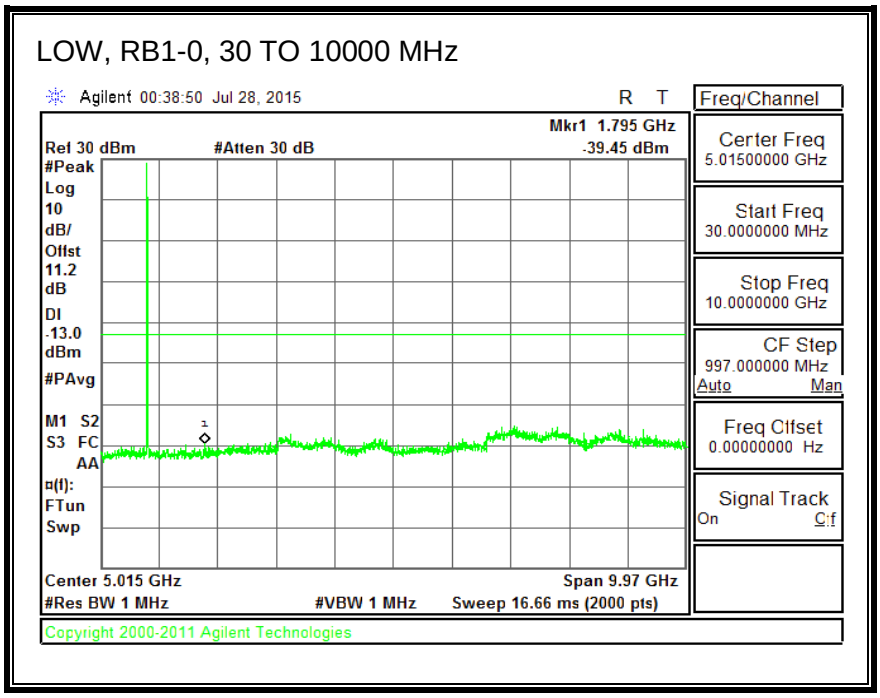
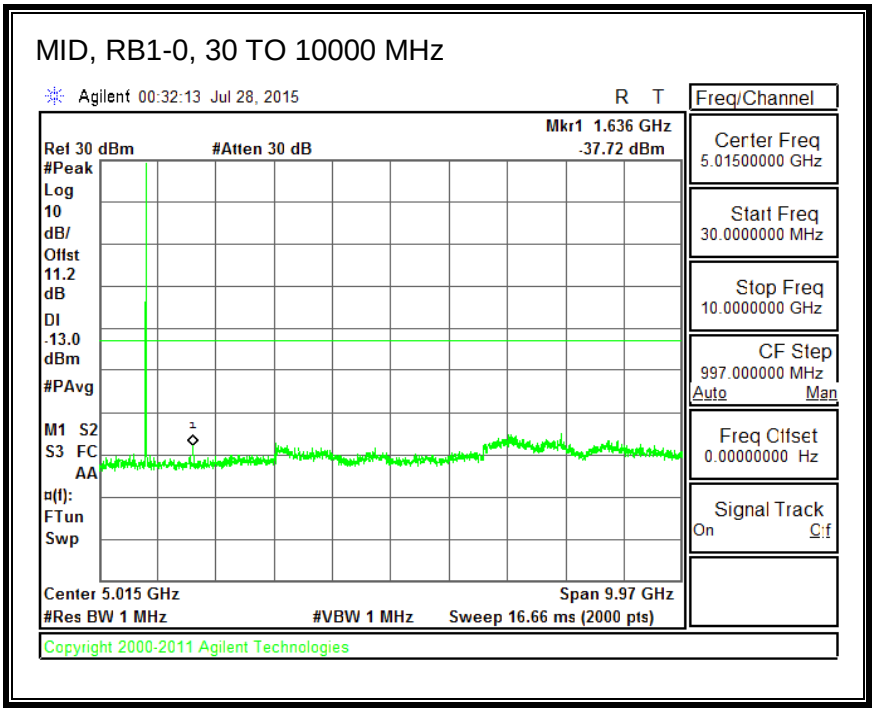
8.3.7. LTE BAND 26

QPSK, (1.4 MHz BAND WIDTH)

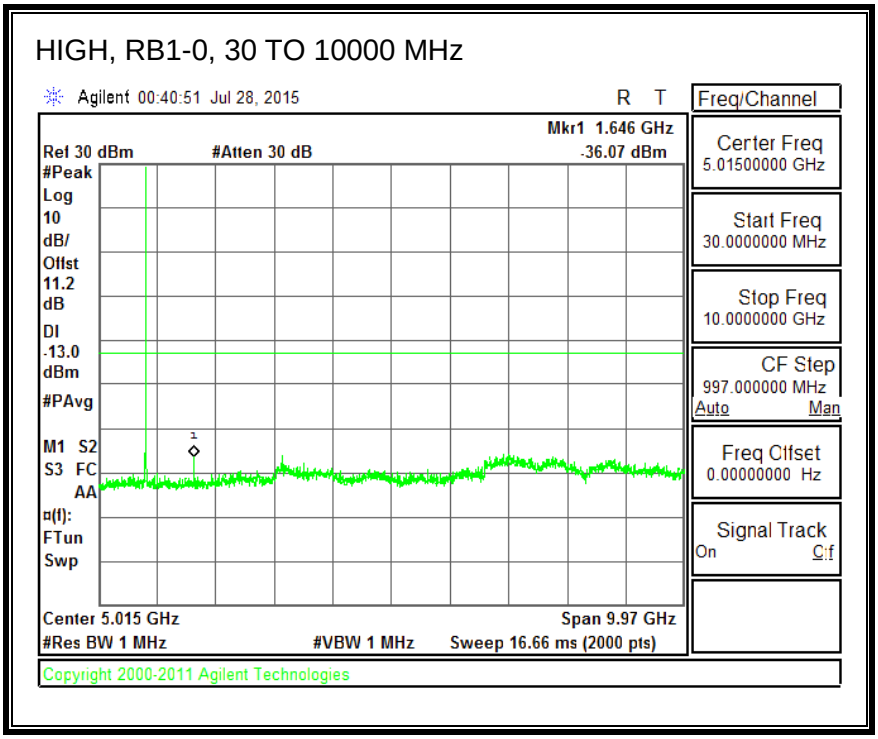
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

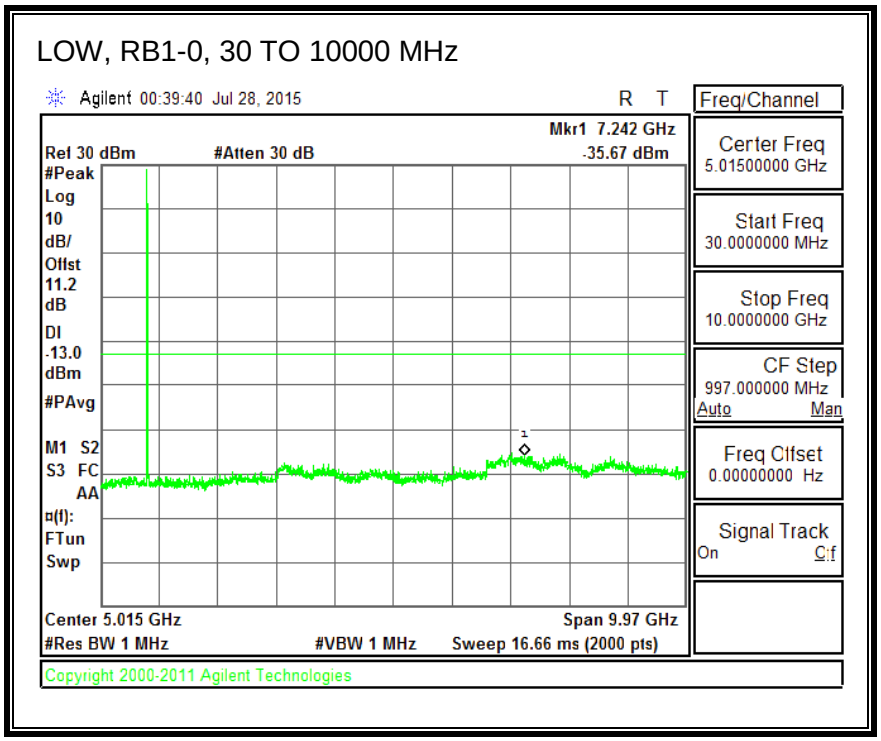


HIGH, RB1-0, 30 TO 10000 MHz

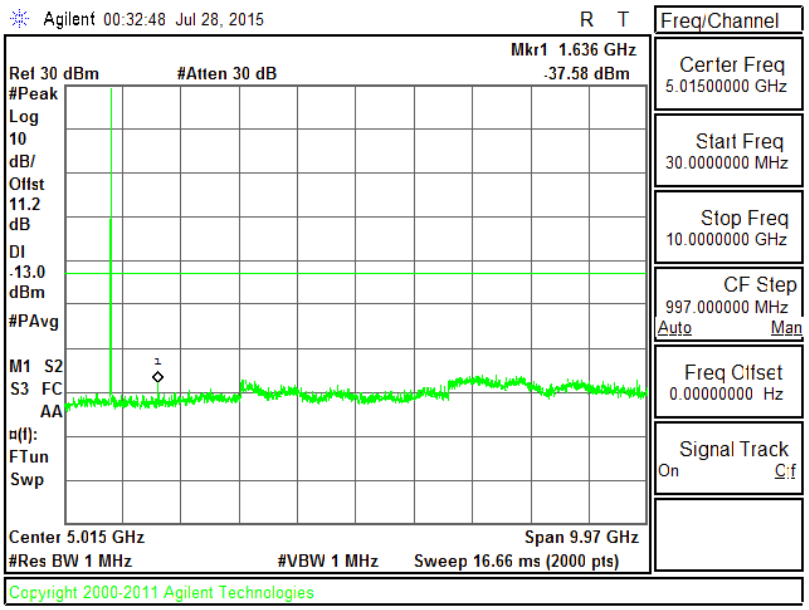


16QAM, (1.4 MHz BAND WIDTH)

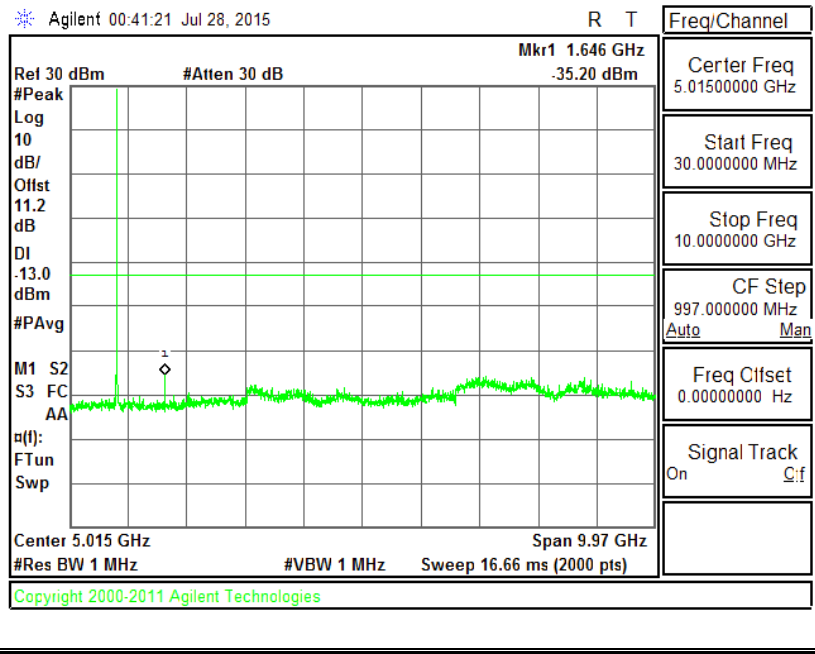
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

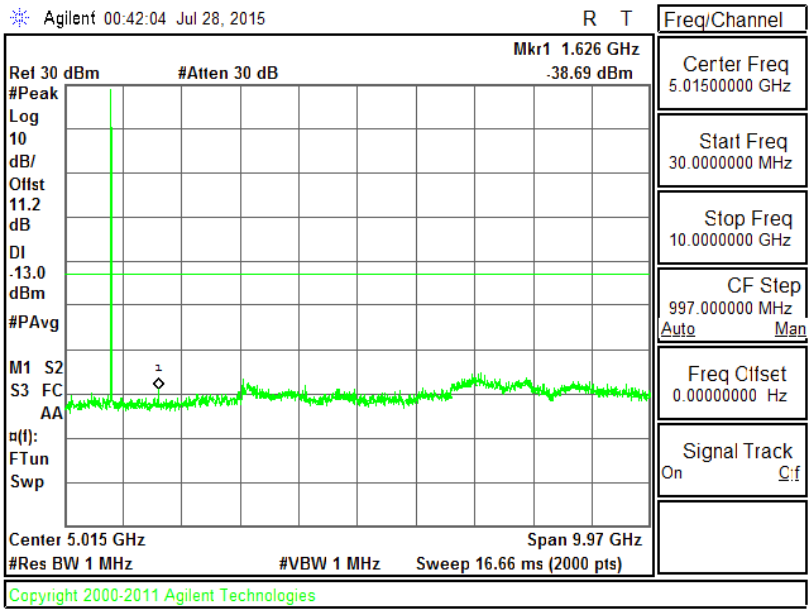


HIGH, RB1-0, 30 TO 10000 MHz

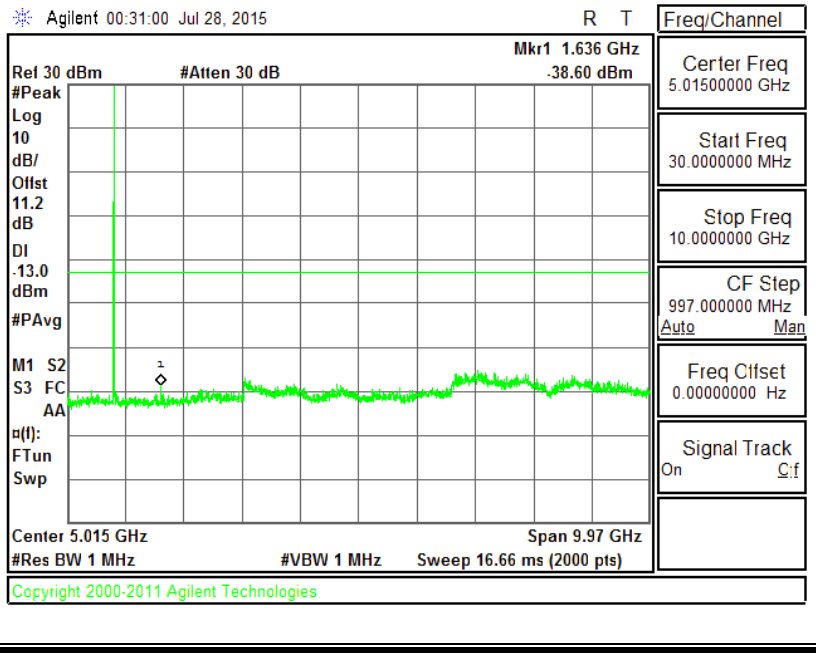


QPSK, (3.0 MHz BAND WIDTH)

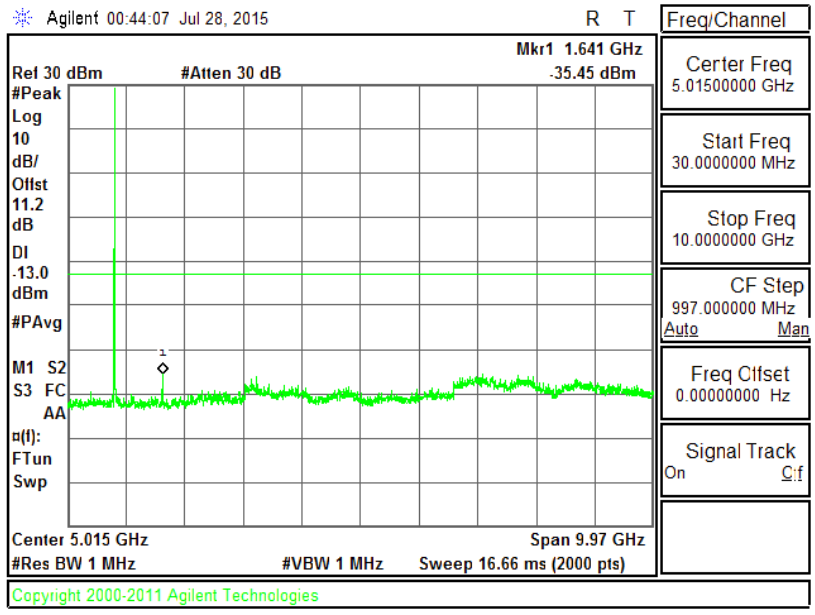
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

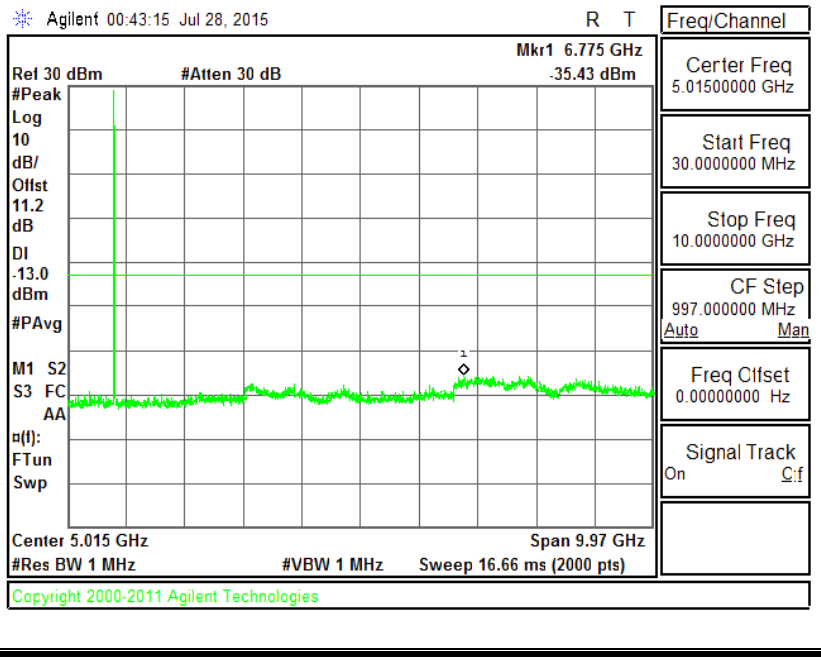


HIGH, RB1-0, 30 TO 10000 MHz

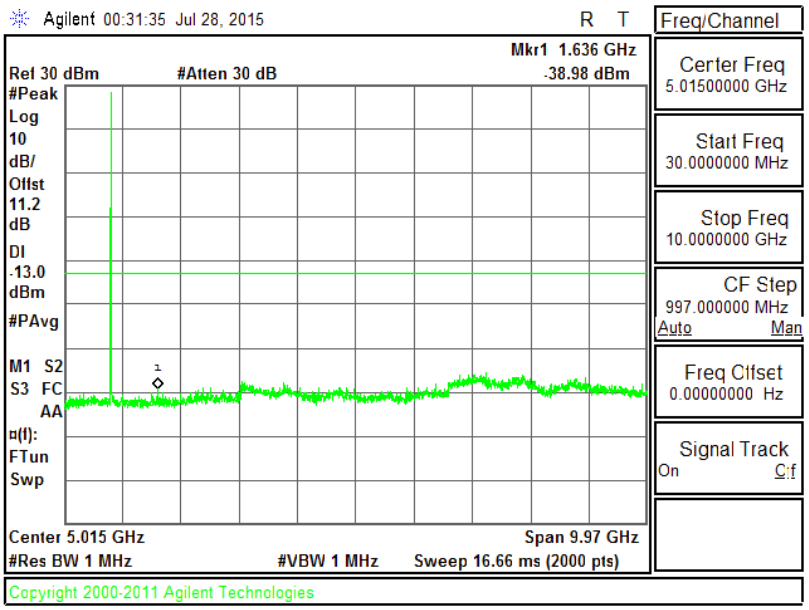


16QAM, (3.0 MHz BAND WIDTH)

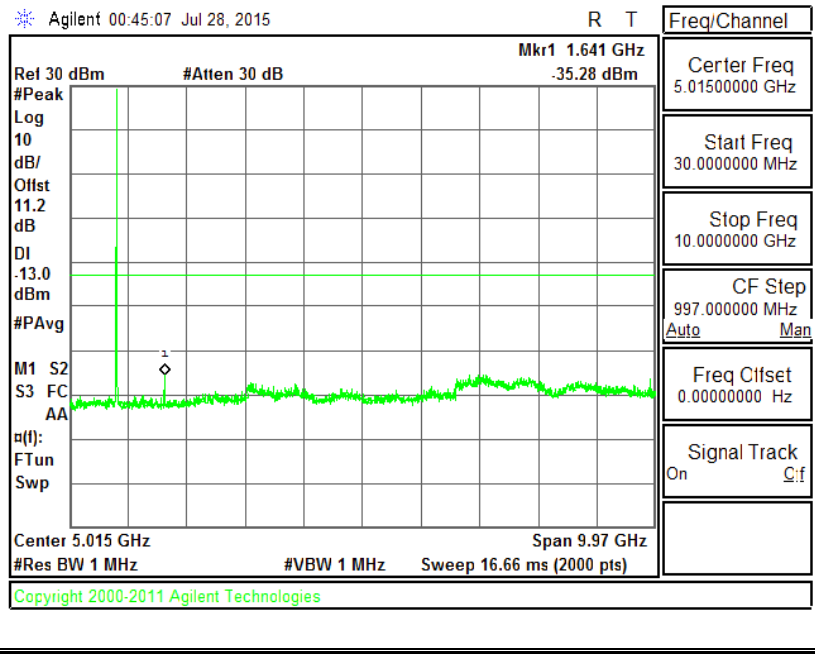
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

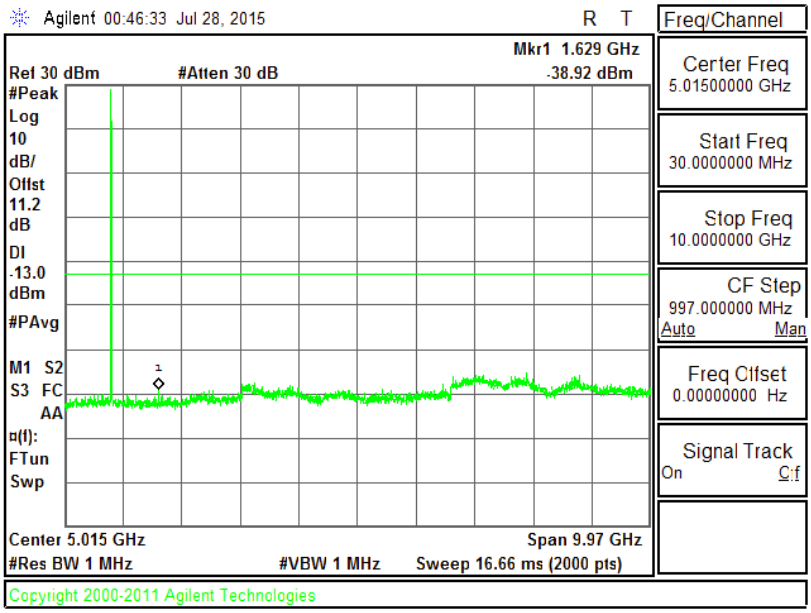


HIGH, RB1-0, 30 TO 10000 MHz

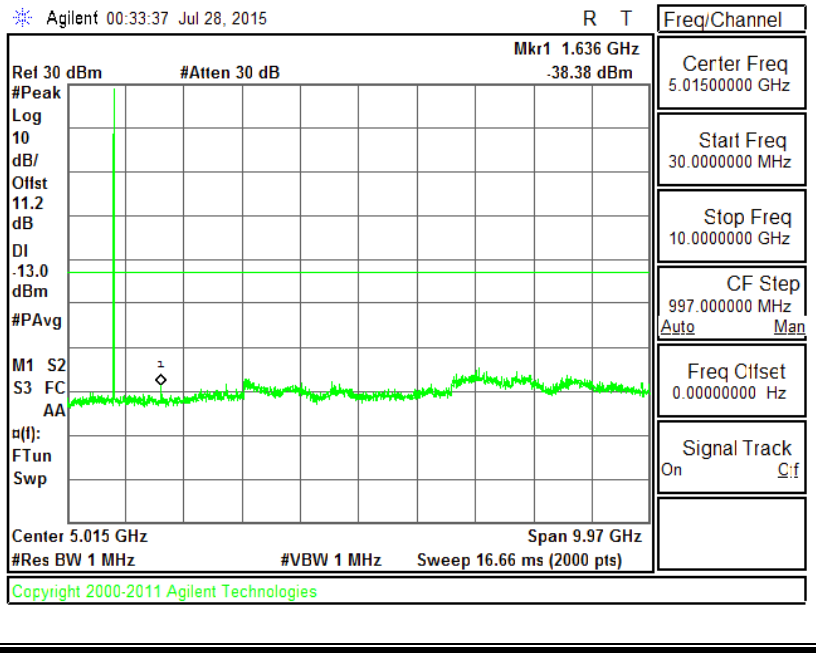


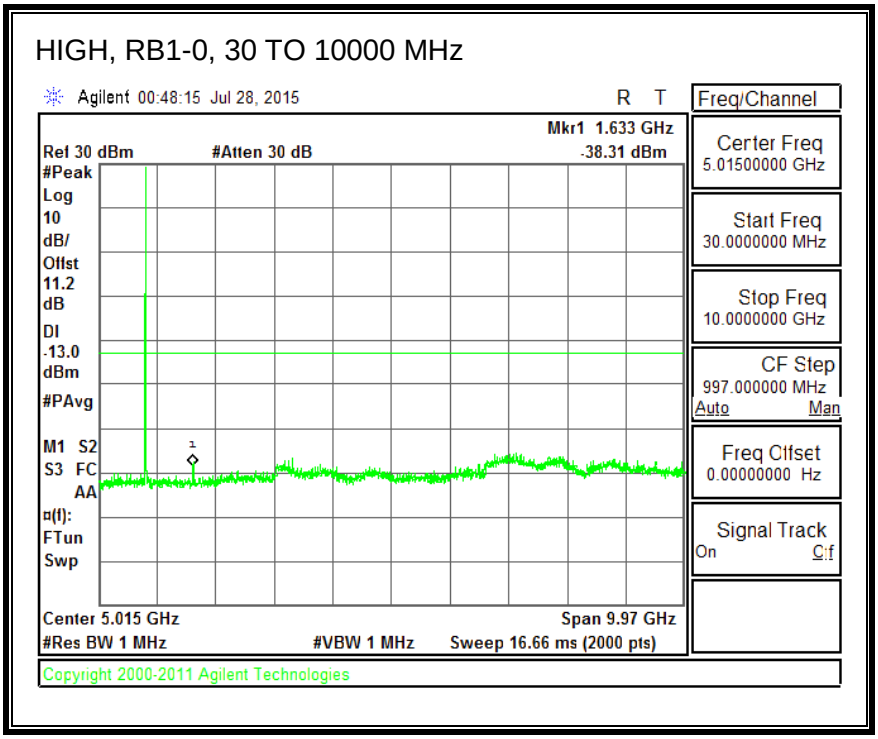
QPSK, (5.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

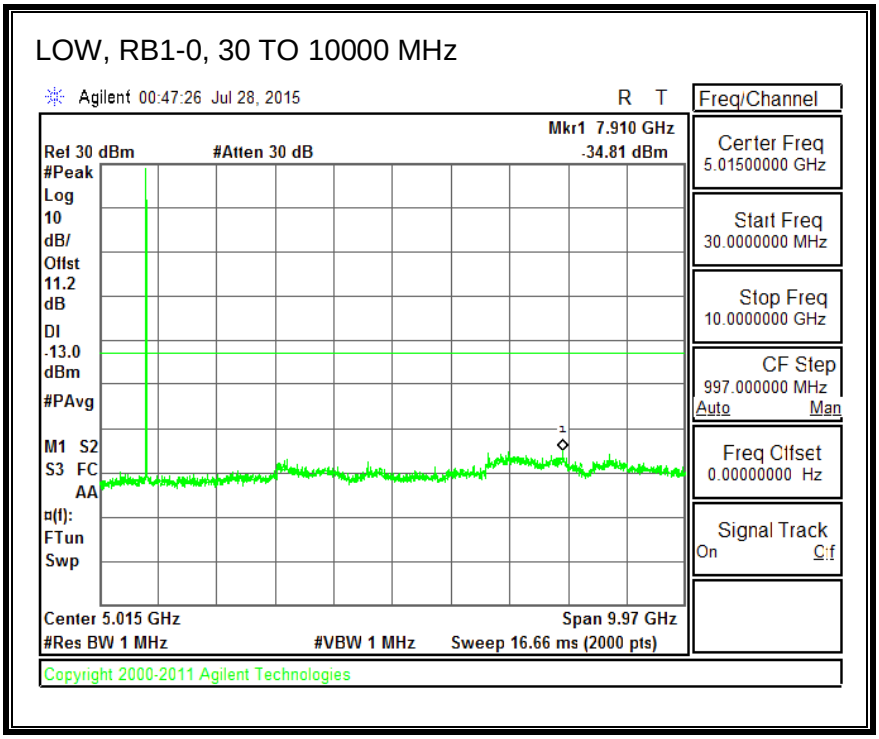


MID, RB1-0, 30 TO 10000 MHz

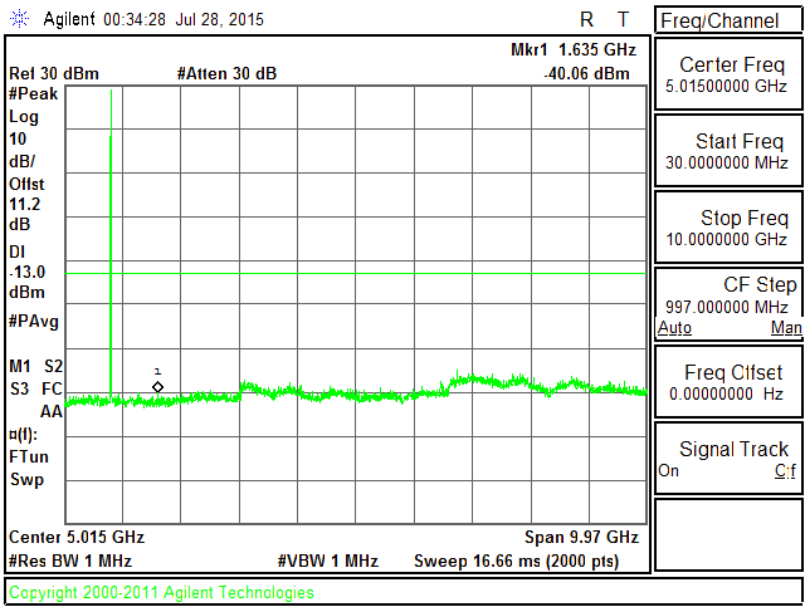




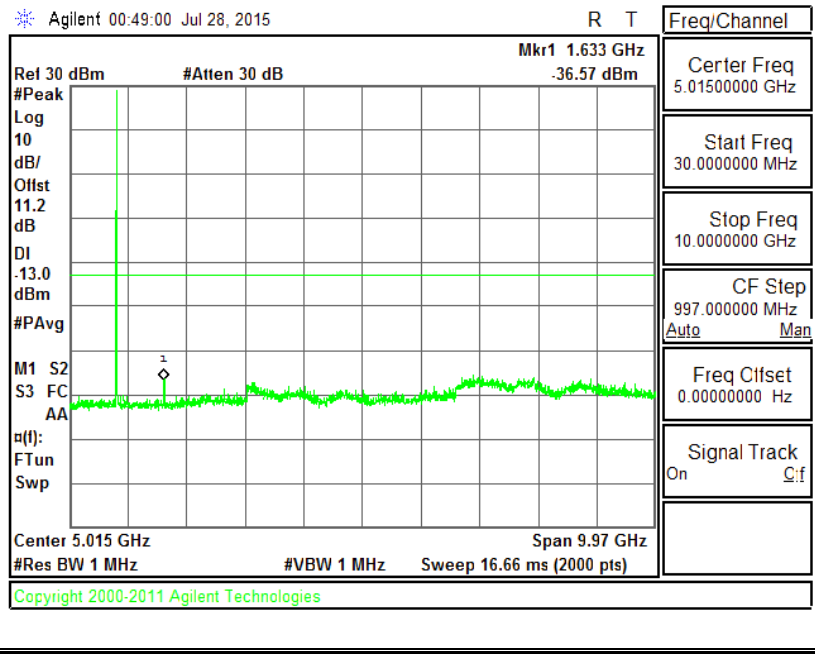
16QAM, (5.0 MHz BAND WIDTH)



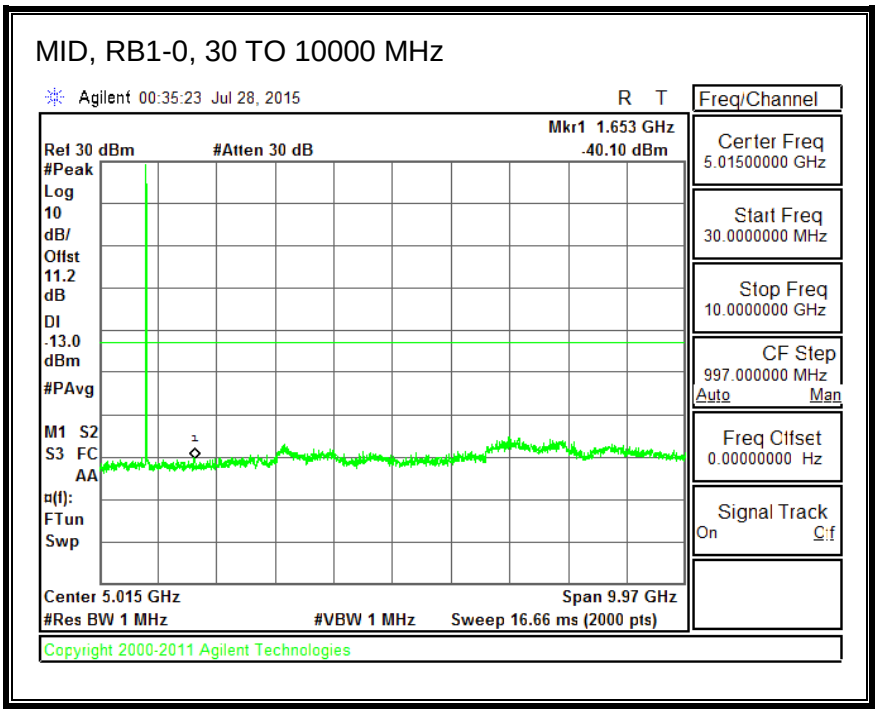
MID, RB1-0, 30 TO 10000 MHz



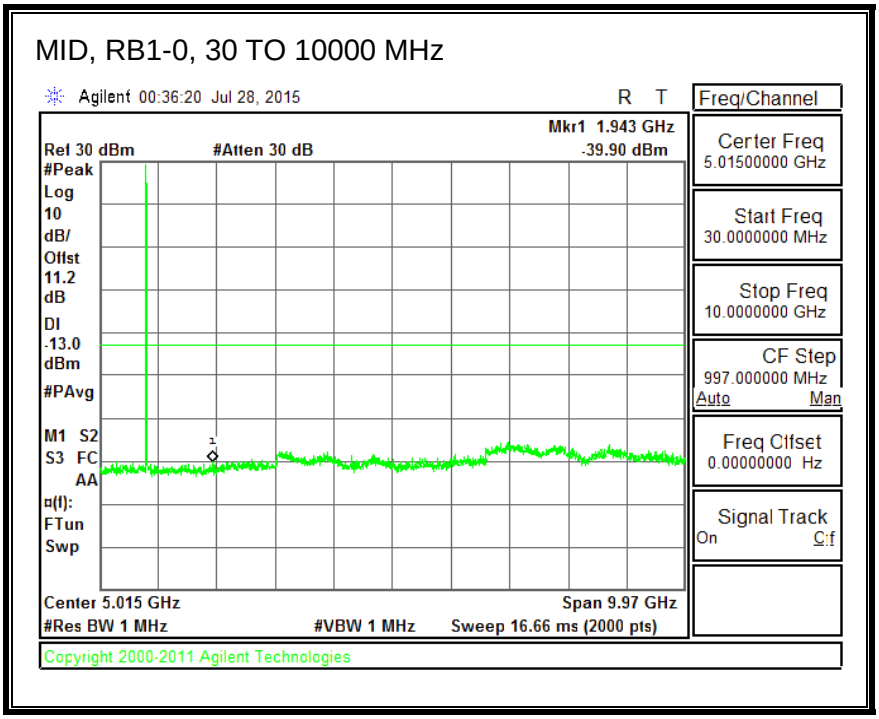
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



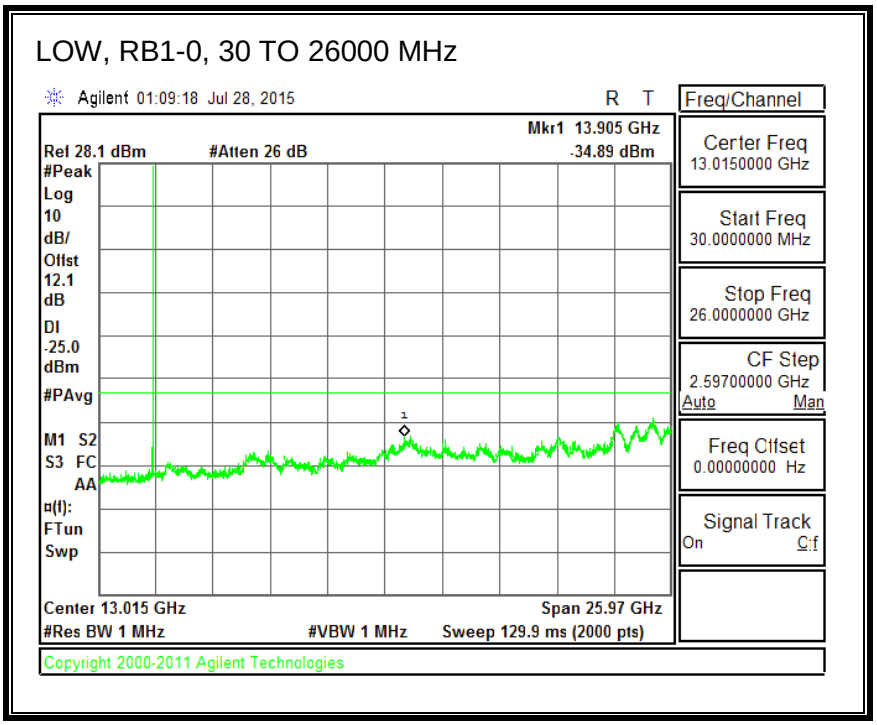
16QAM, (10.0 MHz BAND WIDTH)



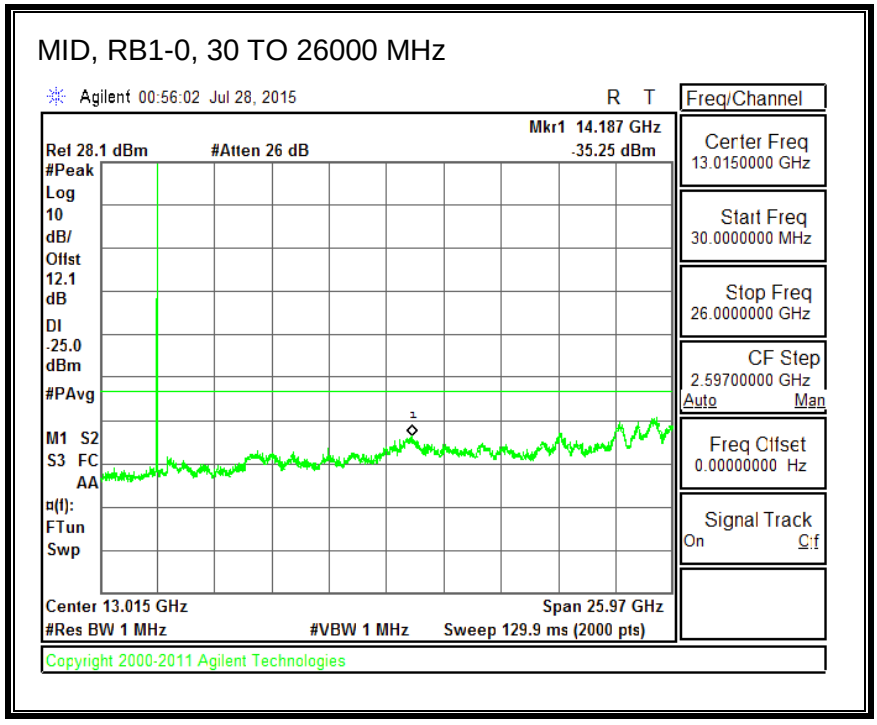
8.3.8. LTE BAND 41

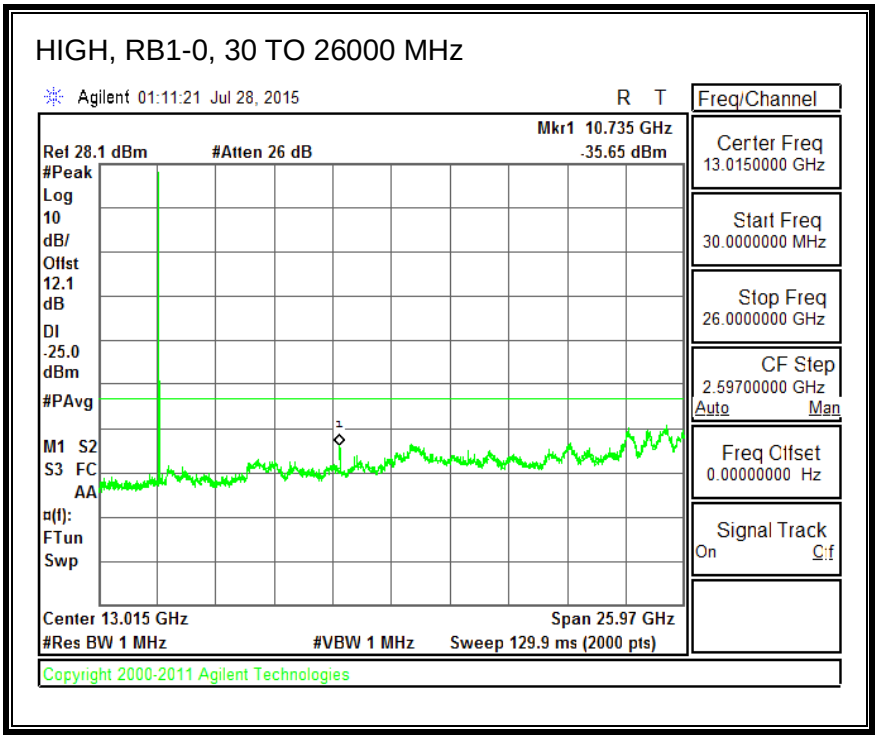
QPSK, (5.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 26000 MHz

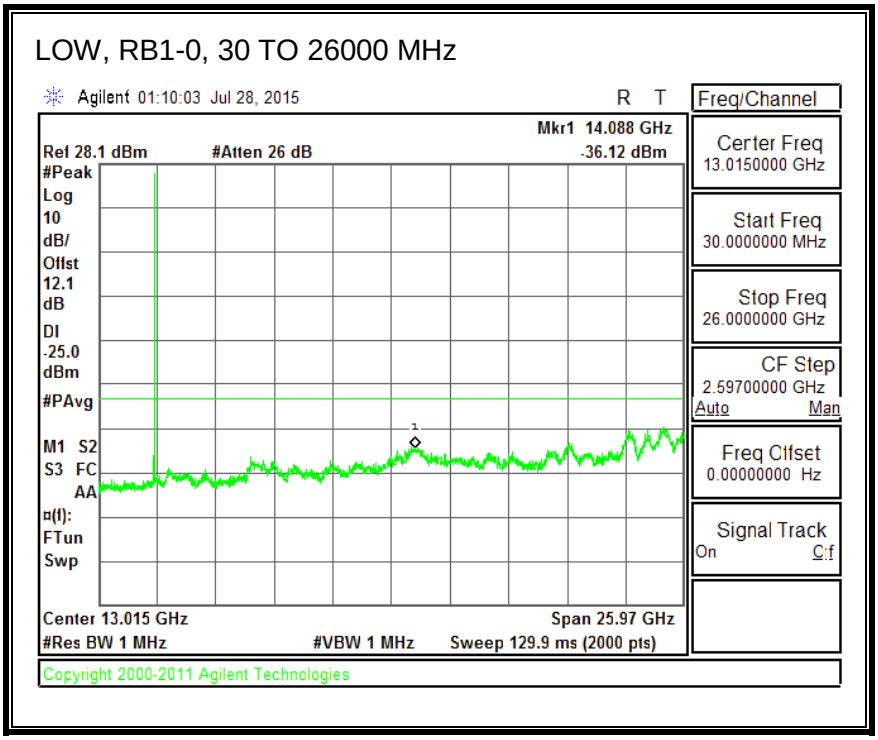


MID, RB1-0, 30 TO 26000 MHz

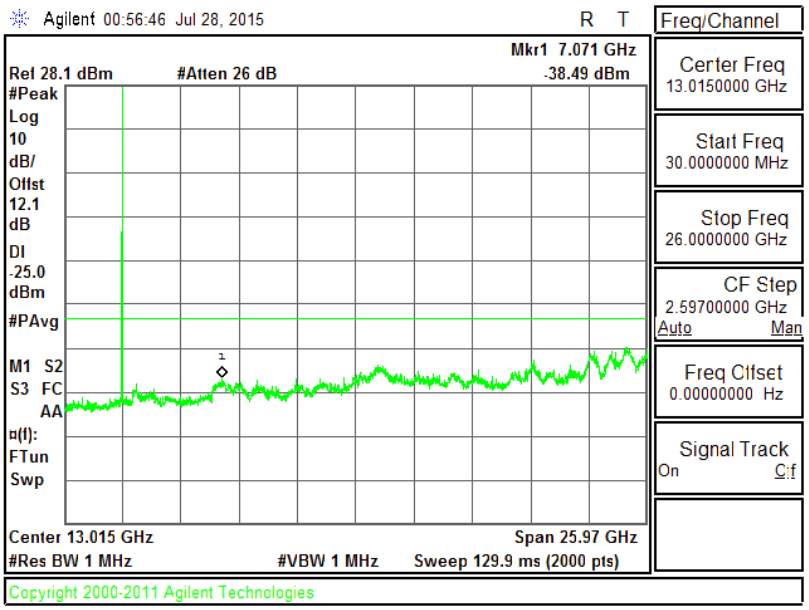




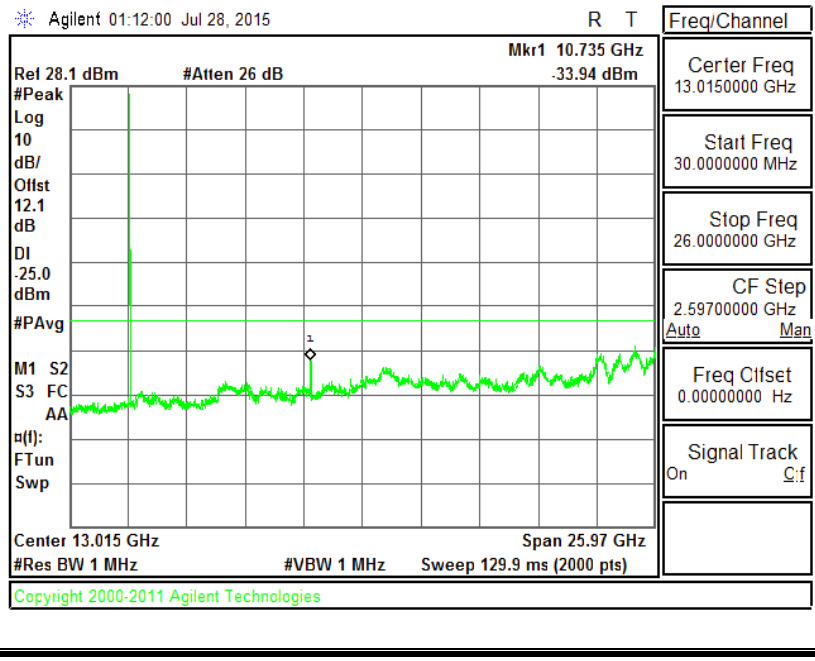
16QAM, (5.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 26000 MHz

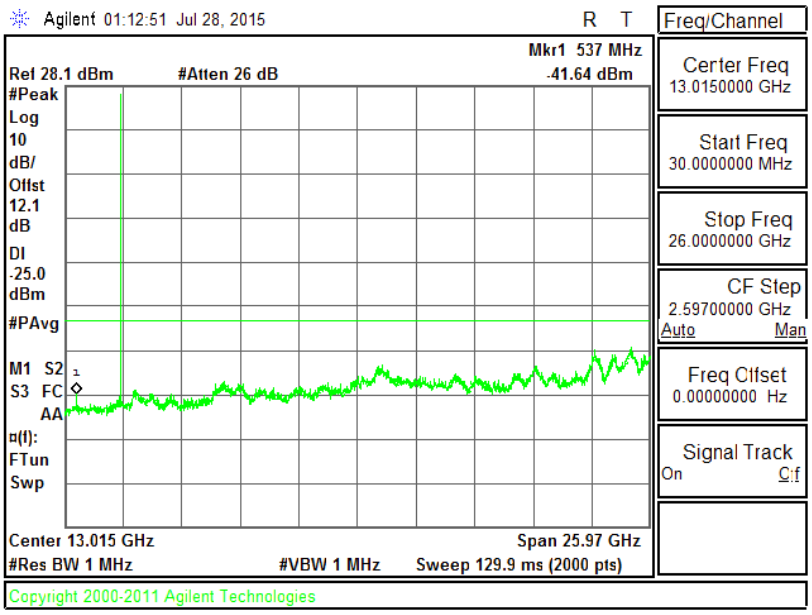


HIGH, RB1-0, 30 TO 26000 MHz

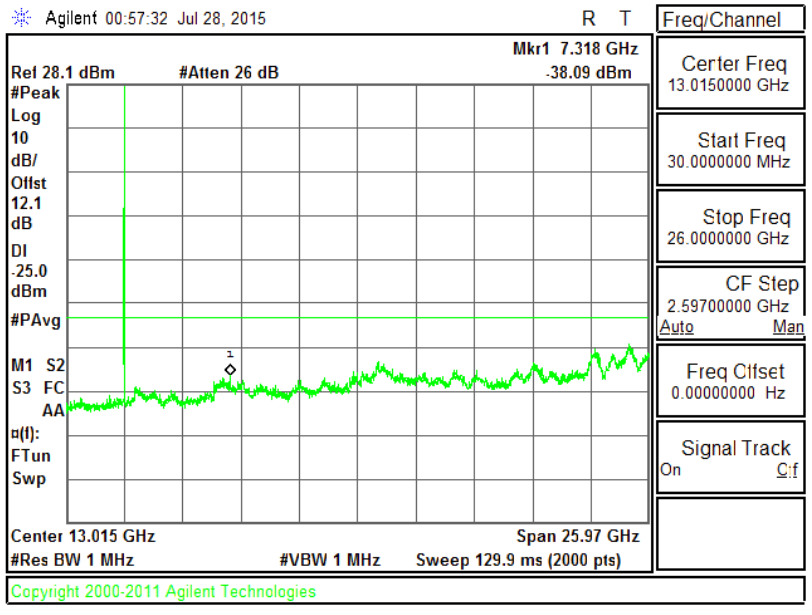


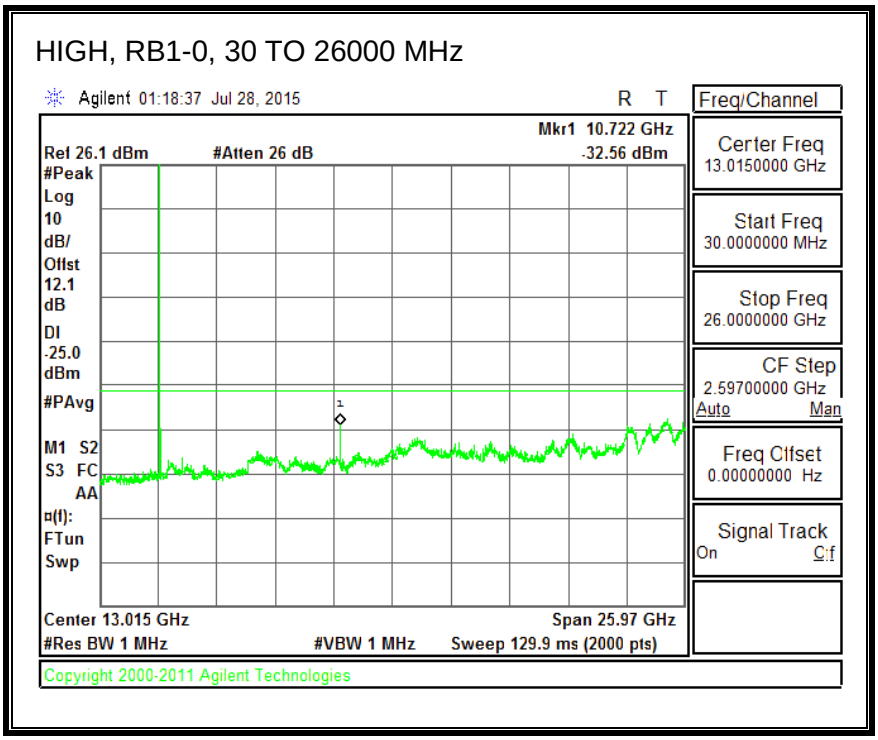
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 26000 MHz

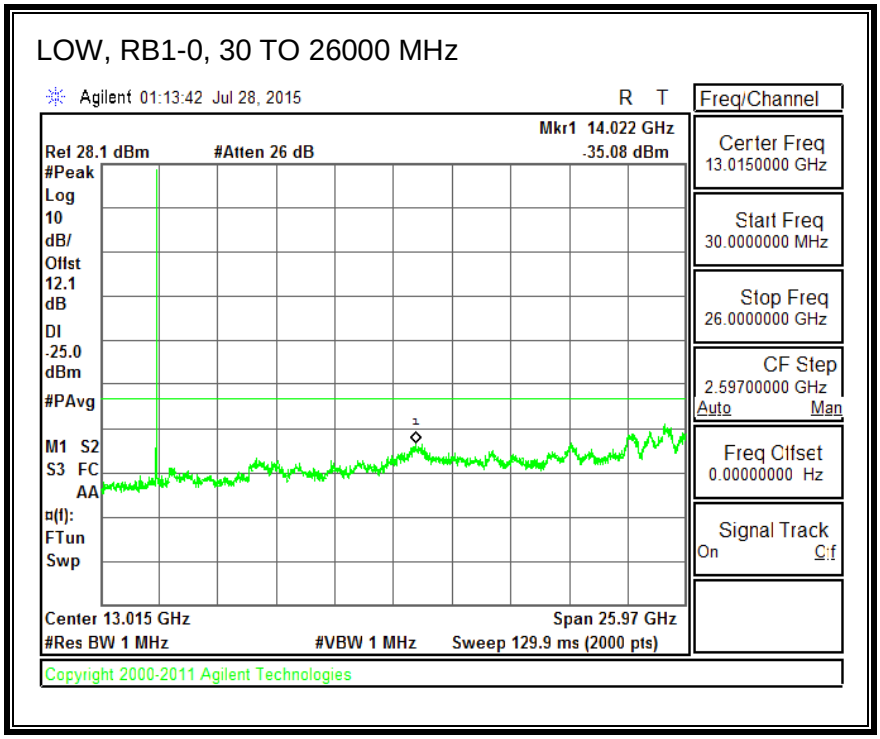


MID, RB1-0, 30 TO 26000 MHz

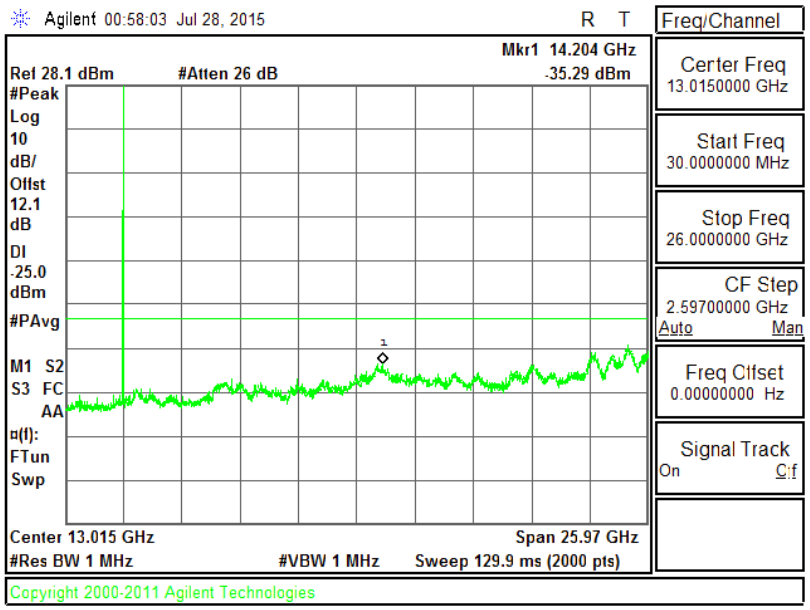




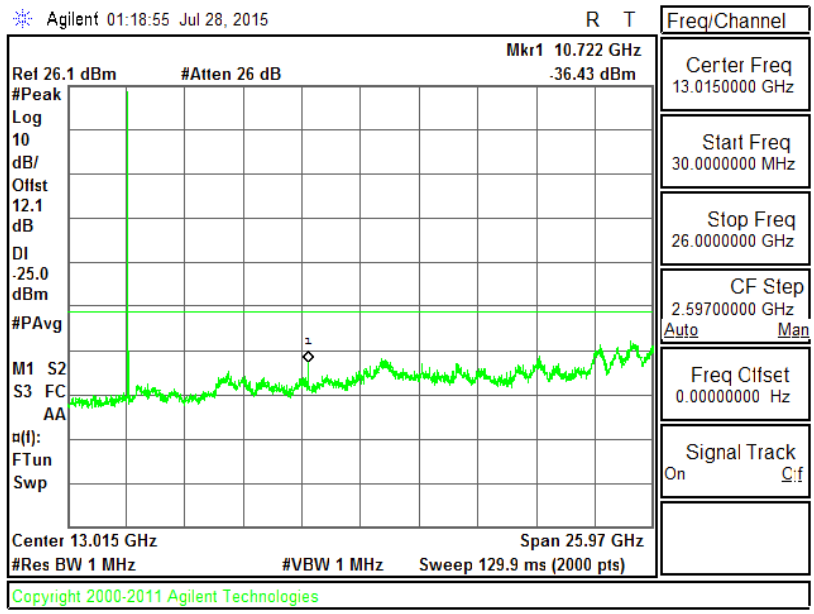
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 26000 MHz

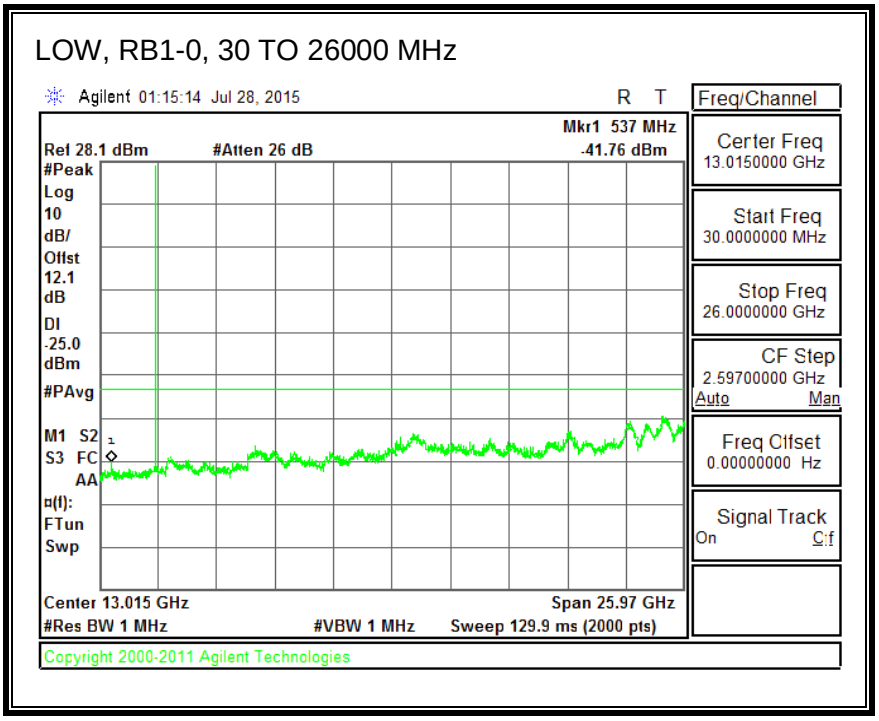


HIGH, RB1-0, 30 TO 26000 MHz

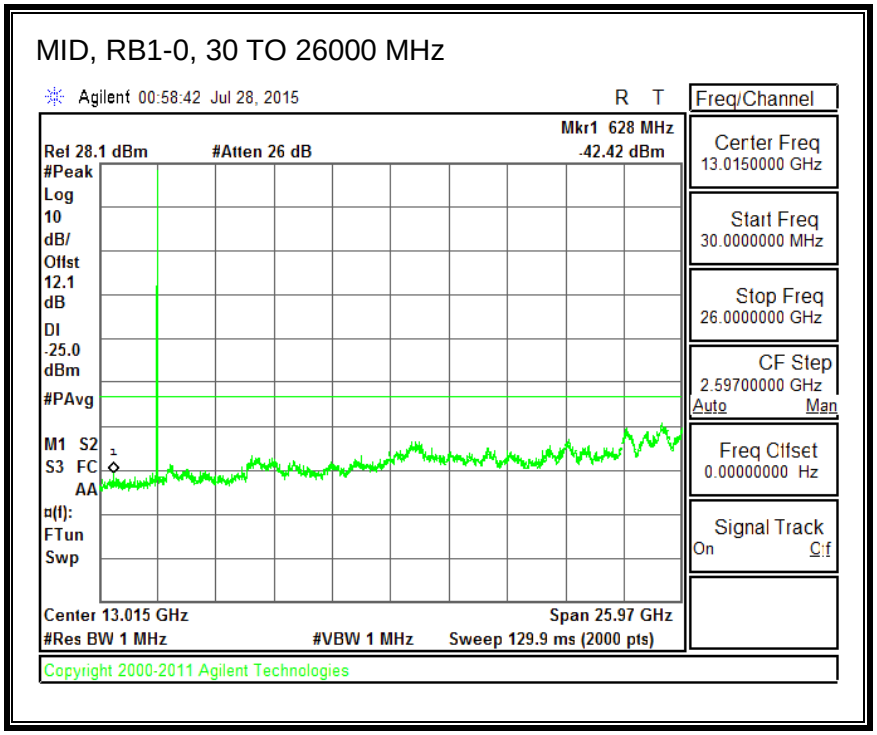


QPSK, (15.0 MHz BAND WIDTH)

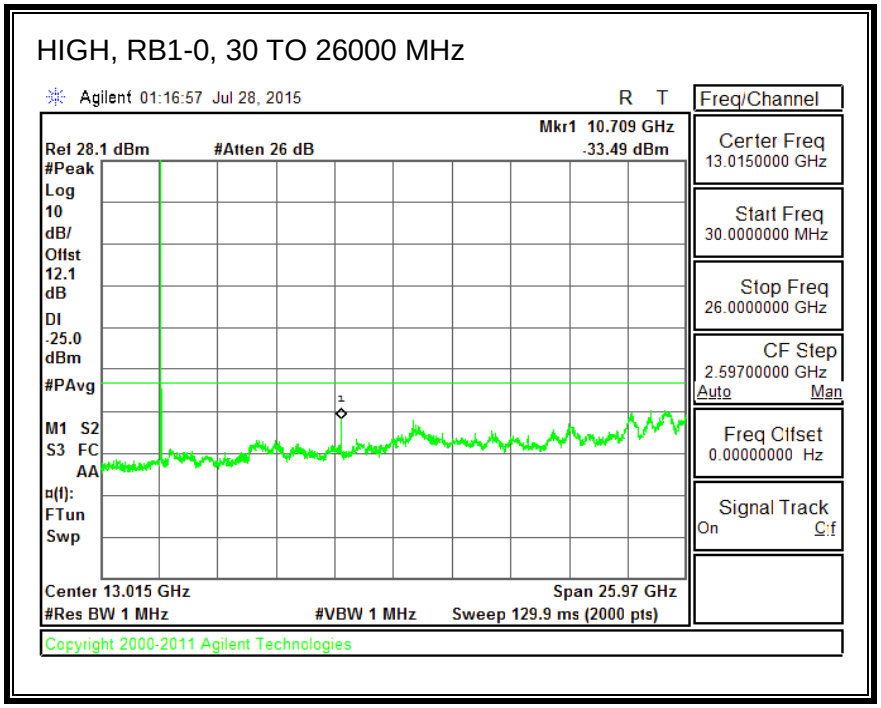
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

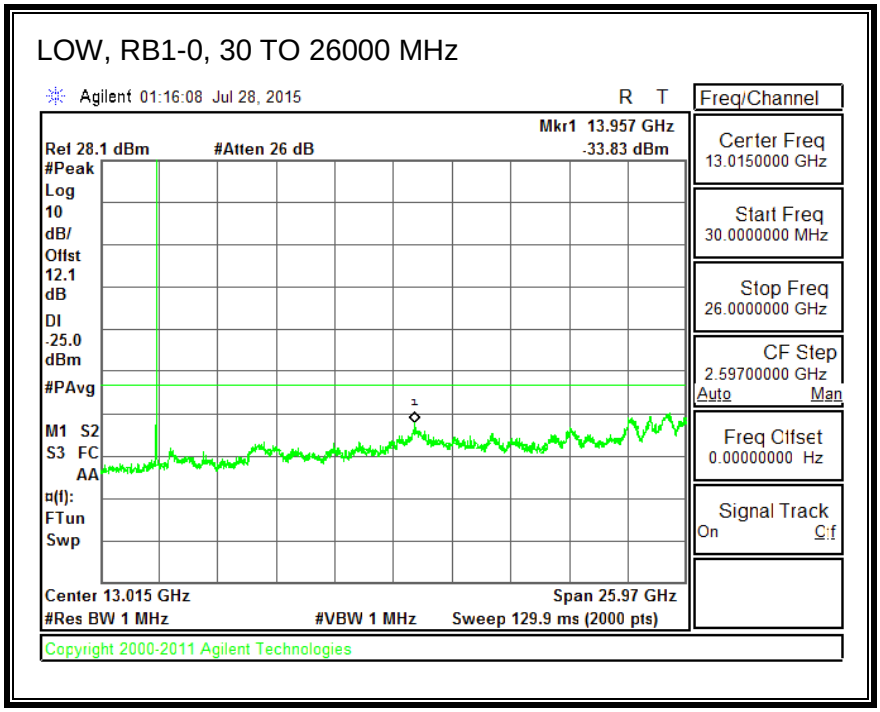


HIGH, RB1-0, 30 TO 26000 MHz

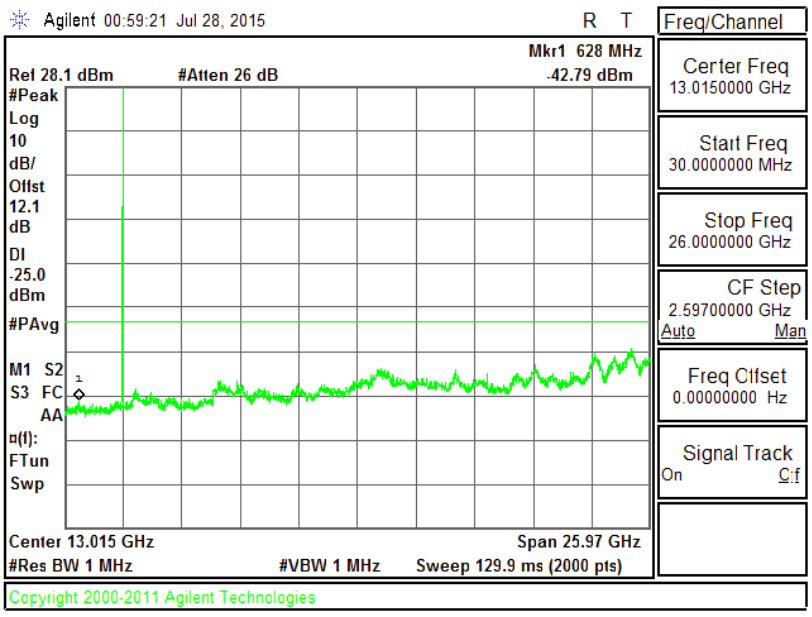


16QAM, (15.0 MHz BAND WIDTH)

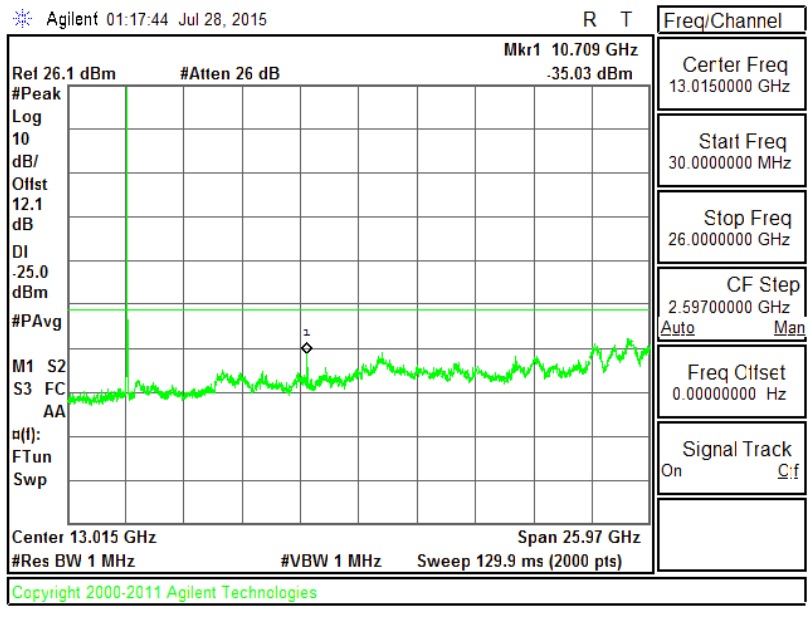
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

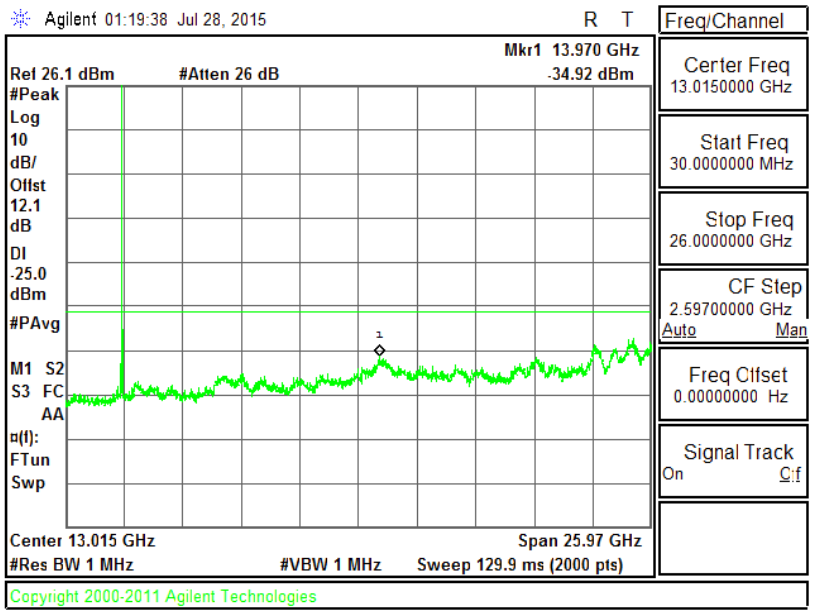


HIGH, RB1-0, 30 TO 26000 MHz

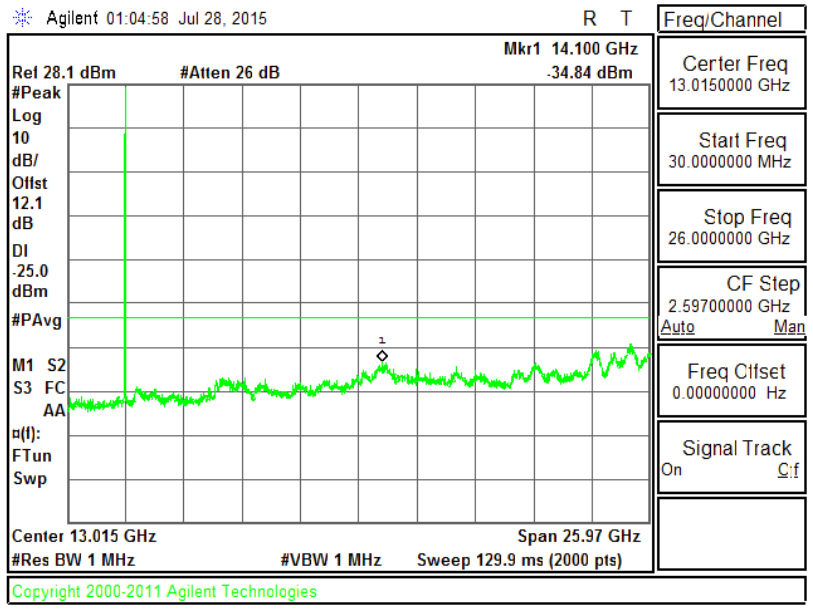


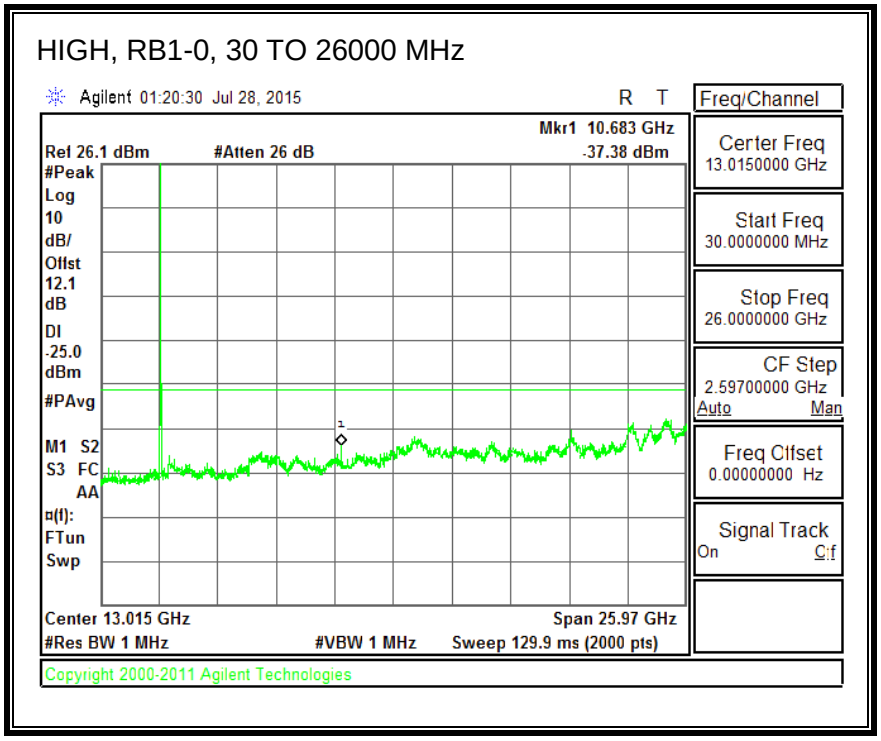
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 26000 MHz

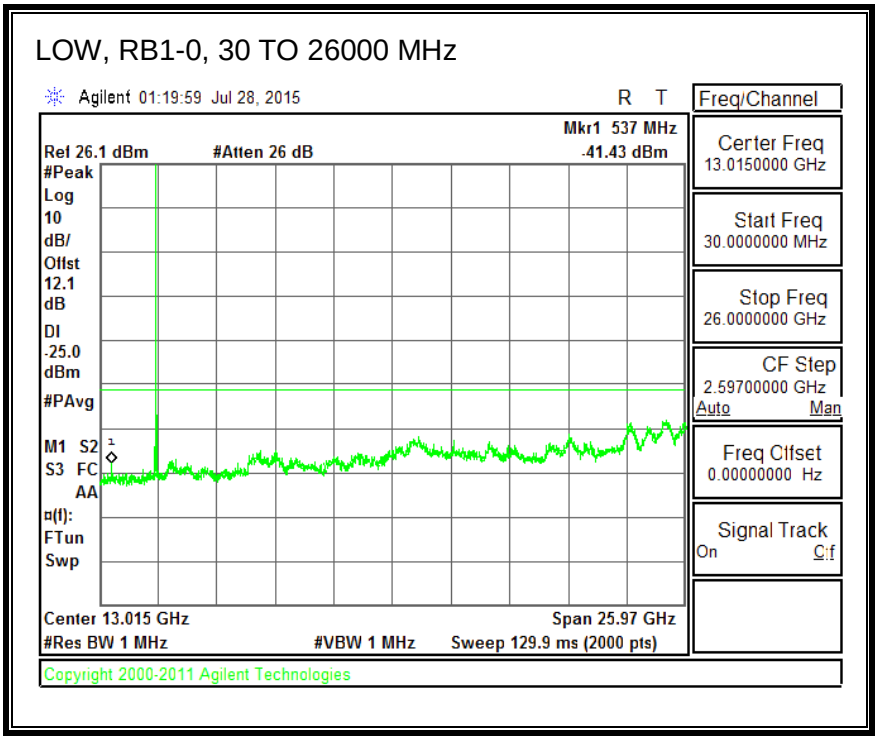


MID, RB1-0, 30 TO 26000 MHz

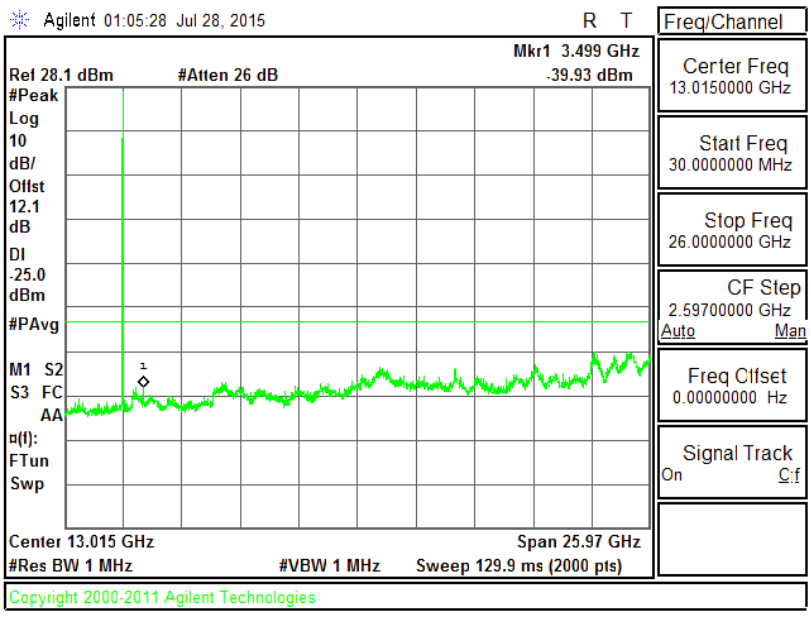




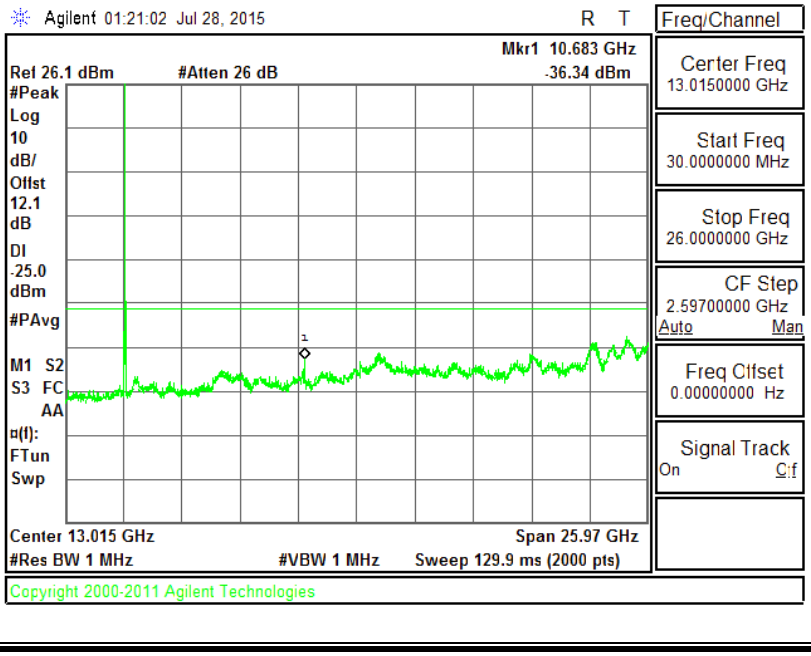
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 26000 MHz



HIGH, RB1-0, 30 TO 26000 MHz



8.4. FREQUENCY STABILITY

FCC: §2.1055, §22.355, §24.235, §27.54

LIMITS

§22.355 & RSS-132 5.3
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 & §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage, 3.4VDC, Normal, 3.8VDC and High voltage, 4.3VDC.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

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

See the following pages.

8.4.1. LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Limit		1850	1910		
Condition		F low @ -13dBm	F high @ -13dBm	Delta (Hz)	Frequency Stability (ppm)
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)		1851.0169	1908.9875		
Extreme (50C)		1851.0169	1908.9875	-2.6	-0.001
Extreme (40C)		1851.0169	1908.9875	-2.9	-0.002
Extreme (30C)		1851.0169	1908.9875	-2.6	-0.001
Extreme (10C)	Normal	1851.0169	1908.9875	-1.5	-0.001
Extreme (0C)		1851.0169	1908.9875	-1.7	-0.001
Extreme (-10C)		1851.0169	1908.9875	-3.2	-0.002
Extreme (-20C)		1851.0169	1908.9875	-2.0	-0.001
Extreme (-30C)		1851.0169	1908.9875	-3.1	-0.002
25C	10%	1851.0169	1908.9875	-1.8	-0.001
	-10%	1851.0169	1908.9875	-2.1	-0.001
	End Point	1851.0169	1908.9875	-1.5	-0.001

16QAM, (20MHz BANDWIDTH)

Condition		F low @ -13dBm	F high @ -13dBm	Delta (Hz)	Frequency Stability (ppm)
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)		1851.0153	1908.9920		
Extreme (50C)		1851.0153	1908.9920	-2.9	-0.002
Extreme (40C)		1851.0153	1908.9920	-3.3	-0.002
Extreme (30C)		1851.0153	1908.9920	-2.7	-0.001
Extreme (10C)	Normal	1851.0153	1908.9920	-2.5	-0.001
Extreme (0C)		1851.0153	1908.9920	-2.6	-0.001
Extreme (-10C)		1851.0153	1908.9920	-2.9	-0.002
Extreme (-20C)		1851.0153	1908.9920	-0.1	0.000
Extreme (-30C)		1851.0153	1908.9920	-2.0	-0.001
25C	10%	1851.0153	1908.9920	-2.6	-0.001
	-10%	1851.0153	1908.9920	-2.7	-0.001
	End Point	1851.0153	1908.9920	-3.2	-0.002

8.4.2. LTE BAND 4

QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1711.0140	1753.9909		
Extreme (50C)		1711.0140	1753.9909	-3.9	-0.002
Extreme (40C)		1711.0140	1753.9909	-2.6	-0.002
Extreme (30C)		1711.0140	1753.9909	-1.6	-0.001
Extreme (10C)		1711.0140	1753.9909	1.0	0.001
Extreme (0C)		1711.0140	1753.9909	0.6	0.000
Extreme (-10C)		1711.0140	1753.9909	0.1	0.000
Extreme (-20C)		1711.0140	1753.9909	-2.0	-0.001
Extreme (-30C)		1711.0140	1753.9909	-2.6	-0.002
25C	10%	1711.0140	1753.9909	-3.5	-0.002
	-10%	1711.0140	1753.9909	-2.4	-0.001
	End Point	1711.0140	1753.9909	-1.1	-0.001

16QAM, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1711.0089	1753.9861		
Extreme (50C)		1711.0089	1753.9861	-1.8	-0.001
Extreme (40C)		1711.0089	1753.9861	-1.1	-0.001
Extreme (30C)		1711.0089	1753.9861	-1.6	-0.001
Extreme (10C)		1711.0089	1753.9861	-1.1	-0.001
Extreme (0C)		1711.0089	1753.9861	-2.2	-0.001
Extreme (-10C)		1711.0089	1753.9861	-1.3	-0.001
Extreme (-20C)		1711.0089	1753.9861	-2.5	-0.001
Extreme (-30C)		1711.0089	1753.9861	-2.4	-0.001
25C	10%	1711.0089	1753.9861	-1.3	-0.001
	-10%	1711.0089	1753.9861	-0.3	0.000
	End Point	1711.0089	1753.9861	0.4	0.000

8.4.3. LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	824.5033	848.5019		
Extreme (50C)		824.5033	848.5019	-1.6	-0.002
Extreme (40C)		824.5033	848.5019	-1.9	-0.002
Extreme (30C)		824.5033	848.5019	-2.0	-0.002
Extreme (10C)		824.5033	848.5019	-0.9	-0.001
Extreme (0C)		824.5033	848.5019	-0.7	-0.001
Extreme (-10C)		824.5033	848.5019	-0.1	0.000
Extreme (-20C)		824.5033	848.5019	-0.4	-0.001
Extreme (-30C)		824.5033	848.5019	-1.9	-0.002
25C	10%	824.5033	848.5019	-0.6	-0.001
	-10%	824.5033	848.5019	-1.3	-0.002
	End Point	824.5033	848.5019	-2.8	-0.003

16QAM, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	824.5059	848.4933		
Extreme (50C)		824.5059	848.4933	-1.8	-0.002
Extreme (40C)		824.5059	848.4933	-2.0	-0.002
Extreme (30C)		824.5059	848.4933	-3.1	-0.004
Extreme (10C)		824.5059	848.4933	-1.0	-0.001
Extreme (0C)		824.5059	848.4933	-1.2	-0.001
Extreme (-10C)		824.5059	848.4933	-1.1	-0.001
Extreme (-20C)		824.5059	848.4933	-0.7	-0.001
Extreme (-30C)		824.5059	848.4933	-0.9	-0.001
25C	10%	824.5059	848.4933	-0.8	-0.001
	-10%	824.5059	848.4933	-1.0	-0.001
	End Point	824.5059	848.4933	-0.8	-0.001

8.4.4. LTE BAND 13

QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	777.5029	786.4963		
Extreme (50C)		777.5029	786.4963	-1.7	0.00
Extreme (40C)		777.5029	786.4963	-1.2	0.00
Extreme (30C)		777.5029	786.4963	-1.5	0.00
Extreme (10C)		777.5029	786.4963	-1.6	0.00
Extreme (0C)		777.5029	786.4963	-1.3	0.00
Extreme (-10C)		777.5029	786.4963	-1.5	0.00
Extreme (-20C)		777.5029	786.4963	-1.6	0.00
Extreme (-30C)		777.5029	786.4963	-1.1	0.00
25C	10%	777.5029	786.4963	-0.9	0.00
	-10%	777.5029	786.4963	0.3	0.00
	End Point	777.5029	786.4963	0.6	0.00

16QAM, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	777.5041	786.4947		
Extreme (50C)		777.5041	786.4947	-0.8	0.00
Extreme (40C)		777.5041	786.4947	-1.4	0.00
Extreme (30C)		777.5041	786.4947	-1.7	0.00
Extreme (10C)		777.5041	786.4947	1.0	0.00
Extreme (0C)		777.5041	786.4947	-0.1	0.00
Extreme (-10C)		777.5041	786.4947	-0.1	0.00
Extreme (-20C)		777.5041	786.4947	-1.4	0.00
Extreme (-30C)		777.5041	786.4947	-2.3	0.00
25C	10%	777.5041	786.4947	0.7	0.00
	-10%	777.5041	786.4947	-0.5	0.00
	End Point	777.5041	786.4947	-1.5	0.00

8.4.5. LTE BAND 17

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	704.5024	715.4941		
Extreme (50C)		704.5024	715.4941	-0.4	-0.001
Extreme (40C)		704.5024	715.4941	0.5	0.001
Extreme (30C)		704.5024	715.4941	0.7	0.001
Extreme (10C)		704.5024	715.4941	2.3	0.003
Extreme (0C)		704.5024	715.4941	-0.3	0.000
Extreme (-10C)		704.5024	715.4941	0.9	0.001
Extreme (-20C)		704.5024	715.4941	0.2	0.000
Extreme (-30C)		704.5024	715.4941	-0.2	0.000
25C	10%	704.5024	715.4941	1.7	0.002
	-10%	704.5024	715.4941	1.2	0.002
	End Point	704.5024	715.4941	-0.3	0.000

16QAM, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	704.5022	715.4932		
Extreme (50C)		704.5022	715.4932	-0.2	0.000
Extreme (40C)		704.5022	715.4932	-1.1	-0.002
Extreme (30C)		704.5022	715.4932	-1.3	-0.002
Extreme (10C)		704.5022	715.4932	1.9	0.003
Extreme (0C)		704.5022	715.4932	-1.3	-0.002
Extreme (-10C)		704.5022	715.4932	1.4	0.002
Extreme (-20C)		704.5022	715.4932	-0.9	-0.001
Extreme (-30C)		704.5022	715.4932	-0.6	-0.001
25C	10%	704.5022	715.4932	1.4	0.002
	-10%	704.5022	715.4932	1.7	0.002
	End Point	704.5022	715.4932	0.9	0.001

8.4.6. LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0107	1913.9867		
Extreme (50C)		1851.0107	1913.9867	4.0	0.002
Extreme (40C)		1851.0107	1913.9867	4.7	0.002
Extreme (30C)		1851.0107	1913.9867	3.7	0.002
Extreme (10C)		1851.0107	1913.9867	4.1	0.002
Extreme (0C)		1851.0107	1913.9867	4.1	0.002
Extreme (-10C)		1851.0107	1913.9867	4.4	0.002
Extreme (-20C)		1851.0107	1913.9867	2.9	0.002
Extreme (-30C)		1851.0107	1913.9867	3.4	0.002
25C	10%	1851.0107	1913.9867	6.1	0.003
	-10%	1851.0107	1913.9867	4.6	0.002
	End Point	1851.0107	1913.9867	6.3	0.003

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0198	1913.9834		
Extreme (50C)		1851.0198	1913.9834	5.4	0.003
Extreme (40C)		1851.0198	1913.9834	2.1	0.001
Extreme (30C)		1851.0198	1913.9834	3.3	0.002
Extreme (10C)		1851.0198	1913.9834	5.4	0.003
Extreme (0C)		1851.0198	1913.9834	4.3	0.002
Extreme (-10C)		1851.0198	1913.9834	5.9	0.003
Extreme (-20C)		1851.0198	1913.9834	2.1	0.001
Extreme (-30C)		1851.0198	1913.9834	3.9	0.002
25C	10%	1851.0198	1913.9834	5.1	0.003
	-10%	1851.0198	1913.9834	5.9	0.003
	End Point	1851.0198	1913.9834	6.4	0.003

8.4.7. LTE BAND 26

QPSK, (10MHz BANDWIDTH)

Limit		814	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5050	823.4979		
Extreme (50C)		814.5050	823.4979	-1.1	-0.001
Extreme (40C)		814.5050	823.4979	-1.1	-0.001
Extreme (30C)		814.5050	823.4979	-2.5	-0.003
Extreme (10C)		814.5050	823.4979	-1.7	-0.002
Extreme (0C)		814.5050	823.4979	1.4	0.002
Extreme (-10C)		814.5050	823.4979	0.9	0.001
Extreme (-20C)		814.5050	823.4979	0.8	0.001
Extreme (-30C)		814.5050	823.4979	-0.8	-0.001
25C	10%	814.5050	823.4979	-1.1	-0.001
	-10%	814.5050	823.4979	-1.9	-0.002
	End Point	814.5050	823.4979	-1.0	-0.001

16QAM, (10MHz BANDWIDTH)

Limit		814	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5069	823.4958		
Extreme (50C)		814.5069	823.4958	-2.0	-0.002
Extreme (40C)		814.5069	823.4958	-2.2	-0.003
Extreme (30C)		814.5069	823.4958	-2.1	-0.003
Extreme (10C)		814.5069	823.4958	-1.7	-0.002
Extreme (0C)		814.5069	823.4959	1.2	0.001
Extreme (-10C)		814.5069	823.4959	1.1	0.001
Extreme (-20C)		814.5069	823.4959	0.8	0.001
Extreme (-30C)		814.5069	823.4958	-0.2	0.000
25C	10%	814.5069	823.4958	-1.8	-0.002
	-10%	814.5069	823.4958	-0.9	-0.001
	End Point	814.5069	823.4958	-1.3	-0.002

8.4.8. LTE BAND 41

QPSK, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2496.9696	2689.0219		
Extreme (50C)		2496.9696	2689.0219	2.4	0.001
Extreme (40C)		2496.9696	2689.0219	2.1	0.001
Extreme (30C)		2496.9696	2689.0219	2.4	0.001
Extreme (10C)		2496.9696	2689.0219	4.8	0.002
Extreme (0C)		2496.9696	2689.0219	1.2	0.000
Extreme (-10C)		2496.9696	2689.0219	0.9	0.000
Extreme (-20C)		2496.9696	2689.0219	1.8	0.001
Extreme (-30C)		2496.9696	2689.0219	2.0	0.001
25C	10%	2496.9696	2689.0219	-2.1	-0.001
	-10%	2496.9696	2689.0219	-2.0	-0.001
	End Point	2496.9696	2689.0219	1.0	0.000

16QAM, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2497.0070	2689.0180		
Extreme (50C)		2497.0070	2689.0180	-3.2	-0.001
Extreme (40C)		2497.0070	2689.0180	-4.2	-0.002
Extreme (30C)		2497.0070	2689.0180	-3.3	-0.001
Extreme (10C)		2497.0070	2689.0180	-5.6	-0.002
Extreme (0C)		2497.0070	2689.0180	-5.1	-0.002
Extreme (-10C)		2497.0070	2689.0180	-3.3	-0.001
Extreme (-20C)		2497.0070	2689.0180	-1.2	0.000
Extreme (-30C)		2497.0070	2689.0180	-2.4	-0.001
25C	10%	2497.0070	2689.0180	-1.6	-0.001
	-10%	2497.0070	2689.0180	2.7	0.001
	End Point	2497.0070	2689.0180	4.3	0.002

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

FCC: §2.1046, §22.913, §24.232 and §27.50

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

ANSI / TIA / EIA 603D Clause 2.2.17
KDB 971168 D01 RF power output using broadband peak and average power meter method.

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

EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	1850.7	25.25	334.97
		1880.0	**27.54**	567.54
		1909.3	26.11	408.32
1.4MHz Band 16QAM	1/0	1850.7	24.25	266.07
		1880.0	**26.51**	447.71
		1909.3	25.07	321.37

EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0MHz Band QPSK	1/0	1851.5	25.97	395.37
		1880.0	**26.71**	468.81
		1908.5	25.66	368.13
3.0MHz Band 16QAM	1/0	1851.5	24.97	314.05
		1880.0	**25.81**	381.07
		1908.5	24.77	299.92

EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHz Band QPSK	1/0	1852.5	25.14	326.59
		1880.0	26.68	465.59
		1907.5	**26.74**	472.06
5.0MHz Band 16QAM	1/0	1852.5	24.14	259.42
		1880.0	25.71	372.39
		1907.5	**25.74**	374.97

EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHz Band QPSK	1/0	1855.0	25.61	363.92
		1880.0	**26.55**	451.86
		1905.0	25.86	385.48
10.0MHz Band 16QAM	1/0	1855.0	24.65	291.74
		1880.0	**25.51**	355.63
		1905.0	24.85	305.49

EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15MHz Band QPSK	1/0	1857.5	24.75	298.54
		1880.0	**27.18**	522.40
		1902.5	25.99	397.19
15MHz Band 16QAM	1/0	1857.5	23.75	237.14
		1880.0	**26.21**	417.83
		1902.5	25.04	319.15

EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHz Band QPSK	1/0	1860.0	24.80	302.00
		1880.0	**26.25**	421.70
		1900.0	25.32	340.41
20MHz Band 16QAM	1/0	1860.0	23.75	237.14
		1880.0	**25.21**	331.89
		1900.0	24.33	271.02

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1710.7	24.46	279.25
		1732.5	**25.60**	363.08
		1754.3	24.67	293.09
1.4 MHZ BAND 16QAM	1/0	1710.7	23.46	221.82
		1732.5	**24.61**	289.07
		1754.3	23.68	233.35

EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1711.5	25.39	345.94
		1732.5	**25.53**	357.27
		1753.5	24.67	293.09
3.0 MHZ BAND 16QAM	1/0	1711.5	24.38	274.16
		1732.5	**24.51**	282.49
		1753.5	23.68	233.35

EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1712.5	25.43	349.14
		1732.5	**25.59**	362.24
		1752.5	25.47	352.37
5.0 MHZ BAND 16QAM	1/0	1712.5	24.43	277.33
		1732.5	**24.61**	289.07
		1752.5	24.48	280.54

EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	1715.0	25.29	338.06
		1732.5	**25.98**	396.28
		1750.0	25.51	355.63
10.0 MHZ BAND 16QAM	1/0	1715.0	24.28	267.92
		1732.5	**25.11**	324.34
		1750.0	24.49	281.19

EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1717.5	25.35	342.77
		1732.5	**25.85**	384.59
		1747.5	24.89	308.32
15.0 MHZ BAND 16QAM	1/0	1717.5	24.37	273.53
		1732.5	**24.91**	309.74
		1747.5	23.89	244.91

EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1720.0	**25.54**	358.10
		1732.5	24.53	283.79
		1745.0	24.90	309.03
20.0 MHZ BAND 16QAM	1/0	1720.0	**24.54**	284.45
		1732.5	23.51	224.39
		1745.0	24.00	251.19

ERP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	824.7	**21.24**	133.05
		836.5	20.32	107.65
		848.3	21.10	128.82
1.4MHz Band 16QAM	1/0	824.7	**20.19**	104.47
		836.5	19.32	85.51
		848.3	20.10	102.33

ERP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	825.5	21.19	131.52
		836.5	**21.53**	142.23
		847.5	21.01	126.18
3.0 MHZ BAND 16QAM	1/0	825.5	20.19	104.47
		836.5	**20.52**	112.72
		847.5	20.00	100.00

ERP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
5MHz Band QPSK	1/0	826.5	**22.19**	165.58
		836.5	21.46	139.96
		846.5	21.50	141.25
5MHz Band 16QAM	1/0	826.5	**21.49**	140.93
		836.5	20.62	115.35
		846.5	20.50	112.20

ERP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	829.0	21.09	128.53
		836.5	**21.92**	155.60
		844.0	21.60	144.54
10.0 MHZ BAND 16QAM	1/0	829.0	20.09	102.09
		836.5	**21.02**	126.47
		844.0	20.60	114.82

ERP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	779.5	19.52	89.54
		782.0	**20.83**	121.06
		784.5	19.78	95.06
5.0 MHZ BAND 16QAM	1/0	779.5	19.39	86.90
		782.0	19.93	98.40
		784.5	**19.98**	99.54

ERP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10 MHZ BAND QPSK	1/0	782.0	**21.43**	139.00
10 MHz BAND 16QAM	1/0		**20.53**	112.98

ERP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5MHz Band QPSK	1/0	706.5	18.92	77.98
		710.0	**19.98**	99.54
		713.5	19.28	84.72
5MHz Band 16QAM	1/0	706.5	18.82	76.21
		710.0	18.99	79.25
		713.5	**19.18**	82.79

EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	710.0	**19.89**	97.50
10.0 MHZ BAND 16QAM		710.0	**18.89**	77.45

EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1850.7	24.10	257.04
		1882.5	**25.62**	364.75
		1914.3	24.55	285.10
1.4 MHZ BAND 16QAM	1/0	1850.7	23.13	205.59
		1882.5	**24.76**	299.23
		1914.3	23.55	226.46

EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1851.5	24.18	261.82
		1882.5	25.63	365.59
		1913.5	**25.65**	367.28
3.0 MHZ BAND 16QAM	1/0	1851.5	23.13	205.59
		1882.5	**24.76**	299.23
		1913.5	24.65	291.74

EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1852.5	24.07	255.27
		1882.5	**25.89**	388.15
		1912.5	25.69	370.68
5.0 MHZ BAND 16QAM	1/0	1852.5	23.03	200.91
		1882.5	**24.96**	313.33
		1912.5	24.64	291.07

EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	1855.0	24.13	258.82
		1882.5	**26.00**	398.11
		1910.0	25.05	319.89
10.0 MHZ BAND 16QAM	1/0	1855.0	23.13	205.59
		1882.5	**24.96**	313.33
		1910.0	24.03	252.93

EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1857.5	24.26	266.69
		1882.5	**26.11**	408.32
		1907.5	25.21	331.89
15.0 MHZ BAND 16QAM	1/0	1857.5	23.32	214.78
		1882.5	**25.06**	320.63
		1907.5	24.32	270.40

EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1860.0	24.08	255.86
		1882.5	25.96	394.46
		1905.0	**26.05**	402.72
20.0 MHZ BAND 16QAM	1/0	1860.0	23.12	205.12
		1882.5	24.96	313.33
		1905.0	**25.01**	316.96

ERP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	814.7	23.29	213.30
		819.0	23.87	243.78
		823.3	**23.98**	250.03
1.4 MHZ BAND 16QAM	1/0	814.7	22.29	169.43
		819.0	22.82	191.43
		823.3	**23.00**	199.53

ERP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	815.5	23.29	213.30
		819.0	23.75	237.14
		822.5	**24.03**	252.93
3.0 MHZ BAND 16QAM	1/0	815.5	22.39	173.38
		819.0	22.82	191.43
		822.5	**23.20**	208.93

ERP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	816.5	23.64	231.21
		819.0	23.70	234.42
		821.5	**23.96**	248.89
5.0 MHZ BAND 16QAM	1/0	816.5	22.69	185.78
		819.0	22.72	187.07
		821.5	**23.00**	199.53

ERP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	819.0	**23.17**	207.49
10.0 MHZ BAND 16QAM	1/0	819.0	**22.37**	172.58

EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2498.5	**30.34**	1081.43
		2593.0	29.67	926.83
		2687.5	29.74	941.89
5.0 MHZ BAND 16QAM	25/0	24.98.5	**29.54**	899.50
		2593.0	28.77	753.36
		2687.5	28.87	770.90

EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2501.0	**30.52**	1127.20
		2593.0	29.86	968.28
		2685.0	30.13	1030.39
10.0 MHZ BAND 16QAM	50/0	2501.0	**29.72**	937.56
		2593.0	28.98	790.68
		2685.0	29.43	877.00

EIRP POWER FOR LTE BAND 41(15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2503.5	**30.74**	1185.77
		2595.0	30.00	1000.00
		2682.5	30.42	1101.54
15.0 MHZ BAND 16QAM	75/0	2503.5	**29.99**	997.70
		2595.0	29.05	803.53
		2682.5	29.53	897.43

EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2506.0	**31.23**	1327.39
		2593.0	29.91	979.49
		2680.0	29.93	984.01
20.0 MHZ BAND 16QAM	100/0	2506.0	**30.55**	1135.01
		2593.0	29.01	796.16
		2680.0	29.02	797.99

LTE BAND 2

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

High Frequency Fundamental Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8507	18.2	V	0.98	8.05	25.25	33.0	-7.8	
1.8507	12.9	H	0.98	8.05	19.99	33.0	-13.0	
Mid Ch								
1.8800	20.5	V	0.98	8.03	27.54	33.0	-5.5	
1.8800	14.3	H	0.98	8.03	21.34	33.0	-11.7	
High Ch								
1.9093	19.0	V	0.98	8.05	26.11	33.0	-6.9	
1.9093	15.0	H	0.98	8.05	22.05	33.0	-10.9	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8507	17.2	V	0.98	8.05	24.25	33.0	-8.8	
1.8507	11.9	H	0.98	8.05	18.97	33.0	-14.0	
Mid Ch								
1.8800	19.5	V	0.98	8.03	26.51	33.0	-6.5	
1.8800	13.2	H	0.98	8.03	20.29	33.0	-12.7	
High Ch								
1.9093	18.0	V	0.98	8.05	25.07	33.0	-7.9	
1.9093	13.9	H	0.98	8.05	21.02	33.0	-12.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8515	18.9	V	0.98	8.05	25.97	33.0	-7.0	
1.8515	8.2	H	0.98	8.05	15.32	33.0	-17.7	
Mid Ch								
1.8800	19.7	V	0.98	8.03	26.71	33.0	-6.3	
1.8800	9.6	H	0.98	8.03	16.61	33.0	-16.4	
High Ch								
1.9085	18.6	V	0.98	8.05	25.66	33.0	-7.3	
1.9085	9.0	H	0.98	8.05	16.03	33.0	-17.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8515	17.9	V	0.98	8.05	24.97	33.0	-8.0	
1.8515	7.2	H	0.98	8.05	14.27	33.0	-18.7	
Mid Ch								
1.8800	18.8	V	0.98	8.03	25.81	33.0	-7.2	
1.8800	8.6	H	0.98	8.03	15.69	33.0	-17.3	
High Ch								
1.9085	17.7	V	0.98	8.05	24.77	33.0	-8.2	
1.9085	7.9	H	0.98	8.05	15.02	33.0	-18.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8525	18.1	V	0.98	8.05	25.14	33.0	-7.9	
1.8525	11.2	H	0.98	8.05	18.25	33.0	-14.7	
Mid Ch								
1.8800	19.6	V	0.98	8.03	26.68	33.0	-6.3	
1.8800	9.3	H	0.98	8.03	16.32	33.0	-16.7	
High Ch								
1.9075	19.7	V	0.98	8.04	26.74	33.0	-6.3	
1.9075	8.7	H	0.98	8.04	15.78	33.0	-17.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	17.1	V	0.98	8.05	24.14	33.0	-8.9	
1.853	10.3	H	0.98	8.05	17.36	33.0	-15.6	
Mid Ch								
1.880	18.7	V	0.98	8.03	25.71	33.0	-7.3	
1.880	8.2	H	0.98	8.03	15.29	33.0	-17.7	
High Ch								
1.908	18.7	V	0.98	8.04	25.74	33.0	-7.3	
1.908	7.7	H	0.98	8.04	14.81	33.0	-18.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8550	18.5	V	0.98	8.05	25.61	33.0	-7.4	
1.8550	11.1	H	0.98	8.05	18.17	33.0	-14.8	
Mid Ch								
1.8800	19.5	V	0.98	8.03	26.55	33.0	-6.5	
1.8800	9.8	H	0.98	8.03	16.84	33.0	-16.2	
High Ch								
1.9050	18.8	V	0.98	8.04	25.86	33.0	-7.1	
1.9050	9.7	H	0.98	8.04	16.80	33.0	-16.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8550	17.6	V	0.98	8.05	24.65	33.0	-8.3	
1.8550	10.2	H	0.98	8.05	17.26	33.0	-15.7	
Mid Ch								
1.8800	18.5	V	0.98	8.03	25.51	33.0	-7.5	
1.8800	8.7	H	0.98	8.03	15.79	33.0	-17.2	
High Ch								
1.9050	17.8	V	0.98	8.04	24.85	33.0	-8.1	
1.9050	8.7	H	0.98	8.04	15.80	33.0	-17.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8575	17.7	V	0.98	8.04	24.75	33.0	-8.2	
1.8575	10.9	H	0.98	8.04	17.99	33.0	-15.0	
Mid Ch								
1.8800	20.1	V	0.98	8.03	27.18	33.0	-5.8	
1.8800	13.1	H	0.98	8.03	20.16	33.0	-12.8	
High Ch								
1.9025	18.9	V	0.98	8.03	25.99	33.0	-7.0	
1.9025	11.3	H	0.98	8.03	18.39	33.0	-14.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.8575	16.7	V	0.98	8.04	23.75	33.0	-9.2	
1.8575	9.9	H	0.98	8.04	16.96	33.0	-16.0	
Mid Ch								
1.8800	19.2	V	0.98	8.03	26.21	33.0	-6.8	
1.8800	12.1	H	0.98	8.03	19.19	33.0	-13.8	
High Ch								
1.9025	18.0	V	0.98	8.03	25.04	33.0	-8.0	
1.9025	10.4	H	0.98	8.03	17.50	33.0	-15.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	17.7	V	0.98	8.04	24.80	33.0	-8.2	
1.860	11.7	H	0.98	8.04	18.80	33.0	-14.2	
Mid Ch								
1.880	19.2	V	0.98	8.03	26.25	33.0	-6.8	
1.880	13.1	H	0.98	8.03	20.18	33.0	-12.8	
High Ch								
1.900	18.3	V	0.98	8.02	25.32	33.0	-7.7	
1.900	10.9	H	0.98	8.02	17.97	33.0	-15.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: G. Chan
Configuration: EUT only
Mode: LTE Band 2 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	16.7	V	0.98	8.04	23.75	33.0	-9.3	
1.860	10.8	H	0.98	8.04	17.86	33.0	-15.1	
Mid Ch								
1.880	18.2	V	0.98	8.03	25.21	33.0	-7.8	
1.880	12.1	H	0.98	8.03	19.19	33.0	-13.8	
High Ch								
1.900	17.3	V	0.98	8.02	24.33	33.0	-8.7	
1.900	9.9	H	0.98	8.02	16.99	33.0	-16.0	

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9.1.1. LTE BAND 4

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	17.1	V	0.95	8.27	24.46	30.0	-5.5	
1.711	11.4	H	0.95	8.27	18.75	30.0	-11.2	
Mid Ch								
1.733	18.3	V	0.95	8.23	25.60	30.0	-4.4	
1.733	12.6	H	0.95	8.23	19.88	30.0	-10.1	
High Ch								
1.754	17.4	V	0.95	8.18	24.67	30.0	-5.3	
1.754	11.8	H	0.95	8.18	19.04	30.0	-11.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	16.1	V	0.95	8.27	23.46	30.0	-6.5	
1.711	10.5	H	0.95	8.27	17.80	30.0	-12.2	
Mid Ch								
1.733	17.3	V	0.95	8.23	24.61	30.0	-5.4	
1.733	11.6	H	0.95	8.23	18.92	30.0	-11.1	
High Ch								
1.754	16.4	V	0.95	8.18	23.68	30.0	-6.3	
1.754	10.8	H	0.95	8.18	18.01	30.0	-12.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	18.1	V	0.95	8.27	25.39	30.0	-4.6	
1.712	10.6	H	0.95	8.27	17.88	30.0	-12.1	
Mid Ch								
1.733	18.3	V	0.95	8.23	25.53	30.0	-4.5	
1.733	12.7	H	0.95	8.23	19.95	30.0	-10.1	
High Ch								
1.754	17.4	V	0.95	8.18	24.67	30.0	-5.3	
1.754	12.9	H	0.95	8.18	20.15	30.0	-9.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	17.1	V	0.95	8.27	24.38	30.0	-5.6	
1.712	9.7	H	0.95	8.27	17.00	30.0	-13.0	
Mid Ch								
1.733	17.2	V	0.95	8.23	24.51	30.0	-5.5	
1.733	11.5	H	0.95	8.23	18.82	30.0	-11.2	
High Ch								
1.754	16.4	V	0.95	8.18	23.68	30.0	-6.3	
1.754	11.9	H	0.95	8.18	19.11	30.0	-10.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	18.1	V	0.95	8.27	25.43	30.0	-4.6	
1.713	11.4	H	0.95	8.27	18.76	30.0	-11.2	
Mid Ch								
1.733	18.3	V	0.95	8.23	25.59	30.0	-4.4	
1.733	12.6	H	0.95	8.23	19.83	30.0	-10.2	
High Ch								
1.753	18.2	V	0.95	8.18	25.47	30.0	-4.5	
1.753	12.8	H	0.95	8.18	20.00	30.0	-10.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	17.1	V	0.95	8.27	24.43	30.0	-5.6	
1.713	10.6	H	0.95	8.27	17.90	30.0	-12.1	
Mid Ch								
1.733	17.3	V	0.95	8.23	24.61	30.0	-5.4	
1.733	11.5	H	0.95	8.23	18.82	30.0	-11.2	
High Ch								
1.753	17.2	V	0.95	8.18	24.48	30.0	-5.5	
1.753	11.8	H	0.95	8.18	19.01	30.0	-11.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	18.0	V	0.95	8.26	25.29	30.0	-4.7	
1.715	11.7	H	0.95	8.26	18.98	30.0	-11.0	
Mid Ch								
1.733	18.7	V	0.95	8.23	25.98	30.0	-4.0	
1.733	12.7	H	0.95	8.23	20.00	30.0	-10.0	
High Ch								
1.750	18.3	V	0.95	8.19	25.51	30.0	-4.5	
1.750	11.6	H	0.95	8.19	18.82	30.0	-11.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	17.0	V	0.95	8.26	24.28	30.0	-5.7	
1.715	10.7	H	0.95	8.26	17.99	30.0	-12.0	
Mid Ch								
1.733	17.8	V	0.95	8.23	25.11	30.0	-4.9	
1.733	11.8	H	0.95	8.23	19.12	30.0	-10.9	
High Ch								
1.750	17.2	V	0.95	8.19	24.49	30.0	-5.5	
1.750	10.7	H	0.95	8.19	17.92	30.0	-12.1	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	18.0	V	0.95	8.26	25.35	30.0	-4.6	
1.718	11.5	H	0.95	8.26	18.76	30.0	-11.2	
Mid Ch								
1.733	18.6	V	0.95	8.23	25.85	30.0	-4.2	
1.733	12.7	H	0.95	8.23	20.00	30.0	-10.0	
High Ch								
1.748	17.6	V	0.95	8.19	24.89	30.0	-5.1	
1.748	12.4	H	0.95	8.19	19.65	30.0	-10.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	17.1	V	0.95	8.26	24.37	30.0	-5.6	
1.718	10.5	H	0.95	8.26	17.79	30.0	-12.2	
Mid Ch								
1.733	17.6	V	0.95	8.23	24.91	30.0	-5.1	
1.733	11.8	H	0.95	8.23	19.12	30.0	-10.9	
High Ch								
1.748	16.6	V	0.95	8.19	23.89	30.0	-6.1	
1.748	11.4	H	0.95	8.19	18.62	30.0	-11.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	18.2	V	0.95	8.25	25.54	30.0	-4.5	
1.720	11.5	H	0.95	8.25	18.83	30.0	-11.2	
Mid Ch								
1.733	17.3	V	0.95	8.23	24.53	30.0	-5.5	
1.733	12.4	H	0.95	8.23	19.64	30.0	-10.4	
High Ch								
1.745	17.6	V	0.95	8.20	24.90	30.0	-5.1	
1.745	11.9	H	0.95	8.20	19.14	30.0	-10.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/30/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 4 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	17.2	V	0.95	8.25	24.54	30.0	-5.5	
1.720	10.5	H	0.95	8.25	17.78	30.0	-12.2	
Mid Ch								
1.733	16.2	V	0.95	8.23	23.51	30.0	-6.5	
1.733	11.4	H	0.95	8.23	18.72	30.0	-11.3	
High Ch								
1.745	16.7	V	0.95	8.20	24.00	30.0	-6.0	
1.745	10.9	H	0.95	8.20	18.13	30.0	-11.9	

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9.1.2. LTE BAND 5

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	20.86	V	0.6	0.0	20.24	22.39	38.45	40.60	-18.2	
824.70	21.86	H	0.6	0.0	21.24	23.39	38.45	40.60	-17.2	
Mid Ch										
836.50	20.32	V	0.6	0.0	19.70	21.85	38.45	40.60	-18.8	
836.50	20.94	H	0.6	0.0	20.32	22.47	38.45	40.60	-18.1	
High Ch										
848.30	18.76	V	0.6	0.0	18.14	20.29	38.45	40.60	-20.3	
848.30	21.72	H	0.6	0.0	21.10	23.25	38.45	40.60	-17.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	19.86	V	0.6	0.0	19.24	21.39	38.45	40.60	-19.2	
824.70	20.81	H	0.6	0.0	20.19	22.34	38.45	40.60	-18.3	
Mid Ch										
836.50	19.32	V	0.6	0.0	18.70	20.85	38.45	40.60	-19.8	
836.50	19.94	H	0.6	0.0	19.32	21.47	38.45	40.60	-19.1	
High Ch										
848.30	17.76	V	0.6	0.0	17.14	19.29	38.45	40.60	-21.3	
848.30	20.72	H	0.6	0.0	20.10	22.25	38.45	40.60	-18.4	

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QPSK EIRP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	21.04	V	0.6	0.0	20.42	22.57	38.45	40.60	-18.0	
825.50	21.81	H	0.6	0.0	21.19	23.34	38.45	40.60	-17.3	
Mid Ch										
836.50	20.52	V	0.6	0.0	19.90	22.05	38.45	40.60	-18.6	
836.50	22.15	H	0.6	0.0	21.53	23.68	38.45	40.60	-16.9	
High Ch										
847.50	20.03	V	0.6	0.0	19.41	21.56	38.45	40.60	-19.0	
847.50	21.63	H	0.6	0.0	21.01	23.16	38.45	40.60	-17.4	

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16QAM EIRP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	20.16	V	0.6	0.0	19.54	21.69	38.45	40.60	-18.9	
825.50	20.81	H	0.6	0.0	20.19	22.34	38.45	40.60	-18.3	
Mid Ch										
836.50	19.52	V	0.6	0.0	18.90	21.05	38.45	40.60	-19.6	
836.50	21.14	H	0.6	0.0	20.52	22.67	38.45	40.60	-17.9	
High Ch										
847.50	19.26	V	0.6	0.0	18.64	20.79	38.45	40.60	-19.8	
847.50	20.62	H	0.6	0.0	20.00	22.15	38.45	40.60	-18.5	

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QPSK EIRP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	21.06	V	0.6	0.0	20.44	22.59	38.45	40.60	-18.0	
826.50	22.81	H	0.6	0.0	22.19	24.34	38.45	40.60	-16.3	
Mid Ch										
836.50	20.62	V	0.6	0.0	20.00	22.15	38.45	40.60	-18.5	
836.50	22.08	H	0.6	0.0	21.46	23.61	38.45	40.60	-17.0	
High Ch										
846.50	19.08	V	0.6	0.0	18.46	20.61	38.45	40.60	-20.0	
846.50	22.12	H	0.6	0.0	21.50	23.65	38.45	40.60	-17.0	

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16QAM EIRP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	20.16	V	0.6	0.0	19.54	21.69	38.45	40.60	-18.9	
826.50	22.11	H	0.6	0.0	21.49	23.64	38.45	40.60	-17.0	
Mid Ch										
836.50	19.72	V	0.6	0.0	19.10	21.25	38.45	40.60	-19.4	
836.50	21.24	H	0.6	0.0	20.62	22.77	38.45	40.60	-17.8	
High Ch										
846.50	18.16	V	0.6	0.0	17.54	19.69	38.45	40.60	-20.9	
846.50	21.12	H	0.6	0.0	20.50	22.65	38.45	40.60	-18.0	

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QPSK EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	21.11	V	0.6	0.0	20.49	22.64	38.45	40.60	-18.0	
829.00	21.71	H	0.6	0.0	21.09	23.24	38.45	40.60	-17.4	
Mid Ch										
836.50	20.92	V	0.6	0.0	20.30	22.45	38.45	40.60	-18.2	
836.50	22.54	H	0.6	0.0	21.92	24.07	38.45	40.60	-16.5	
High Ch										
844.00	20.44	V	0.6	0.0	19.82	21.97	38.45	40.60	-18.6	
844.00	22.22	H	0.6	0.0	21.60	23.75	38.45	40.60	-16.9	

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16QAM EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	20.06	V	0.6	0.0	19.44	21.59	38.45	40.60	-19.0	
829.00	20.71	H	0.6	0.0	20.09	22.24	38.45	40.60	-18.4	
Mid Ch										
836.50	20.02	V	0.6	0.0	19.40	21.55	38.45	40.60	-19.1	
836.50	21.64	H	0.6	0.0	21.02	23.17	38.45	40.60	-17.4	
High Ch										
844.00	19.46	V	0.6	0.0	18.84	20.99	38.45	40.60	-19.6	
844.00	21.22	H	0.6	0.0	20.60	22.75	38.45	40.60	-17.9	

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9.1.3. LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 13 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	14.33	V	0.55	0.0	13.78	15.93	34.77	36.99	-21.1	
779.50	20.07	H	0.55	0.0	19.52	21.67	34.77	36.99	-15.3	
Mid Ch										
782.00	15.14	V	0.55	0.0	14.59	16.74	34.77	36.99	-20.3	
782.00	21.38	H	0.55	0.0	20.83	22.98	34.77	36.99	-14.0	
High Ch										
784.50	15.16	V	0.55	0.0	14.61	16.76	34.77	36.99	-20.2	
784.50	20.33	H	0.55	0.0	19.78	21.93	34.77	36.99	-15.1	

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16QAM EIRP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 13 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	13.33	V	0.55	0.0	12.78	14.93	34.77	36.99	-22.1	
779.50	19.94	H	0.55	0.0	19.39	21.54	34.77	36.99	-15.4	
Mid Ch										
782.00	14.14	V	0.55	0.0	13.59	15.74	34.77	36.99	-21.3	
782.00	20.48	H	0.55	0.0	19.93	22.08	34.77	36.99	-14.9	
High Ch										
784.50	14.18	V	0.55	0.0	13.63	15.78	34.77	36.99	-21.2	
784.50	20.53	H	0.55	0.0	19.98	22.13	34.77	36.99	-14.9	

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QPSK EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 13 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	15.64	V	0.55	0.0	15.09	17.24	34.77	36.99	-19.8	
782.00	21.98	H	0.55	0.0	21.43	23.58	34.77	36.99	-13.4	

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16QAM EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 13 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	14.64	V	0.55	0.0	14.09	16.24	34.77	36.99	-20.8	
782.00	21.08	H	0.55	0.0	20.53	22.68	34.77	36.99	-14.3	

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9.1.4. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 17 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	13.49	V	0.55	0.0	12.94	15.09	34.77	36.99	-21.9	
706.50	19.47	H	0.55	0.0	18.92	21.07	34.77	36.99	-15.9	
Mid Ch										
710.00	13.02	V	0.55	0.0	12.47	14.62	34.77	36.99	-22.4	
710.00	20.53	H	0.55	0.0	19.98	22.13	34.77	36.99	-14.9	
High Ch										
713.50	12.89	V	0.55	0.0	12.34	14.49	34.77	36.99	-22.5	
713.50	19.83	H	0.55	0.0	19.28	21.43	34.77	36.99	-15.6	

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16QAM EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 17 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	13.39	V	0.55	0.0	12.84	14.99	34.77	36.99	-22.0	
706.50	19.37	H	0.55	0.0	18.82	20.97	34.77	36.99	-16.0	
Mid Ch										
710.00	13.02	V	0.55	0.0	12.47	14.62	34.77	36.99	-22.4	
710.00	19.54	H	0.55	0.0	18.99	21.14	34.77	36.99	-15.9	
High Ch										
713.50	12.79	V	0.55	0.0	12.24	14.39	34.77	36.99	-22.6	
713.50	19.73	H	0.55	0.0	19.18	21.33	34.77	36.99	-15.7	

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QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 17 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	13.95	V	0.55	0.0	13.40	15.55	34.77	36.99	-21.4	
710.00	20.44	H	0.55	0.0	19.89	22.04	34.77	36.99	-15.0	

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16QAM EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 17 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	12.95	V	0.55	0.0	12.40	14.55	34.77	36.99	-22.4	
710.00	19.44	H	0.55	0.0	18.89	21.04	34.77	36.99	-16.0	

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9.1.5. LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	17.0	V	0.98	8.05	24.10	33.0	-8.9	
1.851	10.1	H	0.98	8.05	17.12	33.0	-15.9	
Mid Ch								
1.883	18.6	V	0.98	8.03	25.62	33.0	-7.4	
1.883	10.9	H	0.98	8.03	17.91	33.0	-15.1	
High Ch								
1.914	17.5	V	0.98	8.07	24.55	33.0	-8.5	
1.914	10.4	H	0.98	8.07	17.48	33.0	-15.5	

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16QAM EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	16.1	V	0.98	8.05	23.13	33.0	-9.9	
1.851	9.0	H	0.98	8.05	16.10	33.0	-16.9	
Mid Ch								
1.883	17.7	V	0.98	8.03	24.76	33.0	-8.2	
1.883	9.9	H	0.98	8.03	16.97	33.0	-16.0	
High Ch								
1.914	16.5	V	0.98	8.07	23.55	33.0	-9.5	
1.914	9.4	H	0.98	8.07	16.45	33.0	-16.6	

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QPSK EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	17.1	V	0.98	8.05	24.18	33.0	-8.8	
1.852	9.3	H	0.98	8.05	16.35	33.0	-16.7	
Mid Ch								
1.883	18.6	V	0.98	8.03	25.63	33.0	-7.4	
1.883	11.0	H	0.98	8.03	18.02	33.0	-15.0	
High Ch								
1.914	18.6	V	0.98	8.07	25.65	33.0	-7.4	
1.914	10.7	H	0.98	8.07	17.78	33.0	-15.2	

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16QAM EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	16.1	V	0.98	8.05	23.13	33.0	-9.9	
1.852	8.2	H	0.98	8.05	15.30	33.0	-17.7	
Mid Ch								
1.883	17.7	V	0.98	8.03	24.76	33.0	-8.2	
1.883	9.9	H	0.98	8.03	16.97	33.0	-16.0	
High Ch								
1.914	17.6	V	0.98	8.07	24.65	33.0	-8.4	
1.914	9.7	H	0.98	8.07	16.74	33.0	-16.3	

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QPSK EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	17.0	V	0.98	8.05	24.07	33.0	-8.9	
1.853	9.1	H	0.98	8.05	16.14	33.0	-16.9	
Mid Ch								
1.883	18.8	V	0.98	8.03	25.89	33.0	-7.1	
1.883	11.0	H	0.98	8.03	18.01	33.0	-15.0	
High Ch								
1.913	18.6	V	0.98	8.06	25.69	33.0	-7.3	
1.913	10.7	H	0.98	8.06	17.79	33.0	-15.2	

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16QAM EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	16.0	V	0.98	8.05	23.03	33.0	-10.0	
1.853	8.0	H	0.98	8.05	15.10	33.0	-17.9	
Mid Ch								
1.883	17.9	V	0.98	8.03	24.96	33.0	-8.0	
1.883	9.9	H	0.98	8.03	16.97	33.0	-16.0	
High Ch								
1.913	17.6	V	0.98	8.06	24.64	33.0	-8.4	
1.913	9.7	H	0.98	8.06	16.74	33.0	-16.3	

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QPSK EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	17.1	V	0.98	8.05	24.13	33.0	-8.9	
1.855	9.2	H	0.98	8.05	16.29	33.0	-16.7	
Mid Ch								
1.883	19.0	V	0.98	8.03	26.00	33.0	-7.0	
1.883	11.1	H	0.98	8.03	18.17	33.0	-14.8	
High Ch								
1.910	18.0	V	0.98	8.05	25.05	33.0	-7.9	
1.910	10.6	H	0.98	8.05	17.66	33.0	-15.3	

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16QAM EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	16.1	V	0.98	8.05	23.13	33.0	-9.9	
1.855	8.1	H	0.98	8.05	15.20	33.0	-17.8	
Mid Ch								
1.883	17.9	V	0.98	8.03	24.96	33.0	-8.0	
1.883	10.1	H	0.98	8.03	17.17	33.0	-15.8	
High Ch								
1.910	17.0	V	0.98	8.05	24.03	33.0	-9.0	
1.910	9.6	H	0.98	8.05	16.63	33.0	-16.4	

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QPSK EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	17.2	V	0.98	8.04	24.26	33.0	-8.7	
1.858	9.2	H	0.98	8.04	16.30	33.0	-16.7	
Mid Ch								
1.883	19.1	V	0.98	8.03	26.11	33.0	-6.9	
1.883	11.0	H	0.98	8.03	18.02	33.0	-15.0	
High Ch								
1.908	18.1	V	0.98	8.04	25.21	33.0	-7.8	
1.908	10.2	H	0.98	8.04	17.24	33.0	-15.8	

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16QAM EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	16.3	V	0.98	8.04	23.32	33.0	-9.7	
1.858	8.2	H	0.98	8.04	15.30	33.0	-17.7	
Mid Ch								
1.883	18.0	V	0.98	8.03	25.06	33.0	-7.9	
1.883	9.9	H	0.98	8.03	16.97	33.0	-16.0	
High Ch								
1.908	17.3	V	0.98	8.04	24.32	33.0	-8.7	
1.908	9.3	H	0.98	8.04	16.32	33.0	-16.7	

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QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	17.0	V	0.98	8.04	24.08	33.0	-8.9	
1.860	9.2	H	0.98	8.04	16.28	33.0	-16.7	
Mid Ch								
1.883	18.9	V	0.98	8.03	25.96	33.0	-7.0	
1.883	10.7	H	0.98	8.03	17.77	33.0	-15.2	
High Ch								
1.905	19.0	V	0.98	8.04	26.05	33.0	-6.9	
1.905	9.7	H	0.98	8.04	16.71	33.0	-16.3	

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16QAM EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/31/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 25 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T863, and Chamber H SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	16.1	V	0.98	8.04	23.12	33.0	-9.9	
1.860	8.2	H	0.98	8.04	15.29	33.0	-17.7	
Mid Ch								
1.883	17.9	V	0.98	8.03	24.96	33.0	-8.0	
1.883	9.8	H	0.98	8.03	16.87	33.0	-16.1	
High Ch								
1.905	18.0	V	0.98	8.04	25.01	33.0	-8.0	
1.905	8.8	H	0.98	8.04	15.81	33.0	-17.2	

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9.1.6. LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	19.16	V	0.62	0.0	18.54	20.69	38.45	40.60	-19.9	
814.70	23.91	H	0.62	0.0	23.29	25.44	38.45	40.60	-15.2	
Mid Ch										
819.00	20.13	V	0.62	0.0	19.51	21.66	38.45	40.60	-18.9	
819.00	24.49	H	0.62	0.0	23.87	26.02	38.45	40.60	-14.6	
High Ch										
823.30	20.66	V	0.62	0.0	20.04	22.19	38.45	40.60	-18.4	
823.30	24.60	H	0.62	0.0	23.98	26.13	38.45	40.60	-14.5	

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16QAM EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	18.26	V	0.62	0.0	17.64	19.79	38.45	40.60	-20.8	
814.70	22.91	H	0.62	0.0	22.29	24.44	38.45	40.60	-16.2	
Mid Ch										
819.00	19.12	V	0.62	0.0	18.50	20.65	38.45	40.60	-20.0	
819.00	23.44	H	0.62	0.0	22.82	24.97	38.45	40.60	-15.6	
High Ch										
823.30	19.66	V	0.62	0.0	19.04	21.19	38.45	40.60	-19.4	
823.30	23.62	H	0.62	0.0	23.00	25.15	38.45	40.60	-15.5	

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QPSK EIRP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	19.65	V	0.62	0.0	19.03	21.18	38.45	40.60	-19.4	
815.50	23.91	H	0.62	0.0	23.29	25.44	38.45	40.60	-15.2	
Mid Ch										
819.00	19.89	V	0.62	0.0	19.27	21.42	38.45	40.60	-19.2	
819.00	24.37	H	0.62	0.0	23.75	25.90	38.45	40.60	-14.7	
High Ch										
822.50	19.50	V	0.62	0.0	18.88	21.03	38.45	40.60	-19.6	
822.50	24.65	H	0.62	0.0	24.03	26.18	38.45	40.60	-14.4	

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16QAM EIRP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	18.65	V	0.62	0.0	18.03	20.18	38.45	40.60	-20.4	
815.50	23.01	H	0.62	0.0	22.39	24.54	38.45	40.60	-16.1	
Mid Ch										
819.00	18.92	V	0.62	0.0	18.30	20.45	38.45	40.60	-20.2	
819.00	23.44	H	0.62	0.0	22.82	24.97	38.45	40.60	-15.6	
High Ch										
822.50	18.66	V	0.62	0.0	18.04	20.19	38.45	40.60	-20.4	
822.50	23.82	H	0.62	0.0	23.20	25.35	38.45	40.60	-15.3	

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QPSK EIRP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	19.36	V	0.62	0.0	18.74	20.89	38.45	40.60	-19.7	
816.50	24.26	H	0.62	0.0	23.64	25.79	38.45	40.60	-14.8	
Mid Ch										
819.00	19.50	V	0.62	0.0	18.88	21.03	38.45	40.60	-19.6	
819.00	24.32	H	0.62	0.0	23.70	25.85	38.45	40.60	-14.8	
High Ch										
821.50	19.54	V	0.62	0.0	18.92	21.07	38.45	40.60	-19.5	
821.50	24.58	H	0.62	0.0	23.96	26.11	38.45	40.60	-14.5	

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16QAM EIRP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	18.36	V	0.62	0.0	17.74	19.89	38.45	40.60	-20.7	
816.50	23.31	H	0.62	0.0	22.69	24.84	38.45	40.60	-15.8	
Mid Ch										
819.00	18.52	V	0.62	0.0	17.90	20.05	38.45	40.60	-20.6	
819.00	23.34	H	0.62	0.0	22.72	24.87	38.45	40.60	-15.7	
High Ch										
821.50	18.56	V	0.62	0.0	17.94	20.09	38.45	40.60	-20.5	
821.50	23.62	H	0.62	0.0	23.00	25.15	38.45	40.60	-15.5	

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QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin EIRP (dB)	Notes
Mid Ch										
819.00	19.34	V	0.62	0.0	18.72	20.87	38.45	40.60	-19.7	
819.00	23.79	H	0.62	0.0	23.17	25.32	38.45	40.60	-15.3	

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16QAM EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber H

Company:
Project #: 14U19185
Date: 7/29/2015
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 26 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T900, and Chamber H Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Mid Ch										
819.00	18.58	V	0.62	0.0	17.96	20.11	38.45	40.60	-20.5	
819.00	22.99	H	0.62	0.0	22.37	24.52	38.45	40.60	-16.1	

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9.1.7. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	20.7	V	1.15	9.33	28.87	33.0	-4.1	
2.499	22.2	H	1.15	9.33	30.34	33.0	-2.7	
Mid Ch								
2.593	19.0	V	1.16	9.47	27.32	33.0	-5.7	
2.593	21.4	H	1.16	9.47	29.67	33.0	-3.3	
High Ch								
2.688	19.1	V	1.17	9.78	27.75	33.0	-5.2	
2.688	21.1	H	1.17	9.78	29.74	33.0	-3.3	

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16QAM EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	19.9	V	1.15	9.33	28.07	33.0	-4.9	
2.499	21.4	H	1.15	9.33	29.54	33.0	-3.5	
Mid Ch								
2.593	18.1	V	1.16	9.47	26.37	33.0	-6.6	
2.593	20.5	H	1.16	9.47	28.77	33.0	-4.2	
High Ch								
2.688	18.4	V	1.17	9.78	27.03	33.0	-6.0	
2.688	20.3	H	1.17	9.78	28.87	33.0	-4.1	

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QPSK EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.450	20.7	V	1.15	9.32	28.85	33.0	-4.1	
2.450	22.4	H	1.15	9.32	30.52	33.0	-2.5	
Mid Ch								
2.593	19.3	V	1.16	9.47	27.61	33.0	-5.4	
2.593	21.6	H	1.16	9.47	29.86	33.0	-3.1	
High Ch								
2.685	19.7	V	1.17	9.77	28.35	33.0	-4.7	
2.685	21.5	H	1.17	9.77	30.13	33.0	-2.9	

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16QAM EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.451	19.9	V	1.15	9.32	28.03	33.0	-5.0	
2.451	21.6	H	1.15	9.32	29.72	33.0	-3.3	
Mid Ch								
2.593	18.5	V	1.16	9.47	26.77	33.0	-6.2	
2.593	20.7	H	1.16	9.47	28.98	33.0	-4.0	
High Ch								
2.685	18.8	V	1.17	9.77	27.45	33.0	-5.6	
2.685	20.8	H	1.17	9.77	29.43	33.0	-3.6	

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QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	20.5	V	1.15	9.34	28.67	33.0	-4.3	
2.504	22.6	H	1.15	9.34	30.74	33.0	-2.3	
Mid Ch								
2.593	19.5	V	1.16	9.47	27.77	33.0	-5.2	
2.593	21.7	H	1.16	9.47	30.00	33.0	-3.0	
High Ch								
2.683	20.1	V	1.17	9.76	28.66	33.0	-4.3	
2.683	21.8	H	1.17	9.76	30.42	33.0	-2.6	

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16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	19.9	V	1.15	9.34	28.09	33.0	-4.9	
2.504	21.8	H	1.15	9.34	29.99	33.0	-3.0	
Mid Ch								
2.593	18.6	V	1.16	9.47	26.87	33.0	-6.1	
2.593	20.7	H	1.16	9.47	29.05	33.0	-4.0	
High Ch								
2.683	19.0	V	1.17	9.76	27.57	33.0	-5.4	
2.683	20.9	H	1.17	9.76	29.53	33.0	-3.5	

Rev. 10.24.13

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	21.0	V	1.15	9.34	29.18	33.0	-3.8	
2.506	23.0	H	1.15	9.34	31.23	33.0	-1.8	
Mid Ch								
2.593	19.5	V	1.16	9.47	27.77	33.0	-5.2	
2.593	21.6	H	1.16	9.47	29.91	33.0	-3.1	
High Ch								
2.680	20.1	V	1.17	9.76	28.73	33.0	-4.3	
2.680	21.3	H	1.17	9.76	29.93	33.0	-3.1	

Rev. 10.24.13

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19185
Date: 8/3/2015
Test Engineer: R.Z
Configuration: EUT only
Mode: LTE Band 41 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T346, and Chamber E SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	20.0	V	1.15	9.34	28.18	33.0	-4.8	
2.506	22.4	H	1.15	9.34	30.55	33.0	-2.5	
Mid Ch								
2.593	18.9	V	1.16	9.47	27.17	33.0	-5.8	
2.593	20.7	H	1.16	9.47	29.01	33.0	-4.0	
High Ch								
2.680	19.2	V	1.17	9.76	27.83	33.0	-5.2	
2.680	20.4	H	1.17	9.76	29.02	33.0	-4.0	

Rev. 10.24.13

9.2. PEAK-TO-AVERAGE RATIO

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB

9.2.1. LTE BAND 2

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	1.4	1880.0	QPSK	28.57	23.7	4.87
			16QAM	28.63	22.78	5.85
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	3.0	1880.0	QPSK	28.67	23.72	4.95
			16QAM	28.45	22.75	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	5.0	1880.0	QPSK	28.59	23.72	4.87
			16QAM	28.18	22.56	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	10.0	1880.0	QPSK	28.54	23.74	4.8
			16QAM	28.28	22.73	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	15.0	1880.0	QPSK	28.39	23.67	4.72
			16QAM	28.15	22.68	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 2 RB1-0	20.0	1880.0	QPSK	28.41	23.69	4.72
			16QAM	28.14	22.74	5.40
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.2. LTE BAND 4

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	1.4	1732.5	QPSK	28.79	23.99	4.80
			16QAM	28.8	23.10	5.70
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	3.0	1732.5	QPSK	28.85	23.98	4.87
			16QAM	28.57	23.02	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	5.0	1732.5	QPSK	28.67	23.87	4.8
			16QAM	28.29	22.74	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	10.0	1732.5	QPSK	28.68	23.96	4.72
			16QAM	28.44	22.97	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	15.0	1732.5	QPSK	28.65	23.93	4.72
			16QAM	28.42	22.95	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 4 RB1-0	20.0	1732.5	QPSK	28.52	23.8	4.72
			16QAM	28.26	22.86	5.40
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.3. LTE BAND 5

Mode	Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	1.4	836.5	QPSK	29.21	24.34	4.87
			16QAM	29.32	23.54	5.78
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	3.0	836.5	QPSK	29.3	24.43	4.87
			16QAM	29.23	23.53	5.7
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	5.0	836.5	QPSK	29.21	24.34	4.87
			16QAM	28.93	23.23	5.7
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 5 RB1-0	10.0	836.5	QPSK	29.11	24.46	4.65
			16QAM	28.99	23.52	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.4. LTE BAND 13

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 13 RB1-0	5.0	782.0	QPSK	28.76	23.96	4.80
			16QAM	28.45	22.83	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 13 RB1-0	10.0	782.0	QPSK	28.78	23.98	4.80
			16QAM	28.65	23.03	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.5. LTE BAND 17

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 17 RB1-0	5.0	710.0	QPSK	28.29	23.94	4.35
			16QAM	28.36	23.03	5.33
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 17 RB1-0	10.0	710.0	QPSK	28.25	23.90	4.35
			16QAM	28.36	23.11	5.25
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.6. LTE BAND 25

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	1.4	1882.5	QPSK	28.58	23.71	4.87
			16QAM	28.54	22.76	5.78
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	3.0	1882.5	QPSK	28.59	23.72	4.87
			16QAM	28.34	22.72	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	5.0	1882.5	QPSK	28.52	23.72	4.80
			16QAM	28.59	23.56	5.03
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	10.0	1882.5	QPSK	28.45	23.73	4.72
			16QAM	28.26	22.71	5.55
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	15.0	1882.5	QPSK	28.46	23.74	4.72
			16QAM	28.24	22.77	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHz)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 25 RB1-0	20.0	1882.5	QPSK	28.48	23.68	4.80
			16QAM	28.19	22.72	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

9.2.7. LTE BAND 26

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	1.4	819.0	QPSK	28.87	24.00	4.87
			16QAM	28.89	23.11	5.78
*Peak Reading = Average Reading + Peak-to-Average Ratio						

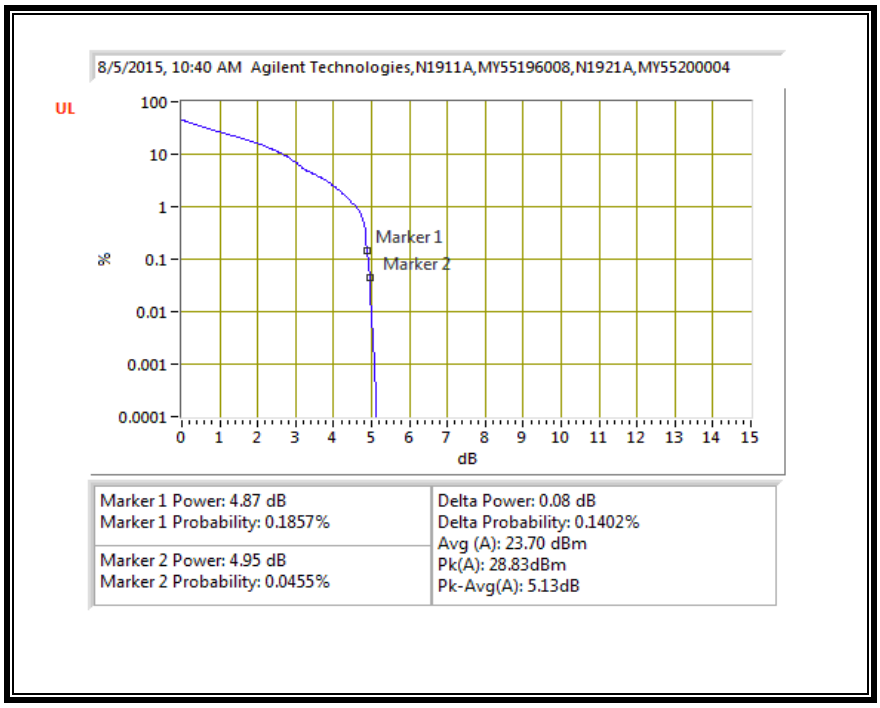
Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	3.0	819.0	QPSK	28.86	23.99	4.87
			16QAM	28.68	23.06	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	5.0	819.0	QPSK	28.76	23.89	4.87
			16QAM	28.39	22.77	5.62
*Peak Reading = Average Reading + Peak-to-Average Ratio						

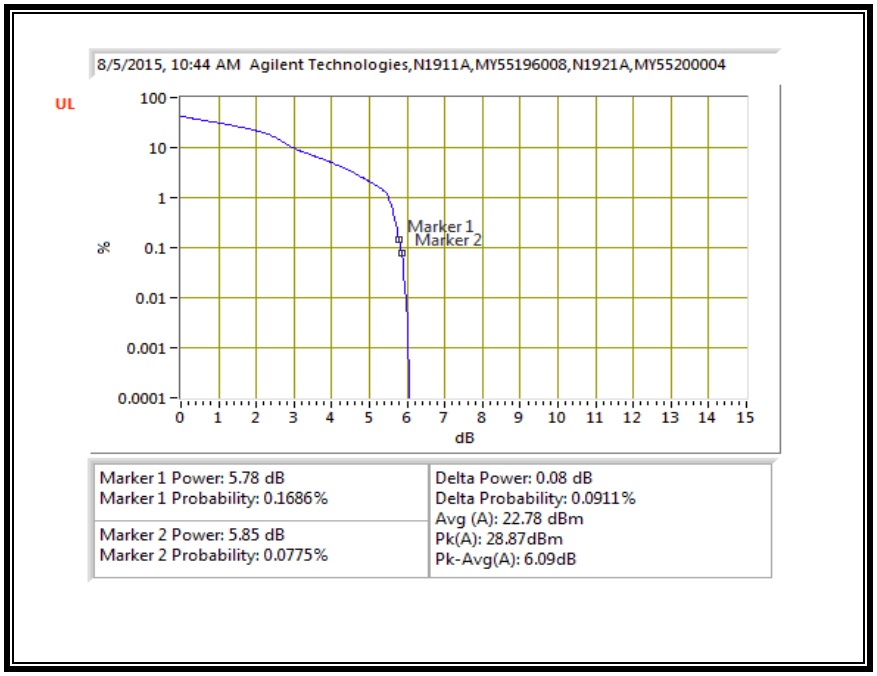
Mode	Channel Band-width (MHZ)	f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Ratio (PAR)
				*Peak	Average	
LTE Band 26 RB1-0	10.0	819.0	QPSK	28.64	23.92	4.72
			16QAM	28.42	22.95	5.47
*Peak Reading = Average Reading + Peak-to-Average Ratio						

LTE BAND 2

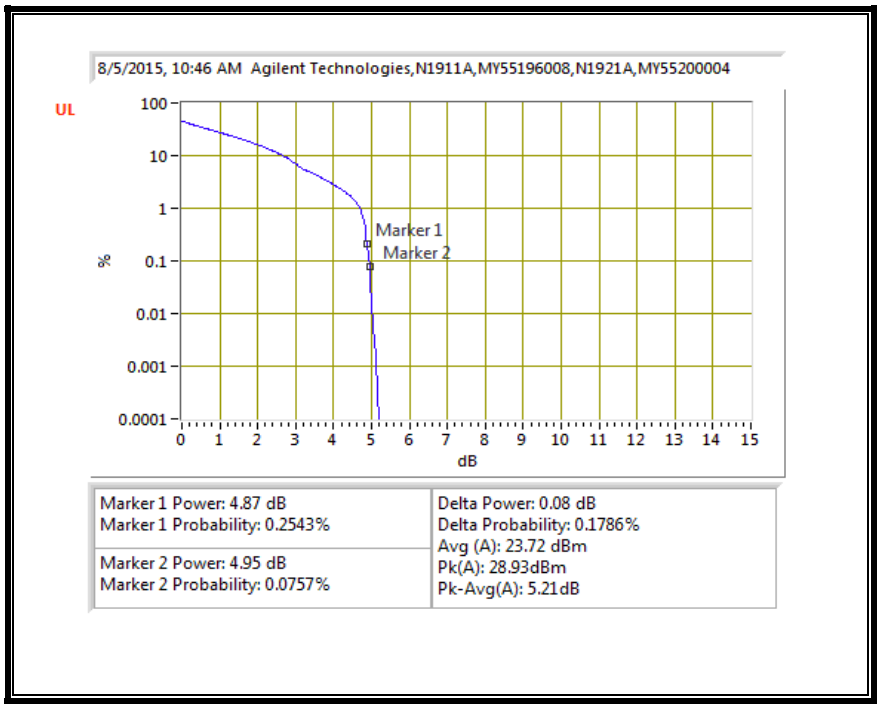
QPSK, (1.4 MHz BAND WIDTH)



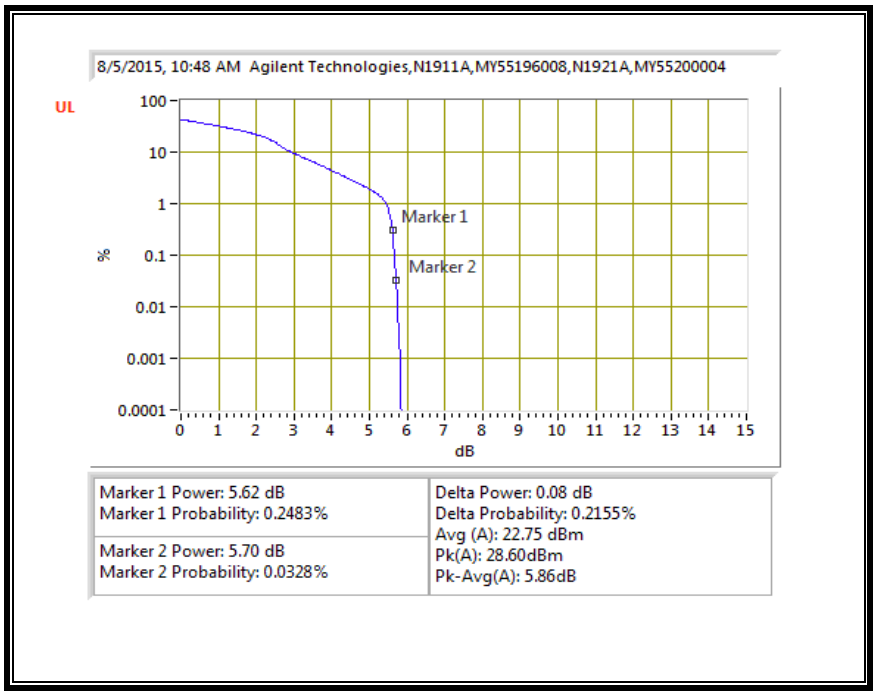
16QAM, (1.4 MHz BAND WIDTH)



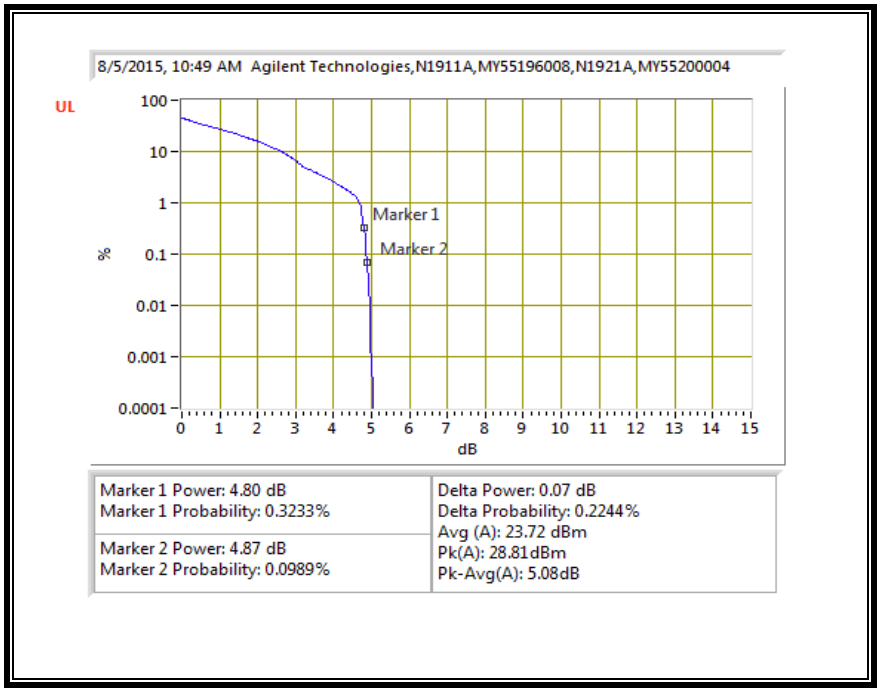
QPSK, (3.0 MHz BAND WIDTH)



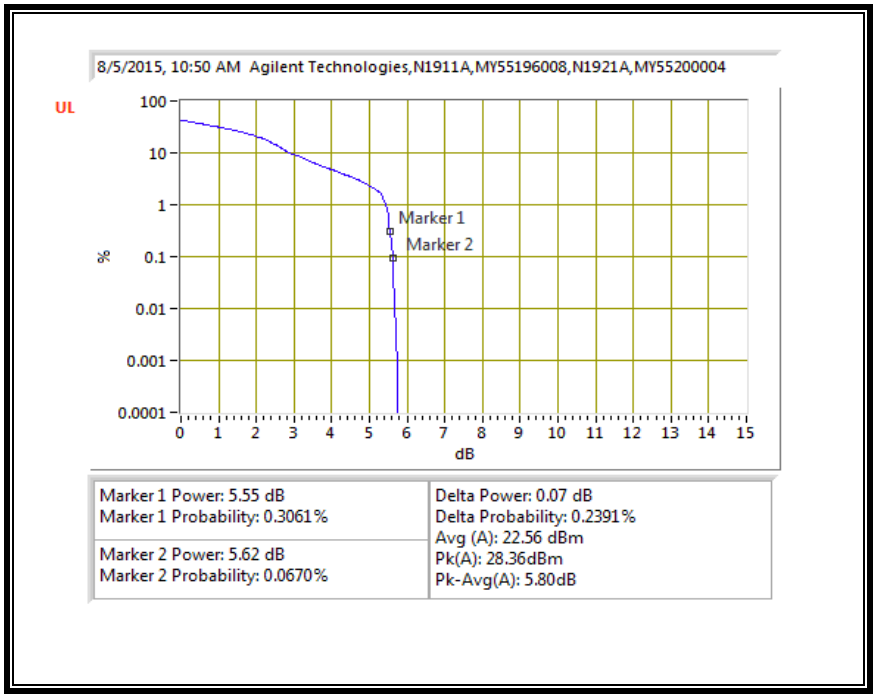
16QAM, (3.0 MHz BAND WIDTH)



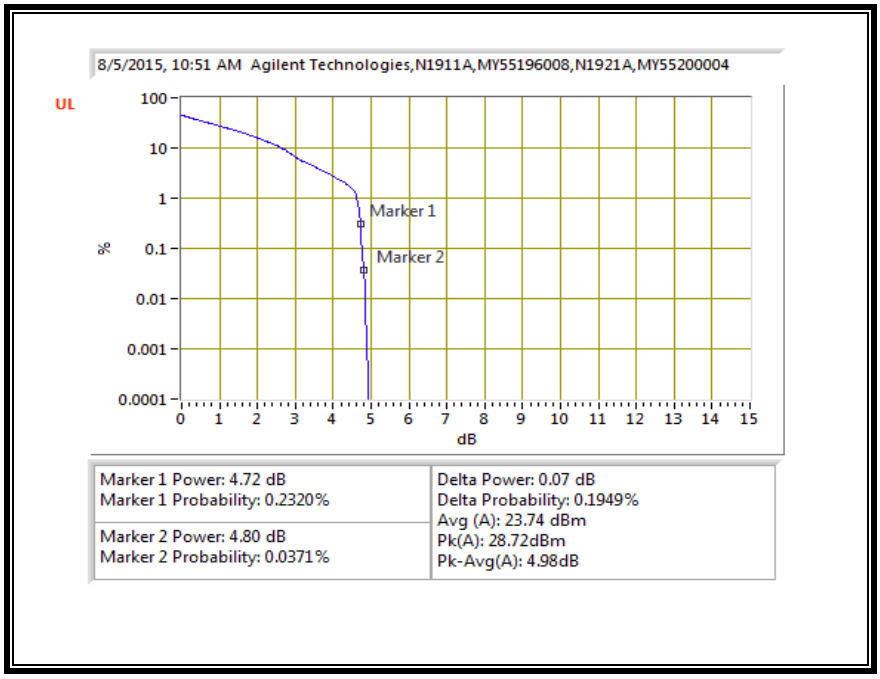
QPSK, (5.0 MHz BAND WIDTH)



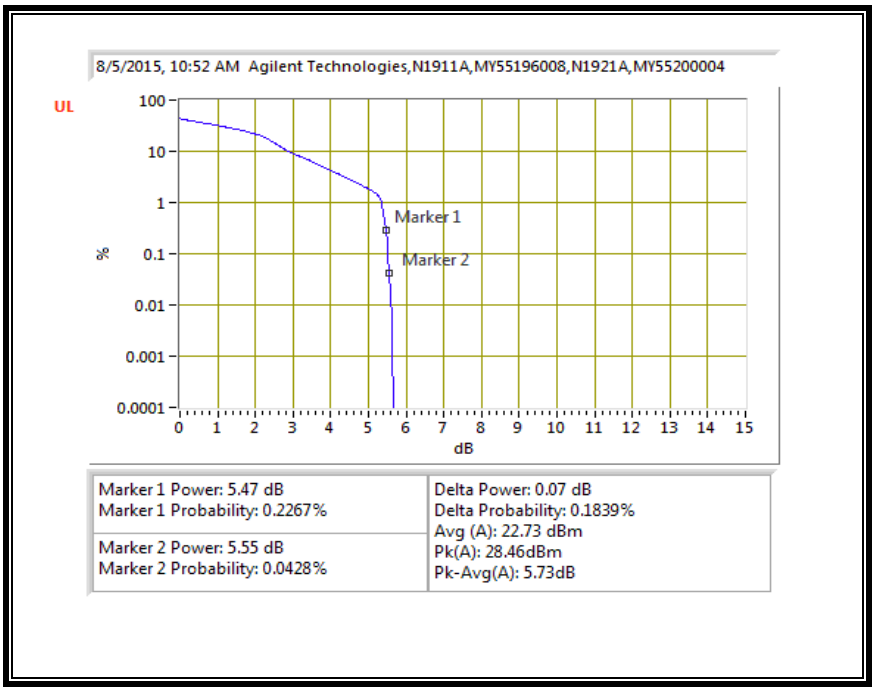
16QAM, (5.0 MHz BAND WIDTH)



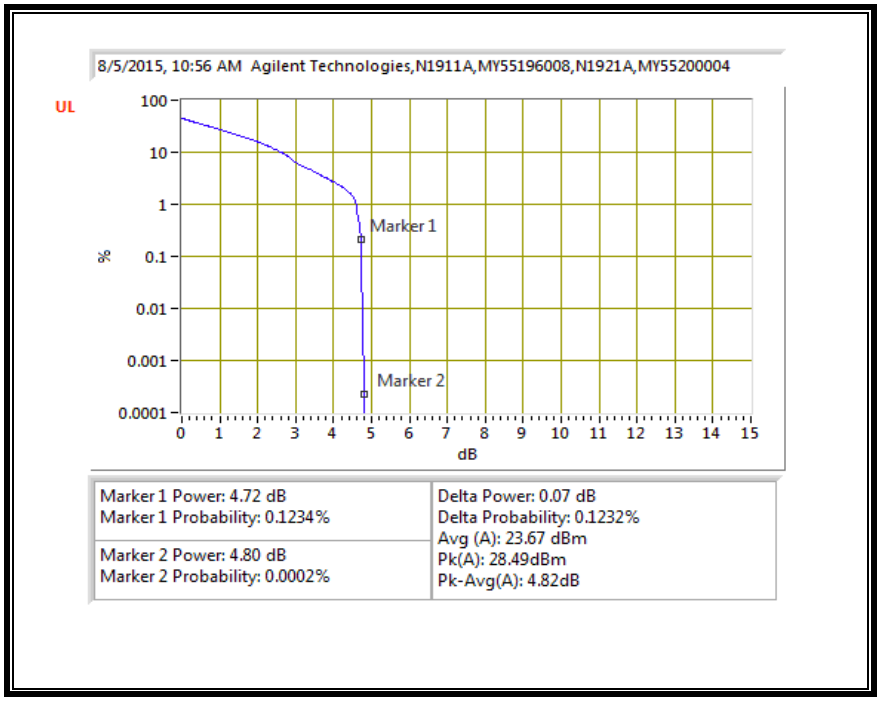
QPSK, (10.0 MHz BAND WIDTH)



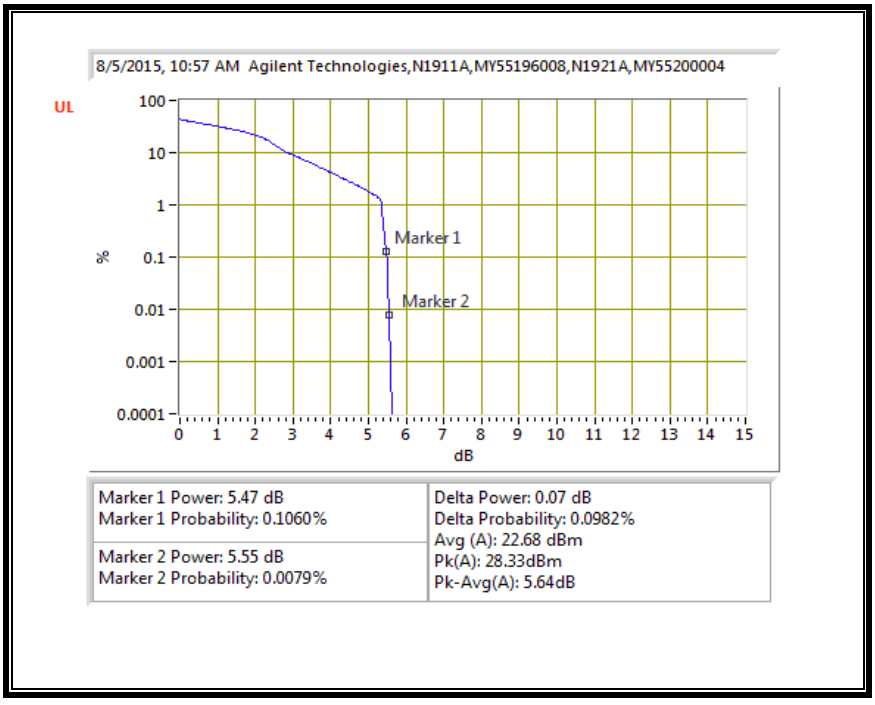
16QAM, (10.0 MHz BAND WIDTH)



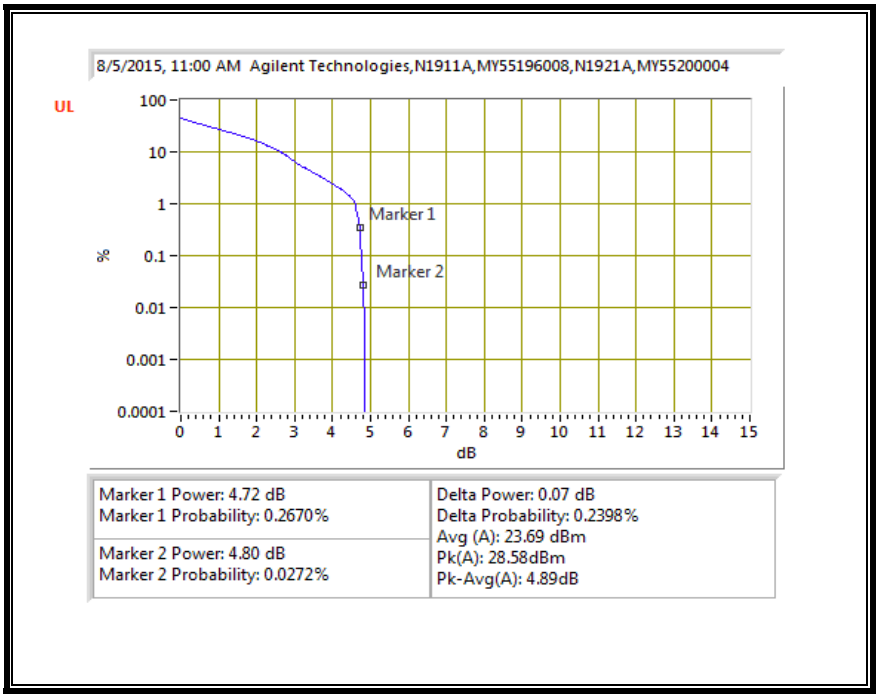
QPSK, (15.0 MHz BAND WIDTH)



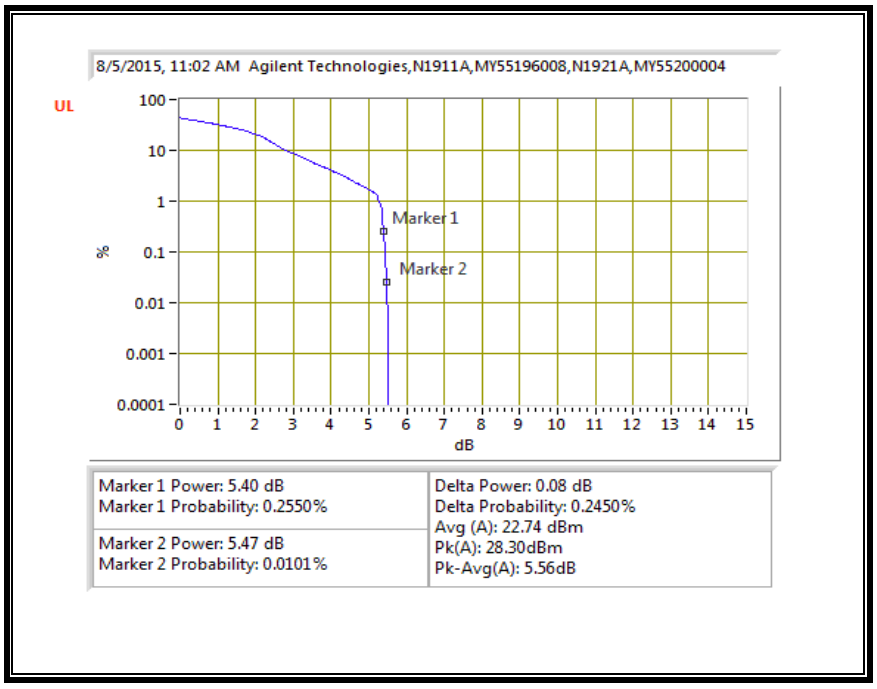
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

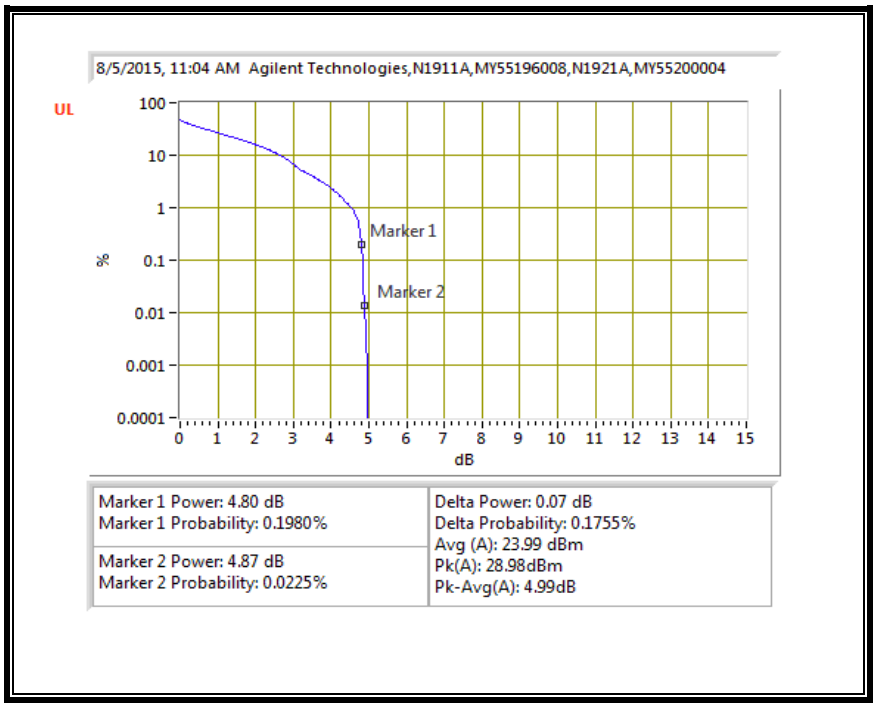


16QAM, (20.0 MHz BAND WIDTH)

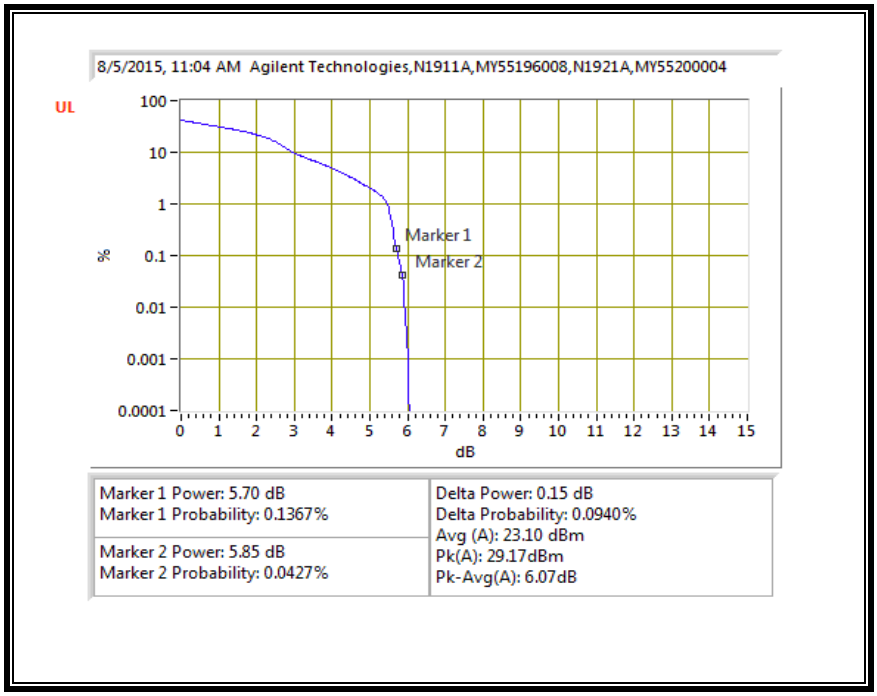


LTE BAND 4

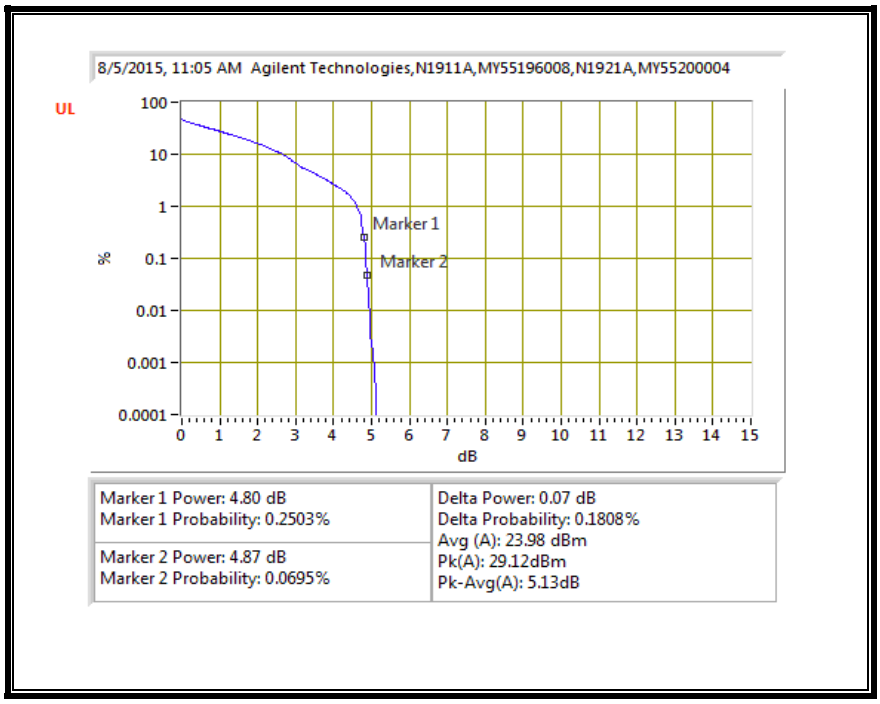
QPSK, (1.4 MHz BAND WIDTH)



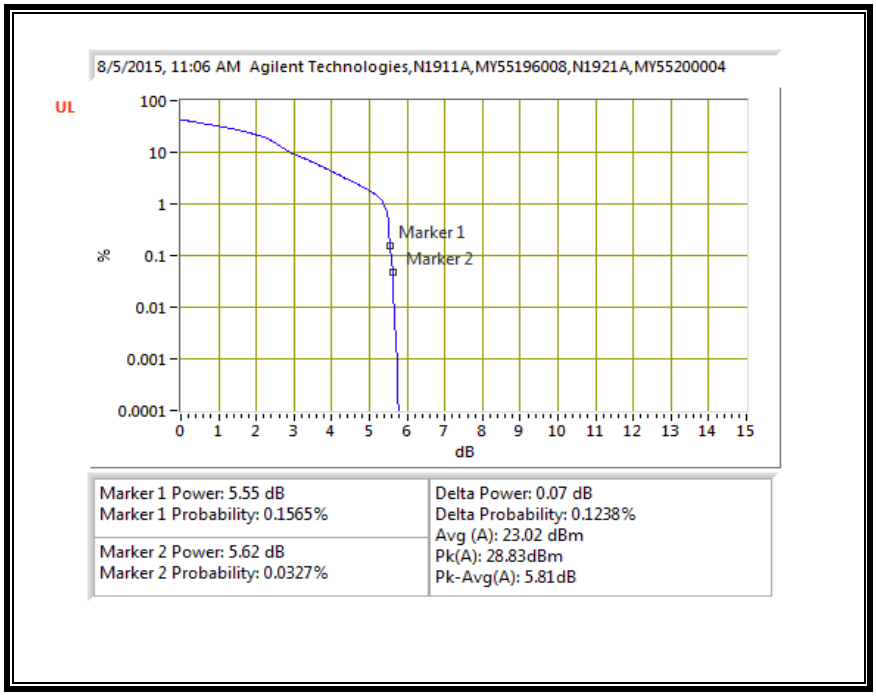
16QAM, (1.4 MHz BAND WIDTH)



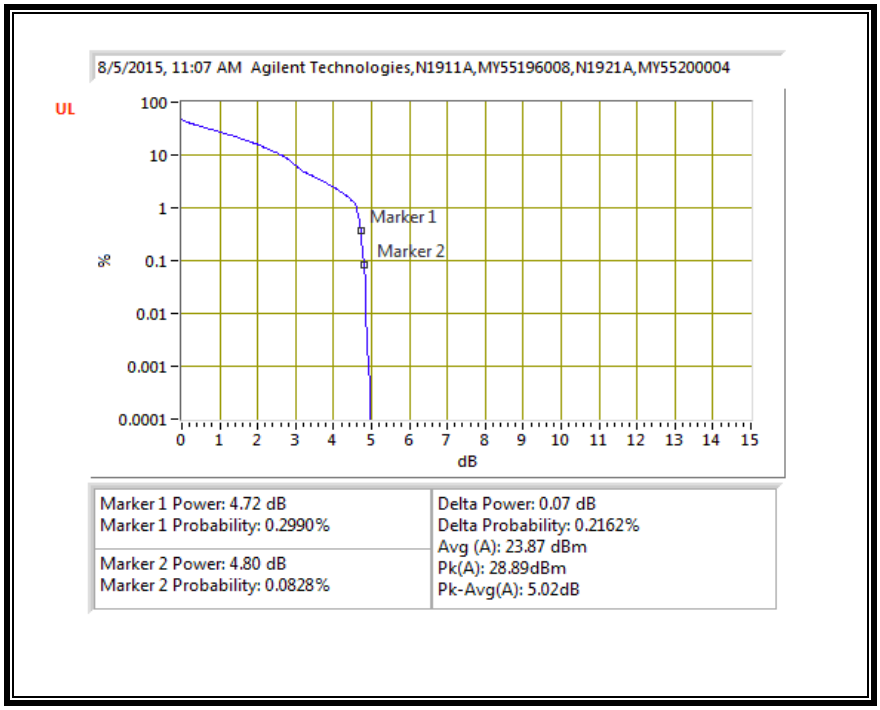
QPSK, (3.0 MHz BAND WIDTH)



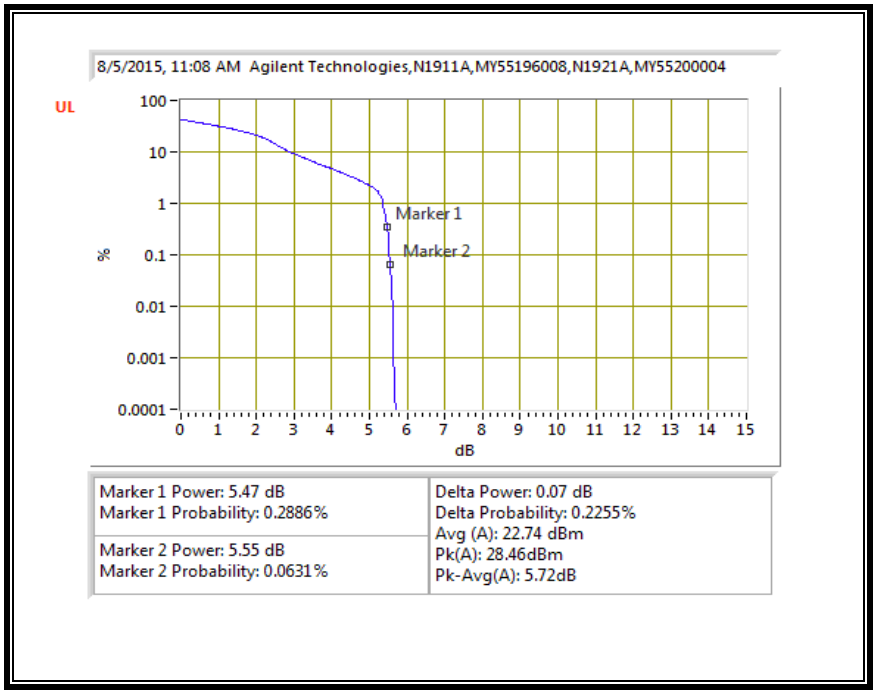
16QAM, (3.0 MHz BAND WIDTH)



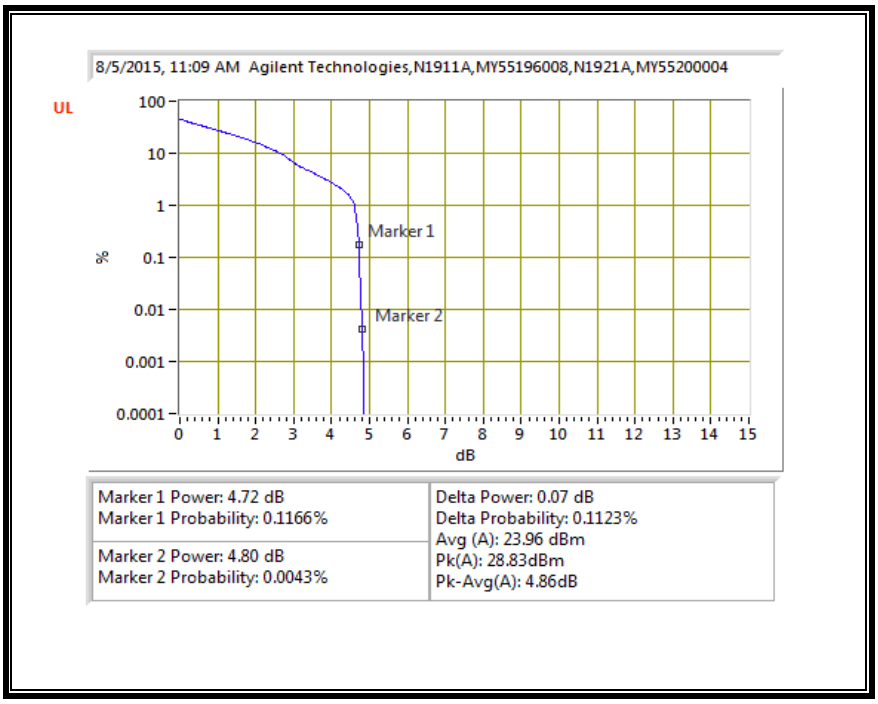
QPSK, (5.0 MHz BAND WIDTH)



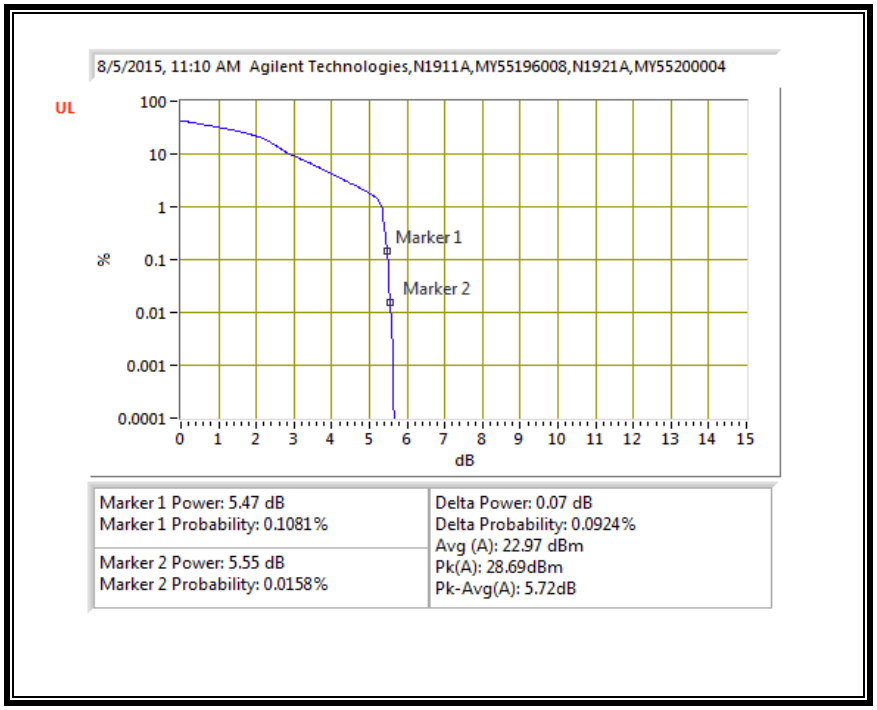
16QAM, (5.0 MHz BAND WIDTH)



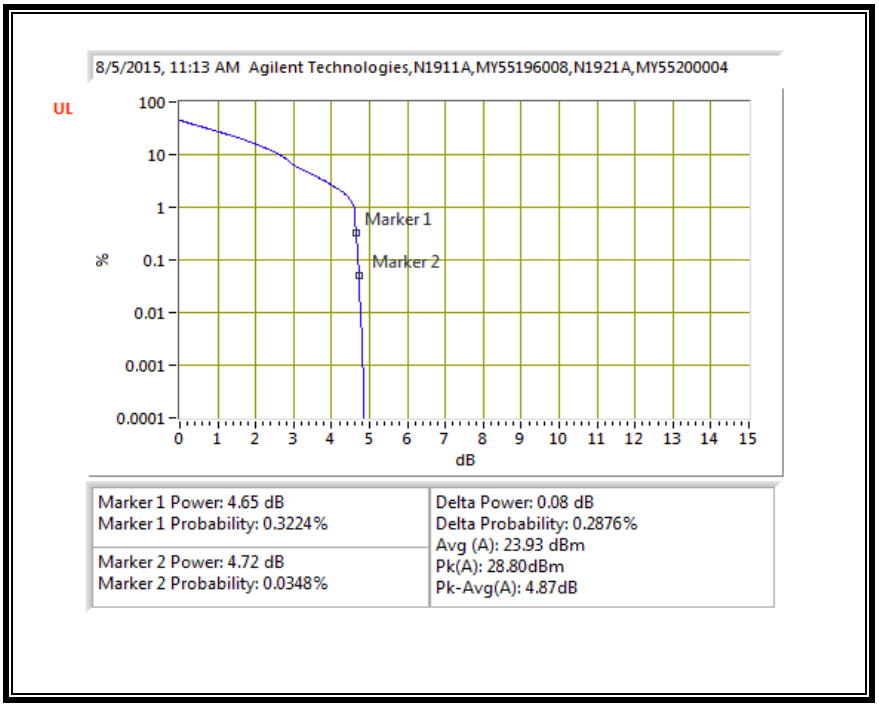
QPSK, (10.0 MHz BAND WIDTH)



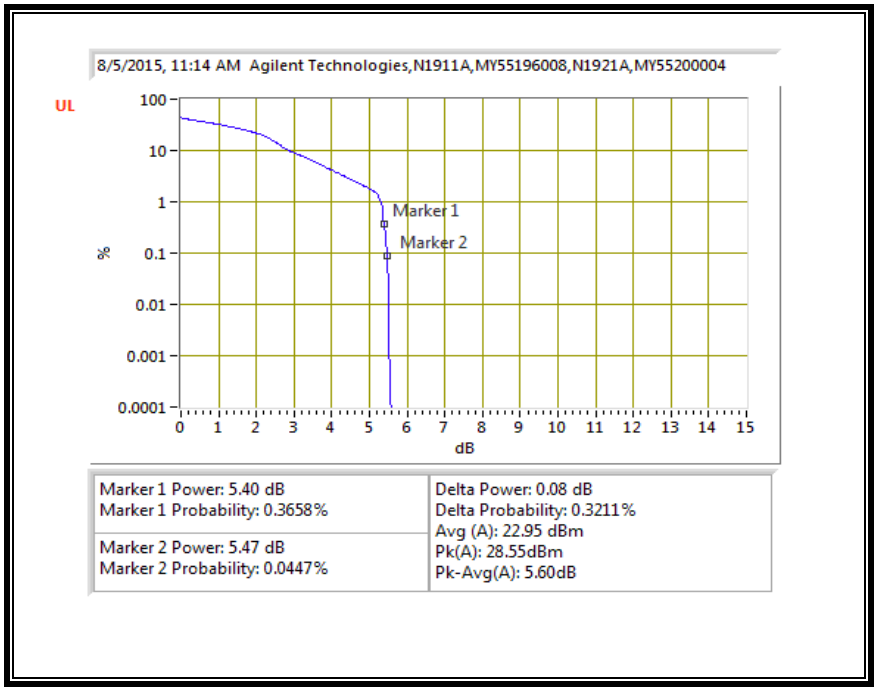
16QAM, (10.0 MHz BAND WIDTH)



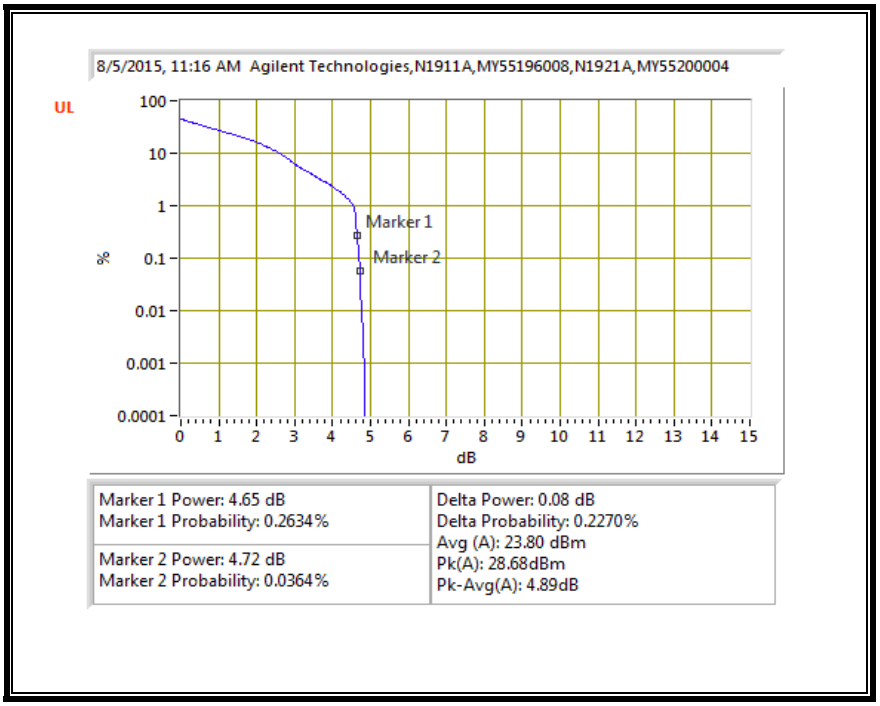
QPSK, (15.0 MHz BAND WIDTH)



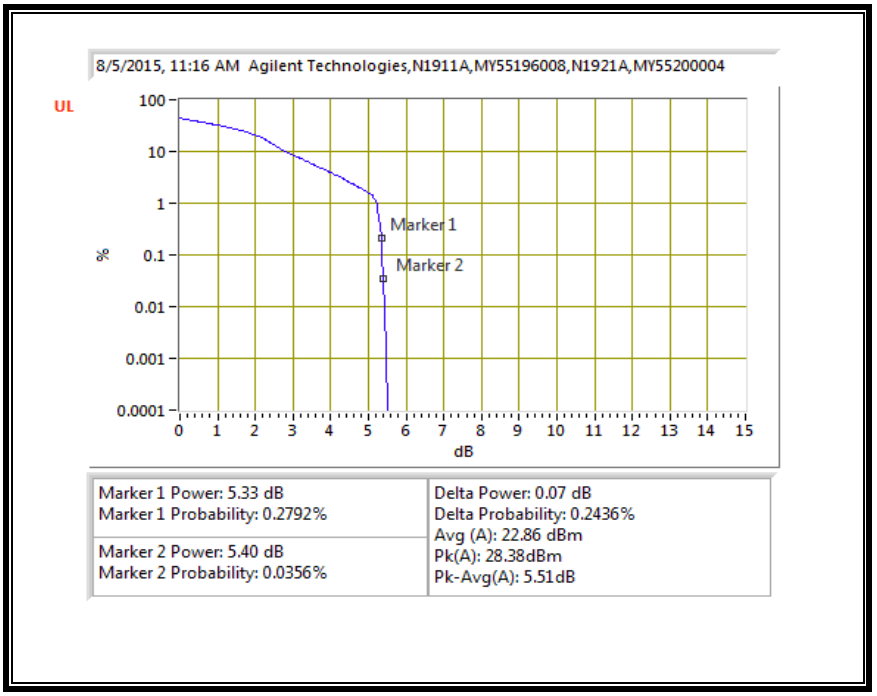
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

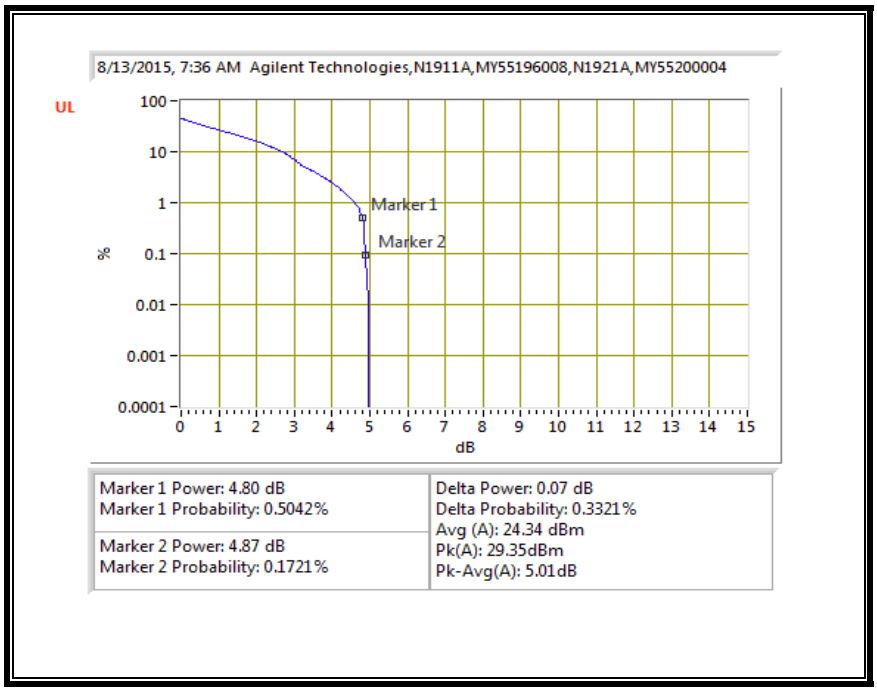


16QAM, (20.0 MHz BAND WIDTH)

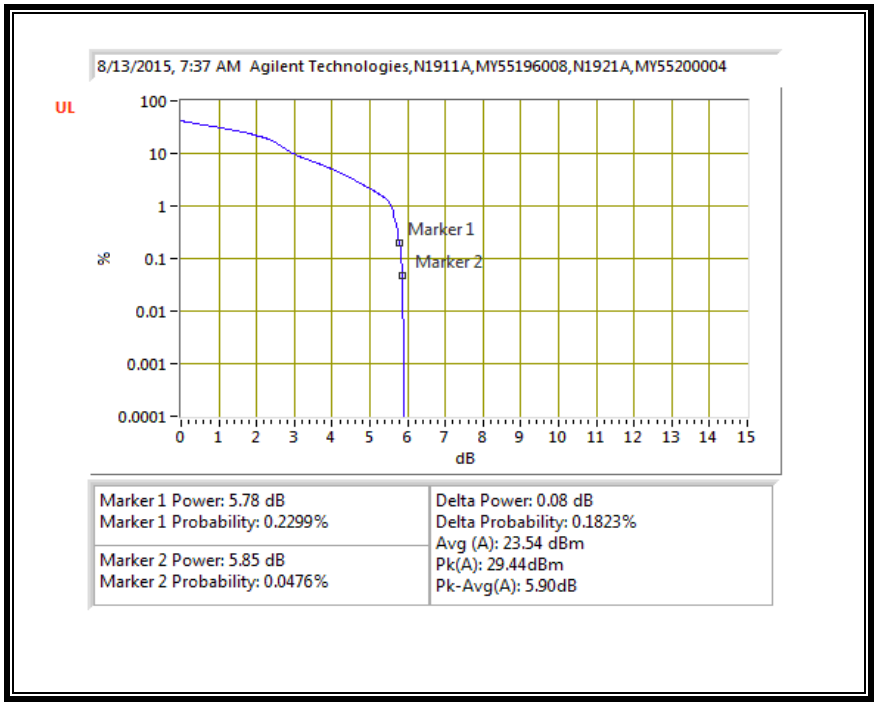


LTE BAND 5

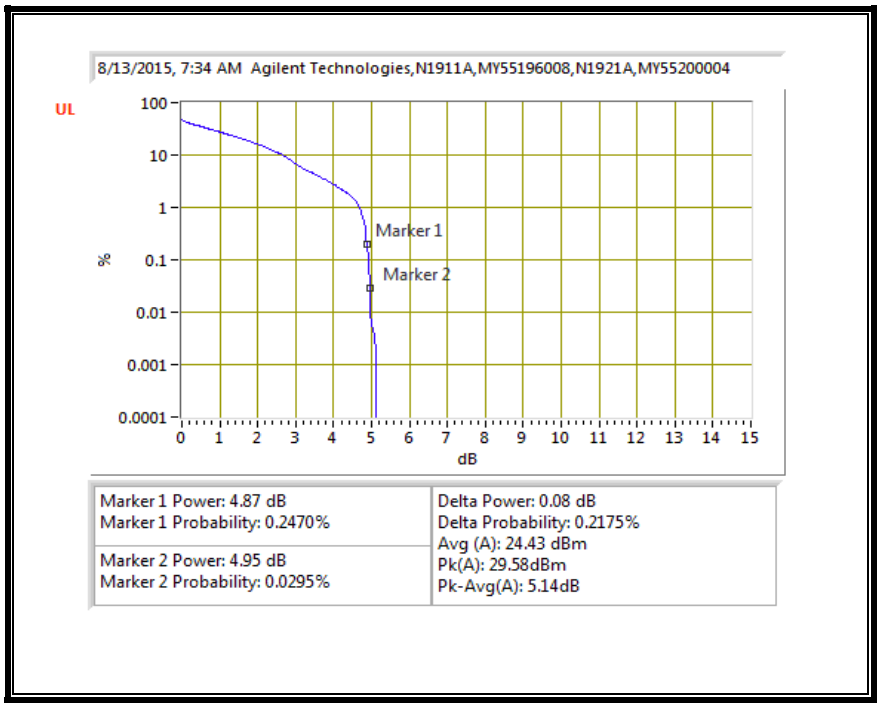
QPSK, (1.4 MHz BAND WIDTH)



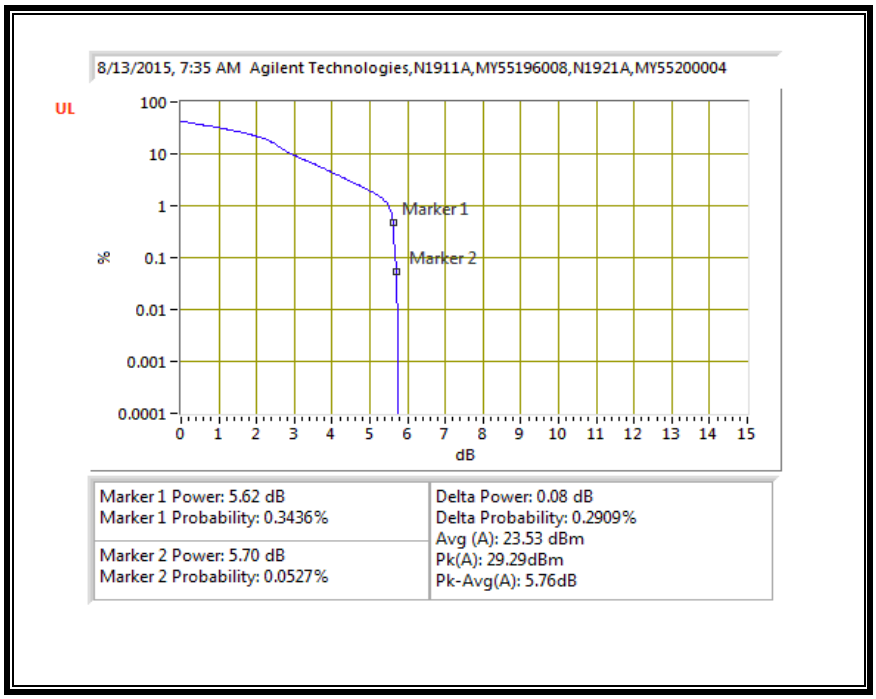
16QAM, (1.4 MHz BAND WIDTH)



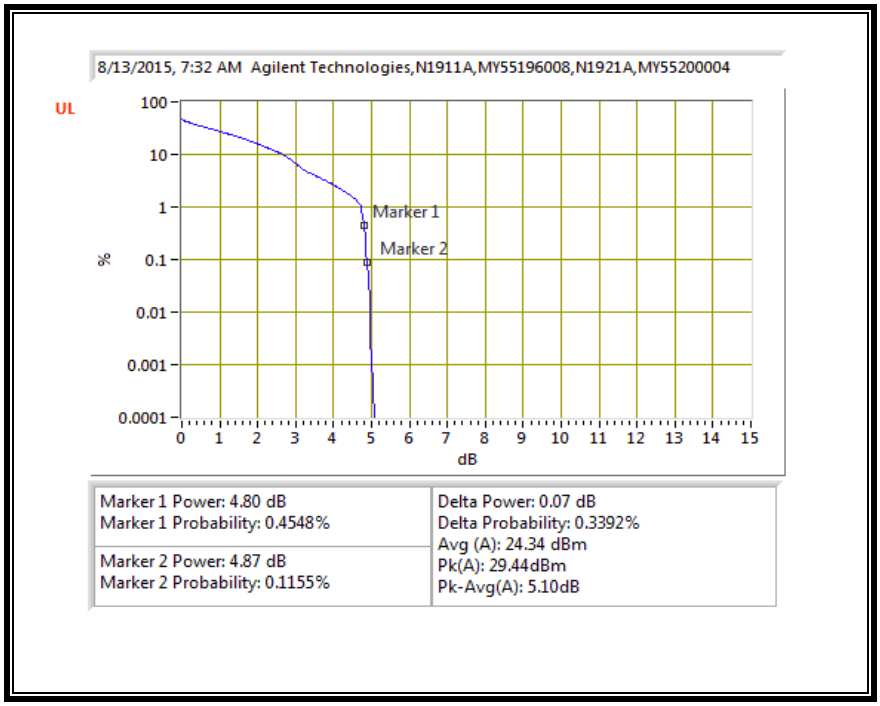
QPSK, (3.0 MHz BAND WIDTH)



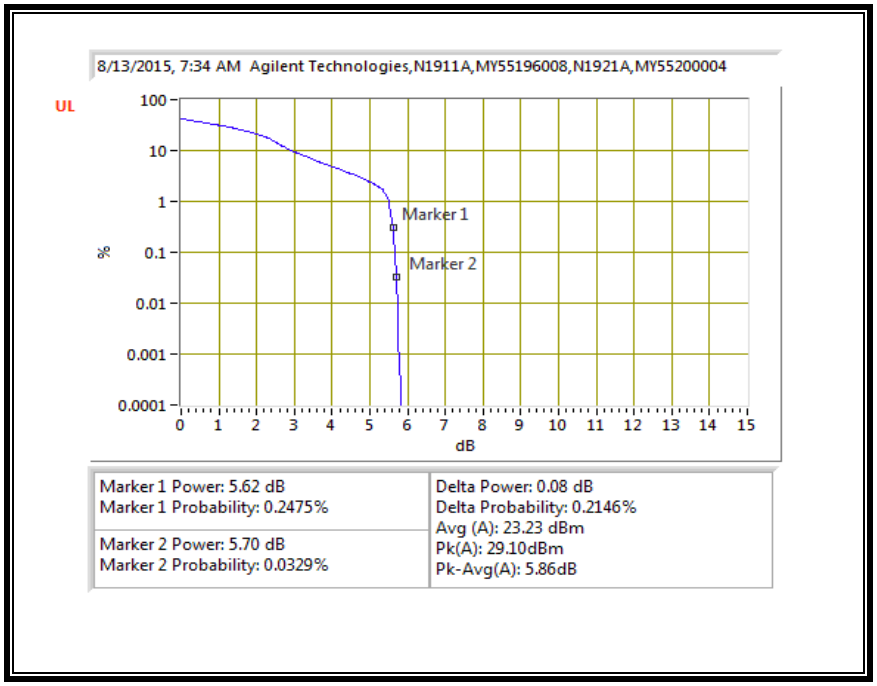
16QAM, (3.0 MHz BAND WIDTH)



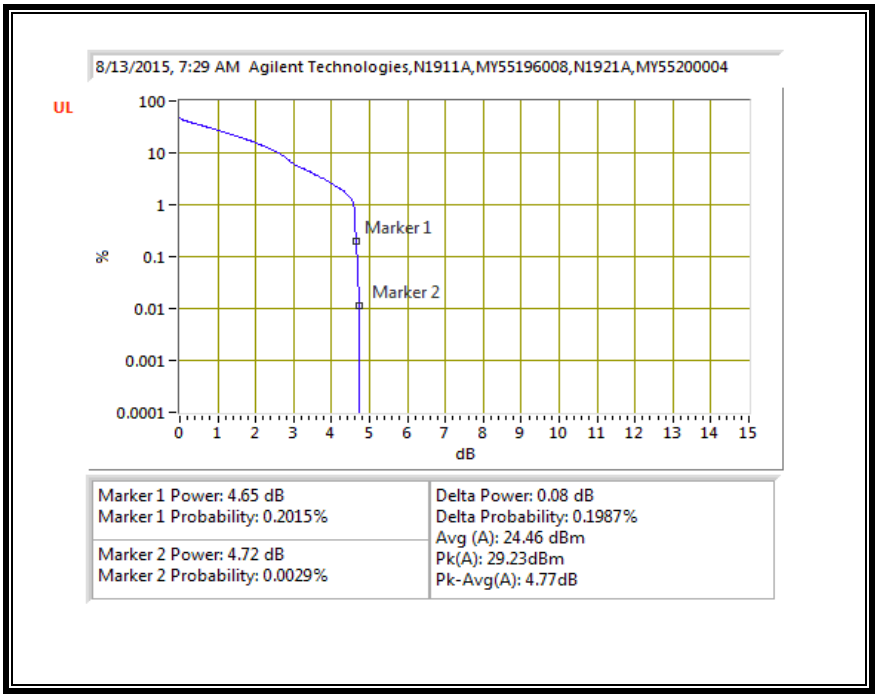
QPSK, (5.0 MHz BAND WIDTH)



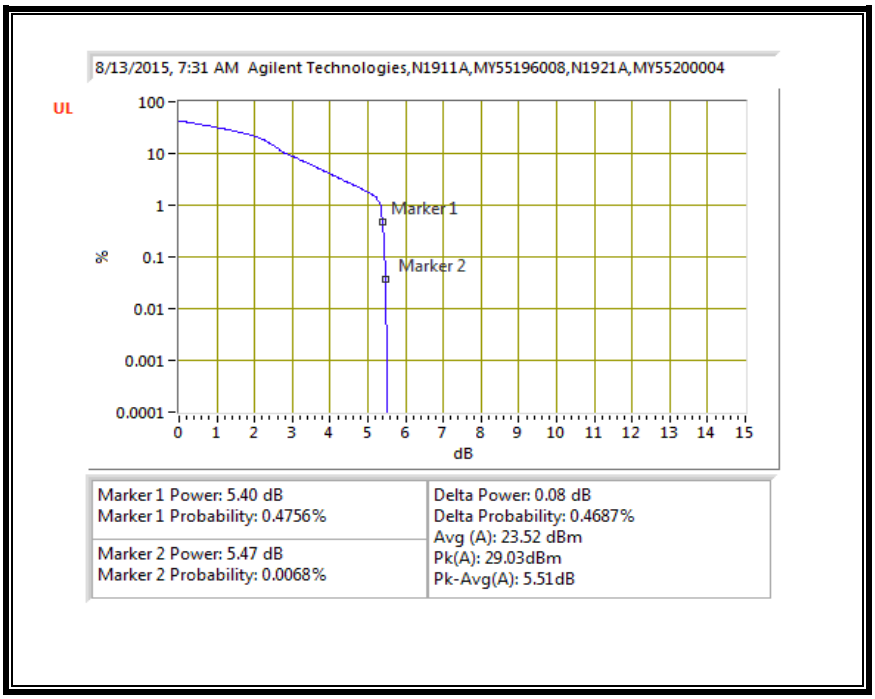
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

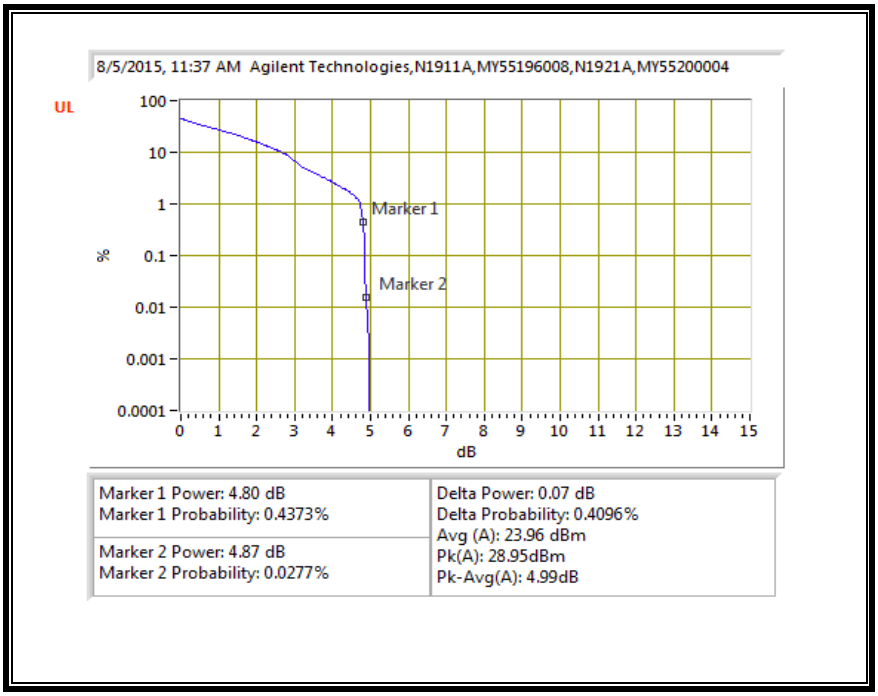


16QAM, (10.0 MHz BAND WIDTH)

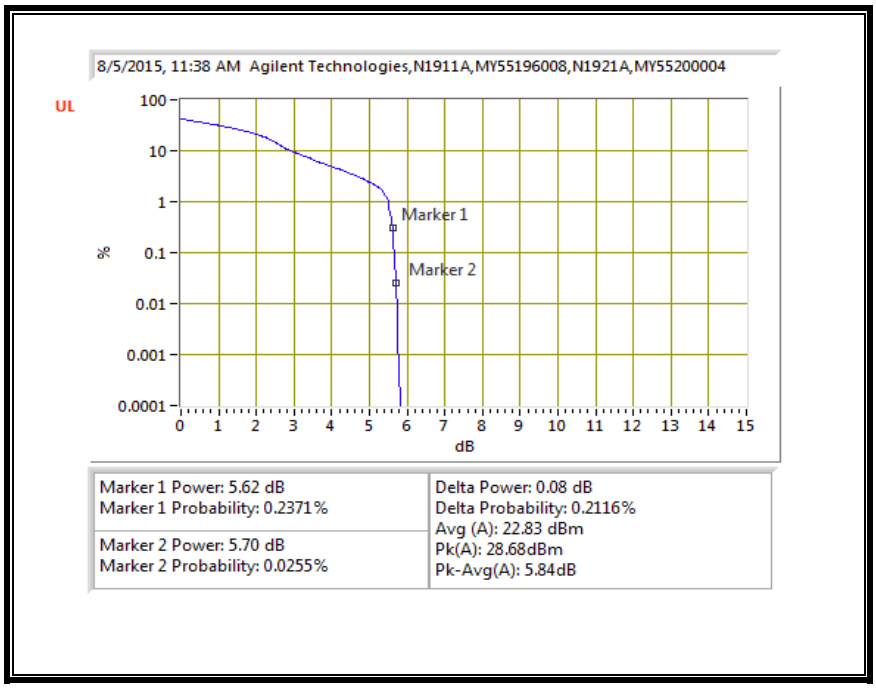


LTE BAND 13

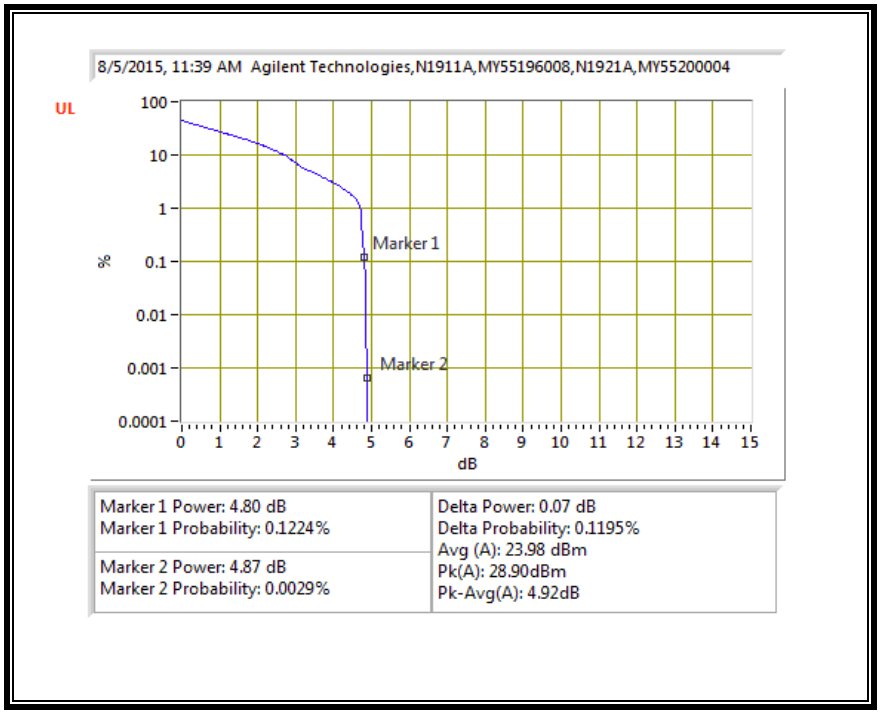
QPSK, (5.0 MHz BAND WIDTH)



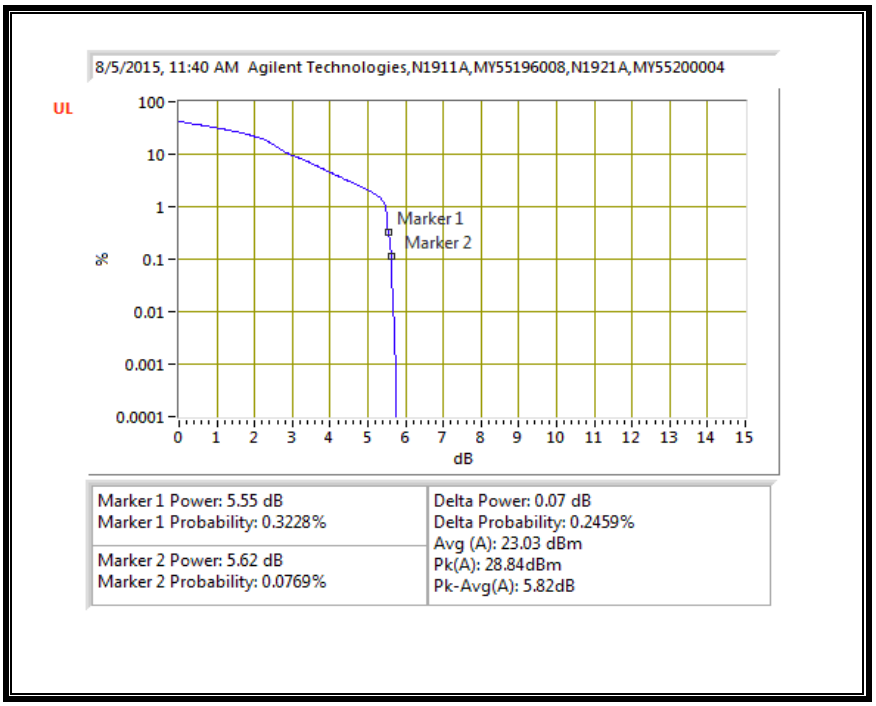
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

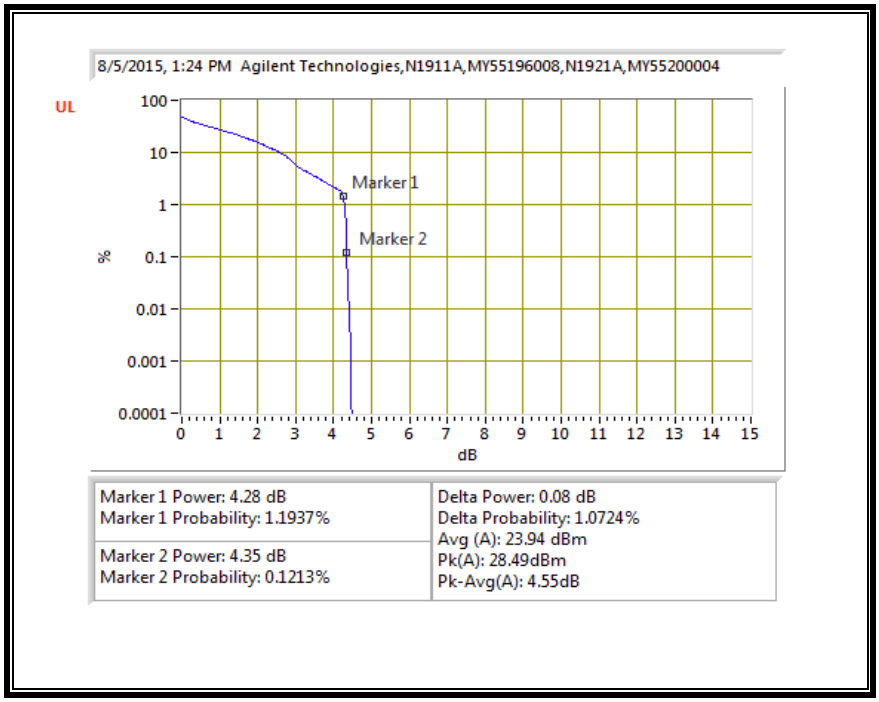


16QAM, (10.0 MHz BAND WIDTH)

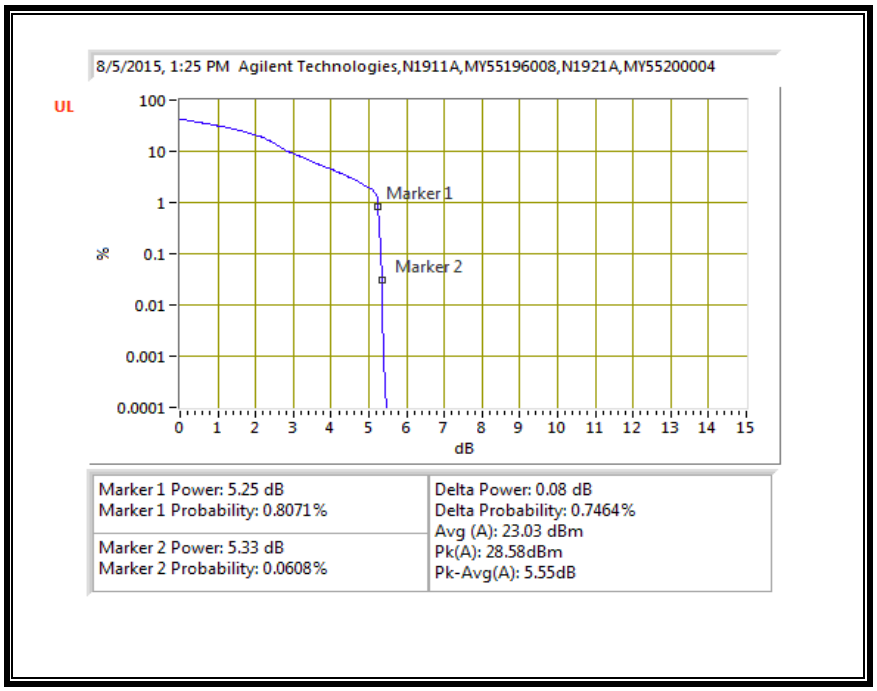


LTE BAND 17

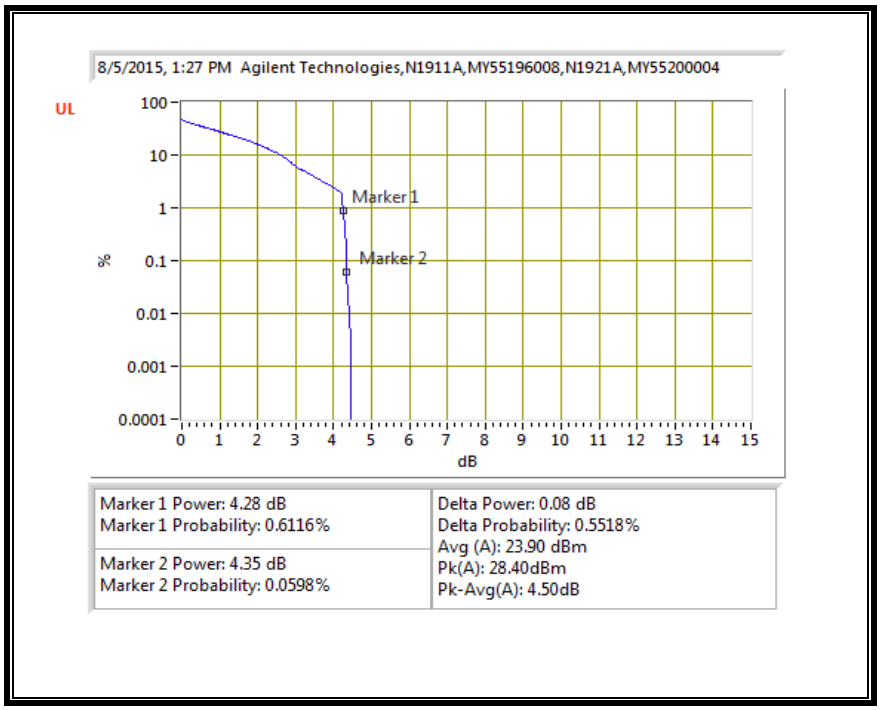
QPSK, (5.0 MHz BAND WIDTH)



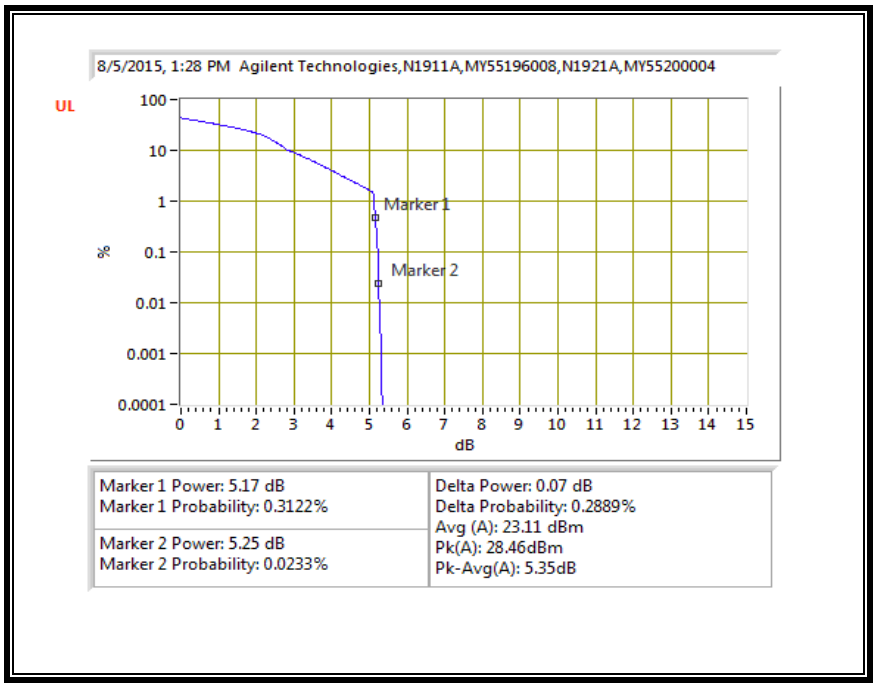
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

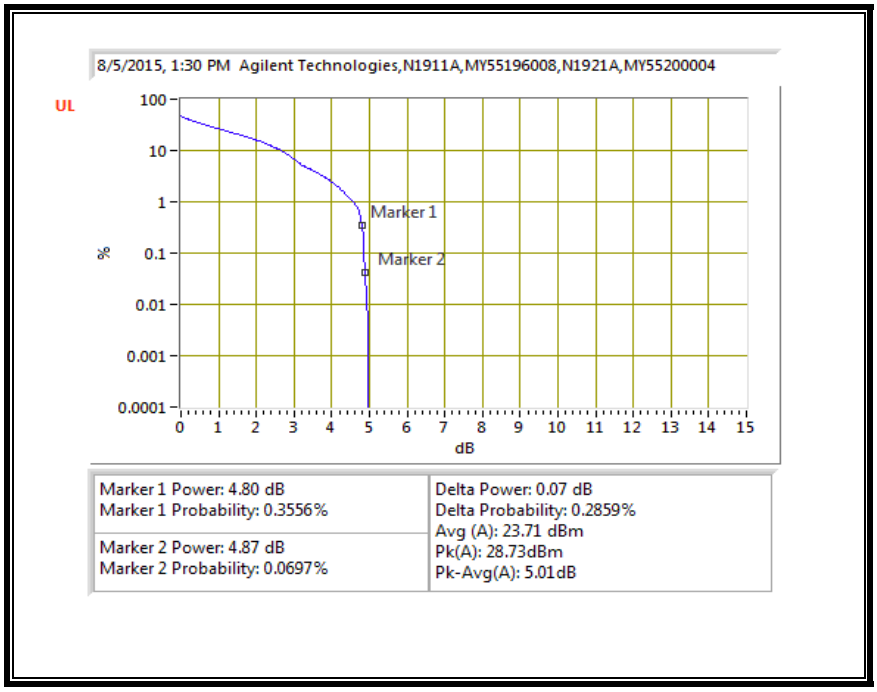


16QAM, (10.0 MHz BAND WIDTH)

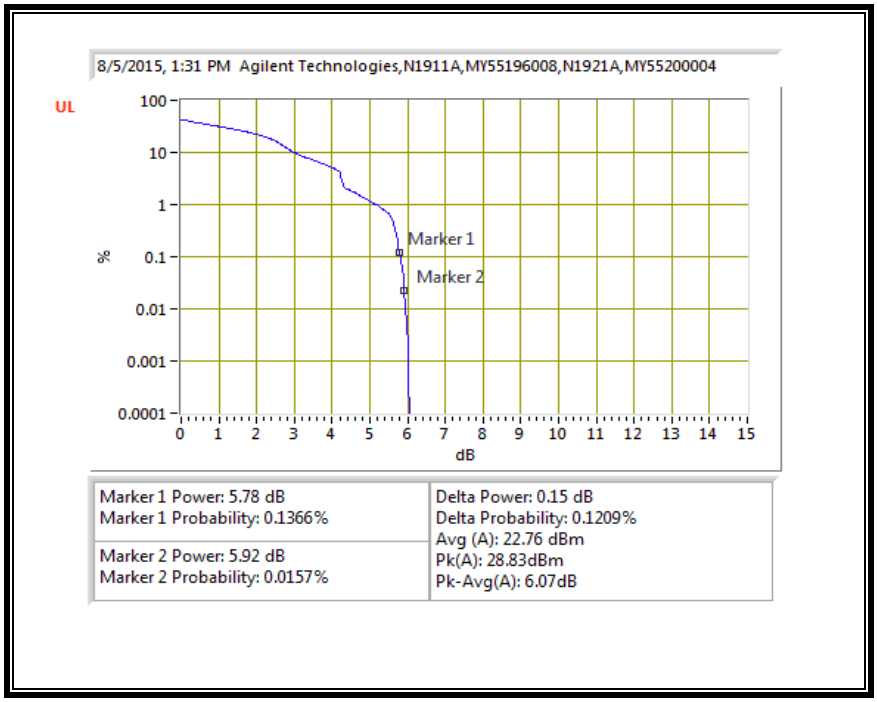


LTE BAND 25

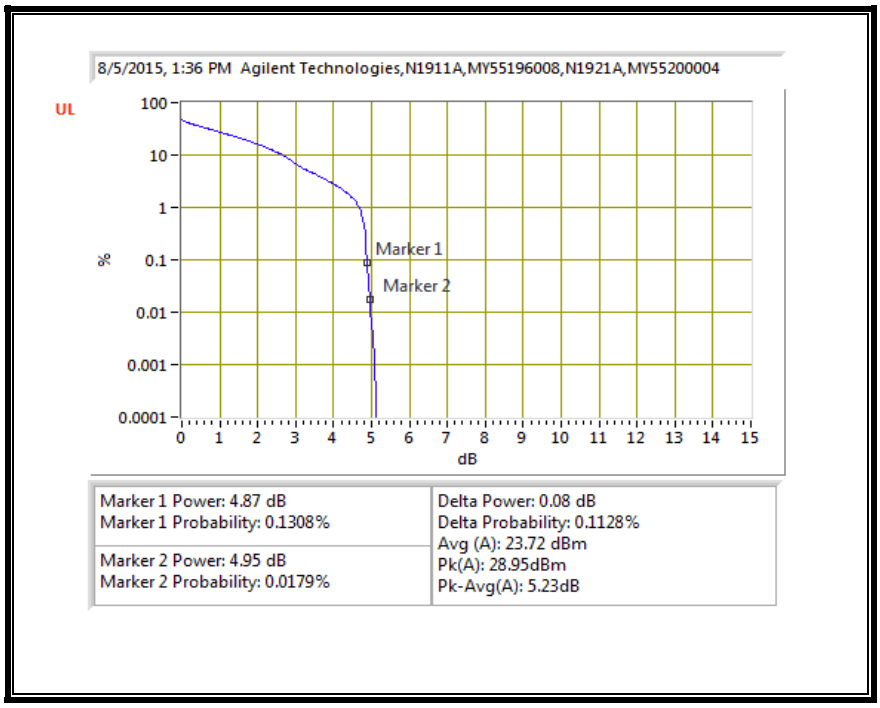
QPSK, (1.4 MHz BAND WIDTH)



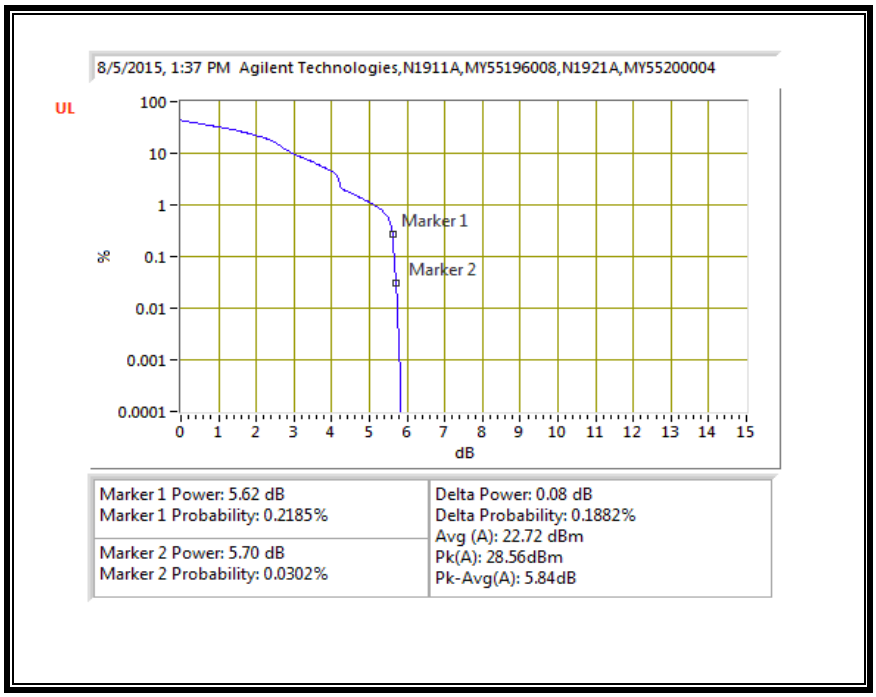
16QAM, (1.4 MHz BAND WIDTH)



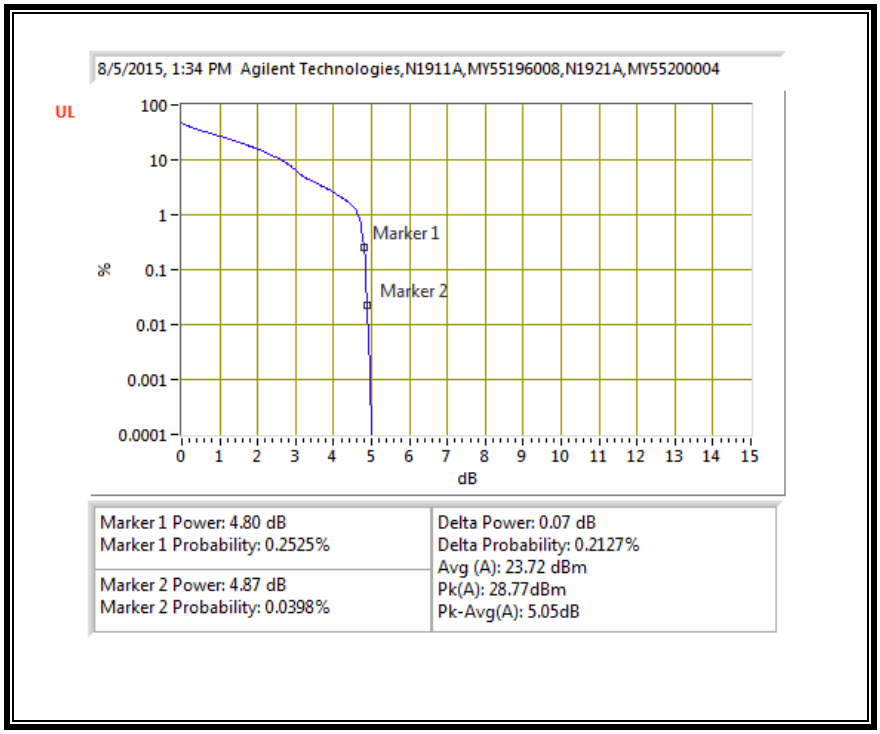
QPSK, (3.0 MHz BAND WIDTH)



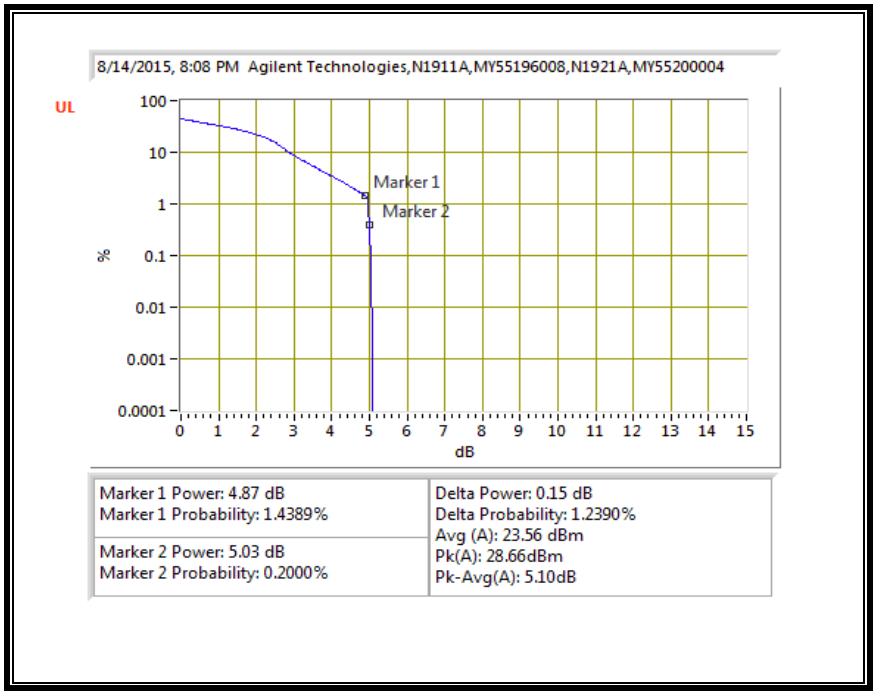
16QAM, (3.0 MHz BAND WIDTH)



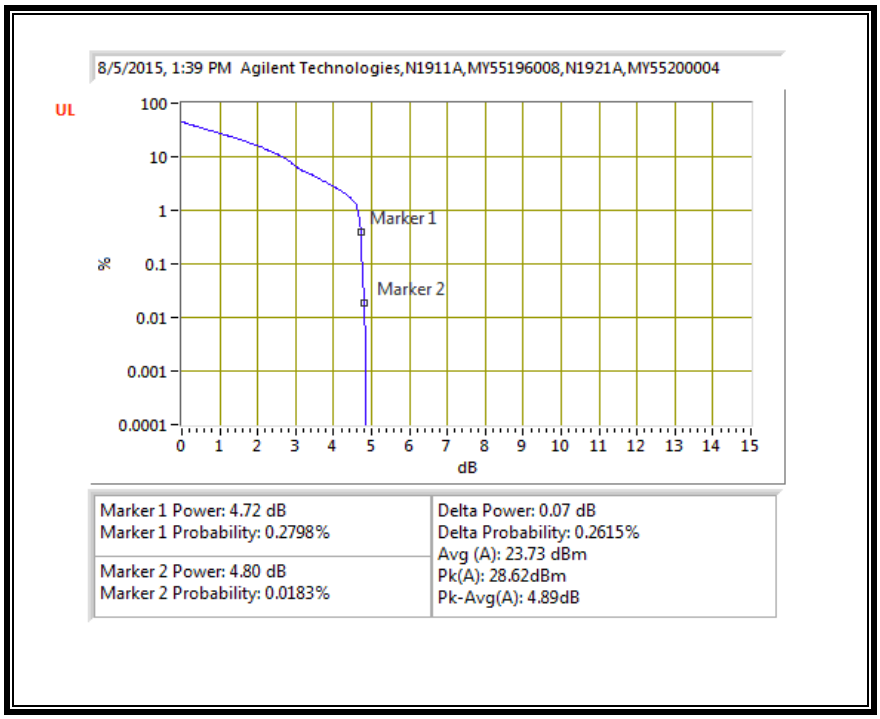
QPSK, (5.0 MHz BAND WIDTH)



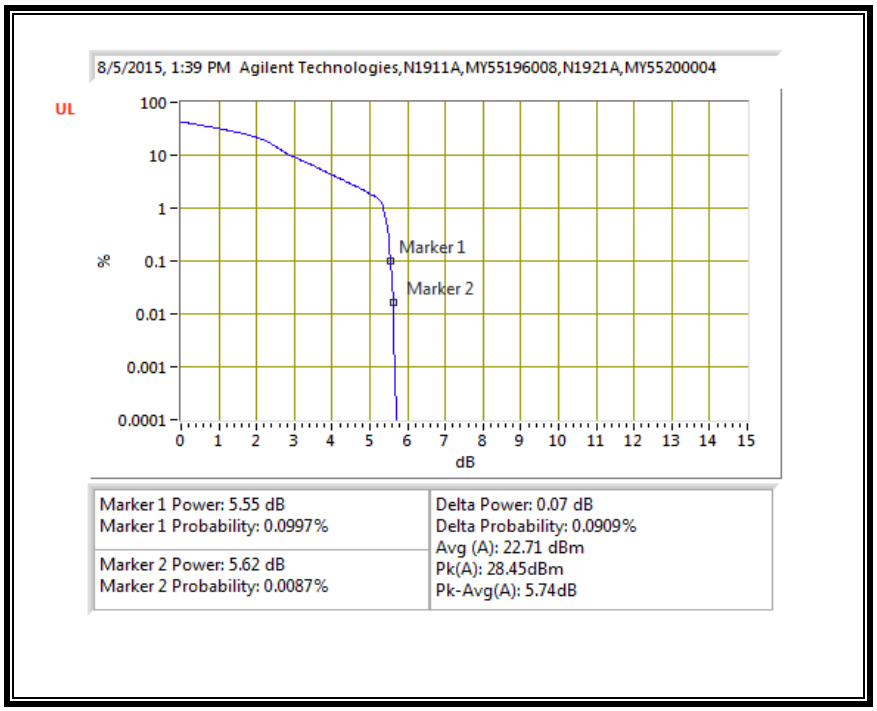
16QAM, (5.0 MHz BAND WIDTH)



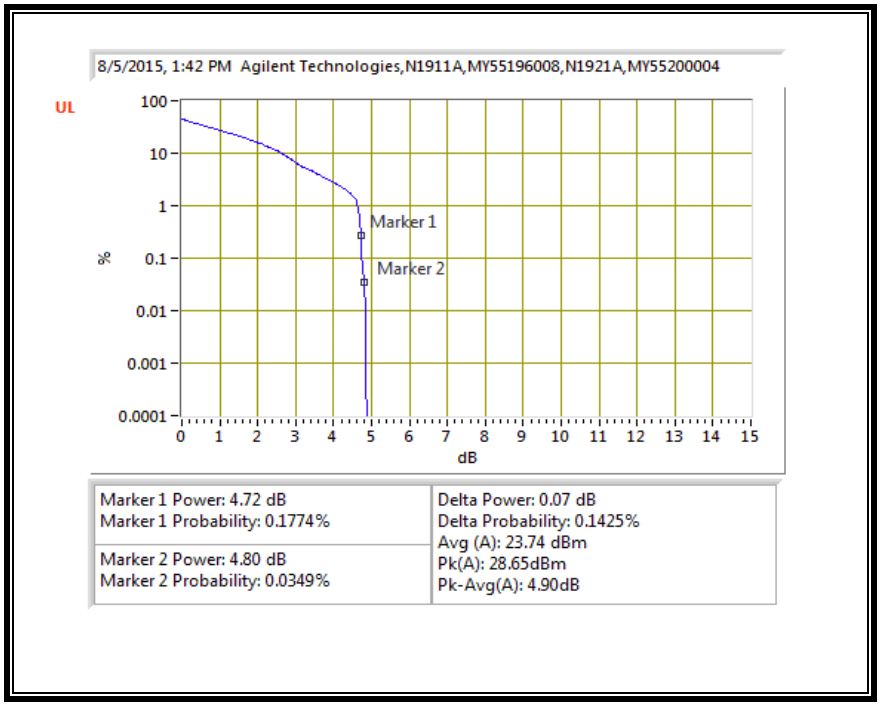
QPSK, (10.0 MHz BAND WIDTH)



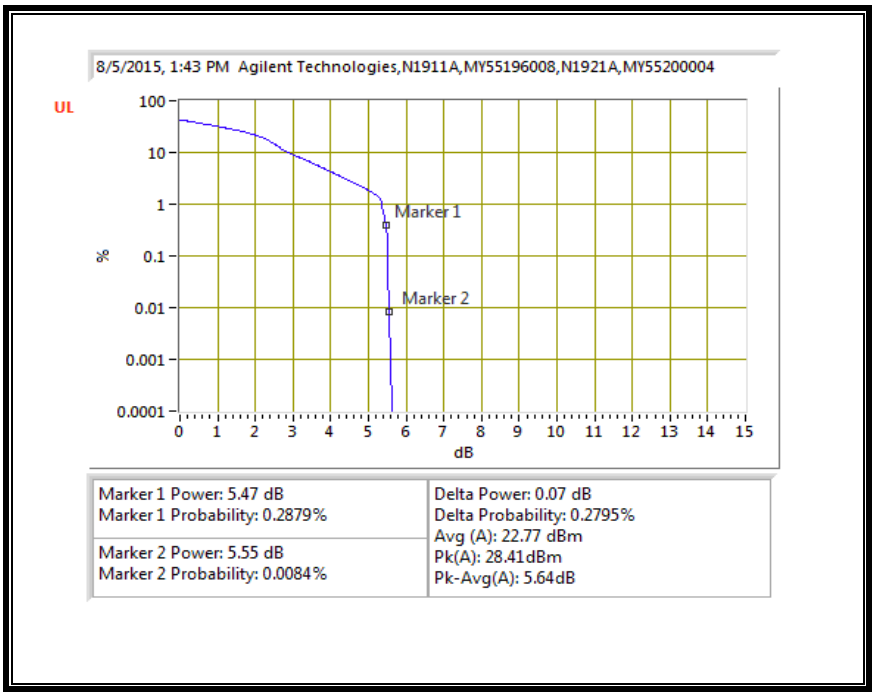
16QAM, (10.0 MHz BAND WIDTH)



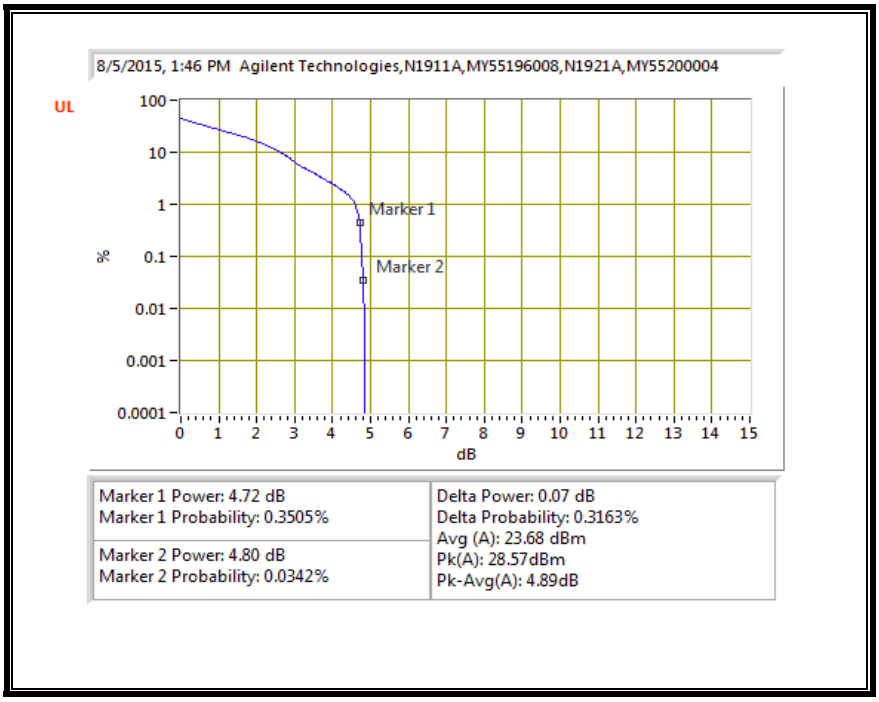
QPSK, (15.0 MHz BAND WIDTH)



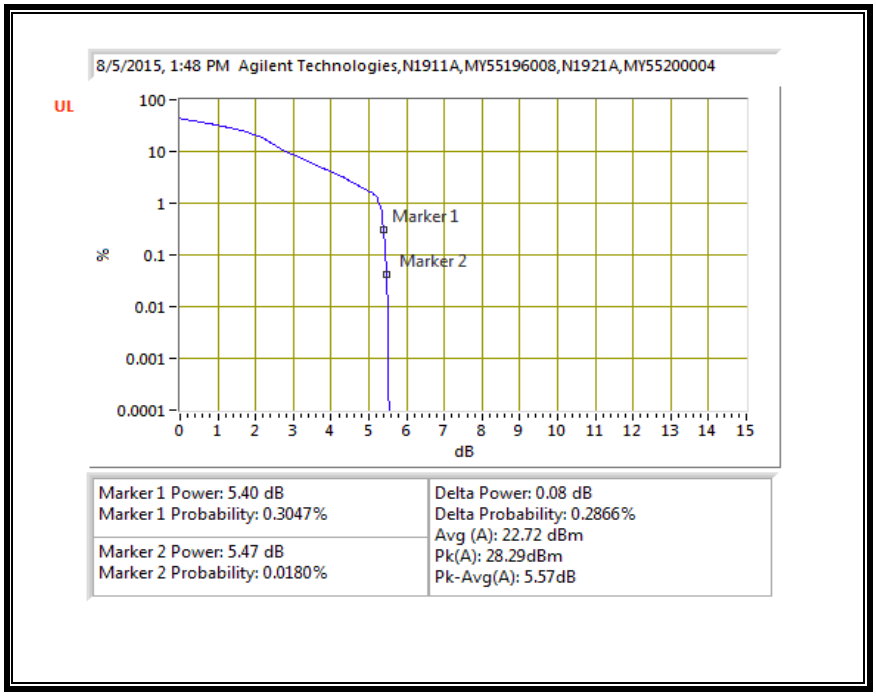
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

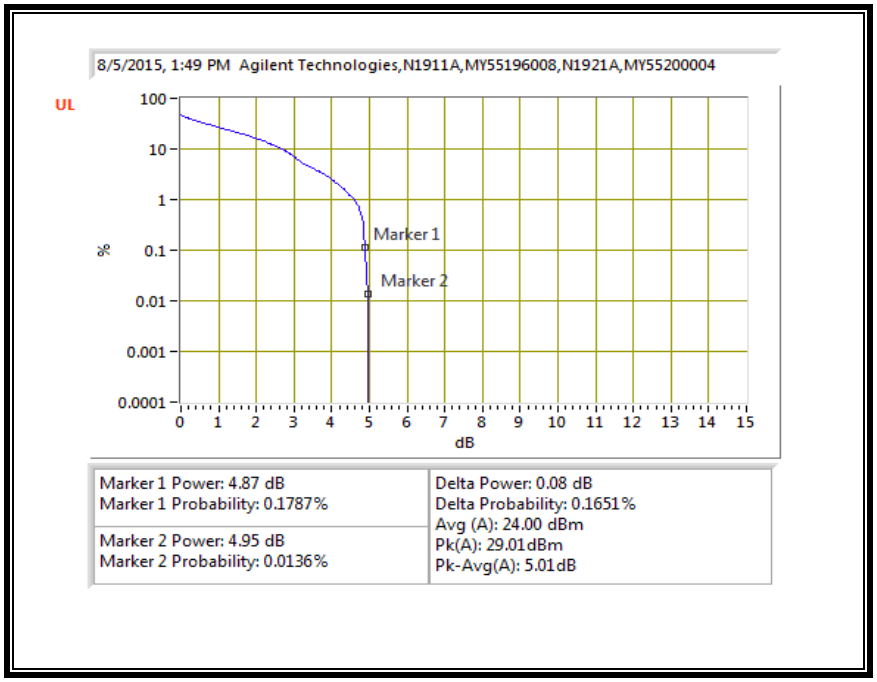


16QAM, (20.0 MHz BAND WIDTH)

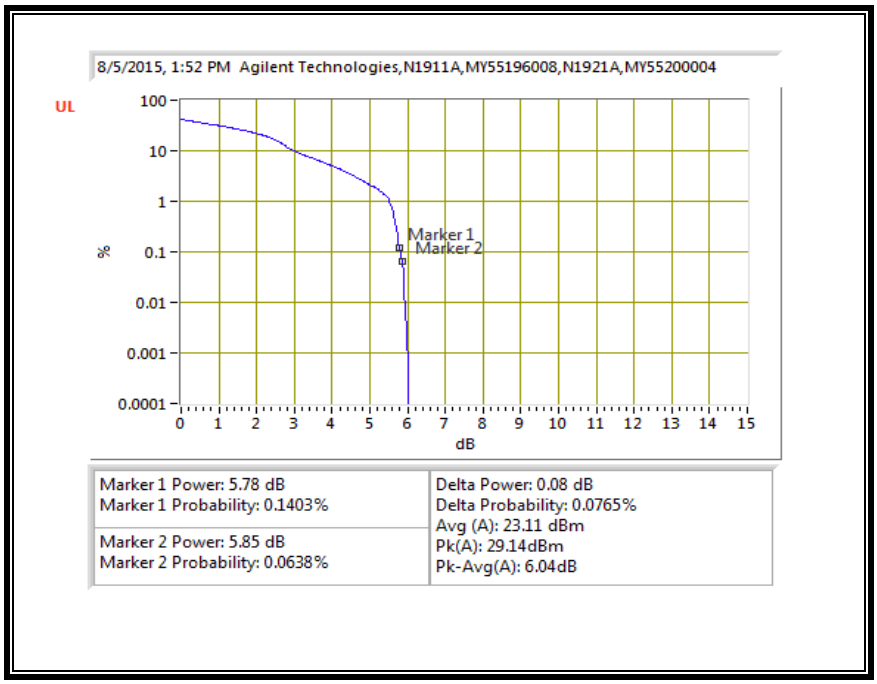


LTE BAND 26

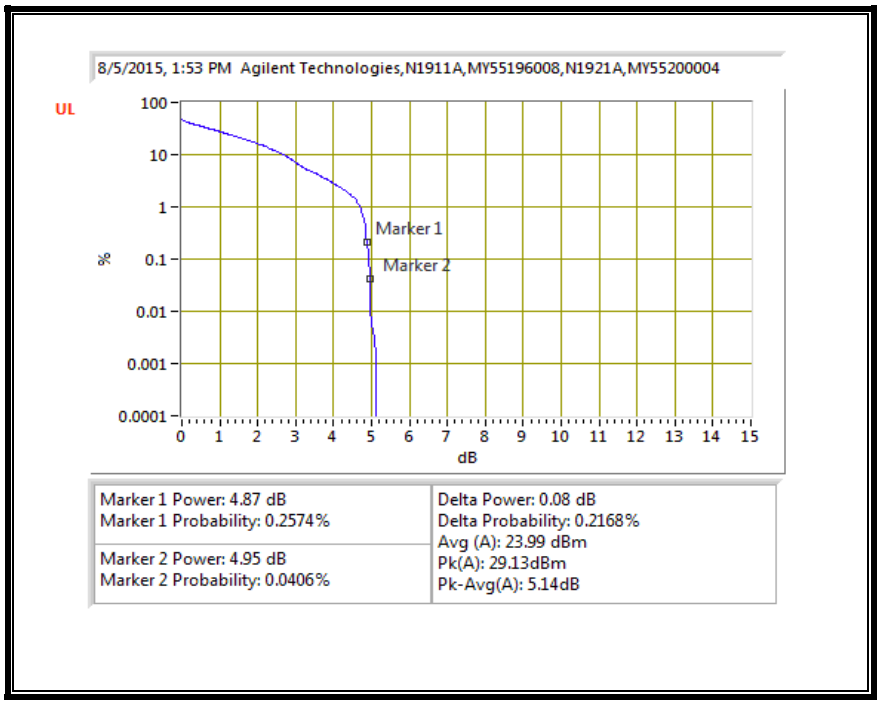
QPSK, (1.4 MHz BAND WIDTH)



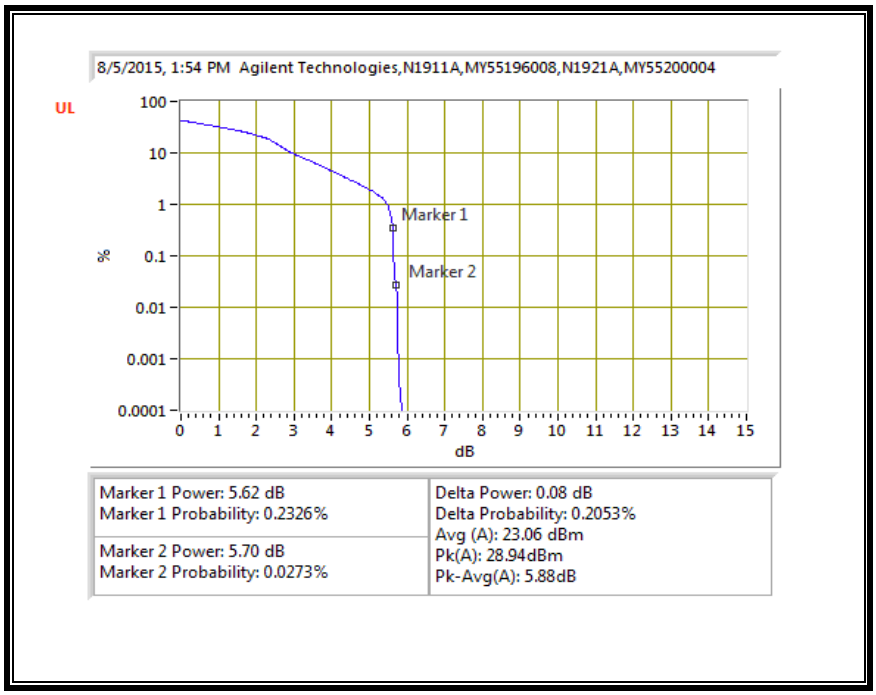
16QAM, (1.4 MHz BAND WIDTH)



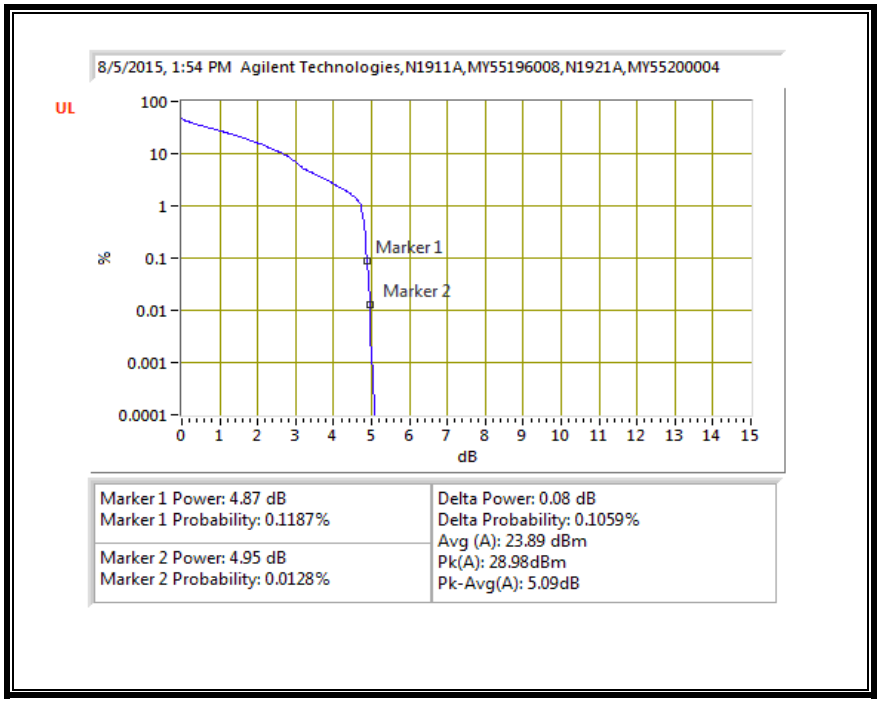
QPSK, (3.0 MHz BAND WIDTH)



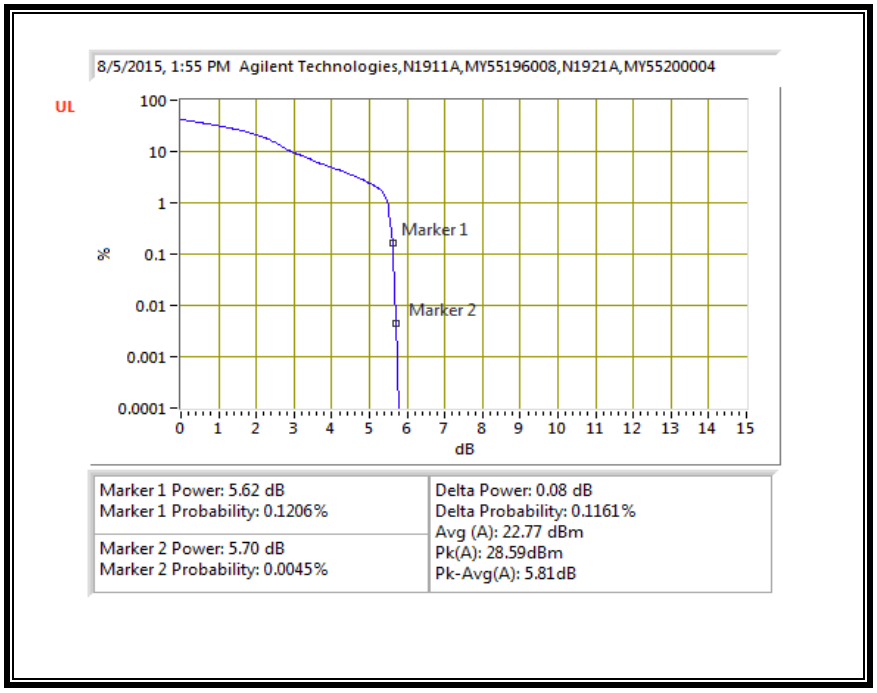
16QAM, (3.0 MHz BAND WIDTH)



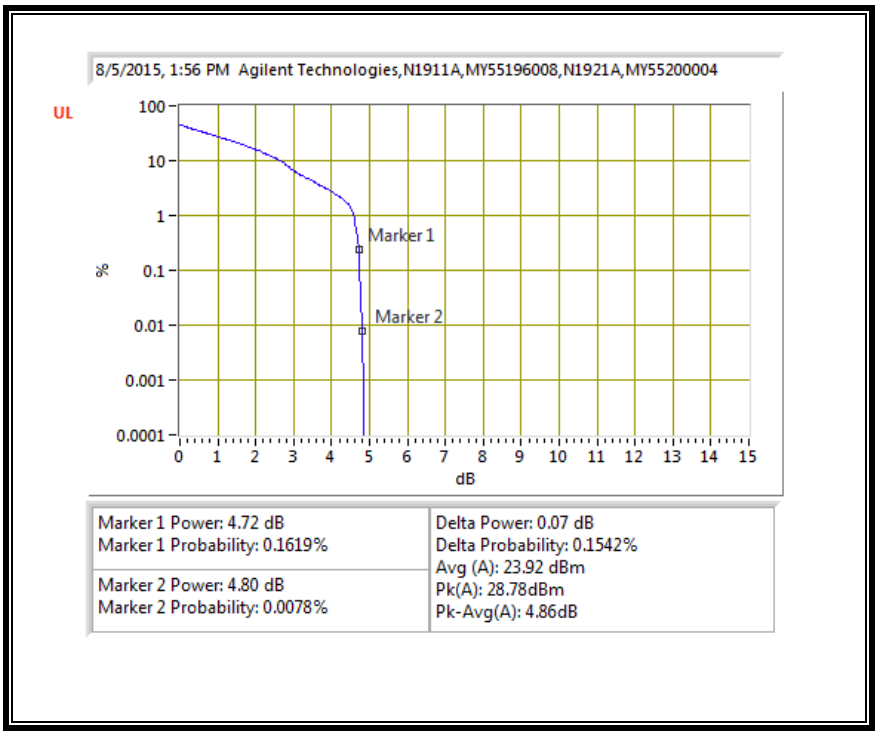
QPSK, (5.0 MHz BAND WIDTH)



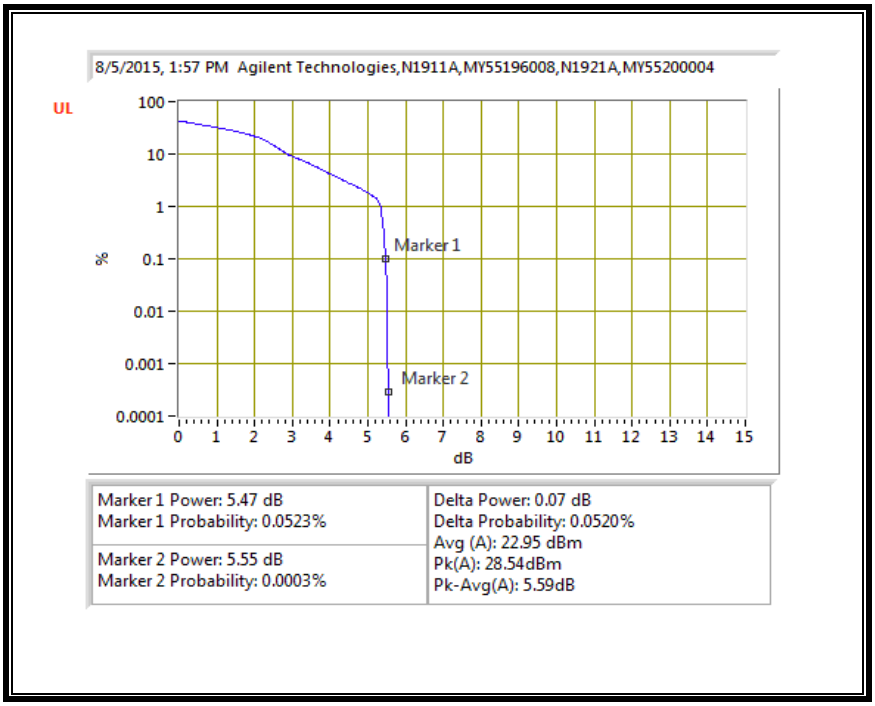
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)



16QAM, (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 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/20/15
Test Engineer: E. Lee
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 H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-62.8	H	3.0	-14.9	37.4	1.0	-51.3	-13.0	-38.3	
5.58	-62.5	H	3.0	-11.5	36.7	1.0	-47.2	-13.0	-34.2	
3.72	-62.3	V	3.0	-14.6	37.4	1.0	-51.0	-13.0	-38.0	
5.58	-64.9	V	3.0	-13.8	36.7	1.0	-49.5	-13.0	-36.5	
Mid Channel (1880MHz)										
3.76	-62.2	H	3.0	-14.2	37.4	1.0	-50.6	-13.0	-37.6	
5.64	-64.2	H	3.0	-13.2	36.7	1.0	-48.9	-13.0	-35.9	
3.76	-62.5	V	3.0	-14.7	37.4	1.0	-51.0	-13.0	-38.0	
5.64	-64.2	V	3.0	-13.1	36.7	1.0	-48.8	-13.0	-35.8	
High Channel (1900MHz)										
3.80	-63.0	H	3.0	-15.0	37.3	1.0	-51.4	-13.0	-38.4	
5.70	-62.6	H	3.0	-11.4	36.7	1.0	-47.1	-13.0	-34.1	
3.80	-62.8	V	3.0	-14.9	37.3	1.0	-51.2	-13.0	-38.2	
5.70	-62.6	V	3.0	-11.4	36.7	1.0	-47.1	-13.0	-34.1	

Rev. 05.21.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/20/15
Test Engineer: E. Lee
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 H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-63.0	H	3.0	-15.0	37.4	1.0	-51.4	-13.0	-38.4	
5.58	-62.9	H	3.0	-11.9	36.7	1.0	-47.6	-13.0	-34.6	
3.72	-63.1	V	3.0	-15.3	37.4	1.0	-51.7	-13.0	-38.7	
5.58	-62.9	V	3.0	-11.8	36.7	1.0	-47.5	-13.0	-34.5	
Mid Channel (1880MHz)										
3.76	-62.4	H	3.0	-14.4	37.4	1.0	-50.8	-13.0	-37.8	
5.64	-63.1	H	3.0	-12.1	36.7	1.0	-47.8	-13.0	-34.8	
3.76	-62.9	V	3.0	-15.0	37.4	1.0	-51.4	-13.0	-38.4	
5.64	-62.9	V	3.0	-11.7	36.7	1.0	-47.4	-13.0	-34.4	
High Channel (1900MHz)										
3.80	-62.9	H	3.0	-14.9	37.3	1.0	-51.2	-13.0	-38.2	
5.70	-62.3	H	3.0	-11.1	36.7	1.0	-46.8	-13.0	-33.8	
3.80	-62.5	V	3.0	-14.7	37.3	1.0	-51.0	-13.0	-38.0	
5.70	-62.8	V	3.0	-11.6	36.7	1.0	-47.3	-13.0	-34.3	

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9.3.2. LTE BAND 4

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/22/15
Test Engineer: E. Lee
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 H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.44	-66.3	H	3.0	-18.4	37.7	1.0	-55.1	-13.0	-42.1	
5.16	-67.0	H	3.0	-16.7	36.8	1.0	-52.6	-13.0	-39.6	
3.44	-67.2	V	3.0	-20.1	37.7	1.0	-56.8	-13.0	-43.8	
5.16	-66.4	V	3.0	-15.9	36.8	1.0	-51.7	-13.0	-38.7	
Mid Channel (1732.5MHz)										
3.47	-66.9	H	3.0	-19.0	37.7	1.0	-55.7	-13.0	-42.7	
5.20	-66.6	H	3.0	-16.2	36.8	1.0	-52.1	-13.0	-39.1	
3.47	-66.5	V	3.0	-18.0	37.7	1.0	-54.7	-13.0	-41.7	
5.20	-68.6	V	3.0	-18.0	36.8	1.0	-53.8	-13.0	-40.8	
High Channel (1745MHz)										
3.49	-67.9	H	3.0	-20.0	37.6	1.0	-56.7	-13.0	-43.7	
5.24	-66.9	H	3.0	-16.5	36.8	1.0	-52.3	-13.0	-39.3	
3.49	-66.2	V	3.0	-19.0	37.6	1.0	-55.6	-13.0	-42.6	
5.24	-67.5	V	3.0	-16.9	36.8	1.0	-52.7	-13.0	-39.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/22/15
Test Engineer: E. Lee
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 H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1720MHz)										
3.44	-67.5	H	3.0	-19.7	37.7	1.0	-56.4	-13.0	-43.4	
5.16	-68.0	H	3.0	-17.7	36.8	1.0	-53.5	-13.0	-40.5	
3.44	-67.6	V	3.0	-20.4	37.7	1.0	-57.1	-13.0	-44.1	
5.16	-67.0	V	3.0	-16.5	36.8	1.0	-52.4	-13.0	-39.4	
Mid Channel (1732.5MHz)										
3.47	-66.9	H	3.0	-19.0	37.7	1.0	-55.7	-13.0	-42.7	
5.20	-67.8	H	3.0	-17.5	36.8	1.0	-53.3	-13.0	-40.3	
3.47	-68.0	V	3.0	-20.8	37.7	1.0	-57.5	-13.0	-44.5	
5.20	-68.3	V	3.0	-17.7	36.8	1.0	-53.6	-13.0	-40.6	
High Channel (1745MHz)										
3.49	-67.0	H	3.0	-19.1	37.6	1.0	-55.8	-13.0	-42.8	
5.24	-66.8	H	3.0	-16.3	36.8	1.0	-52.1	-13.0	-39.1	
3.49	-67.1	V	3.0	-19.9	37.6	1.0	-56.5	-13.0	-43.5	
5.24	-66.8	V	3.0	-16.2	36.8	1.0	-52.1	-13.0	-39.1	

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9.3.3. LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/27/15
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5, 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.66	-64.4	H	3.0	-24.0	37.7	1.0	-60.7	-13.0	-47.7	
2.49	-65.1	H	3.0	-21.0	37.1	1.0	-57.1	-13.0	-44.1	
1.66	-62.5	V	3.0	-21.8	37.7	1.0	-58.5	-13.0	-45.5	
2.49	-65.3	V	3.0	-21.2	37.1	1.0	-57.2	-13.0	-44.2	
Mid Channel (836.5MHz)										
1.67	-64.9	H	3.0	-24.4	37.8	1.0	-61.1	-13.0	-48.1	
2.51	-64.1	H	3.0	-19.9	37.1	1.0	-56.0	-13.0	-43.0	
1.67	-61.3	V	3.0	-20.5	37.8	1.0	-57.3	-13.0	-44.3	
2.51	-63.9	V	3.0	-19.7	37.1	1.0	-55.7	-13.0	-42.7	
High Channel (844MHz)										
1.69	-64.8	H	3.0	-24.1	37.8	1.0	-60.9	-13.0	-47.9	
2.53	-64.7	H	3.0	-20.4	37.1	1.0	-56.5	-13.0	-43.5	
1.69	-64.5	V	3.0	-23.6	37.8	1.0	-60.4	-13.0	-47.4	
2.53	-65.5	V	3.0	-21.2	37.1	1.0	-57.4	-13.0	-44.4	

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16QAM EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/27/15
Test Engineer: E. Lee
Configuration: EUT only
Mode: LTE Band 5, 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (829MHz)										
1.66	-64.5	H	3.0	-24.1	37.7	1.0	-60.8	-13.0	-47.8	
2.49	-59.3	H	3.0	-15.3	37.1	1.0	-51.3	-13.0	-38.3	
1.66	-57.9	V	3.0	-17.2	37.7	1.0	-54.0	-13.0	-41.0	
2.49	-59.9	V	3.0	-15.8	37.1	1.0	-51.8	-13.0	-38.8	
Mid Channel (836.5MHz)										
1.67	-57.0	H	3.0	-16.4	37.8	1.0	-53.2	-13.0	-40.2	
2.51	-60.4	H	3.0	-16.3	37.1	1.0	-52.3	-13.0	-39.3	
1.67	-59.2	V	3.0	-18.4	37.8	1.0	-55.2	-13.0	-42.2	
2.51	-57.2	V	3.0	-12.9	37.1	1.0	-49.0	-13.0	-36.0	
High Channel (844MHz)										
1.69	-64.7	H	3.0	-24.1	37.8	1.0	-60.8	-13.0	-47.8	
2.53	-60.5	H	3.0	-16.2	37.1	1.0	-52.4	-13.0	-39.4	
1.69	-63.5	V	3.0	-22.6	37.8	1.0	-59.4	-13.0	-46.4	
2.53	-60.6	V	3.0	-16.3	37.1	1.0	-52.4	-13.0	-39.4	

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9.3.4. LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 13, 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-65.8	H	3.0	-26.0	37.7	1.0	-62.7	-40.0	-22.7	
2.35	-65.2	H	3.0	-21.6	37.1	1.0	-57.7	-13.0	-44.7	
1.56	-65.7	V	3.0	-25.6	37.7	1.0	-62.3	-40.0	-22.3	
2.35	-64.8	V	3.0	-21.0	37.1	1.0	-57.1	-13.0	-44.1	

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16QAM EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 13, 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (782MHz)										
1.56	-66.8	H	3.0	-27.1	37.7	1.0	-63.7	-40.0	-23.7	
2.35	-65.5	H	3.0	-21.9	37.1	1.0	-58.0	-13.0	-45.0	
1.56	-66.2	V	3.0	-26.1	37.7	1.0	-62.8	-40.0	-22.8	
2.35	-66.3	V	3.0	-22.4	37.1	1.0	-58.6	-13.0	-45.6	

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9.3.5. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 17, 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.42	-64.8	H	3.0	-25.8	37.4	1.0	-62.2	-13.0	-49.2	
2.13	-65.1	H	3.0	-21.9	37.6	1.0	-58.6	-13.0	-45.6	
2.84	-65.5	H	3.0	-19.0	37.8	1.0	-55.8	-13.0	-42.8	
1.42	-65.5	V	3.0	-26.2	37.4	1.0	-62.6	-13.0	-49.6	
2.13	-66.1	V	3.0	-23.0	37.6	1.0	-59.6	-13.0	-46.6	
2.84	-64.7	V	3.0	-19.2	37.8	1.0	-56.1	-13.0	-43.1	

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16QAM EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 17, 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (710MHz)										
1.42	-65.3	H	3.0	-26.3	37.4	1.0	-62.7	-13.0	-49.7	
2.13	-65.0	H	3.0	-21.8	37.6	1.0	-58.5	-13.0	-45.5	
2.84	-65.0	H	3.0	-18.5	37.8	1.0	-55.3	-13.0	-42.3	
1.42	-65.6	V	3.0	-26.3	37.4	1.0	-62.7	-13.0	-49.7	
2.13	-64.8	V	3.0	-21.7	37.6	1.0	-58.4	-13.0	-45.4	
2.84	-65.7	V	3.0	-20.2	37.8	1.0	-57.1	-13.0	-44.1	

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9.3.6. LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: J. Liu
Configuration: EUT Only
Mode: LTE Band 25, 20MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-62.8	H	3.0	-14.8	37.4	1.0	-51.2	-13.0	-38.2	
5.58	-64.1	H	3.0	-13.1	36.7	1.0	-48.8	-13.0	-35.8	
3.72	-62.3	V	3.0	-14.6	37.4	1.0	-51.0	-13.0	-38.0	
5.58	-63.9	V	3.0	-12.8	36.7	1.0	-48.6	-13.0	-35.6	
Mid Channel (1882.5MHz)										
3.77	-63.0	H	3.0	-15.0	37.3	1.0	-51.4	-13.0	-38.4	
5.65	-64.6	H	3.0	-13.5	36.7	1.0	-49.2	-13.0	-36.2	
3.77	-62.7	V	3.0	-14.9	37.3	1.0	-51.2	-13.0	-38.2	
5.65	-63.0	V	3.0	-11.8	36.7	1.0	-47.5	-13.0	-34.5	
High Channel (1905MHz)										
3.81	-62.6	H	3.0	-14.6	37.3	1.0	-50.9	-13.0	-37.9	
5.72	-62.9	H	3.0	-11.7	36.7	1.0	-47.4	-13.0	-34.4	
3.81	-62.5	V	3.0	-14.6	37.3	1.0	-50.9	-13.0	-37.9	
5.72	-64.9	V	3.0	-13.6	36.7	1.0	-49.3	-13.0	-36.3	

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16QAM EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/23/15
Test Engineer: J. Liu
Configuration: EUT Only
Mode: LTE Band 25, 20MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1860MHz)										
3.72	-62.8	H	3.0	-14.8	37.4	1.0	-51.2	-13.0	-38.2	
5.58	-63.4	H	3.0	-12.4	36.7	1.0	-48.1	-13.0	-35.1	
3.72	-61.7	V	3.0	-14.0	37.4	1.0	-50.4	-13.0	-37.4	
5.58	-63.7	V	3.0	-12.6	36.7	1.0	-48.4	-13.0	-35.4	
Mid Channel (1882.5MHz)										
3.77	-62.5	H	3.0	-14.5	37.3	1.0	-50.9	-13.0	-37.9	
5.65	-64.7	H	3.0	-13.6	36.7	1.0	-49.3	-13.0	-36.3	
3.77	-62.2	V	3.0	-14.4	37.3	1.0	-50.7	-13.0	-37.7	
5.65	-63.3	V	3.0	-12.1	36.7	1.0	-47.8	-13.0	-34.8	
High Channel (1905MHz)										
3.81	-62.0	H	3.0	-14.0	37.3	1.0	-50.3	-13.0	-37.3	
5.72	-63.9	H	3.0	-12.7	36.7	1.0	-48.4	-13.0	-35.4	
3.81	-61.8	V	3.0	-13.9	37.3	1.0	-50.2	-13.0	-37.2	
5.72	-64.0	V	3.0	-12.7	36.7	1.0	-48.4	-13.0	-35.4	

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9.3.7. LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/24/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-64.0	H	3.0	-23.7	37.7	1.0	-60.4	-13.0	-47.4	
2.46	-56.1	H	3.0	-12.1	37.0	1.0	-48.2	-13.0	-35.2	
1.64	-55.6	V	3.0	-15.0	37.7	1.0	-51.8	-13.0	-38.8	
2.46	-55.5	V	3.0	-11.4	37.0	1.0	-47.4	-13.0	-34.4	

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16QAM EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/24/15
Test Engineer: E. Lee
Configuration: EUT Only
Mode: LTE Band 26 (90S), 10MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Mid Channel (819MHz)										
1.64	-64.8	H	3.0	-24.5	37.7	1.0	-61.2	-13.0	-48.2	
2.46	-57.2	H	3.0	-13.2	37.0	1.0	-49.3	-13.0	-36.3	
1.64	-57.2	V	3.0	-16.6	37.7	1.0	-53.4	-13.0	-40.4	
2.46	-56.8	V	3.0	-12.7	37.0	1.0	-48.7	-13.0	-35.7	

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9.3.8. TE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/27/15
Test Engineer: G. Chan
Configuration: EUT Only
Mode: LTE Band 41, 20MHz QPSK

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
5.01	-62.76	H	3.0	-12.7	36.9	1.0	-48.6	-25.0	-23.6	
7.52	-64.39	H	3.0	-10.5	35.9	1.0	-45.5	-25.0	-20.5	
5.01	-63.38	V	3.0	-13.2	36.9	1.0	-49.0	-25.0	-24.0	
7.52	-61.89	V	3.0	-19.7	35.9	1.0	-54.6	-25.0	-29.6	
Mid Channel (2593MHz)										
5.19	-63.37	H	3.0	-13.0	36.8	1.0	-48.9	-25.0	-23.9	
7.78	-64.53	H	3.0	-10.4	35.7	1.0	-45.1	-25.0	-20.1	
5.19	-63.23	V	3.0	-12.7	36.8	1.0	-48.5	-25.0	-23.5	
7.78	-64.15	V	3.0	-27.4	35.7	1.0	-62.1	-25.0	-37.1	
High Channel (2680MHz)										
5.36	-63.19	H	3.0	-12.6	36.8	1.0	-48.3	-25.0	-23.3	
8.04	-65.26	H	3.0	-10.9	35.4	1.0	-45.3	-25.0	-20.3	
5.36	-64.14	V	3.0	-13.4	36.8	1.0	-49.2	-25.0	-24.2	
8.04	-63.82	V	3.0	-32.5	35.4	1.0	-67.0	-25.0	-42.0	

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16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 14U19185
Date: 07/27/15
Test Engineer: G. Chan
Configuration: EUT Only
Mode: LTE Band 41, 20MHz 16QAM

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

Chamber	Pre-amplifer	Filter	Limit
3m Chamber H	3m Chamber H	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)										
5.01	-63.08	H	3.0	-13.1	36.9	1.0	-48.9	-25.0	-23.9	
7.52	-63.96	H	3.0	-10.1	35.9	1.0	-45.0	-25.0	-20.0	
5.01	-63.55	V	3.0	-13.3	36.9	1.0	-49.2	-25.0	-24.2	
7.52	-65.17	V	3.0	-22.9	35.9	1.0	-57.9	-25.0	-32.9	
Mid Channel (2593MHz)										
5.19	-64.37	H	3.0	-14.0	36.8	1.0	-49.9	-25.0	-24.9	
7.78	-64.75	H	3.0	-10.6	35.7	1.0	-45.3	-25.0	-20.3	
5.19	-63.82	V	3.0	-13.3	36.8	1.0	-49.1	-25.0	-24.1	
7.78	-64.71	V	3.0	-28.0	35.7	1.0	-62.6	-25.0	-37.6	
High Channel (2680MHz)										
5.36	-63.60	H	3.0	-13.0	36.8	1.0	-48.8	-25.0	-23.8	
8.04	-64.80	H	3.0	-10.4	35.4	1.0	-44.8	-25.0	-19.8	
5.36	-62.99	V	3.0	-12.2	36.8	1.0	-48.0	-25.0	-23.0	
8.04	-64.15	V	3.0	-32.9	35.4	1.0	-67.3	-25.0	-42.3	

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