8.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

Test was performed on Ant 1 antenna; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average ratio criteria.

8.5.1. LTE BAND 7

ID:	50820	Date:	3/13/18

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 7	10MHz / 20MHz	2525.6	2540.0	QPSK	30.66	22.58	8.08
				16QAM	30.78	21.57	9.21
	15 MHz / 15MHz	2527.5	2542.5	QPSK	30.73	22.57	8.16
				16QAM	30.53	21.59	8.94
	15MHz / 20MHz	2525.3	2542.4	QPSK	30.68	22.55	8.13
				16QAM	30.75	21.55	9.20
	20MHz / 10MHz	2530.1	2544.5	QPSK	30.87	22.60	8.27
				16QAM	30.89	21.61	9.28
	20MHz / 15MHz	2527.6	2544.7	QPSK	30.93	22.67	8.26
				16QAM	30.75	21.67	9.08
	20MHz / 20MHz	2525.1	2544.9	QPSK	30.78	22.74	8.04
				16QAM	30.68	21.75	8.93
Duty Cycle Correction Factor (dB) =							
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

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8.5.2. LTE BAND 41

ID:	10646	Date:	3/12/18

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 41 (FCC)	5MHz / 20MHz	2583.8	2595.5	QPSK	31.12	15.63	8.46
				16QAM	31.12	14.67	9.42
	10MHz / 20MHz	2583.6	2598.0	QPSK	31.01	15.56	8.42
				16QAM	31.13	14.61	9.49
	15MHz / 15MHz	2585.5	2600.5	QPSK	31.00	15.56	8.41
				16QAM	31.06	14.59	9.44
	15MHz / 20MHz	2583.3	2600.4	QPSK	31.09	15.60	8.46
				16QAM	31.18	14.65	9.50
	20MHz / 5MHz	2590.5	2602.2	QPSK	31.12	15.63	8.46
				16QAM	31.14	14.68	9.43
	20MHz / 10MHz	2588.1	2602.5	QPSK	31.03	15.57	8.43
				16QAM	31.11	14.60	9.48
	20MHz / 15MHz	2585.6	2602.7	QPSK	31.06	15.60	8.43
				16QAM	31.13	14.63	9.47
	20MHz / 20MHz	2583.1	2602.9	QPSK	30.95	15.64	8.28
				16QAM	31.02	14.68	9.31
Duty Cycle Correction Factor (dB) =			7.03				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9. RADIATED TEST RESULTS

RULE PART(S)

§2.1053, §27.53

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

TEST PROCEDURE

KDB 971168 D01 v02r02/D02 v01

MODES TESTED

- LTE Band 7
- LTE Band 41

RESULTS

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9.1. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 1

9.1.1. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-67.3	H	3.0	-17.9	36.2	1.0	-53.2	-25.0	-28.2	
7.55	-68.2	H	3.0	-15.0	35.1	1.0	-49.1	-25.0	-24.1	
10.07	-68.2	H	3.0	-12.6	33.3	1.0	-44.9	-25.0	-19.9	
5.03	-68.9	V	3.0	-19.6	36.2	1.0	-54.9	-25.0	-29.9	
7.55	-70.2	V	3.0	-17.1	35.1	1.0	-51.2	-25.0	-26.2	
10.07	-68.0	V	3.0	-12.6	33.3	1.0	-45.0	-25.0	-20.0	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-67.1	H	3.0	-17.6	36.3	1.0	-52.9	-25.0	-27.9	
7.61	-68.6	H	3.0	-15.4	35.1	1.0	-49.4	-25.0	-24.4	
10.15	-68.6	H	3.0	-13.0	33.3	1.0	-45.3	-25.0	-20.3	
5.07	-68.8	V	3.0	-19.4	36.3	1.0	-54.7	-25.0	-29.7	
7.61	-68.2	V	3.0	-15.0	35.1	1.0	-49.0	-25.0	-24.0	
10.15	-68.7	V	3.0	-13.3	33.3	1.0	-45.5	-25.0	-20.5	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-69.2	H	3.0	-19.6	36.3	1.0	-54.9	-25.0	-29.9	
7.67	-67.5	H	3.0	-14.2	35.0	1.0	-48.2	-25.0	-23.2	
10.23	-68.7	H	3.0	-13.0	33.2	1.0	-45.3	-25.0	-20.3	
5.11	-67.2	V	3.0	-17.8	36.3	1.0	-53.1	-25.0	-28.1	
7.67	-68.0	V	3.0	-14.7	35.0	1.0	-48.8	-25.0	-23.8	
10.23	-68.4	V	3.0	-12.9	33.2	1.0	-45.2	-25.0	-20.2	

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LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-68.9	H	3.0	-19.5	36.2	1.0	-54.7	-25.0	-29.7	
7.55	-68.9	H	3.0	-15.7	35.1	1.0	-49.8	-25.0	-24.8	
10.07	-69.1	H	3.0	-13.5	33.3	1.0	-45.8	-25.0	-20.8	
5.03	-69.1	V	3.0	-19.8	36.2	1.0	-55.1	-25.0	-30.1	
7.55	-69.1	V	3.0	-15.9	35.1	1.0	-50.0	-25.0	-25.0	
10.07	-69.3	V	3.0	-13.9	33.3	1.0	-46.2	-25.0	-21.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-67.7	H	3.0	-18.1	36.3	1.0	-53.4	-25.0	-28.4	
7.61	-67.1	H	3.0	-13.8	35.1	1.0	-47.9	-25.0	-22.9	
10.15	-68.8	H	3.0	-13.2	33.3	1.0	-45.4	-25.0	-20.4	
5.07	-69.7	V	3.0	-20.4	36.3	1.0	-55.6	-25.0	-30.6	
7.61	-68.3	V	3.0	-15.1	35.1	1.0	-49.1	-25.0	-24.1	
10.15	-69.3	V	3.0	-13.9	33.3	1.0	-46.1	-25.0	-21.1	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-68.5	H	3.0	-18.9	36.3	1.0	-54.2	-25.0	-29.2	
7.67	-67.0	H	3.0	-13.7	35.0	1.0	-47.7	-25.0	-22.7	
10.23	-68.3	H	3.0	-12.7	33.2	1.0	-44.9	-25.0	-19.9	
5.11	-68.1	V	3.0	-18.7	36.3	1.0	-54.0	-25.0	-29.0	
7.67	-67.6	V	3.0	-14.3	35.0	1.0	-48.3	-25.0	-23.3	
10.23	-68.9	V	3.0	-13.5	33.2	1.0	-45.7	-25.0	-20.7	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2529.8MHz 1-99 1-0										
5.04	-68.4	H	3.0	-20.3	36.1	1.0	-55.4	-25.0	-30.4	
7.56	-68.7	H	3.0	-20.0	36.3	1.0	-55.3	-25.0	-30.3	
10.08	-69.3	H	3.0	-13.9	33.4	1.0	-46.3	-25.0	-21.3	
5.04	-68.3	V	3.0	-18.8	36.3	1.0	-54.0	-25.0	-29.0	
7.56	-70.0	V	3.0	-16.4	34.8	1.0	-50.1	-25.0	-25.1	
10.08	-68.6	V	3.0	-12.6	32.1	1.0	-43.7	-25.0	-18.7	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-68.0	H	3.0	-17.0	36.0	1.0	-52.0	-25.0	-27.0	
7.63	-68.9	H	3.0	-15.9	35.2	1.0	-50.1	-25.0	-25.1	
10.18	-68.5	H	3.0	-12.2	32.0	1.0	-43.2	-25.0	-18.2	
5.05	-67.7	V	3.0	-20.0	36.1	1.0	-55.1	-25.0	-30.1	
7.63	-69.1	V	3.0	-15.9	35.0	1.0	-49.9	-25.0	-24.9	
10.18	-68.6	V	3.0	-13.2	33.2	1.0	-45.4	-25.0	-20.4	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-68.8	H	3.0	-19.7	36.2	1.0	-54.9	-25.0	-29.9	
7.65	-69.4	H	3.0	-18.7	36.0	1.0	-53.7	-25.0	-28.7	
10.20	-67.9	H	3.0	-11.6	32.0	1.0	-42.6	-25.0	-17.6	
5.10	-67.9	V	3.0	-20.9	36.3	1.0	-56.1	-25.0	-31.1	
7.65	-68.4	V	3.0	-17.2	35.8	1.0	-52.0	-25.0	-27.0	
10.20	-68.8	V	3.0	-13.4	33.2	1.0	-45.7	-25.0	-20.7	

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LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2529.8MHz 1-99 1-0										
5.04	-68.8	H	3.0	-19.3	36.2	1.0	-54.6	-25.0	-29.6	
7.56	-69.7	H	3.0	-16.5	35.1	1.0	-50.6	-25.0	-25.6	
10.08	-69.2	H	3.0	-13.7	33.3	1.0	-46.0	-25.0	-21.0	
5.04	-68.3	V	3.0	-19.0	36.2	1.0	-54.3	-25.0	-29.3	
7.56	-69.0	V	3.0	-15.9	35.1	1.0	-50.0	-25.0	-25.0	
10.08	-70.1	V	3.0	-14.7	33.3	1.0	-47.0	-25.0	-22.0	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-67.8	H	3.0	-18.3	36.3	1.0	-53.6	-25.0	-28.6	
7.63	-69.5	H	3.0	-16.2	35.0	1.0	-50.2	-25.0	-25.2	
10.18	-67.8	H	3.0	-12.2	33.2	1.0	-44.5	-25.0	-19.5	
5.05	-68.8	V	3.0	-19.5	36.3	1.0	-54.7	-25.0	-29.7	
7.63	-68.8	V	3.0	-15.6	35.0	1.0	-49.7	-25.0	-24.7	
10.18	-68.1	V	3.0	-12.7	33.2	1.0	-44.9	-25.0	-19.9	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-68.5	H	3.0	-19.0	36.3	1.0	-54.3	-25.0	-29.3	
7.65	-69.3	H	3.0	-15.9	35.0	1.0	-50.0	-25.0	-25.0	
10.20	-69.8	H	3.0	-14.2	33.2	1.0	-46.4	-25.0	-21.4	
5.10	-67.1	V	3.0	-17.7	36.3	1.0	-53.0	-25.0	-28.0	
7.65	-68.9	V	3.0	-15.7	35.0	1.0	-49.7	-25.0	-24.7	
10.20	-69.3	V	3.0	-13.9	33.2	1.0	-46.1	-25.0	-21.1	

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LTE B7 20MHz + 20MHz 16QAM

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9.1.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/5

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) +2517.7MHz 1-99, 1-0										
4.05	-66.7	H	3.0	-19.3	36.0	1.0	-54.3	-25.0	-29.3	
6.65	-66.4	H	3.0	-14.3	35.7	1.0	-49.0	-25.0	-24.0	
9.23	-66.6	H	3.0	-11.8	33.9	1.0	-44.7	-25.0	-19.7	
4.07	-66.4	V	3.0	-18.2	36.0	1.0	-53.2	-25.0	-28.2	
6.70	-66.4	V	3.0	-14.2	35.6	1.0	-48.9	-25.0	-23.9	
9.30	-66.5	V	3.0	-11.7	33.9	1.0	-44.6	-25.0	-19.6	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
6.06	-66.7	H	3.0	-15.5	35.9	1.0	-50.4	-25.0	-25.4	
7.65	-65.8	H	3.0	-12.5	35.0	1.0	-46.5	-25.0	-21.5	
11.25	-66.4	H	3.0	-10.4	32.6	1.0	-42.0	-25.0	-17.0	
6.04	-66.3	V	3.0	-15.3	35.9	1.0	-50.2	-25.0	-25.2	
7.63	-66.3	V	3.0	-13.1	35.1	1.0	-47.1	-25.0	-22.1	
11.05	-67.2	V	3.0	-11.5	32.7	1.0	-43.2	-25.0	-18.2	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.76	-66.6	H	3.0	-17.8	36.2	1.0	-52.9	-25.0	-27.9	
7.84	-67.0	H	3.0	-13.5	34.9	1.0	-47.4	-25.0	-22.4	
10.13	-66.1	H	3.0	-10.5	33.3	1.0	-42.8	-25.0	-17.8	
4.76	-66.6	V	3.0	-17.6	36.2	1.0	-52.8	-25.0	-27.8	
7.73	-66.9	V	3.0	-13.6	35.0	1.0	-47.6	-25.0	-22.6	
10.20	-66.8	V	3.0	-11.4	33.2	1.0	-43.7	-25.0	-18.7	

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LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 3/22/2018
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/5

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) +2517.7MHz 1-99, 1-0										
4.05	-66.5	H	3.0	-19.0	36.0	1.0	-54.0	-25.0	-29.0	
6.65	-67.3	H	3.0	-15.2	35.7	1.0	-49.8	-25.0	-24.8	
9.23	-66.4	H	3.0	-11.6	33.9	1.0	-44.6	-25.0	-19.6	
4.07	-65.4	V	3.0	-17.3	36.0	1.0	-52.3	-25.0	-27.3	
6.70	-67.7	V	3.0	-15.6	35.6	1.0	-50.2	-25.0	-25.2	
9.30	-79.0	V	3.0	-24.3	33.9	1.0	-57.1	-25.0	-32.1	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
6.05	-67.0	H	3.0	-15.9	35.9	1.0	-50.8	-25.0	-25.8	
7.65	-66.5	H	3.0	-13.2	35.0	1.0	-47.3	-25.0	-22.3	
11.25	-66.8	H	3.0	-10.9	32.6	1.0	-42.4	-25.0	-17.4	
6.04	-66.5	V	3.0	-15.6	35.9	1.0	-50.5	-25.0	-25.5	
7.63	-66.2	V	3.0	-13.0	35.1	1.0	-47.1	-25.0	-22.1	
11.50	-67.3	V	3.0	-11.6	32.4	1.0	-43.0	-25.0	-18.0	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.76	-66.6	H	3.0	-17.7	36.2	1.0	-52.9	-25.0	-27.9	
7.84	-67.1	H	3.0	-13.6	34.9	1.0	-47.5	-25.0	-22.5	
10.13	-67.8	H	3.0	-12.3	33.3	1.0	-44.5	-25.0	-19.5	
7.75	-66.3	V	3.0	-13.0	35.0	1.0	-47.0	-25.0	-22.0	
7.73	-67.9	V	3.0	-14.6	35.0	1.0	-48.6	-25.0	-23.6	
10.20	-67.4	V	3.0	-12.0	33.2	1.0	-44.3	-25.0	-19.3	

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LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/20

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) + 2525.8MHz 1-99 1-0										
5.03	-66.7	H	3.0	-17.3	36.2	1.0	-52.6	-25.0	-27.6	
7.55	-66.4	H	3.0	-13.2	35.1	1.0	-47.3	-25.0	-22.3	
10.06	-66.6	H	3.0	-11.0	33.3	1.0	-43.4	-25.0	-18.4	
5.04	-66.4	V	3.0	-17.0	36.2	1.0	-52.3	-25.0	-27.3	
7.55	-66.4	V	3.0	-13.2	35.1	1.0	-47.3	-25.0	-22.3	
10.07	-66.5	V	3.0	-11.1	33.3	1.0	-43.4	-25.0	-18.4	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-66.7	H	3.0	-17.0	36.3	1.0	-52.2	-25.0	-27.2	
7.78	-65.8	H	3.0	-12.4	34.9	1.0	-46.3	-25.0	-21.3	
10.37	-66.4	H	3.0	-10.7	33.1	1.0	-42.9	-25.0	-17.9	
5.18	-66.3	V	3.0	-16.8	36.3	1.0	-52.1	-25.0	-27.1	
7.78	-66.3	V	3.0	-12.9	34.9	1.0	-46.9	-25.0	-21.9	
10.56	-67.2	V	3.0	-11.7	33.0	1.0	-43.7	-25.0	-18.7	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-66.6	H	3.0	-16.7	36.2	1.0	-51.9	-25.0	-26.9	
8.01	-67.0	H	3.0	-13.3	34.8	1.0	-47.1	-25.0	-22.1	
10.68	-66.1	H	3.0	-10.3	32.9	1.0	-42.2	-25.0	-17.2	
5.34	-66.6	V	3.0	-16.8	36.2	1.0	-52.1	-25.0	-27.1	
8.02	-66.9	V	3.0	-13.4	34.8	1.0	-47.1	-25.0	-22.1	
10.67	-66.8	V	3.0	-11.3	32.9	1.0	-43.2	-25.0	-18.2	

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LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/22/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/20

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) + 2525.8MHz 1-99 1-0										
5.03	-66.7	H	3.0	-17.2	36.2	1.0	-52.5	-25.0	-27.5	
7.55	-67.4	H	3.0	-14.2	35.1	1.0	-48.3	-25.0	-23.3	
10.06	-66.7	H	3.0	-11.1	33.3	1.0	-43.4	-25.0	-18.4	
5.02	-65.5	V	3.0	-16.3	36.2	1.0	-51.5	-25.0	-26.5	
7.55	-67.5	V	3.0	-14.3	35.1	1.0	-48.5	-25.0	-23.5	
10.06	-67.1	V	3.0	-11.7	33.3	1.0	-44.0	-25.0	-19.0	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-67.0	H	3.0	-17.2	36.3	1.0	-52.5	-25.0	-27.5	
7.78	-66.6	H	3.0	-13.2	34.9	1.0	-47.2	-25.0	-22.2	
10.37	-66.9	H	3.0	-11.2	33.1	1.0	-43.4	-25.0	-18.4	
5.19	-66.5	V	3.0	-17.0	36.3	1.0	-52.3	-25.0	-27.3	
7.78	-66.1	V	3.0	-12.8	34.9	1.0	-46.7	-25.0	-21.7	
10.37	-67.5	V	3.0	-12.1	33.1	1.0	-44.2	-25.0	-19.2	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-66.7	H	3.0	-16.7	36.2	1.0	-51.9	-25.0	-26.9	
8.01	-67.0	H	3.0	-13.4	34.8	1.0	-47.2	-25.0	-22.2	
10.68	-67.9	H	3.0	-12.2	32.9	1.0	-44.1	-25.0	-19.1	
5.35	-65.3	V	3.0	-15.6	36.2	1.0	-50.8	-25.0	-25.8	
8.02	-67.9	V	3.0	-14.3	34.8	1.0	-48.1	-25.0	-23.1	
10.69	-67.2	V	3.0	-11.7	32.9	1.0	-43.6	-25.0	-18.6	

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LTE B41 20MHz + 20MHz 16QAM

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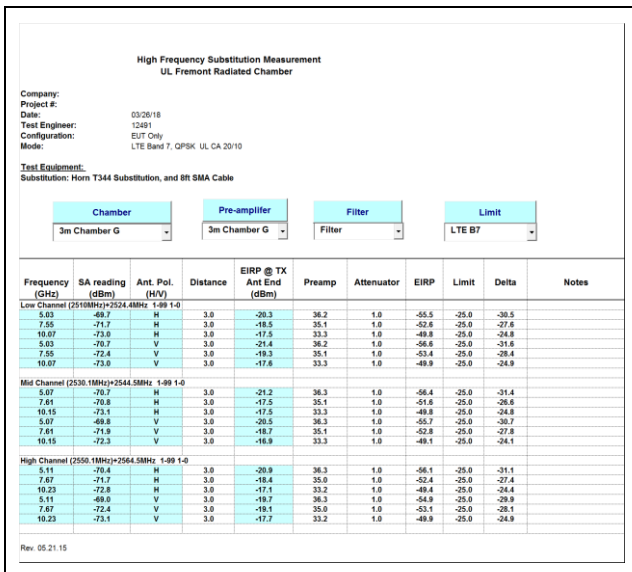
9.2. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 2

9.2.1. LTE BAND 7



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | Filter: Filter | Limit: LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
5.03	-69.7	H	3.0	-20.3	36.2	1.0	-55.5	-25.0	-30.5	
7.55	-71.7	H	3.0	-18.5	35.1	1.0	-52.6	-25.0	-27.6	
10.07	-73.0	H	3.0	-17.5	33.3	1.0	-49.8	-25.0	-24.8	
5.03	-70.7	V	3.0	-21.4	36.2	1.0	-56.6	-25.0	-31.6	
7.55	-72.4	V	3.0	-19.3	35.1	1.0	-53.4	-25.0	-28.4	
10.07	-73.0	V	3.0	-17.6	33.3	1.0	-49.9	-25.0	-24.9	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.7	H	3.0	-21.2	36.3	1.0	-56.4	-25.0	-31.4	
7.61	-70.8	H	3.0	-17.5	35.1	1.0	-51.6	-25.0	-26.6	
10.15	-73.1	H	3.0	-17.5	33.3	1.0	-49.8	-25.0	-24.8	
5.07	-69.8	V	3.0	-20.5	36.3	1.0	-55.7	-25.0	-30.7	
7.61	-71.9	V	3.0	-18.7	35.1	1.0	-52.8	-25.0	-27.8	
10.15	-72.3	V	3.0	-16.9	33.3	1.0	-49.1	-25.0	-24.1	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.4	H	3.0	-20.9	36.3	1.0	-56.1	-25.0	-31.1	
7.67	-71.7	H	3.0	-18.4	35.0	1.0	-52.4	-25.0	-27.4	
10.23	-72.8	H	3.0	-17.1	33.2	1.0	-49.4	-25.0	-24.4	
5.11	-69.0	V	3.0	-19.7	36.3	1.0	-54.9	-25.0	-29.9	
7.67	-72.4	V	3.0	-19.1	35.0	1.0	-53.1	-25.0	-28.1	
10.23	-73.1	V	3.0	-17.7	33.2	1.0	-49.9	-25.0	-24.9	

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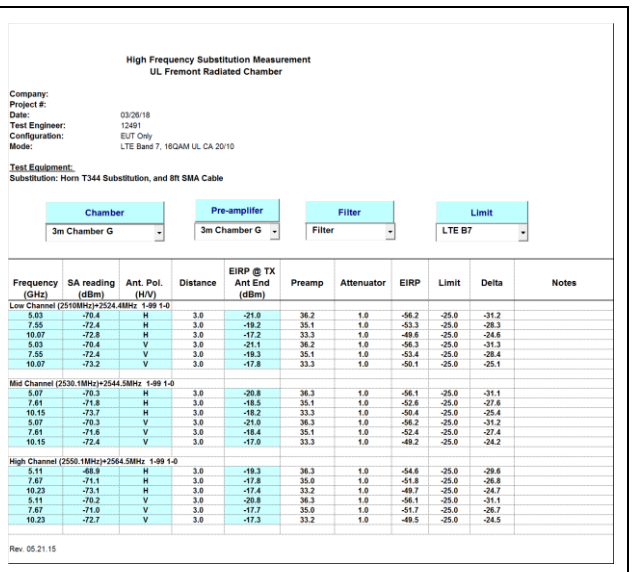
LTE B7 20MHz + 10MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | Filter: Filter | Limit: LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
5.03	-70.4	H	3.0	-21.0	36.2	1.0	-56.2	-25.0	-31.2	
7.55	-72.4	H	3.0	-19.2	35.1	1.0	-53.3	-25.0	-28.3	
10.07	-72.8	H	3.0	-17.2	33.3	1.0	-49.6	-25.0	-24.6	
5.03	-70.4	V	3.0	-21.1	36.2	1.0	-56.3	-25.0	-31.3	
7.55	-72.4	V	3.0	-19.3	35.1	1.0	-53.4	-25.0	-28.4	
10.07	-73.2	V	3.0	-17.8	33.3	1.0	-50.1	-25.0	-25.1	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.3	H	3.0	-20.8	36.3	1.0	-56.1	-25.0	-31.1	
7.61	-71.8	H	3.0	-18.5	35.1	1.0	-52.6	-25.0	-27.6	
10.15	-73.7	H	3.0	-18.2	33.3	1.0	-50.4	-25.0	-25.4	
5.07	-70.3	V	3.0	-21.0	36.3	1.0	-56.2	-25.0	-31.2	
7.61	-71.6	V	3.0	-18.4	35.1	1.0	-52.4	-25.0	-27.4	
10.15	-72.4	V	3.0	-17.0	33.3	1.0	-49.2	-25.0	-24.2	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-68.9	H	3.0	-19.3	36.3	1.0	-54.6	-25.0	-29.6	
7.67	-71.1	H	3.0	-17.8	35.0	1.0	-51.8	-25.0	-26.8	
10.23	-73.1	H	3.0	-17.4	33.2	1.0	-49.7	-25.0	-24.7	
5.11	-70.2	V	3.0	-20.8	36.3	1.0	-56.1	-25.0	-31.1	
7.67	-71.0	V	3.0	-17.7	35.0	1.0	-51.7	-25.0	-26.7	
10.23	-72.7	V	3.0	-17.3	33.2	1.0	-49.5	-25.0	-24.5	

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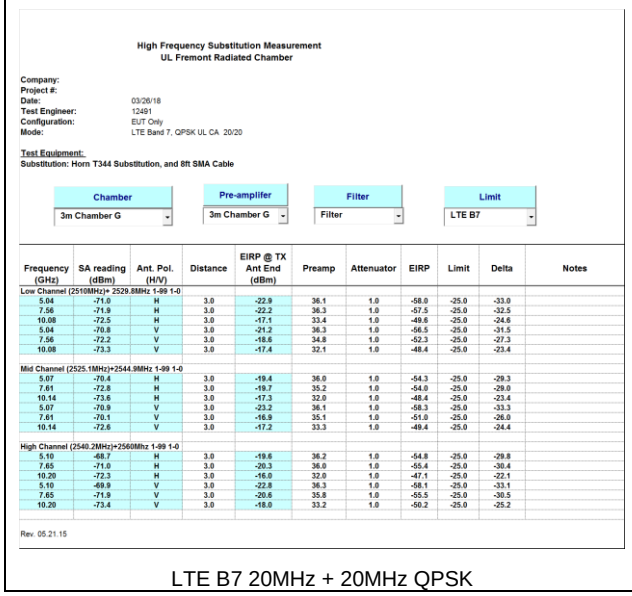
LTE B7 20MHz + 10MHz 16QAM



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | Filter: Filter | Limit: LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
5.04	-71.0	H	3.0	-22.9	36.1	1.0	-58.0	-25.0	-33.0	
7.56	-71.9	H	3.0	-22.2	36.3	1.0	-57.5	-25.0	-32.5	
10.08	-72.5	H	3.0	-17.1	33.4	1.0	-49.6	-25.0	-24.6	
5.04	-70.8	V	3.0	-21.2	36.3	1.0	-56.5	-25.0	-31.5	
7.56	-72.2	V	3.0	-18.6	34.8	1.0	-52.3	-25.0	-27.3	
10.08	-73.3	V	3.0	-17.4	32.1	1.0	-48.4	-25.0	-23.4	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-70.4	H	3.0	-19.4	36.0	1.0	-54.3	-25.0	-29.3	
7.61	-72.8	H	3.0	-19.7	35.2	1.0	-54.0	-25.0	-29.0	
10.14	-73.6	H	3.0	-17.3	32.0	1.0	-48.4	-25.0	-23.4	
5.07	-70.9	V	3.0	-23.2	36.1	1.0	-58.3	-25.0	-33.3	
7.61	-70.1	V	3.0	-16.9	35.1	1.0	-51.0	-25.0	-26.0	
10.14	-72.6	V	3.0	-17.2	33.3	1.0	-49.4	-25.0	-24.4	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-68.7	H	3.0	-19.6	36.2	1.0	-54.8	-25.0	-29.8	
7.65	-71.0	H	3.0	-20.3	36.0	1.0	-55.4	-25.0	-30.4	
10.20	-72.3	H	3.0	-16.0	32.0	1.0	-47.1	-25.0	-22.1	
5.10	-69.9	V	3.0	-22.8	36.3	1.0	-58.1	-25.0	-33.1	
7.65	-71.9	V	3.0	-20.6	35.8	1.0	-55.5	-25.0	-30.5	
10.20	-73.4	V	3.0	-18.0	33.2	1.0	-50.2	-25.0	-25.2	

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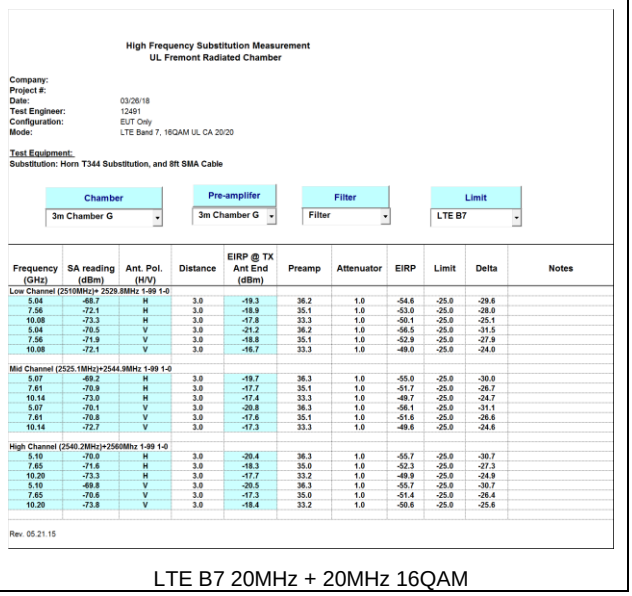
LTE B7 20MHz + 20MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | Filter: Filter | Limit: LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
5.04	-68.7	H	3.0	-19.3	36.2	1.0	-54.6	-25.0	-29.6	
7.56	-72.1	H	3.0	-18.9	35.1	1.0	-53.0	-25.0	-28.0	
10.08	-73.3	H	3.0	-17.8	33.3	1.0	-50.1	-25.0	-25.1	
5.04	-70.5	V	3.0	-21.2	36.2	1.0	-56.5	-25.0	-31.5	
7.56	-71.9	V	3.0	-18.8	35.1	1.0	-52.9	-25.0	-27.9	
10.08	-72.1	V	3.0	-16.7	33.3	1.0	-49.0	-25.0	-24.0	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-69.2	H	3.0	-19.7	36.3	1.0	-55.0	-25.0	-30.0	
7.61	-70.9	H	3.0	-17.7	35.1	1.0	-51.7	-25.0	-26.7	
10.14	-73.0	H	3.0	-17.4	33.3	1.0	-49.7	-25.0	-24.7	
5.07	-70.1	V	3.0	-20.8	36.3	1.0	-56.1	-25.0	-31.1	
7.61	-70.8	V	3.0	-17.6	35.1	1.0	-51.6	-25.0	-26.6	
10.14	-72.7	V	3.0	-17.3	33.3	1.0	-49.6	-25.0	-24.6	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-70.0	H	3.0	-20.4	36.3	1.0	-55.7	-25.0	-30.7	
7.65	-71.6	H	3.0	-18.3	35.0	1.0	-52.3	-25.0	-27.3	
10.20	-73.3	H	3.0	-17.7	33.2	1.0	-49.9	-25.0	-24.9	
5.10	-69.8	V	3.0	-20.5	36.3	1.0	-55.7	-25.0	-30.7	
7.65	-70.6	V	3.0	-17.3	35.0	1.0	-51.4	-25.0	-26.4	
10.20	-73.8	V	3.0	-18.4	33.2	1.0	-50.6	-25.0	-25.6	

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LTE B7 20MHz + 20MHz 16QAM

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9.2.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/5

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) +2517.7MHz 1-99, 1-0										
5.02	-68.9	H	3.0	-19.5	36.2	1.0	-54.8	-25.0	-29.8	
7.54	-72.0	H	3.0	-18.8	35.1	1.0	-52.9	-25.0	-27.9	
10.05	-73.9	H	3.0	-18.3	33.3	1.0	-50.6	-25.0	-25.6	
5.02	-71.0	V	3.0	-21.7	36.2	1.0	-56.9	-25.0	-31.9	
7.54	-72.5	V	3.0	-19.3	35.1	1.0	-53.5	-25.0	-28.5	
10.05	-73.6	V	3.0	-18.3	33.3	1.0	-50.6	-25.0	-25.6	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-70.3	H	3.0	-20.5	36.3	1.0	-55.8	-25.0	-30.8	
7.79	-72.0	H	3.0	-18.5	34.9	1.0	-52.5	-25.0	-27.5	
10.39	-74.1	H	3.0	-18.5	33.1	1.0	-50.6	-25.0	-25.6	
5.19	-70.7	V	3.0	-21.2	36.3	1.0	-56.5	-25.0	-31.5	
7.79	-72.5	V	3.0	-19.2	34.9	1.0	-53.1	-25.0	-28.1	
10.39	-73.7	V	3.0	-18.2	33.1	1.0	-50.4	-25.0	-25.4	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-70.5	H	3.0	-20.5	36.2	1.0	-55.7	-25.0	-30.7	
8.04	-72.0	H	3.0	-18.3	34.8	1.0	-52.1	-25.0	-27.1	
10.72	-73.2	H	3.0	-17.4	32.9	1.0	-49.3	-25.0	-24.3	
5.36	-71.6	V	3.0	-21.8	36.2	1.0	-57.1	-25.0	-32.1	
8.04	-72.4	V	3.0	-18.8	34.8	1.0	-52.5	-25.0	-27.5	
10.72	-74.5	V	3.0	-19.0	32.9	1.0	-50.9	-25.0	-25.9	

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LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/5

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) +2517.7MHz 1-99, 1-0										
5.02	-71.7	H	3.0	-22.3	36.2	1.0	-57.5	-25.0	-32.5	
7.54	-71.9	H	3.0	-18.7	35.1	1.0	-52.9	-25.0	-27.9	
10.05	-74.2	H	3.0	-18.6	33.3	1.0	-51.0	-25.0	-26.0	
5.02	-70.7	V	3.0	-21.5	36.2	1.0	-56.7	-25.0	-31.7	
7.54	-72.6	V	3.0	-19.5	35.1	1.0	-53.6	-25.0	-28.6	
10.05	-74.2	V	3.0	-18.9	33.3	1.0	-51.2	-25.0	-26.2	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-69.8	H	3.0	-20.0	36.3	1.0	-55.3	-25.0	-30.3	
7.79	-72.3	H	3.0	-18.9	34.9	1.0	-52.8	-25.0	-27.8	
10.39	-74.1	H	3.0	-18.5	33.1	1.0	-50.6	-25.0	-25.6	
5.19	-69.8	V	3.0	-20.4	36.3	1.0	-55.6	-25.0	-30.6	
7.79	-71.3	V	3.0	-17.9	34.9	1.0	-51.8	-25.0	-26.8	
10.39	-74.0	V	3.0	-18.5	33.1	1.0	-50.6	-25.0	-25.6	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-70.6	H	3.0	-20.6	36.2	1.0	-55.8	-25.0	-30.8	
8.04	-72.8	H	3.0	-19.1	34.8	1.0	-52.8	-25.0	-27.8	
10.72	-74.4	H	3.0	-18.6	32.9	1.0	-50.5	-25.0	-25.5	
5.36	-70.8	V	3.0	-21.0	36.2	1.0	-56.2	-25.0	-31.2	
8.04	-71.5	V	3.0	-17.9	34.8	1.0	-51.7	-25.0	-26.7	
10.72	-74.0	V	3.0	-18.5	32.9	1.0	-50.4	-25.0	-25.4	

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LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/20

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) + 2525.8MHz 1-99 1-0										
5.03	-70.9	H	3.0	-21.5	36.2	1.0	-56.8	-25.0	-31.8	
7.55	-72.5	H	3.0	-19.3	35.1	1.0	-53.4	-25.0	-28.4	
10.06	-72.7	H	3.0	-17.2	33.3	1.0	-49.5	-25.0	-24.5	
5.03	-70.6	V	3.0	-21.3	36.2	1.0	-56.6	-25.0	-31.6	
7.55	-71.4	V	3.0	-18.2	35.1	1.0	-52.3	-25.0	-27.3	
10.06	-73.8	V	3.0	-18.4	33.3	1.0	-50.7	-25.0	-25.7	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-69.8	H	3.0	-20.1	36.3	1.0	-55.4	-25.0	-30.4	
7.78	-71.7	H	3.0	-18.3	34.9	1.0	-52.2	-25.0	-27.2	
10.37	-73.4	H	3.0	-17.7	33.1	1.0	-49.9	-25.0	-24.9	
5.19	-70.0	V	3.0	-20.5	36.3	1.0	-55.8	-25.0	-30.8	
7.78	-71.3	V	3.0	-17.9	34.9	1.0	-51.9	-25.0	-26.9	
10.37	-73.7	V	3.0	-18.2	33.1	1.0	-50.4	-25.0	-25.4	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-70.1	H	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
8.01	-71.7	H	3.0	-18.1	34.8	1.0	-51.8	-25.0	-26.8	
10.68	-73.7	H	3.0	-18.0	32.9	1.0	-49.9	-25.0	-24.9	
5.34	-70.2	V	3.0	-20.4	36.2	1.0	-55.7	-25.0	-30.7	
8.01	-72.4	V	3.0	-18.8	34.8	1.0	-52.6	-25.0	-27.6	
10.68	-74.2	V	3.0	-18.7	32.9	1.0	-50.6	-25.0	-25.6	

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LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/20

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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) + 2525.8MHz 1-99 1-0										
5.03	-71.2	H	3.0	-21.7	36.2	1.0	-57.0	-25.0	-32.0	
7.55	-72.7	H	3.0	-19.5	35.1	1.0	-53.6	-25.0	-28.6	
10.06	-73.4	H	3.0	-17.9	33.3	1.0	-50.2	-25.0	-25.2	
5.02	-70.2	V	3.0	-20.9	36.2	1.0	-56.1	-25.0	-31.1	
7.55	-71.9	V	3.0	-18.7	35.1	1.0	-52.9	-25.0	-27.9	
10.06	-73.2	V	3.0	-17.8	33.3	1.0	-50.2	-25.0	-25.2	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-70.0	H	3.0	-20.3	36.3	1.0	-55.5	-25.0	-30.5	
7.78	-72.7	H	3.0	-19.3	34.9	1.0	-53.2	-25.0	-28.2	
10.37	-74.1	H	3.0	-18.5	33.1	1.0	-50.6	-25.0	-25.6	
5.19	-70.6	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.78	-72.2	V	3.0	-18.9	34.9	1.0	-52.8	-25.0	-27.8	
10.37	-73.0	V	3.0	-17.6	33.1	1.0	-49.7	-25.0	-24.7	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-70.4	H	3.0	-20.4	36.2	1.0	-55.7	-25.0	-30.7	
8.01	-72.2	H	3.0	-18.6	34.8	1.0	-52.4	-25.0	-27.4	
10.68	-73.9	H	3.0	-18.1	32.9	1.0	-50.0	-25.0	-25.0	
5.34	-70.6	V	3.0	-20.9	36.2	1.0	-56.1	-25.0	-31.1	
8.01	-71.3	V	3.0	-17.8	34.8	1.0	-51.6	-25.0	-26.6	
10.68	-73.7	V	3.0	-18.2	32.9	1.0	-50.1	-25.0	-25.1	

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LTE B41 20MHz + 20MHz 16QAM

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 3

9.3.1. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/24/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-64.7	H	3.0	-15.2	36.2	1.0	-50.5	-25.0	-25.5	
7.55	-65.8	H	3.0	-12.6	35.1	1.0	-46.7	-25.0	-21.7	
10.07	-65.0	H	3.0	-9.4	33.3	1.0	-41.7	-25.0	-16.7	
5.03	-66.3	V	3.0	-17.0	36.2	1.0	-52.2	-25.0	-27.2	
7.55	-66.0	V	3.0	-12.8	35.1	1.0	-46.9	-25.0	-21.9	
10.07	-66.8	V	3.0	-11.4	33.3	1.0	-43.7	-25.0	-18.7	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-65.5	H	3.0	-16.0	36.3	1.0	-51.2	-25.0	-26.2	
7.61	-66.2	H	3.0	-12.9	35.1	1.0	-47.0	-25.0	-22.0	
10.15	-66.5	H	3.0	-10.9	33.3	1.0	-43.2	-25.0	-18.2	
5.07	-63.6	V	3.0	-14.3	36.3	1.0	-49.5	-25.0	-24.5	
7.61	-65.5	V	3.0	-12.3	35.1	1.0	-46.4	-25.0	-21.4	
10.15	-64.4	V	3.0	-9.0	33.3	1.0	-41.3	-25.0	-16.3	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-64.3	H	3.0	-14.7	36.3	1.0	-49.9	-25.0	-24.9	
7.67	-65.2	H	3.0	-11.8	35.0	1.0	-45.8	-25.0	-20.8	
10.23	-65.7	H	3.0	-10.1	33.2	1.0	-42.3	-25.0	-17.3	
5.11	-65.4	V	3.0	-16.0	36.3	1.0	-51.3	-25.0	-26.3	
7.67	-65.6	V	3.0	-12.4	35.0	1.0	-46.4	-25.0	-21.4	
10.23	-65.2	V	3.0	-9.7	33.2	1.0	-41.9	-25.0	-16.9	

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LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/24/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-63.6	H	3.0	-14.2	36.2	1.0	-49.4	-25.0	-24.4	
7.55	-66.0	H	3.0	-12.8	35.1	1.0	-46.9	-25.0	-21.9	
10.07	-65.7	H	3.0	-10.1	33.3	1.0	-42.4	-25.0	-17.4	
5.03	-65.3	V	3.0	-16.0	36.2	1.0	-51.3	-25.0	-26.3	
7.55	-67.6	V	3.0	-14.5	35.1	1.0	-48.6	-25.0	-23.6	
10.07	-66.3	V	3.0	-11.0	33.3	1.0	-43.3	-25.0	-18.3	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-65.5	H	3.0	-16.0	36.3	1.0	-51.2	-25.0	-26.2	
7.61	-68.4	H	3.0	-15.1	35.1	1.0	-49.2	-25.0	-24.2	
10.15	-66.3	H	3.0	-10.7	33.3	1.0	-43.0	-25.0	-18.0	
5.07	-65.4	V	3.0	-16.1	36.3	1.0	-51.3	-25.0	-26.3	
7.61	-67.9	V	3.0	-14.7	35.1	1.0	-48.8	-25.0	-23.8	
10.15	-66.2	V	3.0	-10.8	33.3	1.0	-43.0	-25.0	-18.0	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-66.1	H	3.0	-16.5	36.3	1.0	-51.8	-25.0	-26.8	
7.67	-67.5	H	3.0	-14.2	35.0	1.0	-48.2	-25.0	-23.2	
10.23	-67.3	H	3.0	-11.7	33.2	1.0	-43.9	-25.0	-18.9	
5.11	-65.6	V	3.0	-16.2	36.3	1.0	-51.5	-25.0	-26.5	
7.67	-67.5	V	3.0	-14.3	35.0	1.0	-48.3	-25.0	-23.3	
10.23	-67.3	V	3.0	-11.9	33.2	1.0	-44.1	-25.0	-19.1	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/24/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2529.8MHz 1-99 1-0										
5.04	-65.1	H	3.0	-17.0	36.1	1.0	-52.1	-25.0	-27.1	
7.56	-67.3	H	3.0	-17.6	36.3	1.0	-52.8	-25.0	-27.8	
10.08	-65.8	H	3.0	-10.4	33.4	1.0	-42.9	-25.0	-17.9	
5.04	-65.9	V	3.0	-16.4	36.3	1.0	-51.6	-25.0	-26.6	
7.56	-67.5	V	3.0	-13.9	34.8	1.0	-47.6	-25.0	-22.6	
10.08	-67.0	V	3.0	-11.0	32.1	1.0	-42.1	-25.0	-17.1	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-66.3	H	3.0	-15.3	36.0	1.0	-50.3	-25.0	-25.3	
7.63	-68.0	H	3.0	-14.9	35.2	1.0	-49.1	-25.0	-24.1	
10.18	-67.0	H	3.0	-10.7	32.0	1.0	-41.7	-25.0	-16.7	
5.05	-65.3	V	3.0	-17.6	36.1	1.0	-52.7	-25.0	-27.7	
7.63	-67.4	V	3.0	-14.2	35.0	1.0	-48.3	-25.0	-23.3	
10.18	-66.5	V	3.0	-11.1	33.2	1.0	-43.4	-25.0	-18.4	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-64.0	H	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
7.65	-67.1	H	3.0	-16.4	36.0	1.0	-51.5	-25.0	-26.5	
10.20	-66.6	H	3.0	-10.3	32.0	1.0	-41.4	-25.0	-16.4	
5.10	-65.0	V	3.0	-18.0	36.3	1.0	-53.3	-25.0	-28.3	
7.65	-67.1	V	3.0	-15.9	35.8	1.0	-50.7	-25.0	-25.7	
10.20	-66.6	V	3.0	-11.2	33.2	1.0	-43.4	-25.0	-18.4	

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LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/24/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2529.8MHz 1-99 1-0										
5.04	-64.8	H	3.0	-15.3	36.2	1.0	-50.6	-25.0	-25.6	
7.56	-66.7	H	3.0	-13.5	35.1	1.0	-47.6	-25.0	-22.6	
10.08	-66.6	H	3.0	-11.0	33.3	1.0	-43.4	-25.0	-18.4	
5.04	-64.5	V	3.0	-15.2	36.2	1.0	-50.5	-25.0	-25.5	
7.56	-67.1	V	3.0	-14.0	35.1	1.0	-48.1	-25.0	-23.1	
10.08	-65.9	V	3.0	-10.5	33.3	1.0	-42.8	-25.0	-17.8	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-67.0	H	3.0	-17.5	36.3	1.0	-52.8	-25.0	-27.8	
7.63	-68.4	H	3.0	-15.1	35.0	1.0	-49.1	-25.0	-24.1	
10.18	-67.6	H	3.0	-12.0	33.2	1.0	-44.2	-25.0	-19.2	
5.05	-65.0	V	3.0	-15.7	36.3	1.0	-50.9	-25.0	-25.9	
7.63	-67.8	V	3.0	-14.6	35.0	1.0	-48.7	-25.0	-23.7	
10.18	-67.4	V	3.0	-12.0	33.2	1.0	-44.3	-25.0	-19.3	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-65.8	H	3.0	-16.2	36.3	1.0	-51.5	-25.0	-26.5	
7.65	-67.0	H	3.0	-13.7	35.0	1.0	-47.7	-25.0	-22.7	
10.20	-67.4	H	3.0	-11.7	33.2	1.0	-44.0	-25.0	-19.0	
5.10	-64.9	V	3.0	-15.5	36.3	1.0	-50.8	-25.0	-25.8	
7.65	-67.0	V	3.0	-13.7	35.0	1.0	-47.8	-25.0	-22.8	
10.20	-66.4	V	3.0	-11.0	33.2	1.0	-43.2	-25.0	-18.2	

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LTE B7 20MHz + 20MHz 16QAM

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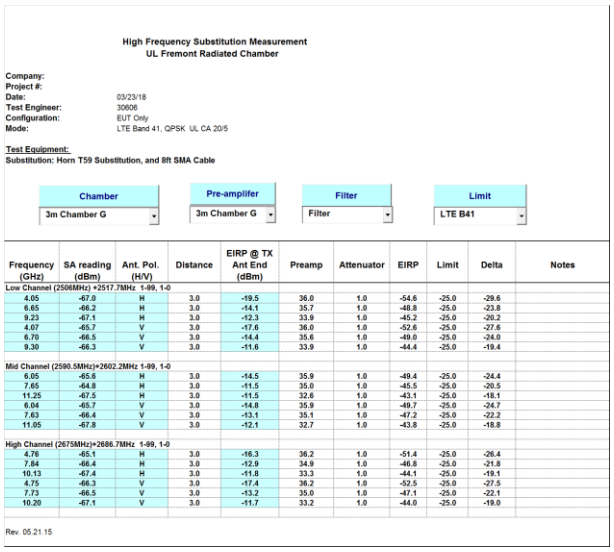
9.3.2. LTE BAND 41



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/5

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) +2517.7MHz 1-99, 1-0										
4.05	-67.0	H	3.0	-19.5	36.0	1.0	-54.6	-25.0	-29.6	
6.65	-66.2	H	3.0	-14.1	35.7	1.0	-48.8	-25.0	-23.8	
9.23	-67.1	H	3.0	-12.3	33.9	1.0	-45.2	-25.0	-20.2	
4.07	-65.7	V	3.0	-17.6	36.0	1.0	-52.6	-25.0	-27.6	
6.70	-66.5	V	3.0	-14.4	35.6	1.0	-49.0	-25.0	-24.0	
9.30	-66.3	V	3.0	-11.6	33.9	1.0	-44.4	-25.0	-19.4	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
6.05	-65.6	H	3.0	-14.5	35.9	1.0	-49.4	-25.0	-24.4	
7.65	-64.8	H	3.0	-11.5	35.0	1.0	-45.5	-25.0	-20.5	
11.25	-67.5	H	3.0	-11.5	32.6	1.0	-43.1	-25.0	-18.1	
6.04	-65.7	V	3.0	-14.8	35.9	1.0	-49.7	-25.0	-24.7	
7.63	-66.4	V	3.0	-13.1	35.1	1.0	-47.2	-25.0	-22.2	
11.05	-67.8	V	3.0	-12.1	32.7	1.0	-43.8	-25.0	-18.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.76	-65.1	H	3.0	-16.3	36.2	1.0	-51.4	-25.0	-26.4	
7.84	-66.4	H	3.0	-12.9	34.9	1.0	-46.8	-25.0	-21.8	
10.13	-67.4	H	3.0	-11.8	33.3	1.0	-44.1	-25.0	-19.1	
4.75	-66.3	V	3.0	-17.4	36.2	1.0	-52.5	-25.0	-27.5	
7.73	-66.5	V	3.0	-13.2	35.0	1.0	-47.1	-25.0	-22.1	
10.20	-67.1	V	3.0	-11.7	33.2	1.0	-44.0	-25.0	-19.0	

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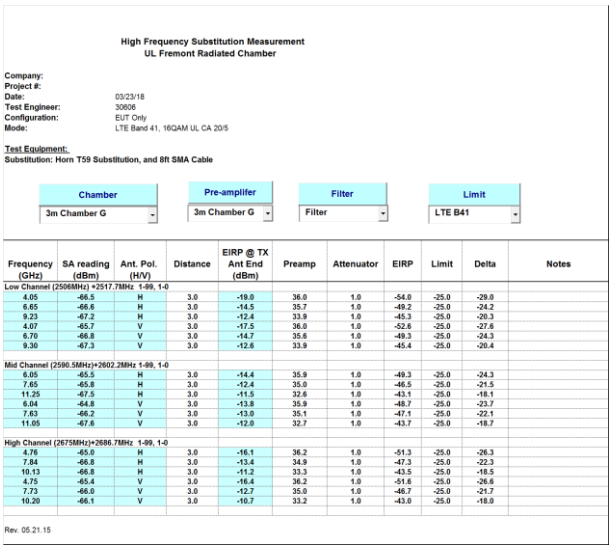
LTE B41 20MHz + 5MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/5

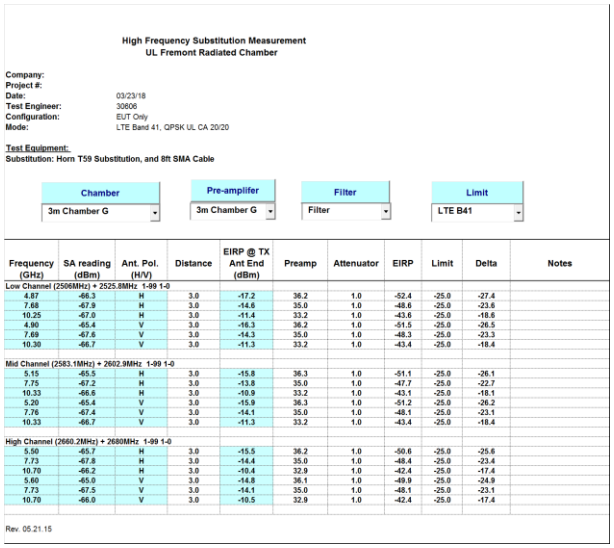
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) +2517.7MHz 1-99, 1-0										
4.05	-66.5	H	3.0	-19.0	36.0	1.0	-54.0	-25.0	-29.0	
6.65	-66.6	H	3.0	-14.5	35.7	1.0	-49.2	-25.0	-24.2	
9.23	-67.2	H	3.0	-12.4	33.9	1.0	-45.3	-25.0	-20.3	
4.07	-65.7	V	3.0	-17.5	36.0	1.0	-52.6	-25.0	-27.6	
6.70	-66.8	V	3.0	-14.7	35.6	1.0	-49.3	-25.0	-24.3	
9.30	-67.3	V	3.0	-12.6	33.9	1.0	-45.4	-25.0	-20.4	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
6.05	-65.5	H	3.0	-14.4	35.9	1.0	-49.3	-25.0	-24.3	
7.65	-65.8	H	3.0	-12.4	35.0	1.0	-46.5	-25.0	-21.5	
11.25	-67.5	H	3.0	-11.5	32.6	1.0	-43.1	-25.0	-18.1	
6.04	-64.8	V	3.0	-13.8	35.9	1.0	-48.7	-25.0	-23.7	
7.63	-66.2	V	3.0	-13.0	35.1	1.0	-47.1	-25.0	-22.1	
11.05	-67.6	V	3.0	-12.0	32.7	1.0	-43.7	-25.0	-18.7	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.76	-65.0	H	3.0	-16.1	36.2	1.0	-51.3	-25.0	-26.3	
7.84	-66.8	H	3.0	-13.4	34.9	1.0	-47.3	-25.0	-22.3	
10.13	-66.8	H	3.0	-11.2	33.3	1.0	-43.5	-25.0	-18.5	
4.75	-65.4	V	3.0	-16.4	36.2	1.0	-51.6	-25.0	-26.6	
7.73	-66.0	V	3.0	-12.7	35.0	1.0	-46.7	-25.0	-21.7	
10.20	-66.1	V	3.0	-10.7	33.2	1.0	-43.0	-25.0	-18.0	

Rev. 05.21.15

LTE B41 20MHz + 5MHz 16QAM



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/20

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) + 2525.8MHz 1-99 1-0										
4.87	-66.3	H	3.0	-17.2	36.2	1.0	-52.4	-25.0	-27.4	
7.68	-67.9	H	3.0	-14.6	35.0	1.0	-48.6	-25.0	-23.6	
10.25	-67.0	H	3.0	-11.4	33.2	1.0	-43.6	-25.0	-18.6	
4.90	-65.4	V	3.0	-16.3	36.2	1.0	-51.5	-25.0	-26.5	
7.69	-67.6	V	3.0	-14.3	35.0	1.0	-48.3	-25.0	-23.3	
10.30	-66.7	V	3.0	-11.3	33.2	1.0	-43.4	-25.0	-18.4	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.15	-65.5	H	3.0	-15.8	36.3	1.0	-51.1	-25.0	-26.1	
7.75	-67.2	H	3.0	-13.8	35.0	1.0	-47.7	-25.0	-22.7	
10.33	-66.6	H	3.0	-10.9	33.2	1.0	-43.1	-25.0	-18.1	
5.20	-65.4	V	3.0	-15.9	36.3	1.0	-51.2	-25.0	-26.2	
7.76	-67.4	V	3.0	-14.1	35.0	1.0	-48.1	-25.0	-23.1	
10.33	-66.7	V	3.0	-11.3	33.2	1.0	-43.4	-25.0	-18.4	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.50	-65.7	H	3.0	-15.5	36.2	1.0	-50.6	-25.0	-25.6	
7.73	-67.8	H	3.0	-14.4	35.0	1.0	-48.4	-25.0	-23.4	
10.70	-66.2	H	3.0	-10.4	32.9	1.0	-42.4	-25.0	-17.4	
5.60	-65.0	V	3.0	-14.8	36.1	1.0	-49.9	-25.0	-24.9	
7.73	-67.5	V	3.0	-14.1	35.0	1.0	-48.1	-25.0	-23.1	
10.70	-66.0	V	3.0	-10.5	32.9	1.0	-42.4	-25.0	-17.4	

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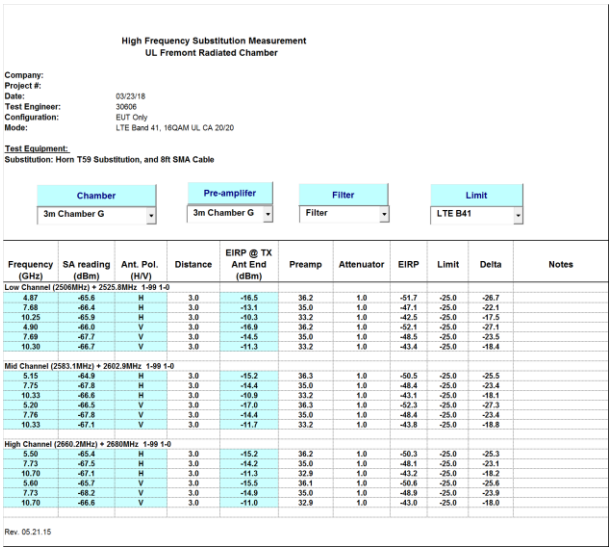
LTE B41 20MHz + 20MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/23/18
Test Engineer: 30606
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/20

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) + 2525.8MHz 1-99 1-0										
4.87	-65.6	H	3.0	-16.5	36.2	1.0	-51.7	-25.0	-26.7	
7.68	-66.4	H	3.0	-13.1	35.0	1.0	-47.1	-25.0	-22.1	
10.25	-65.9	H	3.0	-10.3	33.2	1.0	-42.5	-25.0	-17.5	
4.90	-66.0	V	3.0	-16.9	36.2	1.0	-52.1	-25.0	-27.1	
7.69	-67.7	V	3.0	-14.5	35.0	1.0	-48.5	-25.0	-23.5	
10.30	-66.7	V	3.0	-11.3	33.2	1.0	-43.4	-25.0	-18.4	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.15	-64.9	H	3.0	-15.2	36.3	1.0	-50.5	-25.0	-25.5	
7.75	-67.8	H	3.0	-14.4	35.0	1.0	-48.4	-25.0	-23.4	
10.33	-66.6	H	3.0	-10.9	33.2	1.0	-43.1	-25.0	-18.1	
5.20	-66.5	V	3.0	-17.0	36.3	1.0	-52.3	-25.0	-27.3	
7.76	-67.8	V	3.0	-14.4	35.0	1.0	-48.4	-25.0	-23.4	
10.33	-67.1	V	3.0	-11.7	33.2	1.0	-43.8	-25.0	-18.8	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.50	-65.4	H	3.0	-15.2	36.2	1.0	-50.3	-25.0	-25.3	
7.73	-67.5	H	3.0	-14.2	35.0	1.0	-48.1	-25.0	-23.1	
10.70	-67.1	H	3.0	-11.3	32.9	1.0	-43.2	-25.0	-18.2	
5.60	-65.7	V	3.0	-15.5	36.1	1.0	-50.6	-25.0	-25.6	
7.73	-68.2	V	3.0	-14.9	35.0	1.0	-48.9	-25.0	-23.9	
10.70	-66.6	V	3.0	-11.0	32.9	1.0	-43.0	-25.0	-18.0	

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LTE B41 20MHz + 20MHz 16QAM

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9.4. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 4

9.4.1. LTE BAND 7

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-70.3	H	3.0	-20.9	36.2	1.0	-56.1	-25.0	-31.1	
7.55	-70.6	H	3.0	-17.4	35.1	1.0	-51.5	-25.0	-26.5	
10.07	-70.2	H	3.0	-14.6	33.3	1.0	-46.9	-25.0	-21.9	
5.03	-69.9	V	3.0	-20.6	36.2	1.0	-55.8	-25.0	-30.8	
7.55	-71.3	V	3.0	-18.2	35.1	1.0	-52.3	-25.0	-27.3	
10.07	-69.7	V	3.0	-14.3	33.3	1.0	-46.6	-25.0	-21.6	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.3	H	3.0	-20.8	36.3	1.0	-56.1	-25.0	-31.1	
7.61	-70.7	H	3.0	-17.5	35.1	1.0	-51.5	-25.0	-26.5	
10.15	-71.1	H	3.0	-15.6	33.3	1.0	-47.8	-25.0	-22.8	
5.07	-70.1	V	3.0	-20.7	36.3	1.0	-56.0	-25.0	-31.0	
7.61	-70.2	V	3.0	-17.0	35.1	1.0	-51.0	-25.0	-26.0	
10.15	-70.5	V	3.0	-15.1	33.3	1.0	-47.4	-25.0	-22.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.1	H	3.0	-20.5	36.3	1.0	-55.7	-25.0	-30.7	
7.67	-68.6	H	3.0	-15.2	35.0	1.0	-49.3	-25.0	-24.3	
10.23	-71.6	H	3.0	-16.0	33.2	1.0	-48.2	-25.0	-23.2	
5.11	-69.1	V	3.0	-19.7	36.3	1.0	-55.0	-25.0	-30.0	
7.67	-69.0	V	3.0	-15.7	35.0	1.0	-49.8	-25.0	-24.8	
10.23	-72.5	V	3.0	-17.1	33.2	1.0	-49.3	-25.0	-24.3	

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LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+2524.4MHz 1-99 1-0										
5.03	-70.4	H	3.0	-20.9	36.2	1.0	-56.2	-25.0	-31.2	
7.55	-70.8	H	3.0	-17.6	35.1	1.0	-51.7	-25.0	-26.7	
10.07	-70.3	H	3.0	-14.7	33.3	1.0	-47.0	-25.0	-22.0	
5.03	-69.7	V	3.0	-20.4	36.2	1.0	-55.7	-25.0	-30.7	
7.55	-71.0	V	3.0	-17.9	35.1	1.0	-52.0	-25.0	-27.0	
10.07	-69.9	V	3.0	-14.5	33.3	1.0	-46.8	-25.0	-21.8	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-69.8	H	3.0	-20.3	36.3	1.0	-55.6	-25.0	-30.6	
7.61	-70.3	H	3.0	-17.1	35.1	1.0	-51.1	-25.0	-26.1	
10.15	-70.5	H	3.0	-14.9	33.3	1.0	-47.2	-25.0	-22.2	
5.07	-70.1	V	3.0	-20.8	36.3	1.0	-56.1	-25.0	-31.1	
7.61	-70.2	V	3.0	-17.0	35.1	1.0	-51.0	-25.0	-26.0	
10.15	-71.2	V	3.0	-15.8	33.3	1.0	-48.1	-25.0	-23.1	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.1	H	3.0	-20.5	36.3	1.0	-55.8	-25.0	-30.8	
7.67	-68.6	H	3.0	-15.3	35.0	1.0	-49.3	-25.0	-24.3	
10.23	-71.4	H	3.0	-15.8	33.2	1.0	-48.0	-25.0	-23.0	
5.11	-69.6	V	3.0	-20.2	36.3	1.0	-55.4	-25.0	-30.4	
7.67	-69.1	V	3.0	-15.8	35.0	1.0	-49.8	-25.0	-24.8	
10.23	-72.8	V	3.0	-17.4	33.2	1.0	-49.6	-25.0	-24.6	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2528.8MHz 1-99 1-0										
5.04	-70.1	H	3.0	-22.0	36.1	1.0	-57.1	-25.0	-32.1	
7.56	-69.7	H	3.0	-20.0	36.3	1.0	-55.2	-25.0	-30.2	
10.08	-68.7	H	3.0	-13.2	33.4	1.0	-45.7	-25.0	-20.7	
5.04	-70.5	V	3.0	-20.9	36.3	1.0	-56.2	-25.0	-31.2	
7.56	-70.1	V	3.0	-16.5	34.8	1.0	-50.3	-25.0	-25.3	
10.08	-69.9	V	3.0	-13.9	32.1	1.0	-45.0	-25.0	-20.0	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-72.4	H	3.0	-21.4	36.0	1.0	-56.4	-25.0	-31.4	
7.63	-73.0	H	3.0	-20.0	35.2	1.0	-54.2	-25.0	-29.2	
10.18	-71.8	H	3.0	-15.5	32.0	1.0	-46.5	-25.0	-21.5	
5.05	-72.2	V	3.0	-24.5	36.1	1.0	-59.6	-25.0	-34.6	
7.63	-73.7	V	3.0	-20.5	35.0	1.0	-54.5	-25.0	-29.5	
10.18	-73.6	V	3.0	-18.2	33.2	1.0	-50.5	-25.0	-25.5	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-69.8	H	3.0	-20.7	36.2	1.0	-55.9	-25.0	-30.9	
7.65	-69.5	H	3.0	-18.8	36.0	1.0	-53.9	-25.0	-28.9	
10.20	-71.8	H	3.0	-15.5	32.0	1.0	-46.6	-25.0	-21.6	
5.10	-68.6	V	3.0	-21.6	36.3	1.0	-56.8	-25.0	-31.8	
7.65	-69.5	V	3.0	-18.2	35.8	1.0	-53.1	-25.0	-28.1	
10.20	-71.2	V	3.0	-15.7	33.2	1.0	-48.0	-25.0	-23.0	

Rev. 05.21.15

LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/20

Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	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)+ 2529.8MHz 1-99 1-0										
5.04	-72.2	H	3.0	-20.6	36.2	1.0	-55.9	-25.0	-30.9	
7.56	-70.7	H	3.0	-17.5	36.1	1.0	-51.6	-25.0	-26.6	
10.08	-69.8	H	3.0	-14.2	33.3	1.0	-46.5	-25.0	-21.5	
5.04	-70.9	V	3.0	-21.5	36.2	1.0	-56.8	-25.0	-31.8	
7.56	-70.6	V	3.0	-17.5	36.1	1.0	-51.6	-25.0	-26.6	
10.08	-69.5	V	3.0	-14.1	33.3	1.0	-46.4	-25.0	-21.4	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.05	-72.2	H	3.0	-22.8	36.3	1.0	-58.0	-25.0	-33.0	
7.63	-73.9	H	3.0	-20.6	36.0	1.0	-54.6	-25.0	-29.6	
10.18	-72.4	H	3.0	-16.8	33.2	1.0	-49.0	-25.0	-24.0	
5.05	-72.4	V	3.0	-23.1	36.3	1.0	-58.3	-25.0	-33.3	
7.63	-71.9	V	3.0	-18.6	36.0	1.0	-52.7	-25.0	-27.7	
10.18	-72.4	V	3.0	-17.0	33.2	1.0	-49.2	-25.0	-24.2	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-70.1	H	3.0	-20.6	36.3	1.0	-55.8	-25.0	-30.8	
7.65	-69.6	H	3.0	-16.3	36.0	1.0	-50.3	-25.0	-25.3	
10.20	-72.1	H	3.0	-16.5	33.2	1.0	-48.7	-25.0	-23.7	
5.10	-70.5	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.65	-69.3	V	3.0	-16.1	36.0	1.0	-50.1	-25.0	-25.1	
10.20	-71.9	V	3.0	-16.5	33.2	1.0	-48.8	-25.0	-23.8	

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LTE B7 20MHz + 20MHz 16QAM

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9.4.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/5

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) +2517.7MHz 1-99, 1-0										
5.02	-73.1	H	3.0	-23.7	36.2	1.0	-59.0	-25.0	-34.0	
7.54	-73.6	H	3.0	-20.4	35.1	1.0	-54.5	-25.0	-29.5	
10.05	-73.3	H	3.0	-17.8	33.3	1.0	-50.1	-25.0	-25.1	
5.02	-74.2	V	3.0	-24.9	36.2	1.0	-60.1	-25.0	-35.1	
7.54	-71.8	V	3.0	-18.7	35.1	1.0	-52.8	-25.0	-27.8	
10.05	-73.0	V	3.0	-17.6	33.3	1.0	-50.0	-25.0	-25.0	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-73.1	H	3.0	-23.4	36.3	1.0	-58.6	-25.0	-33.6	
7.79	-71.5	H	3.0	-18.1	34.9	1.0	-52.0	-25.0	-27.0	
10.39	-74.1	H	3.0	-18.4	33.1	1.0	-50.5	-25.0	-25.5	
5.19	-71.5	V	3.0	-22.0	36.3	1.0	-57.3	-25.0	-32.3	
7.79	-71.2	V	3.0	-17.9	34.9	1.0	-51.8	-25.0	-26.8	
10.39	-75.2	V	3.0	-19.7	33.1	1.0	-51.8	-25.0	-26.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-69.4	H	3.0	-19.4	36.2	1.0	-54.6	-25.0	-29.6	
8.04	-75.2	H	3.0	-21.6	34.8	1.0	-55.3	-25.0	-30.3	
10.72	-73.1	H	3.0	-17.3	32.9	1.0	-49.2	-25.0	-24.2	
5.36	-69.8	V	3.0	-20.0	36.2	1.0	-55.2	-25.0	-30.2	
8.04	-74.5	V	3.0	-20.9	34.8	1.0	-54.6	-25.0	-29.6	
10.72	-75.1	V	3.0	-19.6	32.9	1.0	-51.5	-25.0	-26.5	

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LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/5

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) +2517.7MHz 1-99, 1-0										
5.02	-71.6	H	3.0	-22.2	36.2	1.0	-57.4	-25.0	-32.4	
7.54	-72.7	H	3.0	-19.5	35.1	1.0	-53.6	-25.0	-28.6	
10.05	-72.5	H	3.0	-16.9	33.3	1.0	-49.3	-25.0	-24.3	
5.02	-71.8	V	3.0	-22.5	36.2	1.0	-57.7	-25.0	-32.7	
7.54	-72.7	V	3.0	-19.6	35.1	1.0	-53.7	-25.0	-28.7	
10.05	-73.4	V	3.0	-18.0	33.3	1.0	-50.4	-25.0	-25.4	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-72.1	H	3.0	-22.4	36.3	1.0	-57.7	-25.0	-32.7	
7.79	-70.3	H	3.0	-16.9	34.9	1.0	-50.8	-25.0	-25.8	
10.39	-75.0	H	3.0	-19.3	33.1	1.0	-51.4	-25.0	-26.4	
5.19	-72.3	V	3.0	-22.8	36.3	1.0	-58.1	-25.0	-33.1	
7.79	-71.0	V	3.0	-17.6	34.9	1.0	-51.6	-25.0	-26.6	
10.39	-76.2	V	3.0	-20.7	33.1	1.0	-52.8	-25.0	-27.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-73.0	H	3.0	-23.0	36.2	1.0	-58.2	-25.0	-33.2	
8.04	-72.7	H	3.0	-19.0	34.8	1.0	-52.8	-25.0	-27.8	
10.72	-75.8	H	3.0	-20.0	32.9	1.0	-51.9	-25.0	-26.9	
5.36	-72.5	V	3.0	-22.7	36.2	1.0	-58.0	-25.0	-33.0	
8.04	-73.0	V	3.0	-19.4	34.8	1.0	-53.2	-25.0	-28.2	
10.72	-73.8	V	3.0	-18.2	32.9	1.0	-50.1	-25.0	-25.1	

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LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/20

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) + 2525.8MHz 1-99 1-0										
5.03	-73.3	H	3.0	-23.9	36.2	1.0	-59.1	-25.0	-34.1	
7.55	-72.3	H	3.0	-19.1	35.1	1.0	-53.2	-25.0	-28.2	
10.06	-71.9	H	3.0	-16.4	33.3	1.0	-48.7	-25.0	-23.7	
5.04	-72.8	V	3.0	-23.5	36.2	1.0	-58.7	-25.0	-33.7	
7.55	-73.8	V	3.0	-20.6	35.1	1.0	-54.7	-25.0	-29.7	
10.07	-72.9	V	3.0	-17.5	33.3	1.0	-49.8	-25.0	-24.8	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-72.5	H	3.0	-22.7	36.3	1.0	-58.0	-25.0	-33.0	
7.78	-73.3	H	3.0	-19.9	34.9	1.0	-53.8	-25.0	-28.8	
10.37	-73.0	H	3.0	-17.3	33.1	1.0	-49.4	-25.0	-24.4	
5.18	-72.3	V	3.0	-22.8	36.3	1.0	-58.1	-25.0	-33.1	
7.78	-73.7	V	3.0	-20.4	34.9	1.0	-54.3	-25.0	-29.3	
10.56	-73.3	V	3.0	-17.8	33.0	1.0	-49.8	-25.0	-24.8	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-70.1	H	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
8.01	-74.4	H	3.0	-20.8	34.8	1.0	-54.5	-25.0	-29.5	
10.68	-72.8	H	3.0	-17.0	32.9	1.0	-48.9	-25.0	-23.9	
5.34	-70.0	V	3.0	-20.3	36.2	1.0	-55.5	-25.0	-30.5	
8.02	-73.2	V	3.0	-19.6	34.8	1.0	-53.4	-25.0	-28.4	
10.67	-72.3	V	3.0	-16.8	32.9	1.0	-48.7	-25.0	-23.7	

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LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/26/18
Test Engineer: 31300
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/20

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

Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | 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) + 2525.8MHz 1-99 1-0										
5.03	-72.6	H	3.0	-23.2	36.2	1.0	-58.4	-25.0	-33.4	
7.55	-73.6	H	3.0	-20.4	35.1	1.0	-54.5	-25.0	-29.5	
10.06	-71.6	H	3.0	-16.0	33.3	1.0	-48.3	-25.0	-23.3	
5.02	-73.0	V	3.0	-23.7	36.2	1.0	-59.0	-25.0	-34.0	
7.55	-74.0	V	3.0	-20.9	35.1	1.0	-55.0	-25.0	-30.0	
10.06	-72.7	V	3.0	-17.3	33.3	1.0	-49.6	-25.0	-24.6	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-73.3	H	3.0	-23.6	36.3	1.0	-58.9	-25.0	-33.9	
7.78	-73.9	H	3.0	-20.5	34.9	1.0	-54.5	-25.0	-29.5	
10.37	-72.8	H	3.0	-17.1	33.1	1.0	-49.2	-25.0	-24.2	
5.19	-71.6	V	3.0	-22.1	36.3	1.0	-57.4	-25.0	-32.4	
7.78	-73.3	V	3.0	-19.9	34.9	1.0	-53.9	-25.0	-28.9	
10.37	-71.6	V	3.0	-16.2	33.1	1.0	-48.3	-25.0	-23.3	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-70.1	H	3.0	-20.1	36.2	1.0	-55.4	-25.0	-30.4	
8.01	-74.4	H	3.0	-20.7	34.8	1.0	-54.5	-25.0	-29.5	
10.68	-73.2	H	3.0	-17.4	32.9	1.0	-49.4	-25.0	-24.4	
5.35	-70.6	V	3.0	-20.9	36.2	1.0	-56.1	-25.0	-31.1	
8.02	-74.0	V	3.0	-20.4	34.8	1.0	-54.2	-25.0	-29.2	
10.69	-73.2	V	3.0	-17.7	32.9	1.0	-49.6	-25.0	-24.6	

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LTE B41 20MHz + 20MHz 16QAM

END OF REPORT

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10. SETUP PHOTOS

Please refer to 12204475-EP1V1 for setup photos

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