

9.3.5. LTE BAND 41

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:

Project #:

Date: 03/14/18

Test Engineer: 36648

Configuration: EUT only

Mode: LTE Band 41, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber C

Pre-amplifier

3m Chamber C

Filter

Filter

Limit

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 (2500MHz)										
5.91	66.7	H	3.0	-13.8	33.4	1.0	-46.2	-25.0	-21.2	
7.52	68.0	H	3.0	-10.4	33.0	1.0	-42.4	-25.0	-17.4	
10.02	68.7	H	3.0	-7.9	32.7	1.0	-39.6	-25.0	-14.6	
5.91	66.2	V	3.0	-13.4	33.4	1.0	-45.8	-25.0	-20.8	
7.52	66.6	V	3.0	-9.0	33.0	1.0	-41.0	-25.0	-16.0	
10.02	69.2	V	3.0	-6.1	32.7	1.0	-39.8	-25.0	-14.8	
Mid Channel (2500MHz)										
5.19	67.8	H	3.0	-14.6	33.4	1.0	-46.9	-25.0	-21.9	
7.78	67.9	H	3.0	-10.0	33.0	1.0	-42.0	-25.0	-17.0	
10.37	69.8	H	3.0	-8.6	32.4	1.0	-40.1	-25.0	-15.1	
5.19	66.5	V	3.0	-13.3	33.4	1.0	-45.7	-25.0	-20.7	
7.78	67.8	V	3.0	-9.8	33.0	1.0	-41.8	-25.0	-16.8	
10.37	67.6	V	3.0	-6.3	32.4	1.0	-37.7	-25.0	-12.7	
High Channel (2600MHz)										
5.36	66.4	H	3.0	-12.8	33.3	1.0	-45.2	-25.0	-20.2	
8.04	67.9	H	3.0	-9.6	33.0	1.0	-41.6	-25.0	-16.6	
10.72	69.5	H	3.0	-8.0	32.2	1.0	-39.5	-25.0	-14.5	
5.36	66.9	V	3.0	-13.4	33.3	1.0	-45.7	-25.0	-20.7	
8.04	68.0	V	3.0	-9.7	33.0	1.0	-41.7	-25.0	-16.7	
10.72	68.3	V	3.0	-6.7	32.2	1.0	-38.0	-25.0	-13.0	

Rev: 05.21.15

High Frequency Substitution Measurement

UL Fremont Radiated Chamber

Company:

Project #:

Date: 03/14/18

Test Engineer: 36648

Configuration: EUT only

Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber C

Pre-amplifier

3m Chamber C

Filter

Filter

Limit

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 (2500MHz)										
5.91	66.7	H	3.0	-13.8	33.4	1.0	-46.3	-25.0	-21.3	
7.52	68.5	H	3.0	-10.9	33.0	1.0	-43.0	-25.0	-18.0	
10.02	68.7	H	3.0	-7.9	32.7	1.0	-39.6	-25.0	-14.6	
5.91	65.4	V	3.0	-12.6	33.4	1.0	-45.0	-25.0	-20.0	
7.52	67.7	V	3.0	-10.1	33.0	1.0	-42.1	-25.0	-17.1	
10.02	68.3	V	3.0	-7.2	32.7	1.0	-38.9	-25.0	-13.9	
Mid Channel (2500MHz)										
5.19	67.3	H	3.0	-14.0	33.4	1.0	-46.4	-25.0	-21.4	
7.78	67.3	H	3.0	-9.4	33.0	1.0	-41.4	-25.0	-16.4	
10.37	69.0	H	3.0	-8.8	32.4	1.0	-38.3	-25.0	-13.3	
5.19	66.6	V	3.0	-13.4	33.4	1.0	-45.8	-25.0	-20.8	
7.78	67.8	V	3.0	-9.8	33.0	1.0	-41.8	-25.0	-16.8	
10.37	68.6	V	3.0	-7.2	32.4	1.0	-38.7	-25.0	-13.7	
High Channel (2600MHz)										
5.36	67.0	H	3.0	-13.4	33.3	1.0	-45.7	-25.0	-20.7	
8.04	67.9	H	3.0	-9.7	33.0	1.0	-41.7	-25.0	-16.7	
10.72	67.8	H	3.0	-6.3	32.2	1.0	-37.5	-25.0	-12.5	
5.36	67.0	V	3.0	-13.5	33.3	1.0	-45.8	-25.0	-20.8	
8.04	68.6	V	3.0	-10.3	33.0	1.0	-42.3	-25.0	-17.3	
10.72	68.6	V	3.0	-7.1	32.2	1.0	-38.3	-25.0	-13.3	

Rev: 05.21.15

LTE B41 20MHz QPSK

LTE B41 20MHz 16QAM

9.3.6. LTE BAND 66

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 36648
Configuration: EUT only
Mode: LTE Band 66, 20MHz QPSK
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

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 (1720.0MHz)										
3.42	65.8	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
5.13	64.9	H	3.0	-11.7	38.7	1.0	-49.4	-13.0	-36.4	
6.84	65.3	H	3.0	-8.4	38.1	1.0	-45.5	-13.0	-32.5	
3.42	66.7	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
5.13	65.6	V	3.0	-12.8	38.7	1.0	-50.4	-13.0	-37.4	
6.84	65.7	V	3.0	-9.1	38.1	1.0	-46.2	-13.0	-33.2	
Mid Channel (1745.0MHz)										
3.49	65.5	H	3.0	-16.9	38.5	1.0	-53.6	-13.0	-40.6	
5.24	66.1	H	3.0	-12.7	38.7	1.0	-50.4	-13.0	-37.4	
6.98	66.5	H	3.0	-9.4	38.1	1.0	-46.5	-13.0	-33.5	
3.49	65.5	V	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
5.24	65.5	V	3.0	-12.5	38.7	1.0	-50.2	-13.0	-37.2	
6.98	66.1	V	3.0	-9.2	38.1	1.0	-46.3	-13.0	-33.3	
High Channel (1770.0MHz)										
3.56	66.1	H	3.0	-16.4	38.6	1.0	-54.0	-13.0	-41.0	
5.34	67.5	H	3.0	-13.9	38.6	1.0	-51.5	-13.0	-38.5	
7.12	66.1	H	3.0	-8.8	38.9	1.0	-45.8	-13.0	-32.8	
3.56	66.6	V	3.0	-17.1	38.6	1.0	-54.7	-13.0	-41.7	
5.34	66.6	V	3.0	-13.3	38.6	1.0	-51.0	-13.0	-38.0	
7.12	66.1	V	3.0	-9.0	38.9	1.0	-46.0	-13.0	-33.0	

Rev: 02.24.17

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/15/18
Test Engineer: 36648
Configuration: EUT only
Mode: LTE Band 66, 20MHz 16QAM
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

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 (1720.0MHz)										
3.42	65.8	H	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
5.13	65.5	H	3.0	-12.3	38.7	1.0	-50.0	-13.0	-37.0	
6.84	65.5	H	3.0	-8.6	38.1	1.0	-45.8	-13.0	-32.8	
3.42	63.9	V	3.0	-14.8	38.5	1.0	-52.4	-13.0	-39.4	
5.13	64.9	V	3.0	-12.1	38.7	1.0	-49.8	-13.0	-36.8	
6.84	65.2	V	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
Mid Channel (1745.0MHz)										
3.49	65.4	H	3.0	-16.0	38.5	1.0	-53.5	-13.0	-40.5	
5.24	65.6	H	3.0	-12.2	38.7	1.0	-49.9	-13.0	-36.9	
6.98	64.0	H	3.0	-9.9	38.1	1.0	-44.0	-13.0	-31.0	
3.49	66.1	V	3.0	-16.8	38.5	1.0	-54.4	-13.0	-41.4	
5.24	66.9	V	3.0	-12.9	38.7	1.0	-50.5	-13.0	-37.5	
6.98	65.4	V	3.0	-8.5	38.1	1.0	-45.6	-13.0	-32.6	
High Channel (1770.0MHz)										
3.56	66.5	H	3.0	-16.3	38.6	1.0	-53.9	-13.0	-40.9	
5.34	66.4	H	3.0	-12.8	38.6	1.0	-50.5	-13.0	-37.5	
7.12	66.4	H	3.0	-9.0	38.9	1.0	-46.0	-13.0	-33.0	
3.56	66.3	V	3.0	-16.9	38.6	1.0	-54.4	-13.0	-41.4	
5.34	66.7	V	3.0	-13.5	38.6	1.0	-51.1	-13.0	-38.1	
7.12	67.2	V	3.0	-10.1	38.9	1.0	-47.1	-13.0	-34.1	

Rev: 02.24.17

LTE B66 20MHz QPSK

LTE B66 20MHz 16QAM

9.4.1. LTE BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

10641

EUT only

LTE Band 2, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

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 (1800MHz)										
3.72	62.2	H	3.0	-12.2	38.6	1.0	49.8	-13.0	-36.8	
5.58	64.7	H	3.0	-10.6	38.6	1.0	48.2	-13.0	-35.2	
7.44	67.2	H	3.0	-9.5	37.8	1.0	46.3	-13.0	-33.3	
3.72	62.9	V	3.0	-12.9	38.6	1.0	50.5	-13.0	-37.5	
5.58	65.1	V	3.0	-11.3	38.6	1.0	48.8	-13.0	-35.8	
7.44	66.5	V	3.0	-9.0	37.8	1.0	45.8	-13.0	-32.8	
Mid Channel (1800MHz)										
3.76	62.0	H	3.0	-11.9	38.6	1.0	49.5	-13.0	-36.5	
5.64	64.3	H	3.0	-10.1	38.5	1.0	47.6	-13.0	-34.6	
7.52	66.3	H	3.0	-8.5	37.7	1.0	45.2	-13.0	-32.2	
3.76	61.9	V	3.0	-11.8	38.6	1.0	49.4	-13.0	-36.4	
5.64	64.6	V	3.0	-10.6	38.5	1.0	48.2	-13.0	-35.2	
7.52	67.1	V	3.0	-9.5	37.7	1.0	46.2	-13.0	-33.2	
High Channel (1900MHz)										
3.80	62.4	H	3.0	-12.2	38.6	1.0	49.8	-13.0	-36.8	
5.70	65.1	H	3.0	-10.7	38.5	1.0	48.2	-13.0	-35.2	
7.60	67.1	H	3.0	-9.2	37.7	1.0	45.9	-13.0	-32.9	
3.80	63.4	V	3.0	-13.2	38.6	1.0	50.8	-13.0	-37.8	
5.70	63.9	V	3.0	-9.8	38.5	1.0	47.3	-13.0	-34.3	
7.60	66.7	V	3.0	-9.0	37.7	1.0	45.7	-13.0	-32.7	

Rev. 05.21.15

LTE B2 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

10641

EUT Only

LTE Band 2, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

Pre-amplifier

Filter

Limit

3m Chamber E

3m Chamber E

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 (1800MHz)										
3.72	62.3	H	3.0	-12.3	38.6	1.0	49.9	-13.0	-36.9	
5.58	64.8	H	3.0	-10.7	38.6	1.0	48.3	-13.0	-35.3	
7.44	67.0	H	3.0	-9.3	37.8	1.0	46.1	-13.0	-33.1	
3.72	62.9	V	3.0	-12.5	38.6	1.0	50.2	-13.0	-37.2	
5.58	63.2	V	3.0	-9.4	38.6	1.0	47.0	-13.0	-34.0	
7.44	64.7	V	3.0	-7.2	37.8	1.0	44.0	-13.0	-31.0	
Mid Channel (1800MHz)										
3.76	62.1	H	3.0	-12.0	38.6	1.0	49.6	-13.0	-36.6	
5.64	64.1	H	3.0	-9.9	38.5	1.0	47.4	-13.0	-34.4	
7.52	67.0	H	3.0	-9.1	37.7	1.0	45.9	-13.0	-32.9	
3.76	62.6	V	3.0	-12.6	38.6	1.0	50.2	-13.0	-37.2	
5.64	64.8	V	3.0	-10.9	38.5	1.0	48.4	-13.0	-35.4	
7.52	66.2	V	3.0	-8.6	37.7	1.0	45.3	-13.0	-32.3	
High Channel (1900MHz)										
3.80	62.4	H	3.0	-12.1	38.6	1.0	49.8	-13.0	-36.8	
5.70	65.2	H	3.0	-10.8	38.5	1.0	48.3	-13.0	-35.3	
7.60	67.0	H	3.0	-9.1	37.7	1.0	45.8	-13.0	-32.8	
3.80	62.3	V	3.0	-12.1	38.6	1.0	49.8	-13.0	-36.8	
5.70	63.3	V	3.0	-9.3	38.5	1.0	46.8	-13.0	-33.8	
7.60	67.2	V	3.0	-9.5	37.7	1.0	46.2	-13.0	-33.2	

Rev. 05.21.15

LTE B2 20MHz 16QAM

9.4.2. LTE BAND 7

Company:

Project #:

Date: 03/15/18

Test Engineer: 10641

Configuration: EUT Only

Mode: LTE Band 7, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2515MHz)										
5.02	64.0	H	3.0	-11.1	38.7	1.0	48.8	-25.0	-23.8	
7.53	66.1	H	3.0	-8.3	37.7	1.0	45.6	-25.0	-20.0	
10.04	68.1	H	3.0	-7.2	36.2	1.0	42.4	-25.0	-17.4	
5.02	64.1	V	3.0	-11.4	38.7	1.0	49.1	-25.0	-24.1	
7.53	66.0	V	3.0	-8.4	37.7	1.0	45.2	-25.0	-20.2	
10.04	67.5	V	3.0	-6.7	36.2	1.0	41.8	-25.0	-16.8	
Mid Channel (2535MHz)										
5.07	64.2	H	3.0	-11.2	38.7	1.0	48.9	-25.0	-23.9	
7.61	66.5	H	3.0	-8.6	37.7	1.0	45.3	-25.0	-20.3	
10.14	68.2	H	3.0	-7.3	36.2	1.0	42.5	-25.0	-17.5	
5.07	64.0	V	3.0	-11.3	38.7	1.0	49.0	-25.0	-24.0	
7.61	66.0	V	3.0	-8.3	37.7	1.0	45.0	-25.0	-20.0	
10.14	67.1	V	3.0	-6.2	36.2	1.0	41.4	-25.0	-16.4	
High Channel (2565MHz)										
5.12	64.3	H	3.0	-11.2	38.7	1.0	48.9	-25.0	-23.9	
7.68	65.3	H	3.0	-7.3	37.6	1.0	44.0	-25.0	-19.0	
10.24	67.9	H	3.0	-6.9	36.3	1.0	42.1	-25.0	-17.1	
5.12	64.4	V	3.0	-11.6	38.7	1.0	49.3	-25.0	-24.3	
7.68	65.3	V	3.0	-7.4	37.6	1.0	44.1	-25.0	-19.1	
10.24	67.8	V	3.0	-6.7	36.3	1.0	42.0	-25.0	-17.0	

Rev. 05.21.15

Company:

Project #:

Date: 03/15/18

Test Engineer: 10641

Configuration: EUT Only

Mode: LTE Band 7, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2515MHz)										
5.02	64.1	H	3.0	-11.2	38.7	1.0	48.9	-25.0	-23.9	
7.53	65.5	H	3.0	-7.7	37.7	1.0	44.4	-25.0	-19.4	
10.04	67.7	H	3.0	-6.8	36.2	1.0	42.0	-25.0	-17.0	
5.02	64.9	V	3.0	-12.3	38.7	1.0	50.0	-25.0	-25.0	
7.53	65.6	V	3.0	-8.0	37.7	1.0	44.7	-25.0	-19.7	
10.04	68.0	V	3.0	-7.2	36.2	1.0	42.4	-25.0	-17.4	
Mid Channel (2535MHz)										
5.07	64.4	H	3.0	-11.4	38.7	1.0	49.1	-25.0	-24.1	
7.61	67.3	H	3.0	-9.4	37.7	1.0	46.1	-25.0	-21.1	
10.14	68.8	H	3.0	-7.9	36.2	1.0	43.1	-25.0	-18.1	
5.07	65.3	V	3.0	-12.5	38.7	1.0	50.2	-25.0	-25.2	
7.61	67.2	V	3.0	-9.3	37.7	1.0	46.2	-25.0	-21.2	
10.14	67.4	V	3.0	-6.5	36.2	1.0	41.7	-25.0	-16.7	
High Channel (2565MHz)										
5.12	64.0	H	3.0	-10.9	38.7	1.0	48.6	-25.0	-23.6	
7.68	65.4	H	3.0	-7.4	37.6	1.0	44.0	-25.0	-19.0	
10.24	66.9	H	3.0	-5.9	36.3	1.0	41.2	-25.0	-16.2	
5.12	63.6	V	3.0	-10.8	38.7	1.0	48.5	-25.0	-23.5	
7.68	65.7	V	3.0	-7.8	37.6	1.0	44.5	-25.0	-19.5	
10.24	67.0	V	3.0	-6.0	36.3	1.0	41.3	-25.0	-16.3	

Rev. 05.21.15

LTE B7 20MHz QPSK

LTE B7 20MHz 16QAM

9.4.3. LTE BAND 25

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/16/18

10641

EUT Only

LTE Band 25, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (180MHz)										
3.72	62.7	H	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.58	64.1	H	3.0	-10.0	38.6	1.0	-47.5	-13.0	-34.5	
7.44	67.0	H	3.0	-9.3	37.8	1.0	-46.1	-13.0	-33.1	
3.72	62.2	V	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.58	64.3	V	3.0	-10.5	38.6	1.0	-48.1	-13.0	-35.1	
7.44	65.1	V	3.0	-7.5	37.8	1.0	-44.3	-13.0	-31.3	
Mid Channel (180.25MHz)										
3.77	61.3	H	3.0	-11.2	38.6	1.0	-48.8	-13.0	-35.8	
5.65	63.7	H	3.0	-9.5	38.5	1.0	-47.0	-13.0	-34.0	
7.53	66.7	H	3.0	-8.4	37.7	1.0	-45.1	-13.0	-32.1	
3.77	61.9	V	3.0	-11.9	38.6	1.0	-49.5	-13.0	-36.5	
5.65	64.8	V	3.0	-10.7	38.5	1.0	-48.2	-13.0	-35.2	
7.53	67.0	V	3.0	-8.4	37.7	1.0	-46.1	-13.0	-33.1	
High Channel (190.5MHz)										
3.81	63.2	H	3.0	-13.0	38.6	1.0	-50.7	-13.0	-37.7	
5.72	63.8	H	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.62	66.7	H	3.0	-8.8	37.7	1.0	-45.5	-13.0	-32.5	
3.81	63.0	V	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
5.72	63.8	V	3.0	-9.7	38.5	1.0	-47.2	-13.0	-34.2	
7.62	66.3	V	3.0	-8.6	37.7	1.0	-45.3	-13.0	-32.3	

Rev. 05.21.15

LTE B25 20MHz QPSK

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/16/18

10641

EUT Only

LTE Band 25, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (180MHz)										
3.72	62.1	H	3.0	-12.1	38.6	1.0	-49.8	-13.0	-36.8	
5.58	64.4	H	3.0	-10.3	38.6	1.0	-47.8	-13.0	-34.8	
7.44	66.9	H	3.0	-9.2	37.8	1.0	-46.0	-13.0	-33.0	
3.72	61.3	V	3.0	-11.3	38.6	1.0	-49.0	-13.0	-36.0	
5.58	64.9	V	3.0	-11.1	38.6	1.0	-48.6	-13.0	-35.6	
7.44	66.6	V	3.0	-8.1	37.8	1.0	-45.9	-13.0	-32.9	
Mid Channel (180.25MHz)										
3.77	61.8	H	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
5.65	62.8	H	3.0	-8.5	38.5	1.0	-46.1	-13.0	-33.1	
7.53	66.7	H	3.0	-8.8	37.7	1.0	-45.6	-13.0	-32.6	
3.77	61.9	V	3.0	-11.8	38.6	1.0	-49.4	-13.0	-36.4	
5.65	63.9	V	3.0	-9.9	38.5	1.0	-47.5	-13.0	-34.5	
7.53	67.2	V	3.0	-8.5	37.7	1.0	-46.3	-13.0	-33.3	
High Channel (190.5MHz)										
3.81	62.7	H	3.0	-12.4	38.6	1.0	-50.1	-13.0	-37.1	
5.72	65.4	H	3.0	-11.0	38.5	1.0	-48.5	-13.0	-35.5	
7.62	67.1	H	3.0	-9.1	37.7	1.0	-45.8	-13.0	-32.8	
3.81	62.1	V	3.0	-11.9	38.6	1.0	-49.6	-13.0	-36.6	
5.72	65.0	V	3.0	-10.9	38.5	1.0	-48.4	-13.0	-35.4	
7.62	66.5	V	3.0	-8.8	37.7	1.0	-45.5	-13.0	-32.5	

Rev. 05.21.15

LTE B25 20MHz 16QAM

9.4.4. LTE BAND 30

High Frequency Substitution Measurement UL Fremont Radiated Chamber												High Frequency Substitution Measurement UL Fremont Radiated Chamber											
Company: Project #: Date: 03/16/18 Test Engineer: 10641 Configuration: EUT only Mode: LTE Band 30, 10MHz QPSK Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable												Company: Project #: Date: 03/16/18 Test Engineer: 10641 Configuration: EUT only Mode: LTE Band 30, 10MHz 16QAM Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable											
Chamber			Pre-amplifier			Filter			Limit			Chamber			Pre-amplifier			Filter			Limit		
3m Chamber E			3m Chamber E			Filter			LTE B30			3m Chamber E			3m Chamber E			Filter			LTE B30		
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	
Mid Channel (2310MHz)												Mid Channel (2310MHz)											
4.62	67.0	H	3.0	-13.2	37.9	1.0	-50.2	-40.0	-10.2			4.62	65.9	H	3.0	-12.3	37.9	1.0	-49.1	-40.0	-9.1		
6.93	70.1	H	3.0	-11.4	36.5	1.0	-44.9	-40.0	-4.9			6.93	70.4	H	3.0	-11.8	36.5	1.0	-47.2	-40.0	-7.2		
9.24	72.5	H	3.0	-10.9	34.9	1.0	-44.8	-40.0	-4.8			9.24	72.2	H	3.0	-10.7	34.9	1.0	-44.5	-40.0	-4.5		
4.62	66.2	V	3.0	-12.5	37.9	1.0	-49.4	-40.0	-9.4			4.62	66.9	V	3.0	-13.2	37.9	1.0	-50.1	-40.0	-10.1		
6.93	69.4	V	3.0	-9.9	36.5	1.0	-43.4	-40.0	-3.4			6.93	69.8	V	3.0	-10.3	36.5	1.0	-45.8	-40.0	-5.8		
9.24	72.5	V	3.0	-10.7	34.9	1.0	-44.6	-40.0	-4.6			9.24	73.1	V	3.0	-11.3	34.9	1.0	-45.2	-40.0	-5.2		
Rev. 05.21.15												Rev. 05.21.15											
LTE B30 10MHz QPSK												LTE B30 10MHz 16QAM											

9.4.5. LTE BAND 41

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

38602

EUT ONLY

LTE Band 41, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber C

Pre-amplifier

3m Chamber C

Filter

Filter

Limit

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 (250MHz)										
5.01	65.9	H	3.0	-13.0	33.4	1.0	45.4	-25.0	-20.4	
7.52	67.0	H	3.0	-9.4	33.0	1.0	41.5	-25.0	-16.5	
10.02	67.7	H	3.0	-6.9	32.7	1.0	38.6	-25.0	-13.6	
5.01	65.2	V	3.0	-12.4	33.4	1.0	44.8	-25.0	-39.8	
7.52	66.4	V	3.0	-8.8	33.0	1.0	40.8	-25.0	-15.8	
10.02	67.2	V	3.0	-6.1	32.7	1.0	37.8	-25.0	-12.8	
Mid Channel (250MHz)										
5.91	65.9	H	3.0	-12.7	33.4	1.0	45.0	-25.0	-20.0	
7.78	67.3	H	3.0	-9.4	33.0	1.0	41.4	-25.0	-16.4	
10.37	66.3	H	3.0	-5.2	32.4	1.0	36.6	-25.0	-11.6	
5.91	65.5	V	3.0	-12.3	33.4	1.0	44.7	-25.0	-39.7	
7.78	66.6	V	3.0	-8.8	33.0	1.0	40.8	-25.0	-15.8	
10.37	67.0	V	3.0	-5.7	32.4	1.0	37.1	-25.0	-12.1	
High Channel (260MHz)										
5.36	67.2	H	3.0	-13.6	33.3	1.0	45.9	-25.0	-20.9	
8.04	67.0	H	3.0	-8.7	33.0	1.0	40.7	-25.0	-15.7	
10.72	67.4	H	3.0	-5.9	32.2	1.0	37.1	-25.0	-12.1	
5.36	66.3	V	3.0	-12.8	33.3	1.0	45.1	-25.0	-30.1	
8.04	67.0	V	3.0	-8.7	33.0	1.0	40.6	-25.0	-15.6	
10.72	66.6	V	3.0	-5.1	32.2	1.0	36.3	-25.0	-11.3	

Rev: 05.21.15

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

38602

EUT ONLY

LTE Band 41, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber C

Pre-amplifier

3m Chamber C

Filter

Filter

Limit

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 (250MHz)										
5.01	66.1	H	3.0	-13.2	33.4	1.0	45.6	-25.0	-20.6	
7.52	67.2	H	3.0	-9.6	33.0	1.0	41.7	-25.0	-16.7	
10.02	67.8	H	3.0	-7.0	32.7	1.0	38.7	-25.0	-13.7	
5.01	65.5	V	3.0	-12.7	33.4	1.0	45.1	-25.0	-30.1	
7.52	66.6	V	3.0	-9.0	33.0	1.0	41.0	-25.0	-16.0	
10.02	67.4	V	3.0	-6.3	32.7	1.0	38.0	-25.0	-13.0	
Mid Channel (250MHz)										
5.91	66.0	H	3.0	-12.8	33.4	1.0	45.1	-25.0	-20.1	
7.78	67.2	H	3.0	-9.3	33.0	1.0	41.3	-25.0	-16.3	
10.37	66.5	H	3.0	-5.4	32.4	1.0	36.8	-25.0	-11.8	
5.91	65.5	V	3.0	-12.7	33.4	1.0	45.1	-25.0	-30.1	
7.78	66.6	V	3.0	-8.6	33.0	1.0	40.6	-25.0	-15.6	
10.37	67.2	V	3.0	-5.9	32.4	1.0	37.3	-25.0	-12.3	
High Channel (260MHz)										
5.36	67.3	H	3.0	-13.7	33.3	1.0	46.0	-25.0	-21.0	
8.04	67.2	H	3.0	-8.9	33.0	1.0	40.9	-25.0	-15.9	
10.72	67.6	H	3.0	-6.1	32.2	1.0	37.3	-25.0	-12.3	
5.36	66.7	V	3.0	-13.2	33.3	1.0	45.5	-25.0	-30.5	
8.04	67.1	V	3.0	-8.8	33.0	1.0	40.7	-25.0	-15.7	
10.72	66.9	V	3.0	-5.4	32.2	1.0	36.6	-25.0	-11.6	

Rev: 05.21.15

LTE B41 20MHz QPSK

LTE B41 20MHz 16QAM

9.4.6. LTE BAND 66

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

10641

EUT Only

LTE Band 66, 20MHz QPSK

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720.0MHz)										
3.44	66.3	H	3.0	-17.0	38.5	1.0	54.6	-13.0	41.6	
5.16	64.1	H	3.0	-10.9	38.7	1.0	48.6	-13.0	-35.6	
6.88	66.9	H	3.0	-10.0	38.1	1.0	47.1	-13.0	-34.1	
3.44	66.4	V	3.0	-17.2	38.5	1.0	54.8	-13.0	41.8	
5.16	65.4	V	3.0	-12.5	38.7	1.0	50.2	-13.0	-37.2	
6.88	65.0	V	3.0	-8.4	38.1	1.0	45.5	-13.0	-32.5	
Mid Channel (1745.0MHz)										
3.49	65.4	H	3.0	-16.0	38.5	1.0	53.5	-13.0	40.5	
5.24	65.1	H	3.0	-11.8	38.7	1.0	49.4	-13.0	-36.4	
6.98	65.7	H	3.0	-8.6	38.1	1.0	45.6	-13.0	-31.6	
3.49	65.7	V	3.0	-16.4	38.5	1.0	53.9	-13.0	40.9	
5.24	65.3	V	3.0	-12.3	38.7	1.0	50.0	-13.0	-37.0	
6.98	65.3	V	3.0	-8.4	38.1	1.0	45.5	-13.0	-32.5	
High Channel (1770.0MHz)										
3.54	67.5	H	3.0	-17.9	38.6	1.0	55.5	-13.0	42.5	
5.31	65.2	H	3.0	-11.6	38.6	1.0	49.3	-13.0	-36.3	
7.08	66.8	H	3.0	-8.5	38.0	1.0	46.5	-13.0	-33.5	
3.54	66.6	V	3.0	-17.2	38.6	1.0	54.8	-13.0	41.8	
5.31	66.0	V	3.0	-12.8	38.6	1.0	50.5	-13.0	-37.5	
7.08	66.1	V	3.0	-9.0	38.0	1.0	46.1	-13.0	-33.1	

Rev: 02.24.17

Company:

Project #:

Date:

Test Engineer:

Configuration:

Mode:

03/15/18

10641

EUT Only

LTE Band 66, 20MHz 16QAM

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber E

Pre-amplifier

3m Chamber E

Filter

Filter

Limit

EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720.0MHz)										
3.44	67.1	H	3.0	-17.7	38.5	1.0	55.3	-13.0	42.3	
5.16	63.9	H	3.0	-10.7	38.7	1.0	48.4	-13.0	-35.4	
6.88	66.0	H	3.0	-9.1	38.1	1.0	46.2	-13.0	-33.2	
3.44	66.5	V	3.0	-17.4	38.5	1.0	54.9	-13.0	41.9	
5.16	63.3	V	3.0	-10.4	38.7	1.0	48.1	-13.0	-35.1	
6.88	65.5	V								
Mid Channel (1745.0MHz)										
3.49	66.3	H	3.0	-16.8	38.5	1.0	54.4	-13.0	41.4	
5.24	64.6	H	3.0	-11.2	38.7	1.0	48.9	-13.0	-35.9	
6.98	65.7	H	3.0	-8.6	38.1	1.0	45.6	-13.0	-32.6	
3.49	64.6	V	3.0	-15.3	38.5	1.0	52.8	-13.0	-39.8	
5.24	64.9	V	3.0	-11.8	38.7	1.0	48.5	-13.0	-32.5	
6.98	65.9	V	3.0	-9.8	38.1	1.0	46.1	-13.0	-33.1	
High Channel (1770.0MHz)										
3.54	66.3	H	3.0	-16.7	38.6	1.0	54.3	-13.0	41.3	
5.31	66.6	H	3.0	-13.1	38.6	1.0	50.7	-13.0	-37.7	
7.08	66.8	H	3.0	-9.3	38.0	1.0	46.5	-13.0	-33.5	
3.54	67.1	V	3.0	-17.7	38.6	1.0	55.2	-13.0	42.2	
5.31	65.8	V	3.0	-12.6	38.6	1.0	50.2	-13.0	-37.2	
7.08	64.7	V	3.0	-7.6	38.0	1.0	44.6	-13.0	-31.6	

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LTE B66 20MHz QPSK

LTE B66 20MHz 16QAM

10. SETUP PHOTOS

Please refer to 12204475-EP1V1 for setup photos

