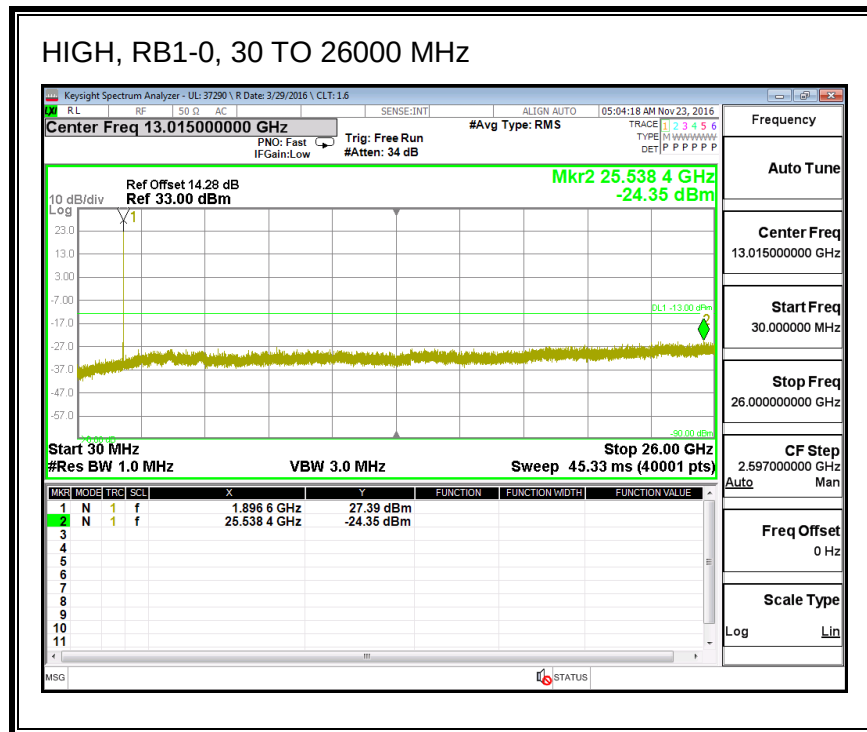
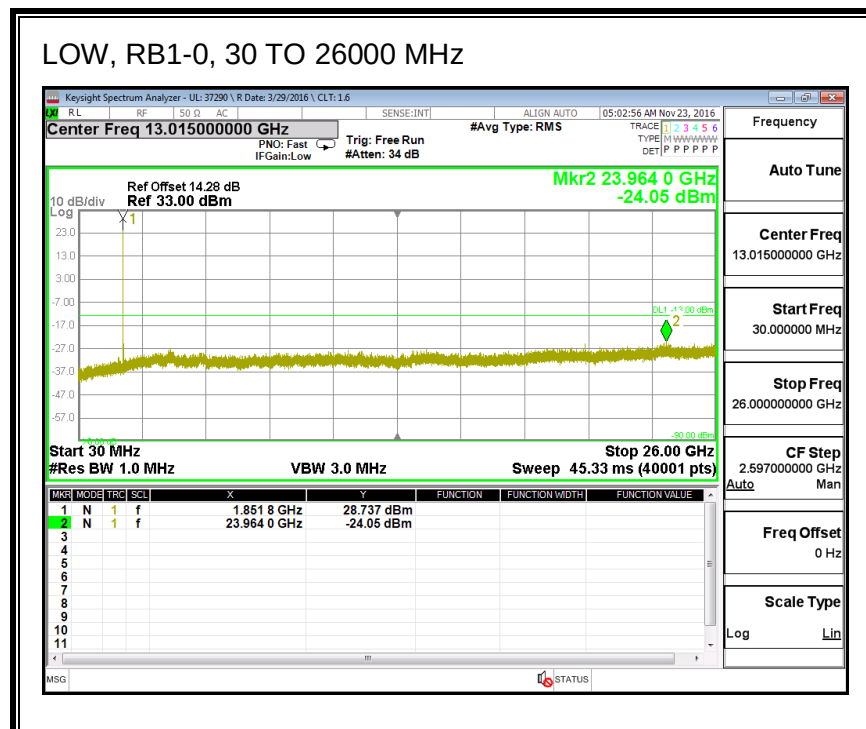
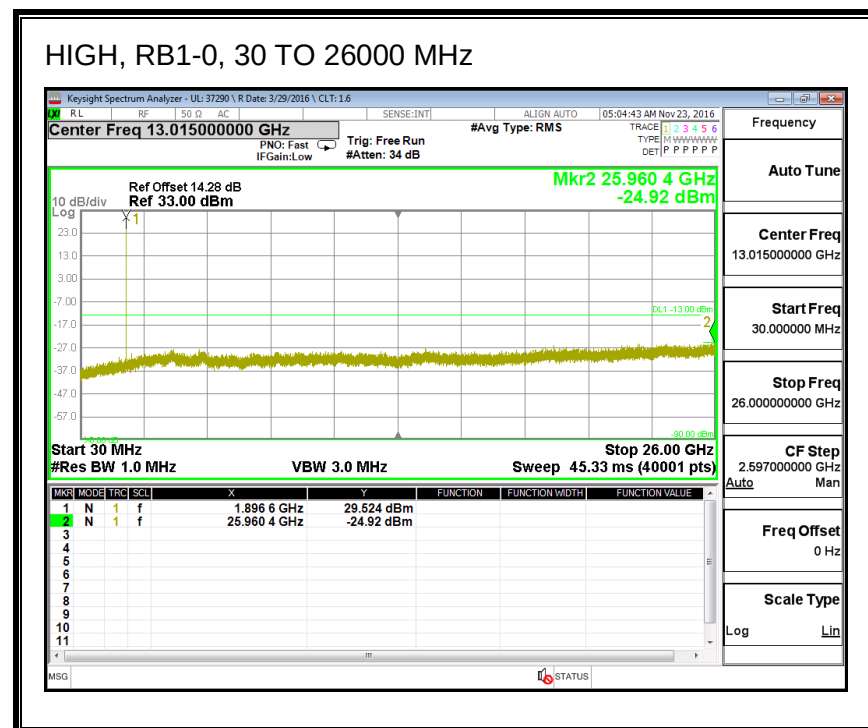
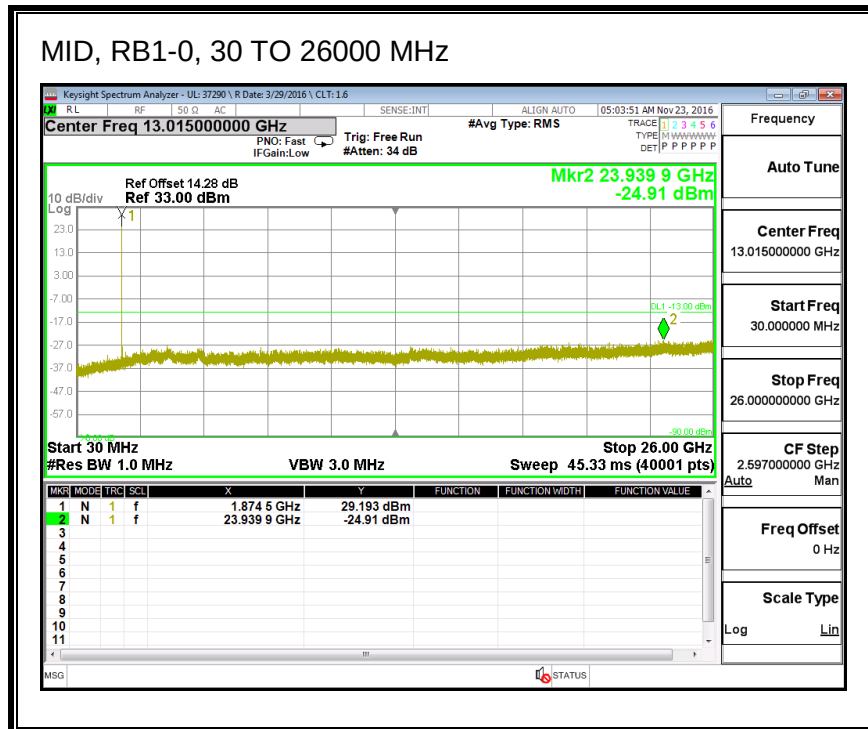




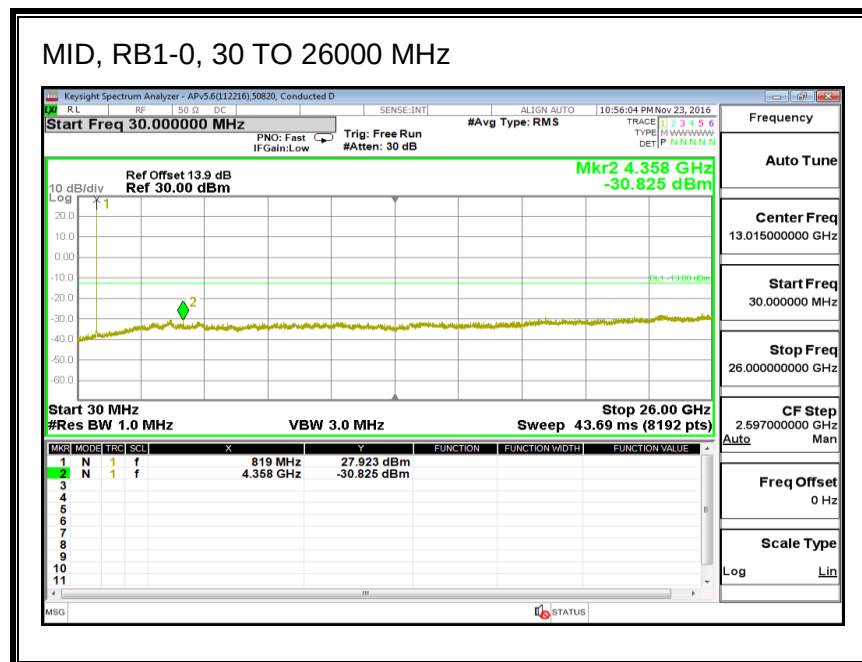
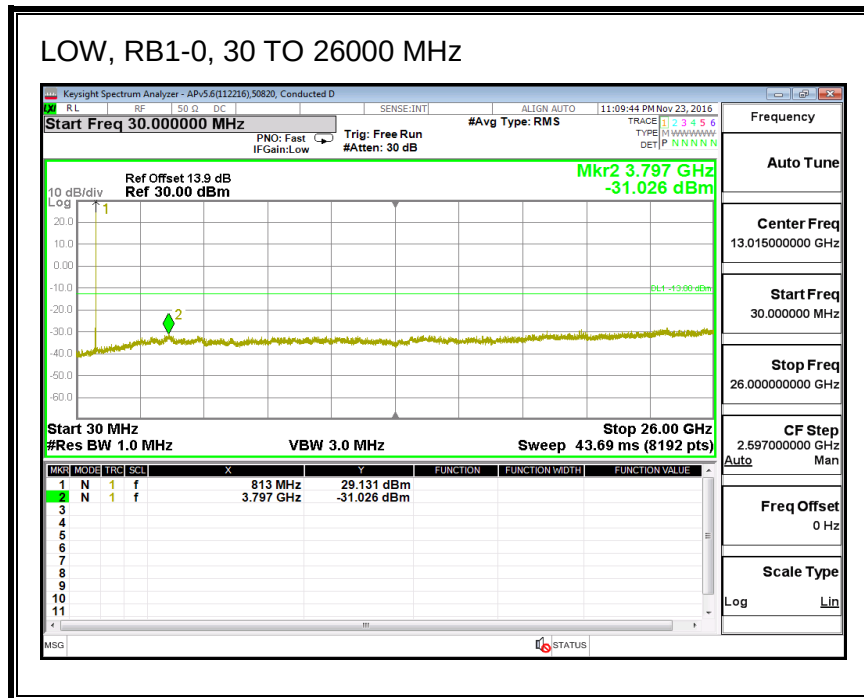
16QAM, (20.0 MHz BAND WIDTH)

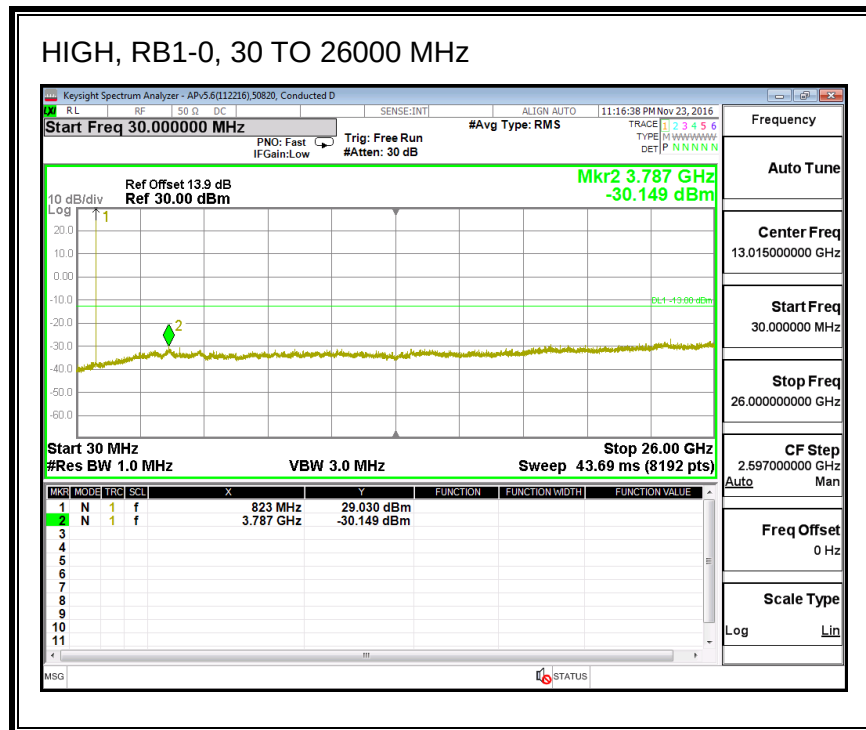




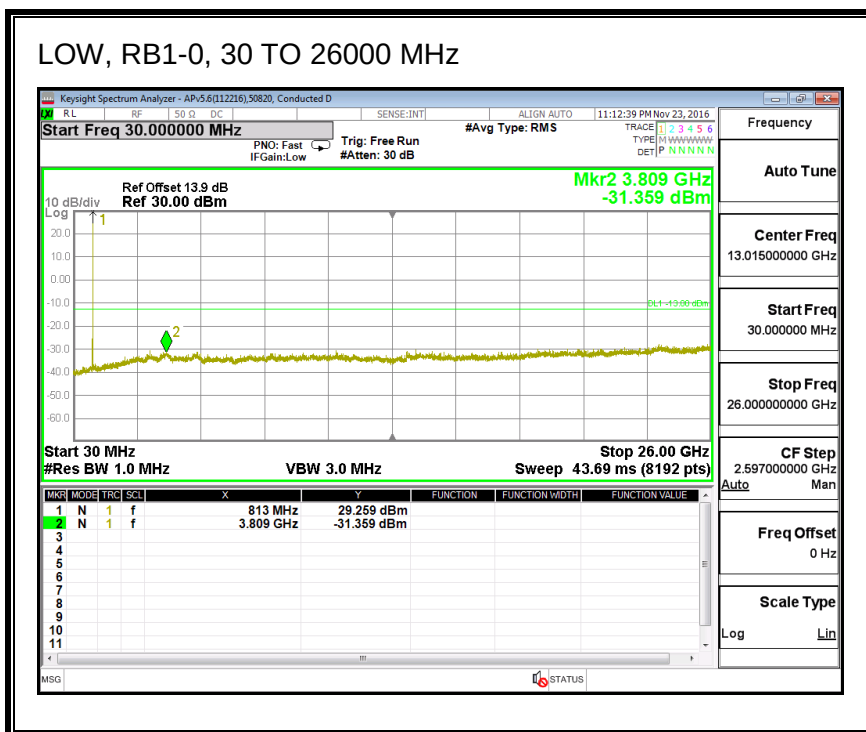
8.3.9. LTE BAND 26

QPSK, (1.4 MHz BAND WIDTH)

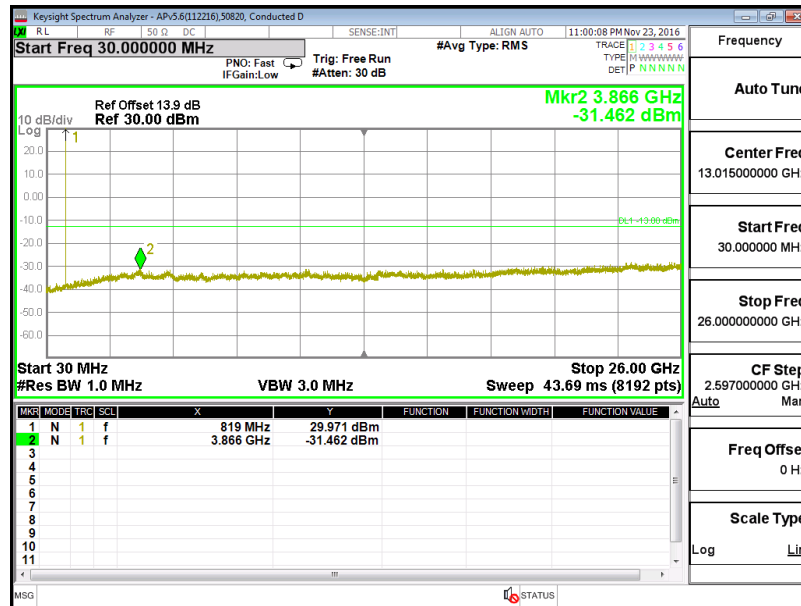




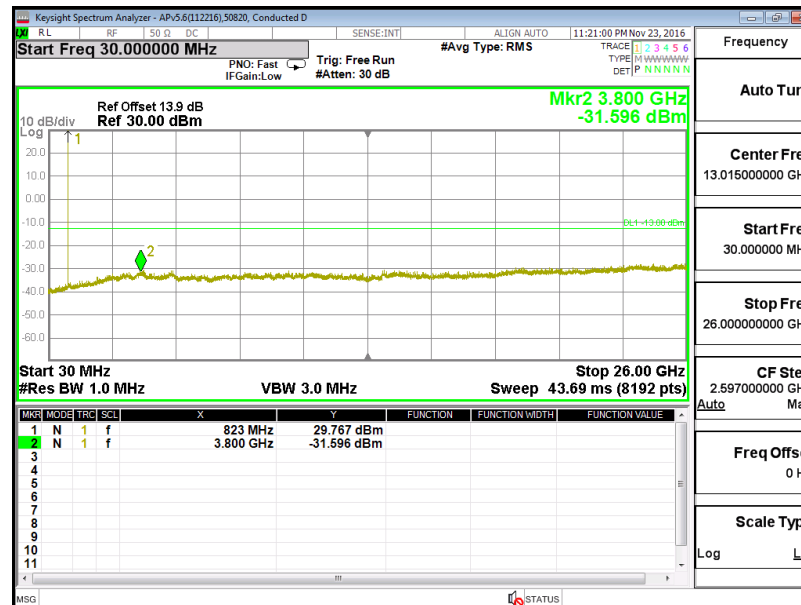
16QAM, (1.4 MHz BAND WIDTH)



MID, RB1-0, 30 TO 26000 MHz

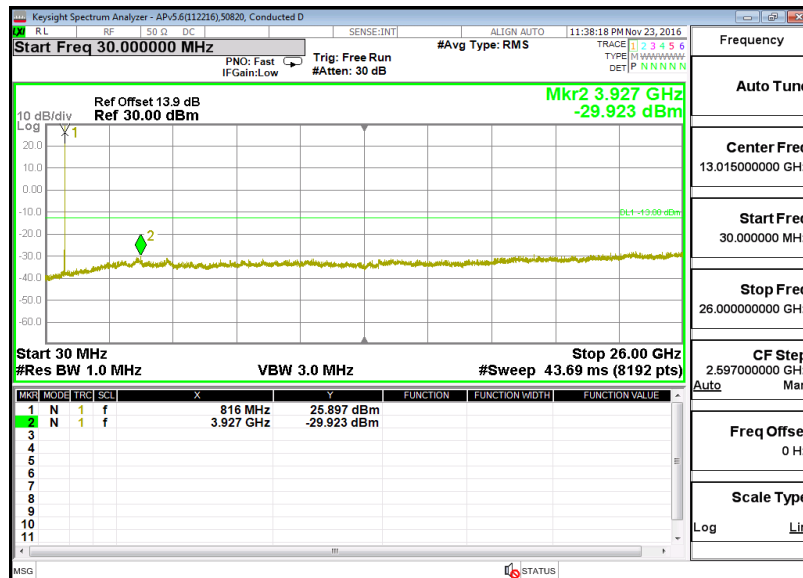


HIGH, RB1-0, 30 TO 26000 MHz

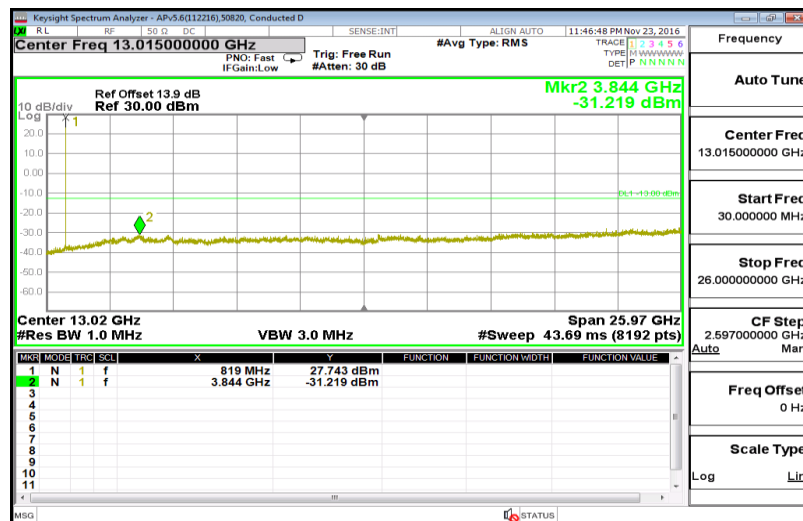


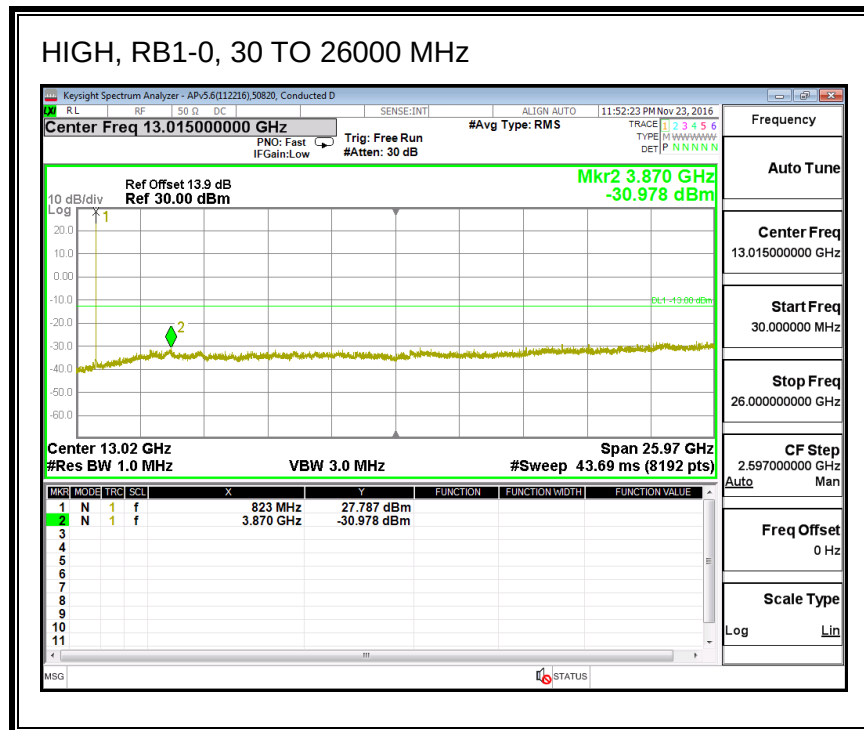
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 26000 MHz

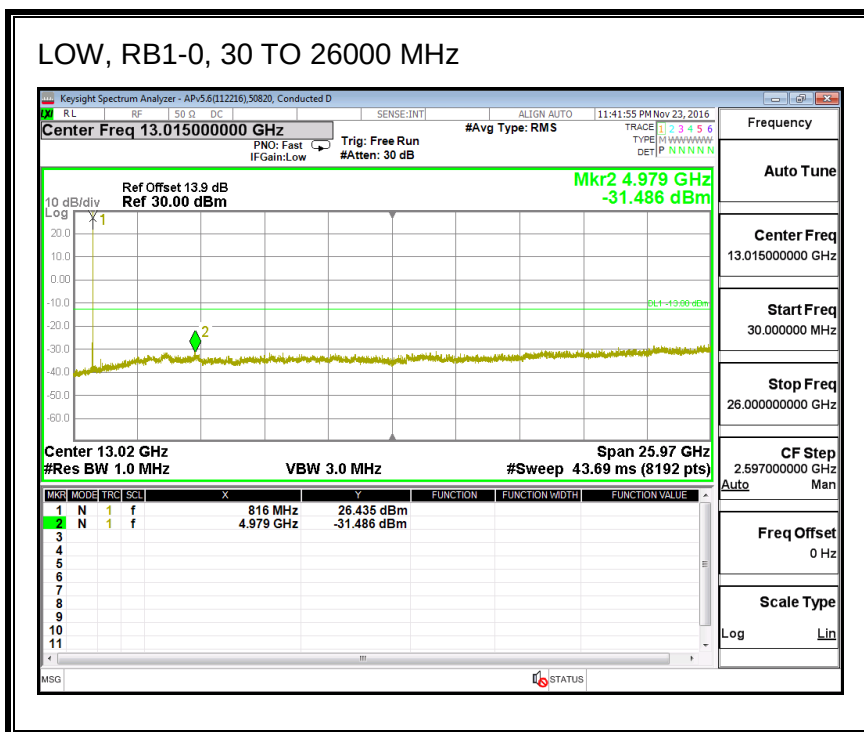


MID, RB1-0, 30 TO 26000 MHz

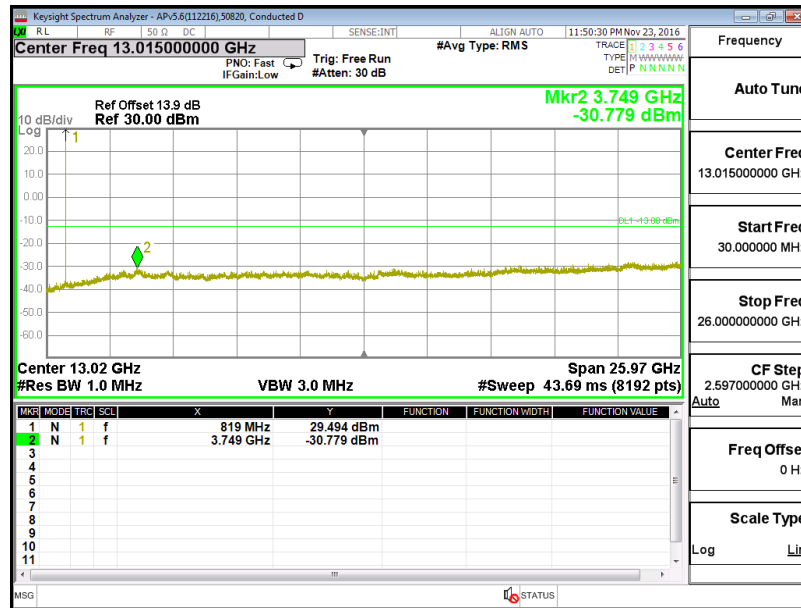




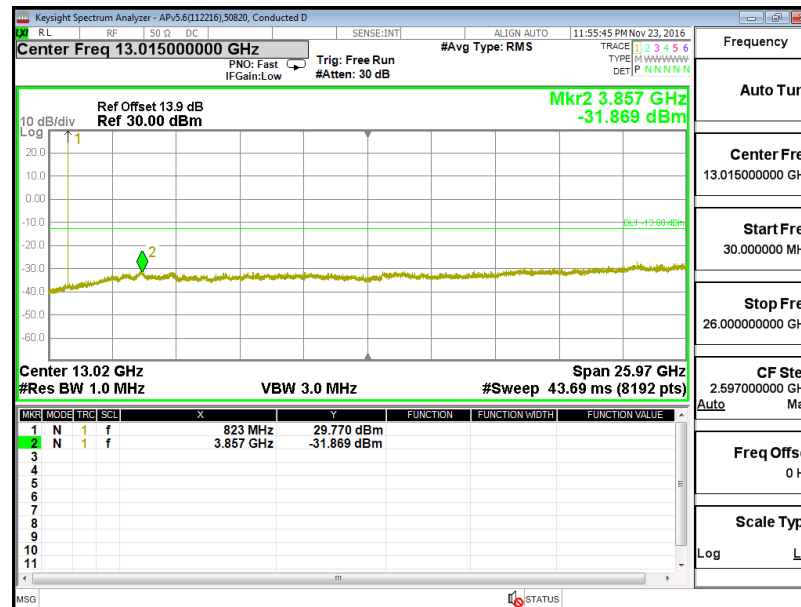
16QAM, (3.0 MHz BAND WIDTH)



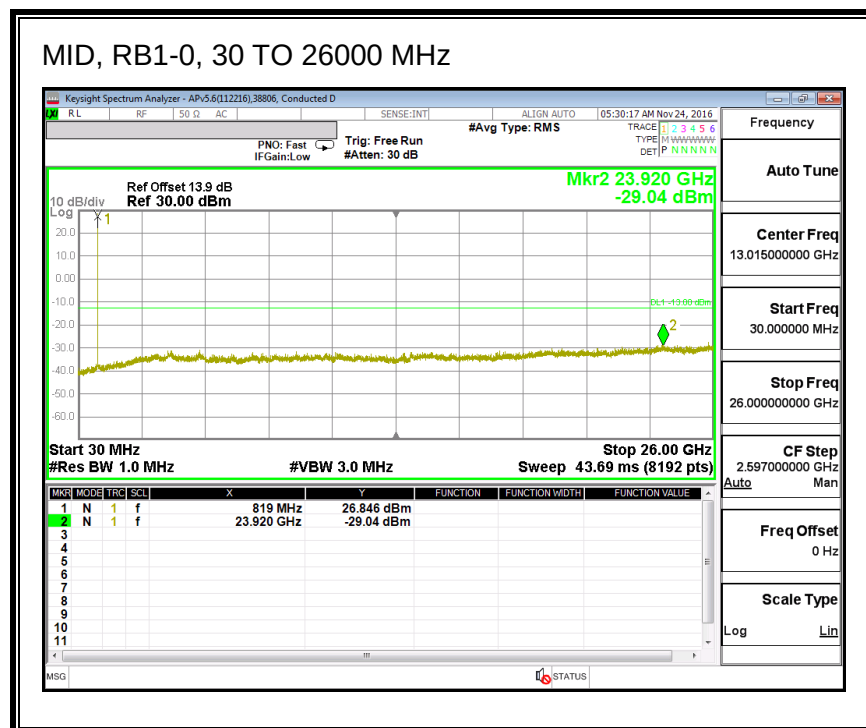
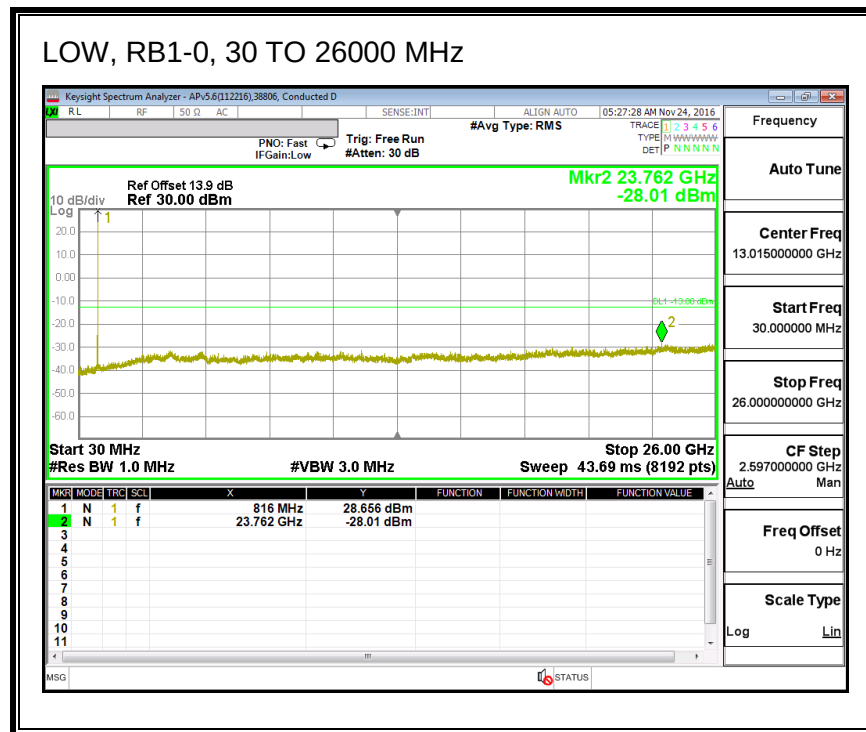
MID, RB1-0, 30 TO 26000 MHz



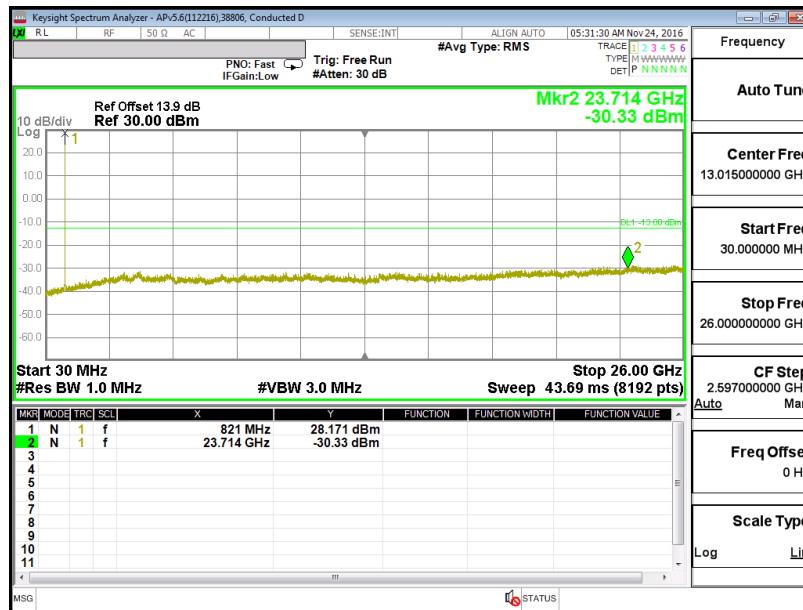
HIGH, RB1-0, 30 TO 26000 MHz



QPSK, (5.0 MHz BAND WIDTH)

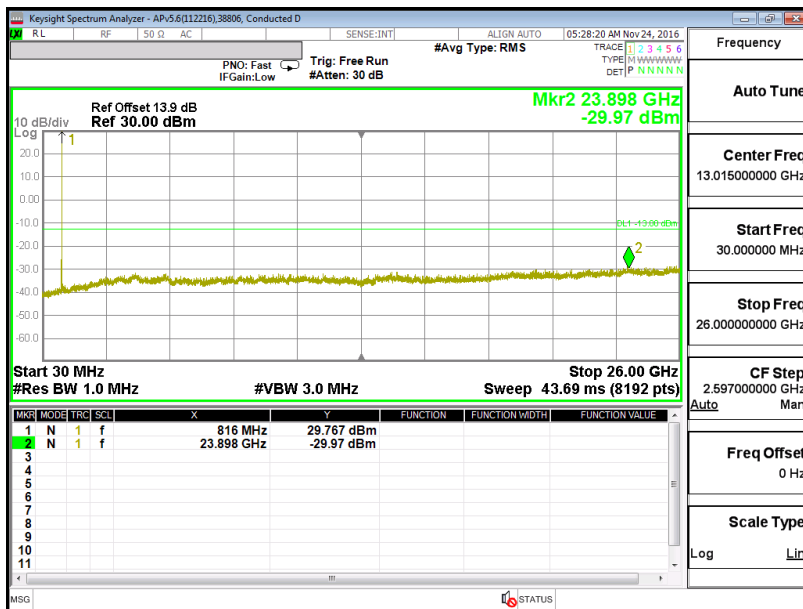


HIGH, RB1-0, 30 TO 26000 MHz

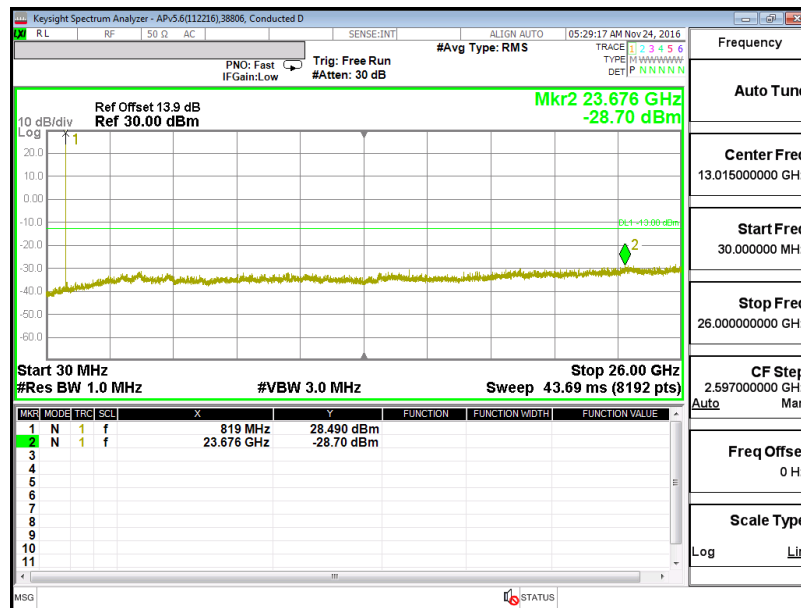


16QAM, (5.0 MHz BAND WIDTH)

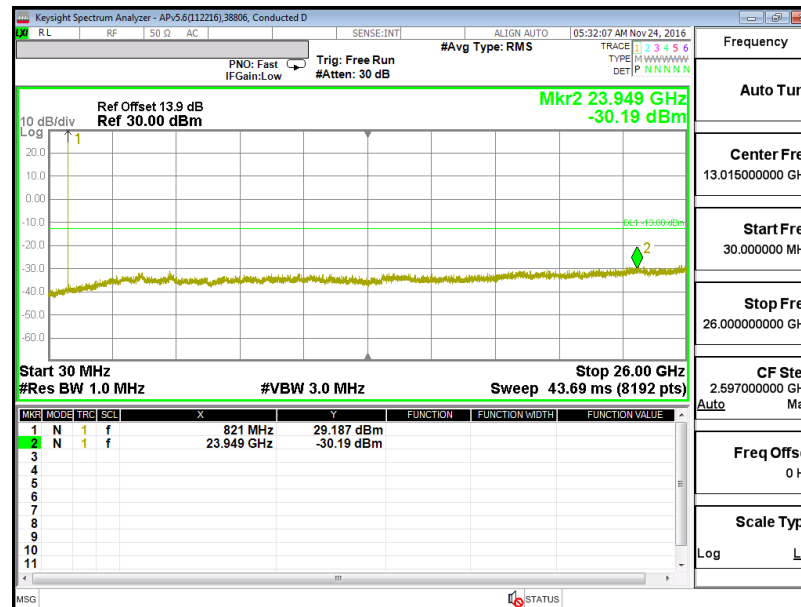
LOW, RB1-0, 30 TO 26000 MHz



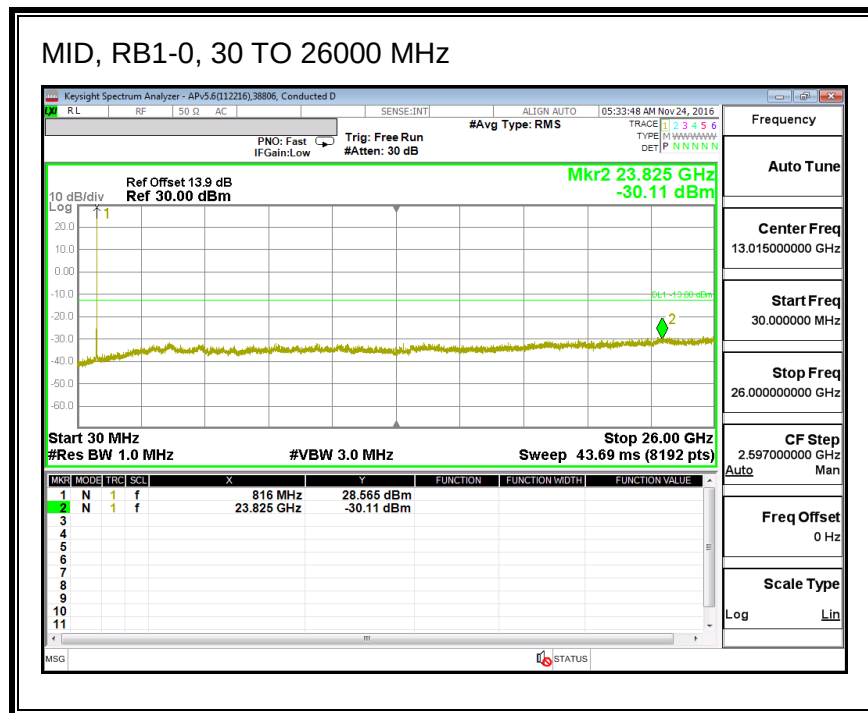
MID, RB1-0, 30 TO 26000 MHz



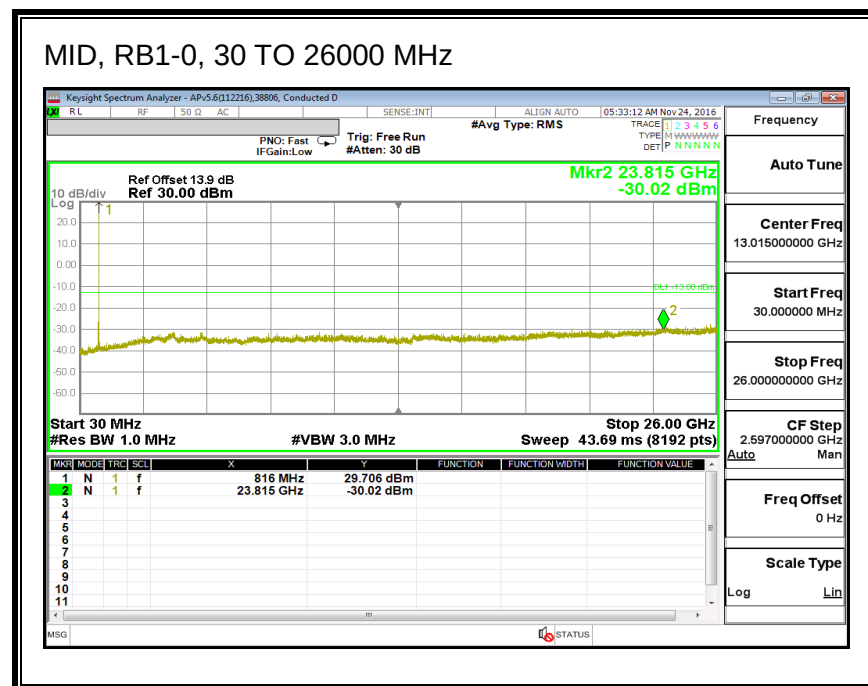
HIGH, RB1-0, 30 TO 26000 MHz



QPSK, (10.0 MHz BAND WIDTH)

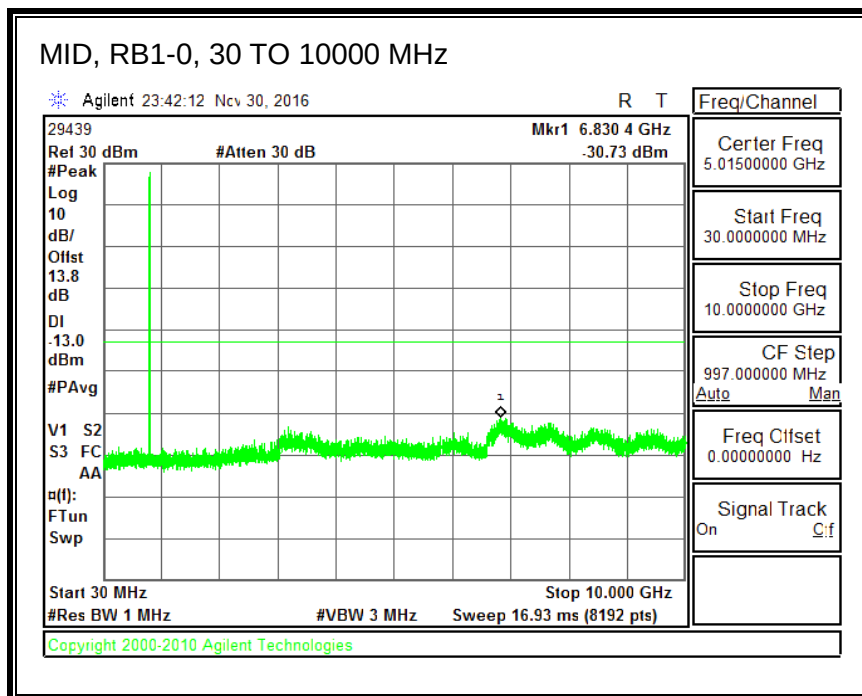
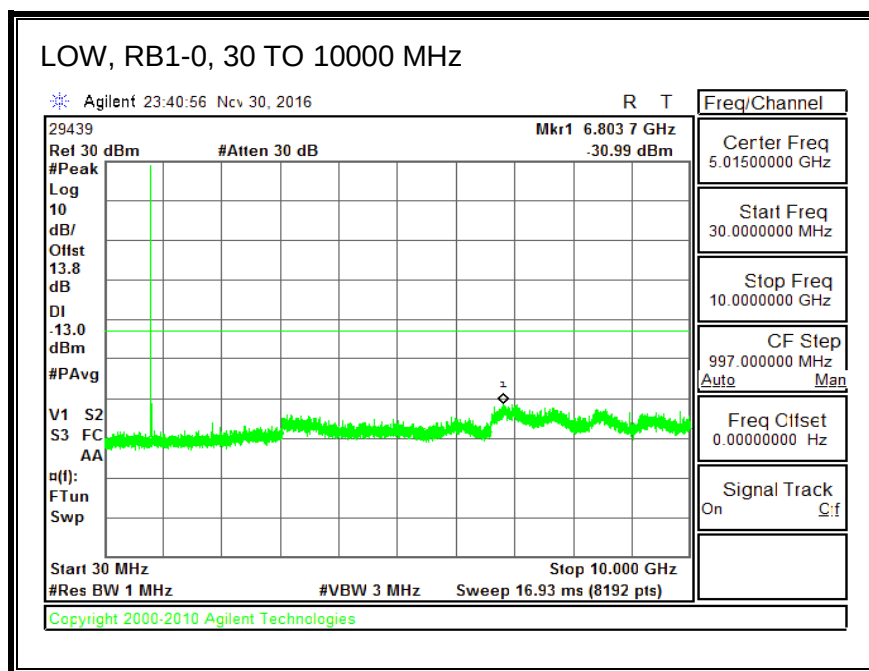


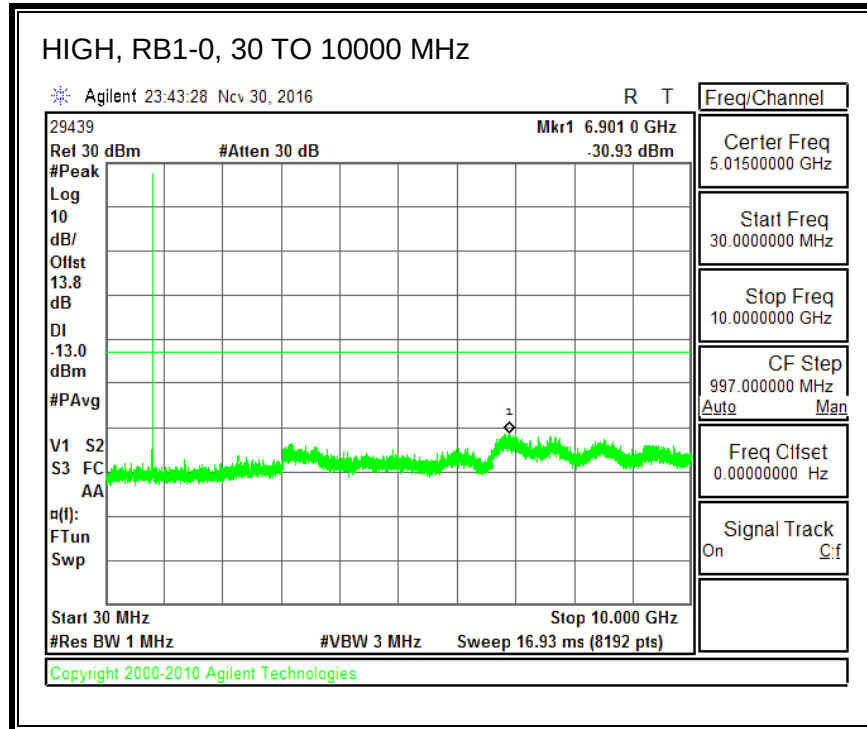
16QAM, (10.0 MHz BAND WIDTH)



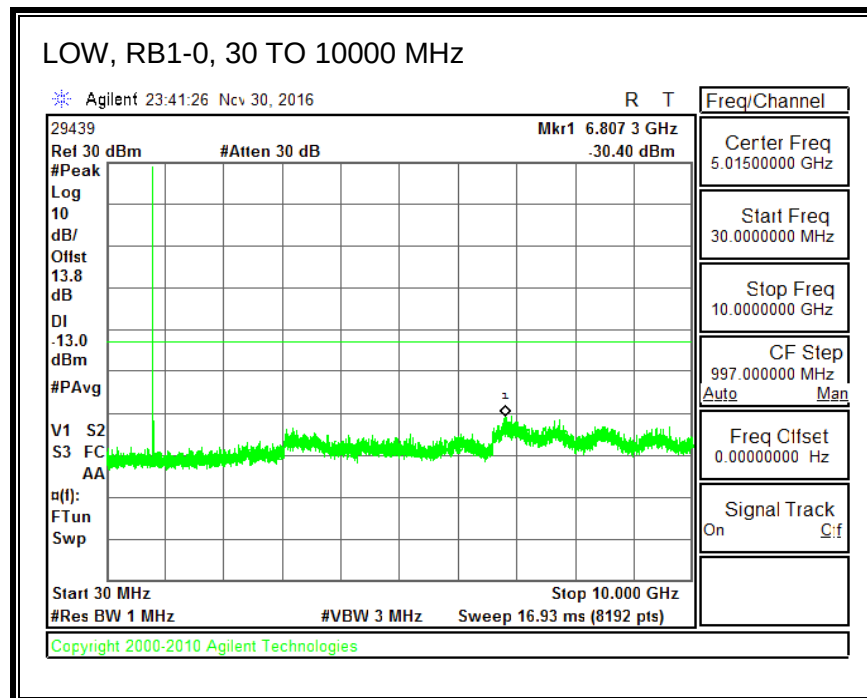
8.3.10. LTE BAND 27

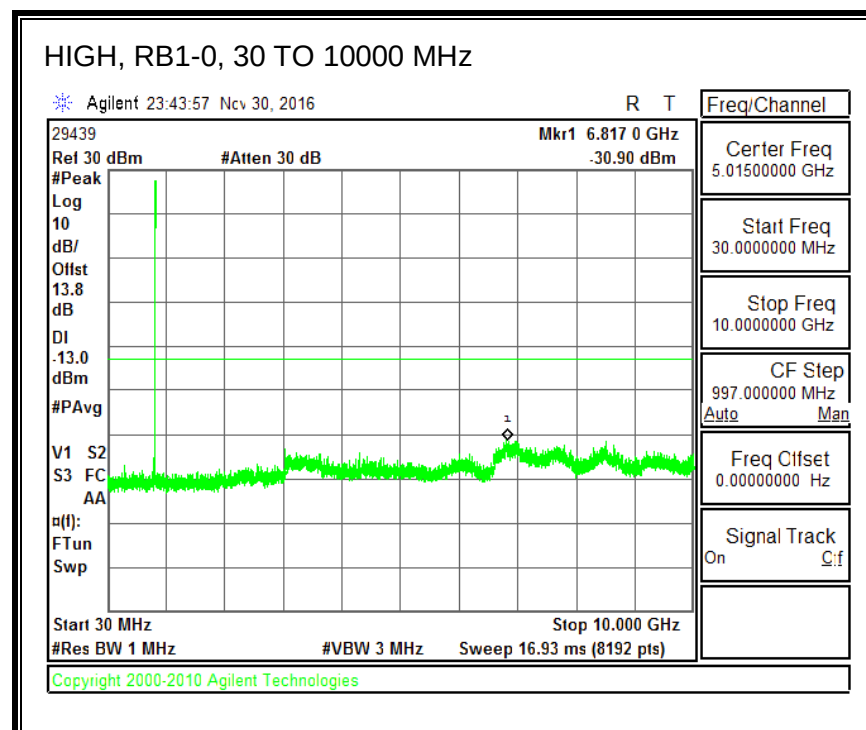
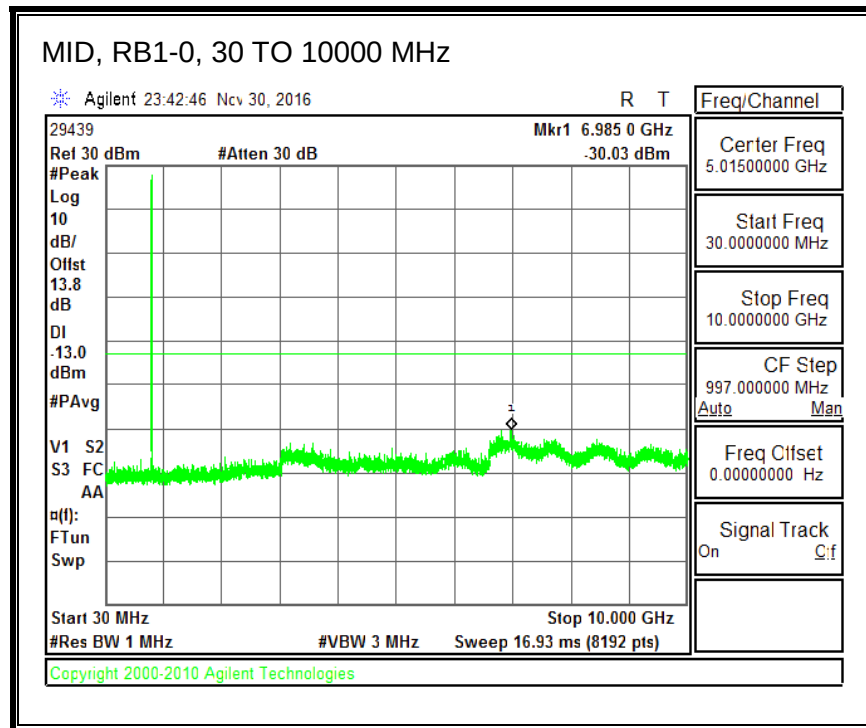
QPSK, (1.4 MHz BAND WIDTH)



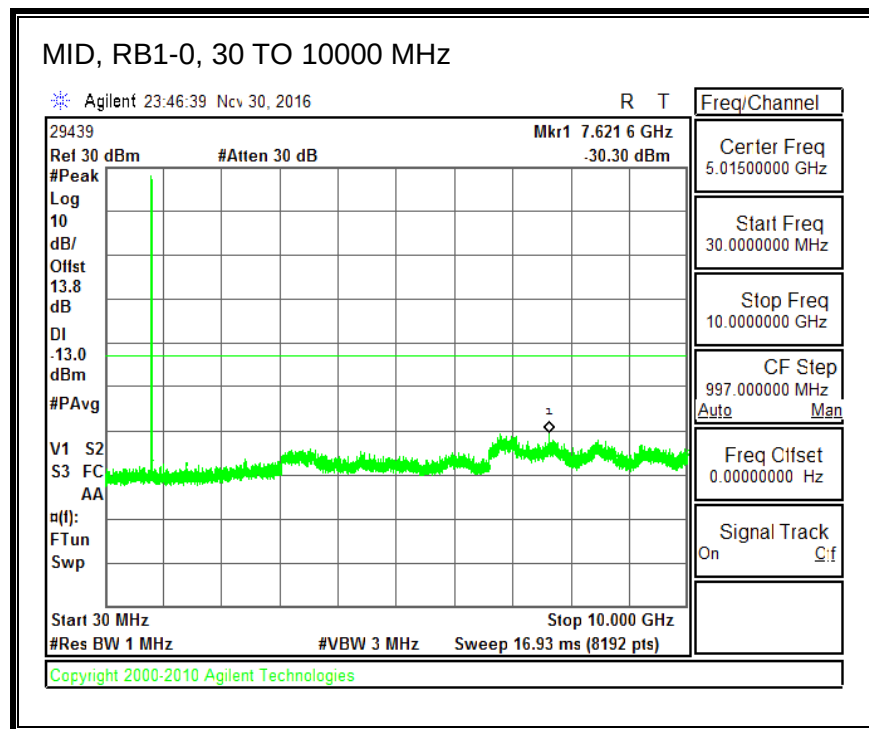
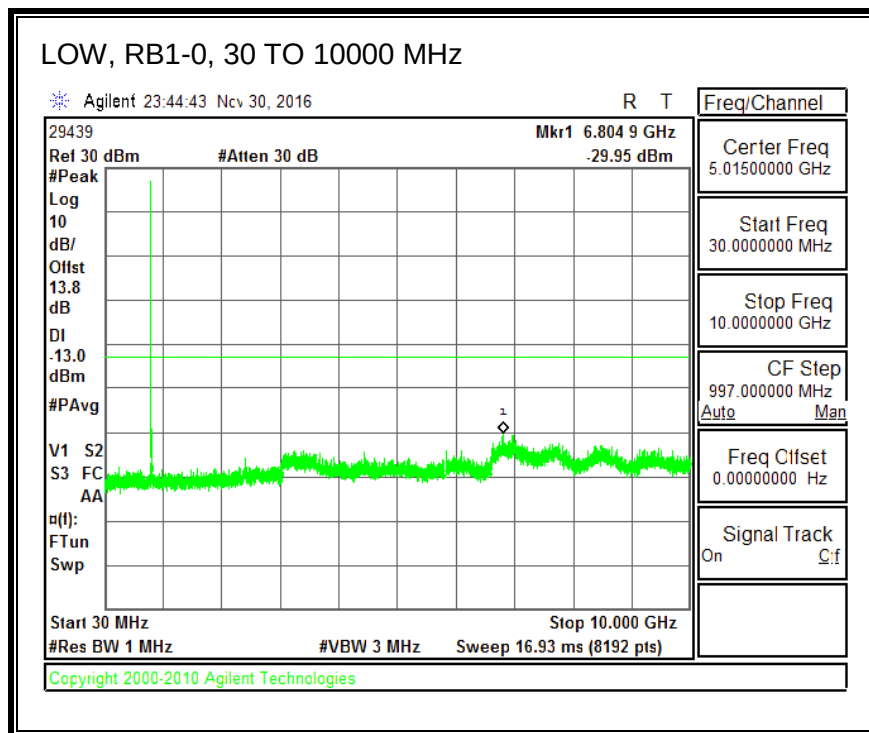


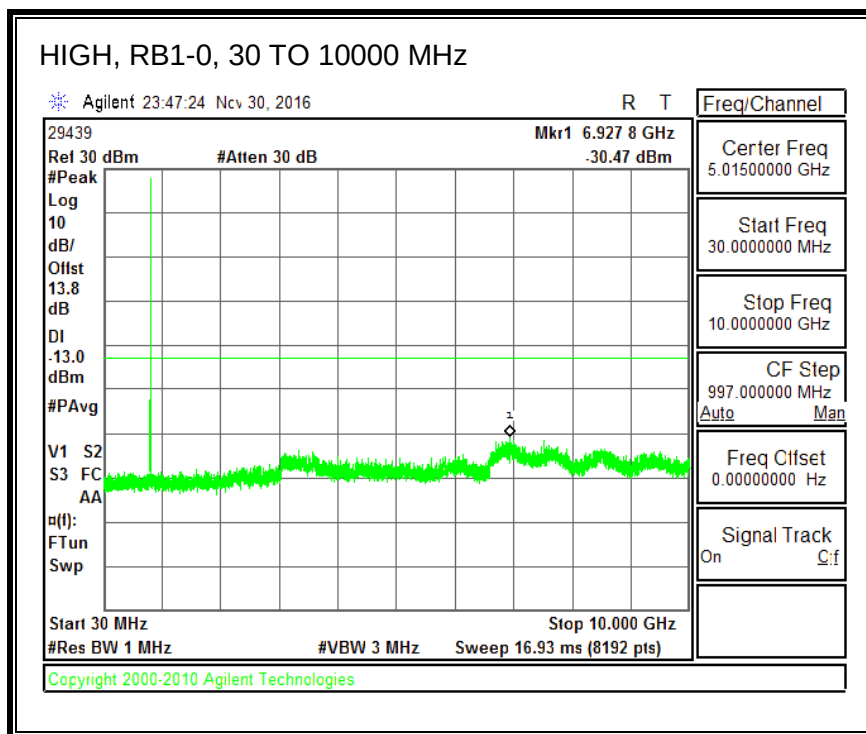
16QAM, (1.4 MHz BAND WIDTH)



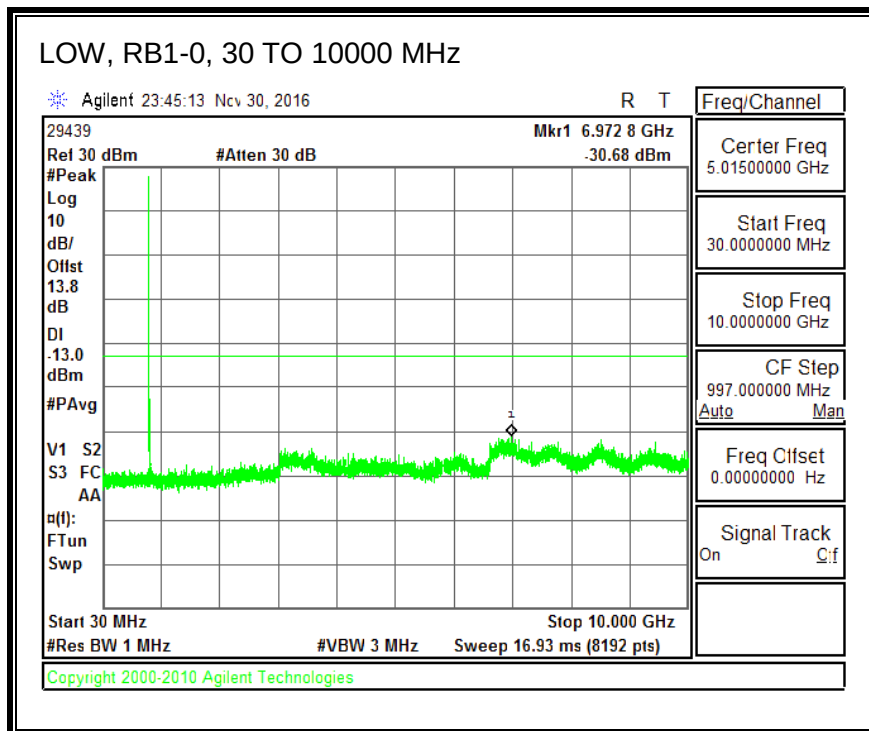


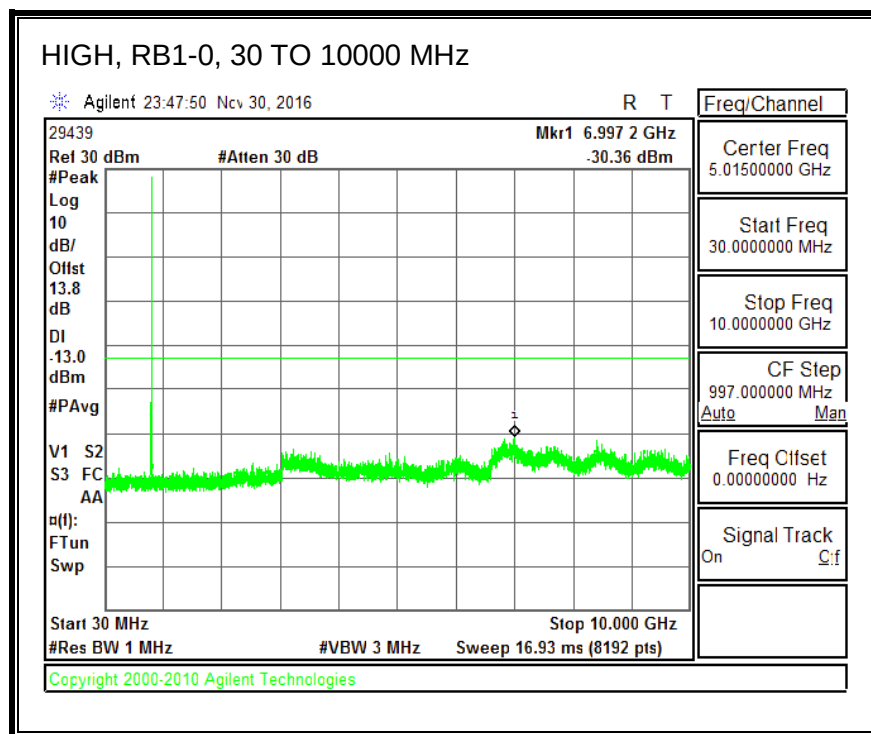
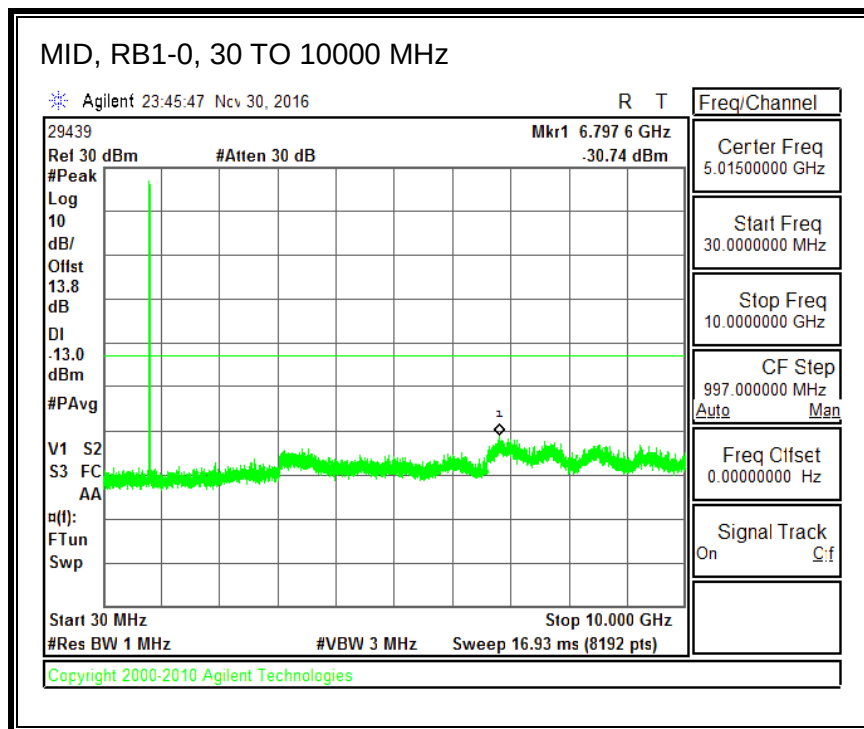
QPSK, (3.0 MHz BAND WIDTH)



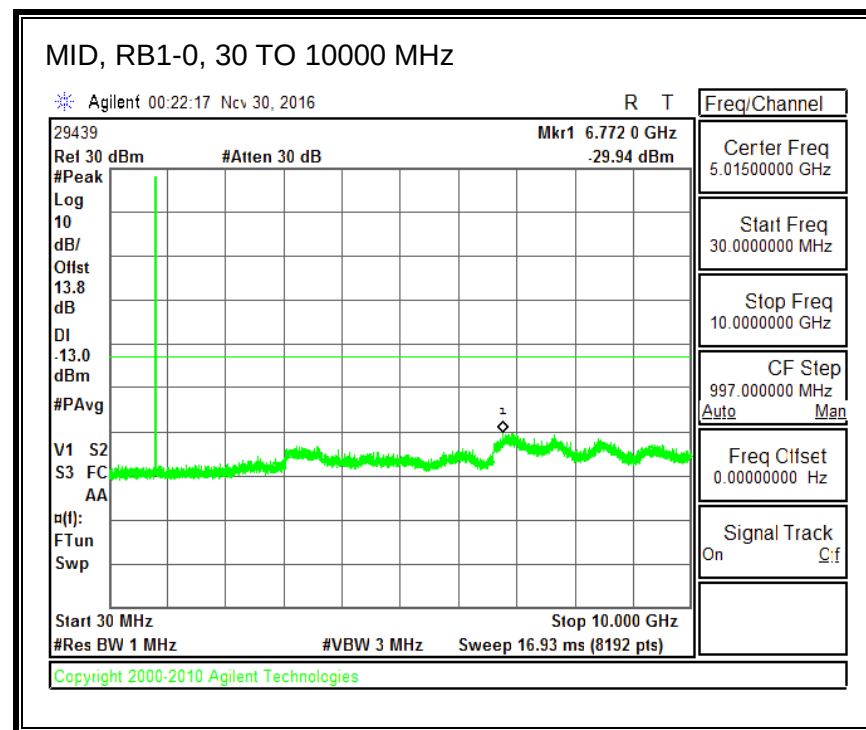
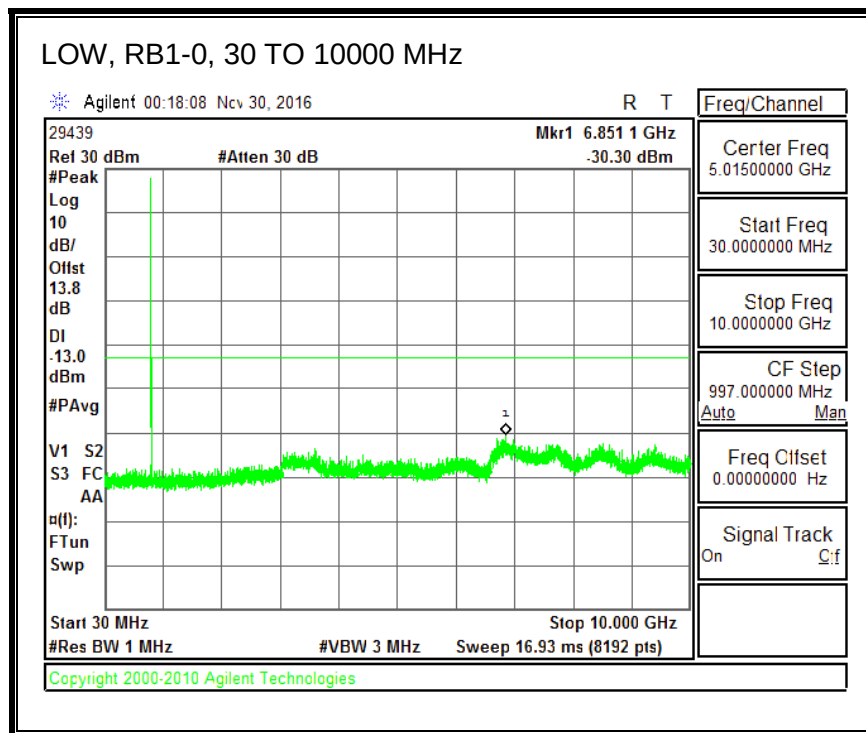


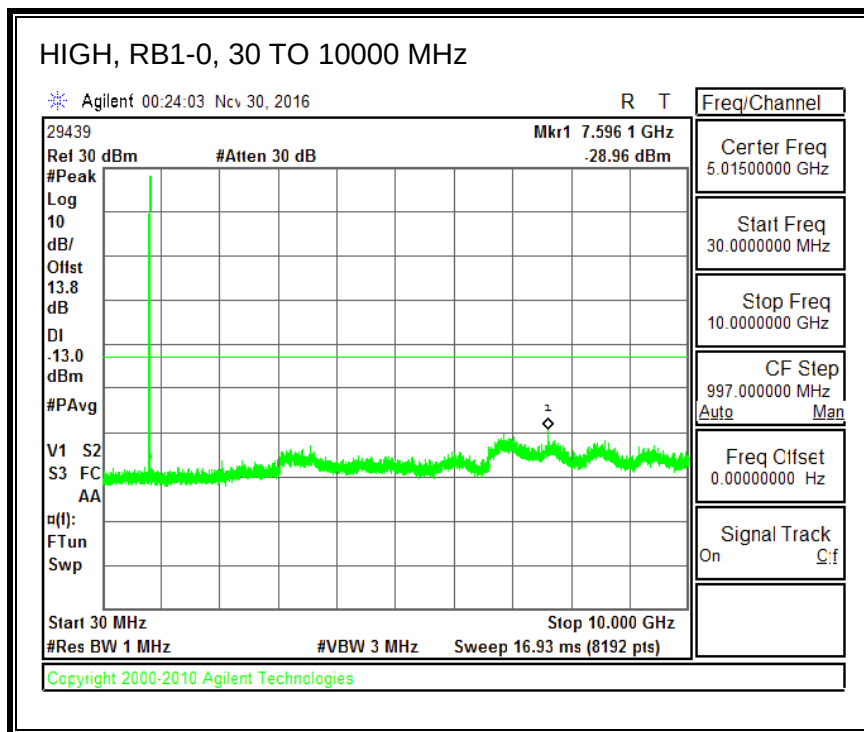
16QAM, (3.0 MHz BAND WIDTH)



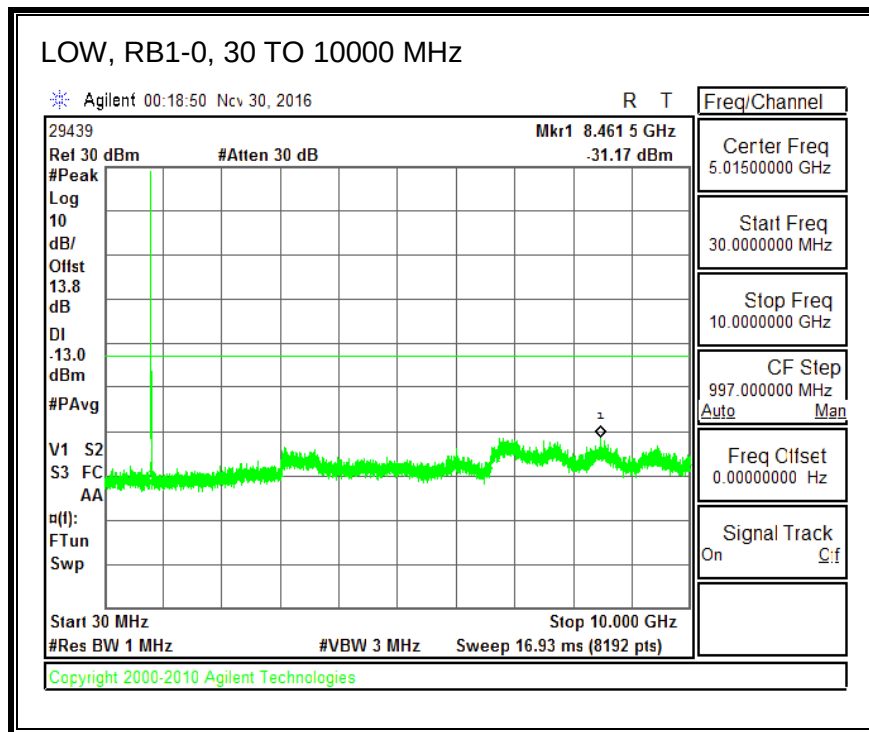


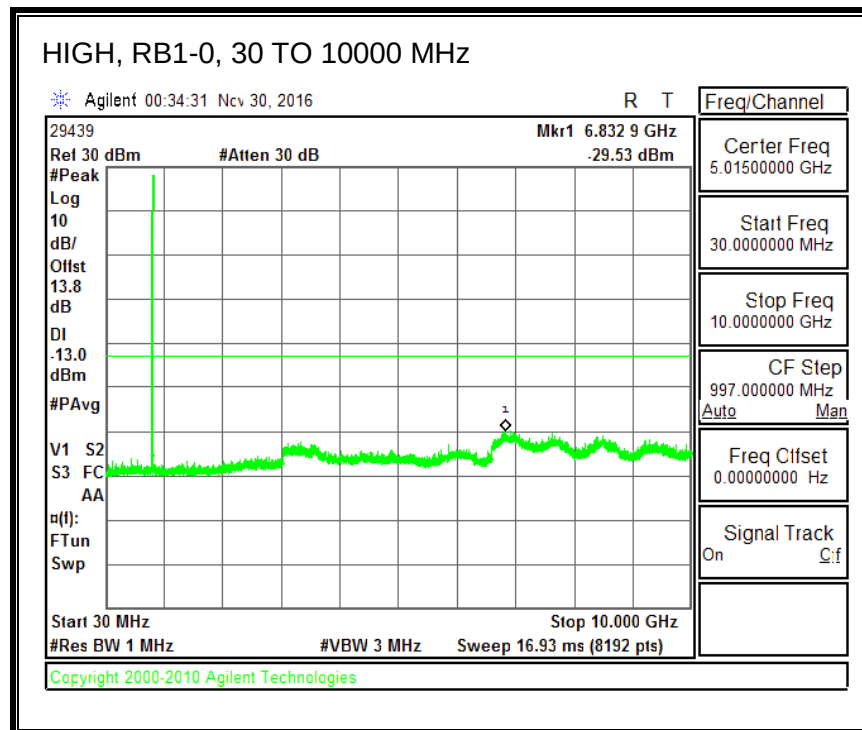
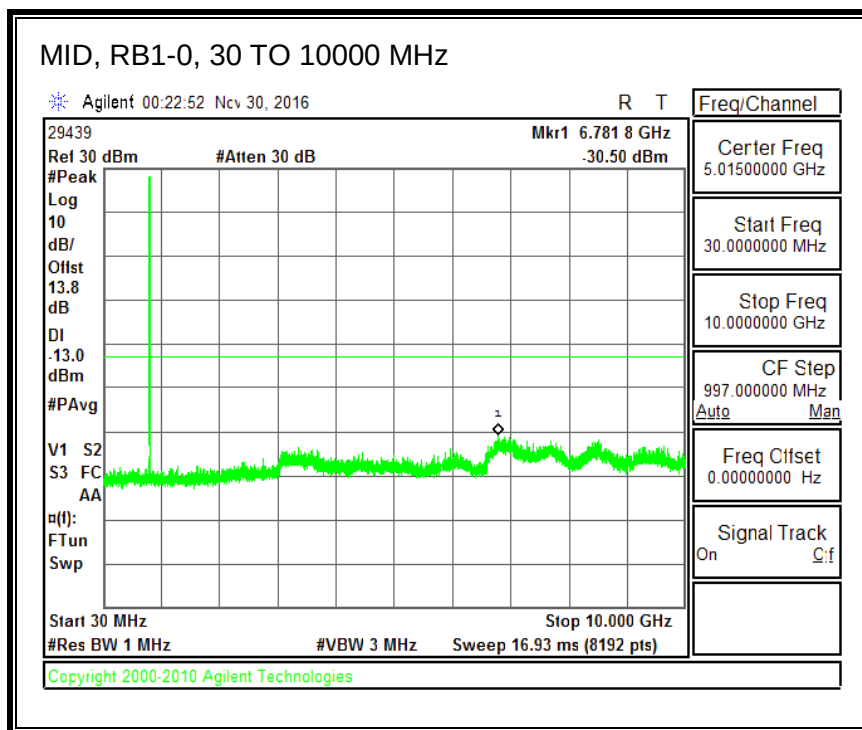
QPSK, (5.0 MHz BAND WIDTH)



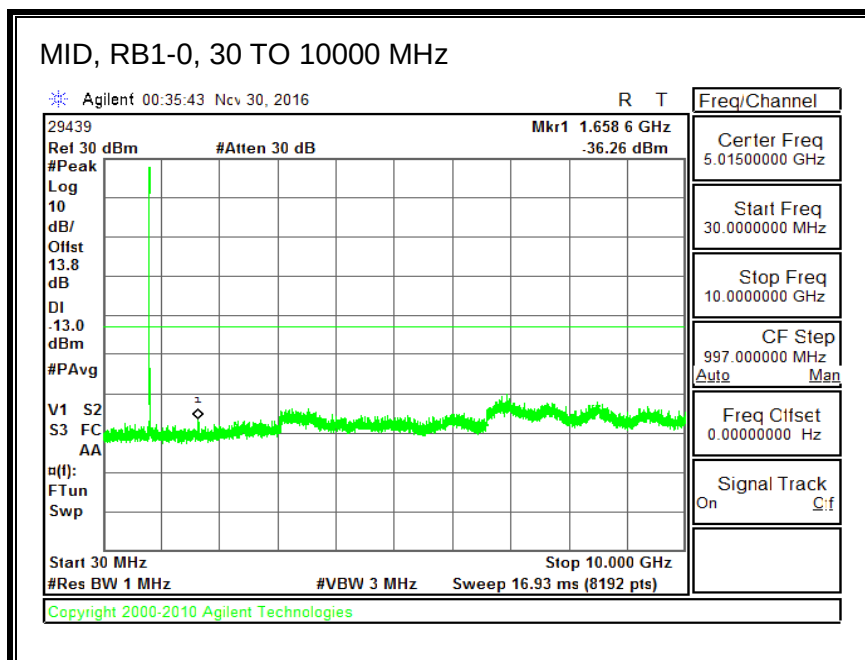


16QAM, (5.0 MHz BAND WIDTH)

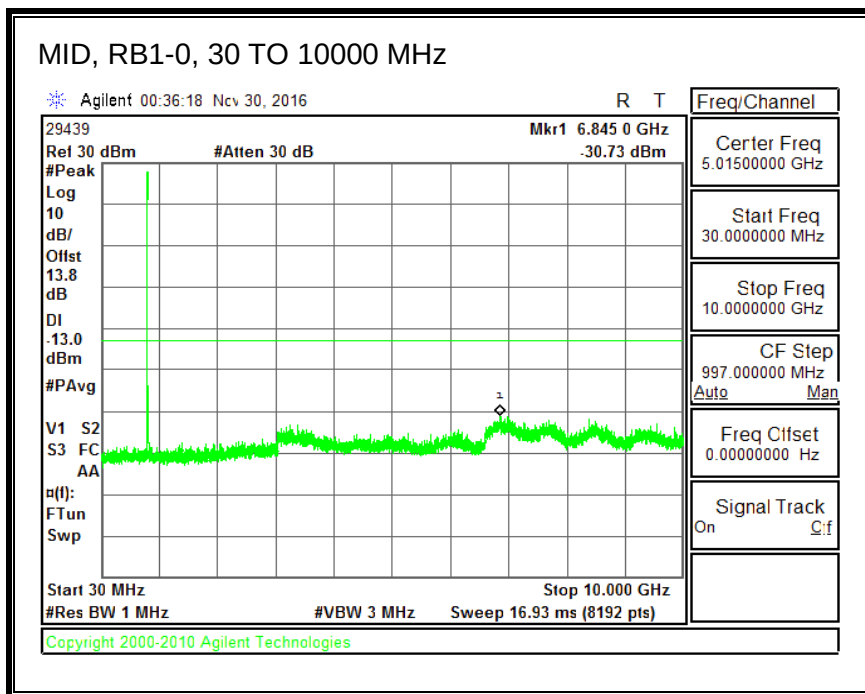




QPSK, (10.0 MHz BAND WIDTH)

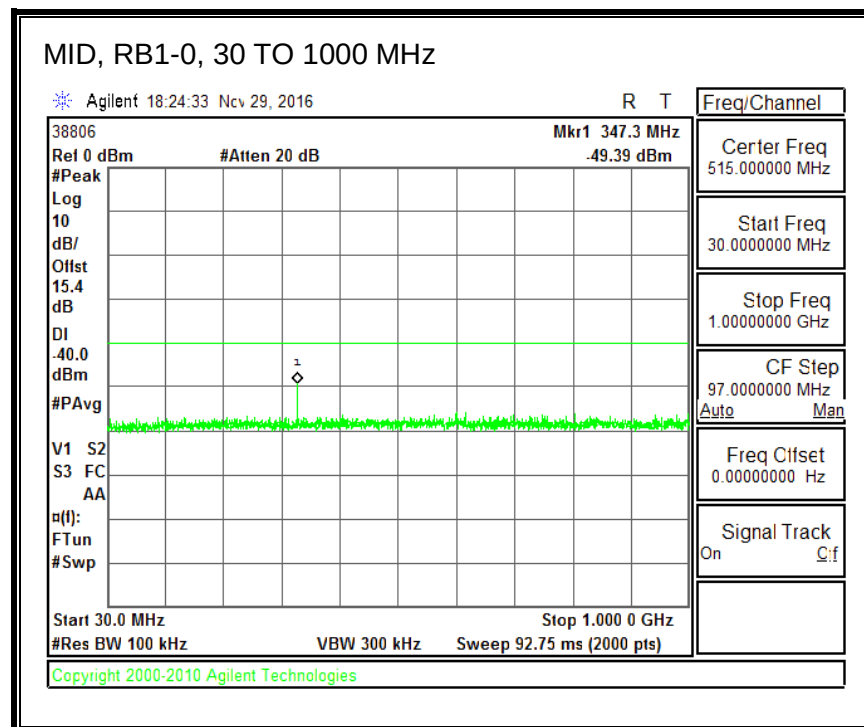
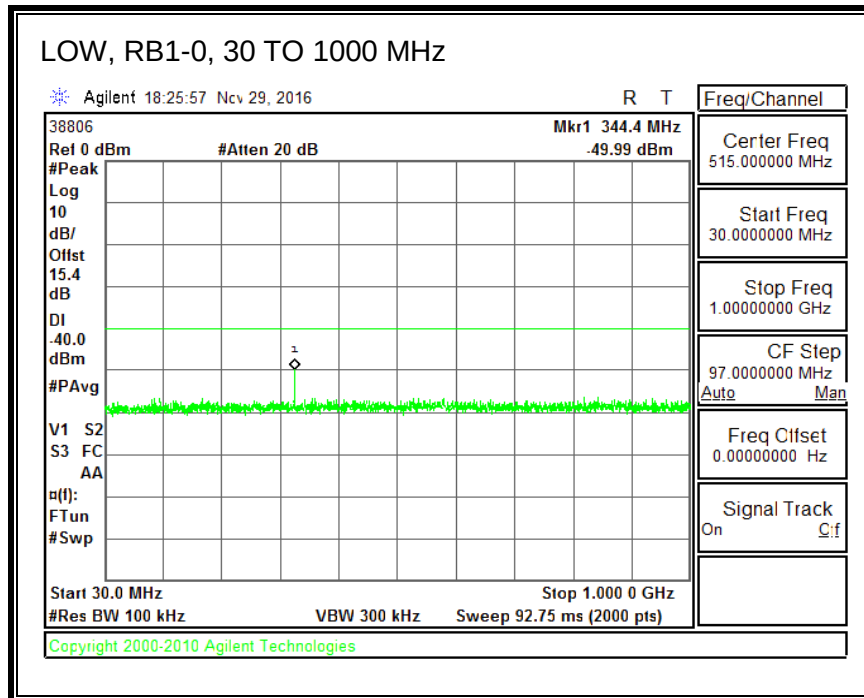


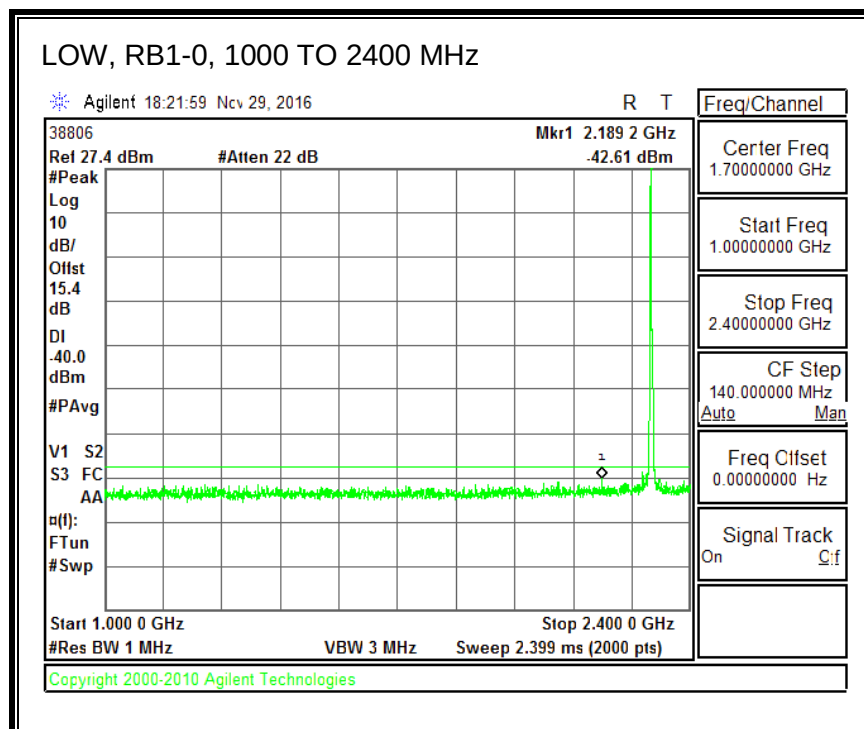
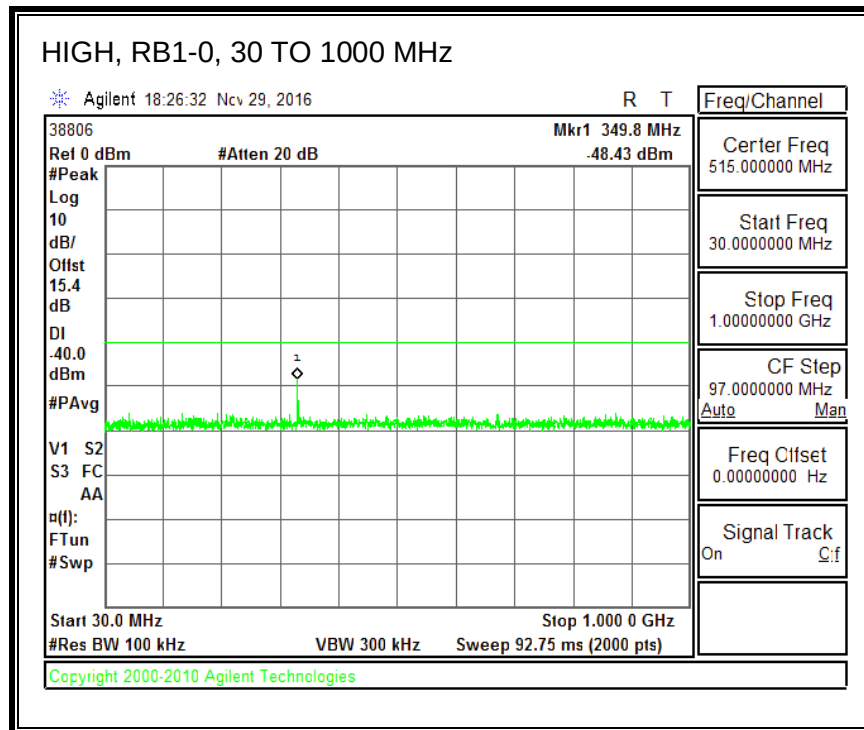
16QAM, (10.0 MHz BAND WIDTH)

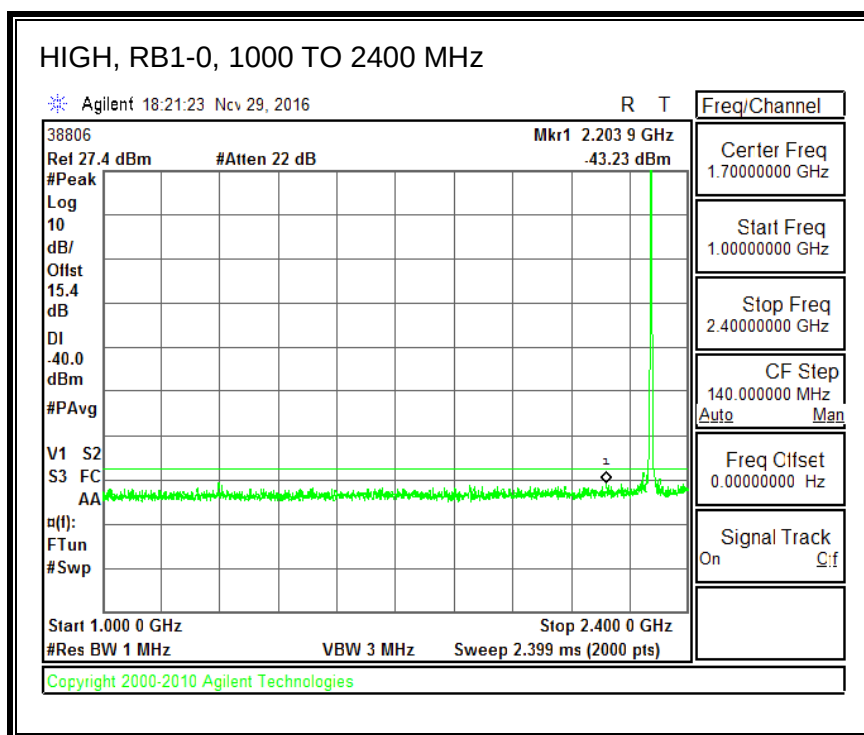
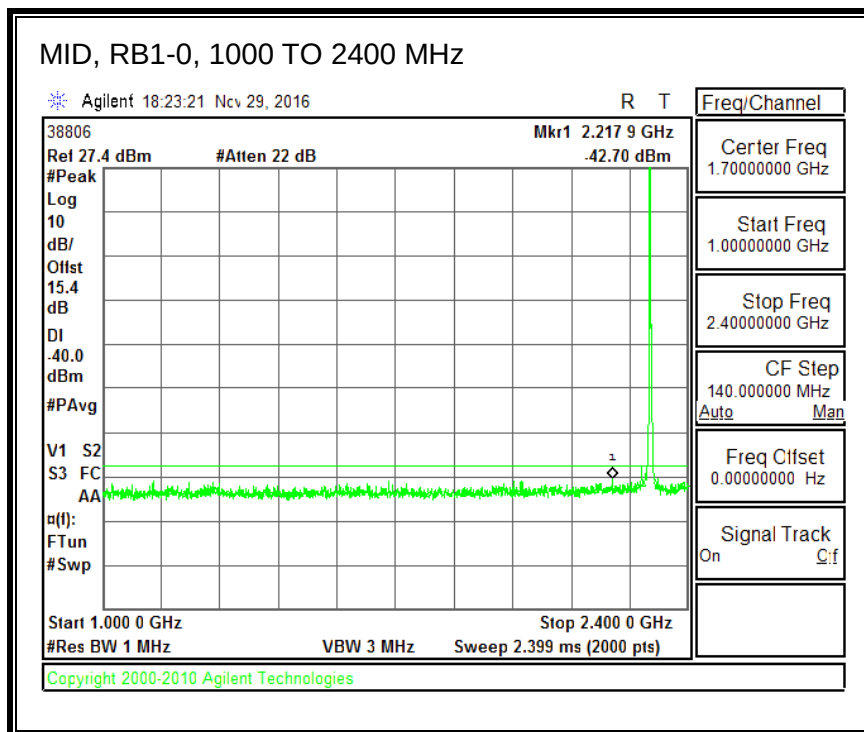


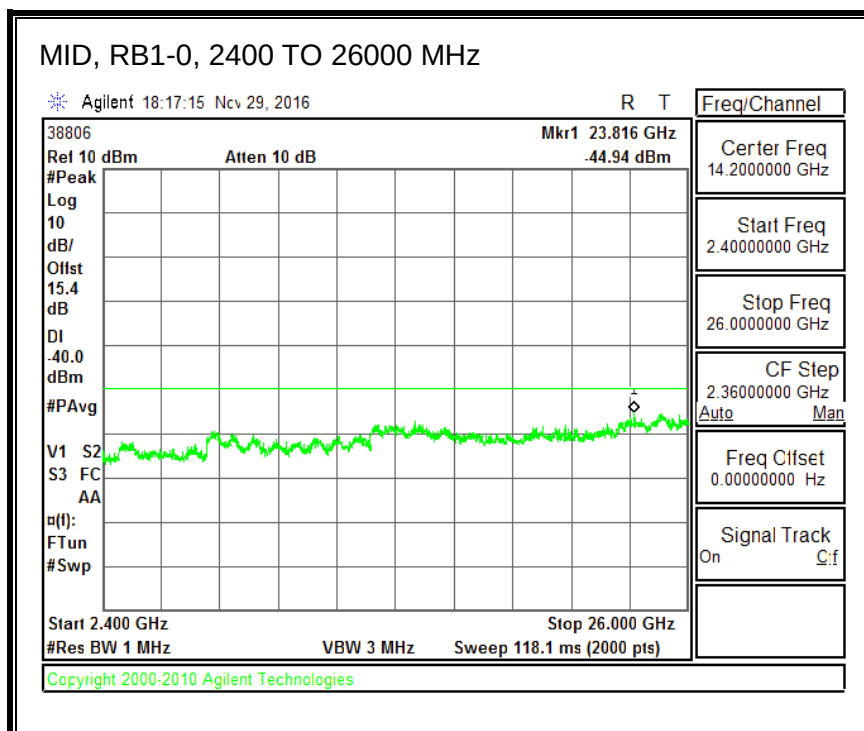
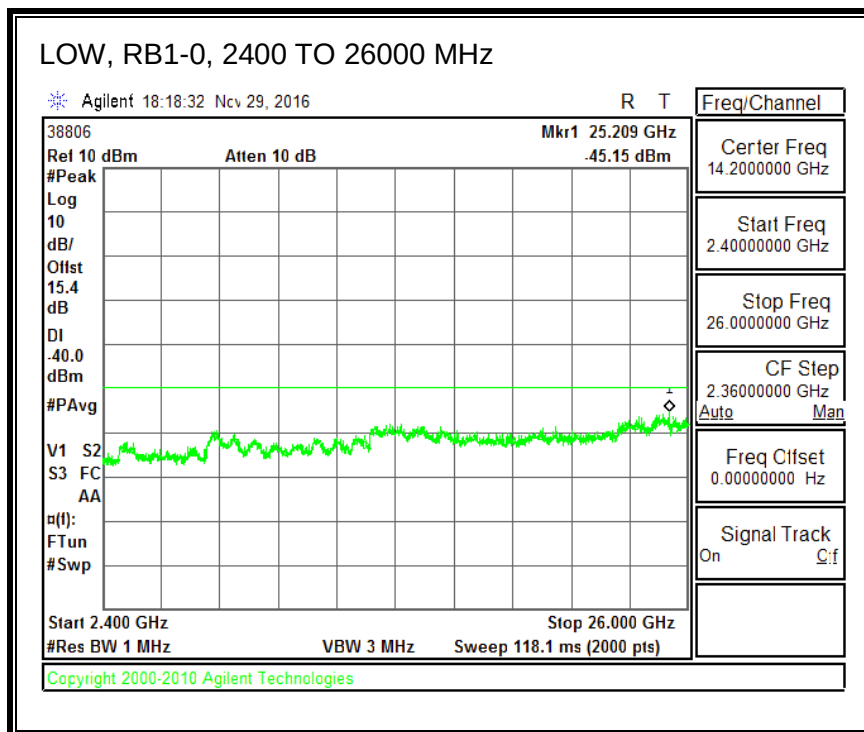
8.3.11. LTE BAND 30

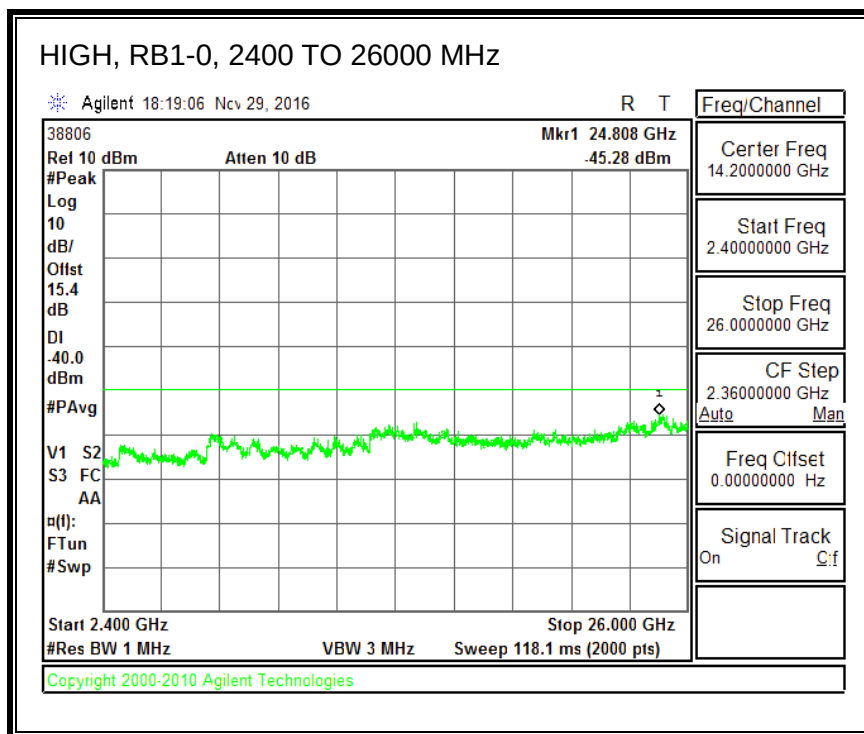
QPSK, (5.0 MHz BAND WIDTH)



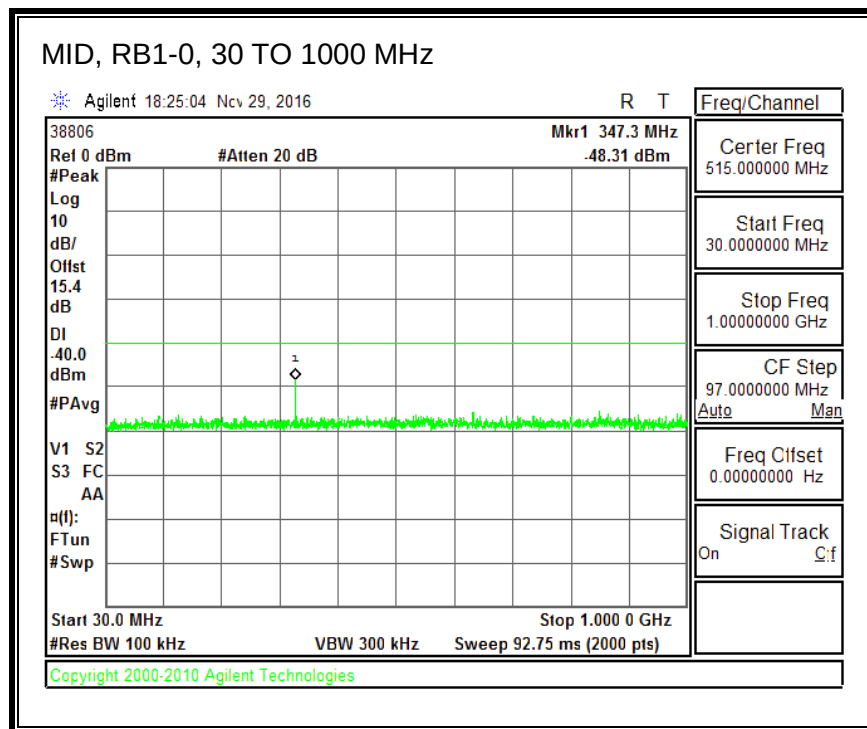
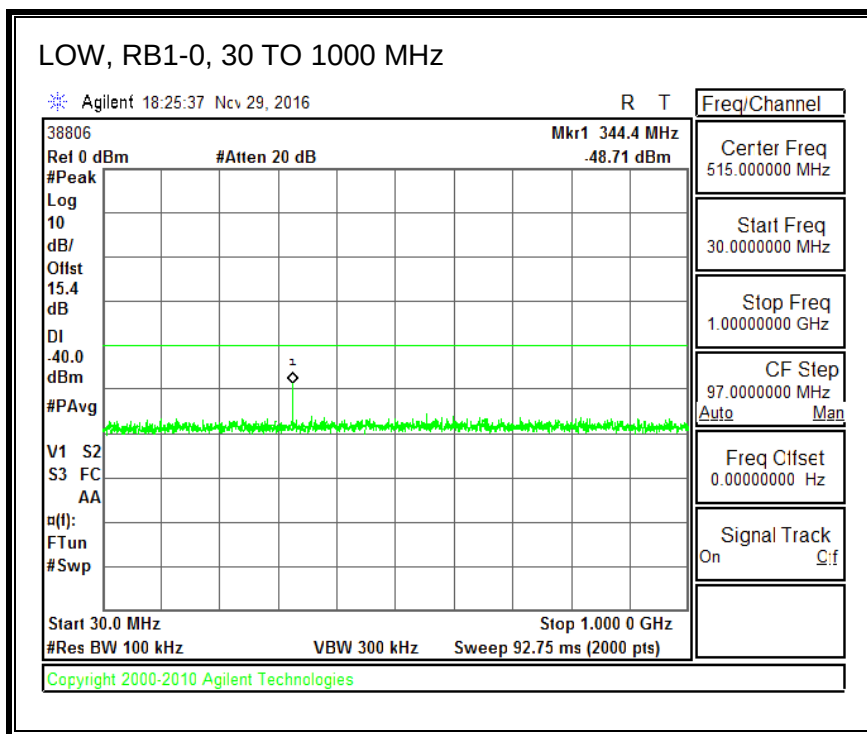


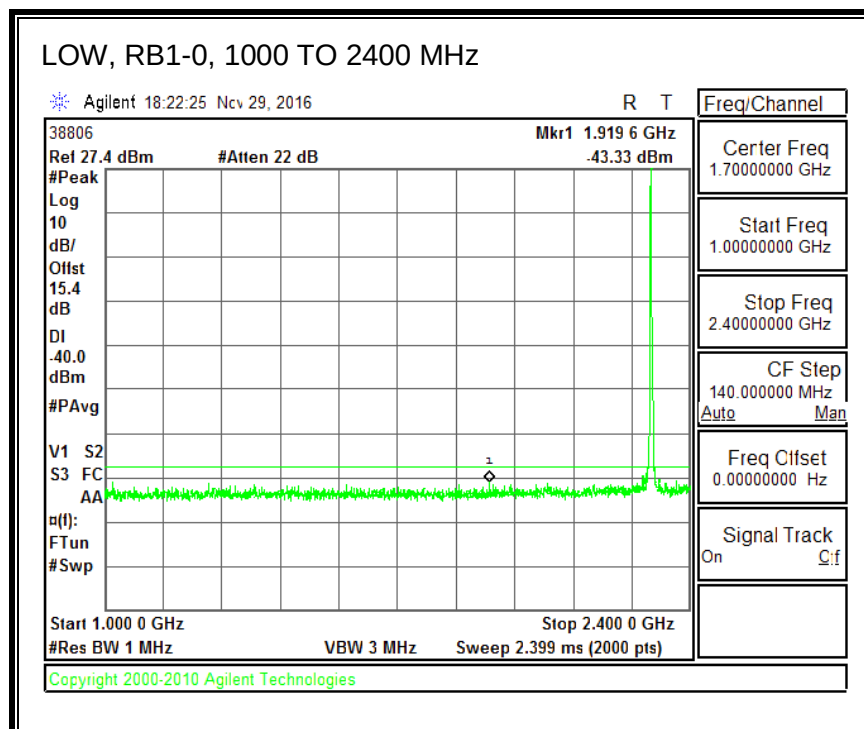
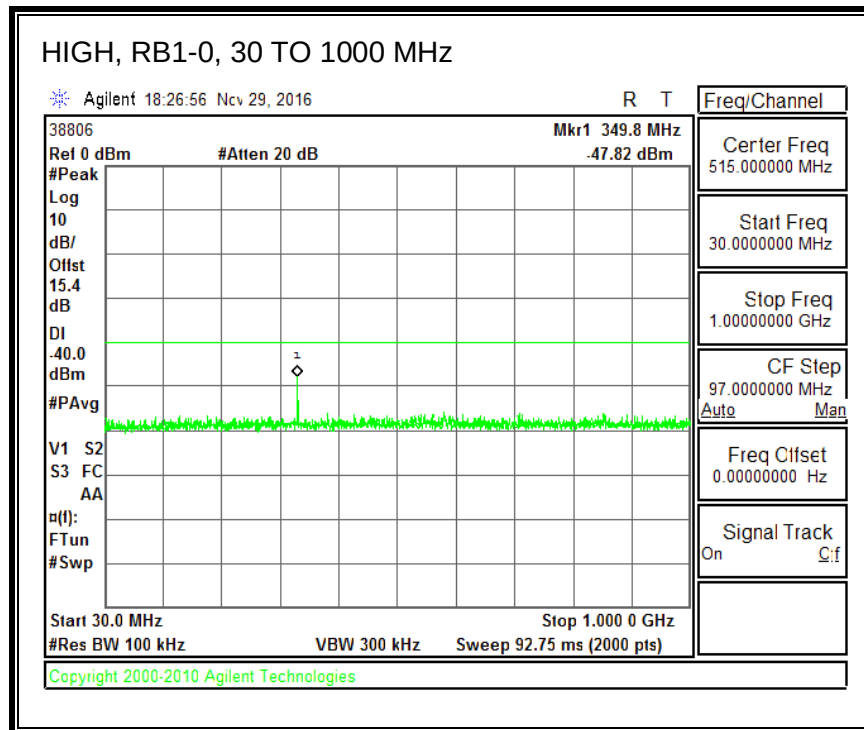


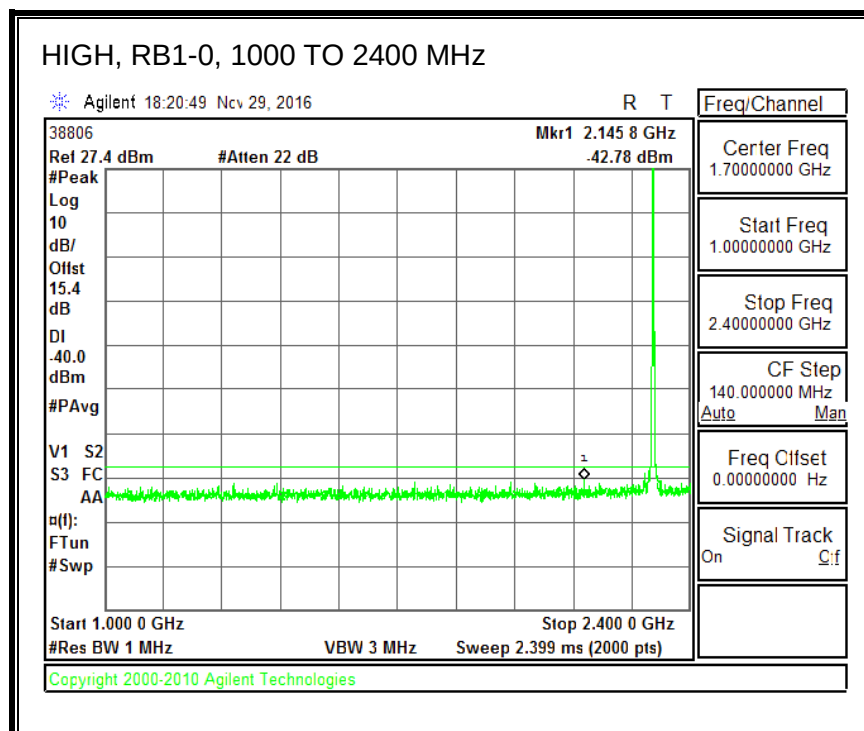
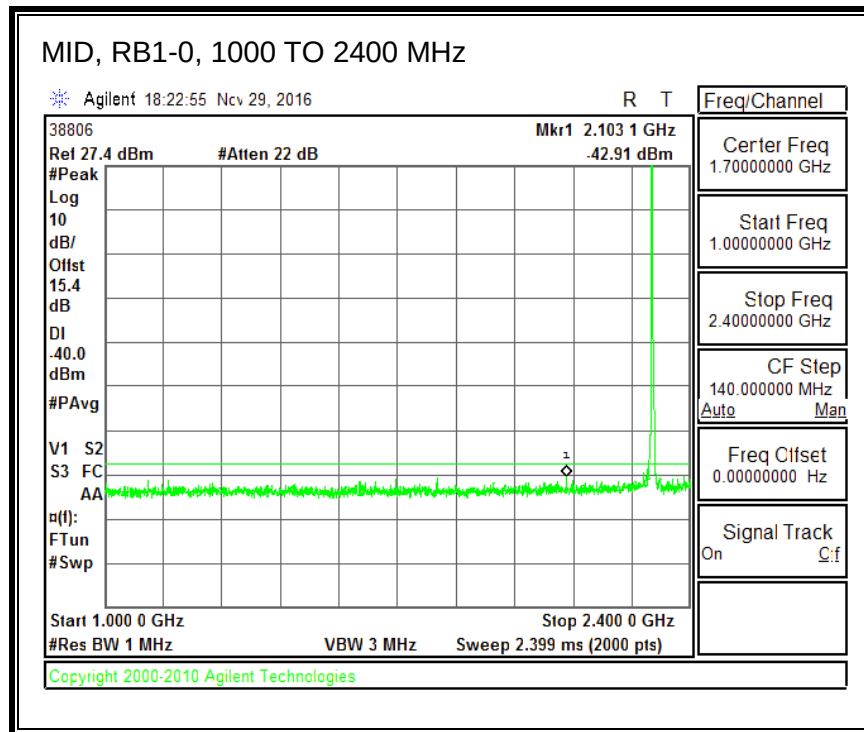


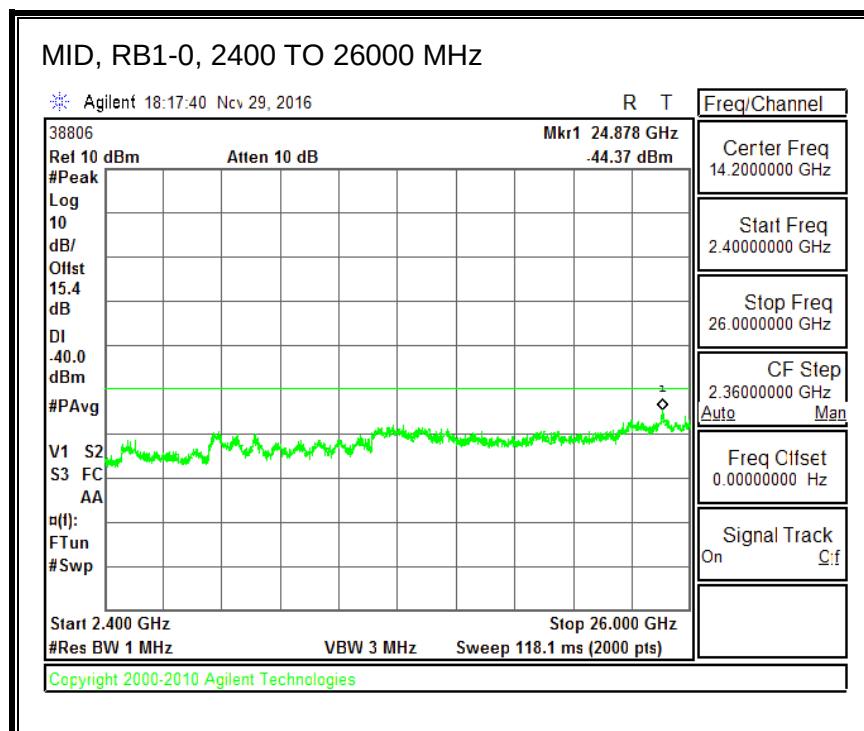
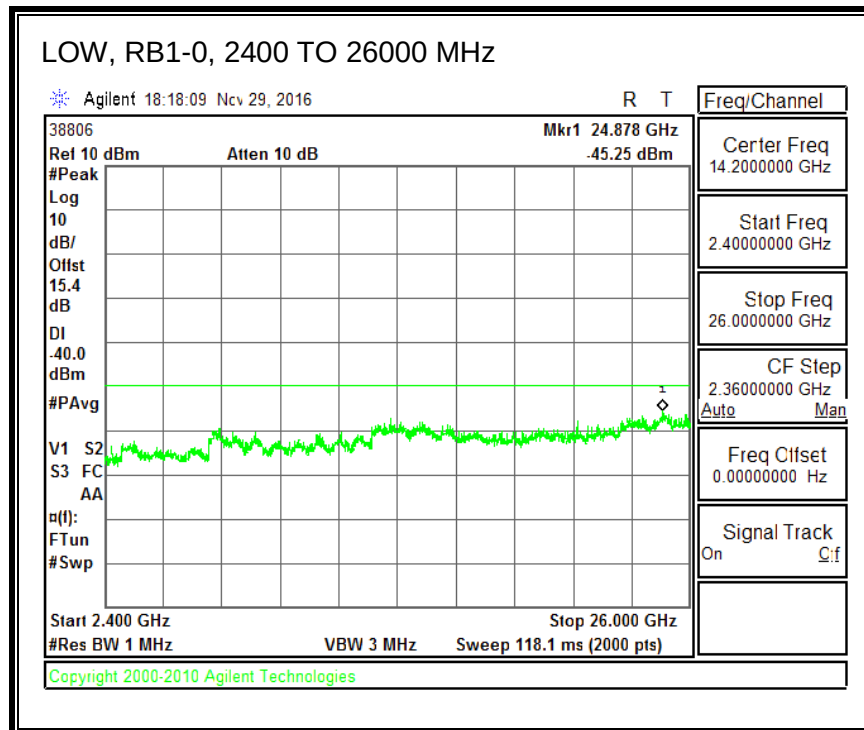


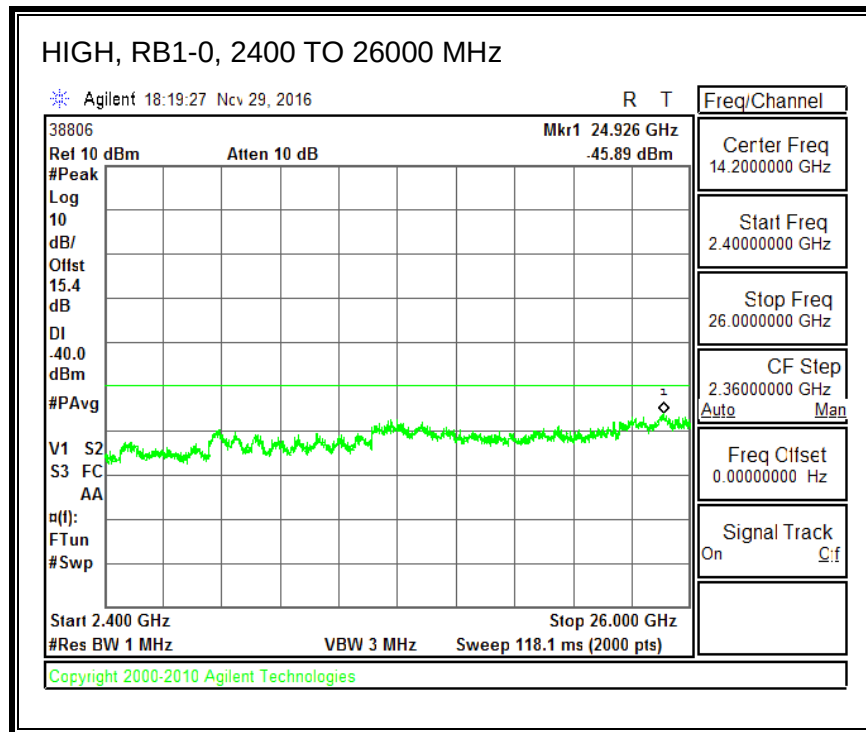
16QAM, (5.0 MHz BAND WIDTH)



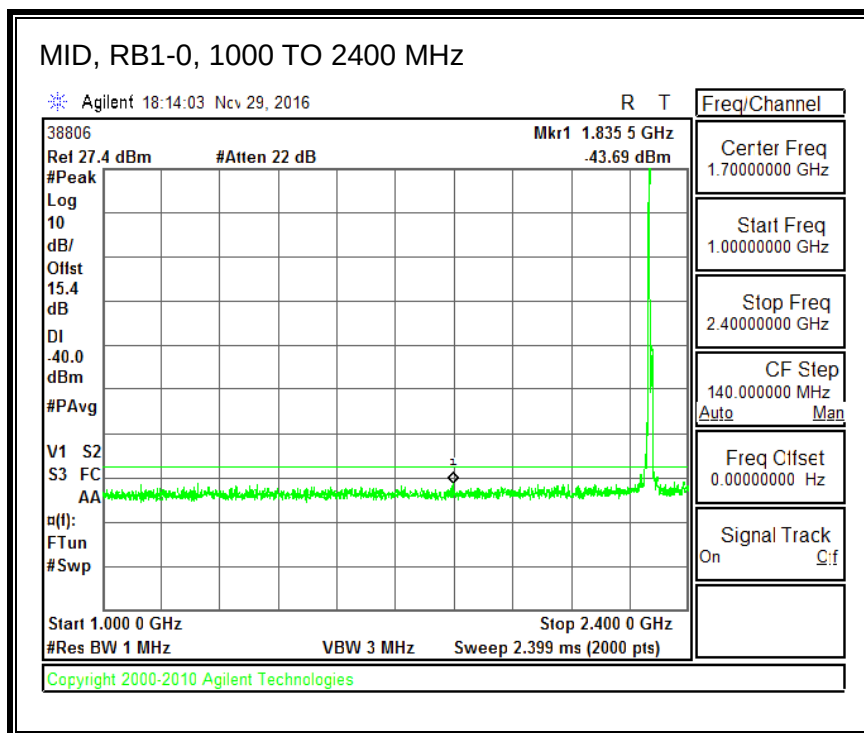
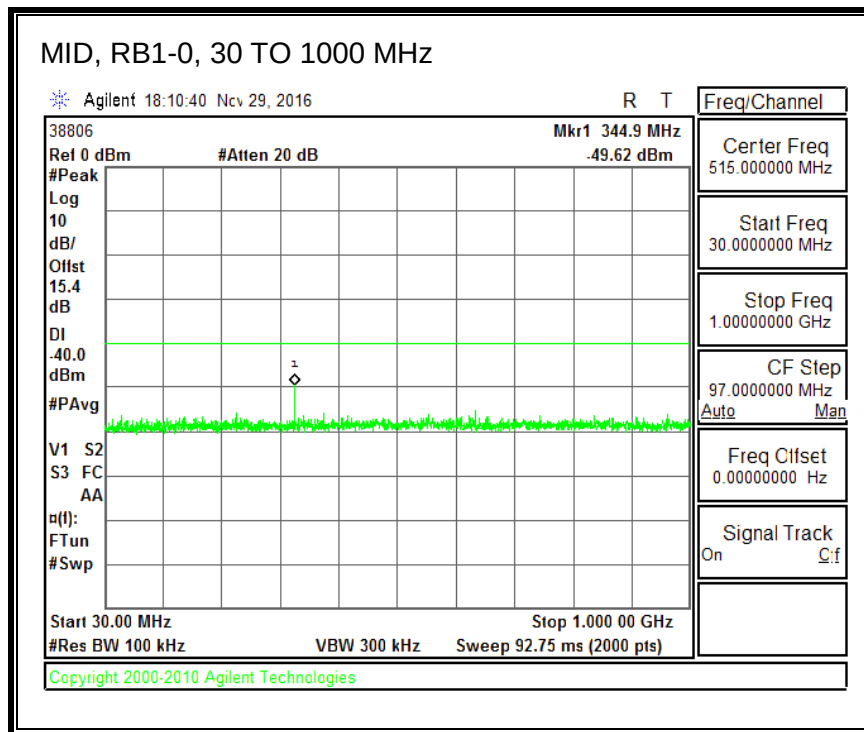


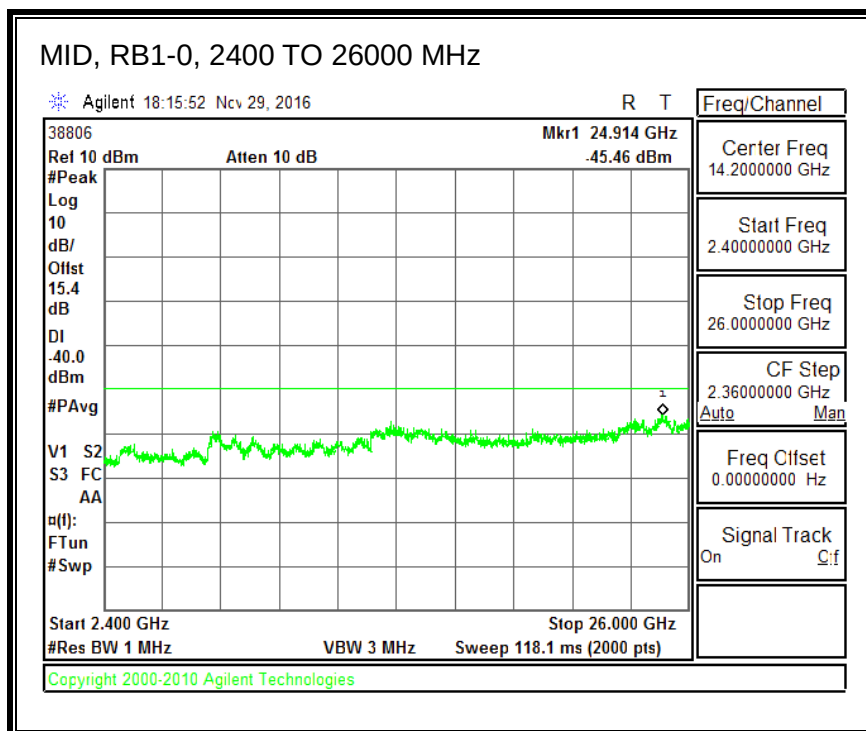




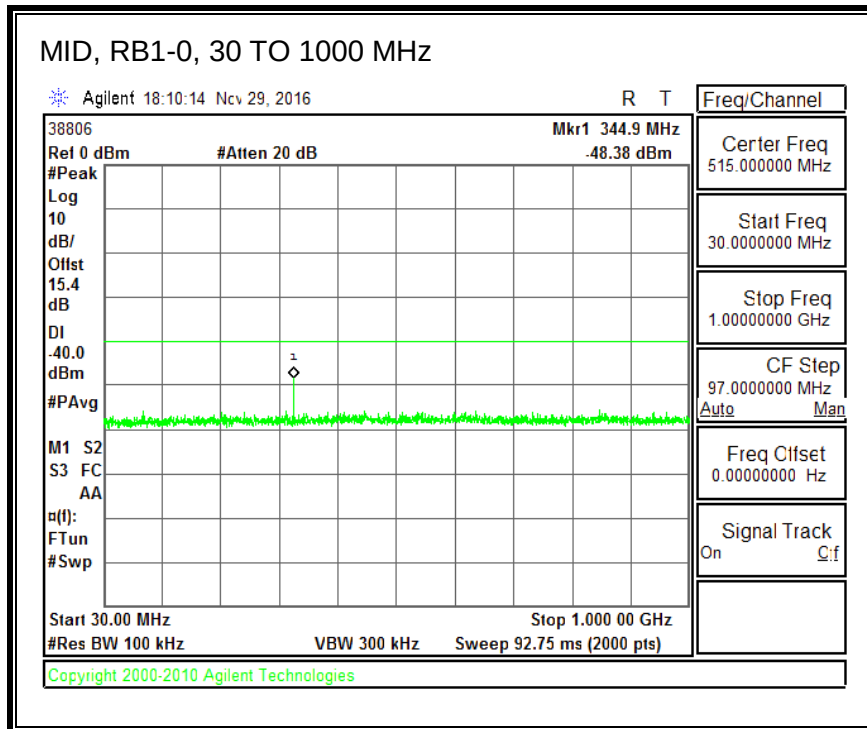


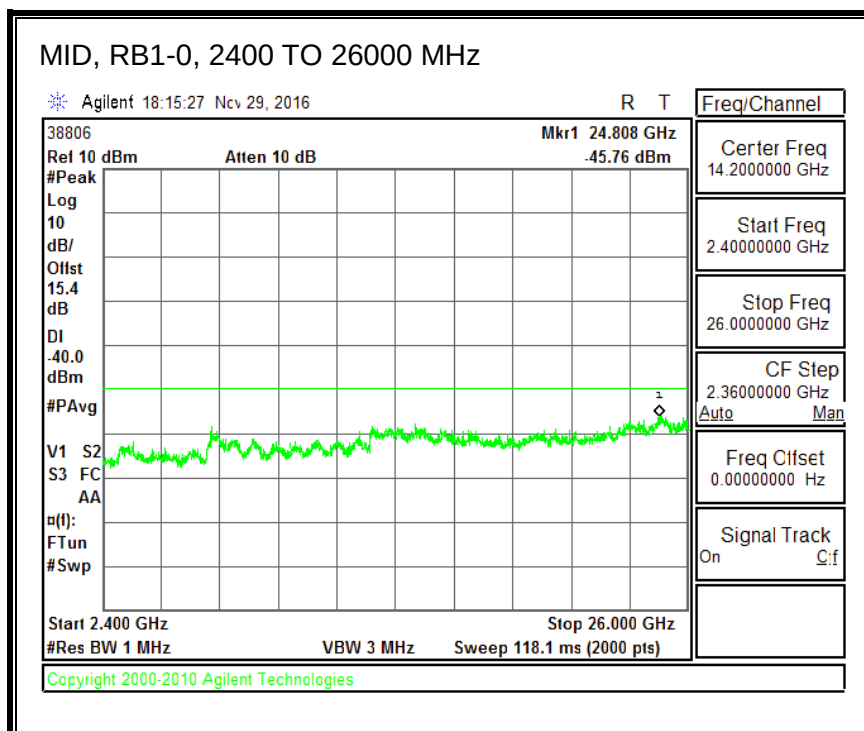
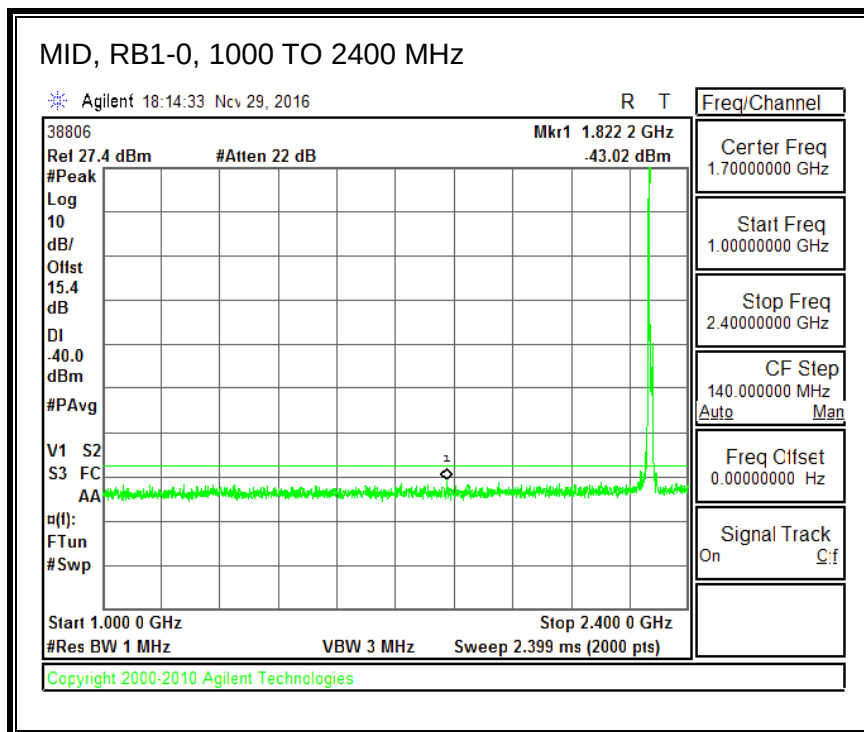
QPSK, (10.0 MHz BAND WIDTH)





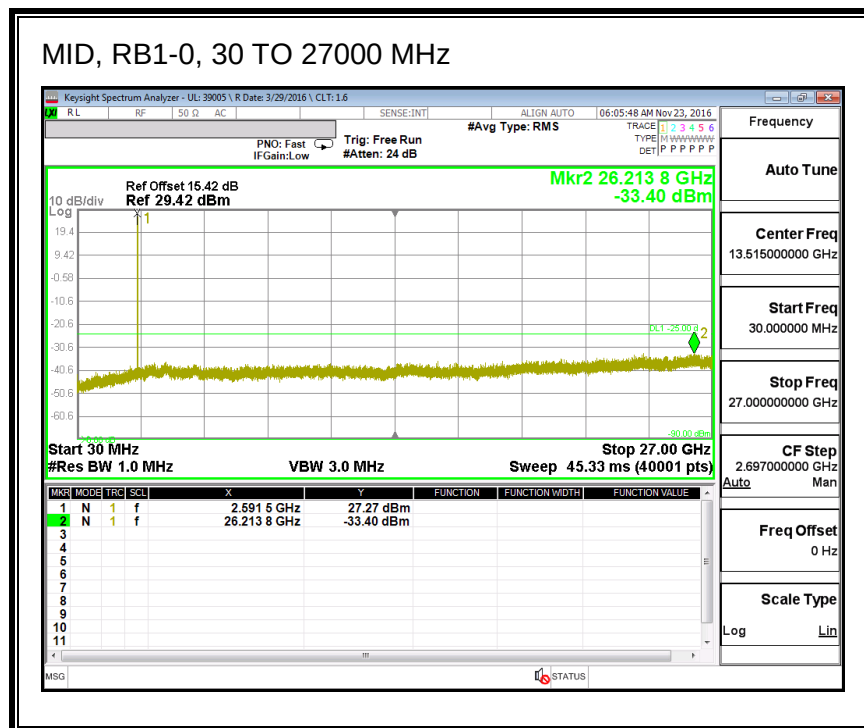
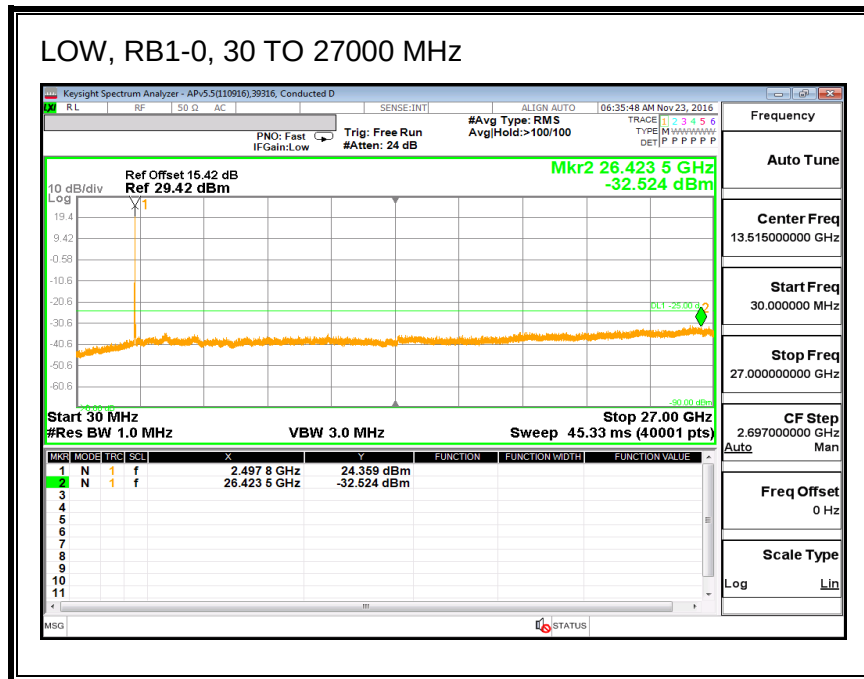
16QAM, (10.0 MHz BAND WIDTH)

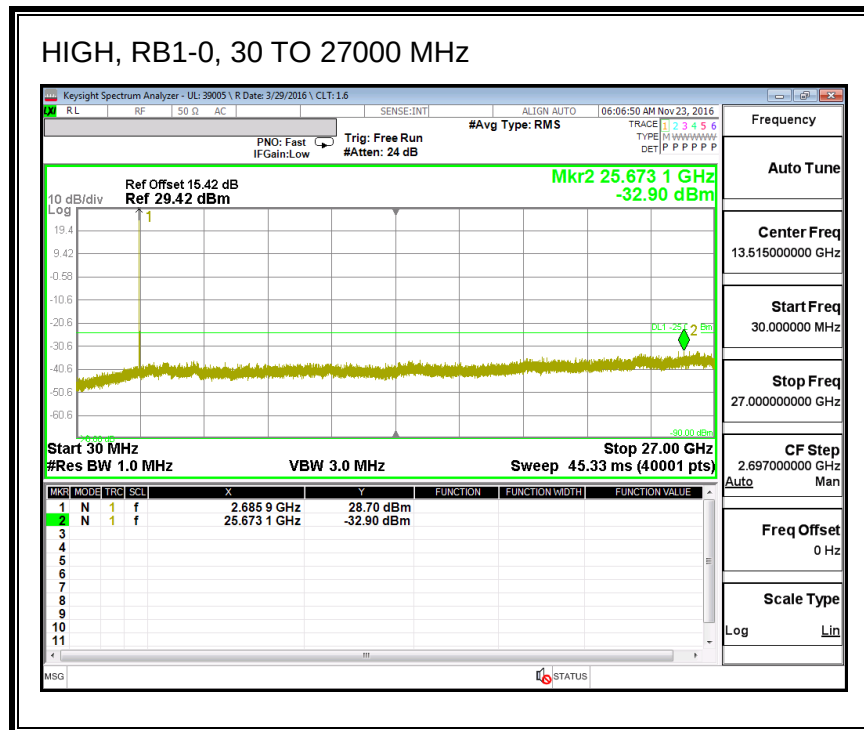




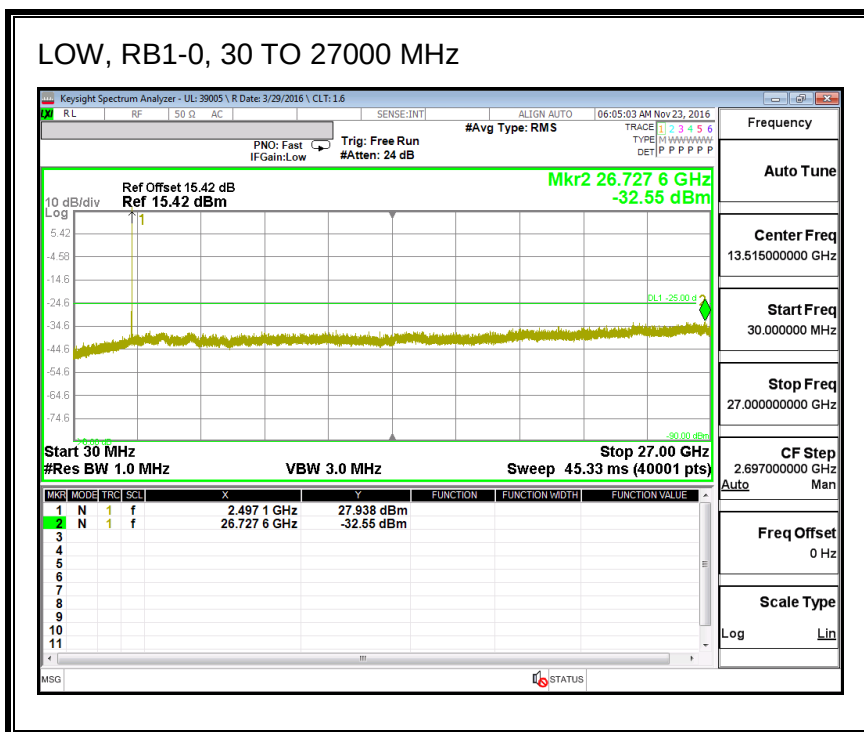
8.3.12. LTE BAND 41

QPSK, (5.0 MHz BAND WIDTH)

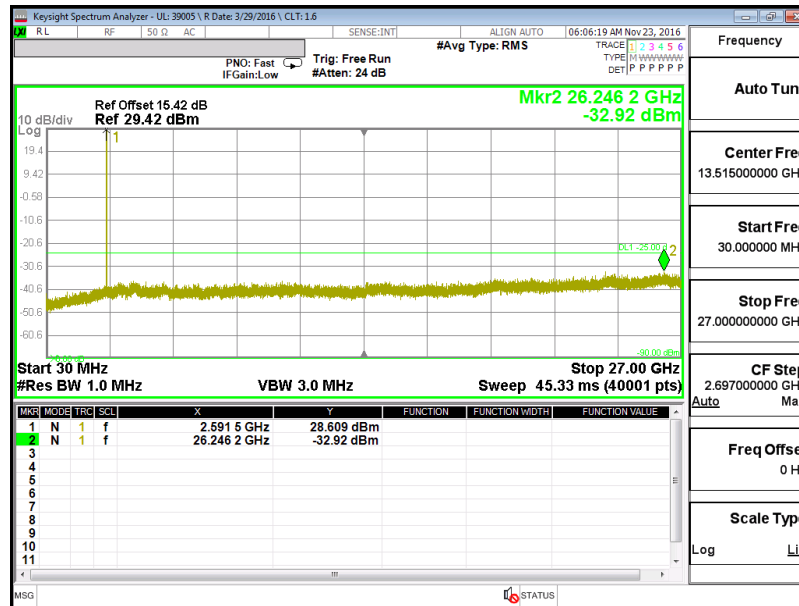




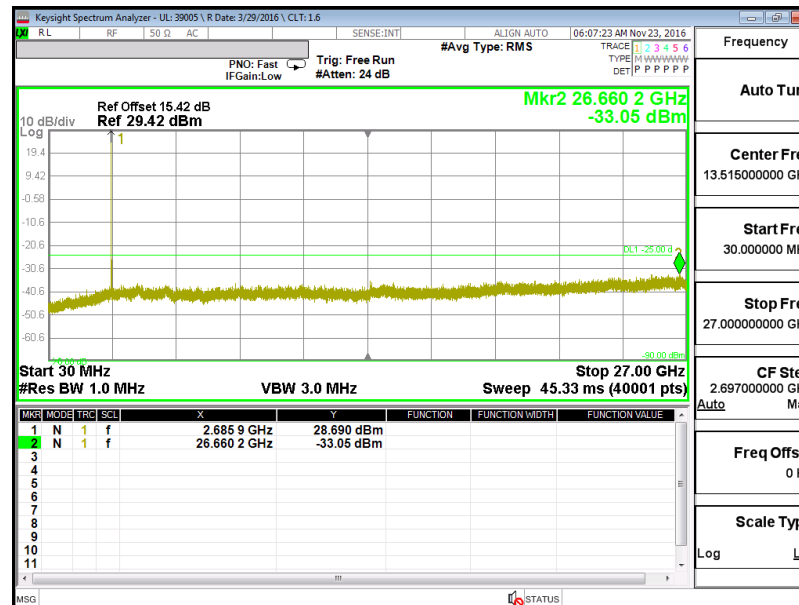
16QAM, (5.0 MHz BAND WIDTH)



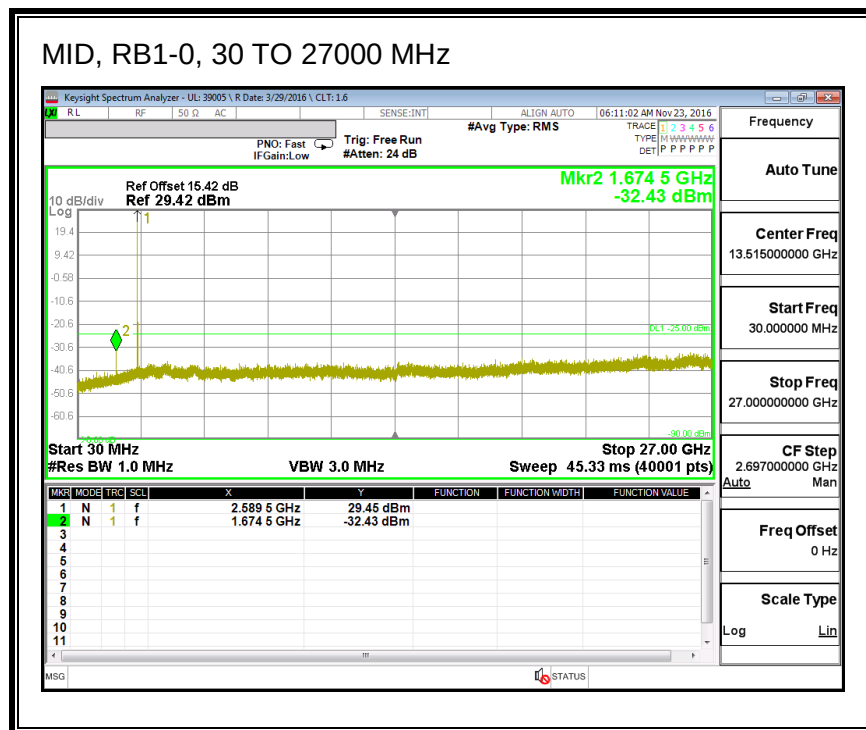
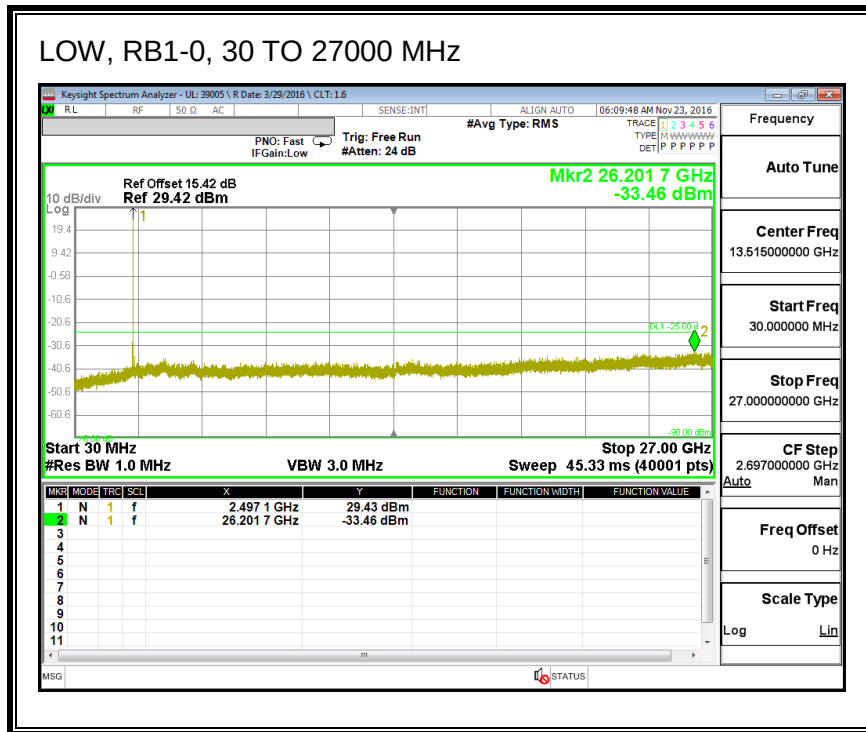
MID, RB1-0, 30 TO 27000 MHz

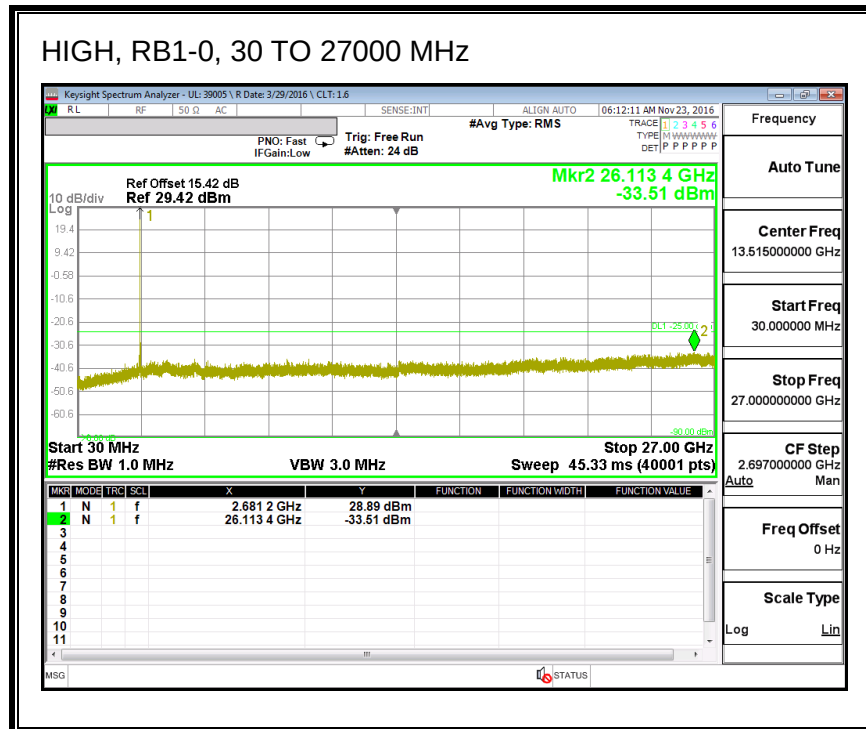


HIGH, RB1-0, 30 TO 27000 MHz

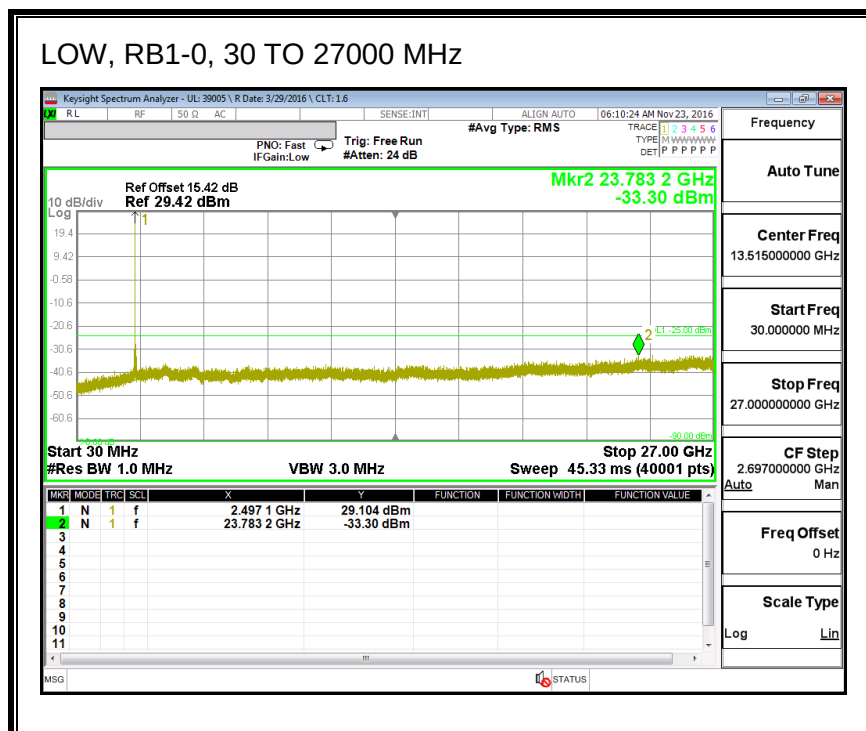


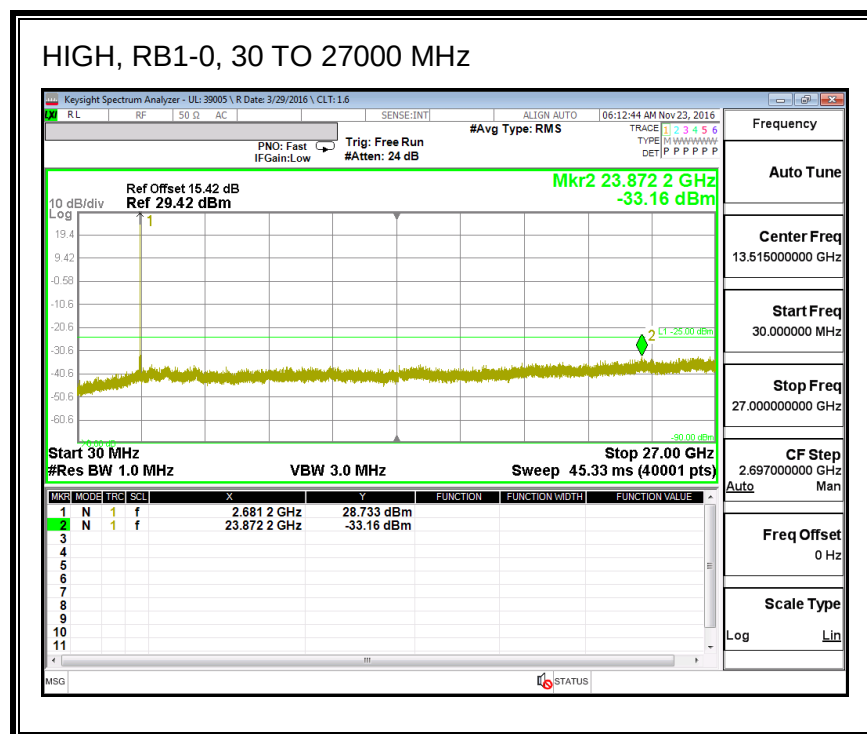
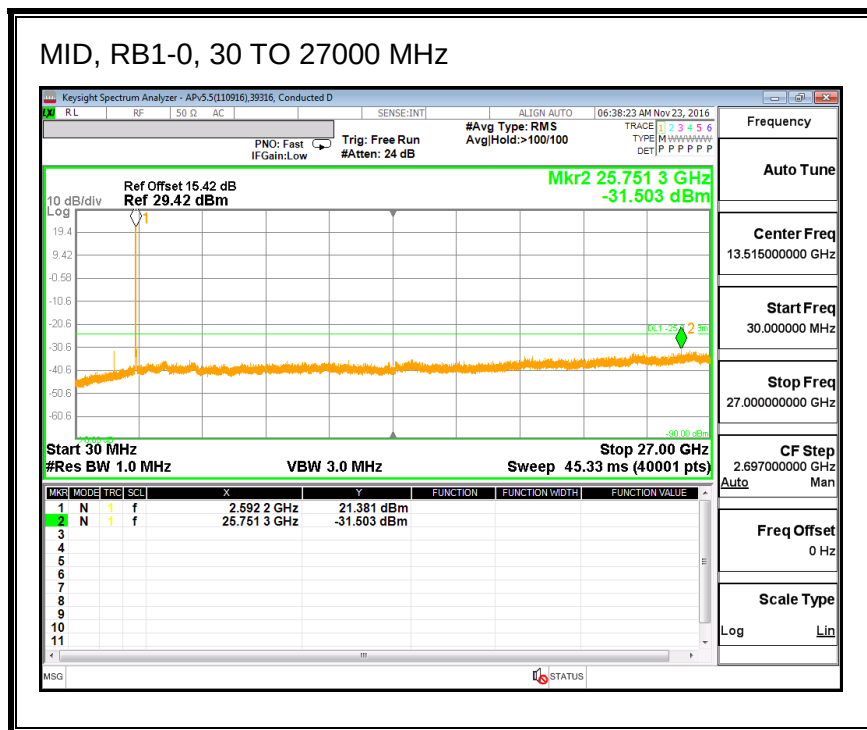
QPSK, (10.0 MHz BAND WIDTH)



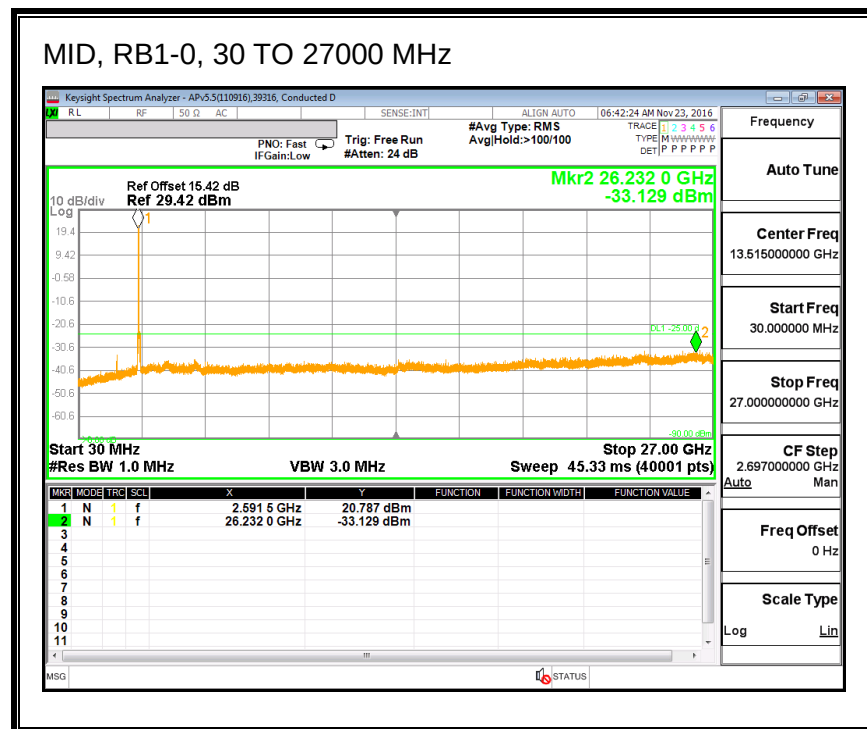
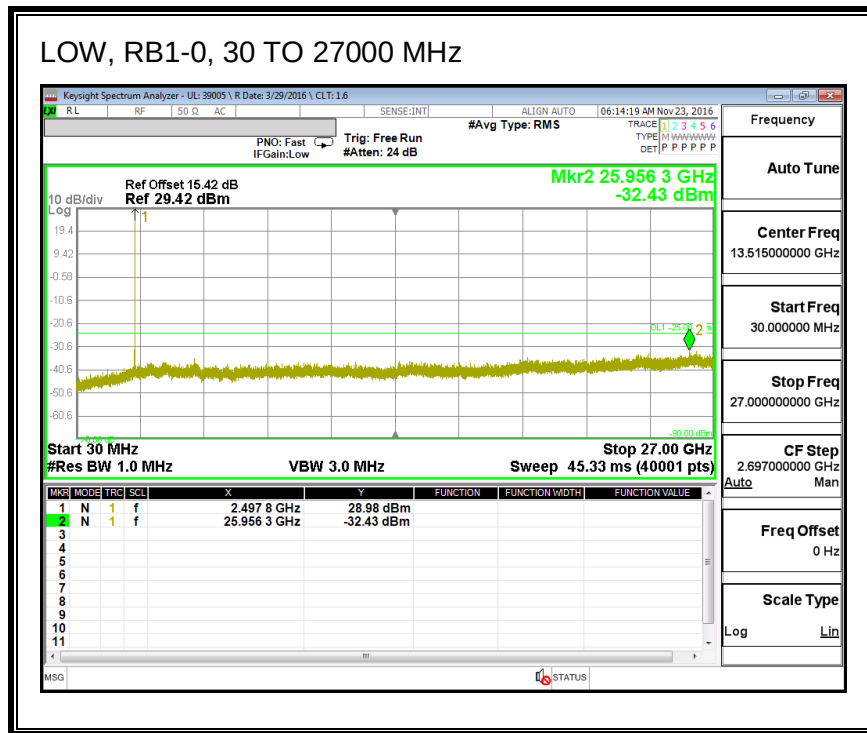


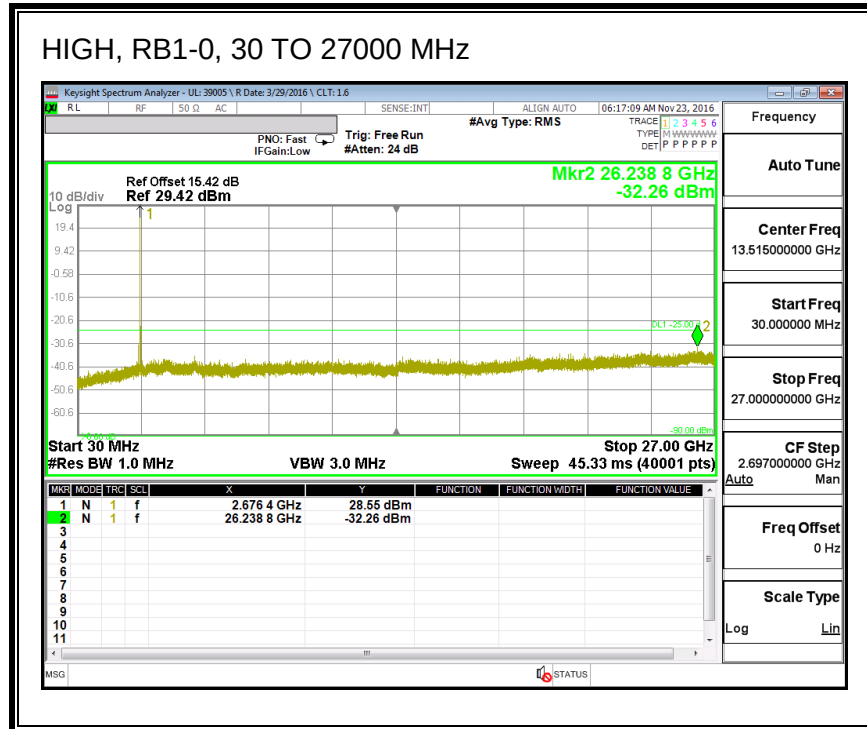
16QAM, (10.0 MHz BAND WIDTH)



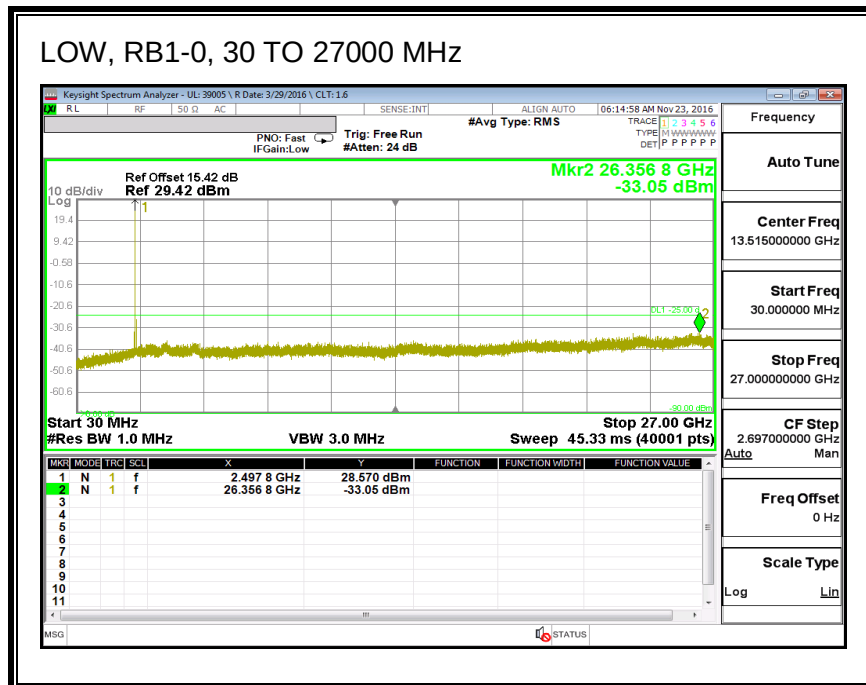


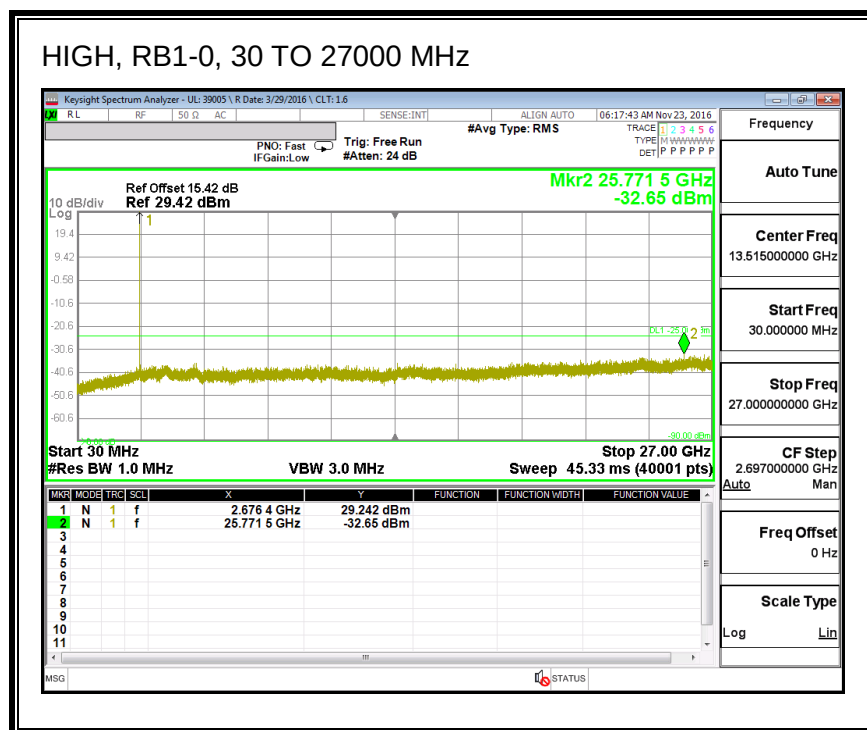
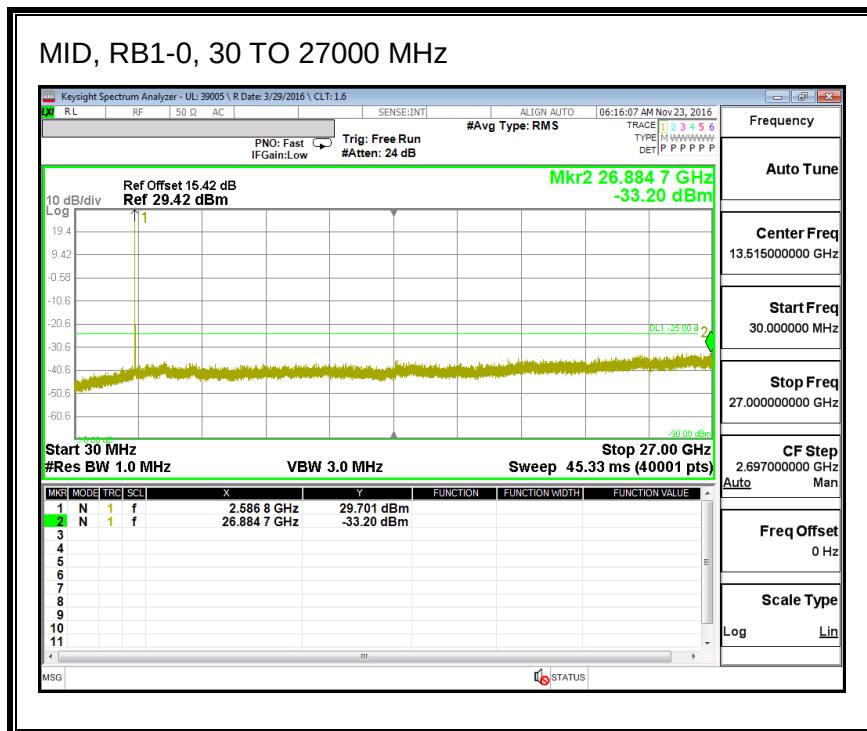
QPSK, (15.0 MHz BAND WIDTH)



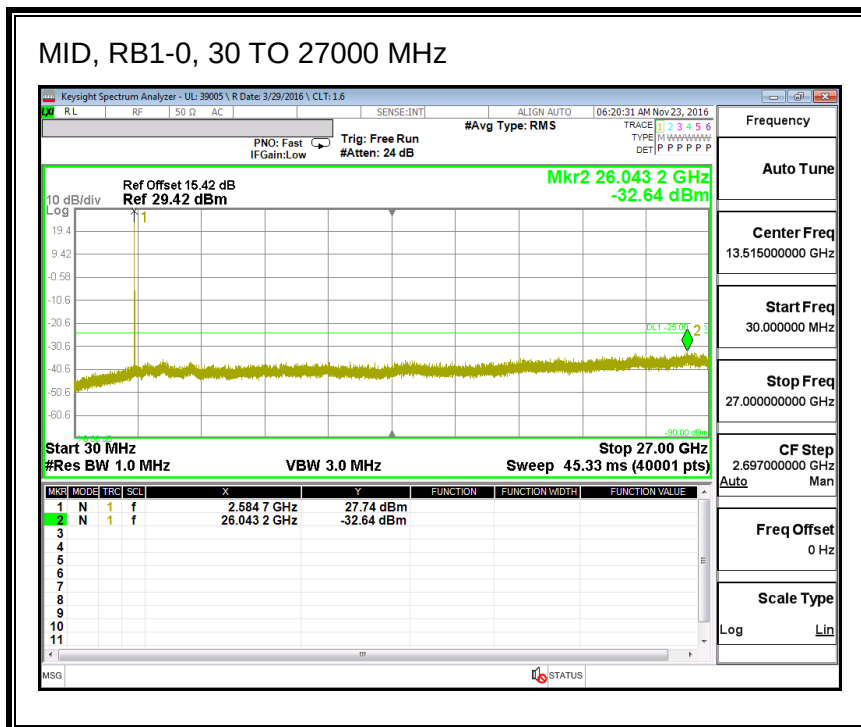
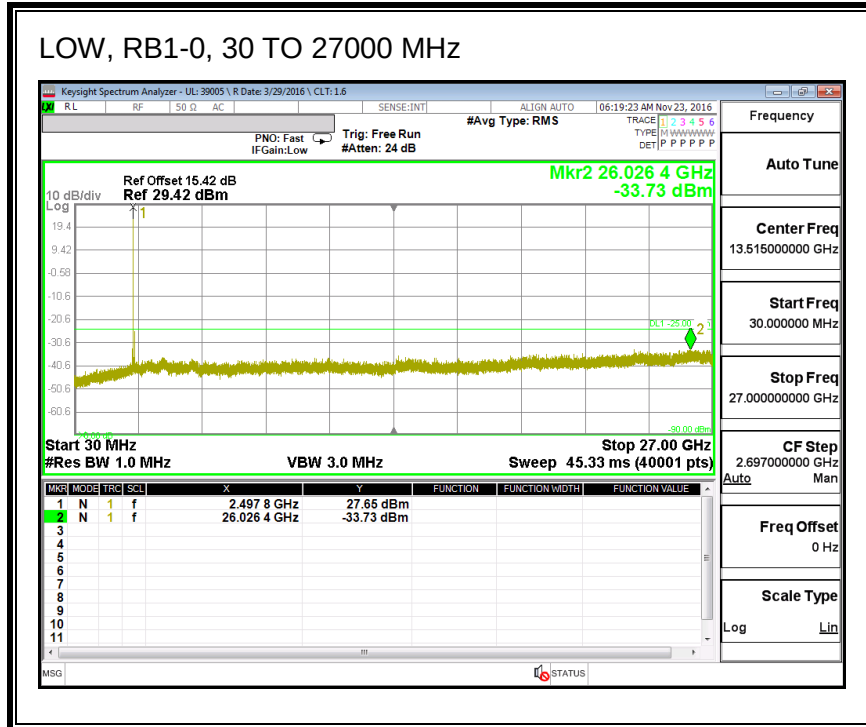


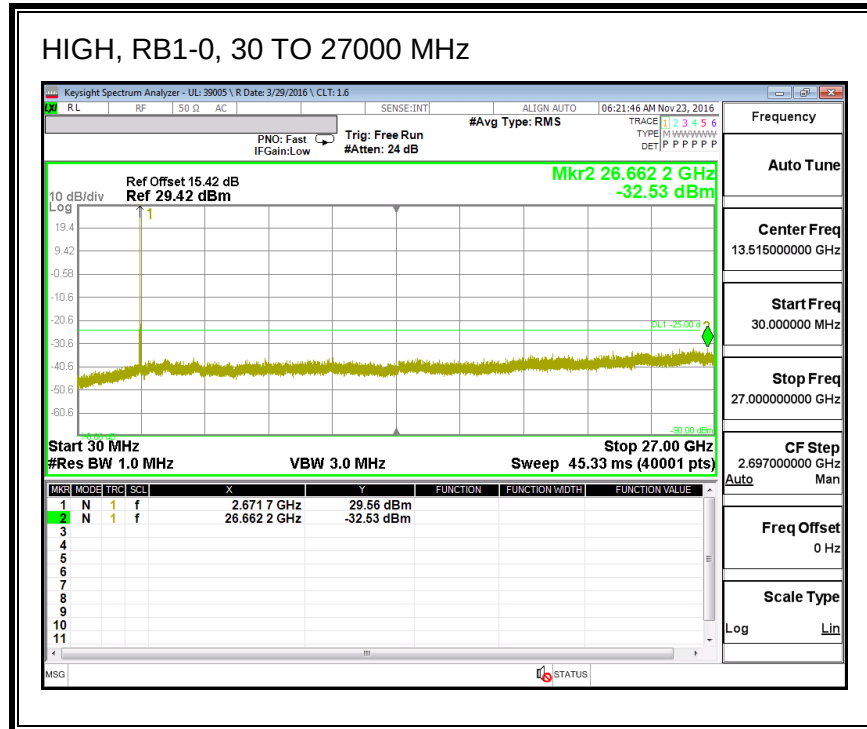
16QAM, (15.0 MHz BAND WIDTH)



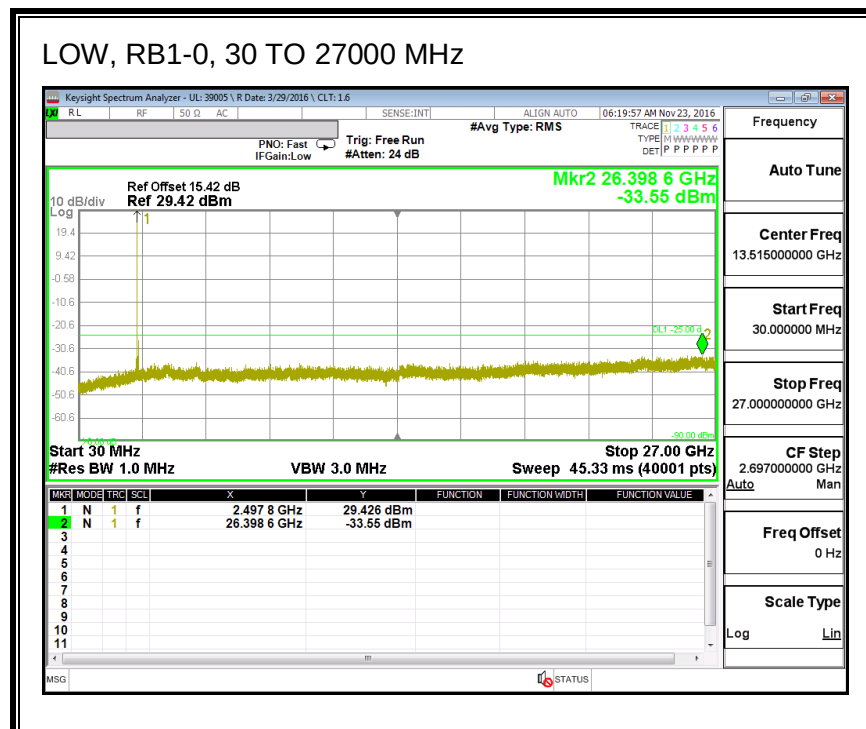


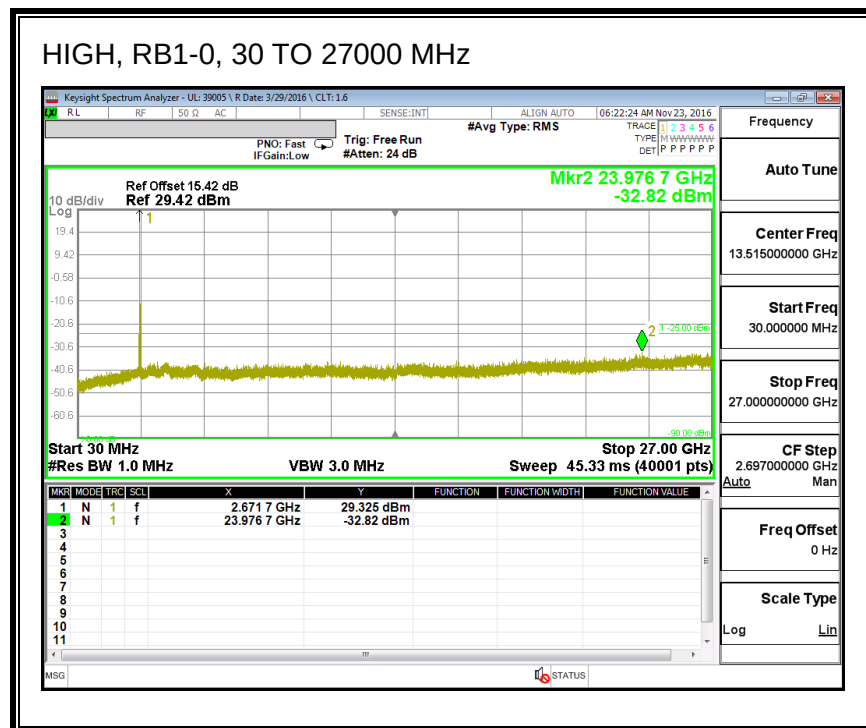
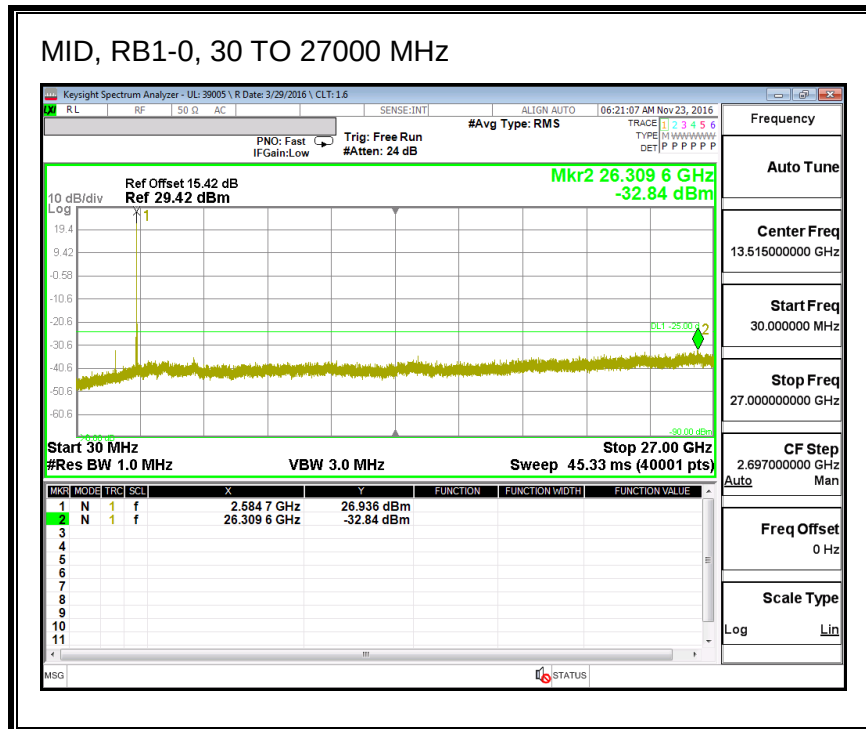
QPSK, (20.0 MHz BAND WIDTH)





16QAM, (20.0 MHz BAND WIDTH)





8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213

LIMITS

§22.355

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.

§90.213

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = -30° to $+50^{\circ}\text{C}$
- Voltage = (85% - 115%)
Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
End Voltage, 3.2VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C 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 $+50^{\circ}\text{C}$ 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 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 27
- LTE Band 30
- LTE Band 41

RESULTS

See the following pages.

8.4.1. LTE BAND 2

ID:	43575	Date:	11/29/16
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QPSK, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1851.0854	1908.9433		
Extreme (50C)		1851.0853	1908.9433	-13.1	-0.007
Extreme (40C)		1851.0854	1908.9433	-9.3	-0.005
Extreme (30C)		1851.0854	1908.9433	-6.3	-0.003
Extreme (10C)		1851.0854	1908.9433	-7.8	-0.004
Extreme (0C)		1851.0854	1908.9433	3.7	0.002
Extreme (-10C)		1851.0854	1908.9433	-4.1	-0.002
Extreme (-20C)		1851.0854	1908.9433	-6.3	-0.003
Extreme (-30C)		1851.0854	1908.9433	6.7	0.004
20C	15%	1851.0854	1908.9433	-7.2	-0.004
	-15%	1851.0854	1908.9433	6.9	0.004
	End Point	1851.0854	1908.9433	7.2	0.004

16QAM, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1851.0931	1908.9351		
Extreme (50C)		1851.0931	1908.9351	-8.1	-0.004
Extreme (40C)		1851.0931	1908.9351	9.3	0.005
Extreme (30C)		1851.0931	1908.9351	7.5	0.004
Extreme (10C)		1851.0931	1908.9351	9.1	0.005
Extreme (0C)		1851.0931	1908.9351	-7.8	-0.004
Extreme (-10C)		1851.0931	1908.9351	5.7	0.003
Extreme (-20C)		1851.0931	1908.9351	6.7	0.004
Extreme (-30C)		1851.0931	1908.9351	-8.1	-0.004
20C	15%	1851.0931	1908.9351	-7.6	-0.004
	-15%	1851.0931	1908.9351	-10.4	-0.006
	End Point	1851.0931	1908.9351	-11.0	-0.006

8.4.2. LTE BAND 4

ID:	43575	Date:	11/29/16
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QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1711.0793	1753.9455		
Extreme (50C)		1711.0793	1753.9455	-8.3	-0.005
Extreme (40C)		1711.0793	1753.9455	-7.2	-0.004
Extreme (30C)		1711.0793	1753.9455	6.8	0.004
Extreme (10C)		1711.0793	1753.9455	6.6	0.004
Extreme (0C)		1711.0793	1753.9455	7.7	0.004
Extreme (-10C)		1711.0793	1753.9455	-4.8	-0.003
Extreme (-20C)		1711.0793	1753.9455	7.5	0.004
Extreme (-30C)		1711.0793	1753.9455	7.0	0.004
20C	15%	1711.0793	1753.9455	5.3	0.003
	-15%	1711.0793	1753.9455	-9.1	-0.005
	End Point	1711.0793	1753.9455	-10.0	-0.006

16QAM, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1711.0751	1753.9450		
Extreme (50C)		1711.0751	1753.9450	7.6	0.004
Extreme (40C)		1711.0751	1753.9450	9.7	0.006
Extreme (30C)		1711.0751	1753.9450	-5.9	-0.003
Extreme (10C)		1711.0751	1753.9450	8.4	0.005
Extreme (0C)		1711.0751	1753.9450	4.4	0.003
Extreme (-10C)		1711.0751	1753.9450	-6.0	-0.003
Extreme (-20C)		1711.0751	1753.9450	6.5	0.004
Extreme (-30C)		1711.0751	1753.9450	7.9	0.005
20C	15%	1711.0751	1753.9450	4.9	0.003
	-15%	1711.0751	1753.9449	-13.6	-0.008
	End Point	1711.0750	1753.9449	-14.3	-0.008

8.4.3. LTE BAND 5

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.5327	848.4711		
Extreme (50C)		824.5327	848.4711	3.6	0.004
Extreme (40C)		824.5327	848.4711	-6.6	-0.008
Extreme (30C)		824.5327	848.4711	5.5	0.007
Extreme (10C)		824.5327	848.4711	-5.2	-0.006
Extreme (0C)		824.5327	848.4711	9.3	0.011
Extreme (-10C)		824.5327	848.4711	13.4	0.016
Extreme (-20C)		824.5327	848.4711	25.9	0.031
Extreme (-30C)		824.5327	848.4712	36.0	0.043
20C	15%	824.5327	848.4711	-4.1	-0.005
	-15%	824.5327	848.4711	-7.8	-0.009
	End Point	824.5327	848.4711	-8.7	-0.010

16QAM, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.5380	848.4674		
Extreme (50C)		824.5380	848.4674	-4.8	-0.006
Extreme (40C)		824.5380	848.4674	-6.0	-0.007
Extreme (30C)		824.5380	848.4674	4.8	0.006
Extreme (10C)		824.5380	848.4674	5.6	0.007
Extreme (0C)		824.5380	848.4674	7.5	0.009
Extreme (-10C)		824.5380	848.4674	7.3	0.009
Extreme (-20C)		824.5380	848.4674	10.5	0.013
Extreme (-30C)		824.5380	848.4674	11.1	0.013
20C	15%	824.5380	848.4674	-4.1	-0.005
	-15%	824.5380	848.4674	-4.2	-0.005
	End Point	824.5380	848.4674	-5.5	-0.007

8.4.4. LTE BAND 7

ID:	43575	Date:	11/29/16
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QPSK, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2501.0793	2568.9475		
Extreme (50C)		2501.0793	2568.9475	-16.9	-0.007
Extreme (40C)		2501.0793	2568.9475	-11.0	-0.004
Extreme (30C)		2501.0793	2568.9475	-12.5	-0.005
Extreme (10C)		2501.0793	2568.9475	-11.4	-0.005
Extreme (0C)		2501.0793	2568.9475	-7.9	-0.003
Extreme (-10C)		2501.0794	2568.9476	10.3	0.004
Extreme (-20C)		2501.0793	2568.9475	-10.7	-0.004
Extreme (-30C)		2501.0793	2568.9475	-7.9	-0.003
20C	15%	2501.0793	2568.9475	-9.3	-0.004
	-15%	2501.0793	2568.9475	-19.1	-0.008
	End Point	2501.0793	2568.9475	-20.4	-0.008

16QAM, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2501.0954	2568.9585		
Extreme (50C)		2501.0953	2568.9585	-16.1	-0.006
Extreme (40C)		2501.0954	2568.9585	-13.3	-0.005
Extreme (30C)		2501.0954	2568.9585	-12.1	-0.005
Extreme (10C)		2501.0954	2568.9585	-9.9	-0.004
Extreme (0C)		2501.0954	2568.9585	-13.7	-0.005
Extreme (-10C)		2501.0954	2568.9585	-9.3	-0.004
Extreme (-20C)		2501.0954	2568.9585	-12.9	-0.005
Extreme (-30C)		2501.0954	2568.9585	-6.8	-0.003
20C	15%	2501.0954	2568.9585	-10.7	-0.004
	-15%	2501.0954	2568.9585	-14.3	-0.006
	End Point	2501.0953	2568.9585	-15.6	-0.006

8.4.5. LTE BAND 12

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	699.5342	715.4727		
Extreme (50C)		699.5342	715.4727	1.8	0.00
Extreme (40C)		699.5342	715.4727	2.4	0.00
Extreme (30C)		699.5342	715.4727	3.6	0.01
Extreme (10C)		699.5342	715.4727	-3.5	0.00
Extreme (0C)		699.5342	715.4727	-3.2	0.00
Extreme (-10C)		699.5342	715.4727	-3.8	-0.01
Extreme (-20C)		699.5342	715.4727	-4.1	-0.01
Extreme (-30C)		699.5342	715.4727	-4.1	-0.01
20C	15%	699.5342	715.4727	-3.4	0.00
	-15%	699.5342	715.4727	4.1	0.01
	End Point	699.5342	715.4727	5.0	0.01

16QAM, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	699.5306	715.4809		
Extreme (50C)		699.5306	715.4809	2.2	0.00
Extreme (40C)		699.5306	715.4809	2.5	0.00
Extreme (30C)		699.5306	715.4809	-3.6	-0.01
Extreme (10C)		699.5306	715.4809	-4.2	-0.01
Extreme (0C)		699.5306	715.4809	2.6	0.00
Extreme (-10C)		699.5306	715.4809	2.8	0.00
Extreme (-20C)		699.5306	715.4809	-4.5	-0.01
Extreme (-30C)		699.5306	715.4809	-3.7	-0.01
20C	15%	699.5306	715.4809	-4.3	-0.01
	-15%	699.5306	715.4809	-1.9	0.00
	End Point	699.5306	715.4809	-3.1	0.00

8.4.6. LTE BAND 13

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	777.2590	786.7491		
Extreme (50C)		777.2590	786.7491	-6.0	-0.008
Extreme (40C)		777.2590	786.7491	-6.4	-0.008
Extreme (30C)		777.2590	786.7491	-6.2	-0.008
Extreme (10C)		777.2590	786.7491	-4.7	-0.006
Extreme (0C)		777.2590	786.7491	5.1	0.007
Extreme (-10C)		777.2590	786.7491	-4.9	-0.006
Extreme (-20C)		777.2590	786.7491	4.3	0.005
Extreme (-30C)		777.2590	786.7491	-4.5	-0.006
20C	15%	777.2590	786.7491	-4.9	-0.006
	-15%	777.2590	786.7491	-6.3	-0.008
	End Point	777.2590	786.7491	-7.5	-0.010

16QAM, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	777.2645	786.7364		
Extreme (50C)		777.2645	786.7364	-5.2	-0.007
Extreme (40C)		777.2645	786.7364	-5.3	-0.007
Extreme (30C)		777.2645	786.7364	-3.5	-0.004
Extreme (10C)		777.2645	786.7364	4.7	0.006
Extreme (0C)		777.2645	786.7364	4.4	0.006
Extreme (-10C)		777.2645	786.7364	5.2	0.007
Extreme (-20C)		777.2645	786.7364	4.1	0.005
Extreme (-30C)		777.2645	786.7364	-4.1	-0.005
20C	15%	777.2645	786.7364	3.7	0.005
	-15%	777.2645	786.7364	5.0	0.006
	End Point	777.2645	786.7364	5.5	0.007

8.4.7. LTE BAND 17

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	704.5006	715.4950		
Extreme (50C)		704.5006	715.4950	1.6	0.002
Extreme (40C)		704.5006	715.4950	1.9	0.003
Extreme (30C)		704.5006	715.4950	2.5	0.004
Extreme (10C)		704.5006	715.4950	-2.2	-0.003
Extreme (0C)		704.5006	715.4950	4.2	0.006
Extreme (-10C)		704.5006	715.4950	4.3	0.006
Extreme (-20C)		704.5006	715.4950	3.8	0.005
Extreme (-30C)		704.5006	715.4950	-2.6	-0.004
20C	15%	704.5006	715.4950	-2.2	-0.003
	-15%	704.5006	715.4950	3.1	0.004
	End Point	704.5006	715.4950	4.3	0.006

16QAM, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	704.5030	715.4935		
Extreme (50C)		704.5030	715.4935	1.8	0.003
Extreme (40C)		704.5030	715.4935	1.7	0.002
Extreme (30C)		704.5030	715.4935	1.8	0.002
Extreme (10C)		704.5030	715.4935	1.6	0.002
Extreme (0C)		704.5030	715.4935	3.8	0.005
Extreme (-10C)		704.5030	715.4935	4.1	0.006
Extreme (-20C)		704.5030	715.4935	3.9	0.005
Extreme (-30C)		704.5030	715.4935	-2.8	-0.004
20C	15%	704.5030	715.4935	1.9	0.003
	-15%	704.5030	715.4935	-3.8	-0.005
	End Point	704.5030	715.4935	-4.7	-0.007

8.4.8. LTE BAND 25

ID:	43575	Date:	11/29/16
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QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1851.0820	1913.9422		
Extreme (50C)		1851.0820	1913.9422	-9.9	-0.005
Extreme (40C)		1851.0820	1913.9422	9.7	0.005
Extreme (30C)		1851.0820	1913.9422	7.2	0.004
Extreme (10C)		1851.0820	1913.9422	7.2	0.004
Extreme (0C)		1851.0820	1913.9422	-6.5	-0.003
Extreme (-10C)		1851.0820	1913.9422	-5.2	-0.003
Extreme (-20C)		1851.0820	1913.9422	-5.1	-0.003
Extreme (-30C)		1851.0820	1913.9422	5.8	0.003
20C	15%	1851.0820	1913.9422	6.3	0.003
	-15%	1851.0820	1913.9422	7.8	0.004
	End Point	1851.0820	1913.9422	8.6	0.005

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1851.0912	1913.9364		
Extreme (50C)		1851.0912	1913.9363	-9.3	-0.005
Extreme (40C)		1851.0911	1913.9363	-10.8	-0.006
Extreme (30C)		1851.0912	1913.9364	6.2	0.003
Extreme (10C)		1851.0912	1913.9363	-7.8	-0.004
Extreme (0C)		1851.0912	1913.9364	9.4	0.005
Extreme (-10C)		1851.0912	1913.9363	-5.0	-0.003
Extreme (-20C)		1851.0912	1913.9364	8.3	0.004
Extreme (-30C)		1851.0912	1913.9364	7.7	0.004
20C	15%	1851.0912	1913.9364	5.6	0.003
	-15%	1851.0912	1913.9363	-7.9	-0.004
	End Point	1851.0912	1913.9363	-8.7	-0.005

8.4.9. LTE BAND 26

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	814.2507	823.7411		
Extreme (50C)		814.2507	823.7410	-7.7	-0.009
Extreme (40C)		814.2507	823.7410	-5.7	-0.007
Extreme (30C)		814.2507	823.7410	-6.5	-0.008
Extreme (10C)		814.2507	823.7411	-4.6	-0.006
Extreme (0C)		814.2507	823.7411	-4.4	-0.005
Extreme (-10C)		814.2507	823.7411	-4.7	-0.006
Extreme (-20C)		814.2507	823.7411	-3.6	-0.004
Extreme (-30C)		814.2507	823.7411	-3.6	-0.004
20C	15%	814.2507	823.7410	-5.4	-0.007
	-15%	814.2507	823.7410	-5.2	-0.006
	End Point	814.2507	823.7410	-6.4	-0.008

16QAM, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	814.2619	823.7382		
Extreme (50C)		814.2619	823.7382	-6.6	-0.008
Extreme (40C)		814.2619	823.7382	-6.0	-0.007
Extreme (30C)		814.2619	823.7382	-6.0	-0.007
Extreme (10C)		814.2619	823.7382	-5.3	-0.006
Extreme (0C)		814.2619	823.7382	-5.9	-0.007
Extreme (-10C)		814.2619	823.7382	-5.5	-0.007
Extreme (-20C)		814.2619	823.7382	-4.9	-0.006
Extreme (-30C)		814.2619	823.7382	-4.7	-0.006
20C	15%	814.2619	823.7382	-5.3	-0.006
	-15%	814.2619	823.7382	-6.0	-0.007
	End Point	814.2619	823.7382	-6.9	-0.008

8.4.10. LTE BAND 27

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	814.4987	823.4963		
Extreme (50C)		814.4987	823.4963	-5.7	-0.007
Extreme (40C)		814.4987	823.4963	-3.9	-0.005
Extreme (30C)		814.4987	823.4963	-5.5	-0.007
Extreme (10C)		814.4987	823.4963	-3.2	-0.004
Extreme (0C)		814.4987	823.4963	-3.7	-0.005
Extreme (-10C)		814.4987	823.4963	-4.5	-0.005
Extreme (-20C)		814.4987	823.4963	-3.4	-0.004
Extreme (-30C)		814.4987	823.4963	-3.4	-0.004
20C	15%	814.4987	823.4963	-4.9	-0.006
	-15%	814.4987	823.4963	-6.1	-0.007
	End Point	814.4987	823.4963	-7.6	-0.009

16QAM, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	814.5065	823.4935		
Extreme (50C)		814.5065	823.4935	-6.0	-0.007
Extreme (40C)		814.5065	823.4935	-5.3	-0.006
Extreme (30C)		814.5065	823.4935	-5.0	-0.006
Extreme (10C)		814.5065	823.4935	3.4	0.004
Extreme (0C)		814.5065	823.4935	-2.9	-0.003
Extreme (-10C)		814.5065	823.4935	-3.0	-0.004
Extreme (-20C)		814.5065	823.4935	-3.8	-0.005
Extreme (-30C)		814.5065	823.4935	-3.7	-0.005
20C	15%	814.5065	823.4935	-4.0	-0.005
	-15%	814.5065	823.4935	-6.4	-0.008
	End Point	814.5065	823.4935	-7.3	-0.009

8.4.11. LTE BAND 30

ID:	43575	Date:	11/29/16
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QPSK, (10MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2305.5028	2314.4962		
Extreme (50C)		2305.5028	2314.4962	-9.0	-0.004
Extreme (40C)		2305.5028	2314.4962	-7.9	-0.003
Extreme (30C)		2305.5028	2314.4962	-8.8	-0.004
Extreme (10C)		2305.5028	2314.4962	-6.5	-0.003
Extreme (0C)		2305.5028	2314.4962	-10.2	-0.004
Extreme (-10C)		2305.5027	2314.4962	-14.3	-0.006
Extreme (-20C)		2305.5028	2314.4962	-8.2	-0.004
Extreme (-30C)		2305.5028	2314.4962	-10.3	-0.004
20C	15%	2305.5028	2314.4962	-10.1	-0.004
	-15%	2305.5028	2314.4962	-5.4	-0.002
	End Point	2305.5028	2314.4962	-6.8	-0.003

16QAM, (10MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2305.5056	2314.4957		
Extreme (50C)		2305.5056	2314.4957	-13.5	-0.006
Extreme (40C)		2305.5056	2314.4957	-7.6	-0.003
Extreme (30C)		2305.5056	2314.4957	-11.3	-0.005
Extreme (10C)		2305.5056	2314.4957	-8.3	-0.004
Extreme (0C)		2305.5056	2314.4957	-7.1	-0.003
Extreme (-10C)		2305.5056	2314.4957	-11.2	-0.005
Extreme (-20C)		2305.5056	2314.4957	-7.9	-0.003
Extreme (-30C)		2305.5056	2314.4957	-8.4	-0.004
20C	15%	2305.5056	2314.4957	-9.0	-0.004
	-15%	2305.5056	2314.4957	-8.2	-0.004
	End Point	2305.5056	2314.4957	-9.3	-0.004

8.4.12. LTE BAND 41

ID:	43575	Date:	11/29/16
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QPSK, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2496.9181	2689.3899		
Extreme (50C)		2496.9182	2689.3899	36.8	0.014
Extreme (40C)		2496.9182	2689.3899	30.2	0.012
Extreme (30C)		2496.9182	2689.3899	34.7	0.013
Extreme (10C)		2496.9182	2689.3899	32.3	0.012
Extreme (0C)		2496.9181	2689.3899	-9.9	-0.004
Extreme (-10C)		2496.9182	2689.3899	21.0	0.008
Extreme (-20C)		2496.9182	2689.3899	11.3	0.004
Extreme (-30C)		2496.9182	2689.3899	9.4	0.004
20C	15%	2496.9182	2689.3899	24.4	0.009
	-15%	2496.9182	2689.3899	22.4	0.009
	End Point	2496.9182	2689.3899	23.5	0.009

16QAM, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2497.0901	2688.9712		
Extreme (50C)		2497.0901	2688.9712	30.1	0.012
Extreme (40C)		2497.0901	2688.9712	36.9	0.014
Extreme (30C)		2497.0901	2688.9712	12.5	0.005
Extreme (10C)		2497.0901	2688.9712	35.0	0.013
Extreme (0C)		2497.0901	2688.9712	31.9	0.012
Extreme (-10C)		2497.0901	2688.9711	-10.2	-0.004
Extreme (-20C)		2497.0901	2688.9712	10.7	0.004
Extreme (-30C)		2497.0901	2688.9712	10.1	0.004
20C	15%	2497.0901	2688.9711	-16.4	-0.006
	-15%	2497.0901	2688.9712	19.1	0.007
	End Point	2497.0901	2688.9712	20.3	0.008

8.5. PEAK-TO-AVERAGE RATIO

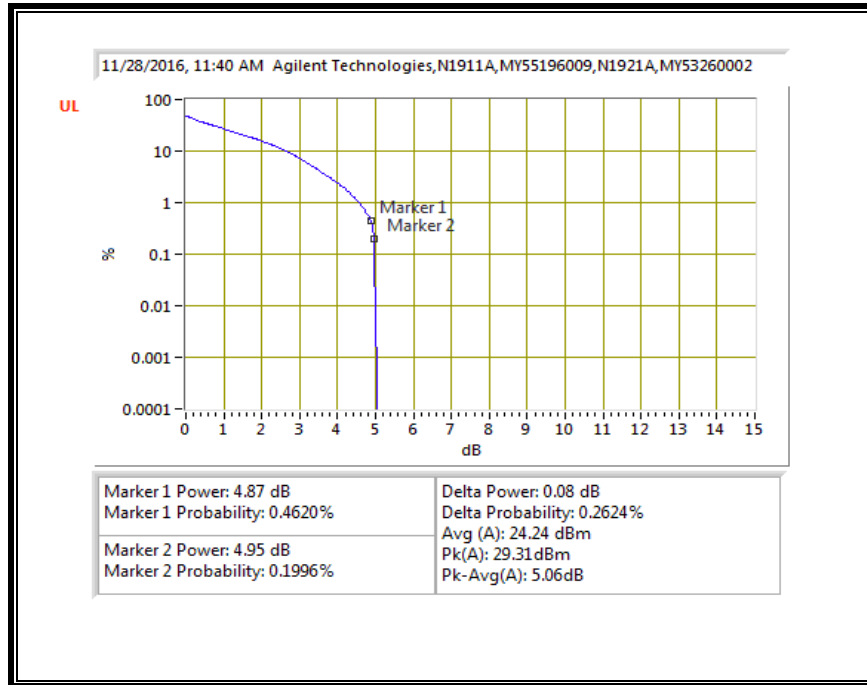
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB

RESULT

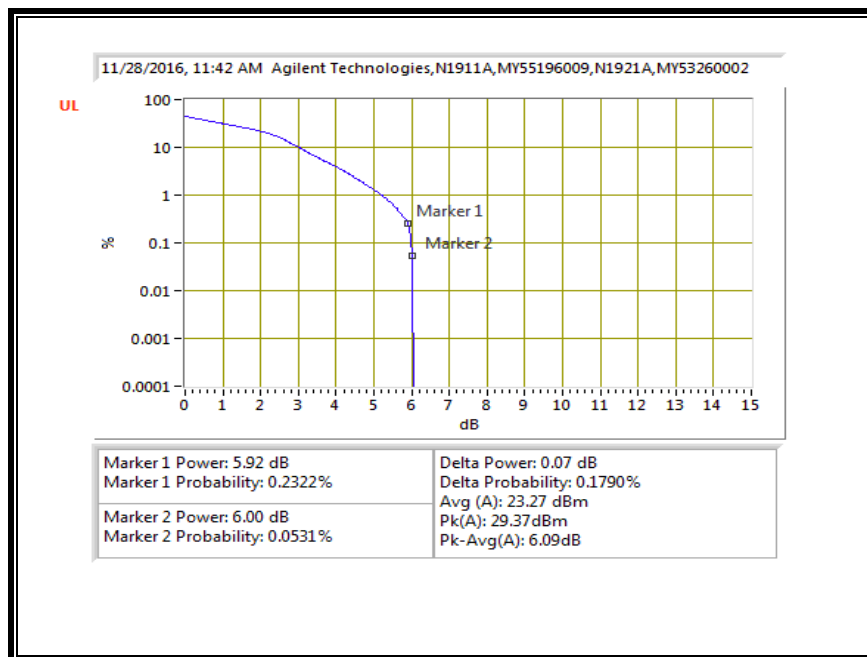
Antenna C was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average ratio criteria.

8.5.1. LTE BAND 2

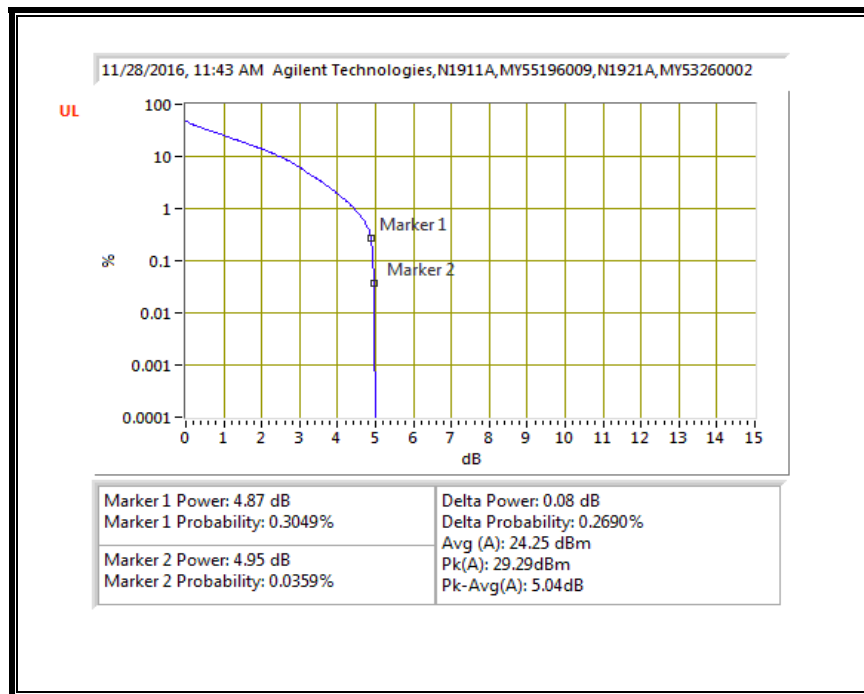
QPSK, (1.4 MHz BAND WIDTH)



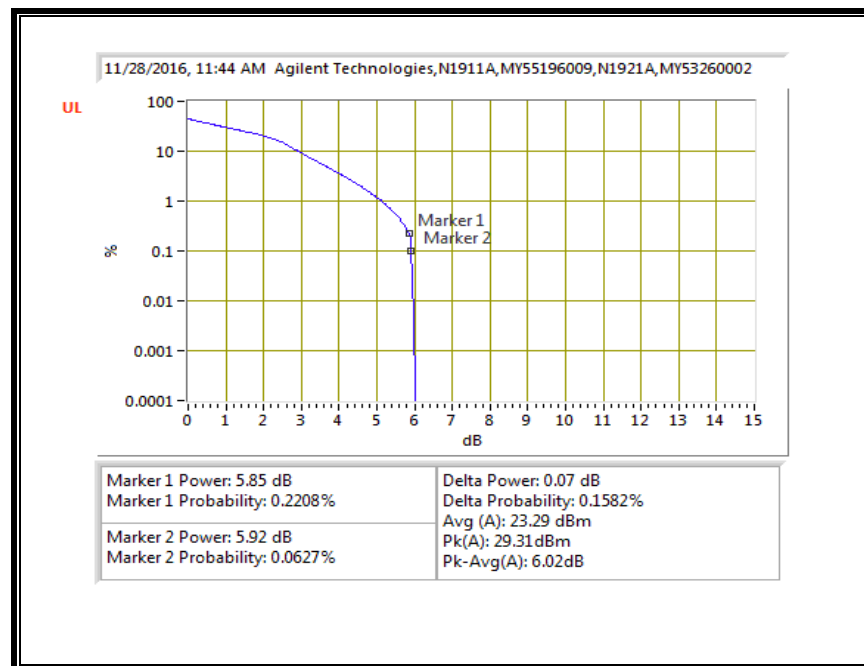
16QAM, (1.4 MHz BAND WIDTH)



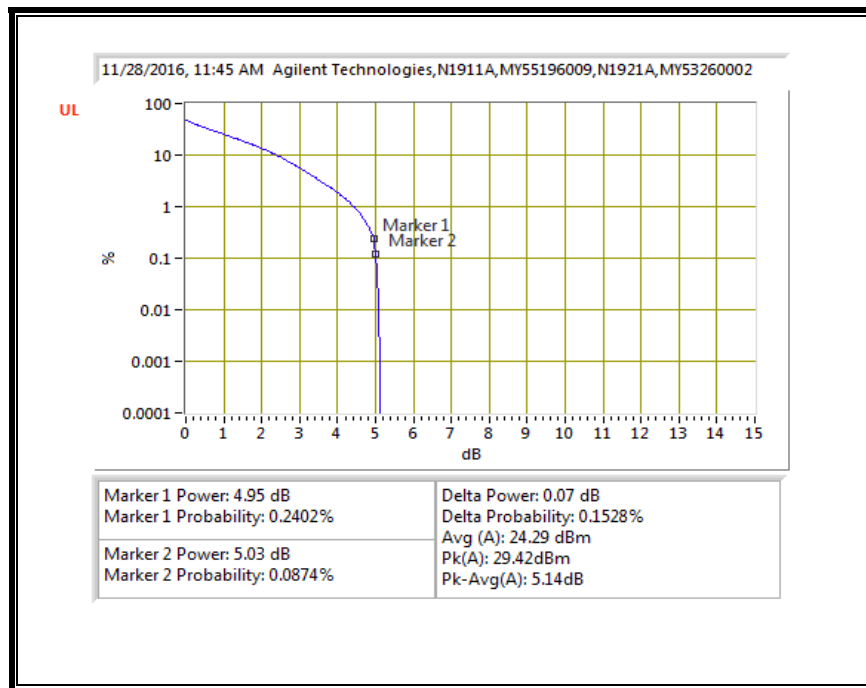
QPSK, (3.0 MHz BAND WIDTH)



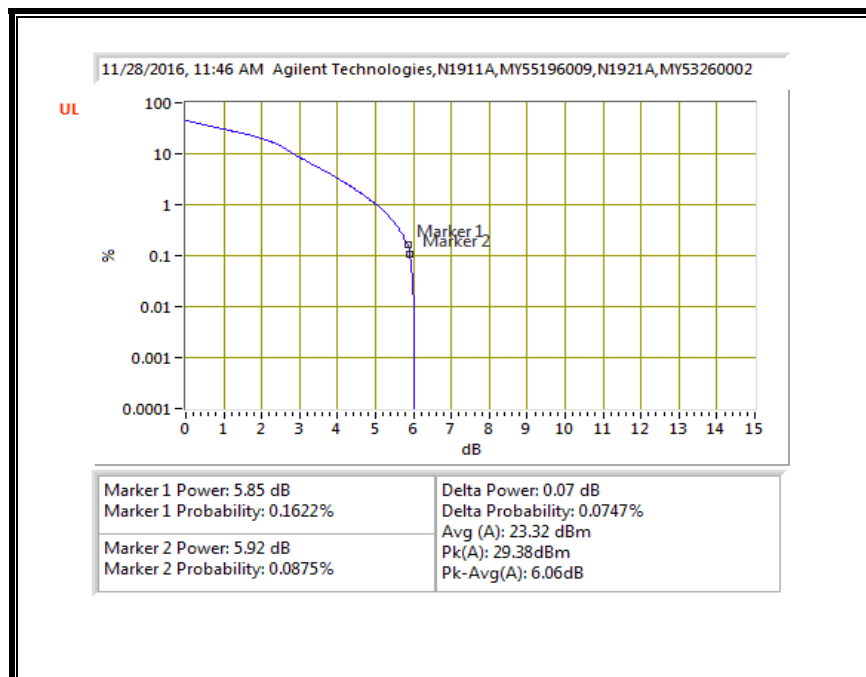
16QAM, (3.0 MHz BAND WIDTH)



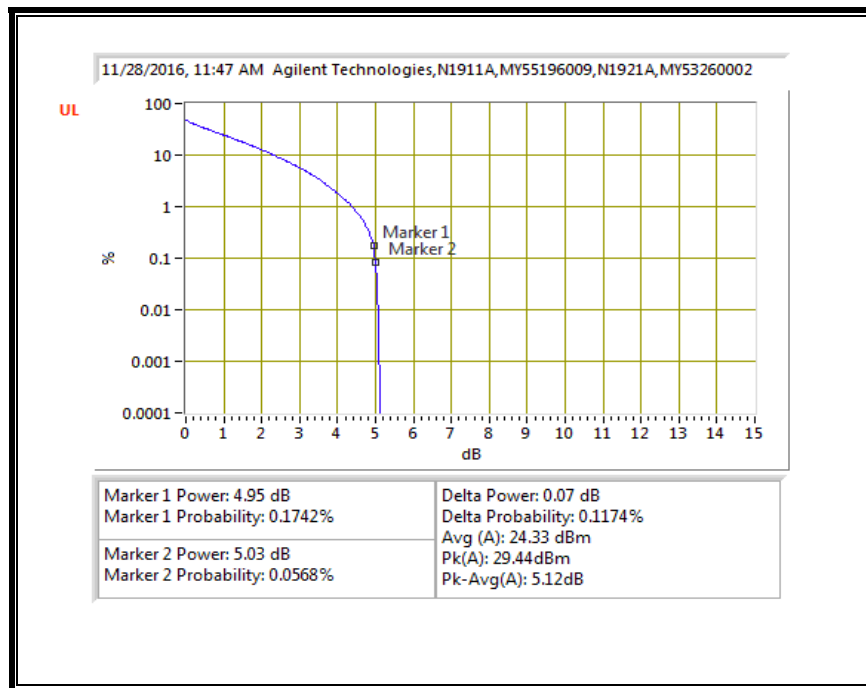
QPSK, (5.0 MHz BAND WIDTH)



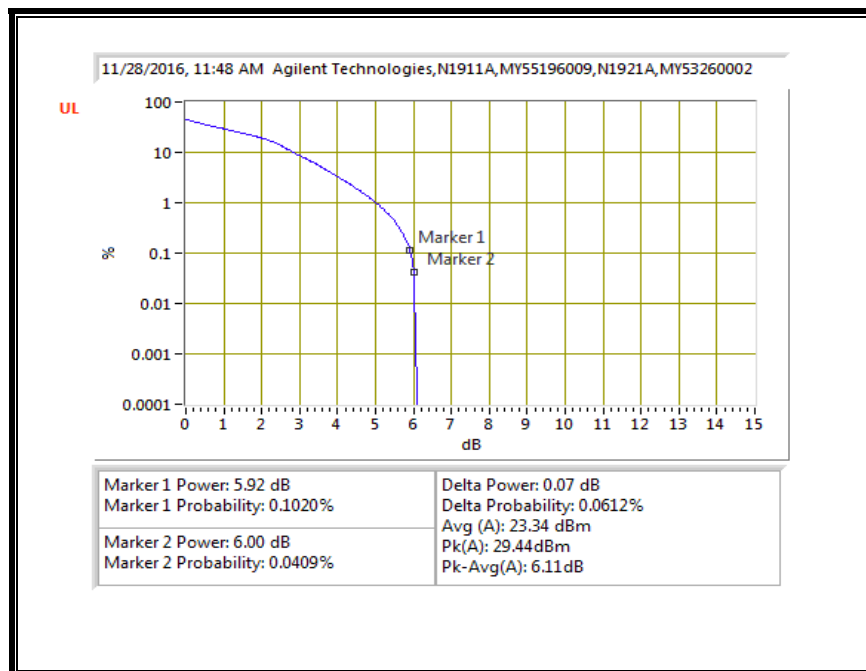
16QAM, (5.0 MHz BAND WIDTH)



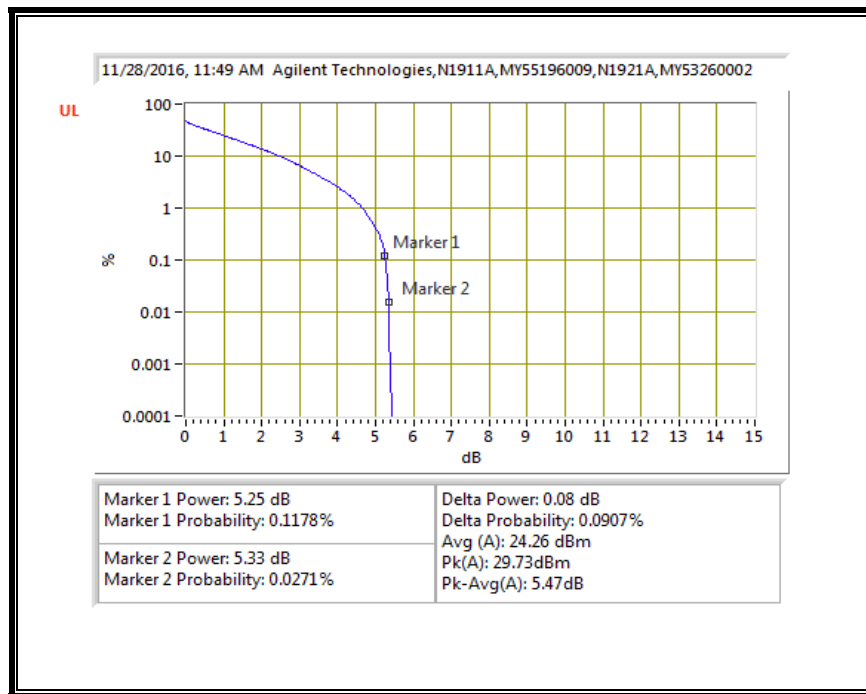
QPSK, (10.0 MHz BAND WIDTH)



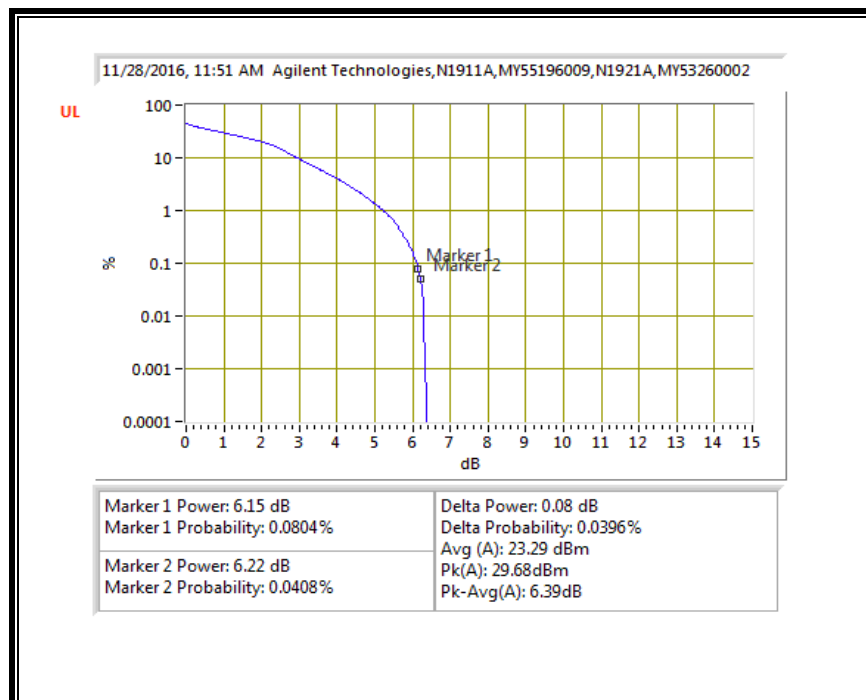
16QAM, (10.0 MHz BAND WIDTH)



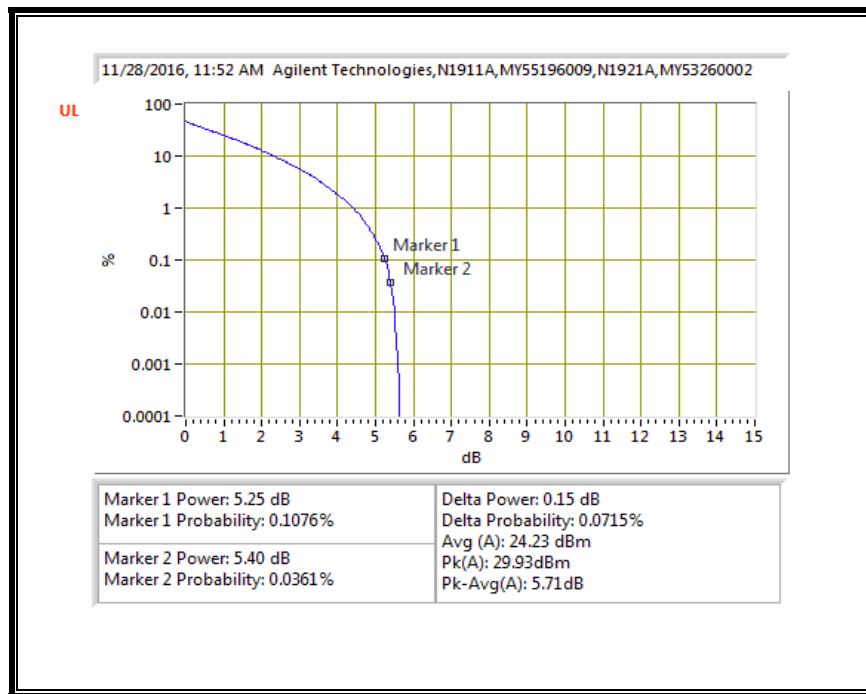
QPSK, (15.0 MHz BAND WIDTH)



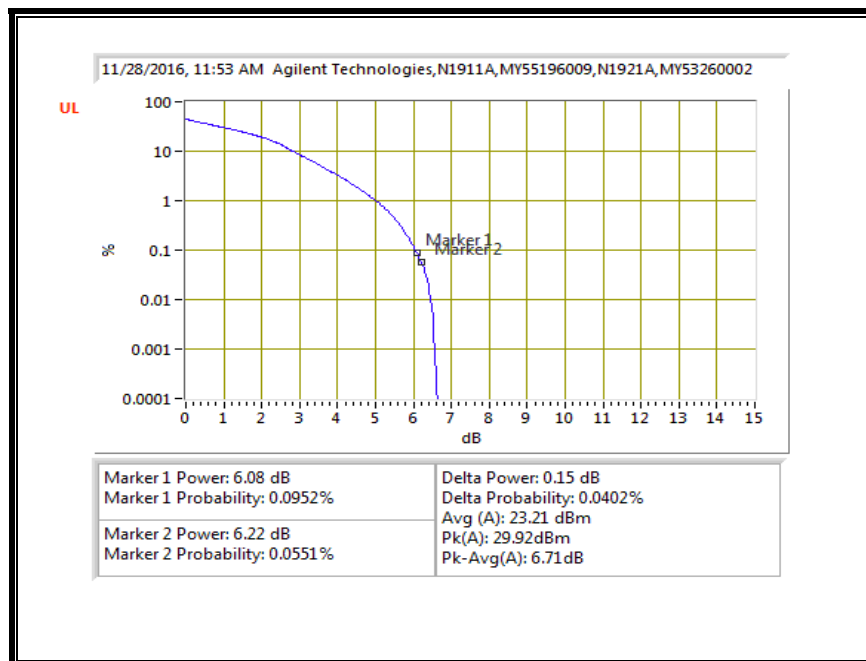
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

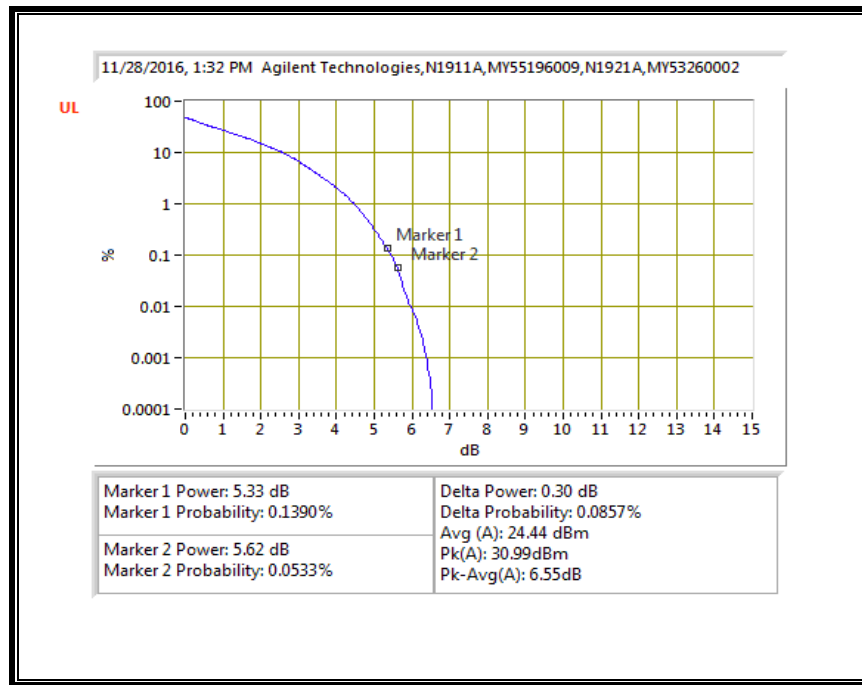


16QAM, (20.0 MHz BAND WIDTH)

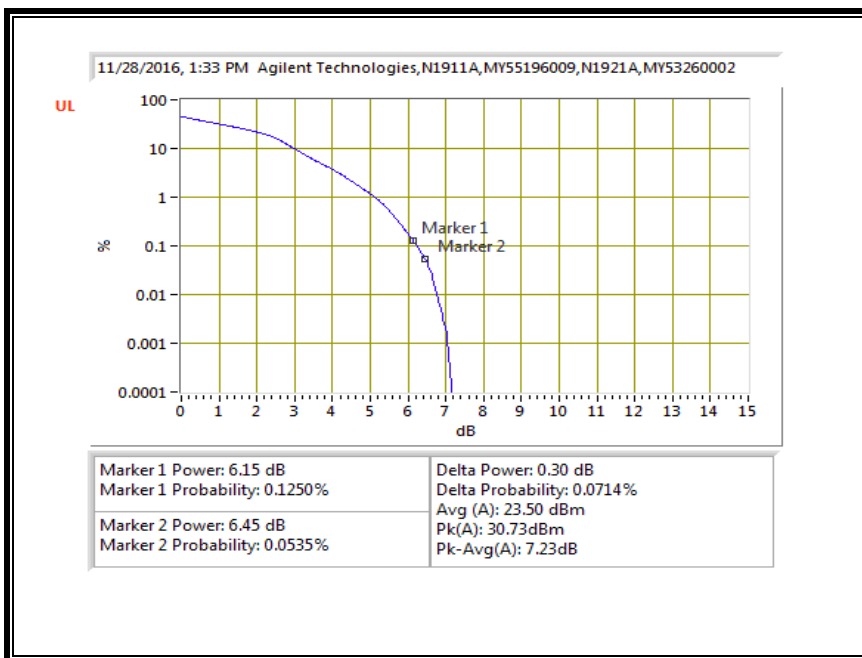


8.5.2. LTE BAND 4

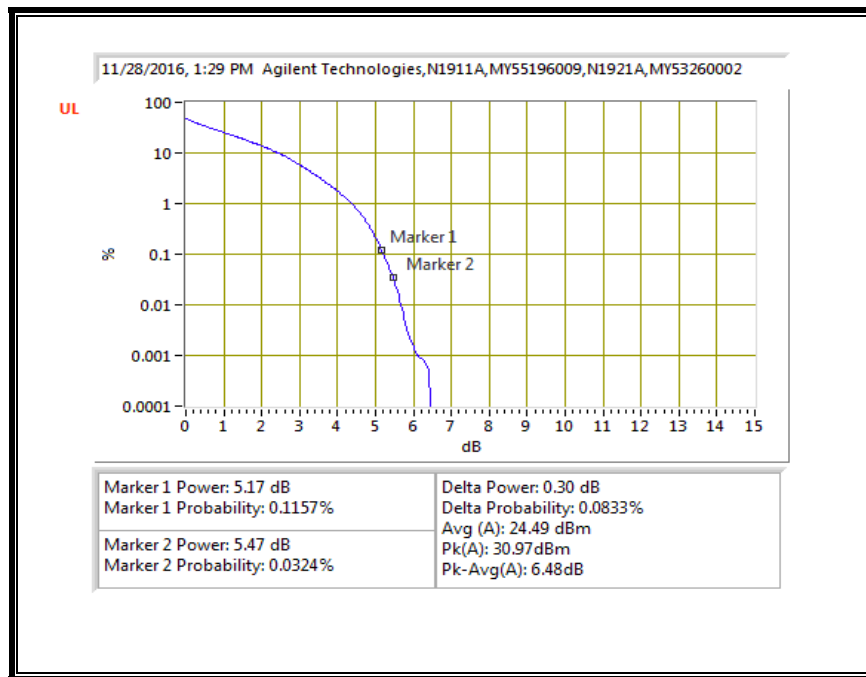
QPSK, (1.4 MHz BAND WIDTH)



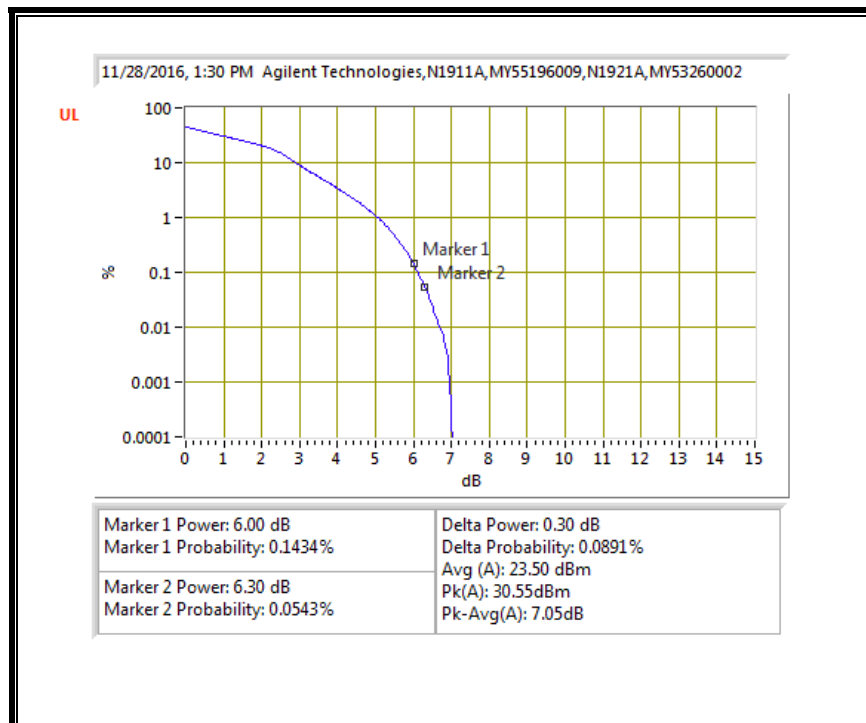
16QAM, (1.4 MHz BAND WIDTH)



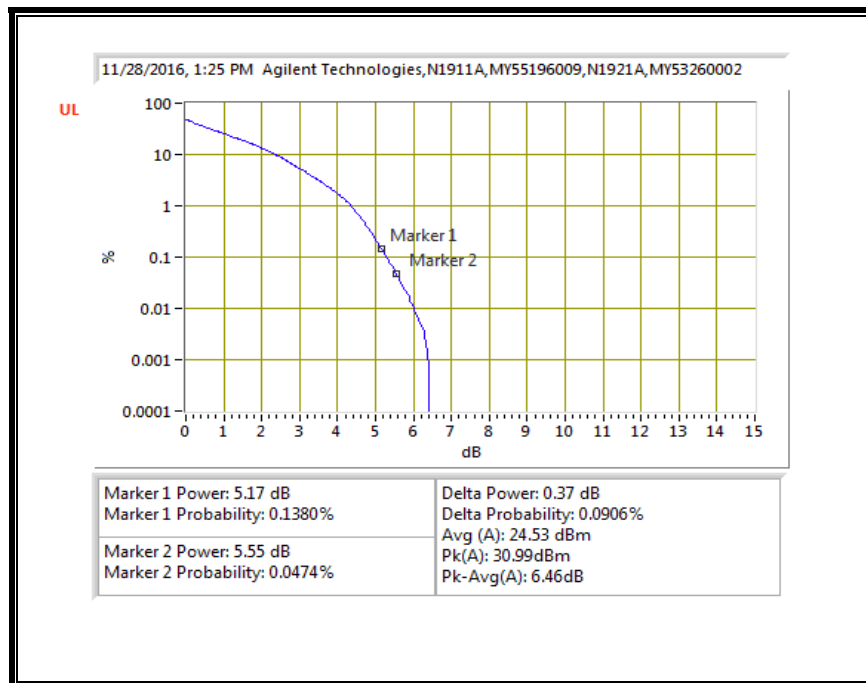
QPSK, (3.0 MHz BAND WIDTH)



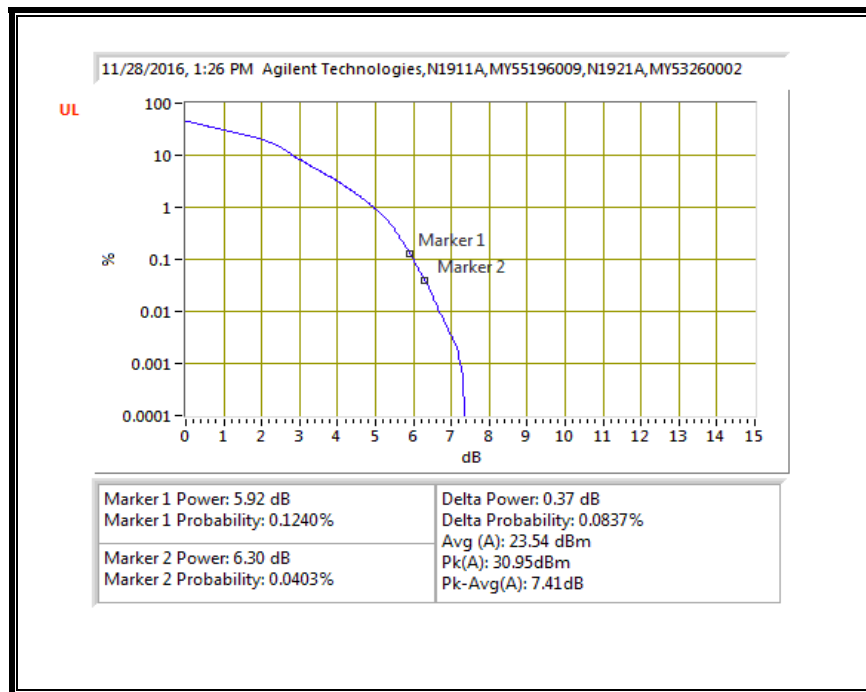
16QAM, (3.0 MHz BAND WIDTH)



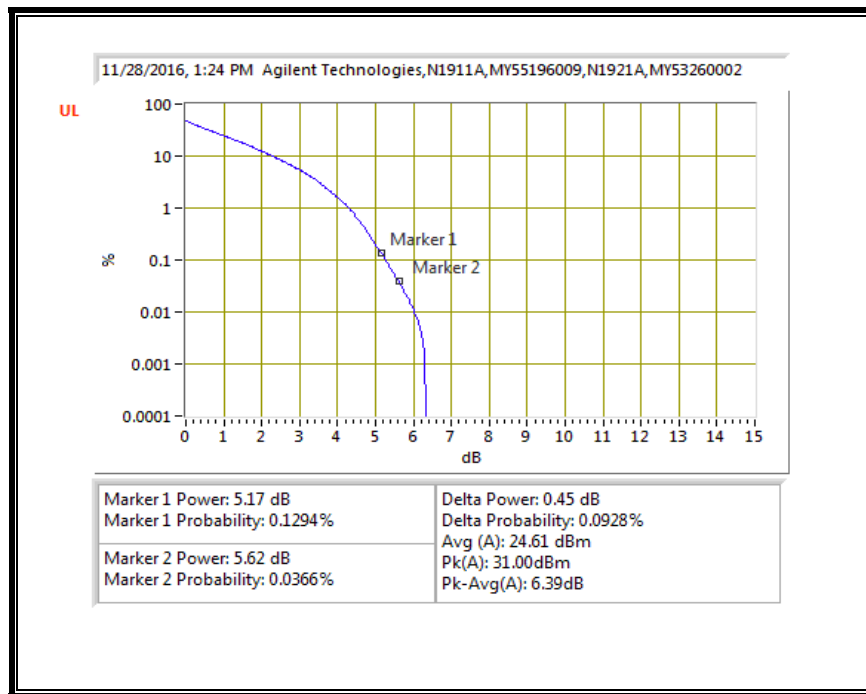
QPSK, (5.0 MHz BAND WIDTH)



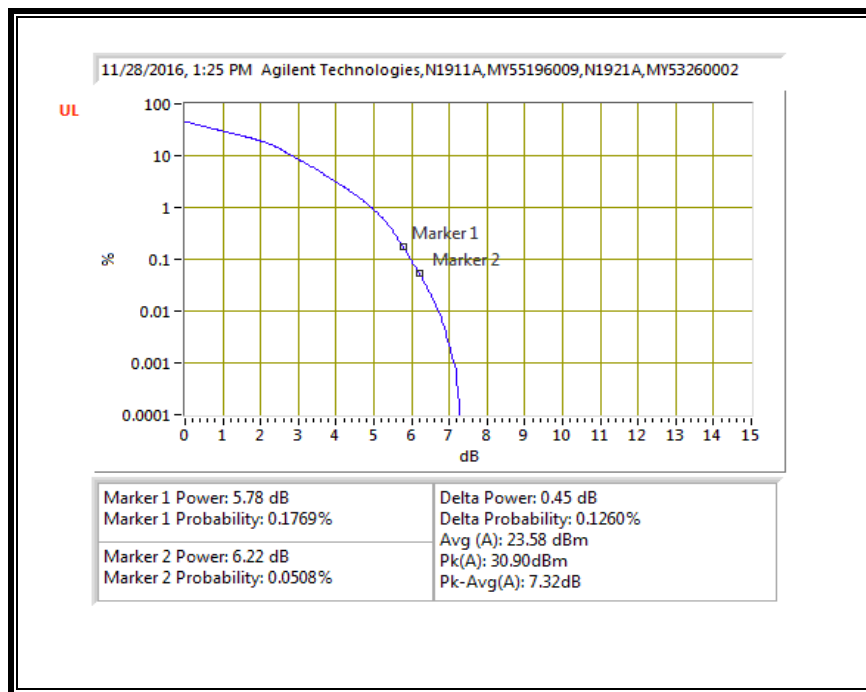
16QAM, (5.0 MHz BAND WIDTH)



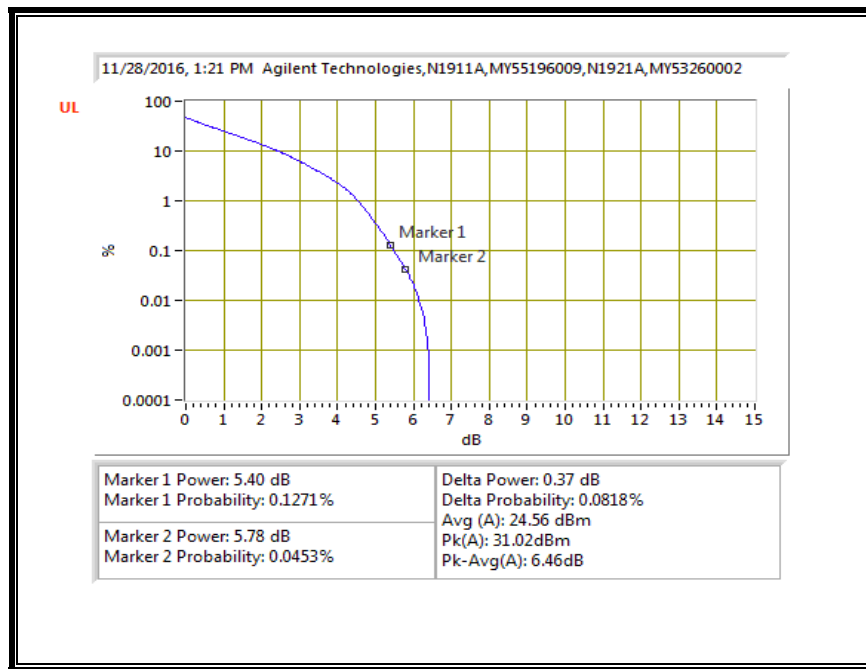
QPSK, (10.0 MHz BAND WIDTH)



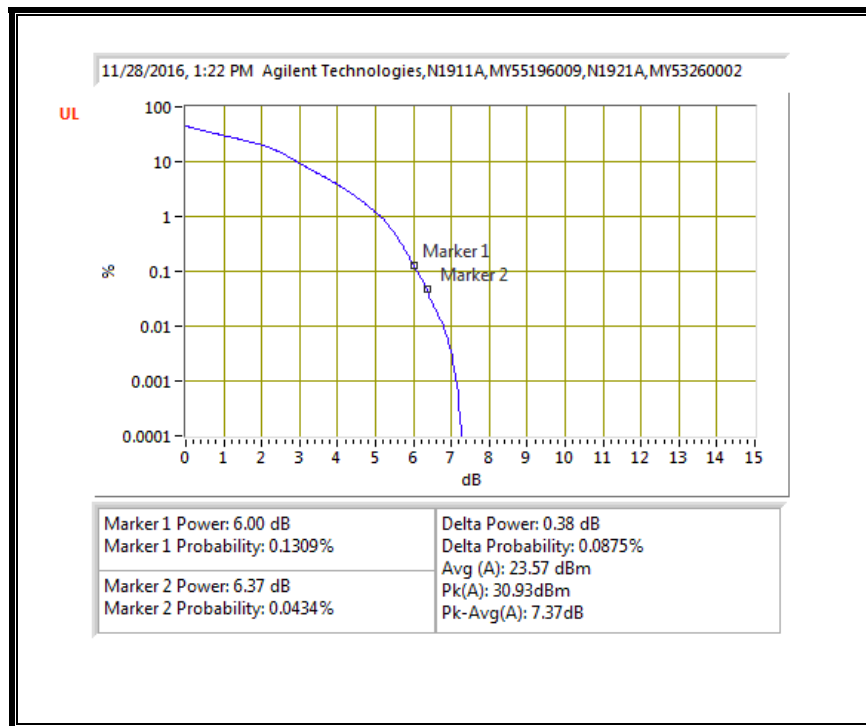
16QAM, (10.0 MHz BAND WIDTH)



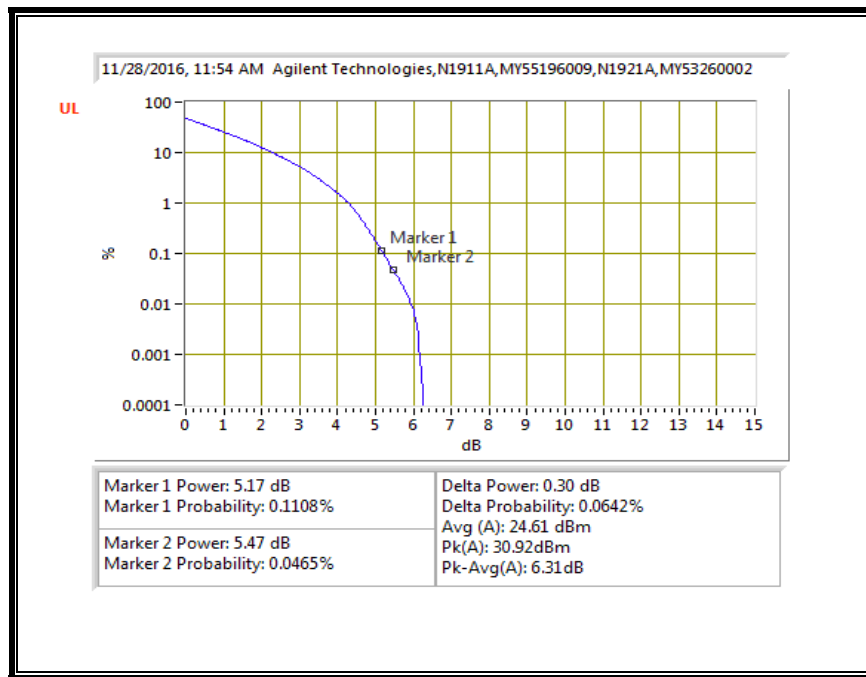
QPSK, (15.0 MHz BAND WIDTH)



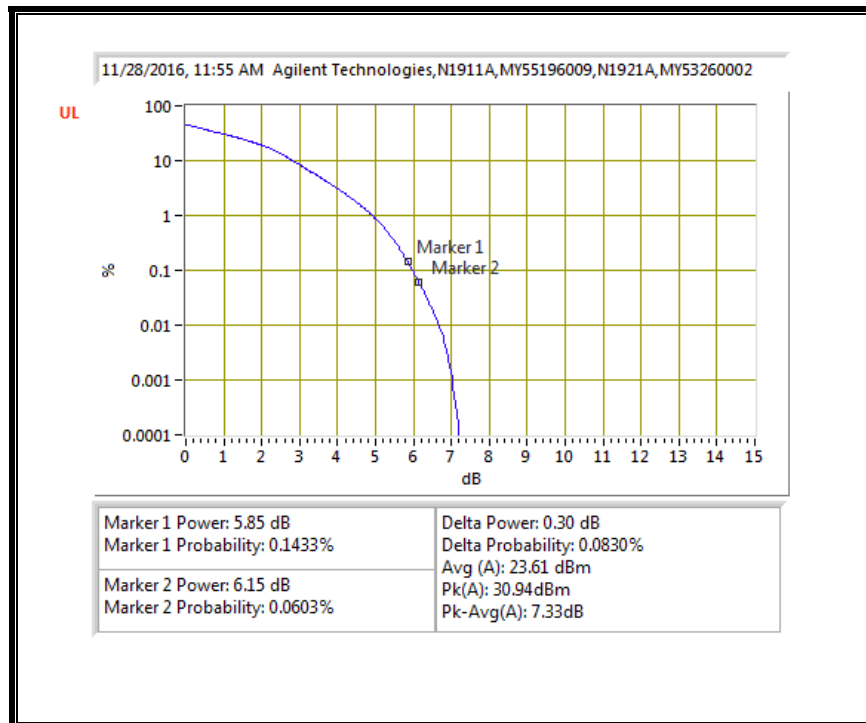
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

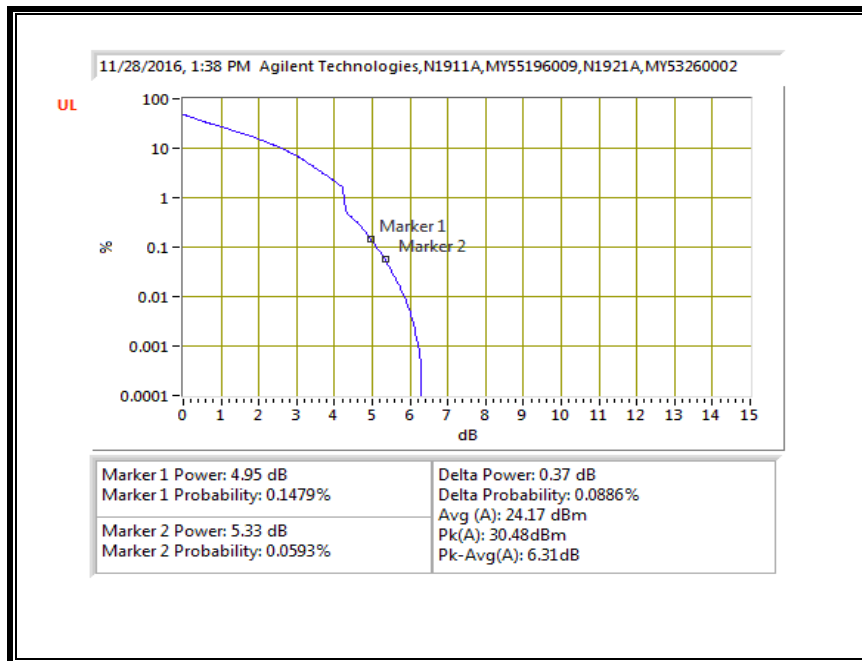


16QAM, (20.0 MHz BAND WIDTH)

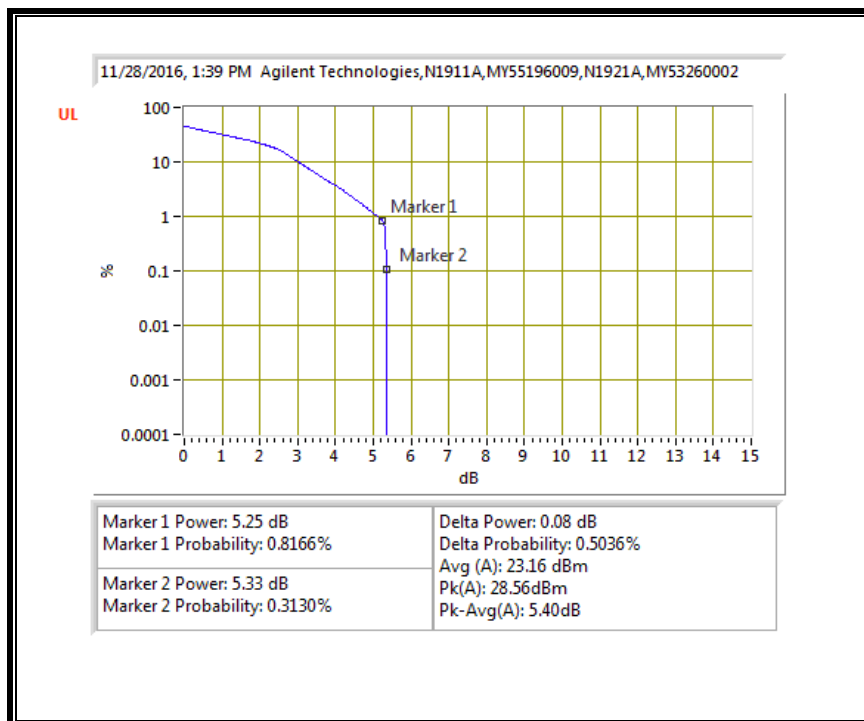


8.5.3. LTE BAND 5

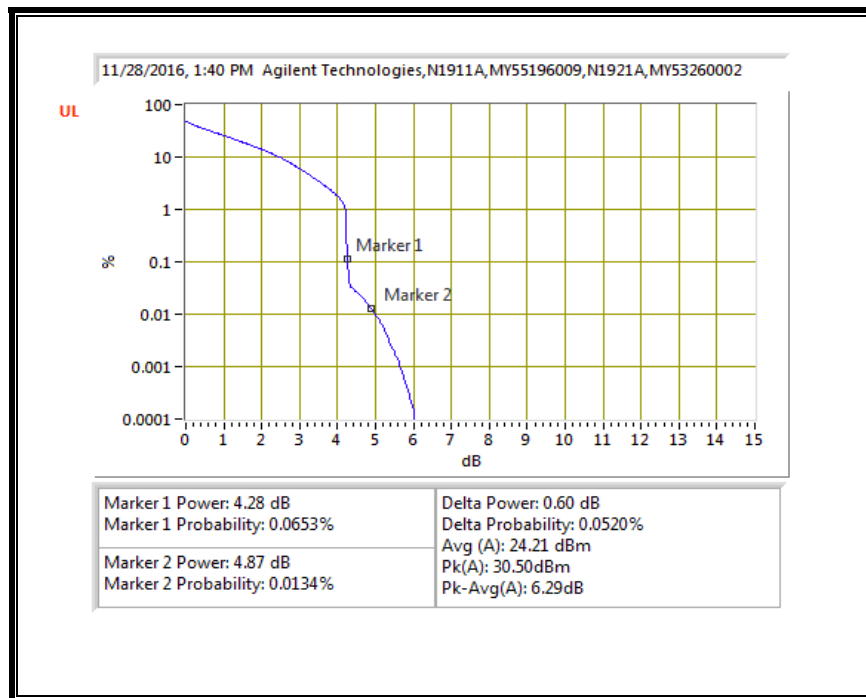
QPSK, (1.4 MHz BAND WIDTH)



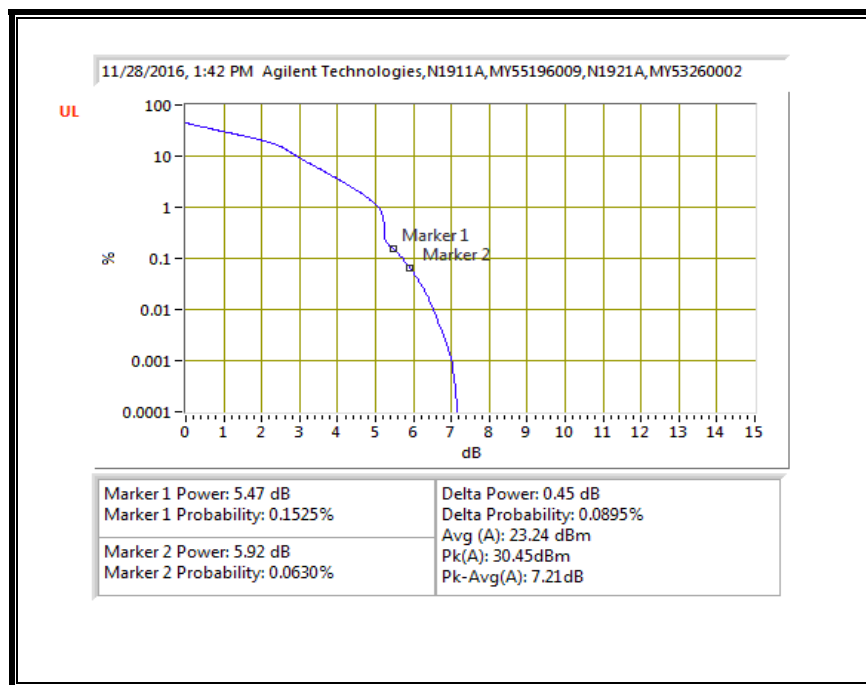
16QAM, (1.4 MHz BAND WIDTH)



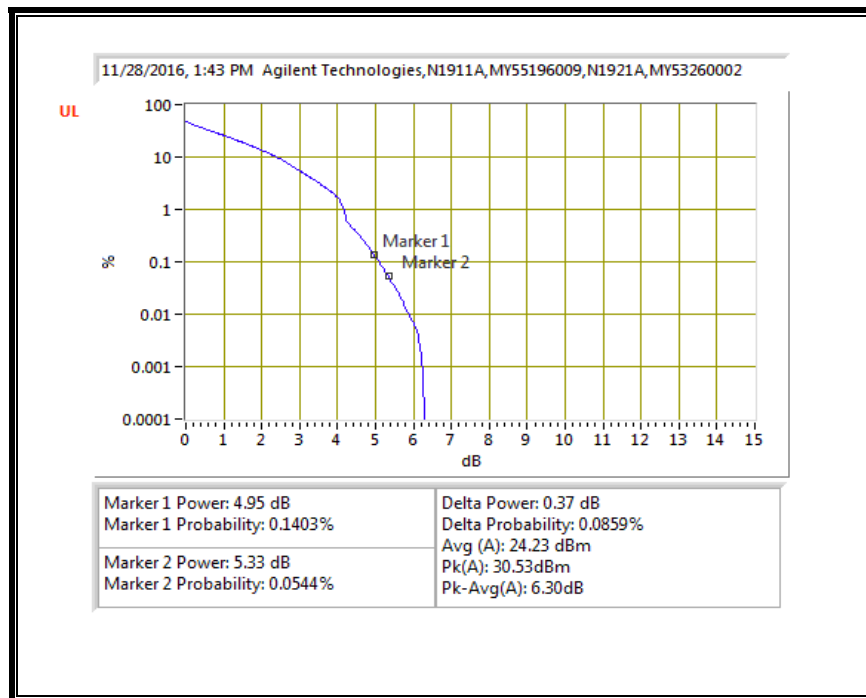
QPSK, (3.0 MHz BAND WIDTH)



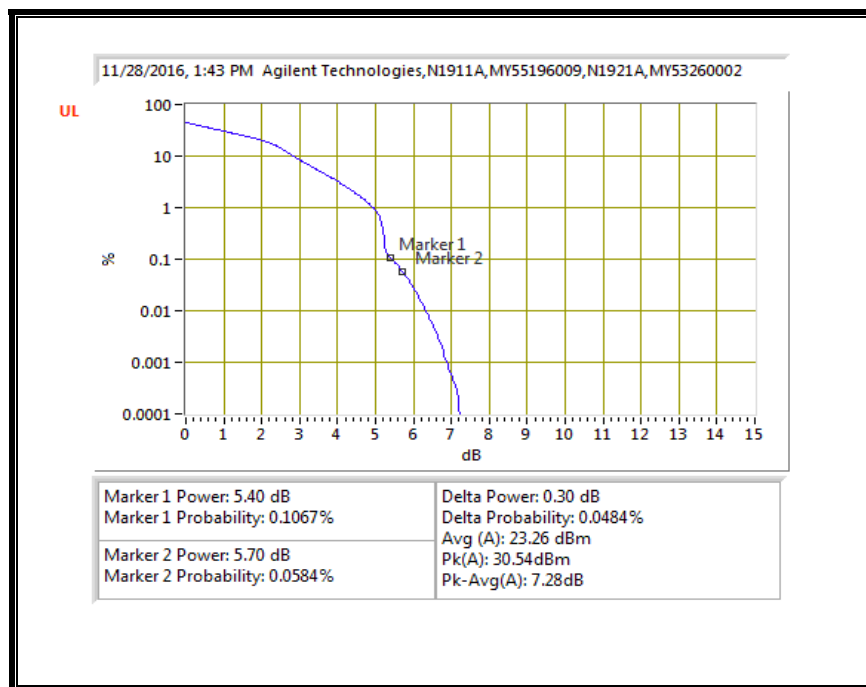
16QAM, (3.0 MHz BAND WIDTH)



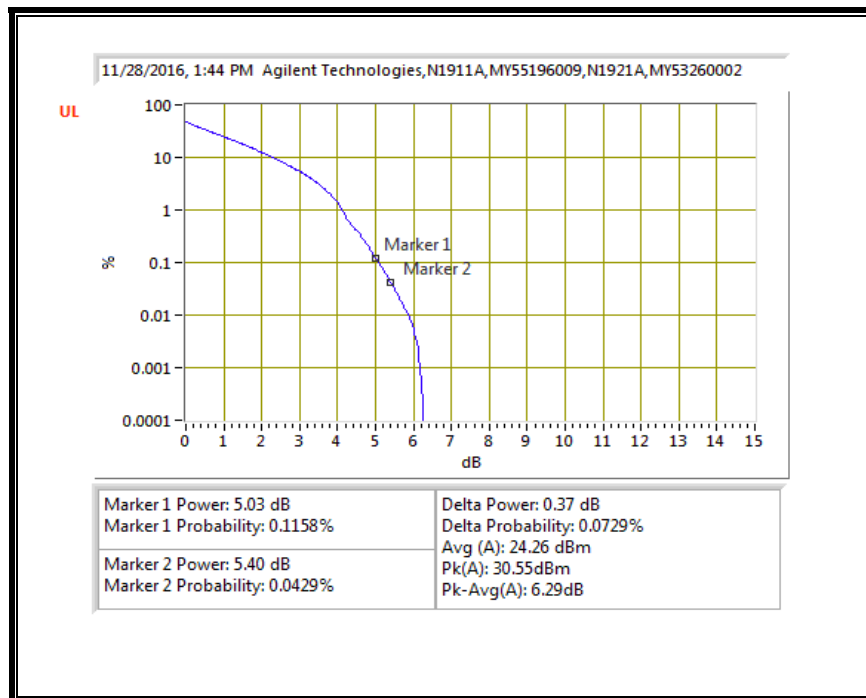
QPSK, (5.0 MHz BAND WIDTH)



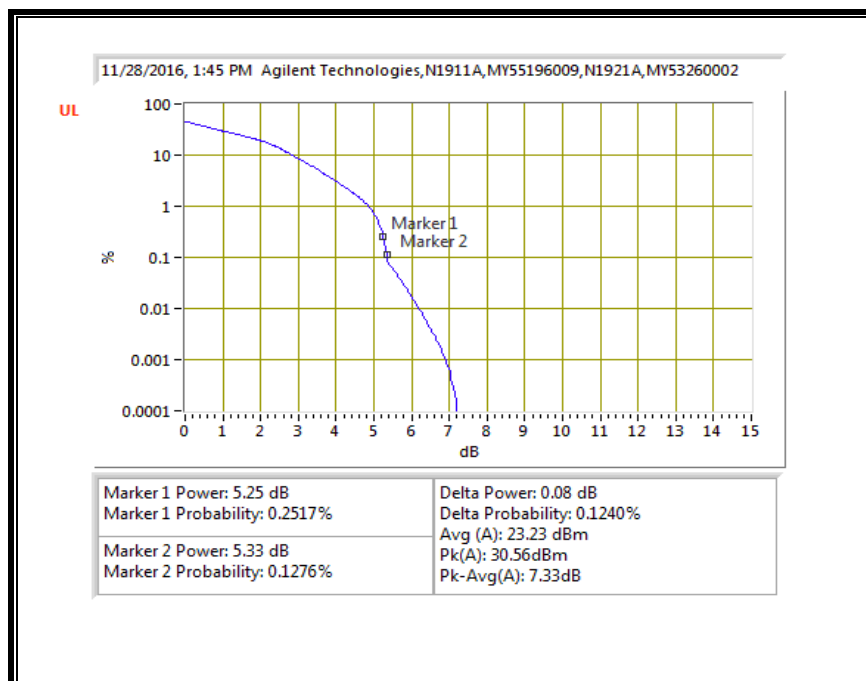
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

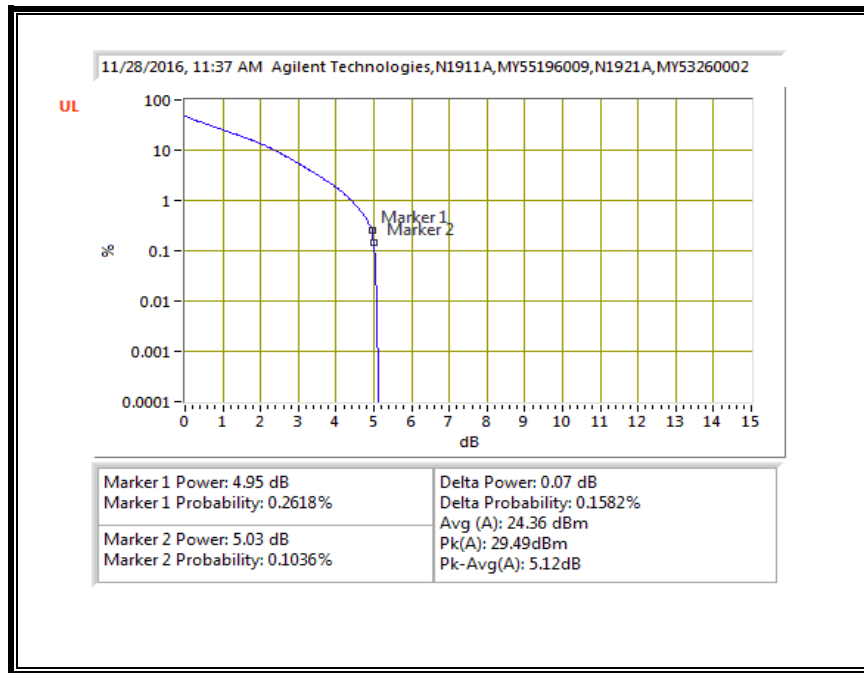


16QAM, (10.0 MHz BAND WIDTH)

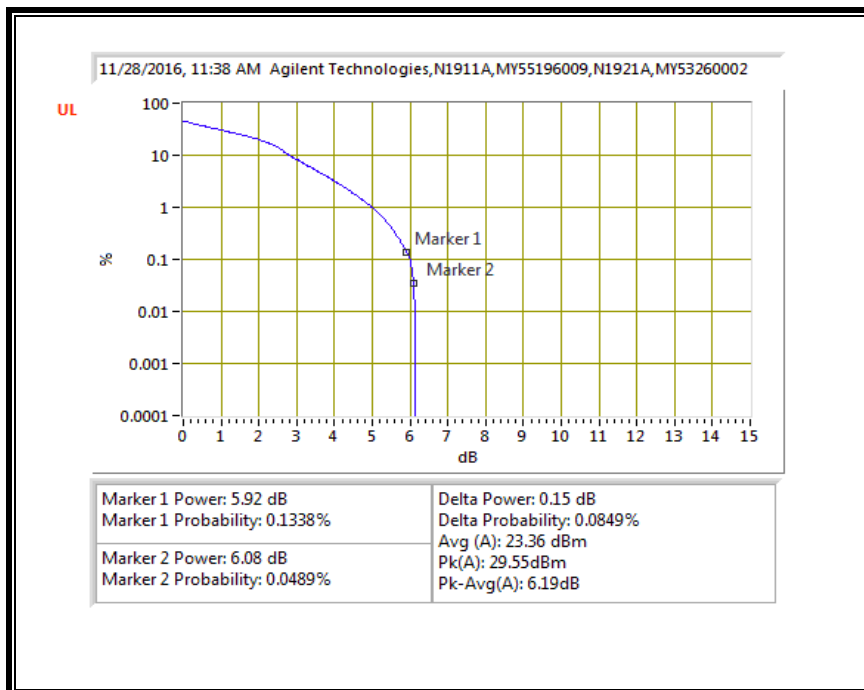


8.5.4. LTE BAND 7

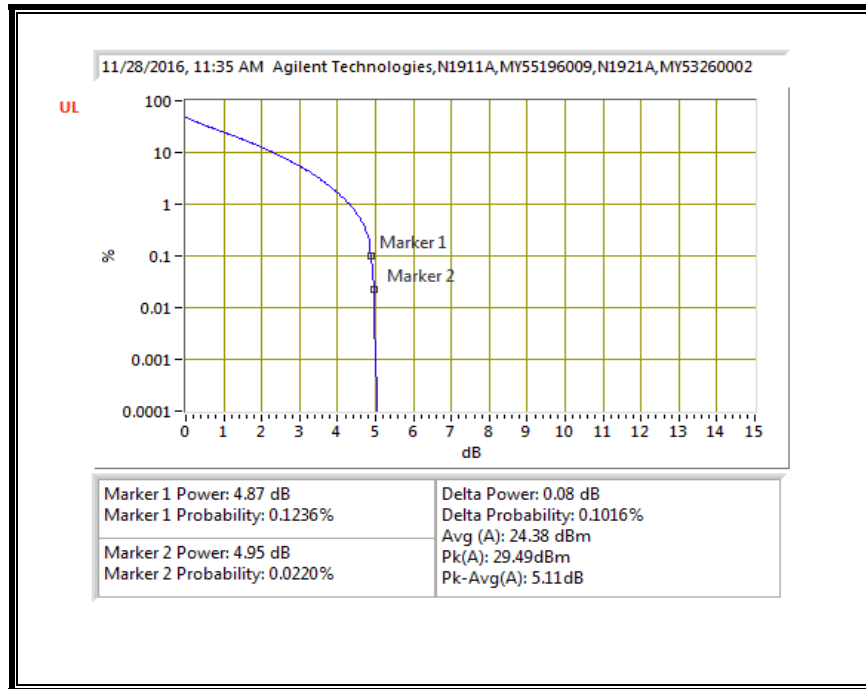
QPSK, (5.0 MHz BAND WIDTH)



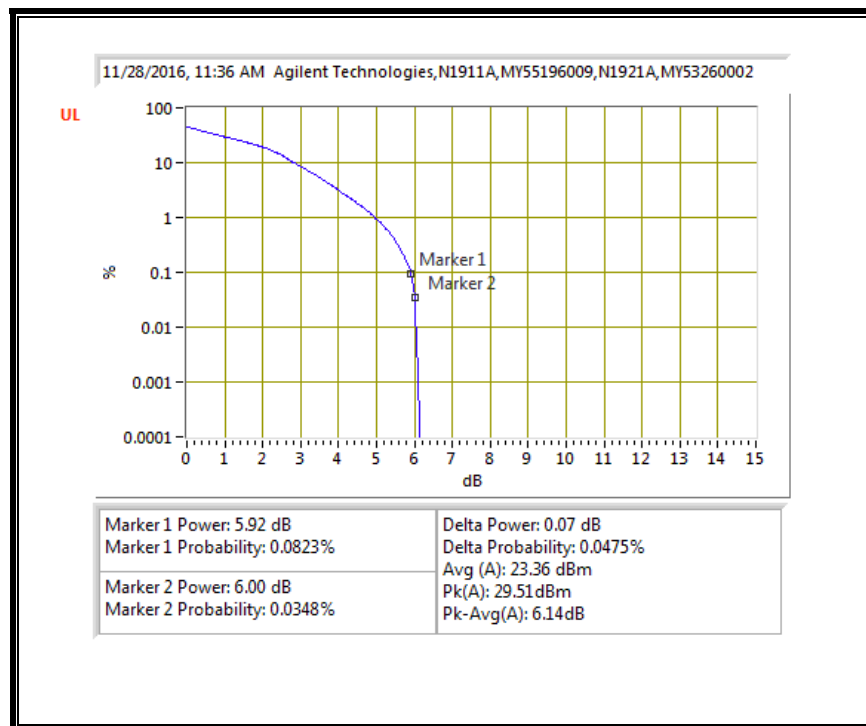
16QAM, (5.0 MHz BAND WIDTH)



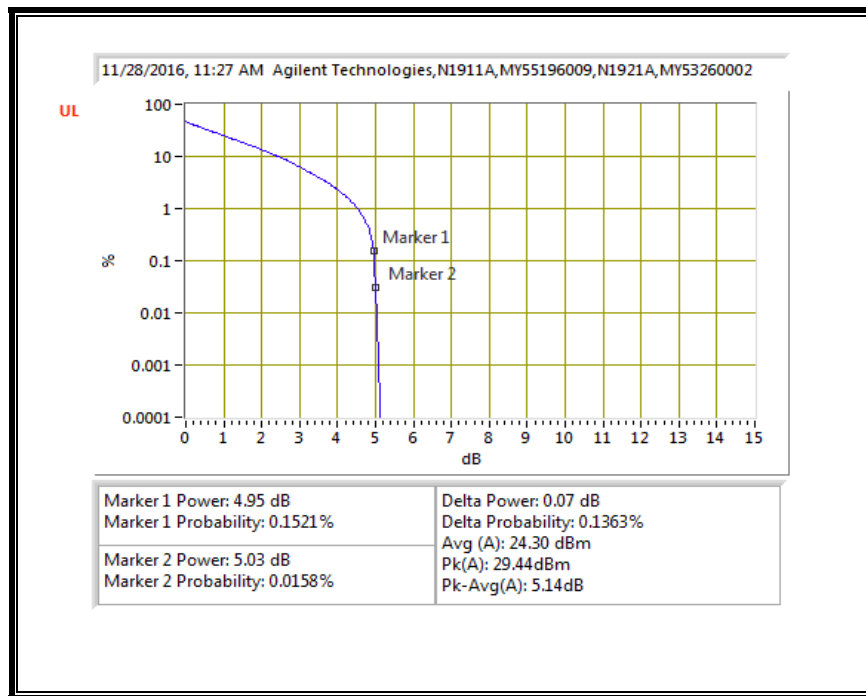
QPSK, (10.0 MHz BAND WIDTH)



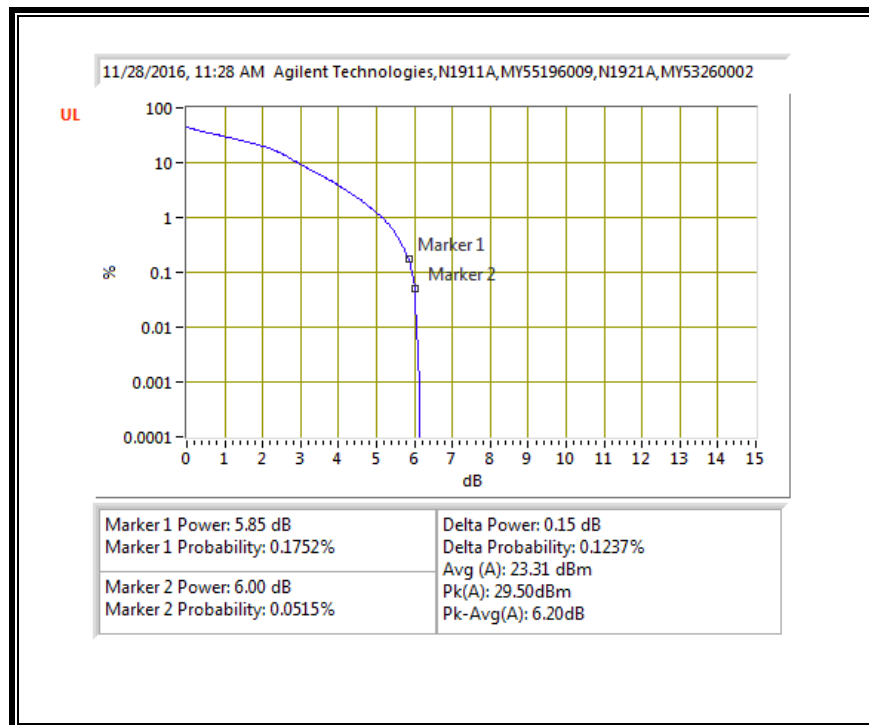
16QAM, (10.0 MHz BAND WIDTH)



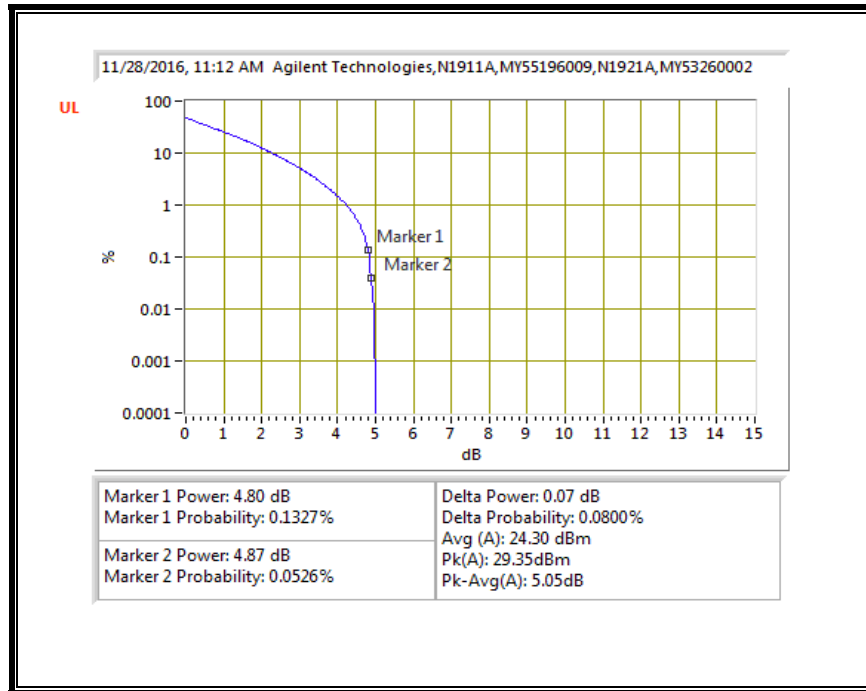
QPSK, (15.0 MHz BAND WIDTH)



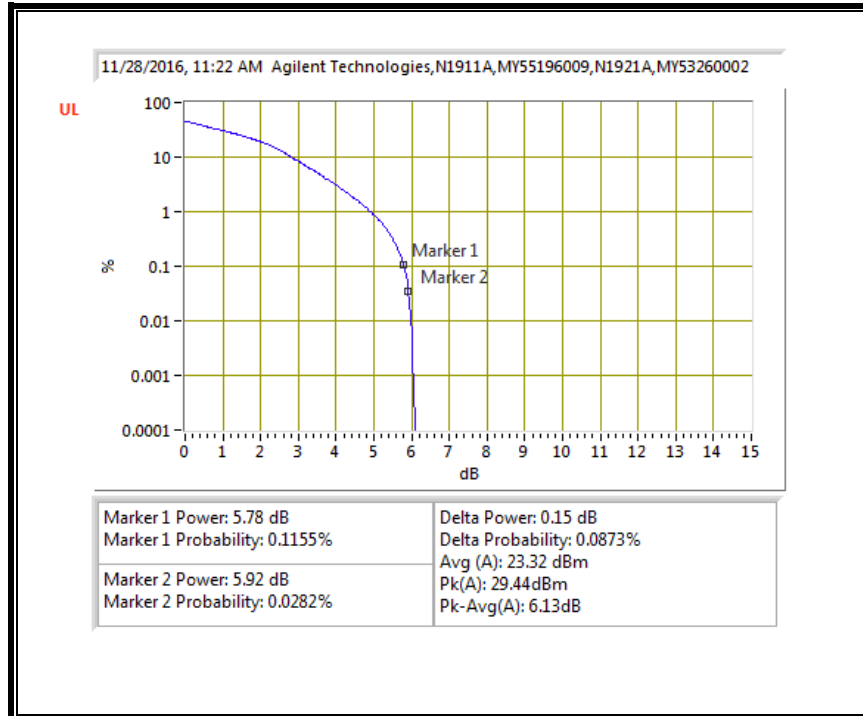
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

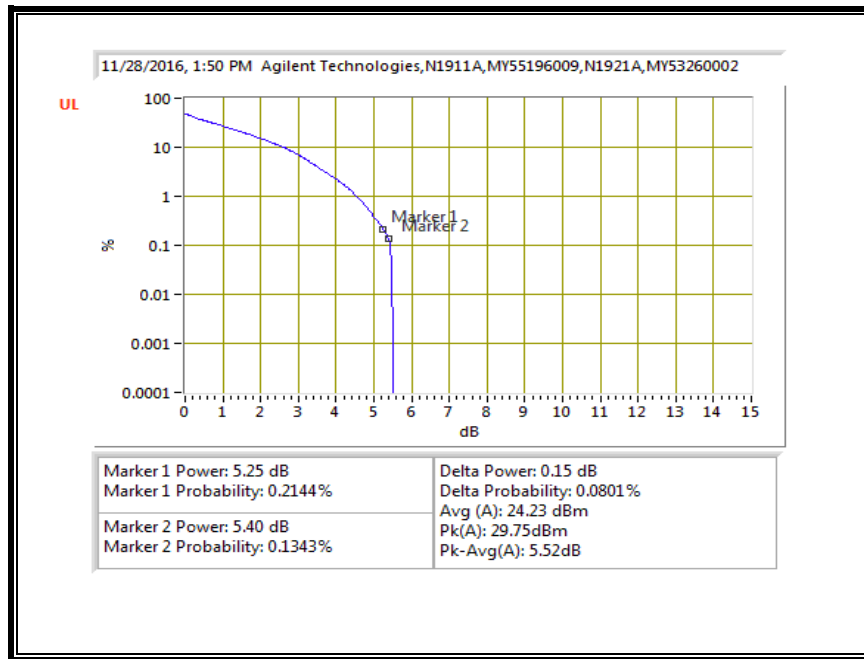


16QAM, (20.0 MHz BAND WIDTH)

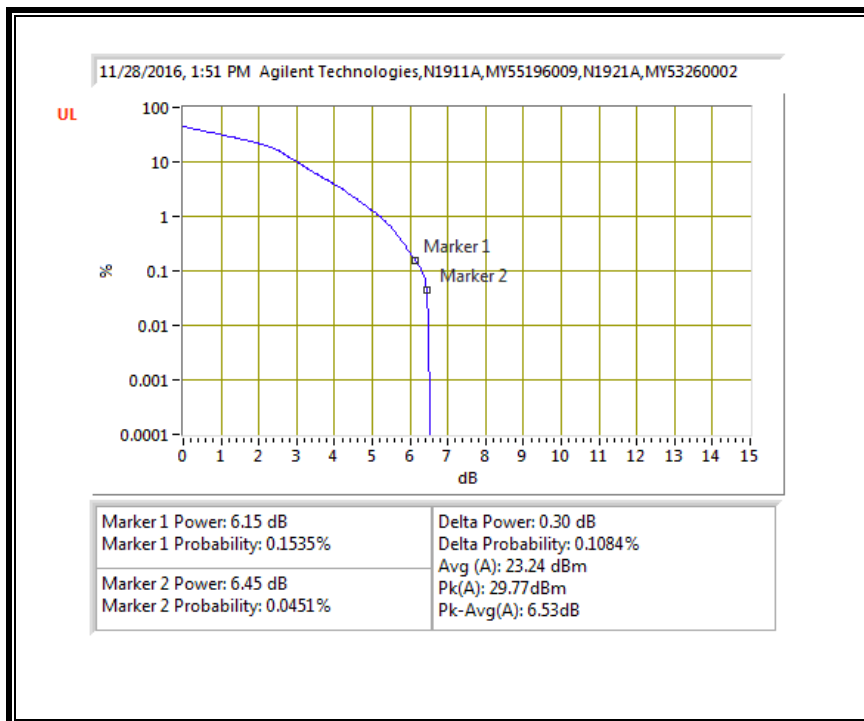


8.5.5. LTE BAND 12

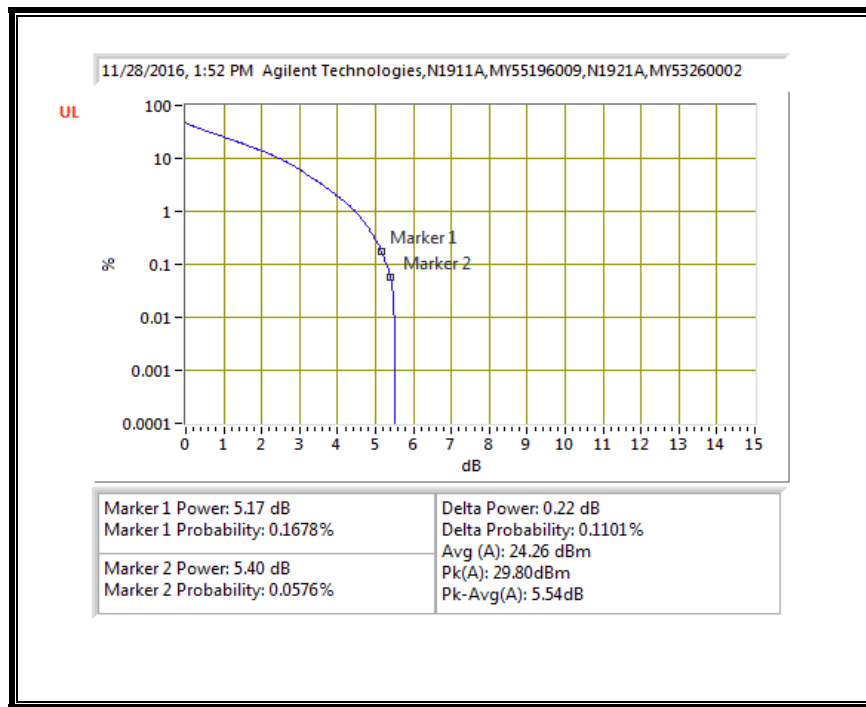
QPSK, (1.4 MHz BAND WIDTH)



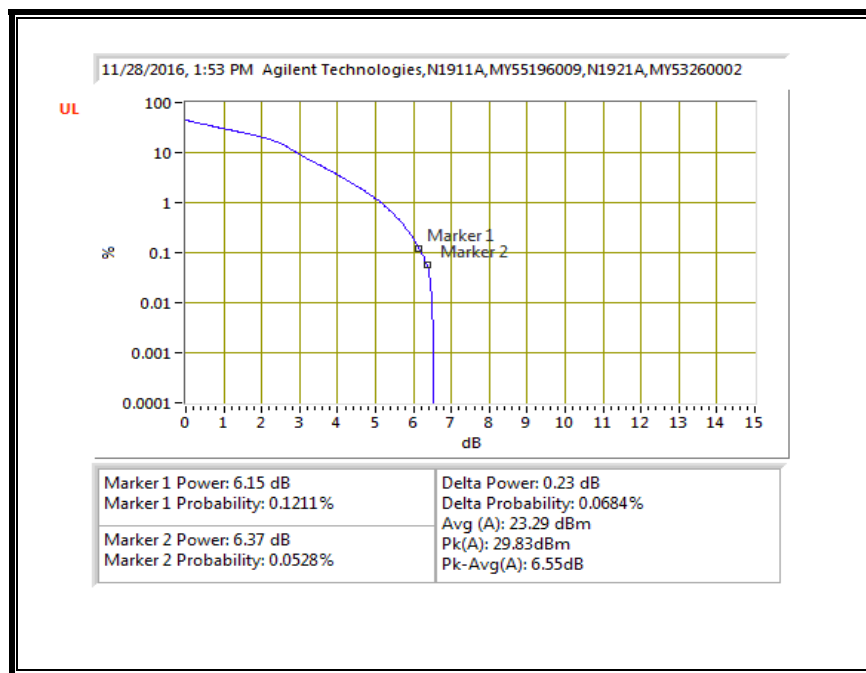
16QAM, (1.4 MHz BAND WIDTH)



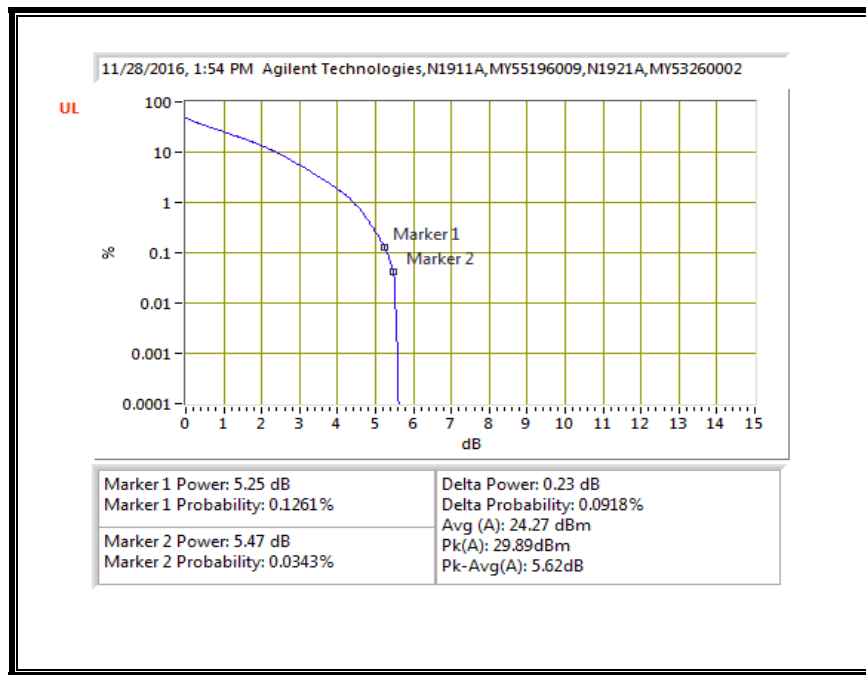
QPSK, (3.0 MHz BAND WIDTH)



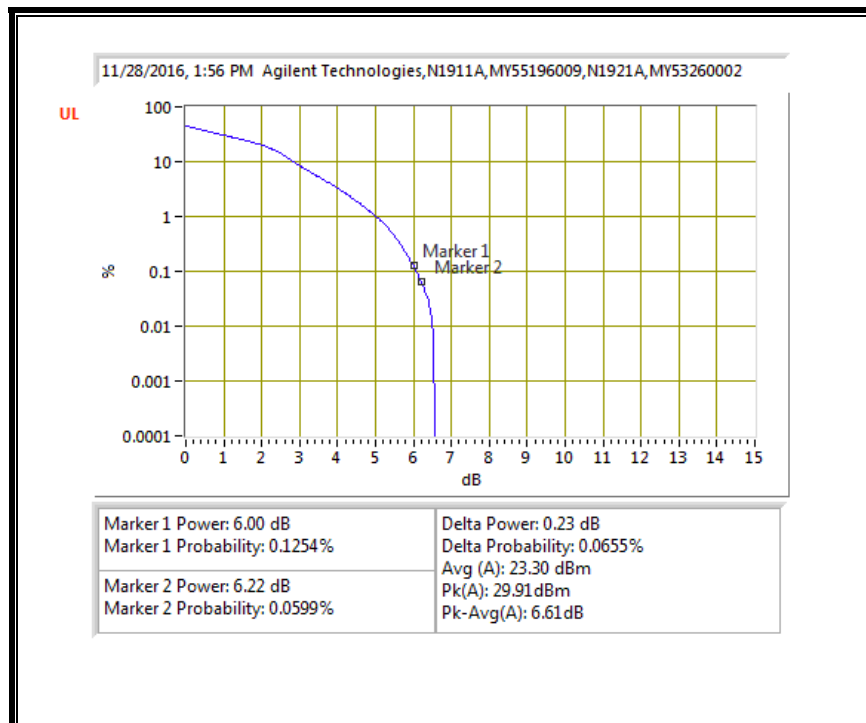
16QAM, (3.0 MHz BAND WIDTH)



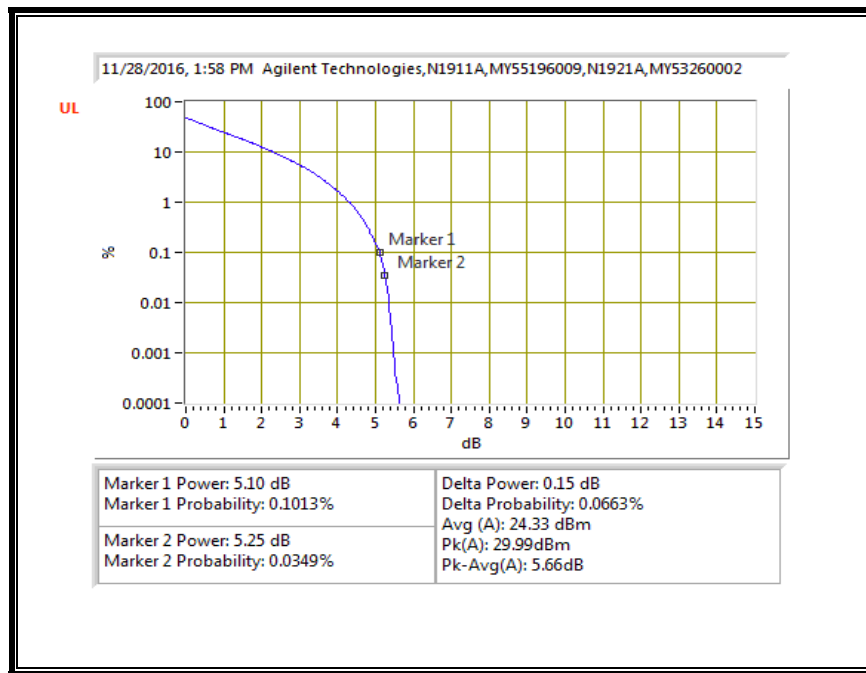
QPSK, (5.0 MHz BAND WIDTH)



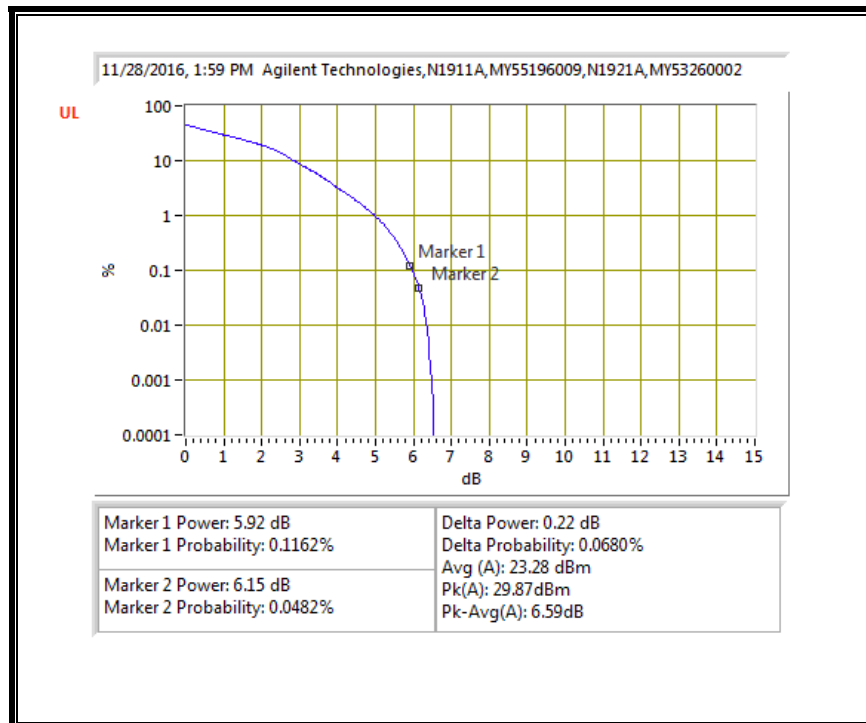
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

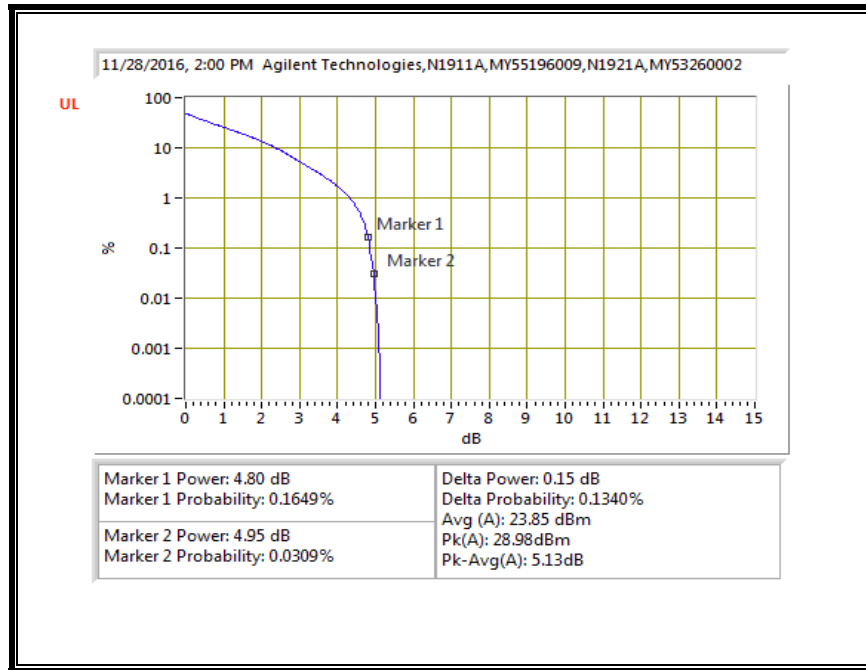


16QAM, (10.0 MHz BAND WIDTH)

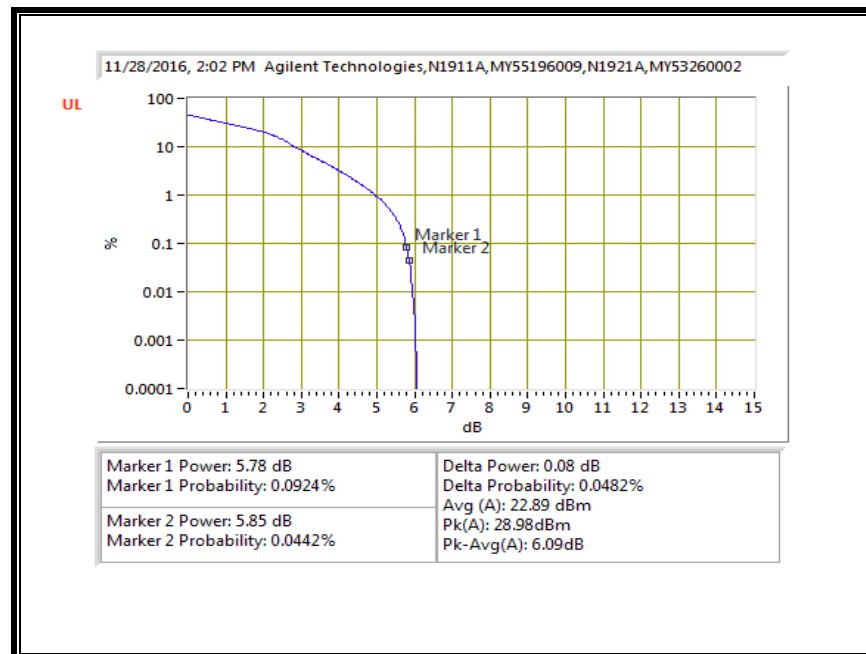


8.5.6. LTE BAND 13

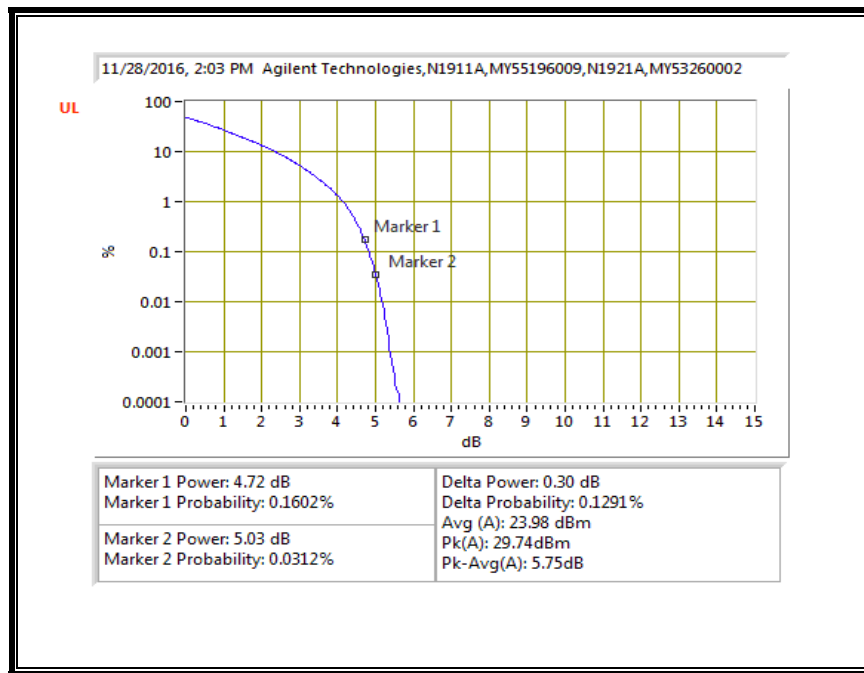
QPSK, (5.0 MHz BAND WIDTH)



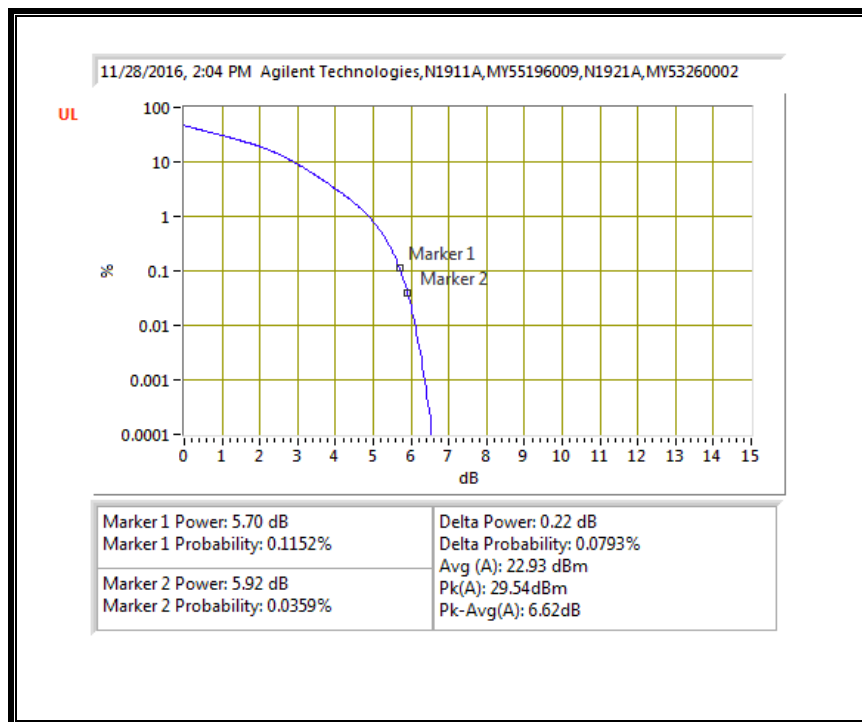
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

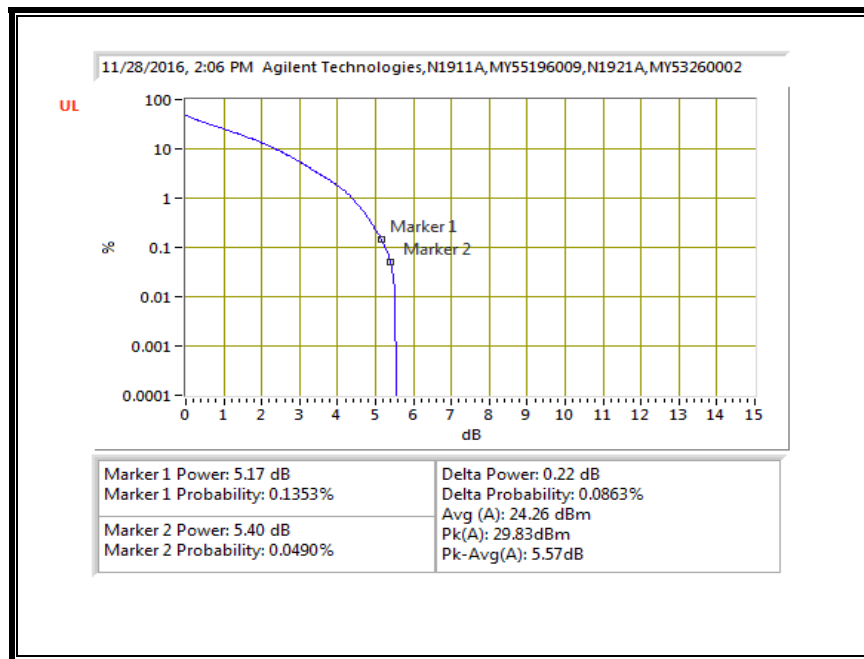


16QAM, (10.0 MHz BAND WIDTH)

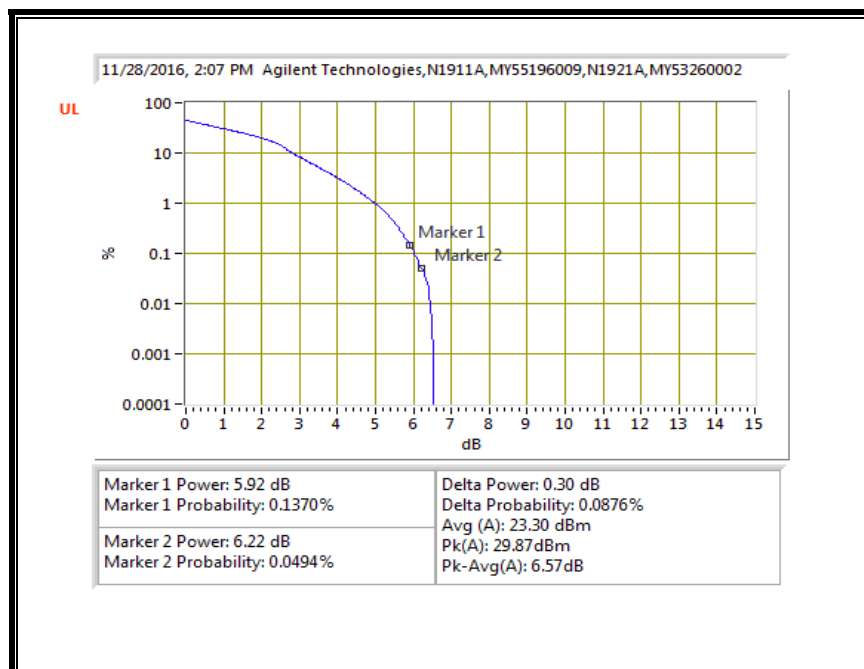


8.5.7. LTE BAND 17

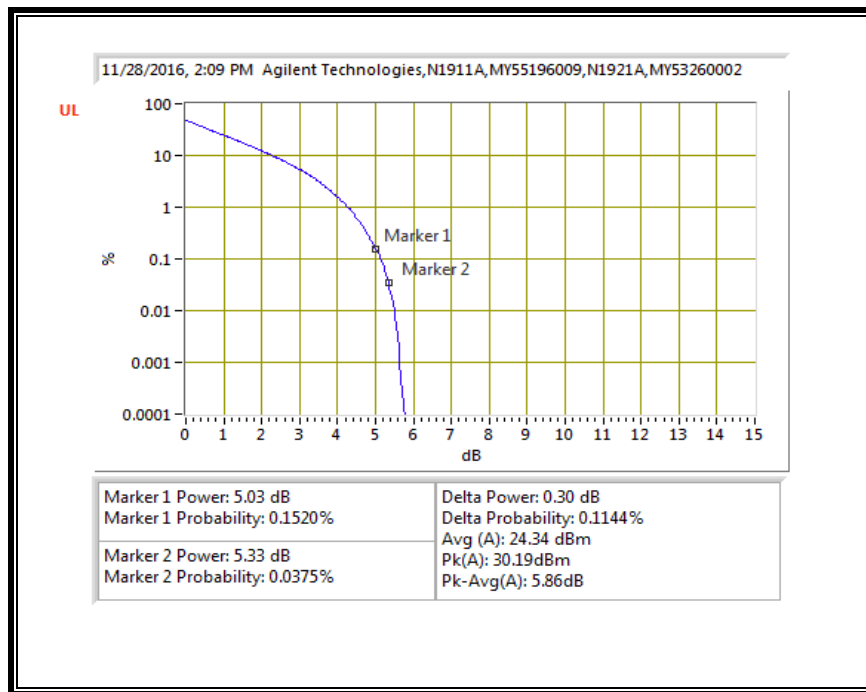
QPSK, (5.0 MHz BAND WIDTH)



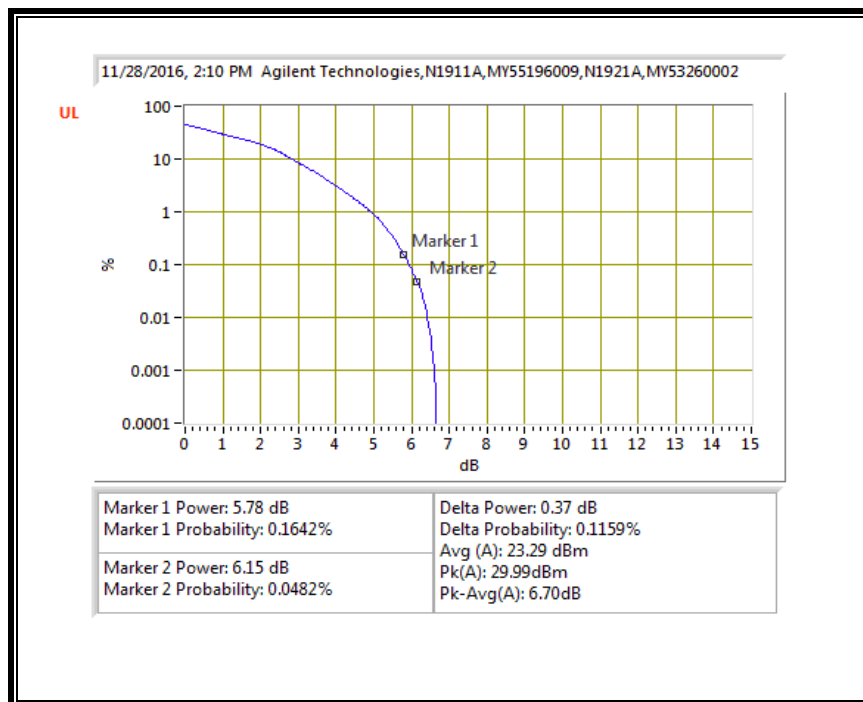
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

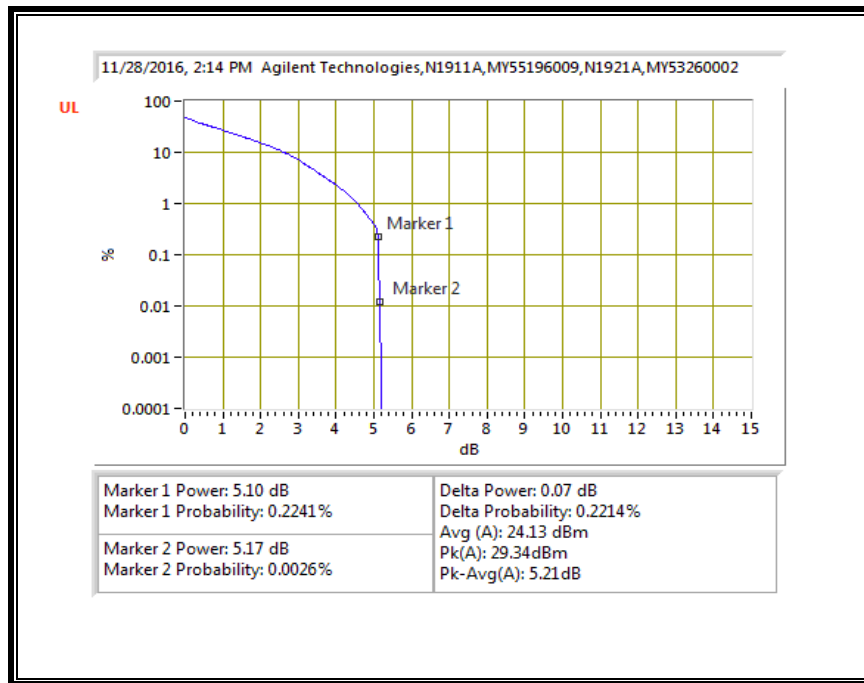


16QAM, (10.0 MHz BAND WIDTH)

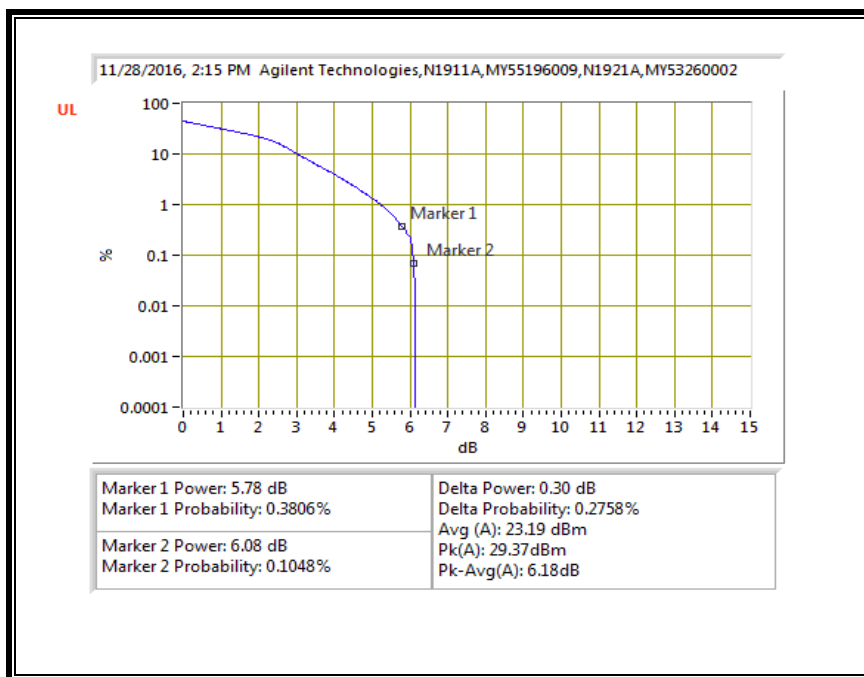


8.5.8. LTE BAND 25

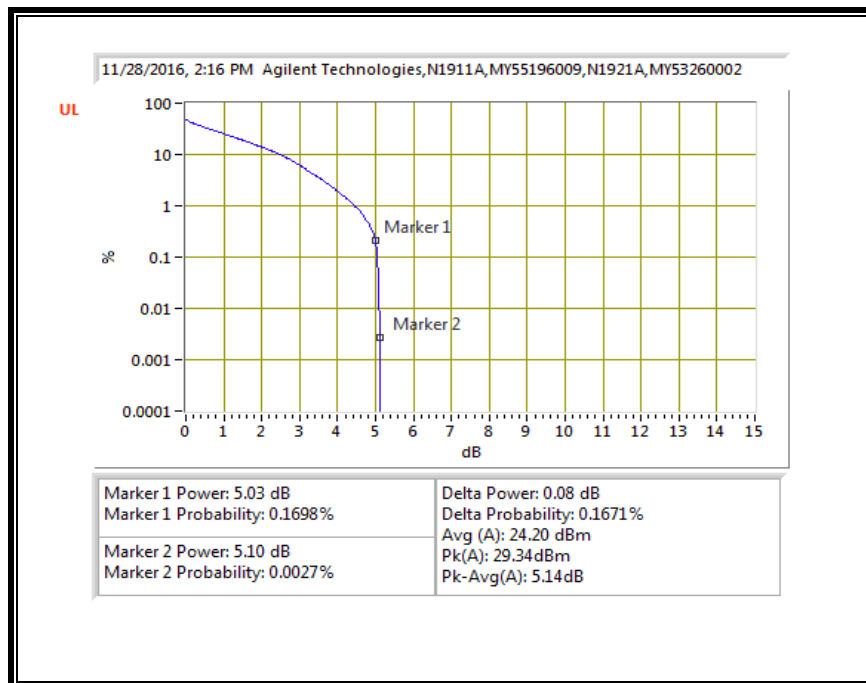
QPSK, (1.4 MHz BAND WIDTH)



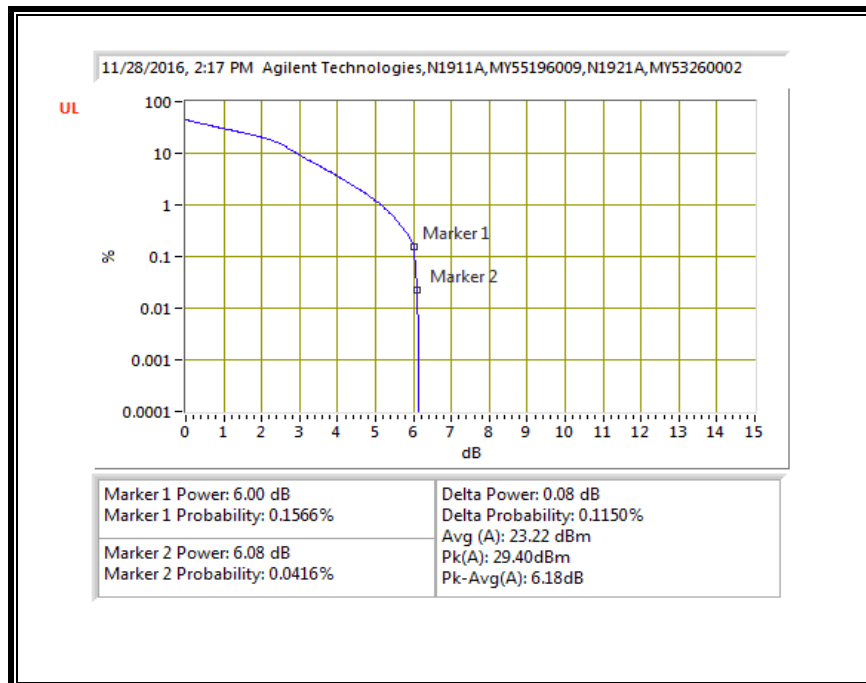
16QAM, (1.4 MHz BAND WIDTH)



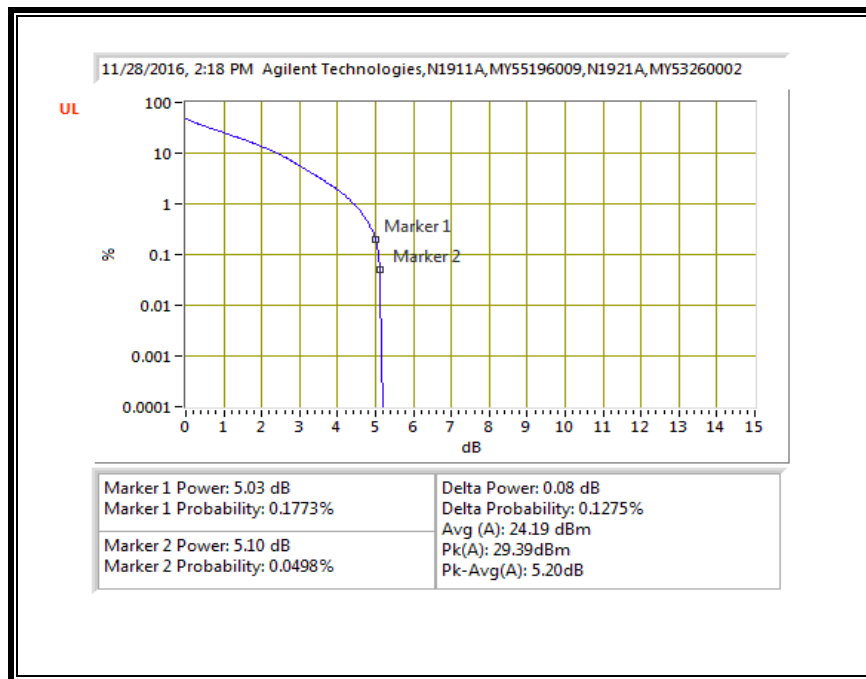
QPSK, (3.0 MHz BAND WIDTH)



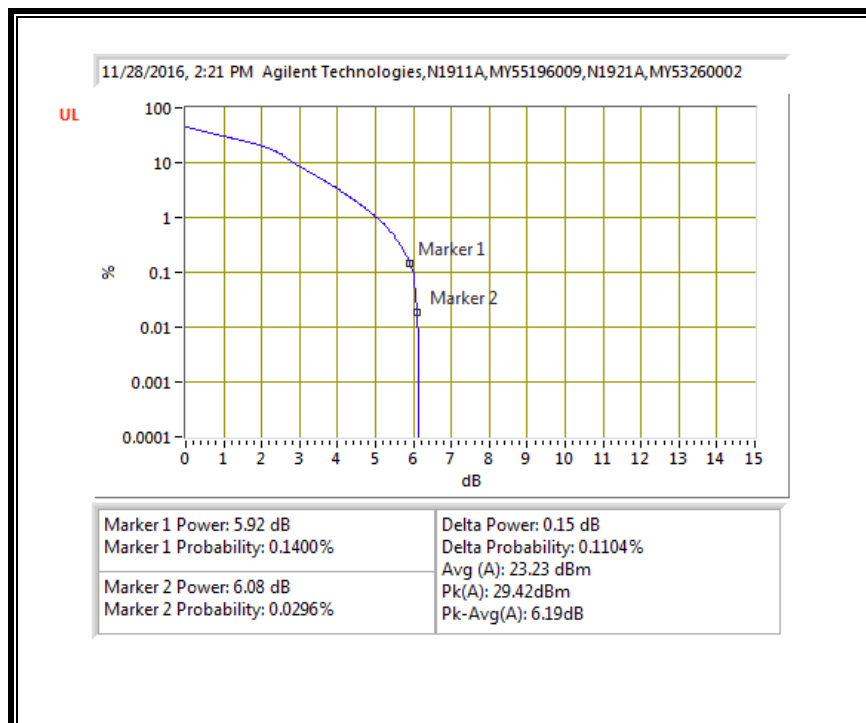
16QAM, (3.0 MHz BAND WIDTH)



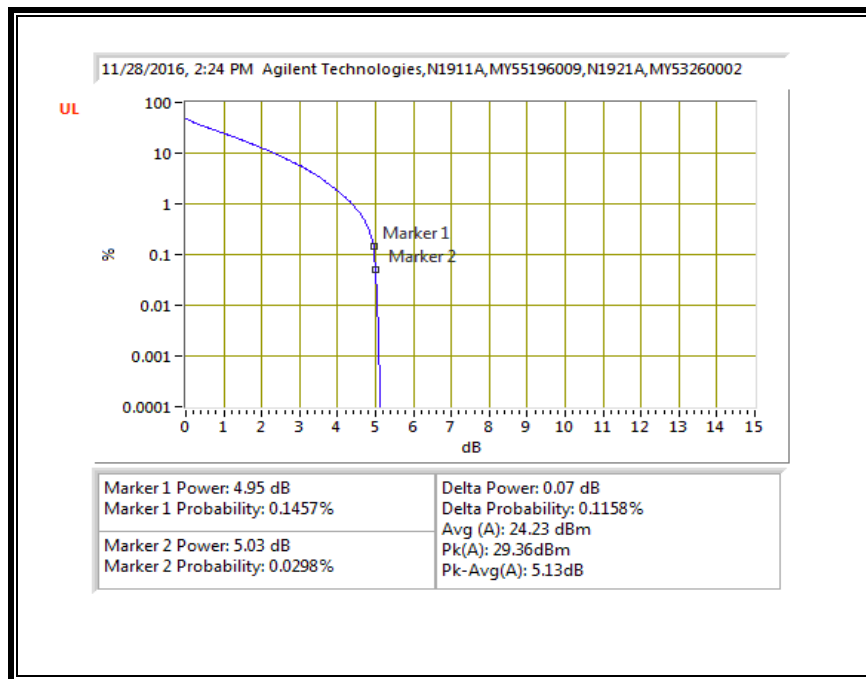
QPSK, (5.0 MHz BAND WIDTH)



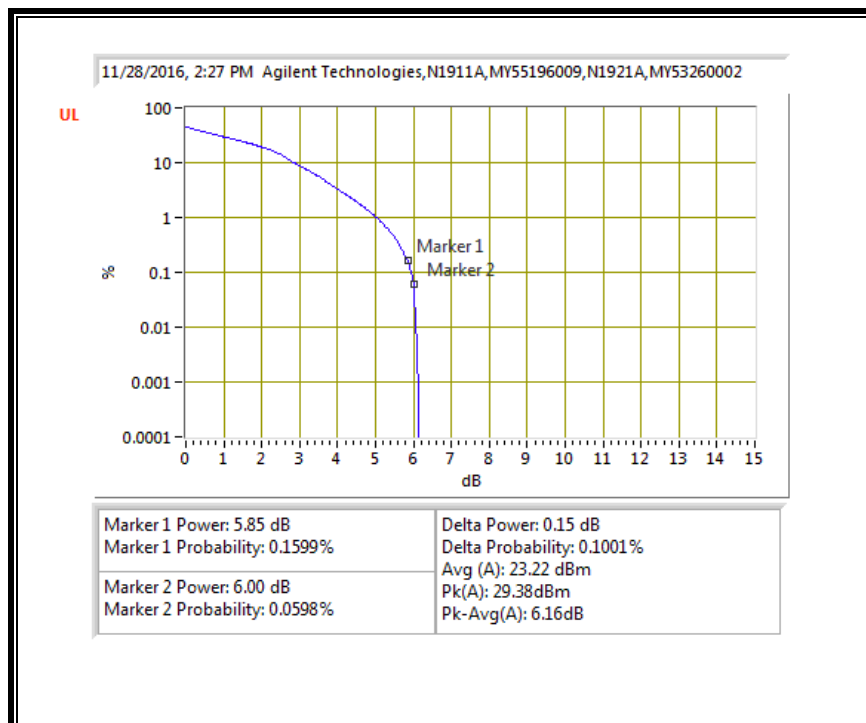
16QAM, (5.0 MHz BAND WIDTH)



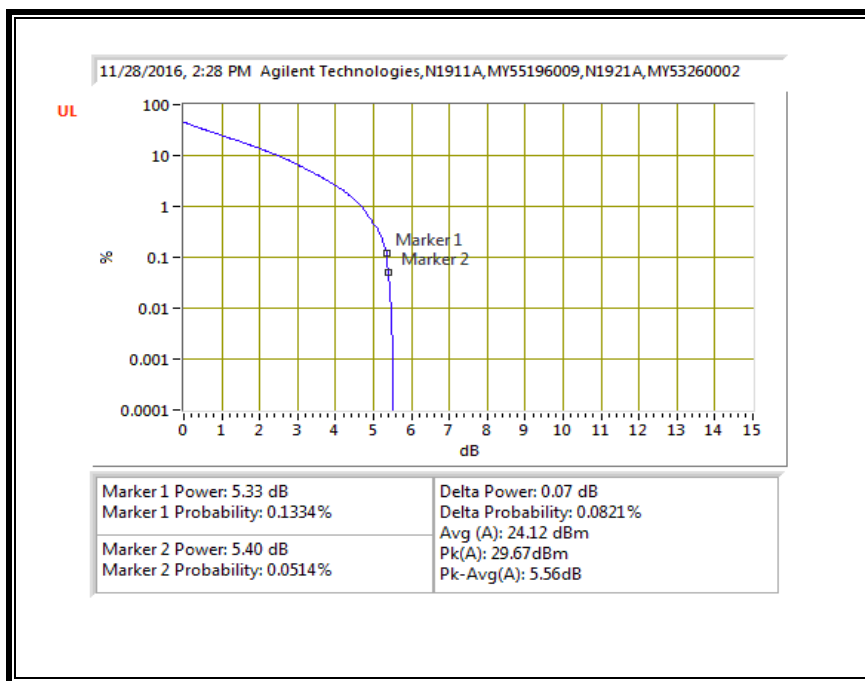
QPSK, (10.0 MHz BAND WIDTH)



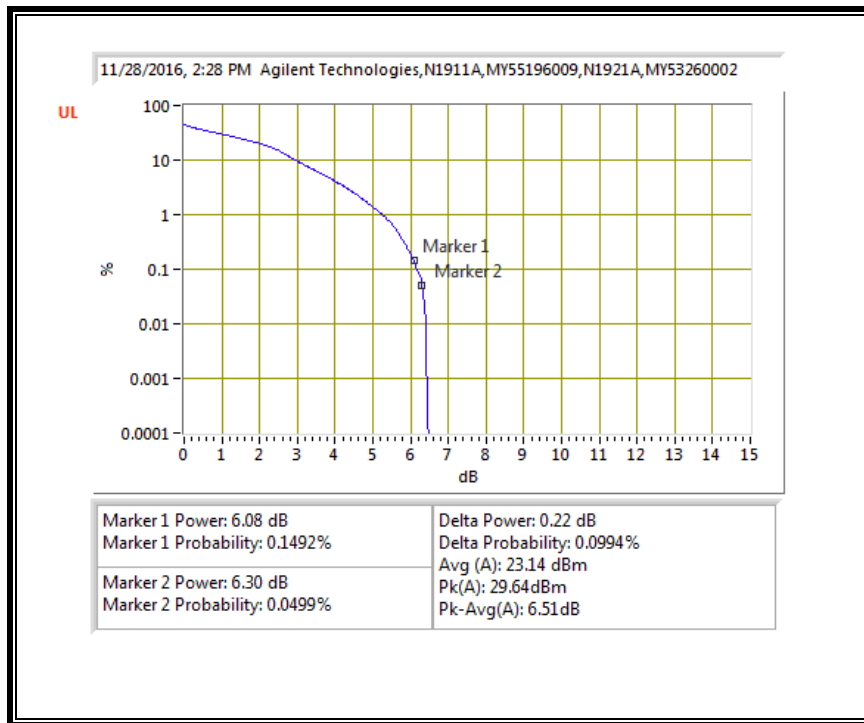
16QAM, (10.0 MHz BAND WIDTH)



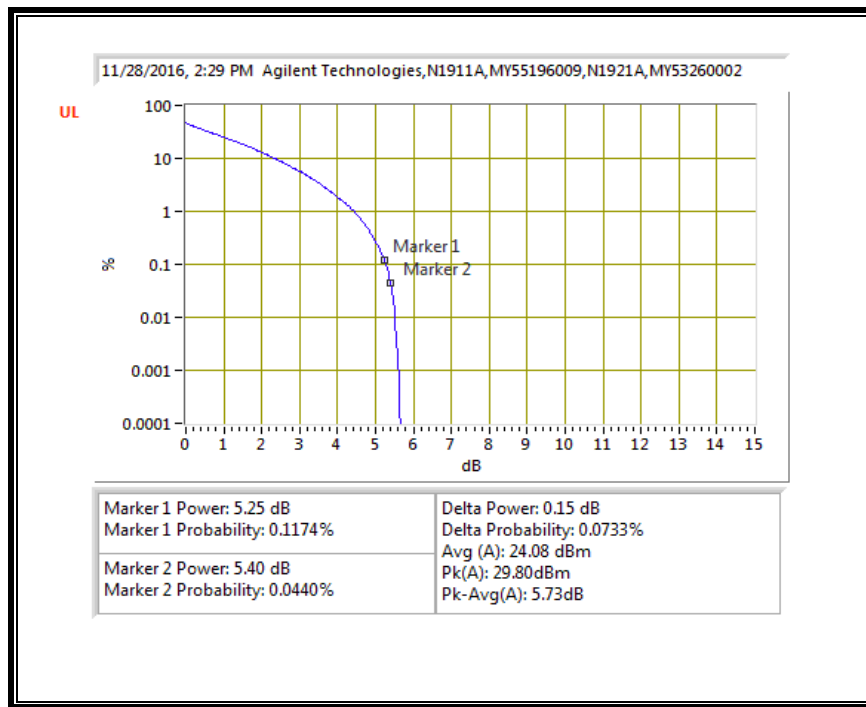
QPSK, (15.0 MHz BAND WIDTH)



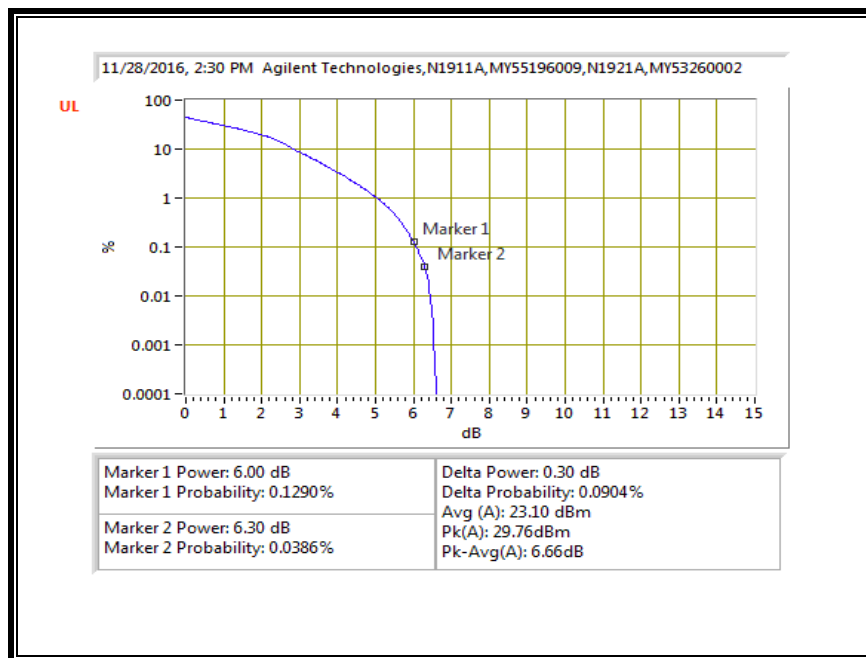
16QAM, (15.0 MHz BAND WIDTH)



QPSK, (20.0 MHz BAND WIDTH)

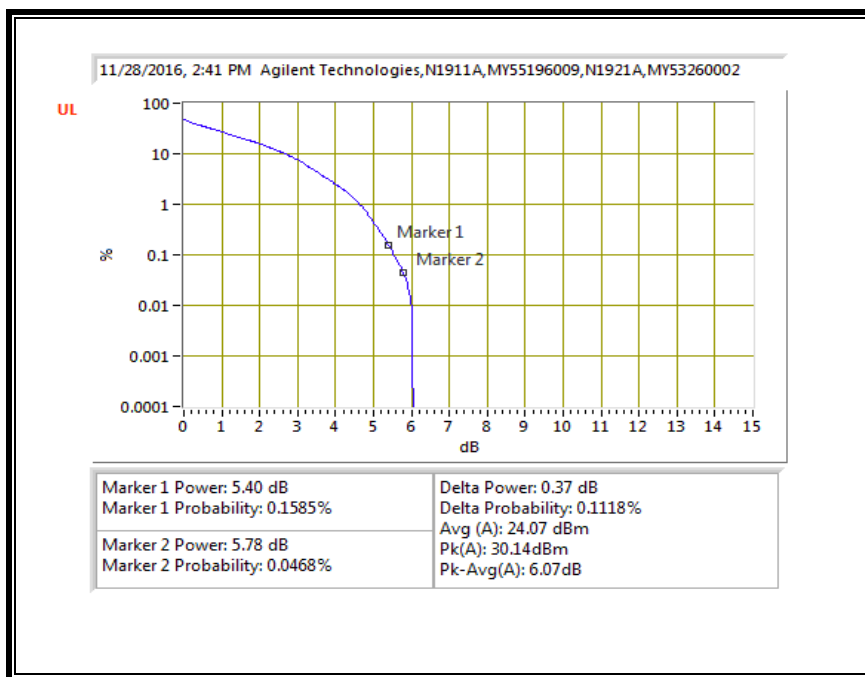


16QAM, (20.0 MHz BAND WIDTH)

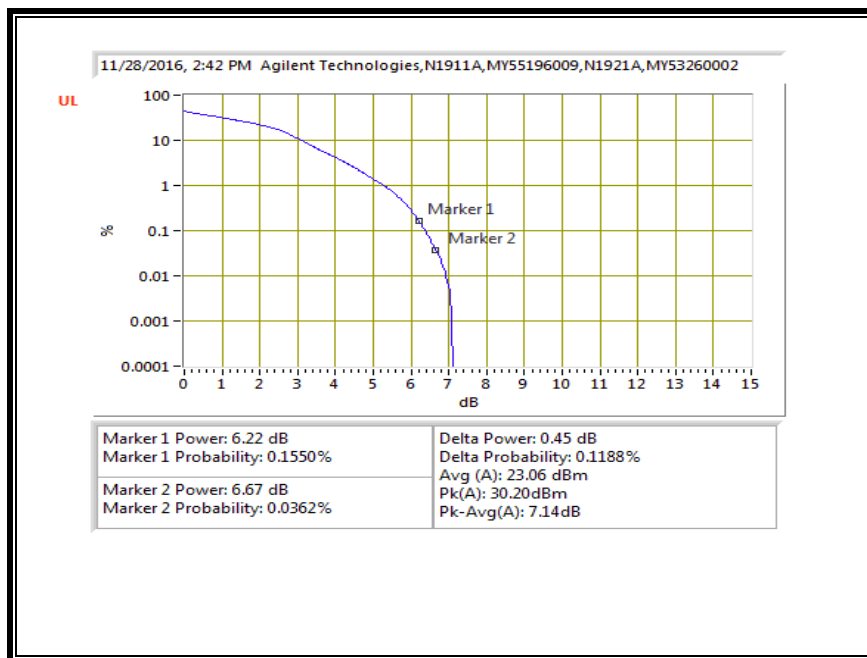


8.5.9. LTE BAND 26

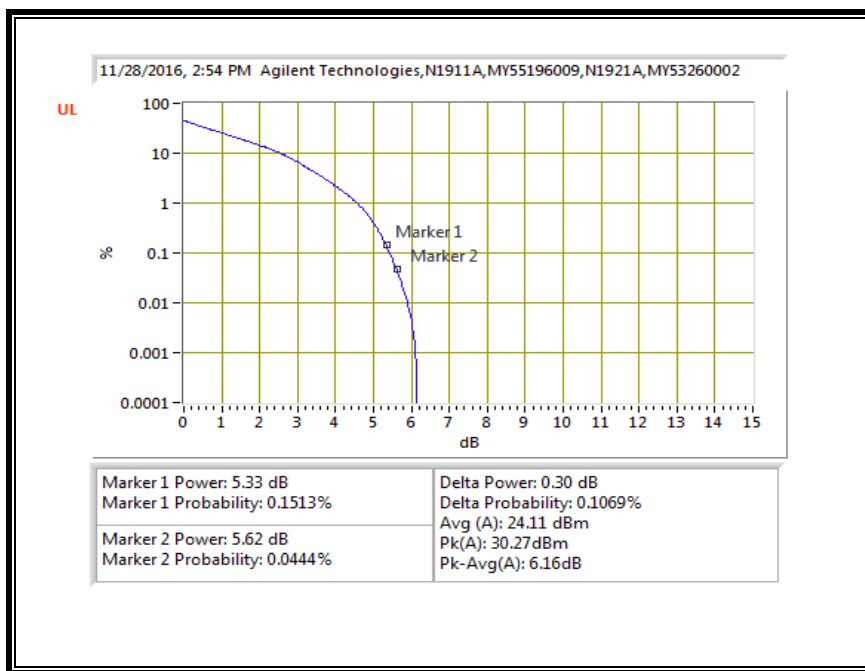
QPSK, (1.4 MHz BAND WIDTH)



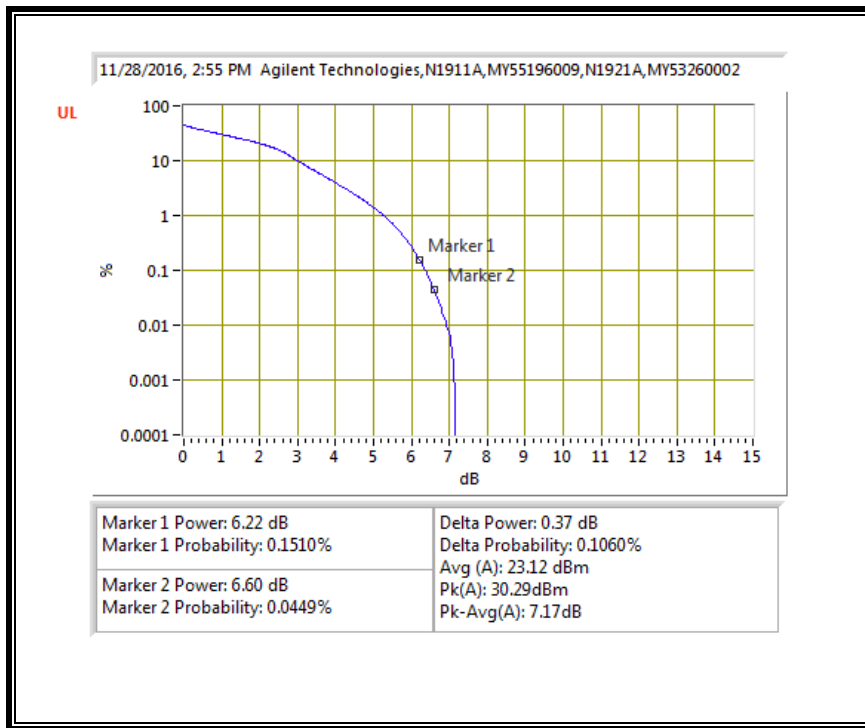
16QAM, (1.4 MHz BAND WIDTH)



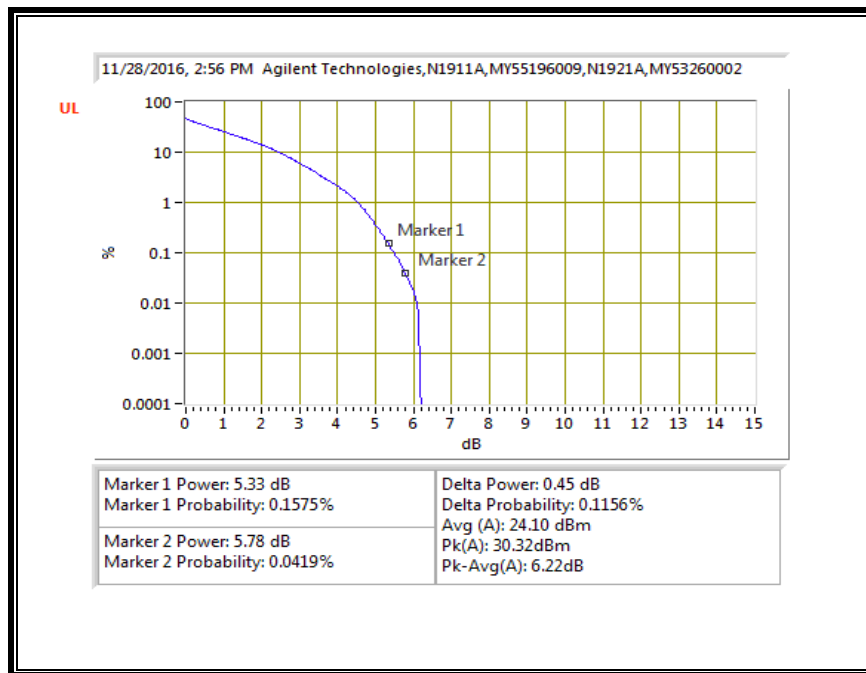
QPSK, (3.0 MHz BAND WIDTH)



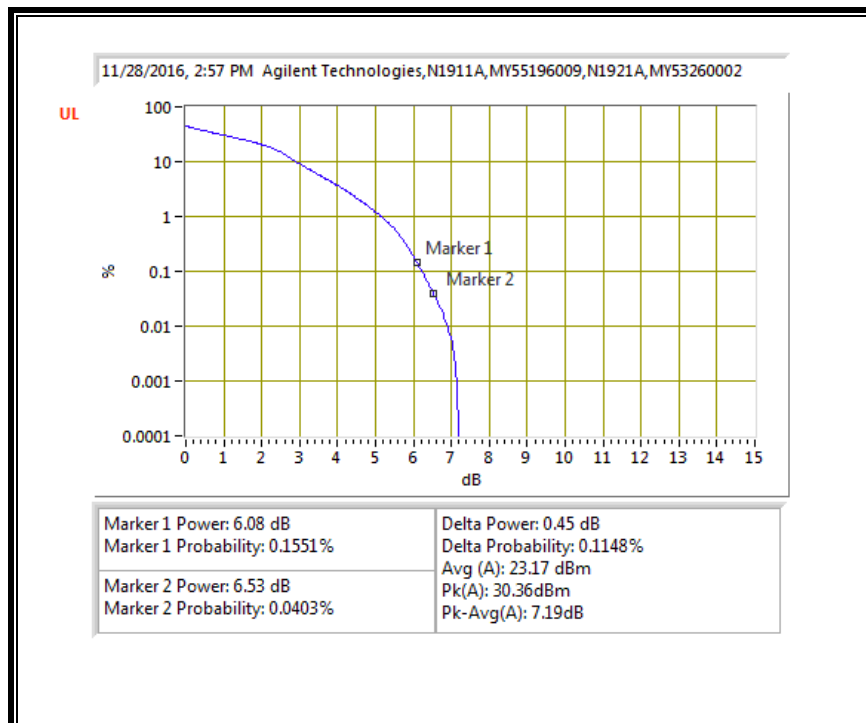
16QAM, (3.0 MHz BAND WIDTH)



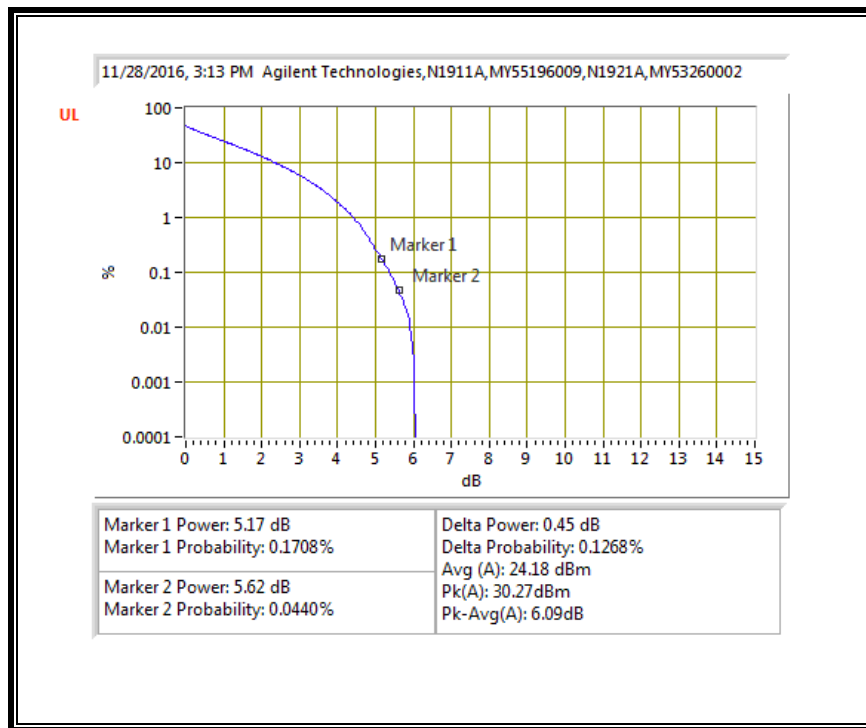
QPSK, (5.0 MHz BAND WIDTH)



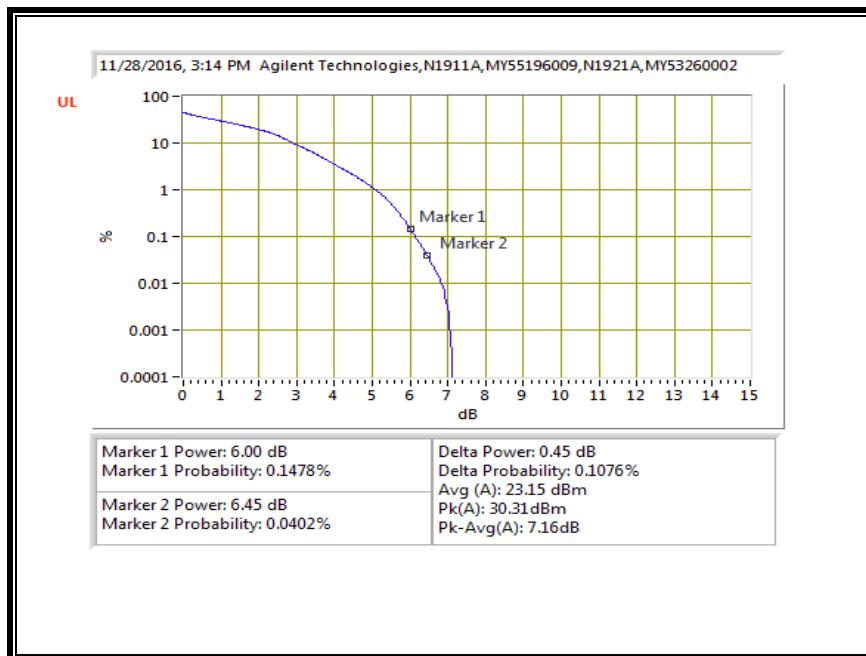
16QAM, (5.0 MHz BAND WIDTH)



QPSK, (10.0 MHz BAND WIDTH)

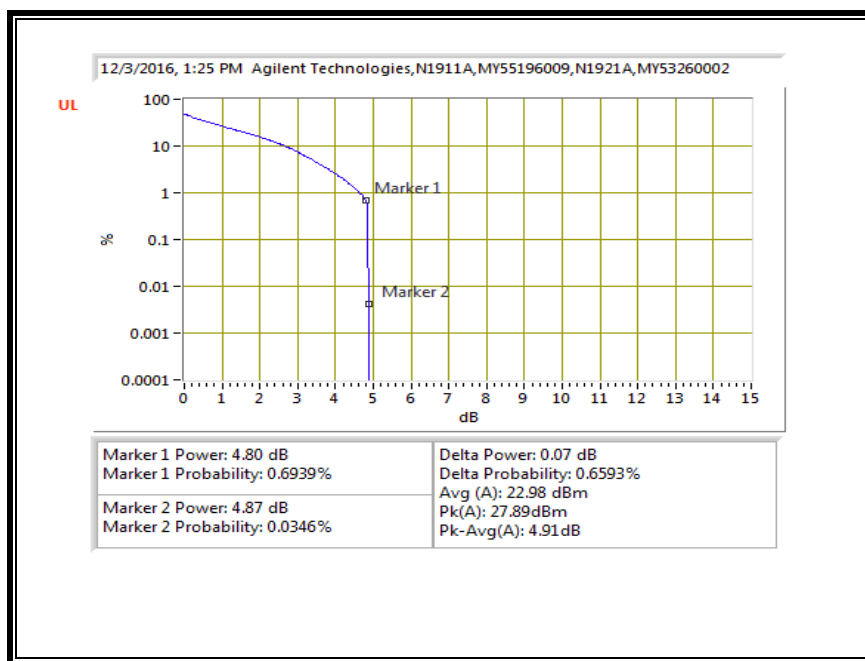


16QAM, (10.0 MHz BAND WIDTH)



8.5.10. LTE BAND 27

QPSK, (1.4 MHz BAND WIDTH)



16QAM, (1.4 MHz BAND WIDTH)

