

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (GSM/UMTS sample X-Axis) Mode: WCDMA2 REL99								
Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	21.46	V	8.3	4.4	17.49	33.0	-15.5	
1852.40	23.84	H	8.3	4.4	19.87	33.0	-13.1	
Mid Ch								
1880.00	22.02	V	8.3	4.3	17.97	33.0	-15.0	
1880.00	24.11	H	8.3	4.3	20.06	33.0	-12.9	
High Ch								
1907.60	21.48	V	8.4	4.2	17.29	33.0	-15.7	
1907.60	23.02	H	8.4	4.2	18.83	33.0	-14.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

B2 REL99

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (GSM/UMTS sample X-Axis) Mode: WCDMA2, HSDPA								
Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	20.19	V	8.3	4.4	16.22	33.0	-16.8	
1852.40	22.47	H	8.3	4.4	18.50	33.0	-14.5	
Mid Ch								
1880.00	20.66	V	8.3	4.3	16.61	33.0	-16.4	
1880.00	22.80	H	8.3	4.3	18.75	33.0	-14.2	
High Ch								
1907.60	20.35	V	8.4	4.2	16.16	33.0	-16.8	
1907.60	21.82	H	8.4	4.2	17.63	33.0	-15.4	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

B2 HSDPA

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #CB512922CL Y-Axis) Mode: WCDMA4 REL99								
Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.40	24.94	V	8.0	4.7	21.66	30.0	-8.3	
1712.40	23.08	H	8.0	4.7	19.80	30.0	-10.2	
Mid Ch								
1732.40	24.47	V	8.0	4.6	21.12	30.0	-8.9	
1732.40	23.17	H	8.0	4.6	19.82	30.0	-10.2	
High Ch								
1752.50	24.20	V	8.1	4.6	20.73	30.0	-9.3	
1752.50	23.24	H	8.1	4.6	19.77	30.0	-10.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

B4 REL99

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #CB512922CL Y-Axis) Mode: WCDMA4 HSDPA								
Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.40	23.59	V	8.0	4.7	20.31	30.0	-9.7	
1712.40	21.44	H	8.0	4.7	18.16	30.0	-11.8	
Mid Ch								
1732.40	23.49	V	8.0	4.6	20.14	30.0	-9.9	
1732.40	21.55	H	8.0	4.6	18.20	30.0	-11.8	
High Ch								
1752.50	22.22	V	8.1	4.6	18.75	30.0	-11.3	
1752.50	21.59	H	8.1	4.6	18.12	30.0	-11.9	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

B4 HSDPA

LTE Band 2

BW (MHz)	Mode	RB/RB Size	f(MHz)	EIRP	
				dBm	mW
1.4	QPSK	1/0	1850.7	19.59	90.99
1.4	QPSK	1/0	1880	19.97	99.31
1.4	QPSK	1/0	1909.3	19.91	97.95
1.4	16QAM	1/0	1850.7	18.72	74.47
1.4	16QAM	1/0	1880	19.11	81.47
1.4	16QAM	1/0	1909.3	18.99	79.25
3	QPSK	1/0	1851.5	19.82	95.94
3	QPSK	1/0	1880	20.05	101.16
3	QPSK	1/0	1908.5	18.79	75.68
3	16QAM	1/0	1851.5	18.94	78.34
3	16QAM	1/0	1880	19.25	84.14
3	16QAM	1/0	1908.5	17.77	59.84
5	QPSK	1/0	1852.5	19.64	92.04
5	QPSK	1/0	1880	19.94	98.63
5	QPSK	1/0	1907.5	19.42	87.50
5	16QAM	1/0	1852.5	18.60	72.44
5	16QAM	1/0	1880	19.01	79.62
5	16QAM	1/0	1907.5	18.67	73.62
10	QPSK	1/0	1855	19.88	97.27
10	QPSK	1/0	1880	19.20	83.18
10	QPSK	1/0	1905	20.29	106.91
10	16QAM	1/0	1855	19.10	81.28
10	16QAM	1/0	1880	18.40	69.18
10	16QAM	1/0	1905	19.45	88.10
15	QPSK	1/0	1857.5	19.64	92.04
15	QPSK	1/0	1880	19.76	94.62
15	QPSK	1/0	1902.5	20.38	109.14
15	16QAM	1/0	1857.5	18.59	72.28
15	16QAM	1/0	1880	19.05	80.35
15	16QAM	1/0	1902.5	19.40	87.10
20	QPSK	1/0	1860	19.63	91.83
20	QPSK	1/0	1880	19.86	96.83
20	QPSK	1/0	1900	20.24	105.68
20	16QAM	1/0	1860	18.87	77.09
20	16QAM	1/0	1880	18.79	75.68
20	16QAM	1/0	1900	19.72	93.76

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 1.4MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	21.96	V	8.3	4.4	18.01	33.0	-15.0	
1850.70	23.54	H	8.3	4.4	19.59	33.0	-13.4	
Mid Ch								
1880.00	20.78	V	8.3	4.3	16.73	33.0	-16.3	
1880.00	24.02	H	8.3	4.3	19.97	33.0	-13.0	
High Ch								
1909.30	20.81	V	8.4	4.2	16.61	33.0	-16.4	
1909.30	24.11	H	8.4	4.2	19.91	33.0	-13.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 1.4MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 1.4MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.70	21.01	V	8.3	4.4	17.06	33.0	-15.9	
1850.70	22.67	H	8.3	4.4	18.72	33.0	-14.3	
Mid Ch								
1880.00	19.74	V	8.3	4.3	15.69	33.0	-17.3	
1880.00	23.16	H	8.3	4.3	19.11	33.0	-13.9	
High Ch								
1909.30	19.72	V	8.4	4.2	15.52	33.0	-17.5	
1909.30	23.19	H	8.4	4.2	18.99	33.0	-14.0	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 1.4MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 3MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	21.67	V	8.3	4.4	17.71	33.0	-15.3	
1851.50	23.78	H	8.3	4.4	19.82	33.0	-13.2	
Mid Ch								
1880.00	20.71	V	8.3	4.3	16.66	33.0	-16.3	
1880.00	24.10	H	8.3	4.3	20.05	33.0	-12.9	
High Ch								
1908.50	21.17	V	8.4	4.2	16.98	33.0	-16.0	
1908.50	22.98	H	8.4	4.2	18.79	33.0	-14.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 3MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 3MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1851.50	20.70	V	8.3	4.4	16.74	33.0	-16.3	
1851.50	22.90	H	8.3	4.4	18.94	33.0	-14.1	
Mid Ch								
1880.00	19.75	V	8.3	4.3	15.70	33.0	-17.3	
1880.00	23.30	H	8.3	4.3	19.25	33.0	-13.7	
High Ch								
1908.50	20.30	V	8.4	4.2	16.11	33.0	-16.9	
1908.50	21.96	H	8.4	4.2	17.77	33.0	-15.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 3MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 5MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	21.95	V	8.3	4.4	17.98	33.0	-15.0	
1852.50	23.61	H	8.3	4.4	19.64	33.0	-13.4	
Mid Ch								
1880.00	20.44	V	8.3	4.3	16.39	33.0	-16.6	
1880.00	23.99	H	8.3	4.3	19.94	33.0	-13.1	
High Ch								
1907.50	21.33	V	8.4	4.2	17.14	33.0	-15.9	
1907.50	23.61	H	8.4	4.2	19.42	33.0	-13.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 5MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 5MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	21.10	V	8.3	4.4	17.13	33.0	-15.9	
1852.50	22.57	H	8.3	4.4	18.60	33.0	-14.4	
Mid Ch								
1880.00	19.84	V	8.3	4.3	15.79	33.0	-17.2	
1880.00	23.06	H	8.3	4.3	19.01	33.0	-14.0	
High Ch								
1907.50	20.61	V	8.4	4.2	16.42	33.0	-16.6	
1907.50	22.86	H	8.4	4.2	18.67	33.0	-14.3	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 5MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 10MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	22.20	V	8.3	4.3	18.22	33.0	-14.8	
1855.00	23.86	H	8.3	4.3	19.88	33.0	-13.1	
Mid Ch								
1880.00	20.43	V	8.3	4.3	16.38	33.0	-16.6	
1880.00	23.25	H	8.3	4.3	19.20	33.0	-13.8	
High Ch								
1905.00	23.62	V	8.4	4.2	19.42	33.0	-13.6	
1905.00	24.49	H	8.4	4.2	20.29	33.0	-12.7	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 10MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 10MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	21.06	V	8.3	4.3	17.08	33.0	-15.9	
1855.00	23.08	H	8.3	4.3	19.10	33.0	-13.9	
Mid Ch								
1880.00	19.56	V	8.3	4.3	15.51	33.0	-17.5	
1880.00	22.45	H	8.3	4.3	18.40	33.0	-14.6	
High Ch								
1905.00	22.68	V	8.4	4.2	18.48	33.0	-14.5	
1905.00	23.65	H	8.4	4.2	19.45	33.0	-13.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 10MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 15MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	21.84	V	8.3	4.4	17.89	33.0	-15.1	
1857.50	23.59	H	8.3	4.4	19.64	33.0	-13.4	
Mid Ch								
1880.00	20.59	V	8.3	4.3	16.54	33.0	-16.5	
1880.00	23.81	H	8.3	4.3	19.76	33.0	-13.2	
High Ch								
1902.50	23.28	V	8.4	4.2	19.08	33.0	-13.9	
1902.50	24.58	H	8.4	4.2	20.38	33.0	-12.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 15MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 15MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1857.50	20.80	V	8.3	4.4	16.85	33.0	-16.2	
1857.50	22.54	H	8.3	4.4	18.59	33.0	-14.4	
Mid Ch								
1880.00	20.00	V	8.3	4.3	15.95	33.0	-17.0	
1880.00	23.10	H	8.3	4.3	19.05	33.0	-13.9	
High Ch								
1902.50	22.50	V	8.4	4.2	18.30	33.0	-14.7	
1902.50	23.60	H	8.4	4.2	19.40	33.0	-13.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 15MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 20MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	21.07	V	8.3	4.3	17.10	33.0	-15.9	
1860.00	23.60	H	8.3	4.3	19.63	33.0	-13.4	
Mid Ch								
1880.00	21.30	V	8.3	4.3	17.25	33.0	-15.7	
1880.00	23.91	H	8.3	4.3	19.86	33.0	-13.1	
High Ch								
1900.00	20.81	V	8.5	4.2	16.60	33.0	-16.4	
1900.00	24.45	H	8.5	4.2	20.24	33.0	-12.8	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 20MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-13 Test Engineer: Brian Kiewra Configuration: Standalone (Sample #C51292315 X-Axis) Mode: LTE2, 20MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1860.00	20.16	V	8.3	4.3	16.19	33.0	-16.8	
1860.00	22.84	H	8.3	4.3	18.87	33.0	-14.1	
Mid Ch								
1880.00	20.26	V	8.3	4.3	16.21	33.0	-16.8	
1880.00	22.84	H	8.3	4.3	18.79	33.0	-14.2	
High Ch								
1900.00	21.70	V	8.5	4.2	17.49	33.0	-15.5	
1900.00	23.93	H	8.5	4.2	19.72	33.0	-13.3	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B2 20MHz 16QAM

LTE Band 4

BW (MHz)	Mode	RB/RB Size	f(MHz)	EIRP	
				dBm	mW
1.4	QPSK	1/0	1710.7	20.41	109.90
1.4	QPSK	1/0	1732.5	20.79	119.95
1.4	QPSK	1/0	1754.3	20.05	101.16
1.4	16QAM	1/0	1710.7	19.60	91.20
1.4	16QAM	1/0	1732.5	19.79	95.28
1.4	16QAM	1/0	1754.3	19.04	80.17
3	QPSK	1/0	1711.5	20.59	114.55
3	QPSK	1/0	1732.5	20.58	114.29
3	QPSK	1/0	1753.5	20.05	101.16
3	16QAM	1/0	1711.5	19.70	93.33
3	16QAM	1/0	1732.5	19.77	94.84
3	16QAM	1/0	1753.5	19.17	82.60
5	QPSK	1/0	1712.5	20.74	118.58
5	QPSK	1/0	1732.5	20.36	108.64
5	QPSK	1/0	1752.5	20.64	115.88
5	16QAM	1/0	1712.5	19.88	97.27
5	16QAM	1/0	1732.5	19.47	88.51
5	16QAM	1/0	1752.5	19.66	92.47
10	QPSK	1/0	1715	20.68	116.95
10	QPSK	1/0	1732.5	20.47	111.43
10	QPSK	1/0	1750	20.95	124.45
10	16QAM	1/0	1715	19.60	91.20
10	16QAM	1/0	1732.5	19.53	89.74
10	16QAM	1/0	1750	20.00	100.00
15	QPSK	1/0	1717.5	20.44	110.66
15	QPSK	1/0	1732.5	20.57	114.02
15	QPSK	1/0	1747.5	21.11	129.12
15	16QAM	1/0	1717.5	19.34	85.90
15	16QAM	1/0	1732.5	19.59	90.99
15	16QAM	1/0	1747.5	20.27	106.41
20	QPSK	1/0	1720	20.66	116.41
20	QPSK	1/0	1732.5	20.55	113.50
20	QPSK	1/0	1745	21.44	139.32
20	16QAM	1/0	1720	19.65	92.26
20	16QAM	1/0	1732.5	19.62	91.62
20	16QAM	1/0	1745	20.48	111.69

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 1.4MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	23.69	V	8.0	4.7	20.41	30.0	-9.6	
1710.70	22.04	H	8.0	4.7	18.76	30.0	-11.2	
Mid Ch								
1732.50	24.14	V	8.0	4.6	20.79	30.0	-9.2	
1732.50	21.99	H	8.0	4.6	18.64	30.0	-11.4	
High Ch								
1754.30	23.53	V	8.1	4.6	20.05	30.0	-10.0	
1754.30	22.14	H	8.1	4.6	18.66	30.0	-11.3	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 1.4MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 1.4MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1710.70	22.88	V	8.0	4.7	19.60	30.0	-10.4	
1710.70	21.08	H	8.0	4.7	17.80	30.0	-12.2	
Mid Ch								
1732.50	23.14	V	8.0	4.6	19.79	30.0	-10.2	
1732.50	21.16	H	8.0	4.6	17.81	30.0	-12.2	
High Ch								
1754.30	22.52	V	8.1	4.6	19.04	30.0	-11.0	
1754.30	21.37	H	8.1	4.6	17.89	30.0	-12.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 1.4MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 3MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	23.87	V	8.0	4.7	20.59	30.0	-9.4	
1711.50	21.98	H	8.0	4.7	18.70	30.0	-11.3	
Mid Ch								
1732.50	23.93	V	8.0	4.6	20.58	30.0	-9.4	
1732.50	22.25	H	8.0	4.6	18.90	30.0	-11.1	
High Ch								
1753.50	23.53	V	8.1	4.6	20.05	30.0	-9.9	
1753.50	22.18	H	8.1	4.6	18.70	30.0	-11.3	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 3MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 3MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1711.50	22.98	V	8.0	4.7	19.70	30.0	-10.3	
1711.50	21.03	H	8.0	4.7	17.75	30.0	-12.2	
Mid Ch								
1732.50	23.12	V	8.0	4.6	19.77	30.0	-10.2	
1732.50	21.28	H	8.0	4.6	17.93	30.0	-12.1	
High Ch								
1753.50	22.65	V	8.1	4.6	19.17	30.0	-10.8	
1753.50	21.23	H	8.1	4.6	17.75	30.0	-12.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 3MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 5MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	24.02	V	8.0	4.7	20.74	30.0	-9.3	
1712.50	21.98	H	8.0	4.7	18.70	30.0	-11.3	
Mid Ch								
1732.50	23.71	V	8.0	4.6	20.36	30.0	-9.6	
1732.50	22.48	H	8.0	4.6	19.13	30.0	-10.9	
High Ch								
1752.50	24.11	V	8.1	4.6	20.64	30.0	-9.4	
1752.50	22.14	H	8.1	4.6	18.67	30.0	-11.3	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 5MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 5MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	23.16	V	8.0	4.7	19.88	30.0	-10.1	
1712.50	20.88	H	8.0	4.7	17.60	30.0	-12.4	
Mid Ch								
1732.50	22.82	V	8.0	4.6	19.47	30.0	-10.5	
1732.50	21.29	H	8.0	4.6	17.94	30.0	-12.1	
High Ch								
1752.50	23.13	V	8.1	4.6	19.66	30.0	-10.3	
1752.50	21.24	H	8.1	4.6	17.77	30.0	-12.2	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 5MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 10MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	23.96	V	8.0	4.7	20.68	30.0	-9.3	
1715.00	22.21	H	8.0	4.7	18.93	30.0	-11.1	
Mid Ch								
1732.50	23.82	V	8.0	4.6	20.47	30.0	-9.5	
1732.50	22.94	H	8.0	4.6	19.59	30.0	-10.4	
High Ch								
1750.00	24.39	V	8.0	4.6	20.95	30.0	-9.1	
1750.00	22.36	H	8.0	4.6	18.92	30.0	-11.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 10MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 10MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	22.88	V	8.0	4.7	19.60	30.0	-10.4	
1715.00	21.31	H	8.0	4.7	18.03	30.0	-12.0	
Mid Ch								
1732.50	22.88	V	8.0	4.6	19.53	30.0	-10.5	
1732.50	21.95	H	8.0	4.6	18.60	30.0	-11.4	
High Ch								
1750.00	23.44	V	8.0	4.6	20.00	30.0	-10.0	
1750.00	21.36	H	8.0	4.6	17.92	30.0	-12.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 10MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 15MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	23.74	V	8.0	4.7	20.44	30.0	-9.6	
1717.50	21.88	H	8.0	4.7	18.58	30.0	-11.4	
Mid Ch								
1732.50	23.92	V	8.0	4.6	20.57	30.0	-9.4	
1732.50	22.25	H	8.0	4.6	18.90	30.0	-11.1	
High Ch								
1747.50	24.53	V	8.0	4.6	21.11	30.0	-8.9	
1747.50	22.29	H	8.0	4.6	18.87	30.0	-11.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 15MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#2 Y-Axis) Mode: LTE4, 15MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1717.50	22.64	V	8.0	4.7	19.34	30.0	-10.7	
1717.50	20.75	H	8.0	4.7	17.45	30.0	-12.6	
Mid Ch								
1732.50	22.94	V	8.0	4.6	19.59	30.0	-10.4	
1732.50	21.35	H	8.0	4.6	18.00	30.0	-12.0	
High Ch								
1747.50	23.69	V	8.0	4.6	20.27	30.0	-9.7	
1747.50	21.30	H	8.0	4.6	17.88	30.0	-12.1	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 15MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 20MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	23.97	V	8.0	4.7	20.66	30.0	-9.3	
1720.00	21.50	H	8.0	4.7	18.19	30.0	-11.8	
Mid Ch								
1732.50	23.90	V	8.0	4.6	20.55	30.0	-9.5	
1732.50	22.29	H	8.0	4.6	18.94	30.0	-11.1	
High Ch								
1745.00	24.85	V	8.0	4.6	21.44	30.0	-8.6	
1745.00	22.85	H	8.0	4.6	19.44	30.0	-10.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 20MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE sample#1 Y-Axis) Mode: LTE4, 20MHz, 16QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1720.00	22.96	V	8.0	4.7	19.65	30.0	-10.4	
1720.00	20.58	H	8.0	4.7	17.27	30.0	-12.7	
Mid Ch								
1732.50	22.97	V	8.0	4.6	19.62	30.0	-10.4	
1732.50	21.48	H	8.0	4.6	18.13	30.0	-11.9	
High Ch								
1745.00	23.89	V	8.0	4.6	20.48	30.0	-9.5	
1745.00	21.82	H	8.0	4.6	18.41	30.0	-11.6	
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm								

LTE B4 20MHz 16QAM

LTE Band 12

BW (MHz)	Mode	RB/RB Size	f(MHz)	ERP	
				dBm	mW
1.4	QPSK	1/0	699.7	12.97	19.82
1.4	QPSK	1/0	707.5	12.64	18.37
1.4	QPSK	1/0	715.3	13.75	23.71
1.4	16QAM	1/0	699.7	11.96	15.70
1.4	16QAM	1/0	707.5	11.67	14.69
1.4	16QAM	1/0	715.3	12.93	19.63
3	QPSK	1/0	700.5	13.11	20.46
3	QPSK	1/0	707.5	13.68	23.33
3	QPSK	1/0	714.5	13.69	23.39
3	16QAM	1/0	700.5	12.16	16.44
3	16QAM	1/0	707.5	12.76	18.88
3	16QAM	1/0	714.5	12.63	18.32
5	QPSK	1/0	701.5	13.04	20.14
5	QPSK	1/0	707.5	13.04	20.14
5	QPSK	1/0	713.5	13.86	24.32
5	16QAM	1/0	701.5	12.29	16.94
5	16QAM	1/0	707.5	12.39	17.34
5	16QAM	1/0	713.5	13.17	20.75
10	QPSK	1/0	704	12.93	19.63
10	QPSK	1/0	707.5	12.88	19.41
10	QPSK	1/0	711	12.88	19.41
10	16QAM	1/0	704	11.95	15.67
10	16QAM	1/0	707.5	12.04	16.00
10	16QAM	1/0	711	11.85	15.31

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 1.4MHz, QPSK								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	18.78	V	4.8	-1.05	12.97	38.5	-25.5	
699.70	4.69	H	4.8	-1.05	-1.12	38.5	-39.6	
Mid Ch								
707.50	18.54	V	4.8	-1.11	12.64	38.5	-25.8	
707.50	5.04	H	4.8	-1.11	-0.86	38.5	-39.3	
High Ch								
715.30	19.76	V	4.8	-1.17	13.75	38.5	-24.7	
715.30	4.61	H	4.8	-1.17	-1.40	38.5	-39.9	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 1.4MHz QPSK

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 1.4MHz, 16QAM								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
699.70	17.77	V	4.8	-1.05	11.96	38.5	-26.5	
699.70	3.84	H	4.8	-1.05	-1.97	38.5	-40.4	
Mid Ch								
707.50	17.57	V	4.8	-1.11	11.67	38.5	-26.8	
707.50	4.15	H	4.8	-1.11	-1.75	38.5	-40.2	
High Ch								
715.30	18.94	V	4.8	-1.17	12.93	38.5	-25.5	
715.30	3.66	H	4.8	-1.17	-2.35	38.5	-40.8	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 1.4MHz 16QAM

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 3MHz, QPSK								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	18.96	V	4.8	-1.08	13.11	38.5	-25.3	
700.50	5.44	H	4.8	-1.08	-0.41	38.5	-38.9	
Mid Ch								
707.50	19.58	V	4.8	-1.11	13.68	38.5	-24.8	
707.50	5.16	H	4.8	-1.11	-0.74	38.5	-39.2	
High Ch								
714.50	19.64	V	4.8	-1.14	13.69	38.5	-24.8	
714.50	4.61	H	4.8	-1.14	-1.34	38.5	-39.8	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 3MHz QPSK

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 3MHz, 16QAM								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
700.50	18.01	V	4.8	-1.08	12.16	38.5	-26.3	
700.50	3.47	H	4.8	-1.08	-2.38	38.5	-40.8	
Mid Ch								
707.50	18.66	V	4.8	-1.11	12.76	38.5	-25.7	
707.50	4.61	H	4.8	-1.11	-1.29	38.5	-39.7	
High Ch								
714.50	18.58	V	4.8	-1.14	12.63	38.5	-25.8	
714.50	3.66	H	4.8	-1.14	-2.29	38.5	-40.7	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 3MHz 16QAM

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 5MHz, QPSK								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
701.50	18.87	V	4.8	-1.06	13.04	38.5	-25.4	
701.50	5.06	H	4.8	-1.06	-0.77	38.5	-39.2	
Mid Ch								
707.50	18.94	V	4.8	-1.11	13.04	38.5	-25.4	
707.50	5.43	H	4.8	-1.11	-0.47	38.5	-38.9	
High Ch								
713.50	19.85	V	4.8	-1.16	13.86	38.5	-24.6	
713.50	4.85	H	4.8	-1.17	-1.17	38.5	-39.6	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 5MHz QPSK

Fundamental Substitution Measurement (Fc < 1GHz)								
UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE12, 5MHz, 16QAM								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
701.50	18.12	V	4.8	-1.06	12.29	38.5	-26.2	
701.50	4.11	H	4.8	-1.06	-1.72	38.5	-40.2	
Mid Ch								
707.50	18.29	V	4.8	-1.11	12.39	38.5	-26.1	
707.50	4.70	H	4.8	-1.11	-1.20	38.5	-39.6	
High Ch								
713.50	19.16	V	4.8	-1.16	13.17	38.5	-25.3	
713.50	4.18	H	4.8	-1.17	-1.84	38.5	-40.3	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

LTE B12 5MHz 16QAM

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE#2 Z-Axis) Mode: LTE12, 10MHz, QPSK								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	18.78	V	4.8	-1.08	12.93	38.5	-25.5	
704.00	4.10	H	4.8	-1.08	-1.75	38.5	-40.2	
Mid Ch								
707.50	18.78	V	4.8	-1.11	12.88	38.5	-25.6	
707.50	4.08	H	4.8	-1.11	-1.82	38.5	-40.3	
High Ch								
711.00	18.83	V	4.8	-1.14	12.88	38.5	-25.6	
711.00	3.48	H	4.8	-1.14	-2.47	38.5	-40.9	
Rev: 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								
LTE B12 10MHz QPSK								

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Mark Nolting Configuration: Standalone (LTE#2 Z-Axis) Mode: LTE12, 10MHz, 16QAM								
Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
704.00	17.80	V	4.8	-1.08	11.95	38.5	-26.5	
704.00	3.13	H	4.8	-1.08	-2.72	38.5	-41.2	
Mid Ch								
707.50	17.94	V	4.8	-1.11	12.04	38.5	-26.4	
707.50	3.15	H	4.8	-1.11	-2.75	38.5	-41.2	
High Ch								
711.00	17.80	V	4.8	-1.14	11.85	38.5	-26.6	
711.00	2.62	H	4.8	-1.14	-3.33	38.5	-41.8	
Rev: 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								
LTE B12 10MHz 16QAM								

LTE Band 17

BW (MHz)	Mode	RB/RB Size	f(MHz)	ERP	
				dBm	mW
5	QPSK	1/0	706.5	13.06	20.23
5	QPSK	1/0	710	13.37	21.73
5	QPSK	1/0	713.5	13.75	23.71
5	16QAM	1/0	706.5	12.27	16.87
5	16QAM	1/0	710	12.74	18.79
5	16QAM	1/0	713.5	12.69	18.58
10	QPSK	1/0	709	13.89	24.49
10	QPSK	1/0	710	13.69	23.39
10	QPSK	1/0	711	13.65	23.17
10	16QAM	1/0	709	12.98	19.86
10	16QAM	1/0	710	12.92	19.59
10	16QAM	1/0	711	12.84	19.23

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE17, 5MHz, QPSK Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
706.50	18.95	V	4.8	-1.10	13.06	34.8	-25.4	
706.50	4.05	H	4.8	-1.10	-1.84	34.8	-40.3	
Mid Ch								
710.00	19.30	V	4.8	-1.13	13.37	34.8	-25.1	
710.00	5.23	H	4.8	-1.13	-0.70	34.8	-39.2	
High Ch								
713.50	19.74	V	4.8	-1.16	13.75	34.8	-24.7	
713.50	4.86	H	4.8	-1.16	-1.13	34.8	-39.6	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								

LTE B17 5MHz QPSK

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE17, 5MHz, 16QAM Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
706.50	18.16	V	4.8	-1.10	12.27	34.8	-26.2	
706.50	3.23	H	4.8	-1.10	-2.66	34.8	-41.1	
Mid Ch								
710.00	18.67	V	4.8	-1.13	12.74	34.8	-25.7	
710.00	4.62	H	4.8	-1.13	-1.31	34.8	-39.8	
High Ch								
713.50	18.68	V	4.8	-1.16	12.69	34.8	-25.8	
713.50	3.92	H	4.8	-1.16	-2.07	34.8	-40.5	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								

LTE B17 5MHz 16QAM

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE17, 10MHz, QPSK Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
709.00	19.81	V	4.8	-1.12	13.89	34.8	-24.6	
709.00	5.79	H	4.8	-1.12	-0.13	34.8	-38.6	
Mid Ch								
710.00	19.62	V	4.8	-1.13	13.69	34.8	-24.8	
710.00	5.33	H	4.8	-1.13	-0.60	34.8	-39.1	
High Ch								
711.00	19.60	V	4.8	-1.14	13.65	34.8	-24.8	
711.00	5.73	H	4.8	-1.14	-0.22	34.8	-38.7	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								

LTE B17 10MHz QPSK

Fundamental Substitution Measurement (Fc < 1GHz) UL LLC, Chamber N								
Company: SOMC Project #: 11139405 Date: 2016-04-12 Test Engineer: Brian Kiewra Configuration: Standalone (CB5129Z315 Z-Axis) Mode: LTE17, 10MHz, 16QAM Test Equipment: Substitution: Dipole antenna AT0016, cable CBL055, and signal-source T374								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
709.00	18.90	V	4.8	-1.12	12.98	34.8	-25.5	
709.00	4.80	H	4.8	-1.12	-1.12	34.8	-39.6	
Mid Ch								
710.00	18.85	V	4.8	-1.13	12.92	34.8	-25.5	
710.00	4.21	H	4.8	-1.13	-1.72	34.8	-40.2	
High Ch								
711.00	18.79	V	4.8	-1.14	12.84	34.8	-25.6	
711.00	5.02	H	4.8	-1.14	-0.93	34.8	-39.4	
Rev. 11.02.2015 Note: For Band 13/17 ERP limit is 34.77dBm. For Band 26 limit is 50dBm								

LTE B17 10MHz 16QAM

LTE Band 41

BW (MHz)	Mode	RB/RB Size	f(MHz)	EIRP (Peak)	
				dBm	mW
5	QPSK	1/0	2498.5	24.52	283.14
5	QPSK	1/0	2593.0	24.73	297.17
5	QPSK	1/0	2687.5	16.91	49.09
5	16QAM	1/0	2498.5	25.60	363.08
5	16QAM	1/0	2593.0	25.72	373.25
5	16QAM	1/0	2687.5	18.05	63.83
10	QPSK	1/0	2501.0	24.66	292.42
10	QPSK	1/0	2593.0	24.91	309.74
10	QPSK	1/0	2685.0	17.51	56.36
10	16QAM	1/0	2501.0	25.49	354.00
10	16QAM	1/0	2593.0	26.30	426.58
10	16QAM	1/0	2685.0	18.65	73.28
15	QPSK	1/0	2503.5	25.00	316.23
15	QPSK	1/0	2593.0	25.86	385.48
15	QPSK	1/0	2682.5	17.82	60.53
15	16QAM	1/0	2503.5	25.99	397.19
15	16QAM	1/0	2593.0	26.75	473.15
15	16QAM	1/0	2682.5	19.21	83.37
20	QPSK	1/0	2506.0	24.76	299.23
20	QPSK	1/0	2593.0	26.13	410.20
20	QPSK	1/0	2680.0	18.54	71.45
20	16QAM	1/0	2506.0	26.16	413.05
20	16QAM	1/0	2593.0	27.23	528.45
20	16QAM	1/0	2680.0	19.61	91.41

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 5MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2498.50	28.77	V	9.7	5.5	24.52	33.0	-8.5	PK Detector	
2498.50	26.04	H	9.7	5.5	21.79	33.0	-11.2		
Mid Ch									
2593.00	28.96	V	10.0	5.8	24.73	33.0	-8.3	PK Detector	
2593.00	26.53	H	10.0	5.8	22.30	33.0	-10.7		
High Ch									
2687.50	21.01	V	10.2	6.0	16.88	33.0	-16.1	PK Detector	
2687.50	21.04	H	10.2	6.0	16.91	33.0	-16.1		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 5MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 5MHz, 16-QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2498.50	29.85	V	9.7	5.5	25.60	33.0	-7.4	PK Detector	
2498.50	27.05	H	9.7	5.5	22.80	33.0	-10.2		
Mid Ch									
2593.00	29.95	V	10.0	5.8	25.72	33.0	-7.3	PK Detector	
2593.00	27.92	H	10.0	5.8	23.69	33.0	-9.3		
High Ch									
2687.50	22.12	V	10.2	6.0	17.99	33.0	-15.0	PK Detector	
2687.50	22.18	H	10.2	6.0	18.05	33.0	-14.9		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 5MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 10MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2501.00	28.91	V	9.8	5.5	24.66	33.0	-8.3	PK Detector	
2501.00	26.63	H	9.8	5.5	22.38	33.0	-10.6		
Mid Ch									
2593.00	29.14	V	10.0	5.8	24.91	33.0	-8.1	PK Detector	
2593.00	26.89	H	10.0	5.8	22.66	33.0	-10.3		
High Ch									
2685.00	21.61	V	10.2	6.0	17.46	33.0	-15.5	PK Detector	
2685.00	21.66	H	10.2	6.0	17.51	33.0	-15.5		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 10MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 10MHz, 16-QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2501.00	29.74	V	9.8	5.5	25.49	33.0	-7.5	PK Detector	
2501.00	27.44	H	9.8	5.5	23.19	33.0	-9.8		
Mid Ch									
2593.00	30.53	V	10.0	5.8	26.30	33.0	-6.7	PK Detector	
2593.00	28.45	H	10.0	5.8	24.22	33.0	-8.8		
High Ch									
2685.00	22.72	V	10.2	6.0	18.57	33.0	-14.4	PK Detector	
2685.00	22.80	H	10.2	6.0	18.65	33.0	-14.3		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 10MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 15MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2593.50	29.25	V	9.8	5.5	25.00	33.0	-8.0	PK Detector	
2593.50	26.52	H	9.8	5.5	22.27	33.0	-10.7		
Mid Ch									
2593.00	30.09	V	10.0	5.8	25.86	33.0	-7.1	PK Detector	
2593.00	27.70	H	10.0	5.8	23.47	33.0	-9.5		
High Ch									
2682.50	21.98	V	10.2	6.0	17.82	33.0	-15.2	PK Detector	
2682.50	21.83	H	10.2	6.0	17.67	33.0	-15.3		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 15MHz QPSK

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 15MHz, 16-QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2593.50	30.24	V	9.8	5.5	25.99	33.0	-7.0	PK Detector	
2593.50	27.42	H	9.8	5.5	23.17	33.0	-9.8		
Mid Ch									
2593.00	30.98	V	10.0	5.8	26.75	33.0	-6.3	PK Detector	
2593.00	28.57	H	10.0	5.8	24.34	33.0	-8.7		
High Ch									
2682.50	23.37	V	10.2	6.0	19.21	33.0	-13.8	PK Detector	
2682.50	23.18	H	10.2	6.0	19.02	33.0	-14.0		
Rev. 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									

LTE B41 15MHz 16QAM

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 20MHz, QPSK Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2506.00	29.02	V	9.8	5.5	24.76	33.0	-8.2	PK Detector	
2506.00	27.30	H	9.8	5.5	23.04	33.0	-10.0		
Mid Ch									
2593.00	30.36	V	10.0	5.8	26.13	33.0	-6.9	PK Detector	
2593.00	27.35	H	10.0	5.8	23.12	33.0	-9.9		
High Ch									
2680.00	22.72	V	10.2	6.0	18.54	33.0	-14.5	PK Detector	
2680.00	22.59	H	10.2	6.0	18.41	33.0	-14.6		
Rev: 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									
LTE B41 20MHz QPSK									

Fundamental Substitution Measurement (Fc > 1GHz) UL LLC, Chamber N									
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: Standalone (Sample # CB51292315 Y-Axis) Mode: LTE41, 20MHz, 16-QAM Test Equipment: Substitution: Horn antenna AT0078, cable CBL055, and signal-source T374									
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
Low Ch									
2506.00	30.42	V	9.8	5.5	26.16	33.0	-6.8	PK Detector	
2506.00	28.27	H	9.8	5.5	24.01	33.0	-9.0		
Mid Ch									
2593.00	31.46	V	10.0	5.8	27.23	33.0	-5.8	PK Detector	
2593.00	29.02	H	10.0	5.8	24.79	33.0	-8.2		
High Ch									
2680.00	23.79	V	10.2	6.0	19.61	33.0	-13.4	PK Detector	
2680.00	23.62	H	10.2	6.0	19.44	33.0	-13.6		
Rev: 11.02.2015 Note: For Band 4 EIRP limit is 30dBm									
LTE B41 20MHz 16QAM									

14.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

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

LIMIT

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

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

TEST PROCEDURE

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

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

14.2.1. SPURIOUS RADIATION PLOTS

GSM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-18
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL Z-Axis)
 Mode: GSM1900MHz

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (824.2MHz)									
1.85	36.7	H	3.0	15.3	39.9	1.0	-54.2	-13.0	-41.2
2.47	63.6	H	3.0	16.9	39.3	1.0	-55.2	-13.0	-42.2
3.36	63.5	H	3.0	14.2	39.5	1.0	-52.7	-13.0	-39.7
Mid Channel (836.6MHz)									
1.67	69.6	V	3.0	15.6	39.9	1.0	-54.5	-13.0	-41.5
2.47	63.6	V	3.0	15.9	39.3	1.0	-54.2	-13.0	-41.2
3.36	63.9	V	3.0	12.7	39.5	1.0	-51.2	-13.0	-38.2
High Channel (848.8MHz)									
1.70	39.4	H	3.0	15.6	40.0	1.0	-54.6	-13.0	-41.6
2.55	62.9	H	3.0	15.9	39.2	1.0	-54.2	-13.0	-41.2
3.40	63.6	H	3.0	14.2	39.5	1.0	-52.8	-13.0	-39.8
Low Channel (850.2MHz)									
1.70	27.7	V	3.0	12.4	40.0	1.0	-51.3	-13.0	-38.3
2.55	63.8	V	3.0	15.8	39.2	1.0	-54.1	-13.0	-41.1
3.40	64.2	V	3.0	13.9	39.5	1.0	-52.4	-13.0	-39.4

Rev: 03 19 15

GSM850 GPRS

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-18
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL Z-Axis)
 Mode: GSM850MHz

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (824.2MHz)									
1.85	62.7	H	3.0	18.8	39.9	1.0	-57.6	-13.0	-44.6
2.47	63.6	H	3.0	17.9	39.3	1.0	-56.3	-13.0	-42.3
3.36	64.1	H	3.0	14.7	39.5	1.0	-53.2	-13.0	-40.2
Mid Channel (836.6MHz)									
1.67	61.7	V	3.0	16.5	39.9	1.0	-55.5	-13.0	-42.5
2.47	63.6	V	3.0	15.8	39.2	1.0	-54.8	-13.0	-40.8
3.36	63.3	V	3.0	13.0	39.5	1.0	-51.5	-13.0	-38.5
High Channel (848.8MHz)									
1.70	31.4	H	3.0	17.6	40.0	1.0	-56.6	-13.0	-43.6
2.55	62.7	H	3.0	15.7	39.2	1.0	-53.9	-13.0	-40.9
3.40	62.9	H	3.0	13.5	39.5	1.0	-51.8	-13.0	-38.8
Low Channel (850.2MHz)									
1.70	28.6	V	3.0	14.3	40.0	1.0	-53.2	-13.0	-40.2
2.55	63.8	V	3.0	15.8	39.2	1.0	-54.0	-13.0	-41.0
3.40	63.9	V	3.0	13.5	39.5	1.0	-52.1	-13.0	-39.1

Rev: 03 19 15

GSM850 EGPRS

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-18
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL X-Axis)
 Mode: GSM1900MHz

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.2MHz)									
3.70	61.6	H	3.0	11.3	39.7	1.0	-50.6	-13.0	-37.6
5.55	63.3	H	3.0	9.8	40.1	1.0	-48.9	-13.0	-35.9
7.40	64.8	H	3.0	8.4	39.0	1.0	-46.4	-13.0	-33.4
Mid Channel (1860MHz)									
3.70	62.2	V	3.0	11.4	39.7	1.0	-50.2	-13.0	-37.2
5.55	63.8	V	3.0	10.4	40.1	1.0	-49.5	-13.0	-36.5
7.40	64.8	V	3.0	8.7	39.0	1.0	-46.7	-13.0	-33.7
High Channel (1900.8MHz)									
3.76	62.6	H	3.0	12.2	39.8	1.0	-50.9	-13.0	-37.9
5.64	63.2	H	3.0	9.5	40.0	1.0	-48.6	-13.0	-35.6
7.52	65.2	H	3.0	8.7	38.9	1.0	-46.6	-13.0	-33.6
Low Channel (1850.2MHz)									
3.76	61.7	V	3.0	10.9	39.8	1.0	-49.7	-13.0	-36.7
5.64	63.0	V	3.0	9.5	40.0	1.0	-48.6	-13.0	-35.6
7.52	64.5	V	3.0	8.3	38.9	1.0	-46.2	-13.0	-33.2
Mid Channel (1860MHz)									
3.76	62.6	H	3.0	12.2	39.8	1.0	-50.9	-13.0	-37.9
5.64	63.1	H	3.0	9.4	40.0	1.0	-48.5	-13.0	-35.5
7.52	64.2	H	3.0	7.7	38.9	1.0	-45.6	-13.0	-32.6
High Channel (1900.8MHz)									
3.76	62.5	V	3.0	11.7	39.8	1.0	-50.4	-13.0	-37.4
5.64	62.0	V	3.0	8.5	40.0	1.0	-47.5	-13.0	-34.5
7.52	63.1	V	3.0	8.9	38.9	1.0	-46.8	-13.0	-33.8

Rev: 03 19 15

GSM1900 GPRS

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-18
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL X-Axis)
 Mode: GSM1900MHz

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.2MHz)									
3.70	61.6	H	3.0	11.2	39.7	1.0	-50.0	-13.0	-37.0
5.55	62.7	H	3.0	9.2	40.1	1.0	-48.3	-13.0	-35.3
7.40	64.4	H	3.0	8.1	39.0	1.0	-46.0	-13.0	-33.0
Mid Channel (1860MHz)									
3.70	61.6	V	3.0	10.8	39.7	1.0	-49.6	-13.0	-36.6
5.55	63.4	V	3.0	10.6	40.1	1.0	-49.1	-13.0	-36.1
7.40	65.0	V	3.0	8.9	39.0	1.0	-46.9	-13.0	-33.9
High Channel (1900.8MHz)									
3.76	61.9	H	3.0	11.5	39.8	1.0	-50.2	-13.0	-37.2
5.64	63.1	H	3.0	9.4	40.0	1.0	-48.5	-13.0	-35.5
7.52	64.2	H	3.0	7.7	38.9	1.0	-45.6	-13.0	-32.6
Low Channel (1850.2MHz)									
3.76	62.5	V	3.0	11.7	39.8	1.0	-50.4	-13.0	-37.4
5.64	62.0	V	3.0	8.5	40.0	1.0	-47.5	-13.0	-34.5
7.52	63.1	V	3.0	8.9	38.9	1.0	-46.8	-13.0	-33.8
Mid Channel (1860MHz)									
3.76	62.6	H	3.0	12.2	39.8	1.0	-50.9	-13.0	-37.9
5.64	63.1	H	3.0	9.4	40.0	1.0	-48.5	-13.0	-35.5
7.52	64.2	H	3.0	7.7	38.9	1.0	-45.6	-13.0	-32.6
High Channel (1900.8MHz)									
3.76	62.5	V	3.0	11.7	39.8	1.0	-50.4	-13.0	-37.4
5.64	62.0	V	3.0	8.5	40.0	1.0	-47.5	-13.0	-34.5
7.52	63.1	V	3.0	8.9	38.9	1.0	-46.8	-13.0	-33.8

Rev: 03 19 15

GSM1900 EGPRS

WCDMA

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-16
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL X-Axis)
 Mode: HSDPA 1900MHz
 Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1825.4MHz)									
3.71	81.0	H	3.0	19.7	39.7	1.0	-49.4	-13.0	-36.4
5.96	82.0	H	3.0	8.5	40.1	1.0	-47.5	-13.0	-34.5
7.41	84.4	H	3.0	8.1	39.0	1.0	-46.0	-13.0	-33.0
3.71	82.2	V	3.0	11.5	39.7	1.0	-50.2	-13.0	-37.2
5.96	83.7	V	3.0	10.3	40.1	1.0	-49.4	-13.0	-36.4
7.41	85.1	V	3.0	9.0	39.0	1.0	-47.0	-13.0	-34.0
Mid Channel (1880MHz)									
3.76	82.5	H	3.0	12.0	39.8	1.0	-50.8	-13.0	-37.8
5.84	83.2	H	3.0	9.5	40.0	1.0	-48.5	-13.0	-35.5
7.52	85.0	H	3.0	8.5	38.9	1.0	-46.4	-13.0	-33.4
3.76	82.5	V	3.0	11.7	39.8	1.0	-50.4	-13.0	-37.4
5.84	83.5	V	3.0	9.3	40.0	1.0	-48.0	-13.0	-35.0
7.52	84.7	V	3.0	8.4	38.9	1.0	-46.4	-13.0	-33.4
High Channel (1907.6MHz)									
3.82	82.5	H	3.0	11.9	39.8	1.0	-50.8	-13.0	-37.8
5.72	83.5	H	3.0	9.7	40.0	1.0	-48.7	-13.0	-35.7
7.63	85.0	H	3.0	8.4	38.9	1.0	-46.3	-13.0	-33.3
3.82	82.9	V	3.0	12.0	39.8	1.0	-50.8	-13.0	-37.8
5.72	82.9	V	3.0	9.2	40.0	1.0	-48.2	-13.0	-35.2
7.63	85.2	V	3.0	8.9	38.9	1.0	-46.8	-13.0	-33.8

Rev: 03 19 16

B2 REL99

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-16
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL X-Axis)
 Mode: HSDPA 1900MHz
 Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1825.4MHz)									
3.71	81.1	H	3.0	18.8	39.7	1.0	-49.5	-13.0	-36.5
5.96	82.7	H	3.0	9.2	40.1	1.0	-48.2	-13.0	-35.2
7.41	84.9	H	3.0	8.5	39.0	1.0	-46.5	-13.0	-33.5
3.71	82.4	V	3.0	11.6	39.7	1.0	-50.4	-13.0	-37.4
5.96	83.0	V	3.0	9.8	40.1	1.0	-48.7	-13.0	-35.7
7.41	84.4	V	3.0	8.3	39.0	1.0	-46.2	-13.0	-33.2
Mid Channel (1880MHz)									
3.76	82.3	H	3.0	12.6	39.8	1.0	-51.4	-13.0	-38.4
5.84	83.3	H	3.0	9.6	40.0	1.0	-48.6	-13.0	-35.6
7.52	84.8	H	3.0	7.9	38.9	1.0	-45.8	-13.0	-32.8
3.76	82.0	V	3.0	11.2	39.8	1.0	-50.0	-13.0	-37.0
5.84	82.5	V	3.0	8.6	40.0	1.0	-48.0	-13.0	-35.0
7.52	84.8	V	3.0	8.6	38.9	1.0	-46.5	-13.0	-33.5
High Channel (1907.6MHz)									
3.82	82.7	H	3.0	11.6	39.8	1.0	-50.5	-13.0	-37.5
5.72	83.8	H	3.0	9.0	40.0	1.0	-47.9	-13.0	-34.9
7.63	85.0	H	3.0	8.4	38.9	1.0	-46.3	-13.0	-33.3
3.82	82.1	V	3.0	11.2	39.8	1.0	-50.0	-13.0	-37.0
5.72	82.9	V	3.0	9.3	40.0	1.0	-48.2	-13.0	-35.2
7.63	85.2	V	3.0	8.9	38.9	1.0	-47.4	-13.0	-34.4

Rev: 03 19 16

B2 HSDPA

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-16
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL Y-Axis)
 Mode: HSDPA 1700MHz
 Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1712.4MHz)									
3.43	83.3	H	3.0	13.5	39.6	1.0	-52.0	-13.0	-39.0
5.14	83.3	H	3.0	10.4	40.3	1.0	-49.7	-13.0	-36.7
6.85	85.7	H	3.0	10.0	39.2	1.0	-48.2	-13.0	-35.2
3.43	84.0	V	3.0	13.6	39.6	1.0	-52.2	-13.0	-39.2
5.14	83.3	V	3.0	10.5	40.3	1.0	-49.8	-13.0	-36.8
6.85	84.7	V	3.0	9.4	39.2	1.0	-47.5	-13.0	-34.5
Mid Channel (1732.4MHz)									
3.47	84.2	H	3.0	14.5	39.6	1.0	-53.1	-13.0	-40.1
5.26	82.8	H	3.0	9.8	40.3	1.0	-49.2	-13.0	-36.2
6.93	85.2	H	3.0	9.4	39.1	1.0	-47.5	-13.0	-34.5
3.47	83.6	V	3.0	13.2	39.6	1.0	-51.8	-13.0	-38.8
5.26	82.8	V	3.0	10.0	40.3	1.0	-49.3	-13.0	-36.3
6.93	84.3	V	3.0	8.9	39.1	1.0	-47.0	-13.0	-34.0
High Channel (1752.4MHz)									
3.51	84.6	H	3.0	14.7	39.6	1.0	-53.3	-13.0	-40.3
5.26	83.2	H	3.0	10.1	40.3	1.0	-49.4	-13.0	-36.4
7.01	84.4	H	3.0	8.4	39.1	1.0	-46.5	-13.0	-33.5
3.51	84.2	V	3.0	13.7	39.6	1.0	-52.3	-13.0	-39.3
5.26	82.9	V	3.0	10.0	40.3	1.0	-49.3	-13.0	-36.3
7.01	84.9	V	3.0	8.9	39.1	1.0	-47.0	-13.0	-34.0

Rev: 03 19 16

B4 REL99

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-16
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample # CB512922CL Y-Axis)
 Mode: HSDPA 1700MHz
 Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1712.4MHz)									
3.43	83.5	H	3.0	13.8	39.6	1.0	-52.4	-13.0	-39.4
5.14	82.9	H	3.0	10.0	40.3	1.0	-49.3	-13.0	-36.3
6.85	85.9	H	3.0	8.3	39.2	1.0	-46.4	-13.0	-33.4
3.43	84.0	V	3.0	13.6	39.6	1.0	-52.2	-13.0	-39.2
5.14	82.5	V	3.0	9.9	40.3	1.0	-49.2	-13.0	-36.2
6.85	84.2	V	3.0	8.8	39.2	1.0	-47.0	-13.0	-34.0
Mid Channel (1732.4MHz)									
3.47	84.1	H	3.0	14.2	39.6	1.0	-52.9	-13.0	-39.9
5.26	82.8	H	3.0	9.8	40.3	1.0	-49.2	-13.0	-36.2
6.93	84.8	H	3.0	8.9	39.1	1.0	-47.1	-13.0	-34.1
3.47	83.1	V	3.0	12.6	39.6	1.0	-51.2	-13.0	-38.2
5.26	82.8	V	3.0	10.0	40.3	1.0	-49.3	-13.0	-36.3
6.93	83.6	V	3.0	8.1	39.1	1.0	-46.2	-13.0	-33.2
High Channel (1752.4MHz)									
3.51	83.4	H	3.0	13.6	39.6	1.0	-52.2	-13.0	-39.2
5.26	83.2	H	3.0	10.1	40.3	1.0	-49.4	-13.0	-36.4
7.01	84.2	H	3.0	8.3	39.1	1.0	-46.4	-13.0	-33.4
3.51	83.8	V	3.0	13.1	39.6	1.0	-51.8	-13.0	-38.8
5.26	82.8	V	3.0	9.9	40.3	1.0	-49.2	-13.0	-36.2
7.01	83.4	V	3.0	7.9	39.1	1.0	-45.8	-13.0	-32.8

Rev: 03 19 16

B4 HSDPA

LTE Band 2

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 1.4MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.70	64.3	H	3.0	14.0	39.7	1.0	52.7	13.0	39.7
5.95	66.0	H	3.0	12.4	40.1	1.0	51.5	13.0	38.5
7.40	67.4	H	3.0	10.6	39.0	1.0	49.6	13.0	36.0
3.70	64.9	V	3.0	14.2	39.7	1.0	52.9	13.0	39.9
5.95	66.6	V	3.0	12.3	40.1	1.0	51.4	13.0	38.4
7.40	67.5	V	3.0	11.5	39.0	1.0	49.4	13.0	36.4
Mid Channel (1800MHz)									
3.76	64.4	H	3.0	13.9	39.8	1.0	52.7	13.0	39.7
5.84	66.2	H	3.0	11.5	40.0	1.0	50.5	13.0	37.5
7.52	68.2	H	3.0	11.7	38.9	1.0	49.6	13.0	36.6
3.76	64.8	V	3.0	14.0	39.8	1.0	52.8	13.0	39.8
5.84	65.0	V	3.0	11.5	40.0	1.0	50.5	13.0	37.5
7.52	67.7	V	3.0	11.5	38.9	1.0	49.4	13.0	36.4
High Channel (1900.3MHz)									
3.82	64.5	H	3.0	13.2	39.8	1.0	52.0	13.0	39.0
5.73	65.5	H	3.0	11.7	40.0	1.0	50.6	13.0	37.6
7.64	67.6	H	3.0	11.0	38.9	1.0	48.9	13.0	35.9
3.82	63.5	V	3.0	12.6	39.8	1.0	51.4	13.0	38.4
5.73	65.3	V	3.0	11.6	40.0	1.0	50.4	13.0	37.4
7.64	67.6	V	3.0	11.2	38.9	1.0	49.1	13.0	36.1

Rev: 10.28.16

LTE B2 1.4MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 1.4MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.70	64.8	H	3.0	14.3	39.7	1.0	52.8	13.0	40.0
5.95	65.4	H	3.0	11.8	40.1	1.0	50.9	13.0	37.9
7.40	67.2	H	3.0	10.8	39.0	1.0	49.8	13.0	36.8
3.70	64.3	V	3.0	13.5	39.7	1.0	52.3	13.0	39.3
5.95	66.1	V	3.0	12.6	40.1	1.0	51.9	13.0	38.9
7.40	66.7	V	3.0	10.6	39.0	1.0	49.5	13.0	36.5
Mid Channel (1800MHz)									
3.76	65.4	H	3.0	14.5	39.8	1.0	53.7	13.0	40.7
5.84	66.5	H	3.0	11.4	40.0	1.0	50.4	13.0	37.4
7.52	67.5	H	3.0	11.4	38.9	1.0	49.3	13.0	36.3
3.76	65.1	V	3.0	14.3	39.8	1.0	53.3	13.0	40.1
5.84	64.7	V	3.0	11.2	40.0	1.0	50.2	13.0	37.2
7.52	68.2	V	3.0	11.2	38.9	1.0	49.2	13.0	36.2
High Channel (1900.3MHz)									
3.82	64.0	H	3.0	14.0	39.8	1.0	52.6	13.0	39.8
5.73	65.0	H	3.0	11.7	40.0	1.0	50.1	13.0	37.1
7.64	67.2	H	3.0	10.6	38.9	1.0	49.5	13.0	36.5
3.82	63.5	V	3.0	12.6	39.8	1.0	51.4	13.0	38.4
5.73	65.3	V	3.0	11.6	40.0	1.0	50.4	13.0	37.4
7.64	67.9	V	3.0	11.6	38.9	1.0	49.5	13.0	36.5

Rev: 10.28.16

LTE B2 1.4MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 3MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.70	64.1	H	3.0	13.8	39.7	1.0	52.5	13.0	39.5
5.96	66.0	H	3.0	12.5	40.1	1.0	51.6	13.0	38.6
7.41	67.0	H	3.0	10.6	39.0	1.0	48.6	13.0	35.6
3.70	64.8	V	3.0	14.0	39.7	1.0	52.7	13.0	39.7
5.96	65.3	V	3.0	11.4	40.0	1.0	50.4	13.0	37.4
7.41	67.2	V	3.0	11.1	39.0	1.0	49.0	13.0	36.0
Mid Channel (1800MHz)									
3.76	64.9	H	3.0	14.5	39.8	1.0	53.3	13.0	40.3
5.84	65.2	H	3.0	11.5	40.0	1.0	50.5	13.0	37.5
7.52	67.6	H	3.0	11.4	38.9	1.0	49.4	13.0	36.4
3.76	64.3	V	3.0	13.5	39.8	1.0	52.3	13.0	39.3
5.84	65.5	V	3.0	12.0	40.0	1.0	51.0	13.0	38.0
7.52	67.6	V	3.0	11.3	38.9	1.0	49.3	13.0	36.3
High Channel (1900.3MHz)									
3.82	64.5	H	3.0	13.9	39.8	1.0	52.7	13.0	39.7
5.73	65.3	H	3.0	11.6	40.0	1.0	50.6	13.0	37.6
7.63	67.4	H	3.0	10.6	38.9	1.0	48.7	13.0	35.7
3.82	63.5	V	3.0	12.6	39.8	1.0	51.4	13.0	38.4
5.73	65.9	V	3.0	11.7	40.0	1.0	50.7	13.0	37.7
7.63	67.5	V	3.0	11.2	38.9	1.0	49.1	13.0	36.1

Rev: 10.28.16

LTE B2 3MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 3MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.70	64.0	H	3.0	14.6	39.7	1.0	53.4	13.0	40.4
5.96	64.4	H	3.0	10.6	40.1	1.0	50.0	13.0	37.0
7.41	67.5	H	3.0	11.2	39.0	1.0	49.1	13.0	36.1
3.70	64.7	V	3.0	13.9	39.7	1.0	52.7	13.0	39.7
5.96	66.0	V	3.0	12.7	40.1	1.0	51.8	13.0	38.8
7.41	67.1	V	3.0	11.1	39.0	1.0	49.0	13.0	36.0
Mid Channel (1800MHz)									
3.76	65.8	H	3.0	15.3	39.8	1.0	54.1	13.0	41.1
5.84	64.8	H	3.0	11.1	40.0	1.0	50.2	13.0	37.2
7.52	68.2	H	3.0	11.1	38.9	1.0	49.7	13.0	36.7
3.76	65.6	V	3.0	14.8	39.8	1.0	53.6	13.0	40.6
5.84	65.0	V	3.0	11.5	40.0	1.0	50.5	13.0	37.5
7.52	67.3	V	3.0	11.1	38.9	1.0	49.0	13.0	36.0
High Channel (1900.3MHz)									
3.82	64.4	H	3.0	13.8	39.8	1.0	52.7	13.0	39.7
5.73	65.4	H	3.0	11.6	40.0	1.0	50.4	13.0	37.4
7.63	67.5	H	3.0	10.9	38.9	1.0	49.8	13.0	36.8
3.82	63.9	V	3.0	13.0	39.8	1.0	51.8	13.0	38.8
5.73	66.7	V	3.0	12.1	40.0	1.0	50.2	13.0	37.2
7.63	67.2	V	3.0	11.3	38.9	1.0	49.7	13.0	36.7

Rev: 10.28.16

LTE B2 3MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 5MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.71	64.9	H	3.0	14.1	39.7	1.0	52.8	13.0	39.9
5.96	65.5	H	3.0	12.0	40.1	1.0	51.1	13.0	38.1
7.41	67.4	H	3.0	10.9	39.0	1.0	49.0	13.0	36.0
3.71	64.9	V	3.0	14.1	39.7	1.0	52.8	13.0	39.9
5.96	65.8	V	3.0	12.4	40.1	1.0	51.5	13.0	38.5
7.41	67.2	V	3.0	11.1	39.0	1.0	49.1	13.0	36.1
Mid Channel (1800MHz)									
3.76	65.1	H	3.0	14.7	39.8	1.0	53.5	13.0	40.5
5.84	64.7	H	3.0	11.0	40.0	1.0	50.1	13.0	37.1
7.52	67.8	H	3.0	11.1	38.9	1.0	49.8	13.0	36.8
3.76	64.7	V	3.0	13.9	39.8	1.0	52.7	13.0	39.7
5.84	65.3	V	3.0	11.8	40.0	1.0	50.8	13.0	37.8
7.52	67.1	V	3.0	10.9	38.9	1.0	48.8	13.0	35.8
High Channel (1900.3MHz)									
3.82	64.7	H	3.0	14.1	39.8	1.0	52.9	13.0	39.9
5.72	65.4	H	3.0	11.3	40.0	1.0	50.3	13.0	37.3
7.63	67.7	H	3.0	11.1	38.9	1.0	49.0	13.0	36.0
3.82	64.6	V	3.0	13.7	39.8	1.0	52.5	13.0	39.5
5.72	65.9	V	3.0	11.9	40.0	1.0	50.9	13.0	37.9
7.63	67.6	V	3.0	11.2	38.9	1.0	49.1	13.0	36.1

Rev: 10.28.16

LTE B2 5MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 5MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1850.3MHz)									
3.71	64.6	H	3.0	14.3	39.7	1.0	53.0	13.0	40.0
5.96	65.0	H	3.0	12.2	40.1	1.0	51.4	13.0	38.4
7.41	67.2	H	3.0	10.8	39.0	1.0	49.8	13.0	36.8
3.71	64.6	V	3.0	13.9</					

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 10MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1855MHz)									
3.71	64.7	H	3.0	14.3	39.7	1.0	-53.1	-13.0	-40.1
5.97	65.0	H	3.0	11.5	40.1	1.0	-50.5	-13.0	-37.5
7.42	67.8	H	3.0	11.5	39.0	1.0	-49.4	-13.0	-36.4
3.71	65.0	V	3.0	14.2	39.7	1.0	-53.0	-13.0	-40.0
5.97	65.4	V	3.0	12.0	40.1	1.0	-51.0	-13.0	-38.0
7.42	67.5	V	3.0	11.4	39.0	1.0	-49.4	-13.0	-36.4
Mid Channel (1880MHz)									
3.76	64.8	H	3.0	14.3	39.8	1.0	-53.1	-13.0	-40.1
5.84	64.8	H	3.0	11.2	40.0	1.0	-50.2	-13.0	-37.2
7.52	67.8	H	3.0	11.3	39.9	1.0	-49.3	-13.0	-36.3
3.76	65.0	V	3.0	14.2	39.8	1.0	-52.8	-13.0	-39.8
5.84	65.1	V	3.0	11.6	40.0	1.0	-50.6	-13.0	-37.6
7.52	68.0	V	3.0	11.4	39.9	1.0	-49.4	-13.0	-36.7
High Channel (1905MHz)									
3.81	64.4	H	3.0	14.0	39.8	1.0	-52.8	-13.0	-39.8
5.72	65.7	H	3.0	11.9	40.0	1.0	-50.9	-13.0	-37.9
7.62	67.8	H	3.0	11.2	39.9	1.0	-49.4	-13.0	-36.4
3.81	64.4	V	3.0	13.5	39.8	1.0	-52.3	-13.0	-39.3
5.72	65.3	V	3.0	11.6	40.0	1.0	-50.6	-13.0	-37.6
7.62	68.0	V	3.0	11.7	39.9	1.0	-49.5	-13.0	-36.6

Rev: 10.28.16

LTE B2 10MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 10MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1855MHz)									
3.71	64.4	H	3.0	14.4	39.7	1.0	-53.1	-13.0	-40.1
5.97	65.5	H	3.0	12.0	40.1	1.0	-51.1	-13.0	-38.1
7.42	67.9	H	3.0	11.5	39.0	1.0	-49.5	-13.0	-36.5
3.71	64.9	V	3.0	14.1	39.7	1.0	-52.8	-13.0	-39.8
5.97	65.2	V	3.0	11.8	40.1	1.0	-50.8	-13.0	-37.8
7.42	67.5	V	3.0	11.4	39.0	1.0	-49.3	-13.0	-36.3
Mid Channel (1880MHz)									
3.76	65.3	H	3.0	15.1	39.8	1.0	-53.9	-13.0	-40.9
5.84	65.6	H	3.0	11.8	40.0	1.0	-50.9	-13.0	-37.9
7.52	68.2	H	3.0	11.7	39.9	1.0	-49.6	-13.0	-36.6
3.76	65.0	V	3.0	14.2	39.8	1.0	-53.0	-13.0	-40.0
5.84	64.8	V	3.0	11.3	40.0	1.0	-50.4	-13.0	-37.4
7.52	68.0	V	3.0	11.7	39.9	1.0	-49.7	-13.0	-36.7
High Channel (1905MHz)									
3.81	64.5	H	3.0	14.6	39.8	1.0	-53.4	-13.0	-40.4
5.72	65.2	H	3.0	11.7	40.0	1.0	-50.7	-13.0	-37.7
7.62	67.7	H	3.0	11.1	39.9	1.0	-49.6	-13.0	-36.6
3.81	64.5	V	3.0	13.6	39.8	1.0	-52.4	-13.0	-39.4
5.72	65.4	V	3.0	11.6	40.0	1.0	-50.7	-13.0	-37.7
7.62	67.5	V	3.0	11.3	39.9	1.0	-49.2	-13.0	-36.2

Rev: 10.28.16

LTE B2 10MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 15MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1875MHz)									
3.72	65.1	H	3.0	14.8	39.8	1.0	-53.5	-13.0	-40.5
5.97	65.5	H	3.0	12.0	40.1	1.0	-51.0	-13.0	-38.0
7.43	68.5	H	3.0	12.1	39.0	1.0	-50.1	-13.0	-37.1
3.72	64.6	V	3.0	13.8	39.8	1.0	-52.5	-13.0	-39.5
5.97	64.9	V	3.0	11.9	40.1	1.0	-50.6	-13.0	-37.6
7.43	68.0	V	3.0	11.9	39.0	1.0	-49.8	-13.0	-36.8
Mid Channel (1880MHz)									
3.76	65.4	H	3.0	14.0	39.8	1.0	-52.7	-13.0	-39.7
5.84	65.2	H	3.0	11.5	40.0	1.0	-50.5	-13.0	-37.5
7.52	68.0	H	3.0	11.5	39.8	1.0	-49.4	-13.0	-36.4
3.76	65.0	V	3.0	14.2	39.8	1.0	-52.8	-13.0	-39.8
5.84	65.1	V	3.0	11.6	40.0	1.0	-50.6	-13.0	-37.6
7.52	67.7	V	3.0	11.5	39.9	1.0	-49.4	-13.0	-36.4
High Channel (1902.5MHz)									
3.81	65.3	H	3.0	14.7	39.8	1.0	-53.5	-13.0	-40.5
5.71	65.3	H	3.0	11.5	40.0	1.0	-50.5	-13.0	-37.5
7.61	68.6	H	3.0	12.0	39.9	1.0	-49.9	-13.0	-36.9
3.81	64.5	V	3.0	13.7	39.8	1.0	-52.5	-13.0	-39.5
5.71	65.5	V	3.0	11.8	40.0	1.0	-50.8	-13.0	-37.8
7.61	68.0	V	3.0	11.7	39.9	1.0	-49.5	-13.0	-36.6

Rev: 10.28.16

LTE B2 15MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 15MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1875MHz)									
3.72	65.2	H	3.0	14.8	39.8	1.0	-53.5	-13.0	-40.5
5.97	65.5	H	3.0	12.0	40.1	1.0	-51.0	-13.0	-38.0
7.43	68.2	H	3.0	11.6	39.0	1.0	-49.8	-13.0	-36.8
3.72	65.1	V	3.0	14.3	39.8	1.0	-53.1	-13.0	-40.1
5.97	65.3	V	3.0	12.1	40.1	1.0	-51.2	-13.0	-38.2
7.43	67.5	V	3.0	11.5	39.0	1.0	-49.4	-13.0	-36.4
Mid Channel (1880MHz)									
3.76	65.1	H	3.0	14.7	39.8	1.0	-53.5	-13.0	-40.5
5.84	65.6	H	3.0	11.9	40.0	1.0	-51.1	-13.0	-38.1
7.52	68.0	H	3.0	11.2	39.9	1.0	-49.6	-13.0	-36.6
3.76	65.3	V	3.0	14.5	39.8	1.0	-53.3	-13.0	-40.3
5.84	65.0	V	3.0	11.5	40.0	1.0	-50.5	-13.0	-37.5
7.52	67.4	V	3.0	11.2	39.9	1.0	-49.1	-13.0	-36.1
High Channel (1902.5MHz)									
3.81	64.9	H	3.0	14.3	39.8	1.0	-53.1	-13.0	-40.1
5.71	65.3	H	3.0	11.6	40.0	1.0	-50.6	-13.0	-37.6
7.61	68.2	H	3.0	11.6	39.9	1.0	-49.5	-13.0	-36.5
3.81	64.5	V	3.0	13.5	39.8	1.0	-52.4	-13.0	-39.4
5.71	65.5	V	3.0	11.8	40.0	1.0	-50.8	-13.0	-37.8
7.61	67.5	V	3.0	11.3	39.9	1.0	-49.2	-13.0	-36.2

Rev: 10.28.16

LTE B2 15MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 20MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1860MHz)									
3.72	65.1	H	3.0	14.7	39.8	1.0	-53.5	-13.0	-40.5
5.98	64.6	H	3.0	11.0	40.1	1.0	-50.1	-13.0	-37.1
7.44	68.0	H	3.0	11.6	39.0	1.0	-49.6	-13.0	-36.6
3.72	65.5	V	3.0	14.7	39.8	1.0	-53.4	-13.0	-40.4
5.98	64.0	V	3.0	10.9	40.1	1.0	-49.7	-13.0	-36.7
7.44	68.3	V	3.0	12.2	39.0	1.0	-48.4	-13.0	-35.4
Mid Channel (1880MHz)									
3.76	65.2	H	3.0	14.8	39.8	1.0	-53.5	-13.0	-40.5
5.84	65.5	H	3.0	11.7	40.0	1.0	-50.9	-13.0	-37.9
7.52	67.6	H	3.0	11.4	39.9	1.0	-49.3	-13.0	-36.3
3.76	65.2	V	3.0	14.4	39.8	1.0	-53.1	-13.0	-40.1
5.84	64.7	V	3.0	11.2	40.0	1.0	-50.2	-13.0	-37.2
7.52	68.1	V	3.0	11.8	39.9	1.0	-49.8	-13.0	-36.8
High Channel (1900MHz)									
3.80	65.5	H	3.0	14.9	39.8	1.0	-53.8	-13.0	-40.8
5.70	65.0	H	3.0	12.3	40.0	1.0	-51.2	-13.0	-38.2
7.60	68.6	H	3.0	12.0	39.9	1.0	-49.9	-13.0	-36.9
3.80	65.0	V	3.0	14.1	39.8	1.0	-52.9	-13.0	-39.9
5.70	65.6	V	3.0	12.0	40.0	1.0	-51.0	-13.0	-38.0
7.60	68.1	V	3.0	11.7	39.9	1.0	-49.6	-13.0	-36.6

Rev: 10.28.16

LTE B2 20MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 X-Axis)
 Mode: LTE Band 2, 20MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1860MHz)									
3.72	64.9	H	3.0	14.7	39.8	1.0	-53.4	-13.0	-40.4
5.98	64.4	H	3.0	10.8	40.1	1.0	-49.9	-13.0	-36.9
7.44	68.1	H	3.0	11.7	39.0	1.0	-49.7	-13.0	-36.7
3.72	65.2	V	3.0	14.4	39.8	1.0	-53.2	-13.0	-40.2
5.98	65								

LTE Band 4

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 1.4MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1710.5MHz)									
3.47	65.6	H	3.0	15.9	39.6	1.0	-54.5	-13.0	-41.5
5.13	65.1	H	3.0	12.3	40.3	1.0	-51.6	-13.0	-38.6
6.84	65.7	H	3.0	11.0	39.2	1.0	-49.7	-13.0	-36.2
3.47	65.1	V	3.0	14.7	39.6	1.0	-53.3	-13.0	-40.3
5.13	65.2	V	3.0	12.5	40.3	1.0	-51.8	-13.0	-38.8
6.84	67.2	V	3.0	11.8	39.2	1.0	-50.6	-13.0	-37.6
Mid Channel (1732.5MHz)									
3.47	65.4	H	3.0	15.7	39.6	1.0	-54.3	-13.0	-41.3
5.20	65.4	H	3.0	12.4	40.3	1.0	-51.7	-13.0	-38.7
6.93	67.4	H	3.0	11.5	39.1	1.0	-49.7	-13.0	-36.7
3.47	65.0	V	3.0	14.5	39.6	1.0	-53.1	-13.0	-40.1
5.20	64.9	V	3.0	12.0	40.3	1.0	-51.4	-13.0	-38.4
6.93	67.0	V	3.0	11.5	39.1	1.0	-49.6	-13.0	-36.6
High Channel (1754.5MHz)									
3.51	65.6	H	3.0	15.7	39.6	1.0	-54.4	-13.0	-41.4
5.26	65.5	H	3.0	12.5	40.3	1.0	-51.5	-13.0	-38.5
7.02	67.0	H	3.0	11.0	39.1	1.0	-49.1	-13.0	-36.1
3.51	65.8	V	3.0	15.3	39.6	1.0	-53.8	-13.0	-40.8
5.26	65.7	V	3.0	12.8	40.3	1.0	-52.1	-13.0	-39.1
7.02	66.9	V	3.0	11.3	39.1	1.0	-49.3	-13.0	-36.3

Rev: 10.28.15

LTE B4 1.4MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 1.4MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1710.5MHz)									
3.47	65.6	H	3.0	15.9	39.6	1.0	-54.5	-13.0	-41.5
5.13	64.7	H	3.0	11.8	40.3	1.0	-51.2	-13.0	-38.2
6.84	66.5	H	3.0	10.6	39.2	1.0	-49.0	-13.0	-36.0
3.47	65.5	V	3.0	14.1	39.6	1.0	-51.1	-13.0	-38.1
5.13	65.4	V	3.0	12.7	40.3	1.0	-52.0	-13.0	-39.0
6.84	66.3	V	3.0	11.6	39.2	1.0	-49.1	-13.0	-36.1
Mid Channel (1732.5MHz)									
3.47	65.2	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.20	65.0	H	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.93	66.7	H	3.0	10.9	39.1	1.0	-49.0	-13.0	-36.0
3.47	65.3	V	3.0	14.8	39.6	1.0	-53.4	-13.0	-40.4
5.20	65.2	V	3.0	12.2	40.3	1.0	-51.2	-13.0	-38.2
6.93	67.0	V	3.0	11.5	39.1	1.0	-49.6	-13.0	-36.6
High Channel (1754.5MHz)									
3.51	65.8	H	3.0	15.6	39.6	1.0	-54.2	-13.0	-41.2
5.26	65.7	H	3.0	12.4	40.3	1.0	-51.6	-13.0	-38.6
7.02	66.9	H	3.0	11.0	39.1	1.0	-49.0	-13.0	-36.0
3.51	65.9	V	3.0	14.4	39.6	1.0	-54.0	-13.0	-41.0
5.26	65.1	V	3.0	12.2	40.3	1.0	-51.5	-13.0	-38.5
7.02	67.3	V	3.0	11.7	39.1	1.0	-49.7	-13.0	-36.7

Rev: 10.28.15

LTE B4 1.4MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 3MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1711.5MHz)									
3.47	64.8	H	3.0	15.1	39.6	1.0	-53.7	-13.0	-40.7
5.13	65.1	H	3.0	12.3	40.3	1.0	-51.6	-13.0	-38.6
6.85	67.4	H	3.0	11.7	39.2	1.0	-49.6	-13.0	-36.6
3.47	65.1	V	3.0	14.7	39.6	1.0	-53.3	-13.0	-40.3
5.13	65.3	V	3.0	12.6	40.3	1.0	-51.9	-13.0	-38.9
6.85	66.5	V	3.0	11.1	39.2	1.0	-49.3	-13.0	-36.3
Mid Channel (1732.5MHz)									
3.47	64.5	H	3.0	14.0	39.6	1.0	-52.6	-13.0	-39.6
5.20	65.3	H	3.0	12.3	40.3	1.0	-51.7	-13.0	-38.7
6.93	67.1	H	3.0	11.3	39.1	1.0	-49.4	-13.0	-36.4
3.47	64.5	V	3.0	14.0	39.6	1.0	-52.6	-13.0	-39.6
5.20	65.2	V	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.93	66.6	V	3.0	11.1	39.1	1.0	-49.2	-13.0	-36.2
High Channel (1753.5MHz)									
3.51	64.8	H	3.0	15.0	39.6	1.0	-53.6	-13.0	-40.6
5.26	65.9	H	3.0	12.5	40.3	1.0	-51.8	-13.0	-38.8
7.01	66.7	H	3.0	10.8	39.1	1.0	-49.0	-13.0	-36.0
3.51	65.4	V	3.0	14.8	39.6	1.0	-53.5	-13.0	-40.5
5.26	65.2	V	3.0	12.7	40.3	1.0	-52.0	-13.0	-39.0
7.01	66.7	V	3.0	11.1	39.1	1.0	-49.1	-13.0	-36.1

Rev: 10.28.15

LTE B4 3MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 3MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1711.5MHz)									
3.47	65.2	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.13	65.4	H	3.0	12.6	40.3	1.0	-52.0	-13.0	-39.0
6.85	67.7	H	3.0	11.6	39.2	1.0	-49.7	-13.0	-36.7
3.47	65.2	V	3.0	14.8	39.6	1.0	-53.4	-13.0	-40.4
5.13	65.5	V	3.0	12.8	40.3	1.0	-52.1	-13.0	-39.1
6.85	66.9	V	3.0	11.1	39.2	1.0	-49.3	-13.0	-36.3
Mid Channel (1732.5MHz)									
3.47	65.2	H	3.0	15.7	39.6	1.0	-54.3	-13.0	-41.3
5.20	65.2	H	3.0	12.2	40.3	1.0	-51.6	-13.0	-38.6
6.93	67.4	H	3.0	11.6	39.1	1.0	-49.7	-13.0	-36.7
3.47	65.3	V	3.0	14.8	39.6	1.0	-53.4	-13.0	-40.4
5.20	65.2	V	3.0	12.2	40.3	1.0	-51.6	-13.0	-38.6
6.93	66.7	V	3.0	11.2	39.1	1.0	-49.4	-13.0	-36.4
High Channel (1753.5MHz)									
3.51	65.2	H	3.0	14.4	39.6	1.0	-54.0	-13.0	-41.0
5.26	65.1	H	3.0	12.1	40.3	1.0	-51.5	-13.0	-38.5
7.01	67.3	H	3.0	11.4	39.1	1.0	-49.5	-13.0	-36.5
3.51	65.4	V	3.0	14.9	39.6	1.0	-53.5	-13.0	-40.5
5.26	65.3	V	3.0	12.4	40.3	1.0	-51.9	-13.0	-38.9
7.01	67.0	V	3.0	11.4	39.1	1.0	-49.5	-13.0	-36.5

Rev: 10.28.15

LTE B4 3MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 5MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1712.5MHz)									
3.43	65.4	H	3.0	15.0	39.6	1.0	-54.1	-13.0	-41.1
5.14	65.2	H	3.0	12.3	40.3	1.0	-51.6	-13.0	-38.6
6.85	67.1	H	3.0	11.4	39.2	1.0	-49.6	-13.0	-36.6
3.43	65.4	V	3.0	15.0	39.6	1.0	-53.6	-13.0	-40.6
5.14	66.4	V	3.0	11.7	40.3	1.0	-51.6	-13.0	-38.6
6.85	66.3	V	3.0	10.9	39.2	1.0	-49.1	-13.0	-36.1
Mid Channel (1732.5MHz)									
3.47	65.1	H	3.0	15.3	39.6	1.0	-53.9	-13.0	-40.9
5.20	65.5	H	3.0	12.6	40.3	1.0	-51.9	-13.0	-38.9
6.93	67.1	H	3.0	11.3	39.1	1.0	-49.4	-13.0	-36.4
3.47	64.8	V	3.0	14.3	39.6	1.0	-52.9	-13.0	-39.9
5.20	64.6	V	3.0	11.8	40.3	1.0	-51.1	-13.0	-38.1
6.93	66.6	V	3.0	11.1	39.1	1.0	-49.2	-13.0	-36.2
High Channel (1752.5MHz)									
3.51	65.1	H	3.0	15.6	39.6	1.0	-54.2	-13.0	-41.2
5.26	65.1	H	3.0	12.0	40.3	1.0	-51.3	-13.0	-38.3
7.01	67.4	H	3.0	11.4	39.1	1.0	-49.5	-13.0	-36.5
3.51	65.5	V	3.0	15.0	39.6	1.0	-53.6	-13.0	-40.6
5.26	65.3	V	3.0	12.4	40.3	1.0	-51.7	-13.0	-38.7
7.01	67.2	V	3.0	11.6	39.1	1.0	-49.6	-13.0	-36.6

Rev: 10.28.15

LTE B4 5MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 5MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1712.5MHz)									
3.43	65.3	H	3.0	14.9	39.6	1.0	-53.9	-13.0	-40.9
5.14	65.3	H	3.0	12.4	40.3	1.0	-51.8	-13.0	-38.8
6.85	66.5	H	3.0	10.8	39.2	1.0	-49.0	-13.0	-36.0
3.43	65.5	V	3.0	15.1</					

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 10MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1715MHz)									
3.43	64.9	H	3.0	15.2	39.6	1.0	-51.8	-13.0	-40.8
5.15	65.2	H	3.0	12.3	40.3	1.0	-51.5	-13.0	-38.6
6.86	67.6	H	3.0	11.3	39.2	1.0	-49.5	-13.0	-36.5
3.43	64.8	V	3.0	14.3	39.6	1.0	-52.9	-13.0	-39.9
5.15	64.3	V	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.86	66.4	V	3.0	11.0	39.2	1.0	-49.2	-13.0	-36.2
Mid Channel (1732.5MHz)									
3.47	65.7	H	3.0	15.9	39.6	1.0	-54.3	-13.0	-41.5
5.20	65.1	H	3.0	12.9	40.3	1.0	-51.5	-13.0	-38.5
6.93	67.1	H	3.0	11.2	39.1	1.0	-49.4	-13.0	-36.4
3.47	65.0	V	3.0	14.6	39.6	1.0	-53.1	-13.0	-40.1
5.20	65.0	V	3.0	12.2	40.3	1.0	-51.5	-13.0	-38.5
6.93	66.9	V	3.0	11.4	39.1	1.0	-49.5	-13.0	-36.5
High Channel (1750MHz)									
3.50	65.9	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.25	65.0	H	3.0	12.0	40.3	1.0	-51.3	-13.0	-38.3
7.00	67.3	H	3.0	11.4	39.1	1.0	-49.5	-13.0	-36.5
3.50	64.7	V	3.0	14.2	39.6	1.0	-52.8	-13.0	-39.8
5.25	65.3	V	3.0	12.4	40.3	1.0	-51.6	-13.0	-38.6
7.00	66.6	V	3.0	11.0	39.1	1.0	-49.0	-13.0	-36.0

Rev. 10.28.16

LTE B4 10MHz QPSK

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 10MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1715MHz)									
3.43	65.9	H	3.0	15.5	39.6	1.0	-53.5	-13.0	-41.1
5.15	65.4	H	3.0	12.5	40.3	1.0	-51.9	-13.0	-38.9
6.86	67.3	H	3.0	11.6	39.2	1.0	-49.8	-13.0	-36.8
3.43	65.2	V	3.0	14.8	39.6	1.0	-53.3	-13.0	-40.3
5.15	65.1	V	3.0	12.3	40.3	1.0	-51.6	-13.0	-38.6
6.86	67.2	V	3.0	11.8	39.2	1.0	-49.9	-13.0	-36.9
Mid Channel (1732.5MHz)									
3.47	65.3	H	3.0	15.5	39.6	1.0	-54.1	-13.0	-41.1
5.20	64.8	H	3.0	12.8	40.3	1.0	-51.3	-13.0	-38.3
6.93	66.5	H	3.0	10.7	39.1	1.0	-48.8	-13.0	-35.8
3.47	65.0	V	3.0	14.5	39.6	1.0	-53.1	-13.0	-40.1
5.20	65.3	V	3.0	12.5	40.3	1.0	-51.8	-13.0	-38.8
6.93	66.6	V	3.0	11.3	39.1	1.0	-49.2	-13.0	-36.2
High Channel (1750MHz)									
3.50	65.7	H	3.0	15.7	39.6	1.0	-54.3	-13.0	-41.3
5.25	64.9	H	3.0	11.5	40.3	1.0	-50.8	-13.0	-37.8
7.00	67.1	H	3.0	11.2	39.1	1.0	-49.2	-13.0	-36.2
3.50	65.2	V	3.0	14.7	39.6	1.0	-53.3	-13.0	-40.3
5.25	65.9	V	3.0	12.6	40.3	1.0	-51.3	-13.0	-38.3
7.00	66.6	V	3.0	11.0	39.1	1.0	-49.0	-13.0	-36.0

Rev. 10.28.16

LTE B4 10MHz 16QAM

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 15MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1717.5MHz)									
3.44	65.5	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.15	65.3	H	3.0	12.4	40.3	1.0	-51.7	-13.0	-38.7
6.87	67.8	H	3.0	12.1	39.2	1.0	-50.2	-13.0	-37.2
3.44	65.2	V	3.0	14.7	39.6	1.0	-53.3	-13.0	-40.3
5.15	65.1	V	3.0	12.3	40.3	1.0	-51.8	-13.0	-38.8
6.87	67.0	V	3.0	11.6	39.2	1.0	-49.8	-13.0	-36.8
Mid Channel (1732.5MHz)									
3.47	65.5	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.20	65.4	H	3.0	12.5	40.3	1.0	-51.8	-13.0	-38.8
6.93	67.5	H	3.0	11.7	39.1	1.0	-49.6	-13.0	-36.6
3.47	64.6	V	3.0	14.1	39.6	1.0	-52.7	-13.0	-39.7
5.20	65.1	V	3.0	12.4	40.3	1.0	-51.5	-13.0	-38.5
6.93	67.0	V	3.0	11.5	39.1	1.0	-49.5	-13.0	-36.5
High Channel (1747.5MHz)									
3.50	65.6	H	3.0	15.8	39.6	1.0	-54.4	-13.0	-41.4
5.24	65.8	H	3.0	12.4	40.3	1.0	-51.6	-13.0	-38.6
6.99	67.0	H	3.0	11.1	39.1	1.0	-49.2	-13.0	-36.2
3.50	64.6	V	3.0	14.1	39.6	1.0	-52.7	-13.0	-39.7
5.24	65.8	V	3.0	12.2	40.3	1.0	-51.6	-13.0	-38.6
6.99	67.8	V	3.0	12.2	39.1	1.0	-50.3	-13.0	-37.3

Rev. 10.28.16

LTE B4 15MHz QPSK

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 15MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1717.5MHz)									
3.44	65.8	H	3.0	16.1	39.6	1.0	-54.6	-13.0	-41.6
5.15	65.5	H	3.0	12.7	40.3	1.0	-52.3	-13.0	-39.3
6.87	67.1	H	3.0	11.4	39.2	1.0	-49.5	-13.0	-36.5
3.44	65.3	V	3.0	14.0	39.6	1.0	-53.4	-13.0	-40.4
5.15	65.8	V	3.0	12.8	40.3	1.0	-51.4	-13.0	-38.4
6.87	67.5	V	3.0	12.1	39.2	1.0	-50.2	-13.0	-37.2
Mid Channel (1732.5MHz)									
3.47	65.8	H	3.0	16.1	39.6	1.0	-54.6	-13.0	-41.6
5.20	65.0	H	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.93	66.8	H	3.0	10.7	39.1	1.0	-48.5	-13.0	-35.5
3.47	65.3	V	3.0	14.8	39.6	1.0	-53.4	-13.0	-40.4
5.20	65.3	V	3.0	12.5	40.3	1.0	-51.8	-13.0	-38.8
6.93	66.7	V	3.0	11.2	39.1	1.0	-49.3	-13.0	-36.3
High Channel (1747.5MHz)									
3.50	65.4	H	3.0	15.6	39.6	1.0	-54.2	-13.0	-41.2
5.24	65.7	H	3.0	12.6	40.3	1.0	-51.3	-13.0	-38.3
6.99	67.6	H	3.0	11.7	39.1	1.0	-49.8	-13.0	-36.8
3.50	65.9	V	3.0	15.4	39.6	1.0	-54.0	-13.0	-41.0
5.24	65.8	V	3.0	12.8	40.3	1.0	-51.6	-13.0	-38.6
6.99	67.1	V	3.0	11.5	39.1	1.0	-49.6	-13.0	-36.6

Rev. 10.28.16

LTE B4 15MHz 16QAM

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 20MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1720MHz)									
3.44	65.2	H	3.0	15.5	39.6	1.0	-54.1	-13.0	-41.1
5.16	64.8	H	3.0	12.9	40.3	1.0	-52.3	-13.0	-39.3
6.88	67.6	H	3.0	11.8	39.1	1.0	-50.0	-13.0	-37.0
3.44	65.3	V	3.0	14.9	39.6	1.0	-53.5	-13.0	-40.5
5.16	64.8	V	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.88	67.5	V	3.0	12.0	39.1	1.0	-50.0	-13.0	-37.0
Mid Channel (1732.5MHz)									
3.47	65.2	H	3.0	15.5	39.6	1.0	-54.1	-13.0	-41.1
5.20	65.0	H	3.0	12.1	40.3	1.0	-51.4	-13.0	-38.4
6.93	66.5	H	3.0	10.7	39.1	1.0	-48.8	-13.0	-35.8
3.47	65.4	V	3.0	14.9	39.6	1.0	-53.5	-13.0	-40.5
5.20	64.8	V	3.0	12.4	40.3	1.0	-51.3	-13.0	-38.3
6.93	67.1	V	3.0	11.6	39.1	1.0	-49.7	-13.0	-36.7
High Channel (1745MHz)									
3.49	65.2	H	3.0	15.3	39.6	1.0	-53.9	-13.0	-40.9
5.24	65.2	H	3.0	12.2	40.3	1.0	-51.6	-13.0	-38.6
6.98	67.1	H	3.0	11.2	39.1	1.0	-49.3	-13.0	-36.3
3.49	65.7	V	3.0	15.2	39.6	1.0	-53.8	-13.0	-40.8
5.24	65.3	V	3.0	12.4	40.3	1.0	-51.7	-13.0	-38.7
6.98	67.0	V	3.0	11.5	39.1	1.0	-49.3	-13.0	-36.3

Rev. 10.28.16

LTE B4 20MHz QPSK

**High Frequency Substitution Measurement
 UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Mark Notting
 Configuration: EUT w/ AC Adaptor and Headphones (LTE Sample#1 Y-Axis)
 Mode: LTE Band 4, 20MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (1720MHz)									
3.44	65.2	H	3.0	15.5	39.6	1.0	-54.0	-13.0	-41.0
5.16	65.6	H	3.0	12.7	40.3	1.0	-52.0	-13.0	-39.0
6.88	66.8	H	3.0	11.6	39.1	1.0	-49.2	-13.0	-36.2
3.44	65.0	V	3.0	14.6	39.6	1.0	-53.2	-13.0	-40.2

LTE Band 12

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 12, 1.4MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (699.7MHz)									
1.40	-61.7	H	3.0	19.8	39.9	1.0	-58.8	-13.0	-45.9
2.10	-62.7	H	3.0	16.6	40.2	1.0	-55.8	-13.0	-42.8
2.80	-63.7	H	3.0	15.8	39.3	1.0	-54.1	-13.0	-41.1
1.40	-62.6	V	3.0	19.2	39.9	1.0	-58.1	-13.0	-45.1
2.10	-62.6	V	3.0	15.1	40.2	1.0	-54.3	-13.0	-41.3
2.80	-62.3	V	3.0	13.3	39.3	1.0	-51.6	-13.0	-38.6
Mid Channel (707.5MHz)									
1.42	-61.6	H	3.0	19.7	39.9	1.0	-58.5	-13.0	-45.8
2.12	-62.2	H	3.0	17.1	40.1	1.0	-56.2	-13.0	-43.2
2.83	-62.6	H	3.0	14.7	39.3	1.0	-52.8	-13.0	-39.8
1.42	-61.4	V	3.0	17.9	39.9	1.0	-56.8	-13.0	-43.8
2.12	-62.2	V	3.0	14.7	40.1	1.0	-53.9	-13.0	-40.9
2.83	-62.3	V	3.0	13.1	39.3	1.0	-51.4	-13.0	-38.4
High Channel (715.3MHz)									
1.43	-61.6	H	3.0	19.8	39.8	1.0	-58.6	-13.0	-45.6
2.13	-62.4	H	3.0	16.1	40.1	1.0	-55.4	-13.0	-42.4
2.86	-63.1	H	3.0	15.0	39.3	1.0	-53.3	-13.0	-40.3
1.43	-61.8	V	3.0	18.2	39.8	1.0	-57.4	-13.0	-44.4
2.13	-62.3	V	3.0	14.0	40.1	1.0	-53.4	-13.0	-40.4
2.86	-62.6	V	3.0	14.3	39.3	1.0	-52.6	-13.0	-39.6

Rev: 10.28.15

LTE B12 1.4MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 12, 1.4MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (699.7MHz)									
1.40	-61.9	H	3.0	-20.6	39.9	1.0	-59.9	-13.0	-45.9
2.10	-62.6	H	3.0	-16.6	40.2	1.0	-55.8	-13.0	-42.8
2.80	-63.6	H	3.0	-15.7	39.3	1.0	-54.0	-13.0	-41.0
1.40	-62.0	V	3.0	-18.6	39.9	1.0	-57.6	-13.0	-44.6
2.10	-62.6	V	3.0	-15.1	40.2	1.0	-54.3	-13.0	-41.3
2.80	-63.3	V	3.0	-14.3	39.3	1.0	-52.6	-13.0	-39.6
Mid Channel (707.5MHz)									
1.42	-61.9	H	3.0	-19.4	39.9	1.0	-58.3	-13.0	-45.3
2.12	-62.0	H	3.0	-17.0	40.1	1.0	-56.1	-13.0	-43.1
2.83	-63.3	H	3.0	-15.2	39.3	1.0	-53.5	-13.0	-40.5
1.42	-61.8	V	3.0	-18.3	39.9	1.0	-57.2	-13.0	-44.2
2.12	-62.0	V	3.0	-15.4	40.1	1.0	-54.5	-13.0	-41.5
2.83	-63.0	V	3.0	-13.8	39.3	1.0	-52.1	-13.0	-39.1
High Channel (715.3MHz)									
1.43	-61.9	H	3.0	-19.1	39.8	1.0	-58.0	-13.0	-45.0
2.13	-62.7	H	3.0	-16.1	40.1	1.0	-55.1	-13.0	-42.1
2.86	-63.0	H	3.0	-14.8	39.3	1.0	-53.1	-13.0	-40.1
1.43	-62.2	V	3.0	-18.6	39.8	1.0	-57.5	-13.0	-44.5
2.13	-62.3	V	3.0	-14.8	40.1	1.0	-53.9	-13.0	-40.9
2.86	-62.6	V	3.0	-13.3	39.3	1.0	-51.6	-13.0	-38.6

Rev: 10.28.15

LTE B12 1.4MHz 16QAM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 12, 3MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (700.5MHz)									
1.40	-61.7	H	3.0	19.8	39.9	1.0	-58.7	-13.0	-45.7
2.10	-62.7	H	3.0	16.7	40.2	1.0	-55.8	-13.0	-42.8
2.80	-63.7	H	3.0	15.3	39.3	1.0	-53.6	-13.0	-40.6
1.40	-61.5	V	3.0	18.1	39.9	1.0	-57.8	-13.0	-44.8
2.10	-62.3	V	3.0	14.8	40.2	1.0	-54.0	-13.0	-41.0
2.80	-63.7	V	3.0	14.7	39.3	1.0	-52.9	-13.0	-39.9
Mid Channel (707.5MHz)									
1.42	-61.5	H	3.0	19.6	39.9	1.0	-58.5	-13.0	-45.5
2.12	-61.9	H	3.0	15.9	40.1	1.0	-55.9	-13.0	-42.9
2.83	-63.3	H	3.0	15.2	39.3	1.0	-53.5	-13.0	-40.5
1.42	-60.9	V	3.0	17.4	39.9	1.0	-56.3	-13.0	-43.3
2.12	-61.7	V	3.0	13.7	40.1	1.0	-52.7	-13.0	-39.7
2.83	-63.0	V	3.0	13.8	39.3	1.0	-52.1	-13.0	-39.1
High Channel (714.5MHz)									
1.43	-61.6	H	3.0	19.6	39.9	1.0	-58.4	-13.0	-45.4
2.14	-61.8	H	3.0	15.6	40.1	1.0	-54.5	-13.0	-41.5
2.86	-62.1	H	3.0	14.9	39.3	1.0	-52.6	-13.0	-39.6
1.43	-60.5	V	3.0	18.9	39.9	1.0	-55.8	-13.0	-42.8
2.14	-62.1	V	3.0	14.6	40.1	1.0	-52.7	-13.0	-39.7
2.86	-63.2	V	3.0	13.9	39.3	1.0	-52.2	-13.0	-39.2

Rev: 10.28.15

LTE B12 3MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 12, 3MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (700.5MHz)									
1.40	-62.5	H	3.0	-20.6	39.9	1.0	-59.6	-13.0	-46.6
2.10	-62.2	H	3.0	-16.2	40.2	1.0	-55.3	-13.0	-42.3
2.80	-63.3	H	3.0	-15.3	39.3	1.0	-53.5	-13.0	-40.5
1.40	-61.4	V	3.0	-18.6	39.9	1.0	-56.9	-13.0	-43.9
2.10	-62.0	V	3.0	-14.6	40.2	1.0	-53.7	-13.0	-40.7
2.80	-63.1	V	3.0	-14.1	39.3	1.0	-52.4	-13.0	-39.4
Mid Channel (707.5MHz)									
1.42	-61.5	H	3.0	-19.6	39.9	1.0	-58.5	-13.0	-45.5
2.12	-62.0	H	3.0	-16.8	40.1	1.0	-55.9	-13.0	-42.9
2.83	-63.1	H	3.0	-15.1	39.3	1.0	-53.3	-13.0	-40.3
1.42	-60.9	V	3.0	-17.5	39.9	1.0	-56.4	-13.0	-43.4
2.12	-61.7	V	3.0	-13.7	40.1	1.0	-52.7	-13.0	-39.7
2.83	-63.1	V	3.0	-13.8	39.3	1.0	-52.2	-13.0	-39.2
High Channel (714.5MHz)									
1.43	-61.1	H	3.0	-18.1	39.9	1.0	-56.0	-13.0	-43.0
2.14	-62.1	H	3.0	-14.6	40.1	1.0	-53.1	-13.0	-40.1
2.86	-62.1	H	3.0	-14.9	39.3	1.0	-52.6	-13.0	-39.6
1.43	-60.5	V	3.0	-16.9	39.9	1.0	-55.8	-13.0	-42.8
2.14	-62.1	V	3.0	-12.8	40.1	1.0	-52.7	-13.0	-39.7
2.86	-62.8	V	3.0	-13.5	39.3	1.0	-51.7	-13.0	-38.7

Rev: 10.28.15

LTE B12 3MHz 16QAM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 12, 5MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (701.5MHz)									
1.40	-61.6	H	3.0	19.6	39.9	1.0	-58.6	-13.0	-45.6
2.11	-61.2	H	3.0	15.2	40.2	1.0	-54.3	-13.0	-41.3
2.81	-63.4	H	3.0	15.5	39.3	1.0	-53.8	-13.0	-40.8
1.40	-62.3	V	3.0	18.9	39.9	1.0	-57.9	-13.0	-44.9
2.11	-62.7	V	3.0	15.2	40.2	1.0	-54.4	-13.0	-41.4
2.81	-63.7	V	3.0	14.7	39.3	1.0	-52.9	-13.0	-39.9
Mid Channel (707.5MHz)									
1.42	-61.6	H	3.0	19.6	39.9	1.0	-58.5	-13.0	-45.5
2.12	-61.7	H	3.0	15.7	40.1	1.0	-54.8	-13.0	-41.8
2.83	-63.3	H	3.0	15.3	39.3	1.0	-53.6	-13.0	-40.6
1.42	-61.8	V	3.0	18.3	39.9	1.0	-57.2	-13.0	-44.2
2.12	-61.7	V	3.0	14.2	40.1	1.0	-53.4	-13.0	-40.4
2.83	-63.5	V	3.0	14.3	39.3	1.0	-52.6	-13.0	-39.6
High Channel (713.5MHz)									
1.43	-61.4	H	3.0	19.2	39.9	1.0	-58.1	-13.0	-45.1
2.14	-62.4	H	3.0	16.3	40.1	1.0	-55.4	-13.0	-42.4
2.85	-63.0	H	3.0	14.9	39.3	1.0	-53.4	-13.0	-40.4
1.43	-61.7	V	3.0	18.2	39.9	1.0	-57.0	-13.0	-44.0
2.14	-61.4	V	3.0	14.0	40.1	1.0	-53.0	-13.0	-40.0
2.85	-63.3	V	3.0	14.0	39.3	1.0	-52.3	-13.0	-39.3

Rev: 10.28.15

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC A
 Mode: LTE Band 12, 5MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (701.5MHz)									
1.40	-62.4	H	3.0	-20.6	39.9	1.0	-59.5	-13.0	-46.5
2.11	-62.3	H	3.0	-16.2	40.2	1.0	-55.4	-13.0	-42.4
2.81	-63.6	H	3.0	-15.6	39.3	1.0	-53.9	-13.0	-40.9
1.40	-62.0	V	3.0	-18.6	39.9	1.0	-57.5	-13.0	-44.5
2.11	-62.6	V	3.0	-15.1	40.2	1.			

LTE B12 5MHz QPSK											LTE B12 5MHz 16QAM										
High Frequency Substitution Measurement UL RTP Radiated Chamber											High Frequency Substitution Measurement UL RTP Radiated Chamber										
Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis) Mode: LTE Band 12, 10MHz QPSK Test Equipment: Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable											Company: SOMC Project #: 11139405 Date: 2016-04-14 Test Engineer: Brian Kiewra Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis) Mode: LTE Band 12, 10MHz 16QAM Test Equipment: Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable										
EIRP											EIRP										
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta		Frequency (GHz)	SA reading (dBm)	Ant. Pol. (dBi)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	
Low Channel (704MHz)											Low Channel (704MHz)										
1.41	81.6	H	3.0	19.7	39.9	1.0	-58.6	-13.0	-45.6		1.41	81.9	H	3.0	19.9	39.9	1.0	-58.9	-13.0	-45.9	
2.11	81.8	H	3.0	15.8	40.1	1.0	-54.9	-13.0	-41.9		2.11	82.0	H	3.0	16.0	40.1	1.0	-55.1	-13.0	-42.1	
2.82	83.0	H	3.0	15.0	39.3	1.0	-53.3	-13.0	-40.3		2.82	83.8	H	3.0	16.6	39.3	1.0	-53.1	-13.0	-40.1	
1.41	81.7	V	3.0	18.3	39.9	1.0	-57.3	-13.0	-44.3		1.41	81.8	V	3.0	18.4	39.9	1.0	-57.3	-13.0	-44.3	
2.11	82.6	V	3.0	15.2	40.1	1.0	-54.3	-13.0	-41.3		2.11	82.9	V	3.0	15.4	40.1	1.0	-54.6	-13.0	-41.6	
2.82	83.9	V	3.0	14.4	39.3	1.0	-52.7	-13.0	-39.7		2.82	83.6	V	3.0	14.5	39.3	1.0	-52.8	-13.0	-39.8	
Mid Channel (707.5MHz)											Mid Channel (707.5MHz)										
1.42	81.4	H	3.0	19.5	39.9	1.0	-58.4	-13.0	-45.4		1.42	80.7	H	3.0	18.8	39.9	1.0	-57.7	-13.0	-44.7	
2.12	81.6	H	3.0	15.6	40.1	1.0	-54.7	-13.0	-41.7		2.12	81.8	H	3.0	15.8	40.1	1.0	-54.9	-13.0	-41.9	
2.83	82.5	H	3.0	14.5	39.3	1.0	-52.8	-13.0	-39.8		2.83	83.0	H	3.0	15.0	39.3	1.0	-53.3	-13.0	-40.3	
1.42	82.0	V	3.0	18.5	39.9	1.0	-57.4	-13.0	-44.4		1.42	82.0	V	3.0	18.5	39.9	1.0	-57.4	-13.0	-44.4	
2.12	83.4	V	3.0	16.9	40.1	1.0	-56.1	-13.0	-43.1		2.12	83.2	V	3.0	16.7	40.1	1.0	-56.8	-13.0	-41.8	
2.83	82.8	V	3.0	13.6	39.3	1.0	-51.9	-13.0	-38.9		2.83	83.0	V	3.0	13.5	39.3	1.0	-52.1	-13.0	-39.1	
High Channel (711MHz)											High Channel (711MHz)										
1.42	80.7	H	3.0	18.7	39.9	1.0	-57.6	-13.0	-44.6		1.42	81.9	H	3.0	19.2	39.9	1.0	-56.1	-13.0	-43.1	
2.13	82.9	H	3.0	16.8	40.1	1.0	-55.8	-13.0	-42.8		2.13	82.1	H	3.0	16.0	40.1	1.0	-55.1	-13.0	-42.1	
2.84	83.2	H	3.0	15.1	39.3	1.0	-53.4	-13.0	-40.4		2.84	82.6	H	3.0	13.6	39.3	1.0	-52.2	-13.0	-39.2	
1.42	81.8	V	3.0	18.3	39.9	1.0	-57.3	-13.0	-44.3		1.42	81.2	V	3.0	17.7	39.9	1.0	-56.6	-13.0	-43.6	
2.13	83.0	V	3.0	15.6	40.1	1.0	-54.7	-13.0	-41.7		2.13	83.1	V	3.0	15.7	40.1	1.0	-54.8	-13.0	-41.8	
2.84	83.2	V	3.0	14.0	39.3	1.0	-52.2	-13.0	-39.2		2.84	82.8	V	3.0	13.6	39.3	1.0	-51.9	-13.0	-38.9	

LTE Band 17

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 17, 5MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (706.5MHz)									
1.41	61.5	H	3.0	19.5	39.9	1.0	-58.4	-13.0	-45.4
2.12	60.4	H	3.0	14.3	40.1	1.0	-33.4	-13.0	-40.4
2.83	63.2	H	3.0	15.2	39.3	1.0	-53.5	-13.0	-40.5
1.41	60.9	V	3.0	17.4	39.9	1.0	-56.3	-13.0	-43.3
2.12	59.3	V	3.0	11.9	40.1	1.0	-50.9	-13.0	-37.9
2.83	62.6	V	3.0	13.7	39.3	1.0	-52.6	-13.0	-39.6
Mid Channel (710MHz)									
1.42	60.8	H	3.0	16.8	39.9	1.0	-57.7	-13.0	-44.7
2.13	61.3	H	3.0	15.3	40.1	1.0	-54.4	-13.0	-41.4
2.84	62.9	H	3.0	14.9	39.3	1.0	-53.1	-13.0	-40.1
1.42	61.3	V	3.0	17.8	39.9	1.0	-56.6	-13.0	-43.6
2.13	60.4	V	3.0	13.9	40.1	1.0	-52.1	-13.0	-39.1
2.84	62.4	V	3.0	13.2	39.3	1.0	-51.5	-13.0	-38.5
High Channel (713.5)									
1.43	60.8	H	3.0	16.8	39.9	1.0	-57.7	-13.0	-44.7
2.14	60.4	H	3.0	14.3	40.1	1.0	-33.4	-13.0	-40.4
2.85	62.3	H	3.0	14.2	39.3	1.0	-52.5	-13.0	-39.5
1.43	60.5	V	3.0	17.0	39.9	1.0	-55.9	-13.0	-42.9
2.14	60.7	V	3.0	13.2	40.1	1.0	-52.3	-13.0	-39.3
2.85	62.5	V	3.0	13.2	39.3	1.0	-51.5	-13.0	-38.5

Rev: 10.28.16

LTE B17 5MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 17, 5MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (706.5MHz)									
1.41	61.5	H	3.0	19.5	39.9	1.0	-58.4	-13.0	-45.4
2.12	60.3	H	3.0	14.2	40.1	1.0	-34.2	-13.0	-40.4
2.83	62.2	H	3.0	14.2	39.3	1.0	-52.5	-13.0	-39.5
1.41	60.8	V	3.0	17.4	39.9	1.0	-56.3	-13.0	-43.3
2.12	59.9	V	3.0	11.6	40.1	1.0	-50.7	-13.0	-37.7
2.83	62.4	V	3.0	13.3	39.3	1.0	-51.6	-13.0	-38.6
Mid Channel (710MHz)									
1.42	62.9	H	3.0	19.9	39.9	1.0	-59.8	-13.0	-46.8
2.13	61.1	H	3.0	15.6	40.1	1.0	-54.1	-13.0	-41.1
2.84	61.7	H	3.0	15.1	39.3	1.0	-53.1	-13.0	-40.1
1.42	60.8	V	3.0	17.3	39.9	1.0	-56.2	-13.0	-43.2
2.13	60.3	V	3.0	13.9	40.1	1.0	-52.0	-13.0	-39.0
2.84	62.5	V	3.0	13.3	39.3	1.0	-51.6	-13.0	-38.6
High Channel (713.5)									
1.43	61.2	H	3.0	19.1	39.9	1.0	-58.0	-13.0	-45.0
2.14	61.6	H	3.0	15.6	40.1	1.0	-54.7	-13.0	-41.7
2.85	62.7	H	3.0	14.6	39.3	1.0	-52.9	-13.0	-39.9
1.43	60.3	V	3.0	16.8	39.9	1.0	-55.7	-13.0	-42.7
2.14	60.6	V	3.0	13.2	40.1	1.0	-52.3	-13.0	-39.3
2.85	62.5	V	3.0	13.2	39.3	1.0	-51.5	-13.0	-38.5

Rev: 10.28.16

LTE B17 5MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 17, 10MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (709MHz)									
1.42	60.9	H	3.0	18.9	39.9	1.0	-57.8	-13.0	-44.8
2.13	62.5	H	3.0	16.5	40.1	1.0	-55.6	-13.0	-42.6
2.84	62.3	H	3.0	14.2	39.3	1.0	-52.5	-13.0	-39.5
1.42	60.8	V	3.0	17.4	39.9	1.0	-56.2	-13.0	-43.2
2.13	61.6	V	3.0	14.1	40.1	1.0	-53.2	-13.0	-40.2
2.84	62.3	V	3.0	13.1	39.3	1.0	-51.4	-13.0	-38.4
Mid Channel (710MHz)									
1.42	61.2	H	3.0	19.2	39.9	1.0	-58.1	-13.0	-45.1
2.13	61.9	H	3.0	15.9	40.1	1.0	-55.0	-13.0	-42.0
2.84	63.2	H	3.0	15.1	39.3	1.0	-53.4	-13.0	-40.4
1.42	60.8	V	3.0	17.3	39.9	1.0	-56.2	-13.0	-43.2
2.13	61.9	V	3.0	14.0	40.1	1.0	-53.1	-13.0	-40.1
2.84	62.7	V	3.0	13.5	39.3	1.0	-51.8	-13.0	-38.8
High Channel (711MHz)									
1.42	61.4	H	3.0	19.4	39.9	1.0	-58.2	-13.0	-45.2
2.13	62.3	H	3.0	16.3	40.1	1.0	-55.4	-13.0	-42.4
2.84	63.2	H	3.0	15.1	39.3	1.0	-53.4	-13.0	-40.4
1.42	60.9	V	3.0	16.4	39.9	1.0	-55.2	-13.0	-42.2
2.13	62.1	V	3.0	14.7	40.1	1.0	-53.8	-13.0	-40.8
2.84	63.1	V	3.0	13.9	39.3	1.0	-52.2	-13.0	-39.2

Rev: 10.28.16

LTE B17 10MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Z-Axis)
 Mode: LTE Band 17, 10MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (709MHz)									
1.42	61.1	H	3.0	19.1	39.9	1.0	-58.0	-13.0	-45.0
2.13	61.4	H	3.0	15.4	40.1	1.0	-54.8	-13.0	-41.8
2.84	63.2	H	3.0	15.2	39.3	1.0	-53.4	-13.0	-40.4
1.42	60.9	V	3.0	16.4	39.9	1.0	-55.3	-13.0	-42.3
2.13	61.9	V	3.0	14.3	40.1	1.0	-53.4	-13.0	-40.4
2.84	62.3	V	3.0	13.1	39.3	1.0	-51.4	-13.0	-38.4
Mid Channel (710MHz)									
1.42	60.9	H	3.0	19.0	39.9	1.0	-57.8	-13.0	-44.8
2.13	61.5	H	3.0	17.5	40.1	1.0	-56.6	-13.0	-43.6
2.84	62.5	H	3.0	14.5	39.3	1.0	-52.8	-13.0	-39.8
1.42	61.6	V	3.0	18.1	39.9	1.0	-57.0	-13.0	-44.0
2.13	61.8	V	3.0	14.3	40.1	1.0	-53.4	-13.0	-40.4
2.84	61.2	V	3.0	12.0	39.3	1.0	-50.3	-13.0	-37.3
High Channel (711MHz)									
1.42	61.3	H	3.0	19.3	39.9	1.0	-58.2	-13.0	-45.2
2.13	62.7	H	3.0	16.7	40.1	1.0	-55.8	-13.0	-42.8
2.84	63.1	H	3.0	15.2	39.3	1.0	-53.3	-13.0	-40.3
1.42	60.8	V	3.0	17.4	39.9	1.0	-56.2	-13.0	-43.2
2.13	62.5	V	3.0	15.0	40.1	1.0	-54.1	-13.0	-41.1
2.84	63.1	V	3.0	13.9	39.3	1.0	-52.2	-13.0	-39.2

Rev: 10.28.16

LTE B17 10MHz 16QAM

LTE Band 41

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 5MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2496.5MHz)									
5.90	63.2	H	3.0	10.5	40.3	1.0	-49.8	-25.0	-24.8
7.50	65.4	H	3.0	8.0	38.9	1.0	-46.8	-25.0	-21.8
9.99	66.8	H	3.0	7.7	38.3	1.0	-45.0	-25.0	-20.0
5.90	63.9	V	3.0	11.4	40.3	1.0	-50.6	-25.0	-25.6
7.50	66.0	V	3.0	9.8	38.9	1.0	-47.8	-25.0	-22.8
9.99	66.6	V	3.0	6.4	38.3	1.0	-43.2	-25.0	-18.2
Mid Channel (2503MHz)									
5.19	61.9	H	3.0	9.0	40.3	1.0	-48.3	-25.0	-23.3
7.78	64.0	H	3.0	7.2	38.9	1.0	-45.1	-25.0	-20.1
10.37	65.1	H	3.0	5.5	38.3	1.0	-42.8	-25.0	-17.8
5.19	63.6	V	3.0	10.8	40.3	1.0	-50.1	-25.0	-25.1
7.78	65.3	V	3.0	8.9	38.9	1.0	-46.8	-25.0	-21.8
10.37	66.6	V	3.0	7.0	38.3	1.0	-44.3	-25.0	-19.3
High Channel (2687.5MHz)									
5.37	64.0	H	3.0	10.7	40.2	1.0	-49.9	-25.0	-24.9
8.06	64.6	H	3.0	7.6	38.8	1.0	-45.6	-25.0	-20.6
10.74	65.4	H	3.0	5.3	38.3	1.0	-42.6	-25.0	-17.6
5.37	63.7	V	3.0	10.6	40.2	1.0	-49.8	-25.0	-24.8
8.06	64.7	V	3.0	7.8	38.8	1.0	-45.8	-25.0	-20.8
10.74	65.2	V	3.0	5.3	38.3	1.0	-42.6	-25.0	-17.6

Rev: 10.28.15

LTE B41 5MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 5MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2496.5MHz)									
5.90	64.0	H	3.0	11.4	40.3	1.0	-50.6	-25.0	-25.6
7.50	66.1	H	3.0	9.6	38.9	1.0	-47.6	-25.0	-22.6
9.99	66.5	H	3.0	7.4	38.3	1.0	-44.7	-25.0	-19.7
5.90	63.1	V	3.0	10.5	40.3	1.0	-49.8	-25.0	-24.8
7.50	66.3	V	3.0	10.1	38.9	1.0	-48.1	-25.0	-23.1
9.99	66.7	V	3.0	8.5	38.3	1.0	-45.8	-25.0	-20.8
Mid Channel (2503MHz)									
5.19	62.8	H	3.0	9.1	40.3	1.0	-48.5	-25.0	-23.5
7.78	64.1	H	3.0	7.3	38.9	1.0	-45.2	-25.0	-20.2
10.37	64.8	H	3.0	5.7	38.3	1.0	-42.5	-25.0	-17.5
5.19	63.2	V	3.0	10.4	40.3	1.0	-49.7	-25.0	-24.7
7.78	65.1	V	3.0	8.6	38.9	1.0	-46.5	-25.0	-21.5
10.37	66.8	V	3.0	7.2	38.3	1.0	-44.5	-25.0	-19.5
High Channel (2687.5MHz)									
5.37	64.0	H	3.0	10.8	40.2	1.0	-50.0	-25.0	-25.0
8.06	64.6	H	3.0	7.7	38.8	1.0	-45.7	-25.0	-20.7
10.74	65.8	H	3.0	5.7	38.3	1.0	-42.7	-25.0	-17.7
5.37	63.9	V	3.0	10.8	40.2	1.0	-50.0	-25.0	-25.0
8.06	64.5	V	3.0	7.6	38.8	1.0	-45.8	-25.0	-20.8
10.74	64.8	V	3.0	5.8	38.3	1.0	-42.1	-25.0	-17.1

Rev: 10.28.15

LTE B41 5MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 10MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2501MHz)									
5.90	62.3	H	3.0	9.7	40.3	1.0	-48.9	-25.0	-23.9
7.50	64.5	H	3.0	8.0	38.9	1.0	-46.0	-25.0	-21.0
10.00	65.3	H	3.0	6.1	38.3	1.0	-43.4	-25.0	-18.4
5.90	62.8	V	3.0	10.5	40.3	1.0	-49.5	-25.0	-24.5
7.50	64.9	V	3.0	8.7	38.9	1.0	-46.6	-25.0	-21.6
10.00	65.6	V	3.0	6.4	38.3	1.0	-43.7	-25.0	-18.7
Mid Channel (2503MHz)									
5.19	62.6	H	3.0	9.7	40.3	1.0	-49.0	-25.0	-24.0
7.78	64.9	H	3.0	7.1	38.9	1.0	-46.8	-25.0	-21.8
10.37	65.0	H	3.0	5.0	38.3	1.0	-42.6	-25.0	-17.6
5.19	61.8	V	3.0	9.3	40.3	1.0	-48.4	-25.0	-23.4
7.78	64.8	V	3.0	7.8	38.9	1.0	-46.8	-25.0	-21.8
10.37	65.8	V	3.0	6.2	38.3	1.0	-43.5	-25.0	-18.5
High Channel (2685MHz)									
5.37	63.4	H	3.0	10.5	40.2	1.0	-49.7	-25.0	-24.7
8.06	63.8	H	3.0	5.7	38.8	1.0	-43.5	-25.0	-17.5
10.74	65.4	H	3.0	5.3	38.3	1.0	-42.8	-25.0	-17.8
5.37	63.9	V	3.0	10.8	40.2	1.0	-50.0	-25.0	-25.0
8.06	64.7	V	3.0	7.9	38.8	1.0	-45.7	-25.0	-20.7
10.74	65.4	V	3.0	5.5	38.3	1.0	-42.8	-25.0	-17.8

Rev: 10.28.15

LTE B41 10MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 10MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2501MHz)									
5.90	62.5	H	3.0	9.9	40.3	1.0	-49.1	-25.0	-24.1
7.50	64.7	H	3.0	8.2	38.9	1.0	-46.2	-25.0	-21.2
10.00	65.7	H	3.0	6.3	38.3	1.0	-43.1	-25.0	-18.1
5.90	62.9	V	3.0	10.3	40.3	1.0	-49.3	-25.0	-24.3
7.50	64.8	V	3.0	8.5	38.9	1.0	-46.5	-25.0	-21.5
10.00	65.0	V	3.0	5.9	38.3	1.0	-43.1	-25.0	-18.1
Mid Channel (2503MHz)									
5.19	62.2	H	3.0	9.3	40.3	1.0	-48.6	-25.0	-23.6
7.78	64.2	H	3.0	7.4	38.9	1.0	-46.3	-25.0	-21.3
10.37	64.9	H	3.0	5.3	38.3	1.0	-42.6	-25.0	-17.6
5.19	62.1	V	3.0	9.3	40.3	1.0	-48.6	-25.0	-23.6
7.78	64.8	V	3.0	7.9	38.9	1.0	-46.3	-25.0	-21.3
10.37	65.7	V	3.0	6.2	38.3	1.0	-43.5	-25.0	-18.5
High Channel (2685MHz)									
5.37	63.4	H	3.0	11.0	40.2	1.0	-50.2	-25.0	-25.2
8.06	64.3	H	3.0	7.3	38.8	1.0	-45.1	-25.0	-20.1
10.74	64.9	H	3.0	5.9	38.3	1.0	-42.5	-25.0	-17.5
5.37	64.3	V	3.0	11.2	40.2	1.0	-50.4	-25.0	-25.4
8.06	64.8	V	3.0	7.6	38.8	1.0	-45.4	-25.0	-20.4
10.74	64.9	V	3.0	5.9	38.3	1.0	-42.5	-25.0	-17.5

Rev: 10.28.15

LTE B41 10MHz 16QAM

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 15MHz QPSK
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2501MHz)									
5.90	62.9	H	3.0	9.9	40.3	1.0	-49.1	-25.0	-24.1
7.50	64.7	H	3.0	8.2	38.9	1.0	-46.2	-25.0	-21.2
10.00	64.9	H	3.0	5.7	38.3	1.0	-43.3	-25.0	-18.3
5.90	62.9	V	3.0	10.3	40.3	1.0	-49.6	-25.0	-24.6
7.50	64.8	V	3.0	8.6	38.9	1.0	-46.5	-25.0	-21.5
10.00	65.0	V	3.0	5.8	38.3	1.0	-43.1	-25.0	-18.1
Mid Channel (2503MHz)									
5.19	62.2	H	3.0	9.3	40.3	1.0	-48.6	-25.0	-23.6
7.78	64.2	H	3.0	7.4	38.9	1.0	-46.3	-25.0	-21.3
10.37	64.9	H	3.0	5.3	38.3	1.0	-42.6	-25.0	-17.6
5.19	62.1	V	3.0	9.3	40.3	1.0	-48.6	-25.0	-23.6
7.78	64.8	V	3.0	8.2	38.9	1.0	-46.1	-25.0	-21.1
10.37	65.7	V	3.0	6.2	38.3	1.0	-43.5	-25.0	-18.5
High Channel (2685MHz)									
5.37	63.4	H	3.0	11.0	40.2	1.0	-50.2	-25.0	-25.2
8.06	64.3	H	3.0	7.3	38.8	1.0	-45.1	-25.0	-20.1
10.74	65.6	H	3.0	5.5	38.3	1.0	-42.8	-25.0	-17.8
5.37	64.3	V	3.0	11.2	40.2	1.0	-50.4	-25.0	-25.4
8.06	64.4	V	3.0	7.6	38.8	1.0	-45.4	-25.0	-20.4
10.74	64.9	V	3.0	5.9	38.3	1.0	-42.3	-25.0	-17.3

Rev: 10.28.15

LTE B41 15MHz QPSK

**High Frequency Substitution Measurement
UL RTP Radiated Chamber**

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kiewra
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292315 Y-Axis)
 Mode: LTE Band 41, 15MHz 16QAM
Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2501MHz)									
5.90	62.4	H	3.0	9.7	40.3	1.0	-49.0	-25.0	-24.0
7.50	64.8	H	3.0	8.3	38.9	1.0	-46.2	-25.0	-21.2
10.00	65.2	H	3.0	6.0	38.3	1.0	-43.4	-25.0	-18.4
5.90	62.1	V	3.0	9.5	40.3				

High Frequency Substitution Measurement
 UL, RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kleura
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Y-Axis)
 Mode: LTE Band 41, 20MHz QPSK

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2500MHz)									
5.91	52.1	H	3.0	9.1	40.3	1.0	-48.7	-25.0	-23.7
7.52	45.8	H	3.0	7.3	38.9	1.0	-45.2	-25.0	-20.2
10.62	54.8	H	3.0	-5.6	38.3	1.0	-43.8	-25.0	-18.0
5.91	42.2	V	3.0	9.7	40.3	1.0	-48.8	-25.0	-23.9
7.52	44.9	V	3.0	8.7	38.9	1.0	-46.6	-25.0	-21.6
10.62	44.7	V	3.0	-5.5	38.3	1.0	-42.8	-25.0	-17.8
Mid Channel (2593MHz)									
5.19	52.1	H	3.0	9.1	40.3	1.0	-48.3	-25.0	-23.5
7.78	44.1	H	3.0	7.3	38.9	1.0	-44.2	-25.0	-20.2
10.37	45.3	H	3.0	-5.6	38.3	1.0	-43.8	-25.0	-18.0
5.19	41.1	V	3.0	8.3	40.3	1.0	-47.6	-25.0	-22.6
7.78	43.8	V	3.0	7.3	38.9	1.0	-45.1	-25.0	-20.1
10.37	45.0	V	3.0	-5.5	38.3	1.0	-42.8	-25.0	-17.8
High Channel (2680MHz)									
5.36	43.8	H	3.0	10.4	40.2	1.0	-49.6	-25.0	-24.8
8.04	45.0	H	3.0	7.9	38.8	1.0	-45.7	-25.0	-20.7
10.72	45.4	H	3.0	-5.3	38.3	1.0	-42.6	-25.0	-17.6
5.36	43.8	V	3.0	10.7	40.2	1.0	-50.0	-25.0	-25.0
8.04	44.8	V	3.0	7.9	38.8	1.0	-45.7	-25.0	-20.7
10.72	45.5	V	3.0	-5.6	38.3	1.0	-42.9	-25.0	-17.9

Rev. 10.28.15

LTE B41 20MHz QPSK

High Frequency Substitution Measurement
 UL, RTP Radiated Chamber

Company: SOMC
 Project #: 11139405
 Date: 2016-04-14
 Test Engineer: Brian Kleura
 Configuration: EUT w/ AC Adaptor and Headphones (Sample #CB51292316 Y-Axis)
 Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:
 Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable

LTE B41

Frequency (MHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta
Low Channel (2500MHz)									
5.91	47.4	H	3.0	8.7	40.3	1.0	-48.0	-25.0	-23.0
7.52	45.4	H	3.0	8.9	38.9	1.0	-46.8	-25.0	-21.8
10.62	45.2	H	3.0	-6.0	38.3	1.0	-43.3	-25.0	-18.3
5.91	42.5	V	3.0	10.0	40.3	1.0	-49.2	-25.0	-24.2
7.52	45.1	V	3.0	8.9	38.9	1.0	-46.8	-25.0	-21.8
10.62	44.8	V	3.0	-5.6	38.3	1.0	-42.9	-25.0	-17.9
Mid Channel (2593MHz)									
5.19	52.3	H	3.0	10.0	40.3	1.0	-49.3	-25.0	-24.3
7.78	43.8	H	3.0	7.4	38.9	1.0	-45.0	-25.0	-20.0
10.37	45.5	H	3.0	-5.8	38.3	1.0	-43.2	-25.0	-18.2
5.19	49.5	V	3.0	6.7	40.3	1.0	-46.0	-25.0	-21.0
7.78	44.5	V	3.0	8.9	38.9	1.0	-45.8	-25.0	-20.8
10.37	44.9	V	3.0	-5.3	38.3	1.0	-42.6	-25.0	-17.6
High Channel (2680MHz)									
5.36	43.3	H	3.0	10.3	40.2	1.0	-49.5	-25.0	-24.5
8.04	44.3	H	3.0	7.3	38.8	1.0	-45.1	-25.0	-20.1
10.72	45.9	H	3.0	-5.5	38.3	1.0	-42.8	-25.0	-17.8
5.36	43.7	V	3.0	10.6	40.2	1.0	-49.8	-25.0	-24.8
8.04	44.6	V	3.0	7.4	38.8	1.0	-44.9	-25.0	-19.9
10.72	44.9	V	3.0	-4.9	38.3	1.0	-42.3	-25.0	-17.3

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LTE B41 20MHz 16QAM