

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; 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:	10643	Date:	5/11/18
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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	30.67	19.51	11.16	
				16QAM	31.02	19.55	11.47	
	15 MHz / 15MHz	2527.5	2542.5	QPSK	29.88	19.55	10.33	
				16QAM	30.10	18.54	11.56	
	15MHz / 20MHz	2525.3	2542.4	QPSK	29.82	19.58	10.24	
				16QAM	29.78	18.93	10.85	
	20MHz / 10MHz	2530.1	2544.5	QPSK	30.26	19.43	10.83	
				16QAM	30.18	18.60	11.58	
	20MHz / 15MHz	2527.6	2544.7	QPSK	29.88	19.50	10.38	
				16QAM	29.79	18.44	11.35	
	20MHz / 20MHz	2525.1	2544.9	QPSK	29.64	19.72	9.92	
				16QAM	29.62	18.73	10.89	
	Duty Cycle Correction Factor (dB) =			0.00				
	Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

8.5.2. LTE BAND 41

ID:	10643	Date:	5/11/18
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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	32.52	18.66	6.87
				16QAM	32.52	17.65	7.88
	10MHz / 20MHz	2583.6	2598.0	QPSK	32.21	17.39	7.83
				16QAM	31.94	16.43	8.52
	15MHz / 15MHz	2585.5	2600.5	QPSK	32.23	17.29	7.95
				16QAM	31.90	16.41	8.50
	15MHz / 20MHz	2583.3	2600.4	QPSK	31.88	16.32	8.57
				16QAM	31.90	16.35	8.56
	20MHz / 5MHz	2590.5	2602.2	QPSK	32.12	17.53	7.60
				16QAM	31.90	16.54	8.37
	20MHz / 10MHz	2588.1	2602.5	QPSK	31.99	17.34	7.66
				16QAM	32.01	16.39	8.63
	20MHz / 15MHz	2585.6	2602.7	QPSK	31.99	17.33	7.67
				16QAM	32.30	16.38	8.93
	20MHz / 20MHz	2583.1	2602.9	QPSK	32.05	17.26	7.80
				16QAM	31.83	16.36	8.48
Duty Cycle Correction Factor (dB) =			6.99				
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 v02r01

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: 12204512
 Project #: 4202018
 Date: 10/6/13
 Test Engineer: 10643
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK, UL CA 2010

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber H	3m Chamber H	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)-2524.8MHz 1.99 1.0										
5.02	-70.0	H	3.0	-20.0	36.9	1.0	-55.9	-25.0	-36.9	
7.53	-72.8	H	3.0	-18.9	35.9	1.0	-53.9	-25.0	-28.9	
10.04	-75.4	H	3.0	-18.8	33.7	1.0	-51.5	-25.0	-26.5	
5.02	-76.0	V	3.0	-20.3	36.9	1.0	-56.2	-25.0	-31.2	
7.53	-73.1	V	3.0	-19.5	35.9	1.0	-54.4	-25.0	-29.4	
10.04	-73.0	V	3.0	-16.9	33.7	1.0	-49.5	-25.0	-24.5	
Mid Channel (2530.18MHz)-2544.58MHz 1.99 1.0										
5.05	-78.0	H	3.0	-19.9	36.9	1.0	-55.7	-25.0	-30.7	
7.59	-74.8	H	3.0	-20.9	35.9	1.0	-54.8	-25.0	-30.8	
10.12	-75.9	H	3.0	-19.3	33.7	1.0	-52.0	-25.0	-27.0	
5.05	-79.7	V	3.0	-20.4	36.9	1.0	-56.3	-25.0	-31.3	
7.59	-74.5	V	3.0	-20.8	35.9	1.0	-55.7	-25.0	-30.7	
10.12	-75.8	V	3.0	-19.5	33.7	1.0	-52.2	-25.0	-27.2	
High Channel (2550.18MHz)-2564.58MHz 1.99 1.0										
5.10	-80.8	H	3.0	-19.6	36.9	1.0	-55.4	-25.0	-30.4	
7.65	-73.5	H	3.0	-19.6	35.8	1.0	-54.4	-25.0	-29.4	
10.20	-74.0	H	3.0	-17.4	33.7	1.0	-50.0	-25.0	-25.0	
5.10	-79.3	V	3.0	-19.9	36.9	1.0	-55.8	-25.0	-30.8	
7.65	-72.8	V	3.0	-19.1	35.8	1.0	-53.9	-25.0	-28.9	
10.20	-75.3	V	3.0	-19.0	33.7	1.0	-51.7	-25.0	-26.7	

Rev: 05.21.15

LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 12204512
 Project #: 4202018
 Date: 10/6/13
 Test Engineer: 10643
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2010

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber H	3m Chamber H	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)-2524.8MHz 1.99 1.0										
5.02	-70.9	H	3.0	-20.9	36.9	1.0	-56.7	-25.0	-31.7	
7.53	-74.1	H	3.0	-20.2	35.9	1.0	-56.2	-25.0	-30.2	
10.04	-76.9	H	3.0	-19.4	33.7	1.0	-51.0	-25.0	-27.0	
5.02	-70.4	V	3.0	-20.2	36.9	1.0	-56.0	-25.0	-31.0	
7.53	-73.9	V	3.0	-19.9	36.9	1.0	-54.8	-25.0	-29.8	
10.04	-76.5	V	3.0	-20.3	33.7	1.0	-52.9	-25.0	-27.9	
Mid Channel (2530.18MHz)-2544.58MHz 1.99 1.0										
5.05	-89.8	H	3.0	-19.7	36.9	1.0	-55.5	-25.0	-30.5	
7.59	-73.8	H	3.0	-19.9	35.9	1.0	-54.7	-25.0	-29.7	
10.12	-79.2	H	3.0	-18.6	33.7	1.0	-51.3	-25.0	-26.3	
5.05	-79.8	V	3.0	-20.3	36.9	1.0	-56.2	-25.0	-31.2	
7.59	-72.7	V	3.0	-19.9	36.9	1.0	-54.8	-25.0	-29.8	
10.12	-72.4	V	3.0	-17.1	33.7	1.0	-49.8	-25.0	-24.8	
High Channel (2550.18MHz)-2564.58MHz 1.99 1.0										
5.10	-71.6	H	3.0	-21.4	36.9	1.0	-57.3	-25.0	-32.3	
7.65	-73.7	H	3.0	-19.7	36.8	1.0	-54.5	-25.0	-29.5	
10.20	-74.6	H	3.0	-17.9	33.7	1.0	-50.6	-25.0	-25.6	
5.10	-79.7	V	3.0	-20.4	36.9	1.0	-56.2	-25.0	-31.2	
7.65	-73.7	V	3.0	-19.9	36.8	1.0	-54.7	-25.0	-29.7	
10.20	-74.4	V	3.0	-18.1	33.7	1.0	-50.8	-25.0	-25.8	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 12204512
 Project #: 4202018
 Date: 10/6/13
 Test Engineer: 10643
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK UL CA 2020

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber H	3m Chamber H	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)-2529.8MHz 1.99 1.0										
5.02	-69.2	H	3.0	-19.2	36.1	1.0	-54.3	-25.0	-29.3	
7.53	-74.2	H	3.0	-20.3	36.3	1.0	-55.6	-25.0	-30.6	
10.04	-76.8	H	3.0	-20.0	33.4	1.0	-52.5	-25.0	-27.5	
5.02	-76.5	V	3.0	-20.2	36.3	1.0	-55.5	-25.0	-30.5	
7.53	-73.3	V	3.0	-19.7	34.8	1.0	-53.4	-25.0	-28.4	
10.04	-71.0	V	3.0	-20.8	32.1	1.0	-51.9	-25.0	-26.9	
Mid Channel (2530.18MHz)-2544.58MHz 1.99 1.0										
5.05	-79.9	H	3.0	-20.8	36.0	1.0	-55.8	-25.0	-30.8	
7.59	-74.8	H	3.0	-20.9	35.2	1.0	-55.1	-25.0	-30.1	
10.10	-74.8	H	3.0	-19.2	32.0	1.0	-49.3	-25.0	-24.3	
5.05	-71.3	V	3.0	-21.0	36.1	1.0	-56.1	-25.0	-31.1	
7.59	-74.9	V	3.0	-21.2	35.9	1.0	-56.1	-25.0	-31.1	
10.01	-71.0	V	3.0	-14.8	33.7	1.0	-47.5	-25.0	-22.5	
High Channel (2540.28MHz)-2560MHz 1.99 1.0										
5.08	-68.3	H	3.0	-18.2	36.2	1.0	-53.4	-25.0	-28.4	
7.62	-75.4	H	3.0	-21.4	36.0	1.0	-56.5	-25.0	-31.5	
10.16	-72.9	H	3.0	-16.3	32.0	1.0	-47.3	-25.0	-22.3	
5.08	-69.5	V	3.0	-19.2	36.3	1.0	-54.4	-25.0	-29.4	
7.62	-75.0	V	3.0	-21.3	35.8	1.0	-56.1	-25.0	-31.1	
10.16	-75.0	V	3.0	-18.8	33.7	1.0	-51.4	-25.0	-26.4	

Rev: 05.21.15

LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: 12204512
 Project #: 4202018
 Date: 10/6/13
 Test Engineer: 10643
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2020

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

Chamber	Pre-amplifier	Filter	Limit
3m Chamber H	3m Chamber H	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)-2529.8MHz 1.99 1.0										
5.02	-70.3	H	3.0	-20.9	36.1	1.0	-56.0	-25.0	-31.0	
7.53	-74.5	H	3.0	-20.7	36.3	1.0	-56.0	-25.0	-31.0	
10.04	-76.2	H	3.0	-19.6	33.4	1.0	-52.1	-25.0	-27.1	
5.02	-70.3	V	3.0	-20.1	36.3	1.0	-55.4	-25.0	-30.4	
7.53	-75.0	V	3.0	-21.4	34.8	1.0	-59.2	-25.0	-30.2	
10.04	-75.9	V	3.0	-19.7	32.1	1.0	-50.7	-25.0	-25.7	
Mid Channel (2530.18MHz)-2544.58MHz 1.99 1.0										
5.05	-70.8	H	3.0	-20.6	36.0	1.0	-55.5	-25.0	-30.5	
7.59	-75.0	H	3.0	-21.1	35.2	1.0	-56.3	-25.0	-30.3	
10.10	-74.7	H	3.0	-17.6	32.0	1.0	-48.7	-25.0	-23.7	
5.05	-70.9	V	3.0	-20.6	36.1	1.0	-55.7	-25.0	-30.7	
7.59	-74.4	V	3.0	-20.7	35.9	1.0	-55.6	-25.0	-30.6	
10.10	-75.9	V	3.0	-19.8	33.7	1.0	-52.3	-25.0	-27.3	
High Channel (2540.28MHz)-2560MHz 1.99 1.0										
5.08	-70.2	H	3.0	-20.1	36.2	1.0	-55.3	-25.0	-30.3	
7.62	-74.1	H	3.0	-20.1	36.0	1.0	-55.1	-25.0	-30.1	
10.16	-73.1	H	3.0	-16.5	32.0	1.0	-47.6	-25.0	-22.6	
5.08	-71.1	V	3.0	-20.8	36.3	1.0	-56.0	-25.0	-31.0	
7.62	-74.1	V	3.0	-20.3	35.8	1.0	-55.2	-25.0	-30.2	
10.16	-74.8	V	3.0	-18.6	33.7	1.0	-51.3	-25.0	-26.3	

Rev: 05.21.15

LTE B7 20MHz + 20MHz 16QAM

9.1.2. LTE BAND 41

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 52275
 Configuration: EUT
 Mode: LTE Band 41, QPSK UL CA 205

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2517.7MHz 1-99 1-0										
5.02	-89.8	H	3.0	-19.8	36.9	1.0	-66.8	-25.0	-32.8	
7.63	-72.7	H	3.0	-18.8	36.9	1.0	-63.7	-25.0	-28.7	
10.04	-73.4	H	3.0	-18.8	33.7	1.0	-49.5	-25.0	-24.5	
5.02	-88.0	V	3.0	-17.8	36.9	1.0	-53.6	-25.0	-28.6	
7.63	-72.9	V	3.0	-18.4	36.9	1.0	-63.3	-25.0	-28.3	
10.04	-72.8	V	3.0	-18.6	33.7	1.0	-49.3	-25.0	-24.3	
Mid Channel (2690.5MHz) + 2692.2MHz 1-99 1-0										
6.19	-76.3	H	3.0	-20.4	36.8	1.0	-66.3	-25.0	-31.3	
7.79	-73.1	H	3.0	-19.0	36.7	1.0	-63.6	-25.0	-28.6	
10.38	-76.1	H	3.0	-18.4	33.7	1.0	-61.1	-25.0	-26.1	
6.19	-86.4	V	3.0	-17.8	36.8	1.0	-63.6	-25.0	-28.6	
7.79	-72.9	V	3.0	-19.0	36.7	1.0	-63.7	-25.0	-28.7	
10.38	-73.0	V	3.0	-18.7	33.7	1.0	-49.4	-25.0	-24.4	
High Channel (2675MHz) + 2686.7MHz 1-99 1-0										
6.36	-72.6	H	3.0	-22.0	36.8	1.0	-67.8	-25.0	-32.8	
8.04	-73.7	H	3.0	-19.3	36.4	1.0	-63.7	-25.0	-28.7	
10.72	-76.6	H	3.0	-18.7	33.7	1.0	-61.5	-25.0	-26.5	
6.36	-71.6	V	3.0	-20.6	36.8	1.0	-66.4	-25.0	-31.4	
8.04	-72.3	V	3.0	-18.2	36.4	1.0	-62.6	-25.0	-27.6	
10.72	-73.8	V	3.0	-17.3	33.7	1.0	-56.1	-25.0	-25.1	

Rev: 05.21.15

LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 52275
 Configuration: EUT
 Mode: LTE Band 41, 16QAM UL CA 205

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2517.7MHz 1-99 1-0										
5.02	-71.1	H	3.0	-21.1	36.8	1.0	-67.0	-25.0	-32.0	
7.63	-72.5	H	3.0	-18.7	36.9	1.0	-63.6	-25.0	-28.6	
10.04	-73.7	H	3.0	-17.1	33.7	1.0	-49.8	-25.0	-24.8	
5.02	-71.6	V	3.0	-21.4	36.8	1.0	-67.3	-25.0	-32.3	
7.63	-73.1	V	3.0	-19.5	36.9	1.0	-64.4	-25.0	-29.4	
10.04	-72.5	V	3.0	-17.3	33.7	1.0	-50.0	-25.0	-25.0	
Mid Channel (2690.5MHz) + 2692.2MHz 1-99 1-0										
6.19	-72.2	H	3.0	-21.9	36.8	1.0	-67.7	-25.0	-32.7	
7.79	-73.8	H	3.0	-19.5	36.7	1.0	-64.2	-25.0	-29.2	
10.38	-74.4	H	3.0	-17.7	33.7	1.0	-60.4	-25.0	-25.4	
6.19	-72.3	V	3.0	-21.8	36.8	1.0	-67.6	-25.0	-32.6	
7.79	-73.3	V	3.0	-19.4	36.7	1.0	-64.1	-25.0	-29.1	
10.38	-74.5	V	3.0	-18.2	33.7	1.0	-60.9	-25.0	-25.9	
High Channel (2675MHz) + 2686.7MHz 1-99 1-0										
6.36	-70.7	H	3.0	-20.1	36.8	1.0	-66.9	-25.0	-31.9	
8.04	-73.7	H	3.0	-19.3	36.4	1.0	-63.7	-25.0	-28.7	
10.72	-76.9	H	3.0	-17.9	33.7	1.0	-49.8	-25.0	-24.8	
6.36	-72.6	V	3.0	-21.8	36.8	1.0	-67.5	-25.0	-32.5	
8.04	-73.3	V	3.0	-18.1	36.4	1.0	-63.6	-25.0	-28.6	
10.72	-72.8	V	3.0	-16.2	33.7	1.0	-48.9	-25.0	-23.9	

Rev: 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 52275
 Configuration: EUT
 Mode: LTE Band 41, QPSK UL CA 200

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2525.8MHz 1-99 1-0										
6.03	-79.8	H	3.0	-20.8	36.9	1.0	-66.7	-25.0	-31.7	
7.66	-71.8	H	3.0	-17.9	36.9	1.0	-62.8	-25.0	-27.8	
10.06	-73.6	H	3.0	-17.0	33.7	1.0	-49.7	-25.0	-24.7	
6.03	-79.5	V	3.0	-20.3	36.9	1.0	-66.1	-25.0	-31.1	
7.66	-71.4	V	3.0	-17.8	36.9	1.0	-62.7	-25.0	-27.7	
10.06	-75.7	V	3.0	-19.5	33.7	1.0	-62.2	-25.0	-27.2	
Mid Channel (2583.1MHz) + 2692.9MHz 1-99 1-0										
6.19	-72.6	H	3.0	-22.3	36.8	1.0	-68.1	-25.0	-33.1	
7.78	-72.4	H	3.0	-18.3	36.7	1.0	-62.9	-25.0	-27.9	
10.37	-74.0	H	3.0	-17.3	33.7	1.0	-60.0	-25.0	-25.0	
6.19	-71.6	V	3.0	-21.1	36.8	1.0	-66.9	-25.0	-31.9	
7.78	-73.9	V	3.0	-20.0	36.7	1.0	-64.7	-25.0	-29.7	
10.37	-74.5	V	3.0	-18.2	33.7	1.0	-60.9	-25.0	-25.9	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
6.34	-71.8	H	3.0	-21.2	36.8	1.0	-67.0	-25.0	-32.0	
8.01	-73.8	H	3.0	-19.4	36.5	1.0	-63.8	-25.0	-28.8	
10.68	-75.7	H	3.0	-18.8	33.7	1.0	-61.6	-25.0	-26.6	
6.34	-71.0	V	3.0	-20.3	36.8	1.0	-66.1	-25.0	-31.1	
8.01	-72.5	V	3.0	-18.4	36.5	1.0	-62.8	-25.0	-27.8	
10.68	-74.1	V	3.0	-17.7	33.7	1.0	-60.4	-25.0	-25.4	

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LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
 UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 52275
 Configuration: EUT
 Mode: LTE Band 41, 16QAM UL CA 200

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2525.8MHz 1-99 1-0										
6.03	-71.9	H	3.0	-21.9	36.9	1.0	-67.7	-25.0	-32.7	
7.66	-72.6	H	3.0	-18.7	36.9	1.0	-63.6	-25.0	-28.6	
10.06	-73.9	H	3.0	-17.3	33.7	1.0	-60.0	-25.0	-25.0	
6.03	-70.5	V	3.0	-20.2	36.9	1.0	-66.1	-25.0	-31.1	
7.66	-72.9	V	3.0	-19.3	36.9	1.0	-64.1	-25.0	-29.1	
10.06	-72.1	V	3.0	-15.9	33.7	1.0	-48.6	-25.0	-23.6	
Mid Channel (2583.1MHz) + 2692.9MHz 1-99 1-0										
6.19	-71.0	H	3.0	-20.6	36.8	1.0	-66.4	-25.0	-31.4	
7.78	-72.8	H	3.0	-18.6	36.7	1.0	-63.2	-25.0	-28.2	
10.37	-76.1	H	3.0	-18.4	33.7	1.0	-61.1	-25.0	-26.1	
6.19	-71.0	V	3.0	-20.5	36.8	1.0	-66.3	-25.0	-31.3	
7.78	-73.1	V	3.0	-19.2	36.7	1.0	-63.9	-25.0	-28.9	
10.37	-74.9	V	3.0	-18.6	33.7	1.0	-61.3	-25.0	-26.3	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
6.34	-70.8	H	3.0	-20.2	36.8	1.0	-66.0	-25.0	-31.0	
8.01	-73.4	H	3.0	-19.0	36.5	1.0	-63.5	-25.0	-28.5	
10.68	-75.2	H	3.0	-18.3	33.7	1.0	-61.0	-25.0	-26.0	
6.34	-70.4	V	3.0	-19.6	36.8	1.0	-65.4	-25.0	-30.4	
8.01	-72.9	V	3.0	-18.8	36.5	1.0	-63.3	-25.0	-28.3	
10.68	-74.5	V	3.0	-18.1	33.7	1.0	-60.8	-25.0	-25.8	

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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: 04/24/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK UL CA 2010

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

Chamber Pre-amplifier Filter Limit
3m Chamber E 3m Chamber E Filter LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2544.4MHz 1-99 1-0										
5.03	-43.8	H	3.0	-10.9	38.7	1.0	-48.5	-25.0	-23.5	
7.56	-46.2	H	3.0	-7.7	37.7	1.0	-44.4	-25.0	-18.4	
10.07	-48.0	H	3.0	-7.5	38.2	1.0	-42.3	-25.0	-17.3	
5.03	-42.3	V	3.0	-9.8	38.7	1.0	-47.3	-25.0	-22.3	
7.56	-46.5	V	3.0	-7.8	37.7	1.0	-44.4	-25.0	-18.4	
10.07	-47.8	V	3.0	-7.0	38.2	1.0	-42.2	-25.0	-17.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-43.1	H	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.81	-46.7	H	3.0	-7.7	37.7	1.0	-44.4	-25.0	-18.4	
10.15	-46.8	H	3.0	-6.8	38.2	1.0	-41.1	-25.0	-16.1	
5.07	-43.7	V	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.81	-46.2	V	3.0	-8.5	37.7	1.0	-45.1	-25.0	-20.1	
10.15	-47.0	V	3.0	-6.0	38.2	1.0	-41.2	-25.0	-16.2	
High Channel (2550.1MHz)+2544.5MHz 1-99 1-0										
5.11	-43.1	H	3.0	-10.0	38.7	1.0	-47.8	-25.0	-22.8	
7.87	-46.8	H	3.0	-7.8	37.8	1.0	-44.5	-25.0	-18.5	
10.23	-47.0	H	3.0	-6.0	38.3	1.0	-41.3	-25.0	-16.3	
5.11	-43.7	V	3.0	-10.9	38.7	1.0	-48.8	-25.0	-23.8	
7.87	-46.3	V	3.0	-7.8	37.8	1.0	-44.5	-25.0	-18.5	
10.23	-46.3	V	3.0	-5.3	38.3	1.0	-40.6	-25.0	-15.6	

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LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2010

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

Chamber Pre-amplifier Filter Limit
3m Chamber E 3m Chamber E Filter LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
5.03	-43.9	H	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.56	-46.4	H	3.0	-8.8	37.7	1.0	-45.3	-25.0	-20.3	
10.07	-46.5	H	3.0	-6.7	38.2	1.0	-40.8	-25.0	-15.8	
5.03	-43.2	V	3.0	-10.8	38.7	1.0	-48.3	-25.0	-23.3	
7.56	-46.3	V	3.0	-7.6	37.7	1.0	-44.4	-25.0	-18.4	
10.07	-47.9	V	3.0	-7.0	38.2	1.0	-42.2	-25.0	-17.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
5.07	-43.5	H	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.81	-46.9	H	3.0	-8.9	37.7	1.0	-45.6	-25.0	-20.6	
10.15	-47.5	H	3.0	-6.6	38.2	1.0	-41.8	-25.0	-16.8	
5.07	-43.3	V	3.0	-10.5	38.7	1.0	-48.2	-25.0	-23.2	
7.81	-46.3	V	3.0	-7.6	37.7	1.0	-44.3	-25.0	-19.3	
10.15	-46.4	V	3.0	-6.4	38.2	1.0	-40.7	-25.0	-15.7	
High Channel (2550.1MHz)+2544.5MHz 1-99 1-0										
5.11	-42.9	H	3.0	-9.8	38.7	1.0	-47.5	-25.0	-22.5	
7.87	-46.9	H	3.0	-7.9	37.8	1.0	-44.6	-25.0	-18.6	
10.23	-46.3	H	3.0	-5.3	38.3	1.0	-40.6	-25.0	-15.6	
5.11	-43.2	V	3.0	-10.4	38.7	1.0	-48.1	-25.0	-23.1	
7.87	-46.3	V	3.0	-7.5	37.8	1.0	-44.2	-25.0	-19.2	
10.23	-46.6	V	3.0	-6.6	38.3	1.0	-40.9	-25.0	-15.9	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK UL CA 2020

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

Chamber Pre-amplifier Filter Limit
3m Chamber E 3m Chamber E Filter LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2529.8MHz 1-99 1-0										
5.04	-62.1	H	3.0	8.3	36.1	1.0	-44.4	25.0	19.4	
7.56	-66.5	H	3.0	8.6	36.3	1.0	-43.9	25.0	18.9	
10.08	-66.8	H	3.0	5.1	33.4	1.0	-38.5	25.0	-13.5	
5.04	-62.7	V	3.0	-10.0	36.3	1.0	-45.3	25.0	20.3	
7.56	-66.0	V	3.0	8.3	34.8	1.0	-42.1	25.0	17.1	
10.08	-67.4	V	3.0	6.6	32.1	1.0	-37.6	25.0	-12.6	
Mid Channel (2525.1MHz)+2544.5MHz 1-99 1-0										
5.07	-63.5	H	3.0	-10.5	36.0	1.0	-45.4	25.0	20.4	
7.81	-65.4	H	3.0	7.5	35.2	1.0	-41.7	25.0	16.7	
10.14	-67.5	H	3.0	6.4	32.0	1.0	-37.4	25.0	-12.4	
5.07	-63.8	V	3.0	-11.1	36.1	1.0	-46.2	25.0	21.2	
7.81	-66.4	V	3.0	8.7	37.7	1.0	-45.4	25.0	20.4	
10.14	-66.5	V	3.0	5.6	36.2	1.0	-40.8	25.0	15.8	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
5.10	-62.3	H	3.0	-9.8	36.2	1.0	-45.0	25.0	20.0	
7.85	-65.1	H	3.0	7.1	36.0	1.0	-42.2	25.0	17.2	
10.20	-67.3	H	3.0	6.3	32.0	1.0	-37.3	25.0	-12.3	
5.10	-63.3	V	3.0	-10.5	36.3	1.0	-45.7	25.0	20.7	
7.85	-65.4	V	3.0	7.6	35.8	1.0	-42.4	25.0	17.4	
10.20	-67.8	V	3.0	6.0	36.3	1.0	-41.3	25.0	16.3	

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LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2020

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

Chamber Pre-amplifier Filter Limit
3m Chamber E 3m Chamber E Filter LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2529.8MHz 1-99 1-0										
5.04	-63.9	H	3.0	-11.0	36.1	1.0	-46.1	25.0	21.1	
7.56	-66.3	H	3.0	-8.4	36.3	1.0	-43.7	25.0	18.7	
10.08	-66.3	H	3.0	-5.4	33.4	1.0	-37.8	25.0	-12.8	
5.04	-64.0	V	3.0	-11.3	36.3	1.0	-46.6	25.0	21.6	
7.56	-65.9	V	3.0	-8.2	34.8	1.0	-42.8	25.0	17.8	
10.08	-67.4	V	3.0	-6.5	32.1	1.0	-37.6	25.0	-12.6	
Mid Channel (2525.1MHz)+2544.5MHz 1-99 1-0										
5.07	-63.2	H	3.0	-10.1	36.0	1.0	-45.1	25.0	20.1	
7.81	-66.9	H	3.0	-8.0	35.2	1.0	-43.2	25.0	18.2	
10.14	-66.8	H	3.0	-5.8	32.0	1.0	-36.9	25.0	-11.9	
5.07	-63.1	V	3.0	-10.8	36.1	1.0	-45.9	25.0	20.9	
7.81	-66.7	V	3.0	-8.0	37.7	1.0	-45.2	25.0	20.2	
10.14	-66.2	V	3.0	-5.3	36.2	1.0	-40.5	25.0	15.5	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
5.10	-63.3	H	3.0	-10.2	36.2	1.0	-45.4	25.0	20.4	
7.85	-65.4	H	3.0	-7.5	36.0	1.0	-42.5	25.0	17.5	
10.20	-67.5	H	3.0	-6.5	32.0	1.0	-37.6	25.0	-12.6	
5.10	-63.7	V	3.0	-10.8	36.3	1.0	-45.7	25.0	20.7	
7.85	-65.9	V	3.0	-8.1	35.8	1.0	-43.0	25.0	18.8	
10.20	-66.4	V	3.0	-5.4	36.3	1.0	-40.6	25.0	15.6	

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LTE B7 20MHz + 20MHz 16QAM

9.2.2. LTE BAND 41

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 10646
 Configuration: EUT only
 Mode: LTE Band 41, QPSK UL CA 205

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2517.7MHz 1-99, 1-0										
5.03	-63.3	H	3.0	-13.8	36.9	1.0	-48.7	-25.0	-24.7	
7.84	-66.2	H	3.0	-12.4	35.9	1.0	-47.3	-25.0	-22.3	
10.06	-67.1	H	3.0	-10.6	33.7	1.0	-43.2	-25.0	-18.2	
5.03	-64.1	V	3.0	-13.9	36.9	1.0	-49.7	-25.0	-24.7	
7.84	-66.3	V	3.0	-12.7	35.9	1.0	-47.6	-25.0	-22.6	
10.06	-68.8	V	3.0	-10.6	33.7	1.0	-43.3	-25.0	-18.3	
Mid Channel (2590.5MHz) + 2602.2MHz 1-99, 1-0										
5.19	-65.0	H	3.0	-15.6	36.8	1.0	-51.4	-25.0	-26.4	
7.79	-66.1	H	3.0	-12.0	35.7	1.0	-46.7	-25.0	-21.7	
10.39	-66.7	H	3.0	-9.9	33.7	1.0	-42.6	-25.0	-17.6	
5.19	-66.6	V	3.0	-16.1	36.8	1.0	-51.9	-25.0	-26.6	
7.79	-66.5	V	3.0	-12.6	35.7	1.0	-47.3	-25.0	-22.3	
10.39	-68.8	V	3.0	-9.4	33.7	1.0	-42.2	-25.0	-17.2	
High Channel (2675MHz) + 2686.7MHz 1-99, 1-0										
5.36	-65.0	H	3.0	-16.2	36.8	1.0	-52.0	-25.0	-27.0	
8.04	-65.5	H	3.0	-11.1	35.4	1.0	-45.5	-25.0	-20.5	
10.72	-66.9	H	3.0	-10.0	33.7	1.0	-42.7	-25.0	-17.7	
5.36	-65.7	V	3.0	-14.9	36.8	1.0	-49.7	-25.0	-24.7	
8.04	-65.8	V	3.0	-11.5	35.4	1.0	-46.0	-25.0	-21.0	
10.72	-68.6	V	3.0	-10.1	33.7	1.0	-42.9	-25.0	-17.9	

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LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 10646
 Configuration: EUT only
 Mode: LTE Band 41, 16QAM UL CA 205

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2517.7MHz 1-99, 1-0										
5.03	-64.2	H	3.0	-14.1	36.9	1.0	-49.0	-25.0	-25.0	
7.84	-66.3	H	3.0	-12.4	35.9	1.0	-47.3	-25.0	-22.3	
10.06	-66.9	H	3.0	-10.4	33.7	1.0	-43.1	-25.0	-18.1	
5.03	-63.9	V	3.0	-13.6	36.9	1.0	-48.5	-25.0	-24.5	
7.84	-65.9	V	3.0	-12.3	35.9	1.0	-47.2	-25.0	-22.2	
10.06	-67.5	V	3.0	-11.3	33.7	1.0	-44.0	-25.0	-19.0	
Mid Channel (2590.5MHz) + 2602.2MHz 1-99, 1-0										
5.19	-67.7	H	3.0	-15.9	36.8	1.0	-51.7	-25.0	-26.7	
7.79	-66.4	H	3.0	-11.3	35.7	1.0	-46.0	-25.0	-21.0	
10.39	-66.9	H	3.0	-10.2	33.7	1.0	-42.9	-25.0	-17.9	
5.19	-66.7	V	3.0	-16.1	36.8	1.0	-52.0	-25.0	-27.0	
7.79	-66.2	V	3.0	-12.3	35.7	1.0	-47.0	-25.0	-22.0	
10.39	-68.9	V	3.0	-10.6	33.7	1.0	-43.3	-25.0	-18.3	
High Channel (2675MHz) + 2686.7MHz 1-99, 1-0										
5.36	-67.7	H	3.0	-17.1	36.8	1.0	-52.9	-25.0	-27.9	
8.04	-66.1	H	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
10.72	-66.9	H	3.0	-9.9	33.7	1.0	-42.7	-25.0	-17.7	
5.36	-66.3	V	3.0	-15.6	36.8	1.0	-51.3	-25.0	-26.3	
8.04	-65.0	V	3.0	-10.8	35.4	1.0	-45.3	-25.0	-20.3	
10.72	-68.5	V	3.0	-10.8	33.7	1.0	-42.8	-25.0	-17.8	

Rev: 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 10646
 Configuration: EUT only
 Mode: LTE Band 41, QPSK UL CA 2020

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2525.8MHz 1-99 1-0										
5.03	-64.1	H	3.0	-14.0	36.9	1.0	-49.9	-25.0	-24.9	
7.86	-65.6	H	3.0	-11.8	35.9	1.0	-46.5	-25.0	-21.5	
10.06	-67.0	H	3.0	-10.4	33.7	1.0	-43.1	-25.0	-18.1	
5.03	-65.2	V	3.0	-14.9	36.9	1.0	-50.8	-25.0	-25.8	
7.86	-66.0	V	3.0	-12.4	35.9	1.0	-47.3	-25.0	-22.3	
10.06	-66.4	V	3.0	-10.1	33.7	1.0	-42.8	-25.0	-17.8	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-66.2	H	3.0	-15.9	36.8	1.0	-51.7	-25.0	-26.7	
7.78	-66.5	H	3.0	-12.3	35.7	1.0	-47.0	-25.0	-22.0	
10.37	-66.7	H	3.0	-10.0	33.7	1.0	-42.7	-25.0	-17.7	
5.19	-66.0	V	3.0	-15.5	36.8	1.0	-51.3	-25.0	-26.3	
7.78	-65.8	V	3.0	-11.9	35.7	1.0	-46.6	-25.0	-21.6	
10.37	-66.3	V	3.0	-10.0	33.7	1.0	-42.7	-25.0	-17.7	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-67.0	H	3.0	-16.4	36.8	1.0	-52.2	-25.0	-27.2	
8.01	-65.9	H	3.0	-11.5	35.5	1.0	-46.0	-25.0	-21.0	
10.68	-65.8	H	3.0	-8.9	33.7	1.0	-41.6	-25.0	-16.6	
5.34	-66.4	V	3.0	-15.7	36.8	1.0	-51.5	-25.0	-26.5	
8.01	-66.5	V	3.0	-12.4	35.5	1.0	-46.8	-25.0	-21.8	
10.68	-66.1	V	3.0	-9.7	33.7	1.0	-42.4	-25.0	-17.4	

Rev: 05.21.15

LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: [Redacted]
 Project #: [Redacted]
 Date: 04/22/18
 Test Engineer: 10646
 Configuration: EUT only
 Mode: LTE Band 41, 16QAM UL CA 2020

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

Chamber: 3m Chamber H | Pre-amplifier: 3m Chamber H | 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 (2508MHz) + 2525.8MHz 1-99 1-0										
5.03	-63.7	H	3.0	-13.7	36.9	1.0	-49.5	-25.0	-24.5	
7.86	-65.6	H	3.0	-11.7	35.9	1.0	-47.6	-25.0	-22.6	
10.06	-67.6	H	3.0	-11.0	33.7	1.0	-43.7	-25.0	-18.7	
5.03	-64.3	V	3.0	-14.1	36.9	1.0	-50.0	-25.0	-25.0	
7.86	-65.8	V	3.0	-12.2	35.9	1.0	-47.1	-25.0	-22.1	
10.06	-67.5	V	3.0	-11.3	33.7	1.0	-43.9	-25.0	-18.9	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
5.19	-66.2	H	3.0	-15.9	36.8	1.0	-51.7	-25.0	-26.7	
7.78	-64.8	H	3.0	-10.9	35.7	1.0	-45.2	-25.0	-20.2	
10.37	-67.4	H	3.0	-10.7	33.7	1.0	-43.4	-25.0	-18.4	
5.19	-66.2	V	3.0	-14.7	36.8	1.0	-50.5	-25.0	-25.5	
7.78	-66.3	V	3.0	-12.4	35.7	1.0	-47.1	-25.0	-22.1	
10.37	-67.6	V	3.0	-11.3	33.7	1.0	-44.0	-25.0	-19.0	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
5.34	-67.4	H	3.0	-16.9	36.8	1.0	-52.6	-25.0	-27.6	
8.01	-65.7	H	3.0	-11.3	35.5	1.0	-45.7	-25.0	-20.7	
10.68	-67.0	H	3.0	-10.1	33.7	1.0	-42.9	-25.0	-17.9	
5.34	-67.0	V	3.0	-16.2	36.8	1.0	-52.0	-25.0	-27.0	
8.01	-66.0	V	3.0	-11.9	35.5	1.0	-46.4	-25.0	-21.4	
10.68	-65.9	V	3.0	-9.4	33.7	1.0	-42.2	-25.0	-17.2	

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: 04/24/18
 Test Engineer: 10641
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK UL CA 2010

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2544.4MHz 1-99 1-0										
5.03	-44.3	H	3.0	-11.4	38.7	1.0	-48.1	-25.0	-24.1	
7.56	-45.9	H	3.0	-8.1	37.7	1.0	-44.8	-25.0	-19.8	
10.07	-48.6	H	3.0	-7.8	36.2	1.0	-42.9	-25.0	-17.8	
5.03	-44.2	V	3.0	-11.5	38.7	1.0	-49.2	-25.0	-24.2	
7.56	-46.0	V	3.0	-8.4	37.7	1.0	-45.1	-25.0	-20.1	
10.07	-47.8	V	3.0	-7.0	36.2	1.0	-42.2	-25.0	-17.2	
Mid Channel (2530.18MHz)+2544.58MHz 1-99 1-0										
5.07	-43.2	H	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.61	-46.1	H	3.0	-8.2	37.6	1.0	-44.9	-25.0	-19.9	
10.15	-47.9	H	3.0	-7.9	36.2	1.0	-42.2	-25.0	-17.2	
5.07	-42.9	V	3.0	-10.2	38.7	1.0	-47.9	-25.0	-22.9	
7.61	-45.9	V	3.0	-8.1	37.7	1.0	-44.8	-25.0	-19.8	
10.15	-47.7	V	3.0	-8.8	36.2	1.0	-42.0	-25.0	-17.0	
High Channel (2550.18MHz)+2544.58MHz 1-99 1-0										
5.11	-44.2	H	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.67	-46.9	H	3.0	-8.0	37.6	1.0	-44.7	-25.0	-19.7	
10.23	-47.1	H	3.0	-8.1	36.3	1.0	-41.4	-25.0	-16.4	
5.11	-44.3	V	3.0	-11.5	38.7	1.0	-49.2	-25.0	-24.2	
7.67	-46.1	V	3.0	-8.1	37.6	1.0	-44.8	-25.0	-19.8	
10.23	-47.0	V	3.0	-8.0	36.3	1.0	-41.3	-25.0	-16.3	

Rev: 05.21.15

LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10641
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2010

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
5.03	-43.9	H	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.56	-46.4	H	3.0	-7.5	37.7	1.0	-44.2	-25.0	-19.2	
10.07	-46.6	H	3.0	-5.8	36.2	1.0	-40.9	-25.0	-15.9	
5.03	-43.5	V	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.56	-45.9	V	3.0	-8.2	37.7	1.0	-44.9	-25.0	-19.9	
10.07	-46.6	V	3.0	-7.7	36.2	1.0	-42.9	-25.0	-17.9	
Mid Channel (2530.18MHz)+2544.58MHz 1-99 1-0										
5.07	-44.2	H	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.67	-46.1	H	3.0	-8.2	37.6	1.0	-44.8	-25.0	-19.8	
10.15	-47.8	H	3.0	-7.9	36.2	1.0	-42.1	-25.0	-17.1	
5.07	-42.5	V	3.0	-9.8	38.7	1.0	-47.4	-25.0	-22.4	
7.67	-46.2	V	3.0	-8.5	37.7	1.0	-45.2	-25.0	-20.2	
10.15	-48.1	V	3.0	-7.1	36.2	1.0	-42.3	-25.0	-17.3	
High Channel (2550.18MHz)+2544.58MHz 1-99 1-0										
5.11	-42.1	H	3.0	-9.0	38.7	1.0	-46.7	-25.0	-21.7	
7.67	-46.1	H	3.0	-8.2	37.6	1.0	-44.8	-25.0	-19.8	
10.23	-46.0	H	3.0	-5.0	36.3	1.0	-40.3	-25.0	-15.3	
5.11	-44.3	V	3.0	-11.5	38.7	1.0	-49.2	-25.0	-24.2	
7.67	-46.3	V	3.0	-8.5	37.6	1.0	-45.1	-25.0	-20.1	
10.23	-47.3	V	3.0	-8.2	36.3	1.0	-41.5	-25.0	-16.5	

Rev: 05.21.15

LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10641
 Configuration: EUT Only
 Mode: LTE Band 7, QPSK UL CA 2020

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2529.8MHz 1-99 1-0										
5.04	-42.6	H	3.0	-9.7	36.1	1.0	-44.7	-25.0	-19.7	
7.56	-46.2	H	3.0	-8.3	36.3	1.0	-43.6	-25.0	-18.6	
10.08	-47.5	H	3.0	-6.6	33.4	1.0	-39.0	-25.0	-14.0	
5.04	-44.3	V	3.0	-11.6	36.3	1.0	-46.9	-25.0	-21.9	
7.56	-46.5	V	3.0	-8.9	34.8	1.0	-42.6	-25.0	-17.6	
10.08	-47.8	V	3.0	-6.9	32.1	1.0	-38.8	-25.0	-13.8	
Mid Channel (2525.18MHz)+2544.58MHz 1-99 1-0										
5.09	-44.0	H	3.0	-11.0	36.0	1.0	-46.0	-25.0	-21.0	
7.61	-46.7	H	3.0	-8.8	35.2	1.0	-43.9	-25.0	-18.9	
10.14	-48.2	H	3.0	-7.2	32.0	1.0	-38.3	-25.0	-13.3	
5.09	-43.5	V	3.0	-10.8	36.1	1.0	-45.9	-25.0	-20.9	
7.61	-46.2	V	3.0	-8.4	37.7	1.0	-45.1	-25.0	-20.1	
10.14	-47.4	V	3.0	-6.5	36.2	1.0	-41.7	-25.0	-16.7	
High Channel (2540.28MHz)+2560MHz 1-99 1-0										
5.10	-43.4	H	3.0	-10.4	36.2	1.0	-45.6	-25.0	-20.6	
7.65	-46.6	H	3.0	-8.7	36.0	1.0	-43.7	-25.0	-18.7	
10.20	-47.2	H	3.0	-6.2	33.0	1.0	-37.3	-25.0	-12.3	
5.10	-44.0	V	3.0	-11.3	36.3	1.0	-46.5	-25.0	-21.5	
7.65	-46.0	V	3.0	-8.2	35.8	1.0	-43.1	-25.0	-18.1	
10.20	-47.1	V	3.0	-6.1	36.3	1.0	-41.4	-25.0	-16.4	

Rev: 05.21.15

LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/24/18
 Test Engineer: 10641
 Configuration: EUT Only
 Mode: LTE Band 7, 16QAM UL CA 2020

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

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (HV)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2529.8MHz 1-99 1-0										
5.04	-44.6	H	3.0	-11.6	36.1	1.0	-46.7	-25.0	-21.7	
7.56	-47.5	H	3.0	-9.6	36.3	1.0	-44.9	-25.0	-19.9	
10.08	-47.3	H	3.0	-6.5	33.4	1.0	-38.9	-25.0	-13.9	
5.04	-43.9	V	3.0	-11.2	36.3	1.0	-46.5	-25.0	-21.5	
7.56	-47.3	V	3.0	-9.6	34.8	1.0	-43.4	-25.0	-18.4	
10.08	-47.3	V	3.0	-6.5	32.1	1.0	-37.3	-25.0	-12.3	
Mid Channel (2525.18MHz)+2544.58MHz 1-99 1-0										
5.07	-43.7	H	3.0	-10.7	36.0	1.0	-45.6	-25.0	-20.6	
7.61	-46.0	H	3.0	-8.0	35.2	1.0	-42.3	-25.0	-17.3	
10.14	-48.2	H	3.0	-7.2	32.0	1.0	-38.3	-25.0	-13.3	
5.07	-44.3	V	3.0	-11.6	36.1	1.0	-46.7	-25.0	-21.7	
7.61	-46.5	V	3.0	-8.7	37.7	1.0	-45.4	-25.0	-20.4	
10.14	-48.2	V	3.0	-7.3	36.2	1.0	-42.5	-25.0	-17.5	
High Channel (2540.28MHz)+2560MHz 1-99 1-0										
5.10	-44.2	H	3.0	-11.2	36.2	1.0	-46.4	-25.0	-21.4	
7.65	-44.5	H	3.0	-5.5	36.0	1.0	-41.5	-25.0	-16.5	
10.20	-46.6	H	3.0	-5.6	32.0	1.0	-36.5	-25.0	-11.5	
5.10	-44.7	V	3.0	-11.9	36.3	1.0	-47.2	-25.0	-22.2	
7.65	-47.0	V	3.0	-9.3	35.8	1.0	-44.1	-25.0	-19.1	
10.20	-46.4	V	3.0	-5.4	36.3	1.0	-40.7	-25.0	-15.7	

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: 04/24/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 41, QPSK UL CA 205

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

Chamber Pre-amplifier 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 (2508MHz) + 2517.7MHz 1-99, 1-0										
6.02	-63.6	H	3.0	-10.6	38.7	1.0	-48.3	-25.0	-23.3	
7.54	-65.6	H	3.0	-7.7	37.7	1.0	-44.4	-25.0	-19.4	
10.05	-67.5	H	3.0	-6.7	36.2	1.0	-41.9	-25.0	-16.9	
6.02	-64.6	V	3.0	-12.0	38.7	1.0	-49.7	-25.0	-24.7	
7.54	-64.9	V	3.0	-7.2	37.7	1.0	-44.0	-25.0	-19.0	
10.05	-68.3	V	3.0	-7.6	36.2	1.0	-42.7	-25.0	-17.7	
Mid Channel (2590.5MHz) + 2602.2MHz 1-99, 1-0										
6.19	-63.1	H	3.0	-8.8	38.7	1.0	-47.6	-25.0	-22.6	
7.89	-66.5	H	3.0	-8.3	37.5	1.0	-44.8	-25.0	-19.8	
10.39	-67.2	H	3.0	-8.0	36.4	1.0	-41.4	-25.0	-16.4	
6.19	-63.1	V	3.0	-19.2	38.7	1.0	-47.9	-25.0	-22.9	
7.89	-65.7	V	3.0	-7.6	37.5	1.0	-44.1	-25.0	-19.1	
10.39	-67.1	V	3.0	-6.9	36.4	1.0	-41.2	-25.0	-16.2	
High Channel (2675MHz) + 2686.7MHz 1-99, 1-0										
6.36	-65.1	H	3.0	-12.1	38.6	1.0	-48.8	-25.0	-24.8	
8.05	-65.2	H	3.0	-6.7	37.4	1.0	-43.1	-25.0	-18.1	
10.74	-67.2	H	3.0	-5.8	36.8	1.0	-41.4	-25.0	-16.4	
6.36	-66.3	V	3.0	-13.0	38.6	1.0	-49.6	-25.0	-25.6	
8.05	-66.0	V	3.0	-7.7	37.4	1.0	-44.1	-25.0	-19.1	
10.74	-67.3	V	3.0	-6.7	36.8	1.0	-41.3	-25.0	-16.3	

Rev: 05.21.15

LTE B41 20MHz + 5MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/23/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 41, 16QAM UL CA 205

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

Chamber Pre-amplifier 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 (2508MHz) + 2517.7MHz 1-99, 1-0										
6.02	-64.4	H	3.0	-11.2	38.7	1.0	-48.9	-25.0	-23.9	
7.54	-65.5	H	3.0	-7.7	37.7	1.0	-44.4	-25.0	-19.4	
10.05	-69.7	H	3.0	-6.8	36.2	1.0	-41.0	-25.0	-16.0	
6.02	-63.7	V	3.0	-11.0	38.7	1.0	-48.7	-25.0	-23.7	
7.54	-66.4	V	3.0	-8.8	37.7	1.0	-45.6	-25.0	-20.6	
10.05	-68.2	V	3.0	-7.4	36.2	1.0	-42.6	-25.0	-17.6	
Mid Channel (2590.5MHz) + 2602.2MHz 1-99, 1-0										
6.19	-63.2	H	3.0	-10.0	38.7	1.0	-47.6	-25.0	-22.6	
7.89	-66.3	H	3.0	-8.1	37.5	1.0	-44.6	-25.0	-19.6	
10.39	-69.7	H	3.0	-6.5	36.4	1.0	-40.9	-25.0	-15.9	
6.19	-64.4	V	3.0	-11.2	38.7	1.0	-48.8	-25.0	-23.8	
7.89	-66.3	V	3.0	-8.2	37.5	1.0	-44.7	-25.0	-19.7	
10.39	-67.9	V	3.0	-6.8	36.4	1.0	-41.2	-25.0	-16.2	
High Channel (2675MHz) + 2686.7MHz 1-99, 1-0										
6.36	-63.7	H	3.0	-10.0	38.6	1.0	-47.7	-25.0	-22.7	
8.05	-64.9	H	3.0	-6.5	37.4	1.0	-42.9	-25.0	-17.9	
10.74	-67.1	H	3.0	-6.7	36.8	1.0	-41.3	-25.0	-16.3	
6.36	-63.7	V	3.0	-10.4	38.6	1.0	-48.0	-25.0	-23.0	
8.05	-66.1	V	3.0	-7.9	37.4	1.0	-44.2	-25.0	-19.2	
10.74	-68.4	V	3.0	-6.8	36.6	1.0	-40.4	-25.0	-15.4	

Rev: 05.21.15

LTE B41 20MHz + 5MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/23/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 41, QPSK UL CA 2020

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

Chamber Pre-amplifier 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 (2508MHz) + 2525.8MHz 1-99 1-0										
6.03	-69.6	H	3.0	-7.6	38.7	1.0	-46.3	-25.0	-20.3	
7.56	-66.7	H	3.0	-7.9	37.7	1.0	-44.6	-25.0	-19.6	
10.06	-67.8	H	3.0	-6.9	36.2	1.0	-42.1	-25.0	-17.1	
6.03	-63.7	V	3.0	-11.1	38.7	1.0	-48.7	-25.0	-23.7	
7.56	-64.7	V	3.0	-7.1	37.7	1.0	-43.8	-25.0	-18.8	
10.06	-66.8	V	3.0	-6.9	36.2	1.0	-41.1	-25.0	-16.1	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
6.19	-64.5	H	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.78	-65.1	H	3.0	-7.9	37.6	1.0	-43.5	-25.0	-18.5	
10.37	-66.6	H	3.0	-6.5	36.4	1.0	-40.9	-25.0	-15.9	
6.19	-63.3	V	3.0	-10.4	38.7	1.0	-48.1	-25.0	-23.1	
7.78	-65.3	V	3.0	-7.4	37.6	1.0	-43.9	-25.0	-18.9	
10.37	-66.6	V	3.0	-6.4	36.4	1.0	-40.8	-25.0	-15.8	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
6.34	-63.7	H	3.0	-10.5	38.6	1.0	-48.1	-25.0	-23.1	
8.01	-64.6	H	3.0	-6.4	37.4	1.0	-42.9	-25.0	-17.9	
10.68	-67.0	H	3.0	-6.5	36.6	1.0	-41.0	-25.0	-16.0	
6.34	-63.3	V	3.0	-10.0	38.6	1.0	-47.7	-25.0	-22.7	
8.01	-64.8	V	3.0	-6.6	37.4	1.0	-43.0	-25.0	-18.0	
10.68	-67.0	V	3.0	-6.5	36.6	1.0	-41.0	-25.0	-16.0	

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LTE B41 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company: _____
 Project #: _____
 Date: 04/23/18
 Test Engineer: 10649
 Configuration: EUT Only
 Mode: LTE Band 41, 16QAM UL CA 2020

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

Chamber Pre-amplifier 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 (2508MHz) + 2525.8MHz 1-99 1-0										
6.03	-63.9	H	3.0	-10.9	38.7	1.0	-48.5	-25.0	-23.5	
7.56	-65.9	H	3.0	-8.1	37.7	1.0	-44.8	-25.0	-19.8	
10.06	-67.1	H	3.0	-6.2	36.2	1.0	-41.4	-25.0	-16.4	
6.03	-63.0	V	3.0	-10.4	38.7	1.0	-48.1	-25.0	-23.1	
7.56	-64.4	V	3.0	-7.9	37.7	1.0	-44.6	-25.0	-19.6	
10.06	-66.7	V	3.0	-6.9	36.2	1.0	-41.1	-25.0	-16.1	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
6.19	-64.4	H	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.78	-64.7	H	3.0	-8.6	37.6	1.0	-43.2	-25.0	-18.2	
10.37	-67.2	H	3.0	-6.1	36.4	1.0	-41.5	-25.0	-16.5	
6.19	-64.6	V	3.0	-11.7	38.7	1.0	-49.4	-25.0	-24.4	
7.78	-65.4	V	3.0	-7.6	37.6	1.0	-44.1	-25.0	-19.1	
10.37	-66.7	V	3.0	-6.6	36.4	1.0	-40.9	-25.0	-15.9	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
6.34	-64.3	H	3.0	-10.7	38.6	1.0	-48.3	-25.0	-23.3	
8.01	-64.9	H	3.0	-6.5	37.4	1.0	-43.9	-25.0	-18.9	
10.68	-67.4	H	3.0	-6.0	36.6	1.0	-41.6	-25.0	-16.6	
6.34	-63.6	V	3.0	-10.4	38.6	1.0	-48.0	-25.0	-23.0	
8.01	-65.9	V	3.0	-7.7	37.4	1.0	-44.1	-25.0	-19.1	
10.68	-67.1	V	3.0	-6.6	36.6	1.0	-41.1	-25.0	-16.1	

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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 #: 10640
Date: 04/24/18
Test Engineer: EUT Only
Configuration: LTE Band 7, QPSK, UL CA 2010
Mode:
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber E	3m Chamber E	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2518MHz)+2524.4MHz 1.99 1-0										
5.03	-62.6	H	3.0	-10.7	38.7	1.0	-48.4	-25.0	-23.4	
7.55	-68.8	H	3.0	-8.0	37.7	1.0	-45.7	-25.0	-20.7	
10.07	-67.6	H	3.0	-8.7	38.2	1.0	-41.3	-25.0	-18.9	
5.03	-63.6	V	3.0	-10.9	38.7	1.0	-48.6	-25.0	-23.6	
7.55	-69.0	V	3.0	-8.4	37.7	1.0	-45.1	-25.0	-20.1	
10.07	-67.8	V	3.0	-8.8	38.2	1.0	-45.1	-25.0	-17.1	
Mid Channel (2538.1MHz)+2544.5MHz 1.99 1-0										
5.07	-63.7	H	3.0	-10.6	38.7	1.0	-48.3	-25.0	-23.3	
7.61	-65.7	H	3.0	-7.8	37.7	1.0	-44.5	-25.0	-19.5	
10.15	-67.2	H	3.0	-9.3	38.2	1.0	-41.5	-25.0	-16.5	
5.07	-63.3	V	3.0	-10.6	38.7	1.0	-48.3	-25.0	-23.3	
7.61	-65.2	V	3.0	-7.5	37.7	1.0	-44.2	-25.0	-19.2	
10.15	-67.1	V	3.0	-8.1	38.2	1.0	-41.4	-25.0	-16.4	
High Channel (2558.1MHz)+2564.5MHz 1.99 1-0										
5.11	-62.9	H	3.0	-9.8	38.7	1.0	-47.5	-25.0	-22.5	
7.67	-65.4	H	3.0	-7.4	37.6	1.0	-44.0	-25.0	-19.0	
10.23	-67.9	H	3.0	-9.0	38.3	1.0	-41.3	-25.0	-16.3	
5.11	-64.3	V	3.0	-11.5	38.7	1.0	-49.2	-25.0	-24.2	
7.67	-65.4	V	3.0	-7.8	37.6	1.0	-44.2	-25.0	-19.2	
10.23	-66.8	V	3.0	-5.7	38.3	1.0	-41.0	-25.0	-16.0	

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LTE B7 20MHz + 10MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 10640
Date: 04/24/18
Test Engineer: EUT Only
Configuration: LTE Band 7, 16QAM UL CA 2010
Mode:
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber E	3m Chamber E	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2518MHz)+2524.4MHz 1.99 1-0										
5.03	-63.9	H	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.55	-65.3	H	3.0	-7.5	37.7	1.0	-44.2	-25.0	-19.2	
10.07	-67.4	H	3.0	-8.6	38.2	1.0	-41.7	-25.0	-16.7	
5.03	-62.7	V	3.0	-10.1	38.7	1.0	-47.8	-25.0	-22.8	
7.55	-66.2	V	3.0	-8.6	37.7	1.0	-45.3	-25.0	-20.3	
10.07	-66.7	V	3.0	-8.9	38.2	1.0	-41.1	-25.0	-16.1	
Mid Channel (2538.1MHz)+2544.5MHz 1.99 1-0										
5.07	-64.1	H	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.61	-66.5	H	3.0	-8.6	37.7	1.0	-45.3	-25.0	-20.3	
10.15	-66.9	H	3.0	-9.0	38.2	1.0	-41.2	-25.0	-16.2	
5.07	-63.8	V	3.0	-11.1	38.7	1.0	-48.8	-25.0	-23.8	
7.61	-65.7	V	3.0	-8.0	37.7	1.0	-44.6	-25.0	-19.6	
10.15	-67.2	V	3.0	-8.3	38.2	1.0	-41.5	-25.0	-16.5	
High Channel (2558.1MHz)+2564.5MHz 1.99 1-0										
5.11	-63.9	H	3.0	-9.9	38.7	1.0	-47.5	-25.0	-22.5	
7.67	-66.1	H	3.0	-8.1	37.6	1.0	-44.8	-25.0	-19.8	
10.23	-66.3	H	3.0	-8.4	38.3	1.0	-41.6	-25.0	-16.6	
5.11	-64.1	V	3.0	-11.3	38.7	1.0	-49.0	-25.0	-24.0	
7.67	-65.1	V	3.0	-7.3	37.6	1.0	-44.0	-25.0	-19.0	
10.23	-67.3	V	3.0	-6.2	38.3	1.0	-41.5	-25.0	-16.5	

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LTE B7 20MHz + 10MHz 16QAM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 10640
Date: 04/24/18
Test Engineer: EUT Only
Configuration: LTE Band 7, QPSK, UL CA 2020
Mode:
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber E	3m Chamber E	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2518MHz)+ 2529.8MHz 1.99 1-0										
5.04	-63.4	H	3.0	-10.5	38.1	1.0	-45.6	-25.0	-20.6	
7.56	-64.6	H	3.0	-8.7	38.3	1.0	-42.0	-25.0	-17.0	
10.08	-67.8	H	3.0	-6.9	33.4	1.0	-39.4	-25.0	-14.4	
5.04	-63.5	V	3.0	-10.8	38.3	1.0	-46.1	-25.0	-21.1	
7.56	-66.2	V	3.0	-8.5	34.8	1.0	-42.3	-25.0	-17.3	
10.08	-68.2	V	3.0	-7.4	32.1	1.0	-38.4	-25.0	-13.4	
Mid Channel (2525.1MHz)+2544.5MHz 1.99 1-0										
5.07	-63.4	H	3.0	-10.4	38.0	1.0	-45.3	-25.0	-20.3	
7.61	-66.4	H	3.0	-8.4	35.2	1.0	-42.7	-25.0	-17.7	
10.14	-66.0	H	3.0	-8.0	33.0	1.0	-37.0	-25.0	-12.0	
5.07	-63.7	V	3.0	-10.9	38.1	1.0	-46.0	-25.0	-21.0	
7.61	-66.3	V	3.0	-8.6	37.7	1.0	-45.2	-25.0	-20.2	
10.14	-68.1	V	3.0	-7.2	36.2	1.0	-42.4	-25.0	-17.4	
High Channel (2540.2MHz)+2560MHz 1.99 1-0										
5.10	-63.5	H	3.0	-10.4	38.2	1.0	-45.6	-25.0	-20.6	
7.65	-66.4	H	3.0	-8.4	36.0	1.0	-43.4	-25.0	-18.4	
10.20	-67.5	H	3.0	-6.5	32.0	1.0	-37.5	-25.0	-12.5	
5.10	-63.9	V	3.0	-10.3	38.3	1.0	-45.5	-25.0	-20.5	
7.65	-66.1	V	3.0	-8.3	35.8	1.0	-43.2	-25.0	-18.2	
10.20	-68.0	V	3.0	-3.1	38.3	1.0	-38.3	-25.0	-13.3	

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LTE B7 20MHz + 20MHz QPSK

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 10640
Date: 04/24/18
Test Engineer: EUT Only
Configuration: LTE Band 7, 16QAM UL CA 2020
Mode:
Test Equipment:
Substitution: Horn T344 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifier	Filter	Limit
3m Chamber E	3m Chamber E	Filter	LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2518MHz)+ 2529.8MHz 1.99 1-0										
5.04	-63.8	H	3.0	-10.9	38.1	1.0	-46.0	-25.0	-21.0	
7.56	-65.9	H	3.0	-8.8	38.3	1.0	-43.3	-25.0	-18.3	
10.08	-68.0	H	3.0	-7.2	33.4	1.0	-39.6	-25.0	-14.6	
5.04	-63.8	V	3.0	-11.1	38.3	1.0	-46.4	-25.0	-21.4	
7.56	-67.8	V	3.0	-9.3	34.8	1.0	-43.1	-25.0	-18.1	
10.08	-69.0	V	3.0	-7.1	32.1	1.0	-39.2	-25.0	-13.2	
Mid Channel (2525.1MHz)+2544.5MHz 1.99 1-0										
5.07	-63.6	H	3.0	-10.6	38.0	1.0	-45.5	-25.0	-20.5	
7.61	-66.1	H	3.0	-7.1	35.2	1.0	-41.4	-25.0	-16.4	
10.14	-67.3	H	3.0	-8.4	33.0	1.0	-37.4	-25.0	-12.4	
5.07	-62.3	V	3.0	-10.5	38.1	1.0	-44.6	-25.0	-19.6	
7.61	-66.7	V	3.0	-8.8	37.7	1.0	-45.7	-25.0	-20.7	
10.14	-66.6	V	3.0	-5.7	36.2	1.0	-40.9	-25.0	-15.9	
High Channel (2540.2MHz)+2560MHz 1.99 1-0										
5.10	-63.1	H	3.0	-10.0	38.2	1.0	-46.2	-25.0	-21.2	
7.65	-65.1	H	3.0	-7.1	36.0	1.0	-42.2	-25.0	-17.2	
10.20	-66.7	H	3.0	-5.8	32.0	1.0	-36.8	-25.0	-11.8	
5.10	-63.9	V	3.0	-10.1	38.3	1.0	-45.4	-25.0	-20.4	
7.65	-65.7	V	3.0	-7.9	35.8	1.0	-42.8	-25.0	-17.8	
10.20	-66.1	V	3.0	-3.1	38.3	1.0	-40.4	-25.0	-15.4	

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LTE B7 20MHz + 20MHz 16QAM

10. SETUP PHOTOS

Please refer to 12204524-EP1V1 for set up photos