

LTE Band 7

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
Project #: 16J23633N
Date: 08/17/2016
Test Engineer: Brian Kiewra / John Manser
Configuration: Unit with ear-buds and charger (LTE #1)
Mode: LTE Band 7, 5MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2502.5MHz)										
5.01	43.4	H	3.0	-10.8	40.3	1.0	-50.1	-25.0	-25.1	
7.51	46.7	H	3.0	-10.2	38.9	1.0	-49.2	-25.0	-23.2	
10.01	47.1	H	3.0	-7.9	38.3	1.0	-45.2	-25.0	-20.2	
5.01	43.4	V	3.0	-10.8	40.3	1.0	-50.1	-25.0	-25.1	
7.51	46.4	H	3.0	-10.2	38.9	1.0	-49.1	-25.0	-23.1	
10.01	47.2	V	3.0	-8.0	38.3	1.0	-45.3	-25.0	-20.3	
Mid Channel (2535MHz)										
5.07	42.8	H	3.0	-10.1	40.3	1.0	-49.4	-25.0	-24.4	
7.61	45.6	H	3.0	-9.1	38.9	1.0	-47.0	-25.0	-22.0	
10.14	47.1	H	3.0	-7.8	38.3	1.0	-45.1	-25.0	-20.1	
5.07	43.0	V	3.0	-10.4	40.3	1.0	-49.7	-25.0	-24.7	
7.61	45.2	V	3.0	-8.9	38.9	1.0	-46.8	-25.0	-21.8	
10.14	47.2	V	3.0	-7.8	38.1	1.0	-45.2	-25.0	-20.2	
High Channel (2567.5MHz)										
5.14	43.6	H	3.0	-10.8	40.3	1.0	-50.1	-25.0	-25.1	
7.70	45.6	H	3.0	-8.9	38.9	1.0	-46.8	-25.0	-21.8	
10.27	46.7	H	3.0	-7.2	38.3	1.0	-44.6	-25.0	-19.6	
5.14	44.1	V	3.0	-11.4	40.3	1.0	-50.7	-25.0	-25.7	
7.70	45.5	V	3.0	-8.1	38.9	1.0	-47.0	-25.0	-22.0	
10.27	47.2	V	3.0	-7.8	38.3	1.0	-45.1	-25.0	-20.1	

Rev: 10.28.15

LTE B7 5MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
Project #: 16J23633N
Date: 08/17/2016
Test Engineer: Brian Kiewra / John Manser
Configuration: Unit with ear-buds and charger (LTE #1)
Mode: LTE Band 7, 10MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2505MHz)										
5.01	42.8	H	3.0	-10.1	40.3	1.0	-49.4	-25.0	-24.4	
7.52	46.0	H	3.0	-8.6	38.9	1.0	-47.5	-25.0	-22.5	
10.02	47.3	H	3.0	-8.1	38.3	1.0	-45.4	-25.0	-20.4	
5.01	43.4	H	3.0	-10.8	40.3	1.0	-50.1	-25.0	-25.1	
7.52	46.2	V	3.0	-10.0	38.9	1.0	-47.9	-25.0	-22.9	
10.02	47.5	V	3.0	-8.3	38.3	1.0	-45.6	-25.0	-20.6	
Mid Channel (2535MHz)										
5.07	43.4	H	3.0	-10.6	40.3	1.0	-49.9	-25.0	-24.9	
7.61	45.8	H	3.0	-9.6	38.9	1.0	-47.0	-25.0	-22.0	
10.14	47.3	H	3.0	-7.3	38.3	1.0	-44.7	-25.0	-19.7	
5.07	43.2	V	3.0	-10.5	40.3	1.0	-49.8	-25.0	-24.8	
7.61	45.8	V	3.0	-8.7	38.9	1.0	-46.6	-25.0	-21.6	
10.14	47.6	V	3.0	-8.2	38.3	1.0	-45.5	-25.0	-20.5	
High Channel (2565MHz)										
5.13	43.0	H	3.0	-10.2	40.3	1.0	-49.5	-25.0	-24.5	
7.70	46.2	H	3.0	-9.6	38.9	1.0	-47.5	-25.0	-22.5	
10.26	47.4	H	3.0	-7.9	38.3	1.0	-45.2	-25.0	-20.2	
5.13	44.0	V	3.0	-11.3	40.3	1.0	-50.6	-25.0	-25.6	
7.70	46.2	V	3.0	-8.8	38.9	1.0	-47.7	-25.0	-22.7	
10.26	47.6	V	3.0	-7.5	38.3	1.0	-44.8	-25.0	-19.8	

Rev: 10.28.15

LTE B7 10MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
Project #: 16J23633N
Date: 08/17/2016
Test Engineer: Brian Kiewra / John Manser
Configuration: Unit with ear-buds and charger (LTE #1)
Mode: LTE Band 7, 5MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2502.5MHz)										
5.01	43.3	H	3.0	-10.6	40.3	1.0	-49.0	-25.0	-24.0	
7.51	46.6	H	3.0	-10.2	38.9	1.0	-48.1	-25.0	-23.1	
10.01	47.3	H	3.0	-8.1	38.3	1.0	-45.5	-25.0	-20.5	
5.01	43.0	V	3.0	-10.4	40.3	1.0	-49.7	-25.0	-24.7	
7.51	46.0	V	3.0	-9.8	38.9	1.0	-47.8	-25.0	-22.8	
10.01	47.4	V	3.0	-8.2	38.3	1.0	-45.5	-25.0	-20.5	
Mid Channel (2535MHz)										
5.07	43.2	H	3.0	-10.4	40.3	1.0	-49.7	-25.0	-24.7	
7.61	45.8	H	3.0	-9.2	38.9	1.0	-47.1	-25.0	-22.1	
10.14	46.8	H	3.0	-7.4	38.3	1.0	-44.8	-25.0	-19.8	
5.07	42.8	V	3.0	-10.2	40.3	1.0	-49.5	-25.0	-24.5	
7.61	45.7	V	3.0	-9.4	38.9	1.0	-47.3	-25.0	-22.3	
10.14	47.2	V	3.0	-7.8	38.3	1.0	-45.1	-25.0	-20.1	
High Channel (2567.5MHz)										
5.14	42.8	H	3.0	-10.0	40.3	1.0	-49.3	-25.0	-24.3	
7.70	45.9	H	3.0	-9.3	38.9	1.0	-47.1	-25.0	-22.1	
10.27	47.3	H	3.0	-7.8	38.3	1.0	-45.1	-25.0	-20.1	
5.14	43.8	V	3.0	-11.0	40.3	1.0	-50.4	-25.0	-25.4	
7.70	45.7	V	3.0	-8.3	38.9	1.0	-47.2	-25.0	-22.2	
10.27	47.1	V	3.0	-7.6	38.3	1.0	-44.9	-25.0	-19.9	

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LTE B7 5MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
Project #: 16J23633N
Date: 08/17/2016
Test Engineer: Brian Kiewra / John Manser
Configuration: Unit with ear-buds and charger (LTE #1)
Mode: LTE Band 7, 10MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2505MHz)										
5.01	42.7	H	3.0	-10.1	40.3	1.0	-49.4	-25.0	-24.4	
7.52	46.4	H	3.0	-9.9	38.9	1.0	-47.8	-25.0	-22.8	
10.02	46.6	H	3.0	-7.4	38.3	1.0	-44.8	-25.0	-19.8	
5.01	43.2	H	3.0	-10.6	40.3	1.0	-49.9	-25.0	-24.9	
7.52	46.2	V	3.0	-10.0	38.9	1.0	-47.9	-25.0	-22.9	
10.02	47.4	V	3.0	-8.2	38.3	1.0	-45.5	-25.0	-20.5	
Mid Channel (2535MHz)										
5.07	42.9	H	3.0	-10.2	40.3	1.0	-49.4	-25.0	-24.4	
7.61	45.8	H	3.0	-9.2	38.9	1.0	-47.1	-25.0	-22.1	
10.14	47.3	H	3.0	-8.0	38.3	1.0	-45.3	-25.0	-20.3	
5.07	43.0	V	3.0	-10.3	40.3	1.0	-49.6	-25.0	-24.6	
7.61	45.8	V	3.0	-9.5	38.9	1.0	-47.4	-25.0	-22.4	
10.14	47.3	V	3.0	-7.9	38.3	1.0	-45.2	-25.0	-20.2	
High Channel (2565MHz)										
5.13	43.7	H	3.0	-10.9	40.3	1.0	-50.2	-25.0	-25.2	
7.70	46.0	H	3.0	-9.9	38.9	1.0	-47.6	-25.0	-22.6	
10.26	47.3	H	3.0	-7.9	38.3	1.0	-45.2	-25.0	-20.2	
5.13	43.7	V	3.0	-11.0	40.3	1.0	-50.3	-25.0	-25.3	
7.70	45.9	V	3.0	-9.4	38.9	1.0	-47.3	-25.0	-22.3	
10.26	47.1	V	3.0	-7.6	38.3	1.0	-44.9	-25.0	-19.9	

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LTE B7 10MHz 16QAM

LTE Band 13

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 13, 5MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (775.5MHz)										
1.56	-61.1	H	3.0	-18.3	39.7	1.0	-57.1	-48.0	-17.1	
2.34	-64.3	H	3.0	-18.1	39.6	1.0	-56.7	-13.0	-43.7	
3.12	-64.7	H	3.0	-15.8	39.4	1.0	-54.1	-13.0	-41.1	
Mid Channel (782MHz)										
1.56	-62.0	V	3.0	-17.6	39.7	1.0	-56.4	-48.0	-16.4	
2.34	-63.8	V	3.0	-16.4	39.6	1.0	-55.0	-13.0	-42.0	
3.12	-64.8	V	3.0	-14.6	39.4	1.0	-52.4	-13.0	-39.4	
High Channel (784.5MHz)										
1.57	-68.4	H	3.0	-17.6	39.8	1.0	-56.4	-48.0	-16.4	
2.35	-63.8	H	3.0	-17.7	39.6	1.0	-56.2	-13.0	-43.2	
3.14	-64.1	H	3.0	-15.2	39.4	1.0	-53.5	-13.0	-40.5	
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LTE B13 5MHz QPSK

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 13, 5MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (779.5MHz)										
1.56	-61.2	H	3.0	-18.4	39.7	1.0	-57.2	-48.0	-17.2	
2.34	-64.8	H	3.0	-17.9	39.5	1.0	-56.5	-13.0	-43.5	
3.12	-64.3	H	3.0	-15.4	39.4	1.0	-53.8	-13.0	-40.8	
Mid Channel (782MHz)										
1.56	-61.1	V	3.0	-16.7	39.7	1.0	-55.5	-48.0	-15.5	
2.34	-63.7	V	3.0	-16.3	39.6	1.0	-54.9	-13.0	-41.9	
3.12	-64.3	V	3.0	-14.2	39.4	1.0	-52.6	-13.0	-39.6	
High Channel (784.5MHz)										
1.57	-66.6	H	3.0	-17.8	39.8	1.0	-56.6	-48.0	-16.6	
2.35	-63.4	H	3.0	-17.2	39.6	1.0	-55.8	-13.0	-42.8	
3.14	-64.9	H	3.0	-15.9	39.4	1.0	-54.3	-13.0	-41.3	
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LTE B13 5MHz 16QAM

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 13, 10MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel ()										
		H								
		H								
		H								
		H								
		V								
		V								
		V								
		V								
		V								
Mid Channel (782MHz)										
1.56	-66.6	H	3.0	-17.9	39.8	1.0	-56.6	-48.0	-16.6	
2.35	-64.1	H	3.0	-17.9	39.6	1.0	-56.5	-13.0	-43.5	
3.13	-64.3	H	3.0	-15.4	39.4	1.0	-53.8	-13.0	-40.8	
High Channel ()										
		H								
		H								
		H								
		H								
		V								
		V								
		V								
		V								
		V								
		V								
		V								
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LTE B13 10MHz QPSK

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 13, 10MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel ()										
		H								
		H								
		H								
		H								
		V								
		V								
		V								
		V								
		V								
Mid Channel (782MHz)										
1.56	-66.4	H	3.0	-17.8	39.8	1.0	-56.3	-48.0	-16.3	
2.35	-63.2	H	3.0	-17.1	39.6	1.0	-55.6	-13.0	-42.6	
3.13	-65.0	H	3.0	-16.1	39.4	1.0	-54.5	-13.0	-41.5	
High Channel ()										
		H								
		H								
		H								
		H								
		V								
		V								
		V								
		V								
		V								
		V								
		V								
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LTE B13 10MHz 16QAM

LTE Band 17

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 17, 5MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (706.5MHz)										
1.41	42.0	H	3.0	-20.1	39.9	1.0	-59.0	-13.0	-46.0	
2.12	42.4	H	3.0	-16.3	40.1	1.0	-55.4	-13.0	-42.4	
2.83	43.6	H	3.0	-15.6	39.3	1.0	-53.9	-13.0	-49.9	
Mid Channel (710MHz)										
1.41	41.5	V	3.0	-18.1	39.9	1.0	-57.0	-13.0	-44.0	
2.12	41.7	V	3.0	-14.3	40.1	1.0	-53.4	-13.0	-40.4	
2.83	43.9	V	3.0	-14.7	39.3	1.0	-53.0	-13.0	-49.0	
High Channel (713.5)										
1.43	42.3	H	3.0	-20.3	39.9	1.0	-59.1	-13.0	-46.1	
2.14	43.4	H	3.0	-17.3	40.1	1.0	-56.4	-13.0	-43.4	
2.85	44.2	H	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
1.43	42.9	V	3.0	-19.4	39.9	1.0	-58.2	-13.0	-45.2	
2.14	43.8	V	3.0	-16.3	40.1	1.0	-55.4	-13.0	-42.4	
2.85	44.8	V	3.0	-15.5	39.3	1.0	-53.8	-13.0	-49.8	

Rev: 10.28.15

LTE B17 5MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 17, 5MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (706.5MHz)										
1.41	42.0	H	3.0	-20.1	39.9	1.0	-59.0	-13.0	-46.0	
2.12	42.9	H	3.0	-16.9	40.1	1.0	-56.9	-13.0	-43.0	
2.83	43.3	H	3.0	-15.3	39.3	1.0	-53.5	-13.0	-48.5	
Mid Channel (710MHz)										
1.41	41.8	V	3.0	-17.8	39.9	1.0	-56.5	-13.0	-43.5	
2.12	41.8	V	3.0	-14.3	40.1	1.0	-53.4	-13.0	-40.4	
2.83	43.6	V	3.0	-14.4	39.3	1.0	-52.7	-13.0	-39.7	
High Channel (713.5)										
1.43	42.6	H	3.0	-20.6	39.9	1.0	-59.4	-13.0	-46.4	
2.14	43.1	H	3.0	-17.1	40.1	1.0	-56.1	-13.0	-43.1	
2.85	43.9	H	3.0	-15.8	39.3	1.0	-54.1	-13.0	-41.1	
1.43	42.8	V	3.0	-19.2	39.9	1.0	-58.1	-13.0	-45.1	
2.14	44.1	V	3.0	-16.7	40.1	1.0	-55.7	-13.0	-42.7	
2.85	44.9	V	3.0	-15.6	39.3	1.0	-53.9	-13.0	-49.9	

Rev: 10.28.15

LTE B17 5MHz 16QAM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 17, 10MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (709MHz)										
1.42	42.5	H	3.0	-20.3	39.9	1.0	-59.2	-13.0	-46.2	
2.13	43.4	H	3.0	-17.3	40.1	1.0	-56.4	-13.0	-43.4	
2.84	43.4	H	3.0	-15.4	39.3	1.0	-53.7	-13.0	-49.7	
Mid Channel (710MHz)										
1.42	42.4	V	3.0	-18.9	39.9	1.0	-57.8	-13.0	-44.8	
2.13	42.7	V	3.0	-15.2	40.1	1.0	-54.3	-13.0	-41.3	
2.84	44.9	V	3.0	-14.8	39.3	1.0	-53.1	-13.0	-49.1	
High Channel (711)										
1.42	41.2	H	3.0	-19.3	39.9	1.0	-58.1	-13.0	-45.1	
2.13	43.4	H	3.0	-17.4	40.1	1.0	-56.5	-13.0	-43.5	
2.84	43.5	H	3.0	-15.4	39.3	1.0	-53.7	-13.0	-49.7	
1.42	42.2	V	3.0	-18.5	39.9	1.0	-57.5	-13.0	-44.5	
2.13	42.9	V	3.0	-15.4	40.1	1.0	-54.5	-13.0	-41.5	
2.84	43.9	V	3.0	-14.7	39.3	1.0	-53.0	-13.0	-49.0	

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LTE B17 10MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 17, 10MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (709MHz)										
1.42	42.0	H	3.0	-20.0	39.9	1.0	-58.9	-13.0	-45.9	
2.13	42.9	H	3.0	-16.8	40.1	1.0	-55.9	-13.0	-42.9	
2.84	43.2	H	3.0	-15.1	39.3	1.0	-53.4	-13.0	-48.4	
Mid Channel (710MHz)										
1.42	41.7	V	3.0	-18.3	39.9	1.0	-57.1	-13.0	-44.1	
2.13	42.5	V	3.0	-15.0	40.1	1.0	-54.1	-13.0	-41.1	
2.84	43.4	V	3.0	-14.2	39.3	1.0	-52.5	-13.0	-39.5	
High Channel (711MHz)										
1.42	41.4	H	3.0	-19.5	39.9	1.0	-58.3	-13.0	-45.3	
2.13	43.4	H	3.0	-17.1	40.1	1.0	-56.4	-13.0	-43.4	
2.84	44.1	H	3.0	-16.0	39.3	1.0	-54.3	-13.0	-41.3	
1.42	42.8	V	3.0	-18.5	39.9	1.0	-57.4	-13.0	-44.4	
2.13	42.8	V	3.0	-15.3	40.1	1.0	-54.4	-13.0	-41.4	
2.84	44.5	V	3.0	-15.3	39.3	1.0	-53.6	-13.0	-49.6	

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LTE B17 10MHz 16QAM

LTE Band 26

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Klewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (90S), 1.4MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (814.7MHz) (Part 90S)										
1.63	42.8	H	3.0	-19.5	39.9	1.0	-58.3	-13.0	-45.3	
2.44	43.4	H	3.0	-17.0	39.4	1.0	-55.3	-13.0	-42.3	
3.26	44.6	H	3.0	-15.5	39.5	1.0	-53.8	-13.0	-40.8	
1.63	42.7	V	3.0	-17.8	39.9	1.0	-56.7	-13.0	-43.7	
2.44	42.7	V	3.0	-14.7	39.4	1.0	-53.0	-13.0	-40.0	
3.26	44.5	V	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8	
Low Channel (824.7MHz)										
1.65	42.8	H	3.0	-19.4	39.9	1.0	-58.3	-13.0	-45.3	
2.47	43.3	H	3.0	-16.7	39.3	1.0	-55.0	-13.0	-42.0	
3.30	44.6	H	3.0	-15.2	39.5	1.0	-53.7	-13.0	-40.7	
1.65	42.0	V	3.0	-17.0	39.9	1.0	-55.9	-13.0	-42.9	
2.47	43.8	V	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
3.30	44.7	V	3.0	-14.4	39.5	1.0	-52.9	-13.0	-39.9	
Mid Channel (831.5MHz)										
1.66	43.2	H	3.0	-18.7	39.9	1.0	-57.6	-13.0	-44.6	
2.49	43.4	H	3.0	-16.6	39.3	1.0	-54.9	-13.0	-41.9	
3.33	43.9	H	3.0	-14.5	39.5	1.0	-53.0	-13.0	-40.0	
1.66	42.4	V	3.0	-17.3	39.9	1.0	-56.2	-13.0	-43.2	
2.49	43.9	V	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
3.33	44.5	V	3.0	-14.2	39.5	1.0	-52.7	-13.0	-39.7	
High Channel (848.3MHz)										
1.70	42.4	H	3.0	-18.7	40.0	1.0	-57.6	-13.0	-44.6	
2.54	43.2	H	3.0	-16.3	39.2	1.0	-54.5	-13.0	-41.5	
3.39	44.3	H	3.0	-14.7	39.5	1.0	-53.2	-13.0	-40.2	
1.70	43.3	V	3.0	-18.0	40.0	1.0	-57.0	-13.0	-44.0	
2.54	43.6	V	3.0	-15.6	39.2	1.0	-53.9	-13.0	-40.9	
3.39	44.5	V	3.0	-14.1	39.5	1.0	-52.7	-13.0	-39.7	

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LTE B26 1.4MHz QPSK

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

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Klewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (90S), 1.4MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (814.7MHz) (Part 90S)										
1.63	42.6	H	3.0	-19.3	39.9	1.0	-58.2	-13.0	-45.2	
2.44	43.4	H	3.0	-17.0	39.4	1.0	-55.3	-13.0	-42.3	
3.26	44.4	H	3.0	-15.2	39.5	1.0	-53.6	-13.0	-40.6	
1.63	42.9	V	3.0	-18.0	39.9	1.0	-56.8	-13.0	-43.8	
2.44	42.4	V	3.0	-14.8	39.4	1.0	-53.2	-13.0	-40.2	
3.26	45.0	V	3.0	-14.8	39.5	1.0	-53.2	-13.0	-40.2	
Low Channel (824.7MHz)										
1.65	42.3	H	3.0	-18.9	39.9	1.0	-57.7	-13.0	-44.7	
2.47	43.7	H	3.0	-17.0	39.3	1.0	-55.3	-13.0	-42.3	
3.30	44.3	H	3.0	-15.0	39.5	1.0	-53.5	-13.0	-40.5	
1.65	42.3	V	3.0	-17.3	39.9	1.0	-56.2	-13.0	-43.2	
2.47	43.3	V	3.0	-15.6	39.3	1.0	-53.9	-13.0	-40.9	
3.30	44.6	V	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8	
Mid Channel (831.5MHz)										
1.66	43.8	H	3.0	-18.3	39.9	1.0	-57.2	-13.0	-44.2	
2.49	43.4	H	3.0	-16.6	39.3	1.0	-54.9	-13.0	-41.9	
3.33	44.3	H	3.0	-14.9	39.5	1.0	-53.4	-13.0	-40.4	
1.66	42.7	V	3.0	-17.0	39.9	1.0	-56.5	-13.0	-43.5	
2.49	43.8	V	3.0	-16.1	39.3	1.0	-54.3	-13.0	-41.3	
3.33	44.3	V	3.0	-14.0	39.5	1.0	-52.5	-13.0	-39.5	
High Channel (848.3MHz)										
1.70	42.3	H	3.0	-18.6	40.0	1.0	-57.5	-13.0	-44.5	
2.54	43.5	H	3.0	-16.5	39.2	1.0	-54.8	-13.0	-41.8	
3.39	44.1	H	3.0	-14.5	39.5	1.0	-53.0	-13.0	-40.0	
1.70	43.4	V	3.0	-18.0	40.0	1.0	-57.0	-13.0	-44.0	
2.54	43.5	V	3.0	-15.5	39.2	1.0	-53.8	-13.0	-40.8	
3.39	44.9	V	3.0	-14.5	39.5	1.0	-53.0	-13.0	-40.0	

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LTE B26 1.4MHz 16QAM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (905), 3MHz QPSK

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (815.5MHz) (Part 905)										
1.63	43.1	H	3.0	-19.8	39.9	1.0	-58.7	-13.0	45.7	
2.45	63.4	H	3.0	-17.0	39.4	1.0	-55.3	-13.0	42.3	
3.26	64.6	H	3.0	-15.3	39.5	1.0	-53.8	-13.0	40.8	
1.63	63.2	V	3.0	-18.3	39.9	1.0	-57.2	-13.0	44.2	
2.45	63.6	V	3.0	-16.0	39.4	1.0	-54.4	-13.0	41.4	
3.26	64.5	V	3.0	-14.3	39.5	1.0	-52.7	-13.0	39.7	
Low Channel (825.5MHz)										
1.65	62.9	H	3.0	-19.4	39.9	1.0	-58.3	-13.0	45.3	
2.47	63.4	H	3.0	-16.8	39.3	1.0	-55.1	-13.0	42.1	
3.30	64.3	H	3.0	-14.9	39.5	1.0	-53.4	-13.0	40.4	
1.65	62.9	V	3.0	-17.9	39.9	1.0	-56.8	-13.0	43.8	
2.47	63.7	V	3.0	-16.0	39.3	1.0	-54.3	-13.0	41.3	
3.30	64.9	V	3.0	-14.6	39.5	1.0	-51.1	-13.0	40.1	
Mid Channel (831.5MHz)										
1.66	62.8	H	3.0	-19.2	39.9	1.0	-58.2	-13.0	45.2	
2.49	63.3	H	3.0	-16.6	39.3	1.0	-54.8	-13.0	41.8	
3.33	64.1	H	3.0	-14.7	39.5	1.0	-53.2	-13.0	40.2	
1.66	63.2	V	3.0	-18.1	39.9	1.0	-57.0	-13.0	44.0	
2.49	64.2	V	3.0	-16.9	39.3	1.0	-54.7	-13.0	41.7	
3.33	64.8	V	3.0	-14.5	39.5	1.0	-53.0	-13.0	40.0	
High Channel (847.5MHz)										
1.70	61.9	H	3.0	-18.1	40.0	1.0	-57.1	-13.0	44.1	
2.54	63.7	H	3.0	-16.8	39.2	1.0	-55.0	-13.0	42.0	
3.39	64.7	H	3.0	-15.1	39.5	1.0	-53.6	-13.0	40.6	
1.70	62.1	V	3.0	-16.7	40.0	1.0	-55.7	-13.0	42.7	
2.54	63.3	V	3.0	-15.4	39.2	1.0	-53.6	-13.0	40.6	
3.39	64.3	V	3.0	-13.9	39.5	1.0	-52.5	-13.0	39.5	

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LTE B26 3MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (905), 3MHz 16QAM

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (815.5MHz) (Part 905)										
1.63	42.6	H	3.0	-19.3	39.9	1.0	-58.2	-13.0	45.2	
2.45	63.3	H	3.0	-16.9	39.4	1.0	-55.2	-13.0	42.2	
3.26	64.2	H	3.0	-14.9	39.5	1.0	-53.4	-13.0	40.4	
1.63	63.0	V	3.0	-18.2	39.9	1.0	-57.0	-13.0	44.0	
2.45	63.5	V	3.0	-15.9	39.4	1.0	-54.3	-13.0	41.3	
3.26	64.1	V	3.0	-13.9	39.5	1.0	-52.3	-13.0	39.3	
Low Channel (825.5MHz)										
1.65	63.0	H	3.0	-19.6	39.9	1.0	-58.5	-13.0	45.5	
2.47	63.5	H	3.0	-16.8	39.3	1.0	-55.1	-13.0	42.1	
3.30	64.5	H	3.0	-15.1	39.5	1.0	-53.6	-13.0	40.6	
1.65	63.4	V	3.0	-18.3	39.9	1.0	-57.2	-13.0	44.2	
2.47	64.0	V	3.0	-16.3	39.3	1.0	-54.6	-13.0	41.6	
3.30	64.6	V	3.0	-14.4	39.5	1.0	-52.0	-13.0	39.8	
Mid Channel (831.5MHz)										
1.66	62.8	H	3.0	-18.5	39.9	1.0	-57.4	-13.0	44.4	
2.49	63.4	H	3.0	-16.6	39.3	1.0	-54.9	-13.0	41.9	
3.33	64.0	H	3.0	-14.6	39.5	1.0	-53.1	-13.0	40.1	
1.66	63.3	V	3.0	-18.2	39.9	1.0	-57.1	-13.0	44.1	
2.49	64.1	V	3.0	-16.4	39.3	1.0	-54.6	-13.0	41.6	
3.33	64.3	V	3.0	-14.0	39.5	1.0	-52.6	-13.0	39.6	
High Channel (847.5MHz)										
1.70	61.7	H	3.0	-17.9	40.0	1.0	-56.9	-13.0	43.9	
2.54	63.3	H	3.0	-16.4	39.2	1.0	-54.6	-13.0	41.6	
3.39	63.9	H	3.0	-14.3	39.5	1.0	-52.0	-13.0	39.8	
1.70	62.7	V	3.0	-17.3	40.0	1.0	-56.3	-13.0	43.3	
2.54	63.6	V	3.0	-15.6	39.2	1.0	-53.9	-13.0	40.9	
3.39	64.1	V	3.0	-13.8	39.5	1.0	-52.3	-13.0	39.3	

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LTE B26 3MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (B26), 5MHz QPSK

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

Chamber Pre-amplifier Filter Limit
3m Chamber N-RTP 3m Chamber N-RTP Filter EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (B16 5MHz) (Part 95)										
1.63	62.0	H	3.0	-18.8	39.9	1.0	-57.6	-13.0	-44.6	
2.45	62.8	H	3.0	-16.3	39.3	1.0	-54.7	-13.0	-41.7	
3.27	64.2	H	3.0	-14.9	39.5	1.0	-53.4	-13.0	-40.4	
Low Channel (B26 5MHz)										
1.63	62.6	V	3.0	-17.7	39.9	1.0	-56.5	-13.0	-43.5	
2.45	62.8	V	3.0	-15.3	39.3	1.0	-53.6	-13.0	-40.6	
3.27	64.7	V	3.0	-14.5	39.5	1.0	-53.0	-13.0	-40.0	
Low Channel (B26 5MHz)										
1.65	62.9	H	3.0	-19.5	39.9	1.0	-58.4	-13.0	-45.4	
2.48	63.8	H	3.0	-17.2	39.3	1.0	-55.4	-13.0	-42.4	
3.31	64.6	H	3.0	-15.2	39.5	1.0	-53.7	-13.0	-40.7	
Low Channel (B26 5MHz)										
1.65	62.6	V	3.0	-17.6	39.9	1.0	-56.4	-13.0	-43.4	
2.48	63.9	V	3.0	-16.2	39.3	1.0	-54.4	-13.0	-41.4	
3.31	64.8	V	3.0	-14.6	39.5	1.0	-53.1	-13.0	-40.1	
Mid Channel (B31 5MHz)										
1.66	62.5	H	3.0	-18.8	39.9	1.0	-57.7	-13.0	-44.7	
2.49	63.6	H	3.0	-16.9	39.3	1.0	-55.1	-13.0	-42.1	
3.33	64.6	H	3.0	-15.1	39.5	1.0	-53.6	-13.0	-40.6	
Mid Channel (B31 5MHz)										
1.66	62.9	V	3.0	-17.8	39.9	1.0	-56.7	-13.0	-43.7	
2.49	63.8	V	3.0	-16.0	39.3	1.0	-54.3	-13.0	-41.3	
3.33	64.2	V	3.0	-13.9	39.5	1.0	-52.4	-13.0	-39.4	
High Channel (B46 5MHz)										
1.69	61.5	H	3.0	-17.7	39.9	1.0	-56.7	-13.0	-43.7	
2.54	63.0	H	3.0	-16.8	39.2	1.0	-55.1	-13.0	-42.1	
3.39	64.5	H	3.0	-14.9	39.5	1.0	-53.5	-13.0	-40.5	
High Channel (B46 5MHz)										
1.69	62.5	V	3.0	-17.2	39.9	1.0	-56.1	-13.0	-43.1	
2.54	63.0	V	3.0	-15.0	39.2	1.0	-53.3	-13.0	-40.3	
3.39	63.9	V	3.0	-13.5	39.5	1.0	-52.1	-13.0	-39.1	

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LTE B26 5MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (B26), 5MHz 16QAM

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

Chamber Pre-amplifier Filter Limit
3m Chamber N-RTP 3m Chamber N-RTP Filter EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (B16 5MHz) (Part 95)										
1.63	62.6	H	3.0	-19.3	39.9	1.0	-58.2	-13.0	-45.2	
2.45	63.4	H	3.0	-16.9	39.3	1.0	-55.2	-13.0	-42.2	
3.27	64.0	H	3.0	-14.7	39.5	1.0	-53.2	-13.0	-40.2	
Low Channel (B26 5MHz)										
1.63	62.8	V	3.0	-17.9	39.9	1.0	-56.8	-13.0	-43.8	
2.45	63.6	V	3.0	-16.0	39.3	1.0	-54.4	-13.0	-41.4	
3.27	64.1	V	3.0	-13.8	39.5	1.0	-52.3	-13.0	-39.3	
Low Channel (B26 5MHz)										
1.65	62.8	H	3.0	-19.4	39.9	1.0	-58.2	-13.0	-45.2	
2.48	63.4	H	3.0	-16.7	39.3	1.0	-55.0	-13.0	-42.0	
3.31	64.4	H	3.0	-15.1	39.5	1.0	-53.5	-13.0	-40.5	
Low Channel (B26 5MHz)										
1.65	62.9	V	3.0	-17.9	39.9	1.0	-56.7	-13.0	-43.7	
2.48	63.3	V	3.0	-15.6	39.3	1.0	-53.9	-13.0	-40.9	
3.31	64.6	V	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8	
Mid Channel (B31 5MHz)										
1.66	62.4	H	3.0	-18.9	39.9	1.0	-57.8	-13.0	-44.8	
2.49	63.9	H	3.0	-17.1	39.3	1.0	-55.4	-13.0	-42.4	
3.33	64.7	H	3.0	-15.3	39.5	1.0	-53.8	-13.0	-40.8	
Mid Channel (B31 5MHz)										
1.66	62.9	V	3.0	-17.8	39.9	1.0	-56.7	-13.0	-43.7	
2.49	64.0	V	3.0	-16.2	39.3	1.0	-54.5	-13.0	-41.5	
3.33	64.9	V	3.0	-14.6	39.5	1.0	-53.1	-13.0	-40.1	
High Channel (B46 5MHz)										
1.69	61.4	H	3.0	-17.6	39.9	1.0	-56.6	-13.0	-43.6	
2.54	63.2	H	3.0	-16.3	39.2	1.0	-54.5	-13.0	-41.5	
3.39	63.9	H	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8	
High Channel (B46 5MHz)										
1.69	62.3	V	3.0	-17.0	39.9	1.0	-56.0	-13.0	-43.0	
2.54	63.5	V	3.0	-15.6	39.2	1.0	-53.8	-13.0	-40.8	
3.39	64.1	V	3.0	-13.7	39.5	1.0	-52.2	-13.0	-39.2	

Rev: 10.28.15

LTE B26 5MHz 16QAM

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kievra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (905), 10MHz QPSK

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (810MHz) (Part 905)										
1.64	62.8	H	3.0	-19.5	39.9	1.0	-58.4	-13.0	-45.4	
2.46	62.6	H	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
3.28	64.2	H	3.0	-14.9	39.5	1.0	-53.3	-13.0	-40.3	
1.64	62.2	V	3.0	-17.3	39.9	1.0	-56.2	-13.0	-43.2	
2.46	63.8	V	3.0	-16.1	39.3	1.0	-54.5	-13.0	-41.5	
3.28	64.1	V	3.0	-13.9	39.5	1.0	-52.3	-13.0	-39.3	
Low Channel (825MHz)										
1.66	62.6	H	3.0	-19.2	39.9	1.0	-58.1	-13.0	-45.1	
2.49	63.7	H	3.0	-17.8	39.3	1.0	-55.3	-13.0	-42.3	
3.32	64.3	H	3.0	-14.9	39.5	1.0	-51.4	-13.0	-40.4	
1.66	62.9	V	3.0	-17.8	39.9	1.0	-56.7	-13.0	-43.7	
2.49	63.7	V	3.0	-16.8	39.3	1.0	-54.2	-13.0	-41.2	
3.32	64.7	V	3.0	-14.4	39.5	1.0	-52.9	-13.0	-39.9	
Mid Channel (831.5MHz)										
1.66	62.7	H	3.0	-19.2	39.9	1.0	-58.1	-13.0	-45.1	
2.49	63.9	H	3.0	-17.1	39.3	1.0	-55.3	-13.0	-42.3	
3.33	64.5	H	3.0	-15.1	39.5	1.0	-51.6	-13.0	-40.6	
1.66	62.9	V	3.0	-17.8	39.9	1.0	-56.7	-13.0	-43.7	
2.49	63.8	V	3.0	-16.9	39.3	1.0	-54.3	-13.0	-41.3	
3.33	64.4	V	3.0	-14.1	39.5	1.0	-52.6	-13.0	-39.6	
High Channel (844MHz)										
1.69	62.4	H	3.0	-18.7	39.9	1.0	-57.7	-13.0	-44.7	
2.53	62.9	H	3.0	-16.0	39.2	1.0	-54.2	-13.0	-41.2	
3.38	64.6	H	3.0	-15.1	39.5	1.0	-53.6	-13.0	-40.6	
1.69	63.2	V	3.0	-17.9	39.9	1.0	-56.8	-13.0	-43.8	
2.53	64.1	V	3.0	-16.2	39.2	1.0	-54.4	-13.0	-41.4	
3.38	64.4	V	3.0	-14.9	39.5	1.0	-52.6	-13.0	-39.6	

Rev: 10.28.15

LTE B26 10MHz QPSK

High Frequency Substitution Measurement
 UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/19/2016
 Test Engineer: Brian Kievra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 26 (905), 10MHz 16QAM

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (810MHz) (Part 905)										
1.64	62.8	H	3.0	-19.4	39.9	1.0	-58.3	-13.0	-45.3	
2.46	62.9	H	3.0	-16.4	39.3	1.0	-54.7	-13.0	-41.7	
3.28	63.9	H	3.0	-14.6	39.5	1.0	-53.1	-13.0	-40.1	
1.64	62.6	V	3.0	-17.7	39.9	1.0	-56.6	-13.0	-43.6	
2.46	63.2	V	3.0	-15.6	39.3	1.0	-53.9	-13.0	-40.9	
3.28	63.8	V	3.0	-13.5	39.5	1.0	-52.0	-13.0	-39.0	
Low Channel (825MHz)										
1.66	63.8	H	3.0	-19.5	39.9	1.0	-58.4	-13.0	-45.4	
2.49	63.8	H	3.0	-17.0	39.3	1.0	-55.3	-13.0	-42.3	
3.32	64.6	H	3.0	-15.2	39.5	1.0	-53.7	-13.0	-40.7	
1.66	63.3	V	3.0	-18.2	39.9	1.0	-57.1	-13.0	-44.1	
2.49	63.9	V	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
3.32	64.4	V	3.0	-14.2	39.5	1.0	-52.7	-13.0	-39.7	
Mid Channel (831.5MHz)										
1.66	62.7	H	3.0	-19.2	39.9	1.0	-58.1	-13.0	-45.1	
2.49	63.9	H	3.0	-17.2	39.3	1.0	-55.4	-13.0	-42.4	
3.33	64.6	H	3.0	-15.2	39.5	1.0	-53.7	-13.0	-40.7	
1.66	63.1	V	3.0	-18.0	39.9	1.0	-56.9	-13.0	-43.9	
2.49	63.9	V	3.0	-16.1	39.3	1.0	-54.3	-13.0	-41.3	
3.33	64.2	V	3.0	-13.9	39.5	1.0	-52.4	-13.0	-39.4	
High Channel (844MHz)										
1.69	62.3	H	3.0	-18.6	39.9	1.0	-57.5	-13.0	-44.5	
2.53	63.3	H	3.0	-16.4	39.2	1.0	-54.6	-13.0	-41.6	
3.38	64.3	H	3.0	-14.7	39.5	1.0	-53.3	-13.0	-40.3	
1.69	62.2	V	3.0	-16.9	39.9	1.0	-55.9	-13.0	-42.9	
2.53	64.0	V	3.0	-16.1	39.2	1.0	-54.3	-13.0	-41.3	
3.38	64.4	V	3.0	-14.1	39.5	1.0	-52.6	-13.0	-39.6	

Rev: 10.28.15

LTE B26 10MHz 16QAM

High Frequency Substitution Measurement UL RTP Radiated Chamber											High Frequency Substitution Measurement UL RTP Radiated Chamber										
Company: SOMC Project #: 16J23633N Date: 08/22/2016 Test Engineer: Brian Kiewra / John Manser Configuration: Unit with ear-buds and charger (LTE #1) Mode: LTE Band 26, 15MHz QPSK Test Equipment: Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable											Company: SOMC Project #: 16J23633N Date: 08/22/2016 Test Engineer: Brian Kiewra / John Manser Configuration: Unit with ear-buds and charger (LTE #1) Mode: LTE Band 26, 15MHz 16QAM Test Equipment: Substitution: Horn AT0078 Substitution, and CBL010 SMA Cable										
Chamber			Pre-amplifier			Filter			Limit		Chamber			Pre-amplifier			Filter			Limit	
3m Chamber N-RTP			3m Chamber N-RTP			Filter			EIRP		3m Chamber N-RTP			3m Chamber N-RTP			Filter			EIRP	
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes	Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (813.5 MHz)											Low Channel (813.5 MHz)										
1.66	62.1	H	3.0	-18.6	39.9	1.0	-57.5	-13.0	-44.5		1.66	61.9	H	3.0	-18.4	39.9	1.0	-57.3	-13.0	-44.3	
2.49	62.5	H	3.0	-15.8	39.3	1.0	-54.0	-13.0	-41.0		2.49	62.4	H	3.0	-15.6	39.3	1.0	-53.9	-13.0	-40.9	
3.33	64.2	H	3.0	-14.7	39.5	1.0	-53.2	-13.0	-40.2		3.33	63.7	H	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8	
1.66	62.6	V	3.0	-17.5	39.9	1.0	-56.4	-13.0	-43.4		1.66	62.7	V	3.0	-17.6	39.9	1.0	-56.5	-13.0	-43.5	
2.49	63.7	V	3.0	-15.9	39.3	1.0	-54.2	-13.0	-41.2		2.49	63.9	V	3.0	-16.1	39.3	1.0	-54.4	-13.0	-41.4	
3.33	64.3	V	3.0	-14.0	39.5	1.0	-52.5	-13.0	-39.5		3.33	64.4	V	3.0	-14.1	39.5	1.0	-52.6	-13.0	-39.6	
Mid Channel (836.5 MHz)											Mid Channel (836.5 MHz)										
1.67	62.0	H	3.0	-18.5	39.9	1.0	-57.4	-13.0	-44.4		1.67	62.1	H	3.0	-18.5	39.9	1.0	-57.4	-13.0	-44.4	
2.51	62.4	H	3.0	-15.6	39.2	1.0	-53.8	-13.0	-40.8		2.51	62.5	H	3.0	-15.6	39.2	1.0	-53.9	-13.0	-40.9	
3.35	64.4	H	3.0	-14.9	39.5	1.0	-53.3	-13.0	-40.5		3.35	64.2	H	3.0	-14.7	39.5	1.0	-53.2	-13.0	-40.2	
1.67	62.6	V	3.0	-17.4	39.9	1.0	-56.3	-13.0	-43.3		1.67	61.6	V	3.0	-16.4	39.9	1.0	-55.3	-13.0	-42.3	
2.51	63.1	V	3.0	-15.2	39.2	1.0	-53.5	-13.0	-40.5		2.51	62.5	V	3.0	-14.7	39.2	1.0	-53.0	-13.0	-40.0	
3.35	64.5	V	3.0	-14.2	39.5	1.0	-52.7	-13.0	-39.7		3.35	64.7	V	3.0	-14.4	39.5	1.0	-52.9	-13.0	-39.9	
High Channel (841.5 MHz)											High Channel (841.5 MHz)										
1.68	61.7	H	3.0	-18.1	39.9	1.0	-57.0	-13.0	-44.0		1.68	62.0	H	3.0	-18.4	39.9	1.0	-57.3	-13.0	-44.3	
2.52	62.2	H	3.0	-15.4	39.2	1.0	-53.6	-13.0	-40.6		2.52	62.9	H	3.0	-16.0	39.2	1.0	-54.2	-13.0	-41.2	
3.37	64.8	H	3.0	-15.2	39.5	1.0	-53.8	-13.0	-40.8		3.37	64.5	H	3.0	-15.0	39.5	1.0	-53.5	-13.0	-40.5	
1.68	63.9	V	3.0	-18.6	39.9	1.0	-57.5	-13.0	-44.5		1.68	63.7	V	3.0	-18.4	39.9	1.0	-57.4	-13.0	-44.4	
2.52	66.6	V	3.0	-18.7	39.2	1.0	-56.9	-13.0	-43.9		2.52	66.2	V	3.0	-18.4	39.2	1.0	-56.6	-13.0	-43.6	
3.37	64.6	V	3.0	-14.3	39.5	1.0	-52.8	-13.0	-39.8		3.37	64.4	V	3.0	-14.0	39.5	1.0	-52.6	-13.0	-39.6	
Rev. 10.28.15											Rev. 10.28.15										
LTE B26 15MHz QPSK											LTE B26 15MHz 16QAM										

LTE Band 41

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 5MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2498.5MHz)										
5.00	44.3	H	3.0	11.6	40.3	1.0	50.9	-25.0	-25.9	
7.50	46.5	H	3.0	10.8	38.9	1.0	48.0	-25.0	-22.0	
9.99	47.2	H	3.0	8.1	38.3	1.0	45.4	-25.0	-20.4	
Mid Channel (2593MHz)										
5.19	43.5	H	3.0	10.6	40.3	1.0	50.0	-25.0	-25.0	
7.78	45.9	H	3.0	9.2	38.9	1.0	47.0	-25.0	-22.0	
10.37	47.5	H	3.0	7.9	38.3	1.0	45.2	-25.0	-20.2	
High Channel (2687.5MHz)										
5.38	44.5	H	3.0	11.3	40.2	1.0	50.5	-25.0	-25.5	
8.06	46.2	H	3.0	9.2	38.8	1.0	47.0	-25.0	-22.0	
10.75	47.9	H	3.0	7.8	38.3	1.0	45.1	-25.0	-20.1	
Low Channel (2498.5MHz)										
5.00	44.1	V	3.0	11.5	40.3	1.0	50.8	-25.0	-25.8	
7.50	45.1	V	3.0	8.9	38.9	1.0	46.8	-25.0	-21.8	
9.99	47.2	V	3.0	8.6	38.3	1.0	45.4	-25.0	-20.4	
Mid Channel (2593MHz)										
5.19	43.0	V	3.0	10.2	40.3	1.0	49.6	-25.0	-24.6	
7.78	46.4	V	3.0	9.4	38.9	1.0	47.7	-25.0	-22.7	
10.37	47.5	V	3.0	7.9	38.3	1.0	45.2	-25.0	-20.2	
High Channel (2687.5MHz)										
5.38	45.2	V	3.0	12.2	40.2	1.0	51.4	-25.0	-26.4	
8.06	46.3	V	3.0	9.4	38.8	1.0	47.2	-25.0	-22.2	
10.75	47.7	V	3.0	7.8	38.3	1.0	45.1	-25.0	-20.1	

Rev: 10/28/15

LTE B41 5MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 5MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2498.5MHz)										
5.00	43.9	H	3.0	11.3	40.3	1.0	50.5	-25.0	-25.5	
7.50	46.2	H	3.0	9.8	38.9	1.0	47.7	-25.0	-22.7	
9.99	47.2	H	3.0	8.1	38.3	1.0	45.4	-25.0	-20.4	
Mid Channel (2593MHz)										
5.19	43.8	H	3.0	10.9	40.3	1.0	50.2	-25.0	-25.2	
7.78	46.1	H	3.0	9.3	38.9	1.0	47.2	-25.0	-22.2	
10.37	47.9	H	3.0	8.2	38.3	1.0	45.6	-25.0	-20.6	
High Channel (2687.5MHz)										
5.38	44.7	H	3.0	11.5	40.2	1.0	50.7	-25.0	-25.7	
8.06	46.2	H	3.0	9.1	38.8	1.0	46.9	-25.0	-21.9	
10.75	47.4	H	3.0	7.3	38.3	1.0	44.6	-25.0	-19.6	
Low Channel (2498.5MHz)										
5.00	43.1	V	3.0	10.6	40.3	1.0	49.8	-25.0	-24.8	
7.50	46.5	V	3.0	9.3	38.9	1.0	46.3	-25.0	-21.3	
9.99	47.8	V	3.0	8.6	38.3	1.0	45.9	-25.0	-20.9	
Mid Channel (2593MHz)										
5.19	43.6	V	3.0	10.8	40.3	1.0	50.1	-25.0	-25.1	
7.78	45.5	V	3.0	8.9	38.9	1.0	46.8	-25.0	-21.8	
10.37	47.5	V	3.0	7.9	38.3	1.0	45.2	-25.0	-20.2	
High Channel (2687.5MHz)										
5.38	44.7	V	3.0	12.3	40.2	1.0	51.5	-25.0	-26.5	
8.06	46.0	V	3.0	9.1	38.8	1.0	46.9	-25.0	-21.9	
10.75	46.2	V	3.0	8.2	38.3	1.0	45.5	-25.0	-20.5	

Rev: 10/28/15

LTE B41 5MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 10MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2591MHz)										
5.00	43.9	H	3.0	11.3	40.3	1.0	50.5	-25.0	-25.5	
7.50	46.5	H	3.0	10.1	38.9	1.0	48.0	-25.0	-23.0	
10.00	47.6	H	3.0	8.4	38.3	1.0	45.8	-25.0	-20.8	
Mid Channel (2593MHz)										
5.19	43.4	H	3.0	10.5	40.3	1.0	49.8	-25.0	-24.8	
7.78	45.8	H	3.0	9.1	38.9	1.0	46.9	-25.0	-21.9	
10.37	47.6	H	3.0	7.9	38.3	1.0	45.3	-25.0	-20.3	
High Channel (2685MHz)										
5.37	45.2	H	3.0	11.9	40.2	1.0	51.2	-25.0	-26.2	
8.06	45.9	H	3.0	9.6	38.8	1.0	46.6	-25.0	-21.6	
10.74	47.9	H	3.0	7.8	38.3	1.0	45.1	-25.0	-20.1	
Low Channel (2498.5MHz)										
5.00	42.9	V	3.0	10.4	40.3	1.0	49.6	-25.0	-24.6	
7.50	46.8	V	3.0	10.6	38.9	1.0	48.5	-25.0	-23.5	
10.00	47.1	V	3.0	7.9	38.3	1.0	45.2	-25.0	-20.2	
Mid Channel (2593MHz)										
5.19	42.4	V	3.0	9.6	40.3	1.0	48.9	-25.0	-23.9	
7.78	45.9	V	3.0	8.4	38.9	1.0	47.3	-25.0	-22.3	
10.37	47.4	V	3.0	7.8	38.3	1.0	45.1	-25.0	-20.1	
High Channel (2685MHz)										
5.37	45.1	V	3.0	12.0	40.2	1.0	51.2	-25.0	-26.2	
8.06	46.4	V	3.0	9.6	38.8	1.0	47.4	-25.0	-22.4	
10.74	48.4	V	3.0	8.4	38.3	1.0	45.7	-25.0	-20.7	

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LTE B41 10MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 10MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2591MHz)										
5.00	43.8	H	3.0	11.2	40.3	1.0	50.5	-25.0	-25.5	
7.50	45.6	H	3.0	9.1	38.9	1.0	47.0	-25.0	-22.0	
10.00	47.7	H	3.0	8.5	38.3	1.0	45.9	-25.0	-20.9	
Mid Channel (2593MHz)										
5.19	43.5	H	3.0	10.9	40.3	1.0	49.4	-25.0	-24.4	
7.78	45.9	H	3.0	9.2	38.9	1.0	47.0	-25.0	-22.0	
10.37	47.7	H	3.0	8.1	38.3	1.0	45.4	-25.0	-20.4	
High Channel (2685MHz)										
5.37	45.2	H	3.0	12.0	40.2	1.0	51.2	-25.0	-26.2	
8.06	46.0	H	3.0	9.9	38.8	1.0	46.7	-25.0	-21.7	
10.74	47.6	H	3.0	7.5	38.3	1.0	44.8	-25.0	-19.8	
Low Channel (2498.5MHz)										
5.00	43.5	V	3.0	11.0	40.3	1.0	50.2	-25.0	-25.2	
7.50	46.6	V	3.0	10.4	38.9	1.0	48.4	-25.0	-23.4	
10.00	46.8	V	3.0	7.6	38.3	1.0	44.8	-25.0	-19.8	
Mid Channel (2593MHz)										
5.19	43.4	V	3.0	10.6	40.3	1.0	49.9	-25.0	-24.9	
7.78	45.6	V	3.0	9.1	38.9	1.0	47.0	-25.0	-22.0	
10.37	47.4	V	3.0	7.8	38.3	1.0	45.2	-25.0	-20.2	
High Channel (2685MHz)										
5.37	45.6	V	3.0	12.5	40.2	1.0	51.7	-25.0	-26.7	
8.06	46.5	V	3.0	9.6	38.8	1.0	47.4	-25.0	-22.4	
10.74	47.4	V	3.0	7.5	38.3	1.0	44.8	-25.0	-19.8	

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LTE B41 10MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 15MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2503.5MHz)										
5.01	-63.6	H	3.0	-10.9	40.3	1.0	-50.2	25.0	25.2	
7.91	-66.1	H	3.0	-9.6	38.9	1.0	-47.5	25.0	-22.5	
10.01	-67.4	H	3.0	-8.2	38.3	1.0	-45.6	25.0	-20.6	
5.01	-63.5	V	3.0	-10.9	40.3	1.0	-50.2	25.0	25.2	
7.91	-66.2	V	3.0	-10.0	38.9	1.0	-47.8	25.0	-22.9	
10.01	-67.4	V	3.0	-8.2	38.3	1.0	-45.5	25.0	-20.5	
Mid Channel (2593MHz)										
5.19	-62.6	H	3.0	-9.7	40.3	1.0	-49.0	25.0	-24.0	
7.78	-66.0	H	3.0	-9.2	38.9	1.0	-47.1	25.0	-22.1	
10.37	-67.6	H	3.0	-8.0	38.3	1.0	-45.3	25.0	-20.3	
5.19	-63.5	V	3.0	-10.6	40.3	1.0	-50.0	25.0	-25.0	
7.78	-66.0	V	3.0	-9.5	38.9	1.0	-47.4	25.0	-22.4	
10.37	-67.3	V	3.0	-7.8	38.3	1.0	-45.1	25.0	-20.1	
High Channel (2682.5MHz)										
5.37	-65.0	H	3.0	-11.8	40.2	1.0	-51.0	25.0	-26.0	
8.05	-66.6	H	3.0	-9.3	38.8	1.0	-47.4	25.0	-22.4	
10.73	-67.9	H	3.0	-7.8	38.3	1.0	-45.1	25.0	-20.1	
5.37	-64.6	V	3.0	-11.5	40.2	1.0	-50.7	25.0	-25.7	
8.05	-66.1	V	3.0	-9.3	38.8	1.0	-47.1	25.0	-22.1	
10.73	-67.2	V	3.0	-7.3	38.3	1.0	-44.6	25.0	-19.6	

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LTE B41 15MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 15MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2503.5MHz)										
5.01	-63.5	H	3.0	-10.9	40.3	1.0	-50.1	25.0	-25.1	
7.91	-66.9	H	3.0	-10.4	38.9	1.0	-48.3	25.0	-23.3	
10.01	-67.4	H	3.0	-8.2	38.3	1.0	-45.5	25.0	-20.5	
5.01	-63.2	V	3.0	-10.7	40.3	1.0	-50.0	25.0	-25.0	
7.91	-66.0	V	3.0	-9.8	38.9	1.0	-47.7	25.0	-22.7	
10.01	-67.2	V	3.0	-8.0	38.3	1.0	-45.3	25.0	-20.3	
Mid Channel (2593MHz)										
5.19	-63.7	H	3.0	-10.8	40.3	1.0	-50.1	25.0	-25.1	
7.78	-65.5	H	3.0	-8.7	38.9	1.0	-46.6	25.0	-21.6	
10.37	-67.7	H	3.0	-8.1	38.3	1.0	-45.4	25.0	-20.4	
5.19	-63.0	V	3.0	-10.2	40.3	1.0	-49.5	25.0	-24.5	
7.78	-66.2	V	3.0	-9.7	38.9	1.0	-47.6	25.0	-22.6	
10.37	-67.3	V	3.0	-7.7	38.3	1.0	-45.0	25.0	-20.0	
High Channel (2682.5MHz)										
5.37	-64.3	H	3.0	-11.1	40.2	1.0	-50.3	25.0	-25.3	
8.05	-66.4	H	3.0	-9.3	38.8	1.0	-47.1	25.0	-22.1	
10.73	-67.9	H	3.0	-7.8	38.3	1.0	-45.1	25.0	-20.1	
5.37	-64.5	V	3.0	-11.5	40.2	1.0	-50.7	25.0	-25.7	
8.05	-66.1	V	3.0	-9.3	38.8	1.0	-47.1	25.0	-22.1	
10.73	-68.0	V	3.0	-8.1	38.3	1.0	-45.4	25.0	-20.4	

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LTE B41 15MHz 16QAM

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 20MHz QPSK

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
5.01	-63.3	H	3.0	-10.7	40.3	1.0	-49.9	25.0	-24.9	
7.92	-66.7	H	3.0	-10.2	38.9	1.0	-48.1	25.0	-23.1	
10.02	-67.6	H	3.0	-8.4	38.3	1.0	-45.7	25.0	-20.7	
5.01	-63.5	V	3.0	-11.0	40.3	1.0	-50.2	25.0	-25.2	
7.92	-66.2	V	3.0	-9.3	38.8	1.0	-47.8	25.0	-22.8	
10.02	-67.4	V	3.0	-8.2	38.3	1.0	-45.5	25.0	-20.5	
Mid Channel (2593MHz)										
5.19	-63.2	H	3.0	-10.3	40.3	1.0	-49.6	25.0	-24.6	
7.78	-66.0	H	3.0	-9.3	38.9	1.0	-47.1	25.0	-22.1	
10.37	-67.5	H	3.0	-7.9	38.3	1.0	-45.2	25.0	-20.2	
5.19	-63.0	V	3.0	-10.2	40.3	1.0	-49.5	25.0	-24.5	
7.78	-66.0	V	3.0	-9.5	38.9	1.0	-47.3	25.0	-22.3	
10.37	-67.4	V	3.0	-7.8	38.3	1.0	-45.2	25.0	-20.2	
High Channel (2680MHz)										
5.36	-63.6	H	3.0	-10.4	40.2	1.0	-49.6	25.0	-24.6	
8.04	-65.8	H	3.0	-9.8	38.8	1.0	-46.6	25.0	-21.6	
10.72	-67.9	H	3.0	-7.9	38.3	1.0	-45.2	25.0	-20.2	
5.36	-64.7	V	3.0	-11.7	40.2	1.0	-50.9	25.0	-25.9	
8.04	-66.6	V	3.0	-9.7	38.8	1.0	-47.5	25.0	-22.5	
10.72	-67.8	V	3.0	-8.0	38.3	1.0	-45.3	25.0	-20.3	

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LTE B41 20MHz QPSK

High Frequency Substitution Measurement
UL RTP Radiated Chamber

Company: SOMC
 Project #: 16J23633N
 Date: 08/18/2016
 Test Engineer: Brian Kiewra / John Manser
 Configuration: Unit with ear-buds and charger (LTE #1)
 Mode: LTE Band 41, 20MHz 16QAM

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber N-RTP	3m Chamber N-RTP	Filter	LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
5.01	-63.2	H	3.0	-10.6	40.3	1.0	-49.8	25.0	-24.8	
7.92	-66.4	H	3.0	-9.9	38.9	1.0	-47.8	25.0	-22.8	
10.02	-67.6	H	3.0	-8.4	38.3	1.0	-45.8	25.0	-20.8	
5.01	-63.3	V	3.0	-10.8	40.3	1.0	-50.0	25.0	-25.0	
7.92	-66.5	V	3.0	-10.3	38.9	1.0	-47.8	25.0	-22.8	
10.02	-67.3	V	3.0	-8.1	38.3	1.0	-45.4	25.0	-20.4	
Mid Channel (2593MHz)										
5.19	-63.5	H	3.0	-10.6	40.3	1.0	-49.9	25.0	-24.9	
7.78	-66.2	H	3.0	-9.5	38.9	1.0	-47.3	25.0	-22.3	
10.37	-67.1	H	3.0	-7.5	38.3	1.0	-44.8	25.0	-19.8	
5.19	-62.7	V	3.0	-9.9	40.3	1.0	-49.2	25.0	-24.2	
7.78	-65.7	V	3.0	-9.2	38.9	1.0	-47.0	25.0	-22.0	
10.37	-66.5	V	3.0	-6.9	38.3	1.0	-44.3	25.0	-19.3	
High Channel (2680MHz)										
5.36	-64.5	H	3.0	-11.3	40.2	1.0	-50.5	25.0	-25.5	
8.04	-65.8	H	3.0	-8.7	38.8	1.0	-46.3	25.0	-21.3	
10.72	-67.7	H	3.0	-7.7	38.3	1.0	-45.0	25.0	-20.0	
5.36	-65.1	V	3.0	-12.0	40.2	1.0	-51.2	25.0	-26.2	
8.04	-66.8	V	3.0	-9.9	38.8	1.0	-47.7	25.0	-22.7	
10.72	-67.6	V	3.0	-7.6	38.3	1.0	-45.0	25.0	-20.0	

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LTE B41 20MHz 16QAM