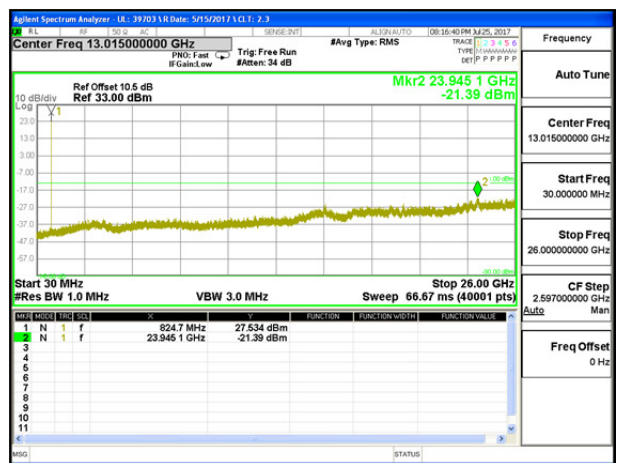
LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel



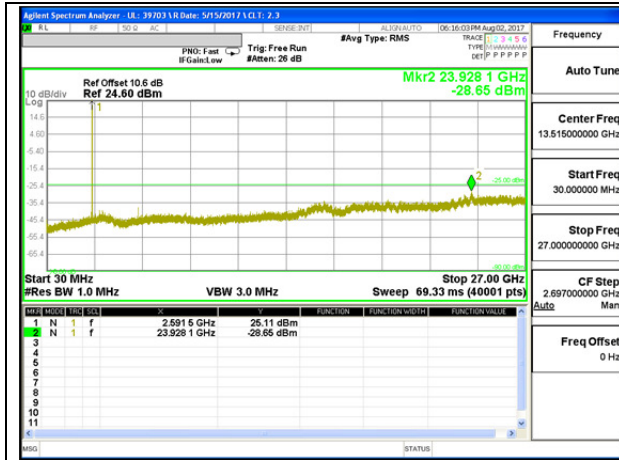
LTE B26 15MHz QPSK Middle Channel



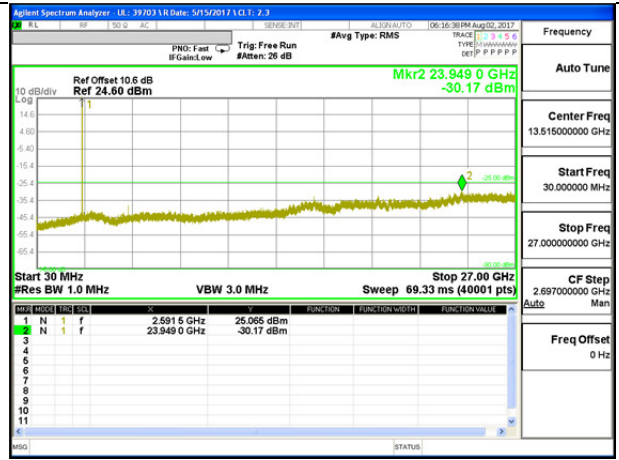
LTE B26 15MHz 16QAM Middle Channel

LTE Band 41

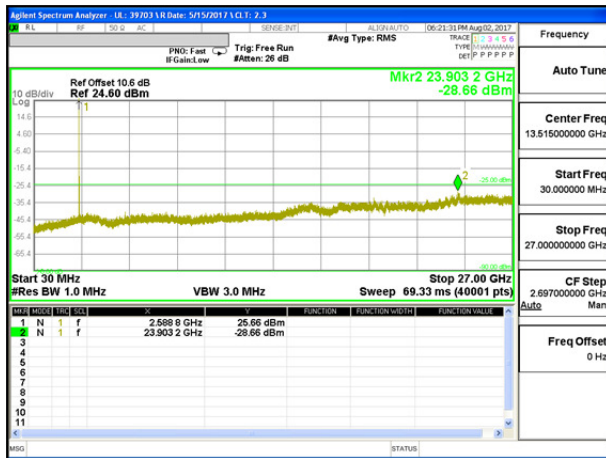
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE41	5	QPSK	2498.5	-29.96	-25	-4.96
			2593	-28.65	-25	-3.65
			2687.5	-29.8	-25	-4.8
		16QAM	2498.5	-29.83	-25	-4.83
			2593	-30.17	-25	-5.17
			2687.5	-29.6	-25	-4.60
	10	QPSK	2501	-29.78	-25	-4.78
			2593	-28.66	-25	-3.66
			2685	-29.69	-25	-4.69
		16QAM	2501	-29.6	-25	-4.6
			2593	-29.9	-25	-4.9
			2685	-29.28	-25	-4.28
	15	QPSK	2503.5	-29.5	-25	-4.5
			2593	-29.44	-25	-4.44
			2682.5	-29.51	-25	-4.51
		16QAM	2503.5	-29.72	-25	-4.72
			2593	-29.77	-25	-4.77
			2682.5	-30.42	-25	-5.42
	20	QPSK	2506	-29.5	-25	-4.5
			2593	-29.38	-25	-4.38
			2680	-29.25	-25	-4.25
		16QAM	2506	-29.47	-25	-4.47
			2593	-29.34	-25	-4.34
			2680	-29.51	-25	-4.51



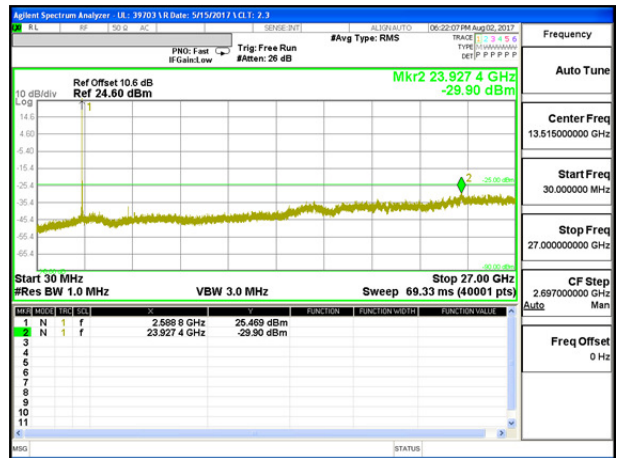
LTE B41 5MHz QPSK Middle Channel



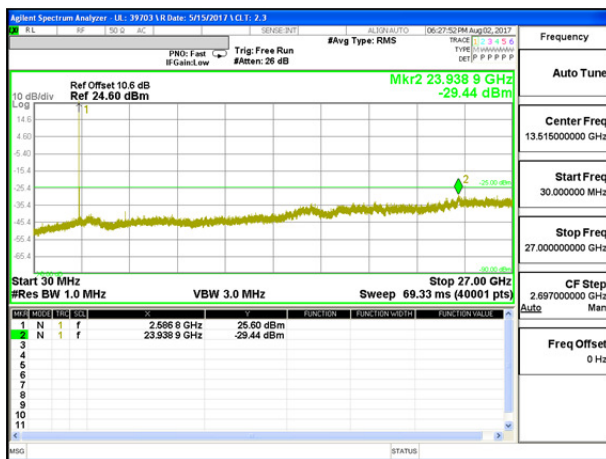
LTE B41 5MHz 16QAM Middle Channel



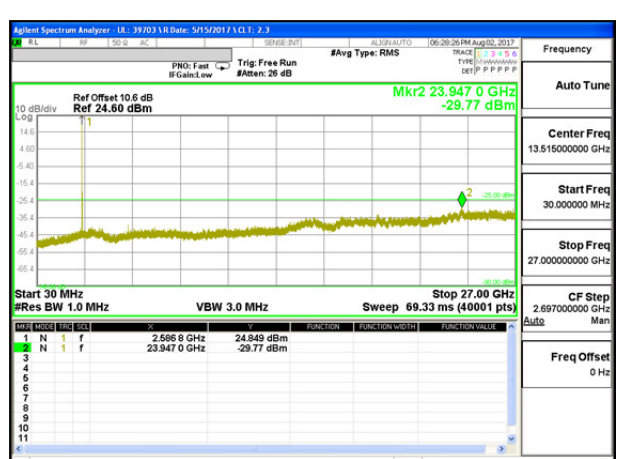
LTE B41 10MHz QPSK Middle Channel



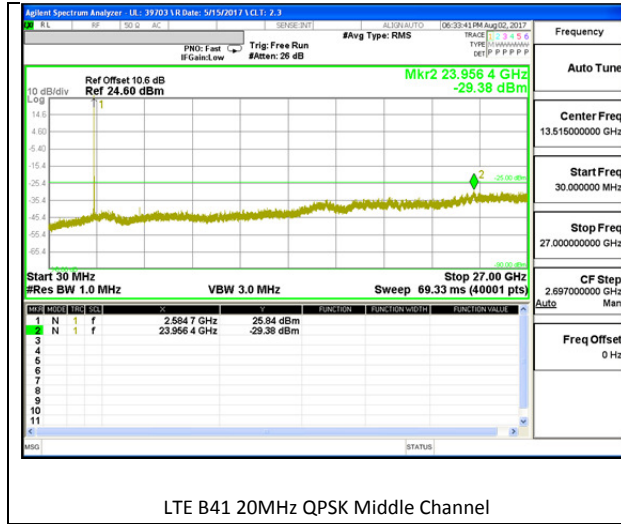
LTE B41 10MHz 16QAM Middle Channel



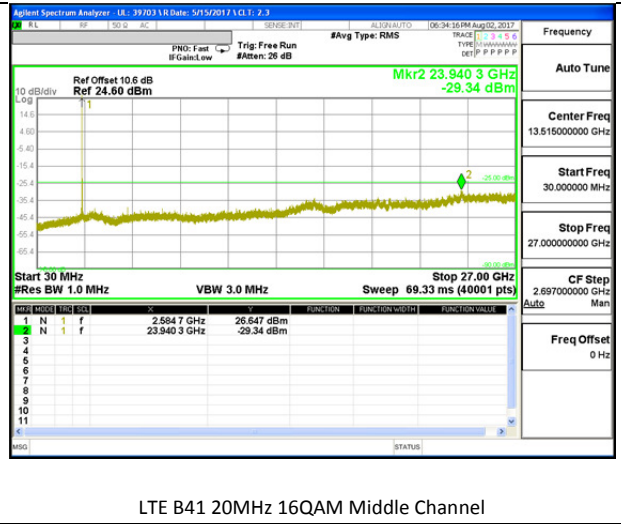
LTE B41 15MHz QPSK Middle Channel



LTE B41 15MHz 16QAM Middle Channel



LTE B41 20MHz QPSK Middle Channel



LTE B41 20MHz 16QAM Middle Channel

17. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213

FCC 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

Tested By	Oren Stoelting
Date	07/17/2017

Note(s):

GSM 850 Band Measured Results

GSM 850 (Frequency range: 824.2-848.8 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) no testing is necessary due to overlapping frequency range.

GSM 1900 Band Measured Results

GSM 1900 (Frequency range: 1850.2-1909.8 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) no testing is necessary due to overlapping frequency range.

WCDMA Band 5 Measured Results

WCDMA Band 5 (Frequency range: 826.4-846.6 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) no testing is necessary due to overlapping frequency range.

WCDMA Band 2 Measured Results

WCDMA Band 2 (Frequency range: 1852.4-1907.6 MHz) is covered by LTE Band 25 (Frequency range: 1850-1915 MHz) no testing is necessary due to overlapping frequency range.

17.1. FREQUENCY STABILITY RESULTS

WCDMA B2

Reference Frequency: LTE Band 2 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	1880.000014	0.000	2.5
3.80	40	1880.000013	0.001	2.5
3.80	30	1880.000014	0.000	2.5
3.80	20	1880.000015	0	2.5
3.80	10	1880.000015	0.000	2.5
3.80	0	1880.000016	-0.001	2.5
3.80	-10	1880.000014	0.000	2.5
3.80	-20	1880.000015	0.000	2.5
3.80	-30	1880.000015	0.000	2.5

Reference Frequency: LTE Band 2 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	1880.000015	0	2.5
4.37	20	1880.000013	0.001	2.5
3.23	20	1880.000014	0.000	2.5

WCDMA B4

Reference Frequency: LTE Band 4 Mid Channel				
			1732.6	MHz @ 20°C
			Limit: to stay +/- 2.5 ppm =	4331.500 Hz
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.599995	0.000	2.5
3.80	40	1732.599995	0.000	2.5
3.80	30	1732.599995	0.000	2.5
3.80	20	1732.599995	0	2.5
3.80	10	1732.599995	0.000	2.5
3.80	0	1732.599995	0.000	2.5
3.80	-10	1732.599992	0.002	2.5
3.80	-20	1732.599995	0.000	2.5
3.80	-30	1732.599995	0.000	2.5

Reference Frequency: LTE Band 4 Mid Channel				
			1732.6	MHz @ 20°C
			Limit: to stay +/- 2.5 ppm =	4331.500 Hz
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.599995	0	2.5
4.37	20	1732.599994	0.000	2.5
3.23	20	1732.599995	0.000	2.5

LTE Band 7

Reference Frequency: LTE Band 7 Mid Channel		2535	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	2535.000014	0.001	2.5
3.80	40	2535.000016	0.000	2.5
3.80	30	2535.000016	0.000	2.5
3.80	20	2535.000017	0	2.5
3.80	10	2535.000015	0.001	2.5
3.80	0	2535.000016	0.000	2.5
3.80	-10	2535.000015	0.001	2.5
3.80	-20	2535.000014	0.001	2.5
3.80	-30	2535.000016	0.000	2.5

Reference Frequency: LTE Band 7 Mid Channel		2535	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	2535.000017	0	2.5
4.37	20	2535.000015	0.001	2.5
3.23	20	2535.000015	0.001	2.5

LTE Band 26

Reference Frequency: LTE Band 26 Mid Channel		831.5	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2078.750	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	831.500011	-0.001	2.5
3.80	40	831.500010	-0.001	2.5
3.80	30	831.500009	0.001	2.5
3.80	20	831.500010	0	2.5
3.80	10	831.500012	-0.002	2.5
3.80	0	831.500009	0.001	2.5
3.80	-10	831.500009	0.001	2.5
3.80	-20	831.500011	-0.001	2.5
3.80	-30	831.500010	0.000	2.5

Reference Frequency: LTE Band 26 Mid Channel		831.5	MHz @ 20°C	
Limit: to stay +/- 2.5 ppm =		2078.750	Hz	
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	831.500010	0	2.5
4.37	20	831.500011	-0.002	2.5
3.23	20	831.500010	0.000	2.5

LTE Band 41

Reference Frequency: LTE Band 41 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	2593.000016	0.000	2.5
3.80	40	2593.000014	0.000	2.5
3.80	30	2593.000013	0.000	2.5
3.80	20	2593.000014	0	2.5
3.80	10	2593.000016	-0.001	2.5
3.80	0	2593.000015	0.000	2.5
3.80	-10	2593.000015	0.000	2.5
3.80	-20	2593.000015	0.000	2.5
3.80	-30	2593.000016	-0.001	2.5

Reference Frequency: LTE Band 41 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	2593.000014	0	2.5
4.37	20	2593.000016	-0.001	2.5
3.23	20	2593.000015	0.000	2.5

18. RADIATED TEST RESULTS

18.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27.53 and §90.691.

FCC LIMIT

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

Part 27: (m)(4) (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

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

18.1.1. SPURIOUS RADIATION PLOTS

GSM

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1648.40	-25.7	V	3.0	37.0	1.0	-61.7	-13.0	-48.7	
2472.60	-21.5	V	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3296.80	-20.4	V	3.0	36.2	1.0	-55.6	-13.0	-42.6	
1648.40	-25.6	H	3.0	37.0	1.0	-61.7	-13.0	-48.7	
2472.60	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3296.80	-19.8	H	3.0	36.2	1.0	-55.0	-13.0	-42.0	
Mid Ch, 836.6MHz									
1673.20	-25.1	V	3.0	37.0	1.0	-61.1	-13.0	-48.1	
2509.80	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3346.40	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.20	-25.4	H	3.0	37.0	1.0	-61.4	-13.0	-48.4	
2509.80	-24.3	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3346.40	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
High Ch, 848.8MHz									
1697.60	-24.4	V	3.0	37.0	1.0	-60.4	-13.0	-47.4	
2546.40	-21.6	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3395.20	-20.3	V	3.0	36.1	1.0	-55.4	-13.0	-42.4	
1697.60	-25.0	H	3.0	37.0	1.0	-60.9	-13.0	-47.9	
2546.40	-24.2	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3395.20	-21.0	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	

GSM850 GPRS

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1648.40	-25.3	V	3.0	37.0	1.0	-61.4	-13.0	-48.4	
2472.60	-22.1	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
3296.80	-20.6	V	3.0	36.2	1.0	-55.8	-13.0	-42.8	
1648.40	-25.8	H	3.0	37.0	1.0	-61.9	-13.0	-48.9	
2472.60	-24.7	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
3296.80	-19.2	H	3.0	36.2	1.0	-54.3	-13.0	-41.3	
Mid Ch, 836.6MHz									
1673.20	-24.6	V	3.0	37.0	1.0	-60.6	-13.0	-47.6	
2509.80	-21.8	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3346.40	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1673.20	-25.0	H	3.0	37.0	1.0	-61.0	-13.0	-48.0	
2509.80	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3346.40	-19.9	H	3.0	36.1	1.0	-55.0	-13.0	-42.0	
High Ch, 848.8MHz									
1697.60	-24.0	V	3.0	37.0	1.0	-60.0	-13.0	-47.0	
2546.40	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3395.20	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1697.60	-24.5	H	3.0	37.0	1.0	-60.5	-13.0	-47.5	
2546.40	-24.3	H	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3395.20	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	

GSM850 EGPRS

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-15.8	V	3.0	35.9	1.0	-50.7	-13.0	-37.7	
5550.60	-13.3	V	3.0	35.5	1.0	-47.8	-13.0	-34.8	
7400.80	-13.2	V	3.0	35.7	1.0	-47.9	-13.0	-34.9	
3700.40	-16.4	H	3.0	35.9	1.0	-51.3	-13.0	-38.3	
5550.60	-13.3	H	3.0	35.5	1.0	-47.7	-13.0	-34.7	
7400.80	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
Mid Ch, 1880MHz									
3760.00	-15.4	V	3.0	35.8	1.0	-50.2	-13.0	-37.2	
5640.00	-12.7	V	3.0	35.5	1.0	-47.2	-13.0	-34.2	
7520.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3760.00	-16.8	H	3.0	35.8	1.0	-51.7	-13.0	-38.7	
5640.00	-13.7	H	3.0	35.5	1.0	-48.2	-13.0	-35.2	
7520.00	-11.7	H	3.0	35.7	1.0	-46.4	-13.0	-33.4	
High Ch, 1909.8MHz									
3819.60	-15.2	V	3.0	35.8	1.0	-50.0	-13.0	-37.0	
5729.40	-13.1	V	3.0	35.5	1.0	-47.6	-13.0	-34.6	
7639.20	-12.6	V	3.0	35.8	1.0	-47.4	-13.0	-34.4	
3819.60	-15.9	H	3.0	35.8	1.0	-50.7	-13.0	-37.7	
5729.40	-12.4	H	3.0	35.5	1.0	-46.9	-13.0	-33.9	
7639.20	-12.1	H	3.0	35.8	1.0	-46.8	-13.0	-33.8	

GSM1900 GPRS

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-16.2	V	3.0	35.9	1.0	-51.1	-13.0	-38.1	
5550.60	-13.7	V	3.0	35.5	1.0	-48.2	-13.0	-35.2	
7400.80	-13.5	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3700.40	-16.8	H	3.0	35.9	1.0	-51.7	-13.0	-38.7	
5550.60	-13.5	H	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7400.80	-12.4	H	3.0	35.7	1.0	-47.1	-13.0	-34.1	
Mid Ch, 1880MHz									
3760.00	-15.9	V	3.0	35.8	1.0	-50.7	-13.0	-37.7	
5640.00	-13.2	V	3.0	35.5	1.0	-47.7	-13.0	-34.7	
7520.00	-13.4	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3760.00	-16.4	H	3.0	35.8	1.0	-51.2	-13.0	-38.2	
5640.00	-12.9	H	3.0	35.5	1.0	-47.4	-13.0	-34.4	
7520.00	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
High Ch, 1909.8MHz									
3819.60	-15.4	V	3.0	35.8	1.0	-50.2	-13.0	-37.2	
5729.40	-13.4	V	3.0	35.5	1.0	-47.9	-13.0	-34.9	
7639.20	-12.9	V	3.0	35.8	1.0	-47.7	-13.0	-34.7	
3819.60	-15.8	H	3.0	35.8	1.0	-50.6	-13.0	-37.6	
5729.40	-11.8	H	3.0	35.5	1.0	-46.3	-13.0	-33.3	
7639.20	-11.7	H	3.0	35.8	1.0	-46.5	-13.0	-33.5	

GSM1900 EGPRS

WCDMA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/29/2017
 Test Engineer: GE43578
 Configuration: EUT + HS + Charger
 Location: Chamber B
 Mode: Rel99 Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3704.80	-19.4	V	3.0	35.9	1.0	-54.2	-13.0	-41.2	
5557.20	-16.4	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7409.60	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3704.80	-19.6	H	3.0	35.9	1.0	-54.5	-13.0	-41.5	
5557.20	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7409.60	-15.5	H	3.0	35.7	1.0	-50.2	-13.0	-37.2	
Mid Ch, 1890MHz									
3760.00	-18.6	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5640.00	-16.5	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7520.00	-16.9	V	3.0	35.7	1.0	-51.6	-13.0	-38.6	
3760.00	-19.2	H	3.0	35.8	1.0	-54.0	-13.0	-41.0	
5640.00	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7520.00	-15.7	H	3.0	35.7	1.0	-50.5	-13.0	-37.5	
High Ch, 1907.6MHz									
3815.20	-18.6	V	3.0	35.8	1.0	-53.3	-13.0	-40.3	
5722.80	-16.9	V	3.0	35.5	1.0	-51.4	-13.0	-38.4	
7630.40	-16.6	V	3.0	35.8	1.0	-51.4	-13.0	-38.4	
3815.20	-18.6	H	3.0	35.8	1.0	-53.4	-13.0	-40.4	
5722.80	-14.8	H	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7630.40	-15.2	H	3.0	35.8	1.0	-50.0	-13.0	-37.0	

B2 REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/29/2017
 Test Engineer: GE43578
 Configuration: EUT + HS + Charger
 Location: Chamber B
 Mode: HSDPA Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3704.80	-20.0	V	3.0	35.9	1.0	-54.8	-13.0	-41.8	
5557.20	-16.1	V	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7409.60	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3704.80	-20.3	H	3.0	35.9	1.0	-55.2	-13.0	-42.2	
5557.20	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7409.60	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
Mid Ch, 1890MHz									
3760.00	-18.9	V	3.0	35.8	1.0	-53.7	-13.0	-40.7	
5640.00	-19.3	V	3.0	35.5	1.0	-53.8	-13.0	-40.8	
7520.00	-19.4	V	3.0	35.7	1.0	-54.1	-13.0	-41.1	
3760.00	-18.7	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5640.00	-18.9	H	3.0	35.5	1.0	-53.4	-13.0	-40.4	
7520.00	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	
High Ch, 1907.6MHz									
3815.20	-18.9	V	3.0	35.8	1.0	-53.7	-13.0	-40.7	
5722.80	-19.3	V	3.0	35.5	1.0	-53.8	-13.0	-40.8	
7630.40	-18.6	V	3.0	35.8	1.0	-53.3	-13.0	-40.3	
3815.20	-18.9	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5722.80	-20.6	H	3.0	35.5	1.0	-55.1	-13.0	-42.1	
7630.40	-17.3	H	3.0	35.8	1.0	-52.0	-13.0	-39.0	

B2 HSDPA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/29/2017
 Test Engineer: GE43578
 Configuration: EUT + HS + Charger
 Location: Chamber B
 Mode: Rel99 Band 4 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.4MHz									
3424.80	-19.5	V	3.0	36.1	1.0	-54.6	-13.0	-41.6	
5137.20	-16.6	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6849.60	-17.5	V	3.0	35.7	1.0	-52.2	-13.0	-39.2	
3424.80	-20.2	H	3.0	36.1	1.0	-55.2	-13.0	-42.2	
5137.20	-16.9	H	3.0	35.4	1.0	-51.3	-13.0	-38.3	
6849.60	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	
Mid Ch, 1732.6MHz									
3465.20	-19.5	V	3.0	36.0	1.0	-54.6	-13.0	-41.6	
5197.80	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6930.40	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3465.20	-20.1	H	3.0	36.0	1.0	-55.1	-13.0	-42.1	
5197.80	-16.3	H	3.0	35.4	1.0	-50.8	-13.0	-37.8	
6930.40	-16.1	H	3.0	35.7	1.0	-50.7	-13.0	-37.7	
High Ch, 1752.6MHz									
3505.20	-19.7	V	3.0	36.0	1.0	-54.7	-13.0	-41.7	
5257.80	-15.4	V	3.0	35.4	1.0	-49.9	-13.0	-36.9	
7010.40	-17.5	V	3.0	35.7	1.0	-52.2	-13.0	-39.2	
3505.20	-19.9	H	3.0	36.0	1.0	-54.9	-13.0	-41.9	
5257.80	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7010.40	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	

B4 REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/29/2017
 Test Engineer: GE43578
 Configuration: EUT + HS + Charger
 Location: Chamber B
 Mode: HSDPA Band 4 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.4MHz									
3424.80	-19.7	V	3.0	36.1	1.0	-54.7	-13.0	-41.7	
5137.20	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6849.60	-17.7	V	3.0	35.7	1.0	-52.4	-13.0	-39.4	
3424.80	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
5137.20	-16.9	H	3.0	35.4	1.0	-51.3	-13.0	-38.3	
6849.60	-16.3	H	3.0	35.7	1.0	-51.0	-13.0	-38.0	
Mid Ch, 1732.6MHz									
3465.20	-19.3	V	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5197.80	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6930.40	-17.0	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3465.20	-19.7	H	3.0	36.0	1.0	-54.7	-13.0	-41.7	
5197.80	-16.4	H	3.0	35.4	1.0	-50.8	-13.0	-37.8	
6930.40	-16.3	H	3.0	35.7	1.0	-51.0	-13.0	-38.0	
High Ch, 1752.6MHz									
3505.20	-20.0	V	3.0	36.0	1.0	-55.0	-13.0	-42.0	
5257.80	-15.7	V	3.0	35.4	1.0	-50.1	-13.0	-37.1	
7010.40	-17.7	V	3.0	35.7	1.0	-52.4	-13.0	-39.4	
3505.20	-20.1	H	3.0	36.0	1.0	-55.1	-13.0	-42.1	
5257.80	-16.0	H	3.0	35.4	1.0	-50.4	-13.0	-37.4	
7010.40	-15.7	H	3.0	35.7	1.0	-50.4	-13.0	-37.4	

B4 HSDPA

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		SOMC								
Project #:		11783785								
Date:		8/9/2017								
Test Engineer:		37290								
Configuration:		EUT + HS + Charger								
Location:		Chamber C								
Mode:		Rel99 Band 5 Harmonics								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 826.4MHz										
1652.80	-30.4	V	3.0	37.0	1.0	-66.4	-13.0	-53.4		
2479.20	-22.6	V	3.0	36.4	1.0	-58.0	-13.0	-45.0		
3305.60	-25.8	V	3.0	36.1	1.0	-60.9	-13.0	-47.9		
1652.80	-31.6	H	3.0	37.0	1.0	-67.7	-13.0	-54.7		
2479.20	-28.3	H	3.0	36.4	1.0	-63.7	-13.0	-50.7		
3305.60	-25.4	H	3.0	36.1	1.0	-60.5	-13.0	-47.5		
Mid Ch, 836.6MHz										
1673.20	-23.5	V	3.0	37.0	1.0	-59.5	-13.0	-46.5		
2509.80	-24.9	V	3.0	36.4	1.0	-60.2	-13.0	-47.2		
3346.40	-26.6	V	3.0	36.1	1.0	-61.8	-13.0	-48.8		
1673.20	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9		
2509.80	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3		
3346.40	-23.6	H	3.0	36.1	1.0	-60.7	-13.0	-47.7		
High Ch, 846.6MHz										
1693.20	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1		
2539.80	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3		
3386.40	-25.4	V	3.0	36.1	1.0	-60.5	-13.0	-47.5		
1693.20	-23.3	H	3.0	37.0	1.0	-59.3	-13.0	-46.3		
2539.80	-21.2	H	3.0	36.4	1.0	-56.6	-13.0	-43.6		
3386.40	-25.4	H	3.0	36.1	1.0	-60.5	-13.0	-47.5		

B5 REL99

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		SOMC								
Project #:		11783785								
Date:		8/9/2017								
Test Engineer:		37290								
Configuration:		EUT + HS + Charger								
Location:		Chamber C								
Mode:		HSDPA Band 5 Harmonics								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 826.4MHz										
1652.80	-30.6	V	3.0	37.0	1.0	-66.8	-13.0	-53.8		
2479.20	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4		
3305.60	-25.8	V	3.0	36.1	1.0	-61.0	-13.0	-48.0		
1652.80	-32.7	H	3.0	37.0	1.0	-68.8	-13.0	-55.8		
2479.20	-28.6	H	3.0	36.4	1.0	-64.0	-13.0	-51.0		
3305.60	-25.7	H	3.0	36.1	1.0	-60.9	-13.0	-47.9		
Mid Ch, 836.6MHz										
1673.20	-24.5	V	3.0	37.0	1.0	-60.5	-13.0	-47.5		
2509.80	-25.3	V	3.0	36.4	1.0	-60.8	-13.0	-47.8		
3346.40	-26.6	V	3.0	36.1	1.0	-61.8	-13.0	-48.8		
1673.20	-30.1	H	3.0	37.0	1.0	-66.1	-13.0	-53.1		
2509.80	-27.4	H	3.0	36.4	1.0	-62.8	-13.0	-49.8		
3346.40	-26.1	H	3.0	36.1	1.0	-61.3	-13.0	-48.3		
High Ch, 846.6MHz										
1693.20	-28.4	V	3.0	37.0	1.0	-64.4	-13.0	-51.4		
2539.80	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6		
3386.40	-26.6	V	3.0	36.1	1.0	-61.7	-13.0	-48.7		
1693.20	-23.9	H	3.0	37.0	1.0	-59.9	-13.0	-46.9		
2539.80	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9		
3386.40	-25.9	H	3.0	36.1	1.0	-61.0	-13.0	-48.0		

B5 HSDPA

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		SOMC							
Project #:		11783785							
Date:		7/25/2017							
Test Engineer:		43575 OS							
Configuration:		EUT + AC + Headset							
Location:		Chamber C							
Mode:		LTE_QPSK Band 7 Harmonics, 20MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ESRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510									
5020.00	-18.8	V	3.0	33.2	1.0	-51.0	-25.0	-26.0	
7520.00	-6.9	V	3.0	32.8	1.0	-32.7	-25.0	-13.7	
10040.00	-18.4	V	3.0	32.7	1.0	-50.2	-25.0	-25.2	
5020.00	-19.4	H	3.0	33.2	1.0	-51.6	-25.0	-26.6	
7520.00	-18.3	H	3.0	32.8	1.0	-50.2	-25.0	-25.2	
10040.00	-18.4	H	3.0	32.7	1.0	-50.1	-25.0	-25.1	
Mid Ch, 2535									
5070.00	-19.2	V	3.0	33.2	1.0	-51.4	-25.0	-26.4	
7605.00	-13.4	V	3.0	32.8	1.0	-45.2	-25.0	-20.2	
10140.00	-18.5	V	3.0	32.7	1.0	-50.5	-25.0	-25.6	
5070.00	-19.2	H	3.0	33.2	1.0	-51.4	-25.0	-26.4	
7605.00	-17.8	H	3.0	32.8	1.0	-49.7	-25.0	-24.7	
10140.00	-17.5	H	3.0	32.7	1.0	-49.2	-25.0	-24.2	
High Ch, 2560									
5120.00	-17.9	V	3.0	33.2	1.0	-50.1	-25.0	-25.1	
7680.00	-18.7	V	3.0	32.8	1.0	-50.5	-25.0	-25.5	
10240.00	-18.4	V	3.0	32.6	1.0	-50.8	-25.0	-25.0	
5120.00	-19.2	H	3.0	33.2	1.0	-51.4	-25.0	-26.4	
7680.00	-17.9	H	3.0	32.8	1.0	-49.7	-25.0	-24.7	
10240.00	-18.1	H	3.0	32.6	1.0	-49.8	-25.0	-24.8	

LTE B7 20MHz QPSK

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement									
Company:		SOMC							
Project #:		11783785							
Date:		7/25/2017							
Test Engineer:		43575 OS							
Configuration:		EUT + AC + Headset							
Location:		Chamber C							
Mode:		LTE_16QAM Band 7 Harmonics, 20MHz Bandwidth							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ESRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510									
5020.00	-19.3	V	3.0	33.2	1.0	-51.5	-25.0	-26.5	
7520.00	-17.5	V	3.0	32.8	1.0	-49.3	-25.0	-24.3	
10040.00	-18.7	V	3.0	32.7	1.0	-50.4	-25.0	-25.4	
5020.00	-17.2	H	3.0	33.2	1.0	-49.5	-25.0	-24.5	
7520.00	-18.6	H	3.0	32.8	1.0	-50.4	-25.0	-25.4	
10040.00	-18.9	H	3.0	32.7	1.0	-50.7	-25.0	-25.7	
Mid Ch, 2535									
5070.00	-19.8	V	3.0	33.2	1.0	-52.0	-25.0	-27.0	
7605.00	-17.7	V	3.0	32.8	1.0	-49.6	-25.0	-24.6	
10140.00	-18.6	V	3.0	32.7	1.0	-50.2	-25.0	-25.2	
5070.00	-17.4	H	3.0	33.2	1.0	-49.6	-25.0	-24.6	
7605.00	-18.1	H	3.0	32.8	1.0	-50.0	-25.0	-25.0	
10140.00	-18.4	H	3.0	32.7	1.0	-50.0	-25.0	-25.0	
High Ch, 2560									
5120.00	-18.7	V	3.0	33.2	1.0	-50.9	-25.0	-25.9	
7680.00	-18.1	V	3.0	32.8	1.0	-50.0	-25.0	-25.0	
10240.00	-17.1	V	3.0	32.6	1.0	-48.7	-25.0	-23.7	
5120.00	-14.6	H	3.0	33.2	1.0	-46.8	-25.0	-21.8	
7680.00	-16.7	H	3.0	32.8	1.0	-48.6	-25.0	-23.6	
10240.00	-18.1	H	3.0	32.6	1.0	-49.8	-25.0	-24.8	

LTE B7 20MHz 16QAM

LTE Band 13

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-27.0	V	3.0	37.1	1.0	-63.1	-13.0	-50.1	
2338.50	-21.0	V	3.0	36.5	1.0	-56.5	-13.0	-43.5	
3118.00	-20.5	V	3.0	36.3	1.0	-55.9	-13.0	-42.9	
1559.00	-26.8	H	3.0	37.1	1.0	-62.9	-13.0	-49.9	
2338.50	-22.9	H	3.0	36.5	1.0	-58.4	-13.0	-45.4	
3118.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	
Mid Ch, 782									
1564.00	-27.7	V	3.0	37.1	1.0	-63.9	-13.0	-50.9	
2346.00	-22.7	V	3.0	36.5	1.0	-58.2	-13.0	-45.2	
3128.00	-21.5	V	3.0	36.3	1.0	-56.7	-13.0	-43.7	
1564.00	-27.9	H	3.0	37.1	1.0	-64.0	-13.0	-51.0	
2346.00	-24.2	H	3.0	36.5	1.0	-59.7	-13.0	-46.7	
3128.00	-21.7	H	3.0	36.3	1.0	-57.0	-13.0	-44.0	
High Ch, 784.5									
1569.00	-27.1	V	3.0	37.1	1.0	-63.2	-13.0	-50.2	
2353.50	-21.8	V	3.0	36.5	1.0	-57.3	-13.0	-44.3	
3138.00	-21.0	V	3.0	36.3	1.0	-56.3	-13.0	-43.3	
1569.00	-27.1	H	3.0	37.1	1.0	-63.2	-13.0	-50.2	
2353.50	-24.1	H	3.0	36.5	1.0	-59.6	-13.0	-46.6	
3138.00	-21.9	H	3.0	36.3	1.0	-57.2	-13.0	-44.2	

LTE B13 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-27.7	V	3.0	37.1	1.0	-63.8	-13.0	-50.8	
2338.50	-21.8	V	3.0	36.5	1.0	-57.3	-13.0	-44.3	
3118.00	-21.5	V	3.0	36.3	1.0	-56.8	-13.0	-43.8	
1559.00	-27.7	H	3.0	37.1	1.0	-63.8	-13.0	-50.8	
2338.50	-23.5	H	3.0	36.5	1.0	-59.0	-13.0	-46.0	
3118.00	-21.4	H	3.0	36.3	1.0	-56.6	-13.0	-43.6	
Mid Ch, 782									
1564.00	-28.9	V	3.0	37.1	1.0	-65.0	-13.0	-52.0	
2346.00	-24.4	V	3.0	36.5	1.0	-59.9	-13.0	-46.9	
3128.00	-22.5	V	3.0	36.3	1.0	-57.8	-13.0	-44.8	
1564.00	-28.0	H	3.0	37.1	1.0	-64.1	-13.0	-51.1	
2346.00	-25.0	H	3.0	36.5	1.0	-60.5	-13.0	-47.5	
3128.00	-21.9	H	3.0	36.3	1.0	-57.2	-13.0	-44.2	
High Ch, 784.5									
1569.00	-27.5	V	3.0	37.1	1.0	-63.7	-13.0	-50.7	
2353.50	-22.7	V	3.0	36.5	1.0	-58.2	-13.0	-45.2	
3138.00	-21.5	V	3.0	36.3	1.0	-56.8	-13.0	-43.8	
1569.00	-27.5	H	3.0	37.1	1.0	-63.7	-13.0	-50.7	
2353.50	-24.9	H	3.0	36.5	1.0	-60.4	-13.0	-47.4	
3138.00	-22.5	H	3.0	36.3	1.0	-57.7	-13.0	-44.7	

LTE B13 5MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	
Mid Ch, 782									
1564.00	-17.1	V	3.0	37.1	1.0	-53.2	-13.0	-40.2	
2346.00	-21.4	V	3.0	36.5	1.0	-56.9	-13.0	-43.9	
3128.00	-19.7	V	3.0	36.3	1.0	-55.0	-13.0	-42.0	
1564.00	-16.9	H	3.0	37.1	1.0	-53.1	-13.0	-40.1	
2346.00	-22.6	H	3.0	36.5	1.0	-58.1	-13.0	-45.1	
3128.00	-20.4	H	3.0	36.3	1.0	-55.6	-13.0	-42.6	
High Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	

LTE B13 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	
Mid Ch, 782									
1564.00	-18.1	V	3.0	37.1	1.0	-54.3	-13.0	-41.3	
2346.00	-22.2	V	3.0	36.5	1.0	-57.7	-13.0	-44.7	
3128.00	-20.3	V	3.0	36.3	1.0	-55.5	-13.0	-42.5	
1564.00	-17.5	H	3.0	37.1	1.0	-53.7	-13.0	-40.7	
2346.00	-24.2	H	3.0	36.5	1.0	-59.7	-13.0	-46.7	
3128.00	-20.9	H	3.0	36.3	1.0	-56.2	-13.0	-43.2	
High Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	

LTE B13 10MHz 16QAM

LTE Band 17

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 8/2/2017
 Test Engineer: 43575 OS
 Configuration: EUT + AC + Headset
 Location: Chamber C
 Mode: LTE_OPSK Band 17 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 706.5									
1413.00	-12.8	V	3.0	36.5	1.0	-48.4	-13.0	-35.4	
2119.50	-14.1	V	3.0	35.6	1.0	-48.7	-13.0	-35.7	
2826.00	-20.0	V	3.0	34.7	1.0	-53.7	-13.0	-40.7	
1413.00	-13.4	H	3.0	36.5	1.0	-49.0	-13.0	-36.0	
2119.50	-14.1	H	3.0	35.6	1.0	-48.8	-13.0	-35.8	
2826.00	-20.0	H	3.0	34.7	1.0	-53.7	-13.0	-40.7	
Mid Ch. 710									
1420.00	-11.4	V	3.0	36.5	1.0	-46.9	-13.0	-33.9	
2130.00	-15.2	V	3.0	35.6	1.0	-49.8	-13.0	-36.8	
2840.00	-20.2	V	3.0	34.7	1.0	-53.9	-13.0	-40.9	
1420.00	-13.3	H	3.0	36.5	1.0	-48.8	-13.0	-35.8	
2130.00	-15.3	H	3.0	35.6	1.0	-49.9	-13.0	-36.9	
2840.00	-20.4	H	3.0	34.7	1.0	-54.1	-13.0	-41.1	
High Ch. 713.5									
1427.00	-10.2	V	3.0	36.5	1.0	-45.7	-13.0	-32.7	
2140.50	-16.0	V	3.0	35.6	1.0	-50.6	-13.0	-37.6	
2854.00	-20.1	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1427.00	-13.0	H	3.0	36.5	1.0	-48.5	-13.0	-35.5	
2140.50	-14.4	H	3.0	35.6	1.0	-49.0	-13.0	-36.0	
2854.00	-20.2	H	3.0	34.7	1.0	-53.9	-13.0	-40.9	

LTE B17 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 8/2/2017
 Test Engineer: 43575 OS
 Configuration: EUT + AC + Headset
 Location: Chamber C
 Mode: LTE_OPSK Band 17 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 709									
1418.00	-10.2	V	3.0	36.5	1.0	-45.7	-13.0	-32.7	
2127.00	-13.7	V	3.0	35.6	1.0	-48.3	-13.0	-35.3	
2836.00	-20.4	V	3.0	34.7	1.0	-54.1	-13.0	-41.1	
1418.00	-11.4	H	3.0	36.5	1.0	-46.9	-13.0	-33.9	
2127.00	-16.4	H	3.0	35.6	1.0	-51.0	-13.0	-38.0	
2836.00	-20.5	H	3.0	34.7	1.0	-54.2	-13.0	-41.2	
Mid Ch. 710									
1420.00	-11.6	V	3.0	36.5	1.0	-47.1	-13.0	-34.1	
2130.00	-15.4	V	3.0	35.6	1.0	-50.0	-13.0	-37.0	
2840.00	-19.8	V	3.0	34.7	1.0	-53.5	-13.0	-40.5	
1420.00	-13.6	H	3.0	36.5	1.0	-49.1	-13.0	-36.1	
2130.00	-15.6	H	3.0	35.6	1.0	-50.2	-13.0	-37.2	
2840.00	-21.1	H	3.0	34.7	1.0	-54.8	-13.0	-41.8	
High Ch. 711									
1422.00	-13.8	V	3.0	36.5	1.0	-49.3	-13.0	-36.3	
2133.00	-14.1	V	3.0	35.6	1.0	-48.7	-13.0	-35.7	
2844.00	-20.1	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1422.00	-18.2	H	3.0	36.5	1.0	-53.8	-13.0	-40.8	
2133.00	-16.3	H	3.0	35.6	1.0	-50.9	-13.0	-37.9	
2844.00	-20.7	H	3.0	34.7	1.0	-54.4	-13.0	-41.4	

LTE B17 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 8/2/2017
 Test Engineer: 43575 OS
 Configuration: EUT + AC + Headset
 Location: Chamber C
 Mode: LTE_16QAM Band 17 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 706.5									
1413.00	-12.6	V	3.0	36.5	1.0	-48.1	-13.0	-35.1	
2119.50	-12.4	V	3.0	35.6	1.0	-47.0	-13.0	-34.0	
2826.00	-20.1	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1413.00	-12.8	H	3.0	36.5	1.0	-48.3	-13.0	-35.3	
2119.50	-15.6	H	3.0	35.6	1.0	-50.2	-13.0	-37.2	
2826.00	-20.0	H	3.0	34.7	1.0	-53.7	-13.0	-40.7	
Mid Ch. 710									
1420.00	-11.4	V	3.0	36.5	1.0	-46.9	-13.0	-33.9	
2130.00	-14.4	V	3.0	35.6	1.0	-49.0	-13.0	-36.0	
2840.00	-20.1	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1420.00	-13.3	H	3.0	36.5	1.0	-48.8	-13.0	-35.8	
2130.00	-15.6	H	3.0	35.6	1.0	-50.2	-13.0	-37.2	
2840.00	-20.7	H	3.0	34.7	1.0	-54.4	-13.0	-41.4	
High Ch. 713.5									
1427.00	-10.4	V	3.0	36.5	1.0	-45.9	-13.0	-32.9	
2140.50	-16.9	V	3.0	35.6	1.0	-51.4	-13.0	-38.4	
2854.00	-20.0	V	3.0	34.7	1.0	-53.7	-13.0	-40.7	
1427.00	-13.0	H	3.0	36.5	1.0	-48.5	-13.0	-35.5	
2140.50	-14.4	H	3.0	35.6	1.0	-49.0	-13.0	-36.0	
2854.00	-19.9	H	3.0	34.7	1.0	-53.5	-13.0	-40.5	

LTE B17 5MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 8/2/2017
 Test Engineer: 43575 OS
 Configuration: EUT + AC + Headset
 Location: Chamber C
 Mode: LTE_16QAM Band 17 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 709									
1418.00	-10.1	V	3.0	36.5	1.0	-45.6	-13.0	-32.6	
2127.00	-14.5	V	3.0	35.6	1.0	-49.1	-13.0	-36.1	
2836.00	-20.1	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1418.00	-11.2	H	3.0	36.5	1.0	-46.8	-13.0	-33.8	
2127.00	-17.1	H	3.0	35.6	1.0	-51.7	-13.0	-38.7	
2836.00	-21.0	H	3.0	34.7	1.0	-54.7	-13.0	-41.7	
Mid Ch. 710									
1420.00	-11.4	V	3.0	36.5	1.0	-46.9	-13.0	-33.9	
2130.00	-14.0	V	3.0	35.6	1.0	-48.6	-13.0	-35.6	
2840.00	-20.2	V	3.0	34.7	1.0	-53.9	-13.0	-40.9	
1420.00	-14.0	H	3.0	36.5	1.0	-49.5	-13.0	-36.5	
2130.00	-16.8	H	3.0	35.6	1.0	-51.4	-13.0	-38.4	
2840.00	-21.0	H	3.0	34.7	1.0	-54.7	-13.0	-41.7	
High Ch. 711									
1422.00	-14.3	V	3.0	36.5	1.0	-49.8	-13.0	-36.8	
2133.00	-14.7	V	3.0	35.6	1.0	-49.3	-13.0	-36.3	
2844.00	-20.2	V	3.0	34.7	1.0	-53.8	-13.0	-40.8	
1422.00	-17.2	H	3.0	36.5	1.0	-52.8	-13.0	-39.8	
2133.00	-16.8	H	3.0	35.6	1.0	-51.4	-13.0	-38.4	
2844.00	-21.1	H	3.0	34.7	1.0	-54.8	-13.0	-41.8	

LTE B17 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 819									
1638.00	-28.8	V	3.0	37.0	1.0	-62.8	-13.0	-49.8	
2497.00	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3276.00	-20.7	V	3.0	36.2	1.0	-56.9	-13.0	-42.9	
1638.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2497.00	-22.5	H	3.0	36.4	1.0	-57.9	-13.0	-44.9	
3276.00	-21.5	H	3.0	36.2	1.0	-56.7	-13.0	-43.7	
Mid Ch. 831.5									
1663.00	-26.1	V	3.0	37.0	1.0	-62.1	-13.0	-49.1	
2494.50	-19.5	V	3.0	36.4	1.0	-54.9	-13.0	-41.9	
3326.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1663.00	-26.5	H	3.0	37.0	1.0	-62.5	-13.0	-49.5	
2494.50	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3326.00	-21.7	H	3.0	36.1	1.0	-56.8	-13.0	-43.8	
High Ch. 844									
1688.00	-26.7	V	3.0	37.0	1.0	-62.6	-13.0	-49.6	
2532.00	-20.3	V	3.0	36.4	1.0	-55.7	-13.0	-42.7	
3376.00	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1688.00	-27.2	H	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2532.00	-21.9	H	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3376.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_16QAM Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 819									
1638.00	-27.3	V	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2497.00	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3276.00	-20.8	V	3.0	36.2	1.0	-56.0	-13.0	-43.0	
1638.00	-27.6	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2497.00	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3276.00	-21.7	H	3.0	36.2	1.0	-56.9	-13.0	-43.9	
Mid Ch. 831.5									
1663.00	-27.2	V	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2494.50	-20.1	V	3.0	36.4	1.0	-55.5	-13.0	-42.5	
3326.00	-21.3	V	3.0	36.1	1.0	-56.5	-13.0	-43.5	
1663.00	-26.7	H	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2494.50	-23.3	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3326.00	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	
High Ch. 844									
1688.00	-27.0	V	3.0	37.0	1.0	-62.9	-13.0	-49.9	
2532.00	-20.7	V	3.0	36.4	1.0	-56.1	-13.0	-43.1	
3376.00	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1688.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2532.00	-23.7	H	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3376.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	

LTE B26 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_QPSK Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 821.5									
1643.00	-26.7	V	3.0	37.0	1.0	-62.8	-13.0	-49.8	
2464.50	-19.1	V	3.0	36.4	1.0	-54.6	-13.0	-41.6	
3286.00	-20.6	V	3.0	36.2	1.0	-56.7	-13.0	-42.7	
1643.00	-27.0	H	3.0	37.0	1.0	-63.0	-13.0	-50.0	
2464.50	-21.7	H	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3286.00	-20.3	H	3.0	36.2	1.0	-55.5	-13.0	-42.5	
Mid Ch. 831.5									
1663.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2494.50	-19.9	V	3.0	36.4	1.0	-55.3	-13.0	-42.3	
3326.00	-20.6	V	3.0	36.1	1.0	-56.8	-13.0	-42.8	
1663.00	-26.6	H	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2494.50	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3326.00	-21.0	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
High Ch. 841.5									
1683.00	-26.5	V	3.0	37.0	1.0	-62.5	-13.0	-49.5	
2524.50	-21.8	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3366.00	-19.7	V	3.0	36.1	1.0	-54.8	-13.0	-41.8	
1683.00	-26.8	H	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2524.50	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3366.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	

LTE B26 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
 Project #: 11783785
 Date: 7/28/2017
 Test Engineer: GE43578
 Configuration: EUT + AC Charger + HS
 Location: Chamber B
 Mode: LTE_16QAM Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 821.5									
1643.00	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2464.50	-19.9	V	3.0	36.4	1.0	-55.4	-13.0	-42.4	
3286.00	-21.0	V	3.0	36.2	1.0	-56.2	-13.0	-43.2	
1643.00	-26.7	H	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2464.50	-22.2	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3286.00	-21.0	H	3.0	36.2	1.0	-56.2	-13.0	-43.2	
Mid Ch. 831.5									
1663.00	-27.3	V	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2494.50	-19.4	V	3.0	36.4	1.0	-54.8	-13.0	-41.8	
3326.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1663.00	-26.5	H	3.0	37.0	1.0	-62.5	-13.0	-49.5	
2494.50	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3326.00	-20.7	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch. 841.5									
1683.00	-26.7	V	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2524.50	-21.4	V	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3366.00	-20.0	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
1683.00	-27.1	H	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2524.50	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3366.00	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1	

LTE B26 15MHz QPSK

LTE B26 15MHz 16QAM

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		SOMC								
Project #:		11783785								
Date:		7/29/2017								
Test Engineer:		GE43578								
Configuration:		EUT + HS + Charger								
Location:		Chamber B								
Mode:		LTE_QPSK Band 41 Harmonics, 20MHz Bandwidth								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 2506MHz										
9012.00	-19.0	V	3.0	35.5	1.0	-53.5	-25.0	-28.5		
7518.00	-21.8	V	3.0	35.7	1.0	-56.5	-25.0	-31.5		
10024.00	-21.3	V	3.0	36.0	1.0	-56.3	-25.0	-31.3		
5012.00	-19.1	H	3.0	35.5	1.0	-53.5	-25.0	-28.5		
7518.00	-21.0	H	3.0	35.7	1.0	-55.8	-25.0	-30.8		
10024.00	-20.2	H	3.0	36.0	1.0	-55.2	-25.0	-30.2		
Mid Ch, 2593MHz										
5186.00	-19.3	V	3.0	35.4	1.0	-53.7	-25.0	-28.7		
7778.00	-23.1	V	3.0	35.8	1.0	-57.9	-25.0	-32.9		
10372.00	-21.1	V	3.0	35.8	1.0	-56.0	-25.0	-31.0		
5186.00	-18.4	H	3.0	35.4	1.0	-52.8	-25.0	-27.8		
7778.00	-20.4	H	3.0	35.8	1.0	-55.2	-25.0	-30.2		
10372.00	-19.8	H	3.0	35.8	1.0	-54.7	-25.0	-29.7		
High Ch, 2680MHz										
5360.00	-18.8	V	3.0	35.4	1.0	-53.2	-25.0	-28.2		
8040.00	-21.8	V	3.0	35.8	1.0	-56.6	-25.0	-31.6		
10720.00	-21.0	V	3.0	35.7	1.0	-55.7	-25.0	-30.7		
5360.00	-18.8	H	3.0	35.4	1.0	-53.2	-25.0	-28.2		
8040.00	-20.7	H	3.0	35.8	1.0	-55.5	-25.0	-30.5		
10720.00	-20.4	H	3.0	35.7	1.0	-55.1	-25.0	-30.1		

LTE B41 20MHz QPSK

UL Verification Services, Inc. Above 1GHz High Frequency Substitution Measurement										
Company:		SOMC								
Project #:		11783785								
Date:		7/29/2017								
Test Engineer:		GE43578								
Configuration:		EUT + HS + Charger								
Location:		Chamber B								
Mode:		LTE_16QAM Band 41 Harmonics, 20MHz Bandwidth								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch, 2506MHz										
9012.00	-19.8	V	3.0	35.5	1.0	-54.3	-25.0	-29.3		
7518.00	-22.5	V	3.0	35.7	1.0	-57.3	-25.0	-32.3		
10024.00	-21.5	V	3.0	36.0	1.0	-56.5	-25.0	-31.5		
5012.00	-19.7	H	3.0	35.5	1.0	-54.1	-25.0	-29.1		
7518.00	-21.6	H	3.0	35.7	1.0	-56.4	-25.0	-31.4		
10024.00	-20.6	H	3.0	36.0	1.0	-55.6	-25.0	-30.6		
Mid Ch, 2593MHz										
5186.00	-19.6	V	3.0	35.4	1.0	-54.0	-25.0	-29.0		
7778.00	-22.8	V	3.0	35.8	1.0	-57.6	-25.0	-32.6		
10372.00	-21.6	V	3.0	35.8	1.0	-56.4	-25.0	-31.4		
5186.00	-17.8	H	3.0	35.4	1.0	-52.2	-25.0	-27.2		
7778.00	-20.3	H	3.0	35.8	1.0	-55.0	-25.0	-30.0		
10372.00	-20.3	H	3.0	35.8	1.0	-55.1	-25.0	-30.1		
High Ch, 2680MHz										
5360.00	-19.0	V	3.0	35.4	1.0	-53.5	-25.0	-28.5		
8040.00	-22.2	V	3.0	35.8	1.0	-57.0	-25.0	-32.0		
10720.00	-21.3	V	3.0	35.7	1.0	-56.0	-25.0	-31.0		
5360.00	-18.5	H	3.0	35.4	1.0	-52.9	-25.0	-27.9		
8040.00	-20.4	H	3.0	35.8	1.0	-55.2	-25.0	-30.2		
10720.00	-20.1	H	3.0	35.7	1.0	-54.8	-25.0	-29.8		

LTE B41 20MHz 16QAM