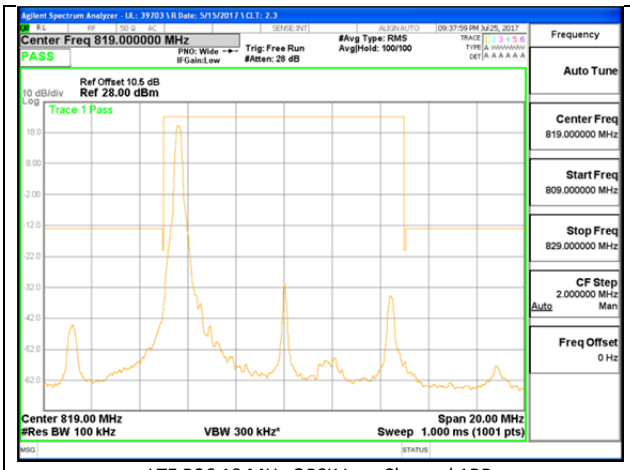
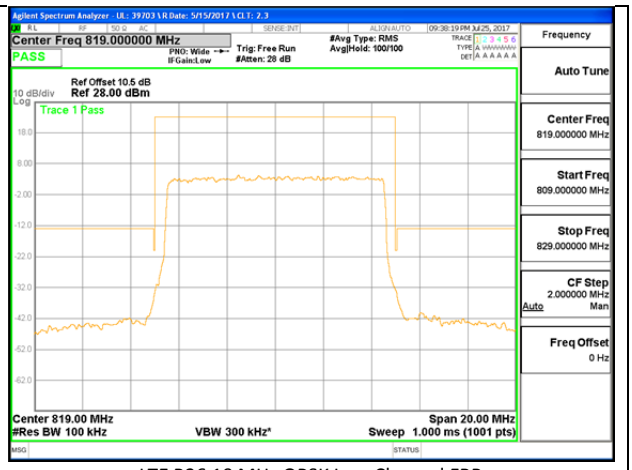
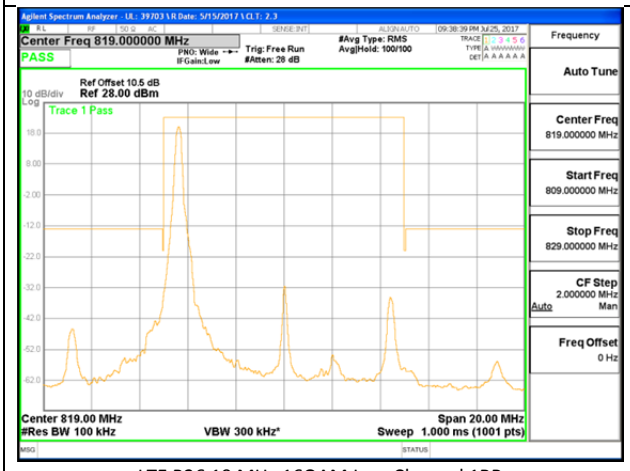


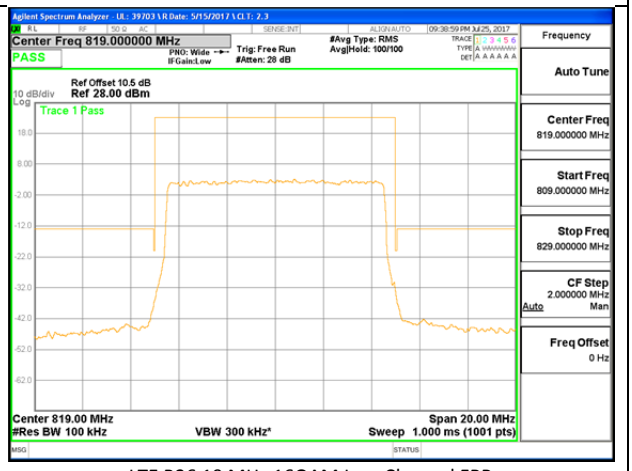
LTE B26 10 MHz QPSK Low Channel 1RB



LTE B26 10 MHz QPSK Low Channel FRB



LTE B26 10 MHz 16QAM Low Channel 1RB



LTE B26 10 MHz 16QAM Low Channel FRB

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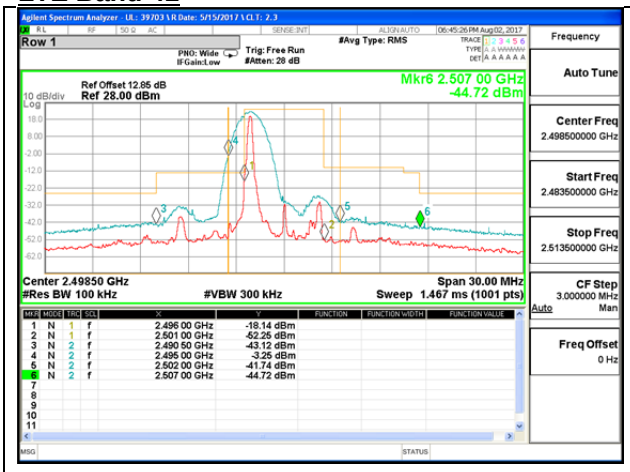
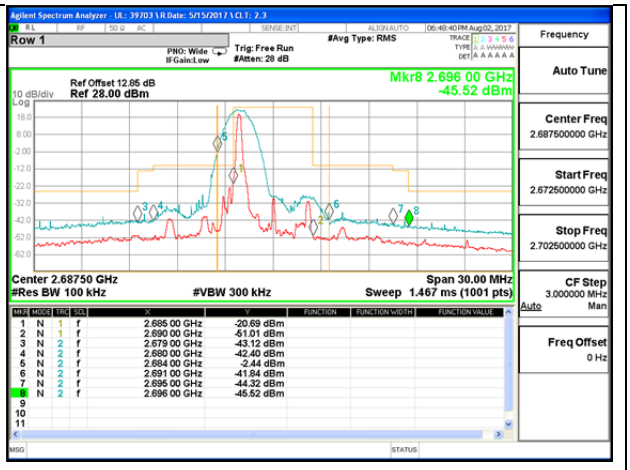
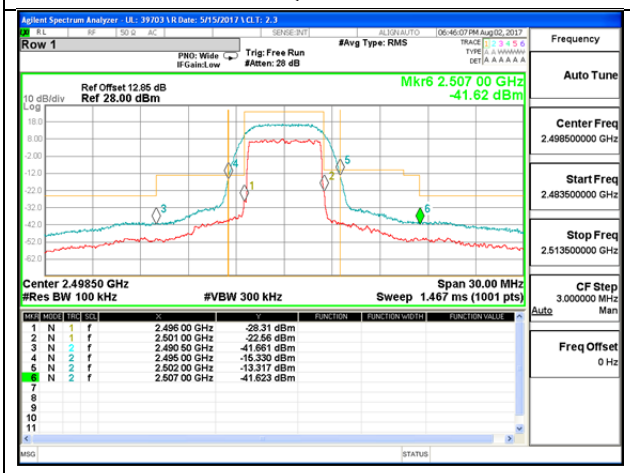
LTE Band 41



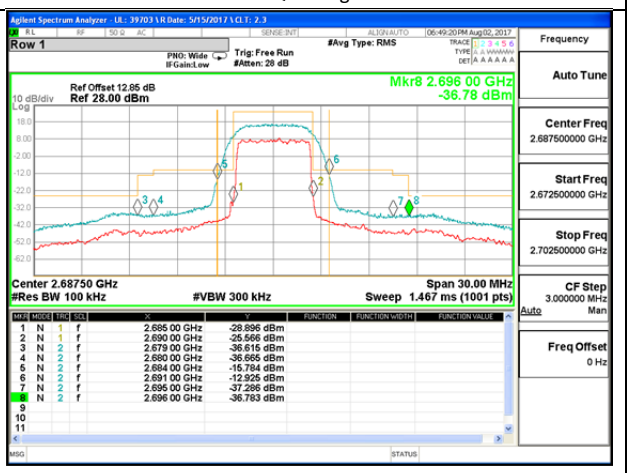
LTE B41 5MHz QPSK Low Channel 1RB



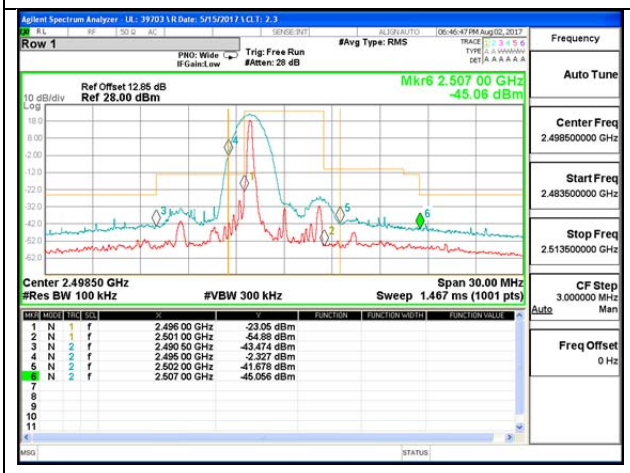
LTE B41 5MHz QPSK High Channel 1RB



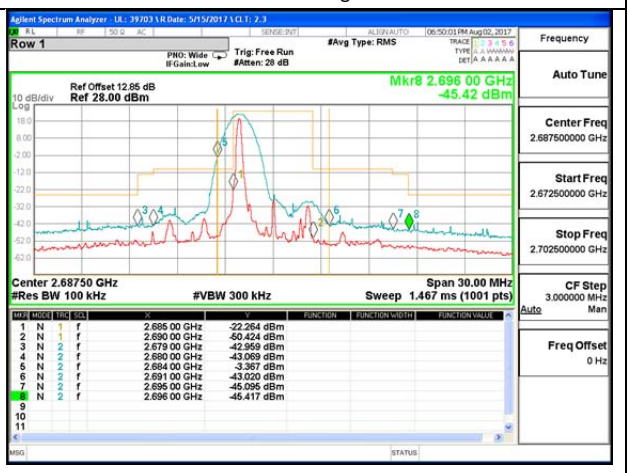
LTE B41 5MHz QPSK Low Channel FRB



LTE B41 5MHz QPSK High Channel FRB



LTE B41 5MHz 16QAM Low Channel 1RB



LTE B41 5MHz 16QAM High Channel 1RB

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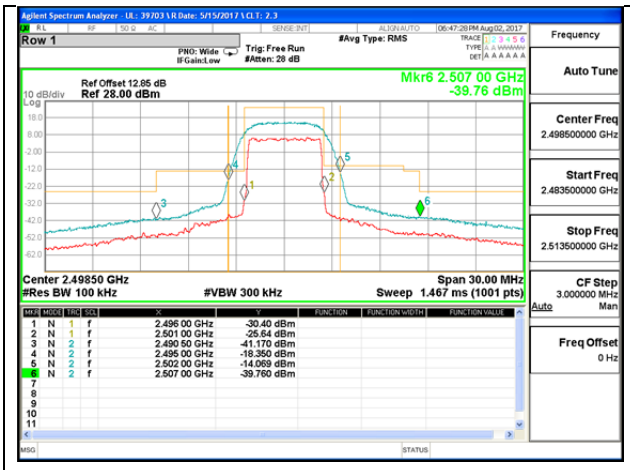
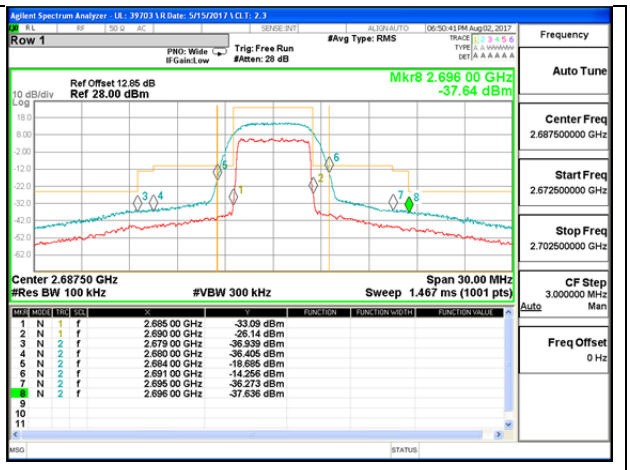
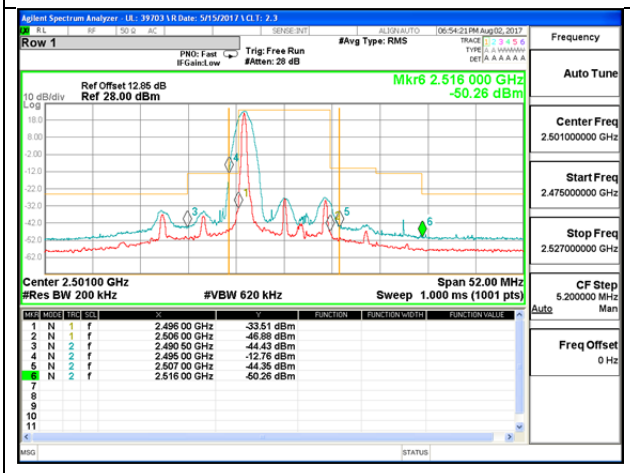


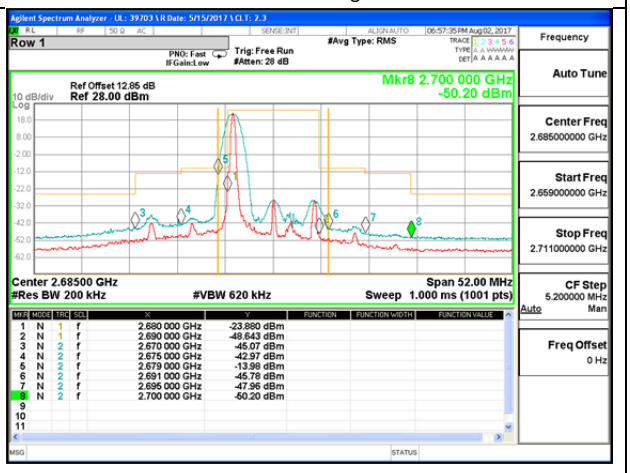
LTE B41 5MHz 16QAM Low Channel FRB



LTE B41 5MHz 16QAM High Channel FRB

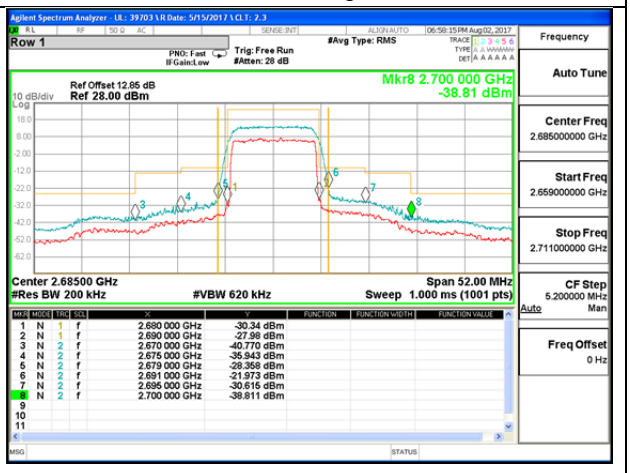


LTE B41 10MHz QPSK Low Channel 1RB



LTE B41 10MHz QPSK High Channel 1RB

LTE B41 10MHz QPSK Low Channel FRB



LTE B41 10MHz QPSK High Channel FRB

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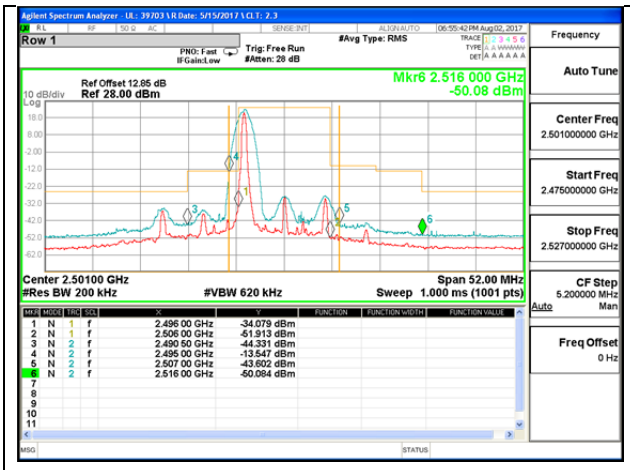
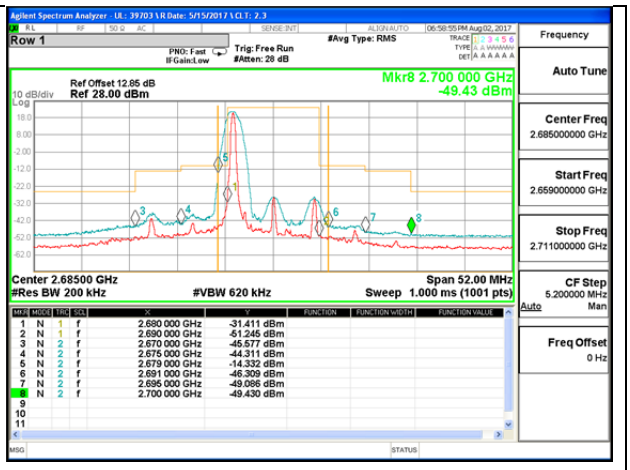
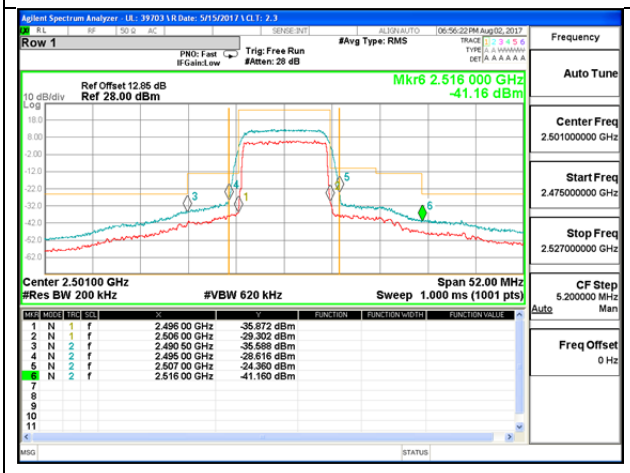


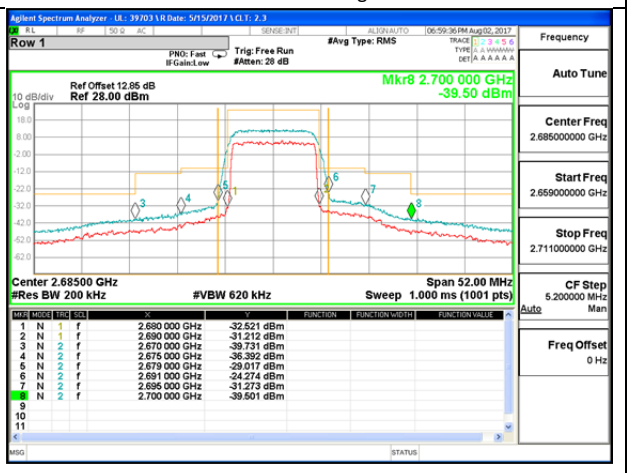
LTE B41 10MHz 16QAM Low Channel 1RB



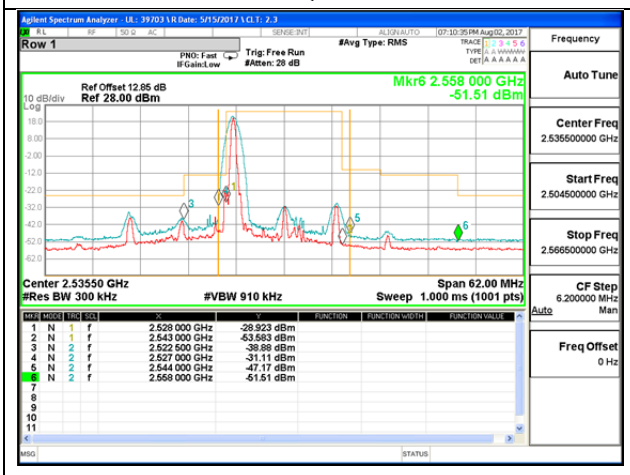
LTE B41 10MHz 16QAM High Channel 1RB



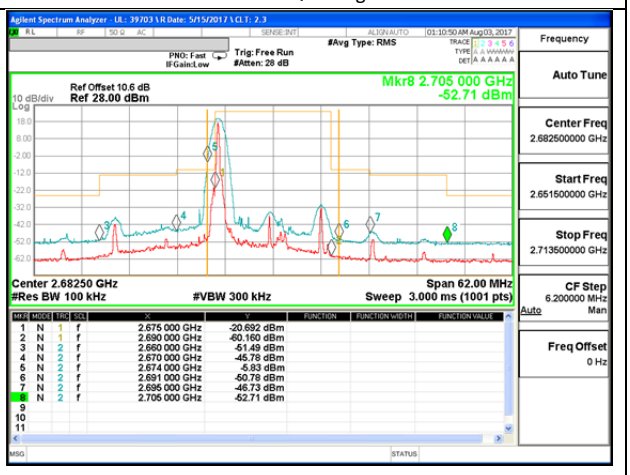
LTE B41 10MHz 16QAM Low Channel FRB



LTE B41 10MHz 16QAM High Channel FRB



LTE B41 15MHz QPSK Low Channel 1RB



LTE B41 15MHz QPSK High Channel 1RB

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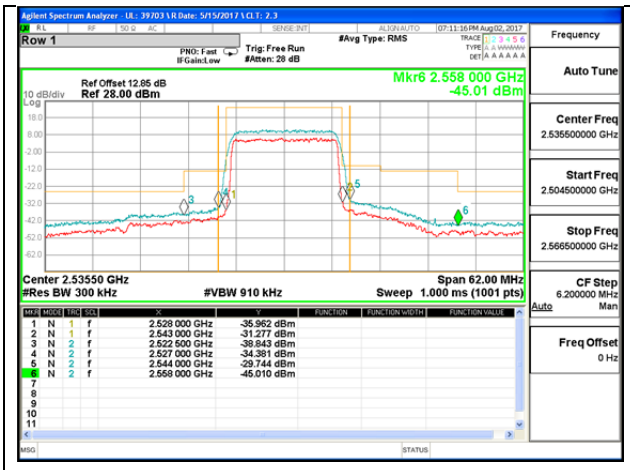
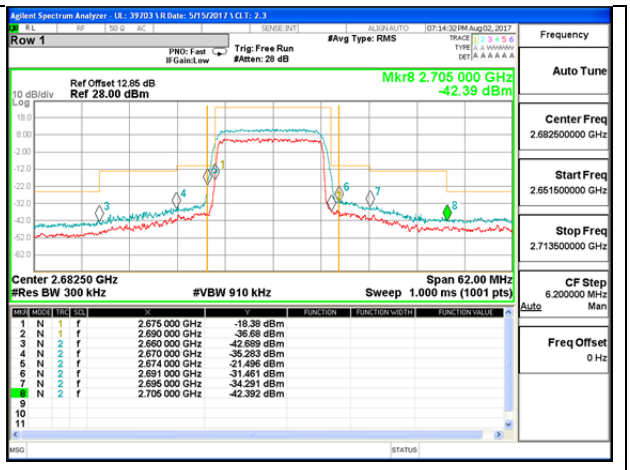
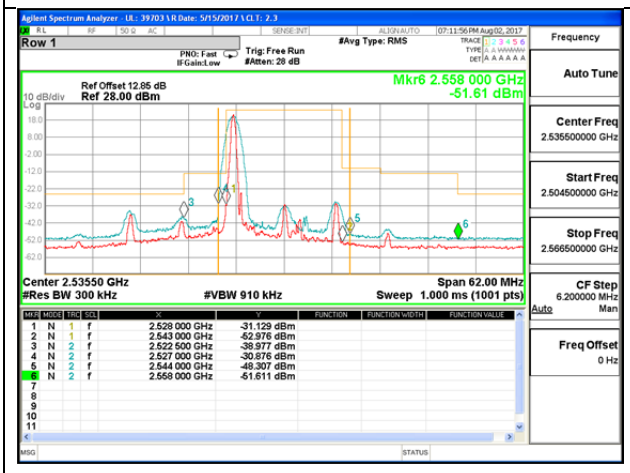


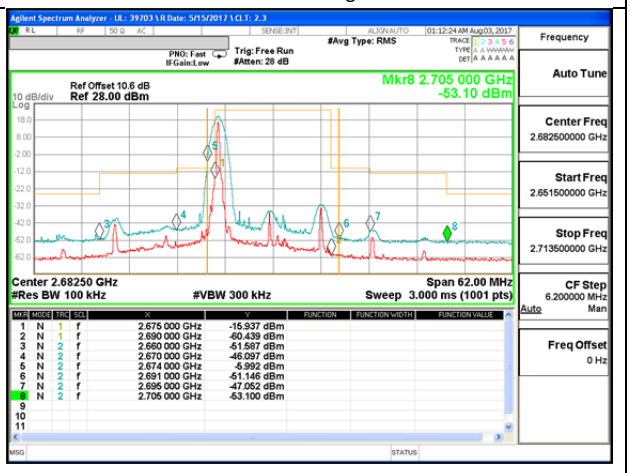
LTE B41 15MHz QPSK Low Channel FRB



LTE B41 15MHz QPSK High Channel FRB

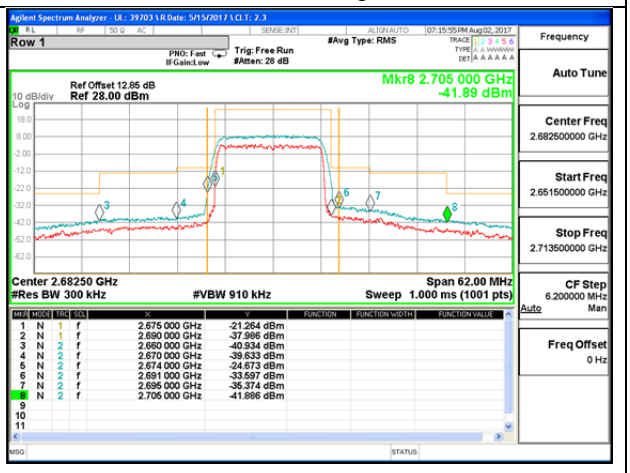


LTE B41 15MHz 16QAM Low Channel 1RB



LTE B41 15MHz 16QAM High Channel 1RB

LTE B41 15MHz 16QAM Low Channel FRB



LTE B41 15MHz 16QAM High Channel FRB

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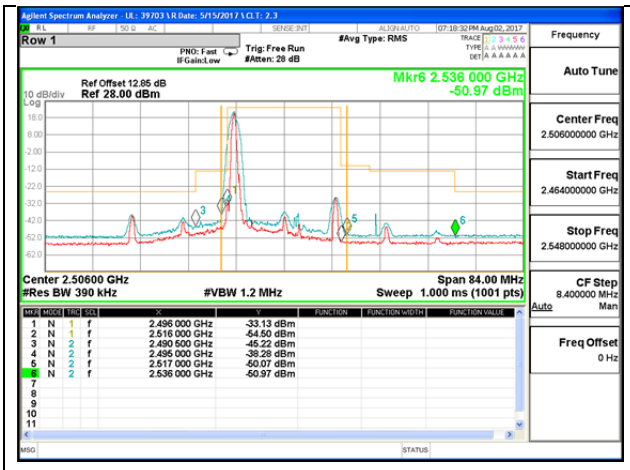
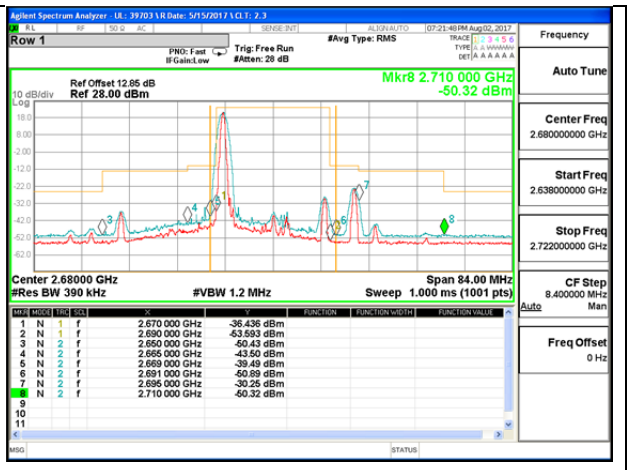


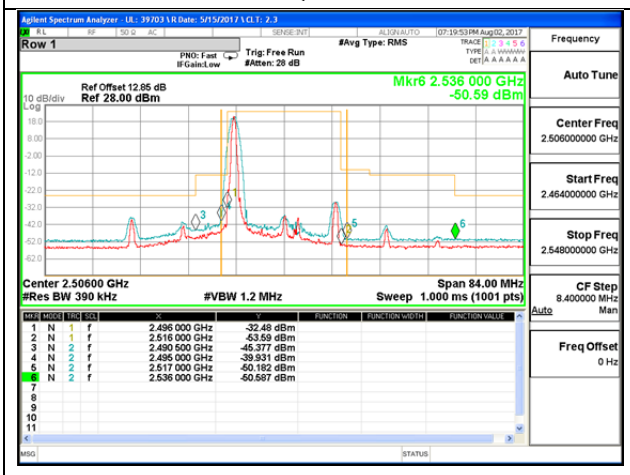
LTE B41 20MHz QPSK Low Channel 1RB



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

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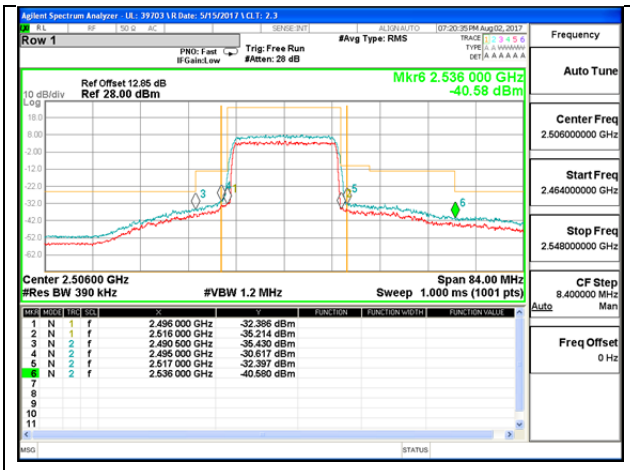

LTE B41 20MHz 16QAM Low Channel FRB

LTE B41 20MHz 16QAM High Channel FRB

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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

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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

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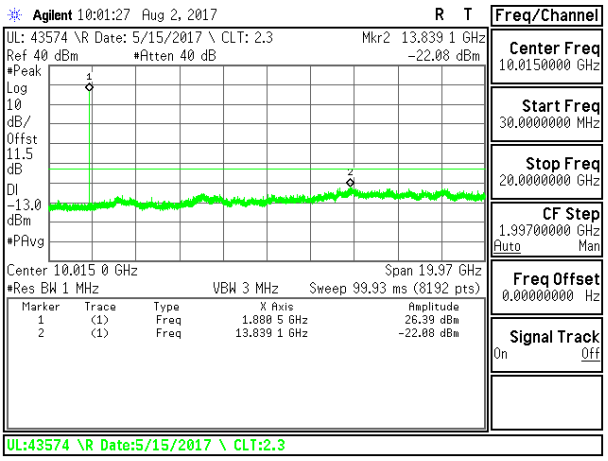
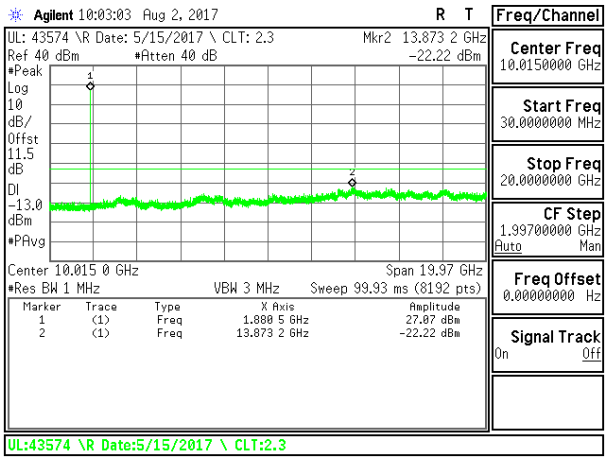


GSM1900 GPRS Middle Channel



GSM1900 EGPRS Middle Channel

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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

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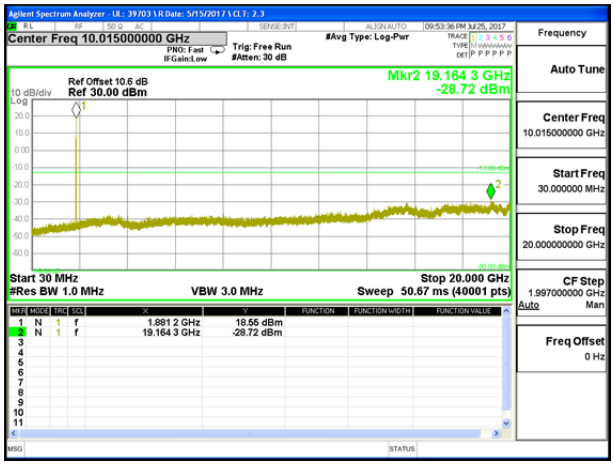
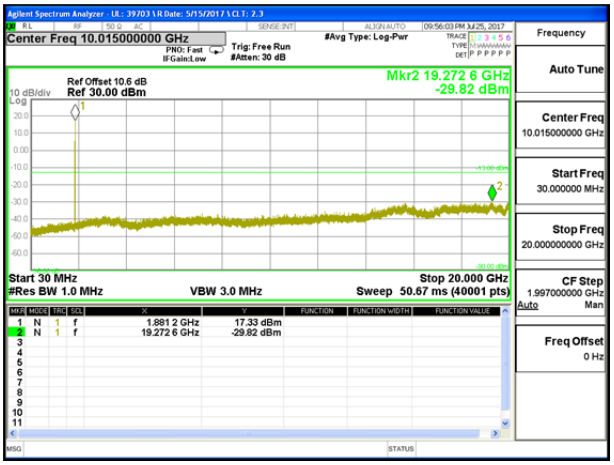
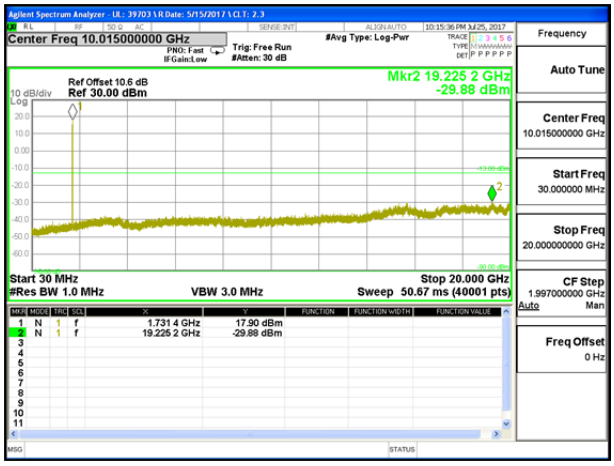


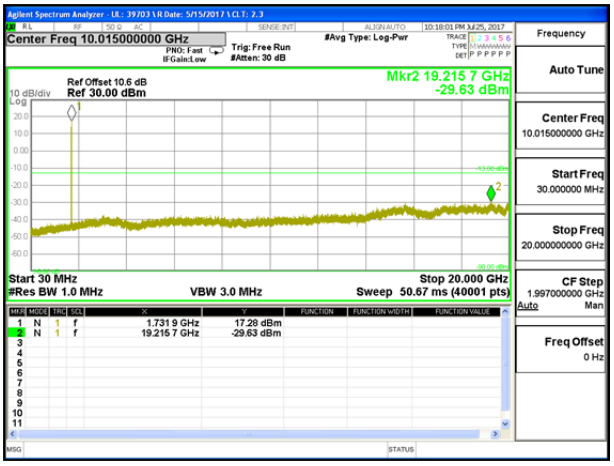
B2 REL99 Middle Channel



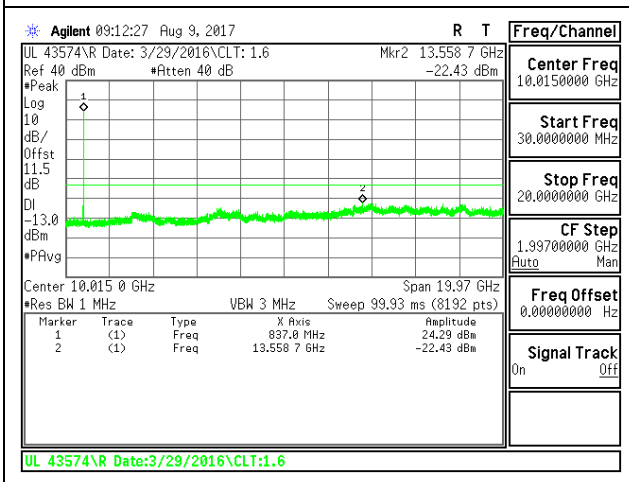
B2 HSDPA Middle Channel



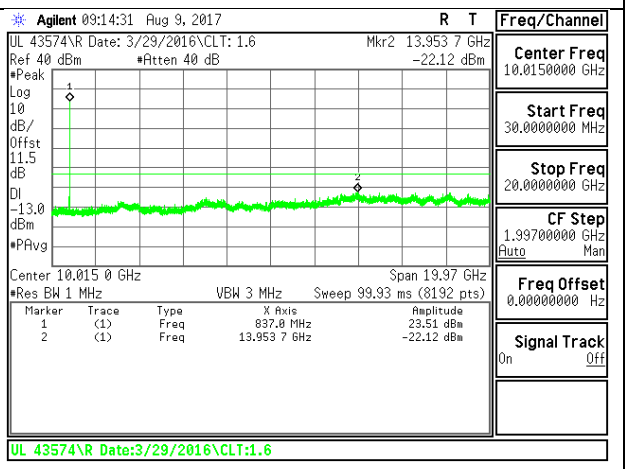
B4 REL99 Middle Channel



B4 HSDPA Middle Channel



B5 REL99 Middle Channel



B5 HSDPA Middle Channel

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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

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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

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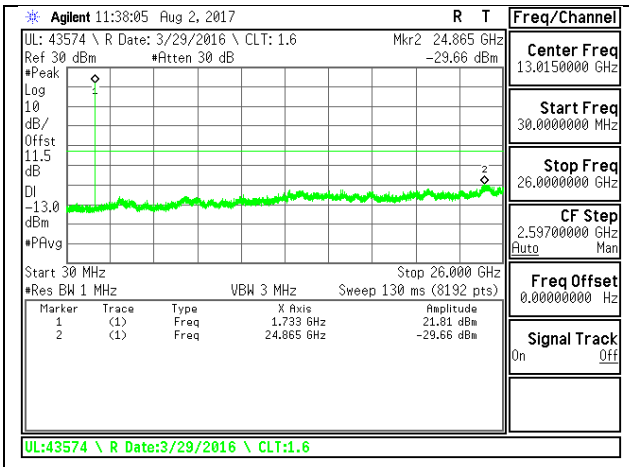
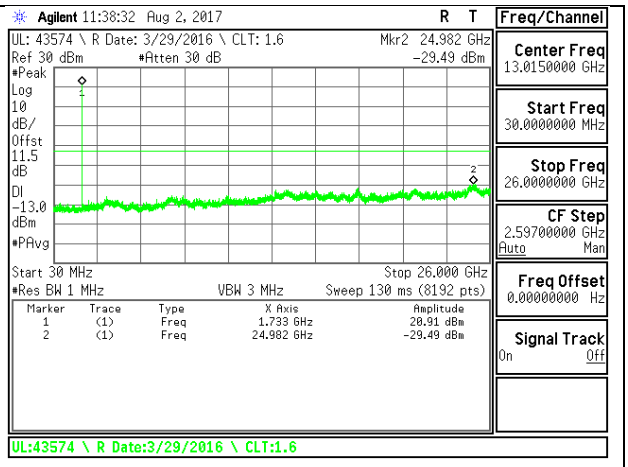
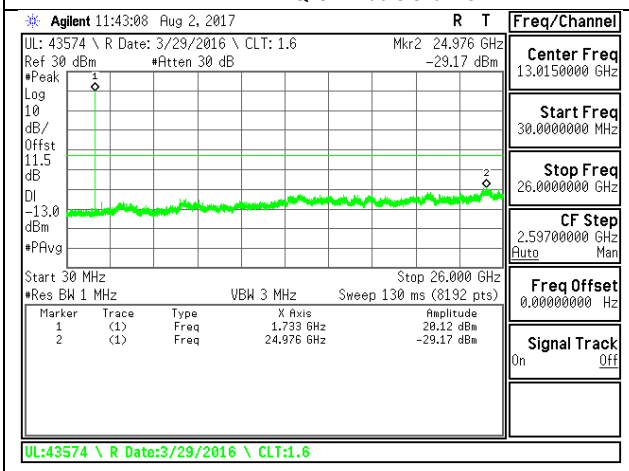


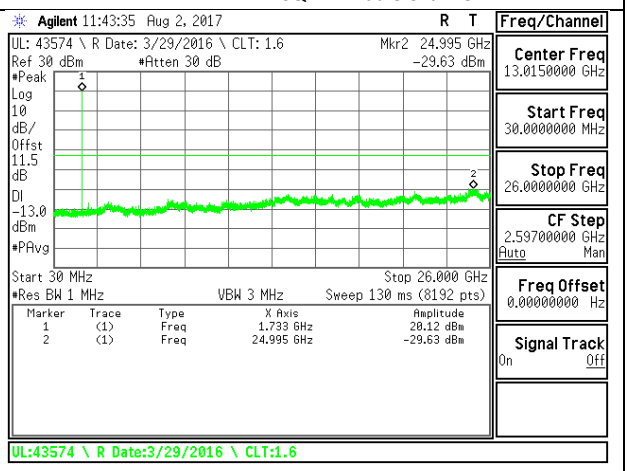
LTE B4 1.4MHz QPSK Middle Channel



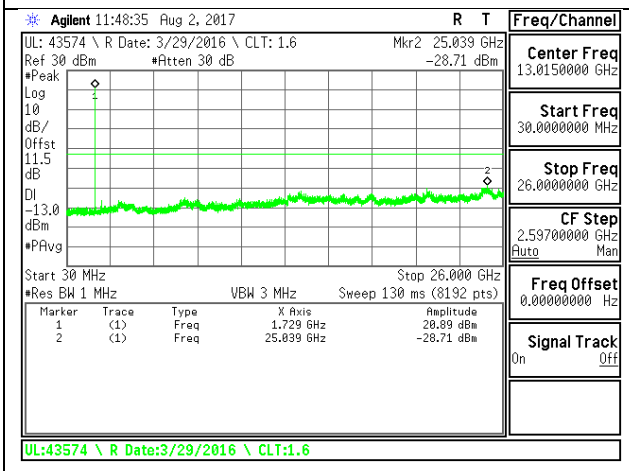
LTE B4 1.4MHz 16QAM Middle Channel



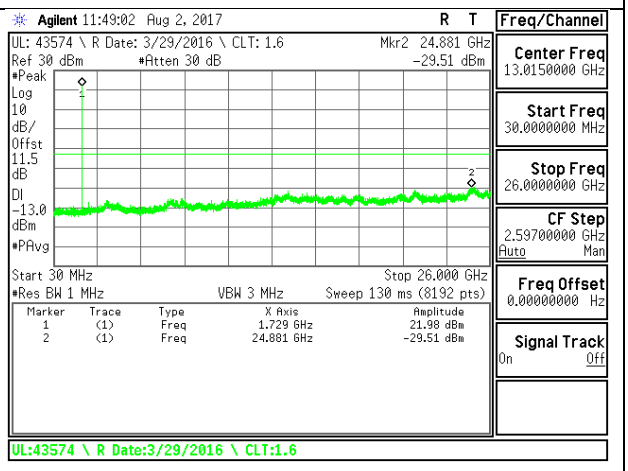
LTE B4 3MHz QPSK Middle Channel



LTE B4 3MHz 16QAM Middle Channel



LTE B4 5MHz QPSK Middle Channel



LTE B4 5MHz 16QAM Middle Channel

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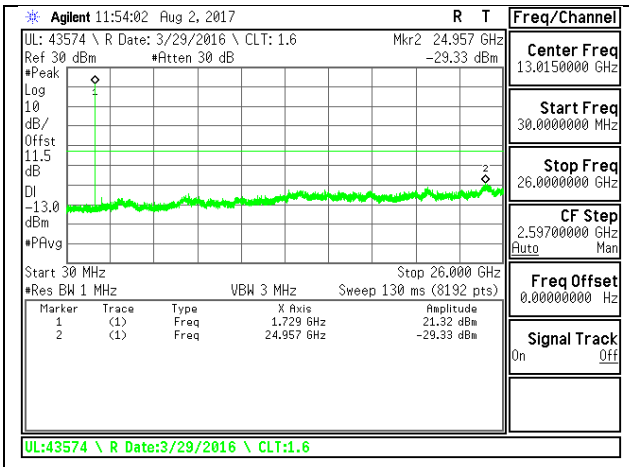
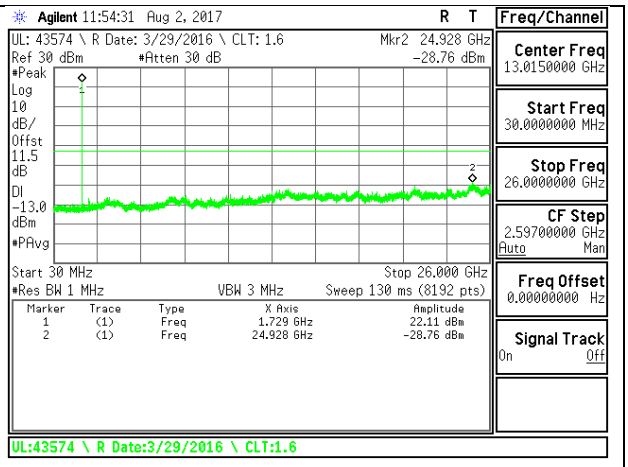
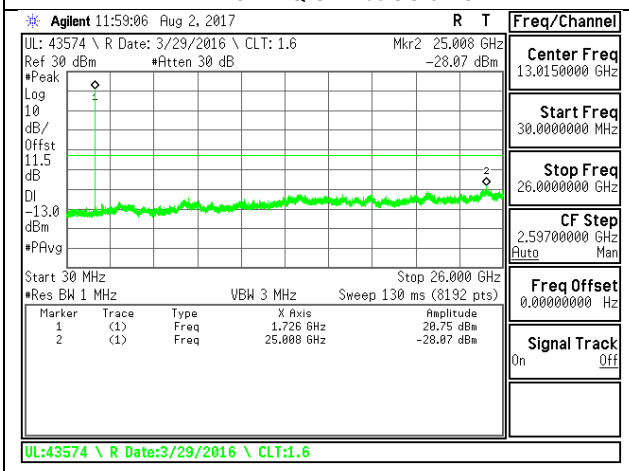


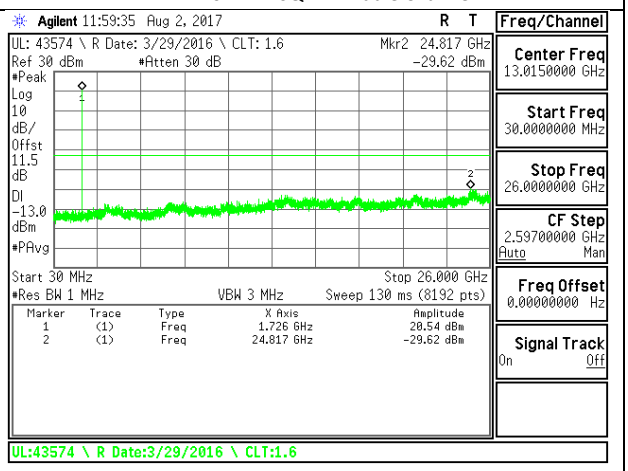
LTE B4 10MHz QPSK Middle Channel



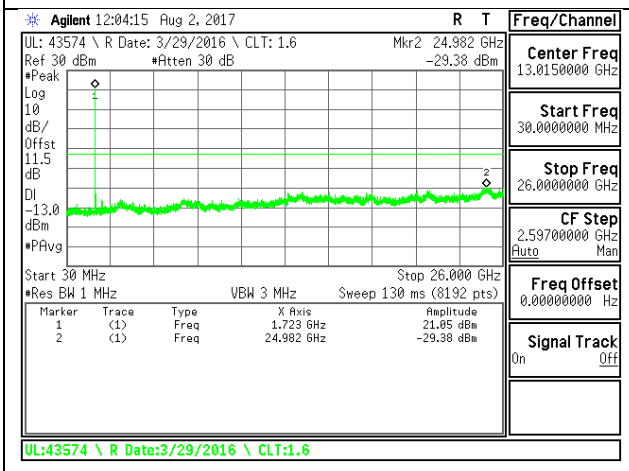
LTE B4 10MHz 16QAM Middle Channel



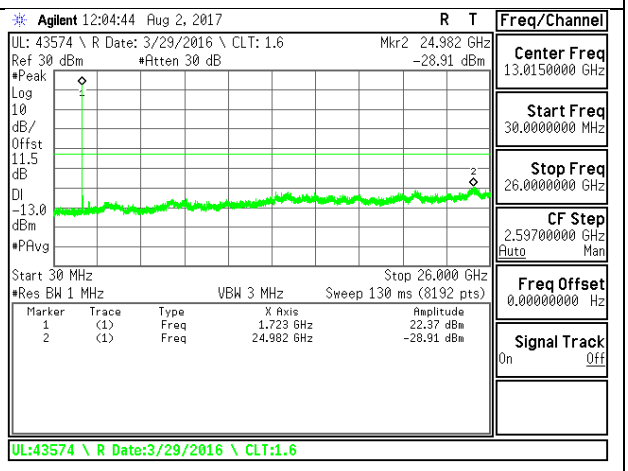
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel



LTE B4 20MHz QPSK Middle Channel



LTE B4 20MHz 16QAM Middle Channel

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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

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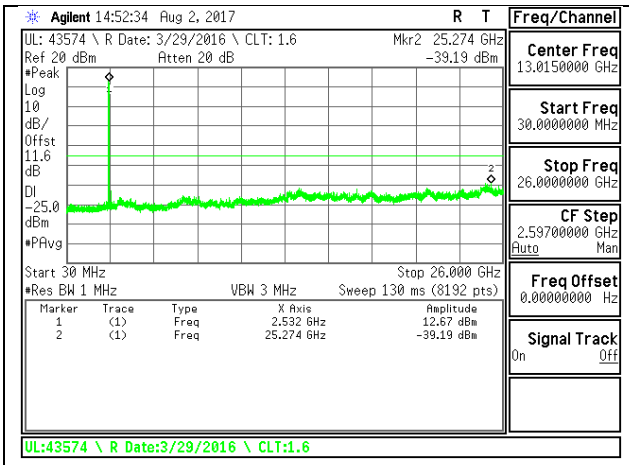
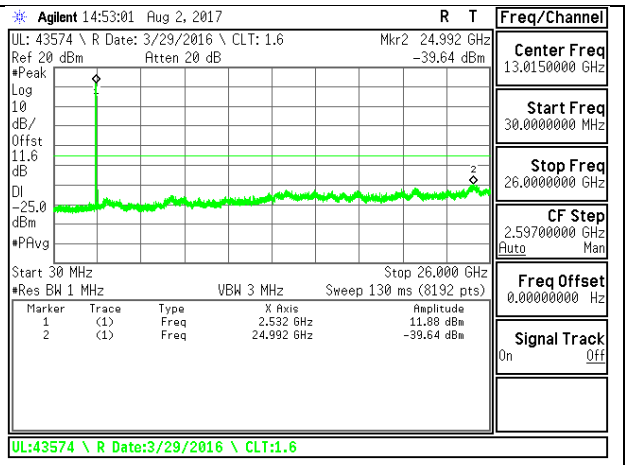
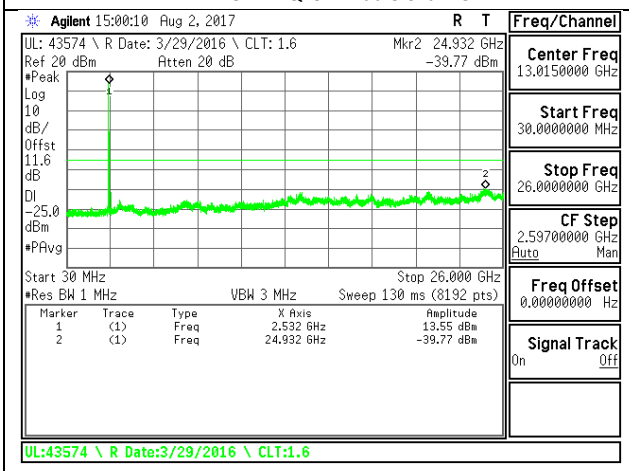


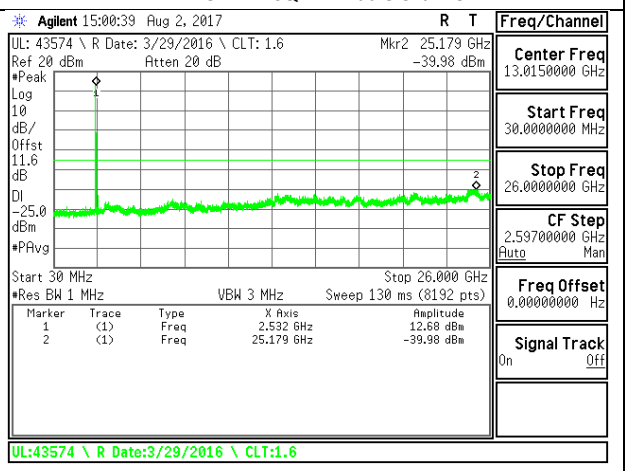
LTE B7 5MHz QPSK Middle Channel



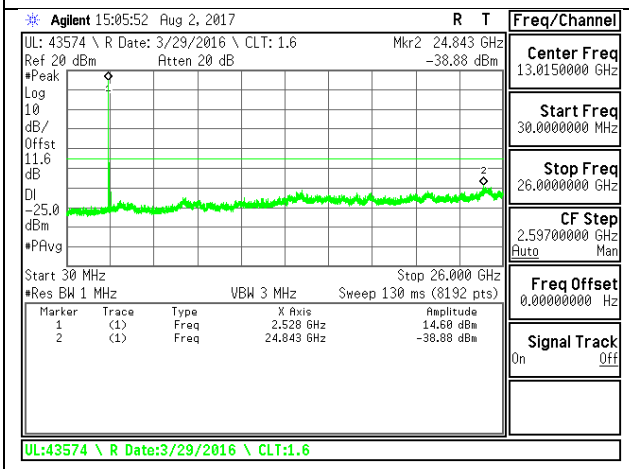
LTE B7 5MHz 16QAM Middle Channel



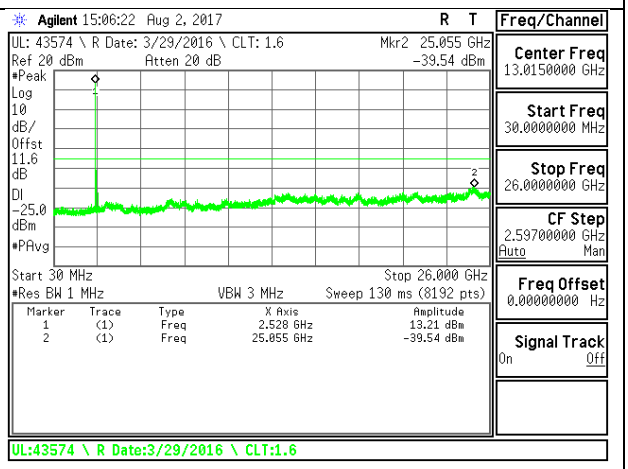
LTE B7 10MHz QPSK Middle Channel



LTE B7 10MHz 16QAM Middle Channel



LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel

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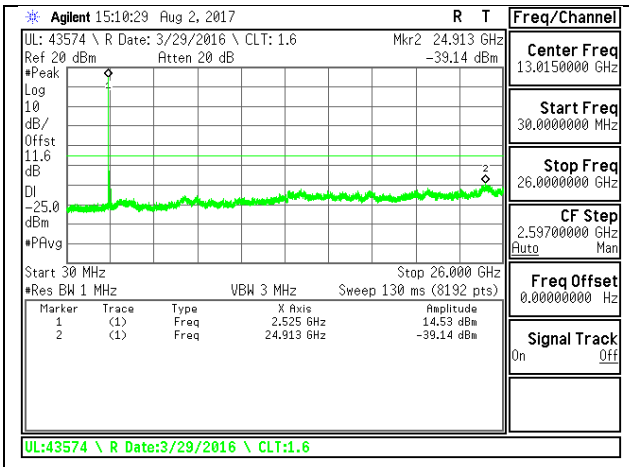
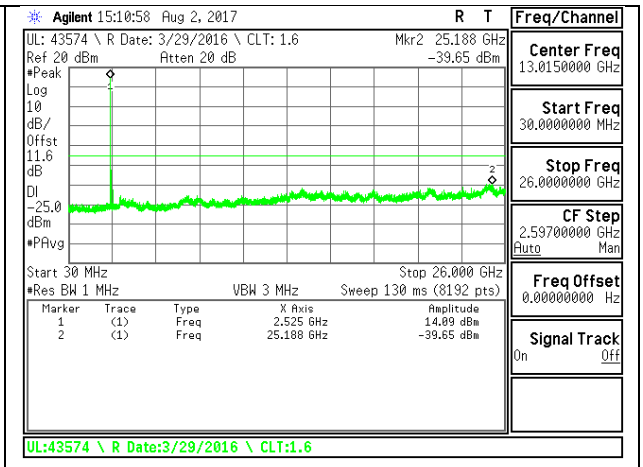


LTE B7 20MHz QPSK Middle Channel



LTE B7 20MHz 16QAM Middle Channel

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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

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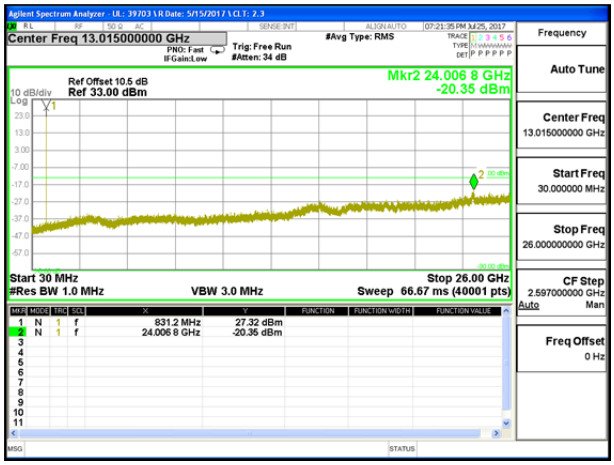
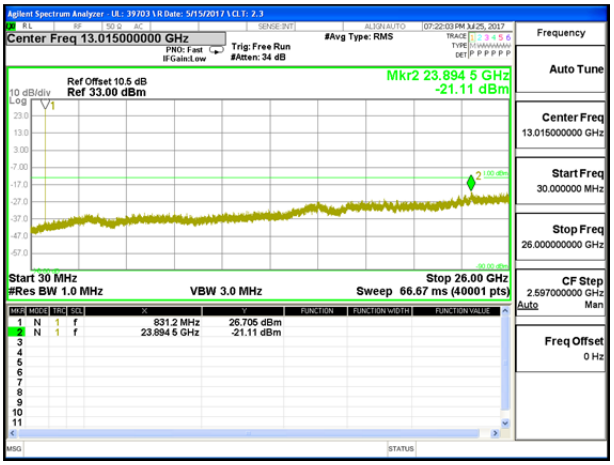
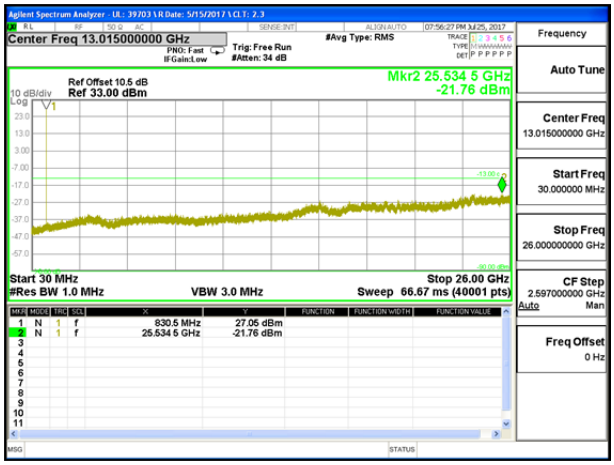


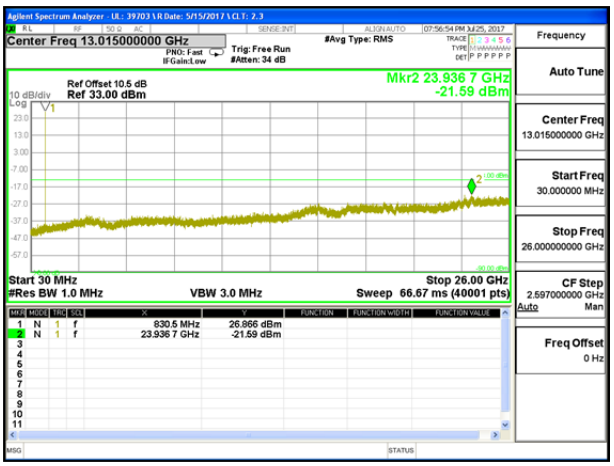
LTE B26 1.4MHz QPSK Middle Channel



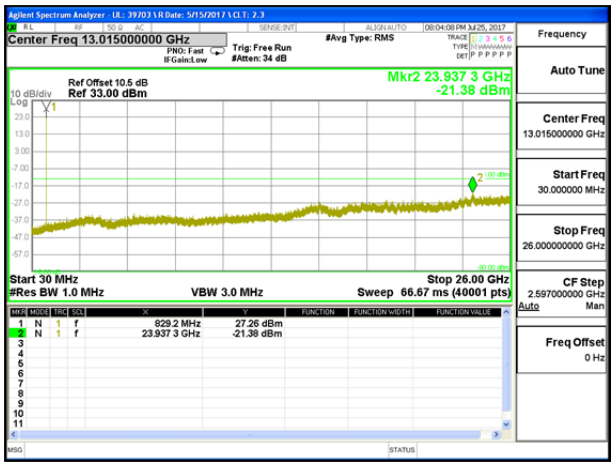
LTE B26 1.4MHz 16QAM Middle Channel



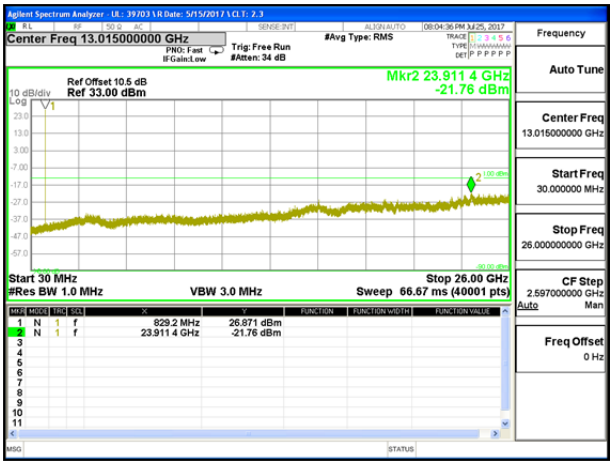
LTE B26 3MHz QPSK Middle Channel



LTE B26 3MHz 16QAM Middle Channel



LTE B26 5MHz QPSK Middle Channel



LTE B26 5MHz 16QAM Middle Channel

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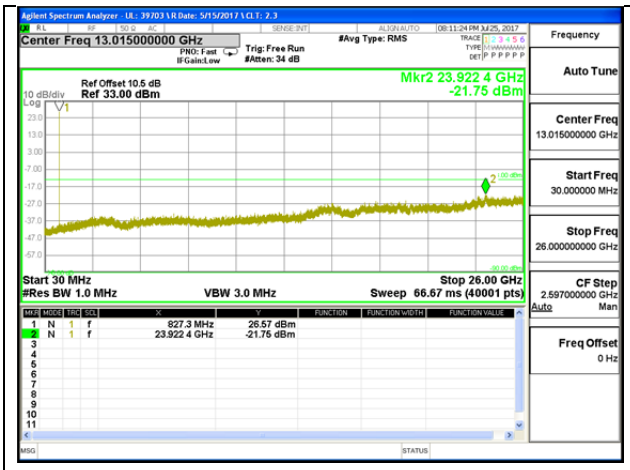
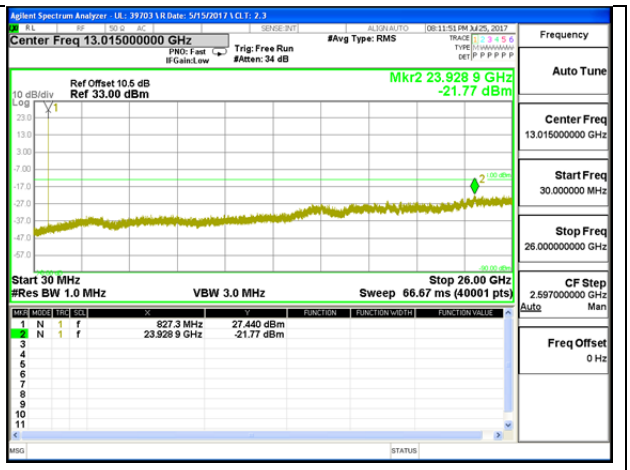
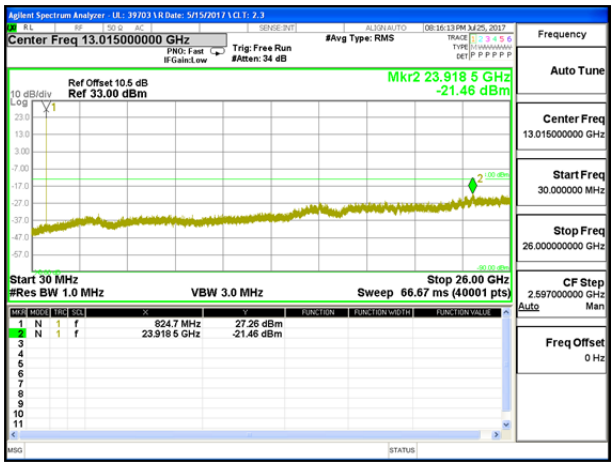


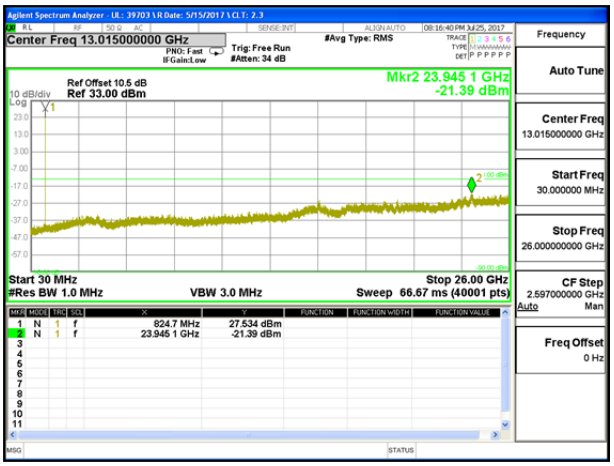
LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel



LTE B26 15MHz QPSK Middle Channel



LTE B26 15MHz 16QAM Middle Channel

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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

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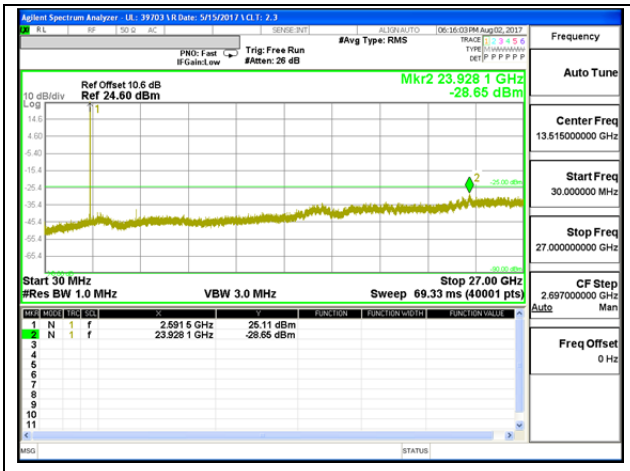
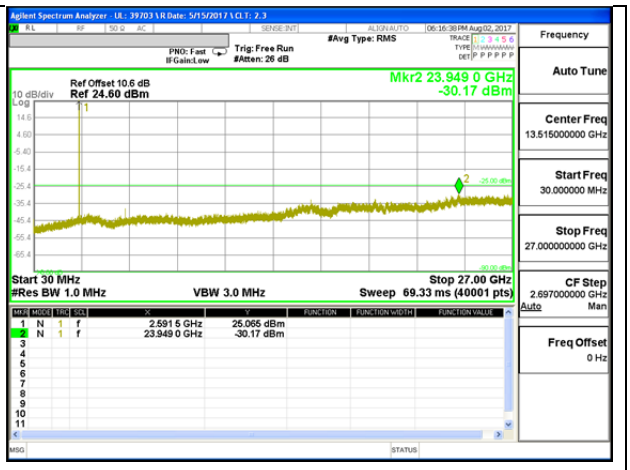
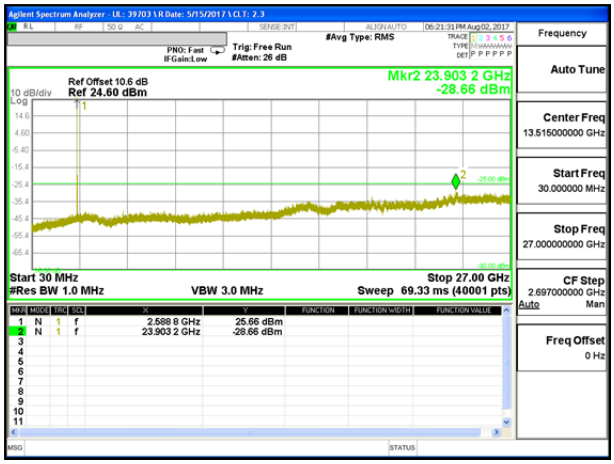


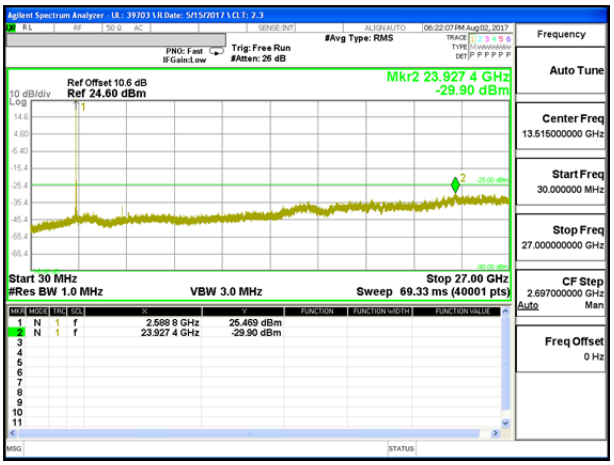
LTE B41 5MHz QPSK Middle Channel



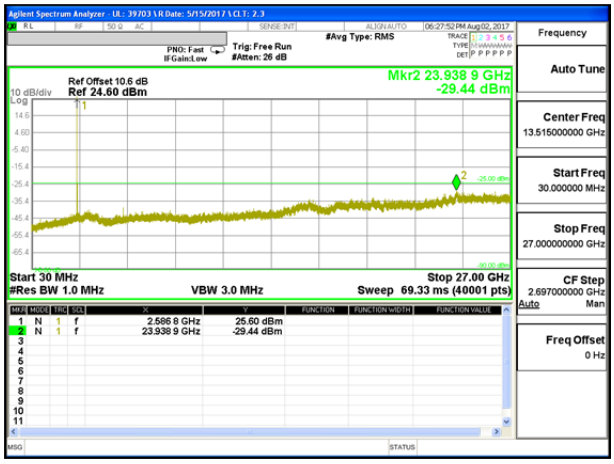
LTE B41 5MHz 16QAM Middle Channel



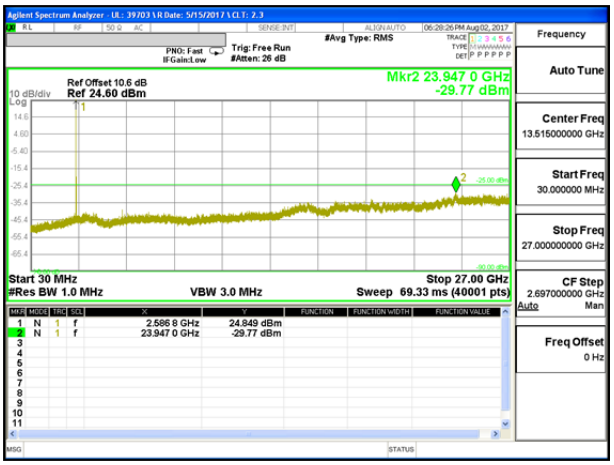
LTE B41 10MHz QPSK Middle Channel



LTE B41 10MHz 16QAM Middle Channel



LTE B41 15MHz QPSK Middle Channel



LTE B41 15MHz 16QAM Middle Channel

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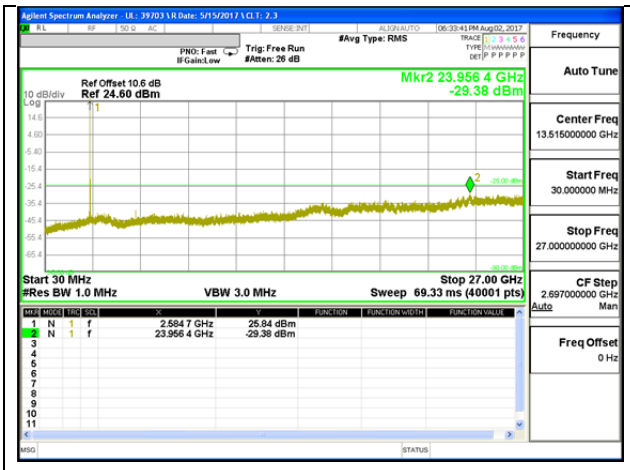
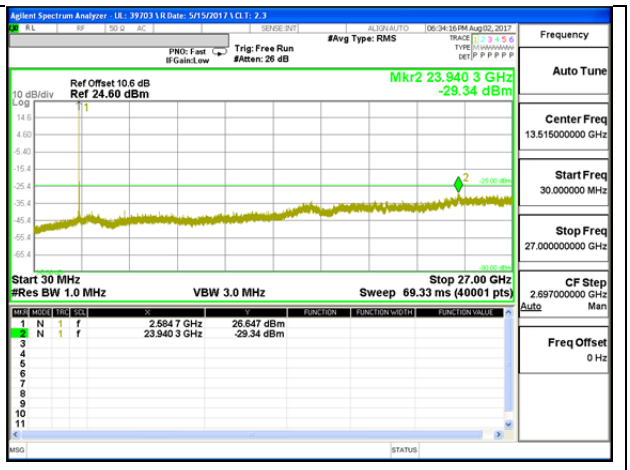


LTE B41 20MHz QPSK Middle Channel



LTE B41 20MHz 16QAM Middle Channel

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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.

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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	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measured with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measured with Time Elapse		
(Vdc)	Temperature (°C)	(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

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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	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measured with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measured with Time Elapse		
(Vdc)	Temperature (°C)	(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

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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	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (°C)	(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	Environment	Frequency Deviation Measured with Time Elapse		
(Vdc)	Temperature (°C)	(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

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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 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

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.

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18.1.1. SPURIOUS RADIATION PLOTS

GSM

Date: 7/29/2017
Test Engineer: GE43578
Configuration: EUT + HS + Charger
Location: Chamber B
Mode: GPRS 850 MHz 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, 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	-21.8	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

Company: SOMC
Project #: 11783785
Date: 7/29/2017
Test Engineer: GE43578
Configuration: EUT + HS + Charger
Location: Chamber B
Mode: EGPRS 850 MHz 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, 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

Company: SOMC
Project #: 11783785
Date: 7/29/2017
Test Engineer: GE43578
Configuration: EUT + HS + Charger
Location: Chamber B
Mode: GPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (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

Company: SOMC
Project #: 11783785
Date: 7/29/2017
Test Engineer: GE43578
Configuration: EUT + HS + Charger
Location: Chamber B
Mode: EGPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (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

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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)	EIRP (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, 1880MHz									
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)	EIRP (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, 1880MHz									
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	-18.8	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)	EIRP (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)	EIRP (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. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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	-60.6	-13.0	-47.6	
Mid Ch, 836.6MHz									
1673.20	-23.5	V	3.0	37.0	1.0	-59.5	-13.0	-46.5	
2509.80	-24.8	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	-25.6	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	-30.8	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. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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LTE Band 4

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 1.4MHz 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, 1710.7MHz									
3421.40	-18.3	V	3.0	36.1	1.0	-53.3	-13.0	-40.3	
5132.10	-17.9	V	3.0	35.4	1.0	-52.3	-13.0	-39.3	
6842.80	-16.9	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3421.40	-19.4	H	3.0	36.1	1.0	-54.5	-13.0	-41.5	
5132.10	-17.2	H	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6842.80	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	
Mid Ch, 1732.5MHz									
3465.00	-18.9	V	3.0	36.0	1.0	-53.9	-13.0	-40.9	
5197.50	-17.5	V	3.0	35.4	1.0	-52.0	-13.0	-39.0	
6930.00	-16.4	V	3.0	35.7	1.0	-51.1	-13.0	-38.1	
3465.00	-19.3	H	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5197.50	-17.1	H	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6930.00	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	
High Ch, 1754.3MHz									
3508.60	-18.5	V	3.0	36.0	1.0	-53.5	-13.0	-40.5	
5262.90	-16.6	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
7017.20	-15.9	V	3.0	35.7	1.0	-50.6	-13.0	-37.6	
3508.60	-18.7	H	3.0	36.0	1.0	-53.7	-13.0	-40.7	
5262.90	-17.5	H	3.0	35.4	1.0	-52.0	-13.0	-39.0	
7017.20	-17.3	H	3.0	35.7	1.0	-52.0	-13.0	-39.0	

LTE B4 1.4MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 1.4MHz 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, 1710.7MHz									
3421.40	-18.9	V	3.0	36.1	1.0	-53.9	-13.0	-40.9	
5132.10	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3	
6842.80	-17.4	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3421.40	-18.7	H	3.0	36.1	1.0	-53.7	-13.0	-40.7	
5132.10	-16.9	H	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6842.80	-16.4	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	
Mid Ch, 1732.5MHz									
3465.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5197.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-17.1	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3465.00	-19.2	H	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5197.50	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6930.00	-16.6	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
High Ch, 1754.3MHz									
3508.60	-18.3	V	3.0	36.0	1.0	-53.3	-13.0	-40.3	
5262.90	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
7017.20	-16.5	V	3.0	35.7	1.0	-51.2	-13.0	-38.2	
3508.60	-18.8	H	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5262.90	-16.6	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
7017.20	-17.2	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	

LTE B4 1.4MHz 16QAM

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 3MHz 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, 1711.5MHz									
3423.00	-17.7	V	3.0	36.1	1.0	-52.8	-13.0	-39.8	
5134.50	-14.3	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
6846.00	-17.0	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3423.00	-17.6	H	3.0	36.1	1.0	-52.7	-13.0	-39.7	
5134.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6846.00	-16.9	H	3.0	35.7	1.0	-51.5	-13.0	-38.5	
Mid Ch, 1732.5MHz									
3465.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5197.50	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6930.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3465.00	-19.2	H	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5197.50	-17.1	H	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6930.00	-15.8	H	3.0	35.7	1.0	-50.5	-13.0	-37.5	
High Ch, 1753.5MHz									
3507.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5260.50	-15.3	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
7014.00	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3507.00	-17.8	H	3.0	36.0	1.0	-52.8	-13.0	-39.8	
5260.50	-16.2	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7014.00	-16.6	H	3.0	35.7	1.0	-51.3	-13.0	-38.3	

LTE B4 3MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 3MHz 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, 1711.5MHz									
3423.00	-17.7	V	3.0	36.1	1.0	-52.8	-13.0	-39.8	
5134.50	-14.8	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
6846.00	-16.8	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3423.00	-18.6	H	3.0	36.1	1.0	-53.6	-13.0	-40.6	
5134.50	-16.4	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6846.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
Mid Ch, 1732.5MHz									
3465.00	-19.4	V	3.0	36.0	1.0	-54.5	-13.0	-41.5	
5197.50	-17.5	V	3.0	35.4	1.0	-51.9	-13.0	-38.9	
6930.00	-16.5	V	3.0	35.7	1.0	-51.1	-13.0	-38.1	
3465.00	-18.7	H	3.0	36.0	1.0	-53.7	-13.0	-40.7	
5197.50	-16.3	H	3.0	35.4	1.0	-50.8	-13.0	-37.8	
6930.00	-16.7	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
High Ch, 1753.5MHz									
3507.00	-19.1	V	3.0	36.0	1.0	-54.1	-13.0	-41.1	
5260.50	-15.6	V	3.0	35.4	1.0	-50.0	-13.0	-37.0	
7014.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3507.00	-17.7	H	3.0	36.0	1.0	-52.7	-13.0	-39.7	
5260.50	-15.7	H	3.0	35.4	1.0	-50.1	-13.0	-37.1	
7014.00	-17.0	H	3.0	35.7	1.0	-51.7	-13.0	-38.7	

LTE B4 3MHz 16QAM

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 5MHz 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, 1712.5MHz									
3425.00	-18.7	V	3.0	36.1	1.0	-53.7	-13.0	-40.7	
5137.50	-18.2	V	3.0	35.4	1.0	-52.7	-13.0	-39.7	
6850.00	-17.8	V	3.0	35.7	1.0	-52.5	-13.0	-39.5	
3425.00	-18.2	H	3.0	36.1	1.0	-53.3	-13.0	-40.3	
5137.50	-17.3	H	3.0	35.4	1.0	-51.7	-13.0	-38.7	
6850.00	-17.2	H	3.0	35.7	1.0	-51.9	-13.0	-38.9	
Mid Ch, 1732.5MHz									
3465.00	-19.0	V	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5197.50	-17.7	V	3.0	35.4	1.0	-52.1	-13.0	-39.1	
6930.00	-16.3	V	3.0	35.7	1.0	-51.0	-13.0	-38.0	
3465.00	-19.0	H	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5197.50	-17.7	H	3.0	35.4	1.0	-52.1	-13.0	-39.1	
6930.00	-17.1	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
High Ch, 1752.5MHz									
3505.00	-18.6	V	3.0	36.0	1.0	-53.6	-13.0	-40.6	
5257.50	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
7010.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3505.00	-18.6	H	3.0	36.0	1.0	-53.6	-13.0	-40.6	
5257.50	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
7010.00	-16.8	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	

LTE B4 5MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 5MHz 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, 1712.5MHz									
3425.00	-19.1	V	3.0	36.1	1.0	-54.2	-13.0	-41.2	
5137.50	-17.7	V	3.0	35.4	1.0	-52.1	-13.0	-39.1	
6850.00	-16.5	V	3.0	35.7	1.0	-51.2	-13.0	-38.2	
3425.00	-18.8	H	3.0	36.1	1.0	-53.8	-13.0	-40.8	
5137.50	-17.0	H	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6850.00	-16.5	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	
Mid Ch, 1732.5MHz									
3465.00	-19.0	V	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5197.50	-16.2	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6930.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3465.00	-19.1	H	3.0	36.0	1.0	-54.2	-13.0	-41.2	
5197.50	-17.8	H	3.0	35.4	1.0	-52.2	-13.0	-39.2	
6930.00	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	
High Ch, 1752.5MHz									
3505.00	-18.4	V	3.0	36.0	1.0	-53.4	-13.0	-40.4	
5257.50	-16.6	V	3.0	35.4	1.0	-51.0	-13.0	-38.0	
7010.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3505.00	-18.5	H	3.0	36.0	1.0	-53.5	-13.0	-40.5	
5257.50	-17.1	H	3.0	35.4	1.0	-51.5	-13.0	-38.5	
7010.00	-16.4	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	

LTE B4 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 10MHz 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, 1715MHz									
3430.00	-18.6	V	3.0	36.1	1.0	-53.6	-13.0	-40.6	
5145.00	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6860.00	-16.9	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3430.00	-18.6	H	3.0	36.1	1.0	-53.6	-13.0	-40.6	
5145.00	-17.4	H	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6860.00	-16.6	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	
Mid Ch, 1732.5MHz									
3465.00	-19.4	V	3.0	36.0	1.0	-54.4	-13.0	-41.4	
5197.50	-15.8	V	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.00	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3465.00	-19.1	H	3.0	36.0	1.0	-54.1	-13.0	-41.1	
5197.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-16.8	H	3.0	35.7	1.0	-51.5	-13.0	-38.5	
High Ch, 1750MHz									
3500.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5250.00	-15.2	V	3.0	35.4	1.0	-49.6	-13.0	-36.6	
7000.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3500.00	-19.1	H	3.0	36.0	1.0	-54.1	-13.0	-41.1	
5250.00	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
7000.00	-16.9	H	3.0	35.7	1.0	-51.6	-13.0	-38.6	

LTE B4 10MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 10MHz 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, 1715MHz									
3430.00	-17.9	V	3.0	36.1	1.0	-53.0	-13.0	-40.0	
5145.00	-17.1	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6860.00	-17.4	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3430.00	-18.2	H	3.0	36.1	1.0	-53.2	-13.0	-40.2	
5145.00	-17.5	H	3.0	35.4	1.0	-51.9	-13.0	-38.9	
6860.00	-16.8	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
Mid Ch, 1732.5MHz									
3465.00	-19.1	V	3.0	36.0	1.0	-54.1	-13.0	-41.1	
5197.50	-15.8	V	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6930.00	-16.3	V	3.0	35.7	1.0	-51.0	-13.0	-38.0	
3465.00	-18.8	H	3.0	36.0	1.0	-53.9	-13.0	-40.9	
5197.50	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-16.1	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	
High Ch, 1750MHz									
3500.00	-17.9	V	3.0	36.0	1.0	-52.9	-13.0	-39.9	
5250.00	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
7000.00	-16.4	V	3.0	35.7	1.0	-51.0	-13.0	-38.0	
3500.00	-17.9	H	3.0	36.0	1.0	-52.9	-13.0	-39.9	
5250.00	-17.4	H	3.0	35.4	1.0	-51.8	-13.0	-38.8	
7000.00	-16.8	H	3.0	35.7	1.0	-51.5	-13.0	-38.5	

LTE B4 10MHz 16QAM

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 Harmonics, 15MHz 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, 1717.5MHz									
3435.00	-18.6	V	3.0	36.1	1.0	-53.7	-13.0	-40.7	
5152.50	-15.5	V	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6870.00	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3435.00	-18.2	H	3.0	36.1	1.0	-53.3	-13.0	-40.3	
5152.50	-16.8	H	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6870.00	-16.2	H	3.0	35.7	1.0	-50.9	-13.0	-37.9	
Mid Ch, 1732.5MHz									
3465.00	-18.7	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5197.50	-17.9	V	3.0	35.4	1.0	-52.3	-13.0	-39.3	
6930.00	-16.5	V	3.0	35.7	1.0	-51.1	-13.0	-38.1	
3465.00	-18.4	H	3.0	36.0	1.0	-53.4	-13.0	-40.4	
5197.50	-17.5	H	3.0	35.4	1.0	-51.9	-13.0	-38.9	
6930.00	-16.6	H	3.0	35.7	1.0	-51.3	-13.0	-38.3	
High Ch, 1747.5MHz									
3495.00	-19.0	V	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5242.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6990.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3495.00	-17.8	H	3.0	36.0	1.0	-52.8	-13.0	-39.8	
5242.50	-16.8	H	3.0	35.4	1.0	-51.3	-13.0	-38.3	
6990.00	-16.5	H	3.0	35.7	1.0	-51.2	-13.0	-38.2	

LTE B4 15MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 Harmonics, 15MHz 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, 1717.5MHz									
3435.00	-18.5	V	3.0	36.1	1.0	-53.6	-13.0	-40.6	
5152.50	-16.6	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6870.00	-16.5	V	3.0	35.7	1.0	-51.2	-13.0	-38.2	
3435.00	-18.2	H	3.0	36.1	1.0	-53.3	-13.0	-40.3	
5152.50	-17.1	H	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6870.00	-17.1	H	3.0	35.7	1.0	-51.8	-13.0	-38.8	
Mid Ch, 1732.5MHz									
3465.00	-19.1	V	3.0	36.0	1.0	-54.1	-13.0	-41.1	
5197.50	-14.1	V	3.0	35.4	1.0	-48.6	-13.0	-35.6	
6930.00	-16.4	V	3.0	35.7	1.0	-51.0	-13.0	-38.0	
3465.00	-18.1	H	3.0	36.0	1.0	-53.1	-13.0	-40.1	
5197.50	-17.5	H	3.0	35.4	1.0	-52.0	-13.0	-39.0	
6930.00	-16.6	H	3.0	35.7	1.0	-51.3	-13.0	-38.3	
High Ch, 1747.5MHz									
3495.00	-18.6	V	3.0	36.0	1.0	-53.6	-13.0	-40.6	
5242.50	-17.1	V	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6990.00	-16.1	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3495.00	-18.7	H	3.0	36.0	1.0	-53.7	-13.0	-40.7	
5242.50	-17.4	H	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6990.00	-16.8	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	

LTE B4 15MHz 16QAM

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_QPSK Band 4 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, 1720MHz									
3440.00	-18.7	V	3.0	36.0	1.0	-53.7	-13.0	-40.7	
5160.00	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6880.00	-15.3	V	3.0	35.7	1.0	-50.0	-13.0	-37.0	
3440.00	-18.2	H	3.0	36.0	1.0	-53.2	-13.0	-40.2	
5160.00	-18.3	H	3.0	35.4	1.0	-52.7	-13.0	-39.7	
6880.00	-15.4	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
Mid Ch, 1732.5MHz									
3465.00	-19.5	V	3.0	36.0	1.0	-54.5	-13.0	-41.5	
5197.50	-16.6	V	3.0	35.4	1.0	-51.0	-13.0	-38.0	
6930.00	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3465.00	-19.6	H	3.0	36.0	1.0	-54.6	-13.0	-41.6	
5197.50	-17.1	H	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6930.00	-14.9	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
High Ch, 1745MHz									
3490.00	-18.9	V	3.0	36.0	1.0	-53.9	-13.0	-40.9	
5235.00	-18.7	V	3.0	35.4	1.0	-53.2	-13.0	-40.2	
6980.00	-16.4	V	3.0	35.7	1.0	-51.1	-13.0	-38.1	
3490.00	-19.4	H	3.0	36.0	1.0	-54.4	-13.0	-41.4	
5235.00	-17.4	H	3.0	35.4	1.0	-51.9	-13.0	-38.9	
6980.00	-14.7	H	3.0	35.7	1.0	-49.4	-13.0	-36.4	

LTE B4 20MHz QPSK

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

Company: SOMC
Project #: 11783785
Date: 7/27/2017
Test Engineer: 43575 OS
Configuration: EUT + HS + Charger
Location: Chamber A
Mode: LTE_16QAM Band 4 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, 1720MHz									
3440.00	-18.1	V	3.0	36.0	1.0	-53.2	-13.0	-40.2	
5160.00	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6880.00	-15.7	V	3.0	35.7	1.0	-50.4	-13.0	-37.4	
3440.00	-18.5	H	3.0	36.0	1.0	-53.5	-13.0	-40.5	
5160.00	-17.3	H	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6880.00	-16.7	H	3.0	35.7	1.0	-51.4	-13.0	-38.4	
Mid Ch, 1732.5MHz									
3465.00	-18.3	V	3.0	36.0	1.0	-53.3	-13.0	-40.3	
5197.50	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6930.00	-16.1	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3465.00	-18.9	H	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5197.50	-18.5	H	3.0	35.4	1.0	-52.9	-13.0	-39.9	
6930.00	-17.0	H	3.0	35.7	1.0	-51.7	-13.0	-38.7	
High Ch, 1745MHz									
3490.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5235.00	-17.2	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6980.00	-16.9	V	3.0	35.7	1.0	-51.6	-13.0	-38.6	
3490.00	-17.6	H	3.0	36.0	1.0	-52.6	-13.0	-39.6	
5235.00	-16.5	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
6980.00	-17.0	H	3.0	35.7	1.0	-51.7	-13.0	-38.7	

LTE B4 20MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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LTE Band 7

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, 5MHz 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, 2502.5									
5005.00	-18.4	V	3.0	33.2	1.0	-50.7	-25.0	-25.7	
7507.50	-15.3	V	3.0	32.8	1.0	-47.2	-25.0	-22.2	
10010.00	-18.6	V	3.0	32.8	1.0	-50.4	-25.0	-25.4	
5005.00	-18.6	H	3.0	33.2	1.0	-50.8	-25.0	-25.8	
7507.50	-18.7	H	3.0	32.8	1.0	-50.6	-25.0	-25.6	
10010.00	-19.0	H	3.0	32.8	1.0	-50.8	-25.0	-25.8	
Mid Ch, 2535									
5070.00	-19.7	V	3.0	33.2	1.0	-51.9	-25.0	-26.9	
7605.00	-18.1	V	3.0	32.8	1.0	-49.9	-25.0	-24.9	
10140.00	-18.1	V	3.0	32.7	1.0	-49.8	-25.0	-24.8	
5070.00	-17.3	H	3.0	33.2	1.0	-49.5	-25.0	-24.5	
7605.00	-18.0	H	3.0	32.8	1.0	-49.8	-25.0	-24.8	
10140.00	-18.7	H	3.0	32.7	1.0	-50.4	-25.0	-25.4	
High Ch, 2567.5									
5135.00	-18.2	V	3.0	33.2	1.0	-50.4	-25.0	-25.4	
7702.50	-16.8	V	3.0	32.8	1.0	-48.7	-25.0	-23.7	
10270.00	-18.3	V	3.0	32.6	1.0	-49.9	-25.0	-24.9	
5135.00	-17.4	H	3.0	33.2	1.0	-49.6	-25.0	-24.6	
7702.50	-18.3	H	3.0	32.8	1.0	-50.1	-25.0	-25.1	
10270.00	-18.7	H	3.0	32.6	1.0	-50.3	-25.0	-25.3	

LTE B7 5MHz 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, 5MHz 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, 2502.5									
5005.00	-17.4	V	3.0	33.2	1.0	-49.6	-25.0	-24.6	
7507.50	-14.8	V	3.0	32.8	1.0	-46.6	-25.0	-21.6	
10010.00	-18.2	V	3.0	32.8	1.0	-50.0	-25.0	-25.0	
5005.00	-18.7	H	3.0	33.2	1.0	-51.0	-25.0	-26.0	
7507.50	-17.9	H	3.0	32.8	1.0	-49.7	-25.0	-24.7	
10010.00	-18.1	H	3.0	32.8	1.0	-49.8	-25.0	-24.8	
Mid Ch, 2535									
5070.00	-19.7	V	3.0	33.2	1.0	-51.9	-25.0	-26.9	
7605.00	-16.8	V	3.0	32.8	1.0	-48.7	-25.0	-23.7	
10140.00	-17.8	V	3.0	32.7	1.0	-49.5	-25.0	-24.5	
5070.00	-17.8	H	3.0	33.2	1.0	-50.0	-25.0	-25.0	
7605.00	-17.4	H	3.0	32.8	1.0	-49.2	-25.0	-24.2	
10140.00	-18.8	H	3.0	32.7	1.0	-50.5	-25.0	-25.5	
High Ch, 2567.5									
5135.00	-17.8	V	3.0	33.2	1.0	-50.0	-25.0	-25.0	
7702.50	-17.4	V	3.0	32.8	1.0	-49.2	-25.0	-24.2	
10270.00	-18.0	V	3.0	32.6	1.0	-49.5	-25.0	-24.5	
5135.00	-17.2	H	3.0	33.2	1.0	-49.4	-25.0	-24.4	
7702.50	-18.4	H	3.0	32.8	1.0	-50.2	-25.0	-25.2	
10270.00	-17.7	H	3.0	32.6	1.0	-49.3	-25.0	-24.3	

LTE B7 5MHz 16QAM

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, 10MHz 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, 2505									
5010.00	-19.1	V	3.0	33.2	1.0	-51.3	-25.0	-26.3	
7515.00	-17.9	V	3.0	32.8	1.0	-49.8	-25.0	-24.8	
10020.00	-18.0	V	3.0	32.8	1.0	-49.7	-25.0	-24.7	
5010.00	-18.5	H	3.0	33.2	1.0	-50.8	-25.0	-25.8	
7515.00	-18.6	H	3.0	32.8	1.0	-50.4	-25.0	-25.4	
10020.00	-18.4	H	3.0	32.8	1.0	-50.1	-25.0	-25.1	
Mid Ch, 2535									
5070.00	-18.9	V	3.0	33.2	1.0	-51.1	-25.0	-26.1	
7605.00	-17.2	V	3.0	32.8	1.0	-49.0	-25.0	-24.0	
10140.00	-18.2	V	3.0	32.7	1.0	-49.9	-25.0	-24.9	
5070.00	-19.8	H	3.0	33.2	1.0	-52.0	-25.0	-27.0	
7605.00	-17.5	H	3.0	32.8	1.0	-49.4	-25.0	-24.4	
10140.00	-17.5	H	3.0	32.7	1.0	-49.2	-25.0	-24.2	
High Ch, 2565									
5130.00	-17.2	V	3.0	33.2	1.0	-49.4	-25.0	-24.4	
7695.00	-18.4	V	3.0	32.8	1.0	-50.2	-25.0	-25.2	
10260.00	-18.3	V	3.0	32.6	1.0	-49.9	-25.0	-24.9	
5130.00	-15.3	H	3.0	33.2	1.0	-47.5	-25.0	-22.5	
7695.00	-18.7	H	3.0	32.8	1.0	-50.5	-25.0	-25.5	
10260.00	-17.8	H	3.0	32.6	1.0	-49.4	-25.0	-24.4	

LTE B7 10MHz 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, 10MHz 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, 2505									
5010.00	-17.7	V	3.0	33.2	1.0	-50.0	-25.0	-25.0	
7515.00	-18.9	V	3.0	32.8	1.0	-50.8	-25.0	-25.8	
10020.00	-17.7	V	3.0	32.8	1.0	-49.4	-25.0	-24.4	
5010.00	-19.1	H	3.0	33.2	1.0	-51.4	-25.0	-26.4	
7515.00	-17.0	H	3.0	32.8	1.0	-48.9	-25.0	-23.9	
10020.00	-18.2	H	3.0	32.8	1.0	-50.0	-25.0	-25.0	
Mid Ch, 2535									
5070.00	-18.5	V	3.0	33.2	1.0	-50.8	-25.0	-25.8	
7605.00	-17.5	V	3.0	32.8	1.0	-49.4	-25.0	-24.4	
10140.00	-18.0	V	3.0	32.7	1.0	-49.7	-25.0	-24.7	
5070.00	-19.1	H	3.0	33.2	1.0	-51.3	-25.0	-26.3	
7605.00	-16.9	H	3.0	32.8	1.0	-48.7	-25.0	-23.7	
10140.00	-18.5	H	3.0	32.7	1.0	-50.2	-25.0	-25.2	
High Ch, 2565									
5130.00	-17.9	V	3.0	33.2	1.0	-50.1	-25.0	-25.1	
7695.00	-16.9	V	3.0	32.8	1.0	-48.8	-25.0	-23.8	
10260.00	-16.7	V	3.0	32.6	1.0	-48.3	-25.0	-23.3	
5130.00	-14.8	H	3.0	33.2	1.0	-47.0	-25.0	-22.0	
7695.00	-16.9	H	3.0	32.8	1.0	-48.8	-25.0	-23.8	
10260.00	-18.3	H	3.0	32.6	1.0	-49.9	-25.0	-24.9	

LTE B7 10MHz 16QAM

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, 15MHz 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, 2507.5									
5015.00	-18.8	V	3.0	33.2	1.0	-51.0	-25.0	-26.0	
7522.50	-15.9	V	3.0	32.8	1.0	-47.7	-25.0	-22.7	
10030.00	-17.3	V	3.0	32.8	1.0	-49.1	-25.0	-24.1	
5015.00	-19.8	H	3.0	33.2	1.0	-52.0	-25.0	-27.0	
7522.50	-18.1	H	3.0	32.8	1.0	-49.9	-25.0	-24.9	
10030.00	-18.2	H	3.0	32.8	1.0	-50.0	-25.0	-25.0	
Mid Ch, 2535									
5070.00	-19.7	V	3.0	33.2	1.0	-52.0	-25.0	-27.0	
7605.00	-18.4	V	3.0	32.8	1.0	-50.2	-25.0	-25.2	
10140.00	-17.6	V	3.0	32.7	1.0	-49.3	-25.0	-24.3	
5070.00	-16.6	H	3.0	33.2	1.0	-48.8	-25.0	-23.8	
7605.00	-17.2	H	3.0	32.8	1.0	-49.0	-25.0	-24.0	
10140.00	-19.0	H	3.0	32.7	1.0	-50.7	-25.0	-25.7	
High Ch, 2562.5									
5125.00	-15.8	V	3.0	33.2	1.0	-48.0	-25.0	-23.0	
7687.50	-17.7	V	3.0	32.8	1.0	-49.6	-25.0	-24.6	
10250.00	-17.3	V	3.0	32.6	1.0	-48.9	-25.0	-23.9	
5125.00	-13.0	H	3.0	33.2	1.0	-45.2	-25.0	-20.2	
7687.50	-16.3	H	3.0	32.8	1.0	-48.2	-25.0	-23.2	
10250.00	-18.0	H	3.0	32.6	1.0	-49.6	-25.0	-24.6	

LTE B7 15MHz 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, 15MHz 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, 2507.5									
5015.00	-16.9	V	3.0	33.2	1.0	-49.1	-25.0	-24.1	
7522.50	-17.3	V	3.0	32.8	1.0	-49.1	-25.0	-24.1	
10030.00	-17.6	V	3.0	32.8	1.0	-49.4	-25.0	-24.4	
5015.00	-18.1	H	3.0	33.2	1.0	-50.4	-25.0	-25.4	
7522.50	-17.8	H	3.0	32.8	1.0	-49.7	-25.0	-24.7	
10030.00	-19.1	H	3.0	32.8	1.0	-50.8	-25.0	-25.8	
Mid Ch, 2535									
5070.00	-19.4	V	3.0	33.2	1.0	-51.6	-25.0	-26.6	
7605.00	-16.8	V	3.0	32.8	1.0	-48.6	-25.0	-23.6	
10140.00	-17.1	V	3.0	32.7	1.0	-48.7	-25.0	-23.7	
5070.00	-17.6	H	3.0	33.2	1.0	-49.8	-25.0	-24.8	
7605.00	-18.5	H	3.0	32.8	1.0	-50.4	-25.0	-25.4	
10140.00	-18.5	H	3.0	32.7	1.0	-50.2	-25.0	-25.2	
High Ch, 2562.5									
5125.00	-15.2	V	3.0	33.2	1.0	-47.4	-25.0	-22.4	
7687.50	-16.9	V	3.0	32.8	1.0	-48.8	-25.0	-23.8	
10250.00	-17.8	V	3.0	32.6	1.0	-49.4	-25.0	-24.4	
5125.00	-13.4	H	3.0	33.2	1.0	-45.6	-25.0	-20.6	
7687.50	-18.8	H	3.0	32.8	1.0	-50.7	-25.0	-25.7	
10250.00	-17.8	H	3.0	32.6	1.0	-49.4	-25.0	-24.4	

LTE B7 15MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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)	EIRP (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	
7530.00	-6.8	V	3.0	32.8	1.0	-38.7	-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	
7530.00	-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	-18.9	V	3.0	32.7	1.0	-50.6	-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	-50.0	-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)	EIRP (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	
7530.00	-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	
7530.00	-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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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	-55.8	-13.0	-42.8	
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	-27.6	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	-23.6	H	3.0	36.5	1.0	-59.1	-13.0	-46.1	
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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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_QPSK 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_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	-13.4	H	3.0	35.6	1.0	-47.9	-13.0	-34.9	
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_QPSK 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, 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

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LTE Band 26

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, 1.4MHz 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, 814.7									
1629.40	-27.4	V	3.0	37.1	1.0	-63.5	-13.0	-50.5	
2444.10	-22.0	V	3.0	36.4	1.0	-57.5	-13.0	-44.5	
3258.80	-20.7	V	3.0	36.2	1.0	-55.9	-13.0	-42.9	
1629.40	-27.4	H	3.0	37.1	1.0	-63.4	-13.0	-50.4	
2444.10	-24.3	H	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3258.80	-21.5	H	3.0	36.2	1.0	-56.6	-13.0	-43.6	
Mid Ch, 831.5									
1663.00	-26.4	V	3.0	37.0	1.0	-62.4	-13.0	-49.4	
2494.50	-21.2	V	3.0	36.4	1.0	-56.6	-13.0	-43.6	
3326.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1663.00	-26.7	H	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2494.50	-23.9	H	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3326.00	-20.9	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
High Ch, 848.3									
1696.60	-26.8	V	3.0	37.0	1.0	-62.8	-13.0	-49.8	
2544.90	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3393.20	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1696.60	-26.6	H	3.0	37.0	1.0	-62.6	-13.0	-49.6	
2544.90	-24.0	H	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3393.20	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	

LTE B26 1.4MHz 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 26 Harmonics, 1.4MHz 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, 814.7									
1629.40	-28.0	V	3.0	37.1	1.0	-64.1	-13.0	-51.1	
2444.10	-22.5	V	3.0	36.4	1.0	-58.0	-13.0	-45.0	
3258.80	-21.2	V	3.0	36.2	1.0	-56.4	-13.0	-43.4	
1629.40	-27.8	H	3.0	37.1	1.0	-63.9	-13.0	-50.9	
2444.10	-24.9	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3258.80	-21.9	H	3.0	36.2	1.0	-57.1	-13.0	-44.1	
Mid Ch, 831.5									
1663.00	-27.0	V	3.0	37.0	1.0	-63.0	-13.0	-50.0	
2494.50	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3326.00	-20.6	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1663.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2494.50	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3326.00	-21.4	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	
High Ch, 848.3									
1696.60	-27.5	V	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2544.90	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3393.20	-21.1	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1696.60	-28.1	H	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2544.90	-24.8	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
3393.20	-21.4	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	

LTE B26 1.4MHz 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, 3MHz 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, 815.5									
1631.00	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2446.50	-23.7	V	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3262.00	-20.5	V	3.0	36.2	1.0	-55.7	-13.0	-42.7	
1631.00	-27.7	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2446.50	-26.1	H	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3262.00	-20.6	H	3.0	36.2	1.0	-55.8	-13.0	-42.8	
Mid Ch, 831.5									
1663.00	-26.9	V	3.0	37.0	1.0	-62.9	-13.0	-49.9	
2494.50	-22.3	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3326.00	-20.1	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1663.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2494.50	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3326.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	
High Ch, 847.5									
1695.00	-26.7	V	3.0	37.0	1.0	-62.7	-13.0	-49.7	
2542.50	-22.6	V	3.0	36.4	1.0	-58.0	-13.0	-45.0	
3390.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1695.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2542.50	-24.6	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3390.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	

LTE B26 3MHz 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 26 Harmonics, 3MHz 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, 815.5									
1631.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2446.50	-24.3	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3262.00	-21.1	V	3.0	36.2	1.0	-56.2	-13.0	-43.2	
1631.00	-28.4	H	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2446.50	-26.3	H	3.0	36.4	1.0	-61.8	-13.0	-48.8	
3262.00	-21.1	H	3.0	36.2	1.0	-56.3	-13.0	-43.3	
Mid Ch, 831.5									
1663.00	-28.0	V	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2494.50	-23.0	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3326.00	-20.6	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1663.00	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2494.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3326.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 847.5									
1695.00	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2542.50	-23.3	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
3390.00	-21.3	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1695.00	-27.8	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2542.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3390.00	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	

LTE B26 3MHz 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, 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, 816.5									
1633.00	-28.3	V	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2449.50	-23.9	V	3.0	36.4	1.0	-59.3	-13.0	-46.3	
3266.00	-21.9	V	3.0	36.2	1.0	-57.1	-13.0	-44.1	
1633.00	-27.3	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2449.50	-25.3	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3266.00	-21.9	H	3.0	36.2	1.0	-57.1	-13.0	-44.1	
Mid Ch, 831.5									
1663.00	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2494.50	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3326.00	-21.2	V	3.0	36.1	1.0	-56.4	-13.0	-43.4	
1663.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2494.50	-25.0	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3326.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	
High Ch, 846.5									
1693.00	-27.2	V	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2539.50	-23.8	V	3.0	36.4	1.0	-59.2	-13.0	-46.2	
3386.00	-21.7	V	3.0	36.1	1.0	-56.8	-13.0	-43.8	
1693.00	-26.6	H	3.0	37.0	1.0	-62.6	-13.0	-49.6	
2539.50	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3386.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	

LTE B26 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 26 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, 816.5									
1633.00	-28.1	V	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2449.50	-24.2	V	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3266.00	-21.8	V	3.0	36.2	1.0	-57.0	-13.0	-44.0	
1633.00	-27.8	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2449.50	-25.6	H	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3266.00	-21.8	H	3.0	36.2	1.0	-57.0	-13.0	-44.0	
Mid Ch, 831.5									
1663.00	-27.4	V	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2494.50	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3326.00	-21.5	V	3.0	36.1	1.0	-56.6	-13.0	-43.6	
1663.00	-27.1	H	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2494.50	-25.4	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3326.00	-21.7	H	3.0	36.1	1.0	-56.9	-13.0	-43.9	
High Ch, 846.5									
1693.00	-27.1	V	3.0	37.0	1.0	-63.1	-13.0	-50.1	
2539.50	-23.7	V	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3386.00	-21.5	V	3.0	36.1	1.0	-56.6	-13.0	-43.6	
1693.00	-26.5	H	3.0	37.0	1.0	-62.4	-13.0	-49.4	
2539.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3386.00	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	

LTE B26 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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	-26.8	V	3.0	37.0	1.0	-62.8	-13.0	-49.8	
2457.00	-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	-55.9	-13.0	-42.9	
1638.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2457.00	-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	

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_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	
2457.00	-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	
2457.00	-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 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, 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	-55.7	-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	-55.8	-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 15MHz 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 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 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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LTE Band 41

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, 5MHz 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, 2498.5MHz									
4997.00	-18.4	V	3.0	35.5	1.0	-52.9	-25.0	-27.9	
7495.50	-20.0	V	3.0	35.7	1.0	-54.8	-25.0	-29.8	
9994.00	-18.4	V	3.0	36.0	1.0	-53.4	-25.0	-28.4	
4997.00	-18.0	H	3.0	35.5	1.0	-52.5	-25.0	-27.5	
7495.50	-17.9	H	3.0	35.7	1.0	-52.6	-25.0	-27.6	
9994.00	-17.3	H	3.0	36.0	1.0	-52.3	-25.0	-27.3	
Mid Ch, 2593MHz									
5186.00	-18.8	V	3.0	35.4	1.0	-53.2	-25.0	-28.2	
7779.00	-20.1	V	3.0	35.8	1.0	-54.9	-25.0	-29.9	
10372.00	-18.6	V	3.0	35.8	1.0	-53.4	-25.0	-28.4	
5186.00	-18.5	H	3.0	35.4	1.0	-52.9	-25.0	-27.9	
7779.00	-18.8	H	3.0	35.8	1.0	-53.5	-25.0	-28.5	
10372.00	-17.3	H	3.0	35.8	1.0	-52.2	-25.0	-27.2	
High Ch, 2687.5MHz									
5375.00	-19.0	V	3.0	35.4	1.0	-53.5	-25.0	-28.5	
8062.50	-20.1	V	3.0	35.8	1.0	-54.9	-25.0	-29.9	
10750.00	-18.0	V	3.0	35.7	1.0	-52.6	-25.0	-27.6	
5375.00	-18.3	H	3.0	35.4	1.0	-52.8	-25.0	-27.8	
8062.50	-19.9	H	3.0	35.8	1.0	-54.7	-25.0	-29.7	
10750.00	-18.0	H	3.0	35.7	1.0	-52.7	-25.0	-27.7	

LTE B41 5MHz 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, 5MHz 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, 2498.5MHz									
4997.00	-19.8	V	3.0	35.5	1.0	-54.3	-25.0	-29.3	
7495.50	-20.9	V	3.0	35.7	1.0	-55.7	-25.0	-30.7	
9994.00	-19.6	V	3.0	36.0	1.0	-54.7	-25.0	-29.7	
4997.00	-19.8	H	3.0	35.5	1.0	-54.2	-25.0	-29.2	
7495.50	-20.4	H	3.0	35.7	1.0	-55.2	-25.0	-30.2	
9994.00	-18.3	H	3.0	36.0	1.0	-53.3	-25.0	-28.3	
Mid Ch, 2593MHz									
5186.00	-19.4	V	3.0	35.4	1.0	-53.8	-25.0	-28.8	
7779.00	-20.8	V	3.0	35.8	1.0	-55.6	-25.0	-30.6	
10372.00	-19.9	V	3.0	35.8	1.0	-54.7	-25.0	-29.7	
5186.00	-18.8	H	3.0	35.4	1.0	-53.3	-25.0	-28.3	
7779.00	-19.7	H	3.0	35.8	1.0	-54.4	-25.0	-29.4	
10372.00	-18.3	H	3.0	35.8	1.0	-53.2	-25.0	-28.2	
High Ch, 2687.5MHz									
5375.00	-19.3	V	3.0	35.4	1.0	-53.8	-25.0	-28.8	
8062.50	-20.5	V	3.0	35.8	1.0	-55.3	-25.0	-30.3	
10750.00	-18.7	V	3.0	35.7	1.0	-53.4	-25.0	-28.4	
5375.00	-18.8	H	3.0	35.4	1.0	-53.2	-25.0	-28.2	
8062.50	-21.2	H	3.0	35.8	1.0	-56.0	-25.0	-31.0	
10750.00	-18.5	H	3.0	35.7	1.0	-53.1	-25.0	-28.1	

LTE B41 5MHz 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, 10MHz 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, 2501MHz									
5002.00	-20.1	V	3.0	35.5	1.0	-54.6	-25.0	-29.6	
7503.00	-20.7	V	3.0	35.7	1.0	-55.5	-25.0	-30.5	
10004.00	-21.6	V	3.0	36.0	1.0	-56.6	-25.0	-31.6	
5002.00	-20.1	H	3.0	35.5	1.0	-54.5	-25.0	-29.5	
7503.00	-20.9	H	3.0	35.7	1.0	-55.7	-25.0	-30.7	
10004.00	-21.0	H	3.0	36.0	1.0	-56.0	-25.0	-31.0	
Mid Ch, 2593MHz									
5186.00	-19.1	V	3.0	35.4	1.0	-53.5	-25.0	-28.5	
7779.00	-22.1	V	3.0	35.8	1.0	-56.9	-25.0	-31.9	
10372.00	-21.4	V	3.0	35.8	1.0	-56.3	-25.0	-31.3	
5186.00	-19.1	H	3.0	35.4	1.0	-53.5	-25.0	-28.5	
7779.00	-19.3	H	3.0	35.8	1.0	-54.1	-25.0	-29.1	
10372.00	-20.5	H	3.0	35.8	1.0	-55.3	-25.0	-30.3	
High Ch, 2685MHz									
5370.00	-19.2	V	3.0	35.4	1.0	-53.6	-25.0	-28.6	
8055.00	-20.7	V	3.0	35.8	1.0	-55.5	-25.0	-30.5	
10740.00	-20.5	V	3.0	35.7	1.0	-55.1	-25.0	-30.1	
5370.00	-19.1	H	3.0	35.4	1.0	-53.6	-25.0	-28.6	
8055.00	-19.5	H	3.0	35.8	1.0	-54.4	-25.0	-29.4	
10740.00	-20.7	H	3.0	35.7	1.0	-55.4	-25.0	-30.4	

LTE B41 10MHz 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, 10MHz 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, 2501MHz									
5002.00	-20.5	V	3.0	35.5	1.0	-55.0	-25.0	-30.0	
7503.00	-21.3	V	3.0	35.7	1.0	-56.1	-25.0	-31.1	
10004.00	-22.4	V	3.0	36.0	1.0	-57.4	-25.0	-32.4	
5002.00	-19.8	H	3.0	35.5	1.0	-54.3	-25.0	-29.3	
7503.00	-22.0	H	3.0	35.7	1.0	-56.7	-25.0	-31.7	
10004.00	-20.8	H	3.0	36.0	1.0	-55.8	-25.0	-30.8	
Mid Ch, 2593MHz									
5186.00	-19.3	V	3.0	35.4	1.0	-53.7	-25.0	-28.7	
7779.00	-22.6	V	3.0	35.8	1.0	-57.3	-25.0	-32.3	
10372.00	-22.0	V	3.0	35.8	1.0	-56.8	-25.0	-31.8	
5186.00	-19.4	H	3.0	35.4	1.0	-53.9	-25.0	-28.9	
7779.00	-20.2	H	3.0	35.8	1.0	-55.0	-25.0	-30.0	
10372.00	-20.7	H	3.0	35.8	1.0	-55.6	-25.0	-30.6	
High Ch, 2685MHz									
5370.00	-19.5	V	3.0	35.4	1.0	-53.9	-25.0	-28.9	
8055.00	-21.3	V	3.0	35.8	1.0	-56.1	-25.0	-31.1	
10740.00	-21.1	V	3.0	35.7	1.0	-55.8	-25.0	-30.8	
5370.00	-18.8	H	3.0	35.4	1.0	-53.3	-25.0	-28.3	
8055.00	-21.5	H	3.0	35.8	1.0	-56.3	-25.0	-31.3	
10740.00	-20.6	H	3.0	35.7	1.0	-55.2	-25.0	-30.2	

LTE B41 10MHz 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, 15MHz 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, 2503.5MHz									
5007.00	-18.8	V	3.0	35.5	1.0	-53.2	-25.0	-28.2	
7510.50	-21.8	V	3.0	35.7	1.0	-56.5	-25.0	-31.5	
10014.00	-21.9	V	3.0	36.0	1.0	-56.9	-25.0	-31.9	
5007.00	-19.2	H	3.0	35.5	1.0	-53.7	-25.0	-28.7	
7510.50	-20.6	H	3.0	35.7	1.0	-55.3	-25.0	-30.3	
10014.00	-20.0	H	3.0	36.0	1.0	-55.0	-25.0	-30.0	
Mid Ch, 2593MHz									
5186.00	-18.5	V	3.0	35.4	1.0	-52.9	-25.0	-27.9	
7779.00	-24.1	V	3.0	35.8	1.0	-58.9	-25.0	-33.9	
10372.00	-21.2	V	3.0	35.8	1.0	-56.0	-25.0	-31.0	
5186.00	-18.3	H	3.0	35.4	1.0	-52.8	-25.0	-27.8	
7779.00	-20.7	H	3.0	35.8	1.0	-55.4	-25.0	-30.4	
10372.00	-20.4	H	3.0	35.8	1.0	-55.2	-25.0	-30.2	
High Ch, 2682.5MHz									
5365.00	-19.1	V	3.0	35.4	1.0	-53.5	-25.0	-28.5	
8047.50	-21.6	V	3.0	35.8	1.0	-56.5	-25.0	-31.5	
10730.00	-20.7	V	3.0	35.7	1.0	-55.4	-25.0	-30.4	
5365.00	-17.6	H	3.0	35.4	1.0	-52.1	-25.0	-27.1	
8047.50	-19.9	H	3.0	35.8	1.0	-54.7	-25.0	-29.7	
10730.00	-20.4	H	3.0	35.7	1.0	-55.1	-25.0	-30.1	

LTE B41 15MHz 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, 15MHz 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, 2503.5MHz									
5007.00	-19.8	V	3.0	35.5	1.0	-54.3	-25.0	-29.3	
7510.50	-22.6	V	3.0	35.7	1.0	-57.3	-25.0	-32.3	
10014.00	-22.0	V	3.0	36.0	1.0	-57.0	-25.0	-32.0	
5007.00	-19.8	H	3.0	35.5	1.0	-54.3	-25.0	-29.3	
7510.50	-20.4	H	3.0	35.7	1.0	-55.2	-25.0	-30.2	
10014.00	-20.4	H	3.0	36.0	1.0	-55.4	-25.0	-30.4	
Mid Ch, 2593MHz									
5186.00	-19.1	V	3.0	35.4	1.0	-53.5	-25.0	-28.5	
7779.00	-21.8	V	3.0	35.8	1.0	-56.6	-25.0	-31.6	
10372.00	-21.2	V	3.0	35.8	1.0	-56.1	-25.0	-31.1	
5186.00	-18.8	H	3.0	35.4	1.0	-53.3	-25.0	-28.3	
7779.00	-21.0	H	3.0	35.8	1.0	-55.8	-25.0	-30.8	
10372.00	-20.8	H	3.0	35.8	1.0	-55.7	-25.0	-30.7	
High Ch, 2682.5MHz									
5365.00	-19.6	V	3.0	35.4	1.0	-54.0	-25.0	-29.0	
8047.50	-22.1	V	3.0	35.8	1.0	-56.9	-25.0	-31.9	
10730.00	-21.2	V	3.0	35.7	1.0	-55.9	-25.0	-30.9	
5365.00	-18.6	H	3.0	35.4	1.0	-53.1	-25.0	-28.1	
8047.50	-20.2	H	3.0	35.8	1.0	-55.0	-25.0	-30.0	
10730.00	-20.0	H	3.0	35.7	1.0	-54.7	-25.0	-29.7	

LTE B41 15MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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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									
5012.00	-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	
7779.00	-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	
7779.00	-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									
5012.00	-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	
7779.00	-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	
7779.00	-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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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