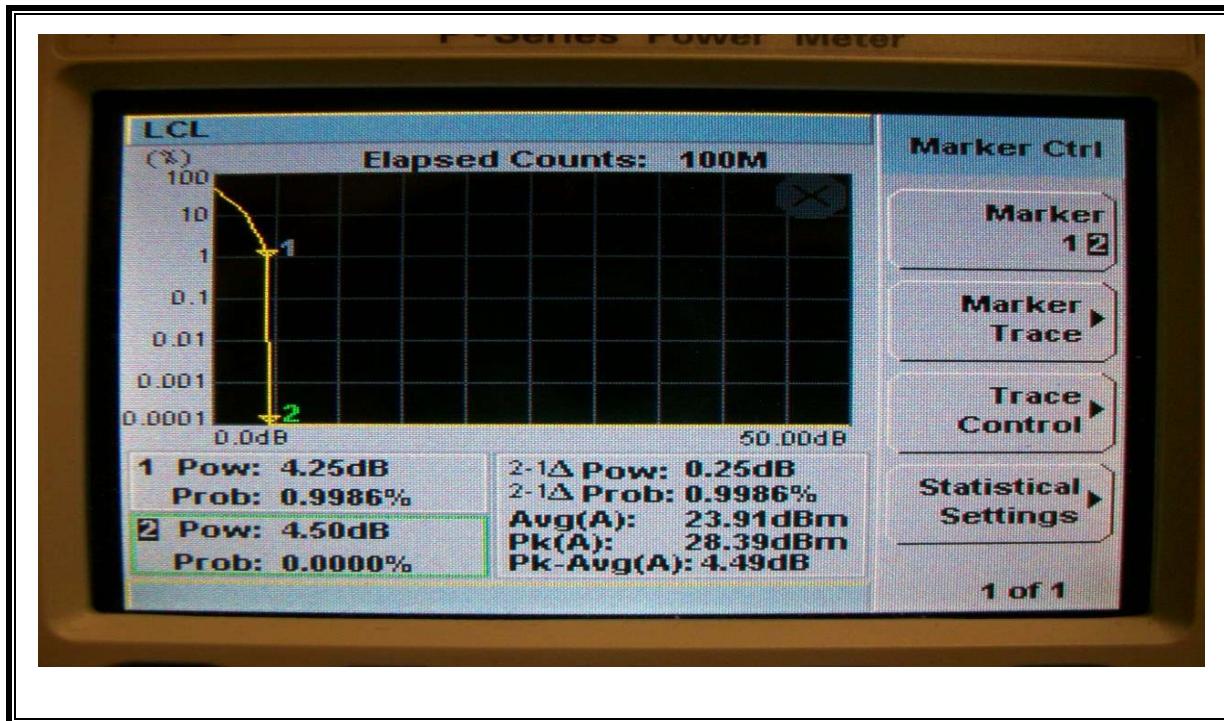
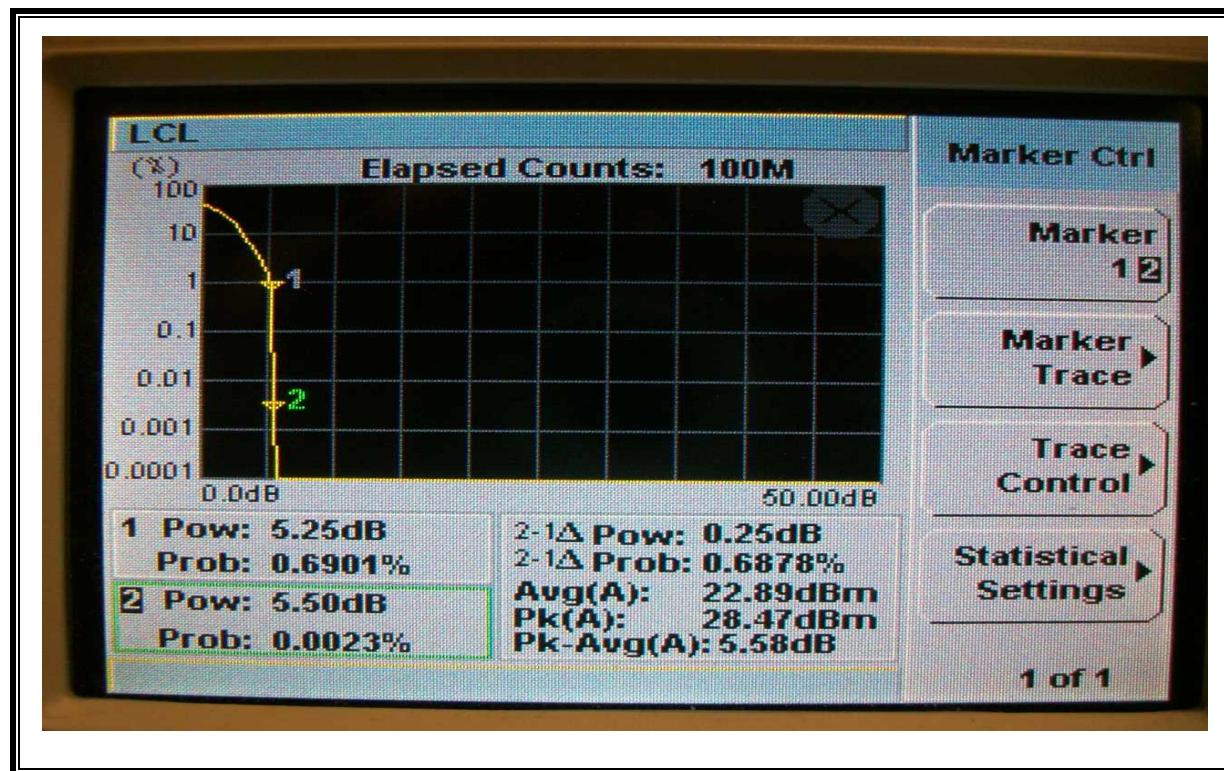


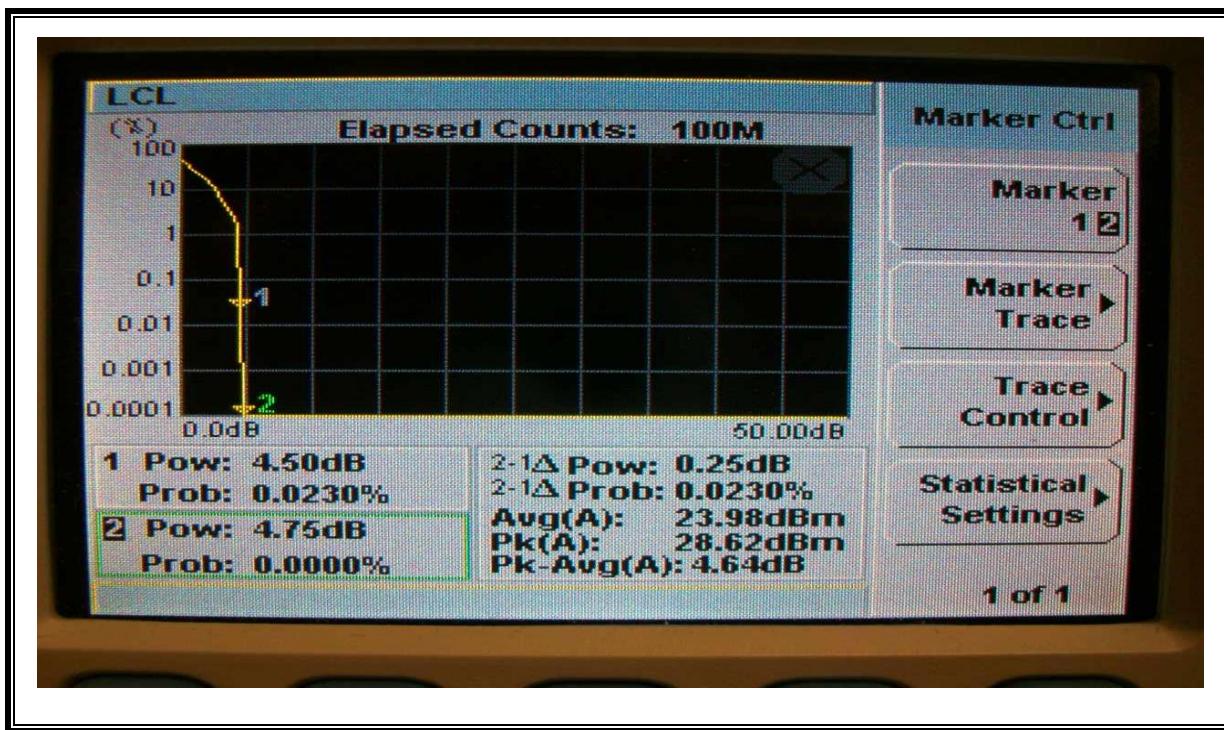
LTE QPSK Band 17 (5.0 MHz BAND WIDTH)



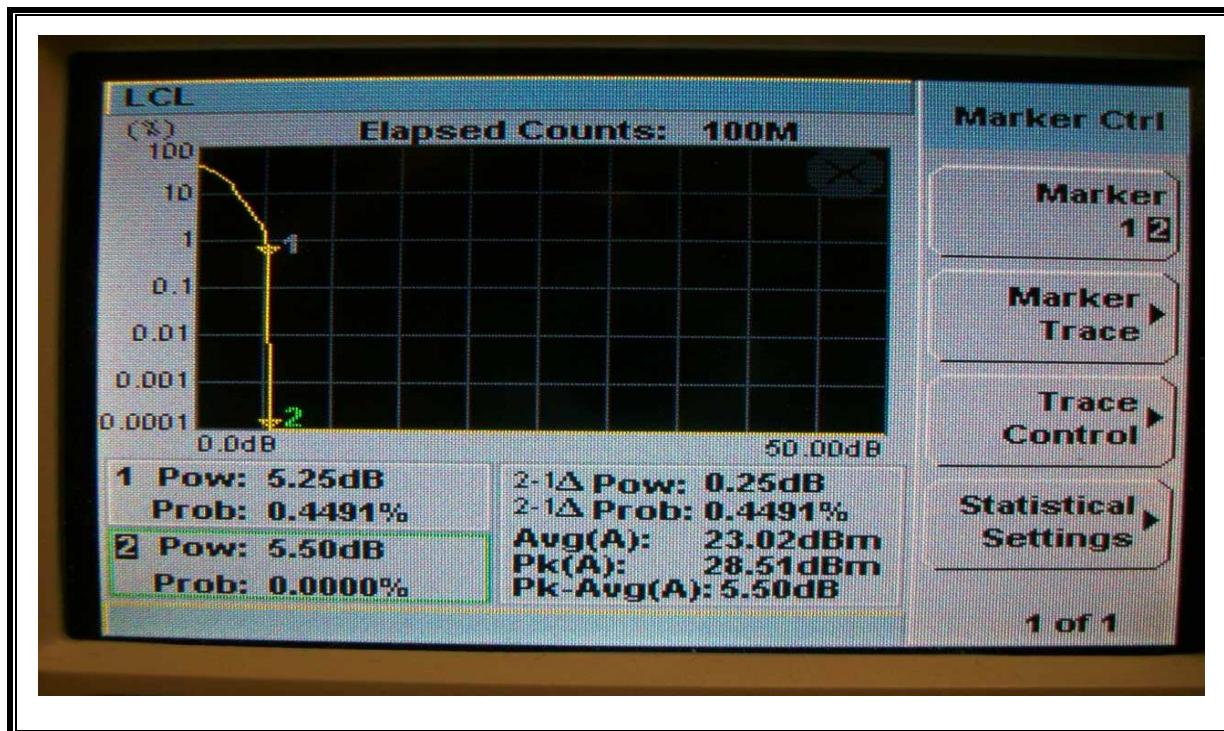
LTE 16QAM Band 17 (5.0 MHz BAND WIDTH)



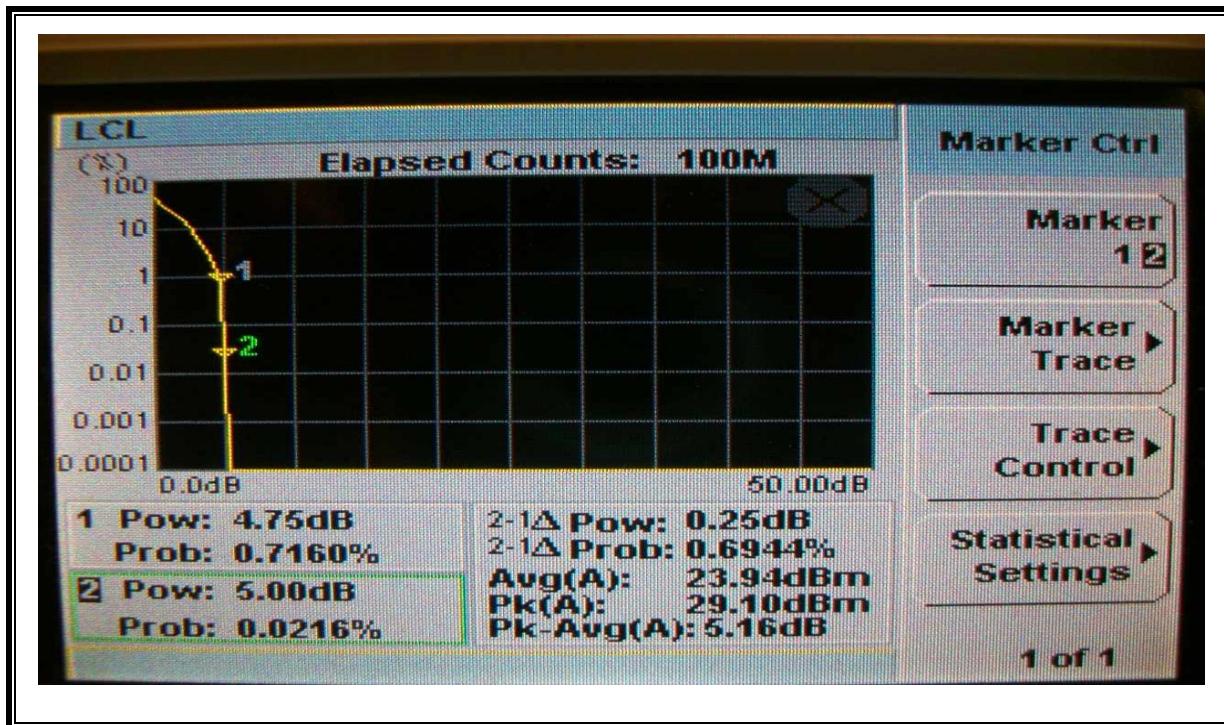
LTE QPSK Band 17 (10.0 MHz BAND WIDTH)



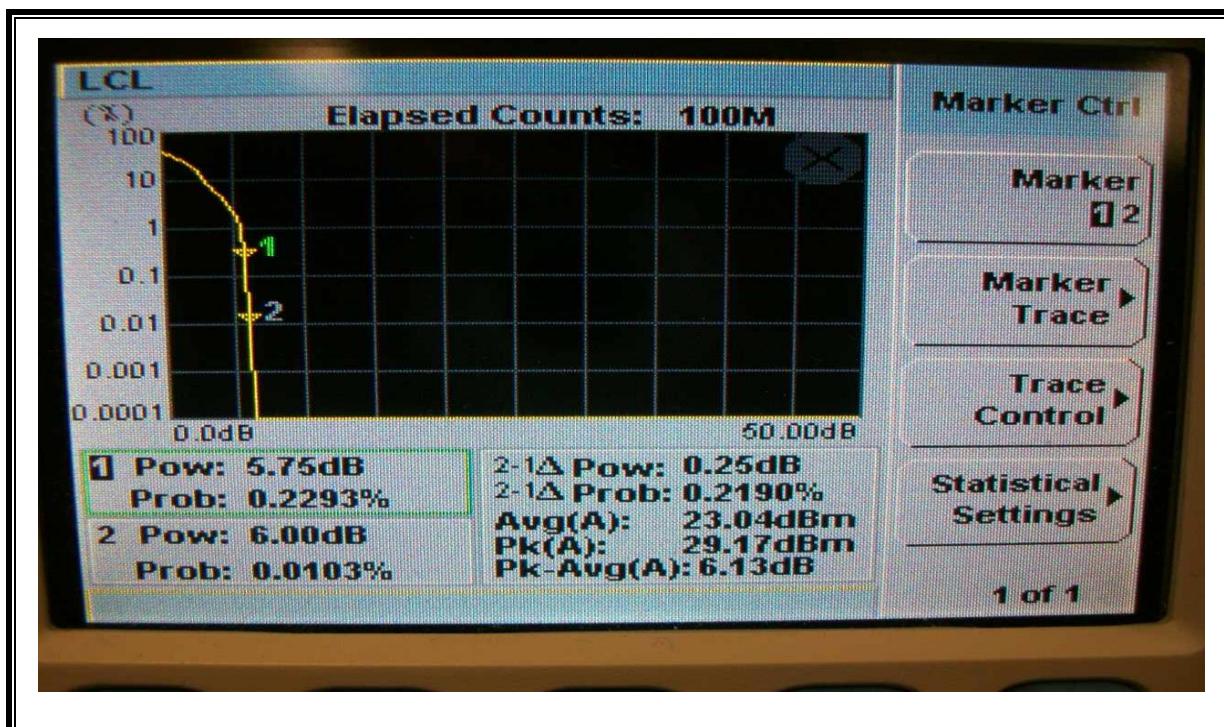
LTE 16QAM Band 17 (10.0 MHz BAND WIDTH)



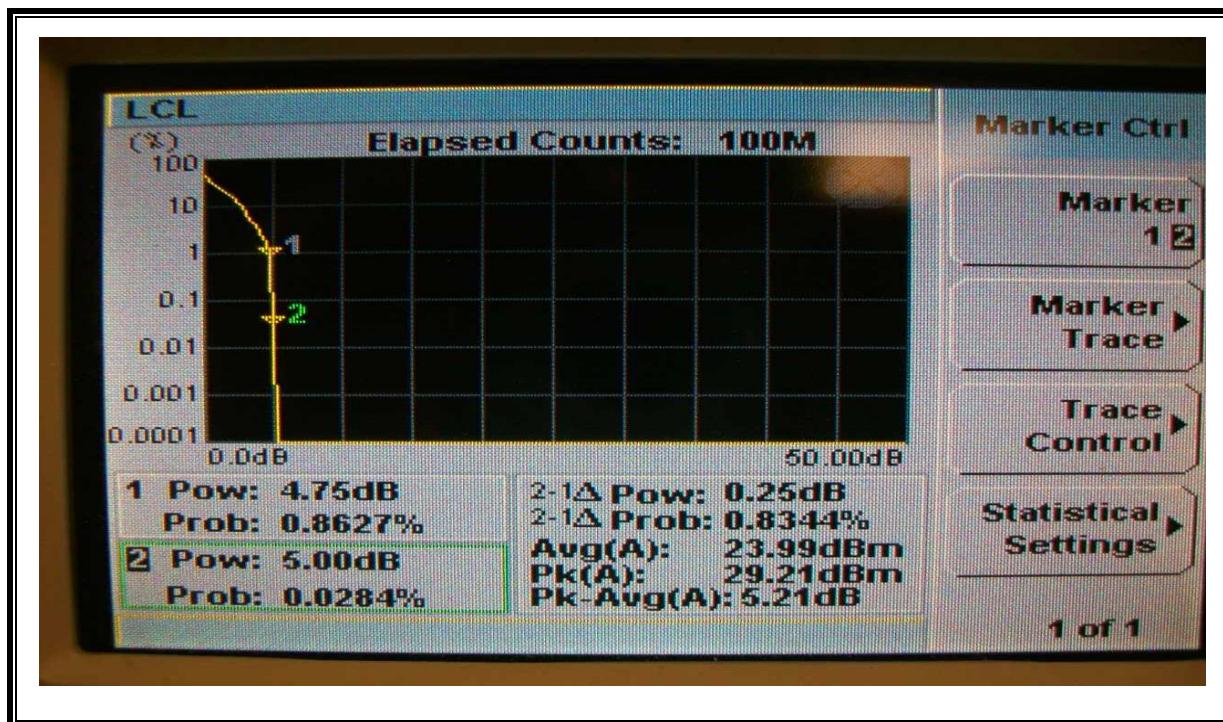
QPSK Band 25 (1.4 MHz BAND WIDTH)



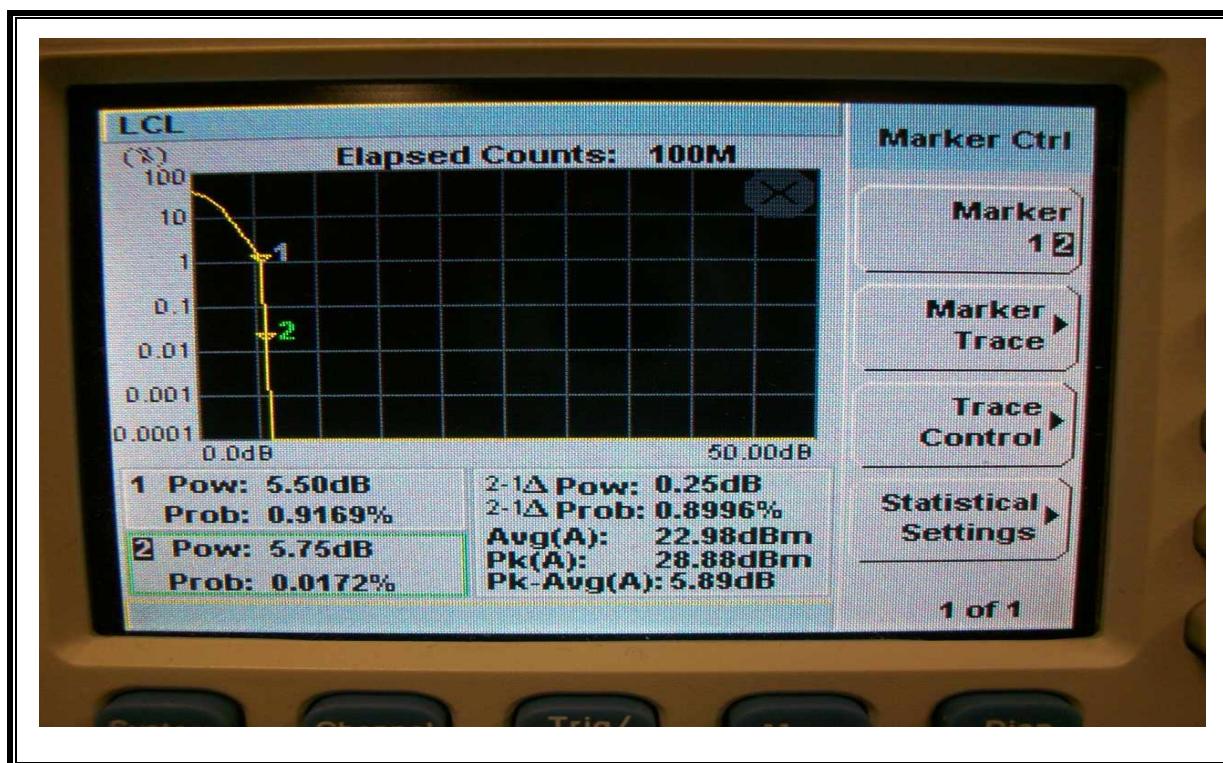
16QAM Band 25 (1.4 MHz BAND WIDTH)



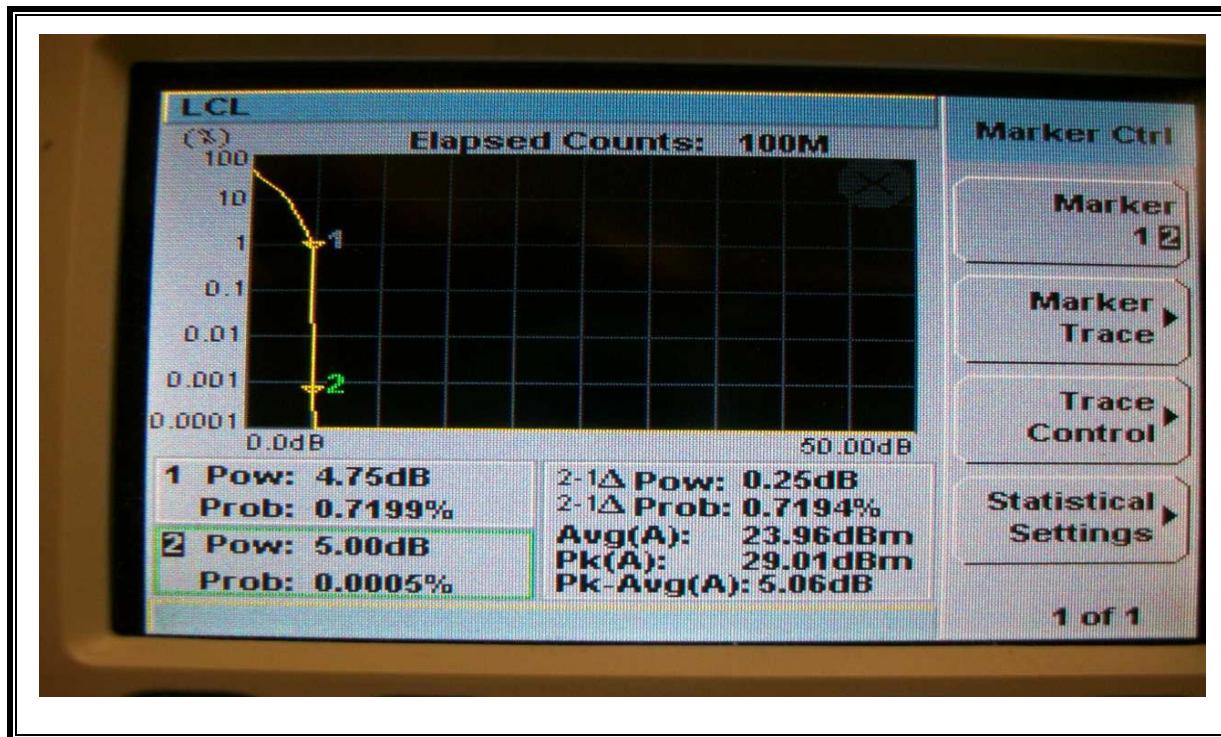
LTE QPSK Band 25 (3.0 MHz BAND WIDTH)



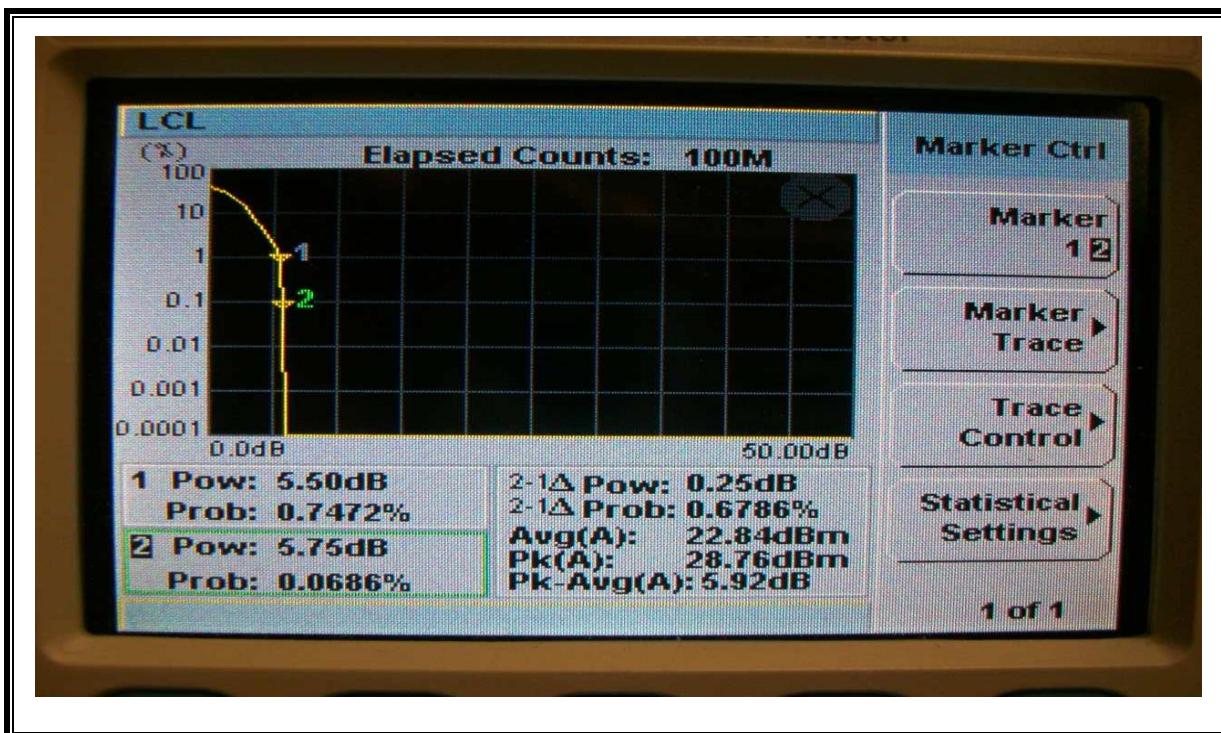
LTE 16QAM Band 25 (3.0 MHz BAND WIDTH)



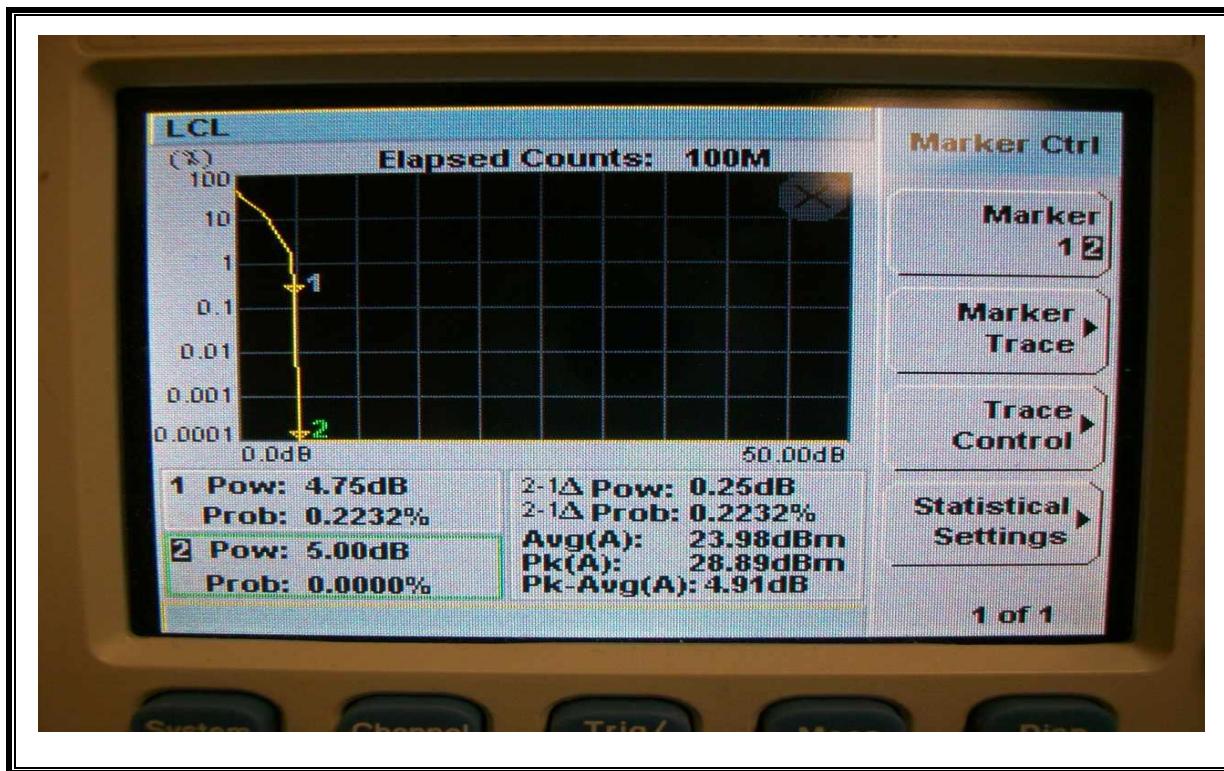
LTE QPSK Band 25 (5.0 MHz BAND WIDTH)



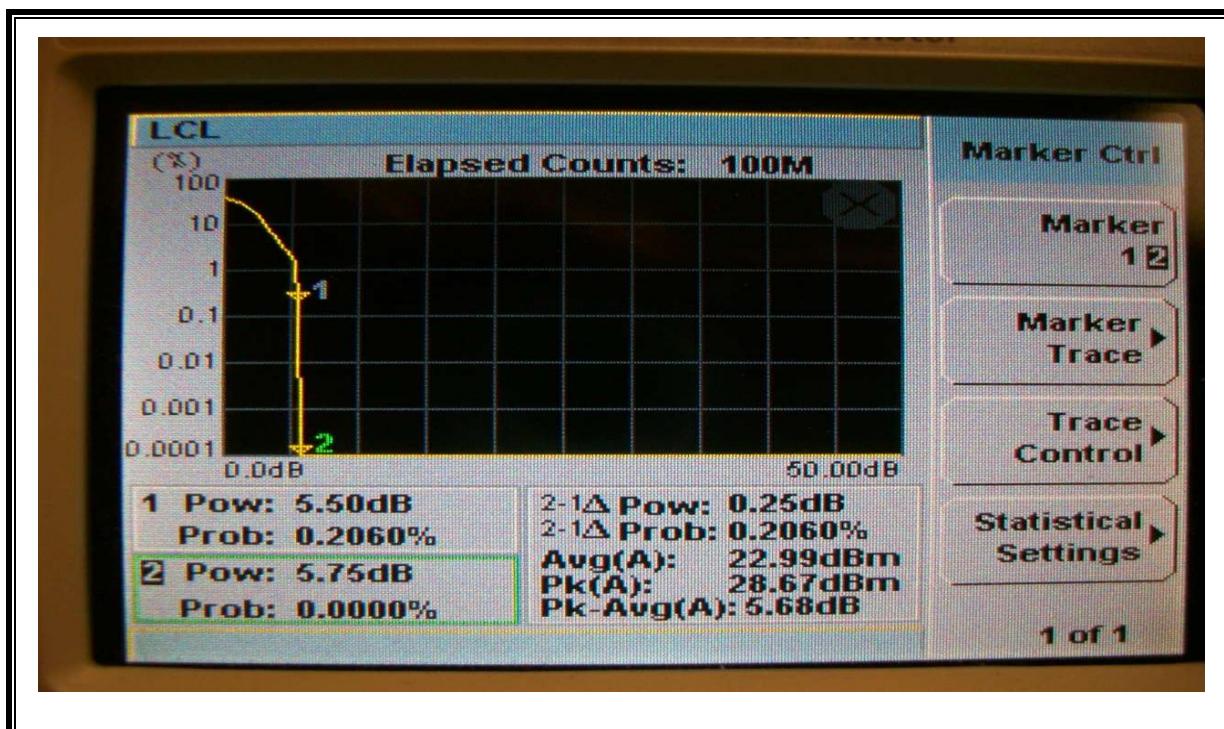
LTE 16QAM Band 25 (5.0 MHz BAND WIDTH)



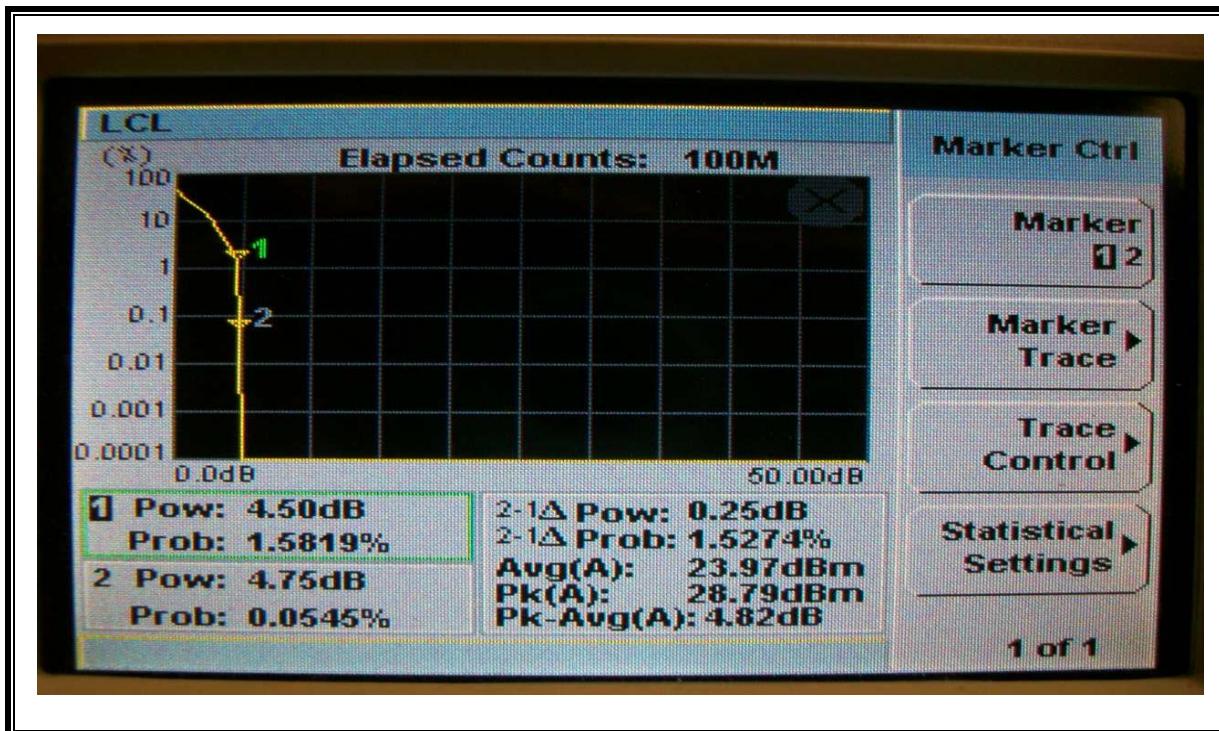
LTE QPSK Band 25 (10.0 MHz BAND WIDTH)



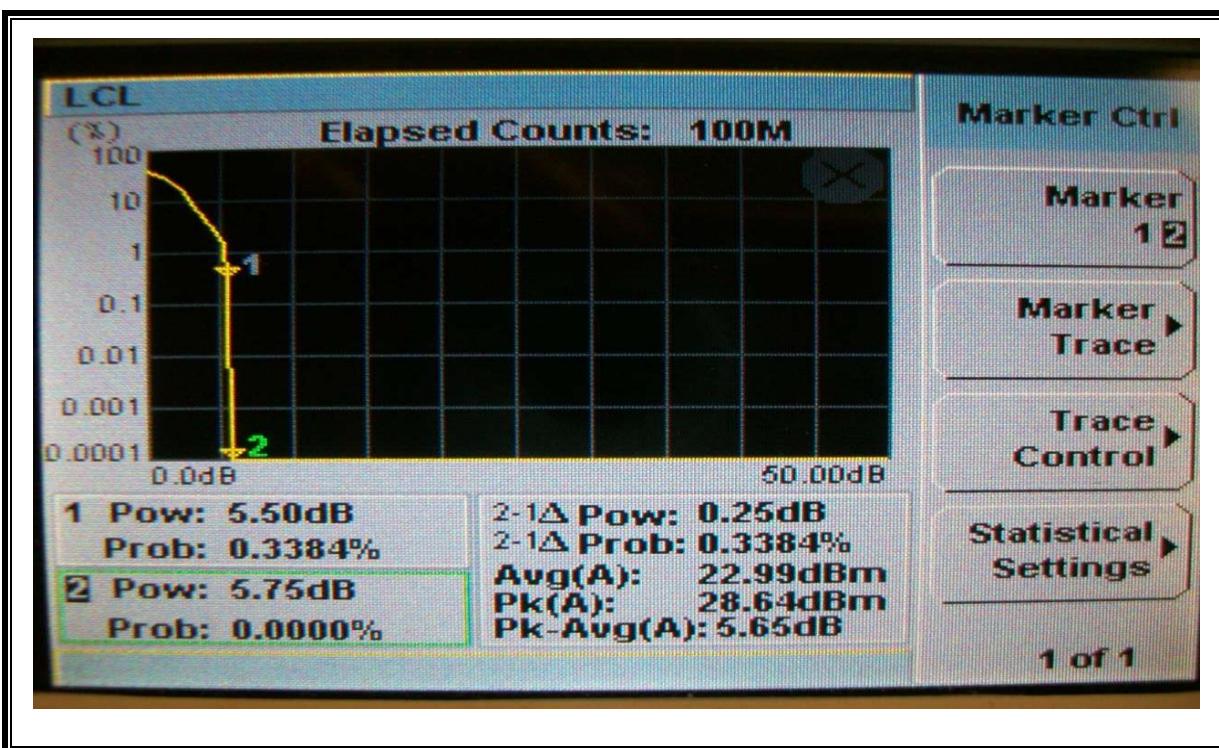
LTE 16QAM Band 25 (10.0 MHz BAND WIDTH)



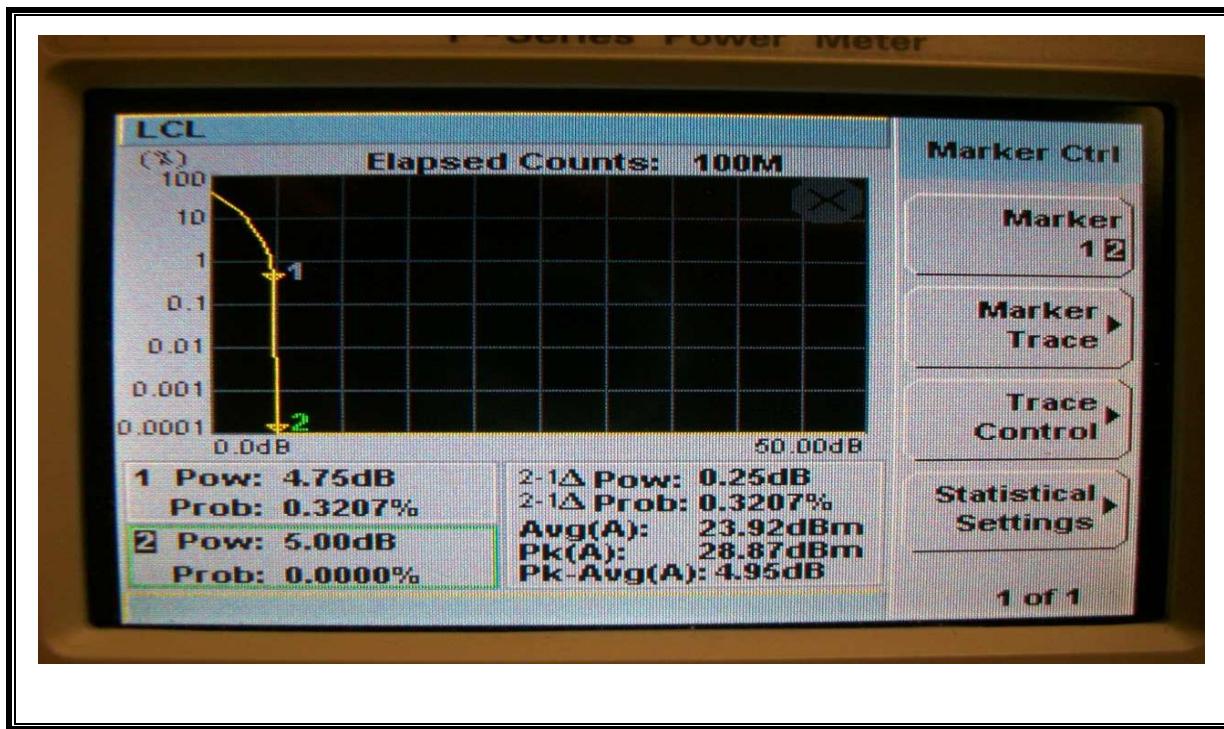
LTE QPSK Band 25 (15.0 MHz BAND WIDTH)



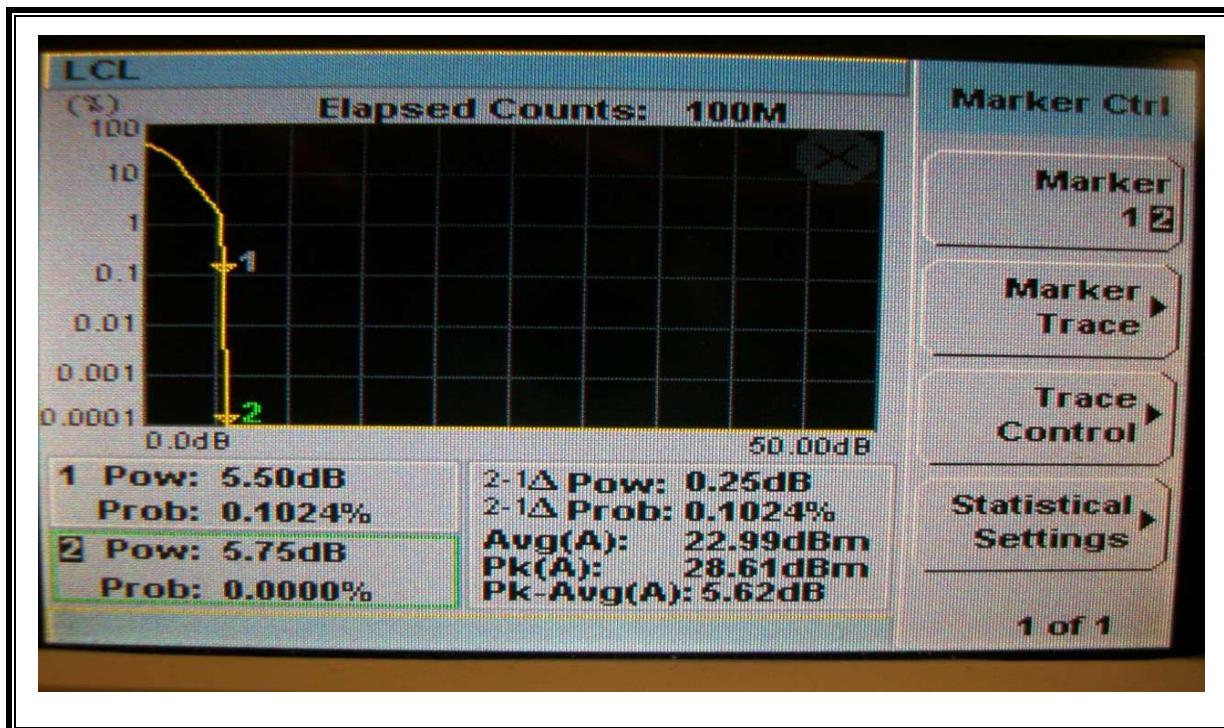
LTE 16QAM Band 25 (15.0 MHz BAND WIDTH)



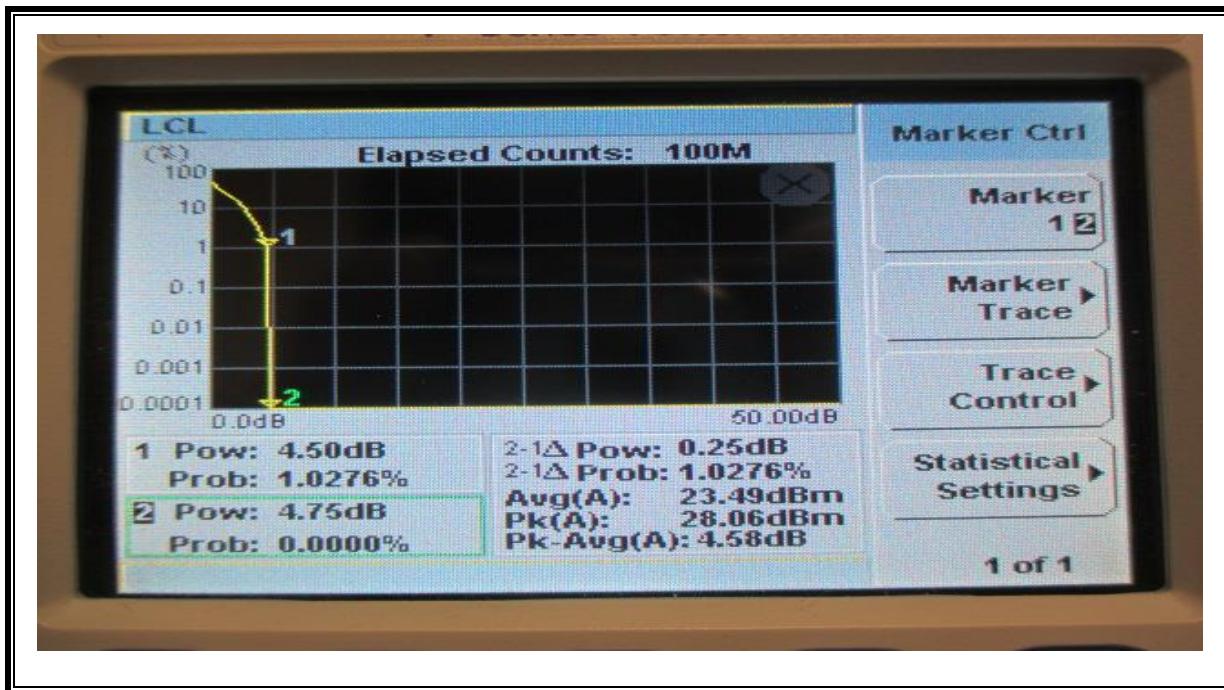
LTE QPSK Band 25 (20.0 MHz BAND WIDTH)



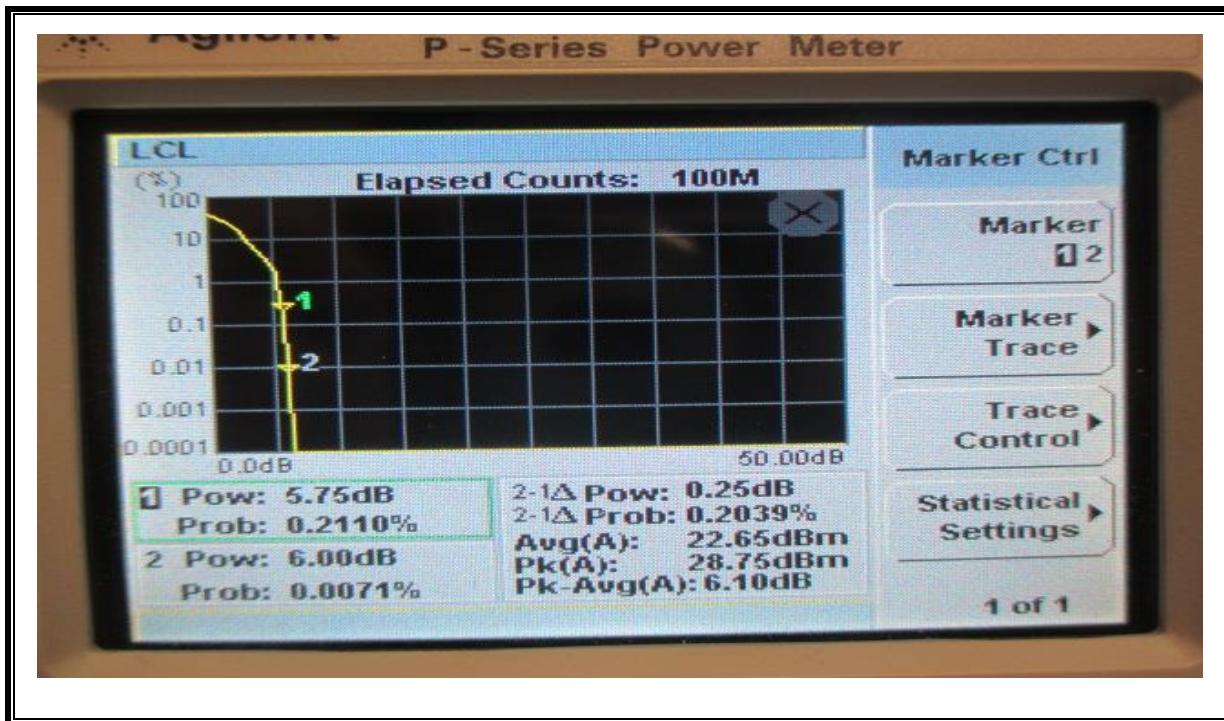
LTE 16QAM Band 25 (20.0 MHz BAND WIDTH)



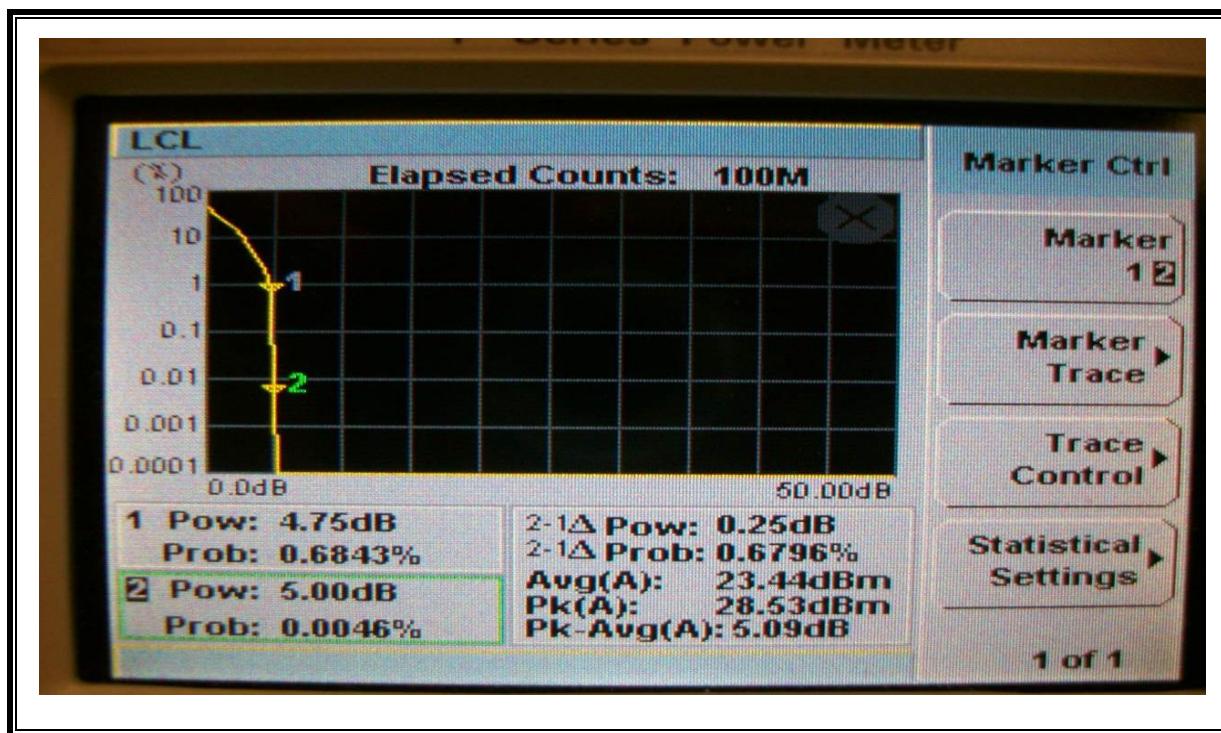
LTE QPSK Band 26 (1.4 MHz BAND WIDTH)



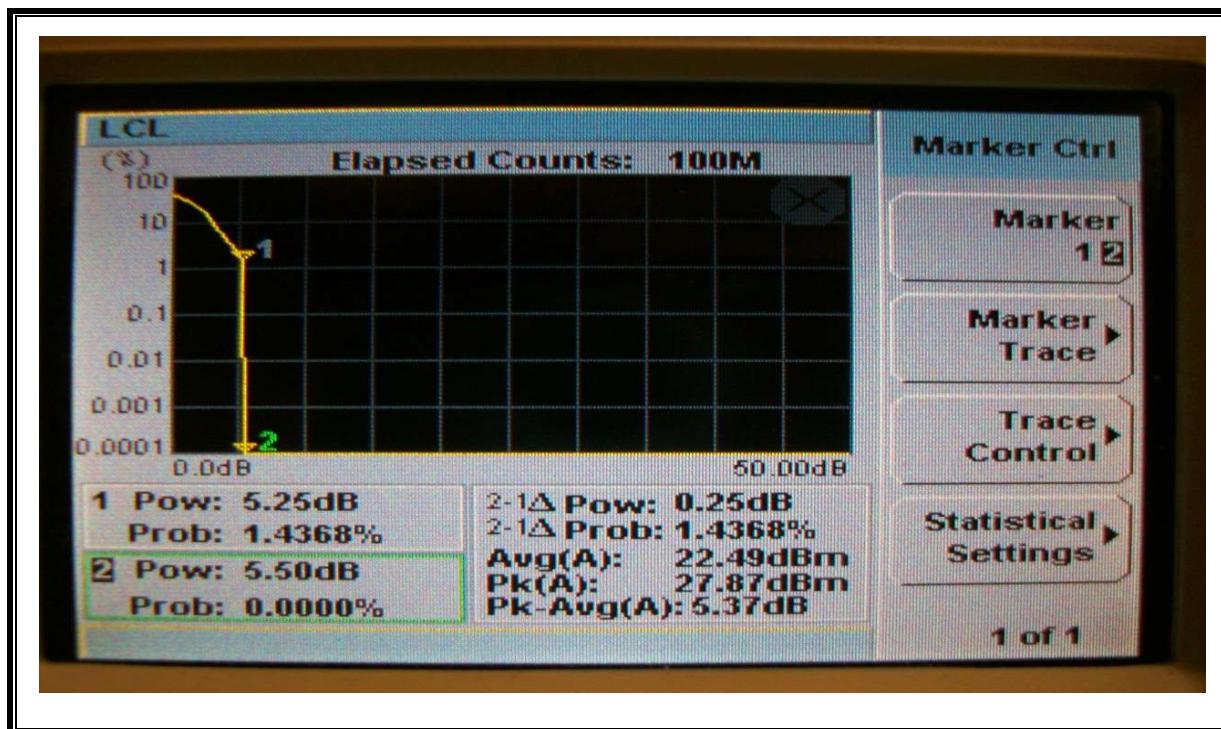
LTE 16QAM Band 26 (1.4 MHz BAND WIDTH)



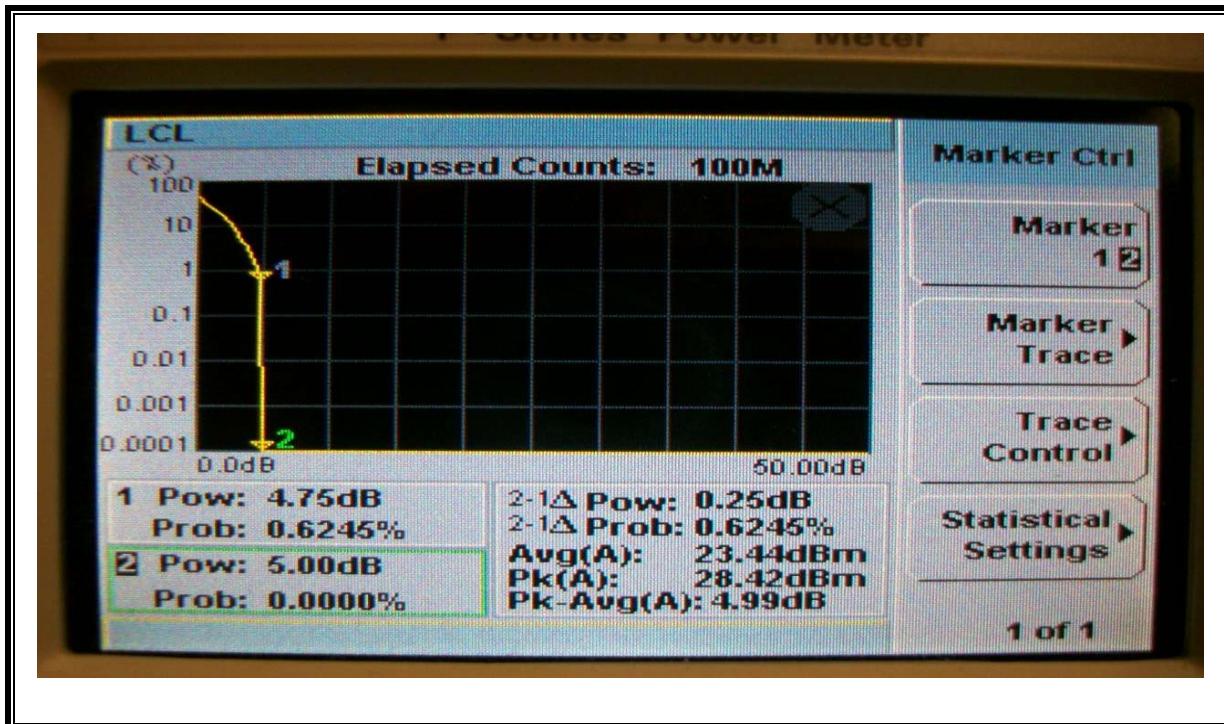
LTE QPSK Band 26 (3.0 MHz BAND WIDTH)



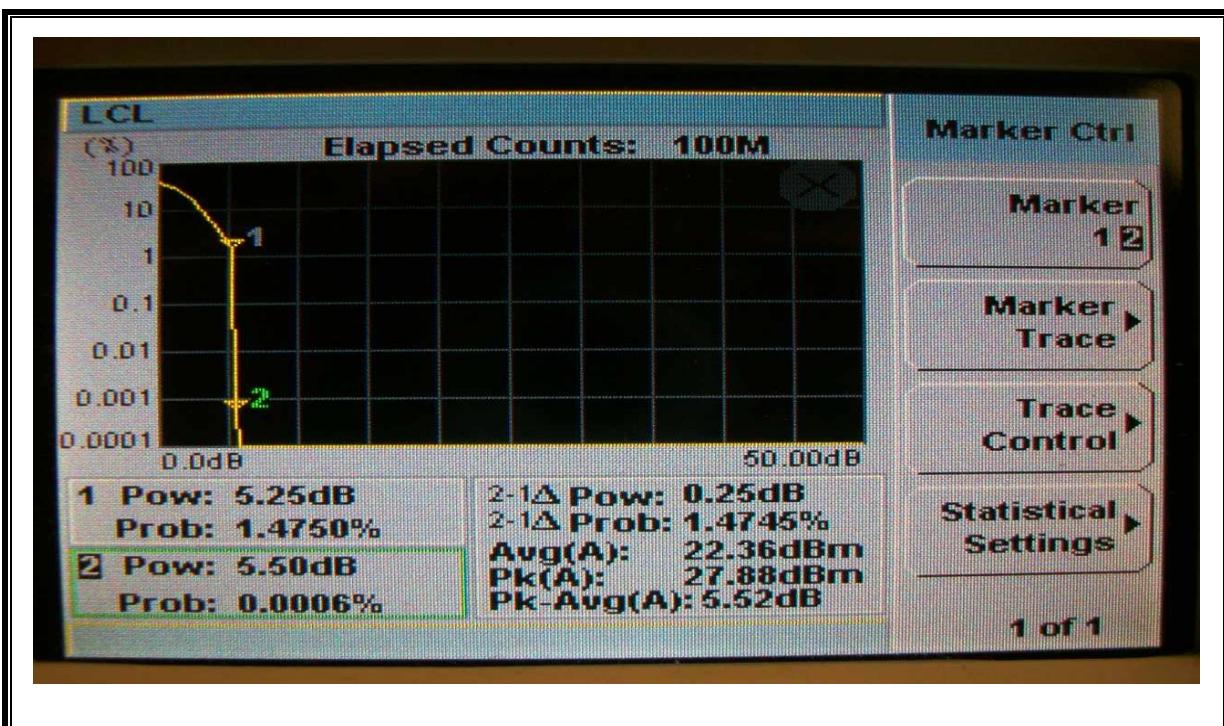
LTE 16QAM Band 26 (3.0 MHz BAND WIDTH)



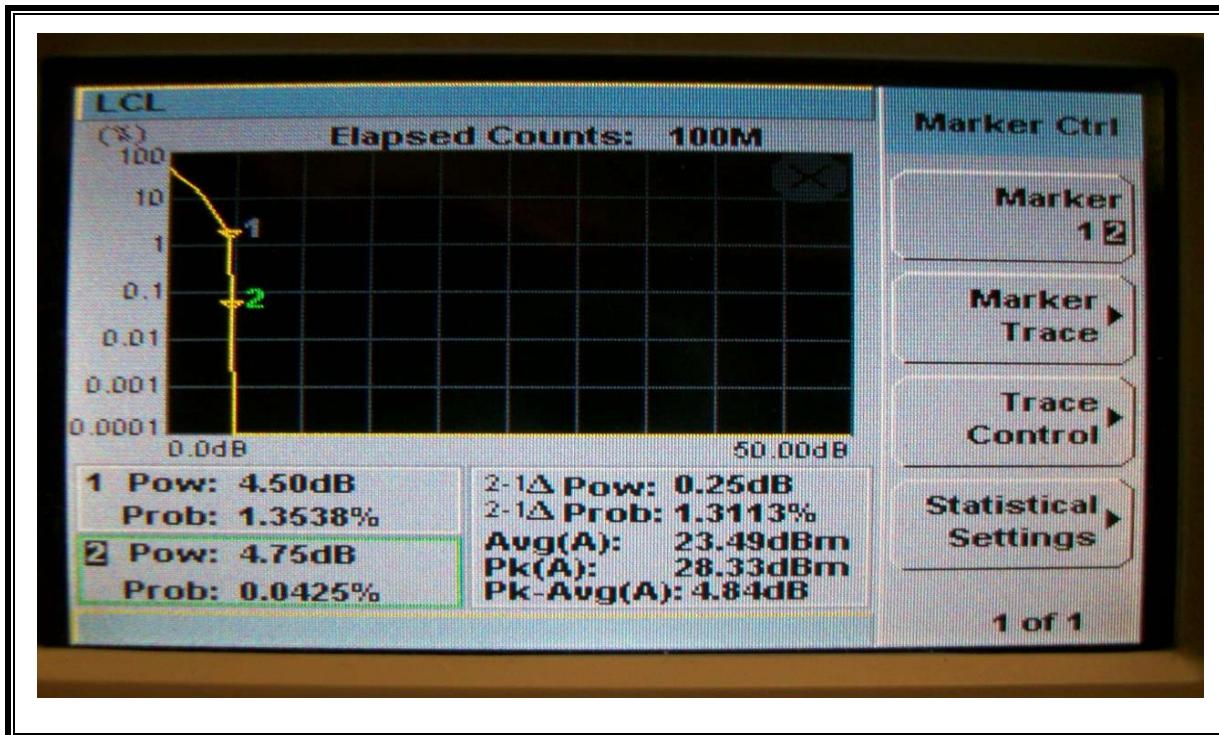
LTE QPSK Band 26 (5.0 MHz BAND WIDTH)



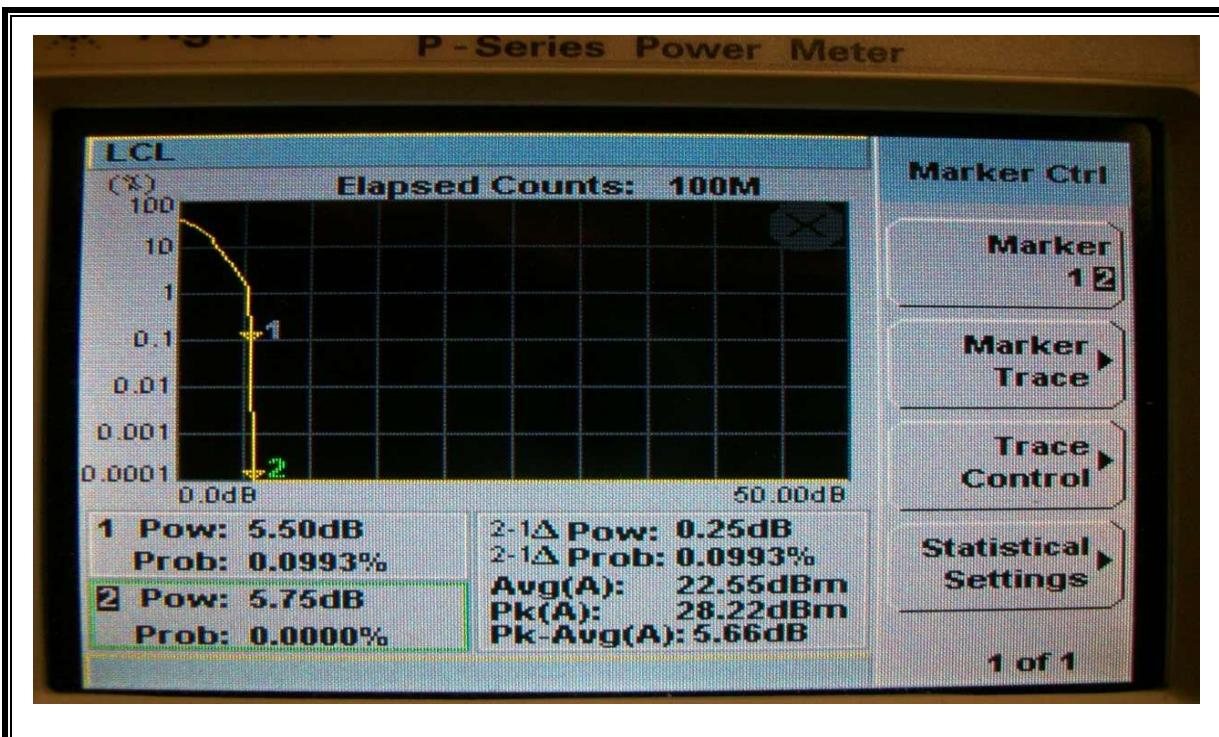
LTE 16QAM Band 26 (5.0 MHz BAND WIDTH)



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 $43 + 10 \log_{10}(P)$ 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 $43 + 10 \log_{10} (p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10} (p)$, dB at the channel edges and $55 + 10 \log_{10} (p)$ 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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 2, 1.4MHz QPSK									
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier			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	
Rev. 09.04.14										

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										
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier		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	
Rev. 09.04.14										

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																	
<u>Test Equipment:</u>																			
Substitution: Horn T59 Substitution, and 8ft SMA Cable																			
Chamber			Pre-amplifier			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										
Rev. 09.04.14																			

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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 2, 3MHz 16QAM									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier			Filter			Limit	
3m Chamber F			3m Chamber F			Filter			Part 24	
Frequency (GHz)	SA reading (dBm)	Ant. Pol.	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	
Rev. 09.04.14										

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								
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier			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	
Rev. 09.04.14										

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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 2, 5MHz 16QAM									
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
Rev. 09.04.14										

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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 2, 10MHz QPSK									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier		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	
Rev. 09.04.14										

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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 2, 10MHz 16QAM									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier			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	
Rev. 09.04.14										

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-amplifier		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	
Rev. 09.04.14										

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									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
Rev. 09.04.14										

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									
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
Rev. 09.04.14										

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									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
Rev. 09.04.14										

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									
<u>Test Equipment:</u>										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier		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	
Rev. 09.04.14										

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										
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier		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	
Rev. 09.04.14										

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-amplifier			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	
Rev. 09.04.14										

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: TWang Configuration: EUT Only Mode: LTE Band 4, 3MHz 16QAM										
Test Equipment: Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber			Pre-amplifier		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	
Rev. 09.04.14										

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																	
<u>Test Equipment:</u>																			
Substitution: Horn T59 Substitution, and 8ft SMA Cable																			
Chamber			Pre-amplifier			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										
Rev. 09.04.14																			

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-amplifier		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	
Rev. 09.04.14										

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-amplifier		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	
Rev. 09.04.14										

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									
<u>Test Equipment:</u> Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
Rev. 09.04.14										

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-amplifier		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	
Rev. 09.04.14										

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-amplifier		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																	
<u>Test Equipment:</u>																			
Substitution: Horn T59 Substitution, and 8ft SMA Cable																			
Chamber			Pre-amplifier			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-amplifier		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	
Rev. 09.04.14										

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. Guarero									
Configuration:	EUT Only									
Mode:	LTE Band 5, 1.4MHz QPSK									
Test Equipment:										
Substitution: Horn T59 Substitution, and 8ft SMA Cable										
Chamber		Pre-amplifier		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	
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-amplifier			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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