9.1.3. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-64.153	H	3.0	-11.3	38.7	1.0	-48.9	-25.0	-23.9	
7.53	-66.275	H	3.0	-8.4	37.7	1.0	-45.2	-25.0	-20.2	
10.04	-66.894	H	3.0	-6.1	36.2	1.0	-41.2	-25.0	-16.2	
5.02	-63.594	V	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.53	-65.887	V	3.0	-8.3	37.7	1.0	-45.0	-25.0	-20.0	
10.04	-67.986	V	3.0	-7.2	36.2	1.0	-42.3	-25.0	-17.3	
Mid Channel (2535MHz)										
5.07	-64.383	H	3.0	-11.4	38.7	1.0	-49.1	-25.0	-24.1	
7.61	-65.967	H	3.0	-8.0	37.7	1.0	-44.7	-25.0	-19.7	
10.14	-68.239	H	3.0	-7.3	36.2	1.0	-42.5	-25.0	-17.5	
5.07	-63.533	V	3.0	-10.8	38.7	1.0	-48.5	-25.0	-23.5	
7.61	-66.844	V	3.0	-9.1	37.7	1.0	-45.8	-25.0	-20.8	
10.14	-67.883	V	3.0	-7.0	36.2	1.0	-42.2	-25.0	-17.2	
High Channel (2560MHz)										
5.12	-64.017	H	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.68	-65.189	H	3.0	-7.2	37.6	1.0	-43.8	-25.0	-18.8	
10.24	-66.343	H	3.0	-5.3	36.3	1.0	-40.6	-25.0	-15.6	
5.12	-64.349	V	3.0	-11.5	38.7	1.0	-49.2	-25.0	-24.2	
7.68	-65.700	V	3.0	-7.9	37.6	1.0	-44.5	-25.0	-19.5	
10.24	-67.749	V	3.0	-6.7	36.3	1.0	-42.0	-25.0	-17.0	

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LTE B7 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-64.017	H	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.53	-66.742	H	3.0	-8.9	37.7	1.0	-45.7	-25.0	-20.7	
10.04	-67.715	H	3.0	-6.9	36.2	1.0	-42.0	-25.0	-17.0	
5.02	-63.630	V	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.53	-66.661	V	3.0	-9.0	37.7	1.0	-45.8	-25.0	-20.8	
10.04	-67.967	V	3.0	-6.9	36.2	1.0	-42.0	-25.0	-17.0	
Mid Channel (2535MHz)										
5.07	-64.722	H	3.0	-11.7	38.7	1.0	-49.4	-25.0	-24.4	
7.61	-65.867	H	3.0	-7.9	37.7	1.0	-44.6	-25.0	-19.6	
10.14	-67.648	H	3.0	-6.7	36.2	1.0	-41.9	-25.0	-16.9	
5.07	-64.001	V	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.61	-66.624	V	3.0	-8.9	37.7	1.0	-45.6	-25.0	-20.6	
10.14	-67.978	V	3.0	-7.1	36.2	1.0	-42.3	-25.0	-17.3	
High Channel (2560MHz)										
5.12	-63.843	H	3.0	-10.7	38.7	1.0	-48.4	-25.0	-23.4	
7.68	-64.239	H	3.0	-6.2	37.6	1.0	-42.9	-25.0	-17.9	
10.24	-65.662	H	3.0	-4.7	36.3	1.0	-39.9	-25.0	-14.9	
5.12	-63.498	V	3.0	-10.7	38.7	1.0	-48.4	-25.0	-23.4	
7.68	-65.275	V	3.0	-7.5	37.6	1.0	-44.1	-25.0	-19.1	
10.24	-65.664	V	3.0	-4.6	36.3	1.0	-39.9	-25.0	-14.9	

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LTE B7 20MHz 16QAM

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9.1.4. LTE BAND 12

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 12, 10MHz QPSK

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

Chamber: 3m Chamber E | Pre-amplifer: 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 (704MHz)										
1.41	-63.7	H	3.0	-22.0	38.1	1.0	-59.1	-13.0	-46.1	
2.11	-64.8	H	3.0	-21.2	38.0	1.0	-58.2	-13.0	-45.2	
2.82	-65.0	H	3.0	-18.0	38.4	1.0	-55.4	-13.0	-42.4	
1.41	-63.7	V	3.0	-22.8	38.1	1.0	-59.8	-13.0	-46.8	
2.11	-64.1	V	3.0	-20.0	38.0	1.0	-57.0	-13.0	-44.0	
2.82	-64.4	V	3.0	-17.5	38.4	1.0	-55.0	-13.0	-42.0	
Mid Channel (707.5MHz)										
1.42	-64.2	H	3.0	-22.5	38.0	1.0	-59.6	-13.0	-46.6	
2.12	-65.3	H	3.0	-21.6	38.0	1.0	-58.6	-13.0	-45.6	
2.83	-65.2	H	3.0	-18.0	38.4	1.0	-55.5	-13.0	-42.5	
1.42	-64.1	V	3.0	-23.1	38.0	1.0	-60.2	-13.0	-47.2	
2.12	-64.0	V	3.0	-19.9	38.0	1.0	-56.9	-13.0	-43.9	
2.83	-65.8	V	3.0	-18.8	38.4	1.0	-56.3	-13.0	-43.3	
High Channel (711MHz)										
1.42	-64.6	H	3.0	-22.8	38.0	1.0	-59.9	-13.0	-46.9	
2.13	-64.4	H	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.84	-65.2	H	3.0	-17.9	38.4	1.0	-55.4	-13.0	-42.4	
1.42	-64.2	V	3.0	-23.2	38.0	1.0	-60.2	-13.0	-47.2	
2.13	-65.0	V	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.84	-64.8	V	3.0	-17.7	38.4	1.0	-55.2	-13.0	-42.2	

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LTE B12 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 12, 10MHz 16QAM

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

Chamber: 3m Chamber E | Pre-amplifer: 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 (704MHz)										
1.41	-63.9	H	3.0	-22.2	38.1	1.0	-59.3	-13.0	-46.3	
2.11	-64.8	H	3.0	-21.2	38.0	1.0	-58.2	-13.0	-45.2	
2.82	-65.3	H	3.0	-18.2	38.4	1.0	-55.6	-13.0	-42.6	
1.41	-63.6	V	3.0	-22.7	38.1	1.0	-59.7	-13.0	-46.7	
2.11	-64.2	V	3.0	-20.0	38.0	1.0	-57.0	-13.0	-44.0	
2.82	-64.5	V	3.0	-17.6	38.4	1.0	-55.0	-13.0	-42.0	
Mid Channel (707.5MHz)										
1.42	-64.1	H	3.0	-22.4	38.0	1.0	-59.5	-13.0	-46.5	
2.12	-64.7	H	3.0	-21.1	38.0	1.0	-58.1	-13.0	-45.1	
2.83	-65.1	H	3.0	-17.9	38.4	1.0	-55.4	-13.0	-42.4	
1.42	-63.6	V	3.0	-22.6	38.0	1.0	-59.6	-13.0	-46.6	
2.12	-64.7	V	3.0	-20.5	38.0	1.0	-57.5	-13.0	-44.5	
2.83	-65.0	V	3.0	-18.0	38.4	1.0	-55.4	-13.0	-42.4	
High Channel (711MHz)										
1.42	-64.5	H	3.0	-22.7	38.0	1.0	-59.8	-13.0	-46.8	
2.13	-65.6	H	3.0	-21.9	38.0	1.0	-58.9	-13.0	-45.9	
2.84	-66.0	H	3.0	-18.7	38.4	1.0	-56.2	-13.0	-43.2	
1.42	-64.1	V	3.0	-23.1	38.0	1.0	-60.1	-13.0	-47.1	
2.13	-64.4	V	3.0	-20.2	38.0	1.0	-57.2	-13.0	-44.2	
2.84	-65.6	V	3.0	-18.5	38.4	1.0	-56.0	-13.0	-43.0	

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LTE B12 10MHz 16QAM

9.1.5. LTE BAND 13

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 13, 10MHz QPSK

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

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-63.8	H	3.0	-21.6	37.8	1.0	-58.4	-40.0	-18.4	
2.35	-64.8	H	3.0	-19.6	38.1	1.0	-56.7	-13.0	-43.7	
3.13	-65.1	H	3.0	-16.5	38.4	1.0	-54.0	-13.0	-41.0	
1.56	-64.0	V	3.0	-22.3	37.8	1.0	-59.1	-40.0	-19.1	
2.35	-64.6	V	3.0	-20.0	38.1	1.0	-57.1	-13.0	-44.1	
3.13	-65.3	V	3.0	-17.1	38.4	1.0	-54.6	-13.0	-41.6	

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LTE B13 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 13, 10MHz 16QAM

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

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: LTE B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-63.4	H	3.0	-21.1	37.8	1.0	-58.0	-40.0	-18.0	
2.35	-65.2	H	3.0	-20.8	38.1	1.0	-57.9	-13.0	-44.9	
3.13	-64.8	H	3.0	-16.3	38.4	1.0	-53.7	-13.0	-40.7	
1.56	-63.8	V	3.0	-22.1	37.8	1.0	-58.9	-40.0	-18.9	
2.35	-65.2	V	3.0	-20.6	38.1	1.0	-57.7	-13.0	-44.7	
3.13	-64.7	V	3.0	-16.5	38.4	1.0	-53.9	-13.0	-40.9	

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LTE B13 10MHz 16QAM

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9.1.6. LTE BAND 14

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 14, 10MHz 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
Mid Channel (793MHz)										
1.59	-63.9	H	3.0	-21.6	36.5	1.0	-59.1	-40.0	-19.1	
2.38	-64.9	H	3.0	-20.3	38.7	1.0	-58.0	-13.0	-45.0	
3.17	-64.0	H	3.0	-19.3	38.1	1.0	-62.4	-13.0	-39.4	
1.59	-63.5	V	3.0	-21.7	36.5	1.0	-59.2	-40.0	-19.2	
2.38	-64.9	V	3.0	-20.1	38.7	1.0	-57.8	-13.0	-44.8	
3.17	-65.5	V	3.0	-17.1	38.1	1.0	-54.2	-13.0	-41.2	

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LTE B14 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 4, 3.0MHz 16QAM

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
Mid Channel (793MHz)										
1.59	-64.4	H	3.0	-22.1	37.8	1.0	-58.9	-40.0	-18.9	
2.38	-65.3	H	3.0	-20.7	38.2	1.0	-57.9	-13.0	-44.9	
3.17	-64.4	H	3.0	-18.7	38.4	1.0	-53.1	-13.0	-40.1	
1.59	-64.2	V	3.0	-22.4	37.8	1.0	-59.2	-40.0	-19.2	
2.38	-63.8	V	3.0	-19.1	38.2	1.0	-56.3	-13.0	-43.3	
3.17	-65.2	V	3.0	-16.9	38.4	1.0	-54.3	-13.0	-41.3	

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LTE B14 10MHz 16QAM

9.1.7. LTE BAND 17

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 17, 10MHz 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
Mid Channel (710MHz)										
1.42	-64.2	H	3.0	-22.5	38.0	1.0	-59.6	-13.0	-46.6	
2.13	-64.9	H	3.0	-21.3	38.0	1.0	-58.3	-13.0	-45.3	
2.84	-65.3	H	3.0	-18.1	38.4	1.0	-55.5	-13.0	-42.5	
1.42	-64.8	V	3.0	-23.8	38.0	1.0	-60.8	-13.0	-47.8	
2.13	-64.9	V	3.0	-20.7	38.0	1.0	-57.7	-13.0	-44.7	
2.84	-65.9	V	3.0	-18.9	38.4	1.0	-56.3	-13.0	-43.3	

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LTE B17 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/19/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 17, 10MHz 16QAM

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
Mid Channel (710MHz)										
1.42	-64.1	H	3.0	-22.4	38.0	1.0	-59.4	-13.0	-46.4	
2.13	-64.5	H	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.84	-64.3	H	3.0	-17.1	38.4	1.0	-54.5	-13.0	-41.5	
1.42	-64.5	V	3.0	-23.5	38.0	1.0	-60.5	-13.0	-47.5	
2.13	-64.5	V	3.0	-20.4	38.0	1.0	-57.3	-13.0	-44.3	
2.84	-65.8	V	3.0	-18.8	38.4	1.0	-56.2	-13.0	-43.2	

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LTE B17 10MHz 16QAM

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9.1.8. LTE BAND 25

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

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

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

Chamber: 3m Chamber E | Pre-amplifer: 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 (1860MHz)										
3.72	-61.8	H	3.0	-11.8	38.6	1.0	-49.4	-13.0	-36.4	
5.58	-63.7	H	3.0	-9.6	38.6	1.0	-47.2	-13.0	-34.2	
7.44	-66.3	H	3.0	-8.6	37.8	1.0	-45.4	-13.0	-32.4	
3.72	-62.0	V	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
5.58	-63.2	V	3.0	-9.4	38.6	1.0	-47.0	-13.0	-34.0	
7.44	-65.3	V	3.0	-7.8	37.8	1.0	-44.6	-13.0	-31.6	
Mid Channel (1882.5MHz)										
3.77	-61.3	H	3.0	-11.2	38.6	1.0	-48.8	-13.0	-35.8	
5.65	-63.4	H	3.0	-9.2	38.5	1.0	-46.7	-13.0	-33.7	
7.53	-64.7	H	3.0	-6.9	37.7	1.0	-43.6	-13.0	-30.6	
3.77	-61.8	V	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
5.65	-63.5	V	3.0	-9.6	38.5	1.0	-47.1	-13.0	-34.1	
7.53	-66.1	V	3.0	-8.4	37.7	1.0	-45.2	-13.0	-32.2	
High Channel (1905MHz)										
3.81	-61.4	H	3.0	-11.2	38.6	1.0	-48.8	-13.0	-35.8	
5.71	-63.8	H	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.62	-65.9	H	3.0	-8.0	37.7	1.0	-44.6	-13.0	-31.6	
3.81	-62.5	V	3.0	-12.3	38.6	1.0	-50.0	-13.0	-37.0	
5.71	-64.0	V	3.0	-9.9	38.5	1.0	-47.5	-13.0	-34.5	
7.62	-64.7	V	3.0	-7.0	37.7	1.0	-43.7	-13.0	-30.7	

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LTE B25 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

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

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

Chamber: 3m Chamber E | Pre-amplifer: 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 (1860MHz)										
3.72	-62.0	H	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.58	-63.6	H	3.0	-9.5	38.6	1.0	-47.0	-13.0	-34.0	
7.44	-66.1	H	3.0	-8.3	37.8	1.0	-45.1	-13.0	-32.1	
3.72	-61.4	V	3.0	-11.5	38.6	1.0	-49.1	-13.0	-36.1	
5.58	-64.8	V	3.0	-11.0	38.6	1.0	-48.6	-13.0	-35.6	
7.44	-66.8	V	3.0	-9.2	37.8	1.0	-46.0	-13.0	-33.0	
Mid Channel (1882.5MHz)										
3.77	-61.4	H	3.0	-11.3	38.6	1.0	-48.9	-13.0	-35.9	
5.65	-63.4	H	3.0	-9.1	38.5	1.0	-46.7	-13.0	-33.7	
7.53	-66.2	H	3.0	-8.4	37.7	1.0	-45.1	-13.0	-32.1	
3.77	-62.0	V	3.0	-11.9	38.6	1.0	-49.6	-13.0	-36.6	
5.65	-64.5	V	3.0	-10.6	38.5	1.0	-48.1	-13.0	-35.1	
7.53	-66.2	V	3.0	-8.6	37.7	1.0	-45.3	-13.0	-32.3	
High Channel (1905MHz)										
3.81	-63.0	H	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
5.72	-64.2	H	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.62	-65.7	H	3.0	-7.8	37.7	1.0	-44.5	-13.0	-31.5	
3.81	-62.7	V	3.0	-12.5	38.6	1.0	-50.1	-13.0	-37.1	
5.72	-64.5	V	3.0	-10.8	38.5	1.0	-48.3	-13.0	-35.3	
7.62	-66.2	V	3.0	-8.5	37.7	1.0	-45.2	-13.0	-32.2	

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LTE B25 20MHz 16QAM

9.1.9. LTE BAND 26 (PART 90S)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 26, 10MHz QPSK

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

Chamber: 3m Chamber E | Pre-amplifer: 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
Mid Channel (819MHz)										
1.64	-65.6	H	3.0	-23.2	37.8	1.0	-60.0	-13.0	-47.0	
2.46	-65.9	H	3.0	-21.0	38.4	1.0	-58.4	-13.0	-45.4	
3.33	-65.8	H	3.0	-16.8	38.5	1.0	-54.2	-13.0	-41.2	
1.64	-65.2	V	3.0	-23.1	37.8	1.0	-60.0	-13.0	-47.0	
2.46	-65.4	V	3.0	-20.3	38.4	1.0	-57.7	-13.0	-44.7	
3.33	-64.6	V	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	

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LTE B26 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 26, 10MHz 16QAM

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

Chamber: 3m Chamber E | Pre-amplifer: 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
Mid Channel (819MHz)										
1.64	-65.2	H	3.0	-22.8	37.8	1.0	-59.6	-13.0	-46.6	
2.46	-64.2	H	3.0	-19.3	38.4	1.0	-56.7	-13.0	-43.7	
3.33	-64.5	H	3.0	-15.5	38.5	1.0	-53.0	-13.0	-40.0	
1.64	-65.6	V	3.0	-23.5	37.8	1.0	-60.3	-13.0	-47.3	
2.46	-65.5	V	3.0	-20.4	38.4	1.0	-57.8	-13.0	-44.8	
3.33	-65.3	V	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	

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LTE B26 10MHz 16QAM

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9.1.10. LTE BAND 30

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
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	-66.9	H	3.0	-13.1	37.9	1.0	-50.0	-40.0	-10.0	
6.93	-68.2	H	3.0	-9.6	36.5	1.0	-45.0	-40.0	-5.0	
8.50	-69.1	H	3.0	-8.4	35.4	1.0	-42.8	-40.0	-2.8	
4.62	-66.7	V	3.0	-12.9	37.9	1.0	-49.9	-40.0	-9.9	
6.93	-67.5	V	3.0	-8.0	36.5	1.0	-43.5	-40.0	-3.5	
8.50	-69.2	V	3.0	-8.1	35.4	1.0	-42.5	-40.0	-2.5	

Rev. 05.21.15

LTE B30 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 30, 10MHz 16QAM

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

Chamber	Pre-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	-67.4	H	3.0	-13.6	37.9	1.0	-50.5	-40.0	-10.5	
6.93	-68.5	H	3.0	-9.9	36.5	1.0	-45.3	-40.0	-5.3	
8.50	-70.7	H	3.0	-9.5	34.9	1.0	-43.3	-40.0	-3.3	
4.62	-67.2	V	3.0	-13.4	37.9	1.0	-50.4	-40.0	-10.4	
6.93	-69.6	V	3.0	-10.1	36.5	1.0	-45.6	-40.0	-5.6	
8.50	-70.9	V	3.0	-9.3	34.9	1.0	-43.2	-40.0	-3.2	

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LTE B30 10MHz 16QAM

9.1.11. LTE BAND 41

UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
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	-64.2	H	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.52	-65.7	H	3.0	-7.9	37.7	1.0	-44.6	-25.0	-19.6	
10.02	-67.9	H	3.0	-7.1	36.1	1.0	-42.2	-25.0	-17.2	
5.01	-65.1	V	3.0	-12.4	38.7	1.0	-50.1	-25.0	-25.1	
7.52	-66.0	V	3.0	-8.4	37.7	1.0	-45.2	-25.0	-20.2	
10.02	-68.3	V	3.0	-7.5	36.1	1.0	-42.6	-25.0	-17.6	
Mid Channel (2593MHz)										
5.19	-64.5	H	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.78	-66.2	H	3.0	-8.0	37.6	1.0	-44.6	-25.0	-19.6	
10.37	-66.5	H	3.0	-5.3	36.4	1.0	-40.7	-25.0	-15.7	
5.19	-64.2	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.78	-65.9	V	3.0	-8.0	37.6	1.0	-44.6	-25.0	-19.6	
10.37	-67.8	V	3.0	-6.6	36.4	1.0	-42.0	-25.0	-17.0	
High Channel (2680MHz)										
5.36	-66.1	H	3.0	-12.5	38.6	1.0	-50.1	-25.0	-25.1	
8.04	-65.7	H	3.0	-7.3	37.4	1.0	-43.7	-25.0	-18.7	
10.72	-68.1	H	3.0	-6.7	36.6	1.0	-42.3	-25.0	-17.3	
5.36	-66.9	V	3.0	-13.6	38.6	1.0	-51.3	-25.0	-26.3	
8.04	-67.3	V	3.0	-9.0	37.4	1.0	-45.4	-25.0	-20.4	
10.72	-66.6	V	3.0	-5.0	36.6	1.0	-40.6	-25.0	-15.6	

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LTE B41 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
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	-64.3	H	3.0	-11.4	38.7	1.0	-49.1	-25.0	-24.1	
7.52	-66.4	H	3.0	-8.6	37.7	1.0	-45.4	-25.0	-20.4	
10.02	-67.5	H	3.0	-6.6	36.1	1.0	-41.8	-25.0	-16.8	
5.01	-63.8	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.52	-65.9	V	3.0	-8.3	37.7	1.0	-45.1	-25.0	-20.1	
10.02	-67.2	V	3.0	-6.5	36.1	1.0	-41.6	-25.0	-16.6	
Mid Channel (2593MHz)										
5.19	-63.8	H	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.78	-66.5	H	3.0	-8.3	37.6	1.0	-44.9	-25.0	-19.9	
10.37	-67.5	H	3.0	-6.4	36.4	1.0	-41.8	-25.0	-16.8	
5.19	-64.2	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.78	-66.3	V	3.0	-8.3	37.6	1.0	-44.9	-25.0	-19.9	
10.37	-68.0	V	3.0	-6.8	36.4	1.0	-42.2	-25.0	-17.2	
High Channel (2680MHz)										
5.36	-65.5	H	3.0	-11.8	38.6	1.0	-49.5	-25.0	-24.5	
8.04	-65.7	H	3.0	-7.2	37.4	1.0	-43.6	-25.0	-18.6	
10.72	-67.4	H	3.0	-6.0	36.6	1.0	-41.6	-25.0	-16.6	
5.36	-65.9	V	3.0	-12.6	38.6	1.0	-50.2	-25.0	-25.2	
8.04	-66.4	V	3.0	-8.1	37.4	1.0	-44.5	-25.0	-19.5	
10.72	-67.5	V	3.0	-5.9	36.6	1.0	-41.5	-25.0	-16.5	

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LTE B41 20MHz 16QAM

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9.1.12. LTE BAND 66

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
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 (1720MHz)										
3.44	-66.1	H	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
5.16	-63.0	H	3.0	-9.8	38.7	1.0	-47.5	-13.0	-34.5	
6.88	-65.4	H	3.0	-8.5	38.1	1.0	-45.6	-13.0	-32.6	
3.44	-68.5	V	3.0	-19.4	38.5	1.0	-57.0	-13.0	-44.0	
5.16	-64.6	V	3.0	-11.7	38.7	1.0	-49.4	-13.0	-36.4	
6.88	-67.3	V	3.0	-10.6	38.1	1.0	-47.7	-13.0	-34.7	
Mid Channel (1745MHz)										
3.49	-66.0	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
5.24	-64.5	H	3.0	-11.2	38.7	1.0	-48.9	-13.0	-35.9	
6.98	-65.3	H	3.0	-8.3	38.1	1.0	-45.4	-13.0	-32.4	
3.49	-66.1	V	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
5.24	-63.5	V	3.0	-10.5	38.7	1.0	-48.2	-13.0	-35.2	
6.98	-66.1	V	3.0	-9.3	38.1	1.0	-46.4	-13.0	-33.4	
High Channel (1770MHz)										
3.54	-66.7	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
5.31	-65.9	H	3.0	-12.6	38.7	1.0	-50.2	-13.0	-37.2	
7.08	-64.9	H	3.0	-7.7	38.1	1.0	-44.8	-13.0	-31.8	
3.54	-66.1	V	3.0	-16.8	38.5	1.0	-54.4	-13.0	-41.4	
5.31	-65.5	V	3.0	-12.5	38.7	1.0	-50.2	-13.0	-37.2	
7.08	-65.5	V	3.0	-8.6	38.1	1.0	-45.6	-13.0	-32.6	

LTE B66 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
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 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 (1720MHz)										
3.44	-67.7	H	3.0	-18.4	38.5	1.0	-55.9	-13.0	-42.9	
5.16	-64.5	H	3.0	-11.3	38.7	1.0	-48.9	-13.0	-35.9	
6.88	-66.1	H	3.0	-9.1	38.1	1.0	-46.3	-13.0	-33.3	
3.44	-66.8	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
5.16	-63.9	V	3.0	-11.1	38.7	1.0	-48.8	-13.0	-35.8	
6.88	-65.1	V	3.0	-8.5	38.1	1.0	-45.6	-13.0	-32.6	
Mid Channel (1745MHz)										
3.49	-66.3	H	3.0	-16.8	38.5	1.0	-54.4	-13.0	-41.4	
5.24	-64.4	H	3.0	-11.0	38.7	1.0	-48.7	-13.0	-35.7	
6.98	-65.7	H	3.0	-8.6	38.1	1.0	-45.6	-13.0	-32.6	
3.49	-66.9	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
5.24	-64.6	V	3.0	-11.6	38.7	1.0	-49.2	-13.0	-36.2	
6.98	-65.8	V	3.0	-8.9	38.1	1.0	-46.0	-13.0	-33.0	
High Channel (1770MHz)										
3.54	-66.9	H	3.0	-17.4	38.6	1.0	-54.9	-13.0	-41.9	
5.31	-64.6	H	3.0	-11.1	38.6	1.0	-48.7	-13.0	-35.7	
7.08	-65.8	H	3.0	-8.5	38.0	1.0	-45.5	-13.0	-32.5	
3.54	-68.2	V	3.0	-18.8	38.6	1.0	-56.4	-13.0	-43.4	
5.31	-66.1	V	3.0	-12.9	38.6	1.0	-50.6	-13.0	-37.6	
7.08	-65.1	V	3.0	-8.0	38.0	1.0	-45.0	-13.0	-32.0	

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LTE B66 20MHz 16QAM

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9.1.13. LTE BAND 71

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 71, 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 (673MHz)										
1.35	-65.6	H	3.0	-24.3	38.2	1.0	-61.5	-13.0	-48.5	
2.02	-64.8	H	3.0	-21.6	37.9	1.0	-58.5	-13.0	-45.5	
2.69	-65.8	H	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
1.35	-65.8	V	3.0	-25.1	38.2	1.0	-62.4	-13.0	-49.4	
2.02	-64.9	V	3.0	-21.0	37.9	1.0	-57.9	-13.0	-44.9	
2.69	-66.1	V	3.0	-19.8	38.5	1.0	-57.3	-13.0	-44.3	
Mid Channel (680.5MHz)										
1.36	-65.4	H	3.0	-24.0	38.2	1.0	-61.2	-13.0	-48.2	
2.04	-65.5	H	3.0	-22.2	37.9	1.0	-59.2	-13.0	-46.2	
2.72	-64.6	H	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
1.36	-65.3	V	3.0	-24.6	38.2	1.0	-61.8	-13.0	-48.8	
2.04	-65.3	V	3.0	-21.4	37.9	1.0	-58.3	-13.0	-45.3	
2.72	-66.4	V	3.0	-20.0	38.5	1.0	-57.5	-13.0	-44.5	
High Channel (688MHz)										
1.38	-64.3	H	3.0	-22.9	38.2	1.0	-60.0	-13.0	-47.0	
2.06	-64.9	H	3.0	-21.5	38.0	1.0	-58.5	-13.0	-45.5	
2.75	-65.8	H	3.0	-19.1	38.5	1.0	-56.6	-13.0	-43.6	
1.38	-64.8	V	3.0	-24.0	38.2	1.0	-61.1	-13.0	-48.1	
2.06	-64.0	V	3.0	-20.0	38.0	1.0	-57.0	-13.0	-44.0	
2.75	-65.5	V	3.0	-18.9	38.5	1.0	-56.4	-13.0	-43.4	

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LTE B71 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 71, 20MHz 16QAM

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 (673MHz)										
1.35	-65.3	H	3.0	-24.0	38.2	1.0	-61.2	-13.0	-48.2	
2.02	-63.8	H	3.0	-20.6	37.9	1.0	-57.5	-13.0	-44.5	
2.69	-65.3	H	3.0	-19.0	38.5	1.0	-56.5	-13.0	-43.5	
1.35	-64.7	V	3.0	-24.1	38.2	1.0	-61.3	-13.0	-48.3	
2.02	-64.9	V	3.0	-21.0	37.9	1.0	-57.9	-13.0	-44.9	
2.69	-64.9	V	3.0	-18.6	38.5	1.0	-56.1	-13.0	-43.1	
Mid Channel (680.5MHz)										
1.36	-65.6	H	3.0	-24.2	38.2	1.0	-61.4	-13.0	-48.4	
2.04	-64.2	H	3.0	-20.9	37.9	1.0	-57.8	-13.0	-44.8	
2.72	-65.8	H	3.0	-19.3	38.5	1.0	-56.7	-13.0	-43.7	
1.36	-63.8	V	3.0	-23.1	38.2	1.0	-60.3	-13.0	-47.3	
2.04	-65.3	V	3.0	-21.3	37.9	1.0	-58.3	-13.0	-45.3	
2.72	-66.2	V	3.0	-19.8	38.5	1.0	-57.3	-13.0	-44.3	
High Channel (688MHz)										
1.38	-64.0	H	3.0	-22.6	38.2	1.0	-59.7	-13.0	-46.7	
2.06	-65.5	H	3.0	-22.1	38.0	1.0	-59.1	-13.0	-46.1	
2.75	-65.7	H	3.0	-19.0	38.5	1.0	-56.5	-13.0	-43.5	
1.38	-63.2	V	3.0	-22.4	38.2	1.0	-59.5	-13.0	-46.5	
2.06	-65.3	V	3.0	-21.3	38.0	1.0	-58.2	-13.0	-45.2	
2.75	-65.5	V	3.0	-18.9	38.5	1.0	-56.4	-13.0	-43.4	

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LTE B71 20MHz 16QAM

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

9.2.1. LTE BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 2/21/2018
Test Engineer: 10649
Configuration: EUT ONLY
Mode: LTE Band 2, 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	-62.2	H	3.0	-12.2	38.6	1.0	-49.8	-13.0	-36.8	
5.58	-64.1	H	3.0	-10.0	38.6	1.0	-47.6	-13.0	-34.6	
7.44	-65.7	H	3.0	-7.9	37.8	1.0	-44.7	-13.0	-31.7	
3.72	-61.4	V	3.0	-11.5	38.6	1.0	-49.1	-13.0	-36.1	
5.58	-63.2	V	3.0	-9.4	38.6	1.0	-47.0	-13.0	-34.0	
7.44	-66.4	V	3.0	-8.9	37.8	1.0	-45.7	-13.0	-32.7	
Mid Channel (1880MHz)										
3.76	-61.4	H	3.0	-11.3	38.6	1.0	-49.0	-13.0	-36.0	
5.64	-64.0	H	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.52	-65.3	H	3.0	-7.5	37.7	1.0	-44.2	-13.0	-31.2	
3.76	-61.4	V	3.0	-11.4	38.6	1.0	-49.0	-13.0	-36.0	
5.64	-64.0	V	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.52	-66.1	V	3.0	-8.5	37.7	1.0	-45.3	-13.0	-32.3	
High Channel (1900MHz)										
3.80	-62.1	H	3.0	-11.9	38.6	1.0	-49.5	-13.0	-36.5	
5.70	-63.4	H	3.0	-9.0	38.5	1.0	-46.5	-13.0	-33.5	
7.60	-65.4	H	3.0	-7.5	37.7	1.0	-44.2	-13.0	-31.2	
3.80	-60.9	V	3.0	-10.7	38.6	1.0	-48.4	-13.0	-35.4	
5.70	-64.1	V	3.0	-10.0	38.5	1.0	-47.5	-13.0	-34.5	
7.60	-65.0	V	3.0	-7.3	37.7	1.0	-44.0	-13.0	-31.0	

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LTE B2 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10649
Configuration: EUT ONLY
Mode: LTE Band 2, 20MHz 16QAM

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	-62.3	H	3.0	-12.2	38.6	1.0	-49.9	-13.0	-36.9	
5.58	-63.7	H	3.0	-9.5	38.6	1.0	-47.1	-13.0	-34.1	
7.44	-65.2	H	3.0	-7.4	37.8	1.0	-44.2	-13.0	-31.2	
3.72	-62.3	V	3.0	-12.3	38.6	1.0	-50.0	-13.0	-37.0	
5.58	-63.4	V	3.0	-9.6	38.6	1.0	-47.1	-13.0	-34.1	
7.44	-65.4	V	3.0	-7.9	37.8	1.0	-44.7	-13.0	-31.7	
Mid Channel (1880MHz)										
3.76	-60.4	H	3.0	-10.3	38.6	1.0	-48.0	-13.0	-35.0	
5.64	-63.6	H	3.0	-9.3	38.5	1.0	-46.9	-13.0	-33.9	
7.52	-65.9	H	3.0	-8.1	37.7	1.0	-44.9	-13.0	-31.9	
3.76	-61.0	V	3.0	-10.9	38.6	1.0	-48.5	-13.0	-35.5	
5.64	-63.1	V	3.0	-9.2	38.5	1.0	-46.7	-13.0	-33.7	
7.52	-66.1	V	3.0	-8.5	37.7	1.0	-45.3	-13.0	-32.3	
High Channel (1900MHz)										
3.80	-61.5	H	3.0	-11.3	38.6	1.0	-48.9	-13.0	-35.9	
5.70	-63.9	H	3.0	-9.5	38.5	1.0	-47.0	-13.0	-34.0	
7.60	-64.4	H	3.0	-6.5	37.7	1.0	-43.1	-13.0	-30.1	
3.80	-61.4	V	3.0	-11.2	38.6	1.0	-48.9	-13.0	-35.9	
5.70	-64.4	V	3.0	-10.4	38.5	1.0	-47.9	-13.0	-34.9	
7.60	-65.6	V	3.0	-7.9	37.7	1.0	-44.6	-13.0	-31.6	

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LTE B2 20MHz 16QAM

9.2.2. LTE BAND 5

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 5, 10MHz 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
Mid Channel (836.5MHz)										
1.67	-63.7	H	3.0	-21.2	37.8	1.0	-58.1	-13.0	-45.1	
2.51	-66.1	H	3.0	-20.9	38.6	1.0	-58.5	-13.0	-45.5	
3.35	-65.5	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
1.67	-64.0	V	3.0	-21.8	37.8	1.0	-58.6	-13.0	-45.6	
2.51	-65.7	V	3.0	-20.3	38.6	1.0	-57.8	-13.0	-44.8	
3.35	-65.8	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	

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LTE B5 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 5, 10MHz 16QAM

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
Mid Channel (836.5MHz)										
1.67	-63.7	H	3.0	-22.2	37.8	1.0	-59.1	-13.0	-46.1	
2.51	-65.1	H	3.0	-21.9	38.6	1.0	-59.5	-13.0	-46.5	
3.35	-65.3	H	3.0	-19.3	38.5	1.0	-56.8	-13.0	-43.8	
1.67	-64.6	V	3.0	-22.8	37.8	1.0	-59.6	-13.0	-46.6	
2.51	-65.4	V	3.0	-21.2	38.6	1.0	-58.8	-13.0	-45.8	
3.35	-65.7	V	3.0	-19.7	38.5	1.0	-57.2	-13.0	-44.2	

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LTE B5 10MHz 16QAM

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9.2.3. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/23/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-63.0	H	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.53	-66.3	H	3.0	-8.5	37.7	1.0	-45.2	-25.0	-20.2	
10.04	-67.6	H	3.0	-6.7	36.2	1.0	-41.9	-25.0	-16.9	
5.02	-64.4	V	3.0	-11.8	38.7	1.0	-49.5	-25.0	-24.5	
7.53	-66.2	V	3.0	-8.5	37.7	1.0	-45.3	-25.0	-20.3	
10.04	-67.5	V	3.0	-6.7	36.2	1.0	-41.8	-25.0	-16.8	
Mid Channel (2535MHz)										
5.07	-63.1	H	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.61	-66.3	H	3.0	-8.4	37.7	1.0	-45.1	-25.0	-20.1	
10.14	-67.0	H	3.0	-6.1	36.2	1.0	-41.3	-25.0	-16.3	
5.07	-63.8	V	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.61	-66.6	V	3.0	-8.9	37.7	1.0	-45.5	-25.0	-20.5	
10.14	-66.7	V	3.0	-5.8	36.2	1.0	-41.0	-25.0	-16.0	
High Channel (2560MHz)										
5.12	-63.1	H	3.0	-10.0	38.7	1.0	-47.6	-25.0	-22.6	
7.68	-65.3	H	3.0	-7.3	37.6	1.0	-43.9	-25.0	-18.9	
10.24	-67.2	H	3.0	-6.2	36.3	1.0	-41.5	-25.0	-16.5	
5.12	-62.6	V	3.0	-9.7	38.7	1.0	-47.4	-25.0	-22.4	
7.68	-64.9	V	3.0	-7.1	37.6	1.0	-43.7	-25.0	-18.7	
10.24	-65.9	V	3.0	-4.9	36.3	1.0	-40.1	-25.0	-15.1	

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LTE B7 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 7, 20MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber C	3m Chamber C	Filter	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 (2510MHz)										
5.02	-62.8	H	3.0	-9.9	33.4	1.0	-42.4	-25.0	-17.4	
7.53	-64.8	H	3.0	-7.2	33.0	1.0	-39.2	-25.0	-14.2	
10.04	-66.6	H	3.0	-5.8	32.6	1.0	-37.5	-25.0	-12.5	
5.02	-64.8	V	3.0	-11.9	33.4	1.0	-44.3	-25.0	-19.3	
7.53	-65.7	V	3.0	-8.1	33.0	1.0	-40.2	-25.0	-15.2	
10.04	-67.8	V	3.0	-6.7	32.6	1.0	-38.4	-25.0	-13.4	
Mid Channel (2535MHz)										
5.07	-63.7	H	3.0	-10.7	33.4	1.0	-43.1	-25.0	-18.1	
7.61	-65.5	H	3.0	-7.8	33.0	1.0	-39.8	-25.0	-14.8	
10.14	-65.9	H	3.0	-5.0	32.6	1.0	-36.6	-25.0	-11.6	
5.07	-63.5	V	3.0	-10.6	33.4	1.0	-43.0	-25.0	-18.0	
7.61	-65.7	V	3.0	-7.9	33.0	1.0	-40.0	-25.0	-15.0	
10.14	-66.7	V	3.0	-5.6	32.6	1.0	-37.2	-25.0	-12.2	
High Channel (2560MHz)										
5.12	-63.1	H	3.0	-10.0	33.4	1.0	-42.4	-25.0	-17.4	
7.68	-64.8	H	3.0	-7.0	33.0	1.0	-39.0	-25.0	-14.0	
10.24	-65.8	H	3.0	-4.8	32.5	1.0	-36.4	-25.0	-11.4	
5.12	-63.5	V	3.0	-10.5	33.4	1.0	-42.8	-25.0	-17.8	
7.68	-65.6	V	3.0	-7.8	33.0	1.0	-39.8	-25.0	-14.8	
10.24	-66.8	V	3.0	-5.6	32.5	1.0	-37.1	-25.0	-12.1	

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LTE B7 20MHz 16QAM

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9.2.4. LTE BAND 12

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 12, 10MHz 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
Mid Channel (707.5MHz)										
1.42	-64.7	H	3.0	-23.0	38.0	1.0	-60.1	-13.0	-47.1	
2.12	-64.4	H	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.83	-65.9	H	3.0	-18.7	38.4	1.0	-56.2	-13.0	-43.2	
1.42	-64.4	V	3.0	-23.4	38.0	1.0	-60.5	-13.0	-47.5	
2.12	-65.3	V	3.0	-21.1	38.0	1.0	-58.1	-13.0	-45.1	
2.83	-66.5	V	3.0	-19.5	38.4	1.0	-57.0	-13.0	-44.0	

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LTE B12 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/12/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 12, 10MHz 16QAM

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
Mid Channel (707.5MHz)										
1.42	-64.2	H	3.0	-22.5	38.0	1.0	-59.6	-13.0	-46.6	
2.12	-65.2	H	3.0	-21.6	38.0	1.0	-58.5	-13.0	-45.5	
2.83	-66.3	H	3.0	-19.1	38.4	1.0	-56.6	-13.0	-43.6	
1.42	-64.5	V	3.0	-23.5	38.0	1.0	-60.5	-13.0	-47.5	
2.12	-64.8	V	3.0	-20.7	38.0	1.0	-57.7	-13.0	-44.7	
2.83	-65.4	V	3.0	-18.5	38.4	1.0	-55.9	-13.0	-42.9	

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LTE B12 10MHz 16QAM

9.2.5. LTE BAND 13

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 13, 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 B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-63.8	H	3.0	-21.6	37.8	1.0	-58.4	-40.0	-18.4	
2.35	-65.0	H	3.0	-20.6	38.1	1.0	-57.7	-13.0	-44.7	
3.13	-65.1	H	3.0	-16.6	38.4	1.0	-54.0	-13.0	-41.0	
1.56	-64.6	V	3.0	-22.9	37.8	1.0	-59.7	-40.0	-19.7	
2.35	-65.9	V	3.0	-21.2	38.1	1.0	-58.4	-13.0	-45.4	
3.13	-65.4	V	3.0	-17.2	38.4	1.0	-54.6	-13.0	-41.6	

Rev. 05.21.15

LTE B13 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 13, 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 B13

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-64.6	H	3.0	-22.4	37.8	1.0	-59.2	-40.0	-19.2	
2.35	-65.8	H	3.0	-21.4	38.1	1.0	-58.5	-13.0	-45.5	
3.13	-65.6	H	3.0	-17.1	38.4	1.0	-54.5	-13.0	-41.5	
1.56	-64.7	V	3.0	-23.0	37.8	1.0	-59.8	-40.0	-19.8	
2.35	-65.0	V	3.0	-20.3	38.1	1.0	-57.5	-13.0	-44.5	
3.13	-66.2	V	3.0	-18.1	38.4	1.0	-55.5	-13.0	-42.5	

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LTE B13 10MHz 16QAM

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9.2.6. LTE BAND 14

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 14, 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 B14

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (793MHz) [BW 10MHz]										
1.59	-64.5	H	3.0	-22.1	37.8	1.0	-59.0	-40.0	-19.0	
2.38	-65.7	H	3.0	-21.2	38.2	1.0	-58.3	-13.0	-45.3	
3.17	-64.1	H	3.0	-15.5	38.4	1.0	-52.9	-13.0	-39.9	
1.59	-65.0	V	3.0	-23.2	37.8	1.0	-60.0	-40.0	-20.0	
2.38	-65.3	V	3.0	-20.5	38.2	1.0	-57.7	-13.0	-44.7	
3.17	-65.1	V	3.0	-16.8	38.4	1.0	-54.2	-13.0	-41.2	

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LTE B14 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 14, 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 B14

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (793MHz) [BW 10MHz]										
1.59	-64.5	H	3.0	-22.1	37.8	1.0	-59.0	-40.0	-19.0	
2.38	-65.9	H	3.0	-21.4	38.2	1.0	-58.5	-13.0	-45.5	
3.17	-65.5	H	3.0	-16.9	38.4	1.0	-54.3	-13.0	-41.3	
1.59	-64.6	V	3.0	-22.7	37.8	1.0	-59.6	-40.0	-19.6	
2.38	-65.9	V	3.0	-21.2	38.2	1.0	-58.3	-13.0	-45.3	
3.17	-66.2	V	3.0	-17.9	38.4	1.0	-55.4	-13.0	-42.4	

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LTE B14 10MHz 16QAM

9.2.7. LTE BAND 17

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641\
Configuration: EUT ONLY
Mode: LTE Band 17, 10MHz 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
Mid Channel (710MHz)										
1.42	-65.3	H	3.0	-23.6	38.0	1.0	-60.6	-13.0	-47.6	
2.13	-65.8	H	3.0	-22.2	38.0	1.0	-59.2	-13.0	-46.2	
2.84	-65.6	H	3.0	-18.3	38.4	1.0	-55.8	-13.0	-42.8	
1.42	-64.1	V	3.0	-23.1	38.0	1.0	-60.2	-13.0	-47.2	
2.13	-65.0	V	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.84	-65.6	V	3.0	-18.6	38.4	1.0	-56.0	-13.0	-43.0	

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LTE B17 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 17, 10MHz 16QAM

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
Mid Channel (710MHz)										
1.42	-64.4	H	3.0	-22.7	38.0	1.0	-59.8	-13.0	-46.8	
2.13	-65.2	H	3.0	-21.5	38.0	1.0	-58.5	-13.0	-45.5	
2.84	-65.0	H	3.0	-17.8	38.4	1.0	-55.2	-13.0	-42.2	
1.42	-64.9	V	3.0	-23.9	38.0	1.0	-60.9	-13.0	-47.9	
2.13	-64.9	V	3.0	-20.7	38.0	1.0	-57.7	-13.0	-44.7	
2.84	-66.1	V	3.0	-19.1	38.4	1.0	-56.5	-13.0	-43.5	

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LTE B17 10MHz 16QAM

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9.2.8. 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	-62.5	H	3.0	-12.4	38.6	1.0	-50.1	-13.0	-37.1	
5.58	-64.3	H	3.0	-10.2	38.6	1.0	-47.7	-13.0	-34.7	
7.44	-67.1	H	3.0	-9.4	37.8	1.0	-46.2	-13.0	-33.2	
3.72	-62.0	V	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
5.58	-63.6	V	3.0	-9.8	38.6	1.0	-47.4	-13.0	-34.4	
7.44	-66.0	V	3.0	-8.6	37.8	1.0	-45.3	-13.0	-32.3	
Mid Channel (1882.5MHz)										
3.77	-62.1	H	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.65	-63.9	H	3.0	-9.7	38.5	1.0	-47.2	-13.0	-34.2	
7.53	-65.4	H	3.0	-7.5	37.7	1.0	-44.3	-13.0	-31.3	
3.77	-61.9	V	3.0	-11.9	38.6	1.0	-49.5	-13.0	-36.5	
5.65	-63.5	V	3.0	-9.6	38.5	1.0	-47.1	-13.0	-34.1	
7.53	-65.3	V	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	
High Channel (1905MHz)										
3.81	-61.2	H	3.0	-11.0	38.6	1.0	-48.6	-13.0	-35.6	
5.72	-63.4	H	3.0	-9.0	38.5	1.0	-46.5	-13.0	-33.5	
7.62	-65.5	H	3.0	-7.6	37.7	1.0	-44.2	-13.0	-31.2	
3.81	-60.5	V	3.0	-10.3	38.6	1.0	-48.0	-13.0	-35.0	
5.72	-63.4	V	3.0	-9.3	38.5	1.0	-46.9	-13.0	-33.9	
7.62	-65.4	V	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	

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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 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	-62.0	H	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.58	-63.7	H	3.0	-9.6	38.6	1.0	-47.2	-13.0	-34.2	
7.44	-66.3	H	3.0	-8.6	37.8	1.0	-45.4	-13.0	-32.4	
3.72	-62.7	V	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
5.58	-64.5	V	3.0	-10.7	38.6	1.0	-48.3	-13.0	-35.3	
7.44	-66.1	V	3.0	-8.6	37.8	1.0	-45.4	-13.0	-32.4	
Mid Channel (1882.5MHz)										
3.77	-61.9	H	3.0	-11.7	38.6	1.0	-49.4	-13.0	-36.4	
5.65	-63.5	H	3.0	-9.3	38.5	1.0	-46.8	-13.0	-33.8	
7.53	-65.0	H	3.0	-7.2	37.7	1.0	-44.0	-13.0	-31.0	
3.77	-61.5	V	3.0	-11.4	38.6	1.0	-49.1	-13.0	-36.1	
5.65	-65.0	V	3.0	-11.1	38.5	1.0	-48.6	-13.0	-35.6	
7.53	-65.4	V	3.0	-7.8	37.7	1.0	-44.5	-13.0	-31.5	
High Channel (1905MHz)										
3.81	-62.3	H	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
5.72	-64.6	H	3.0	-10.2	38.5	1.0	-47.7	-13.0	-34.7	
7.62	-65.5	H	3.0	-7.5	37.7	1.0	-44.2	-13.0	-31.2	
3.81	-62.2	V	3.0	-12.0	38.6	1.0	-49.7	-13.0	-36.7	
5.72	-64.8	V	3.0	-10.7	38.5	1.0	-48.2	-13.0	-35.2	
7.62	-66.2	V	3.0	-8.4	37.7	1.0	-45.1	-13.0	-32.1	

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LTE B25 20MHz 16QAM

9.2.9. LTE BAND 26 (PART 90S)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 26 (90S), 10MHz 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
Mid Channel (819MHz)										
1.66	-65.3	H	3.0	-22.8	37.8	1.0	-59.6	-13.0	-46.6	
2.49	-65.9	H	3.0	-20.7	38.6	1.0	-58.3	-13.0	-45.3	
3.33	-65.0	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
1.66	-64.9	V	3.0	-22.7	37.8	1.0	-59.6	-13.0	-46.6	
2.49	-64.4	V	3.0	-19.1	38.6	1.0	-56.7	-13.0	-43.7	
3.33	-64.6	V	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	

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LTE B26 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/21/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 26 (90S), 10MHz 16QAM

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
Mid Channel (819MHz)										
1.66	-64.0	H	3.0	-21.5	37.8	1.0	-58.3	-13.0	-45.3	
2.49	-66.2	H	3.0	-21.1	38.6	1.0	-58.6	-13.0	-45.6	
3.33	-65.2	H	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
1.66	-65.7	V	3.0	-23.5	37.8	1.0	-60.3	-13.0	-47.3	
2.49	-66.4	V	3.0	-21.1	38.6	1.0	-58.6	-13.0	-45.6	
3.33	-66.1	V	3.0	-17.4	38.5	1.0	-54.8	-13.0	-41.8	

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LTE B26 10MHz 16QAM

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9.2.10. 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: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: 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	-66.0	H	3.0	-12.2	37.9	1.0	-49.1	-40.0	-9.1	
6.93	-69.6	H	3.0	-11.0	36.5	1.0	-46.4	-40.0	-6.4	
9.24	-71.1	H	3.0	-9.6	34.9	1.0	-43.5	-40.0	-3.5	
4.62	-66.4	V	3.0	-12.7	37.9	1.0	-49.6	-40.0	-9.6	
6.93	-69.1	V	3.0	-9.7	36.5	1.0	-45.1	-40.0	-5.1	
9.24	-70.9	V	3.0	-9.1	34.9	1.0	-43.0	-40.0	-3.0	

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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: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: 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	-66.9	H	3.0	-13.1	37.9	1.0	-50.0	-40.0	-10.0	
6.93	-68.8	H	3.0	-10.2	36.5	1.0	-45.6	-40.0	-5.6	
9.24	-72.3	H	3.0	-10.8	34.9	1.0	-44.7	-40.0	-4.7	
4.62	-66.8	V	3.0	-13.0	37.9	1.0	-49.9	-40.0	-9.9	
6.93	-69.2	V	3.0	-9.7	36.5	1.0	-45.2	-40.0	-5.2	
9.24	-70.6	V	3.0	-8.8	34.9	1.0	-42.7	-40.0	-2.7	

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LTE B30 10MHz 16QAM

9.2.11. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 41, 20MHz QPSK

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

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | 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 (2506MHz)										
5.01	-64.1	H	3.0	-11.3	38.7	1.0	-48.9	-25.0	-23.9	
7.52	-66.4	H	3.0	-8.6	37.7	1.0	-45.3	-25.0	-20.3	
10.02	-67.3	H	3.0	-6.5	36.1	1.0	-41.6	-25.0	-16.6	
5.01	-64.2	V	3.0	-11.6	38.7	1.0	-49.3	-25.0	-24.3	
7.52	-67.2	V	3.0	-9.6	37.7	1.0	-46.3	-25.0	-21.3	
10.02	-67.3	V	3.0	-6.5	36.1	1.0	-41.6	-25.0	-16.6	
Mid Channel (2593MHz)										
5.19	-63.9	H	3.0	-10.7	38.7	1.0	-48.3	-25.0	-23.3	
7.78	-64.8	H	3.0	-6.7	37.6	1.0	-43.3	-25.0	-18.3	
10.37	-66.3	H	3.0	-5.2	36.4	1.0	-40.5	-25.0	-15.5	
5.19	-64.6	V	3.0	-11.6	38.7	1.0	-49.3	-25.0	-24.3	
7.78	-65.8	V	3.0	-7.8	37.6	1.0	-44.4	-25.0	-19.4	
10.37	-65.9	V	3.0	-4.7	36.4	1.0	-40.0	-25.0	-15.0	
High Channel (2680MHz)										
5.36	-65.2	H	3.0	-11.6	38.6	1.0	-49.2	-25.0	-24.2	
8.04	-65.4	H	3.0	-7.0	37.4	1.0	-43.4	-25.0	-18.4	
10.72	-67.0	H	3.0	-5.6	36.6	1.0	-41.2	-25.0	-16.2	
5.36	-65.6	V	3.0	-12.3	38.6	1.0	-49.9	-25.0	-24.9	
8.04	-66.9	V	3.0	-8.6	37.4	1.0	-45.1	-25.0	-20.1	
10.72	-67.6	V	3.0	-6.0	36.6	1.0	-41.6	-25.0	-16.6	

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LTE B41 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 41, 20MHz 16QAM

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

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | 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 (2506MHz)										
5.01	-64.2	H	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.52	-66.0	H	3.0	-8.2	37.7	1.0	-45.0	-25.0	-20.0	
10.02	-67.5	H	3.0	-6.7	36.1	1.0	-41.8	-25.0	-16.8	
5.01	-64.3	V	3.0	-11.7	38.7	1.0	-49.4	-25.0	-24.4	
7.52	-66.4	V	3.0	-8.8	37.7	1.0	-45.6	-25.0	-20.6	
10.02	-67.7	V	3.0	-6.9	36.1	1.0	-42.1	-25.0	-17.1	
Mid Channel (2593MHz)										
5.19	-64.3	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.78	-65.5	H	3.0	-7.3	37.6	1.0	-43.9	-25.0	-18.9	
10.37	-67.3	H	3.0	-6.2	36.4	1.0	-41.5	-25.0	-16.5	
5.19	-63.4	V	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.78	-65.4	V	3.0	-7.5	37.6	1.0	-44.1	-25.0	-19.1	
10.37	-66.3	V	3.0	-5.2	36.4	1.0	-40.5	-25.0	-15.5	
High Channel (2680MHz)										
5.36	-66.3	H	3.0	-12.7	38.6	1.0	-50.3	-25.0	-25.3	
8.04	-64.6	H	3.0	-6.1	37.4	1.0	-42.5	-25.0	-17.5	
10.72	-66.8	H	3.0	-5.4	36.6	1.0	-41.0	-25.0	-16.0	
5.36	-66.2	V	3.0	-12.9	38.6	1.0	-50.5	-25.0	-25.5	
8.04	-65.8	V	3.0	-7.5	37.4	1.0	-43.9	-25.0	-18.9	
10.72	-67.5	V	3.0	-5.9	36.6	1.0	-41.5	-25.0	-16.5	

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LTE B41 20MHz 16QAM

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9.2.12. LTE BAND 66

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
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	-67.4	H	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
5.16	-63.5	H	3.0	-10.3	38.7	1.0	-48.0	-13.0	-35.0	
6.88	-64.4	H	3.0	-7.5	38.1	1.0	-44.6	-13.0	-31.6	
3.44	-66.6	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
5.16	-63.7	V	3.0	-10.8	38.7	1.0	-48.5	-13.0	-35.5	
6.88	-65.9	V	3.0	-9.2	38.1	1.0	-46.3	-13.0	-33.3	
Mid Channel (1745.0MHz)										
3.49	-66.1	H	3.0	-16.6	38.5	1.0	-54.2	-13.0	-41.2	
5.16	-63.4	H	3.0	-10.2	38.7	1.0	-47.9	-13.0	-34.9	
6.98	-66.5	H	3.0	-9.4	38.1	1.0	-46.4	-13.0	-33.4	
3.49	-66.2	V	3.0	-16.9	38.5	1.0	-54.5	-13.0	-41.5	
5.16	-61.8	V	3.0	-8.9	38.7	1.0	-46.6	-13.0	-33.6	
6.98	-65.9	V	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
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	-65.1	H	3.0	-11.6	38.6	1.0	-49.3	-13.0	-36.3	
7.08	-65.2	H	3.0	-7.9	38.0	1.0	-44.9	-13.0	-31.9	
3.54	-65.9	V	3.0	-16.5	38.6	1.0	-54.0	-13.0	-41.0	
5.31	-65.7	V	3.0	-12.5	38.6	1.0	-50.1	-13.0	-37.1	
7.08	-66.2	V	3.0	-9.2	38.0	1.0	-46.2	-13.0	-33.2	

Rev. 02.24.17

LTE B66 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 66, 20MHz 16QAM

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	-65.9	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
5.16	-63.7	H	3.0	-10.5	38.7	1.0	-48.2	-13.0	-35.2	
6.88	-65.8	H	3.0	-8.9	38.1	1.0	-46.0	-13.0	-33.0	
3.44	-67.2	V	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
5.16	-63.3	V	3.0	-10.5	38.7	1.0	-48.2	-13.0	-35.2	
6.88	-65.3	V	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
Mid Channel (1745.0MHz)										
3.49	-65.6	H	3.0	-16.2	38.5	1.0	-53.8	-13.0	-40.8	
5.16	-62.6	H	3.0	-9.4	38.7	1.0	-47.1	-13.0	-34.1	
6.98	-66.1	H	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
3.49	-65.9	V	3.0	-16.6	38.5	1.0	-54.2	-13.0	-41.2	
5.16	-63.3	V	3.0	-10.4	38.7	1.0	-48.1	-13.0	-35.1	
6.98	-65.8	V	3.0	-8.9	38.1	1.0	-46.0	-13.0	-33.0	
High Channel (1770.0MHz)										
3.54	-66.6	H	3.0	-17.0	38.6	1.0	-54.6	-13.0	-41.6	
5.31	-65.6	H	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
7.08	-65.5	H	3.0	-8.3	38.0	1.0	-45.3	-13.0	-32.3	
3.54	-66.9	V	3.0	-17.5	38.6	1.0	-55.0	-13.0	-42.0	
5.31	-66.8	V	3.0	-13.6	38.6	1.0	-51.3	-13.0	-38.3	
7.08	-66.3	V	3.0	-9.3	38.0	1.0	-46.3	-13.0	-33.3	

Rev. 02.24.17

LTE B66 20MHz 16QAM

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9.2.13. LTE BAND 71

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 71, 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 (673MHz)										
1.35	-62.9	H	3.0	-21.6	38.2	1.0	-58.8	-13.0	-45.8	
2.02	-64.5	H	3.0	-21.3	37.9	1.0	-58.2	-13.0	-45.2	
2.69	-65.7	H	3.0	-19.4	38.5	1.0	-56.9	-13.0	-43.9	
1.35	-64.7	V	3.0	-24.0	38.2	1.0	-61.3	-13.0	-48.3	
2.02	-64.9	V	3.0	-20.9	37.9	1.0	-57.9	-13.0	-44.9	
2.69	-65.8	V	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
Mid Channel (680.5MHz)										
1.36	-63.4	H	3.0	-22.0	38.2	1.0	-59.2	-13.0	-46.2	
2.04	-65.3	H	3.0	-22.0	37.9	1.0	-58.9	-13.0	-45.9	
2.72	-65.7	H	3.0	-19.2	38.5	1.0	-56.7	-13.0	-43.7	
1.36	-63.7	V	3.0	-23.0	38.2	1.0	-60.2	-13.0	-47.2	
2.04	-62.9	V	3.0	-18.9	37.9	1.0	-55.8	-13.0	-42.8	
2.72	-65.6	V	3.0	-19.1	38.5	1.0	-56.6	-13.0	-43.6	
High Channel (688MHz)										
1.38	-64.2	H	3.0	-22.7	38.2	1.0	-59.9	-13.0	-46.9	
2.06	-64.2	H	3.0	-20.8	38.0	1.0	-57.8	-13.0	-44.8	
2.75	-66.0	H	3.0	-19.3	38.5	1.0	-56.8	-13.0	-43.8	
1.38	-64.4	V	3.0	-23.6	38.2	1.0	-60.7	-13.0	-47.7	
2.06	-64.9	V	3.0	-20.9	38.0	1.0	-57.8	-13.0	-44.8	
2.75	-64.9	V	3.0	-18.3	38.5	1.0	-55.8	-13.0	-42.8	

Rev. 12.18.15

LTE B71 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 71, 20MHz 16QAM

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 (673MHz)										
1.35	-63.1	H	3.0	-21.8	38.2	1.0	-59.1	-13.0	-46.1	
2.02	-64.8	H	3.0	-21.6	37.9	1.0	-58.5	-13.0	-45.5	
2.69	-66.6	H	3.0	-20.2	38.5	1.0	-57.7	-13.0	-44.7	
1.35	-64.7	V	3.0	-24.0	38.2	1.0	-61.3	-13.0	-48.3	
2.02	-66.0	V	3.0	-22.0	37.9	1.0	-59.0	-13.0	-46.0	
2.69	-64.8	V	3.0	-18.5	38.5	1.0	-56.0	-13.0	-43.0	
Mid Channel (680.5MHz)										
1.36	-64.3	H	3.0	-22.9	38.2	1.0	-60.1	-13.0	-47.1	
2.04	-65.4	H	3.0	-22.1	37.9	1.0	-59.0	-13.0	-46.0	
2.72	-66.1	H	3.0	-19.6	38.5	1.0	-57.1	-13.0	-44.1	
1.36	-63.9	V	3.0	-23.2	38.2	1.0	-60.4	-13.0	-47.4	
2.04	-65.1	V	3.0	-21.2	37.9	1.0	-58.1	-13.0	-45.1	
2.72	-65.8	V	3.0	-19.4	38.5	1.0	-56.9	-13.0	-43.9	
High Channel (688MHz)										
1.38	-65.2	H	3.0	-23.7	38.2	1.0	-60.9	-13.0	-47.9	
2.06	-65.3	H	3.0	-21.9	38.0	1.0	-58.9	-13.0	-45.9	
2.75	-66.3	H	3.0	-19.6	38.5	1.0	-57.1	-13.0	-44.1	
1.38	-64.7	V	3.0	-23.9	38.2	1.0	-61.1	-13.0	-48.1	
2.06	-64.1	V	3.0	-20.1	38.0	1.0	-57.0	-13.0	-44.0	
2.75	-65.6	V	3.0	-19.0	38.5	1.0	-56.5	-13.0	-43.5	

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LTE B71 20MHz 16QAM

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

9.3.1. LTE BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 2, 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	-61.7	H	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
5.58	-64.2	H	3.0	-10.0	38.6	1.0	-47.6	-13.0	-34.6	
7.74	-65.4	H	3.0	-7.3	37.6	1.0	-43.9	-13.0	-30.9	
3.72	-62.2	V	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.58	-64.2	V	3.0	-10.4	38.6	1.0	-47.9	-13.0	-34.9	
7.74	-65.6	V	3.0	-7.7	37.6	1.0	-44.3	-13.0	-31.3	
Mid Channel (1880MHz)										
3.76	-61.3	H	3.0	-11.2	38.6	1.0	-48.8	-13.0	-35.8	
5.64	-63.6	H	3.0	-9.3	38.5	1.0	-46.9	-13.0	-33.9	
7.52	-65.2	H	3.0	-7.4	37.7	1.0	-44.1	-13.0	-31.1	
3.76	-60.8	V	3.0	-10.7	38.6	1.0	-48.4	-13.0	-35.4	
5.64	-63.7	V	3.0	-9.7	38.5	1.0	-47.3	-13.0	-34.3	
7.52	-64.0	V	3.0	-6.4	37.7	1.0	-43.1	-13.0	-30.1	
High Channel (1900MHz)										
3.80	-60.8	H	3.0	-10.6	38.6	1.0	-48.2	-13.0	-35.2	
5.70	-63.8	H	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.60	-66.7	H	3.0	-8.7	37.7	1.0	-45.4	-13.0	-32.4	
3.80	-61.8	V	3.0	-11.6	38.6	1.0	-49.3	-13.0	-36.3	
5.70	-63.9	V	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.60	-65.6	V	3.0	-7.8	37.7	1.0	-44.5	-13.0	-31.5	

Rev. 05.21.15

LTE B2 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 2, 20MHz QPSK

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	-62.05	H	3.0	-12.2	34.4	1.0	-45.6	-13.0	-32.6	
5.58	-63.79	H	3.0	-10.2	34.1	1.0	-43.3	-13.0	-30.3	
7.74	-64.22	H	3.0	-7.4	33.4	1.0	-39.8	-13.0	-26.8	
3.72	-62.6	V	3.0	-12.7	34.4	1.0	-46.1	-13.0	-33.1	
5.58	-64.4	V	3.0	-10.7	34.1	1.0	-43.8	-13.0	-30.8	
7.74	-65.7	V	3.0	-9.1	33.4	1.0	-41.4	-13.0	-28.4	
Mid Channel (1880MHz)										
3.76	-60.8	H	3.0	-10.8	34.4	1.0	-44.2	-13.0	-31.2	
5.64	-63.6	H	3.0	-10.1	34.1	1.0	-43.2	-13.0	-30.2	
7.52	-65.7	H	3.0	-9.2	33.5	1.0	-41.7	-13.0	-28.7	
3.76	-61.4	V	3.0	-11.3	34.4	1.0	-44.7	-13.0	-31.7	
5.64	-64.2	V	3.0	-10.4	34.1	1.0	-43.5	-13.0	-30.5	
7.52	-64.7	V	3.0	-8.4	33.5	1.0	-41.0	-13.0	-28.0	
High Channel (1900MHz)										
3.80	-62.2	H	3.0	-12.0	34.4	1.0	-45.4	-13.0	-32.4	
5.70	-64.3	H	3.0	-10.6	34.1	1.0	-43.7	-13.0	-30.7	
7.60	-66.2	H	3.0	-9.6	33.5	1.0	-42.1	-13.0	-29.1	
3.80	-61.5	V	3.0	-11.3	34.4	1.0	-44.7	-13.0	-31.7	
5.70	-64.3	V	3.0	-10.4	34.1	1.0	-43.5	-13.0	-30.5	
7.60	-66.0	V	3.0	-9.6	33.5	1.0	-42.0	-13.0	-29.0	

Rev. 05.21.15

LTE B2 20MHz 16QAM

9.3.2. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-63.9	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.53	-65.0	H	3.0	-7.2	37.7	1.0	-43.9	-25.0	-18.9	
10.04	-67.5	H	3.0	-6.6	36.2	1.0	-41.8	-25.0	-16.8	
5.02	-63.8	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.53	-65.8	V	3.0	-8.1	37.7	1.0	-44.9	-25.0	-19.9	
10.04	-67.0	V	3.0	-6.2	36.2	1.0	-41.3	-25.0	-16.3	
Mid Channel (2535MHz)										
5.07	-63.6	H	3.0	-10.6	38.7	1.0	-48.2	-25.0	-23.2	
7.61	-65.3	H	3.0	-7.4	37.7	1.0	-44.1	-25.0	-19.1	
10.14	-66.9	H	3.0	-5.9	36.2	1.0	-41.1	-25.0	-16.1	
5.07	-63.1	V	3.0	-10.4	38.7	1.0	-48.1	-25.0	-23.1	
7.61	-65.4	V	3.0	-7.6	37.7	1.0	-44.3	-25.0	-19.3	
10.14	-65.6	V	3.0	-4.7	36.2	1.0	-39.9	-25.0	-14.9	
High Channel (2560MHz)										
5.12	-62.6	H	3.0	-9.4	38.7	1.0	-47.1	-25.0	-22.1	
7.68	-65.3	H	3.0	-7.3	37.6	1.0	-43.9	-25.0	-18.9	
10.24	-67.1	H	3.0	-6.1	36.3	1.0	-41.4	-25.0	-16.4	
5.12	-63.5	V	3.0	-10.7	38.7	1.0	-48.4	-25.0	-23.4	
7.68	-65.3	V	3.0	-7.4	37.6	1.0	-44.1	-25.0	-19.1	
10.24	-66.3	V	3.0	-5.3	36.3	1.0	-40.5	-25.0	-15.5	

Rev. 05.21.15

LTE B7 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-63.9	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.53	-60.9	H	3.0	-3.1	37.7	1.0	-39.8	-25.0	-14.8	
10.04	-66.2	H	3.0	-5.3	36.2	1.0	-40.5	-25.0	-15.5	
5.02	-63.8	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.53	-64.5	V	3.0	-6.9	37.7	1.0	-43.6	-25.0	-18.6	
10.04	-67.9	V	3.0	-7.1	36.2	1.0	-42.2	-25.0	-17.2	
Mid Channel (2535MHz)										
5.07	-64.2	H	3.0	-11.2	38.7	1.0	-48.8	-25.0	-23.8	
7.61	-65.7	H	3.0	-7.8	37.7	1.0	-44.4	-25.0	-19.4	
10.14	-66.4	H	3.0	-5.4	36.2	1.0	-40.7	-25.0	-15.7	
5.07	-63.5	V	3.0	-10.8	38.7	1.0	-48.5	-25.0	-23.5	
7.61	-66.4	V	3.0	-8.7	37.7	1.0	-45.4	-25.0	-20.4	
10.14	-67.2	V	3.0	-6.3	36.2	1.0	-41.5	-25.0	-16.5	
High Channel (2560MHz)										
5.12	-63.6	H	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.68	-65.0	H	3.0	-7.0	37.6	1.0	-43.7	-25.0	-18.7	
10.24	-66.3	H	3.0	-5.3	36.3	1.0	-40.6	-25.0	-15.6	
5.12	-63.0	V	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.68	-64.9	V	3.0	-7.1	37.6	1.0	-43.7	-25.0	-18.7	
10.24	-67.3	V	3.0	-6.3	36.3	1.0	-41.5	-25.0	-16.5	

Rev. 05.21.15

LTE B7 20MHz 16QAM

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9.3.3. LTE BAND 25

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
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	-62.0	H	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.58	-63.2	H	3.0	-9.1	38.6	1.0	-46.7	-13.0	-33.7	
7.44	-65.1	H	3.0	-7.4	37.8	1.0	-44.2	-13.0	-31.2	
3.72	-60.9	V	3.0	-10.9	38.6	1.0	-48.5	-13.0	-35.5	
5.58	-64.1	V	3.0	-10.3	38.6	1.0	-47.9	-13.0	-34.9	
7.44	-66.2	V	3.0	-8.7	37.8	1.0	-45.5	-13.0	-32.5	
Mid Channel (1882.5MHz)										
3.75	-59.0	H	3.0	-8.9	38.6	1.0	-46.5	-13.0	-33.5	
5.62	-50.6	H	3.0	3.6	38.5	1.0	-33.9	-13.0	-20.9	
7.53	-65.5	H	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	
3.75	-55.5	V	3.0	-5.5	38.6	1.0	-43.1	-13.0	-30.1	
5.62	-45.7	V	3.0	8.2	38.5	1.0	-29.3	-13.0	-16.3	
7.53	-65.0	V	3.0	-7.4	37.7	1.0	-44.2	-13.0	-31.2	
High Channel (1905MHz)										
3.80	-58.4	H	3.0	-8.2	38.6	1.0	-45.9	-13.0	-32.9	
5.69	-52.3	H	3.0	2.1	38.5	1.0	-35.5	-13.0	-22.5	
7.62	-65.9	H	3.0	-8.0	37.7	1.0	-44.6	-13.0	-31.6	
3.80	-60.9	V	3.0	-10.8	38.6	1.0	-48.4	-13.0	-35.4	
5.69	-59.5	V	3.0	-5.5	38.5	1.0	-43.0	-13.0	-30.0	
7.62	-64.9	V	3.0	-7.1	37.7	1.0	-43.8	-13.0	-30.8	

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LTE B25 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
Mode: LTE Band 25, 20MHz 16QAM

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	-63.1	H	3.0	-13.1	38.6	1.0	-50.7	-13.0	-37.7	
5.58	-64.1	H	3.0	-10.0	38.6	1.0	-47.6	-13.0	-34.6	
7.44	-65.5	H	3.0	-7.8	37.8	1.0	-44.6	-13.0	-31.6	
3.72	-62.3	V	3.0	-12.3	38.6	1.0	-50.0	-13.0	-37.0	
5.58	-63.8	V	3.0	-10.0	38.6	1.0	-47.5	-13.0	-34.5	
7.44	-65.5	V	3.0	-8.0	37.8	1.0	-44.8	-13.0	-31.8	
Mid Channel (1882.5MHz)										
3.77	-61.3	H	3.0	-11.2	38.6	1.0	-48.8	-13.0	-35.8	
5.65	-63.9	H	3.0	-9.7	38.5	1.0	-47.2	-13.0	-34.2	
7.53	-65.5	H	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	
3.77	-60.5	V	3.0	-10.4	38.6	1.0	-48.1	-13.0	-35.1	
5.65	-64.1	V	3.0	-10.1	38.5	1.0	-47.7	-13.0	-34.7	
7.53	-65.5	V	3.0	-7.9	37.7	1.0	-44.6	-13.0	-31.6	
High Channel (1905MHz)										
3.81	-60.9	H	3.0	-10.6	38.6	1.0	-48.3	-13.0	-35.3	
5.72	-63.9	H	3.0	-9.5	38.5	1.0	-47.0	-13.0	-34.0	
7.62	-65.7	H	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	
3.81	-61.3	V	3.0	-11.1	38.6	1.0	-48.8	-13.0	-35.8	
5.72	-64.3	V	3.0	-10.2	38.5	1.0	-47.7	-13.0	-34.7	
7.62	-65.8	V	3.0	-8.1	37.7	1.0	-44.7	-13.0	-31.7	

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LTE B25 20MHz 16QAM

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9.3.4. LTE BAND 30

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
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	-12.8	37.9	1.0	-49.7	-40.0	-9.7	
6.93	-67.1	H	3.0	-8.4	36.5	1.0	-43.9	-40.0	-3.9	
9.24	-68.4	H	3.0	-6.8	34.9	1.0	-40.7	-40.0	-0.7	
4.62	-66.1	V	3.0	-12.4	37.9	1.0	-49.3	-40.0	-9.3	
6.93	-68.1	V	3.0	-8.6	36.5	1.0	-44.1	-40.0	-4.1	
9.24	-69.9	V	3.0	-8.1	34.9	1.0	-42.0	-40.0	-2.0	

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LTE B30 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
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	-65.9	H	3.0	-12.1	37.9	1.0	-49.0	-40.0	-9.0	
6.93	-68.5	H	3.0	-9.9	36.5	1.0	-45.3	-40.0	-5.3	
9.24	-69.8	H	3.0	-8.2	34.9	1.0	-42.1	-40.0	-2.1	
4.62	-66.5	V	3.0	-12.7	37.9	1.0	-49.7	-40.0	-9.7	
6.93	-67.6	V	3.0	-8.2	36.5	1.0	-43.6	-40.0	-3.6	
9.24	-69.6	V	3.0	-7.8	34.9	1.0	-41.7	-40.0	-1.7	

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LTE B30 10MHz 16QAM

9.3.5. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
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	-63.8	H	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.52	-65.8	H	3.0	-8.0	37.7	1.0	-44.7	-25.0	-19.7	
10.02	-65.3	H	3.0	-4.5	36.1	1.0	-39.6	-25.0	-14.6	
5.01	-63.0	V	3.0	-10.4	38.7	1.0	-48.1	-25.0	-23.1	
7.52	-65.1	V	3.0	-7.5	37.7	1.0	-44.2	-25.0	-19.2	
10.02	-65.7	V	3.0	-4.9	36.1	1.0	-40.0	-25.0	-15.0	
Mid Channel (2593MHz)										
5.19	-64.3	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.78	-65.8	H	3.0	-7.7	37.6	1.0	-44.3	-25.0	-19.3	
10.37	-66.0	H	3.0	-4.9	36.4	1.0	-40.2	-25.0	-15.2	
5.19	-63.4	V	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.78	-65.0	V	3.0	-7.0	37.6	1.0	-43.6	-25.0	-18.6	
10.37	-67.3	V	3.0	-6.1	36.4	1.0	-41.4	-25.0	-16.4	
High Channel (2680MHz)										
5.36	-65.7	H	3.0	-12.1	38.6	1.0	-49.7	-25.0	-24.7	
8.04	-65.7	H	3.0	-7.2	37.4	1.0	-43.6	-25.0	-18.6	
10.72	-66.5	H	3.0	-5.1	36.6	1.0	-40.7	-25.0	-15.7	
5.36	-65.3	V	3.0	-12.0	38.6	1.0	-49.6	-25.0	-24.6	
8.04	-65.8	V	3.0	-7.5	37.4	1.0	-43.9	-25.0	-18.9	
10.72	-65.7	V	3.0	-4.1	36.6	1.0	-39.7	-25.0	-14.7	

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LTE B41 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/20/18
Test Engineer: 10649
Configuration: EUT
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	-63.4	H	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.52	-66.3	H	3.0	-8.5	37.7	1.0	-45.2	-25.0	-20.2	
10.02	-67.1	H	3.0	-6.2	36.1	1.0	-41.4	-25.0	-16.4	
5.01	-63.4	V	3.0	-10.8	38.7	1.0	-48.5	-25.0	-23.5	
7.52	-65.6	V	3.0	-8.0	37.7	1.0	-44.7	-25.0	-19.7	
10.02	-66.9	V	3.0	-6.1	36.1	1.0	-41.2	-25.0	-16.2	
Mid Channel (2593MHz)										
5.19	-63.5	H	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.78	-65.4	H	3.0	-7.3	37.6	1.0	-43.8	-25.0	-18.8	
10.37	-66.9	H	3.0	-5.8	36.4	1.0	-41.1	-25.0	-16.1	
5.19	-63.0	V	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.78	-64.2	V	3.0	-6.2	37.6	1.0	-42.8	-25.0	-17.8	
10.37	-65.8	V	3.0	-4.6	36.4	1.0	-40.0	-25.0	-15.0	
High Channel (2680MHz)										
5.36	-65.7	H	3.0	-12.0	38.6	1.0	-49.7	-25.0	-24.7	
8.04	-65.3	H	3.0	-6.9	37.4	1.0	-43.3	-25.0	-18.3	
10.72	-66.5	H	3.0	-5.0	36.6	1.0	-40.6	-25.0	-15.6	
5.36	-64.8	V	3.0	-11.5	38.6	1.0	-49.1	-25.0	-24.1	
8.04	-65.0	V	3.0	-6.7	37.4	1.0	-43.1	-25.0	-18.1	
10.72	-66.6	V	3.0	-5.1	36.6	1.0	-40.7	-25.0	-15.7	

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LTE B41 20MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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9.3.6. LTE BAND 66

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
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 (1720MHz)										
3.44	-67.3	H	3.0	-18.0	38.5	1.0	-55.6	-13.0	-42.6	
5.16	-64.2	H	3.0	-11.0	38.7	1.0	-48.6	-13.0	-35.6	
6.88	-66.3	H	3.0	-9.4	38.1	1.0	-46.5	-13.0	-33.5	
3.44	-67.0	V	3.0	-17.9	38.5	1.0	-55.4	-13.0	-42.4	
5.16	-64.3	V	3.0	-11.4	38.7	1.0	-49.1	-13.0	-36.1	
6.88	-66.3	V	3.0	-9.6	38.1	1.0	-46.7	-13.0	-33.7	
Mid Channel (1745MHz)										
3.49	-65.3	H	3.0	-16.0	38.5	1.0	-53.5	-13.0	-40.5	
5.24	-63.2	H	3.0	-9.9	38.7	1.0	-47.6	-13.0	-34.6	
6.98	-64.6	H	3.0	-7.6	38.1	1.0	-44.7	-13.0	-31.7	
3.49	-66.4	V	3.0	-17.2	38.5	1.0	-54.7	-13.0	-41.7	
5.24	-65.2	V	3.0	-12.3	38.7	1.0	-50.0	-13.0	-37.0	
6.98	-65.4	V	3.0	-8.7	38.1	1.0	-45.8	-13.0	-32.8	
High Channel (1770MHz)										
3.54	-66.9	H	3.0	-17.4	38.5	1.0	-55.0	-13.0	-42.0	
5.31	-66.3	H	3.0	-13.0	38.7	1.0	-50.6	-13.0	-37.6	
7.08	-65.9	H	3.0	-8.8	38.1	1.0	-45.9	-13.0	-32.9	
3.54	-65.9	V	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
5.31	-65.4	V	3.0	-12.4	38.7	1.0	-50.1	-13.0	-37.1	
7.08	-64.8	V	3.0	-7.9	38.1	1.0	-45.0	-13.0	-32.0	

LTE B66 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 66, 20MHz 16QAM

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 (1720MHz)										
3.44	-67.3	H	3.0	-18.0	38.5	1.0	-55.5	-13.0	-42.5	
5.16	-64.1	H	3.0	-10.9	38.7	1.0	-48.6	-13.0	-35.6	
6.88	-65.6	H	3.0	-8.6	38.1	1.0	-45.8	-13.0	-32.8	
3.44	-67.3	V	3.0	-18.2	38.5	1.0	-55.7	-13.0	-42.7	
5.16	-63.7	V	3.0	-10.8	38.7	1.0	-48.5	-13.0	-35.5	
6.88	-64.1	V	3.0	-7.4	38.1	1.0	-44.5	-13.0	-31.5	
Mid Channel (1745MHz)										
3.49	-65.7	H	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
5.24	-65.3	H	3.0	-12.0	38.7	1.0	-49.7	-13.0	-36.7	
6.98	-65.7	H	3.0	-8.7	38.1	1.0	-45.8	-13.0	-32.8	
3.49	-65.3	V	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	
5.24	-64.3	V	3.0	-11.4	38.7	1.0	-49.1	-13.0	-36.1	
6.98	-65.2	V	3.0	-8.4	38.1	1.0	-45.5	-13.0	-32.5	
High Channel (1770MHz)										
3.54	-66.1	H	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
5.31	-65.1	H	3.0	-11.7	38.7	1.0	-49.4	-13.0	-36.4	
7.08	-65.3	H	3.0	-8.1	38.1	1.0	-45.2	-13.0	-32.2	
3.54	-65.5	V	3.0	-16.2	38.5	1.0	-53.8	-13.0	-40.8	
5.31	-64.9	V	3.0	-11.9	38.7	1.0	-49.6	-13.0	-36.6	
7.08	-64.3	V	3.0	-7.4	38.1	1.0	-44.4	-13.0	-31.4	

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LTE B66 20MHz 16QAM

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9.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

9.4.1. LTE BAND 2

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 2, 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	-61.7	H	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
5.58	-64.0	H	3.0	-9.9	38.6	1.0	-47.5	-13.0	-34.5	
7.44	-66.2	H	3.0	-8.5	37.8	1.0	-45.3	-13.0	-32.3	
3.72	-61.9	V	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.58	-64.1	V	3.0	-10.3	38.6	1.0	-47.8	-13.0	-34.8	
7.44	-65.9	V	3.0	-8.4	37.8	1.0	-45.2	-13.0	-32.2	
Mid Channel (1880MHz)										
3.76	-61.9	H	3.0	-11.8	38.6	1.0	-49.4	-13.0	-36.4	
5.64	-64.2	H	3.0	-9.9	38.5	1.0	-47.5	-13.0	-34.5	
7.52	-66.0	H	3.0	-8.1	37.7	1.0	-44.9	-13.0	-31.9	
3.76	-62.5	V	3.0	-12.4	38.6	1.0	-50.0	-13.0	-37.0	
5.64	-63.7	V	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.52	-66.1	V	3.0	-8.4	37.7	1.0	-45.2	-13.0	-32.2	
High Channel (1900MHz)										
3.80	-60.7	H	3.0	-10.5	38.6	1.0	-48.1	-13.0	-35.1	
5.70	-63.6	H	3.0	-9.3	38.5	1.0	-46.8	-13.0	-33.8	
7.60	-65.4	H	3.0	-7.5	37.7	1.0	-44.2	-13.0	-31.2	
3.80	-62.6	V	3.0	-12.5	38.6	1.0	-50.1	-13.0	-37.1	
5.70	-64.2	V	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.60	-66.9	V	3.0	-9.2	37.7	1.0	-45.9	-13.0	-32.9	

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LTE B2 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 2, 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	-62.9	H	3.0	-13.1	34.4	1.0	-46.5	-13.0	-33.5	
5.58	-64.0	H	3.0	-10.5	34.1	1.0	-43.6	-13.0	-30.6	
7.44	-66.0	H	3.0	-9.7	33.6	1.0	-42.2	-13.0	-29.2	
3.72	-61.9	V	3.0	-12.0	34.4	1.0	-45.4	-13.0	-32.4	
5.58	-64.0	V	3.0	-10.3	34.1	1.0	-43.4	-13.0	-30.4	
7.44	-65.2	V	3.0	-9.0	33.6	1.0	-41.6	-13.0	-28.6	
Mid Channel (1880MHz)										
3.76	-62.2	H	3.0	-12.2	34.4	1.0	-45.6	-13.0	-32.6	
5.64	-63.5	H	3.0	-9.9	34.1	1.0	-43.1	-13.0	-30.1	
7.52	-65.3	H	3.0	-8.8	33.5	1.0	-41.3	-13.0	-28.3	
3.76	-62.3	V	3.0	-12.2	34.4	1.0	-45.6	-13.0	-32.6	
5.64	-64.6	V	3.0	-10.8	34.1	1.0	-43.9	-13.0	-30.9	
7.52	-65.5	V	3.0	-9.2	33.5	1.0	-41.7	-13.0	-28.7	
High Channel (1900MHz)										
3.80	-62.1	H	3.0	-11.9	34.4	1.0	-45.3	-13.0	-32.3	
5.70	-64.0	H	3.0	-10.4	34.1	1.0	-43.5	-13.0	-30.5	
7.60	-66.3	H	3.0	-9.8	33.5	1.0	-42.2	-13.0	-29.2	
3.80	-62.1	V	3.0	-11.9	34.4	1.0	-45.3	-13.0	-32.3	
5.70	-63.5	V	3.0	-9.7	34.1	1.0	-42.8	-13.0	-29.8	
7.60	-65.7	V	3.0	-9.3	33.5	1.0	-41.7	-13.0	-28.7	

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LTE B2 20MHz 16QAM

9.4.2. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 02/22/18
Test Engineer: 10641
Configuration: EUT ONLY
Mode: LTE Band 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-62.6	H	3.0	-9.7	38.7	1.0	-47.4	-25.0	-22.4	
7.53	-66.3	H	3.0	-8.5	37.7	1.0	-45.2	-25.0	-20.2	
10.04	-67.8	H	3.0	-6.9	36.2	1.0	-42.1	-25.0	-17.1	
5.02	-64.0	V	3.0	-11.4	38.7	1.0	-49.1	-25.0	-24.1	
7.53	-66.2	V	3.0	-8.6	37.7	1.0	-45.3	-25.0	-20.3	
10.04	-66.9	V	3.0	-6.1	36.2	1.0	-41.2	-25.0	-16.2	
Mid Channel (2535MHz)										
5.07	-64.0	H	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.61	-66.5	H	3.0	-8.6	37.7	1.0	-45.2	-25.0	-20.2	
10.14	-66.9	H	3.0	-6.0	36.2	1.0	-41.2	-25.0	-16.2	
5.07	-63.8	V	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.61	-67.3	V	3.0	-9.6	37.7	1.0	-46.3	-25.0	-21.3	
10.14	-66.9	V	3.0	-6.0	36.2	1.0	-41.2	-25.0	-16.2	
High Channel (2560MHz)										
5.12	-63.3	H	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.68	-65.4	H	3.0	-7.4	37.6	1.0	-44.0	-25.0	-19.0	
10.24	-66.5	H	3.0	-5.5	36.3	1.0	-40.7	-25.0	-15.7	
5.12	-63.3	V	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.68	-65.5	V	3.0	-7.7	37.6	1.0	-44.3	-25.0	-19.3	
10.24	-66.0	V	3.0	-5.0	36.3	1.0	-40.2	-25.0	-15.2	

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LTE B7 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 7, 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 B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)										
5.02	-64.6	H	3.0	-11.7	38.7	1.0	-49.4	-25.0	-24.4	
7.53	-66.4	H	3.0	-8.6	37.7	1.0	-45.3	-25.0	-20.3	
10.04	-67.5	H	3.0	-6.7	36.2	1.0	-41.8	-25.0	-16.8	
5.02	-62.6	V	3.0	-10.0	38.7	1.0	-47.7	-25.0	-22.7	
7.53	-65.7	V	3.0	-8.1	37.7	1.0	-44.8	-25.0	-19.8	
10.04	-67.7	V	3.0	-6.9	36.2	1.0	-42.0	-25.0	-17.0	
Mid Channel (2535MHz)										
5.07	-63.9	H	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.61	-66.3	H	3.0	-8.4	37.7	1.0	-45.1	-25.0	-20.1	
10.14	-67.2	H	3.0	-6.3	36.2	1.0	-41.5	-25.0	-16.5	
5.07	-64.0	V	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.61	-66.4	V	3.0	-8.7	37.7	1.0	-45.4	-25.0	-20.4	
10.14	-66.4	V	3.0	-5.5	36.2	1.0	-40.7	-25.0	-15.7	
High Channel (2560MHz)										
5.12	-63.4	H	3.0	-10.3	38.7	1.0	-48.0	-25.0	-23.0	
7.68	-65.7	H	3.0	-7.7	37.6	1.0	-44.3	-25.0	-19.3	
10.24	-66.3	H	3.0	-5.3	36.3	1.0	-40.6	-25.0	-15.6	
5.12	-63.2	V	3.0	-10.4	38.7	1.0	-48.0	-25.0	-23.0	
7.68	-64.8	V	3.0	-7.0	37.6	1.0	-43.6	-25.0	-18.6	
10.24	-66.7	V	3.0	-5.7	36.3	1.0	-41.0	-25.0	-16.0	

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LTE B7 20MHz 16QAM

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