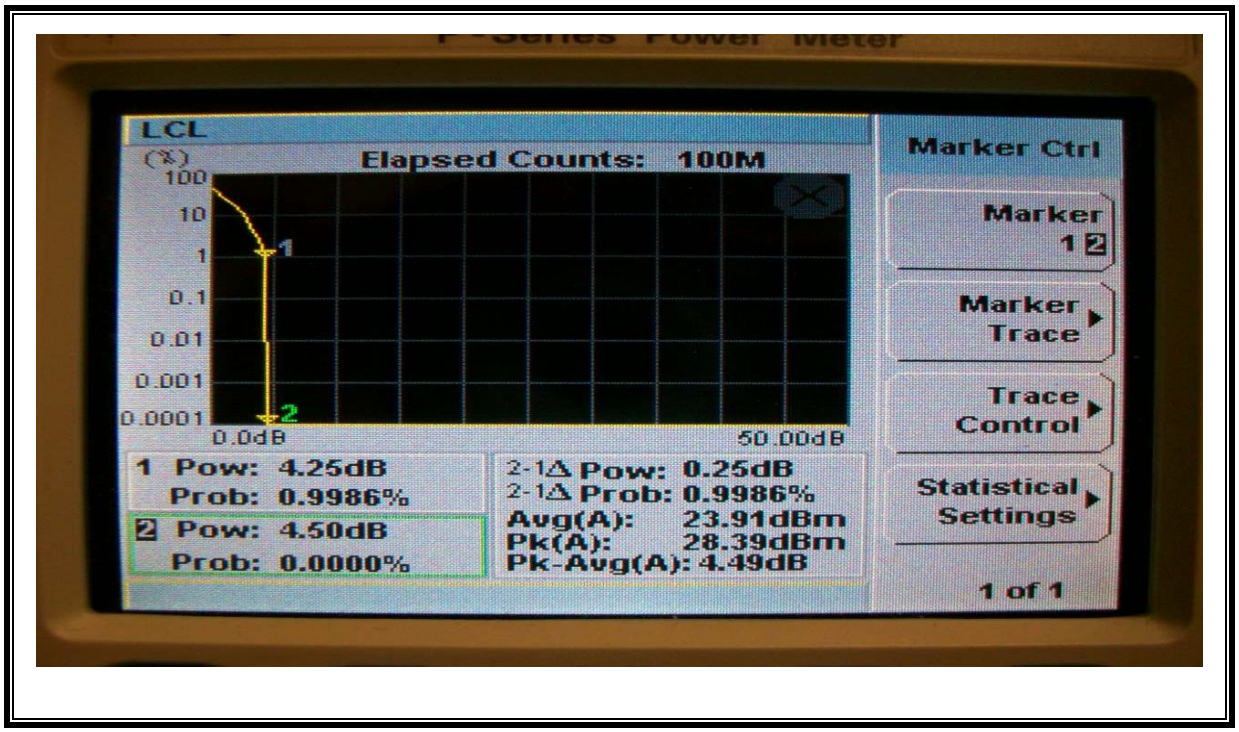
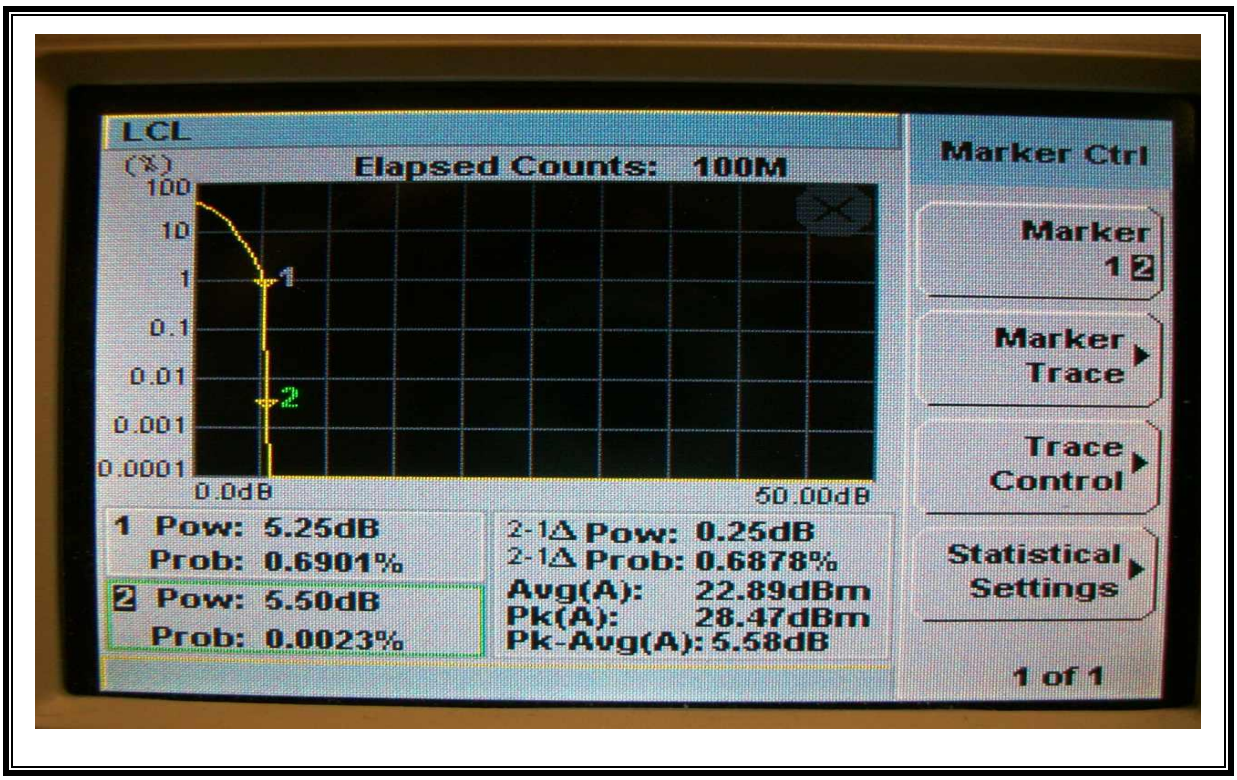
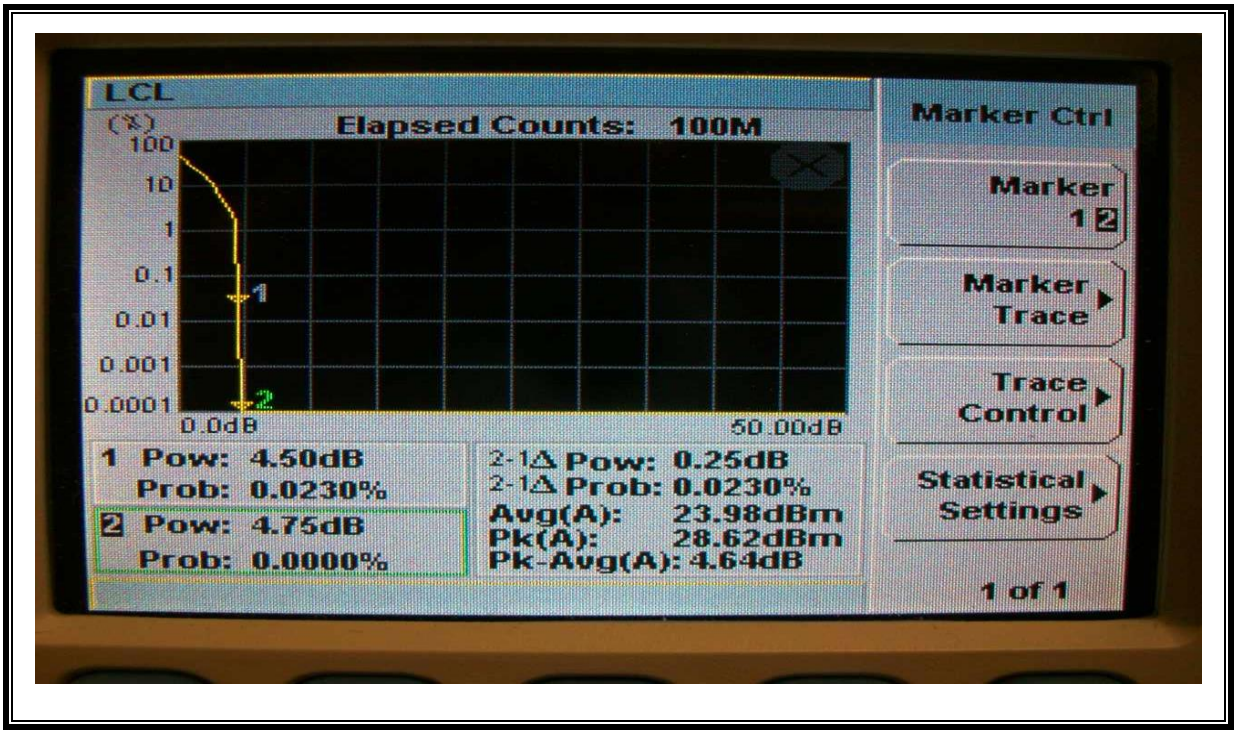
LTE QPSK Band 17 (5.0 MHz BAND WIDTH)



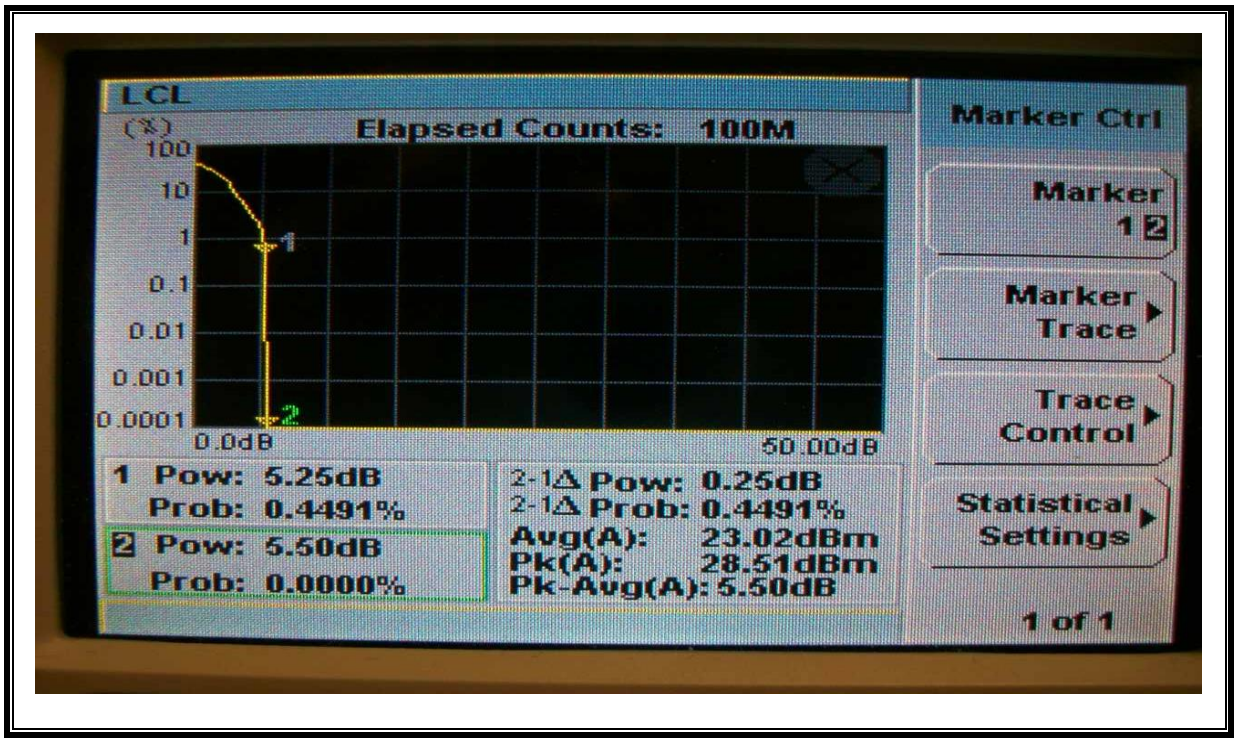
LTE 16QAM Band 17 (5.0 MHz BAND WIDTH)



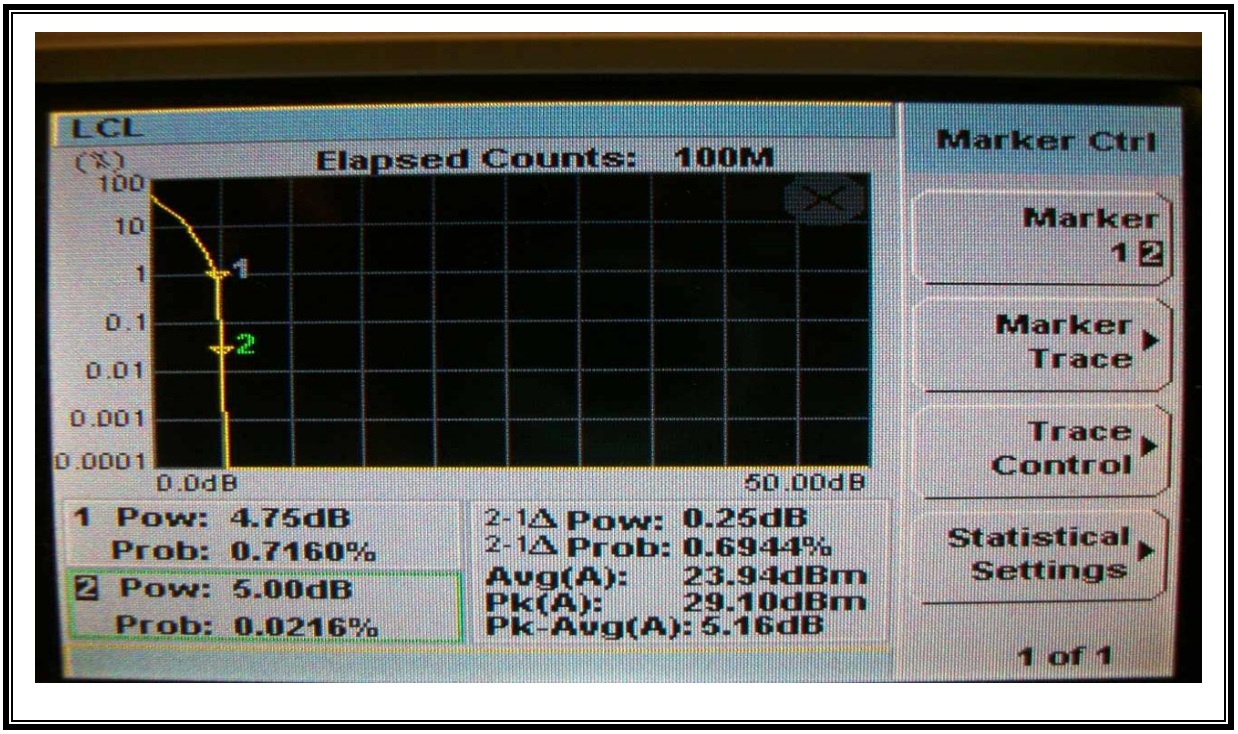
LTE QPSK Band 17 (10.0 MHz BAND WIDTH)



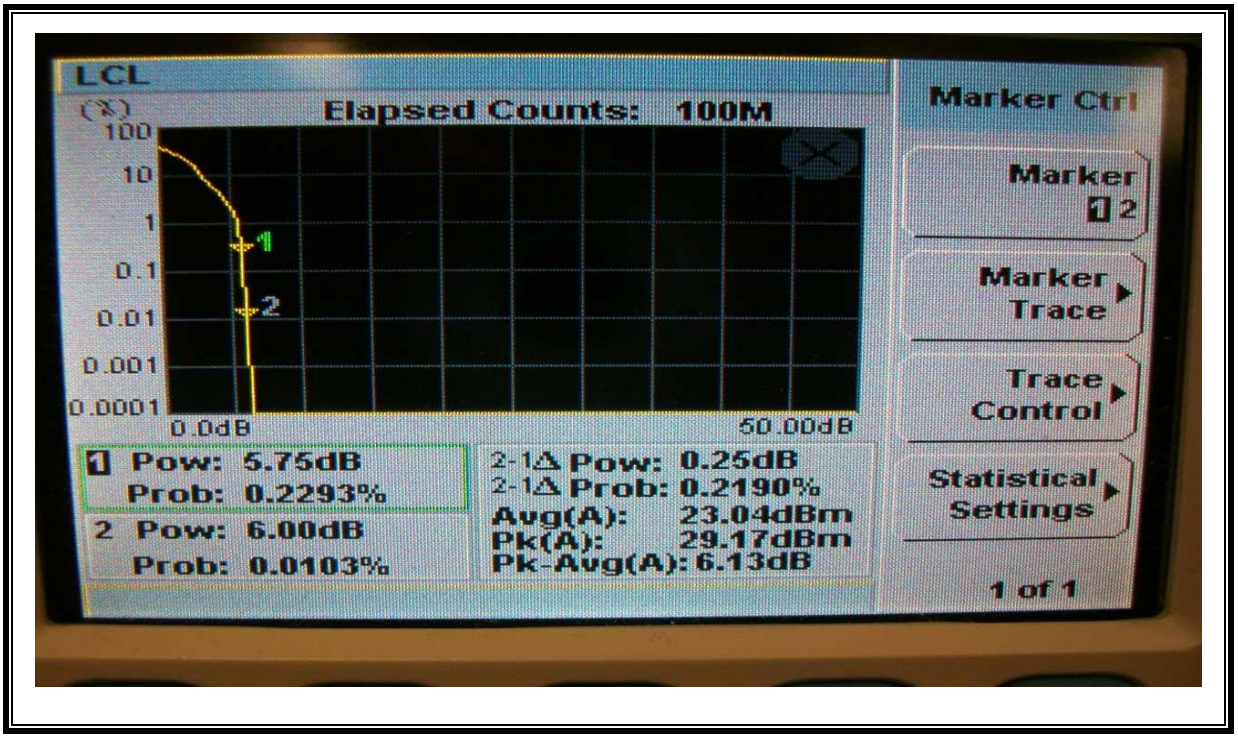
LTE 16QAM Band 17 (10.0 MHz BAND WIDTH)



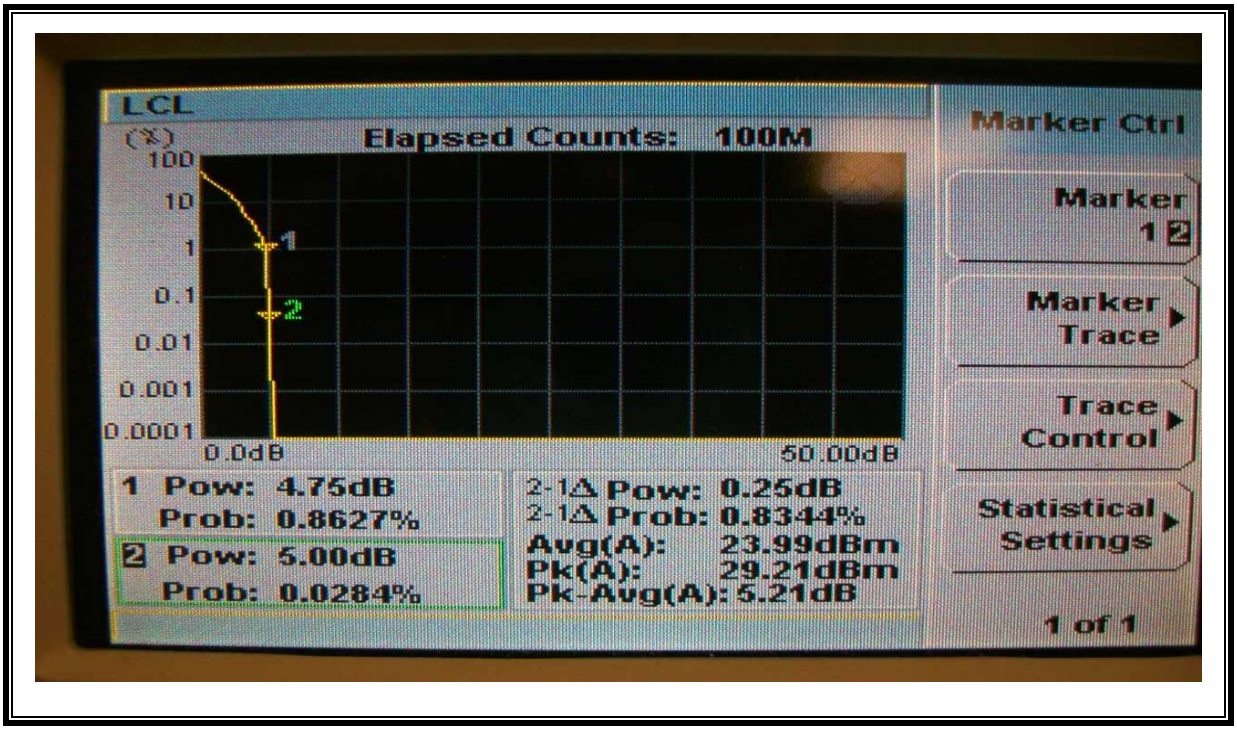
QPSK Band 25 (1.4 MHz BAND WIDTH)



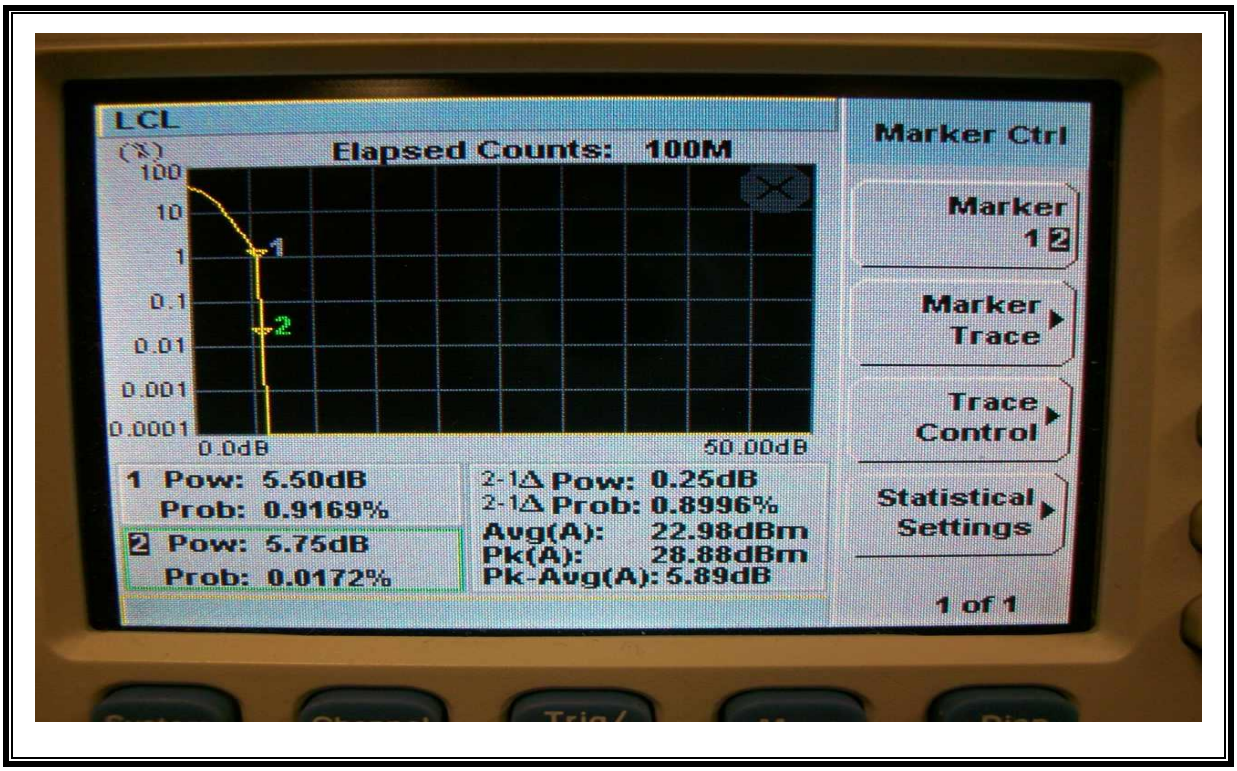
16QAM Band 25 (1.4 MHz BAND WIDTH)



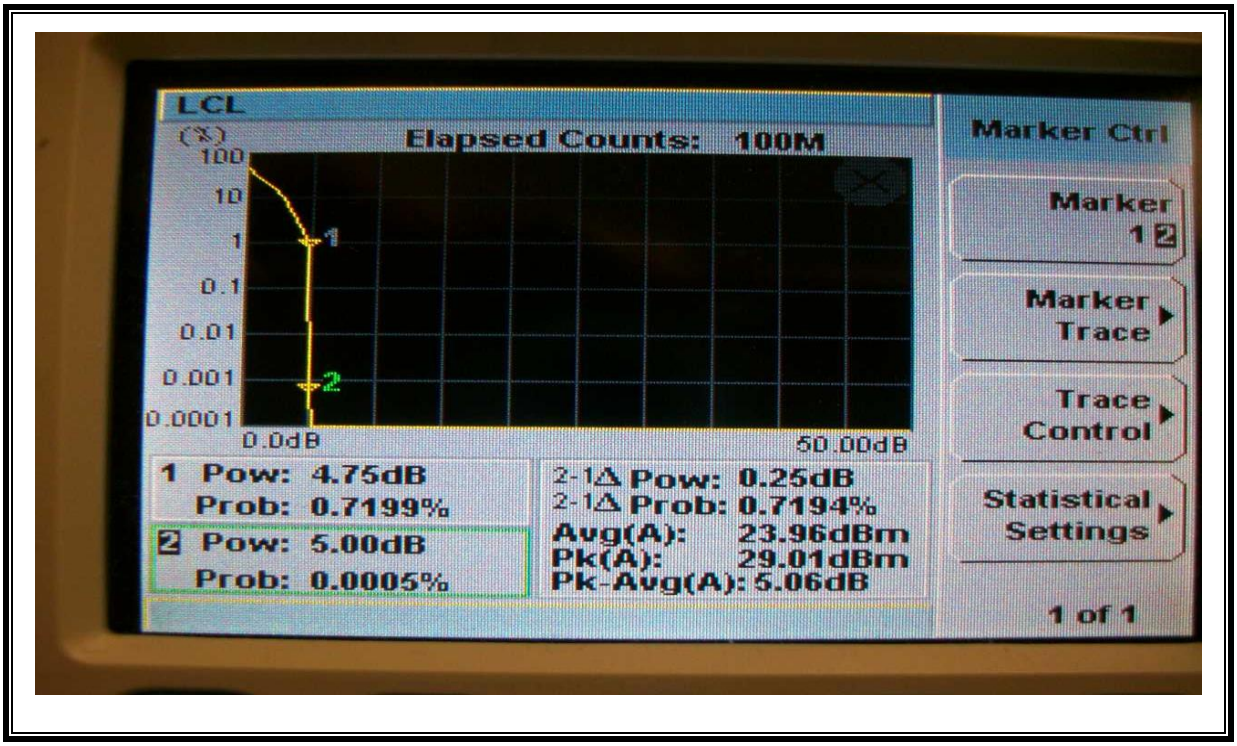
LTE QPSK Band 25 (3.0 MHz BAND WIDTH)



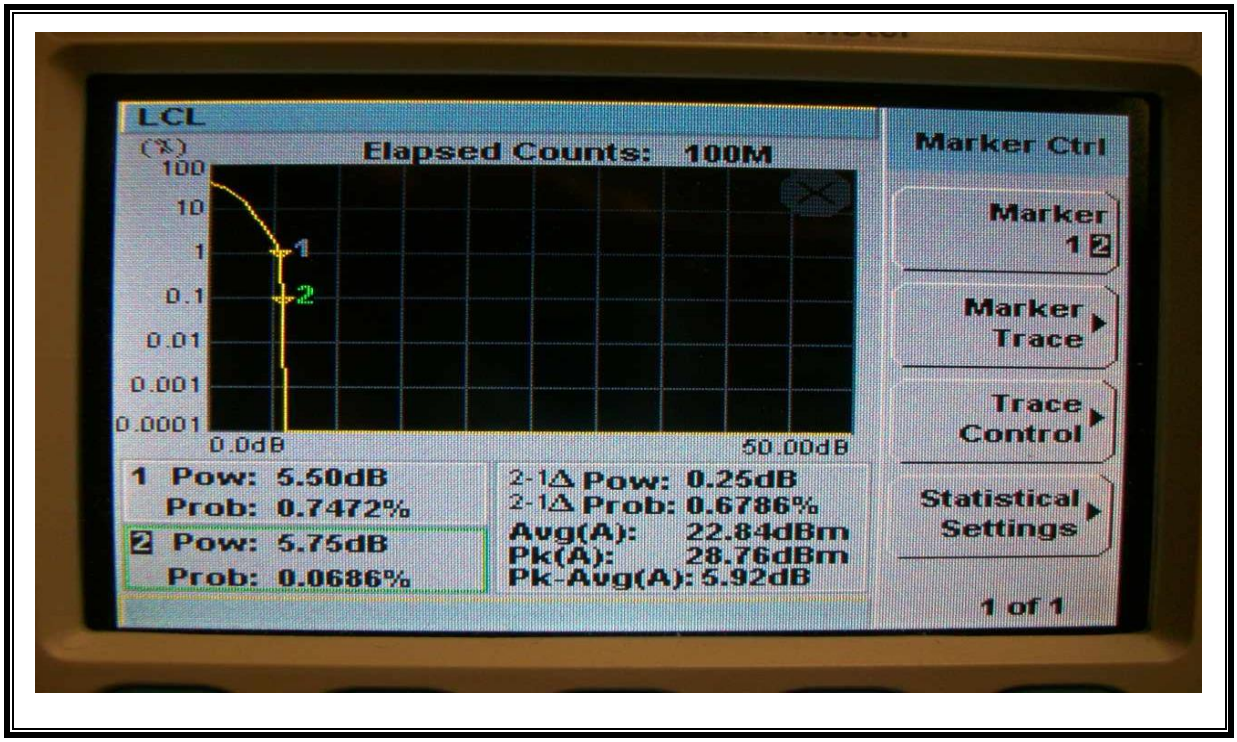
LTE 16QAM Band 25 (3.0 MHz BAND WIDTH)



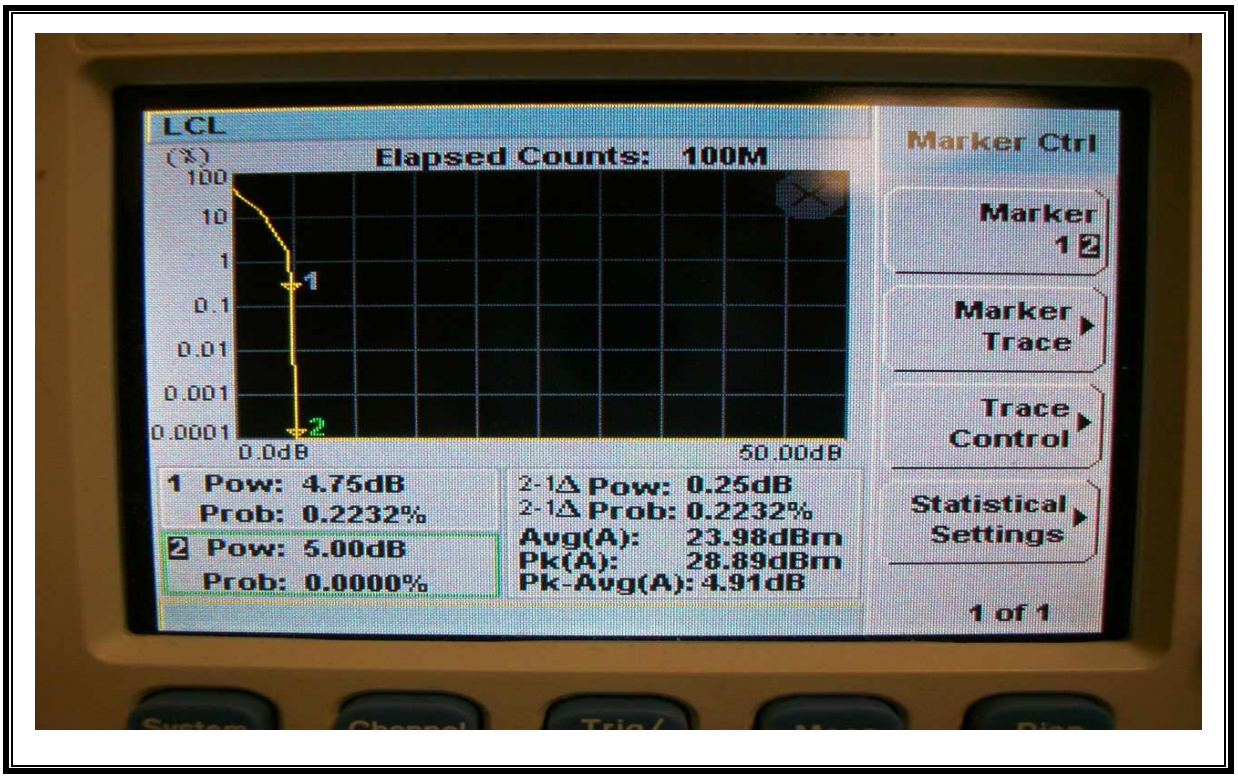
LTE QPSK Band 25 (5.0 MHz BAND WIDTH)



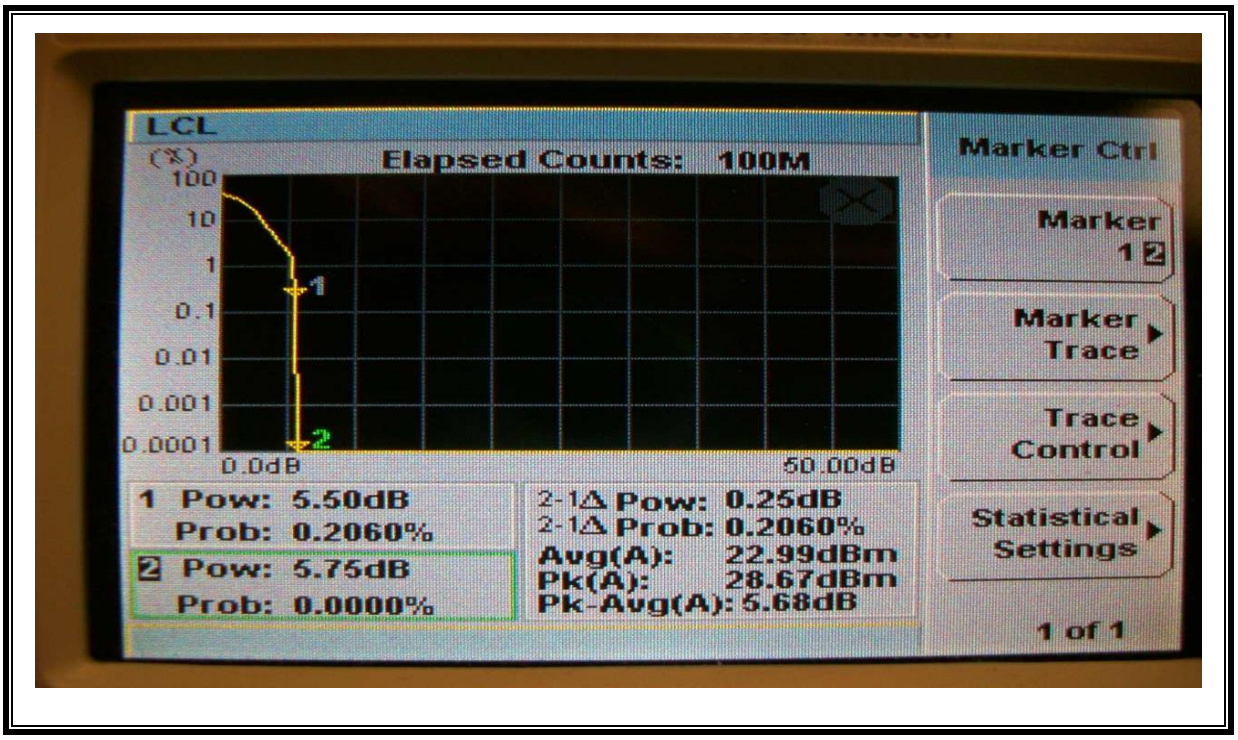
LTE 16QAM Band 25 (5.0 MHz BAND WIDTH)



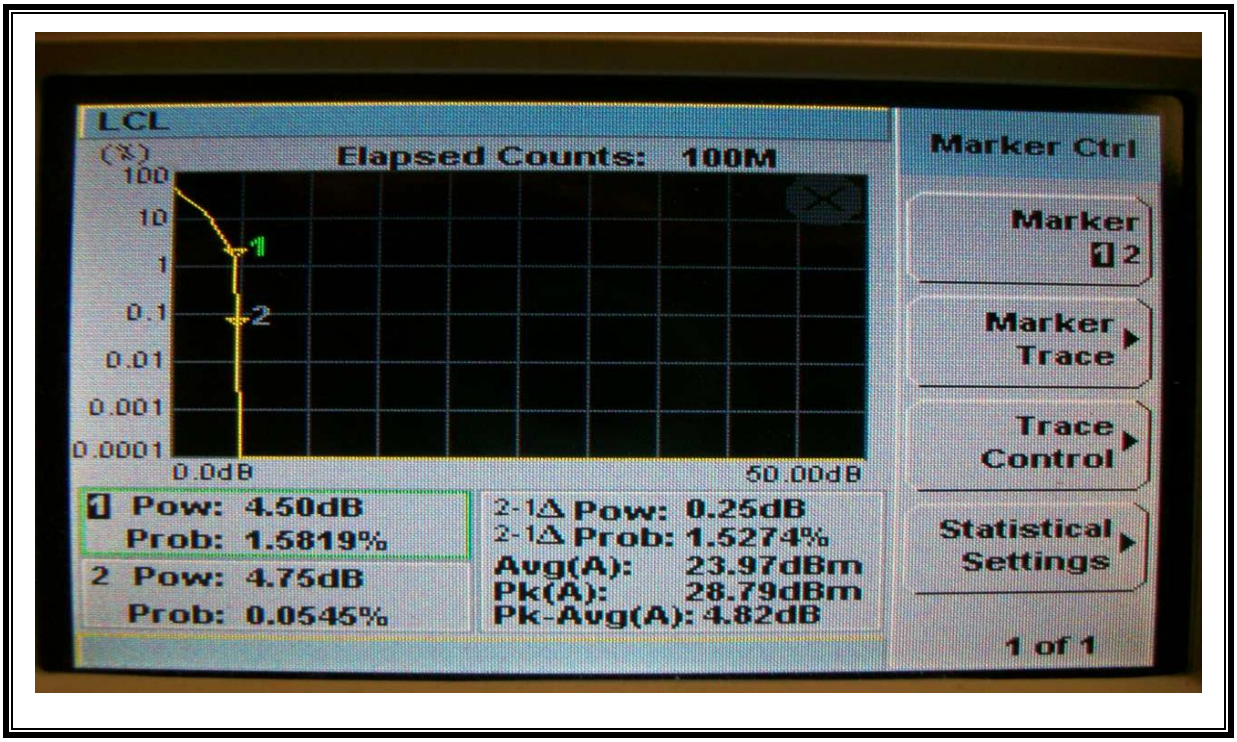
LTE QPSK Band 25 (10.0 MHz BAND WIDTH)



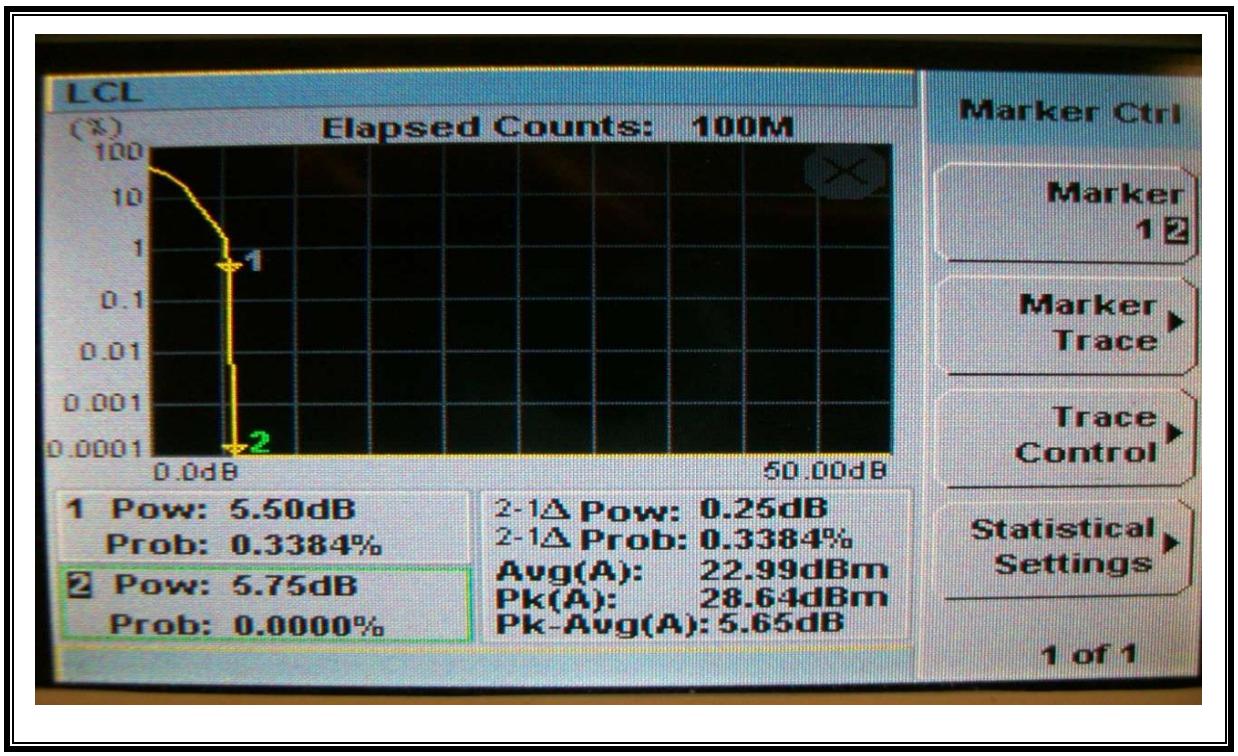
LTE 16QAM Band 25 (10.0 MHz BAND WIDTH)



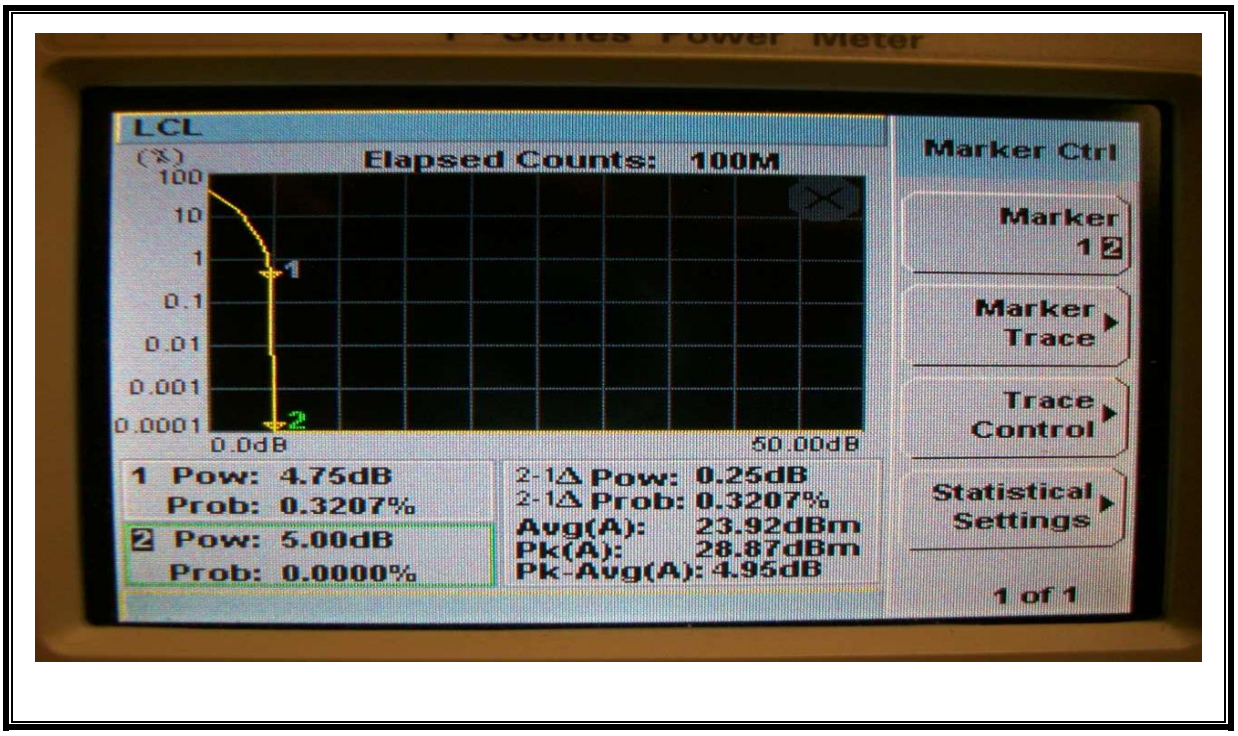
LTE QPSK Band 25 (15.0 MHz BAND WIDTH)



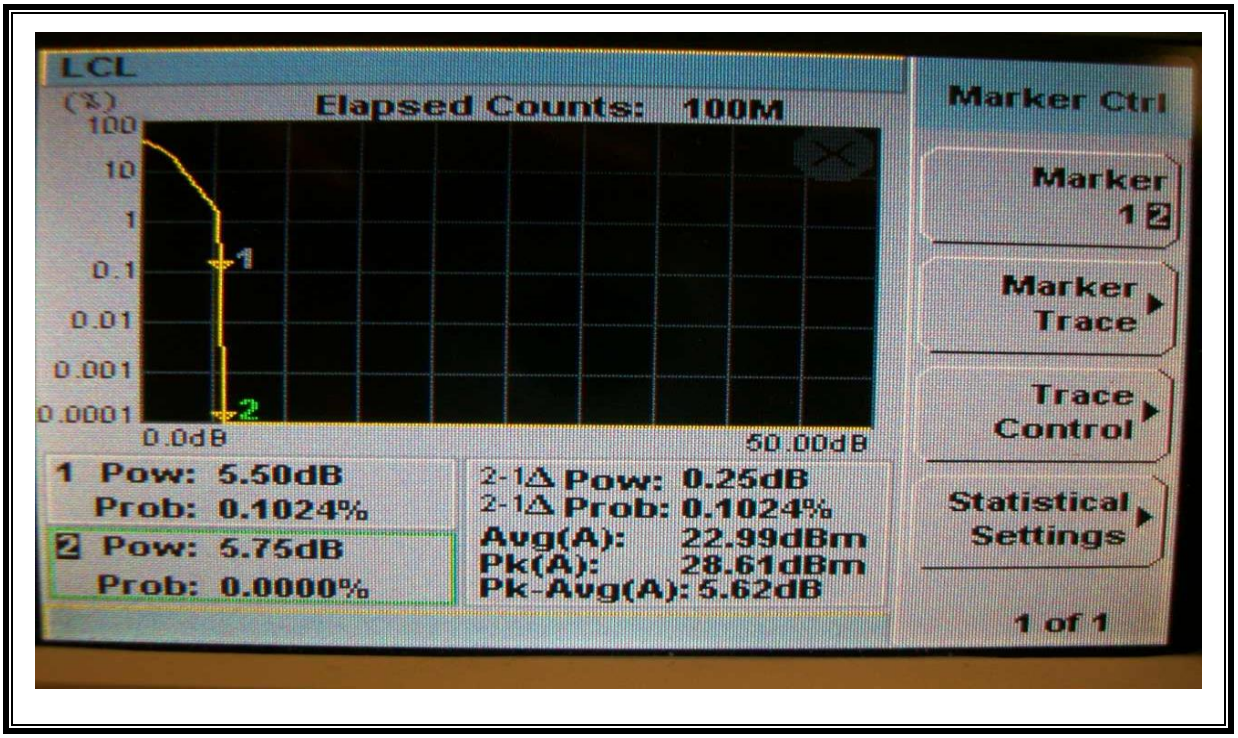
LTE 16QAM Band 25 (15.0 MHz BAND WIDTH)



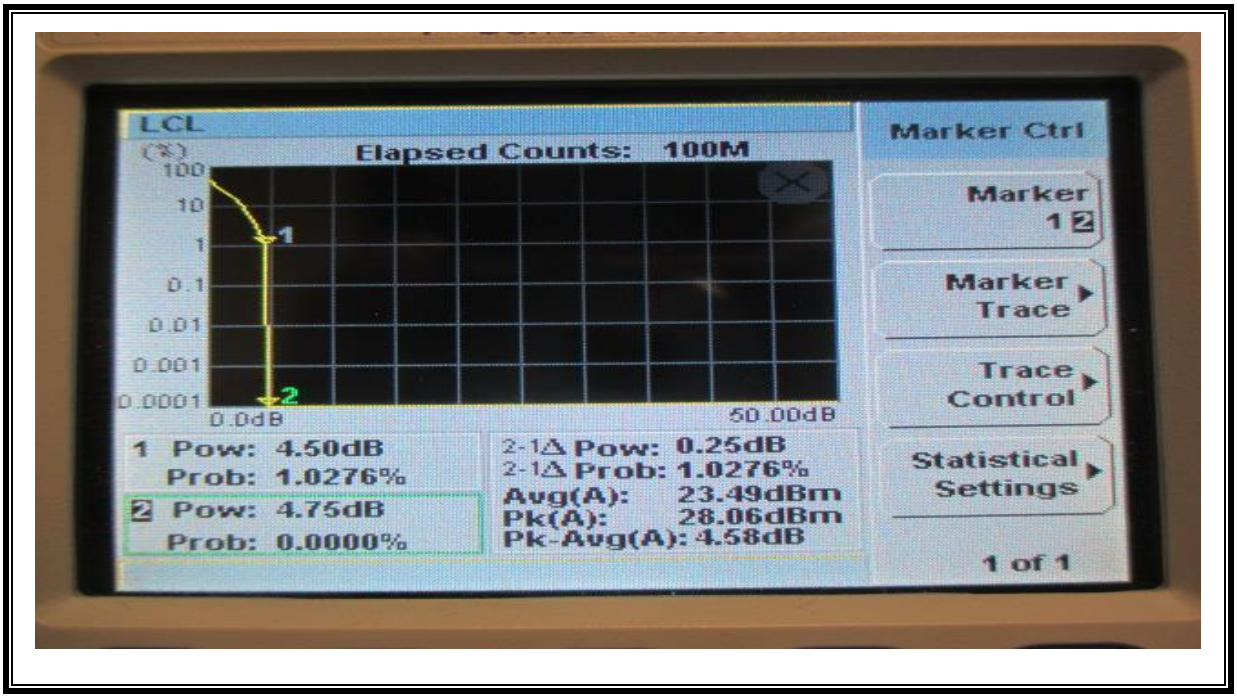
LTE QPSK Band 25 (20.0 MHz BAND WIDTH)



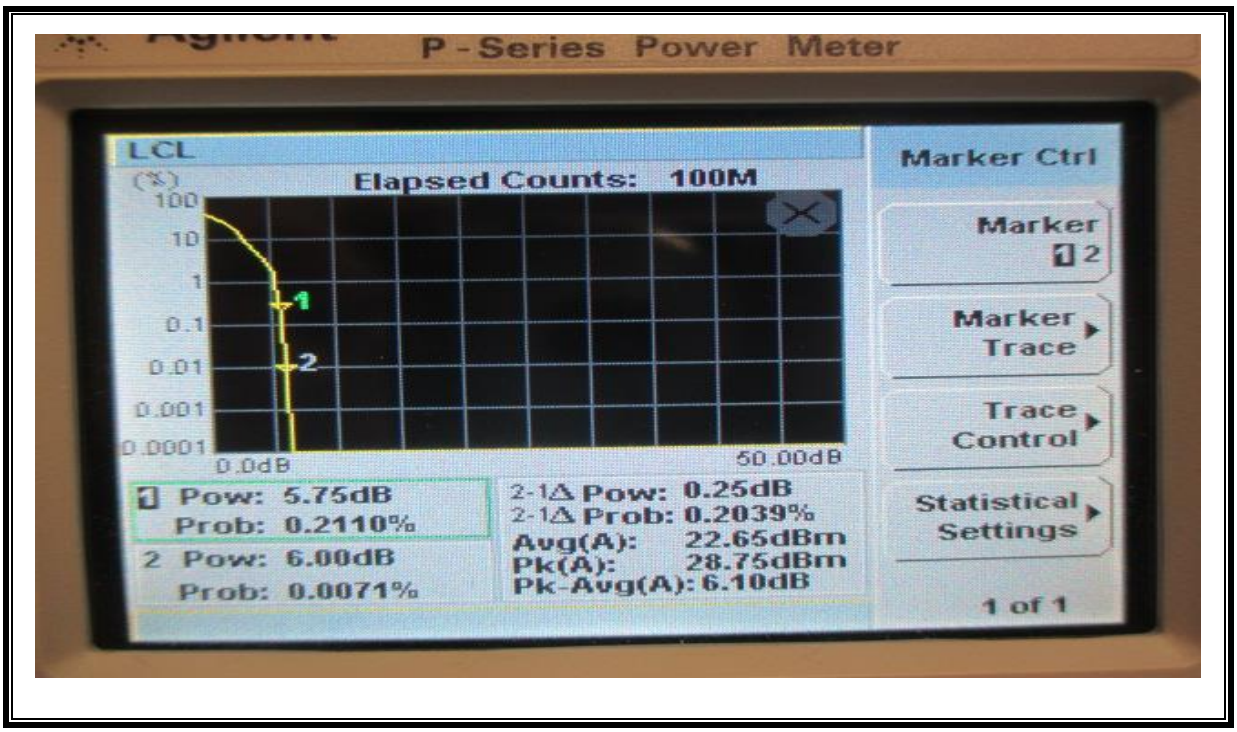
LTE 16QAM Band 25 (20.0 MHz BAND WIDTH)



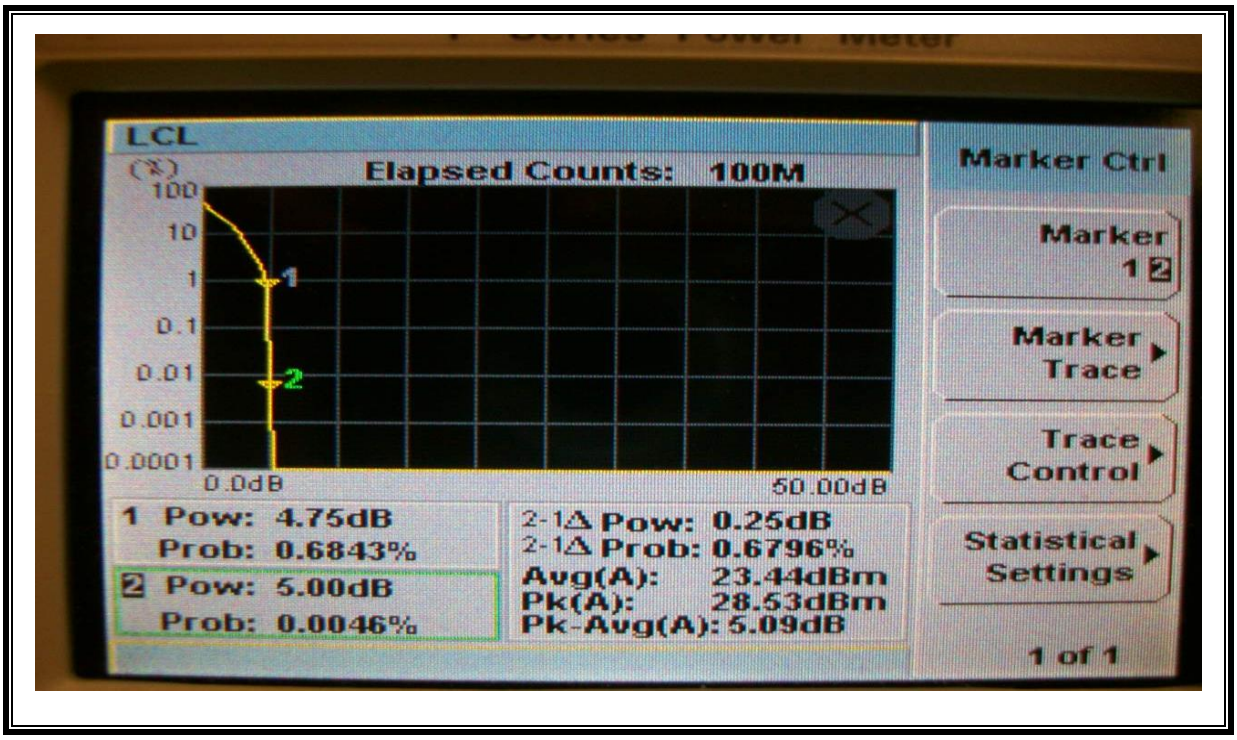
LTE QPSK Band 26 (1.4 MHz BAND WIDTH)



LTE 16QAM Band 26 (1.4 MHz BAND WIDTH)

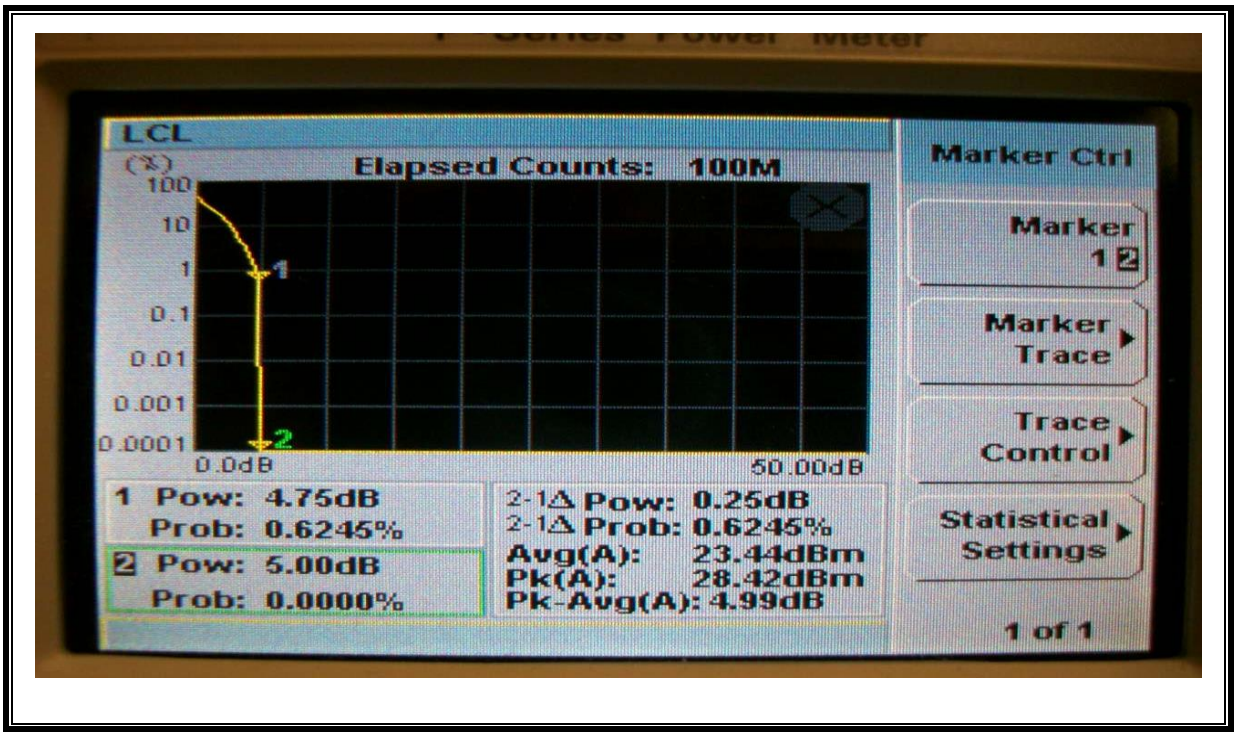


LTE QPSK Band 26 (3.0 MHz BAND WIDTH)

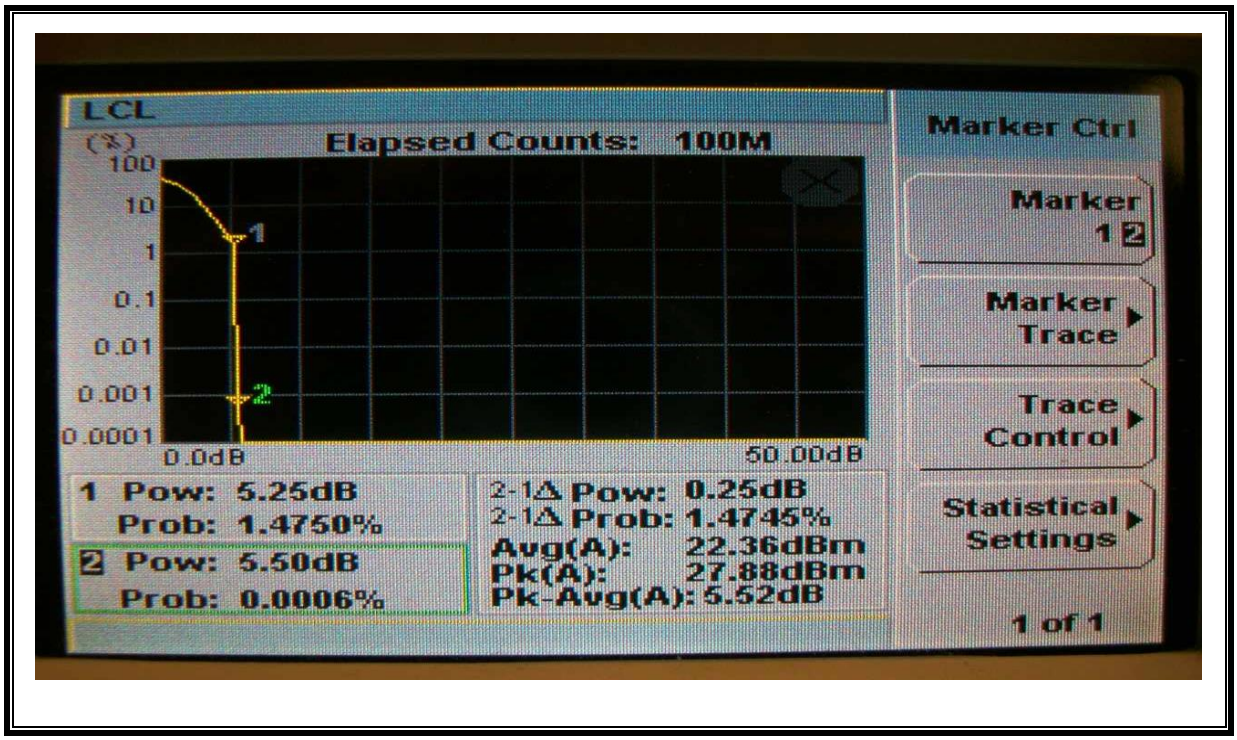


LTE 16QAM Band 26 (3.0 MHz BAND WIDTH)

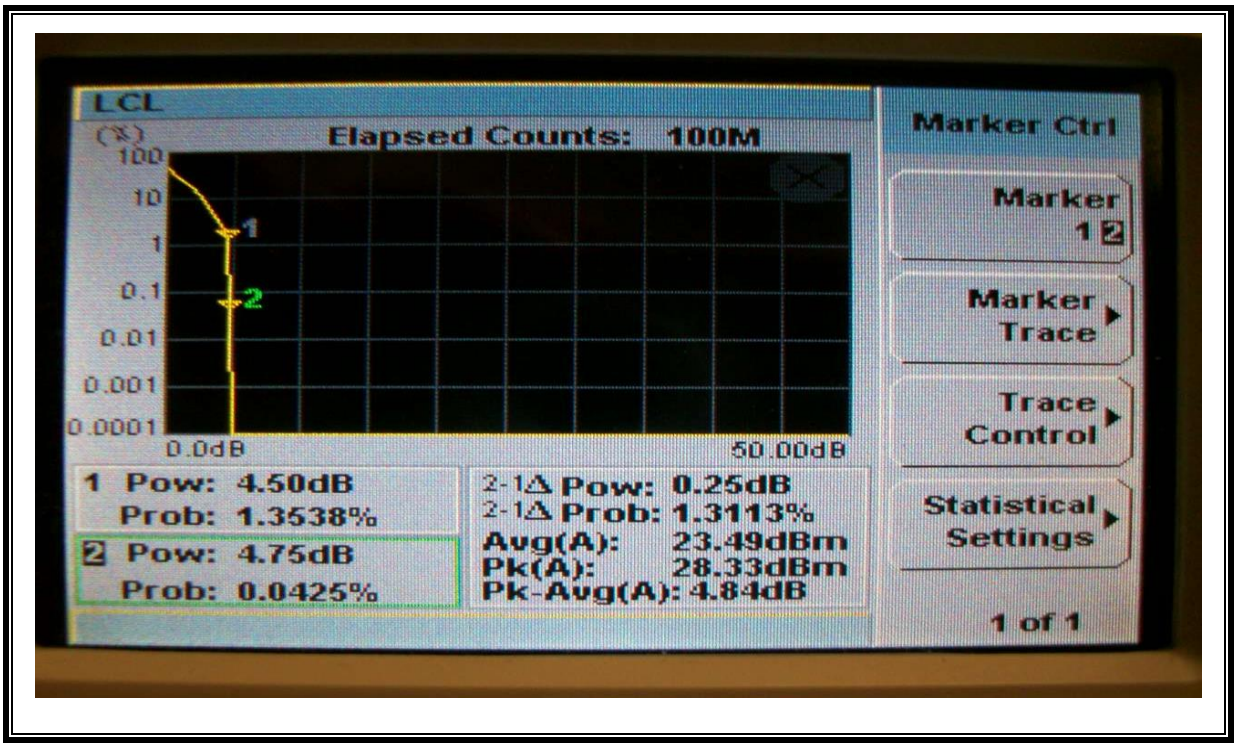
LTE QPSK Band 26 (5.0 MHz BAND WIDTH)



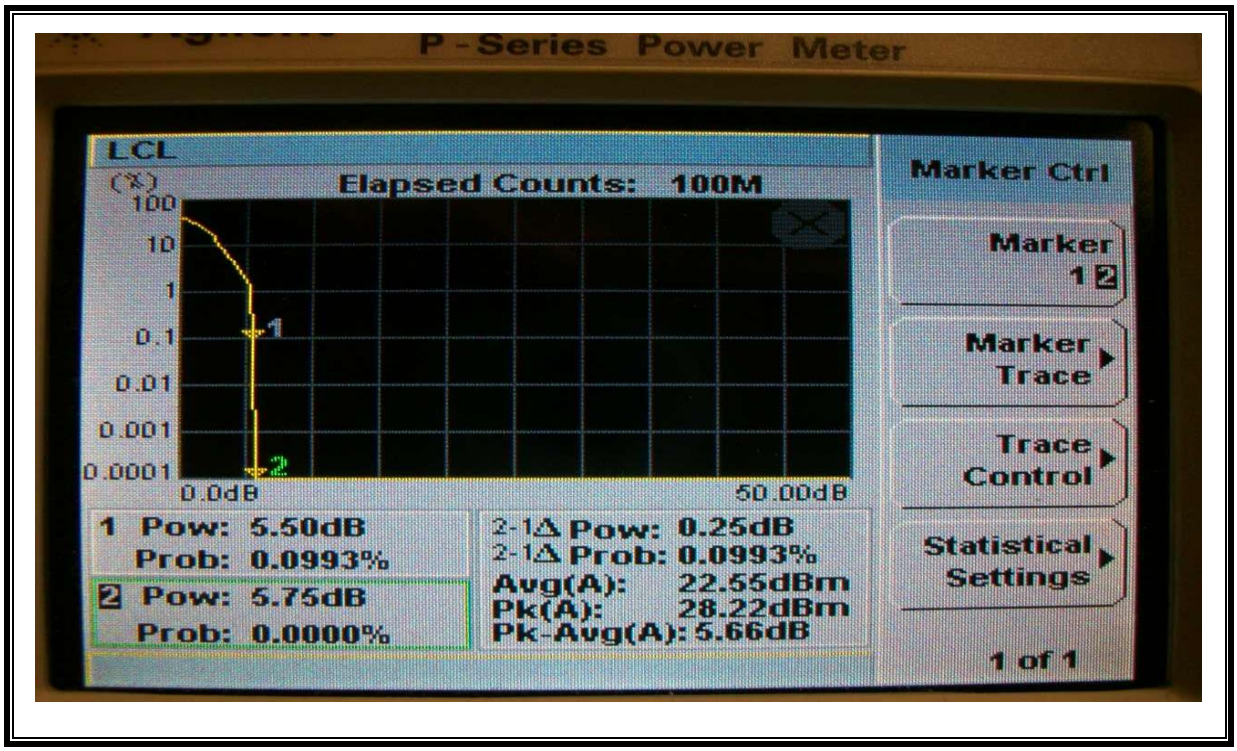
LTE 16QAM Band 26 (5.0 MHz BAND WIDTH)



LTE QPSK Band 26 (10.0 MHz BAND WIDTH)



LTE 16QAM Band 26 (10.0 MHz BAND WIDTH)



9.3. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §27.53

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:

a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and

b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 41

RESULTS

9.3.1. LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 1.4MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.7MHz)										
3.70	-67.7	H	3.0	-17.4	34.5	1.0	-50.9	-13.0	-37.9	
5.55	-67.5	H	3.0	-14.6	33.7	1.0	-47.3	-13.0	-34.3	
3.70	-68.2	V	3.0	-17.6	34.5	1.0	-51.1	-13.0	-38.1	
5.55	-68.5	V	3.0	-15.4	33.7	1.0	-48.1	-13.0	-35.1	
Mid Channel (1880MHz)										
3.76	-69.1	H	3.0	-18.7	34.5	1.0	-52.2	-13.0	-39.2	
5.64	-68.1	H	3.0	-15.1	33.6	1.0	-47.7	-13.0	-34.7	
3.76	-69.3	V	3.0	-18.7	34.5	1.0	-52.1	-13.0	-39.1	
5.64	-69.3	V	3.0	-16.1	33.6	1.0	-48.8	-13.0	-35.8	
High Channel (1909.3MHz)										
3.81	-68.3	H	3.0	-17.9	34.5	1.0	-51.4	-13.0	-38.4	
5.72	-70.5	H	3.0	-17.4	33.6	1.0	-50.0	-13.0	-37.0	
3.74	-66.6	V	3.0	-16.0	34.5	1.0	-49.5	-13.0	-36.5	
5.77	-70.1	V	3.0	-16.7	33.6	1.0	-49.2	-13.0	-36.2	

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16QAM EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 1.4MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.7MHz)										
3.70	-68.0	H	3.0	-18.3	33.1	1.0	-50.4	-13.0	-37.4	
5.55	-68.0	H	3.0	-15.5	32.6	1.0	-47.2	-13.0	-34.2	
3.70	-69.0	V	3.0	-19.3	33.1	1.0	-51.4	-13.0	-38.4	
5.55	-68.7	V	3.0	-16.2	32.6	1.0	-47.9	-13.0	-34.9	
Mid Channel (1880MHz)										
3.76	-69.7	H	3.0	-19.9	33.1	1.0	-52.0	-13.0	-39.0	
5.64	-68.9	H	3.0	-16.3	32.6	1.0	-47.9	-13.0	-34.9	
3.76	-69.9	V	3.0	-20.1	33.1	1.0	-52.2	-13.0	-39.2	
5.64	-69.9	V	3.0	-17.3	32.6	1.0	-48.9	-13.0	-35.9	
High Channel (1909.3MHz)										
3.81	-68.9	H	3.0	-19.1	33.0	1.0	-51.1	-13.0	-38.1	
5.72	-70.9	H	3.0	-18.2	32.6	1.0	-49.8	-13.0	-36.8	
3.74	-67.1	V	3.0	-17.4	33.1	1.0	-49.4	-13.0	-36.4	
5.77	-70.8	V	3.0	-18.1	32.6	1.0	-49.7	-13.0	-36.7	

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QPSK EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 3MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.5MHz)										
3.70	-68.9	H	3.0	-18.6	34.5	1.0	-52.1	-13.0	-39.1	
5.55	-69.1	H	3.0	-16.3	33.7	1.0	-48.9	-13.0	-35.9	
3.70	-68.0	V	3.0	-17.4	34.5	1.0	-50.9	-13.0	-37.9	
5.55	-69.8	V	3.0	-16.7	33.7	1.0	-49.4	-13.0	-36.4	
Mid Channel (1880MHz)										
3.76	-68.1	H	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	
5.64	-69.8	H	3.0	-16.7	33.6	1.0	-49.4	-13.0	-36.4	
3.76	-67.8	V	3.0	-17.2	34.5	1.0	-50.7	-13.0	-37.7	
5.64	-69.9	V	3.0	-16.7	33.6	1.0	-49.4	-13.0	-36.4	
High Channel (1908.5MHz)										
3.82	-67.9	H	3.0	-17.4	34.4	1.0	-50.9	-13.0	-37.9	
5.72	-69.5	H	3.0	-16.3	33.6	1.0	-48.9	-13.0	-35.9	
3.82	-69.8	V	3.0	-19.1	34.4	1.0	-52.6	-13.0	-39.6	
5.72	-69.5	V	3.0	-16.2	33.6	1.0	-48.7	-13.0	-35.7	

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16QAM EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 3MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.5MHz)										
3.70	-69.5	H	3.0	-19.8	33.1	1.0	-51.9	-13.0	-38.9	
5.55	-69.9	H	3.0	-17.4	32.6	1.0	-49.1	-13.0	-36.1	
3.70	-68.5	V	3.0	-18.8	33.1	1.0	-50.9	-13.0	-37.9	
5.55	-70.1	V	3.0	-17.7	32.6	1.0	-49.3	-13.0	-36.3	
Mid Channel (1880MHz)										
3.76	-68.9	H	3.0	-19.1	33.1	1.0	-51.2	-13.0	-38.2	
5.64	-70.0	H	3.0	-17.4	32.6	1.0	-49.0	-13.0	-36.0	
3.76	-68.5	V	3.0	-18.8	33.1	1.0	-50.8	-13.0	-37.8	
5.64	-70.5	V	3.0	-17.9	32.6	1.0	-49.5	-13.0	-36.5	
High Channel (1908.5MHz)										
3.82	-68.5	H	3.0	-18.6	33.0	1.0	-50.7	-13.0	-37.7	
5.72	-70.0	H	3.0	-17.3	32.6	1.0	-48.9	-13.0	-35.9	
3.82	-69.9	V	3.0	-20.0	33.0	1.0	-52.1	-13.0	-39.1	
5.72	-70.4	V	3.0	-17.7	32.6	1.0	-49.3	-13.0	-36.3	

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QPSK EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 5MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.5MHz)										
3.70	-67.8	H	3.0	-17.6	34.5	1.0	-51.1	-13.0	-38.1	
5.55	-68.6	H	3.0	-15.7	33.7	1.0	-48.3	-13.0	-35.3	
3.70	-68.4	V	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	
5.55	-68.6	V	3.0	-15.5	33.7	1.0	-48.2	-13.0	-35.2	
Mid Channel (1880MHz)										
3.76	-68.3	H	3.0	-18.0	34.5	1.0	-51.4	-13.0	-38.4	
5.64	-68.7	H	3.0	-15.7	33.6	1.0	-48.3	-13.0	-35.3	
3.76	-68.4	V	3.0	-17.8	34.5	1.0	-51.2	-13.0	-38.2	
5.64	-69.5	V	3.0	-16.3	33.6	1.0	-48.9	-13.0	-35.9	
High Channel (1907.5MHz)										
3.81	-66.4	H	3.0	-16.0	34.4	1.0	-49.4	-13.0	-36.4	
5.72	-68.1	H	3.0	-15.0	33.6	1.0	-47.5	-13.0	-34.5	
3.81	-69.4	V	3.0	-18.7	34.4	1.0	-52.2	-13.0	-39.2	
5.72	-68.0	V	3.0	-14.7	33.6	1.0	-47.3	-13.0	-34.3	

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16QAM EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 5MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.5MHz)										
3.70	-68.2	H	3.0	-17.9	34.5	1.0	-51.4	-13.0	-38.4	
5.55	-69.0	H	3.0	-16.1	33.7	1.0	-48.7	-13.0	-35.7	
3.70	-68.8	V	3.0	-18.2	34.5	1.0	-51.7	-13.0	-38.7	
5.55	-68.9	V	3.0	-15.8	33.7	1.0	-48.5	-13.0	-35.5	
Mid Channel (1880MHz)										
3.76	-68.9	H	3.0	-18.6	34.5	1.0	-52.0	-13.0	-39.0	
5.64	-69.1	H	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
3.76	-68.8	V	3.0	-18.2	34.5	1.0	-51.7	-13.0	-38.7	
5.64	-69.9	V	3.0	-16.7	33.6	1.0	-49.3	-13.0	-36.3	
High Channel (1907.5MHz)										
3.81	-66.9	H	3.0	-16.5	34.4	1.0	-49.9	-13.0	-36.9	
5.72	-68.7	H	3.0	-15.6	33.6	1.0	-48.1	-13.0	-35.1	
3.81	-70.0	V	3.0	-19.3	34.4	1.0	-52.7	-13.0	-39.7	
5.72	-68.9	V	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	

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QPSK EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1855MHz)										
3.70	-65.9	H	3.0	-15.6	34.5	1.0	-49.1	-13.0	-36.1	
5.16	-67.8	H	3.0	-15.5	33.8	1.0	-48.3	-13.0	-35.3	
3.70	-67.4	V	3.0	-16.8	34.5	1.0	-50.3	-13.0	-37.3	
5.16	-68.3	V	3.0	-15.7	33.8	1.0	-48.6	-13.0	-35.6	
Mid Channel (1880MHz)										
3.75	-67.3	H	3.0	-17.0	34.5	1.0	-50.5	-13.0	-37.5	
5.63	-69.1	H	3.0	-16.1	33.6	1.0	-48.8	-13.0	-35.8	
3.75	-68.4	V	3.0	-17.8	34.5	1.0	-51.3	-13.0	-38.3	
6.63	-68.8	V	3.0	-14.2	33.2	1.0	-46.4	-13.0	-33.4	
High Channel (1905MHz)										
3.80	-68.6	H	3.0	-18.2	34.5	1.0	-51.6	-13.0	-38.6	
5.70	-70.1	H	3.0	-17.0	33.6	1.0	-49.5	-13.0	-36.5	
3.80	-67.3	V	3.0	-16.6	34.5	1.0	-50.1	-13.0	-37.1	
5.70	-69.9	V	3.0	-16.6	33.6	1.0	-49.2	-13.0	-36.2	

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16QAM EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1855MHz)										
3.70	-67.4	H	3.0	-17.2	34.5	1.0	-50.7	-13.0	-37.7	
5.16	-68.5	H	3.0	-16.1	33.8	1.0	-49.0	-13.0	-36.0	
3.70	-68.0	V	3.0	-17.4	34.5	1.0	-50.9	-13.0	-37.9	
5.16	-68.9	V	3.0	-16.3	33.8	1.0	-49.1	-13.0	-36.1	
Mid Channel (1880MHz)										
3.75	-68.0	H	3.0	-17.7	34.5	1.0	-51.1	-13.0	-38.1	
5.63	-69.6	H	3.0	-16.6	33.6	1.0	-49.3	-13.0	-36.3	
3.75	-68.9	V	3.0	-18.3	34.5	1.0	-51.7	-13.0	-38.7	
6.63	-69.0	V	3.0	-14.5	33.2	1.0	-46.6	-13.0	-33.6	
High Channel (1905MHz)										
3.80	-68.7	H	3.0	-18.3	34.5	1.0	-51.8	-13.0	-38.8	
5.70	-70.6	H	3.0	-17.5	33.6	1.0	-50.1	-13.0	-37.1	
3.80	-67.9	V	3.0	-17.2	34.5	1.0	-50.6	-13.0	-37.6	
5.70	-69.4	V	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	

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QPSK EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 15MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1857.5MHz)										
3.69	-67.7	H	3.0	-17.4	34.5	1.0	-50.9	-13.0	-37.9	
5.58	-67.6	H	3.0	-14.7	33.6	1.0	-47.3	-13.0	-34.3	
3.70	-68.9	V	3.0	-18.4	34.5	1.0	-51.9	-13.0	-38.9	
5.55	-69.8	V	3.0	-16.7	33.7	1.0	-49.4	-13.0	-36.4	
Mid Channel (1880MHz)										
3.75	-68.3	H	3.0	-17.9	34.5	1.0	-51.4	-13.0	-38.4	
5.63	-69.3	H	3.0	-16.3	33.6	1.0	-48.9	-13.0	-35.9	
3.77	-68.0	V	3.0	-17.3	34.5	1.0	-50.8	-13.0	-37.8	
5.63	-69.7	V	3.0	-16.5	33.6	1.0	-49.1	-13.0	-36.1	
High Channel (1902.5MHz)										
3.79	-68.8	H	3.0	-18.4	34.5	1.0	-51.9	-13.0	-38.9	
5.69	-70.4	H	3.0	-17.3	33.6	1.0	-49.9	-13.0	-36.9	
3.79	-68.8	V	3.0	-18.1	34.5	1.0	-51.6	-13.0	-38.6	
5.69	-69.3	V	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	

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16QAM EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 15MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1857.5MHz)										
3.69	-67.9	H	3.0	-18.3	33.1	1.0	-50.3	-13.0	-37.3	
5.58	-67.9	H	3.0	-15.4	32.6	1.0	-47.0	-13.0	-34.0	
3.70	-69.4	V	3.0	-19.7	33.1	1.0	-51.8	-13.0	-38.8	
5.55	-70.1	V	3.0	-17.7	32.6	1.0	-49.3	-13.0	-36.3	
Mid Channel (1880MHz)										
3.75	-68.8	H	3.0	-19.1	33.1	1.0	-51.1	-13.0	-38.1	
5.63	-69.6	H	3.0	-17.0	32.6	1.0	-48.6	-13.0	-35.6	
3.77	-68.4	V	3.0	-18.6	33.0	1.0	-50.7	-13.0	-37.7	
5.63	-70.0	V	3.0	-17.4	32.6	1.0	-49.0	-13.0	-36.0	
High Channel (1902.5MHz)										
3.79	-69.5	H	3.0	-19.7	33.0	1.0	-51.7	-13.0	-38.7	
5.69	-70.8	H	3.0	-18.2	32.6	1.0	-49.8	-13.0	-36.8	
3.79	-68.9	V	3.0	-19.1	33.0	1.0	-51.1	-13.0	-38.1	
5.69	-69.7	V	3.0	-17.1	32.6	1.0	-48.7	-13.0	-35.7	

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QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 20MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.68	-68.2	H	3.0	-17.9	34.5	1.0	-51.5	-13.0	-38.5	
5.56	-68.4	H	3.0	-15.5	33.6	1.0	-48.1	-13.0	-35.1	
3.70	-69.0	V	3.0	-18.4	34.5	1.0	-51.9	-13.0	-38.9	
5.56	-69.2	V	3.0	-16.1	33.6	1.0	-48.8	-13.0	-35.8	
Mid Channel (1880MHz)										
3.74	-68.7	H	3.0	-18.4	34.5	1.0	-51.8	-13.0	-38.8	
5.65	-68.3	H	3.0	-15.2	33.6	1.0	-47.8	-13.0	-34.8	
3.74	-68.7	V	3.0	-18.1	34.5	1.0	-51.6	-13.0	-38.6	
5.65	-68.9	V	3.0	-15.7	33.6	1.0	-48.3	-13.0	-35.3	
High Channel (1900MHz)										
3.73	-67.8	H	3.0	-17.5	34.5	1.0	-51.0	-13.0	-38.0	
5.67	-69.7	H	3.0	-16.7	33.6	1.0	-49.3	-13.0	-36.3	
3.73	-68.8	V	3.0	-18.2	34.5	1.0	-51.6	-13.0	-38.6	
5.67	-69.8	V	3.0	-16.5	33.6	1.0	-49.1	-13.0	-36.1	

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16QAM EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/17/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 2, 20MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 24

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.68	-68.7	H	3.0	-18.5	34.5	1.0	-52.0	-13.0	-39.0	
5.56	-69.0	H	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
3.70	-69.1	V	3.0	-18.6	34.5	1.0	-52.1	-13.0	-39.1	
5.56	-69.6	V	3.0	-16.5	33.6	1.0	-49.1	-13.0	-36.1	
Mid Channel (1880MHz)										
3.74	-69.0	H	3.0	-18.7	34.5	1.0	-52.2	-13.0	-39.2	
5.65	-68.6	H	3.0	-15.5	33.6	1.0	-48.1	-13.0	-35.1	
3.74	-68.9	V	3.0	-18.3	34.5	1.0	-51.8	-13.0	-38.8	
5.65	-69.4	V	3.0	-16.2	33.6	1.0	-48.8	-13.0	-35.8	
High Channel (1900MHz)										
3.73	-68.0	H	3.0	-17.7	34.5	1.0	-51.2	-13.0	-38.2	
5.67	-70.0	H	3.0	-16.9	33.6	1.0	-49.5	-13.0	-36.5	
3.73	-69.1	V	3.0	-18.5	34.5	1.0	-52.0	-13.0	-39.0	
5.67	-69.9	V	3.0	-16.6	33.6	1.0	-49.2	-13.0	-36.2	

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9.3.2. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 1.4MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1710.7MHz)										
3.421	-63.5	H	3.0	-13.6	34.6	1.0	-47.3	-13.0	-34.3	
5.132	-65.6	H	3.0	-13.3	33.8	1.0	-46.2	-13.0	-33.2	
3.421	-59.8	V	3.0	-9.6	34.6	1.0	-43.2	-13.0	-30.2	
5.132	-67.0	V	3.0	-14.5	33.8	1.0	-47.3	-13.0	-34.3	
Mid Channel (1732.5MHz)										
3.465	-68.3	H	3.0	-18.4	34.6	1.0	-52.0	-13.0	-39.0	
5.198	-67.5	H	3.0	-15.1	33.8	1.0	-47.9	-13.0	-34.9	
3.465	-66.9	V	3.0	-16.7	34.6	1.0	-50.3	-13.0	-37.3	
5.198	-67.0	V	3.0	-14.4	33.8	1.0	-47.2	-13.0	-34.2	
High Channel (1754.3MHz)										
3.509	-66.7	H	3.0	-16.7	34.6	1.0	-50.3	-13.0	-37.3	
5.263	-68.2	H	3.0	-15.7	33.8	1.0	-48.5	-13.0	-35.5	
3.509	-67.7	V	3.0	-17.4	34.6	1.0	-51.0	-13.0	-38.0	
5.263	-67.2	V	3.0	-14.5	33.8	1.0	-47.3	-13.0	-34.3	

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16QAM EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 1.4MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1710.7MHz)										
3.421	-64.6	H	3.0	-14.7	34.6	1.0	-48.4	-13.0	-35.4	
5.132	-66.6	H	3.0	-14.3	33.8	1.0	-47.2	-13.0	-34.2	
3.421	-61.7	V	3.0	-11.5	34.6	1.0	-45.1	-13.0	-32.1	
5.132	-67.8	V	3.0	-15.3	33.8	1.0	-48.1	-13.0	-35.1	
Mid Channel (1732.5MHz)										
3.465	-69.2	H	3.0	-19.3	34.6	1.0	-52.9	-13.0	-39.9	
5.198	-68.3	H	3.0	-15.9	33.8	1.0	-48.7	-13.0	-35.7	
3.465	-67.8	V	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
5.198	-67.9	V	3.0	-15.3	33.8	1.0	-48.1	-13.0	-35.1	
High Channel (1754.3MHz)										
3.509	-67.7	H	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
5.263	-69.1	H	3.0	-16.6	33.8	1.0	-49.4	-13.0	-36.4	
3.509	-68.8	V	3.0	-18.5	34.6	1.0	-52.1	-13.0	-39.1	
5.263	-68.3	V	3.0	-15.6	33.8	1.0	-48.4	-13.0	-35.4	

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QPSK EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 3MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.5MHz)										
3.423	-65.5	H	3.0	-15.6	34.6	1.0	-49.3	-13.0	-36.3	
5.135	-66.8	H	3.0	-14.5	33.8	1.0	-47.3	-13.0	-34.3	
3.423	-65.3	V	3.0	-15.1	34.6	1.0	-48.7	-13.0	-35.7	
5.135	-66.1	V	3.0	-13.6	33.8	1.0	-46.4	-13.0	-33.4	
Mid Channel (1732.5MHz)										
3.465	-66.0	H	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.198	-64.7	H	3.0	-12.3	33.8	1.0	-45.1	-13.0	-32.1	
3.465	-65.4	V	3.0	-15.2	34.6	1.0	-48.8	-13.0	-35.8	
5.198	-65.8	V	3.0	-13.2	33.8	1.0	-46.0	-13.0	-33.0	
High Channel (1753.5MHz)										
3.507	-64.5	H	3.0	-14.5	34.6	1.0	-48.1	-13.0	-35.1	
5.261	-65.0	H	3.0	-12.5	33.8	1.0	-45.3	-13.0	-32.3	
3.507	-61.3	V	3.0	-11.0	34.6	1.0	-44.6	-13.0	-31.6	
5.261	-65.5	V	3.0	-12.8	33.8	1.0	-45.6	-13.0	-32.6	

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16QAM EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 3MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1711.5MHz)										
3.423	-66.4	H	3.0	-16.5	34.6	1.0	-50.2	-13.0	-37.2	
5.135	-67.7	H	3.0	-15.4	33.8	1.0	-48.2	-13.0	-35.2	
3.423	-66.3	V	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.135	-67.5	V	3.0	-15.0	33.8	1.0	-47.8	-13.0	-34.8	
Mid Channel (1732.5MHz)										
3.465	-66.9	H	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
5.198	-65.8	H	3.0	-13.4	33.8	1.0	-46.2	-13.0	-33.2	
3.465	-66.4	V	3.0	-16.2	34.6	1.0	-49.8	-13.0	-36.8	
5.198	-66.7	V	3.0	-14.1	33.8	1.0	-46.9	-13.0	-33.9	
High Channel (1753.5MHz)										
3.507	-65.5	H	3.0	-15.5	34.6	1.0	-49.1	-13.0	-36.1	
5.261	-66.1	H	3.0	-13.6	33.8	1.0	-46.4	-13.0	-33.4	
3.507	-62.3	V	3.0	-12.0	34.6	1.0	-45.6	-13.0	-32.6	
5.261	-66.2	V	3.0	-13.5	33.8	1.0	-46.3	-13.0	-33.3	

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QPSK EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 5MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.5MHz)										
3.425	-65.9	H	3.0	-16.0	34.6	1.0	-49.7	-13.0	-36.7	
5.138	-65.5	H	3.0	-13.2	33.8	1.0	-46.0	-13.0	-33.0	
3.425	-65.6	V	3.0	-15.4	34.6	1.0	-49.0	-13.0	-36.0	
5.138	-65.7	V	3.0	-13.2	33.8	1.0	-46.0	-13.0	-33.0	
Mid Channel (1732.5MHz)										
3.465	-65.7	H	3.0	-15.8	34.6	1.0	-49.4	-13.0	-36.4	
5.198	-66.0	H	3.0	-13.6	33.8	1.0	-46.4	-13.0	-33.4	
3.465	-65.2	V	3.0	-15.0	34.6	1.0	-48.6	-13.0	-35.6	
5.198	-66.2	V	3.0	-13.6	33.8	1.0	-46.4	-13.0	-33.4	
High Channel (1752.5MHz)										
3.505	-66.1	H	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.258	-66.3	H	3.0	-13.8	33.8	1.0	-46.6	-13.0	-33.6	
3.505	-65.6	V	3.0	-15.3	34.6	1.0	-48.9	-13.0	-35.9	
5.258	-65.9	V	3.0	-13.2	33.8	1.0	-46.0	-13.0	-33.0	

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16QAM EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 5MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.5MHz)										
3.425	-66.7	H	3.0	-16.8	34.6	1.0	-50.5	-13.0	-37.5	
5.138	-66.5	H	3.0	-14.2	33.8	1.0	-47.0	-13.0	-34.0	
3.425	-66.6	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
5.138	-66.8	V	3.0	-14.3	33.8	1.0	-47.1	-13.0	-34.1	
Mid Channel (1732.5MHz)										
3.465	-66.7	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.198	-67.0	H	3.0	-14.6	33.8	1.0	-47.4	-13.0	-34.4	
3.465	-66.3	V	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.198	-67.1	V	3.0	-14.5	33.8	1.0	-47.3	-13.0	-34.3	
High Channel (1752.5MHz)										
3.505	-67.0	H	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
5.258	-67.3	H	3.0	-14.8	33.8	1.0	-47.6	-13.0	-34.6	
3.505	-66.6	V	3.0	-16.3	34.6	1.0	-49.9	-13.0	-36.9	
5.258	-66.8	V	3.0	-14.1	33.8	1.0	-46.9	-13.0	-33.9	

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QPSK EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1715MHz)										
3.430	-65.1	H	3.0	-15.2	34.6	1.0	-48.8	-13.0	-35.8	
5.145	-65.8	H	3.0	-13.5	33.8	1.0	-46.3	-13.0	-33.3	
3.430	-65.7	V	3.0	-15.5	34.6	1.0	-49.1	-13.0	-36.1	
5.145	-66.2	V	3.0	-13.7	33.8	1.0	-46.5	-13.0	-33.5	
Mid Channel (1732.5MHz)										
3.465	-65.2	H	3.0	-15.3	34.6	1.0	-48.9	-13.0	-35.9	
5.198	-66.2	H	3.0	-13.8	33.8	1.0	-46.6	-13.0	-33.6	
3.465	-65.1	V	3.0	-14.9	34.6	1.0	-48.5	-13.0	-35.5	
5.198	-65.4	V	3.0	-12.8	33.8	1.0	-45.6	-13.0	-32.6	
High Channel (1750MHz)										
3.500	-66.3	H	3.0	-16.3	34.6	1.0	-49.9	-13.0	-36.9	
5.250	-66.6	H	3.0	-14.1	33.8	1.0	-46.9	-13.0	-33.9	
3.500	-66.2	V	3.0	-15.9	34.6	1.0	-49.5	-13.0	-36.5	
5.250	-65.7	V	3.0	-13.0	33.8	1.0	-45.8	-13.0	-32.8	

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16QAM EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1715MHz)										
3.430	-66.0	H	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.145	-66.7	H	3.0	-14.4	33.8	1.0	-47.2	-13.0	-34.2	
3.430	-66.6	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
5.145	-67.0	V	3.0	-14.5	33.8	1.0	-47.3	-13.0	-34.3	
Mid Channel (1732.5MHz)										
3.465	-66.3	H	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
5.198	-67.1	H	3.0	-14.7	33.8	1.0	-47.5	-13.0	-34.5	
3.465	-66.1	V	3.0	-15.9	34.6	1.0	-49.5	-13.0	-36.5	
5.198	-66.5	V	3.0	-13.9	33.8	1.0	-46.7	-13.0	-33.7	
High Channel (1750MHz)										
3.500	-67.1	H	3.0	-17.1	34.6	1.0	-50.7	-13.0	-37.7	
5.250	-67.4	H	3.0	-14.9	33.8	1.0	-47.7	-13.0	-34.7	
3.500	-67.2	V	3.0	-16.9	34.6	1.0	-50.5	-13.0	-37.5	
5.250	-66.8	V	3.0	-14.1	33.8	1.0	-46.9	-13.0	-33.9	

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QPSK EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 15MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1717.5MHz)										
3.435	-66.5	H	3.0	-16.6	34.6	1.0	-50.2	-13.0	-37.2	
5.153	-67.5	H	3.0	-15.2	33.8	1.0	-48.0	-13.0	-35.0	
3.435	-66.6	V	3.0	-16.4	34.6	1.0	-50.0	-13.0	-37.0	
5.153	-68.1	V	3.0	-15.6	33.8	1.0	-48.4	-13.0	-35.4	
Mid Channel (1732.5MHz)										
3.465	-66.4	H	3.0	-16.5	34.6	1.0	-50.1	-13.0	-37.1	
5.198	-67.5	H	3.0	-15.1	33.8	1.0	-47.9	-13.0	-34.9	
3.465	-66.5	V	3.0	-16.3	34.6	1.0	-49.9	-13.0	-36.9	
5.198	-67.6	V	3.0	-15.0	33.8	1.0	-47.8	-13.0	-34.8	
High Channel (1747.5MHz)										
3.495	-67.4	H	3.0	-17.4	34.6	1.0	-51.0	-13.0	-38.0	
5.243	-67.6	H	3.0	-15.1	33.8	1.0	-47.9	-13.0	-34.9	
3.495	-67.3	V	3.0	-17.0	34.6	1.0	-50.6	-13.0	-37.6	
5.243	-67.6	V	3.0	-14.9	33.8	1.0	-47.7	-13.0	-34.7	

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16QAM EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 15MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1717.5MHz)										
3.435	-67.6	H	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
5.153	-68.4	H	3.0	-16.1	33.8	1.0	-48.9	-13.0	-35.9	
3.435	-67.7	V	3.0	-17.5	34.6	1.0	-51.1	-13.0	-38.1	
5.153	-69.2	V	3.0	-16.7	33.8	1.0	-49.5	-13.0	-36.5	
Mid Channel (1732.5MHz)										
3.465	-67.5	H	3.0	-17.6	34.6	1.0	-51.2	-13.0	-38.2	
5.198	-68.4	H	3.0	-16.0	33.8	1.0	-48.8	-13.0	-35.8	
3.465	-67.6	V	3.0	-17.4	34.6	1.0	-51.0	-13.0	-38.0	
5.198	-68.7	V	3.0	-16.1	33.8	1.0	-48.9	-13.0	-35.9	
High Channel (1747.5MHz)										
3.495	-68.5	H	3.0	-18.5	34.6	1.0	-52.1	-13.0	-39.1	
5.243	-68.6	H	3.0	-16.1	33.8	1.0	-48.9	-13.0	-35.9	
3.495	-68.4	V	3.0	-18.1	34.6	1.0	-51.7	-13.0	-38.7	
5.243	-68.7	V	3.0	-16.0	33.8	1.0	-48.8	-13.0	-35.8	

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QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 20MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.440	-67.9	H	3.0	-18.0	34.6	1.0	-51.6	-13.0	-38.6	
5.160	-67.9	H	3.0	-15.6	33.8	1.0	-48.4	-13.0	-35.4	
3.440	-66.9	V	3.0	-16.7	34.6	1.0	-50.3	-13.0	-37.3	
5.160	-68.0	V	3.0	-15.5	33.8	1.0	-48.3	-13.0	-35.3	
Mid Channel (1732.5MHz)										
3.465	-66.7	H	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.198	-67.2	H	3.0	-14.8	33.8	1.0	-47.6	-13.0	-34.6	
3.465	-67.0	V	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.198	-67.5	V	3.0	-14.9	33.8	1.0	-47.7	-13.0	-34.7	
High Channel (1745MHz)										
3.490	-67.8	H	3.0	-17.8	34.6	1.0	-51.4	-13.0	-38.4	
5.235	-67.9	H	3.0	-15.5	33.8	1.0	-48.3	-13.0	-35.3	
3.490	-67.5	V	3.0	-17.2	34.6	1.0	-50.8	-13.0	-37.8	
5.235	-67.6	V	3.0	-14.9	33.8	1.0	-47.7	-13.0	-34.7	

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16QAM EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/18/15
Test Engineer: T Wang
Configuration: EUT Only
Mode: LTE Band 4, 20MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 27

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.440	-68.8	H	3.0	-18.9	34.6	1.0	-52.5	-13.0	-39.5	
5.160	-68.9	H	3.0	-16.6	33.8	1.0	-49.4	-13.0	-36.4	
3.440	-67.9	V	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
5.160	-69.1	V	3.0	-16.6	33.8	1.0	-49.4	-13.0	-36.4	
Mid Channel (1732.5MHz)										
3.465	-67.6	H	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
5.198	-67.3	H	3.0	-14.9	33.8	1.0	-47.7	-13.0	-34.7	
3.465	-67.9	V	3.0	-17.7	34.6	1.0	-51.3	-13.0	-38.3	
5.198	-68.5	V	3.0	-15.9	33.8	1.0	-48.7	-13.0	-35.7	
High Channel (1745MHz)										
3.490	-68.8	H	3.0	-18.8	34.6	1.0	-52.4	-13.0	-39.4	
5.235	-68.9	H	3.0	-16.5	33.8	1.0	-49.3	-13.0	-36.3	
3.490	-68.4	V	3.0	-18.1	34.6	1.0	-51.7	-13.0	-38.7	
5.235	-68.6	V	3.0	-15.9	33.8	1.0	-48.7	-13.0	-35.7	

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9.3.3. LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/19/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 5, 1.4MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 22

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-57.1	H	3.0	-13.4	33.7	1.0	-46.1	-13.0	-33.1	
1.72	-57.4	H	3.0	-13.0	33.7	1.0	-45.7	-13.0	-32.7	
2.51	-66.2	H	3.0	-18.7	34.1	1.0	-51.8	-13.0	-38.8	
2.47	-66.9	H	3.0	-19.5	34.0	1.0	-52.6	-13.0	-39.6	
1.65	-57.1	V	3.0	-11.1	33.7	1.0	-43.8	-13.0	-30.8	
1.72	-56.9	V	3.0	-10.7	33.7	1.0	-43.4	-13.0	-30.4	
2.44	-63.6	V	3.0	-15.6	34.0	1.0	-48.7	-13.0	-35.7	
2.47	-66.4	V	3.0	-18.4	34.1	1.0	-51.5	-13.0	-38.5	
Mid Channel (836.5MHz)										
1.67	-60.9	H	3.0	-16.9	33.7	1.0	-49.6	-13.0	-36.6	
1.72	-57.7	H	3.0	-13.3	33.7	1.0	-45.9	-13.0	-32.9	
2.51	-66.7	H	3.0	-19.1	34.1	1.0	-52.3	-13.0	-39.3	
1.67	-67.8	V	3.0	-21.7	33.7	1.0	-54.4	-13.0	-41.4	
1.73	-61.2	V	3.0	-15.0	33.7	1.0	-47.7	-13.0	-34.7	
2.44	-63.6	V	3.0	-15.7	34.0	1.0	-48.7	-13.0	-35.7	
2.51	-68.3	V	3.0	-20.2	34.1	1.0	-53.3	-13.0	-40.3	
		V								
High Channel (848.3MHz)										
1.70	-62.7	H	3.0	-18.5	33.7	1.0	-51.2	-13.0	-38.2	
1.73	-58.4	H	3.0	-14.0	33.7	1.0	-46.6	-13.0	-33.6	
2.55	-67.3	H	3.0	-19.7	34.2	1.0	-52.8	-13.0	-39.8	
1.70	-62.7	V	3.0	-16.6	33.7	1.0	-49.2	-13.0	-36.2	
1.72	-57.8	V	3.0	-11.6	33.7	1.0	-44.2	-13.0	-31.2	
2.44	-63.3	V	3.0	-15.4	34.0	1.0	-48.4	-13.0	-35.4	
2.54	-62.3	V	3.0	-14.1	34.1	1.0	-47.2	-13.0	-34.2	

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16QAM EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19187
Date: 02/19/15
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 5, 1.4MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	Part 22

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	Path Loss @ SG End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-58.3	H	3.0	-14.6	33.7	1.0	-47.3	-13.0	-34.3	
1.72	-57.9	H	3.0	-13.5	33.7	1.0	-46.2	-13.0	-33.2	
2.51	-66.9	H	3.0	-19.4	34.1	1.0	-52.5	-13.0	-39.5	
2.47	-67.7	H	3.0	-20.3	34.0	1.0	-53.4	-13.0	-40.4	
1.65	-57.8	V	3.0	-11.8	33.7	1.0	-44.5	-13.0	-31.5	
1.72	-57.5	V	3.0	-11.3	33.7	1.0	-44.0	-13.0	-31.0	
2.44	-64.9	V	3.0	-16.9	34.0	1.0	-50.0	-13.0	-37.0	
2.47	-67.1	V	3.0	-19.1	34.1	1.0	-52.2	-13.0	-39.2	
Mid Channel (836.5MHz)										
1.67	-61.7	H	3.0	-17.7	33.7	1.0	-50.4	-13.0	-37.4	
1.72	-59.5	H	3.0	-15.1	33.7	1.0	-47.8	-13.0	-34.8	
2.51	-67.0	H	3.0	-19.4	34.1	1.0	-52.6	-13.0	-39.6	
1.67	-68.6	V	3.0	-22.6	33.7	1.0	-55.3	-13.0	-42.3	
1.73	-61.6	V	3.0	-15.4	33.7	1.0	-48.0	-13.0	-35.0	
2.44	-64.0	V	3.0	-16.0	34.0	1.0	-49.1	-13.0	-36.1	
2.51	-68.6	V	3.0	-20.5	34.1	1.0	-53.6	-13.0	-40.6	
High Channel (848.3MHz)										
1.70	-63.5	H	3.0	-19.3	33.7	1.0	-52.0	-13.0	-39.0	
1.73	-58.9	H	3.0	-14.5	33.7	1.0	-47.1	-13.0	-34.1	
2.55	-67.8	H	3.0	-20.2	34.2	1.0	-53.3	-13.0	-40.3	
1.70	-63.9	V	3.0	-17.8	33.7	1.0	-50.4	-13.0	-37.4	
1.72	-58.9	V	3.0	-12.7	33.7	1.0	-45.3	-13.0	-32.3	
2.44	-63.9	V	3.0	-15.9	34.0	1.0	-48.9	-13.0	-35.9	
2.54	-63.0	V	3.0	-14.8	34.1	1.0	-47.9	-13.0	-34.9	

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