9.4.3. LTE BAND 25

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 25, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	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 (1860MHz)										
3.72	-61.8	H	3.0	-11.8	38.6	1.0	-49.4	-13.0	-36.4	
5.58	-63.0	H	3.0	-8.9	38.6	1.0	-46.4	-13.0	-33.4	
7.44	-66.5	H	3.0	-8.8	37.8	1.0	-45.6	-13.0	-32.6	
3.72	-62.6	V	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.58	-63.2	V	3.0	-9.4	38.6	1.0	-47.0	-13.0	-34.0	
7.44	-67.4	V	3.0	-9.9	37.8	1.0	-46.7	-13.0	-33.7	
Mid Channel (1882.5MHz)										
3.77	-62.7	H	3.0	-12.6	38.6	1.0	-50.2	-13.0	-37.2	
5.65	-63.9	H	3.0	-9.7	38.5	1.0	-47.2	-13.0	-34.2	
7.53	-66.4	H	3.0	-8.5	37.7	1.0	-45.3	-13.0	-32.3	
3.77	-61.6	V	3.0	-11.6	38.6	1.0	-49.2	-13.0	-36.2	
5.65	-64.6	V	3.0	-10.7	38.5	1.0	-48.2	-13.0	-35.2	
7.53	-65.8	V	3.0	-8.2	37.7	1.0	-44.9	-13.0	-31.9	
High Channel (1905MHz)										
3.81	-62.0	H	3.0	-11.8	38.6	1.0	-49.4	-13.0	-36.4	
5.72	-63.8	H	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.62	-67.0	H	3.0	-9.1	37.7	1.0	-45.7	-13.0	-32.7	
3.81	-61.5	V	3.0	-11.3	38.6	1.0	-49.0	-13.0	-36.0	
5.72	-63.6	V	3.0	-9.5	38.5	1.0	-47.0	-13.0	-34.0	
7.62	-65.5	V	3.0	-7.8	37.7	1.0	-44.5	-13.0	-31.5	

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LTE B25 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 25, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	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 (1860MHz)										
3.72	-62.6	H	3.0	-12.8	34.4	1.0	-46.2	-13.0	-33.2	
5.58	-65.1	H	3.0	-11.6	34.1	1.0	-44.7	-13.0	-31.7	
7.44	-66.2	H	3.0	-9.8	33.6	1.0	-42.4	-13.0	-29.4	
3.72	-62.3	V	3.0	-12.3	34.4	1.0	-45.8	-13.0	-32.8	
5.58	-62.4	V	3.0	-8.7	34.1	1.0	-41.8	-13.0	-28.8	
7.44	-66.6	V	3.0	-10.4	33.6	1.0	-43.0	-13.0	-30.0	
Mid Channel (1882.5MHz)										
3.77	-61.4	H	3.0	-11.4	34.4	1.0	-44.8	-13.0	-31.8	
5.65	-63.8	H	3.0	-10.2	34.1	1.0	-43.3	-13.0	-30.3	
7.53	-66.2	H	3.0	-9.7	33.5	1.0	-42.2	-13.0	-29.2	
3.77	-62.6	V	3.0	-12.5	34.4	1.0	-45.9	-13.0	-32.9	
5.65	-64.1	V	3.0	-10.3	34.1	1.0	-43.5	-13.0	-30.5	
7.53	-65.0	V	3.0	-8.7	33.5	1.0	-41.2	-13.0	-28.2	
High Channel (1905MHz)										
3.81	-62.9	H	3.0	-12.7	34.4	1.0	-46.1	-13.0	-33.1	
5.72	-64.6	H	3.0	-10.9	34.1	1.0	-44.0	-13.0	-31.0	
7.62	-66.0	H	3.0	-9.4	33.4	1.0	-41.9	-13.0	-28.9	
3.81	-61.5	V	3.0	-11.2	34.4	1.0	-44.6	-13.0	-31.6	
5.72	-62.2	V	3.0	-8.3	34.1	1.0	-41.4	-13.0	-28.4	
7.62	-65.4	V	3.0	-9.0	33.4	1.0	-41.5	-13.0	-28.5	

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LTE B25 20MHz 16QAM

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9.4.4. LTE BAND 30

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/01/18
Test Engineer: 31300
Configuration: EUT only
Mode: LTE Band 30, 10MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
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
Mid Channel (2310MHz)										
4.62	-66.6	H	3.0	-12.9	37.9	1.0	-49.8	-40.0	-9.8	
6.93	-68.6	H	3.0	-9.9	36.5	1.0	-45.4	-40.0	-5.4	
9.24	-70.1	H	3.0	-8.6	34.9	1.0	-42.4	-40.0	-2.4	
4.62	-66.8	V	3.0	-13.1	37.9	1.0	-50.0	-40.0	-10.0	
6.93	-69.4	V	3.0	-9.9	36.5	1.0	-45.4	-40.0	-5.4	
9.24	-71.3	V	3.0	-9.5	34.9	1.0	-43.4	-40.0	-3.4	

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LTE B30 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/01/18
Test Engineer: 31300
Configuration: EUT only
Mode: LTE Band 30, 10MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
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
Mid Channel (2310MHz)										
4.62	-66.5	H	3.0	-12.7	37.9	1.0	-49.6	-40.0	-9.6	
6.93	-68.9	H	3.0	-10.2	36.5	1.0	-45.7	-40.0	-5.7	
9.24	-70.5	H	3.0	-8.9	34.9	1.0	-42.8	-40.0	-2.8	
4.62	-66.6	V	3.0	-12.8	37.9	1.0	-49.8	-40.0	-9.8	
6.93	-68.2	V	3.0	-8.7	36.5	1.0	-44.2	-40.0	-4.2	
9.24	-71.4	V	3.0	-9.6	34.9	1.0	-43.5	-40.0	-3.5	

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LTE B30 10MHz 16QAM

9.4.5. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/23/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 41, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	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 (2506MHz)										
5.01	-62.6	H	3.0	-9.7	38.7	1.0	-47.4	-25.0	-22.4	
7.52	-65.7	H	3.0	-7.9	37.7	1.0	-44.6	-25.0	-19.6	
10.02	-65.9	H	3.0	-5.1	36.1	1.0	-40.2	-25.0	-15.2	
5.01	-61.9	V	3.0	-9.3	38.7	1.0	-47.0	-25.0	-22.0	
7.52	-66.3	V	3.0	-8.7	37.7	1.0	-45.4	-25.0	-20.4	
10.02	-67.0	V	3.0	-6.2	36.1	1.0	-41.4	-25.0	-16.4	
Mid Channel (2593MHz)										
5.19	-63.5	H	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.78	-65.3	H	3.0	-7.2	37.6	1.0	-43.8	-25.0	-18.8	
10.37	-66.1	H	3.0	-5.0	36.4	1.0	-40.3	-25.0	-15.3	
5.19	-63.4	V	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.78	-65.8	V	3.0	-7.8	37.6	1.0	-44.4	-25.0	-19.4	
10.37	-66.4	V	3.0	-5.2	36.4	1.0	-40.5	-25.0	-15.5	
High Channel (2680MHz)										
5.36	-65.1	H	3.0	-11.4	38.6	1.0	-49.1	-25.0	-24.1	
8.04	-65.6	H	3.0	-7.2	37.4	1.0	-43.6	-25.0	-18.6	
10.72	-65.7	H	3.0	-4.2	36.6	1.0	-39.8	-25.0	-14.8	
5.36	-65.6	V	3.0	-12.2	38.6	1.0	-49.9	-25.0	-24.9	
8.04	-65.1	V	3.0	-6.9	37.4	1.0	-43.3	-25.0	-18.3	
10.72	-65.9	V	3.0	-4.3	36.6	1.0	-39.9	-25.0	-14.9	

Rev. 05.21.15

LTE B41 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/23/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 41, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	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 (2506MHz)										
5.01	-63.9	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.52	-65.6	H	3.0	-7.7	37.7	1.0	-44.5	-25.0	-19.5	
10.02	-66.7	H	3.0	-5.8	36.1	1.0	-41.0	-25.0	-16.0	
5.01	-64.2	V	3.0	-11.6	38.7	1.0	-49.3	-25.0	-24.3	
7.52	-65.6	V	3.0	-8.0	37.7	1.0	-44.7	-25.0	-19.7	
10.02	-67.0	V	3.0	-6.2	36.1	1.0	-41.3	-25.0	-16.3	
Mid Channel (2593MHz)										
5.19	-64.1	H	3.0	-10.8	38.7	1.0	-48.5	-25.0	-23.5	
7.78	-64.9	H	3.0	-6.8	37.6	1.0	-43.4	-25.0	-18.4	
10.37	-66.0	H	3.0	-4.9	36.4	1.0	-40.3	-25.0	-15.3	
5.19	-63.7	V	3.0	-10.8	38.7	1.0	-48.5	-25.0	-23.5	
7.78	-65.0	V	3.0	-7.1	37.6	1.0	-43.7	-25.0	-18.7	
10.37	-66.3	V	3.0	-5.2	36.4	1.0	-40.5	-25.0	-15.5	
High Channel (2680MHz)										
5.36	-64.9	H	3.0	-11.3	38.6	1.0	-48.9	-25.0	-23.9	
8.04	-64.2	H	3.0	-5.8	37.4	1.0	-42.2	-25.0	-17.2	
10.72	-66.9	H	3.0	-5.5	36.6	1.0	-41.1	-25.0	-16.1	
5.36	-65.7	V	3.0	-12.4	38.6	1.0	-50.0	-25.0	-25.0	
8.04	-64.9	V	3.0	-6.7	37.4	1.0	-43.1	-25.0	-18.1	
10.72	-66.7	V	3.0	-5.2	36.6	1.0	-40.8	-25.0	-15.8	

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LTE B41 20MHz 16QAM

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9.4.6. LTE BAND 66

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10649
Configuration: EUT ONLY
Mode: LTE Band 66, 20MHz QPSK

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	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)										
3.44	-66.9	H	3.0	-17.6	38.5	1.0	-55.1	-13.0	-42.1	
5.16	-63.7	H	3.0	-10.5	38.7	1.0	-48.1	-13.0	-35.1	
6.88	-65.2	H	3.0	-8.3	38.1	1.0	-45.4	-13.0	-32.4	
3.44	-66.2	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
5.16	-63.1	V	3.0	-10.2	38.7	1.0	-47.9	-13.0	-34.9	
6.88	-65.1	V	3.0	-8.4	38.1	1.0	-45.5	-13.0	-32.5	
Mid Channel (1745.0MHz)										
3.49	-65.7	H	3.0	-16.2	38.5	1.0	-53.8	-13.0	-40.8	
5.24	-64.2	H	3.0	-10.8	38.7	1.0	-48.5	-13.0	-35.5	
6.98	-64.7	H	3.0	-7.6	38.1	1.0	-44.7	-13.0	-31.7	
3.49	-65.3	V	3.0	-16.0	38.5	1.0	-53.6	-13.0	-40.6	
5.24	-64.2	V	3.0	-11.1	38.7	1.0	-48.8	-13.0	-35.8	
6.98	-64.7	V	3.0	-7.8	38.1	1.0	-44.9	-13.0	-31.9	
High Channel (1770.0MHz)										
3.54	-66.2	H	3.0	-16.6	38.6	1.0	-54.2	-13.0	-41.2	
5.31	-65.0	H	3.0	-11.5	38.6	1.0	-49.1	-13.0	-36.1	
7.08	-65.3	H	3.0	-8.0	38.0	1.0	-45.0	-13.0	-32.0	
3.54	-64.9	V	3.0	-15.5	38.6	1.0	-53.1	-13.0	-40.1	
5.31	-65.5	V	3.0	-12.3	38.6	1.0	-50.0	-13.0	-37.0	
7.08	-64.0	V	3.0	-7.0	38.0	1.0	-44.0	-13.0	-31.0	

Rev. 02.24.17

LTE B66 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/23/18
Test Engineer: 10649
Configuration: EUT ONLY
Mode: LTE Band 66, 20MHz 16QAM

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber D	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)										
3.44	-67.3	H	3.0	-18.0	33.3	1.0	-50.3	-13.0	-37.3	
5.16	-62.4	H	3.0	-9.2	32.9	1.0	-41.1	-13.0	-28.1	
6.88	-64.3	H	3.0	-7.4	31.0	1.0	-37.4	-13.0	-24.4	
3.44	-66.7	V	3.0	-17.6	33.3	1.0	-49.9	-13.0	-36.9	
5.16	-62.4	V	3.0	-9.5	32.9	1.0	-41.4	-13.0	-28.4	
6.88	-64.3	V	3.0	-7.6	31.0	1.0	-37.6	-13.0	-24.6	
Mid Channel (1745.0MHz)										
3.49	-65.2	H	3.0	-15.8	33.4	1.0	-48.2	-13.0	-35.2	
5.24	-64.9	H	3.0	-11.5	32.8	1.0	-43.3	-13.0	-30.3	
6.98	-64.9	H	3.0	-7.8	30.9	1.0	-37.7	-13.0	-24.7	
3.49	-65.9	V	3.0	-16.7	33.4	1.0	-49.0	-13.0	-36.0	
5.24	-63.8	V	3.0	-10.8	32.8	1.0	-42.6	-13.0	-29.6	
6.98	-64.2	V	3.0	-7.3	30.9	1.0	-37.2	-13.0	-24.2	
High Channel (1770.0MHz)										
3.54	-66.7	H	3.0	-17.2	33.4	1.0	-49.6	-13.0	-36.6	
5.31	-64.1	H	3.0	-10.6	32.7	1.0	-42.3	-13.0	-29.3	
7.08	-56.5	H	3.0	0.8	30.8	1.0	-29.0	-13.0	-16.0	
3.54	-66.1	V	3.0	-16.7	33.4	1.0	-49.0	-13.0	-36.0	
5.31	-65.8	V	3.0	-12.6	32.7	1.0	-44.3	-13.0	-31.3	
7.08	-65.6	V	3.0	-8.6	30.8	1.0	-38.4	-13.0	-25.4	

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LTE B66 20MHz 16QAM

END OF REPORT

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10. SETUP PHOTOS

Please refer to 12124121-EP1V1 for setup photos

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