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 Port A 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	30.61	22.79	7.82
				16QAM	30.58	21.82	8.76
	15 MHz / 15MHz	2527.5	2542.5	QPSK	30.71	22.85	7.86
				16QAM	30.67	21.85	8.82
	15MHz / 20MHz	2525.3	2542.4	QPSK	30.64	22.91	7.73
				16QAM	30.61	21.90	8.71
	20MHz / 10MHz	2530.1	2544.5	QPSK	30.75	22.86	7.89
				16QAM	30.81	21.83	8.98
	20MHz / 15MHz	2527.6	2544.7	QPSK	30.81	22.92	7.89
				16QAM	30.72	21.91	8.81
	20MHz / 20MHz	2525.1	2544.9	QPSK	30.59	23.01	7.58
				16QAM	30.56	21.98	8.58
Duty Cycle Correction Factor (dB) =							
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

8.3.2 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	31.13	15.71	8.33
				16QAM	31.19	14.73	9.37
	10MHz / 20MHz	2583.6	2598.0	QPSK	30.97	15.63	8.25
				16QAM	31.31	14.79	9.43
	15MHz / 15MHz	2585.5	2600.5	QPSK	30.90	15.61	8.20
				16QAM	30.95	14.65	9.21
	15MHz / 20MHz	2583.3	2600.4	QPSK	31.02	15.66	8.27
				16QAM	31.02	14.70	9.23
	20MHz / 5MHz	2590.5	2602.2	QPSK	31.10	15.69	8.32
				16QAM	31.16	14.74	9.33
	20MHz / 10MHz	2588.1	2602.5	QPSK	30.99	15.61	8.29
				16QAM	31.13	14.66	9.38
	20MHz / 15MHz	2585.6	2602.7	QPSK	31.05	15.67	8.29
				16QAM	31.05	14.69	9.27
	20MHz / 20MHz	2583.1	2602.9	QPSK	30.86	15.71	8.06
				16QAM	30.99	14.74	9.16
Duty Cycle Correction Factor (dB) =			7.09				
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 v03r01/D02 v01

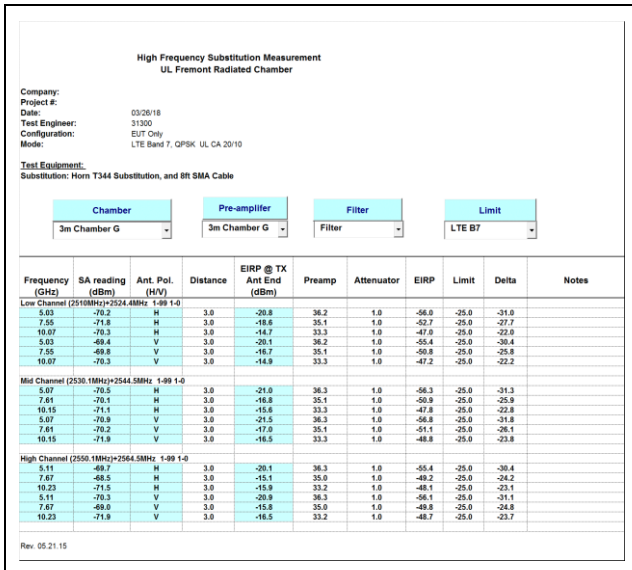
MODES TESTED

- LTE Band 7
- LTE Band 41

RESULTS

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

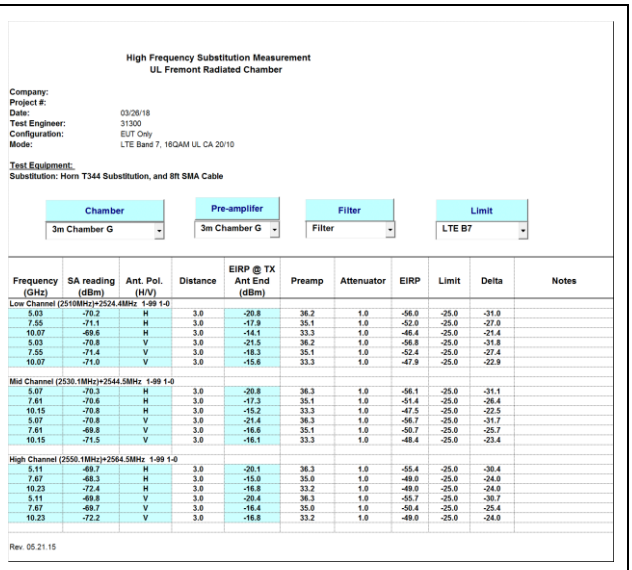
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 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	-70.2	H	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
7.55	-71.8	H	3.0	-18.6	35.1	1.0	-52.7	-25.0	-27.7	
10.07	-70.3	H	3.0	-14.7	33.3	1.0	-47.0	-25.0	-22.0	
5.03	-69.4	V	3.0	-20.1	36.2	1.0	-55.4	-25.0	-30.4	
7.55	-69.8	V	3.0	-16.7	35.1	1.0	-50.8	-25.0	-25.8	
10.07	-70.3	V	3.0	-14.9	33.3	1.0	-47.2	-25.0	-22.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.5	H	3.0	-21.0	36.3	1.0	-56.3	-25.0	-31.3	
7.61	-70.1	H	3.0	-16.8	35.1	1.0	-50.9	-25.0	-25.9	
10.15	-71.1	H	3.0	-15.6	33.3	1.0	-47.8	-25.0	-22.8	
5.07	-70.9	V	3.0	-21.5	36.3	1.0	-56.8	-25.0	-31.8	
7.61	-70.2	V	3.0	-17.0	35.1	1.0	-51.1	-25.0	-26.1	
10.15	-71.9	V	3.0	-16.5	33.3	1.0	-48.8	-25.0	-23.8	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-69.7	H	3.0	-20.1	36.3	1.0	-55.4	-25.0	-30.4	
7.67	-68.5	H	3.0	-15.1	35.0	1.0	-49.2	-25.0	-24.2	
10.23	-71.5	H	3.0	-15.9	33.2	1.0	-48.1	-25.0	-23.1	
5.11	-70.3	V	3.0	-20.9	36.3	1.0	-56.1	-25.0	-31.1	
7.67	-69.0	V	3.0	-15.8	35.0	1.0	-49.8	-25.0	-24.8	
10.23	-71.9	V	3.0	-16.5	33.2	1.0	-48.7	-25.0	-23.7	

Rev. 05.21.15

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

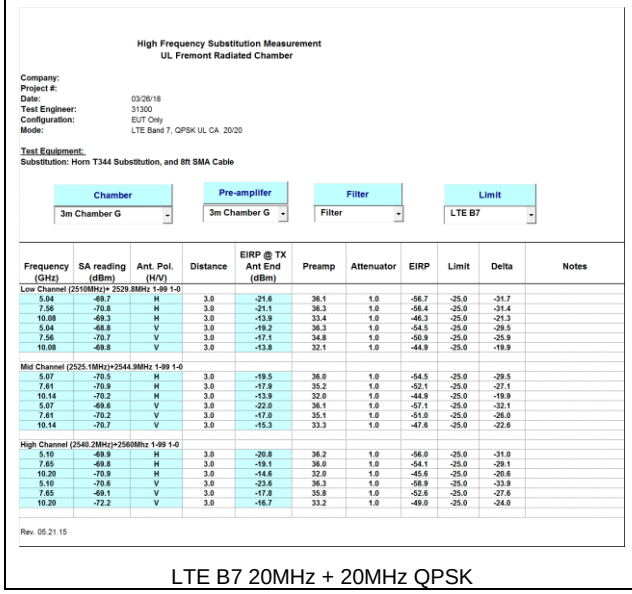
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 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	-70.2	H	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
7.55	-71.1	H	3.0	-17.9	35.1	1.0	-52.0	-25.0	-27.0	
10.07	-69.6	H	3.0	-14.1	33.3	1.0	-46.4	-25.0	-21.4	
5.03	-70.8	V	3.0	-21.5	36.2	1.0	-56.8	-25.0	-31.8	
7.55	-71.4	V	3.0	-18.3	35.1	1.0	-52.4	-25.0	-27.4	
10.07	-71.0	V	3.0	-15.6	33.3	1.0	-47.9	-25.0	-22.9	
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	-70.6	H	3.0	-17.3	35.1	1.0	-51.4	-25.0	-26.4	
10.15	-70.8	H	3.0	-15.2	33.3	1.0	-47.5	-25.0	-22.5	
5.07	-70.8	V	3.0	-21.4	36.3	1.0	-56.7	-25.0	-31.7	
7.61	-69.8	V	3.0	-16.6	35.1	1.0	-50.7	-25.0	-25.7	
10.15	-71.5	V	3.0	-16.1	33.3	1.0	-48.4	-25.0	-23.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-69.7	H	3.0	-20.1	36.3	1.0	-55.4	-25.0	-30.4	
7.67	-68.3	H	3.0	-15.0	35.0	1.0	-49.0	-25.0	-24.0	
10.23	-72.4	H	3.0	-16.8	33.2	1.0	-49.0	-25.0	-24.0	
5.11	-69.8	V	3.0	-20.4	36.3	1.0	-55.7	-25.0	-30.7	
7.67	-69.7	V	3.0	-16.4	35.0	1.0	-50.4	-25.0	-25.4	
10.23	-72.2	V	3.0	-16.8	33.2	1.0	-49.0	-25.0	-24.0	

Rev. 05.21.15

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

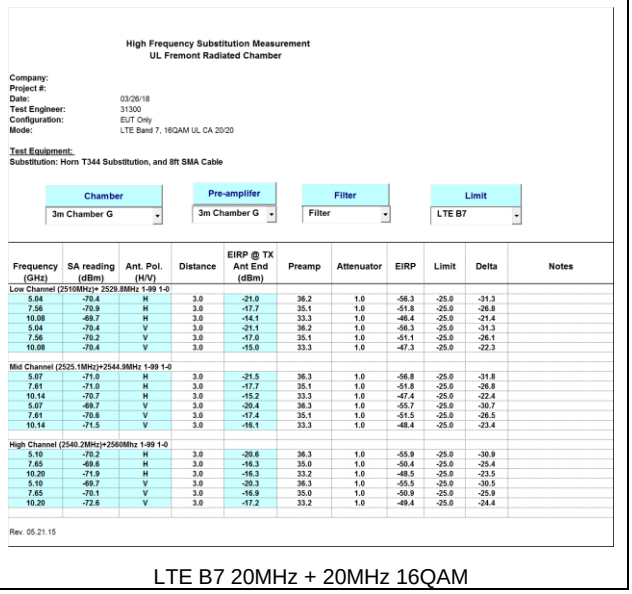
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber: 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	-69.7	H	3.0	-21.6	36.1	1.0	-56.7	-25.0	-31.7	
7.56	-70.8	H	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
10.08	-69.3	H	3.0	-13.9	33.4	1.0	-46.3	-25.0	-21.3	
5.04	-68.8	V	3.0	-19.2	36.3	1.0	-54.5	-25.0	-29.5	
7.56	-70.7	V	3.0	-17.1	34.8	1.0	-50.9	-25.0	-25.9	
10.08	-69.8	V	3.0	-13.8	32.1	1.0	-44.9	-25.0	-19.9	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-70.5	H	3.0	-19.5	36.0	1.0	-54.5	-25.0	-29.5	
7.61	-70.9	H	3.0	-17.9	35.2	1.0	-52.1	-25.0	-27.1	
10.14	-70.2	H	3.0	-13.9	32.0	1.0	-44.9	-25.0	-19.9	
5.07	-69.8	V	3.0	-22.0	36.1	1.0	-57.1	-25.0	-32.1	
7.61	-70.2	V	3.0	-17.0	35.1	1.0	-51.0	-25.0	-26.0	
10.14	-70.7	V	3.0	-15.3	33.3	1.0	-47.6	-25.0	-22.6	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-69.9	H	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
7.65	-69.8	H	3.0	-19.1	36.0	1.0	-54.1	-25.0	-29.1	
10.20	-70.9	H	3.0	-14.6	32.0	1.0	-45.6	-25.0	-20.6	
5.10	-70.6	V	3.0	-23.6	36.3	1.0	-58.9	-25.0	-33.9	
7.65	-69.1	V	3.0	-17.8	35.8	1.0	-52.6	-25.0	-27.6	
10.20	-72.2	V	3.0	-16.7	33.2	1.0	-49.0	-25.0	-24.0	

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: 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	-70.4	H	3.0	-21.0	36.2	1.0	-56.3	-25.0	-31.3	
7.56	-70.9	H	3.0	-17.7	35.1	1.0	-51.8	-25.0	-26.8	
10.08	-69.7	H	3.0	-14.1	33.3	1.0	-46.4	-25.0	-21.4	
5.04	-70.4	V	3.0	-21.1	36.2	1.0	-56.3	-25.0	-31.3	
7.56	-70.2	V	3.0	-17.0	35.1	1.0	-51.1	-25.0	-26.1	
10.08	-70.4	V	3.0	-15.0	33.3	1.0	-47.3	-25.0	-22.3	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-71.0	H	3.0	-21.5	36.3	1.0	-56.8	-25.0	-31.8	
7.61	-71.0	H	3.0	-17.7	35.1	1.0	-51.8	-25.0	-26.8	
10.14	-70.7	H	3.0	-15.2	33.3	1.0	-47.4	-25.0	-22.4	
5.07	-69.7	V	3.0	-20.4	36.3	1.0	-55.7	-25.0	-30.7	
7.61	-70.6	V	3.0	-17.4	35.1	1.0	-51.5	-25.0	-26.5	
10.14	-71.5	V	3.0	-16.1	33.3	1.0	-48.4	-25.0	-23.4	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-70.2	H	3.0	-20.6	36.3	1.0	-55.9	-25.0	-30.9	
7.65	-69.6	H	3.0	-16.3	35.0	1.0	-50.4	-25.0	-25.4	
10.20	-71.9	H	3.0	-16.3	33.2	1.0	-48.5	-25.0	-23.5	
5.10	-69.7	V	3.0	-20.3	36.3	1.0	-55.5	-25.0	-30.5	
7.65	-70.1	V	3.0	-16.9	35.0	1.0	-50.9	-25.0	-25.9	
10.20	-72.6	V	3.0	-17.2	33.2	1.0	-49.4	-25.0	-24.4	

Rev. 05.21.15

LTE B7 20MHz + 20MHz 16QAM

9.1.2. 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	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	-69.3	H	3.0	-19.9	36.2	1.0	-55.1	-25.0	-30.1	
7.54	-69.9	H	3.0	-16.7	35.1	1.0	-50.8	-25.0	-25.8	
10.05	-71.4	H	3.0	-15.8	33.3	1.0	-48.2	-25.0	-23.2	
5.02	-70.2	V	3.0	-20.9	36.2	1.0	-56.2	-25.0	-31.2	
7.54	-69.1	V	3.0	-16.0	35.1	1.0	-50.1	-25.0	-25.1	
10.05	-71.7	V	3.0	-16.3	33.3	1.0	-48.7	-25.0	-23.7	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-70.2	H	3.0	-20.5	36.3	1.0	-55.8	-25.0	-30.8	
7.79	-69.5	H	3.0	-16.1	34.9	1.0	-50.0	-25.0	-25.0	
10.39	-73.5	H	3.0	-17.9	33.1	1.0	-50.0	-25.0	-25.0	
5.19	-71.5	V	3.0	-22.1	36.3	1.0	-57.3	-25.0	-32.3	
7.79	-69.3	V	3.0	-15.9	34.9	1.0	-49.9	-25.0	-24.9	
10.39	-72.6	V	3.0	-17.1	33.1	1.0	-49.2	-25.0	-24.2	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-70.3	H	3.0	-20.3	36.2	1.0	-55.5	-25.0	-30.5	
8.04	-69.2	H	3.0	-15.5	34.8	1.0	-49.3	-25.0	-24.3	
10.72	-71.3	H	3.0	-15.5	32.9	1.0	-47.4	-25.0	-22.4	
5.36	-71.7	V	3.0	-21.9	36.2	1.0	-57.1	-25.0	-32.1	
8.04	-68.6	V	3.0	-15.0	34.8	1.0	-48.8	-25.0	-23.8	
10.72	-71.7	V	3.0	-16.1	32.9	1.0	-48.0	-25.0	-23.0	

Rev. 05.21.15

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	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	-69.4	H	3.0	-20.0	36.2	1.0	-55.3	-25.0	-30.3	
7.54	-67.8	H	3.0	-14.6	35.1	1.0	-48.7	-25.0	-23.7	
10.05	-72.1	H	3.0	-16.6	33.3	1.0	-48.9	-25.0	-23.9	
5.02	-68.8	V	3.0	-19.5	36.2	1.0	-54.7	-25.0	-29.7	
7.54	-69.0	V	3.0	-15.9	35.1	1.0	-50.0	-25.0	-25.0	
10.05	-73.0	V	3.0	-17.6	33.3	1.0	-49.9	-25.0	-24.9	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-68.1	H	3.0	-18.4	36.3	1.0	-53.6	-25.0	-28.6	
7.79	-68.3	H	3.0	-14.9	34.9	1.0	-48.8	-25.0	-23.8	
10.39	-71.4	H	3.0	-15.8	33.1	1.0	-47.9	-25.0	-22.9	
5.19	-69.5	V	3.0	-20.0	36.3	1.0	-55.3	-25.0	-30.3	
7.79	-69.3	V	3.0	-16.0	34.9	1.0	-49.9	-25.0	-24.9	
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	-69.5	H	3.0	-19.5	36.2	1.0	-54.7	-25.0	-29.7	
8.04	-69.5	H	3.0	-15.8	34.8	1.0	-49.6	-25.0	-24.6	
10.72	-73.8	H	3.0	-18.0	32.9	1.0	-49.9	-25.0	-24.9	
5.36	-69.3	V	3.0	-19.5	36.2	1.0	-54.7	-25.0	-29.7	
8.04	-69.5	V	3.0	-15.9	34.8	1.0	-49.6	-25.0	-24.6	
10.72	-73.4	V	3.0	-17.9	32.9	1.0	-49.8	-25.0	-24.8	

Rev. 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 12204471
Date: 03/22/18
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	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	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	-59.7	H	3.0	-7.1	34.2	1.0	-40.3	-25.0	-15.3	
7.55	-62.8	H	3.0	-6.3	33.6	1.0	-38.8	-25.0	-13.8	
10.06	-63.3	H	3.0	-3.5	31.7	1.0	-34.2	-25.0	-9.2	
5.03	-59.6	V	3.0	-6.8	34.2	1.0	-40.0	-25.0	-15.0	
7.55	-62.9	V	3.0	-6.6	33.6	1.0	-39.1	-25.0	-14.1	
10.06	-63.1	V	3.0	-3.3	31.7	1.0	-34.0	-25.0	-9.0	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-62.3	H	3.0	-9.4	34.2	1.0	-42.6	-25.0	-17.6	
7.78	-62.6	H	3.0	-5.7	33.3	1.0	-38.0	-25.0	-13.0	
10.37	-62.0	H	3.0	-2.0	31.9	1.0	-32.9	-25.0	-7.9	
5.19	-61.7	V	3.0	-8.6	34.2	1.0	-41.8	-25.0	-16.8	
7.78	-62.5	V	3.0	-5.9	33.3	1.0	-38.2	-25.0	-13.2	
10.37	-62.7	V	3.0	-2.6	31.9	1.0	-33.5	-25.0	-8.5	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-62.5	H	3.0	-9.5	34.2	1.0	-42.6	-25.0	-17.6	
8.01	-61.9	H	3.0	-4.8	33.1	1.0	-36.9	-25.0	-11.9	
10.68	-62.5	H	3.0	-2.3	32.2	1.0	-33.5	-25.0	-8.5	
5.34	-63.0	V	3.0	-9.6	34.2	1.0	-42.8	-25.0	-17.8	
8.01	-62.0	V	3.0	-5.0	33.1	1.0	-37.1	-25.0	-12.1	
10.68	-63.0	V	3.0	-2.6	32.2	1.0	-33.8	-25.0	-8.8	

Rev. 05.21.15

LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 12204471
Date: 03/22/18
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	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	LTE B41

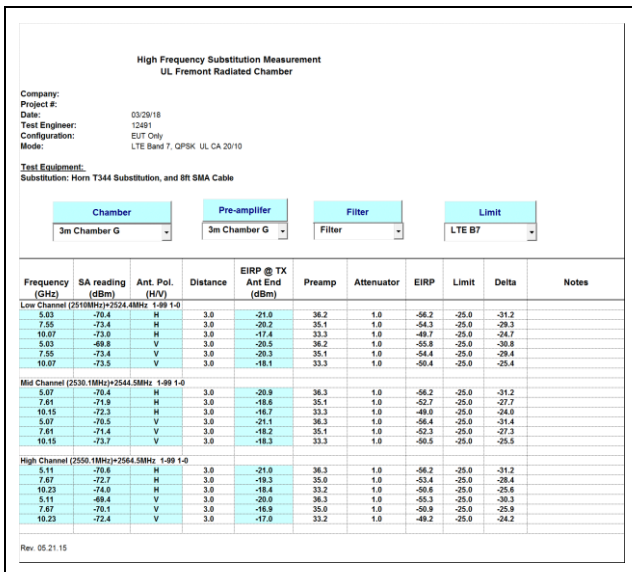
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 1-99 1-0										
5.03	-59.9	H	3.0	-7.3	34.2	1.0	-40.5	-25.0	-15.5	
7.55	-62.5	H	3.0	-6.0	33.6	1.0	-38.5	-25.0	-13.5	
10.06	-63.3	H	3.0	-3.4	31.7	1.0	-34.1	-25.0	-9.1	
5.03	-59.8	V	3.0	-7.0	34.2	1.0	-40.2	-25.0	-15.2	
7.55	-62.8	V	3.0	-6.6	33.6	1.0	-39.0	-25.0	-14.0	
10.06	-63.5	V	3.0	-3.7	31.7	1.0	-34.4	-25.0	-9.4	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-61.5	H	3.0	-8.7	34.2	1.0	-41.9	-25.0	-16.9	
7.78	-62.9	H	3.0	-6.1	33.3	1.0	-38.4	-25.0	-13.4	
10.37	-62.9	H	3.0	-2.9	31.9	1.0	-33.8	-25.0	-8.8	
5.19	-61.4	V	3.0	-8.2	34.2	1.0	-41.4	-25.0	-16.4	
7.78	-63.3	V	3.0	-6.6	33.3	1.0	-38.9	-25.0	-13.9	
10.37	-63.3	V	3.0	-3.2	31.9	1.0	-34.1	-25.0	-9.1	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-63.1	H	3.0	-10.0	34.2	1.0	-43.1	-25.0	-18.1	
8.01	-62.8	H	3.0	-5.7	33.1	1.0	-37.8	-25.0	-12.8	
10.68	-62.7	H	3.0	-2.5	32.2	1.0	-33.7	-25.0	-8.7	
5.34	-63.5	V	3.0	-10.1	34.2	1.0	-43.3	-25.0	-18.3	
8.01	-62.8	V	3.0	-5.7	33.1	1.0	-37.8	-25.0	-12.8	
10.68	-62.4	V	3.0	-2.0	32.2	1.0	-33.2	-25.0	-8.2	

Rev. 05.21.15

LTE B41 20MHz + 20MHz 16QAM

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: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

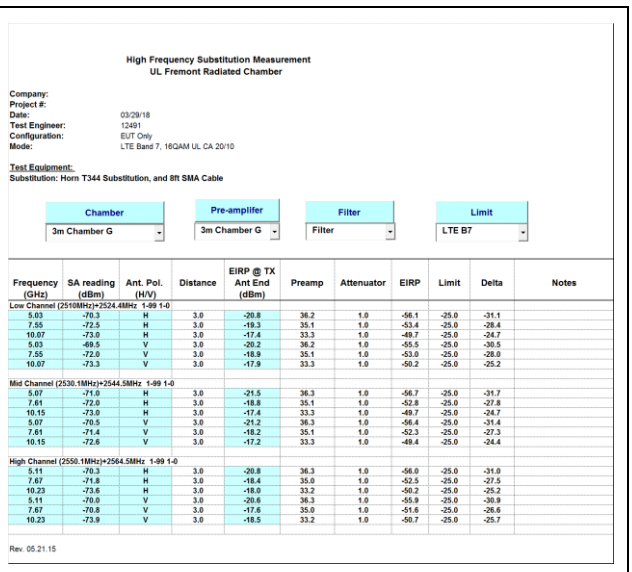
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-70.4	H	3.0	-21.0	36.2	1.0	-56.2	-25.0	-31.2	
7.55	-73.4	H	3.0	-20.2	35.1	1.0	-54.3	-25.0	-29.3	
10.07	-73.0	H	3.0	-17.4	33.3	1.0	-49.7	-25.0	-24.7	
5.03	-69.8	V	3.0	-20.5	36.2	1.0	-55.8	-25.0	-30.8	
7.55	-73.4	V	3.0	-20.3	35.1	1.0	-54.4	-25.0	-29.4	
10.07	-73.5	V	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.4	H	3.0	-20.9	36.3	1.0	-56.2	-25.0	-31.2	
7.61	-71.9	H	3.0	-18.6	35.1	1.0	-52.7	-25.0	-27.7	
10.15	-72.3	H	3.0	-16.7	33.3	1.0	-49.0	-25.0	-24.0	
5.07	-70.5	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.61	-71.4	V	3.0	-18.2	35.1	1.0	-52.3	-25.0	-27.3	
10.15	-73.7	V	3.0	-18.3	33.3	1.0	-50.5	-25.0	-25.5	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.6	H	3.0	-21.0	36.3	1.0	-56.2	-25.0	-31.2	
7.67	-72.7	H	3.0	-19.3	35.0	1.0	-53.4	-25.0	-28.4	
10.23	-74.0	H	3.0	-18.4	33.2	1.0	-50.6	-25.0	-25.6	
5.11	-69.4	V	3.0	-20.0	36.3	1.0	-55.3	-25.0	-30.3	
7.67	-70.1	V	3.0	-16.9	35.0	1.0	-50.9	-25.0	-25.9	
10.23	-72.4	V	3.0	-17.0	33.2	1.0	-49.2	-25.0	-24.2	

Rev. 05.21.15

LTE B7 20MHz + 10MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

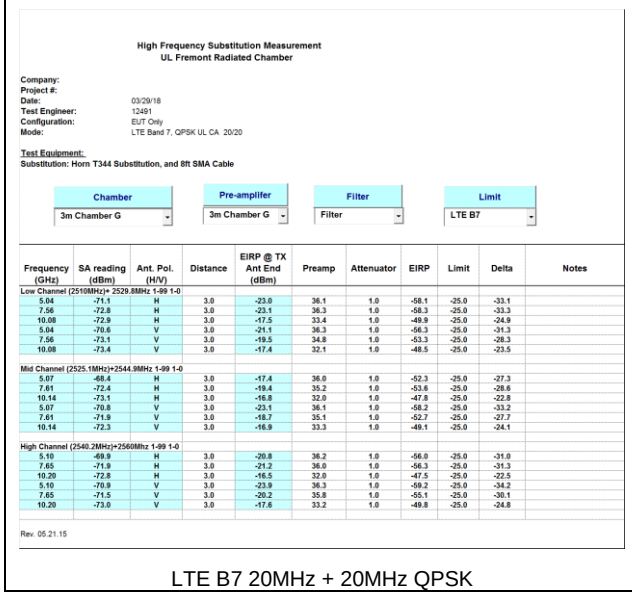
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-70.3	H	3.0	-20.8	36.2	1.0	-56.1	-25.0	-31.1	
7.55	-72.5	H	3.0	-19.3	35.1	1.0	-53.4	-25.0	-28.4	
10.07	-73.0	H	3.0	-17.4	33.3	1.0	-49.7	-25.0	-24.7	
5.03	-69.5	V	3.0	-20.2	36.2	1.0	-55.5	-25.0	-30.5	
7.55	-72.0	V	3.0	-18.9	35.1	1.0	-53.0	-25.0	-28.0	
10.07	-73.3	V	3.0	-17.9	33.3	1.0	-50.2	-25.0	-25.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-71.0	H	3.0	-21.5	36.3	1.0	-56.7	-25.0	-31.7	
7.61	-72.0	H	3.0	-18.8	35.1	1.0	-52.8	-25.0	-27.8	
10.15	-73.0	H	3.0	-17.4	33.3	1.0	-49.7	-25.0	-24.7	
5.07	-70.5	V	3.0	-21.2	36.3	1.0	-56.4	-25.0	-31.4	
7.61	-71.4	V	3.0	-18.2	35.1	1.0	-52.3	-25.0	-27.3	
10.15	-72.6	V	3.0	-17.2	33.3	1.0	-49.4	-25.0	-24.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.3	H	3.0	-20.8	36.3	1.0	-56.0	-25.0	-31.0	
7.67	-71.8	H	3.0	-18.4	35.0	1.0	-52.5	-25.0	-27.5	
10.23	-73.6	H	3.0	-18.0	33.2	1.0	-50.2	-25.0	-25.2	
5.11	-70.0	V	3.0	-20.6	36.3	1.0	-55.9	-25.0	-30.9	
7.67	-70.8	V	3.0	-17.6	35.0	1.0	-51.6	-25.0	-26.6	
10.23	-73.8	V	3.0	-18.5	33.2	1.0	-50.7	-25.0	-25.7	

Rev. 05.21.15

LTE B7 20MHz + 10MHz 16QAM



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

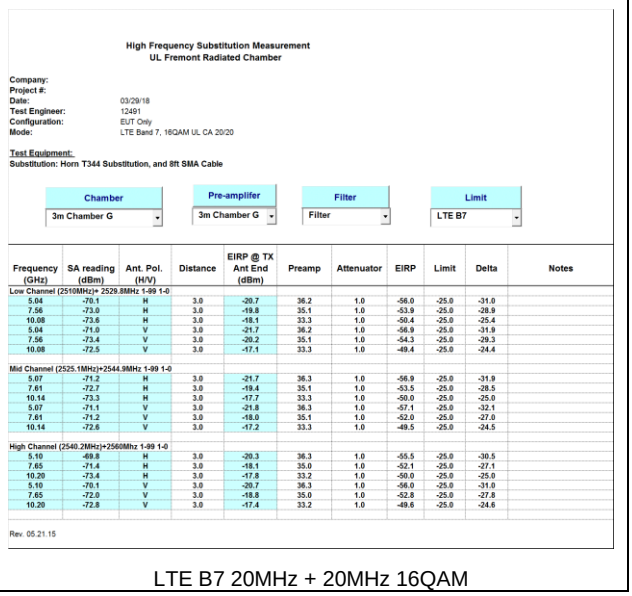
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-71.1	H	3.0	-23.0	36.1	1.0	-58.1	-25.0	-33.1	
7.56	-72.8	H	3.0	-23.1	36.3	1.0	-58.3	-25.0	-33.3	
10.08	-72.9	H	3.0	-17.5	33.4	1.0	-49.9	-25.0	-24.9	
5.04	-70.6	V	3.0	-21.1	36.3	1.0	-56.3	-25.0	-31.3	
7.56	-73.1	V	3.0	-19.5	34.8	1.0	-53.3	-25.0	-28.3	
10.08	-73.4	V	3.0	-17.4	32.1	1.0	-48.5	-25.0	-23.5	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-68.4	H	3.0	-17.4	36.0	1.0	-52.3	-25.0	-27.3	
7.61	-72.4	H	3.0	-19.4	35.2	1.0	-53.6	-25.0	-28.6	
10.14	-73.1	H	3.0	-16.8	32.0	1.0	-47.8	-25.0	-22.8	
5.07	-70.8	V	3.0	-23.1	36.1	1.0	-58.2	-25.0	-33.2	
7.61	-71.9	V	3.0	-18.7	35.1	1.0	-52.7	-25.0	-27.7	
10.14	-72.3	V	3.0	-16.9	33.3	1.0	-49.1	-25.0	-24.1	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-69.9	H	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
7.65	-71.9	H	3.0	-21.2	36.0	1.0	-56.3	-25.0	-31.3	
10.20	-72.8	H	3.0	-16.5	32.0	1.0	-47.5	-25.0	-22.5	
5.10	-70.9	V	3.0	-23.9	36.3	1.0	-59.2	-25.0	-34.2	
7.65	-71.5	V	3.0	-20.2	35.8	1.0	-55.1	-25.0	-30.1	
10.20	-73.0	V	3.0	-17.6	33.2	1.0	-49.8	-25.0	-24.8	

Rev. 05.21.15

LTE B7 20MHz + 20MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
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

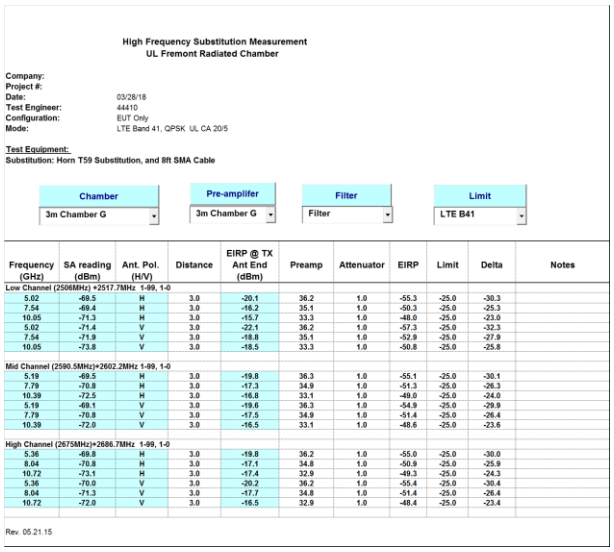
Chamber: 3m Chamber G | Pre-amplifer: 3m Chamber G | Filter: Filter | Limit: LTE B7

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	-70.1	H	3.0	-20.7	36.2	1.0	-56.0	-25.0	-31.0	
7.56	-73.0	H	3.0	-19.8	35.1	1.0	-53.9	-25.0	-28.9	
10.08	-73.6	H	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
5.04	-71.0	V	3.0	-21.7	36.2	1.0	-56.9	-25.0	-31.9	
7.56	-73.4	V	3.0	-20.2	35.1	1.0	-54.3	-25.0	-29.3	
10.08	-72.5	V	3.0	-17.1	33.3	1.0	-49.4	-25.0	-24.4	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-71.2	H	3.0	-21.7	36.3	1.0	-56.9	-25.0	-31.9	
7.61	-72.7	H	3.0	-19.4	35.1	1.0	-53.5	-25.0	-28.5	
10.14	-73.3	H	3.0	-17.7	33.3	1.0	-50.0	-25.0	-25.0	
5.07	-71.1	V	3.0	-21.8	36.3	1.0	-57.1	-25.0	-32.1	
7.61	-71.2	V	3.0	-18.0	35.1	1.0	-52.0	-25.0	-27.0	
10.14	-72.6	V	3.0	-17.2	33.3	1.0	-49.5	-25.0	-24.5	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-69.8	H	3.0	-20.3	36.3	1.0	-55.5	-25.0	-30.5	
7.65	-71.4	H	3.0	-18.1	35.0	1.0	-52.1	-25.0	-27.1	
10.20	-73.4	H	3.0	-17.8	33.2	1.0	-50.0	-25.0	-25.0	
5.10	-70.1	V	3.0	-20.7	36.3	1.0	-56.0	-25.0	-31.0	
7.65	-72.0	V	3.0	-18.8	35.0	1.0	-52.8	-25.0	-27.8	
10.20	-72.8	V	3.0	-17.4	33.2	1.0	-49.6	-25.0	-24.6	

Rev. 05.21.15

LTE B7 20MHz + 20MHz 16QAM

9.2.2. LTE BAND 41



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/28/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/5

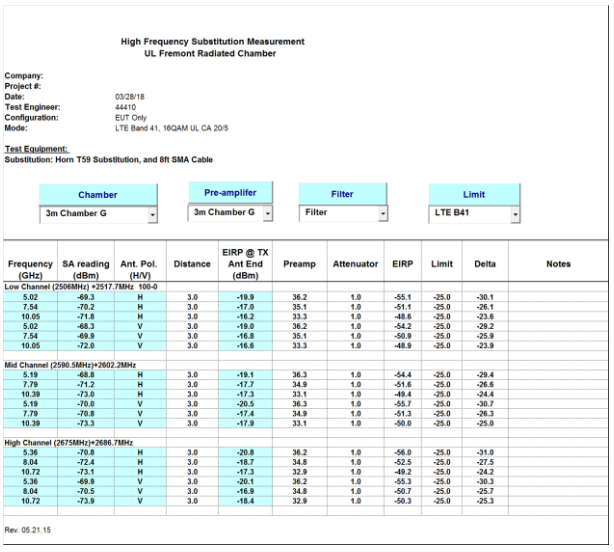
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

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	-69.5	H	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
7.54	-69.4	H	3.0	-16.2	35.1	1.0	-50.3	-25.0	-25.3	
10.05	-71.3	H	3.0	-15.7	33.3	1.0	-48.0	-25.0	-23.0	
5.02	-71.4	V	3.0	-22.1	36.2	1.0	-57.3	-25.0	-32.3	
7.54	-71.9	V	3.0	-18.8	35.1	1.0	-52.9	-25.0	-27.9	
10.05	-73.8	V	3.0	-18.5	33.3	1.0	-50.8	-25.0	-25.8	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-69.5	H	3.0	-19.8	36.3	1.0	-55.1	-25.0	-30.1	
7.79	-70.8	H	3.0	-17.3	34.9	1.0	-51.3	-25.0	-26.3	
10.39	-72.5	H	3.0	-16.8	33.1	1.0	-49.0	-25.0	-24.0	
5.19	-69.1	V	3.0	-19.6	36.3	1.0	-54.9	-25.0	-29.9	
7.79	-70.8	V	3.0	-17.5	34.9	1.0	-51.4	-25.0	-26.4	
10.39	-72.0	V	3.0	-16.5	33.1	1.0	-48.6	-25.0	-23.6	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-69.8	H	3.0	-19.8	36.2	1.0	-55.0	-25.0	-30.0	
8.04	-70.8	H	3.0	-17.1	34.8	1.0	-50.9	-25.0	-25.9	
10.72	-73.1	H	3.0	-17.4	32.9	1.0	-49.3	-25.0	-24.3	
5.36	-70.0	V	3.0	-20.2	36.2	1.0	-55.4	-25.0	-30.4	
8.04	-71.3	V	3.0	-17.7	34.8	1.0	-51.4	-25.0	-26.4	
10.72	-72.0	V	3.0	-16.5	32.9	1.0	-48.4	-25.0	-23.4	

Rev. 05.21.15

LTE B41 20MHz + 5MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/28/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 41, 16QAM UL CA 20/5

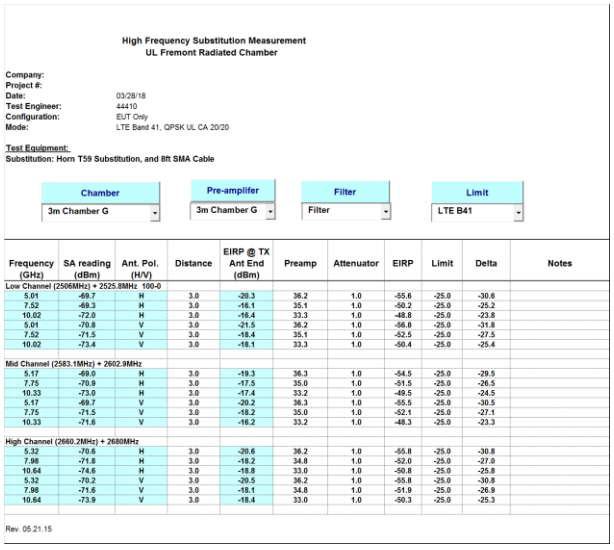
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

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 100-0										
5.02	-69.3	H	3.0	-19.9	36.2	1.0	-55.1	-25.0	-30.1	
7.54	-70.2	H	3.0	-17.0	35.1	1.0	-51.1	-25.0	-26.1	
10.05	-71.8	H	3.0	-16.2	33.3	1.0	-48.6	-25.0	-23.6	
5.02	-68.3	V	3.0	-19.0	36.2	1.0	-54.2	-25.0	-29.2	
7.54	-69.9	V	3.0	-16.8	35.1	1.0	-50.9	-25.0	-25.9	
10.05	-72.0	V	3.0	-16.6	33.3	1.0	-48.9	-25.0	-23.9	
Mid Channel (2590.5MHz)+2602.2MHz										
5.19	-68.8	H	3.0	-19.1	36.3	1.0	-54.4	-25.0	-29.4	
7.79	-71.2	H	3.0	-17.7	34.9	1.0	-51.6	-25.0	-26.6	
10.39	-73.0	H	3.0	-17.3	33.1	1.0	-49.4	-25.0	-24.4	
5.19	-70.0	V	3.0	-20.5	36.3	1.0	-55.7	-25.0	-30.7	
7.79	-70.8	V	3.0	-17.4	34.9	1.0	-51.3	-25.0	-26.3	
10.39	-73.3	V	3.0	-17.9	33.1	1.0	-50.0	-25.0	-25.0	
High Channel (2675MHz)+2686.7MHz										
5.36	-70.8	H	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
8.04	-72.4	H	3.0	-18.7	34.8	1.0	-52.5	-25.0	-27.5	
10.72	-73.1	H	3.0	-17.3	32.9	1.0	-49.2	-25.0	-24.2	
5.36	-69.9	V	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
8.04	-70.5	V	3.0	-16.9	34.8	1.0	-50.7	-25.0	-25.7	
10.72	-73.9	V	3.0	-18.4	32.9	1.0	-50.3	-25.0	-25.3	

Rev. 05.21.15

LTE B41 20MHz + 5MHz 16QAM



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/28/18
Test Engineer: 44410
Configuration: EUT Only
Mode: LTE Band 41, QPSK UL CA 20/20

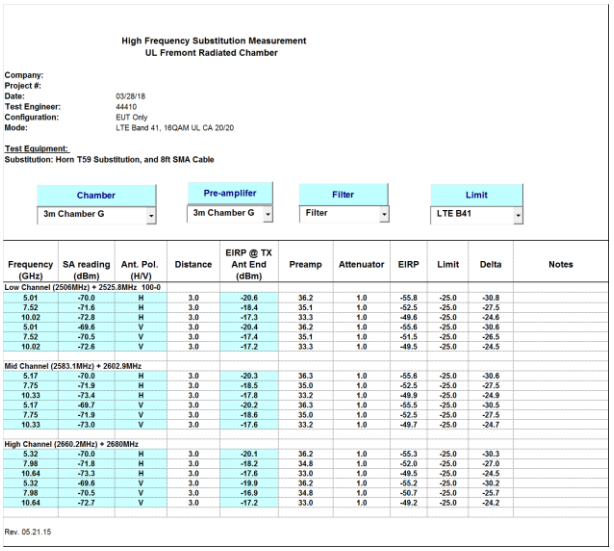
Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

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 100-0										
5.01	-69.7	H	3.0	-20.3	36.2	1.0	-55.6	-25.0	-30.6	
7.52	-69.3	H	3.0	-16.1	35.1	1.0	-50.2	-25.0	-25.2	
10.02	-72.0	H	3.0	-16.4	33.3	1.0	-48.8	-25.0	-23.8	
5.01	-70.8	V	3.0	-21.5	36.2	1.0	-56.8	-25.0	-31.8	
7.52	-71.5	V	3.0	-18.4	35.1	1.0	-52.5	-25.0	-27.5	
10.02	-73.4	V	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
Mid Channel (2583.1MHz) + 2602.9MHz										
5.17	-69.0	H	3.0	-19.3	36.3	1.0	-54.5	-25.0	-29.5	
7.75	-70.9	H	3.0	-17.5	35.0	1.0	-51.5	-25.0	-26.5	
10.33	-73.0	H	3.0	-17.4	33.2	1.0	-49.5	-25.0	-24.5	
5.17	-69.7	V	3.0	-20.2	36.3	1.0	-55.5	-25.0	-30.5	
7.75	-71.5	V	3.0	-18.2	35.0	1.0	-52.1	-25.0	-27.1	
10.33	-71.6	V	3.0	-16.2	33.2	1.0	-48.3	-25.0	-23.3	
High Channel (2660.2MHz) + 2680MHz										
5.32	-70.6	H	3.0	-20.6	36.2	1.0	-55.8	-25.0	-30.8	
7.98	-71.8	H	3.0	-18.2	34.8	1.0	-52.0	-25.0	-27.0	
10.64	-74.6	H	3.0	-18.8	33.0	1.0	-50.8	-25.0	-25.8	
5.32	-70.2	V	3.0	-20.5	36.2	1.0	-55.8	-25.0	-30.8	
7.98	-71.6	V	3.0	-18.1	34.8	1.0	-51.9	-25.0	-26.9	
10.64	-73.9	V	3.0	-18.4	33.0	1.0	-50.3	-25.0	-25.3	

Rev. 05.21.15

LTE B41 20MHz + 20MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/28/18
Test Engineer: 44410
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 100-0										
5.01	-70.0	H	3.0	-20.6	36.2	1.0	-55.8	-25.0	-30.8	
7.52	-71.6	H	3.0	-18.4	35.1	1.0	-52.5	-25.0	-27.5	
10.02	-72.8	H	3.0	-17.3	33.3	1.0	-49.6	-25.0	-24.6	
5.01	-69.6	V	3.0	-20.4	36.2	1.0	-55.6	-25.0	-30.6	
7.52	-70.5	V	3.0	-17.4	35.1	1.0	-51.5	-25.0	-26.5	
10.02	-72.6	V	3.0	-17.2	33.3	1.0	-49.5	-25.0	-24.5	
Mid Channel (2583.1MHz) + 2602.9MHz										
5.17	-70.0	H	3.0	-20.3	36.3	1.0	-55.6	-25.0	-30.6	
7.75	-71.9	H	3.0	-18.5	35.0	1.0	-52.5	-25.0	-27.5	
10.33	-73.4	H	3.0	-17.8	33.2	1.0	-49.9	-25.0	-24.9	
5.17	-69.7	V	3.0	-20.2	36.3	1.0	-55.5	-25.0	-30.5	
7.75	-71.9	V	3.0	-18.6	35.0	1.0	-52.5	-25.0	-27.5	
10.33	-73.0	V	3.0	-17.6	33.2	1.0	-49.7	-25.0	-24.7	
High Channel (2660.2MHz) + 2680MHz										
5.32	-70.0	H	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
7.98	-71.8	H	3.0	-18.2	34.8	1.0	-52.0	-25.0	-27.0	
10.64	-73.3	H	3.0	-17.6	33.0	1.0	-49.5	-25.0	-24.5	
5.32	-69.6	V	3.0	-19.9	36.2	1.0	-55.2	-25.0	-30.2	
7.98	-70.5	V	3.0	-16.9	34.8	1.0	-50.7	-25.0	-25.7	
10.64	-72.7	V	3.0	-17.2	33.0	1.0	-49.2	-25.0	-24.2	

Rev. 05.21.15

LTE B41 20MHz + 20MHz 16QAM

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: 03/27/18
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	-69.5	H	3.0	-20.0	36.2	1.0	-55.3	-25.0	-30.3	
7.55	-69.6	H	3.0	-16.4	35.1	1.0	-50.5	-25.0	-25.5	
10.07	-72.0	H	3.0	-16.4	33.3	1.0	-48.7	-25.0	-23.7	
5.03	-70.8	V	3.0	-21.5	36.2	1.0	-56.8	-25.0	-31.8	
7.55	-69.9	V	3.0	-16.7	35.1	1.0	-50.8	-25.0	-25.8	
10.07	-72.5	V	3.0	-17.1	33.3	1.0	-49.4	-25.0	-24.4	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-71.5	H	3.0	-22.0	36.3	1.0	-57.2	-25.0	-32.2	
7.61	-69.8	H	3.0	-16.6	35.1	1.0	-50.6	-25.0	-25.6	
10.15	-73.6	H	3.0	-18.1	33.3	1.0	-50.3	-25.0	-25.3	
5.07	-69.8	V	3.0	-20.5	36.3	1.0	-55.8	-25.0	-30.8	
7.61	-69.9	V	3.0	-16.7	35.1	1.0	-50.8	-25.0	-25.8	
10.15	-71.4	V	3.0	-16.0	33.3	1.0	-48.3	-25.0	-23.3	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.5	H	3.0	-21.0	36.3	1.0	-56.2	-25.0	-31.2	
7.67	-69.4	H	3.0	-16.1	35.0	1.0	-50.1	-25.0	-25.1	
10.23	-73.2	H	3.0	-17.8	33.2	1.0	-49.8	-25.0	-24.8	
5.11	-70.9	V	3.0	-21.5	36.3	1.0	-56.8	-25.0	-31.8	
7.67	-69.5	V	3.0	-16.2	35.0	1.0	-50.2	-25.0	-25.2	
10.23	-72.3	V	3.0	-16.9	33.2	1.0	-49.1	-25.0	-24.1	

Rev. 05.21.15

LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
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	-68.4	H	3.0	-19.0	36.2	1.0	-54.3	-25.0	-29.3	
7.55	-69.8	H	3.0	-16.5	35.1	1.0	-50.7	-25.0	-25.7	
10.07	-72.5	H	3.0	-16.9	33.3	1.0	-49.3	-25.0	-24.3	
5.03	-69.6	V	3.0	-20.3	36.2	1.0	-55.5	-25.0	-30.5	
7.55	-69.9	V	3.0	-16.8	35.1	1.0	-50.9	-25.0	-25.9	
10.07	-73.5	V	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-69.5	H	3.0	-20.0	36.3	1.0	-55.2	-25.0	-30.2	
7.61	-69.3	H	3.0	-16.0	35.1	1.0	-50.1	-25.0	-25.1	
10.15	-73.4	H	3.0	-17.8	33.3	1.0	-50.1	-25.0	-25.1	
5.07	-70.5	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.61	-69.3	V	3.0	-16.1	35.1	1.0	-50.2	-25.0	-25.2	
10.15	-72.5	V	3.0	-17.1	33.3	1.0	-49.4	-25.0	-24.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-69.3	H	3.0	-19.8	36.3	1.0	-55.0	-25.0	-30.0	
7.67	-69.3	H	3.0	-15.9	35.0	1.0	-50.0	-25.0	-25.0	
10.23	-72.0	H	3.0	-16.4	33.2	1.0	-48.6	-25.0	-23.6	
5.11	-70.4	V	3.0	-21.0	36.3	1.0	-56.2	-25.0	-31.2	
7.67	-69.2	V	3.0	-16.0	35.0	1.0	-50.0	-25.0	-25.0	
10.23	-71.7	V	3.0	-16.2	33.2	1.0	-48.5	-25.0	-23.5	

Rev. 05.21.15

LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
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)+ 2529.8MHz 1-99 1-0										
5.04	-70.5	H	3.0	-22.4	36.1	1.0	-57.5	-25.0	-32.5	
7.56	-71.7	H	3.0	-22.0	36.3	1.0	-57.3	-25.0	-32.3	
10.08	-71.0	H	3.0	-15.5	33.4	1.0	-48.0	-25.0	-23.0	
5.04	-70.7	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.56	-71.4	V	3.0	-17.8	34.8	1.0	-51.6	-25.0	-26.6	
10.08	-69.5	V	3.0	-13.6	32.1	1.0	-44.6	-25.0	-19.6	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-69.9	H	3.0	-18.9	36.0	1.0	-53.8	-25.0	-28.8	
7.61	-70.7	H	3.0	-17.6	35.2	1.0	-51.9	-25.0	-26.9	
10.14	-69.9	H	3.0	-13.6	32.0	1.0	-44.6	-25.0	-19.6	
5.07	-69.7	V	3.0	-22.0	36.1	1.0	-57.1	-25.0	-32.1	
7.61	-71.0	V	3.0	-17.9	35.1	1.0	-51.9	-25.0	-26.9	
10.14	-71.0	V	3.0	-15.6	33.3	1.0	-47.9	-25.0	-22.9	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-69.2	H	3.0	-20.0	36.2	1.0	-55.2	-25.0	-30.2	
7.65	-70.2	H	3.0	-19.5	36.0	1.0	-54.6	-25.0	-29.6	
10.20	-72.3	H	3.0	-16.0	32.0	1.0	-47.0	-25.0	-22.0	
5.10	-70.2	V	3.0	-23.2	36.3	1.0	-58.4	-25.0	-33.4	
7.65	-69.5	V	3.0	-18.2	35.8	1.0	-53.1	-25.0	-28.1	
10.20	-72.7	V	3.0	-17.3	33.2	1.0	-49.5	-25.0	-24.5	

Rev. 05.21.15

LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
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	-70.1	H	3.0	-20.7	36.2	1.0	-55.9	-25.0	-30.9	
7.56	-71.0	H	3.0	-17.8	35.1	1.0	-51.9	-25.0	-26.9	
10.08	-69.7	H	3.0	-14.1	33.3	1.0	-48.4	-25.0	-21.4	
5.04	-70.4	V	3.0	-21.1	36.2	1.0	-56.4	-25.0	-31.4	
7.56	-71.8	V	3.0	-18.6	35.1	1.0	-52.7	-25.0	-27.7	
10.08	-70.6	V	3.0	-15.2	33.3	1.0	-47.5	-25.0	-22.5	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-69.9	H	3.0	-20.4	36.3	1.0	-55.6	-25.0	-30.6	
7.61	-70.9	H	3.0	-17.6	35.1	1.0	-51.7	-25.0	-26.7	
10.14	-70.2	H	3.0	-14.6	33.3	1.0	-48.9	-25.0	-21.9	
5.07	-70.4	V	3.0	-21.1	36.3	1.0	-56.3	-25.0	-31.3	
7.61	-71.5	V	3.0	-18.3	35.1	1.0	-52.3	-25.0	-27.3	
10.14	-69.6	V	3.0	-14.2	33.3	1.0	-48.4	-25.0	-21.4	
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	-69.3	H	3.0	-16.0	35.0	1.0	-50.0	-25.0	-25.0	
10.20	-72.5	H	3.0	-16.9	33.2	1.0	-49.1	-25.0	-24.1	
5.10	-70.5	V	3.0	-21.1	36.3	1.0	-56.4	-25.0	-31.4	
7.65	-69.5	V	3.0	-16.3	35.0	1.0	-50.3	-25.0	-25.3	
10.20	-72.4	V	3.0	-16.9	33.2	1.0	-49.2	-25.0	-24.2	

Rev. 05.21.15

LTE B7 20MHz + 20MHz 16QAM

9.3.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
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	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	-70.5	H	3.0	-21.1	36.2	1.0	-56.3	-25.0	-31.3	
7.54	-71.1	H	3.0	-17.9	35.1	1.0	-52.0	-25.0	-27.0	
10.05	-70.5	H	3.0	-14.9	33.3	1.0	-47.3	-25.0	-22.3	
5.02	-70.7	V	3.0	-21.4	36.2	1.0	-56.6	-25.0	-31.6	
7.54	-70.8	V	3.0	-17.6	35.1	1.0	-51.7	-25.0	-26.7	
10.05	-70.5	V	3.0	-15.1	33.3	1.0	-47.4	-25.0	-22.4	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-70.3	H	3.0	-20.6	36.3	1.0	-55.8	-25.0	-30.8	
7.79	-69.2	H	3.0	-15.7	34.9	1.0	-49.7	-25.0	-24.7	
10.39	-73.0	H	3.0	-17.3	33.1	1.0	-49.4	-25.0	-24.4	
5.19	-69.3	V	3.0	-19.8	36.3	1.0	-55.1	-25.0	-30.1	
7.79	-69.8	V	3.0	-16.4	34.9	1.0	-50.3	-25.0	-25.3	
10.39	-73.4	V	3.0	-17.9	33.1	1.0	-50.0	-25.0	-25.0	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-67.5	H	3.0	-17.5	36.2	1.0	-52.7	-25.0	-27.7	
8.04	-72.1	H	3.0	-18.4	34.8	1.0	-52.1	-25.0	-27.1	
10.72	-71.1	H	3.0	-15.4	32.9	1.0	-47.3	-25.0	-22.3	
5.36	-67.9	V	3.0	-18.1	36.2	1.0	-53.3	-25.0	-28.3	
8.04	-71.9	V	3.0	-18.3	34.8	1.0	-52.1	-25.0	-27.1	
10.72	-70.8	V	3.0	-15.3	32.9	1.0	-47.2	-25.0	-22.2	

Rev. 05.21.15

LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
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	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	-70.3	H	3.0	-20.9	36.2	1.0	-56.1	-25.0	-31.1	
7.54	-71.6	H	3.0	-18.4	35.1	1.0	-52.5	-25.0	-27.5	
10.05	-70.4	H	3.0	-14.9	33.3	1.0	-47.2	-25.0	-22.2	
5.02	-69.7	V	3.0	-20.5	36.2	1.0	-55.7	-25.0	-30.7	
7.54	-71.8	V	3.0	-18.7	35.1	1.0	-52.8	-25.0	-27.8	
10.05	-70.1	V	3.0	-14.7	33.3	1.0	-47.1	-25.0	-22.1	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-71.1	H	3.0	-21.4	36.3	1.0	-56.7	-25.0	-31.7	
7.79	-69.8	H	3.0	-16.4	34.9	1.0	-50.3	-25.0	-25.3	
10.39	-72.8	H	3.0	-17.2	33.1	1.0	-49.3	-25.0	-24.3	
5.19	-69.8	V	3.0	-20.3	36.3	1.0	-55.6	-25.0	-30.6	
7.79	-69.6	V	3.0	-16.3	34.9	1.0	-50.2	-25.0	-25.2	
10.39	-73.0	V	3.0	-17.5	33.1	1.0	-49.7	-25.0	-24.7	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-67.9	H	3.0	-17.9	36.2	1.0	-53.1	-25.0	-28.1	
8.04	-72.2	H	3.0	-18.5	34.8	1.0	-52.3	-25.0	-27.3	
10.72	-71.1	H	3.0	-15.4	32.9	1.0	-47.3	-25.0	-22.3	
5.36	-66.1	V	3.0	-16.3	36.2	1.0	-51.5	-25.0	-26.5	
8.04	-71.5	V	3.0	-17.9	34.8	1.0	-51.7	-25.0	-26.7	
10.72	-69.7	V	3.0	-14.2	32.9	1.0	-46.1	-25.0	-21.1	

Rev. 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
Test Engineer: 44410
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 100-0										
5.01	-71.1	H	3.0	-21.7	36.2	1.0	-56.9	-25.0	-31.9	
7.52	-70.4	H	3.0	-17.2	35.1	1.0	-51.4	-25.0	-26.4	
10.02	-72.4	H	3.0	-16.9	33.3	1.0	-49.2	-25.0	-24.2	
5.01	-69.1	V	3.0	-19.8	36.2	1.0	-55.1	-25.0	-30.1	
7.52	-70.0	V	3.0	-16.9	35.1	1.0	-51.0	-25.0	-26.0	
10.02	-71.0	V	3.0	-15.7	33.3	1.0	-48.0	-25.0	-23.0	
Mid Channel (2583.1MHz) + 2602.9MHz										
5.17	-71.1	H	3.0	-21.4	36.3	1.0	-56.6	-25.0	-31.6	
7.75	-71.7	H	3.0	-18.3	35.0	1.0	-52.2	-25.0	-27.2	
10.33	-71.8	H	3.0	-16.1	33.2	1.0	-48.3	-25.0	-23.3	
5.17	-69.9	V	3.0	-20.4	36.3	1.0	-55.7	-25.0	-30.7	
7.75	-71.2	V	3.0	-17.9	35.0	1.0	-51.9	-25.0	-26.9	
10.33	-74.5	V	3.0	-19.1	33.2	1.0	-51.2	-25.0	-26.2	
High Channel (2660.2MHz) + 2680MHz										
5.32	-71.6	H	3.0	-21.6	36.2	1.0	-56.9	-25.0	-31.9	
7.98	-72.9	H	3.0	-19.2	34.8	1.0	-53.0	-25.0	-28.0	
10.64	-73.5	H	3.0	-17.8	33.0	1.0	-49.7	-25.0	-24.7	
5.32	-69.8	V	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
7.98	-71.7	V	3.0	-18.2	34.8	1.0	-52.0	-25.0	-27.0	
10.64	-74.1	V	3.0	-18.6	33.0	1.0	-50.6	-25.0	-25.6	

Rev. 05.21.15

LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/27/18
Test Engineer: 44410
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

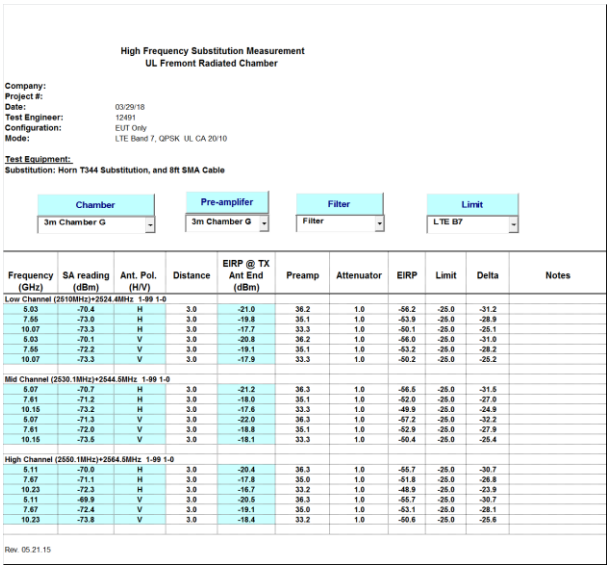
Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 100-0										
5.01	-70.5	H	3.0	-21.1	36.2	1.0	-56.3	-25.0	-31.3	
7.52	-72.2	H	3.0	-19.1	35.1	1.0	-53.2	-25.0	-28.2	
10.02	-74.1	H	3.0	-18.5	33.3	1.0	-50.9	-25.0	-25.9	
5.01	-69.4	V	3.0	-20.2	36.2	1.0	-55.4	-25.0	-30.4	
7.52	-70.2	V	3.0	-17.1	35.1	1.0	-51.2	-25.0	-26.2	
10.02	-72.4	V	3.0	-17.0	33.3	1.0	-49.4	-25.0	-24.4	
Mid Channel (2583.1MHz) + 2602.9MHz										
5.17	-69.4	H	3.0	-19.8	36.3	1.0	-55.0	-25.0	-30.0	
7.75	-71.8	H	3.0	-18.4	35.0	1.0	-52.4	-25.0	-27.4	
10.33	-73.6	H	3.0	-18.0	33.2	1.0	-50.1	-25.0	-25.1	
5.17	-69.3	V	3.0	-19.9	36.3	1.0	-55.2	-25.0	-30.2	
7.75	-70.2	V	3.0	-16.8	35.0	1.0	-50.8	-25.0	-25.8	
10.33	-72.2	V	3.0	-16.8	33.2	1.0	-48.9	-25.0	-23.9	
High Channel (2660.2MHz) + 2680MHz										
5.32	-70.7	H	3.0	-20.7	36.2	1.0	-56.0	-25.0	-31.0	
7.98	-71.7	H	3.0	-18.1	34.8	1.0	-51.9	-25.0	-26.9	
10.64	-73.8	H	3.0	-18.0	33.0	1.0	-50.0	-25.0	-25.0	
5.32	-69.0	V	3.0	-19.2	36.2	1.0	-54.5	-25.0	-29.5	
7.98	-72.6	V	3.0	-19.1	34.8	1.0	-52.9	-25.0	-27.9	
10.64	-73.5	V	3.0	-18.0	33.0	1.0	-50.0	-25.0	-25.0	

Rev. 05.21.15

LTE B41 20MHz + 20MHz 16QAM

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: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/10

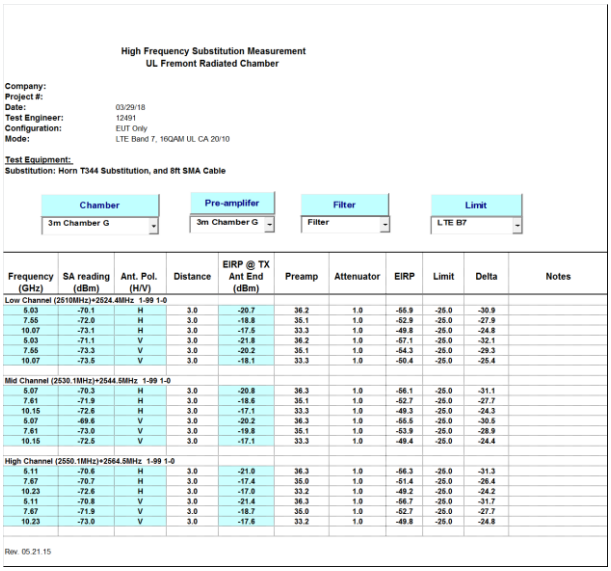
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-70.4	H	3.0	-21.0	36.2	1.0	-56.2	-25.0	-31.2	
7.55	-73.0	H	3.0	-19.8	35.1	1.0	-53.9	-25.0	-28.9	
10.07	-73.3	H	3.0	-17.7	33.3	1.0	-50.1	-25.0	-25.1	
5.03	-70.1	V	3.0	-20.8	36.2	1.0	-56.0	-25.0	-31.0	
7.55	-72.2	V	3.0	-19.1	35.1	1.0	-53.2	-25.0	-28.2	
10.07	-73.3	V	3.0	-17.9	33.3	1.0	-50.2	-25.0	-25.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-70.7	H	3.0	-21.2	36.3	1.0	-56.5	-25.0	-31.5	
7.61	-71.2	H	3.0	-18.0	35.1	1.0	-52.0	-25.0	-27.0	
10.15	-73.2	H	3.0	-17.6	33.3	1.0	-49.9	-25.0	-24.9	
5.07	-71.3	V	3.0	-22.0	36.3	1.0	-57.2	-25.0	-32.2	
7.61	-72.0	V	3.0	-18.8	35.1	1.0	-52.9	-25.0	-27.9	
10.15	-73.5	V	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.0	H	3.0	-20.4	36.3	1.0	-55.7	-25.0	-30.7	
7.67	-71.1	H	3.0	-17.8	35.0	1.0	-51.8	-25.0	-26.8	
10.23	-72.3	H	3.0	-16.7	33.2	1.0	-48.9	-25.0	-23.9	
5.11	-69.9	V	3.0	-20.5	36.3	1.0	-55.7	-25.0	-30.7	
7.67	-72.4	V	3.0	-19.1	35.0	1.0	-53.1	-25.0	-28.1	
10.23	-73.8	V	3.0	-18.4	33.2	1.0	-50.6	-25.0	-25.6	

Rev. 05.21.15

LTE B7 20MHz + 10MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, 16QAM UL CA 20/10

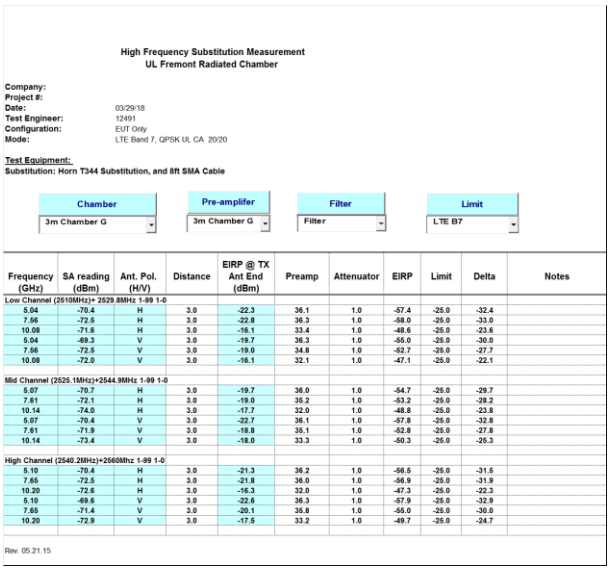
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-70.1	H	3.0	-20.7	36.2	1.0	-55.9	-25.0	-30.9	
7.55	-72.0	H	3.0	-18.8	35.1	1.0	-52.9	-25.0	-27.9	
10.07	-73.1	H	3.0	-17.5	33.3	1.0	-49.8	-25.0	-24.8	
5.03	-71.1	V	3.0	-21.8	36.2	1.0	-57.1	-25.0	-32.1	
7.55	-73.3	V	3.0	-20.2	35.1	1.0	-54.3	-25.0	-29.3	
10.07	-73.5	V	3.0	-18.1	33.3	1.0	-50.4	-25.0	-25.4	
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	-71.9	H	3.0	-18.6	35.1	1.0	-52.7	-25.0	-27.7	
10.15	-72.6	H	3.0	-17.1	33.3	1.0	-49.3	-25.0	-24.3	
5.07	-69.6	V	3.0	-20.2	36.3	1.0	-55.5	-25.0	-30.5	
7.61	-73.0	V	3.0	-19.8	35.1	1.0	-53.9	-25.0	-28.9	
10.15	-72.5	V	3.0	-17.1	33.3	1.0	-49.4	-25.0	-24.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
5.11	-70.6	H	3.0	-21.0	36.3	1.0	-56.3	-25.0	-31.3	
7.67	-70.7	H	3.0	-17.4	35.0	1.0	-51.4	-25.0	-26.4	
10.23	-72.6	H	3.0	-17.0	33.2	1.0	-49.2	-25.0	-24.2	
5.11	-70.8	V	3.0	-21.4	36.3	1.0	-56.7	-25.0	-31.7	
7.67	-71.9	V	3.0	-18.7	35.0	1.0	-52.7	-25.0	-27.7	
10.23	-73.0	V	3.0	-17.6	33.2	1.0	-49.8	-25.0	-24.8	

Rev. 05.21.15

LTE B7 20MHz + 10MHz 16QAM



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 12491
Configuration: EUT Only
Mode: LTE Band 7, QPSK UL CA 20/20

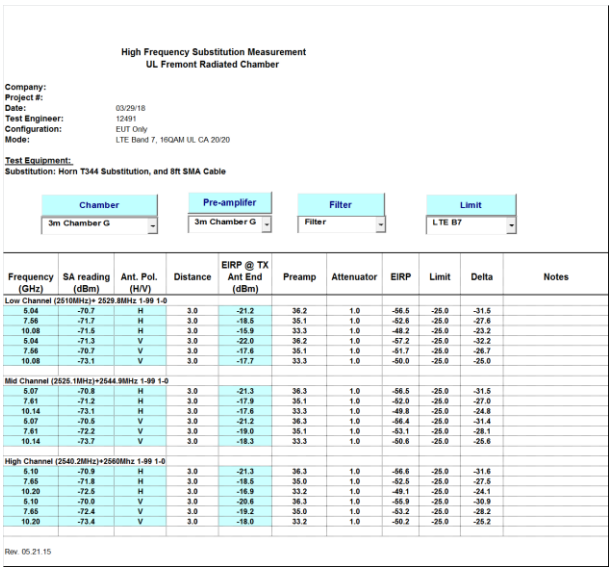
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

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	-70.4	H	3.0	-22.3	36.1	1.0	-57.4	-25.0	-32.4	
7.56	-72.5	H	3.0	-22.8	36.3	1.0	-58.0	-25.0	-33.0	
10.08	-71.6	H	3.0	-16.1	33.4	1.0	-48.6	-25.0	-23.6	
5.04	-69.3	V	3.0	-19.7	36.3	1.0	-55.0	-25.0	-30.0	
7.56	-72.5	V	3.0	-19.0	34.8	1.0	-52.7	-25.0	-27.7	
10.08	-72.0	V	3.0	-16.1	32.1	1.0	-47.1	-25.0	-22.1	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-70.7	H	3.0	-19.7	36.0	1.0	-54.7	-25.0	-29.7	
7.61	-72.1	H	3.0	-19.0	35.2	1.0	-53.2	-25.0	-28.2	
10.14	-74.0	H	3.0	-17.7	32.0	1.0	-48.8	-25.0	-23.8	
5.07	-70.4	V	3.0	-22.7	36.1	1.0	-57.8	-25.0	-32.8	
7.61	-71.9	V	3.0	-18.8	35.1	1.0	-52.8	-25.0	-27.8	
10.14	-73.4	V	3.0	-18.0	33.3	1.0	-50.3	-25.0	-25.3	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-70.4	H	3.0	-21.3	36.2	1.0	-56.5	-25.0	-31.5	
7.65	-72.5	H	3.0	-21.8	36.0	1.0	-56.9	-25.0	-31.9	
10.20	-72.6	H	3.0	-16.3	32.0	1.0	-47.3	-25.0	-22.3	
5.10	-69.6	V	3.0	-22.6	36.3	1.0	-57.9	-25.0	-32.9	
7.65	-71.4	V	3.0	-20.1	35.8	1.0	-55.0	-25.0	-30.0	
10.20	-72.9	V	3.0	-17.5	33.2	1.0	-49.7	-25.0	-24.7	

Rev. 05.21.15

LTE B7 20MHz + 20MHz QPSK



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
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	-70.7	H	3.0	-21.2	36.2	1.0	-56.5	-25.0	-31.5	
7.56	-71.7	H	3.0	-18.5	35.1	1.0	-52.6	-25.0	-27.6	
10.08	-71.5	H	3.0	-15.9	33.3	1.0	-48.2	-25.0	-23.2	
5.04	-71.3	V	3.0	-22.0	36.2	1.0	-57.2	-25.0	-32.2	
7.56	-70.7	V	3.0	-17.6	35.1	1.0	-51.7	-25.0	-26.7	
10.08	-73.1	V	3.0	-17.7	33.3	1.0	-50.0	-25.0	-25.0	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
5.07	-70.8	H	3.0	-21.3	36.3	1.0	-56.5	-25.0	-31.5	
7.61	-71.2	H	3.0	-17.9	35.1	1.0	-52.0	-25.0	-27.0	
10.14	-73.1	H	3.0	-17.6	33.3	1.0	-49.8	-25.0	-24.8	
5.07	-70.5	V	3.0	-21.2	36.3	1.0	-56.4	-25.0	-31.4	
7.61	-72.2	V	3.0	-19.0	35.1	1.0	-53.1	-25.0	-28.1	
10.14	-73.7	V	3.0	-18.3	33.3	1.0	-50.6	-25.0	-25.6	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
5.10	-70.9	H	3.0	-21.3	36.3	1.0	-56.6	-25.0	-31.6	
7.65	-71.8	H	3.0	-18.5	36.0	1.0	-52.6	-25.0	-27.6	
10.20	-72.5	H	3.0	-16.9	33.2	1.0	-49.1	-25.0	-24.1	
5.10	-70.0	V	3.0	-20.6	36.3	1.0	-55.9	-25.0	-30.9	
7.65	-72.4	V	3.0	-19.2	36.0	1.0	-53.2	-25.0	-28.2	
10.20	-73.4	V	3.0	-18.0	33.2	1.0	-50.2	-25.0	-25.2	

Rev. 05.21.15

LTE B7 20MHz + 20MHz 16QAM

9.4.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 36648
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 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) +2517.7MHz 1-99, 1-0										
5.02	-68.6	H	3.0	-15.7	38.7	1.0	-53.4	-25.0	-28.4	
7.54	-71.6	H	3.0	-13.0	37.7	1.0	-50.5	-25.0	-25.5	
10.05	-72.9	H	3.0	-12.1	36.2	1.0	-47.2	-25.0	-22.2	
5.02	-69.1	V	3.0	-16.4	38.7	1.0	-54.1	-25.0	-29.1	
7.54	-72.6	V	3.0	-14.9	37.7	1.0	-51.7	-25.0	-26.7	
10.05	-72.7	V	3.0	-11.9	36.2	1.0	-47.0	-25.0	-22.0	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-68.6	H	3.0	-15.3	38.7	1.0	-53.0	-25.0	-28.0	
7.79	-73.1	H	3.0	-14.9	37.6	1.0	-51.5	-25.0	-26.5	
10.39	-72.9	H	3.0	-11.8	36.4	1.0	-47.2	-25.0	-22.2	
5.19	-69.0	V	3.0	-16.1	38.7	1.0	-53.8	-25.0	-28.8	
7.79	-72.9	V	3.0	-15.0	37.6	1.0	-51.5	-25.0	-26.5	
10.39	-72.6	V	3.0	-11.5	36.4	1.0	-46.8	-25.0	-21.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-68.0	H	3.0	-14.4	38.6	1.0	-52.0	-25.0	-27.0	
8.04	-72.1	H	3.0	-13.6	37.4	1.0	-50.0	-25.0	-25.0	
10.72	-73.4	H	3.0	-12.0	36.6	1.0	-47.6	-25.0	-22.6	
5.36	-68.9	V	3.0	-15.6	38.6	1.0	-53.2	-25.0	-28.2	
8.04	-72.0	V	3.0	-13.8	37.4	1.0	-50.2	-25.0	-25.2	
10.72	-73.1	V	3.0	-11.5	36.6	1.0	-47.1	-25.0	-22.1	

Rev. 05.21.15

LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 36648
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	-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	-53.0	-25.0	-28.0	
10.05	-74.4	H	3.0	-18.8	33.3	1.0	-51.2	-25.0	-26.2	
5.02	-69.7	V	3.0	-20.4	36.2	1.0	-55.7	-25.0	-30.7	
7.54	-72.6	V	3.0	-19.5	35.1	1.0	-53.6	-25.0	-28.6	
10.05	-73.9	V	3.0	-18.6	33.3	1.0	-50.9	-25.0	-25.9	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
5.19	-69.7	H	3.0	-19.9	36.3	1.0	-55.2	-25.0	-30.2	
7.79	-72.4	H	3.0	-19.0	34.9	1.0	-52.9	-25.0	-27.9	
10.39	-72.7	H	3.0	-17.0	33.1	1.0	-49.1	-25.0	-24.1	
5.19	-69.4	V	3.0	-19.9	36.3	1.0	-55.2	-25.0	-30.2	
7.79	-72.4	V	3.0	-19.0	34.9	1.0	-53.0	-25.0	-28.0	
10.39	-72.8	V	3.0	-17.4	33.1	1.0	-49.5	-25.0	-24.5	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
5.36	-71.4	H	3.0	-21.4	36.2	1.0	-56.6	-25.0	-31.6	
8.04	-69.5	H	3.0	-15.9	34.8	1.0	-49.6	-25.0	-24.6	
10.72	-73.0	H	3.0	-17.3	32.9	1.0	-49.2	-25.0	-24.2	
5.36	-71.3	V	3.0	-21.5	36.2	1.0	-56.7	-25.0	-31.7	
8.04	-70.4	V	3.0	-16.8	34.8	1.0	-50.5	-25.0	-25.5	
10.72	-73.9	V	3.0	-18.3	32.9	1.0	-50.2	-25.0	-25.2	

Rev. 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 36648
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) + 2625.8MHz 1-99 1-0										
5.01	-68.8	H	3.0	-19.4	36.2	1.0	-54.7	-25.0	-29.7	
7.52	-71.1	H	3.0	-17.9	36.1	1.0	-52.1	-25.0	-27.1	
10.02	-74.7	H	3.0	-19.2	33.3	1.0	-51.5	-25.0	-26.5	
5.01	-69.3	V	3.0	-20.0	36.2	1.0	-55.2	-25.0	-30.2	
7.52	-72.0	V	3.0	-18.9	36.1	1.0	-53.0	-25.0	-28.0	
10.02	-73.9	V	3.0	-18.5	33.3	1.0	-50.9	-25.0	-25.9	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.17	-69.6	H	3.0	-19.9	36.3	1.0	-55.2	-25.0	-30.2	
7.75	-71.2	H	3.0	-17.8	35.0	1.0	-51.8	-25.0	-26.8	
10.33	-73.4	H	3.0	-17.7	33.2	1.0	-49.9	-25.0	-24.9	
5.17	-69.8	V	3.0	-20.4	36.3	1.0	-55.6	-25.0	-30.6	
7.75	-72.1	V	3.0	-18.8	35.0	1.0	-52.8	-25.0	-27.8	
10.33	-73.7	V	3.0	-18.3	33.2	1.0	-50.4	-25.0	-25.4	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.32	-71.9	H	3.0	-22.0	36.2	1.0	-57.2	-25.0	-32.2	
7.98	-71.4	H	3.0	-17.7	34.8	1.0	-51.5	-25.0	-26.5	
10.64	-73.4	H	3.0	-17.7	33.0	1.0	-49.6	-25.0	-24.6	
5.32	-71.3	V	3.0	-21.6	36.2	1.0	-56.8	-25.0	-31.8	
7.98	-71.5	V	3.0	-18.0	34.8	1.0	-51.8	-25.0	-26.8	
10.64	-74.1	V	3.0	-18.6	33.0	1.0	-50.6	-25.0	-25.6	

Rev. 05.21.15

LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 03/29/18
Test Engineer: 36648
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 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) + 2625.8MHz 1-99 1-0										
5.01	-69.1	H	3.0	-16.2	38.7	1.0	-53.9	-25.0	-28.9	
7.52	-72.4	H	3.0	-14.6	37.7	1.0	-51.3	-25.0	-26.3	
10.02	-74.7	H	3.0	-13.9	36.1	1.0	-49.0	-25.0	-24.0	
5.01	-69.0	V	3.0	-16.4	38.7	1.0	-54.1	-25.0	-29.1	
7.52	-71.7	V	3.0	-14.1	37.7	1.0	-50.8	-25.0	-25.8	
10.02	-73.6	V	3.0	-12.9	36.1	1.0	-48.0	-25.0	-23.0	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.17	-68.3	H	3.0	-15.1	38.7	1.0	-52.8	-25.0	-27.8	
7.75	-69.9	H	3.0	-11.8	37.6	1.0	-48.4	-25.0	-23.4	
10.33	-73.4	H	3.0	-12.3	36.3	1.0	-47.6	-25.0	-22.6	
5.17	-70.0	V	3.0	-17.1	38.7	1.0	-54.8	-25.0	-29.8	
7.75	-71.5	V	3.0	-13.6	37.6	1.0	-50.2	-25.0	-25.2	
10.33	-74.4	V	3.0	-13.2	36.3	1.0	-48.6	-25.0	-23.6	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.32	-72.7	H	3.0	-19.1	38.6	1.0	-56.8	-25.0	-31.8	
7.98	-72.1	H	3.0	-13.7	37.4	1.0	-50.1	-25.0	-25.1	
10.64	-74.3	H	3.0	-13.0	36.6	1.0	-48.5	-25.0	-23.5	
5.32	-71.2	V	3.0	-17.9	38.6	1.0	-55.6	-25.0	-30.6	
7.98	-71.1	V	3.0	-12.9	37.4	1.0	-49.3	-25.0	-24.3	
10.64	-73.9	V	3.0	-12.5	36.6	1.0	-48.0	-25.0	-23.0	

Rev. 05.21.15

LTE B41 20MHz + 20MHz 16QAM

9 SETUP PHOTOS

Please refer to 12204447-EP1V1 for setup photos