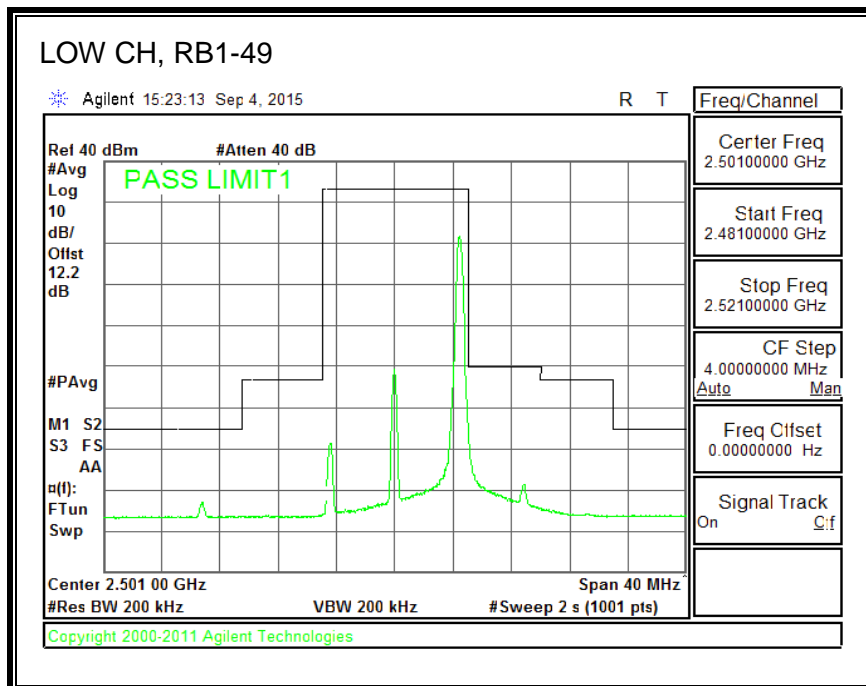
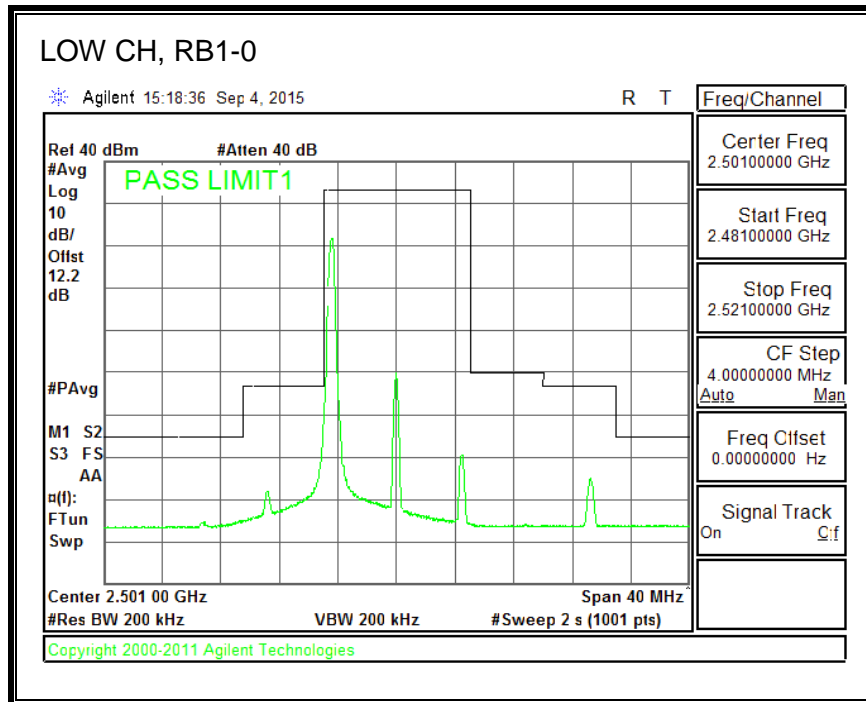
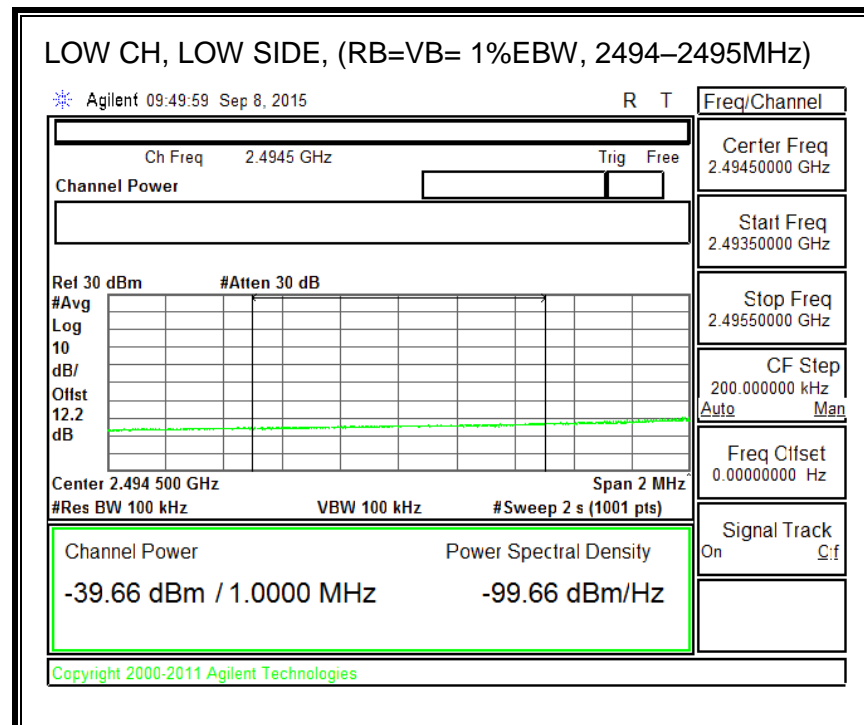
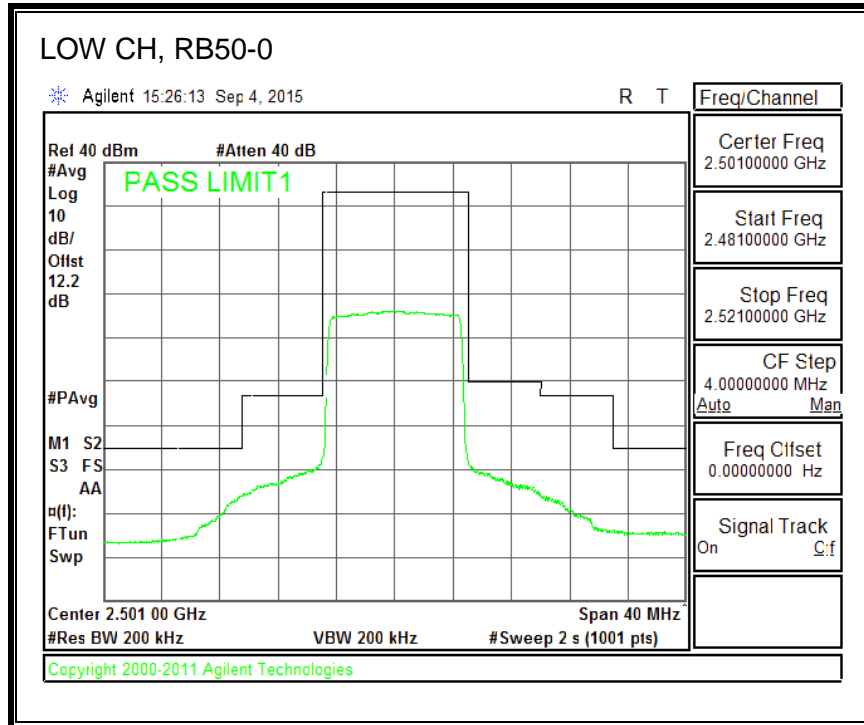
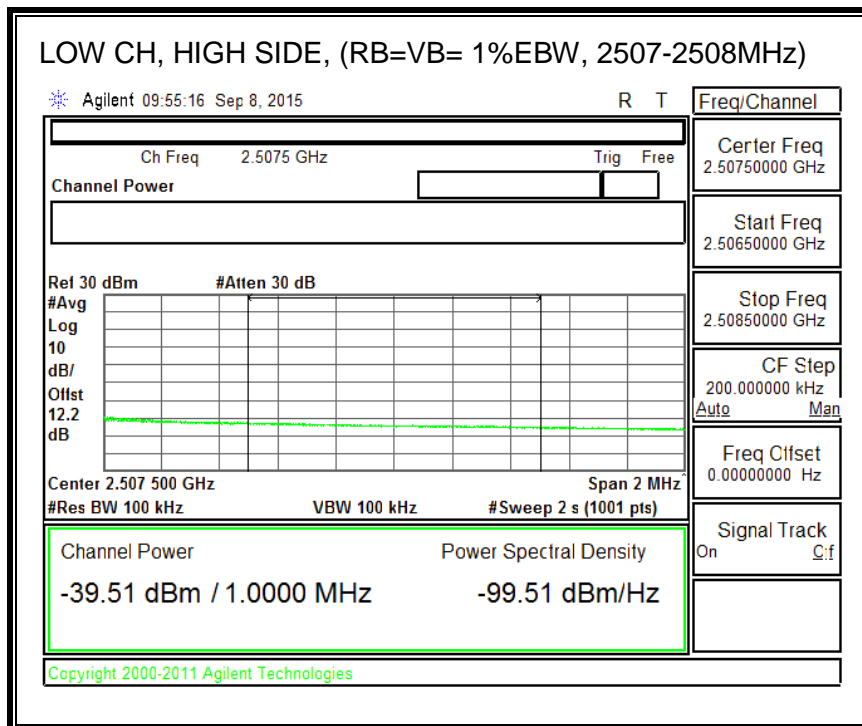
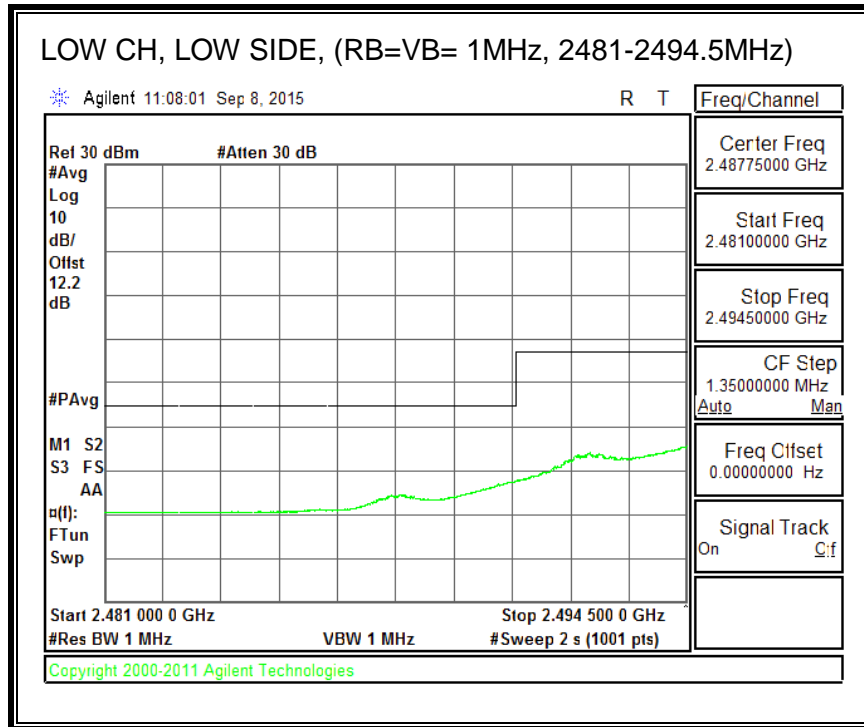
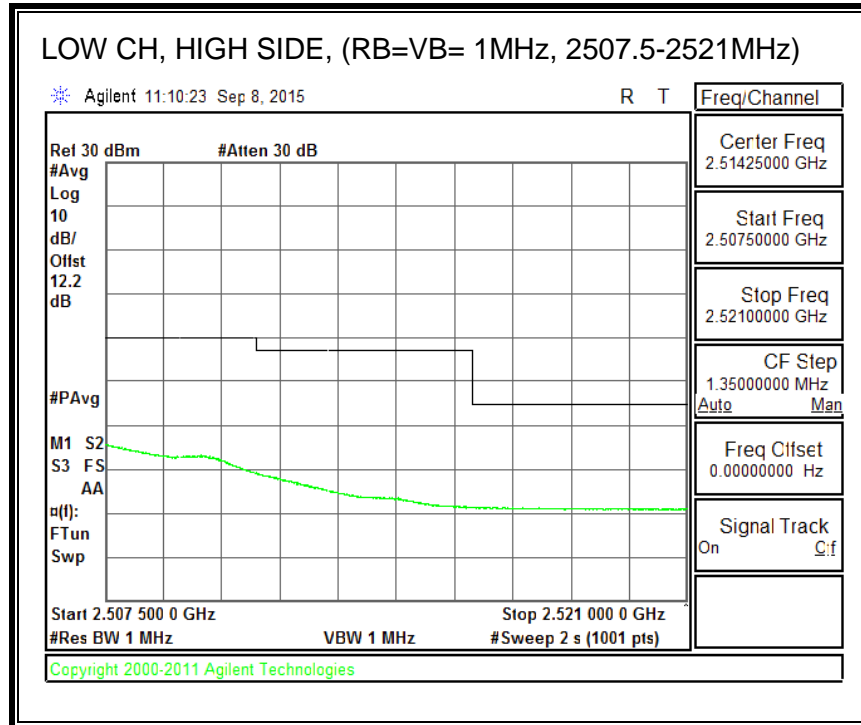


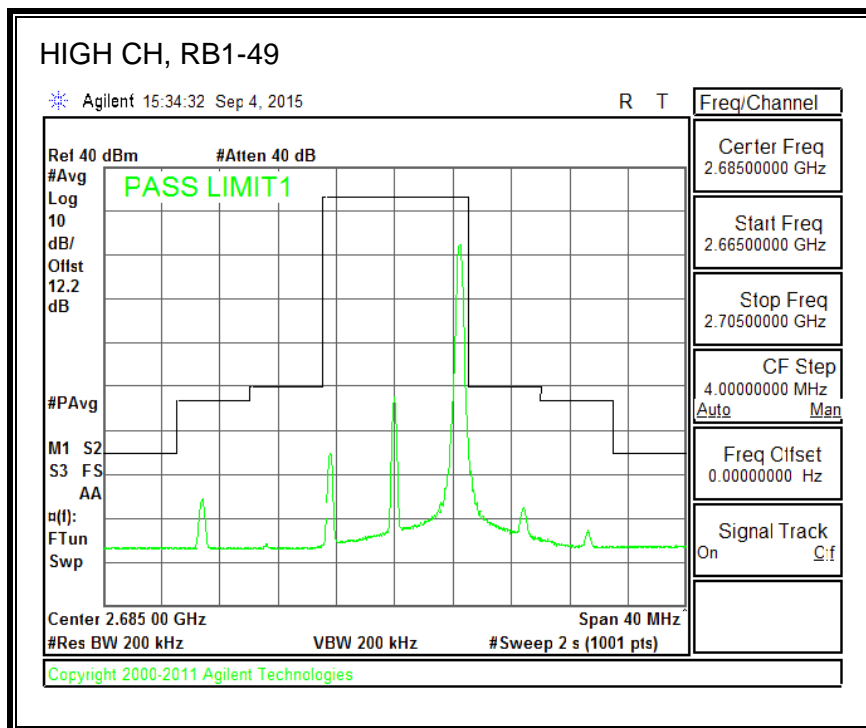
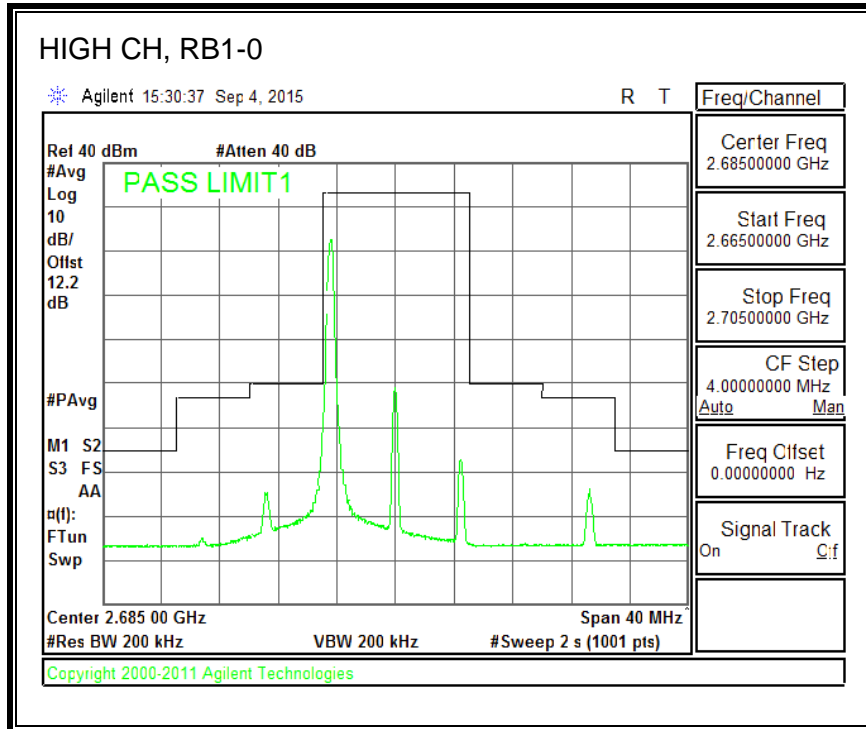
QPSK, (10.0 MHz BAND WIDTH)

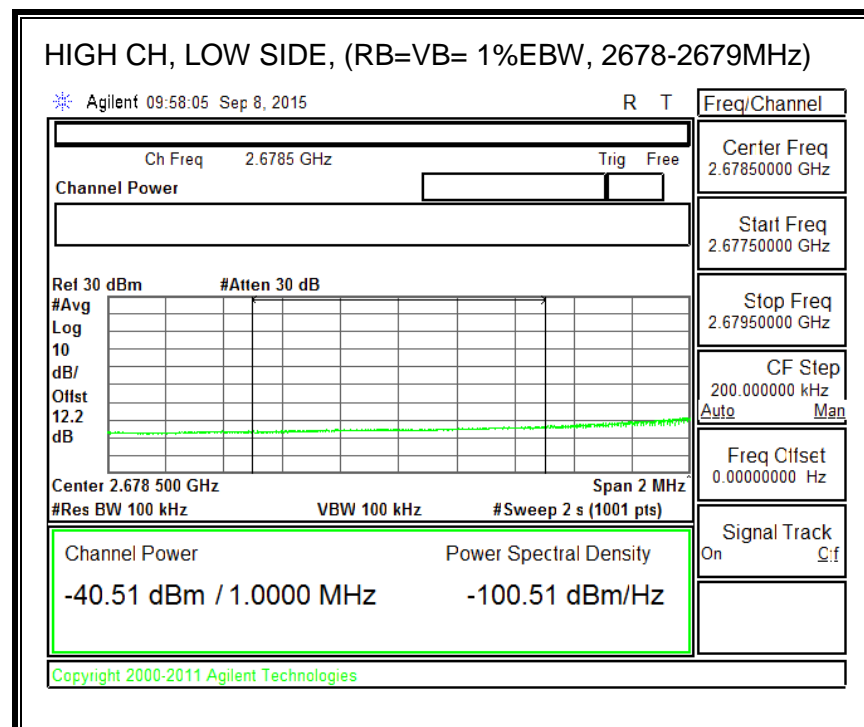
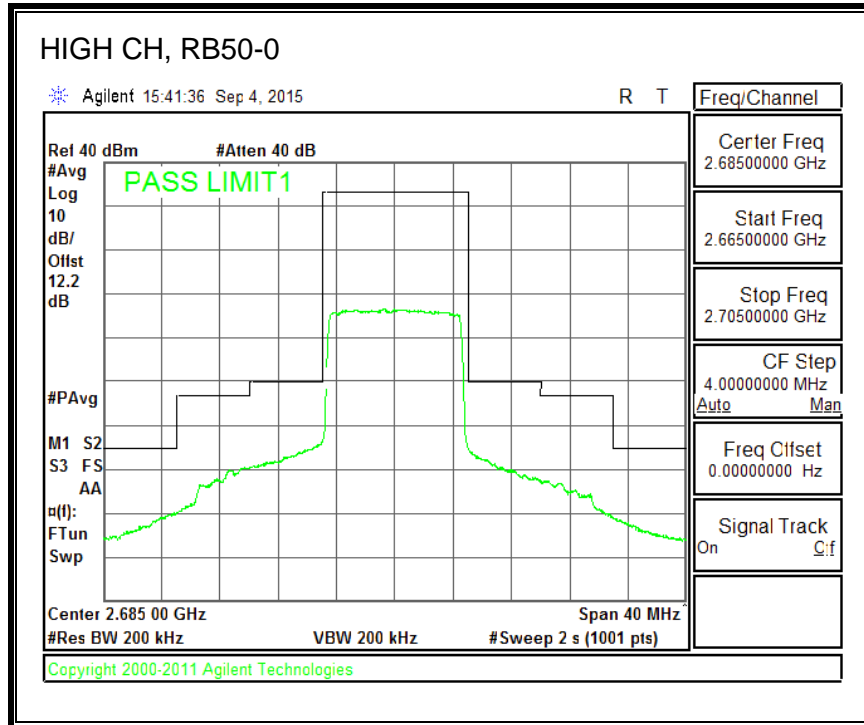


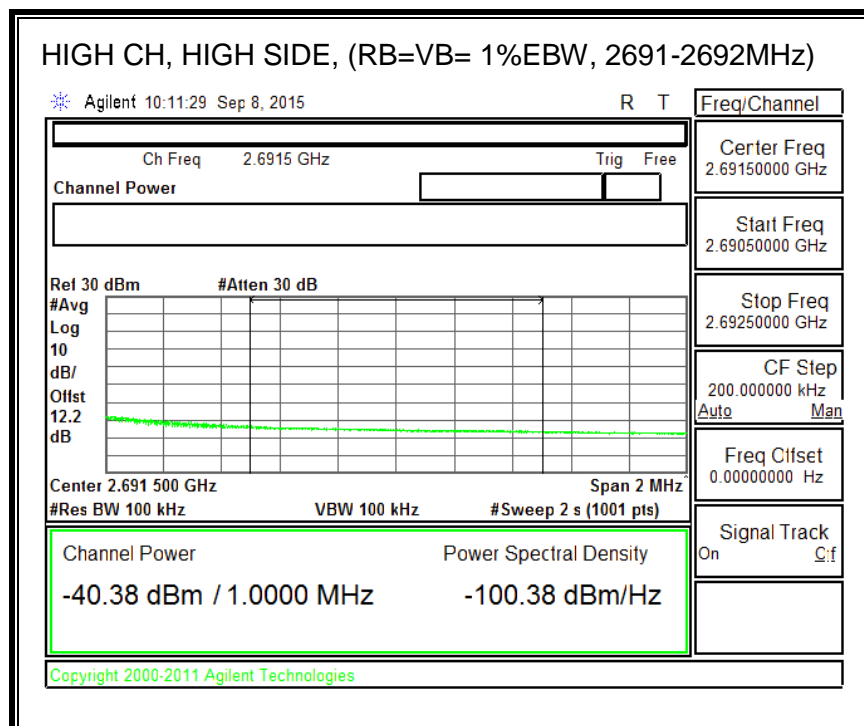
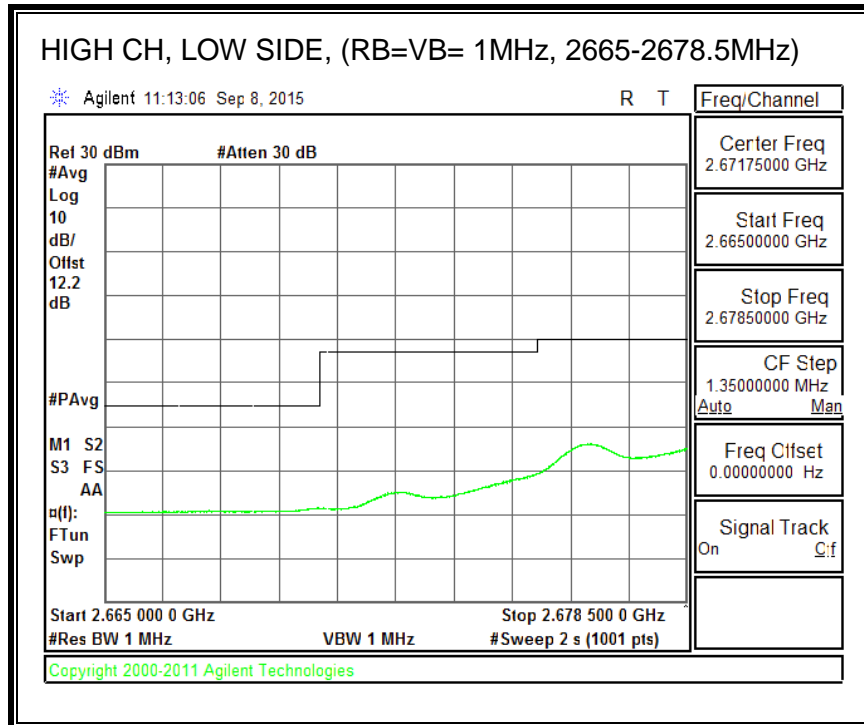


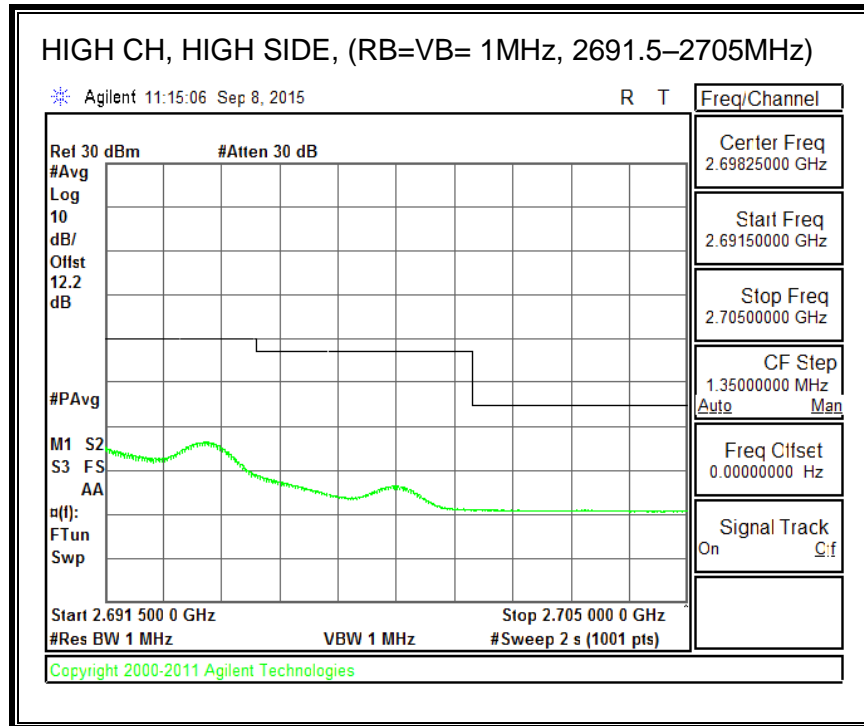




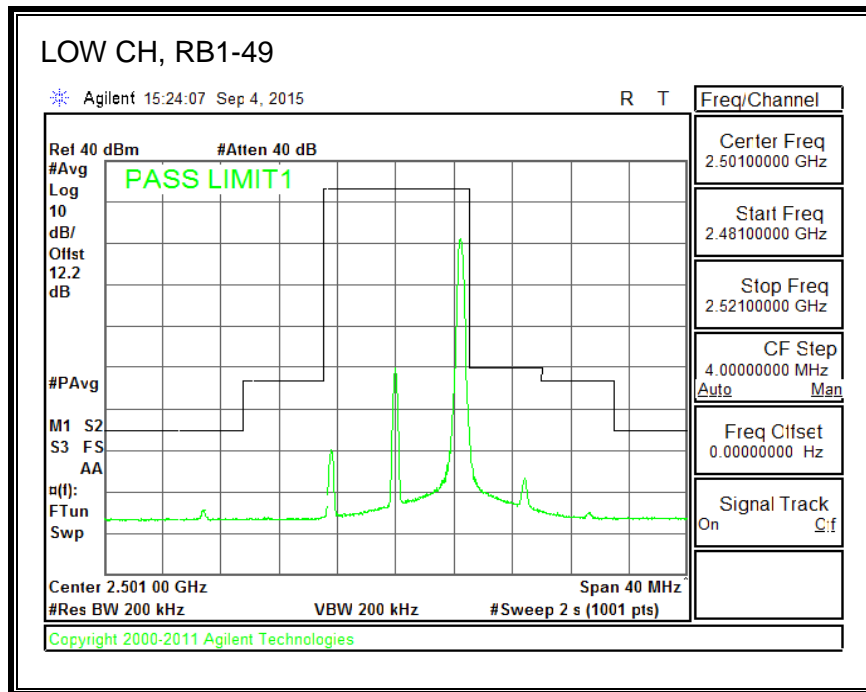
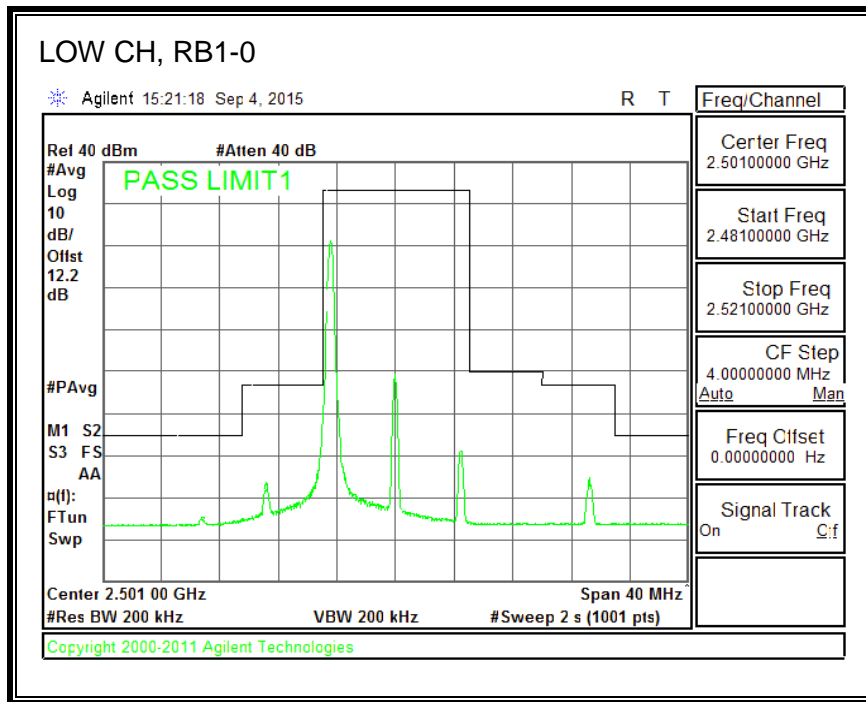


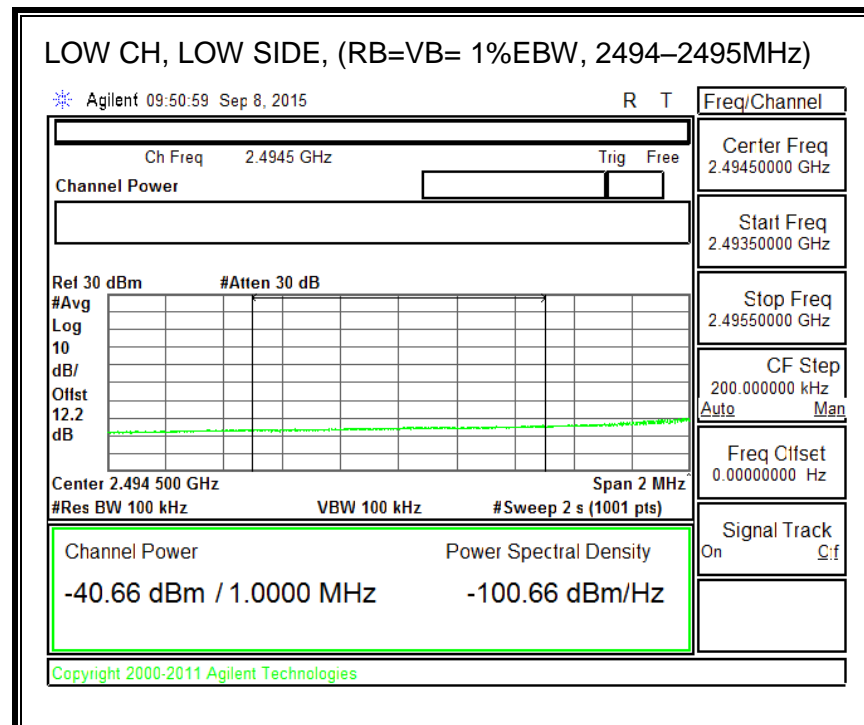
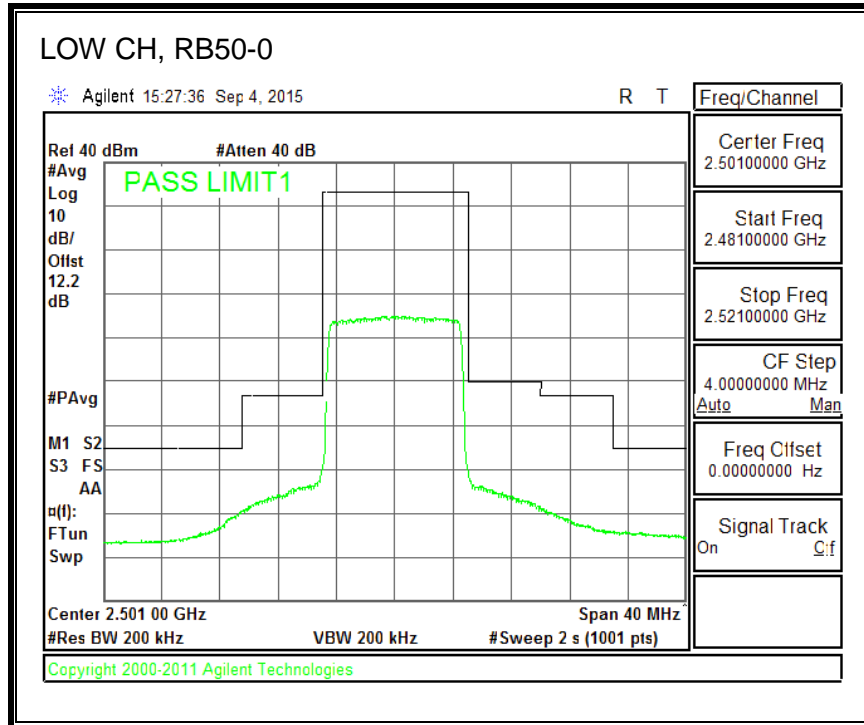


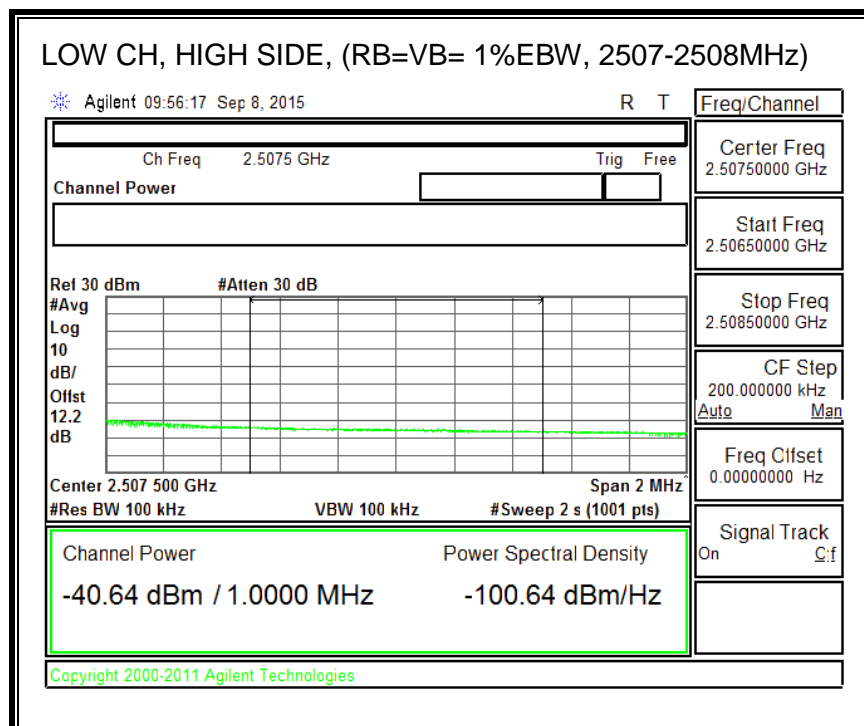
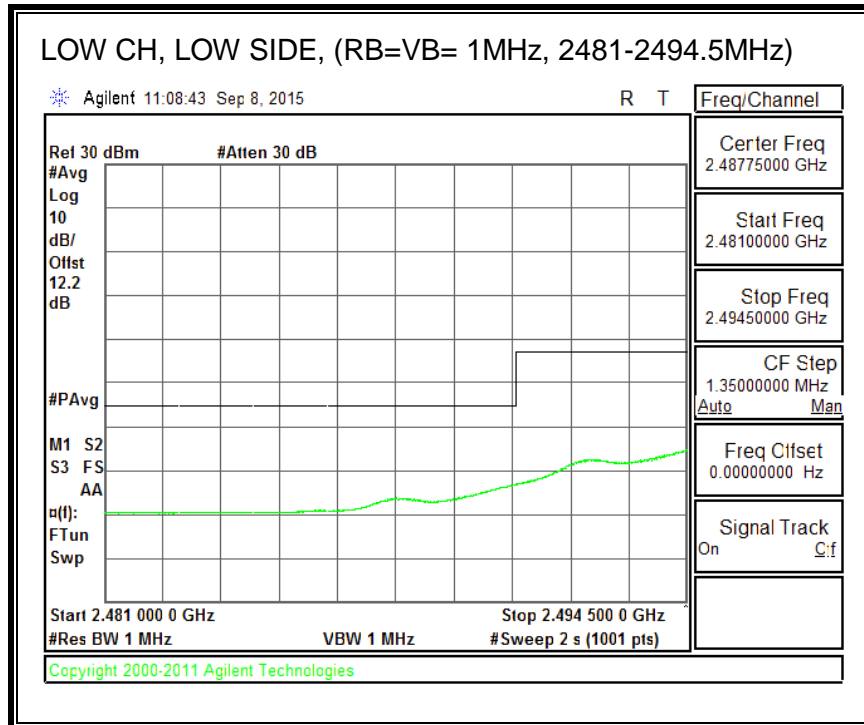


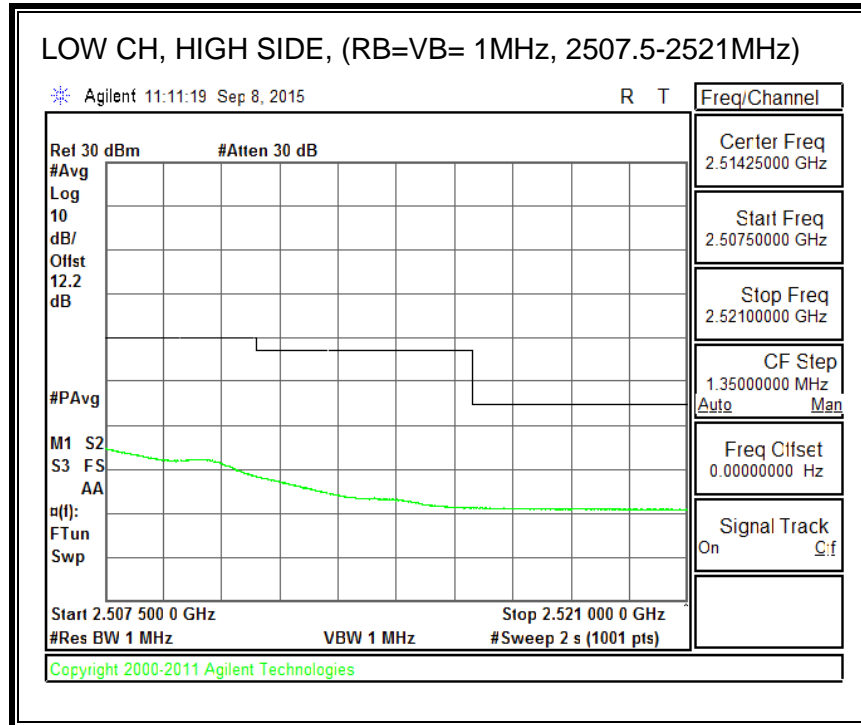


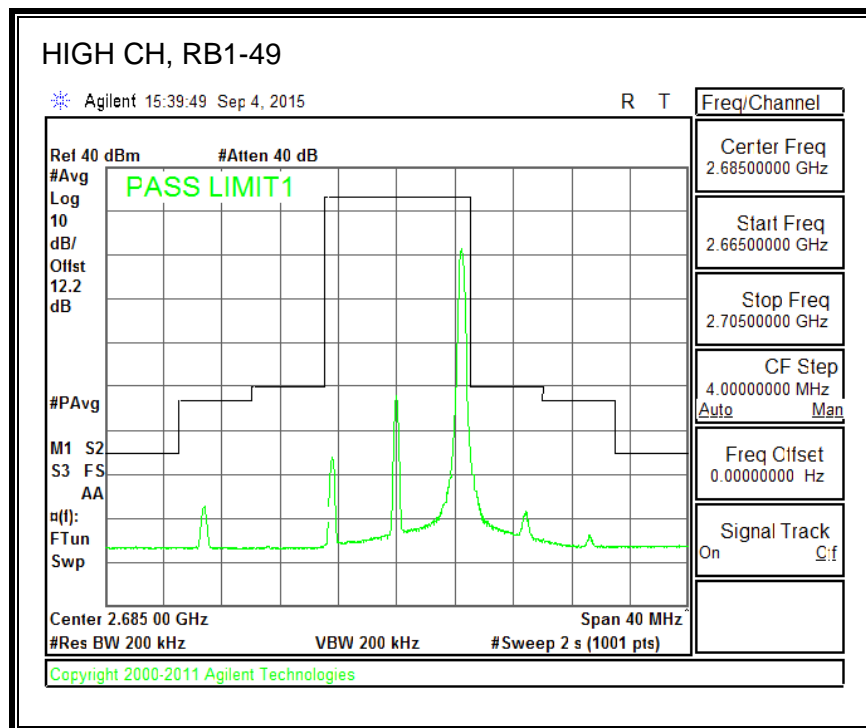
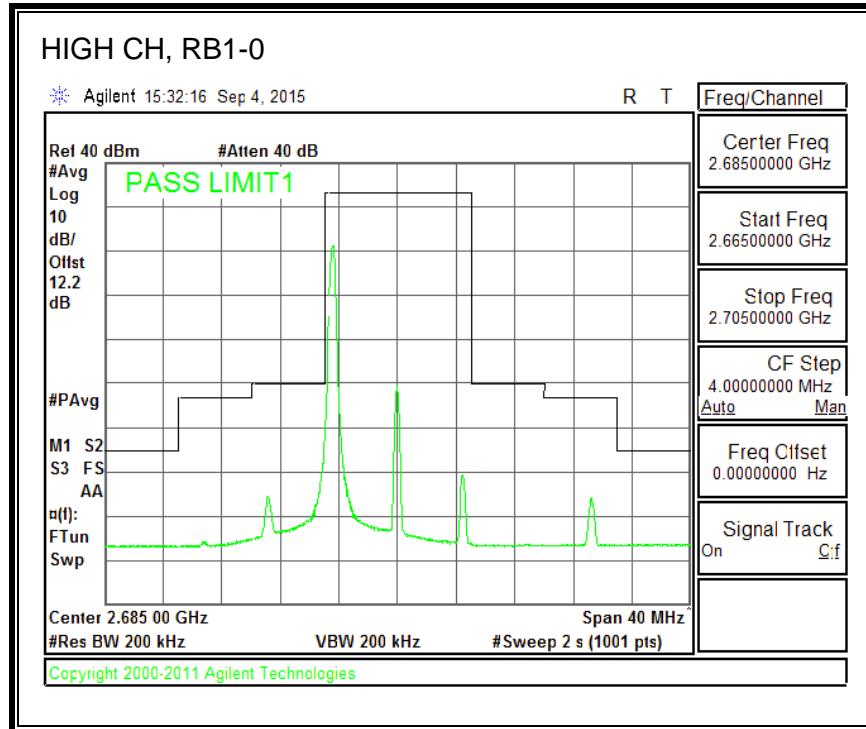
16QAM, (10.0 MHz BAND WIDTH)

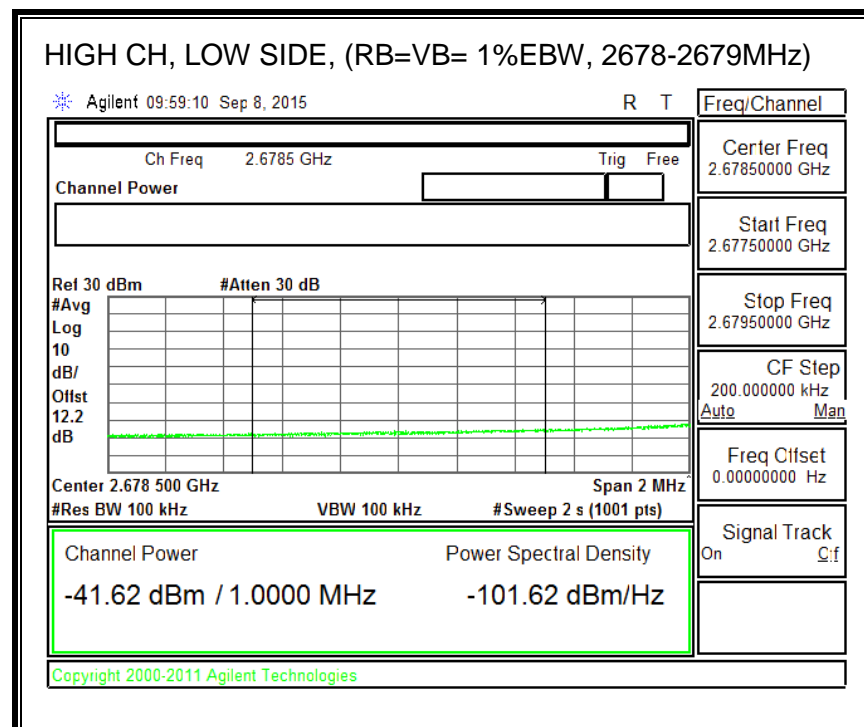
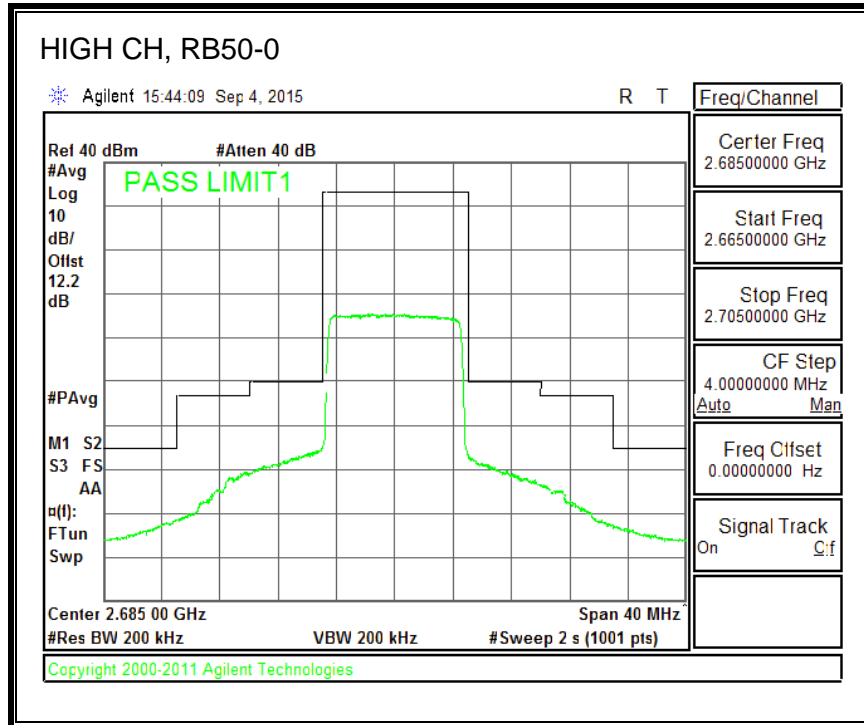


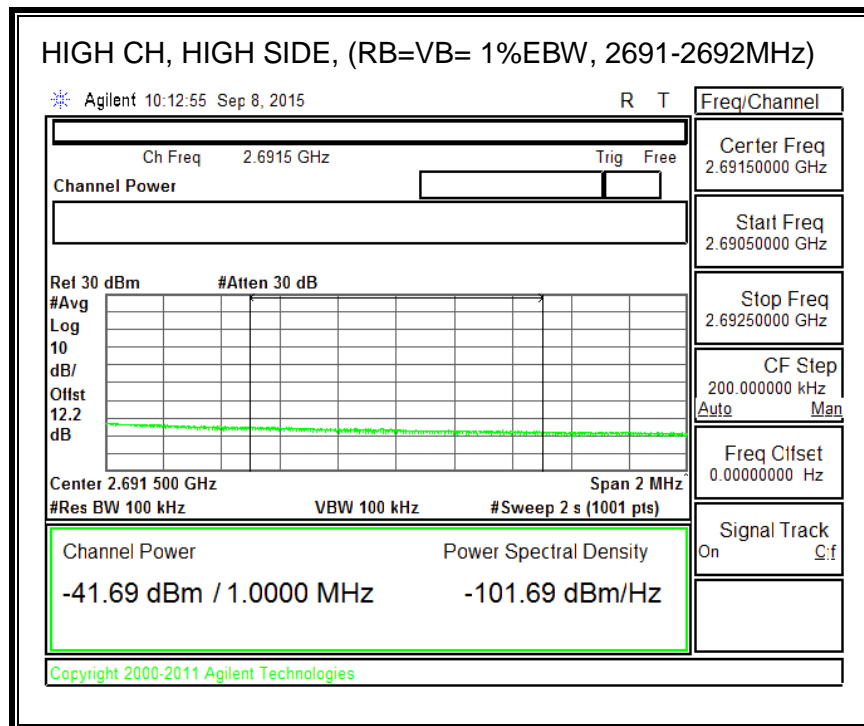
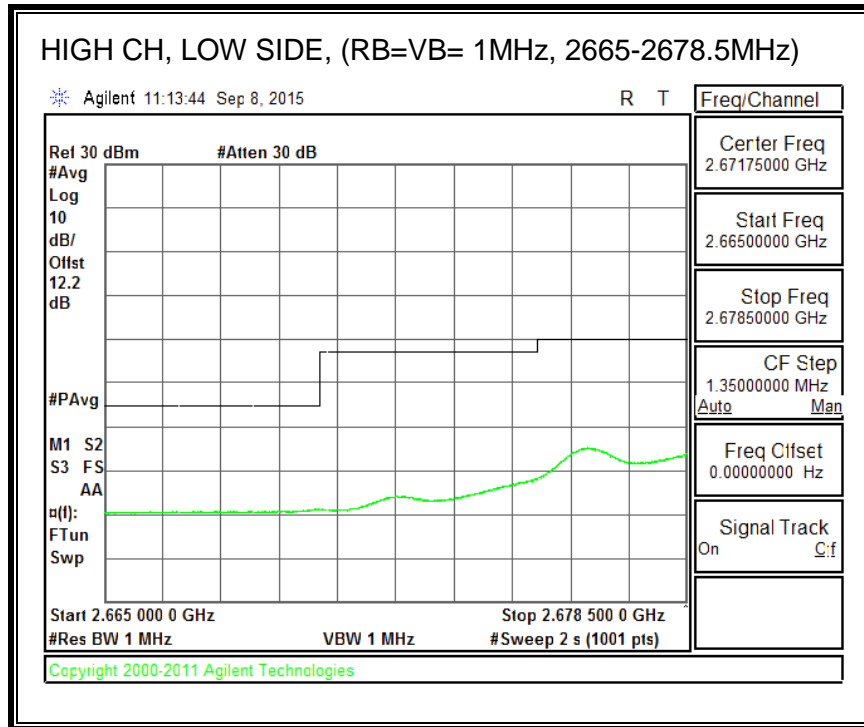


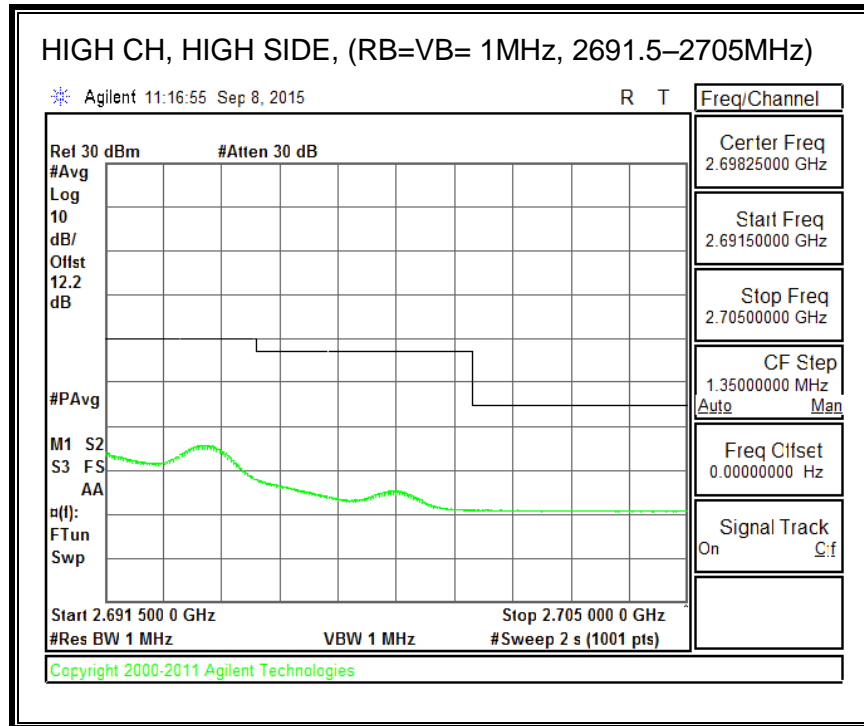




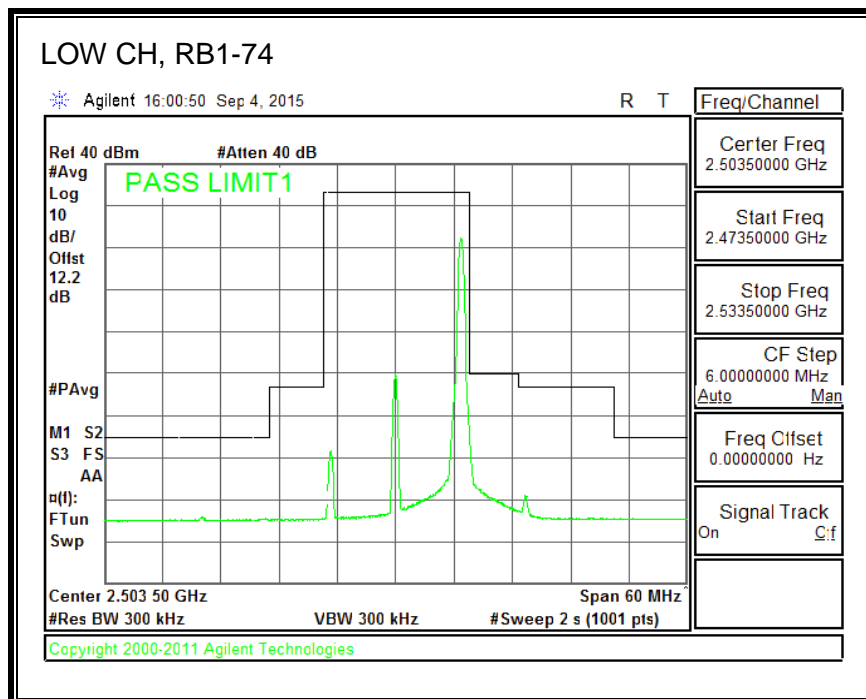
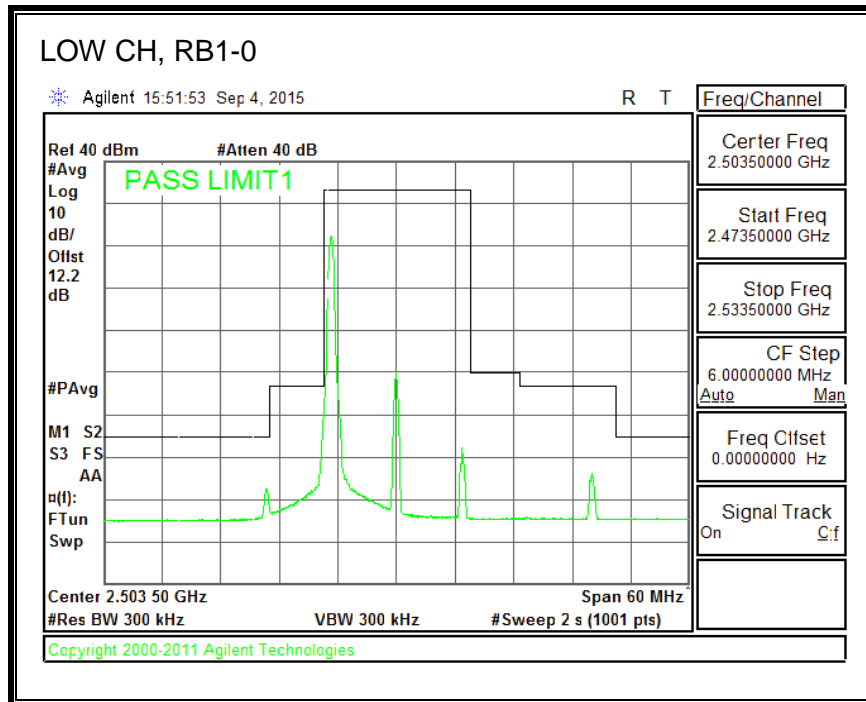


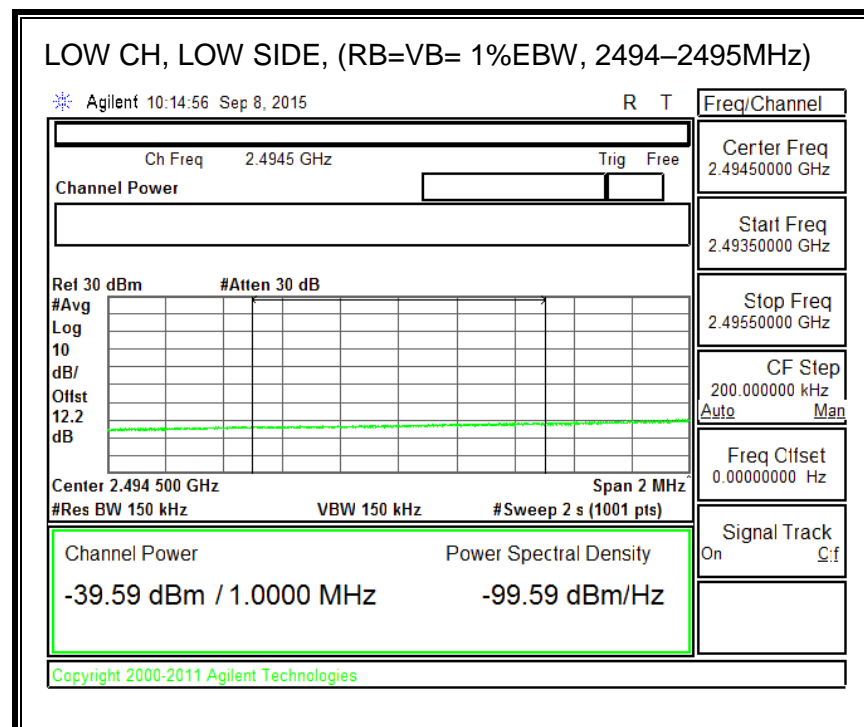
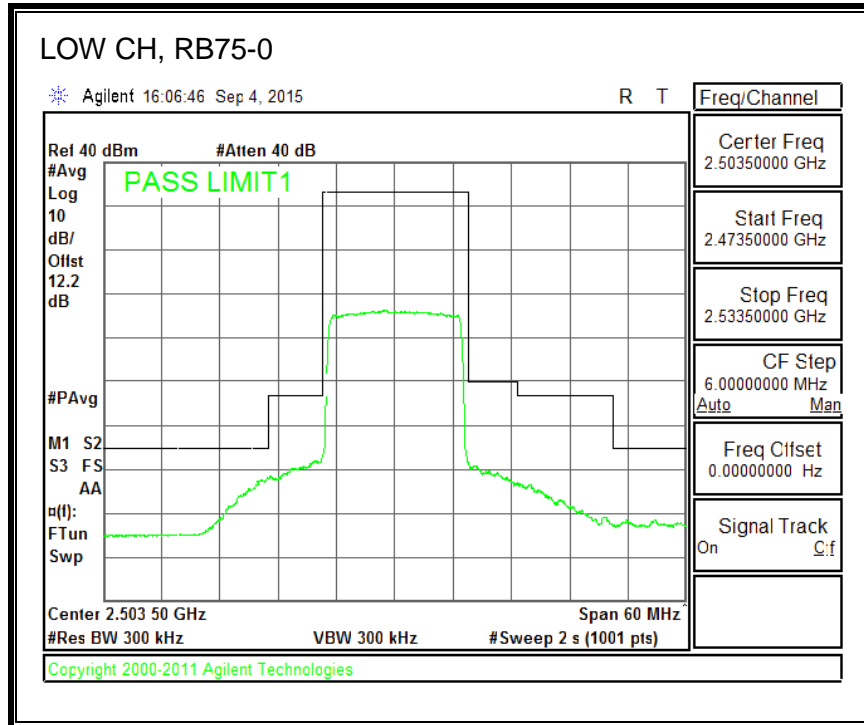


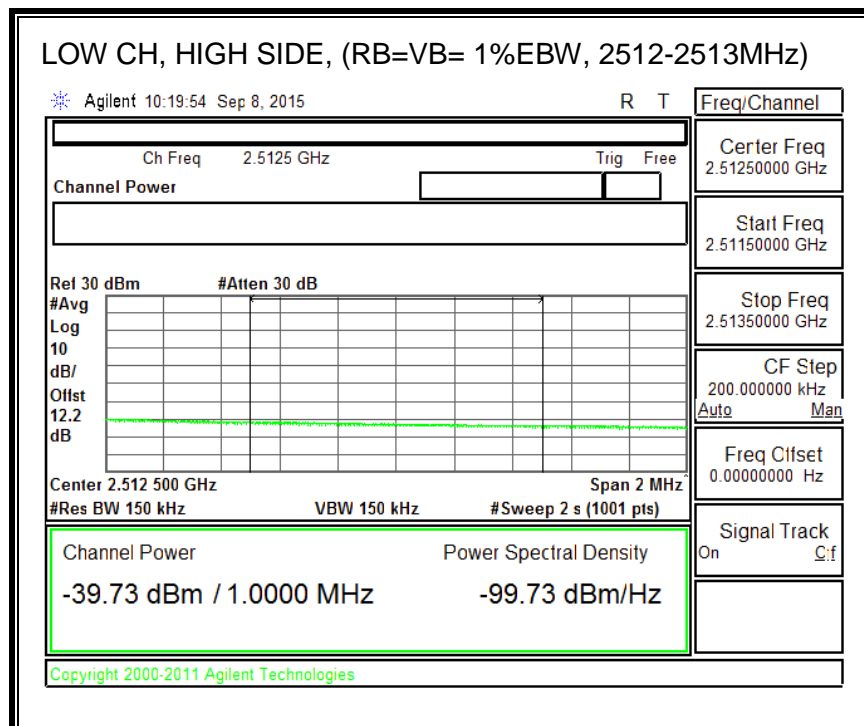
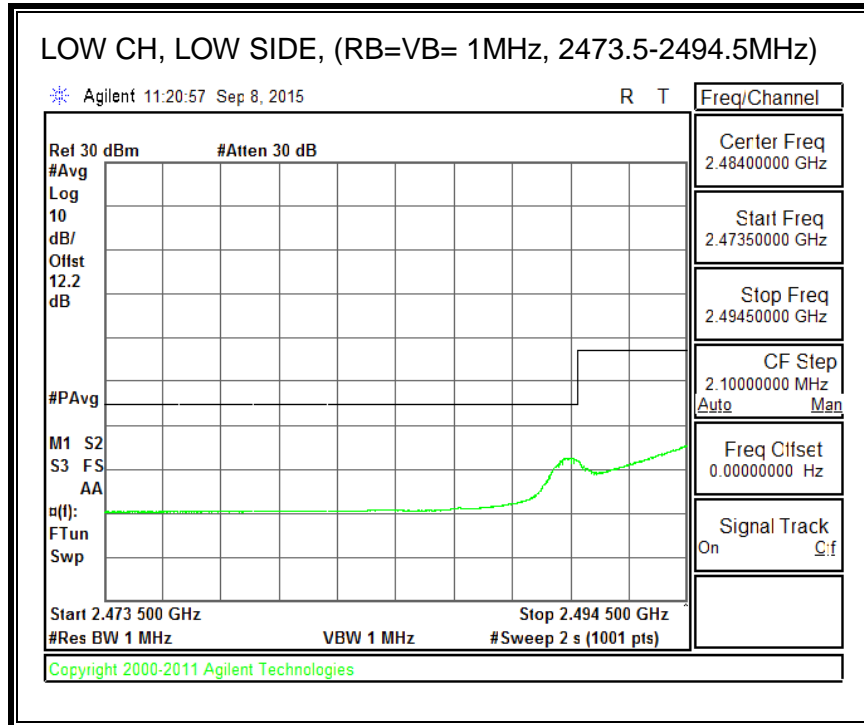


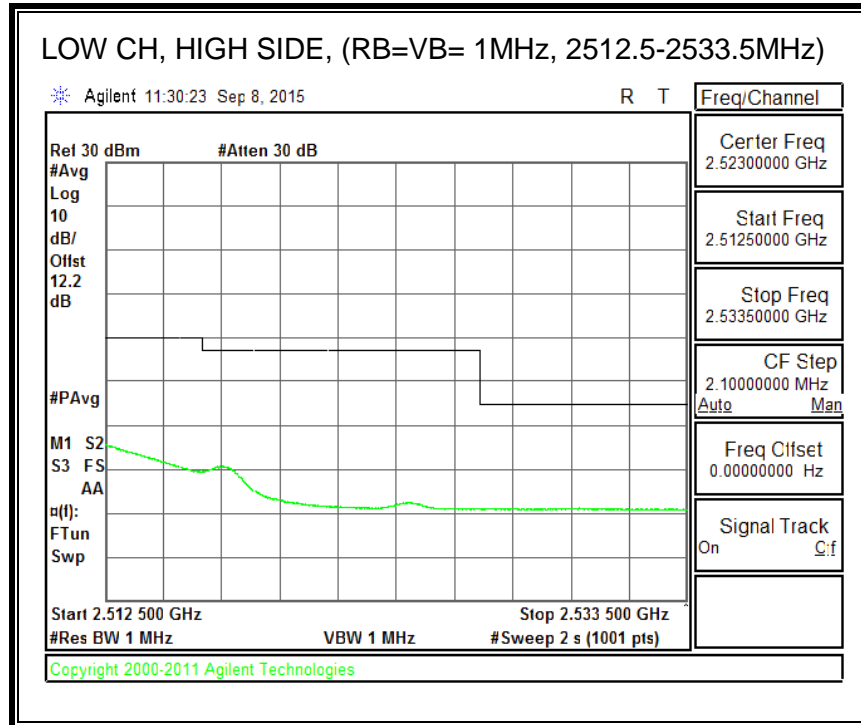


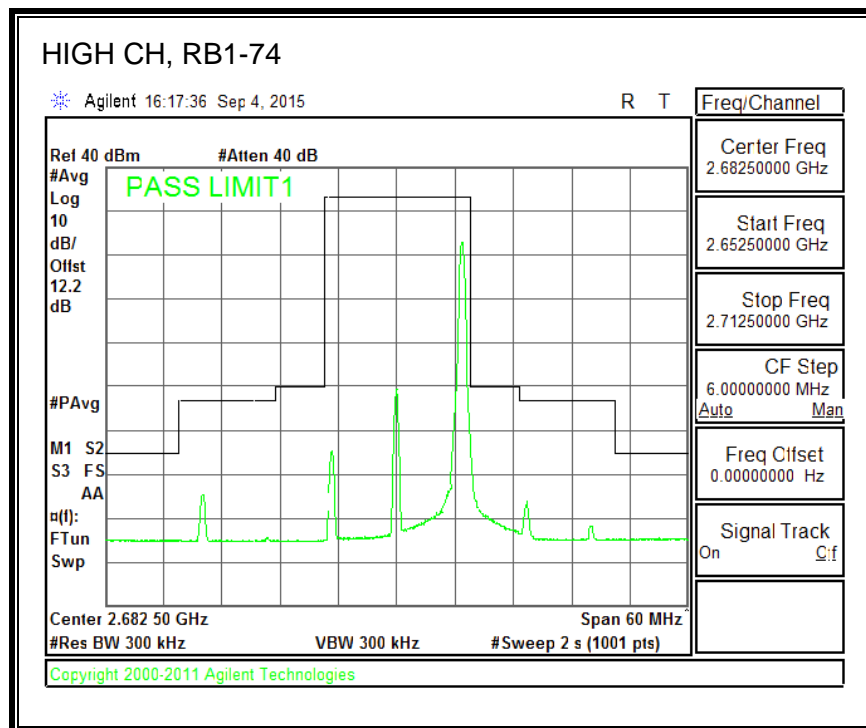
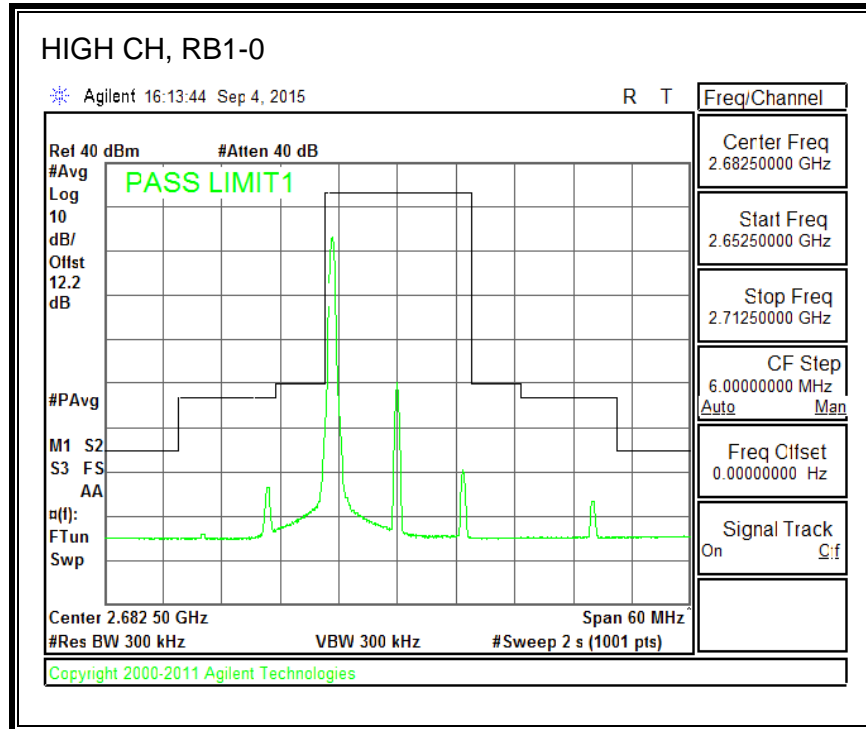
QPSK, (15.0 MHz BAND WIDTH)

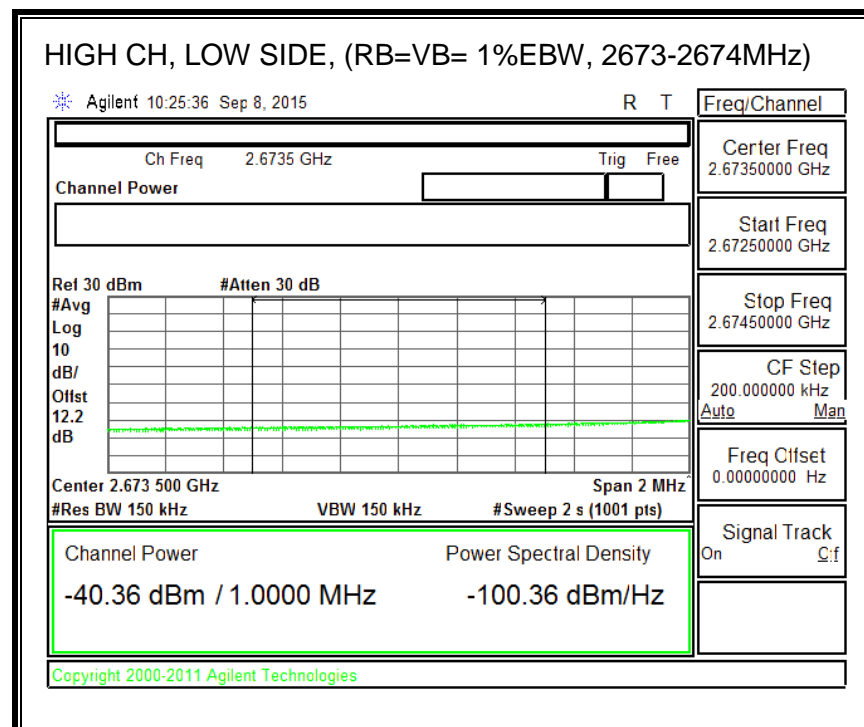
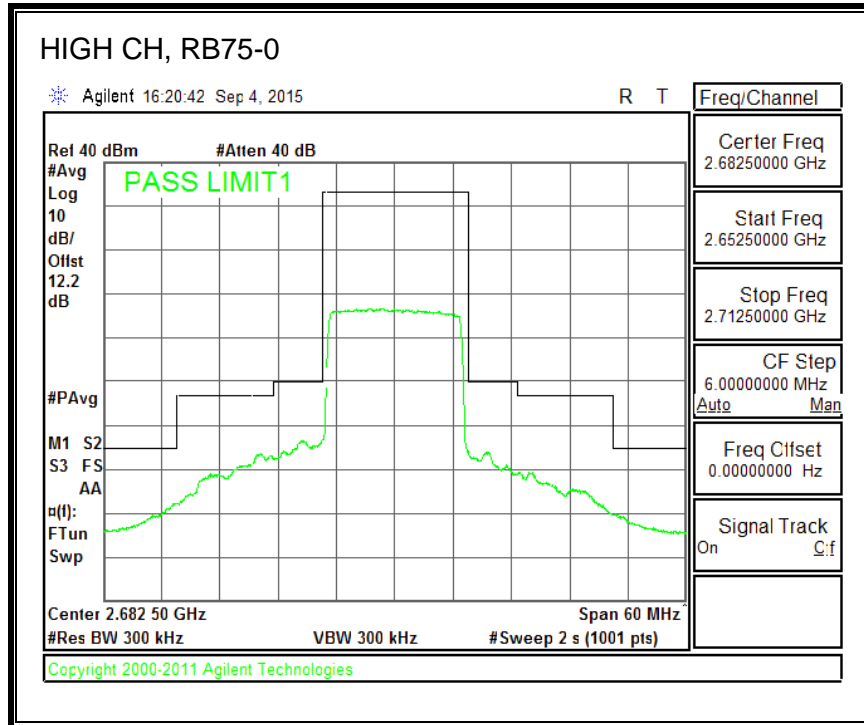


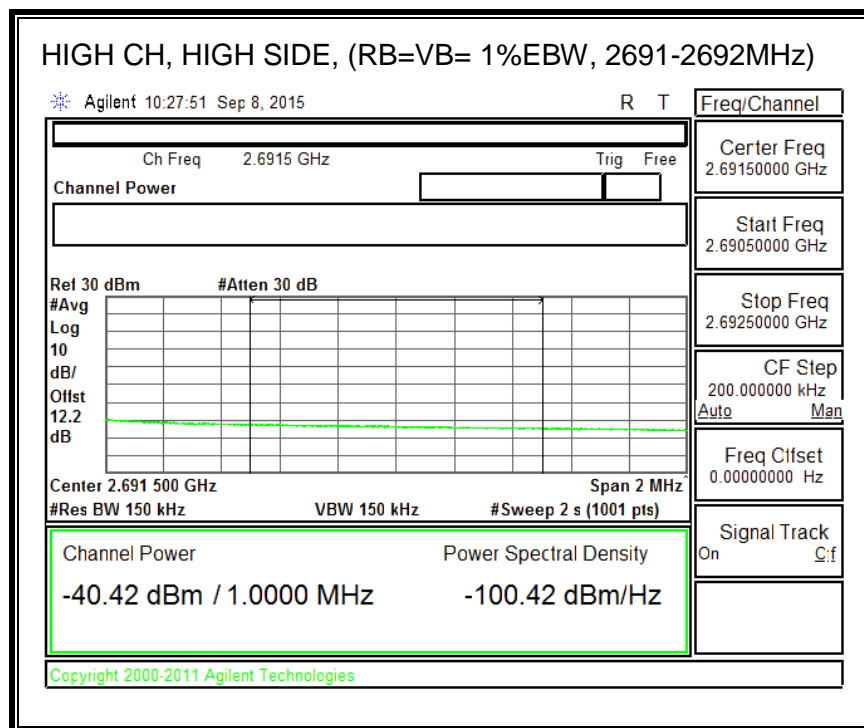
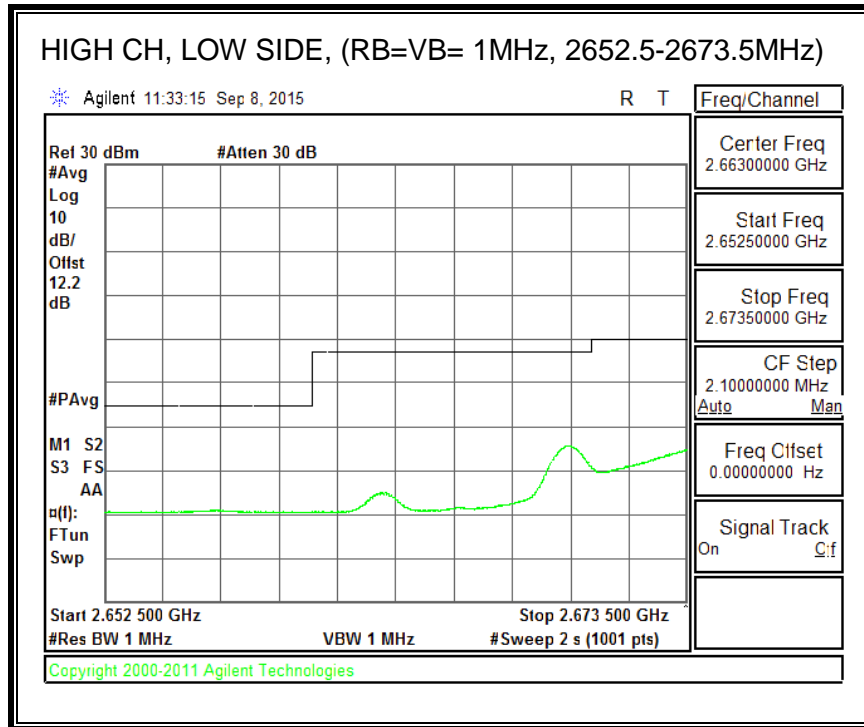


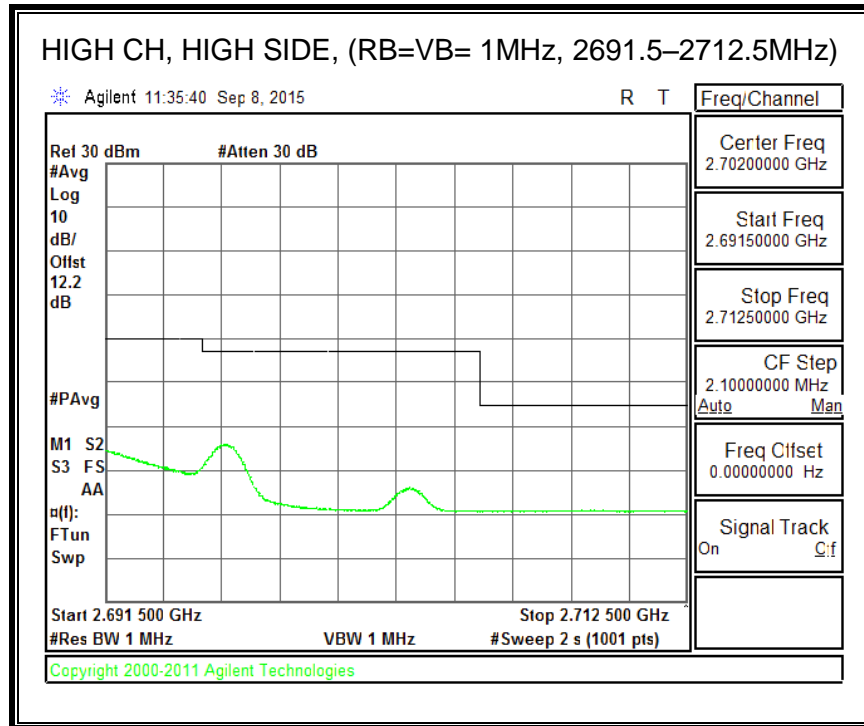




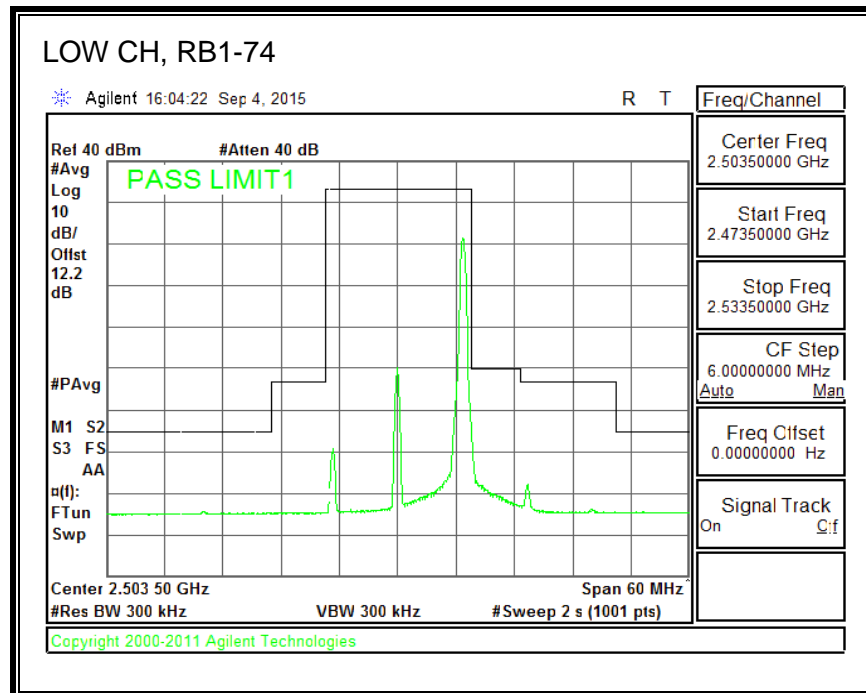
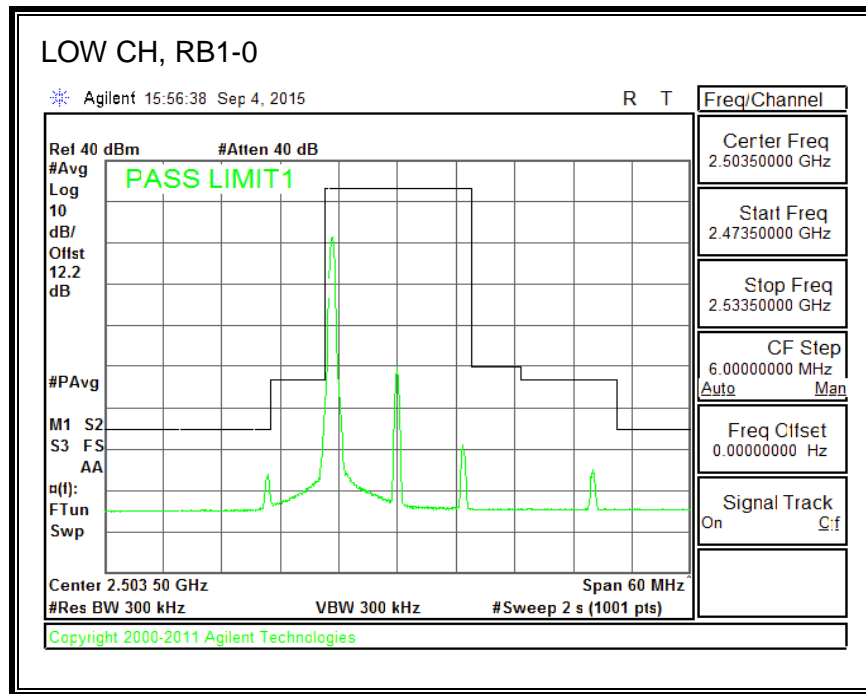


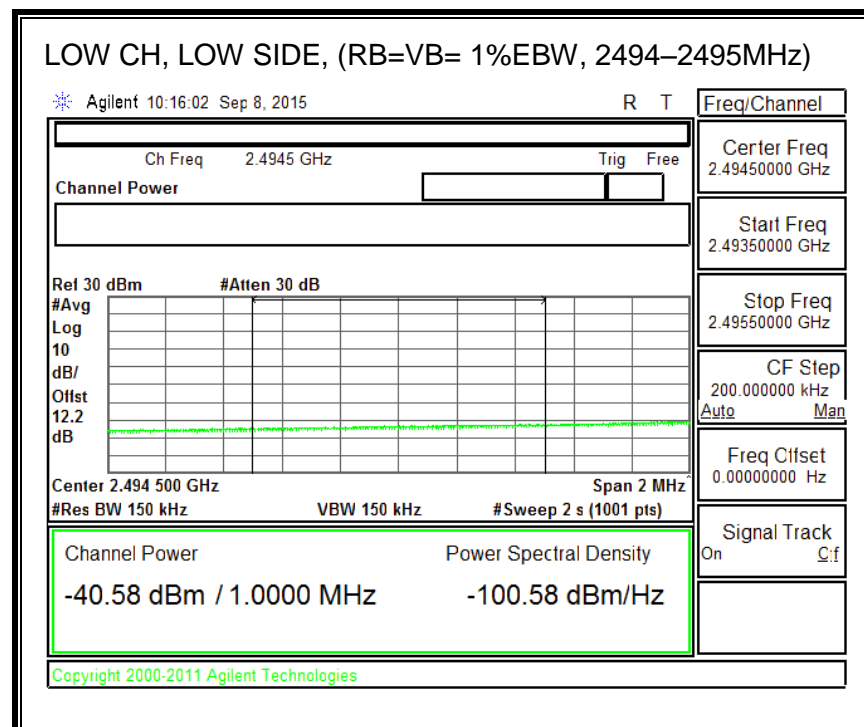
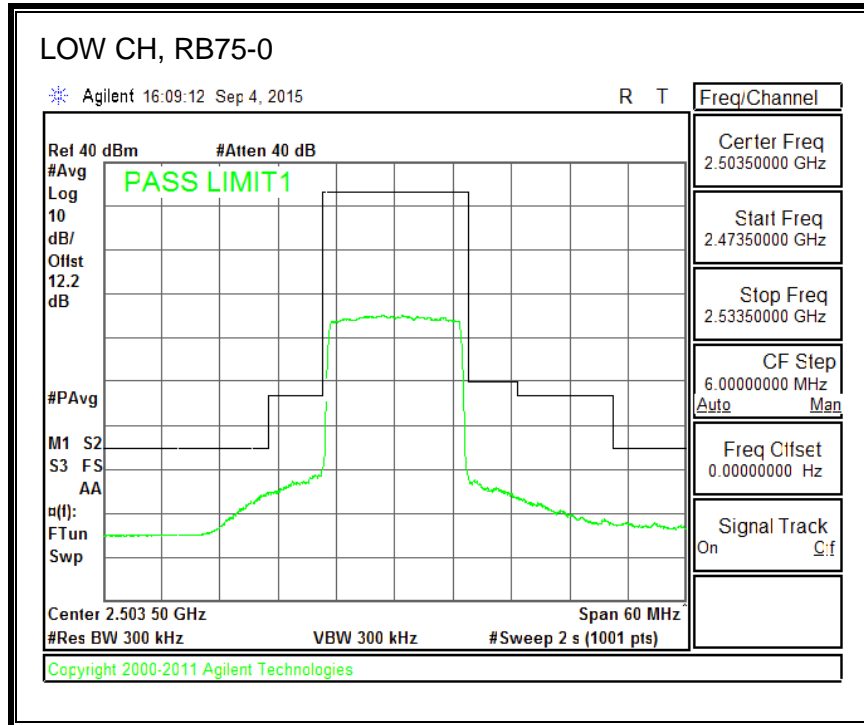


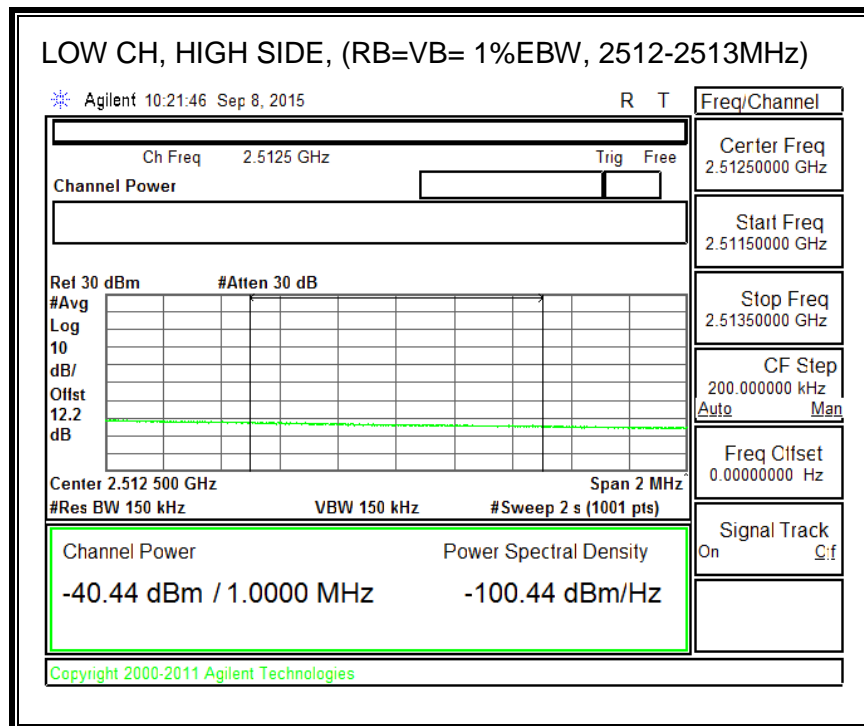
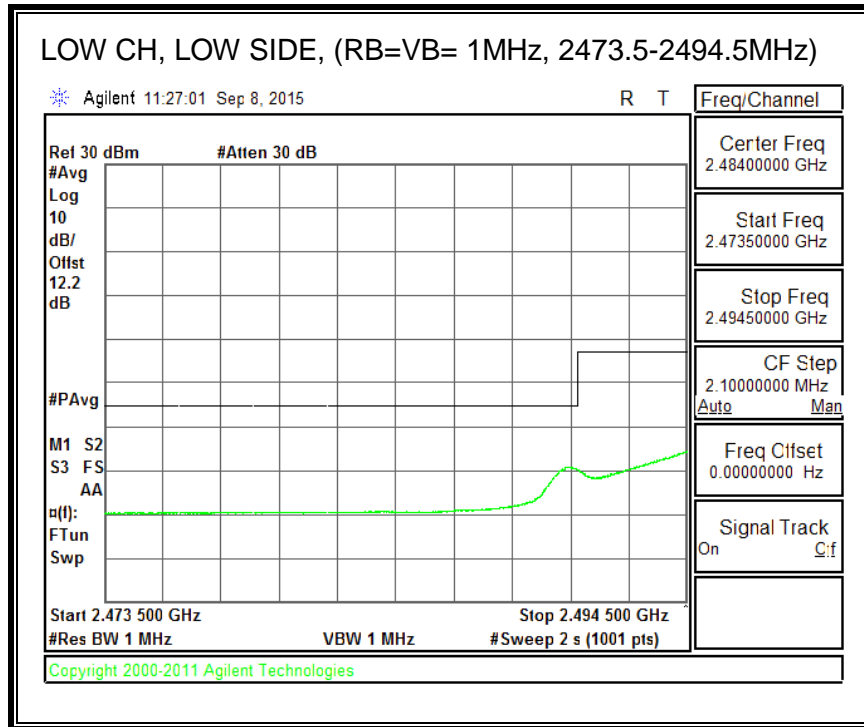


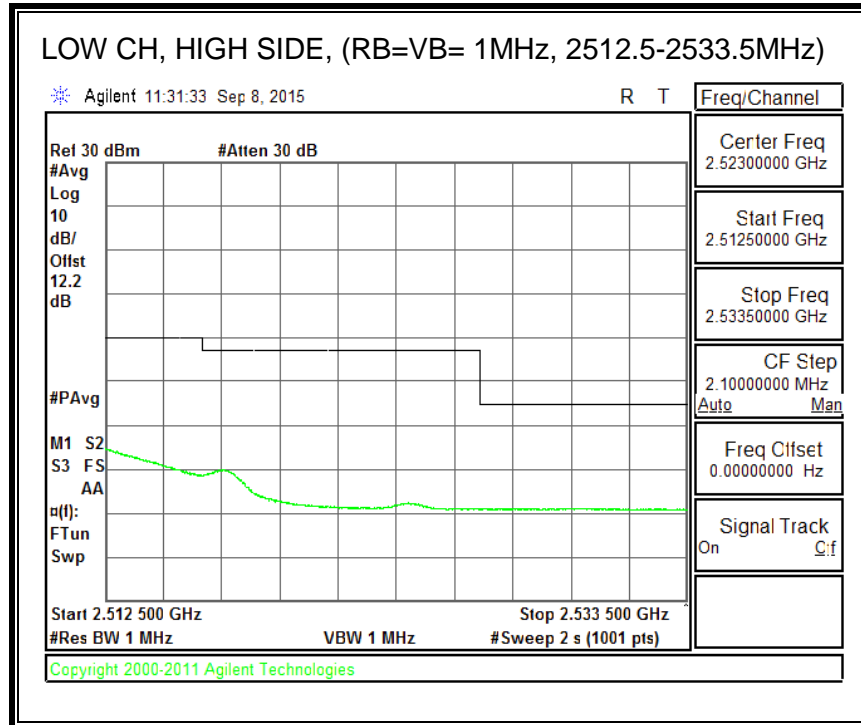


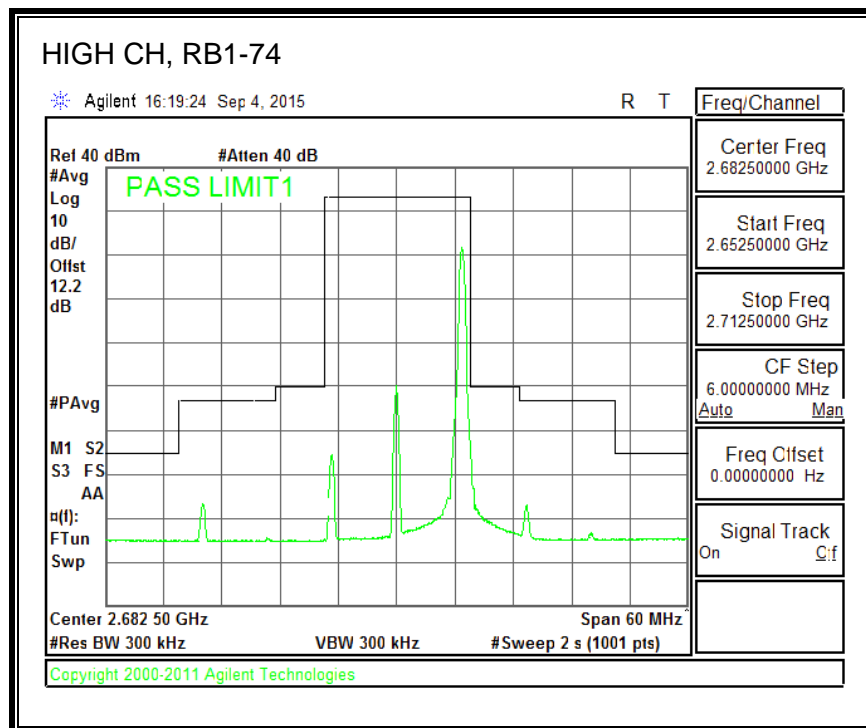
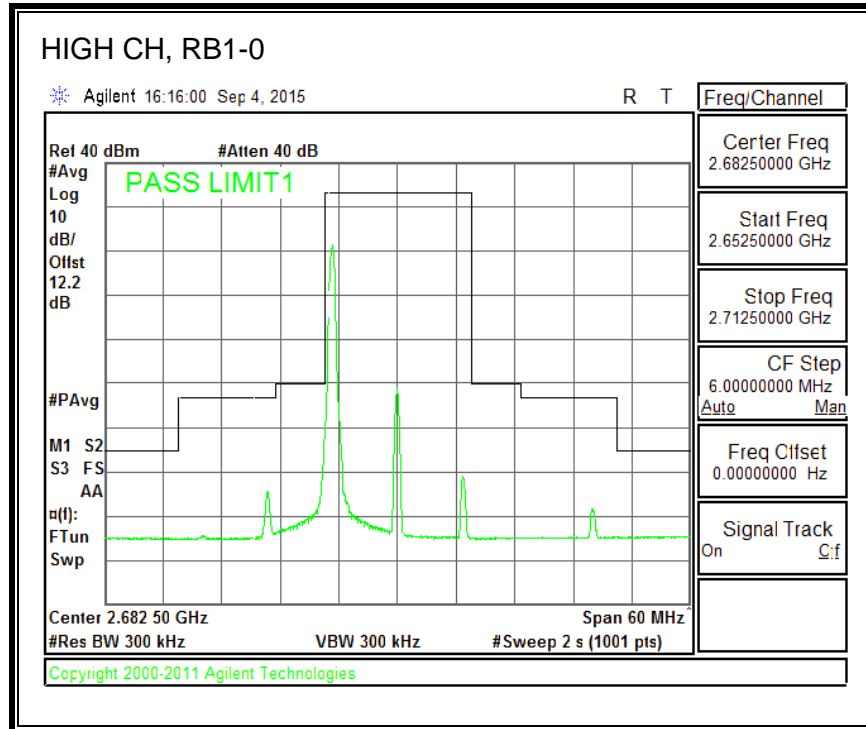
16QAM, (15.0 MHz BAND WIDTH)

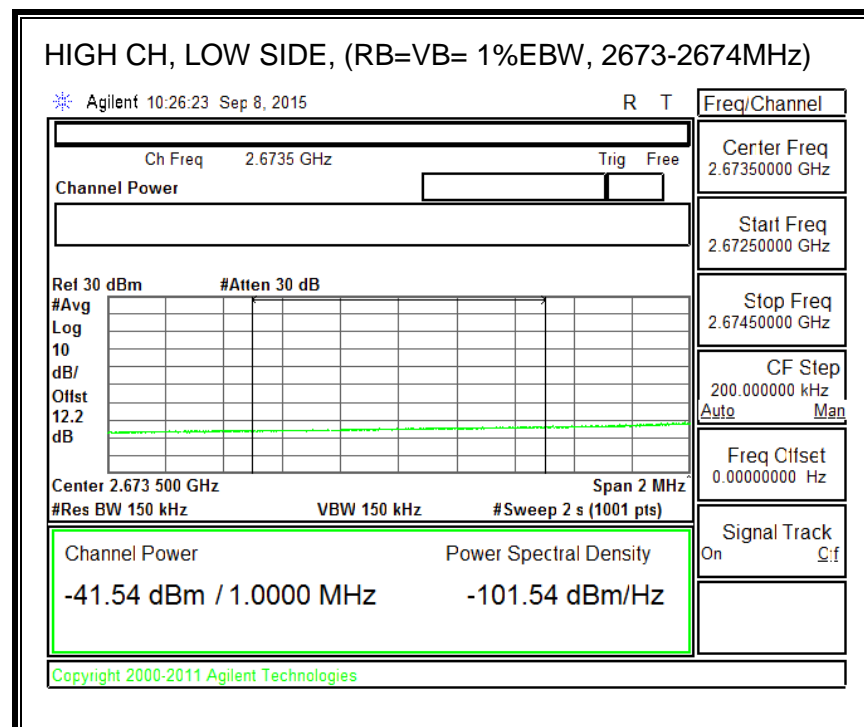
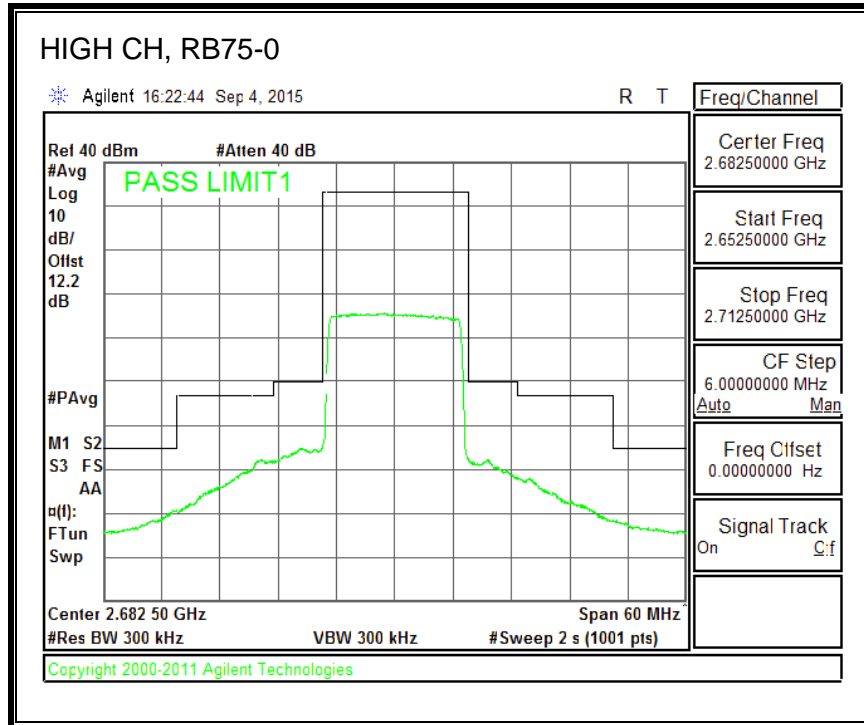


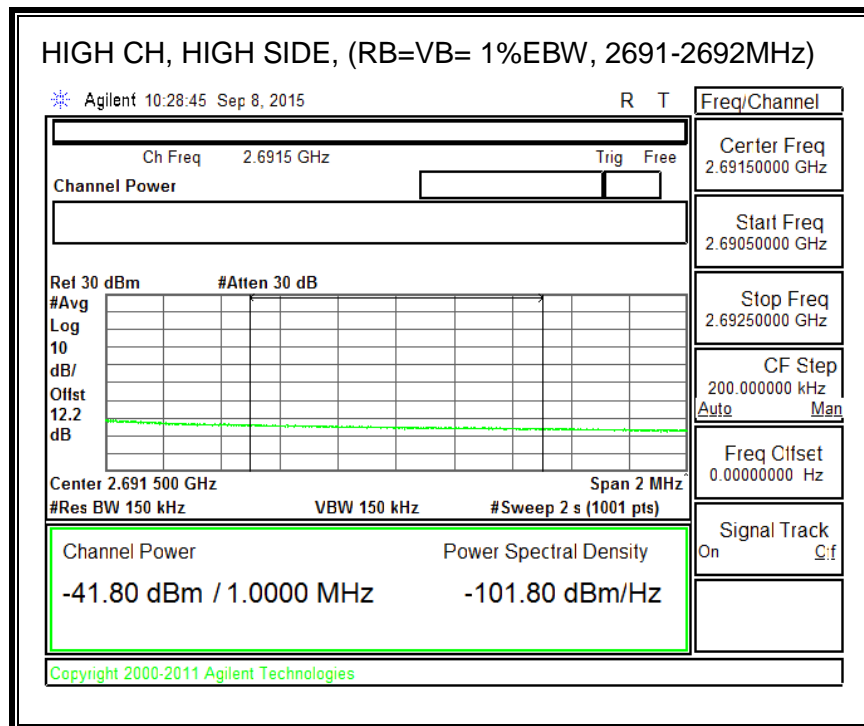
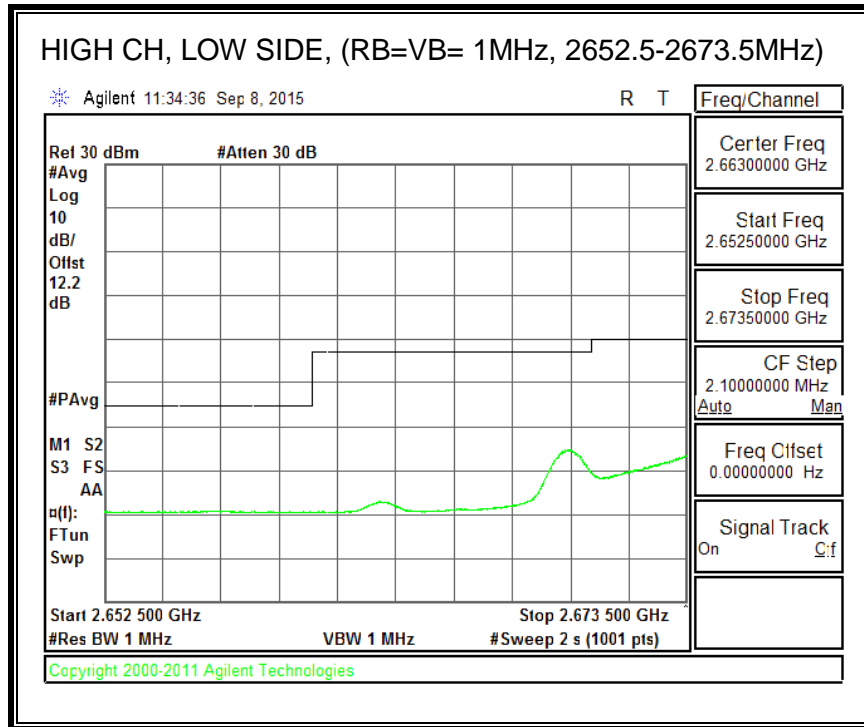


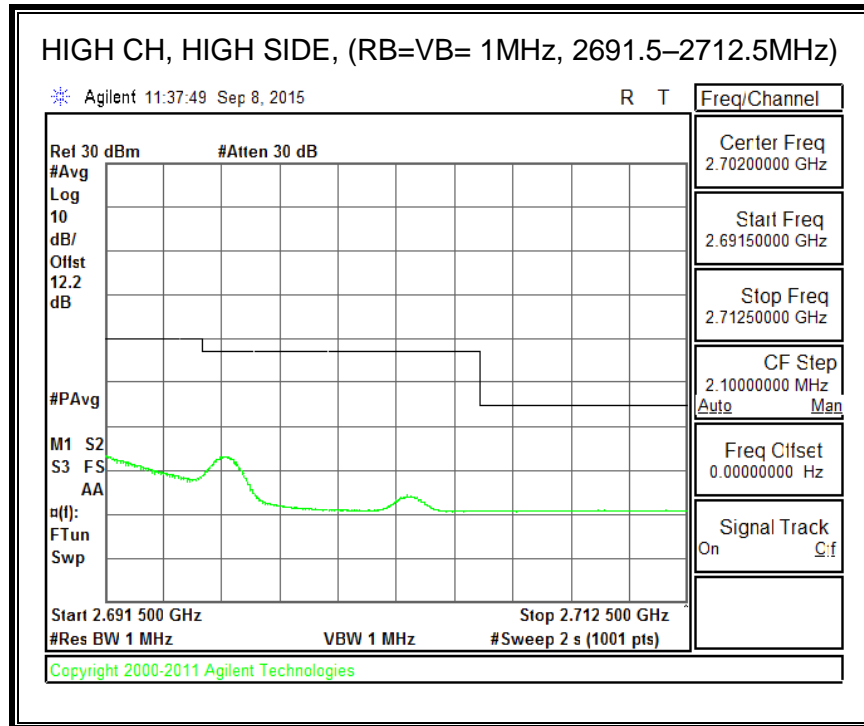




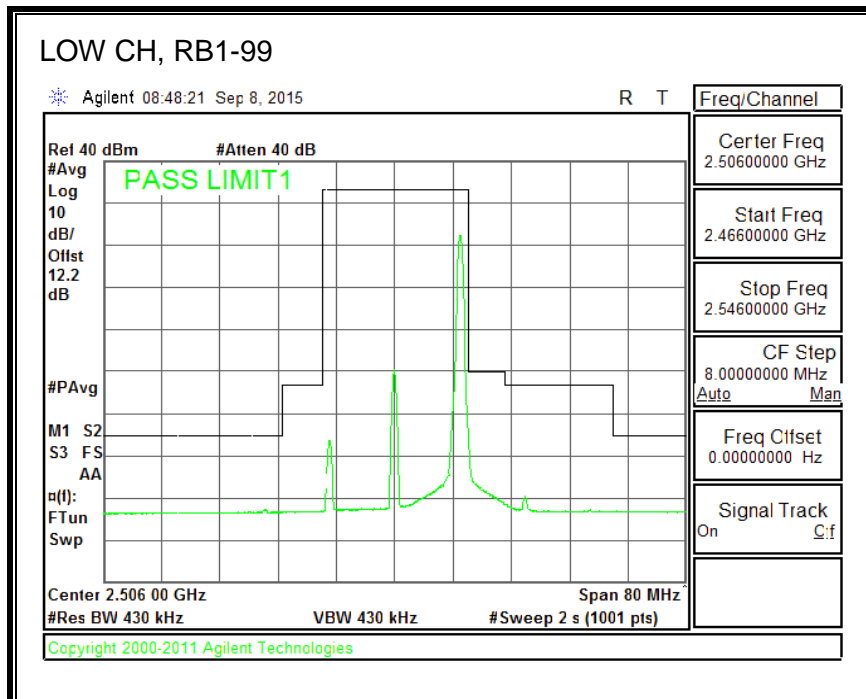
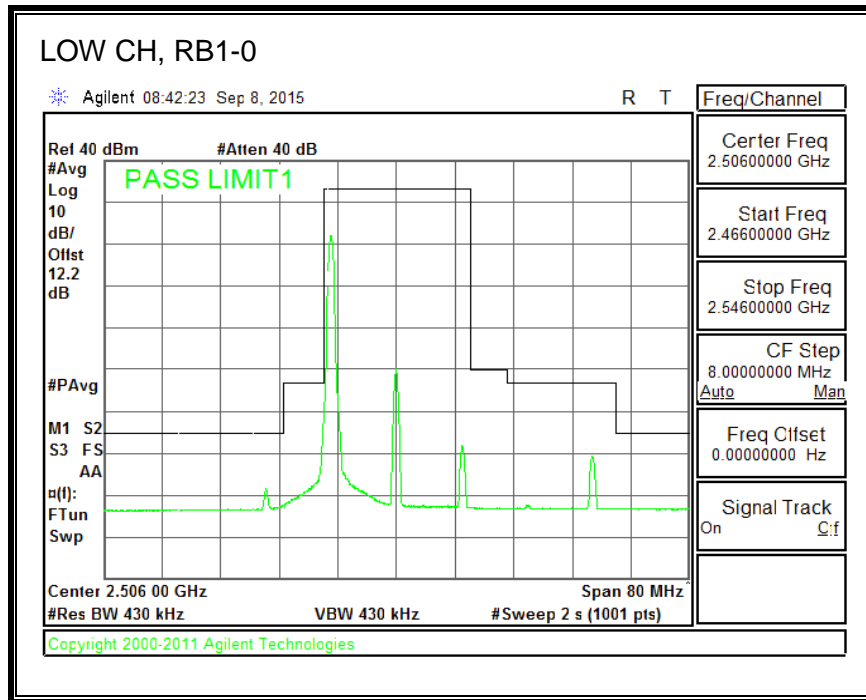


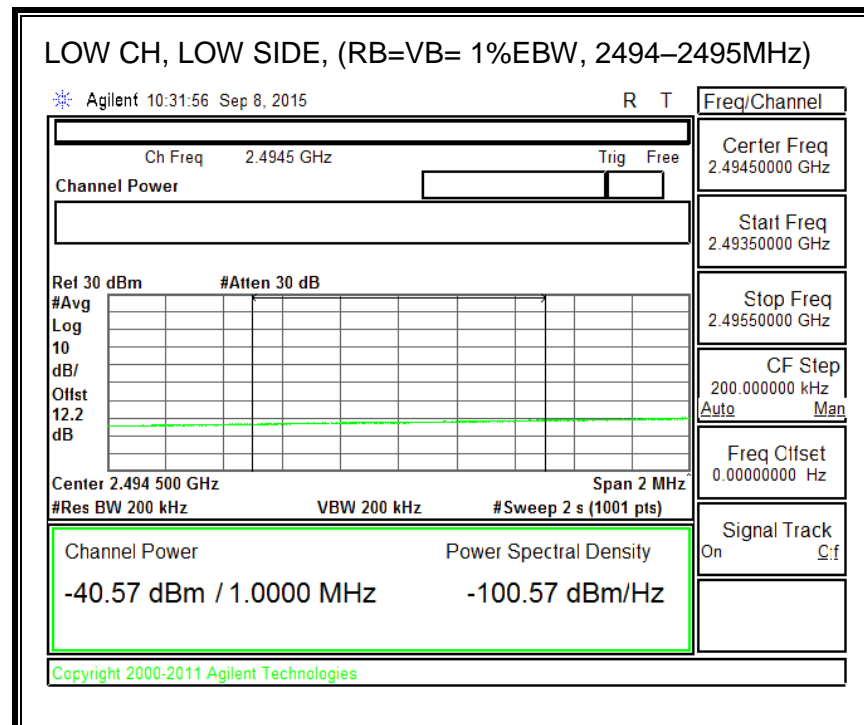
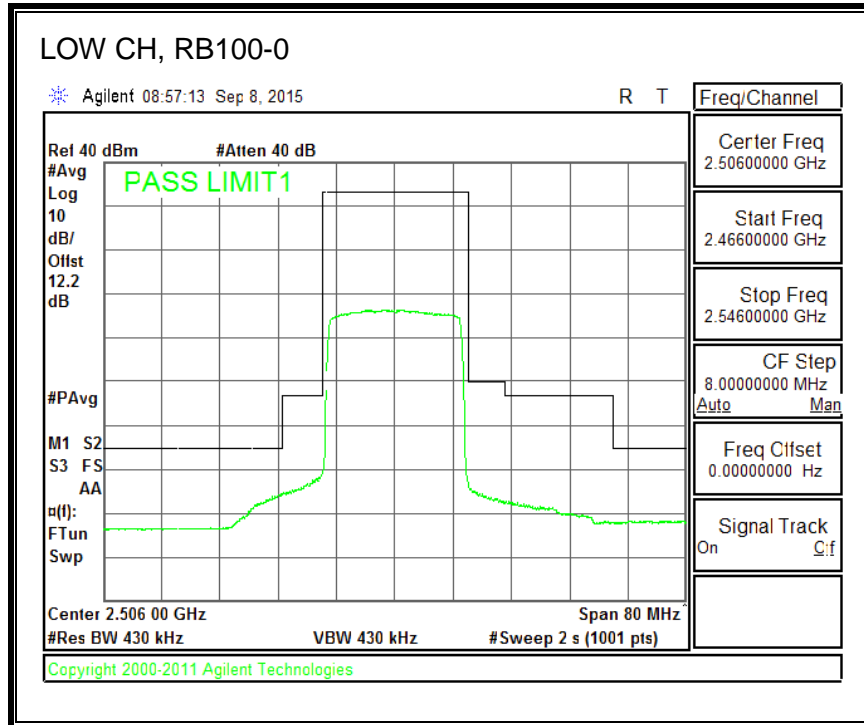


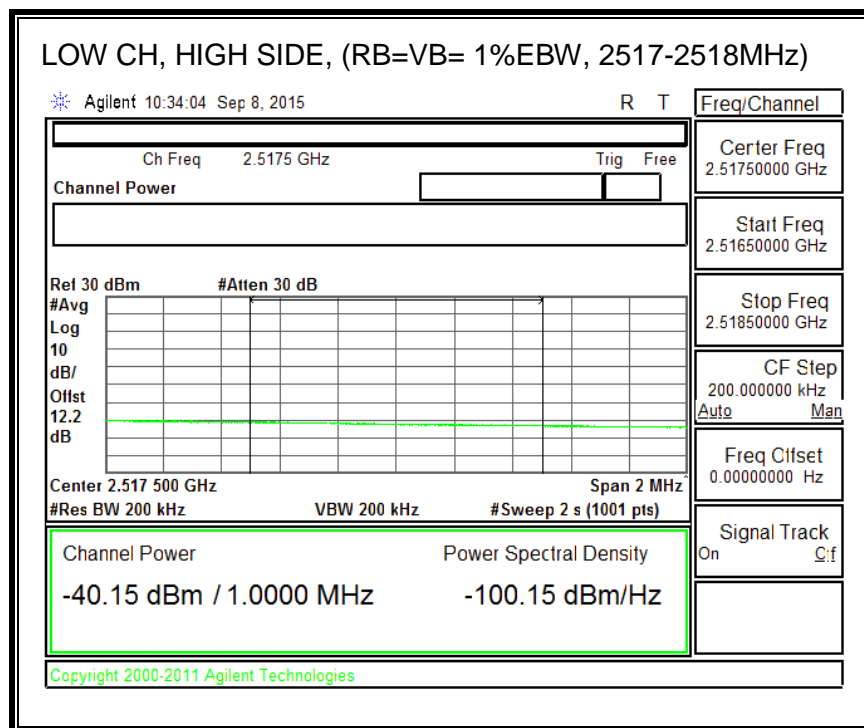
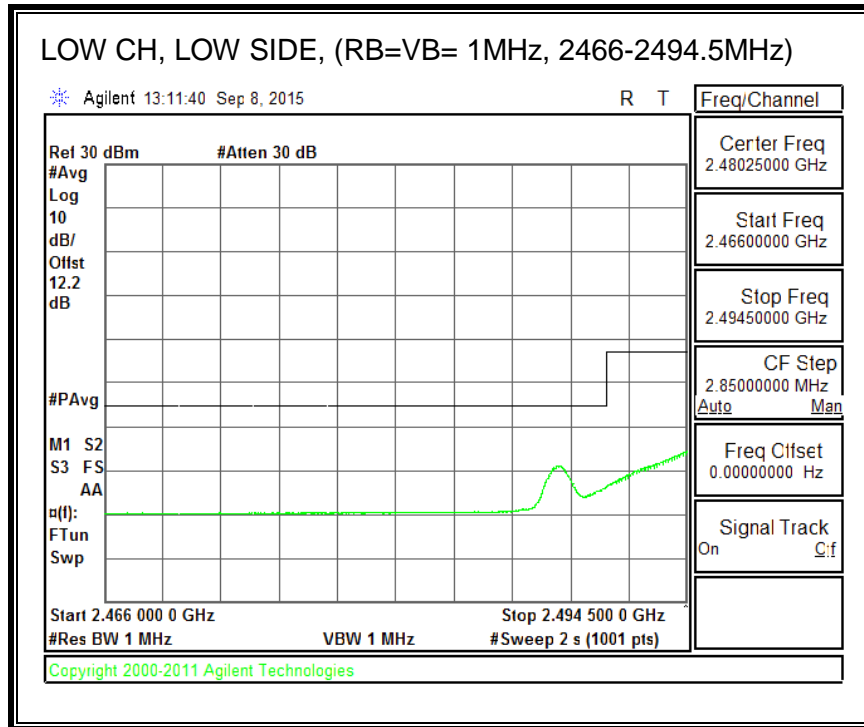


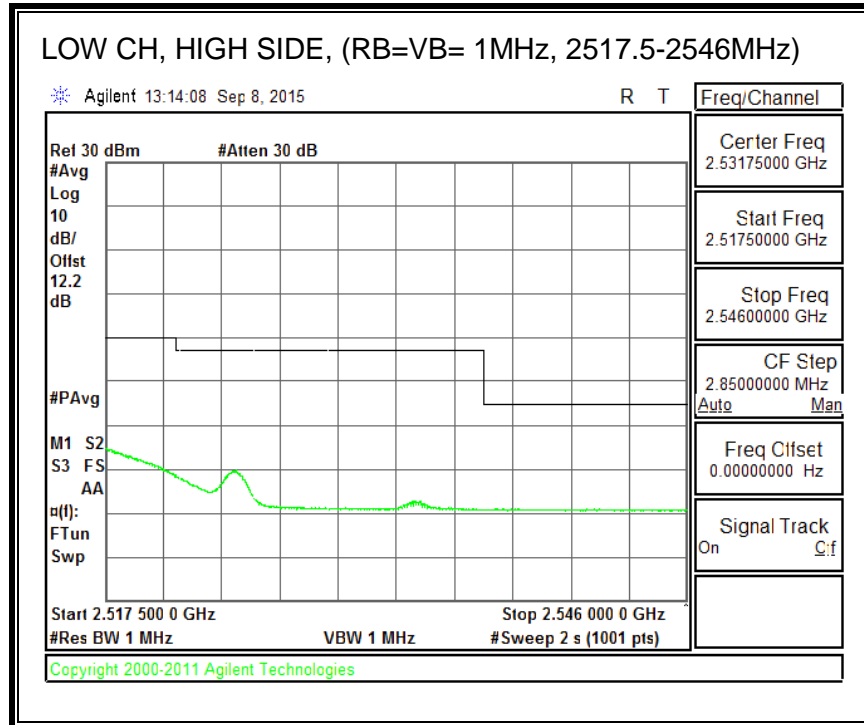


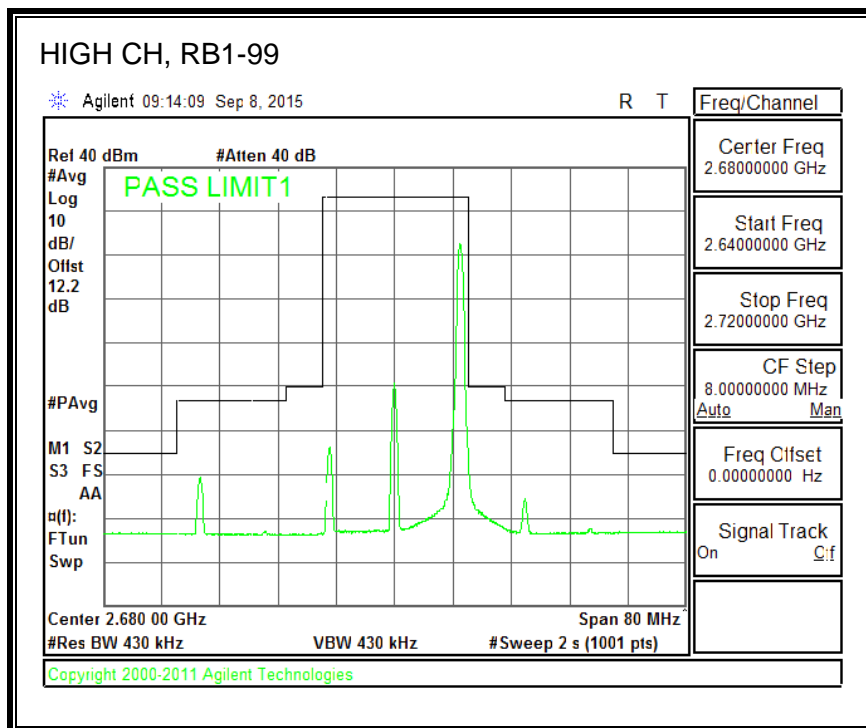
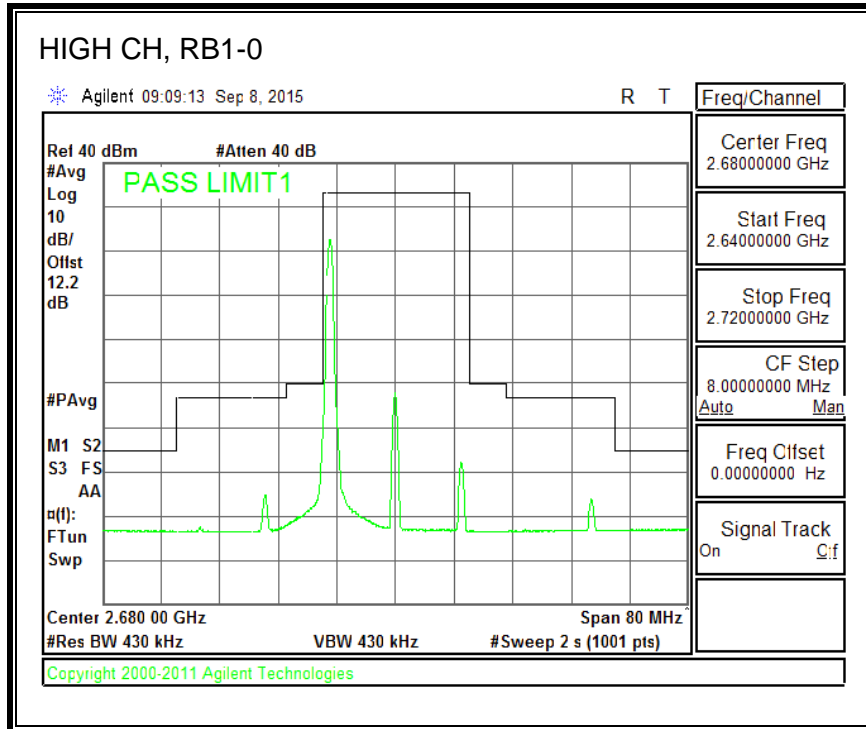
QPSK, (20.0 MHz BAND WIDTH)

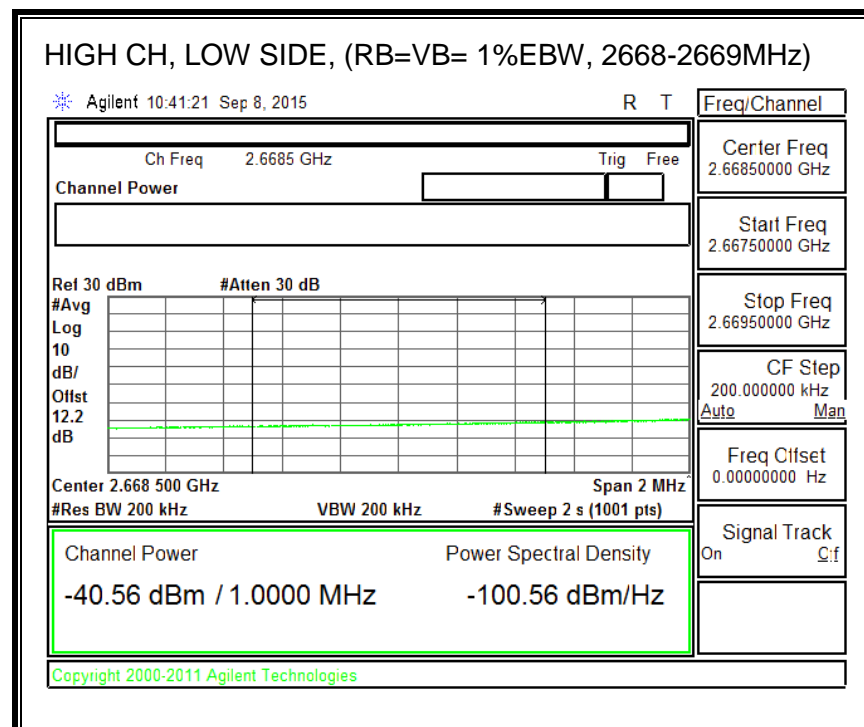
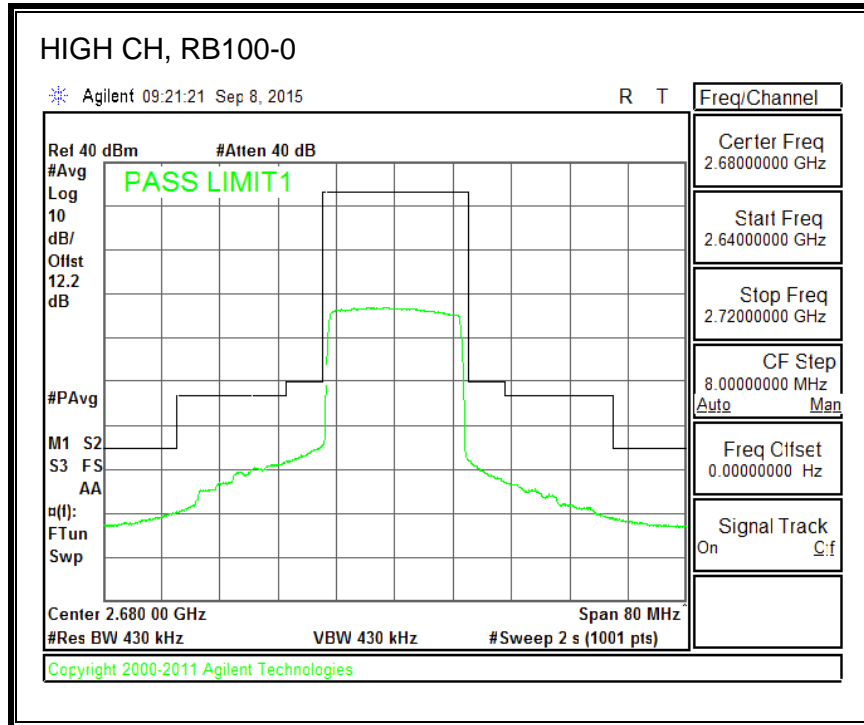


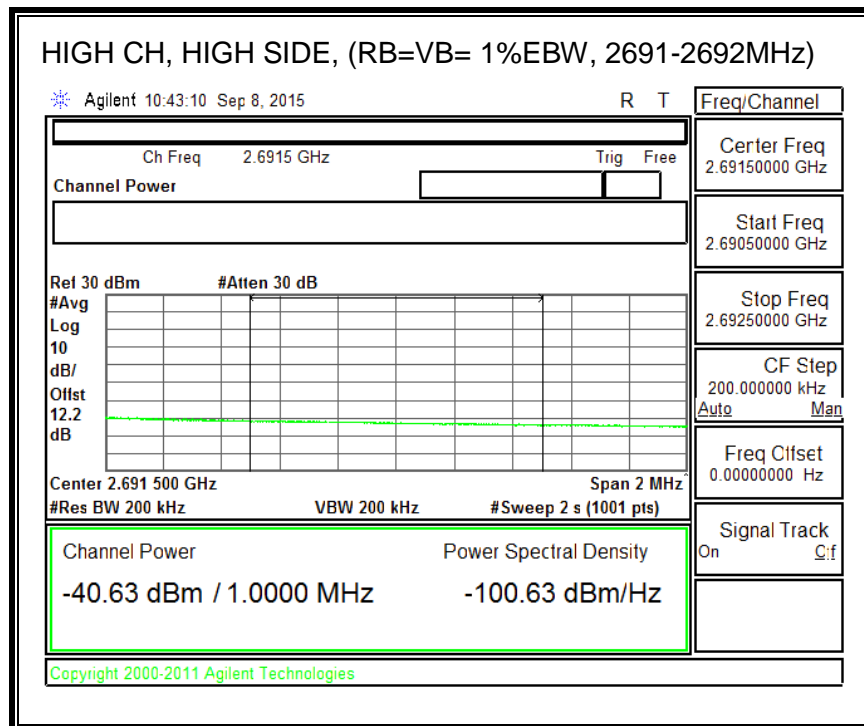
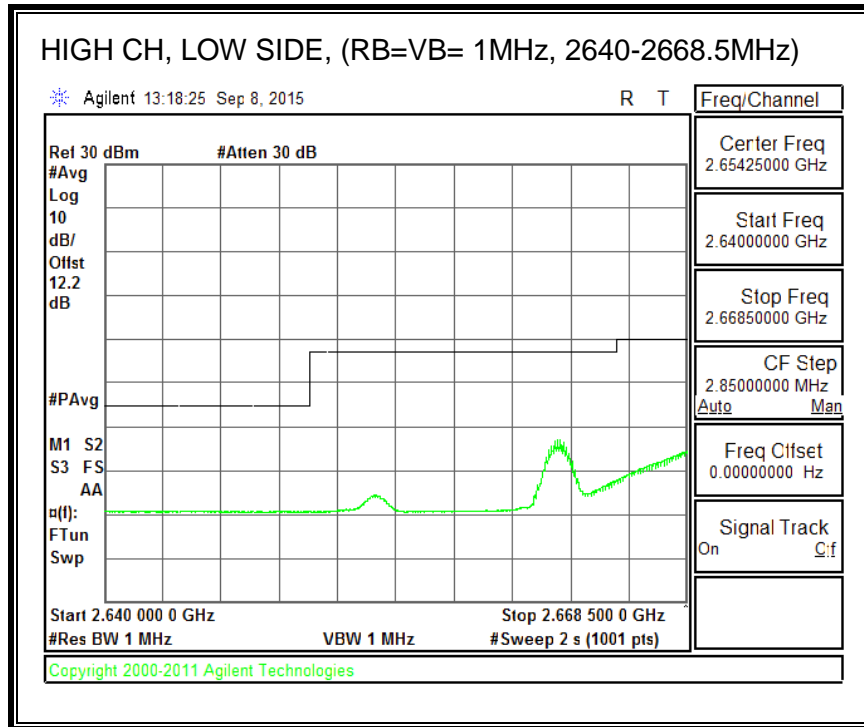


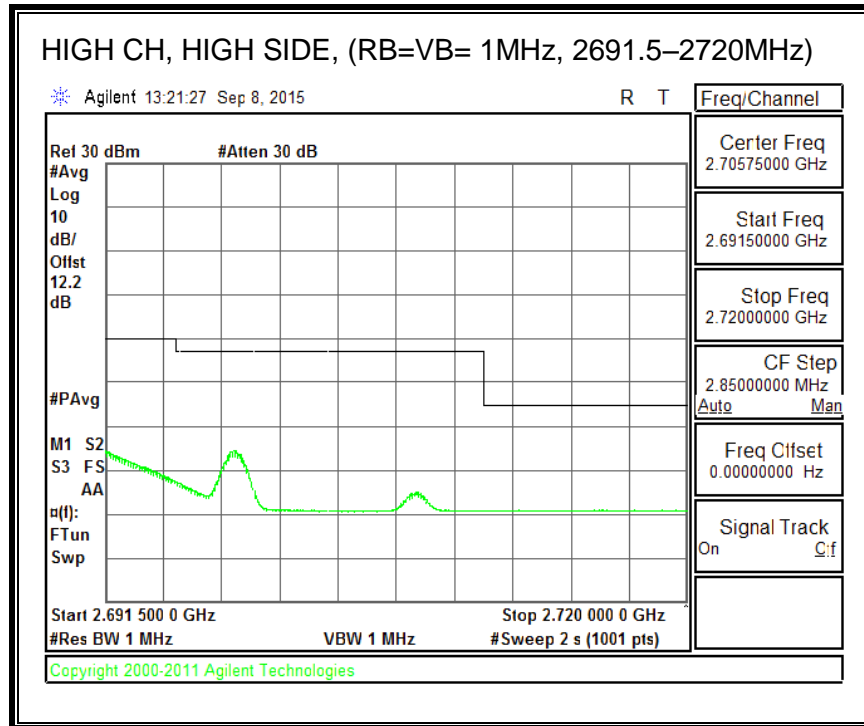




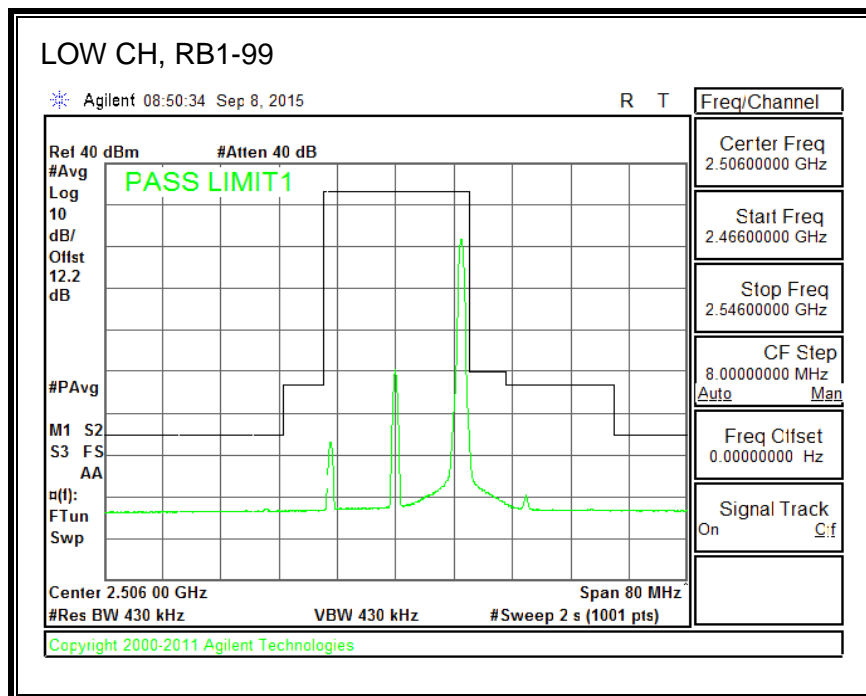
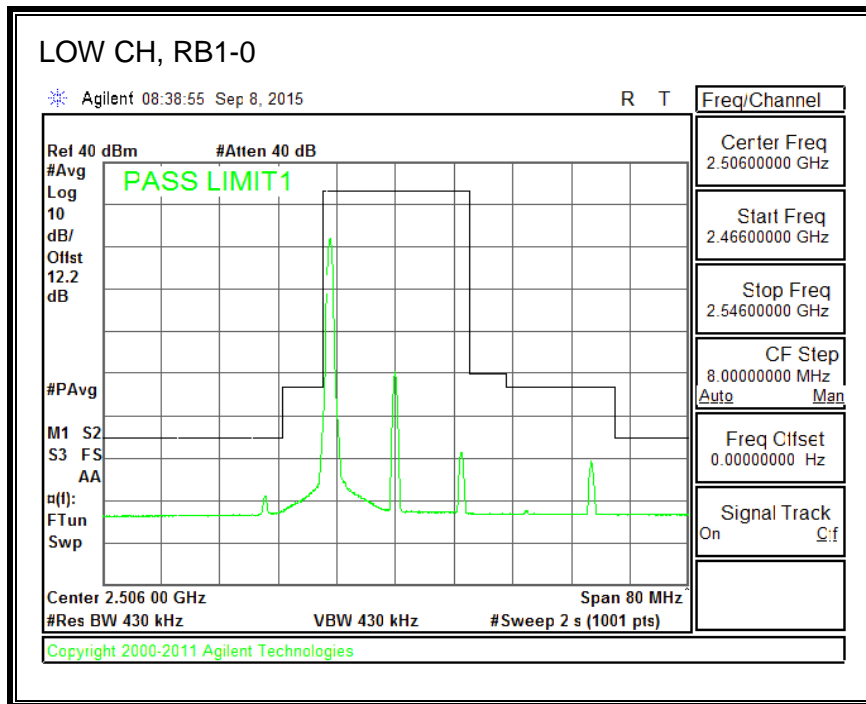


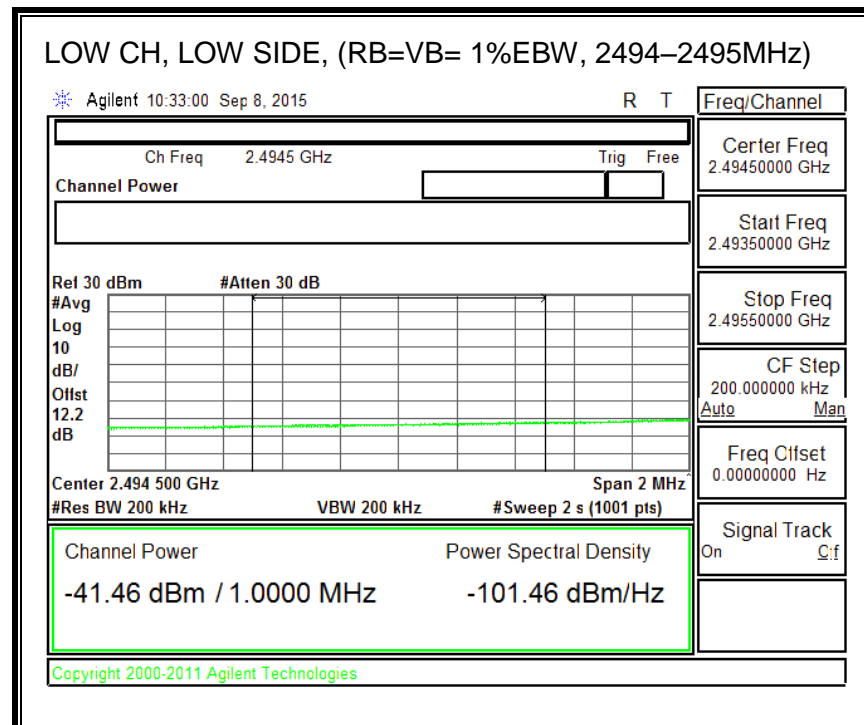
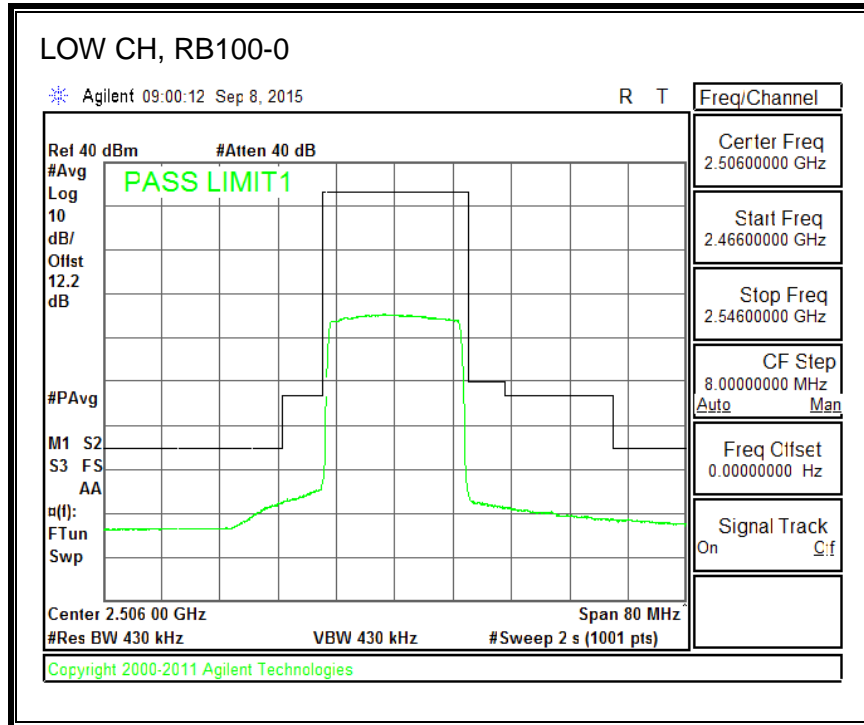


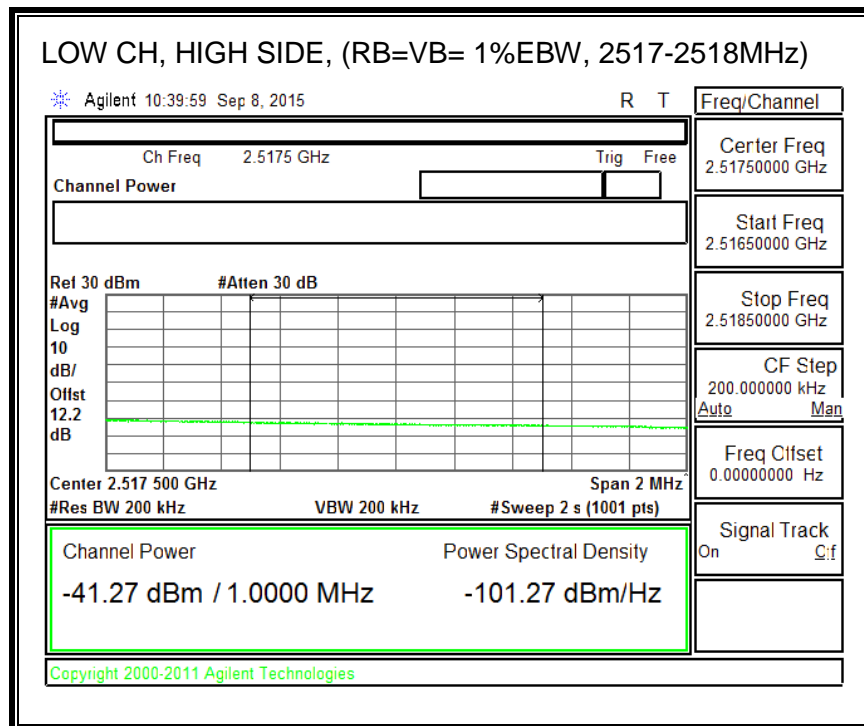
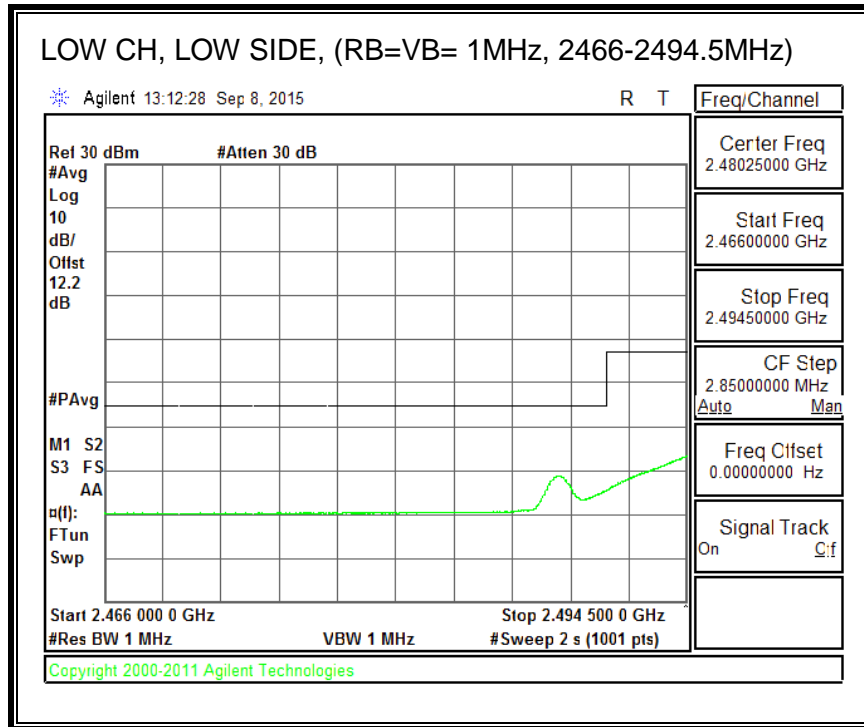


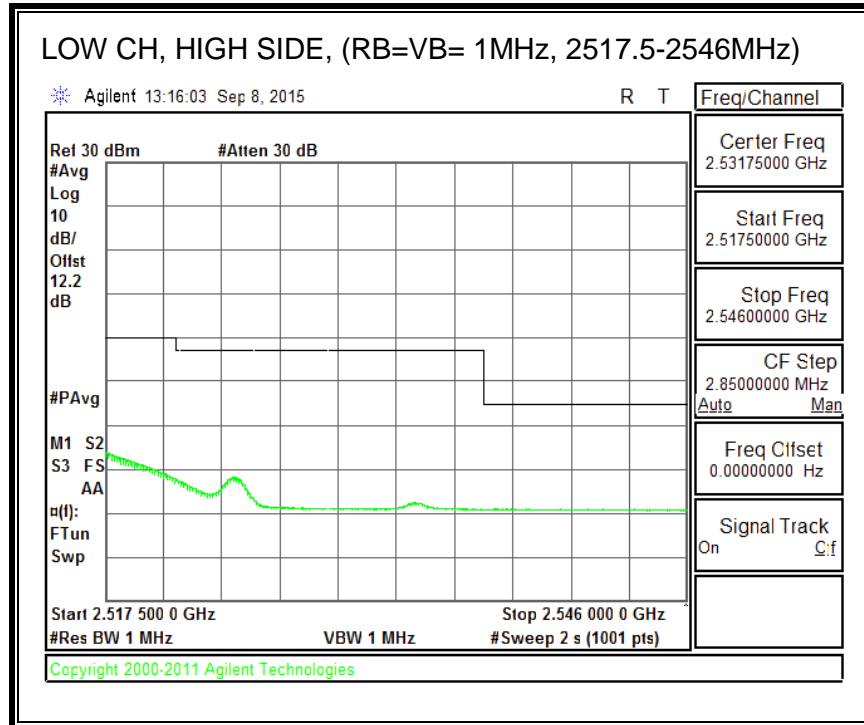


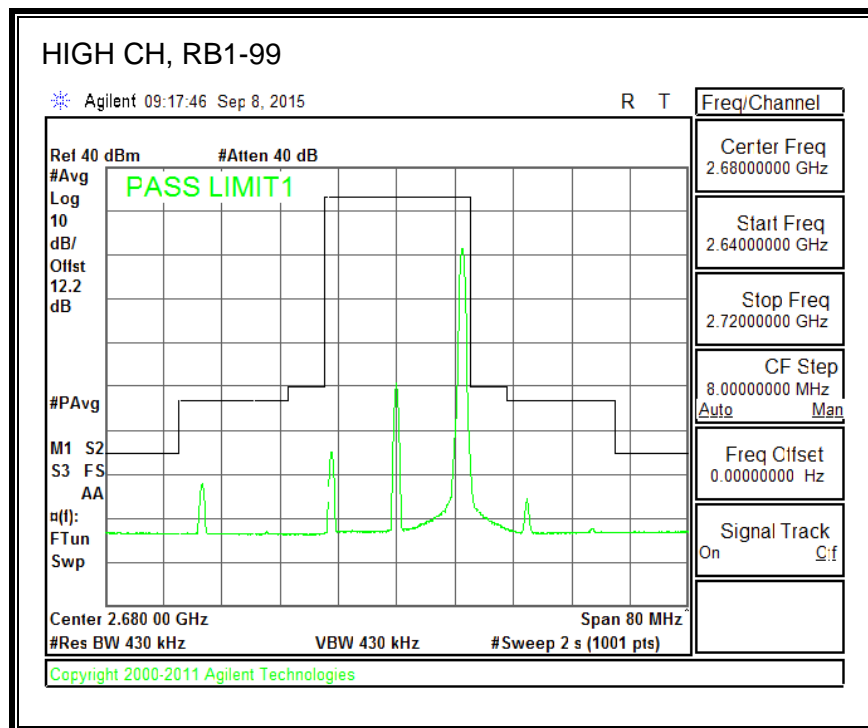
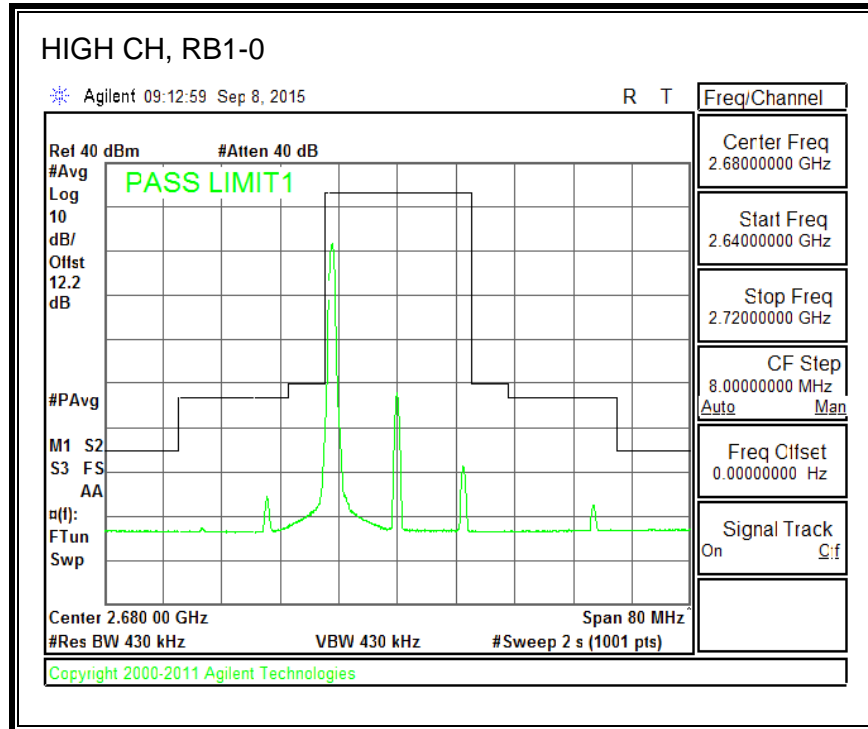
16QAM, (20.0 MHz BAND WIDTH)

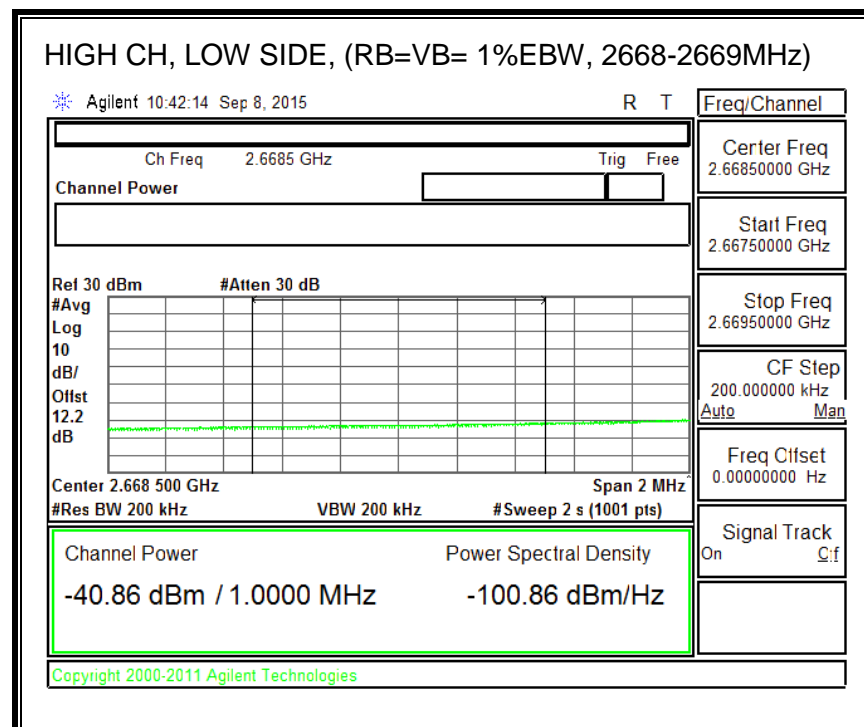
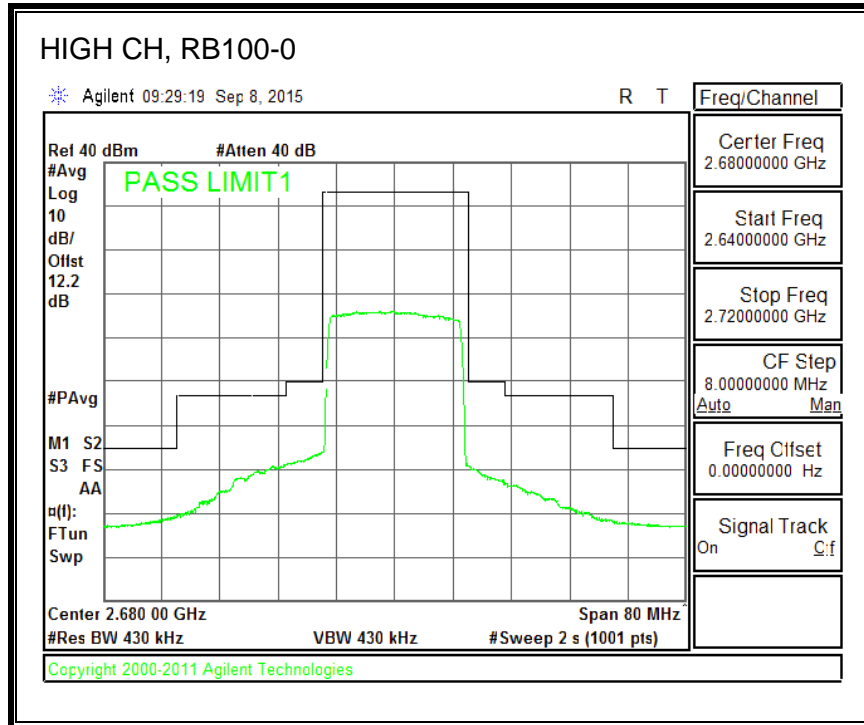


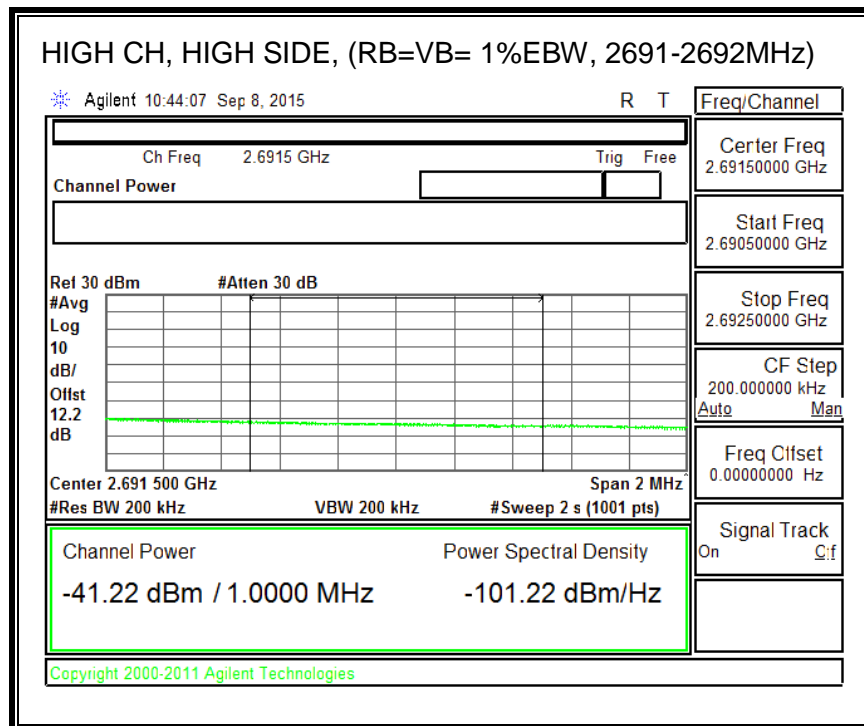
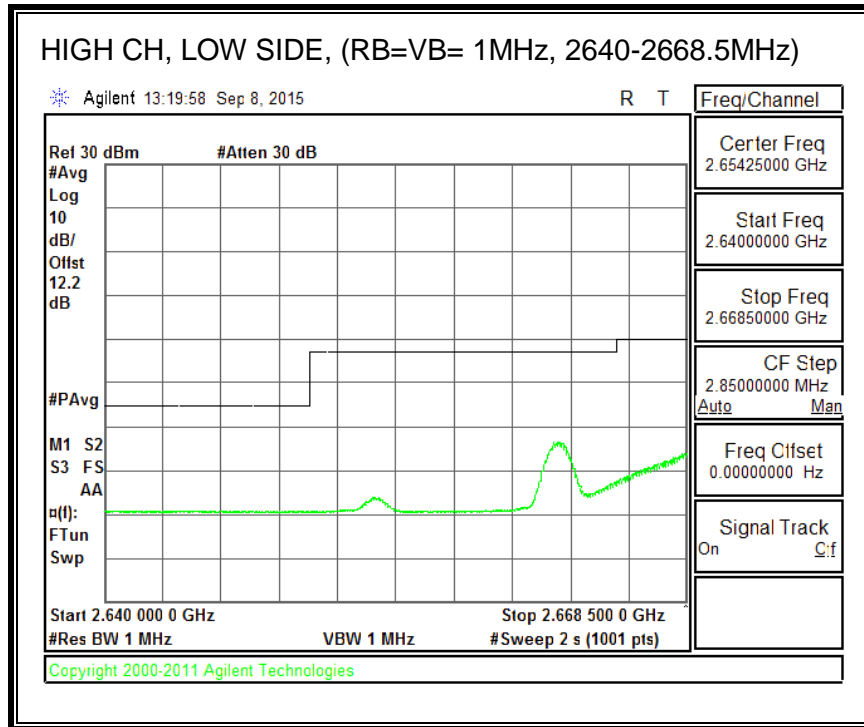


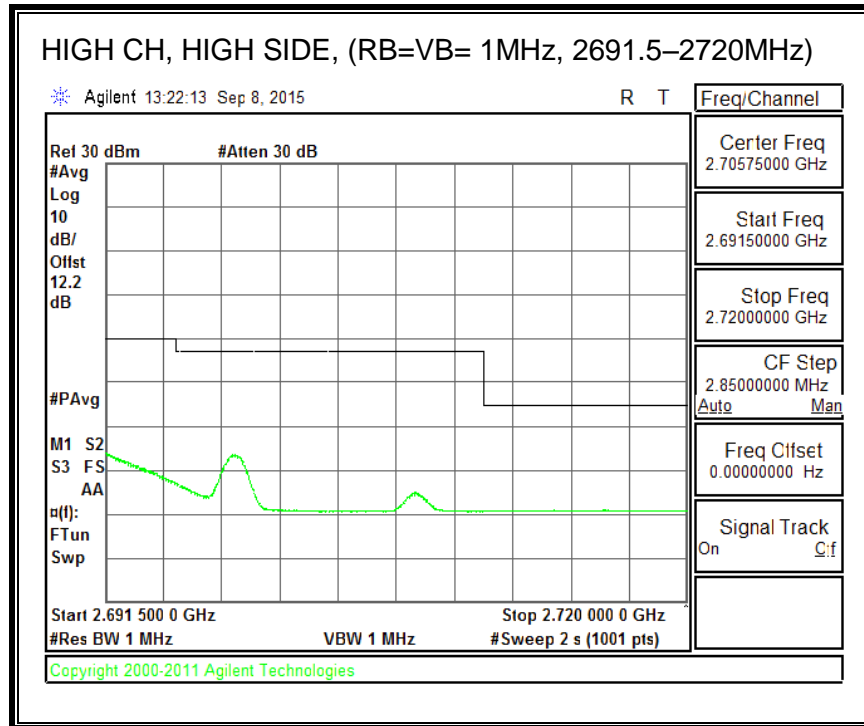












8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27.53

LIMITS

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.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

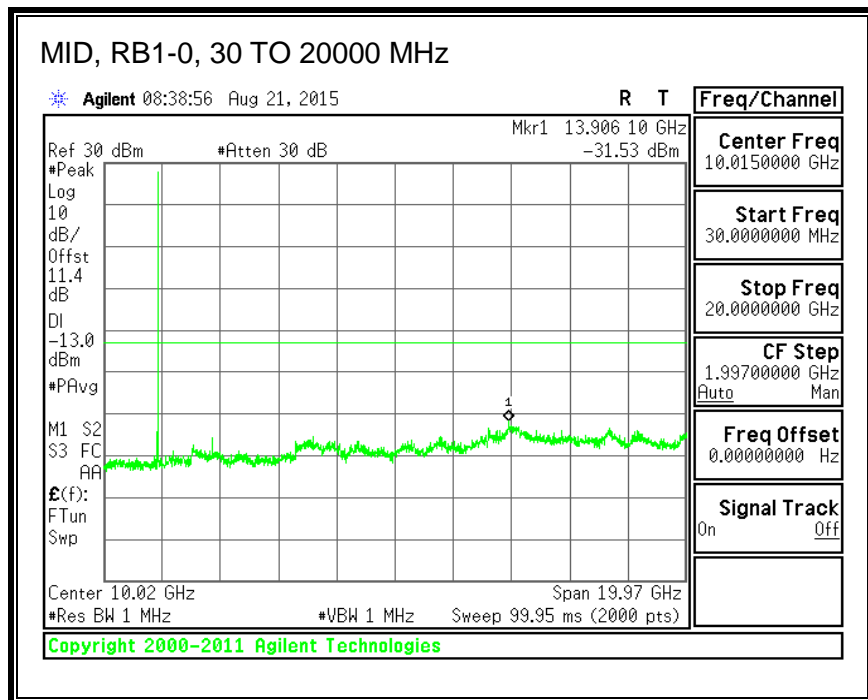
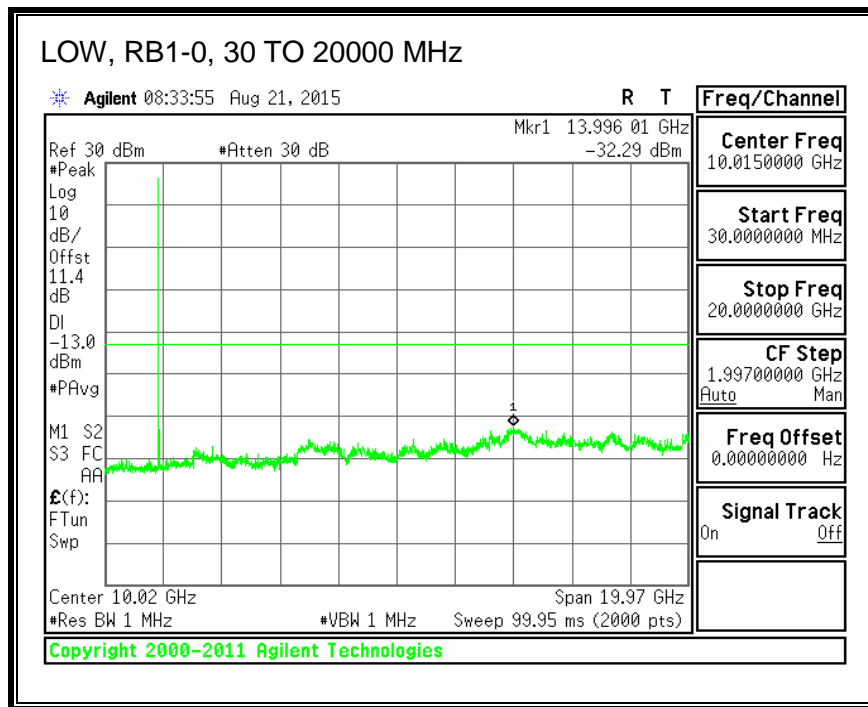
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

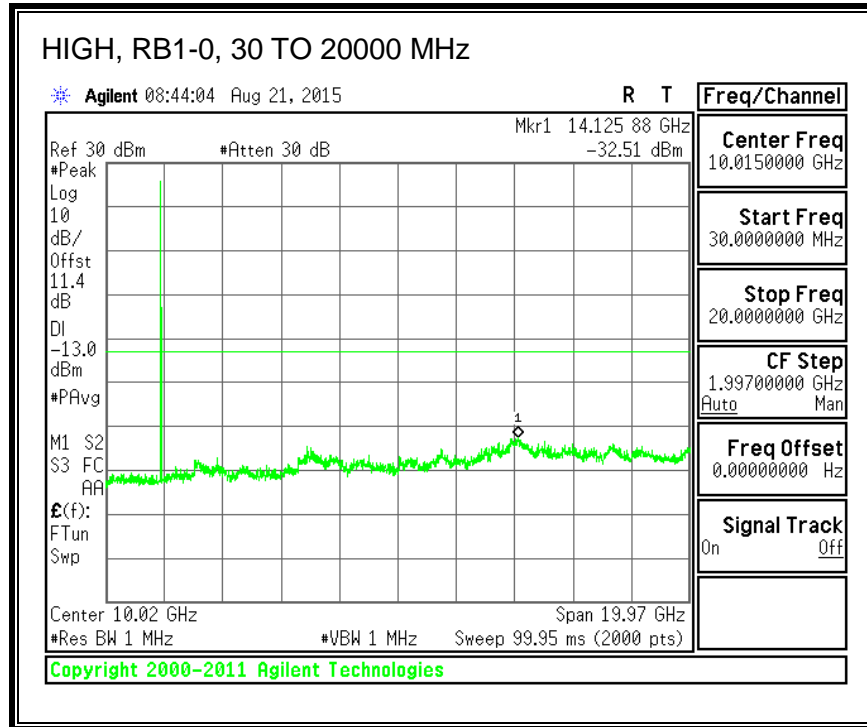
MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 41

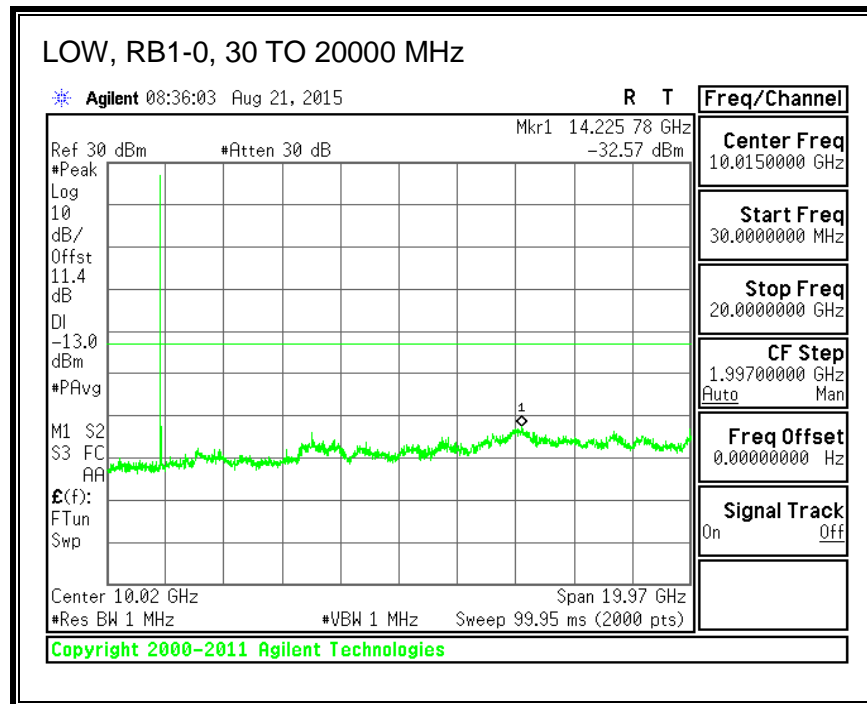
8.3.1. LTE BAND 2

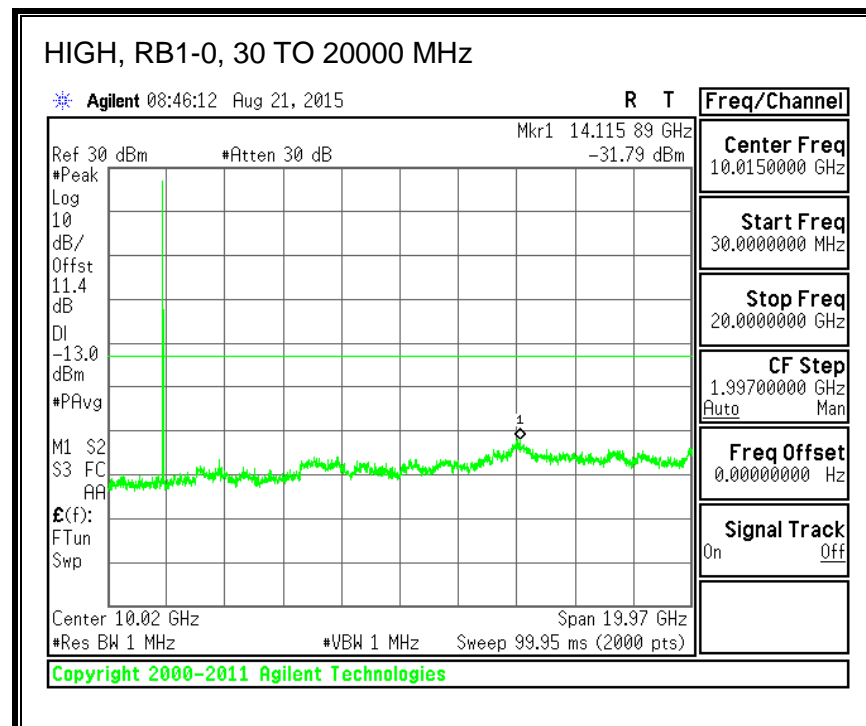
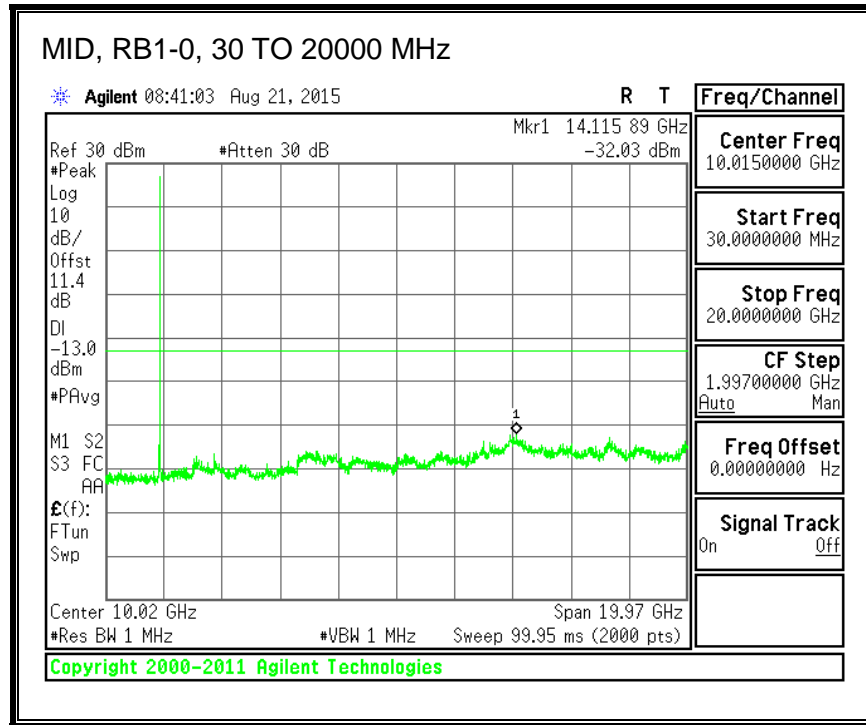
QPSK, (1.4 MHz BAND WIDTH)



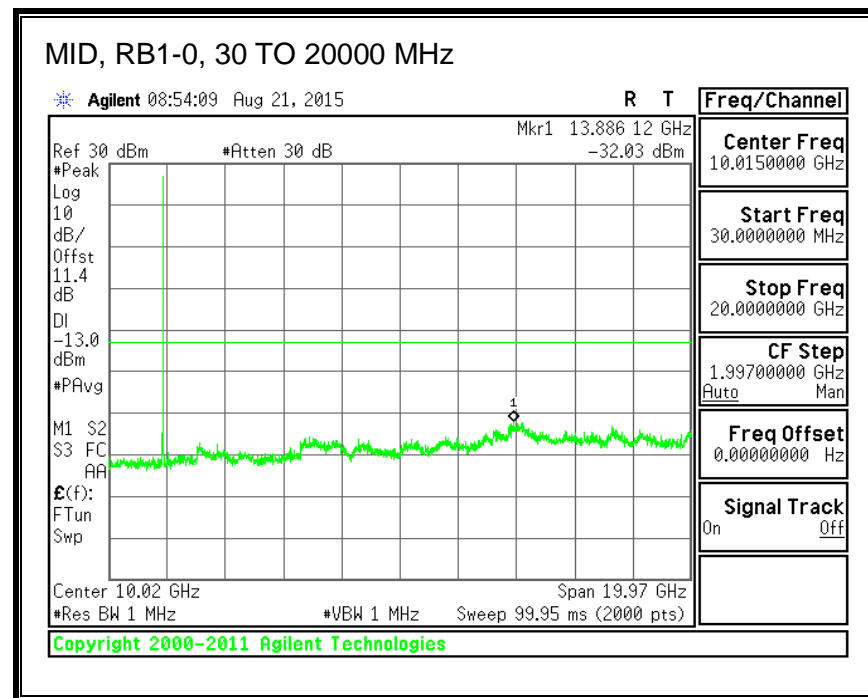
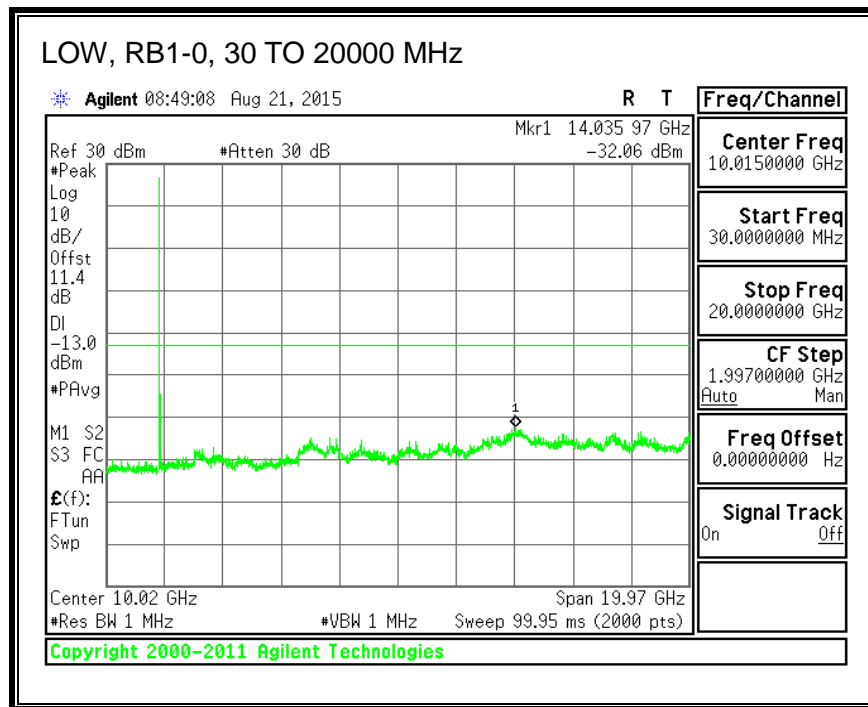


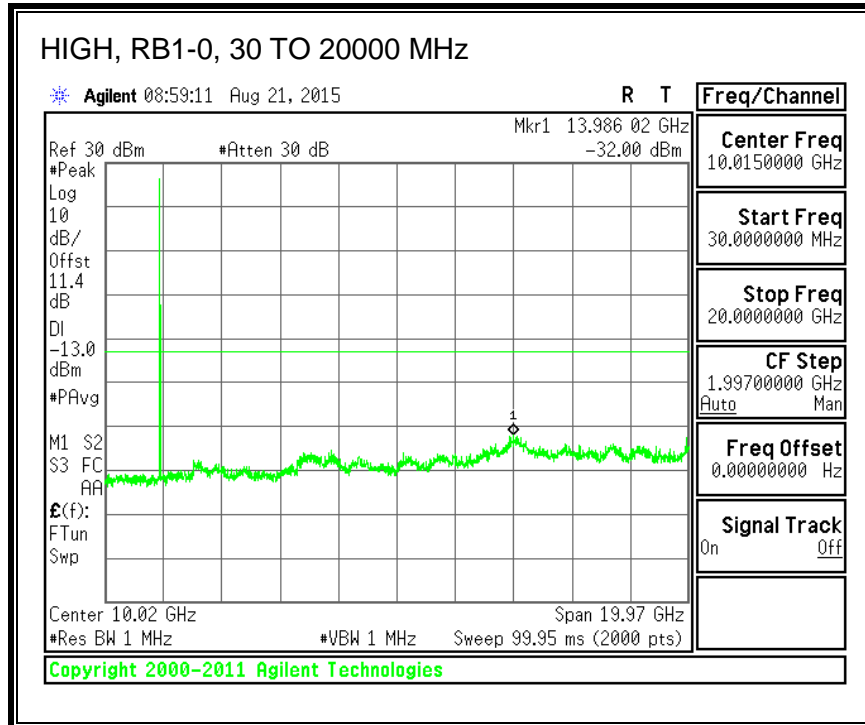
16QAM, (1.4 MHz BAND WIDTH)



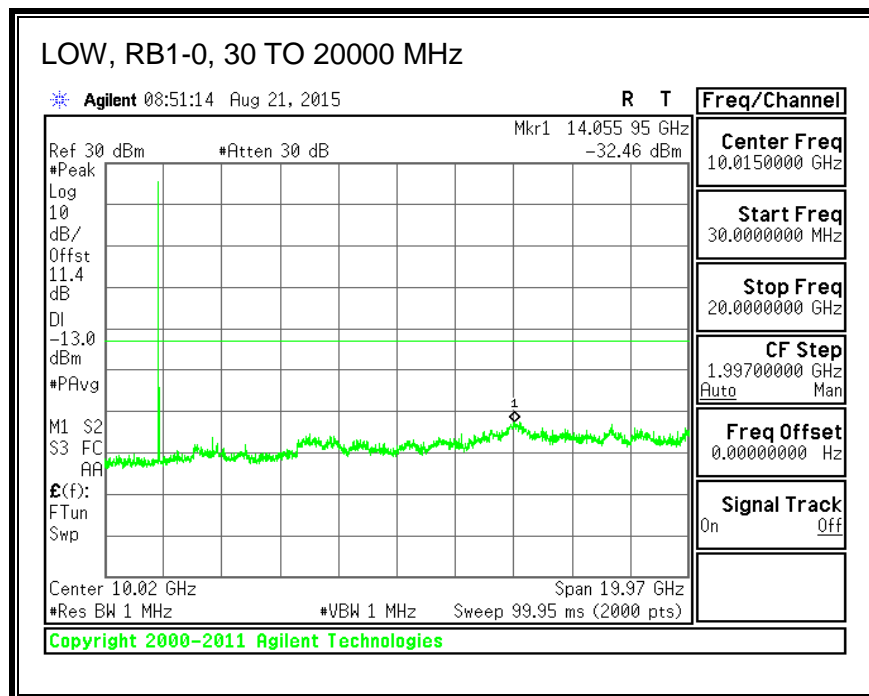


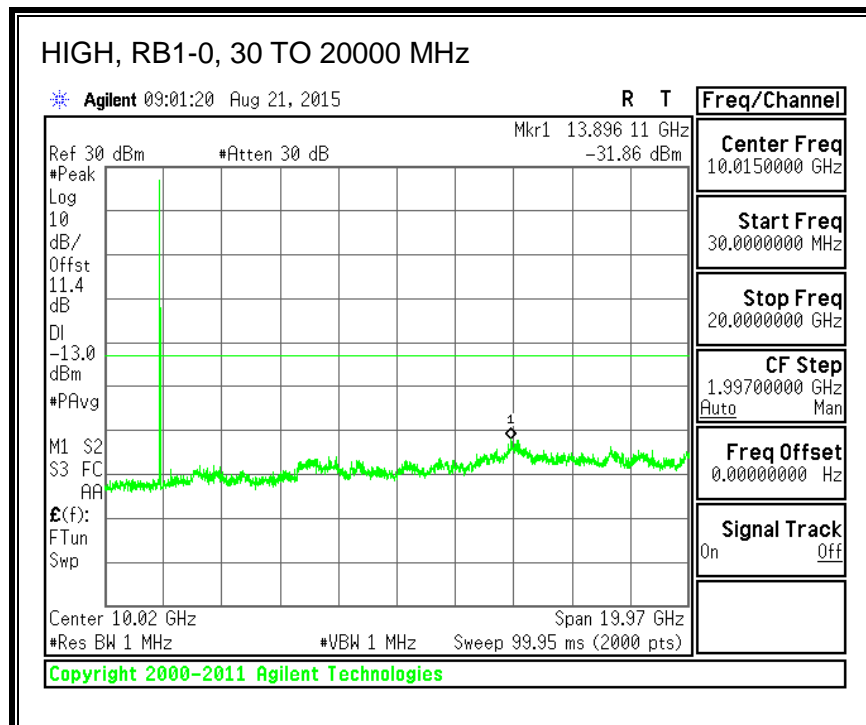
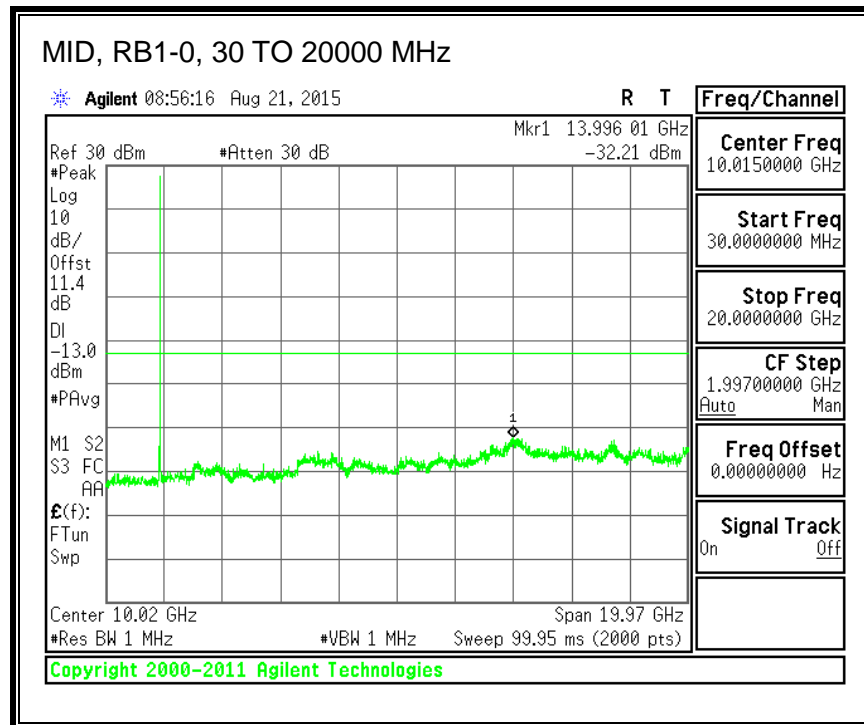
QPSK, (3.0 MHz BAND WIDTH)



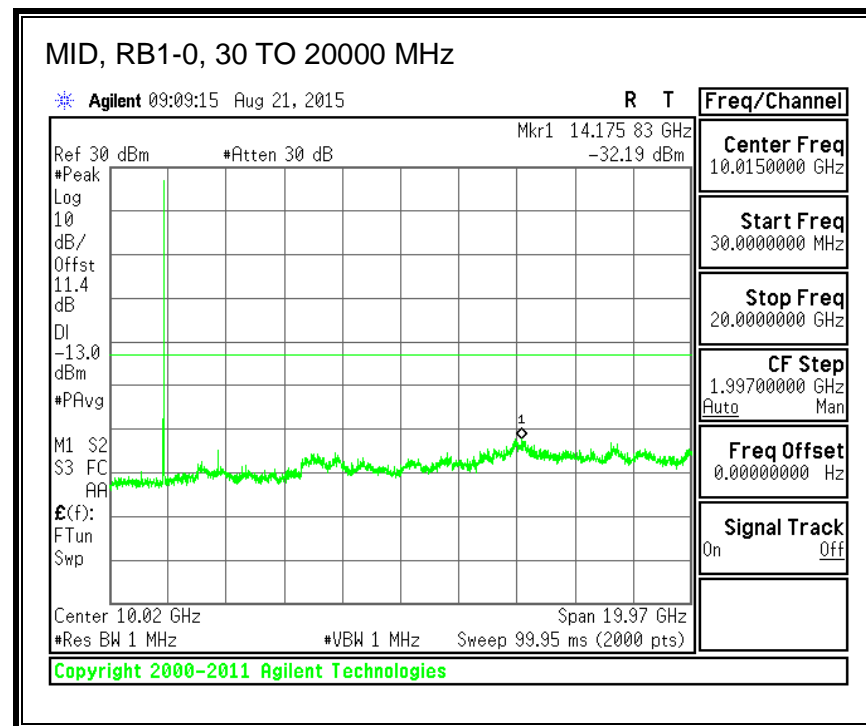
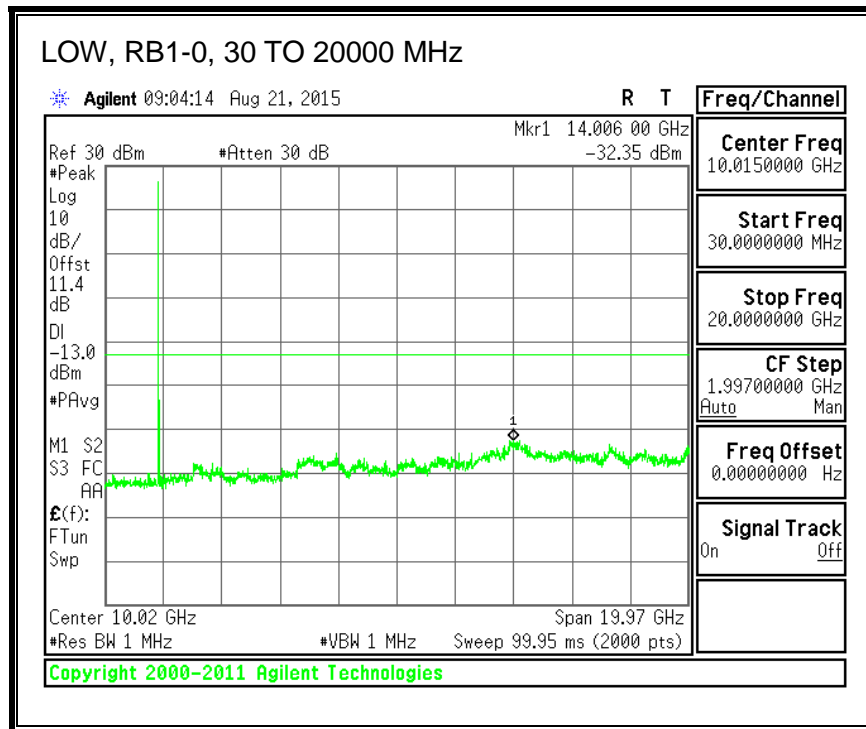


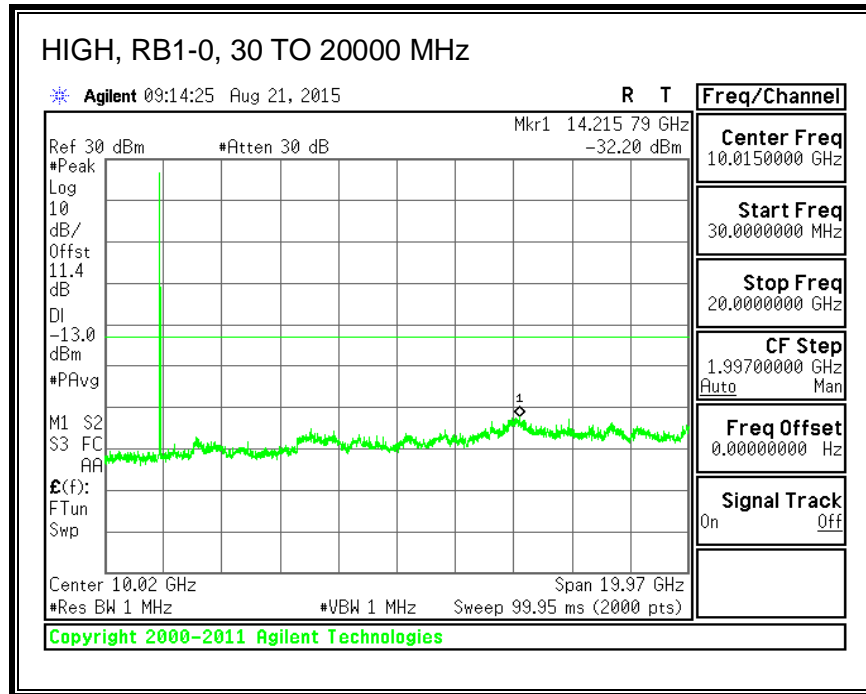
16QAM, (3.0 MHz BAND WIDTH)



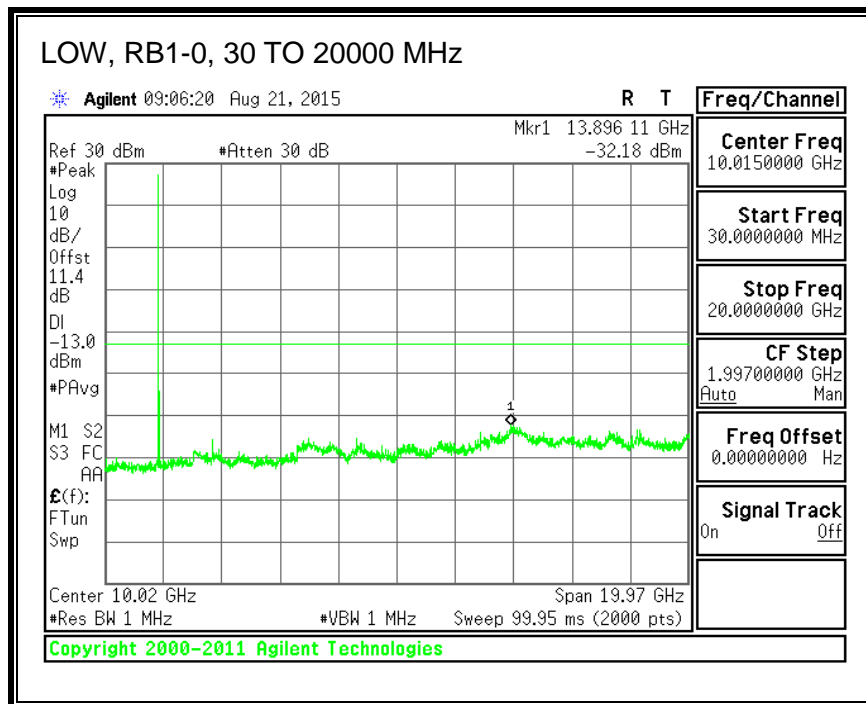


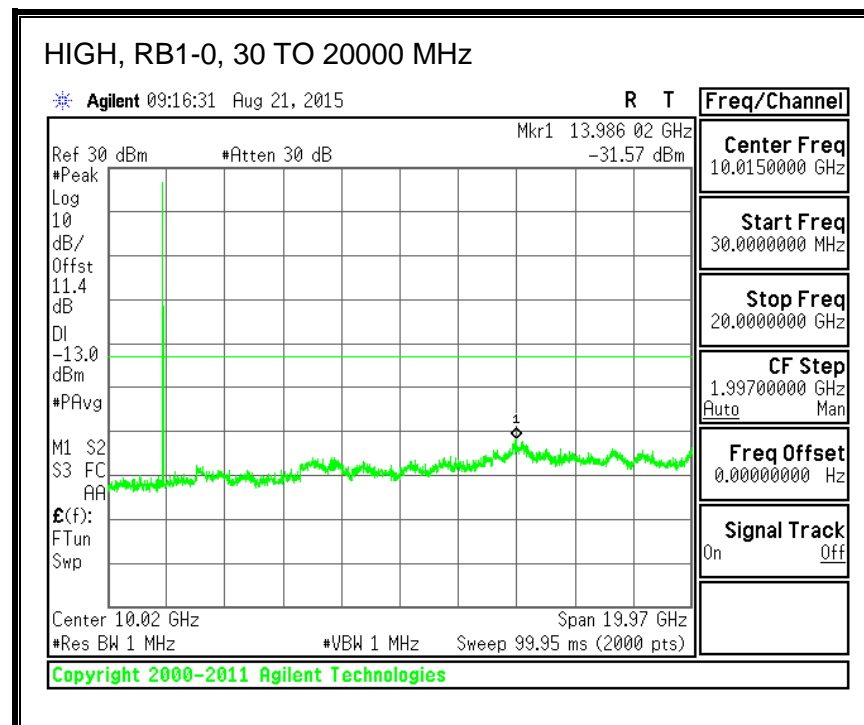
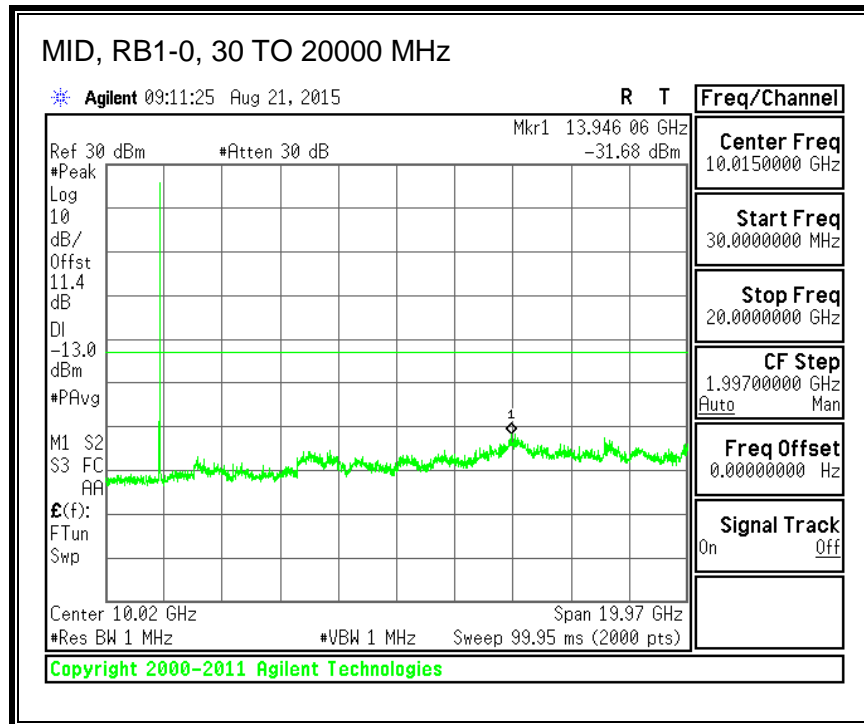
QPSK, (5.0 MHz BAND WIDTH)



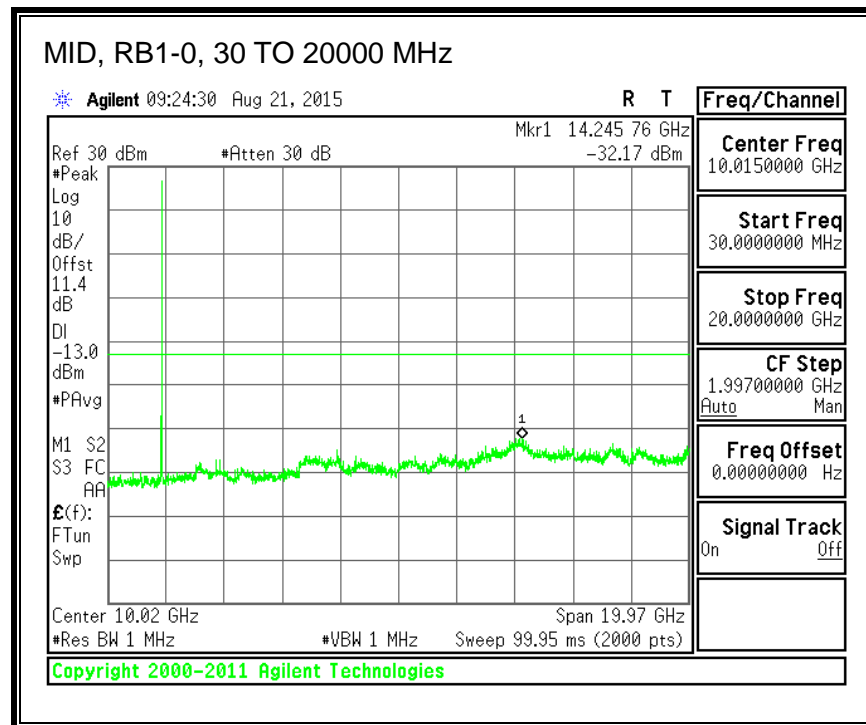
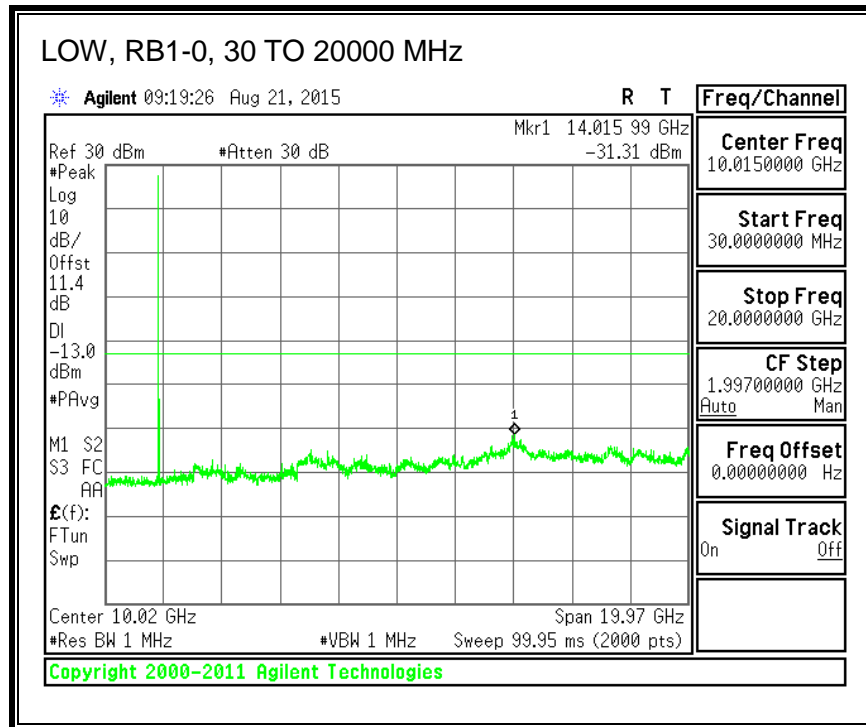


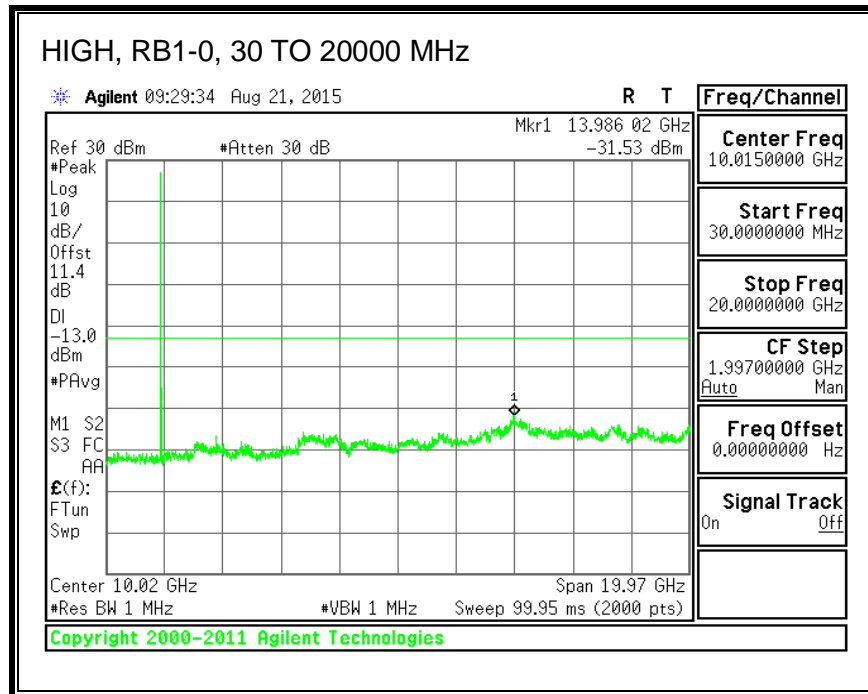
16QAM, (5.0 MHz BAND WIDTH)



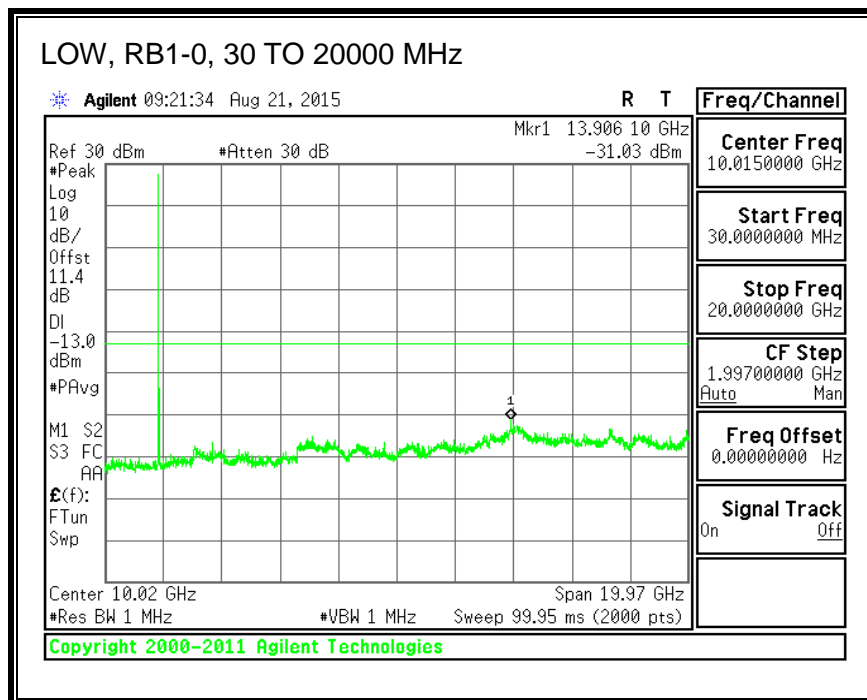


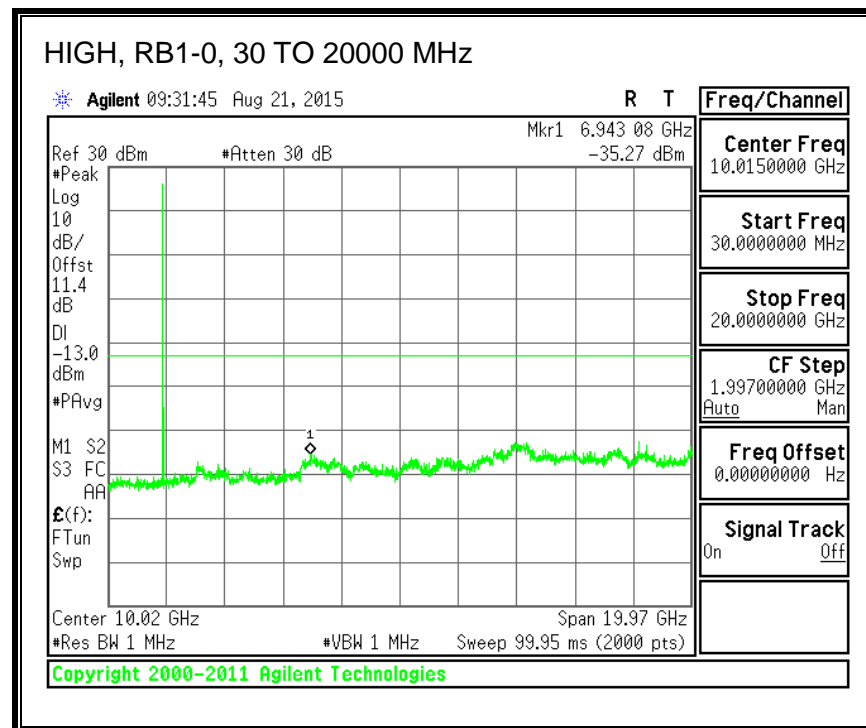
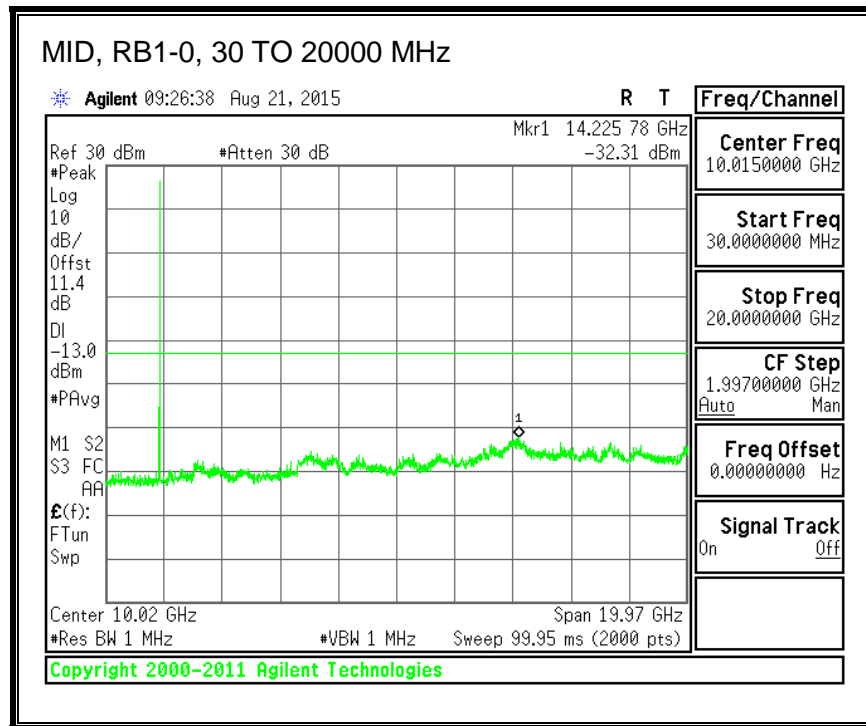
QPSK, (10.0 MHz BAND WIDTH)



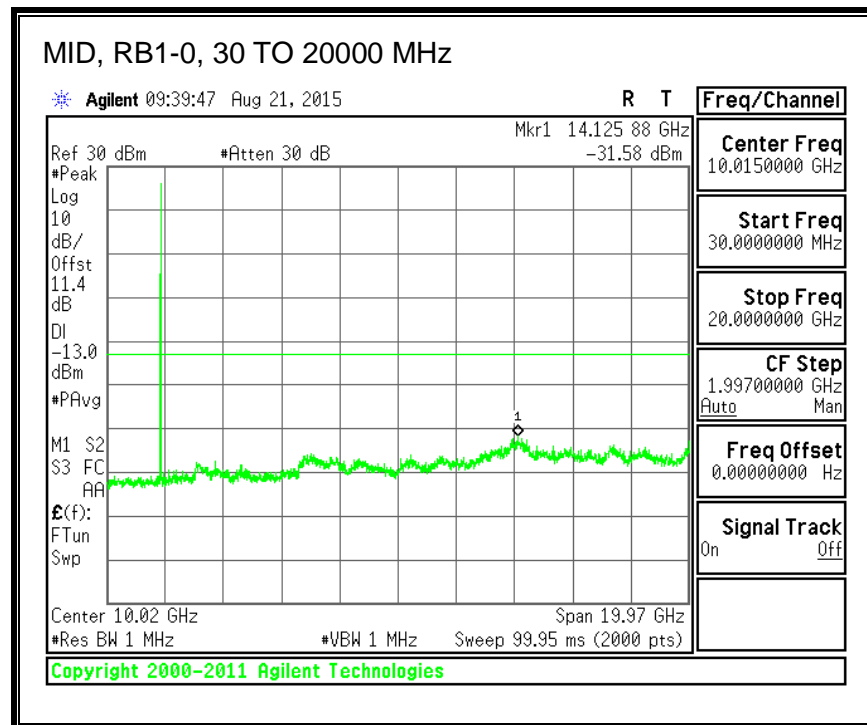
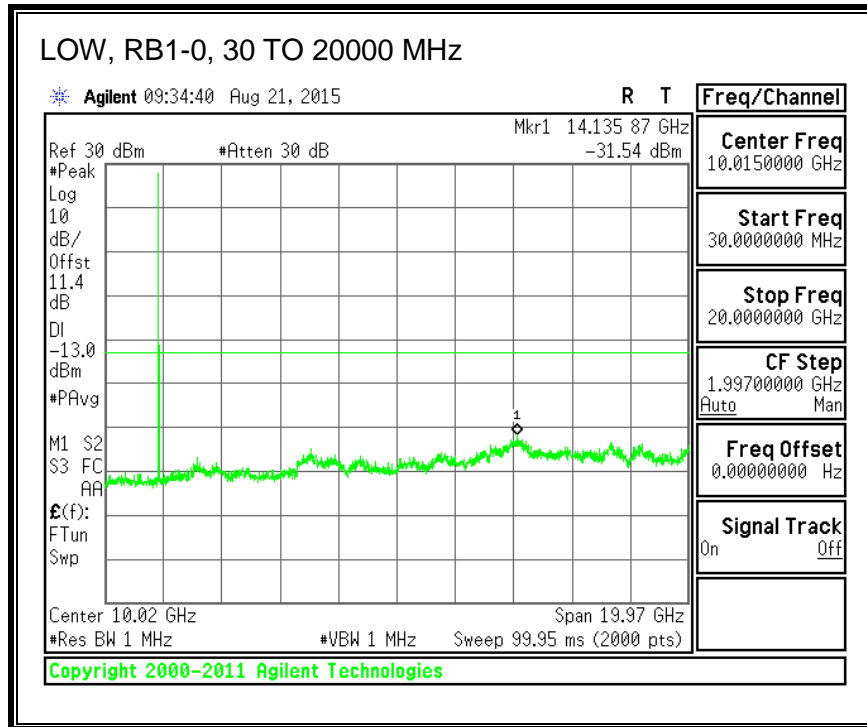


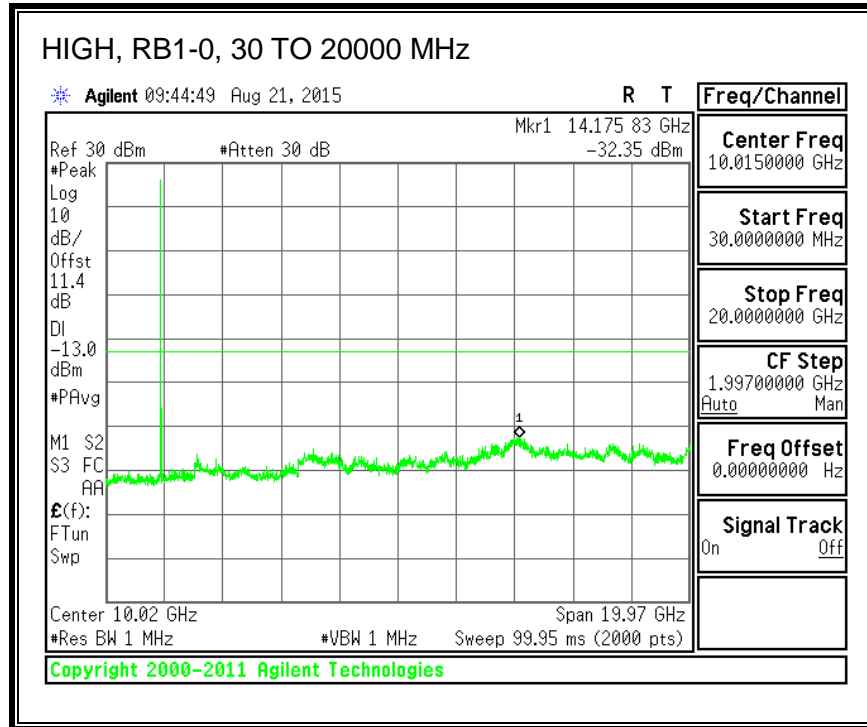
16QAM, (10.0 MHz BAND WIDTH)



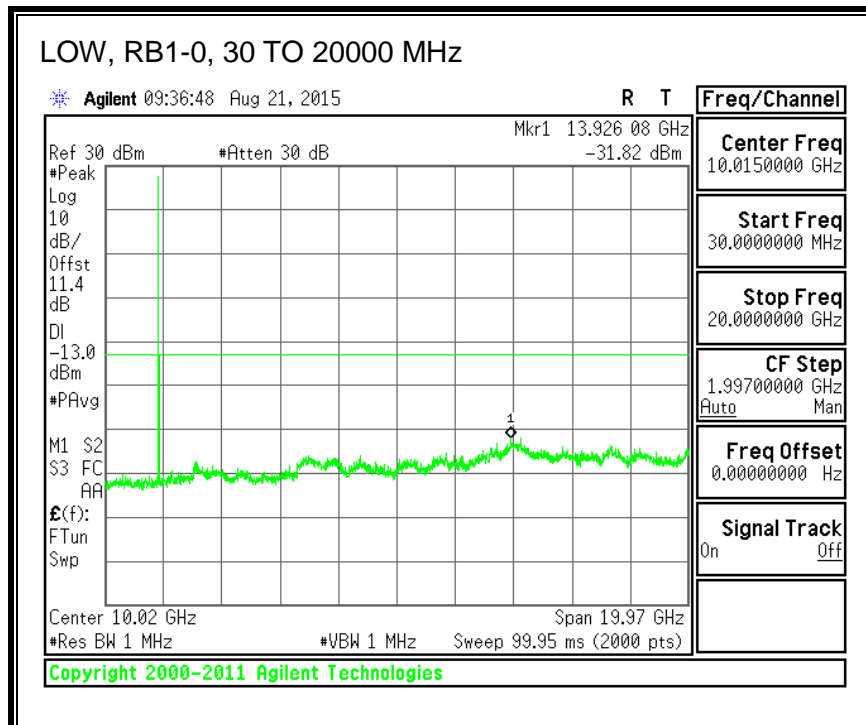


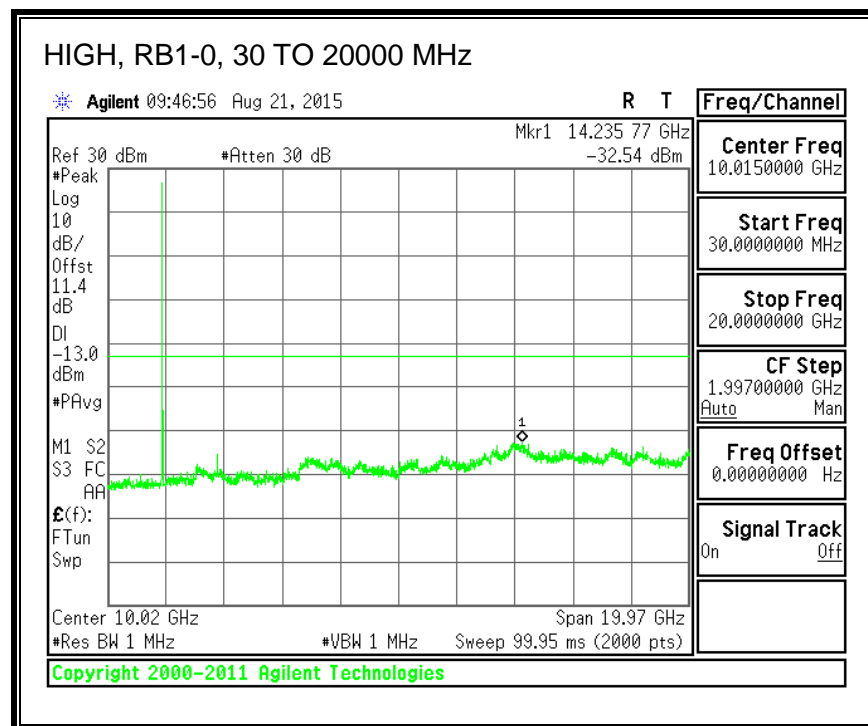
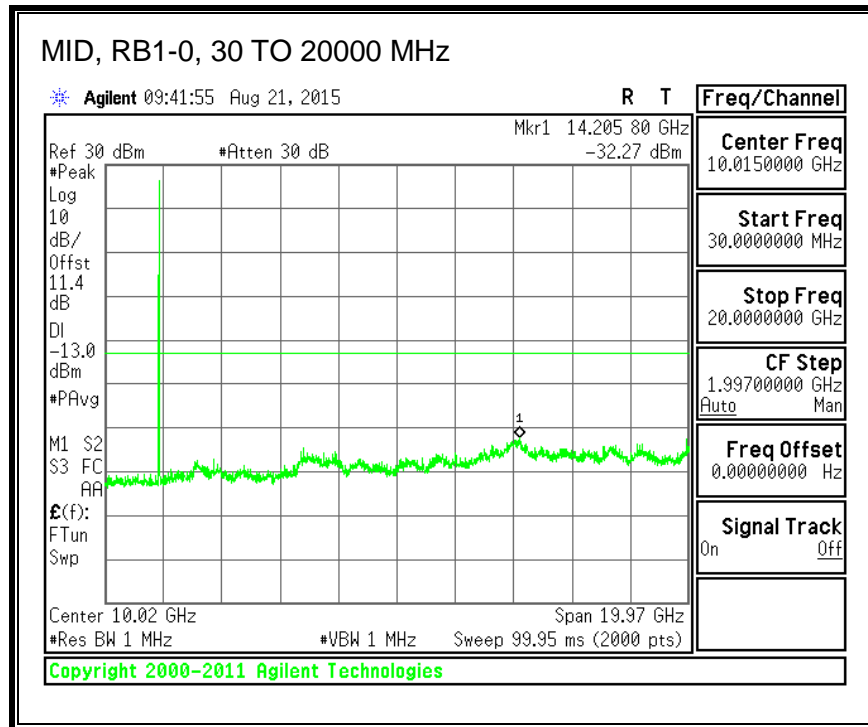
QPSK, (15.0 MHz BAND WIDTH)



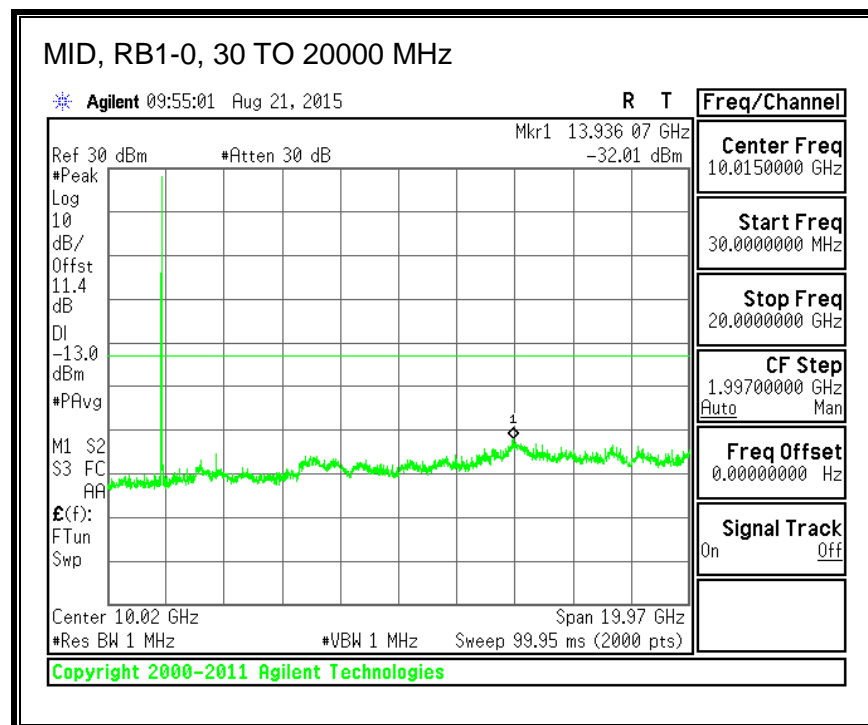
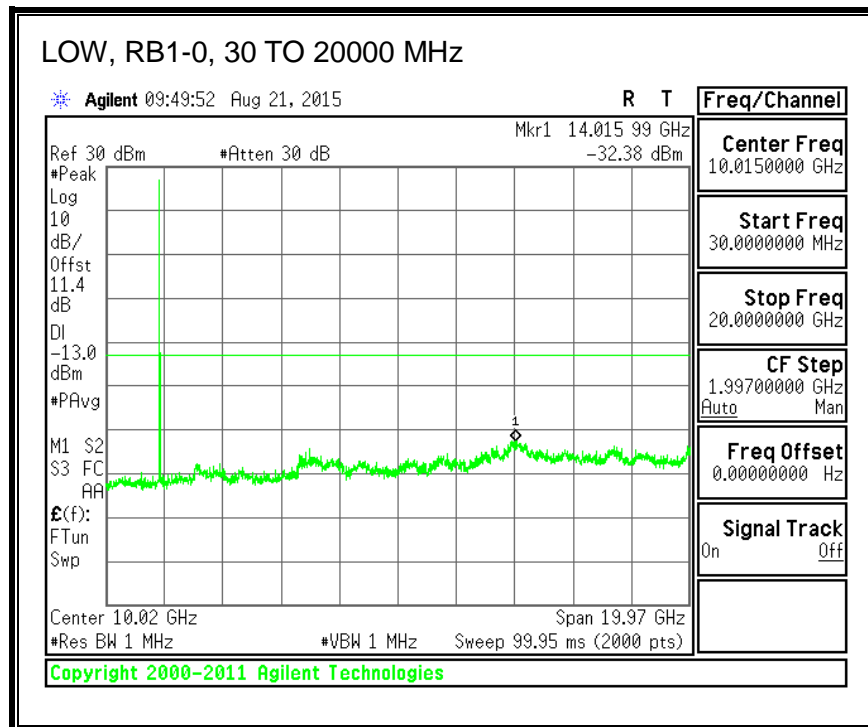


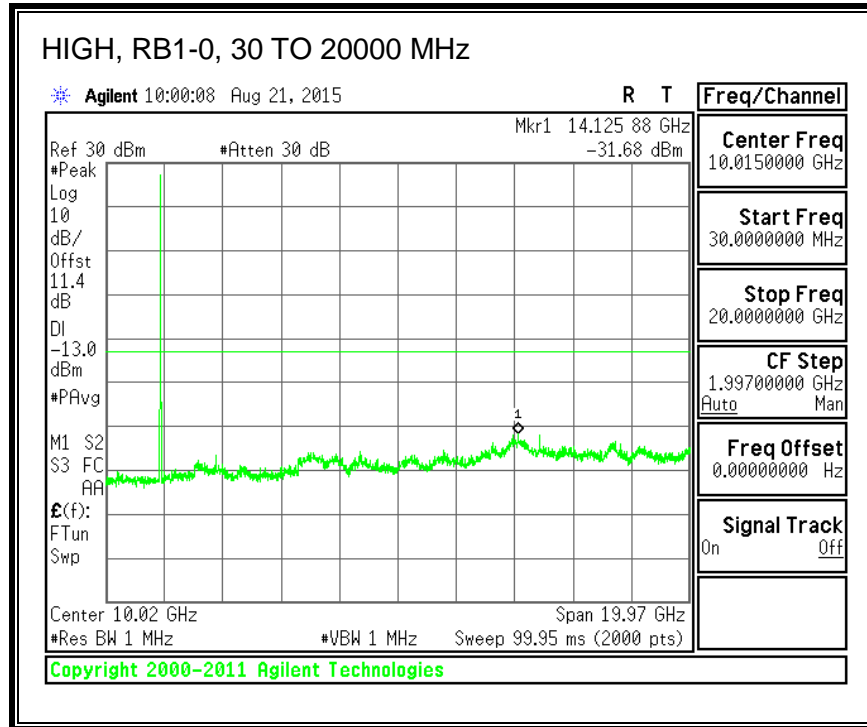
16QAM, (15.0 MHz BAND WIDTH)



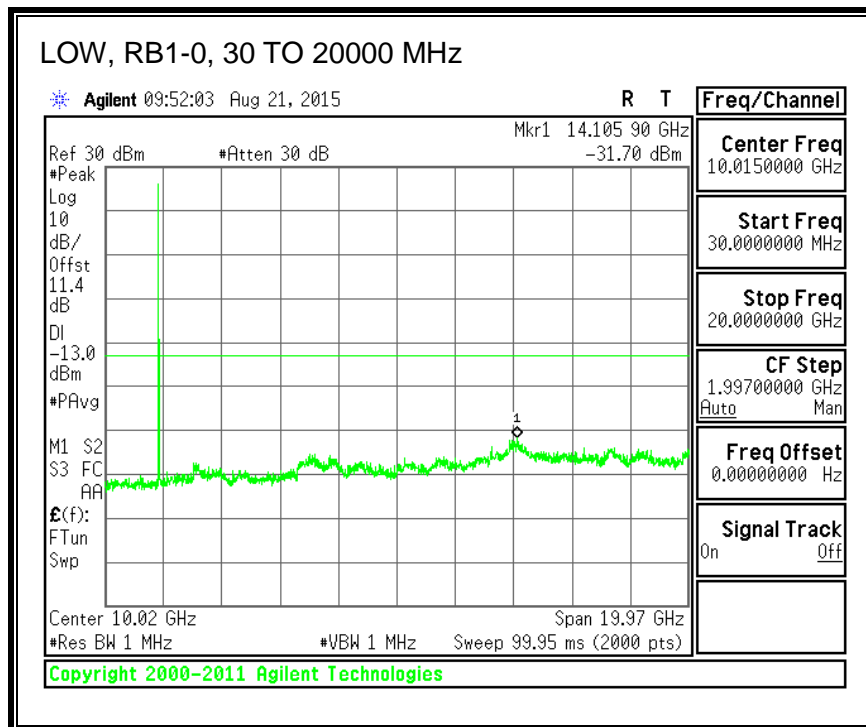


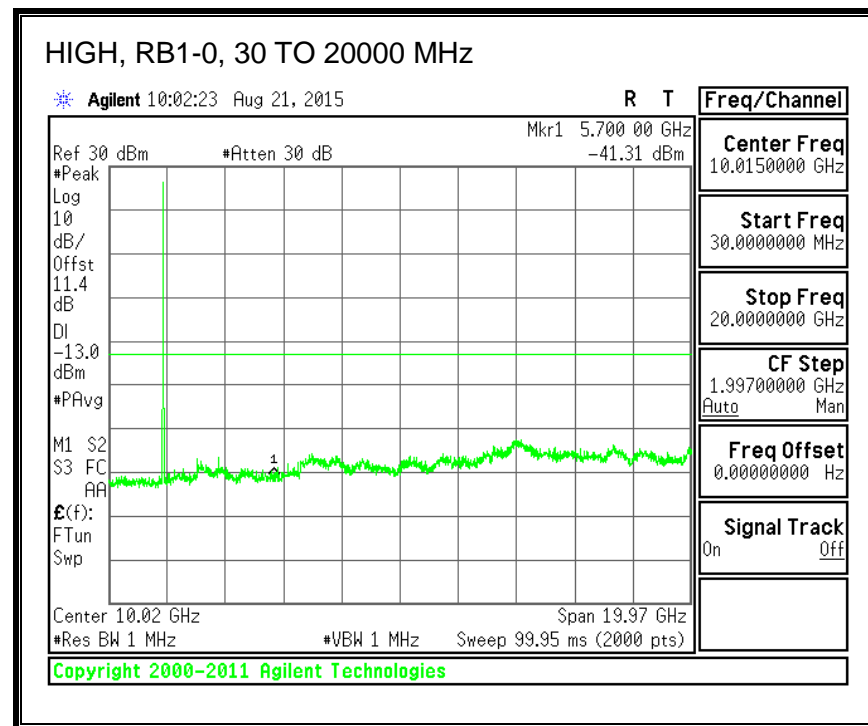
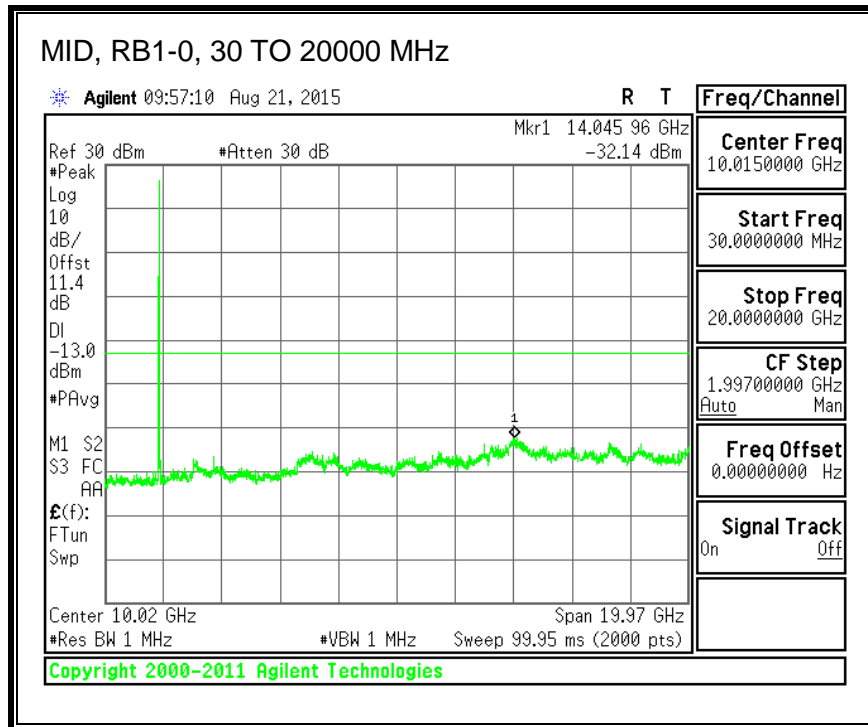
QPSK, (20.0 MHz BAND WIDTH)





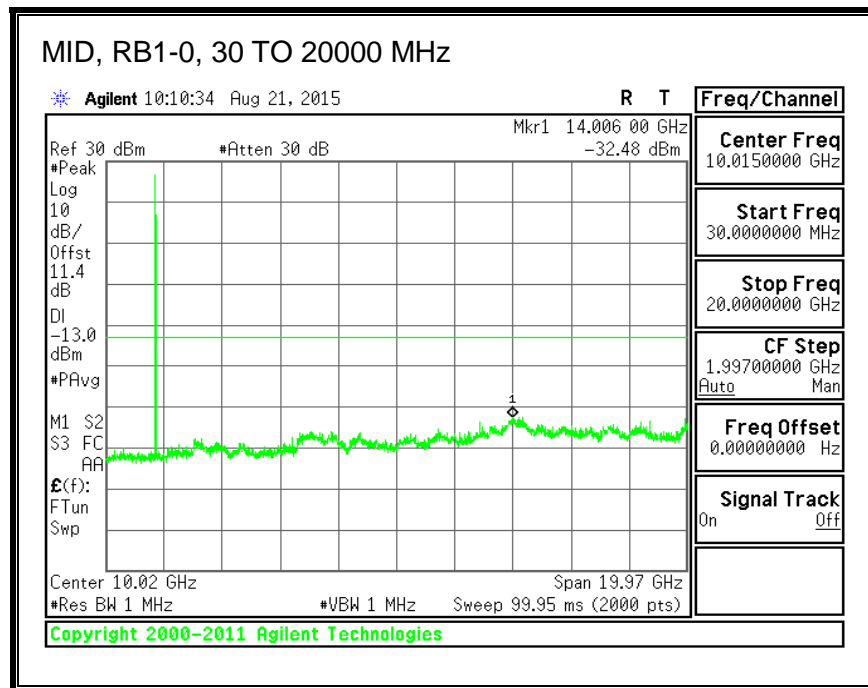
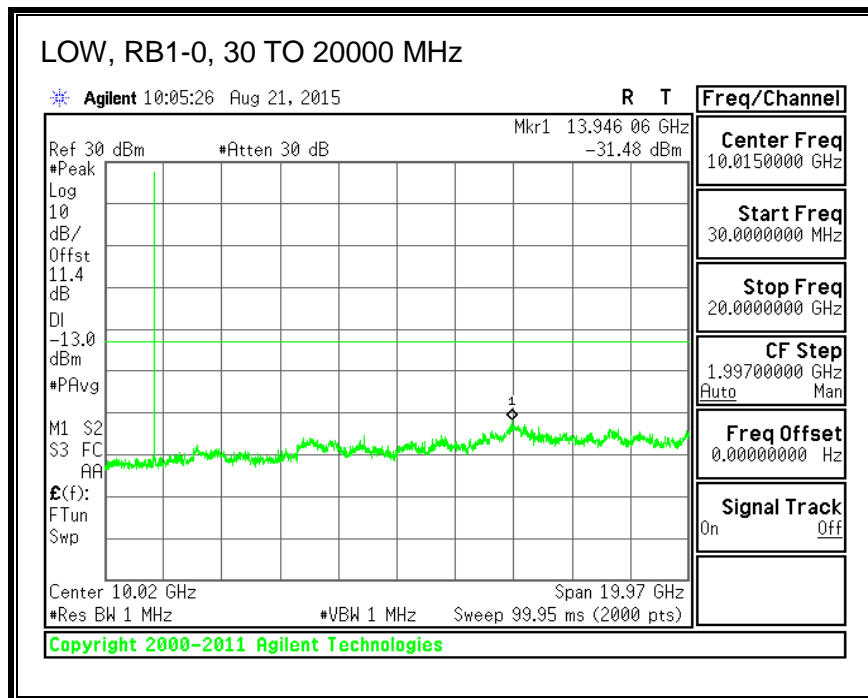
16QAM, (20.0 MHz BAND WIDTH)

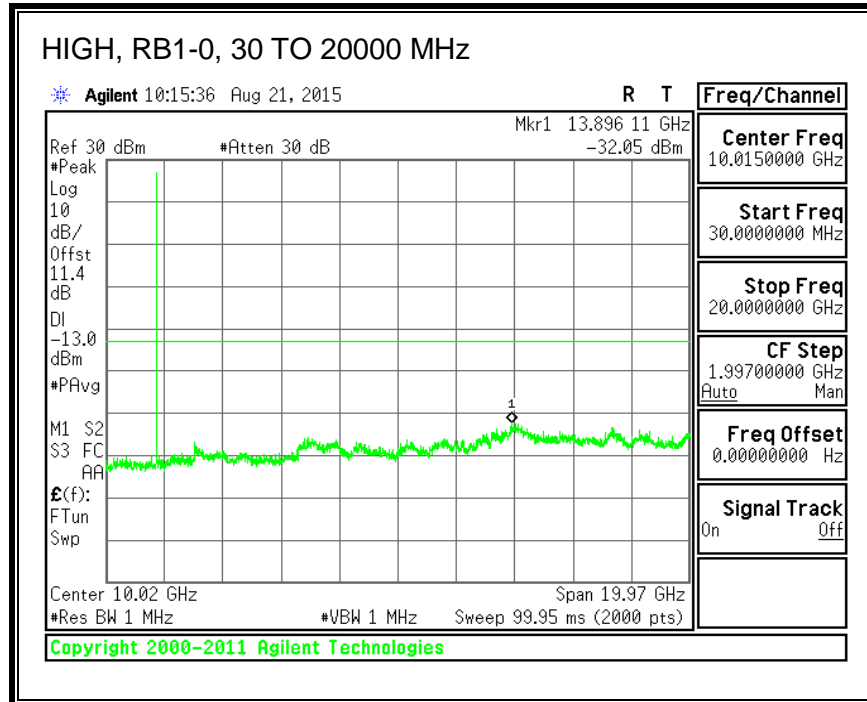




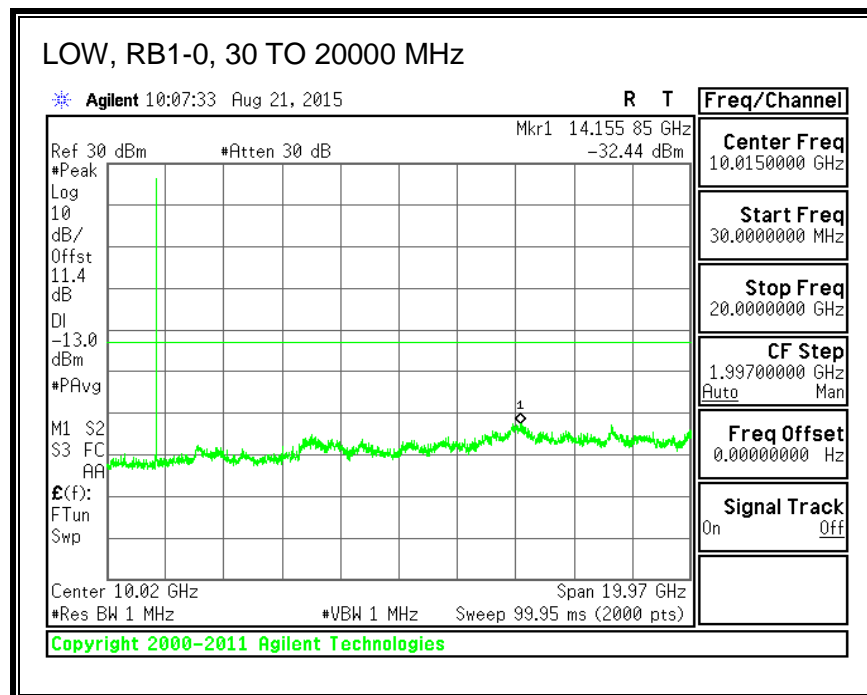
8.3.2. LTE BAND 4

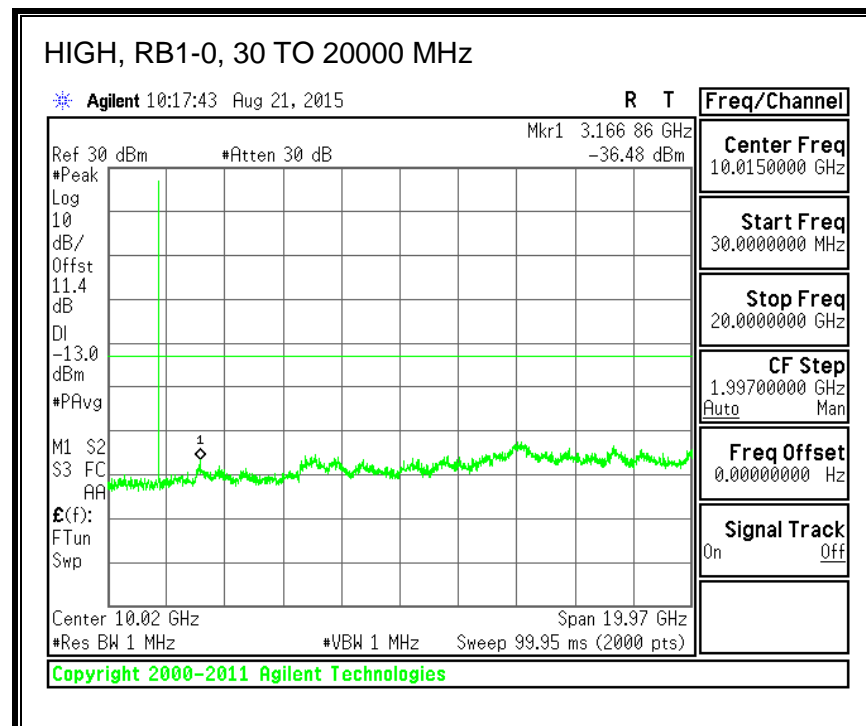
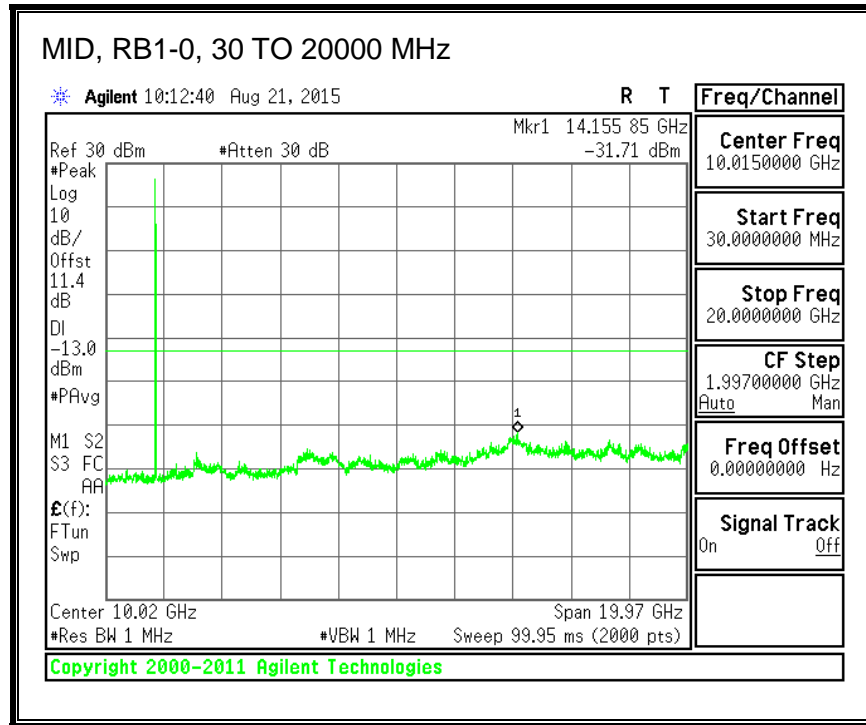
QPSK, (1.4 MHz BAND WIDTH)



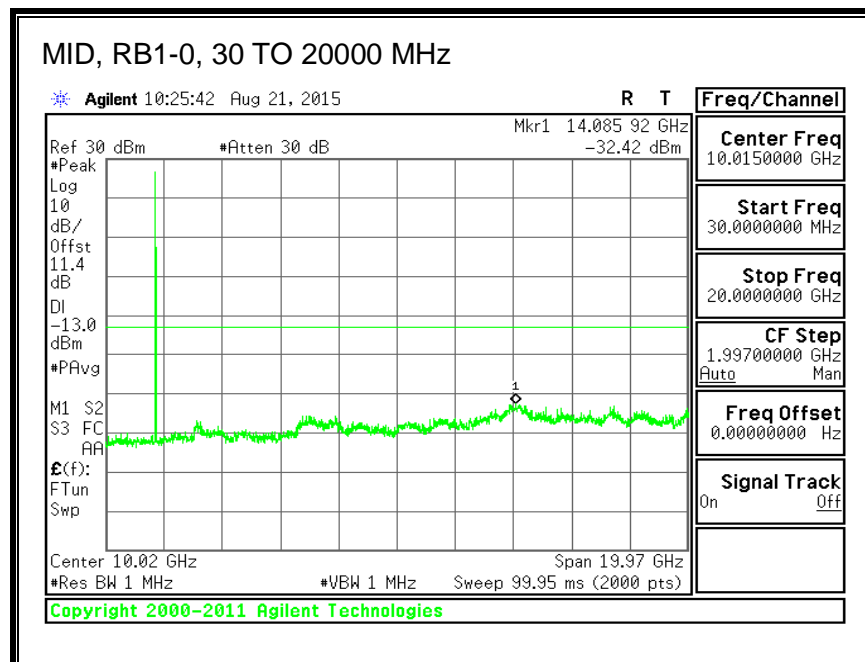
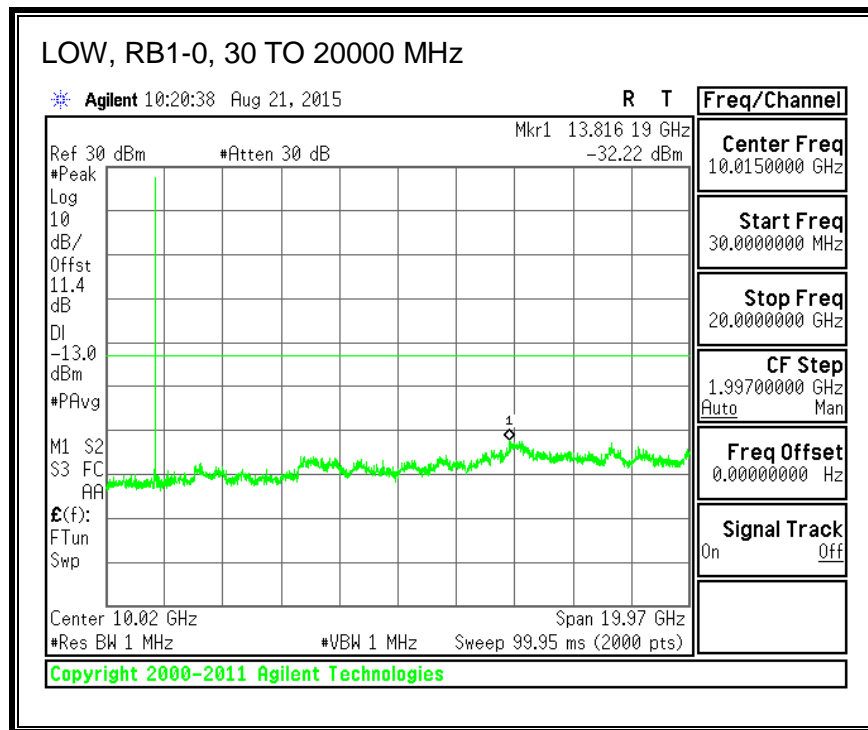


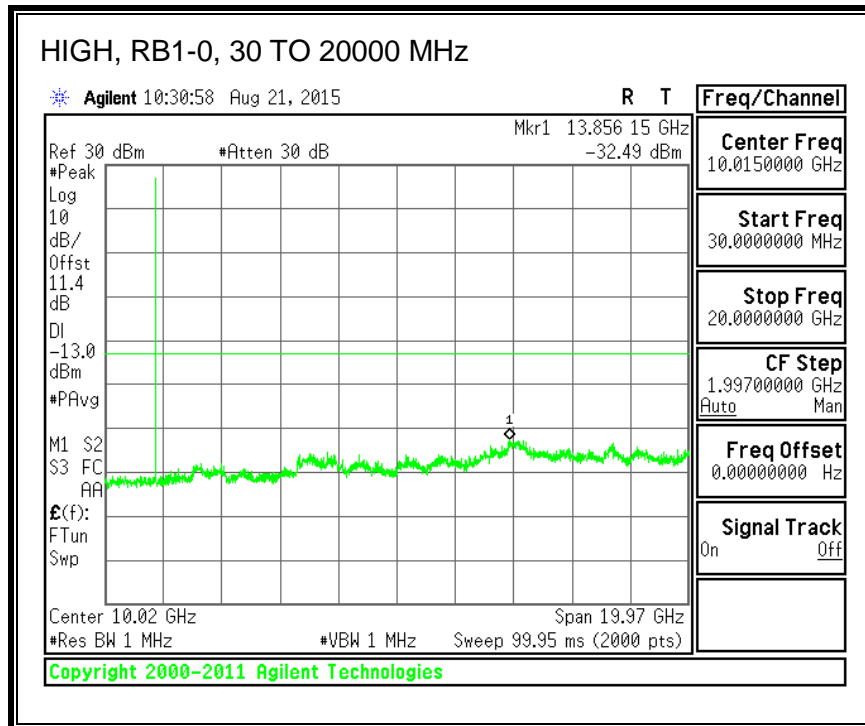
16QAM, (1.4 MHz BAND WIDTH)



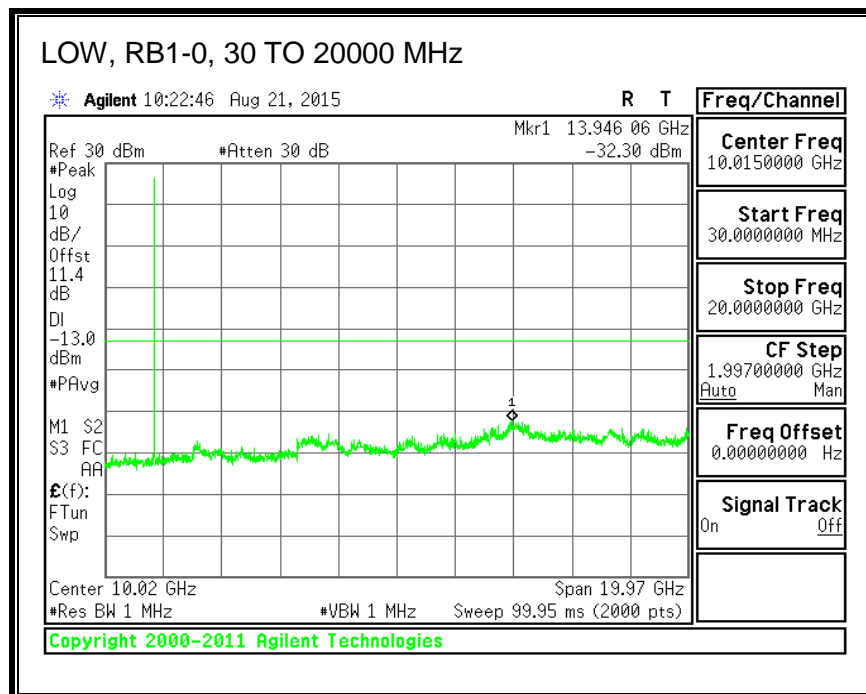


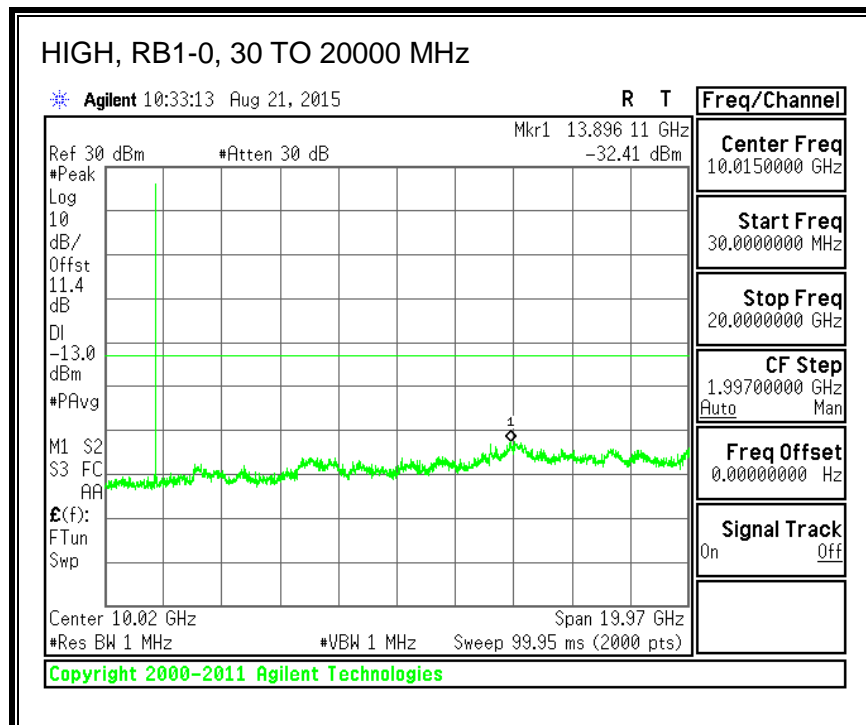
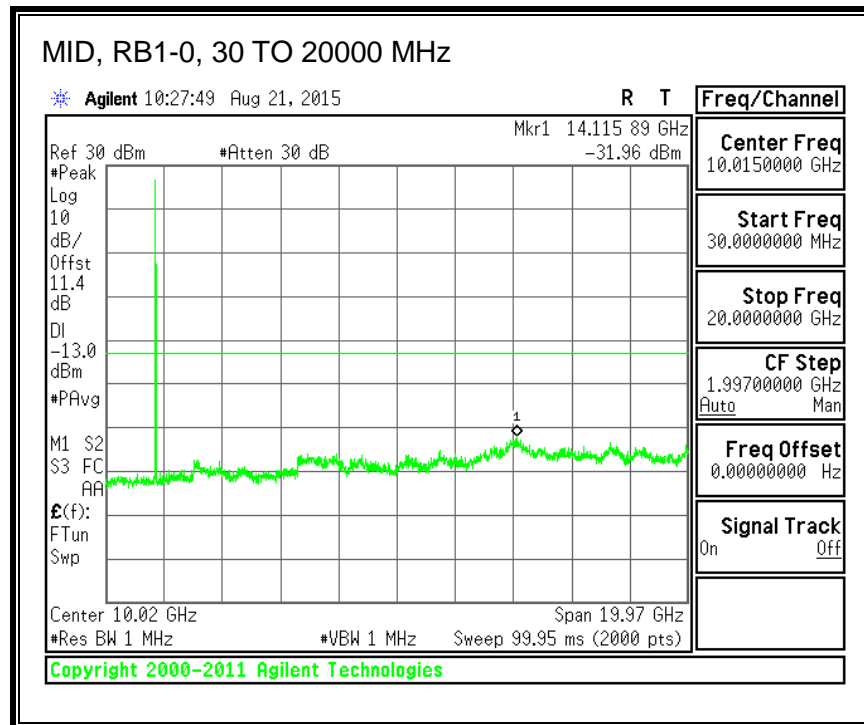
QPSK, (3.0 MHz BAND WIDTH)



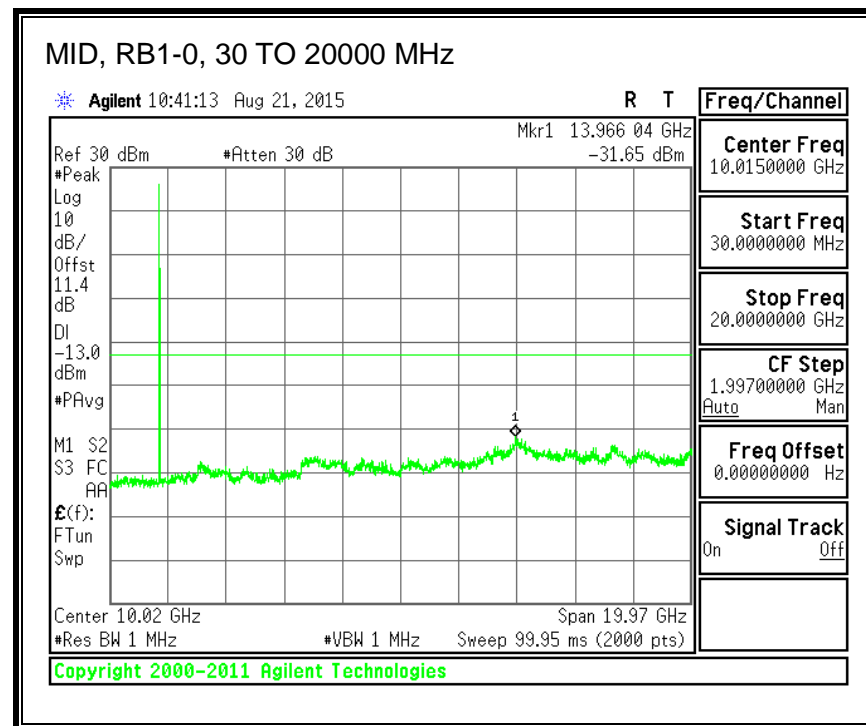
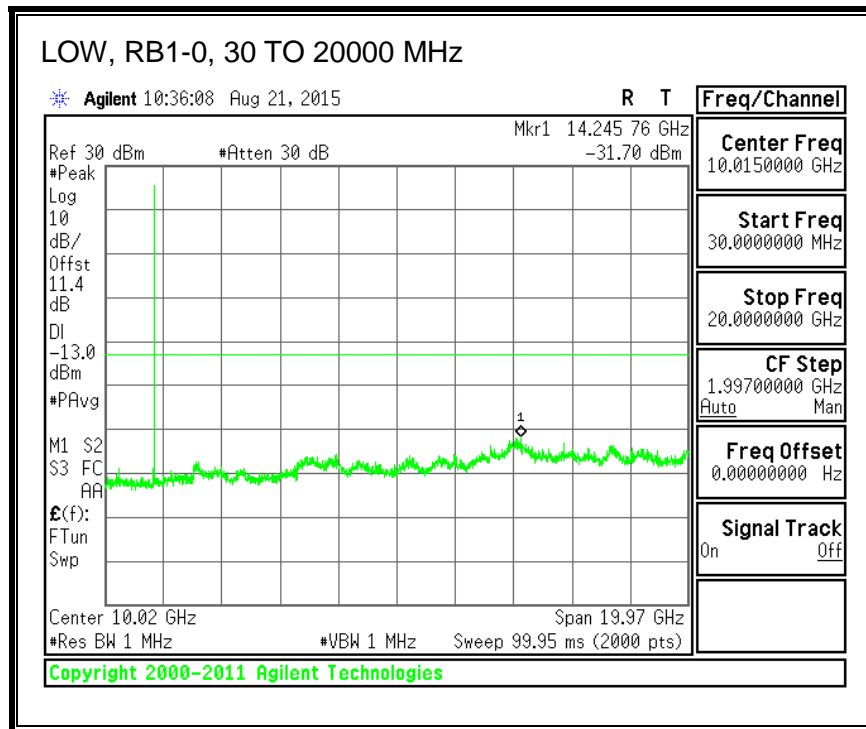


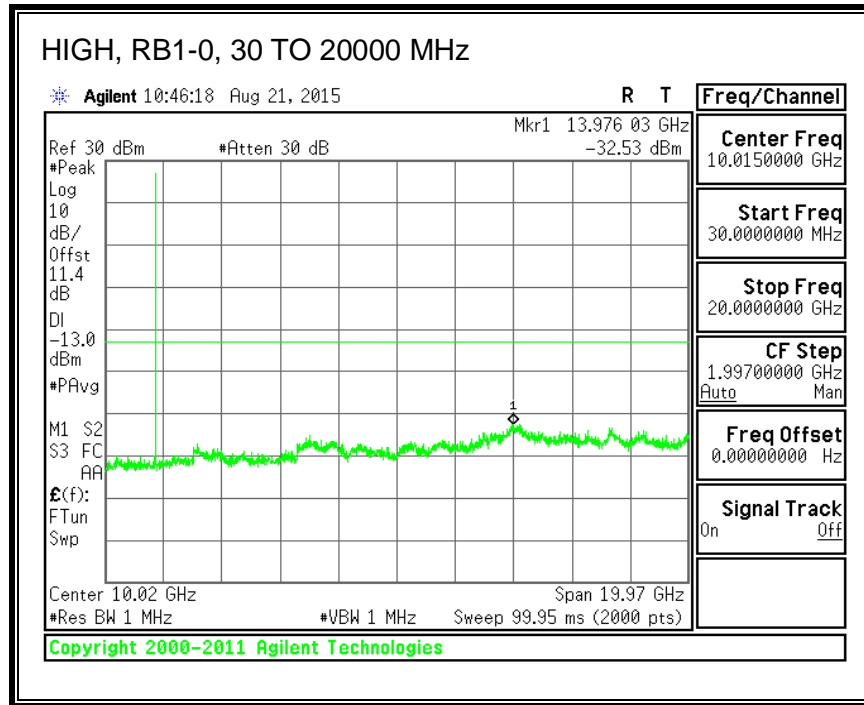
16QAM, (3.0 MHz BAND WIDTH)



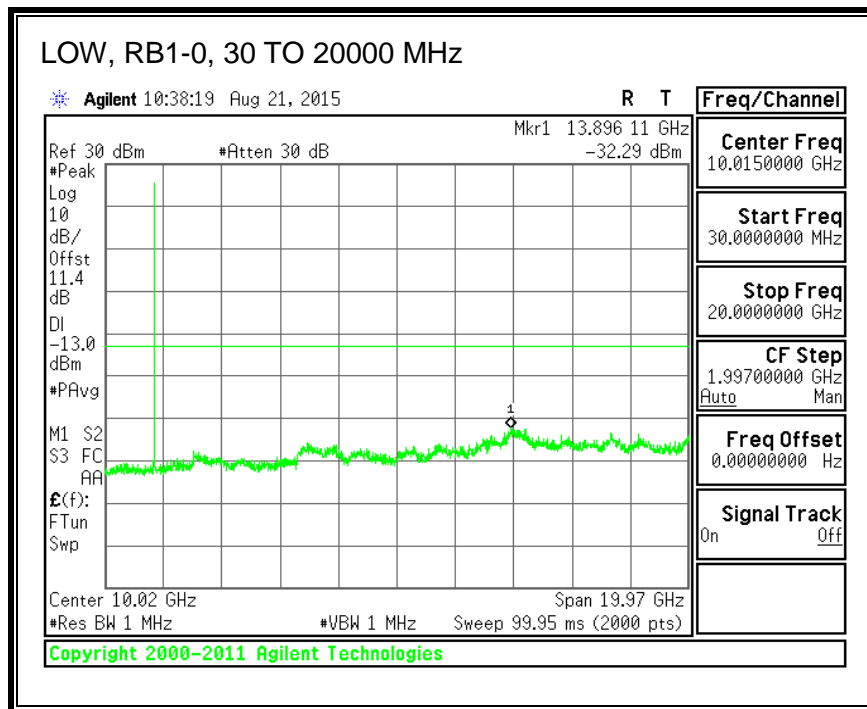


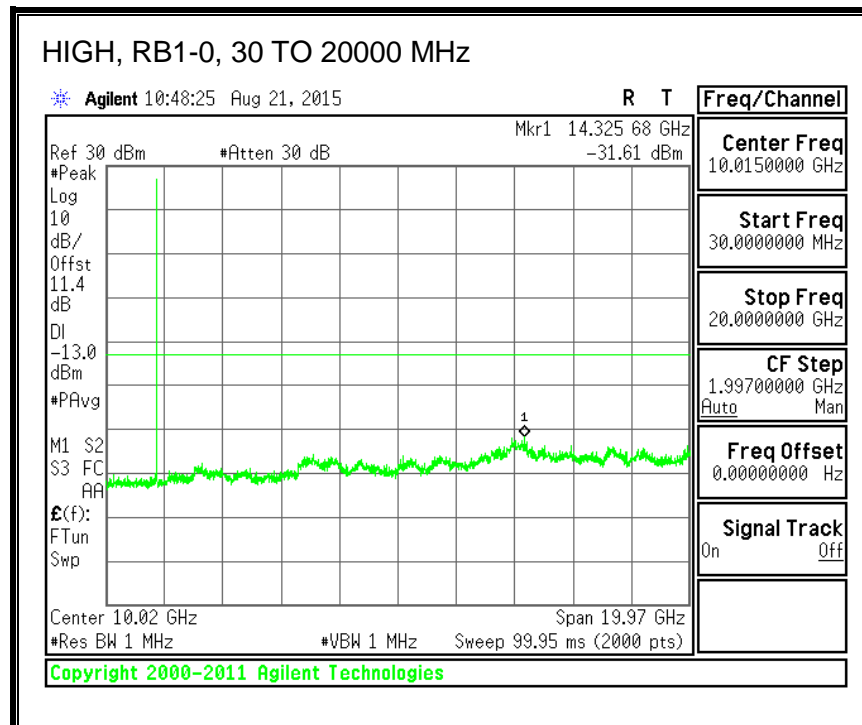
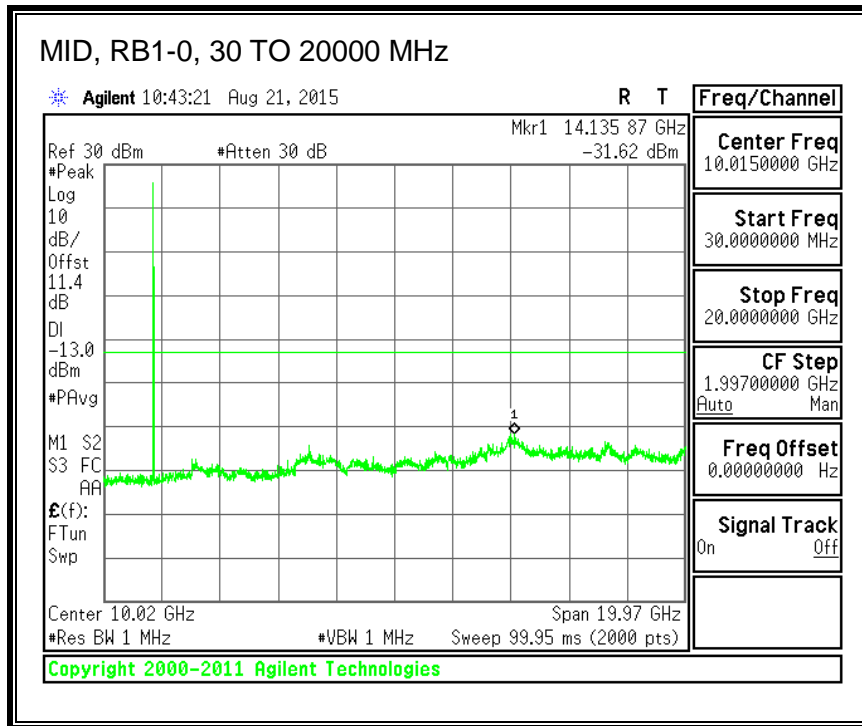
QPSK, (5.0 MHz BAND WIDTH)



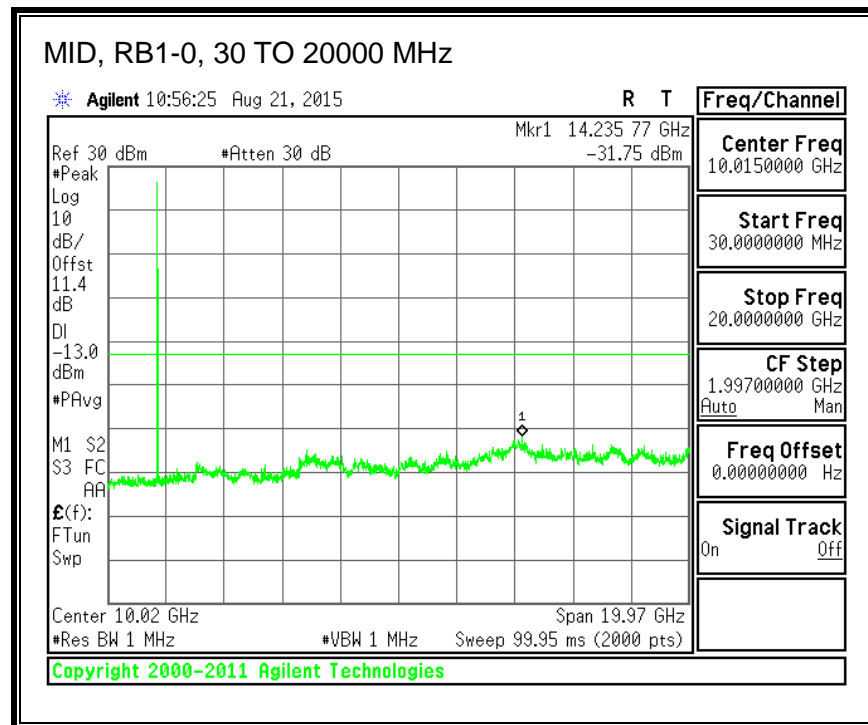
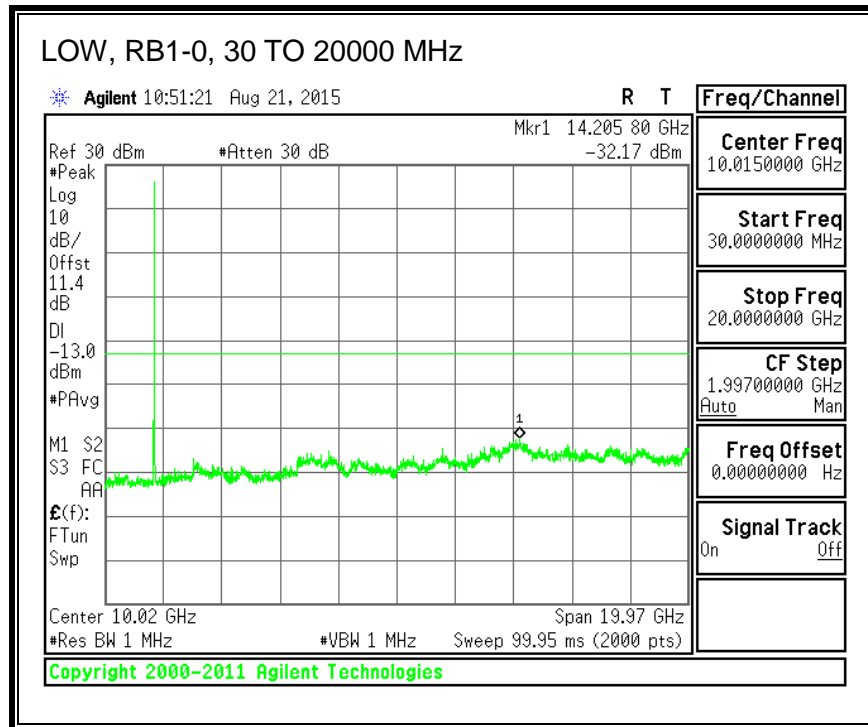


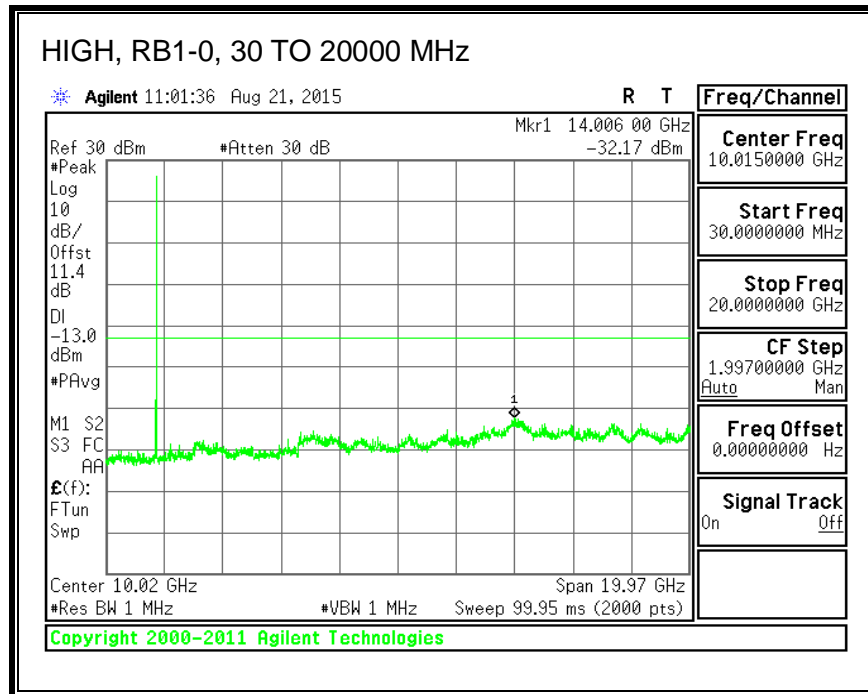
16QAM, (5.0 MHz BAND WIDTH)



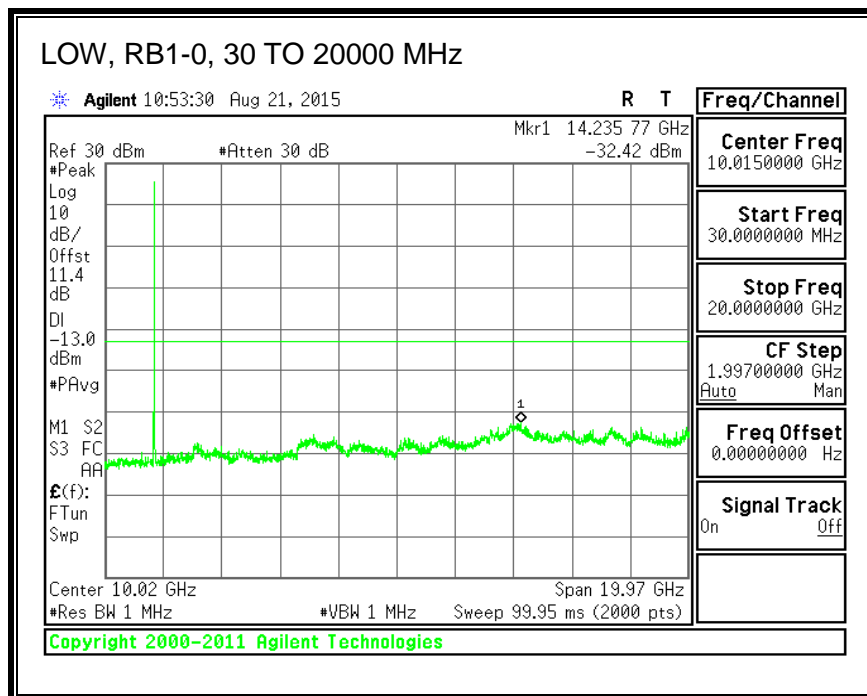


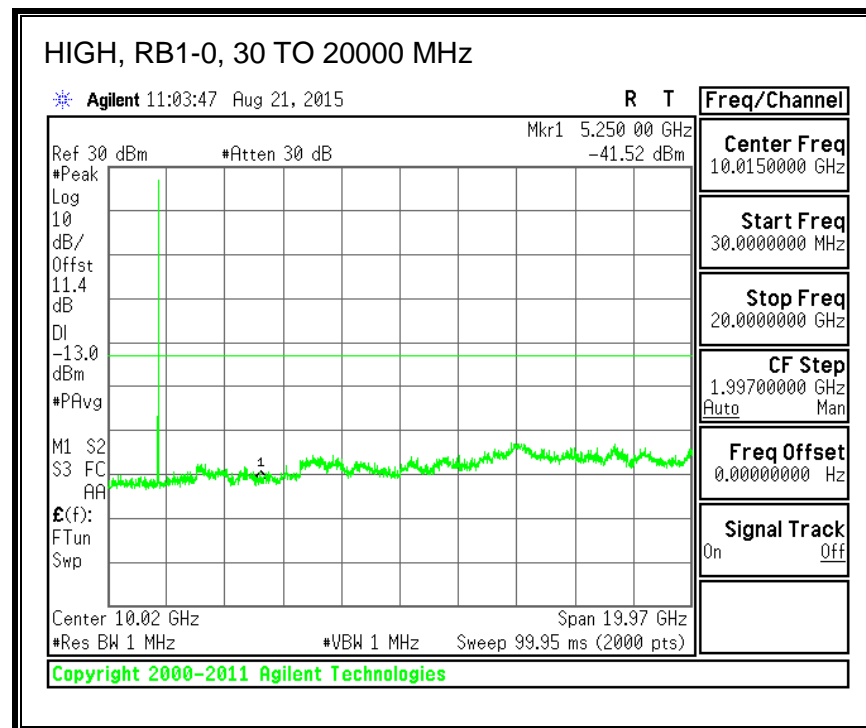
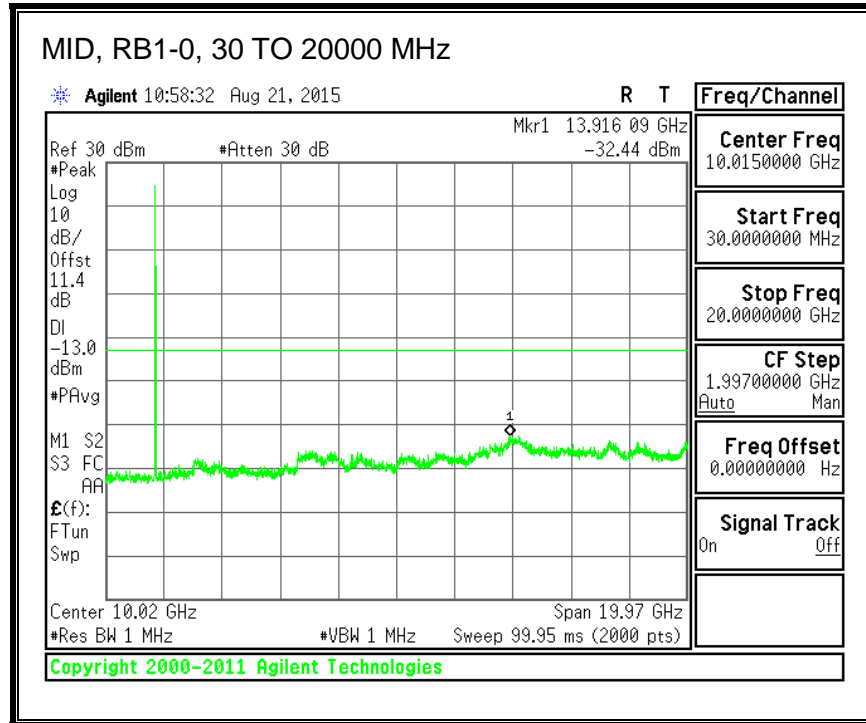
QPSK, (10.0 MHz BAND WIDTH)



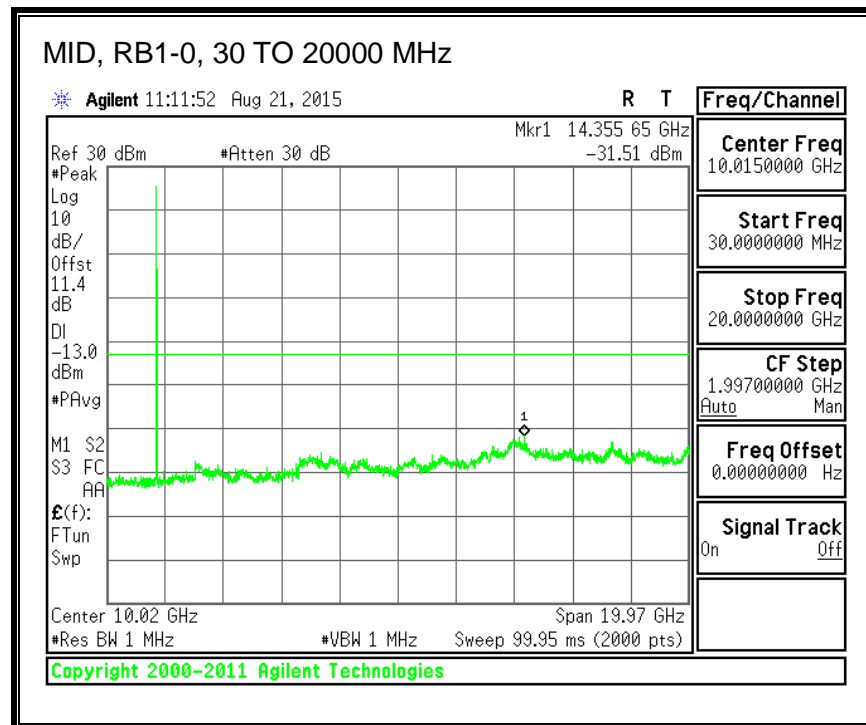
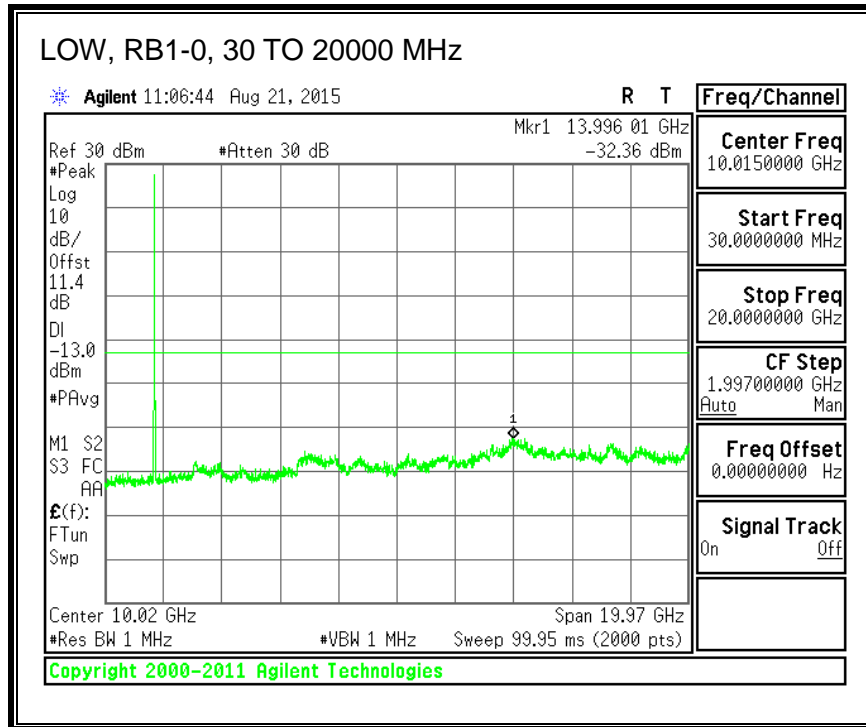


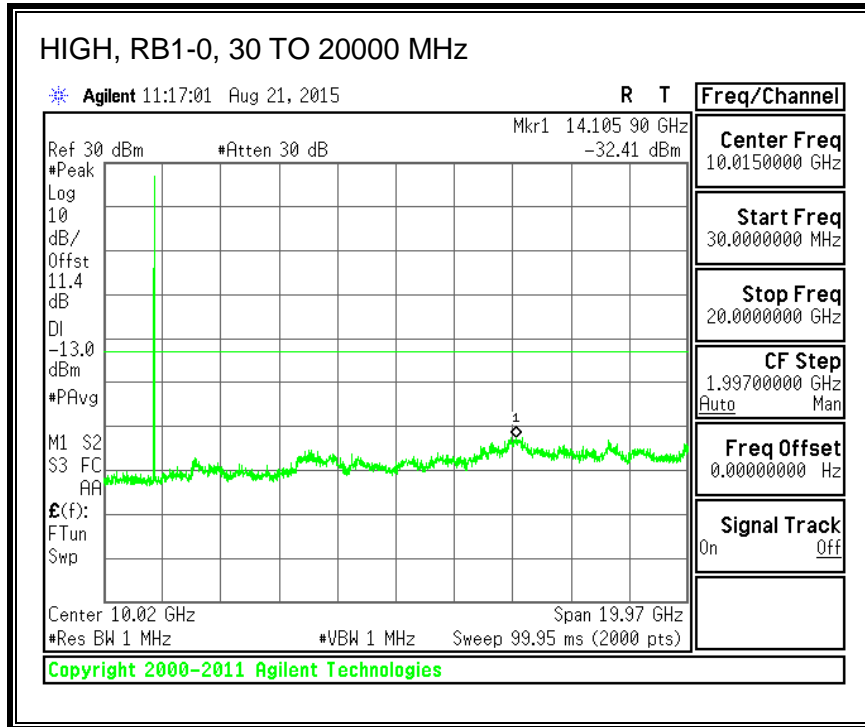
16QAM, (10.0 MHz BAND WIDTH)



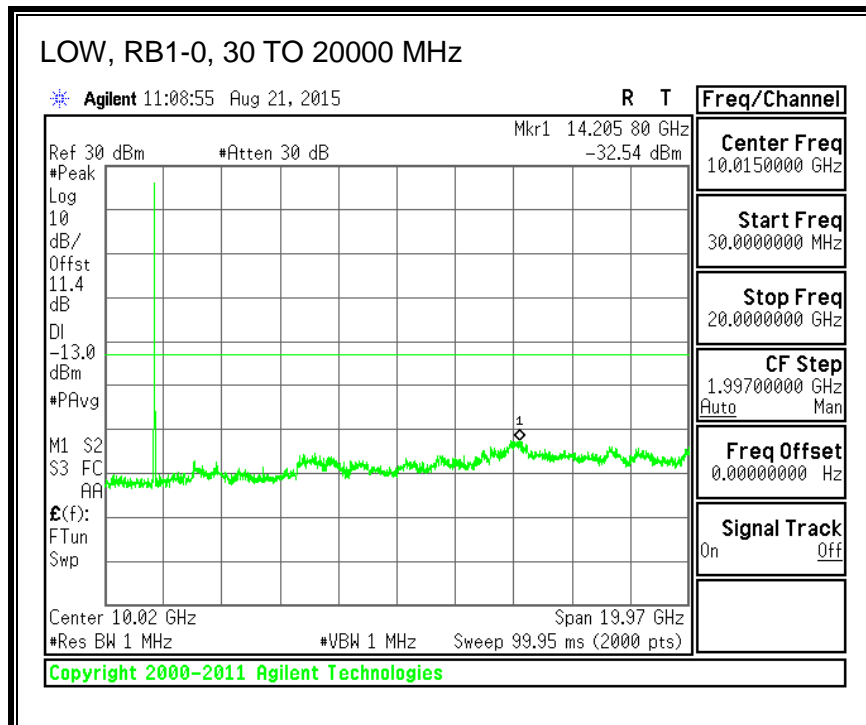


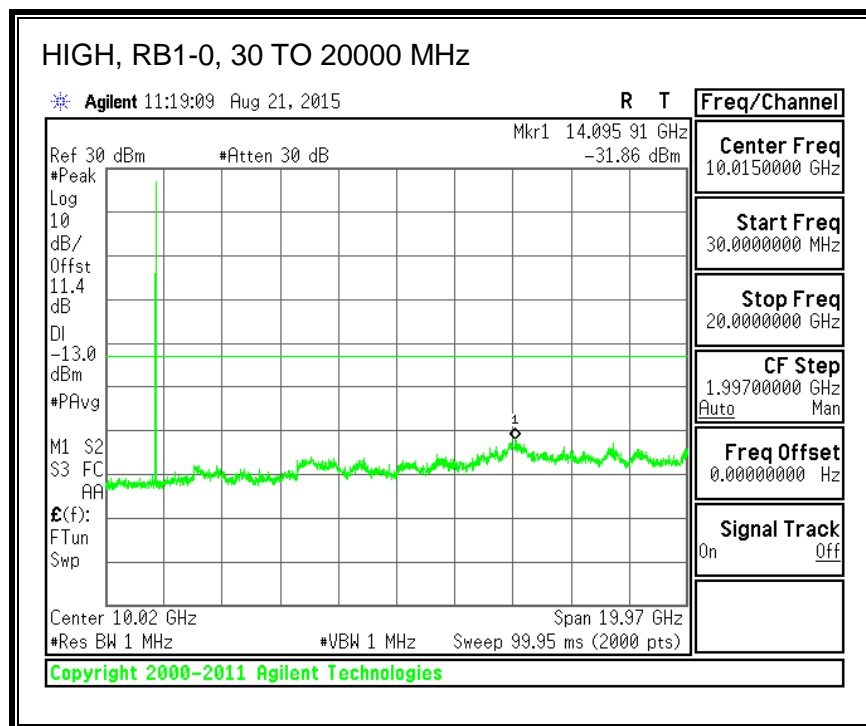
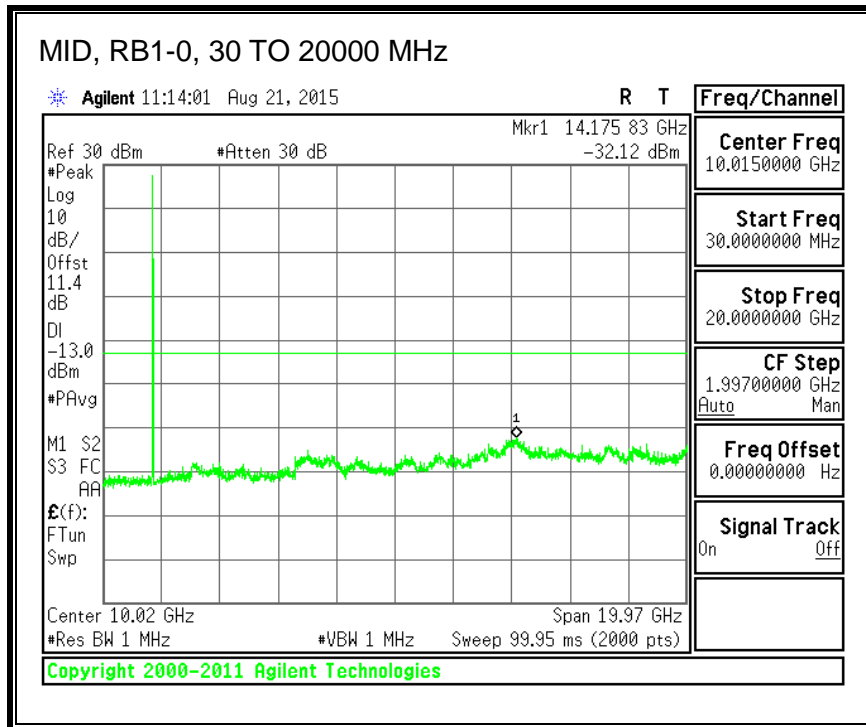
QPSK, (15.0 MHz BAND WIDTH)



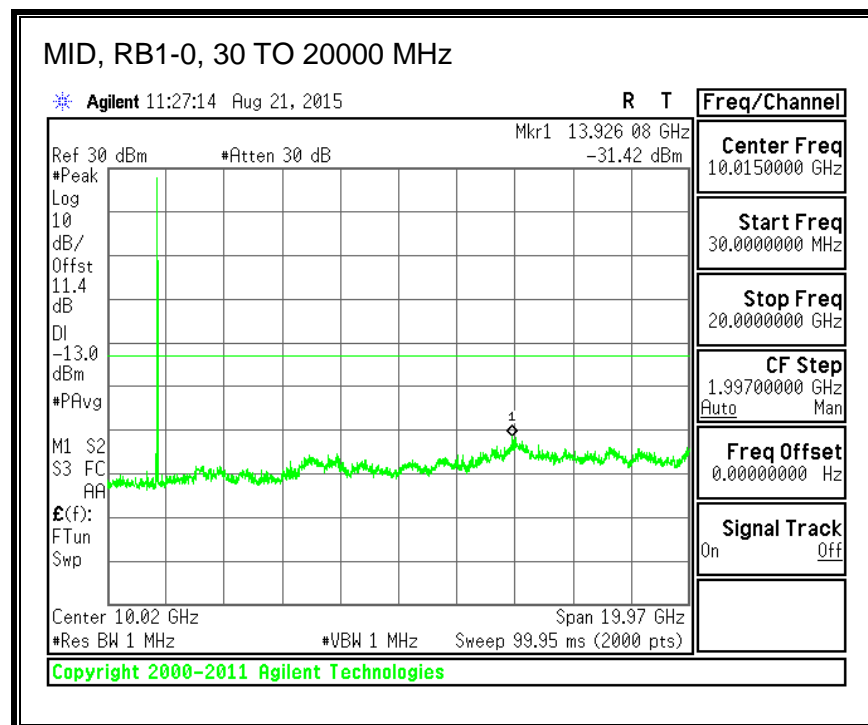
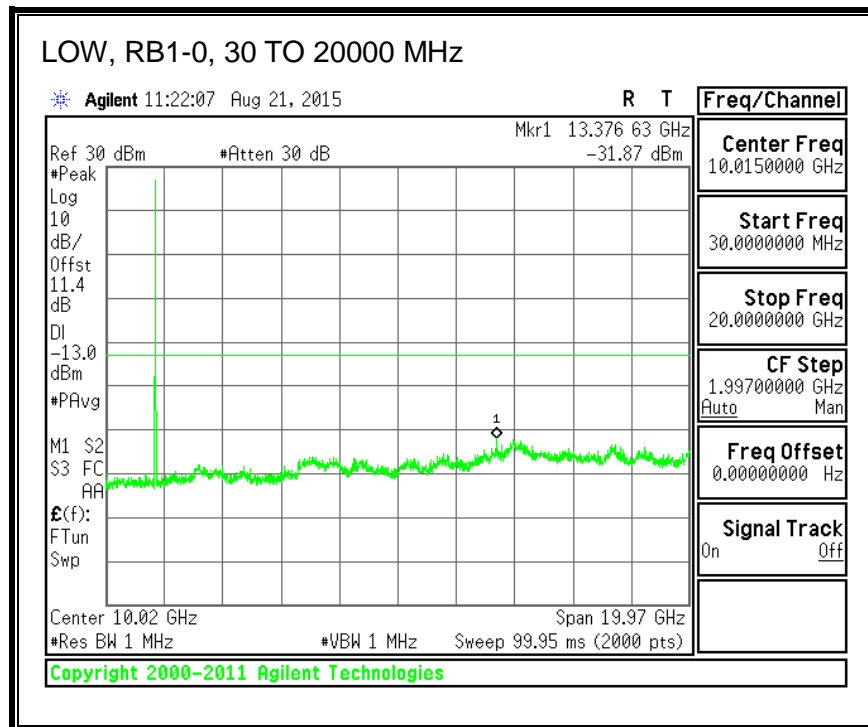


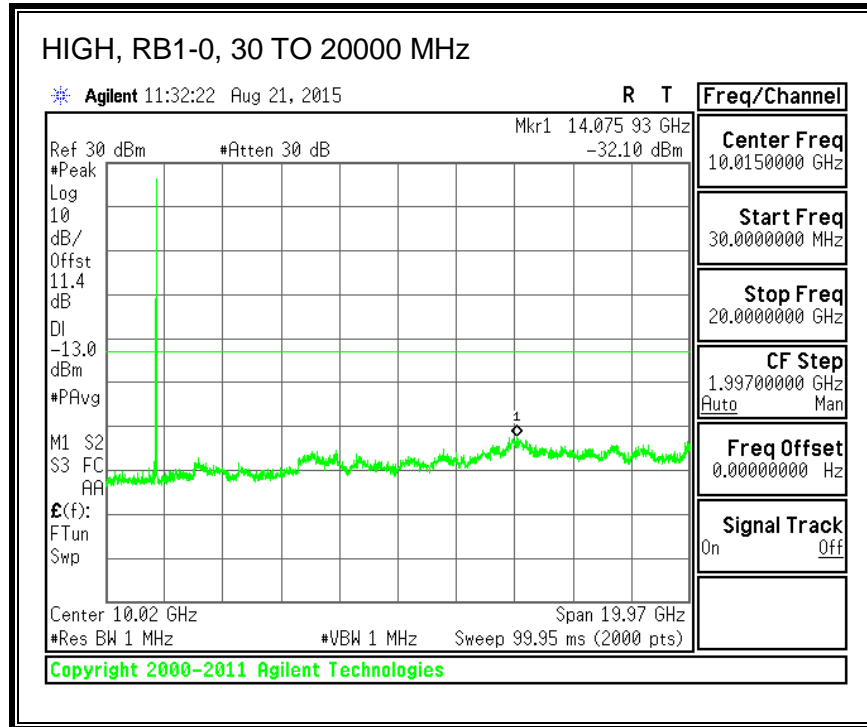
16QAM, (15.0 MHz BAND WIDTH)



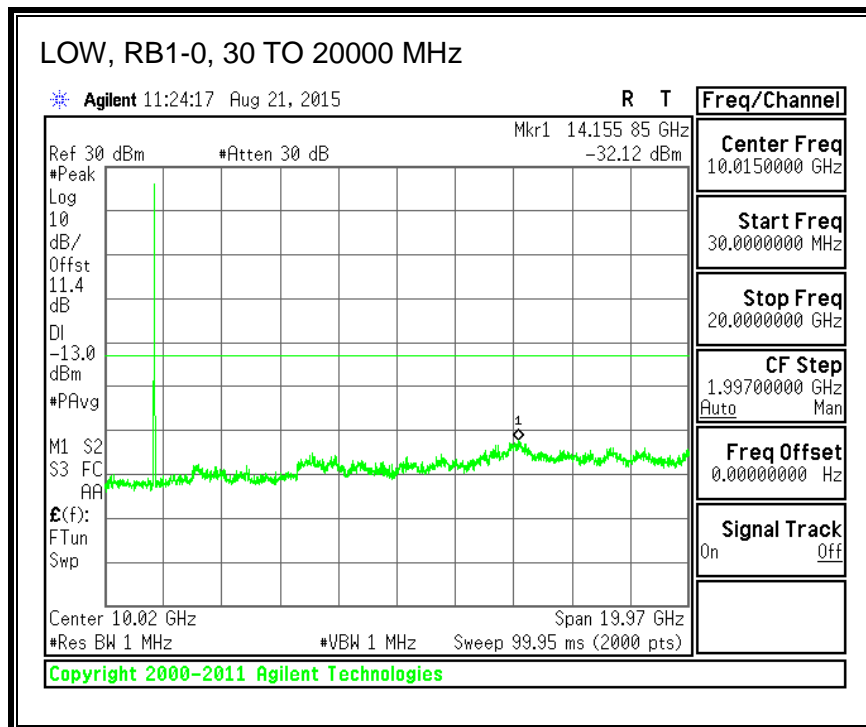


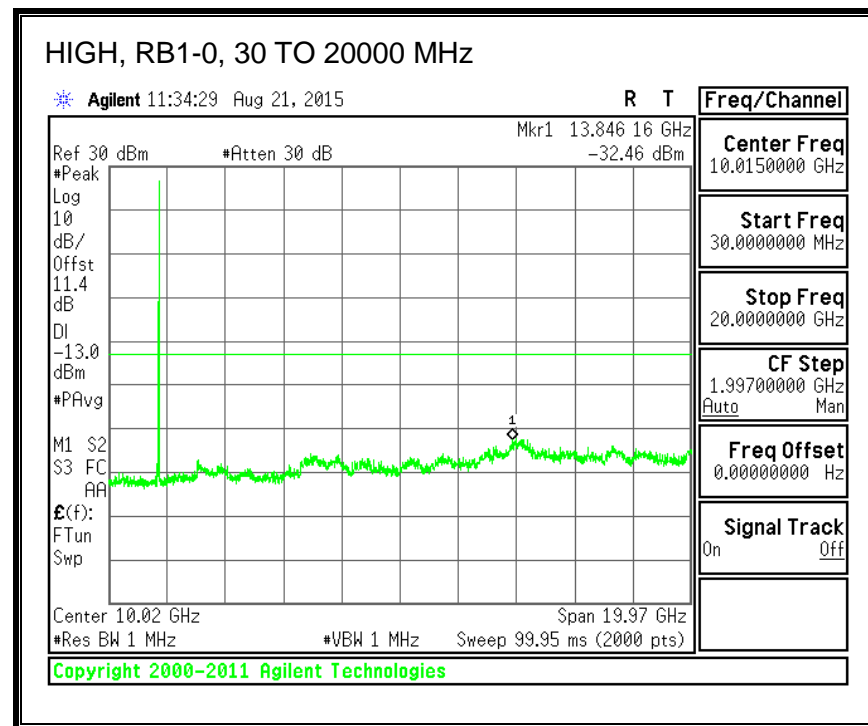
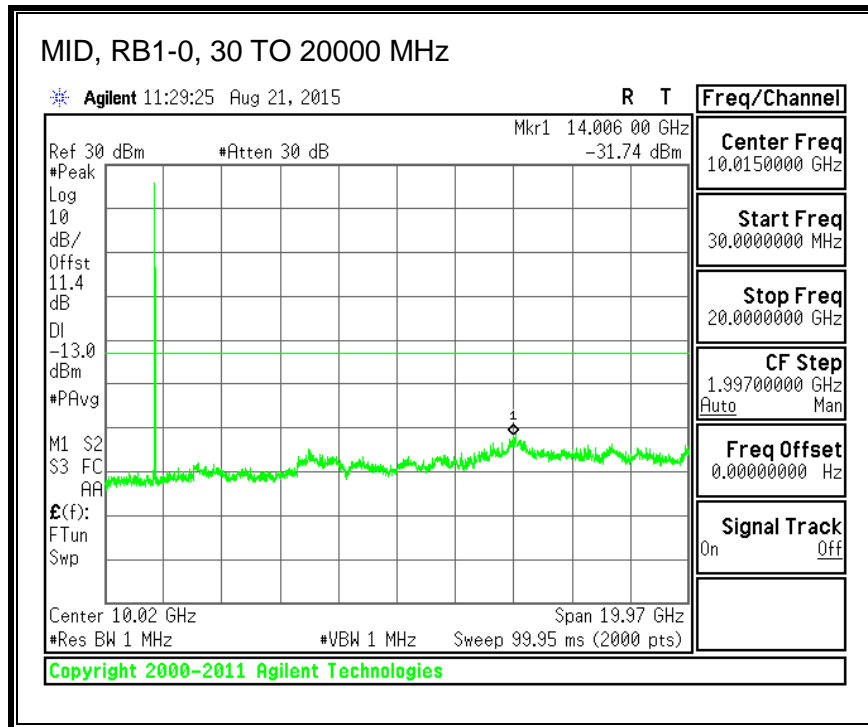
QPSK, (20.0 MHz BAND WIDTH)





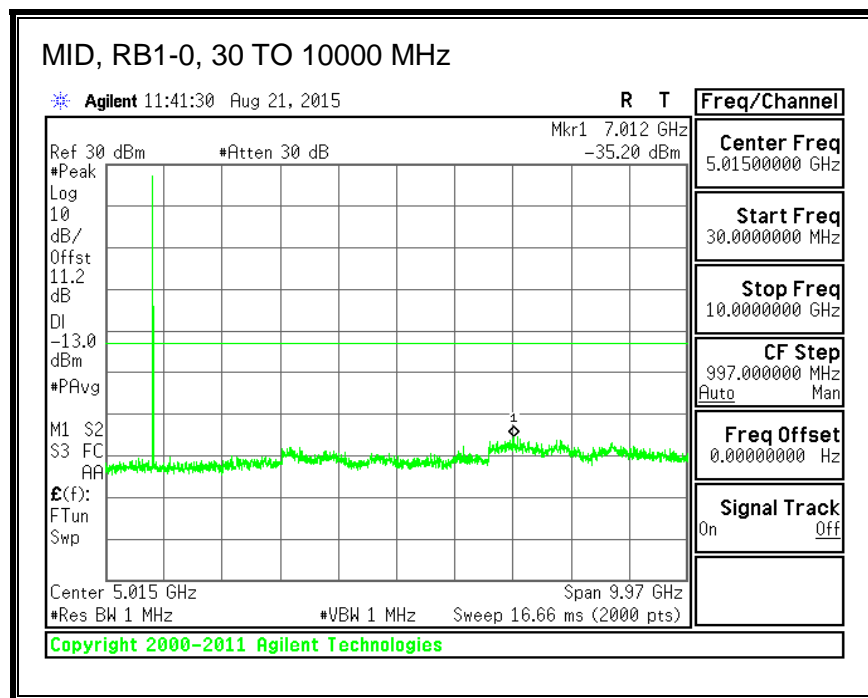
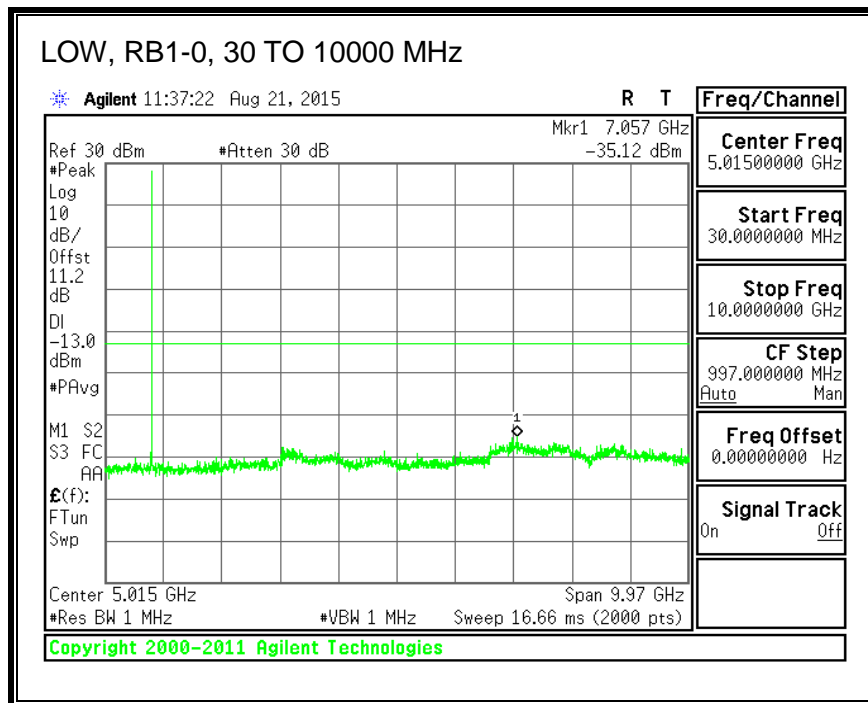
16QAM, (20.0 MHz BAND WIDTH)

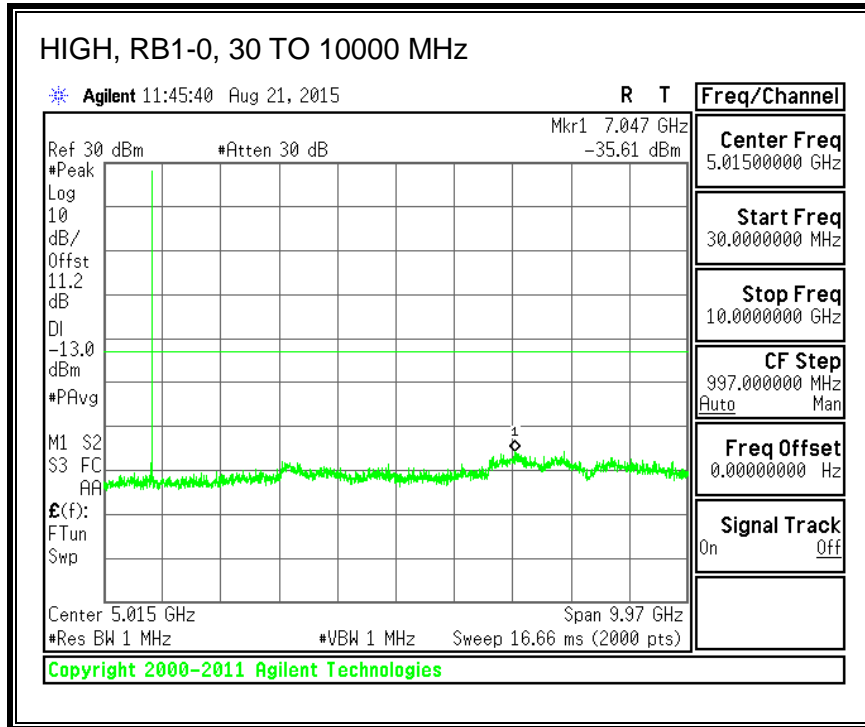




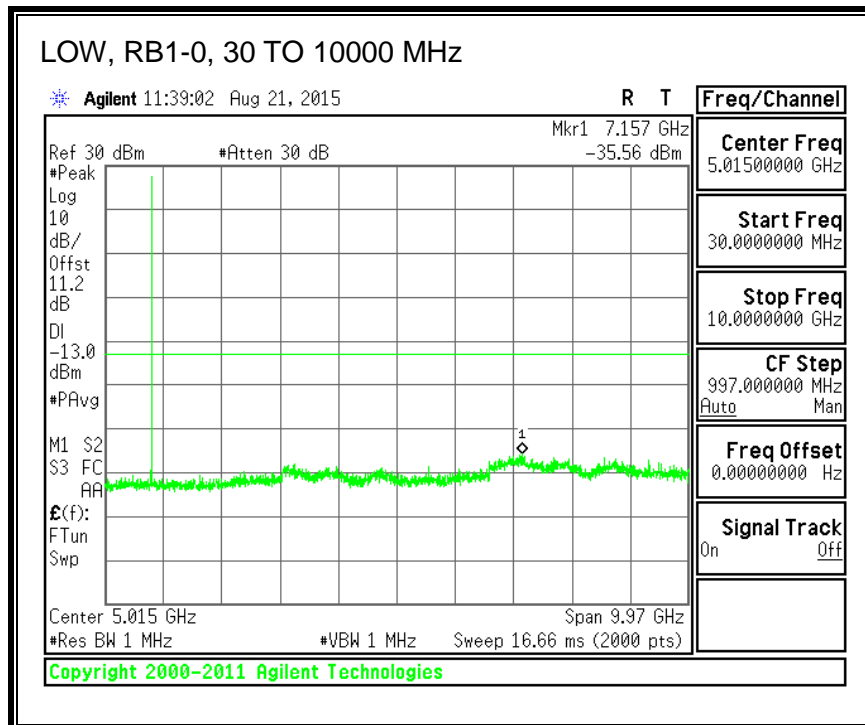
8.3.3. LTE BAND 5

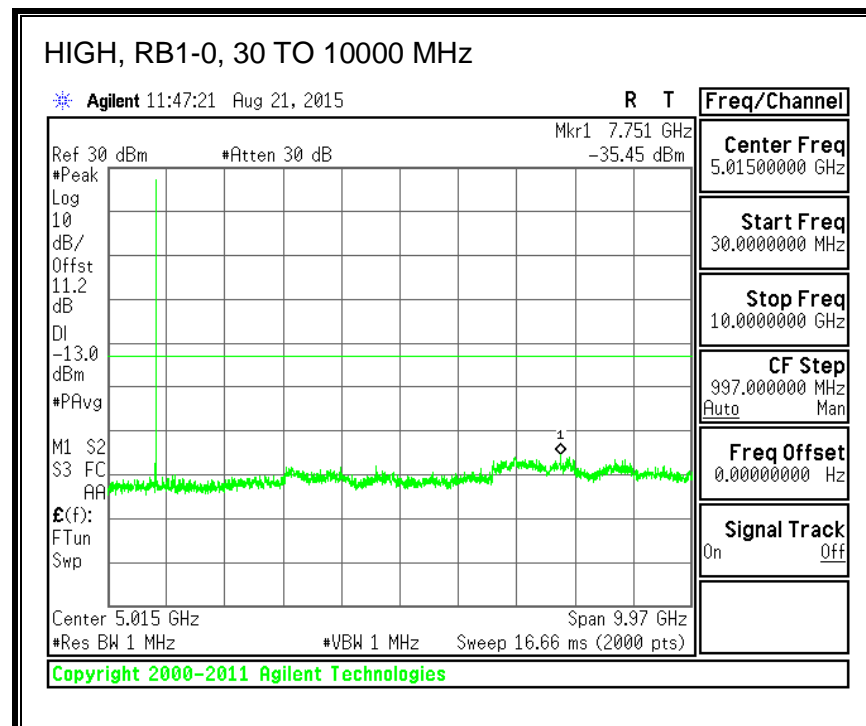
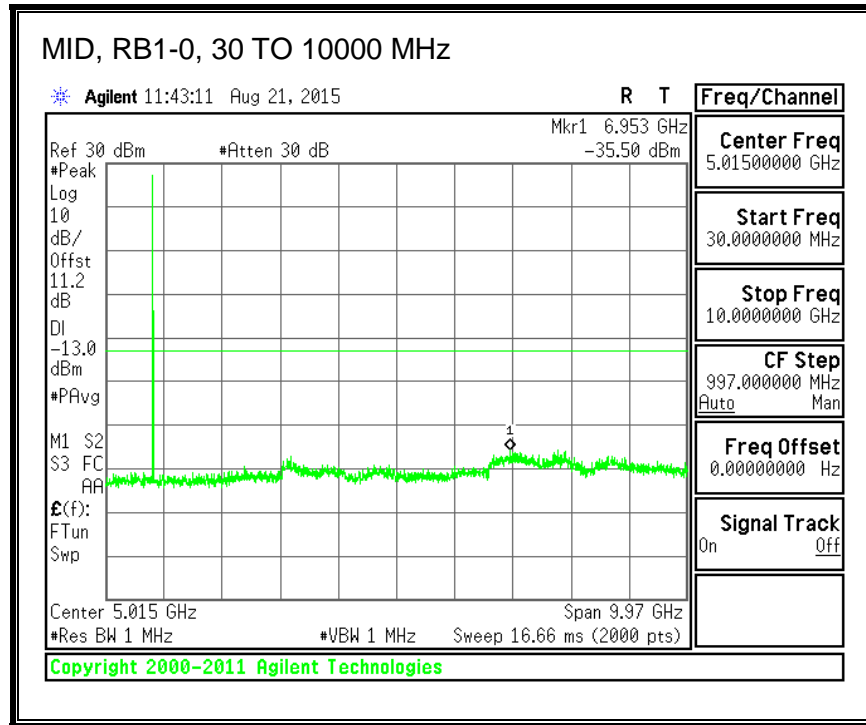
QPSK, (1.4 MHz BAND WIDTH)



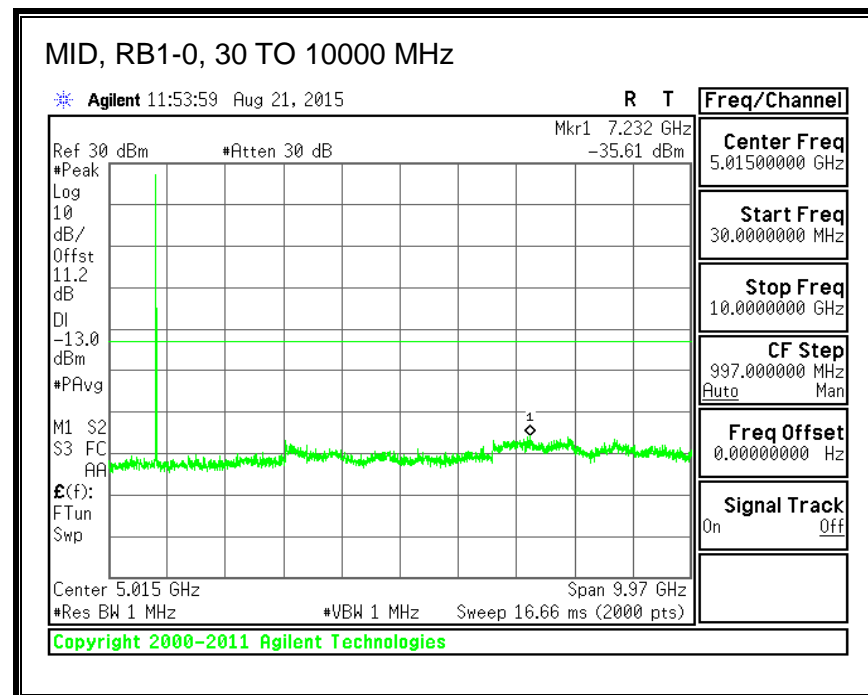
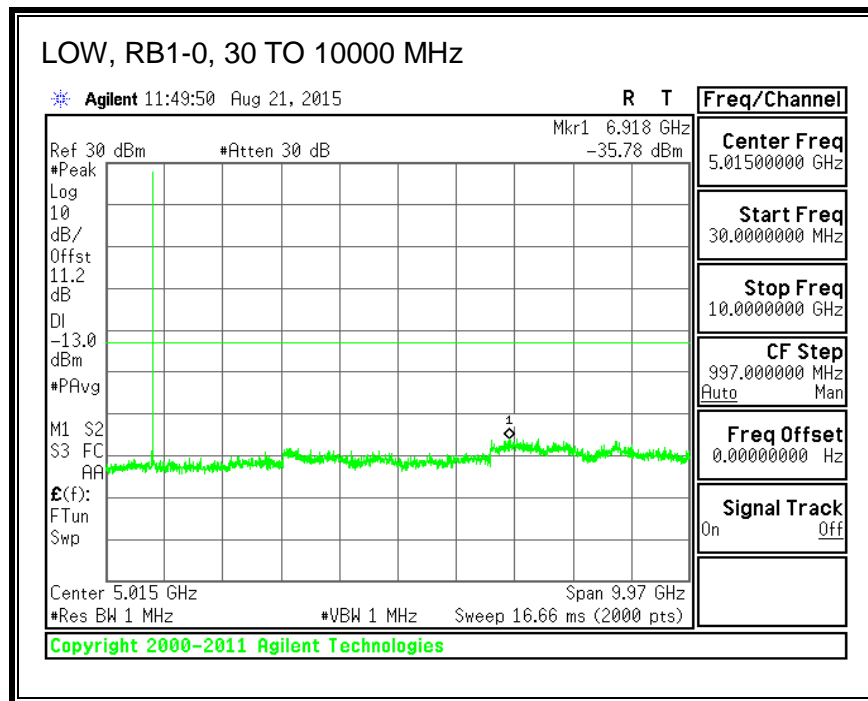


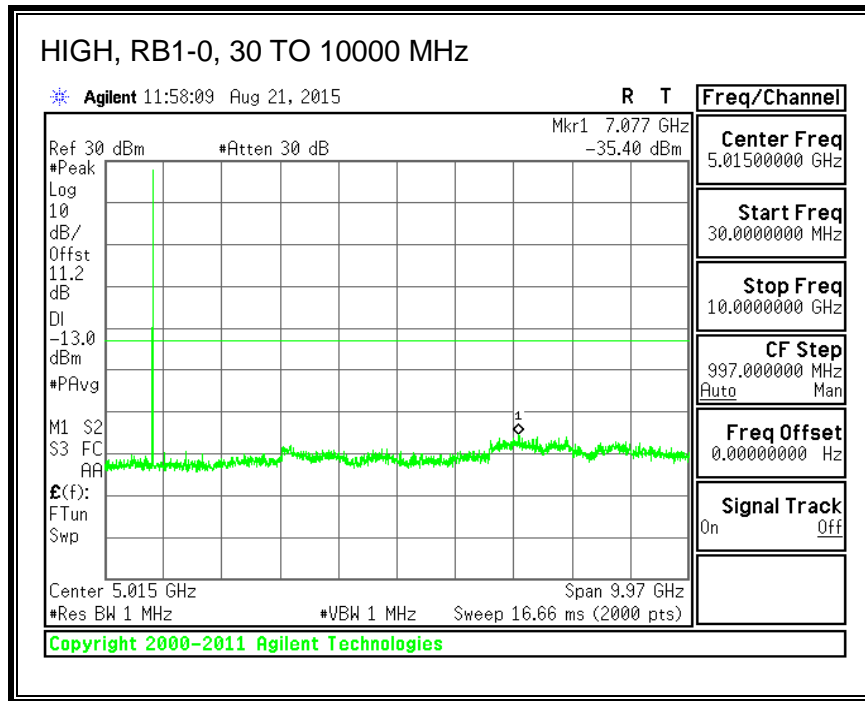
16QAM, (1.4 MHz BAND WIDTH)



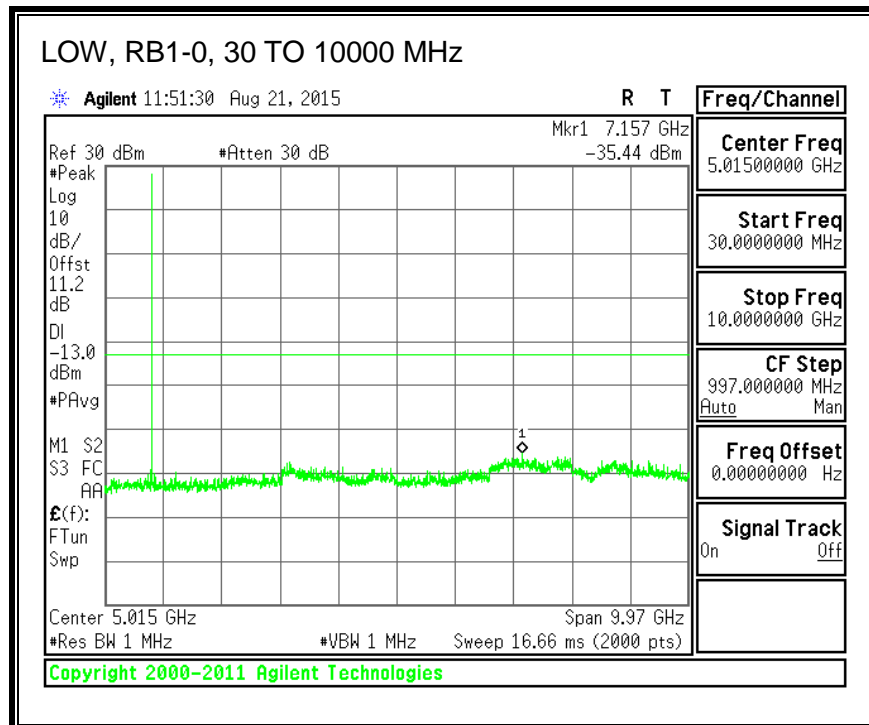


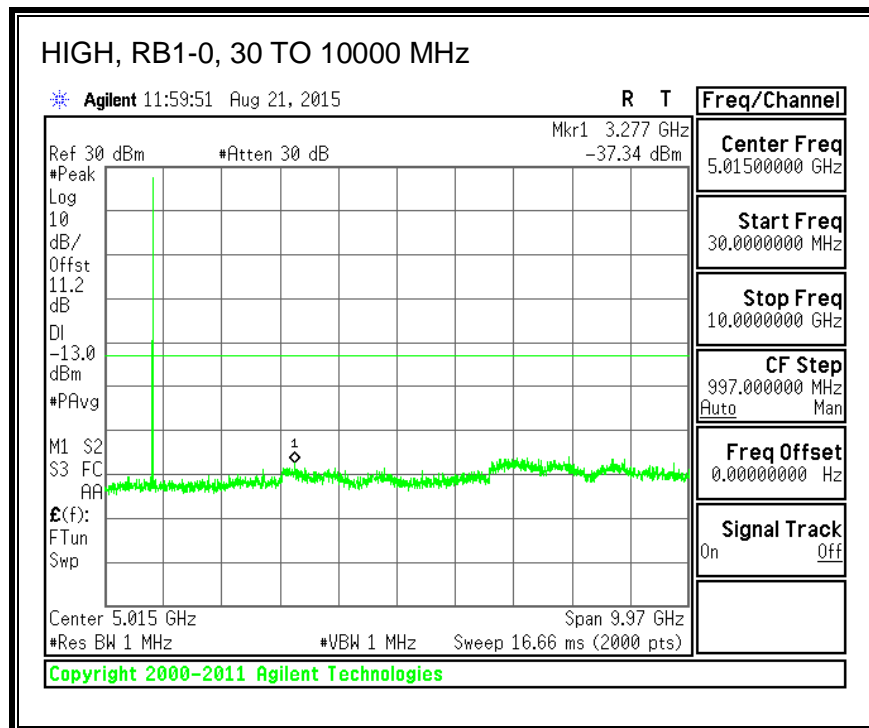
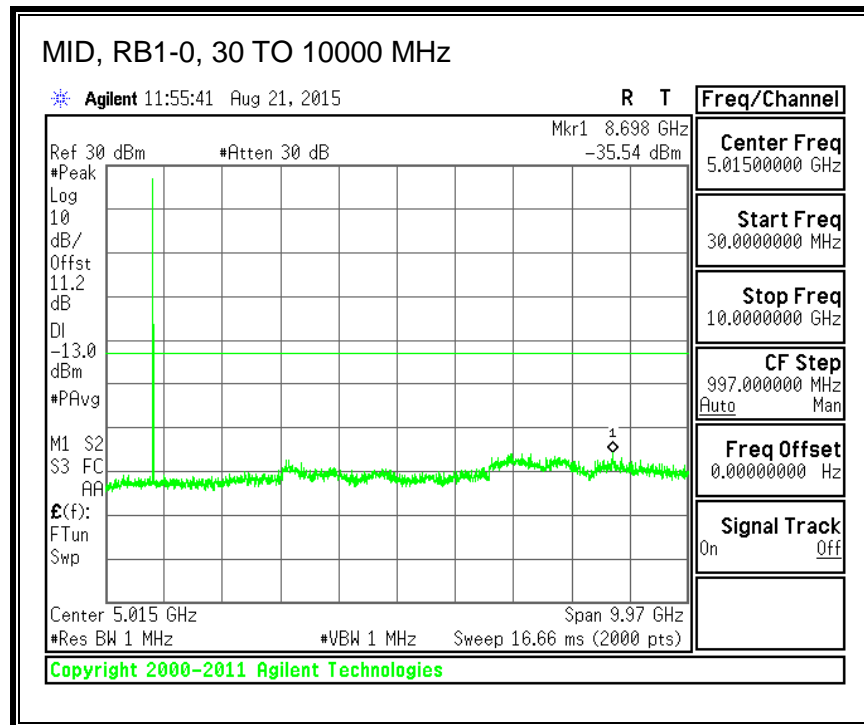
QPSK, (3.0 MHz BAND WIDTH)



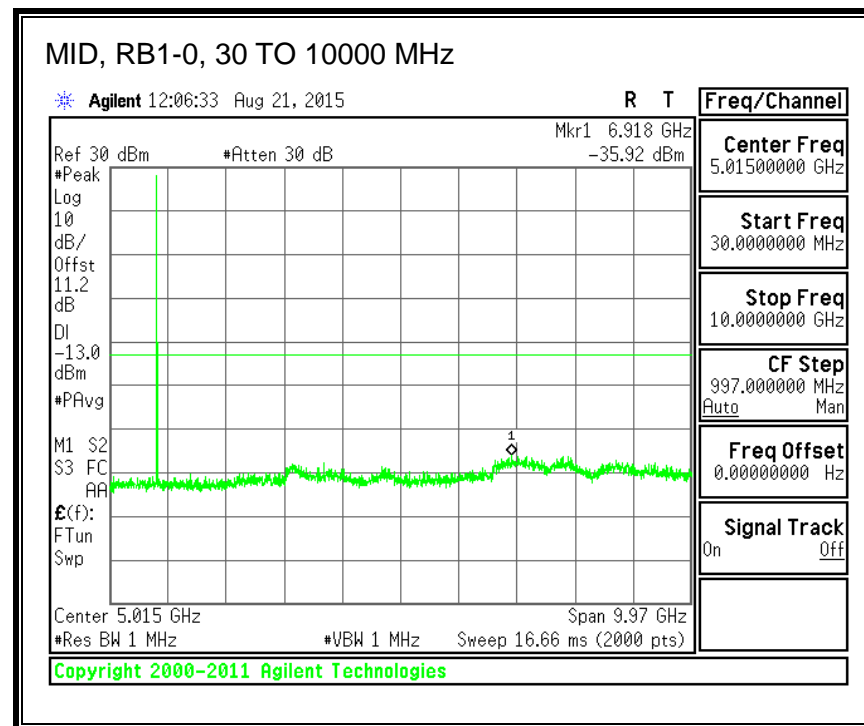
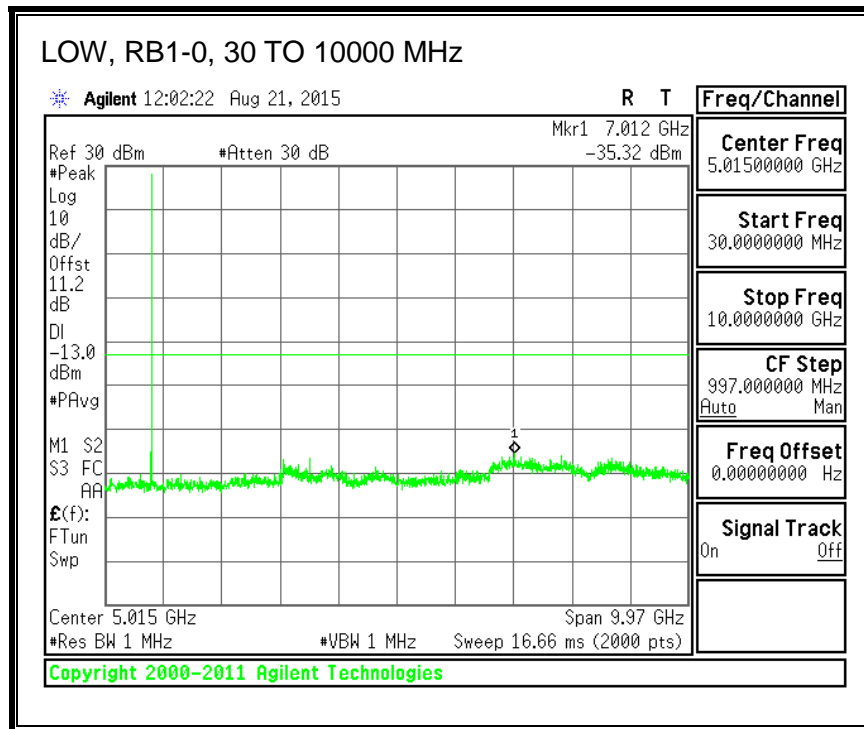


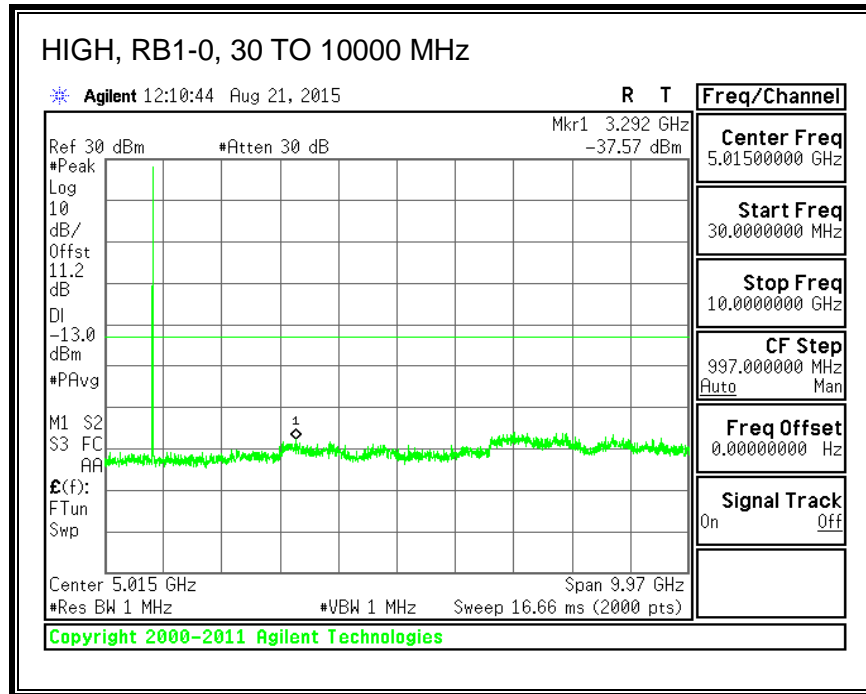
16QAM, (3.0 MHz BAND WIDTH)



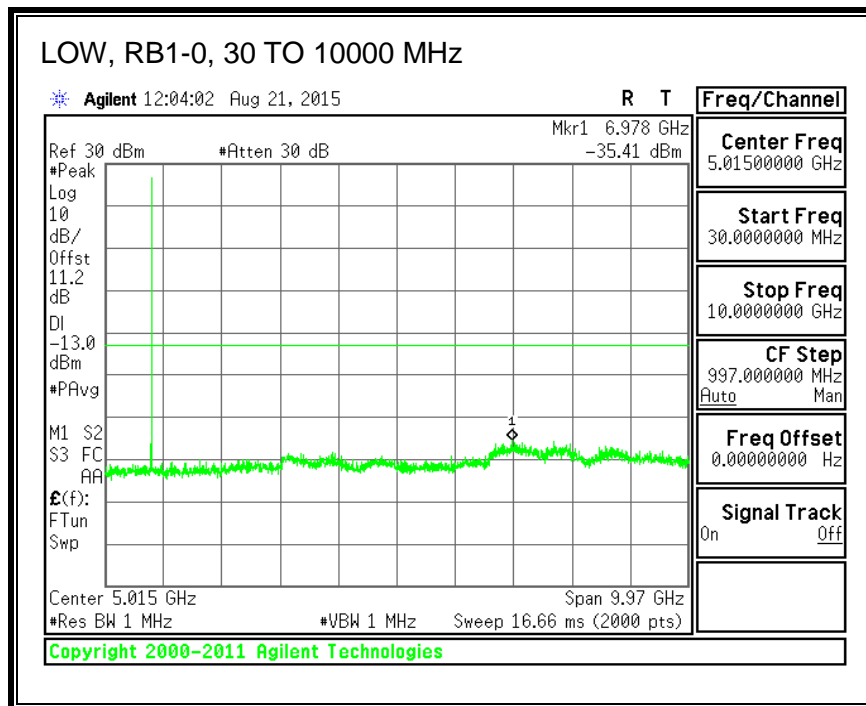


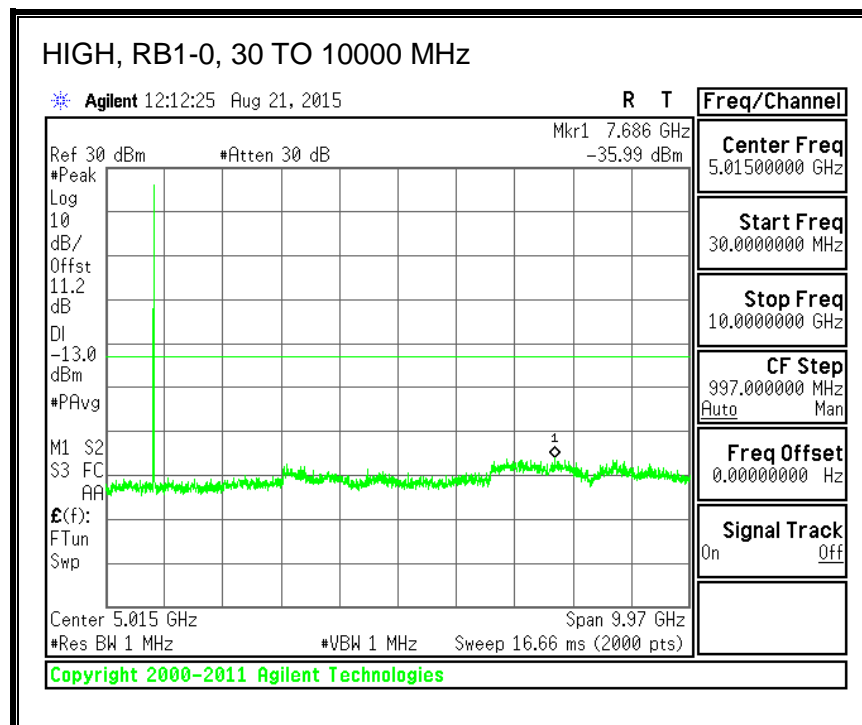
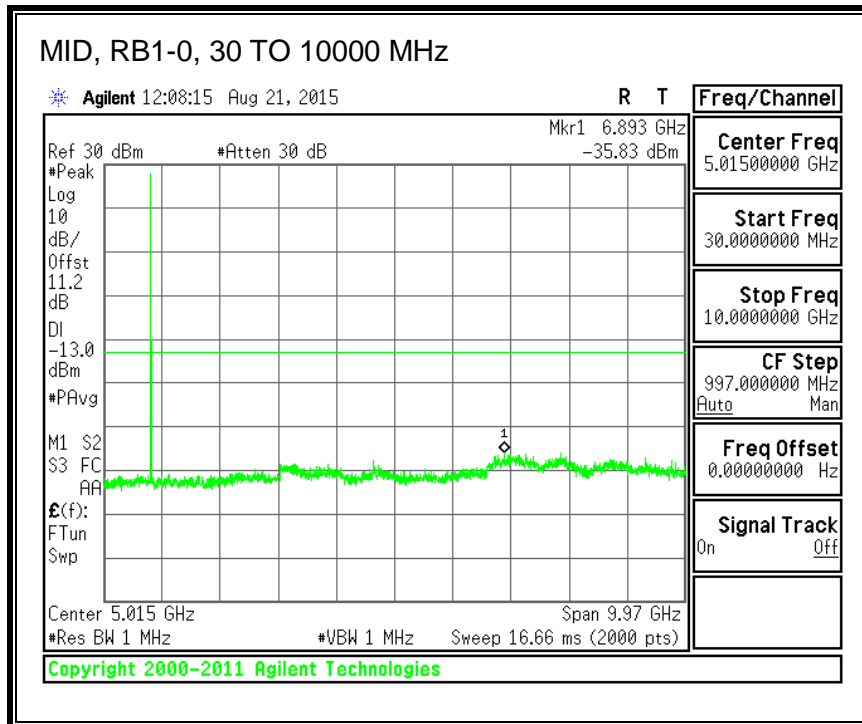
QPSK, (5.0 MHz BAND WIDTH)



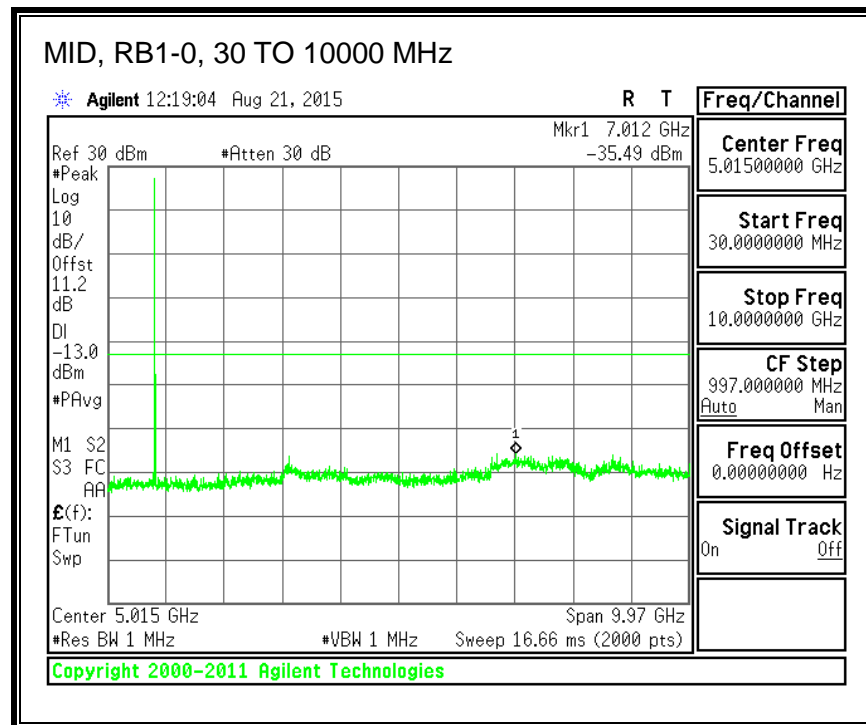
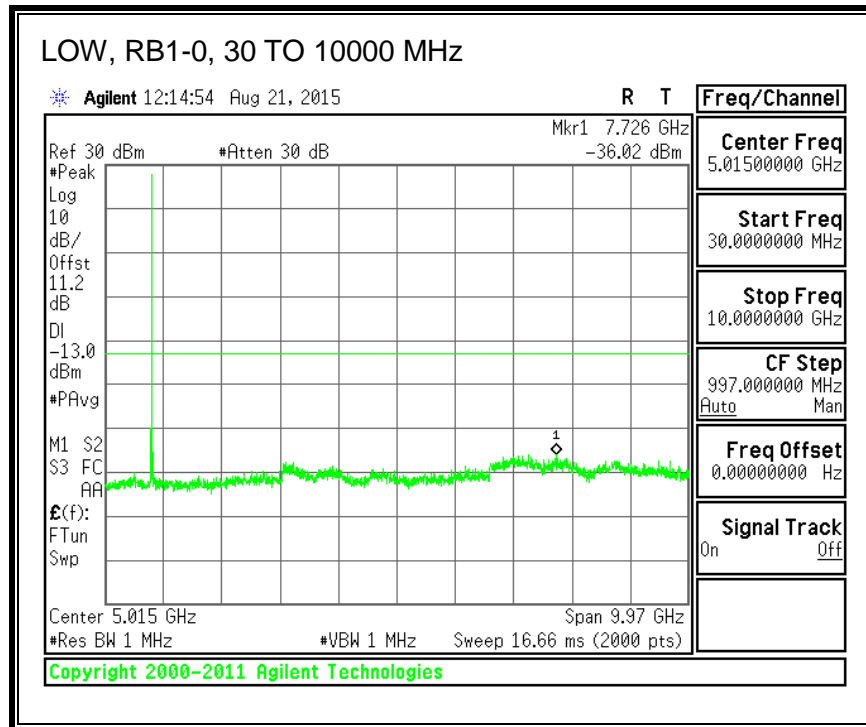


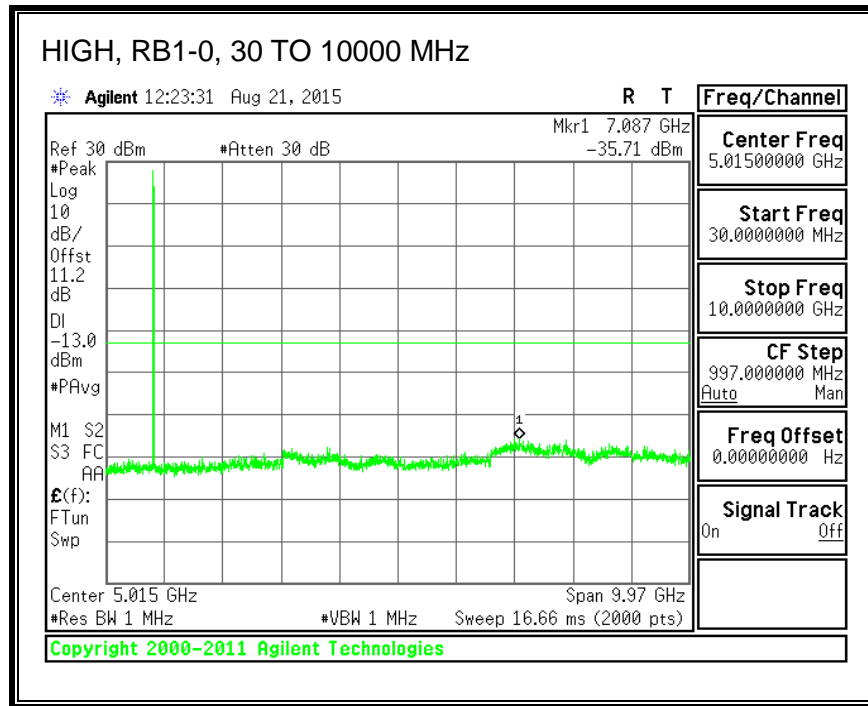
16QAM, (5.0 MHz BAND WIDTH)



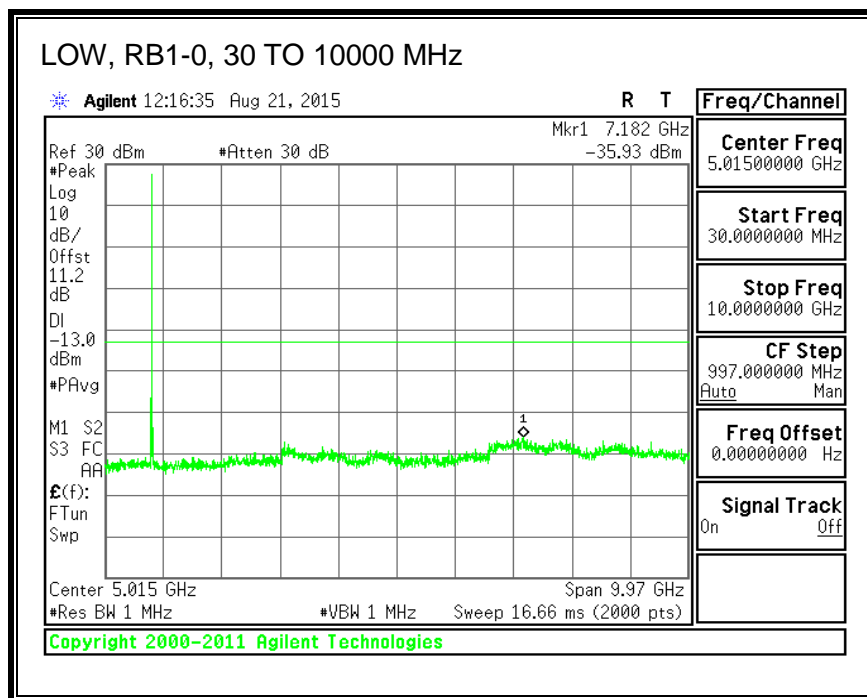


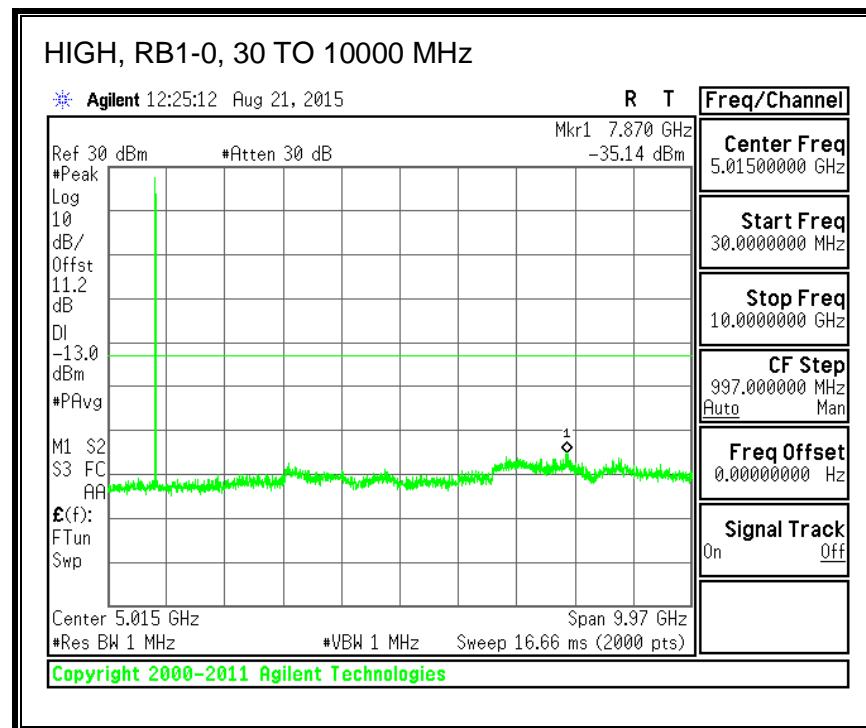
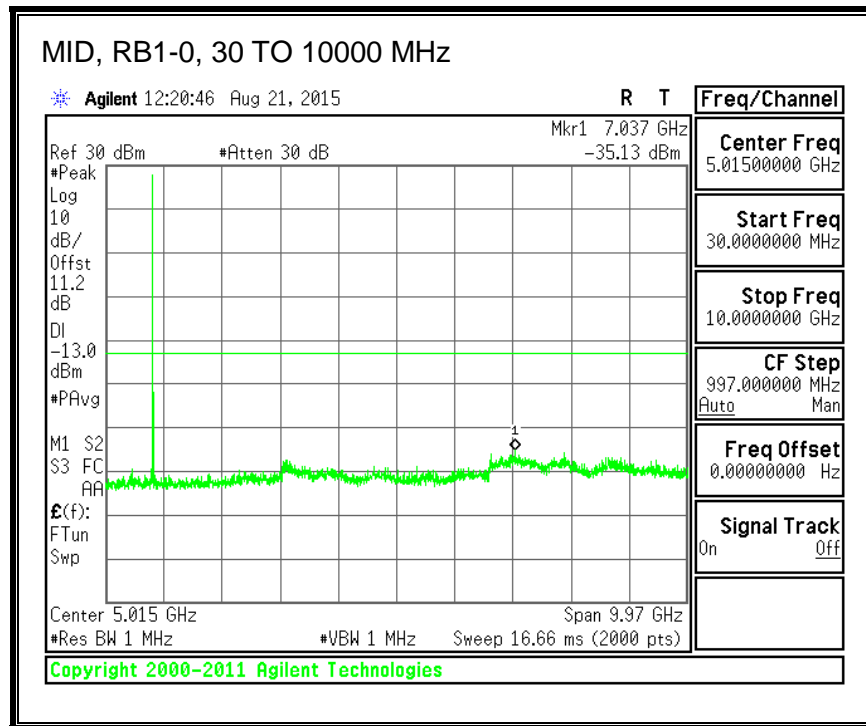
QPSK, (10.0 MHz BAND WIDTH)





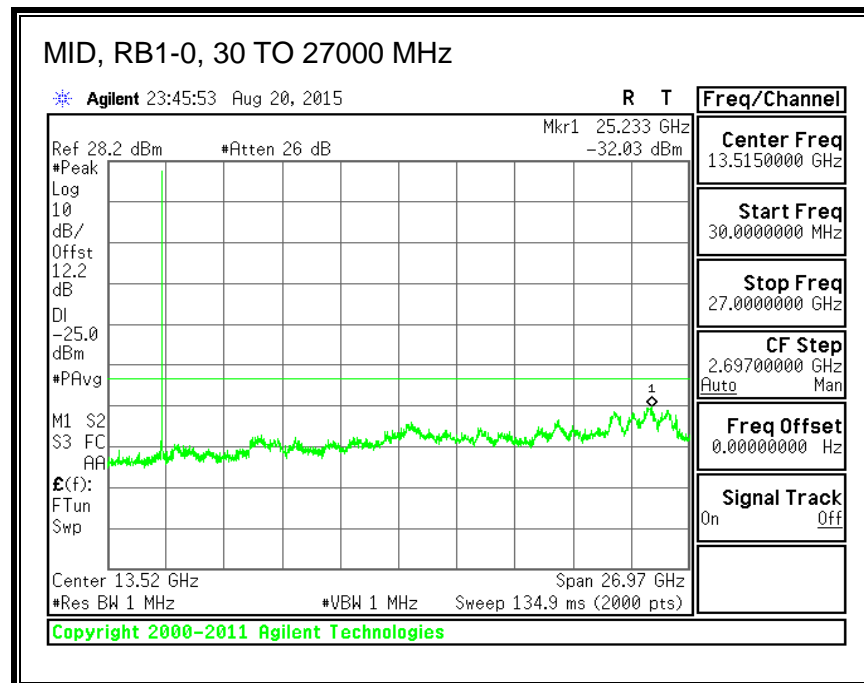
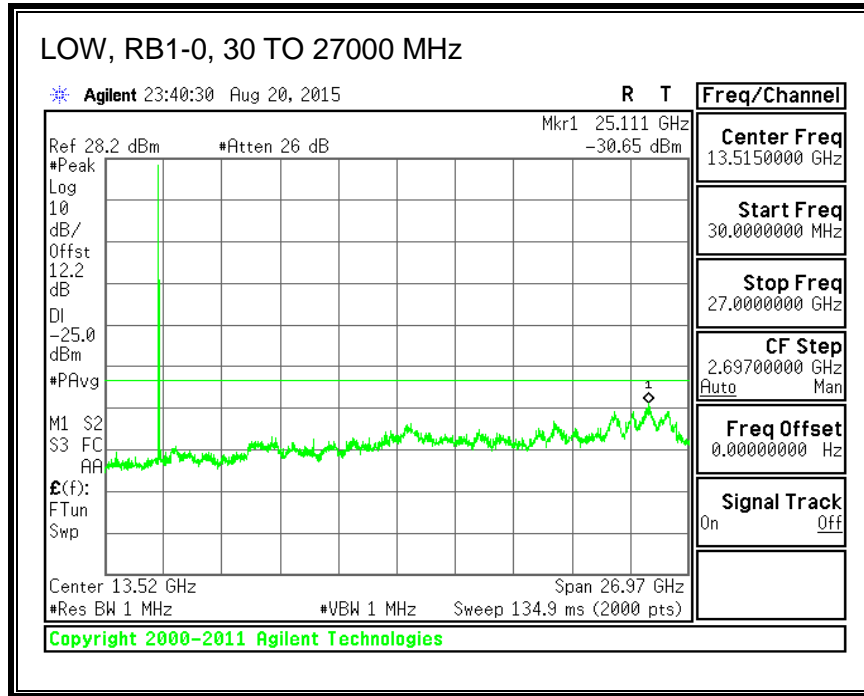
16QAM, (10.0 MHz BAND WIDTH)

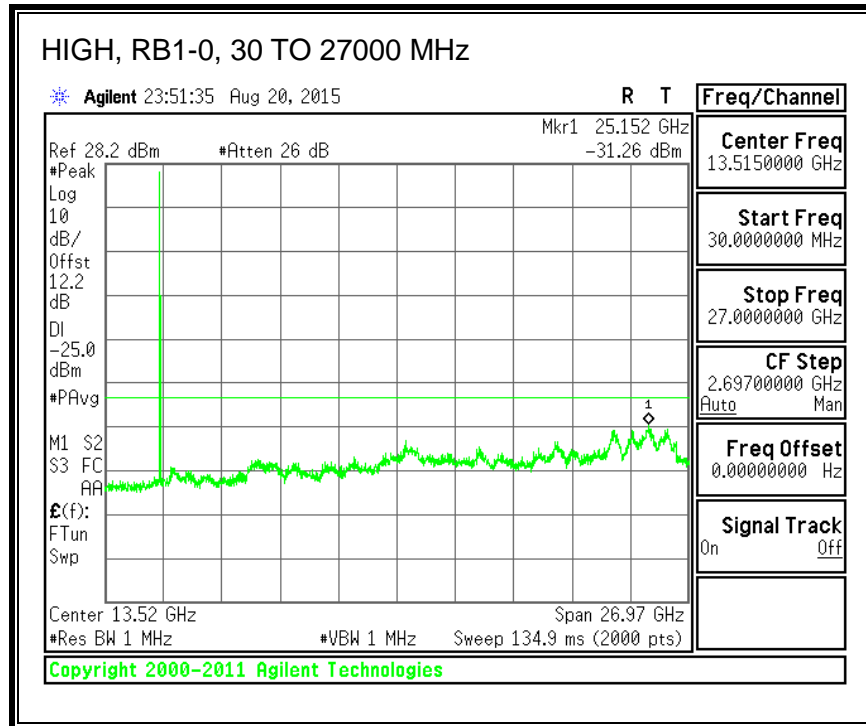




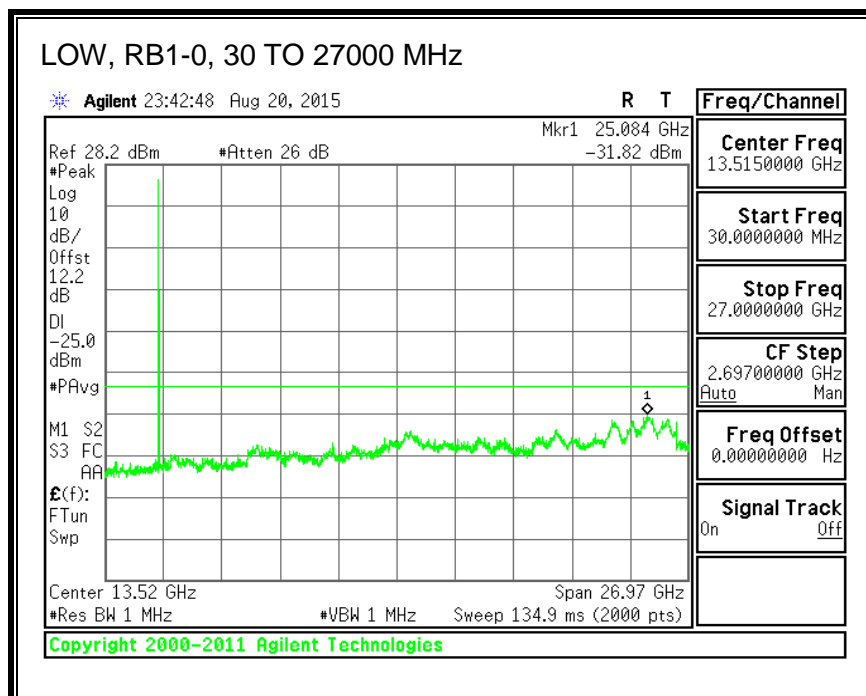
8.3.4. LTE BAND 7

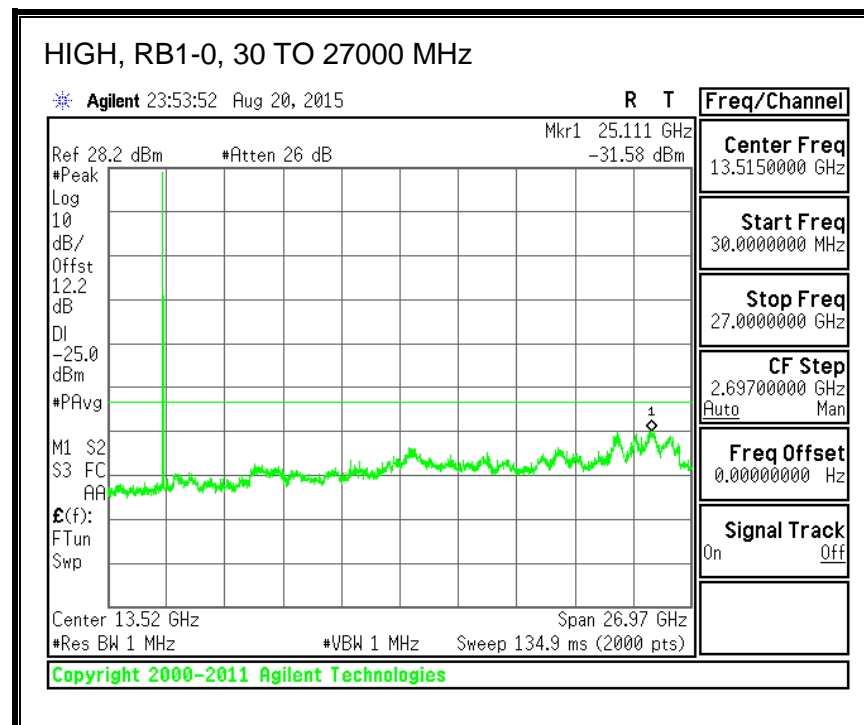
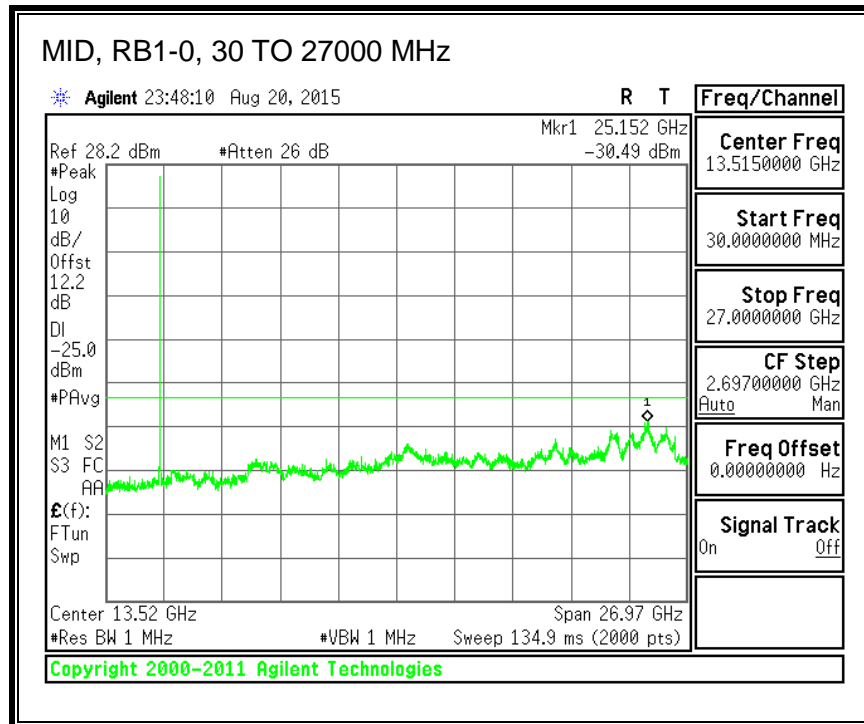
QPSK, (5.0 MHz BAND WIDTH)



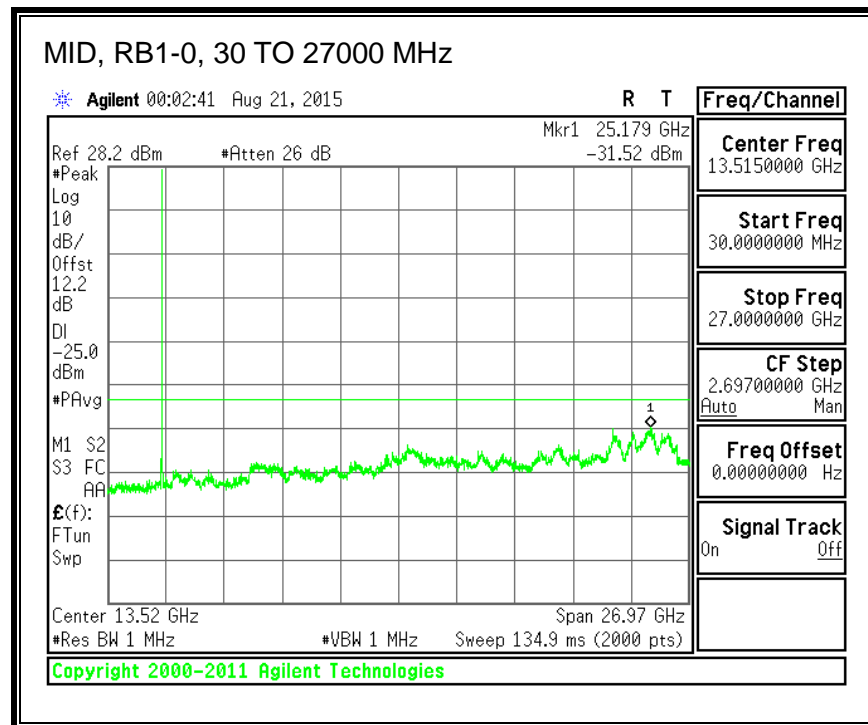
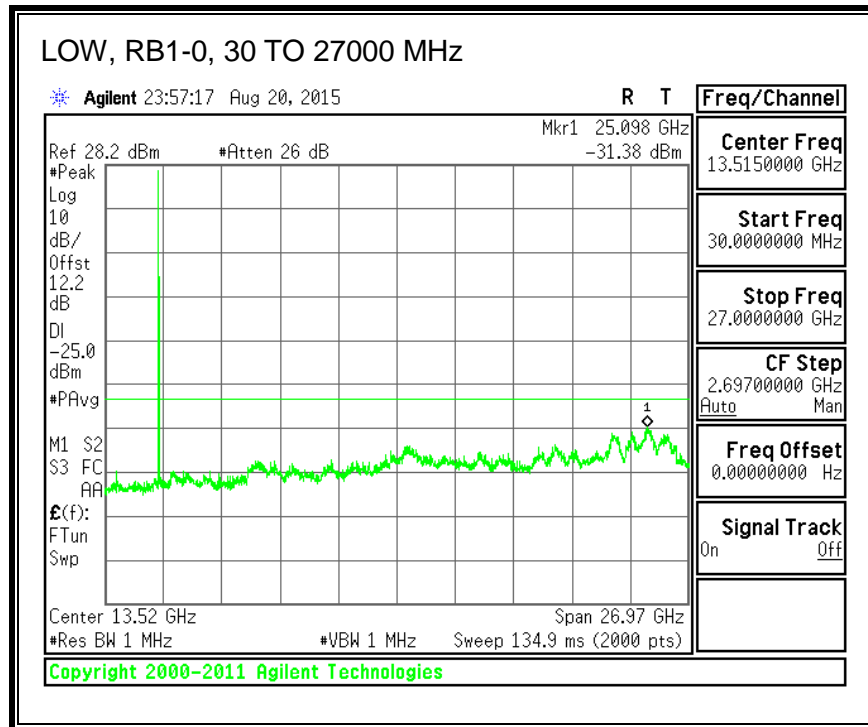


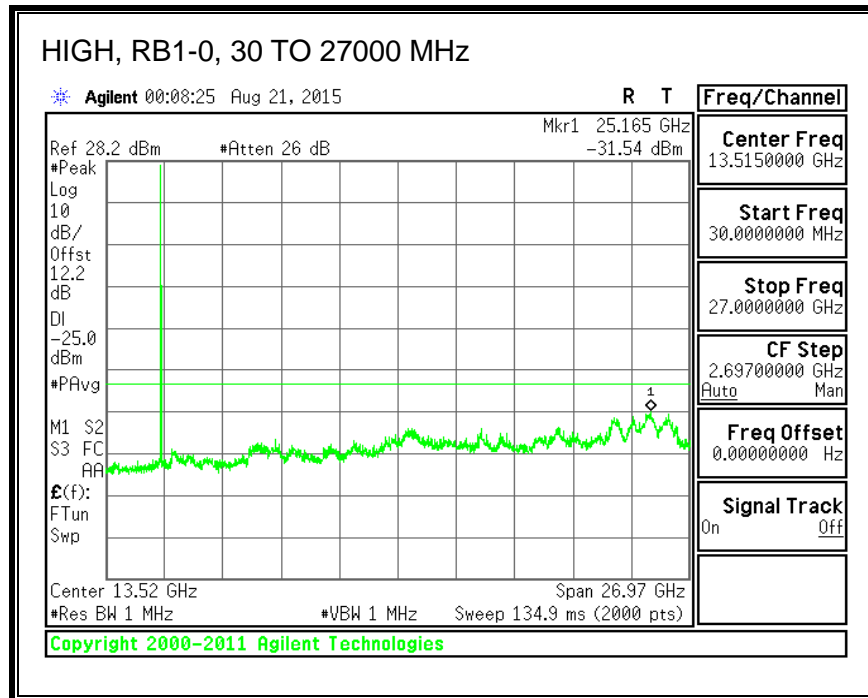
16QAM, (5.0 MHz BAND WIDTH)



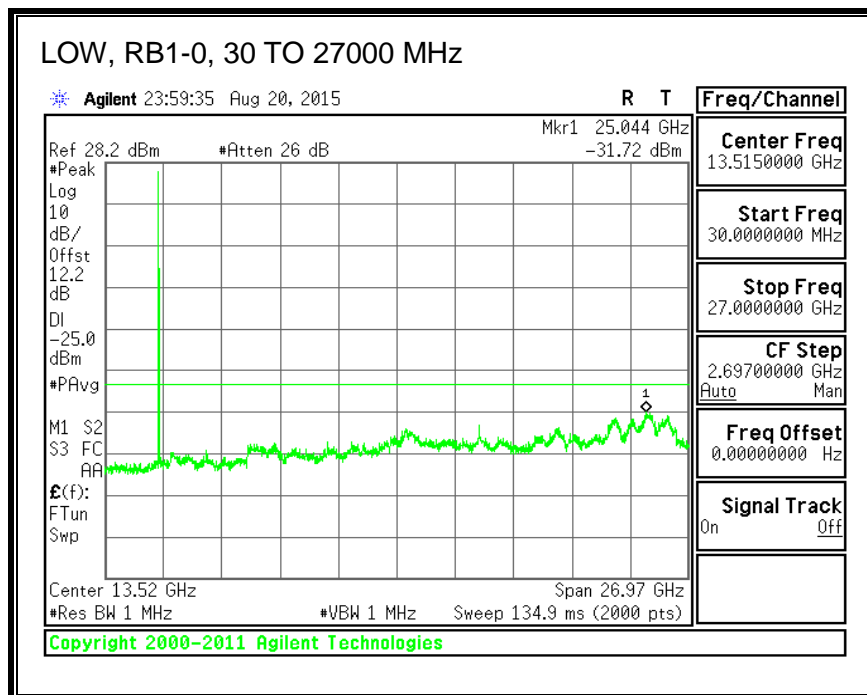


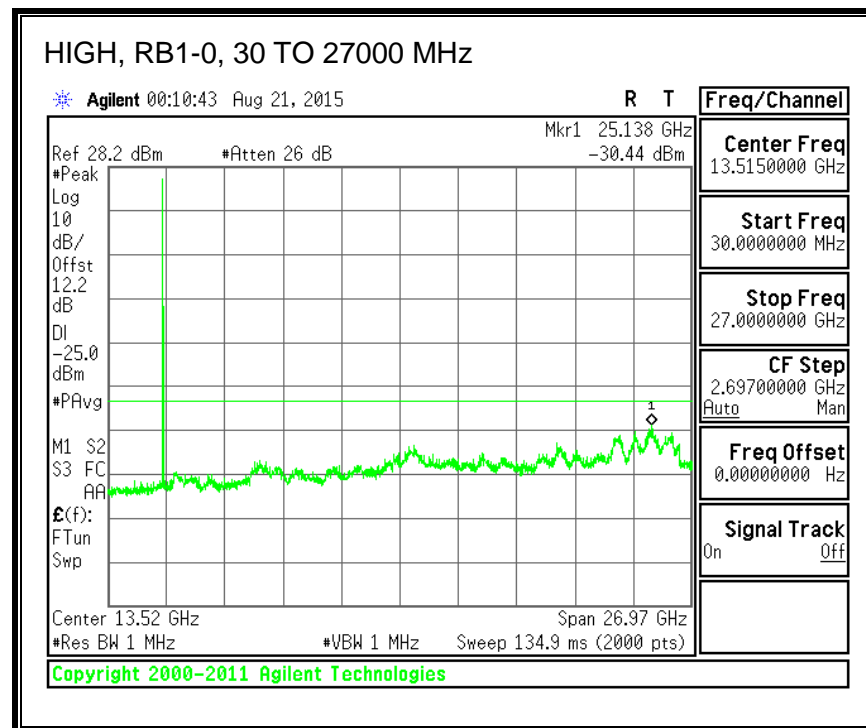
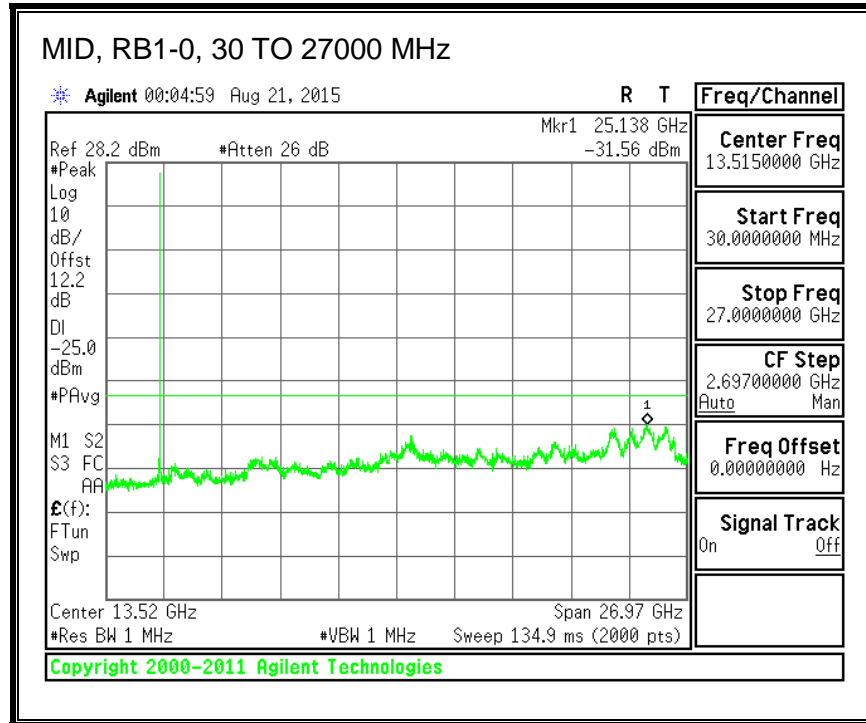
QPSK, (10.0 MHz BAND WIDTH)



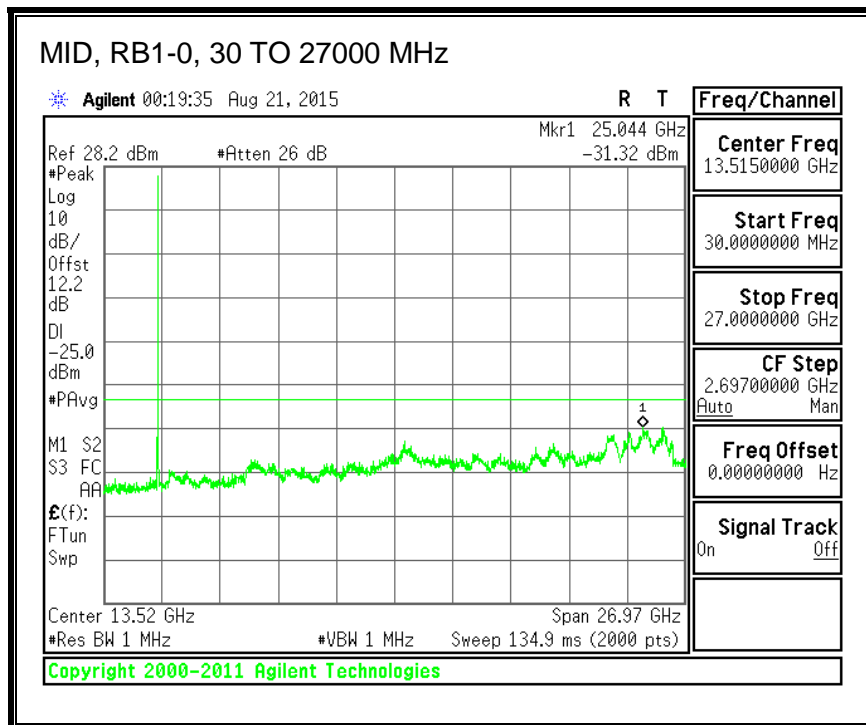
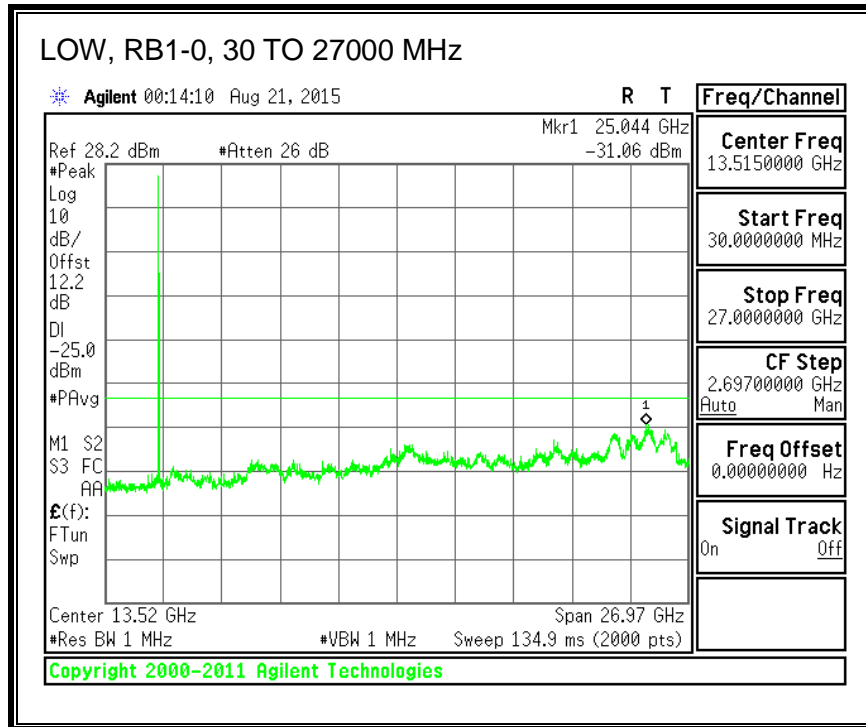


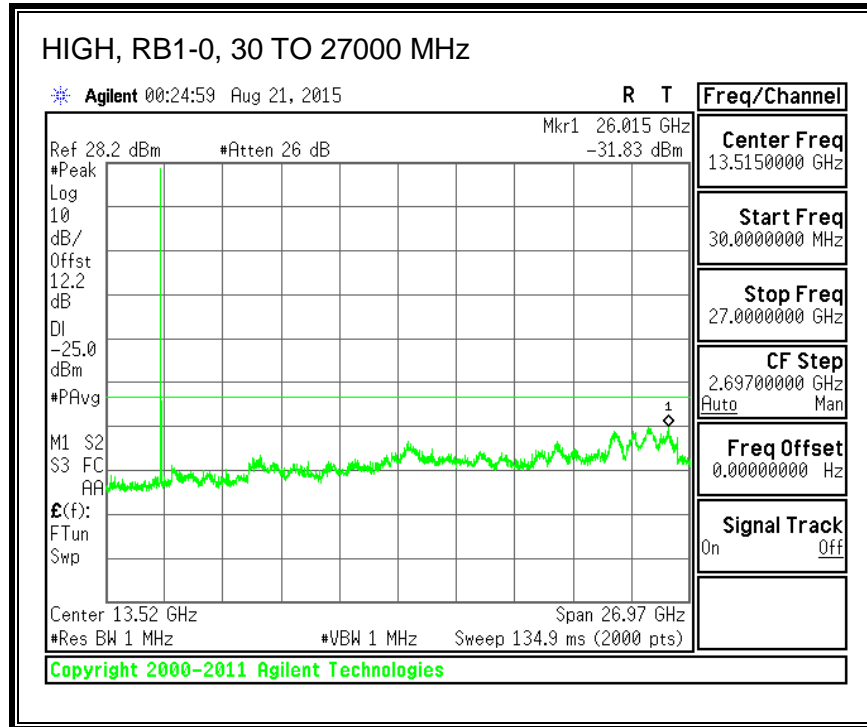
16QAM, (10.0 MHz BAND WIDTH)



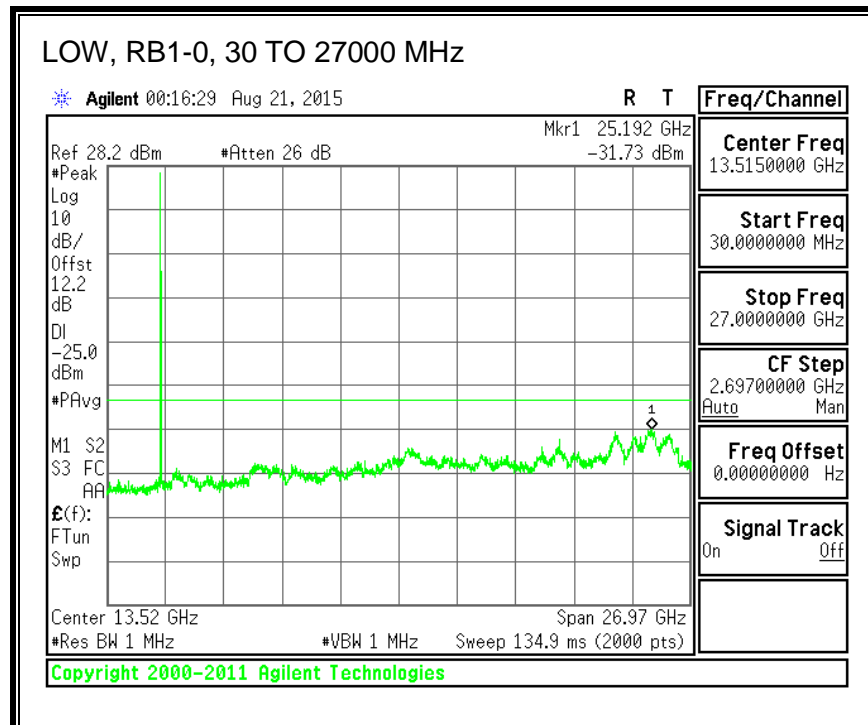


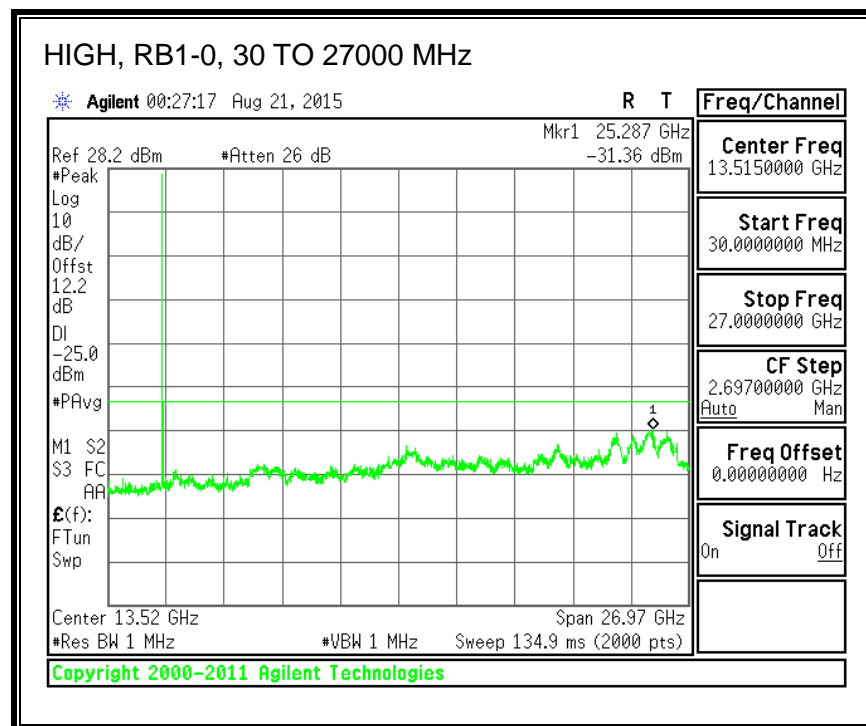
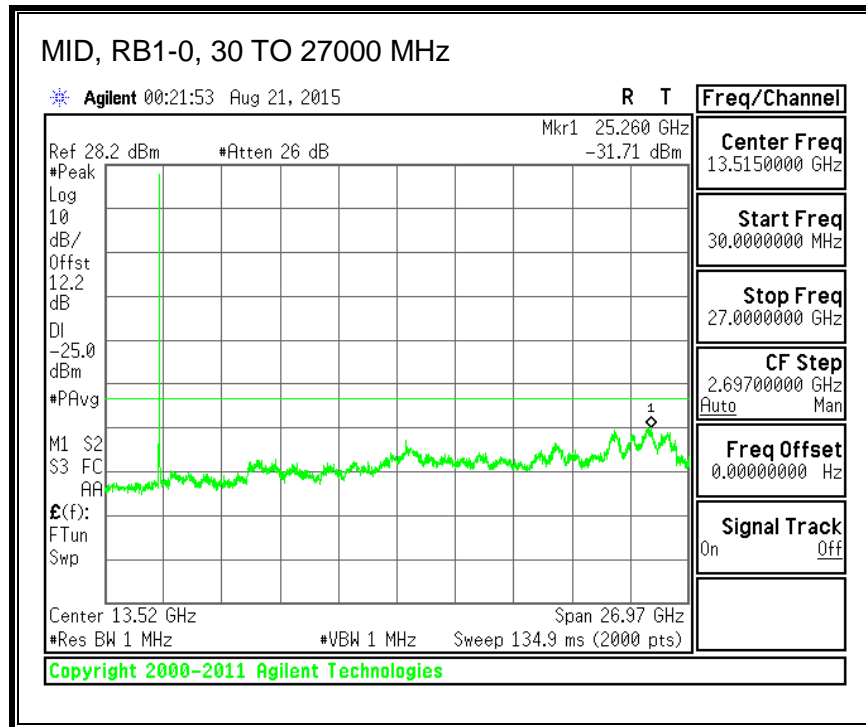
QPSK, (15.0 MHz BAND WIDTH)



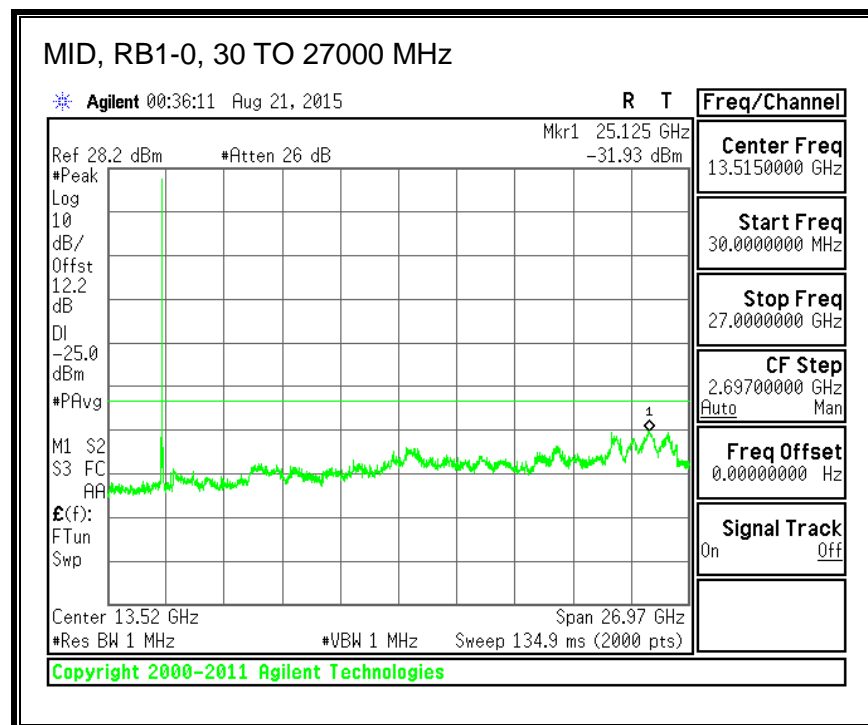
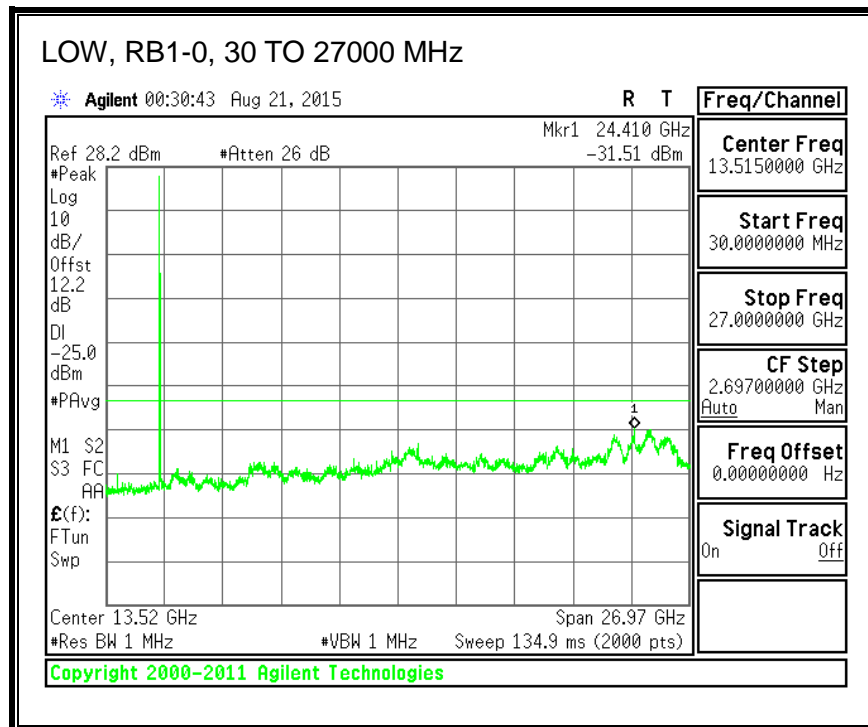


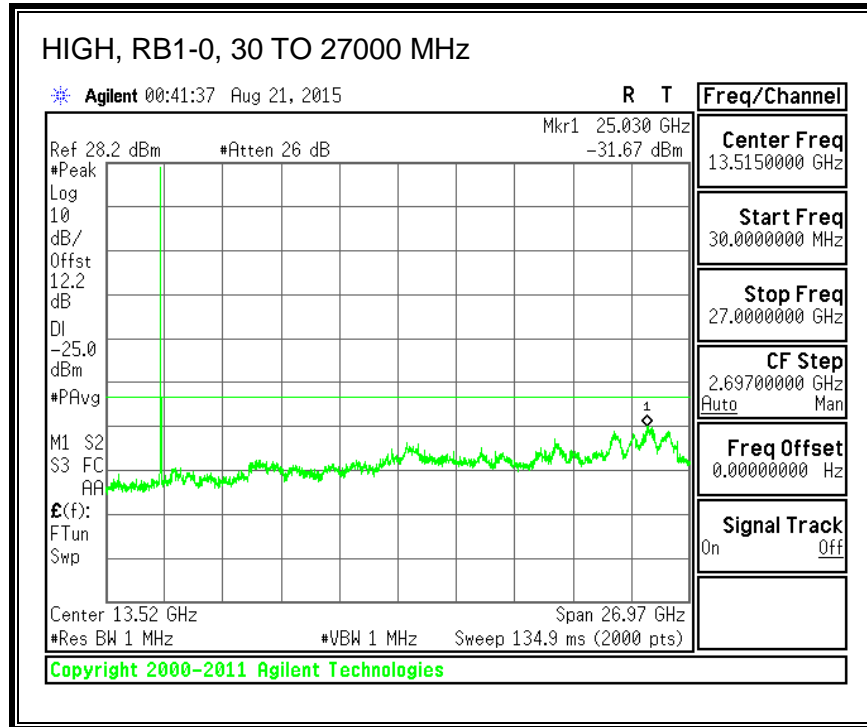
16QAM, (15.0 MHz BAND WIDTH)



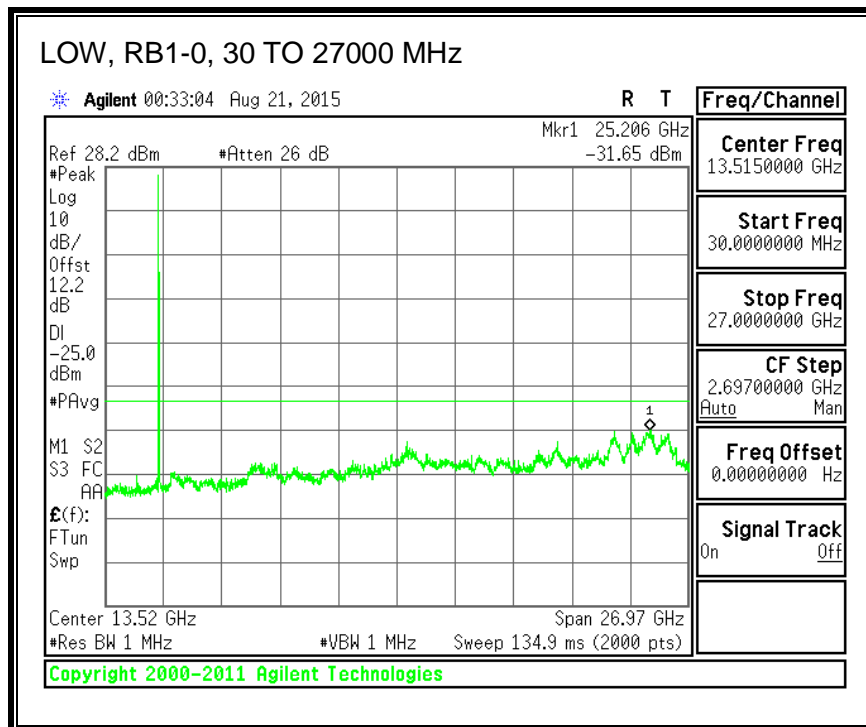


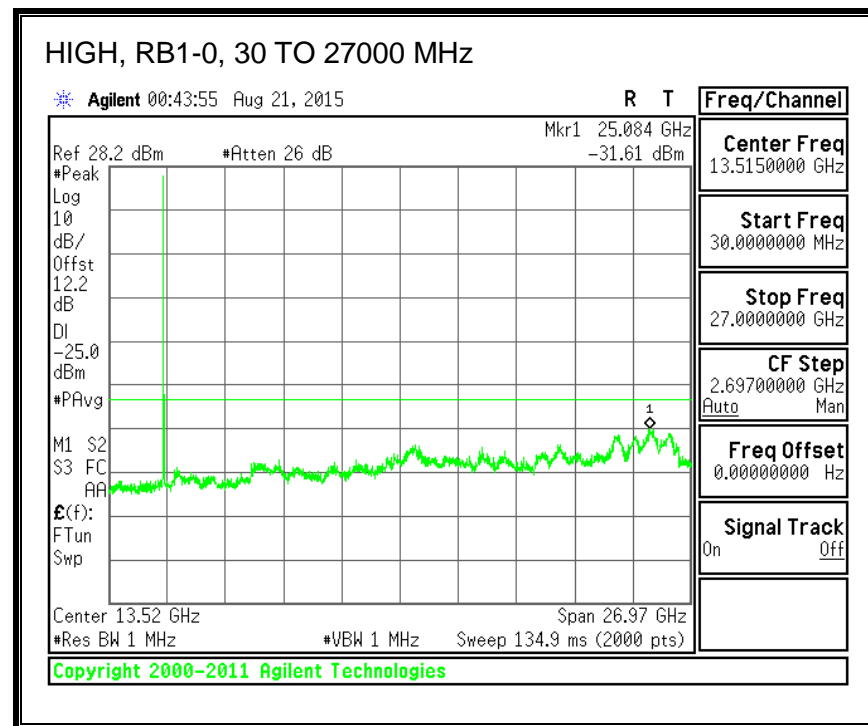
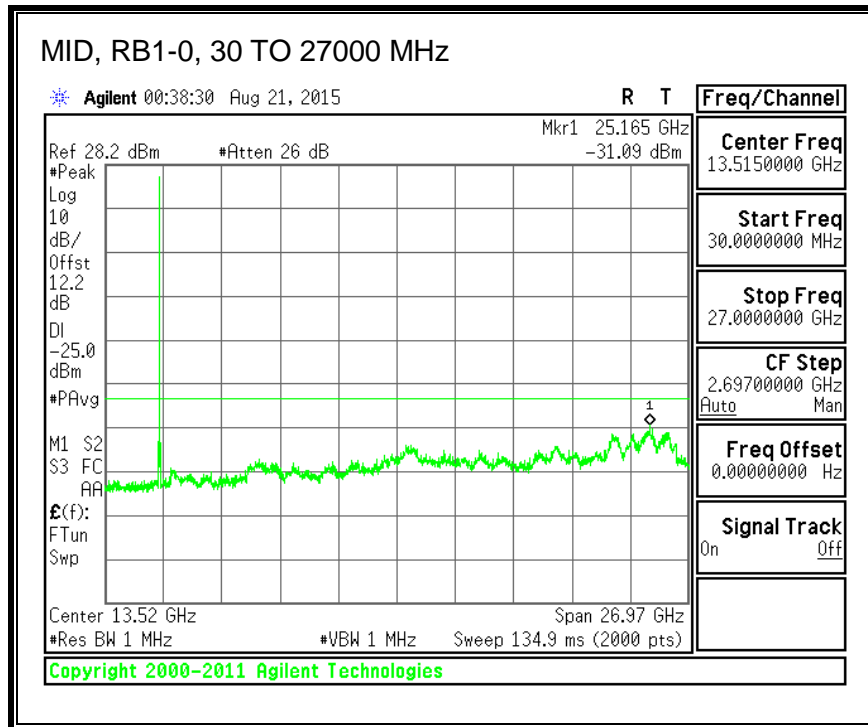
QPSK, (20.0 MHz BAND WIDTH)





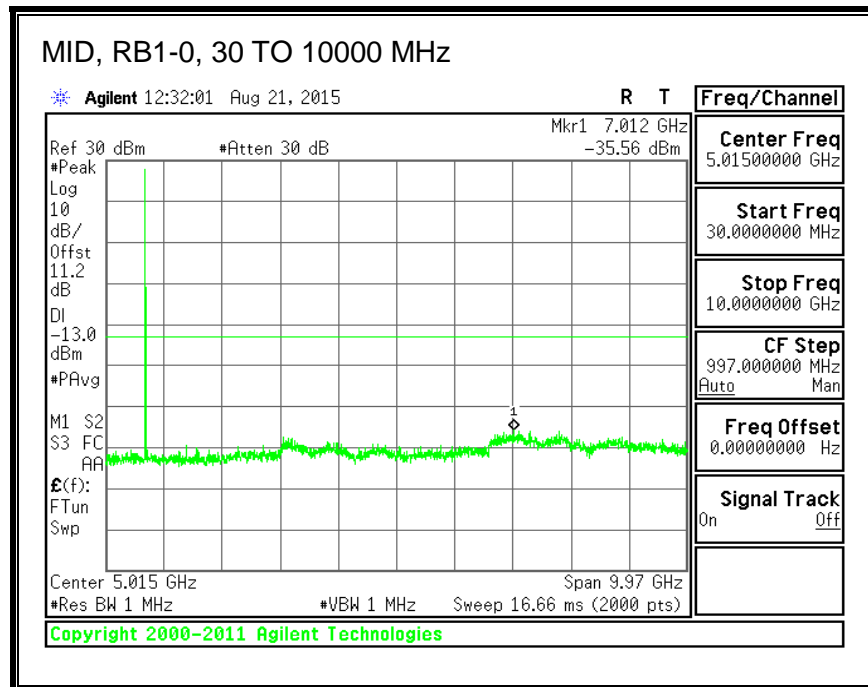
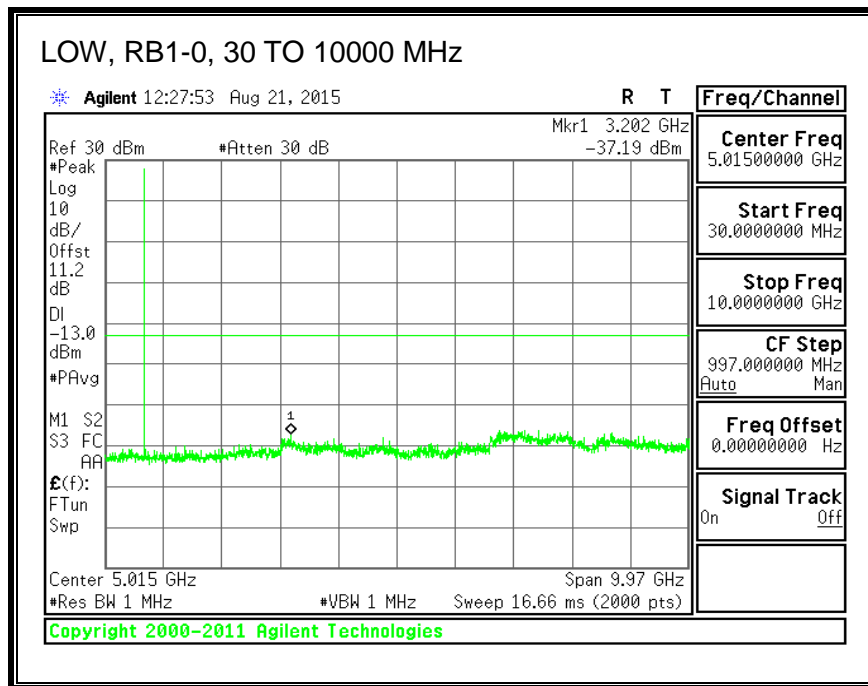
16QAM, (20.0 MHz BAND WIDTH)

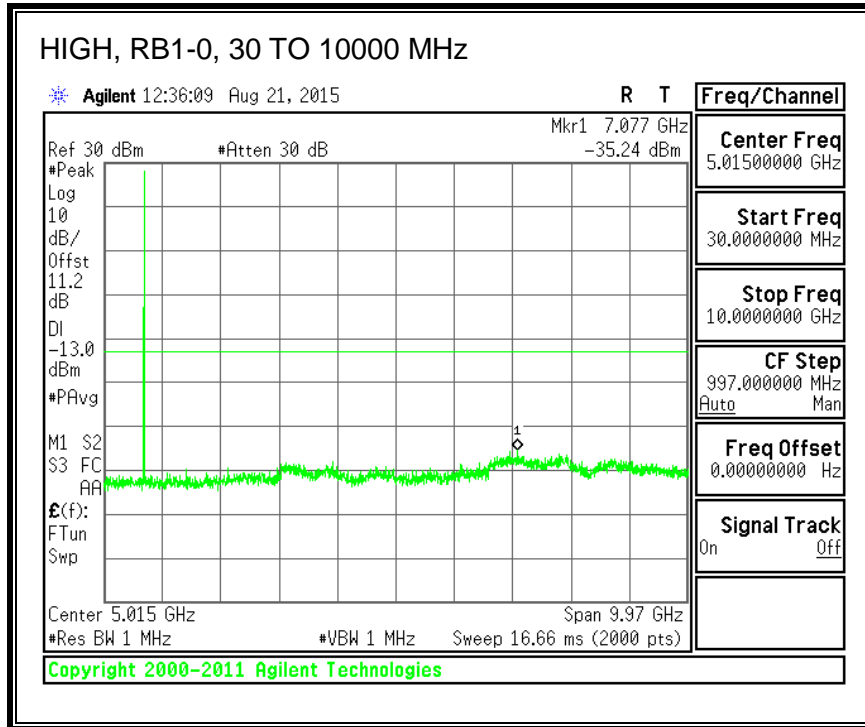




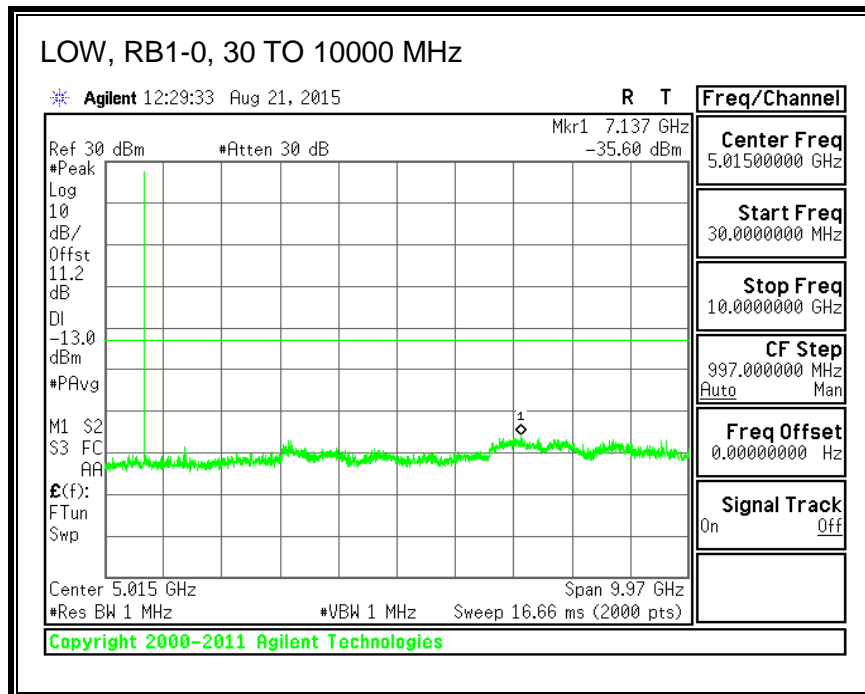
8.3.5. LTE BAND 12

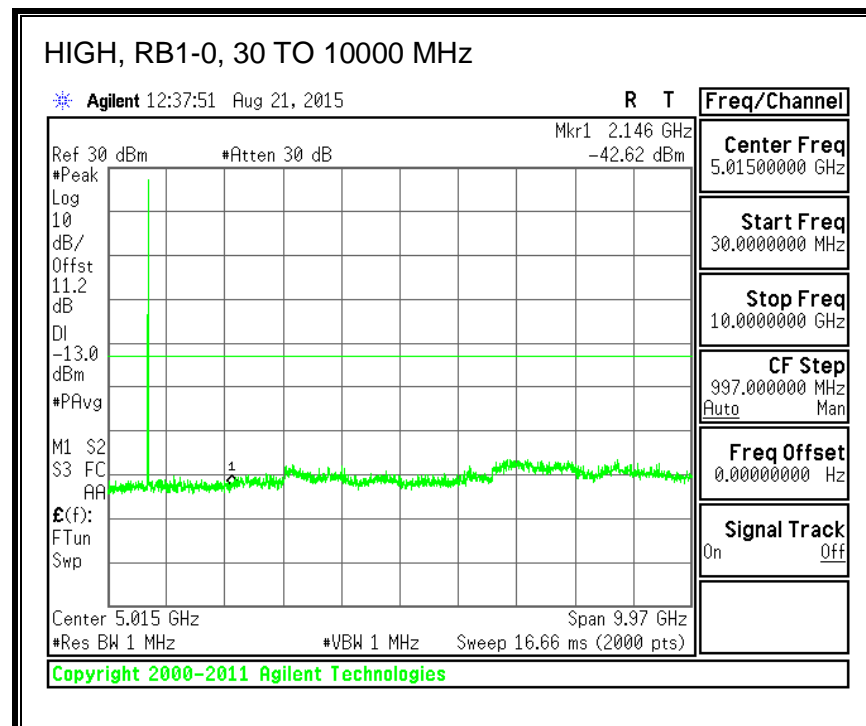
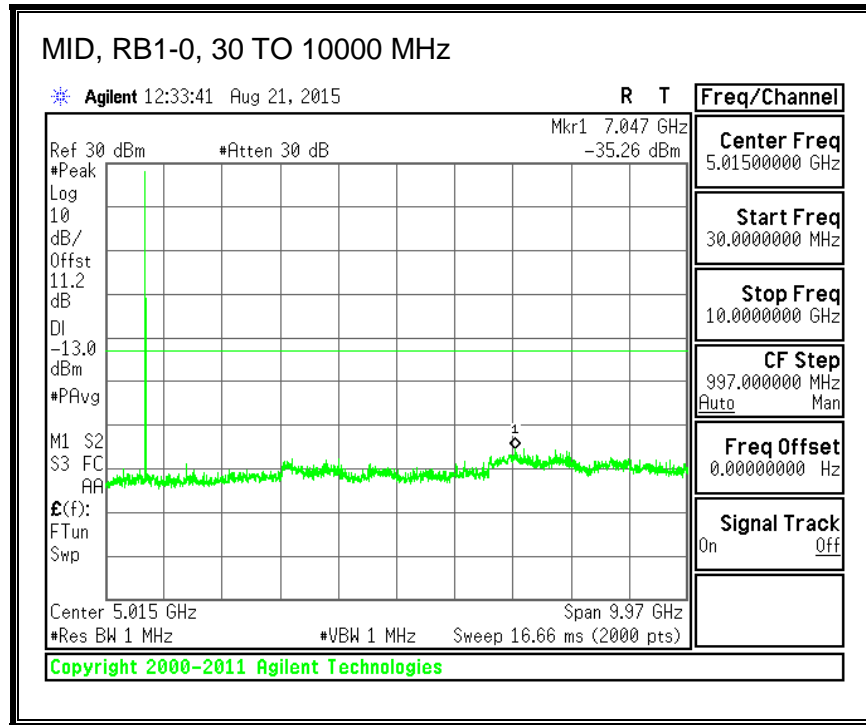
QPSK, (1.4 MHz BAND WIDTH)



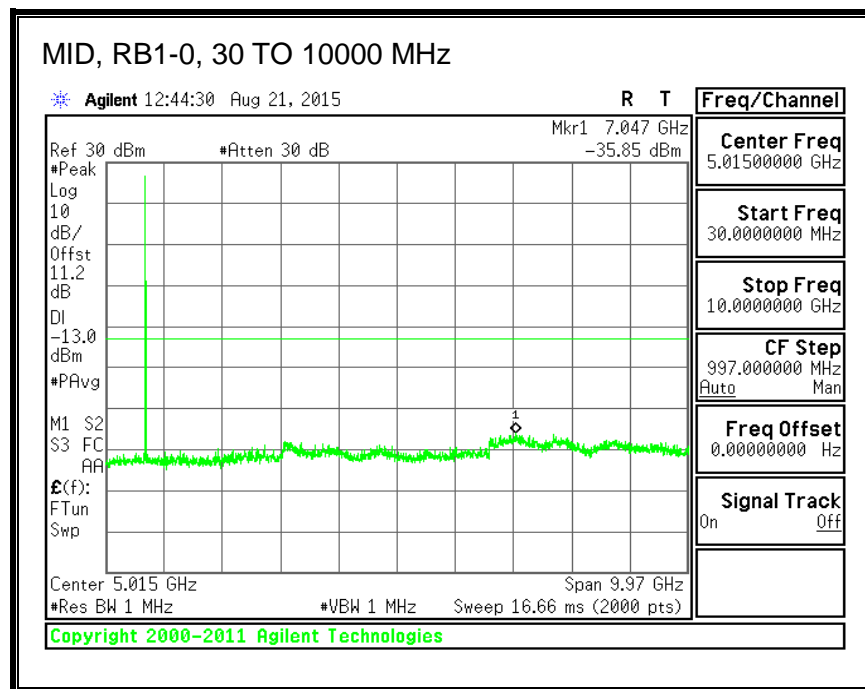
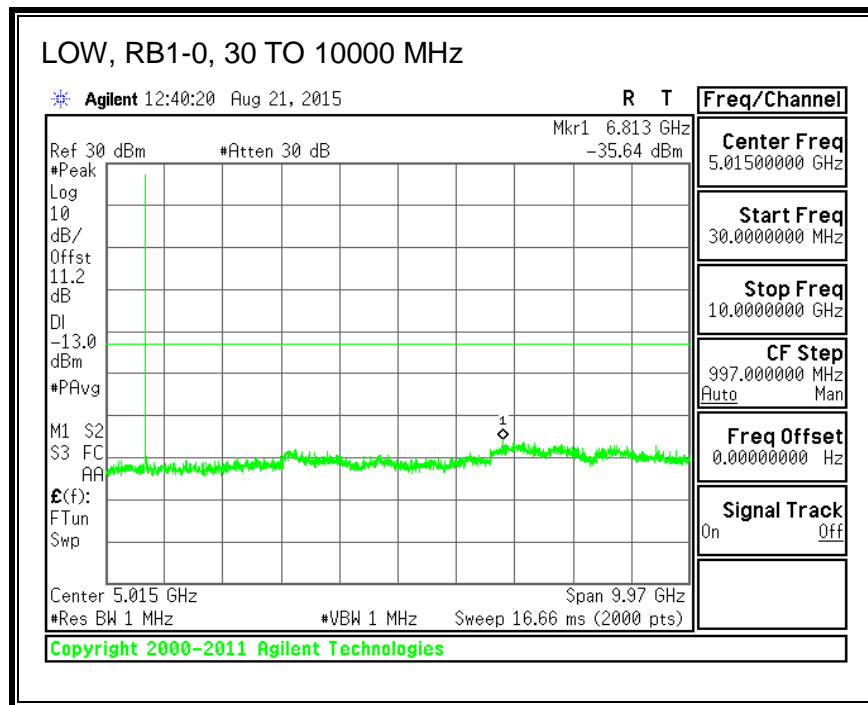


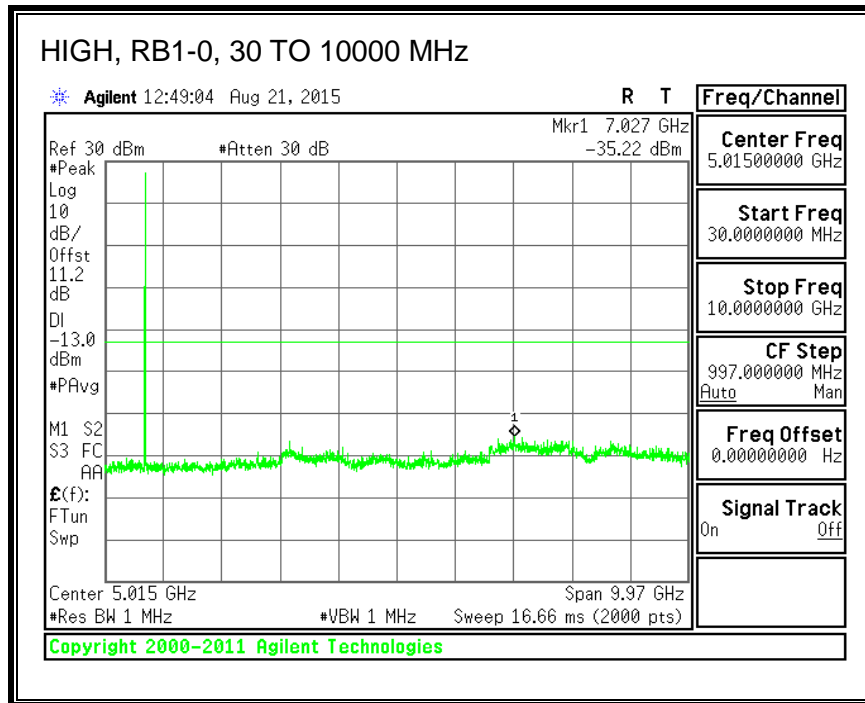
16QAM, (1.4 MHz BAND WIDTH)



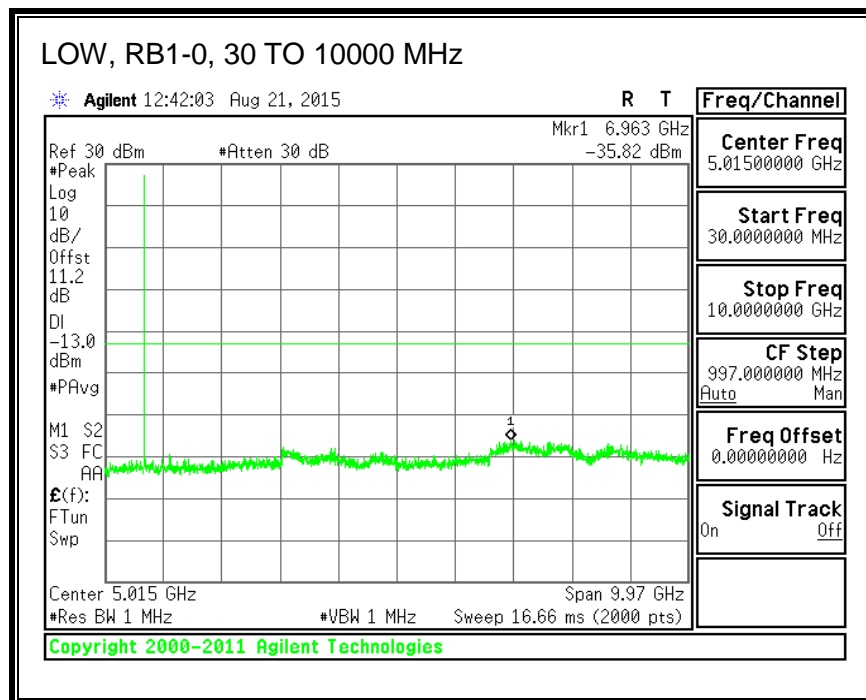


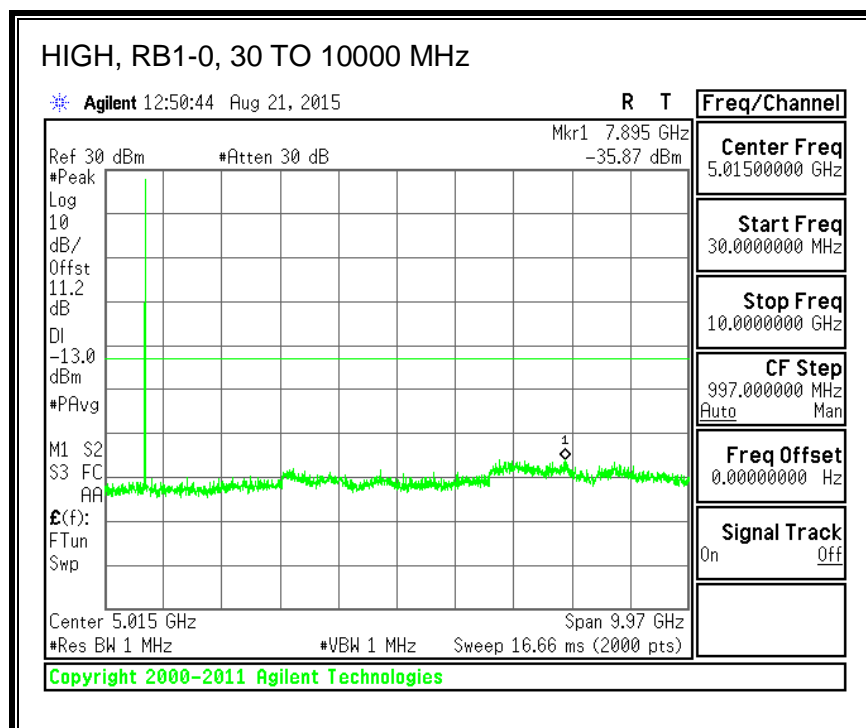
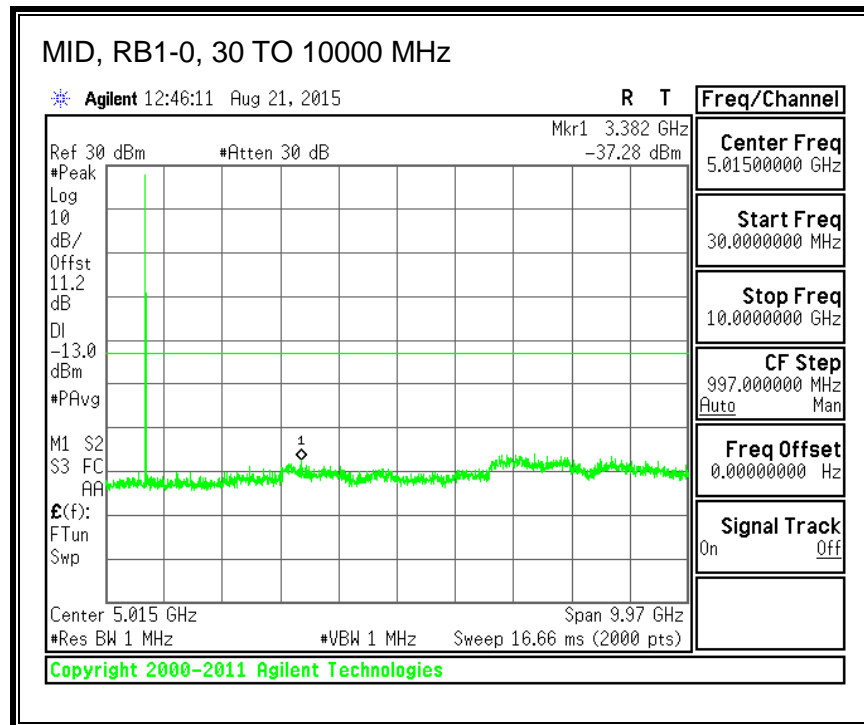
QPSK, (3.0 MHz BAND WIDTH)



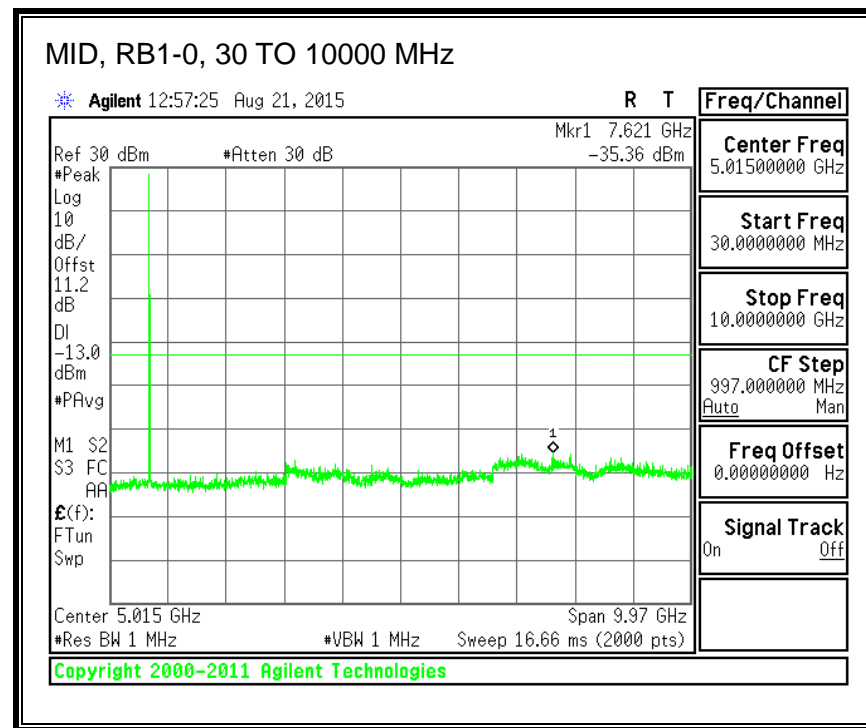
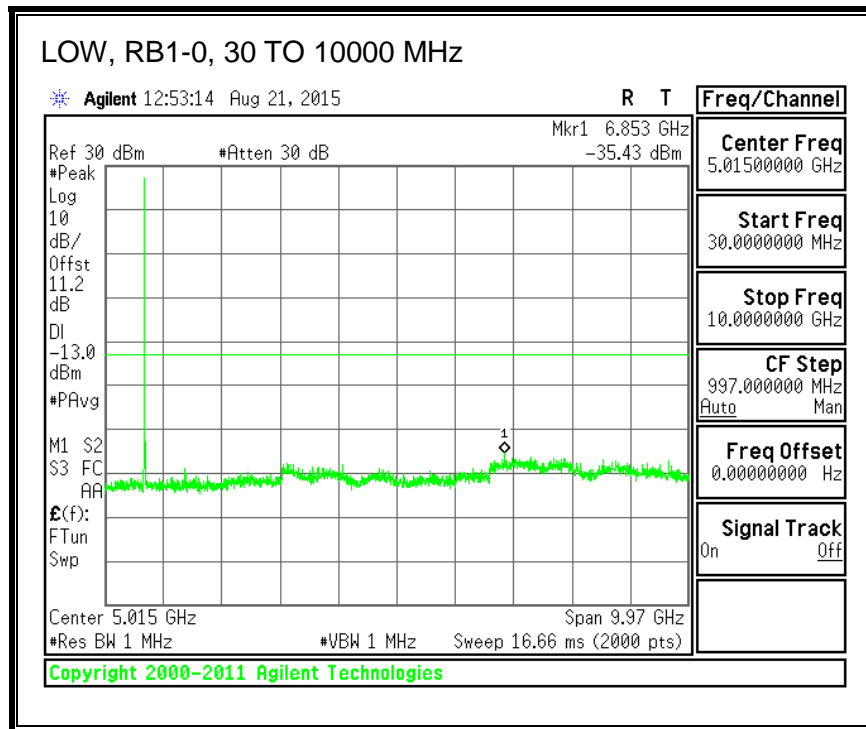


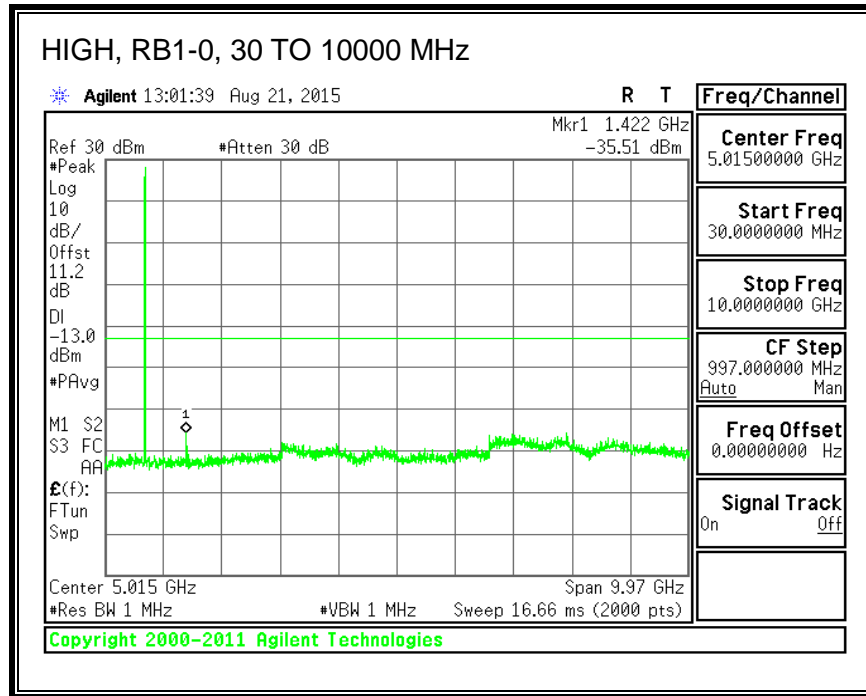
16QAM, (3.0 MHz BAND WIDTH)



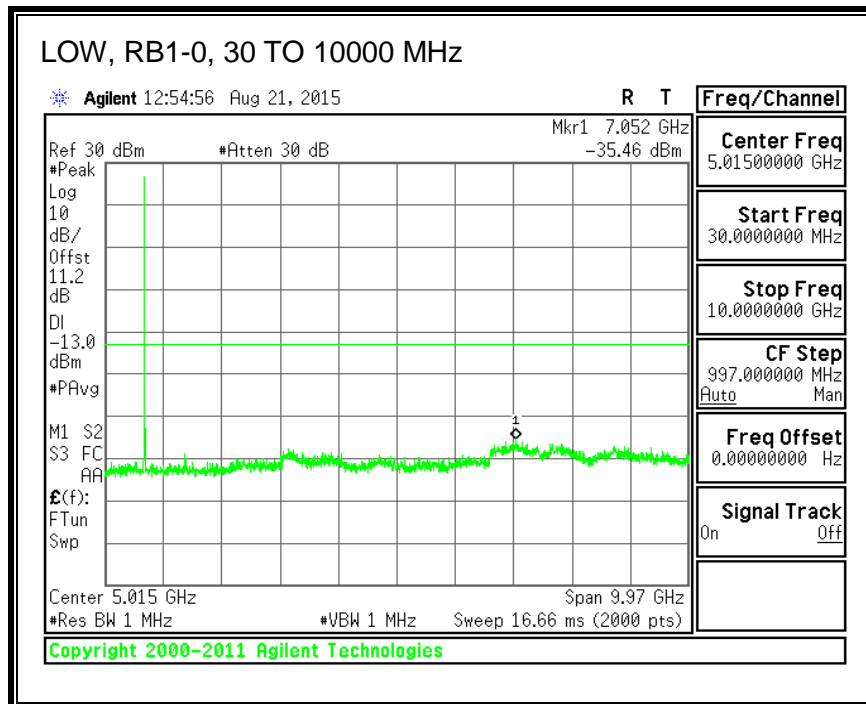


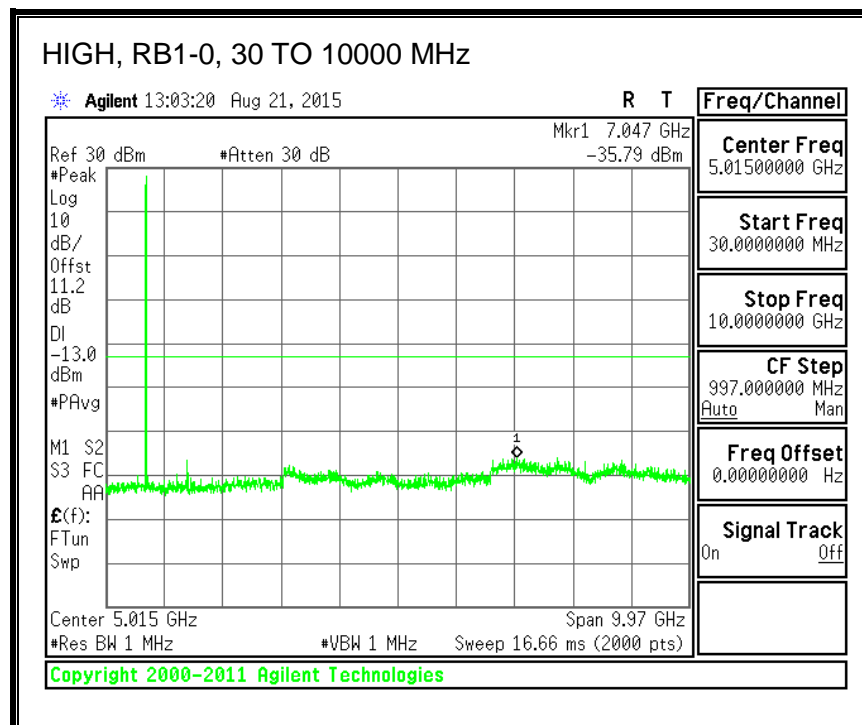
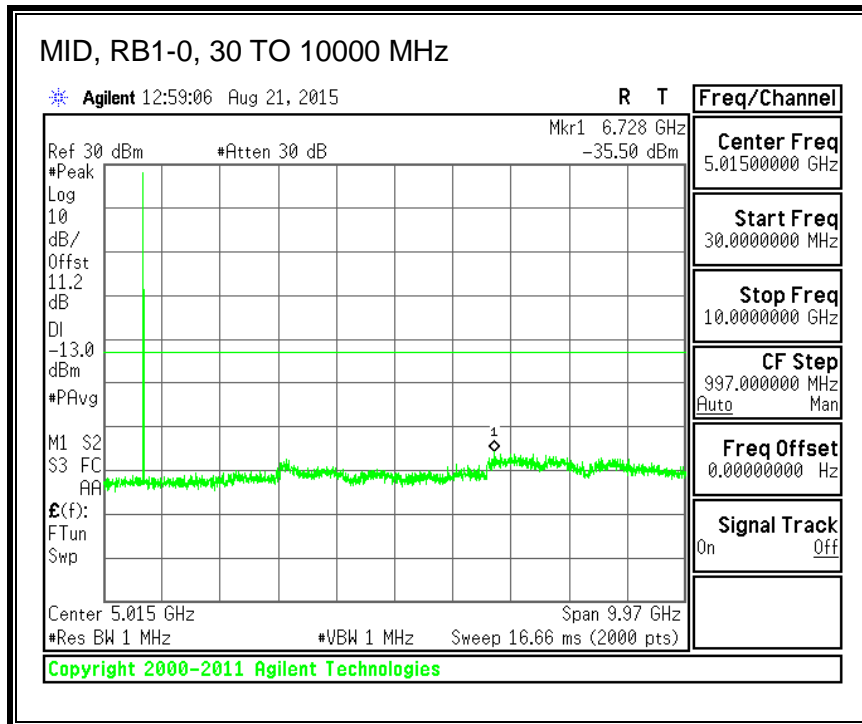
QPSK, (5.0 MHz BAND WIDTH)



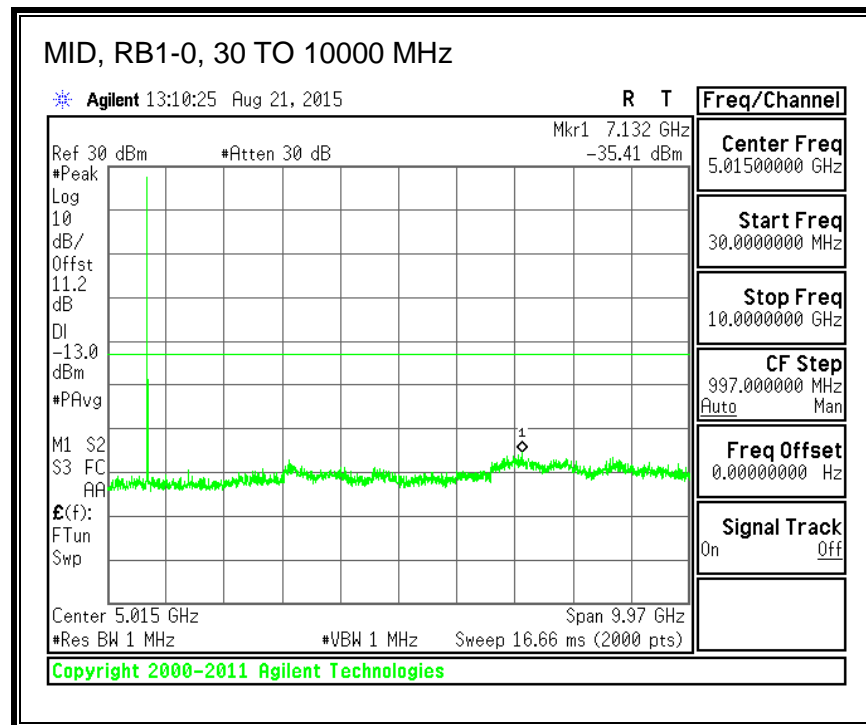
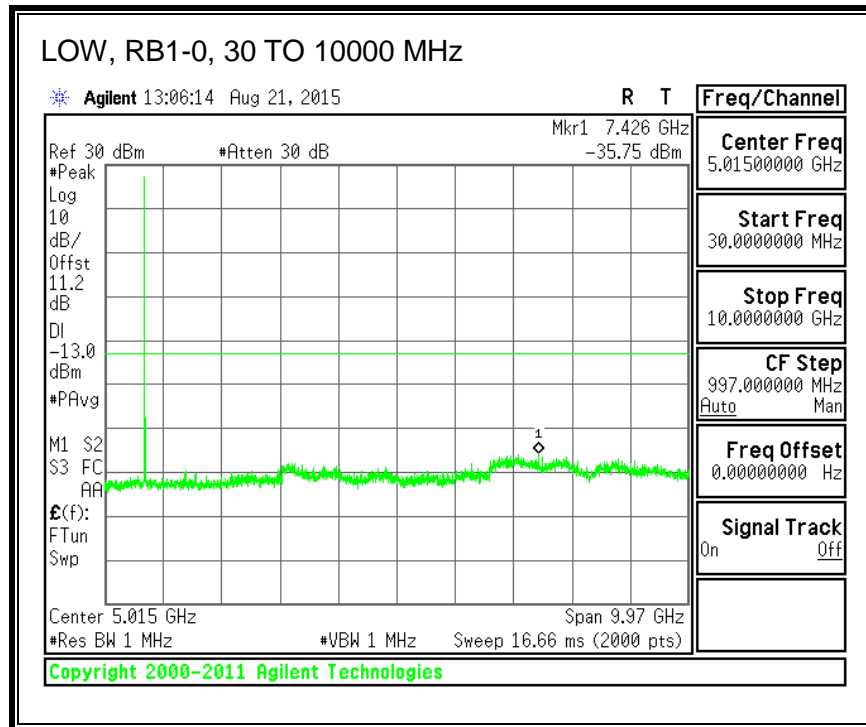


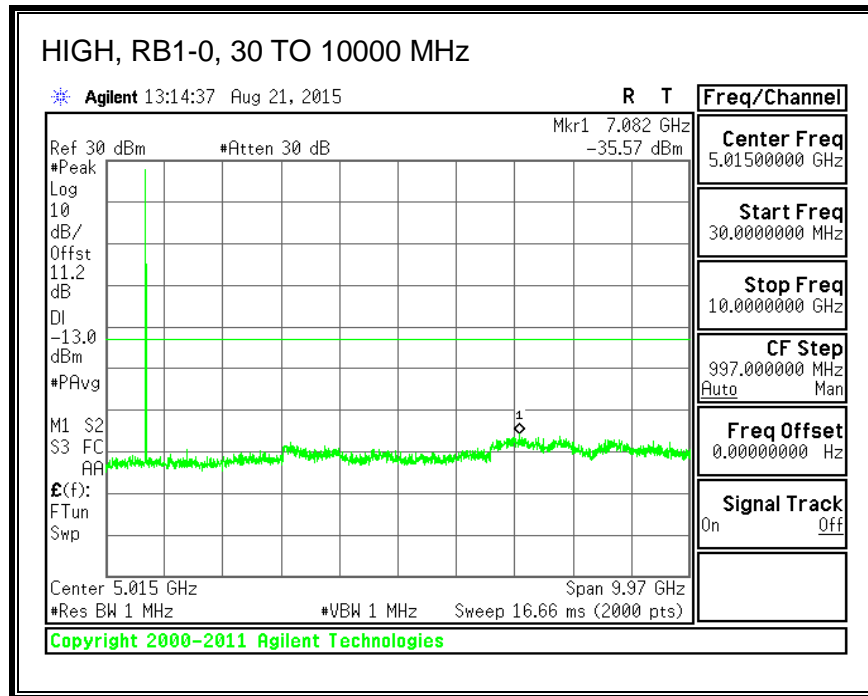
16QAM, (5.0 MHz BAND WIDTH)



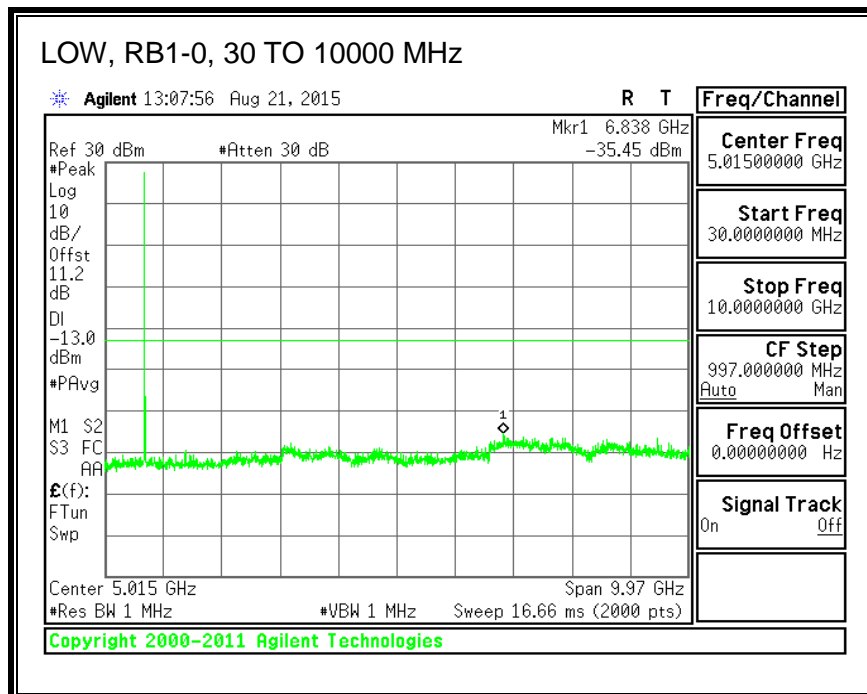


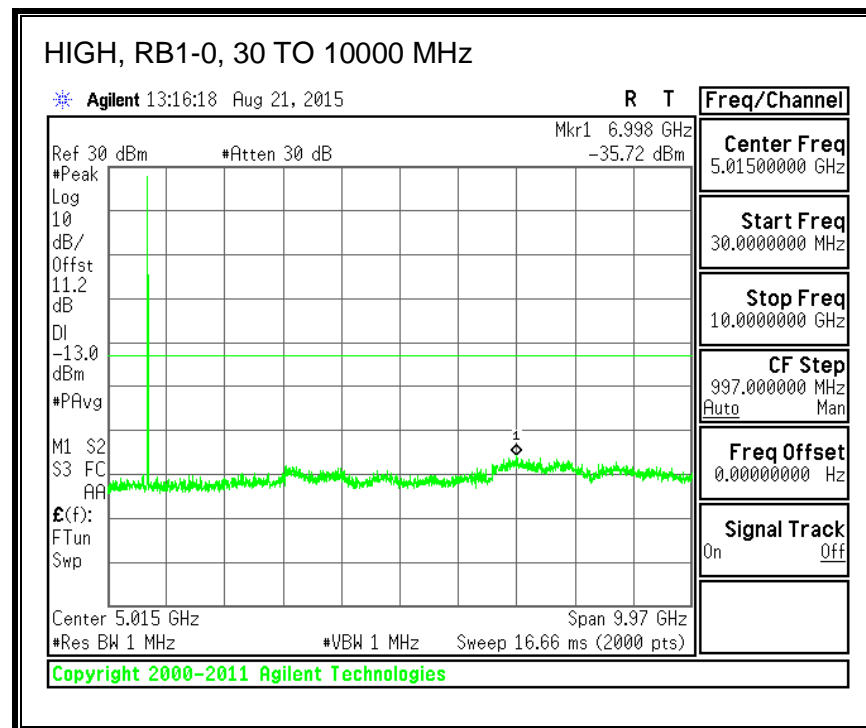
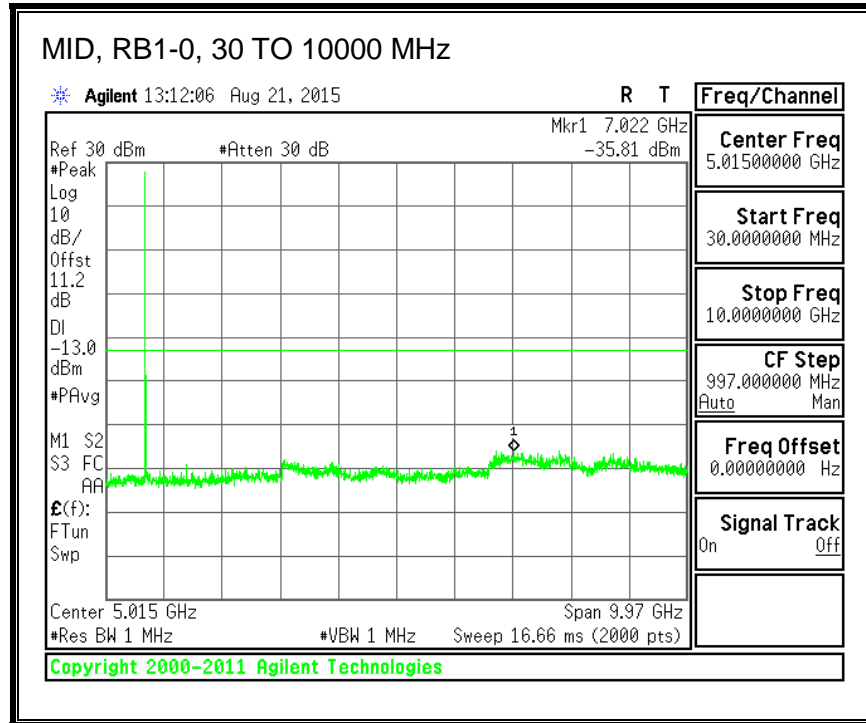
QPSK, (10.0 MHz BAND WIDTH)





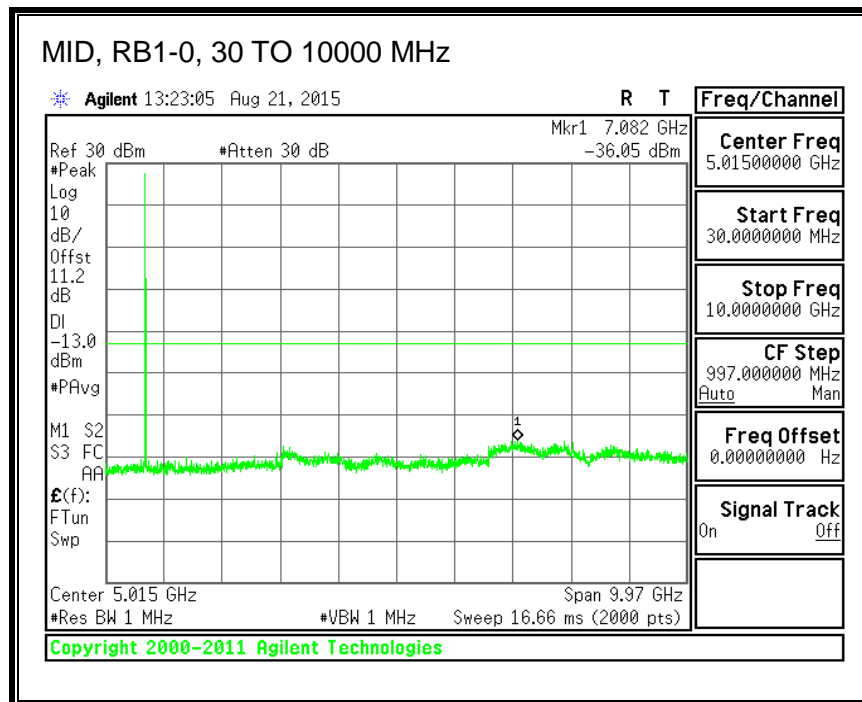
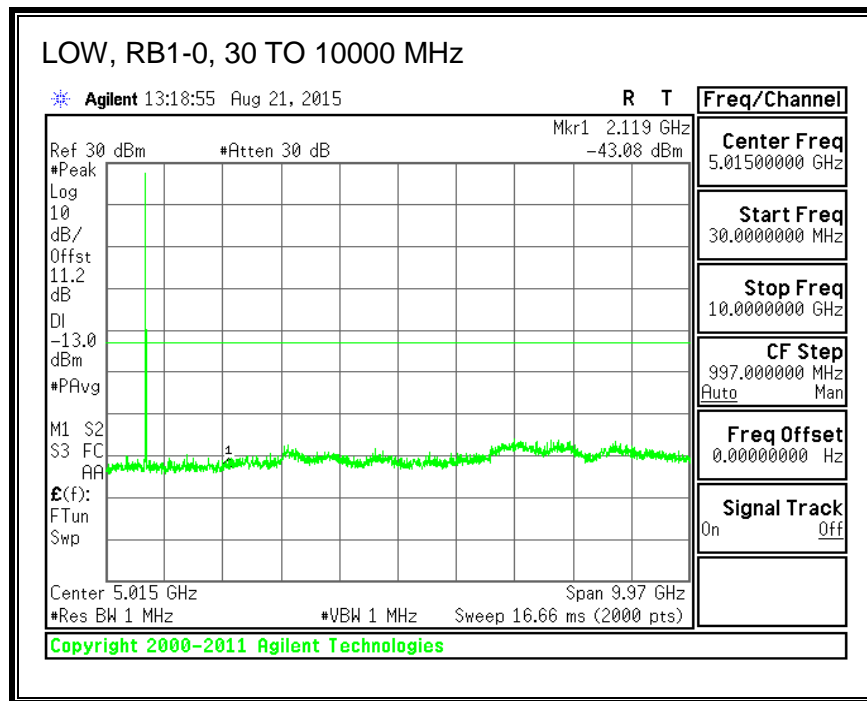
16QAM, (10.0 MHz BAND WIDTH)

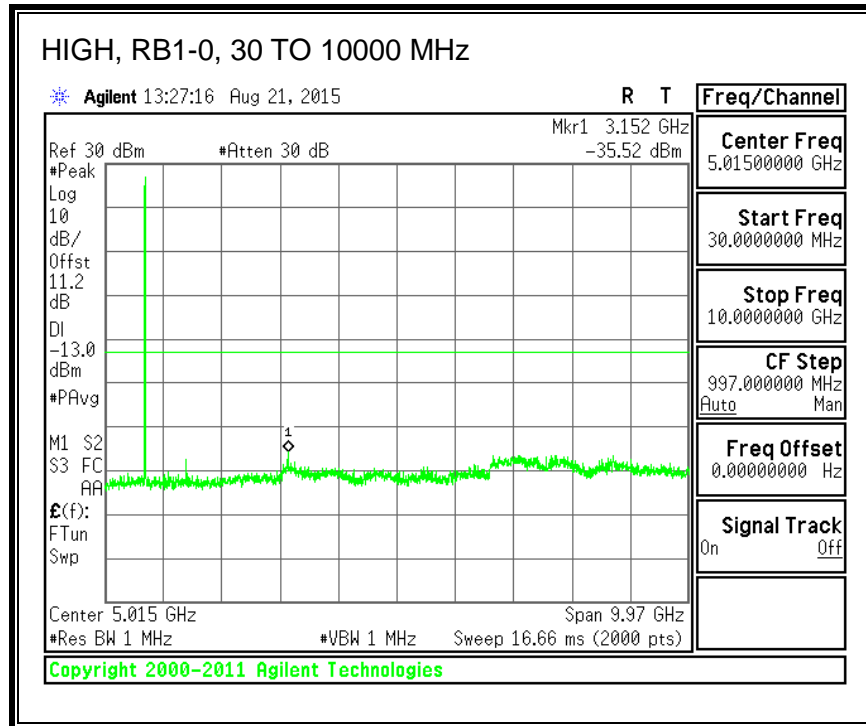




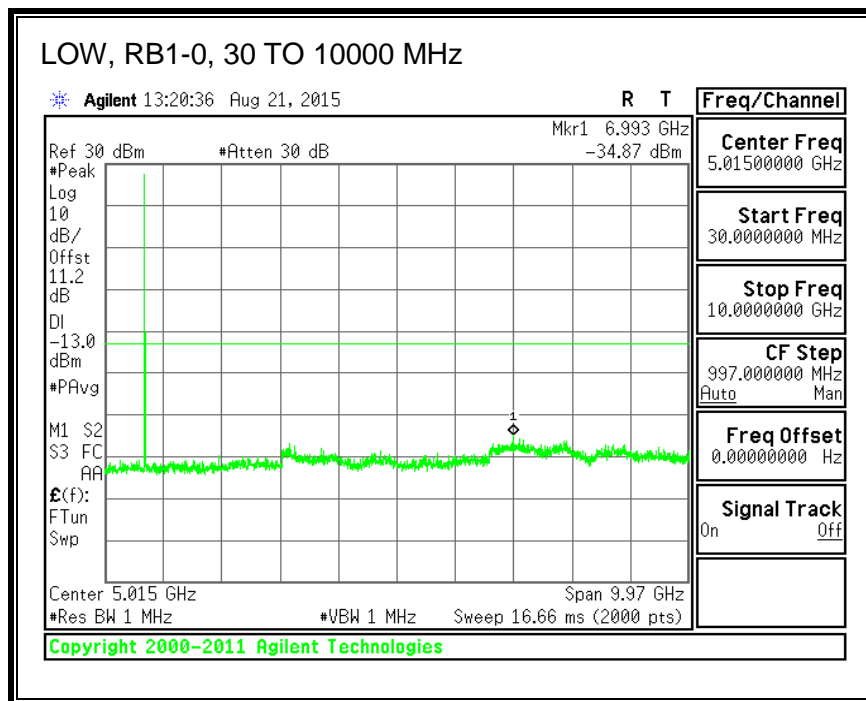
8.3.6. LTE BAND 17

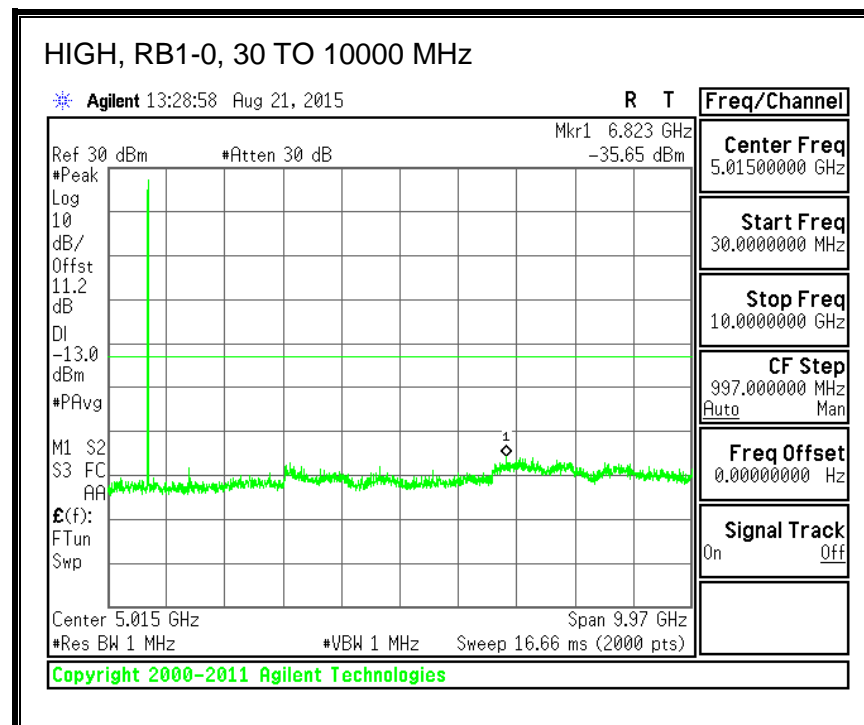
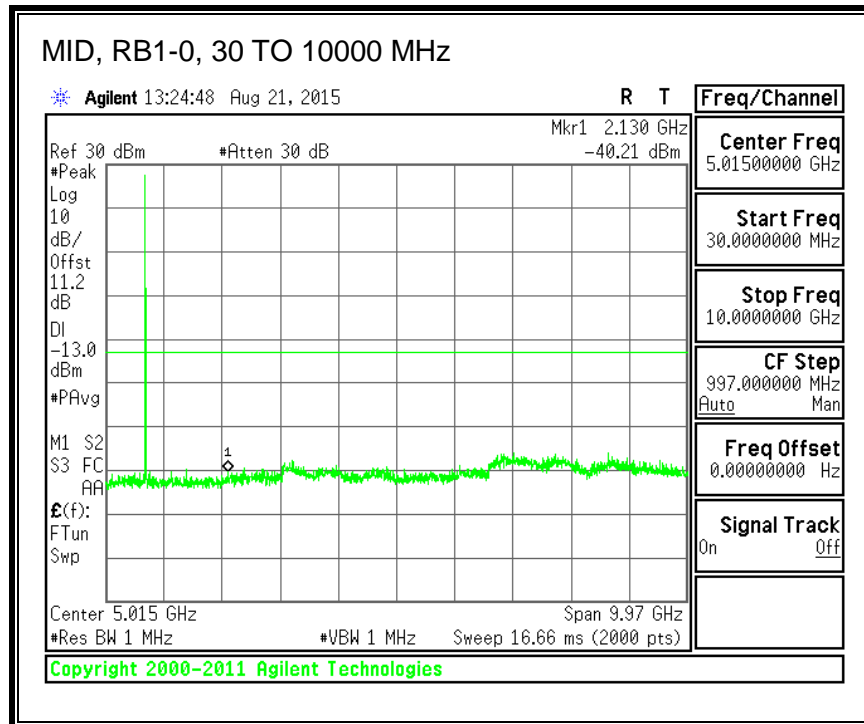
QPSK, (5.0 MHz BAND WIDTH)



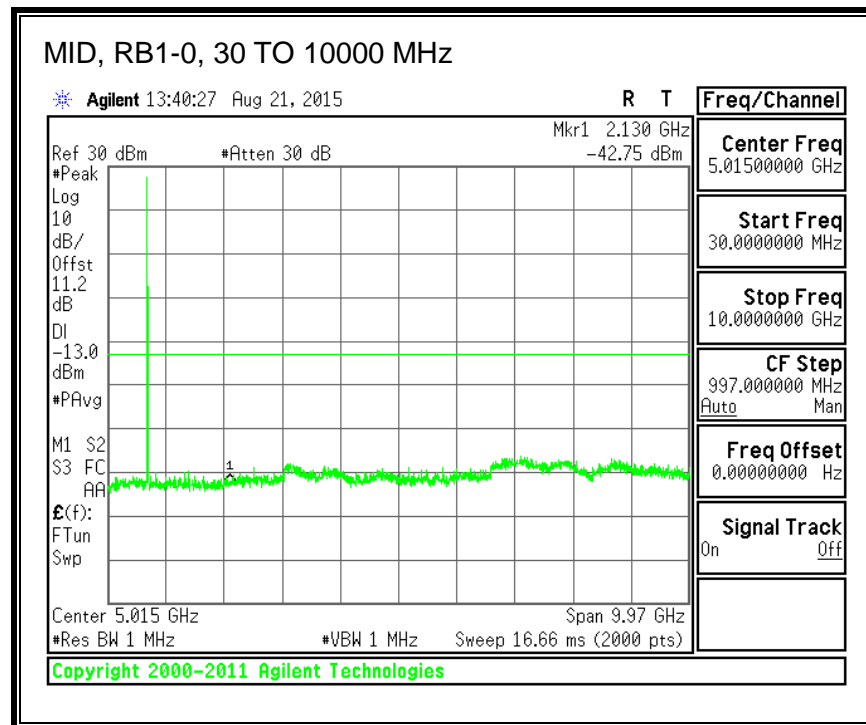
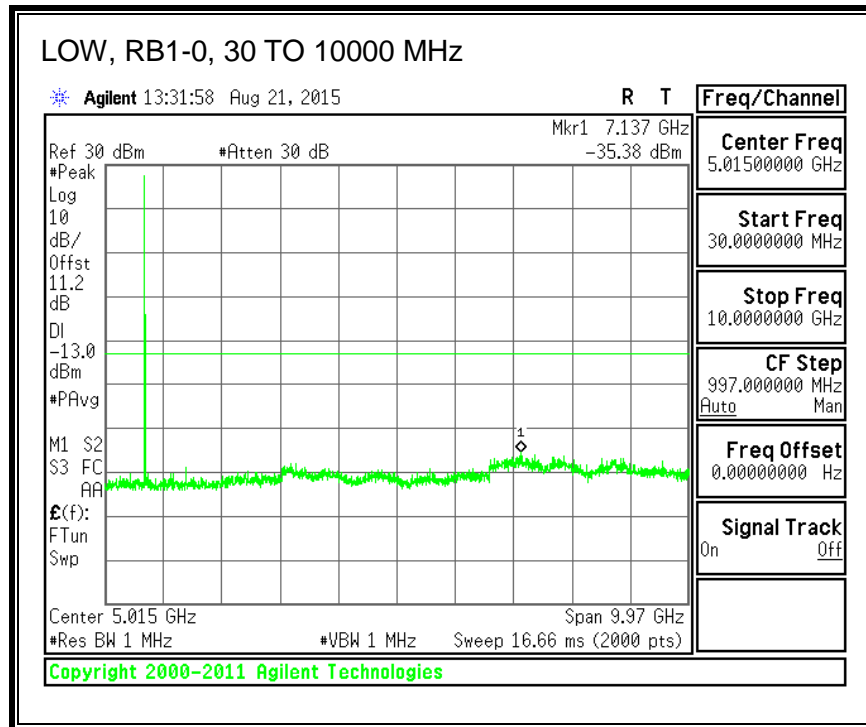


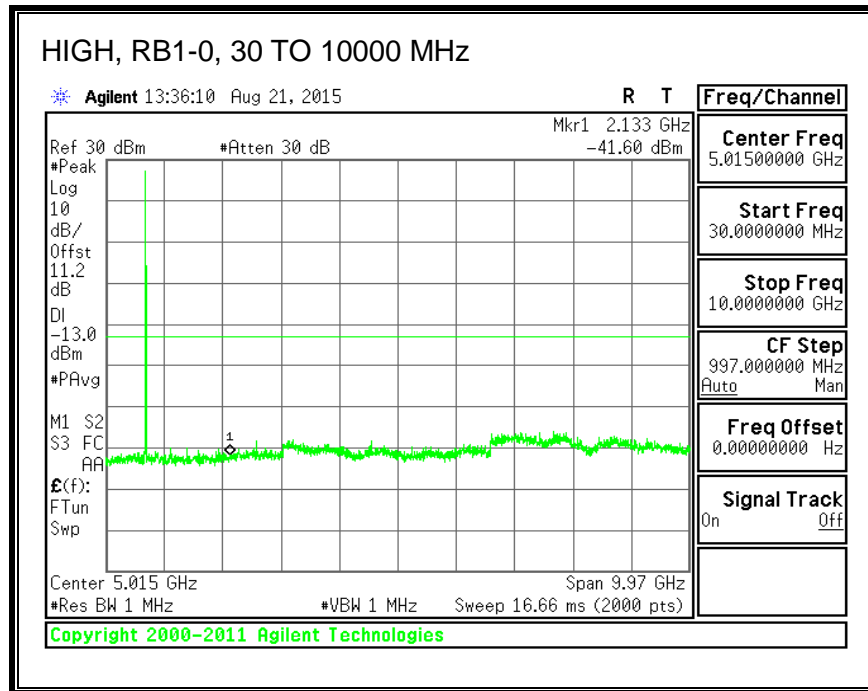
16QAM, (5.0 MHz BAND WIDTH)



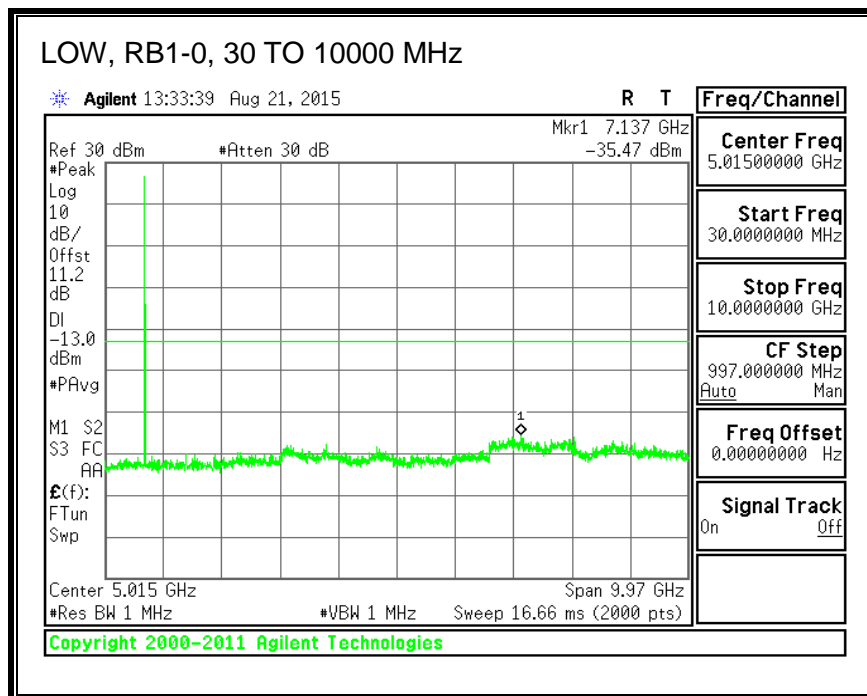


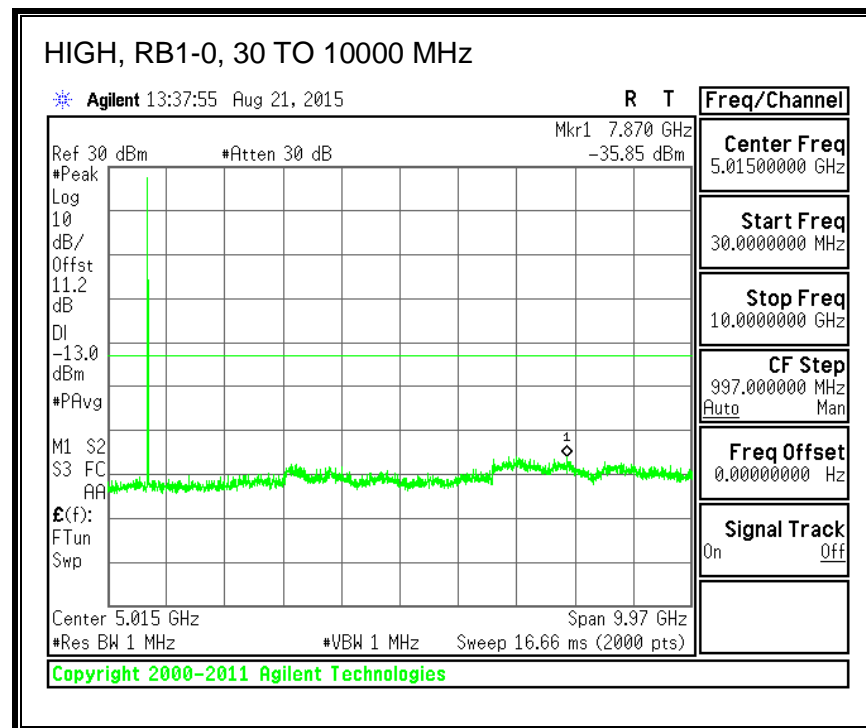
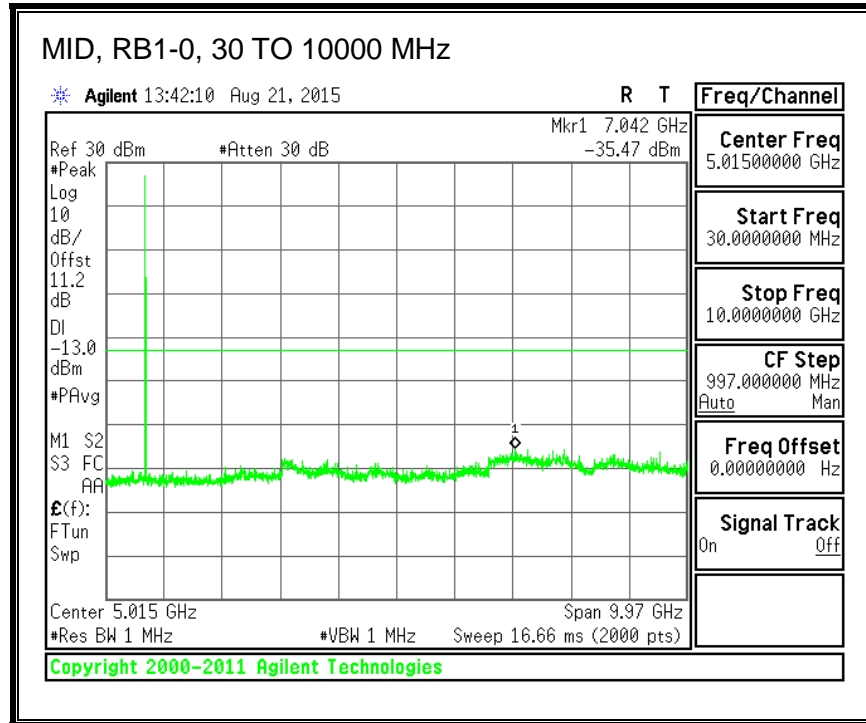
QPSK, (10.0 MHz BAND WIDTH)





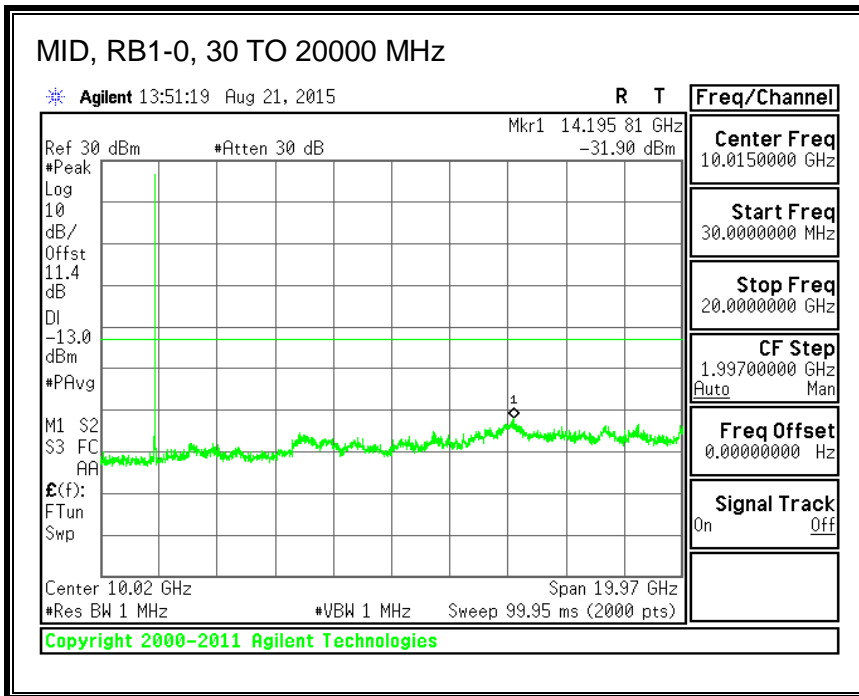
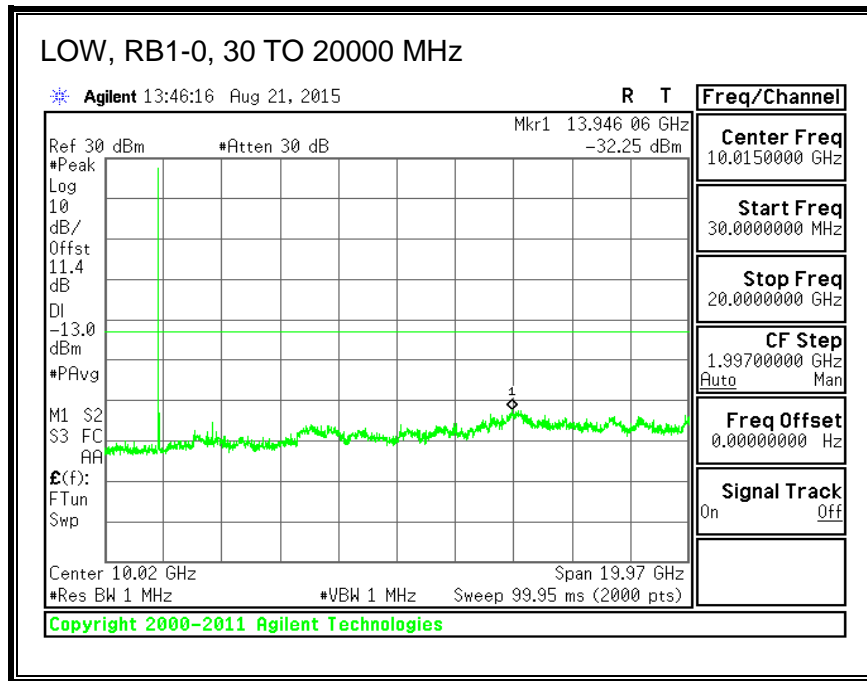
16QAM, (10.0 MHz BAND WIDTH)

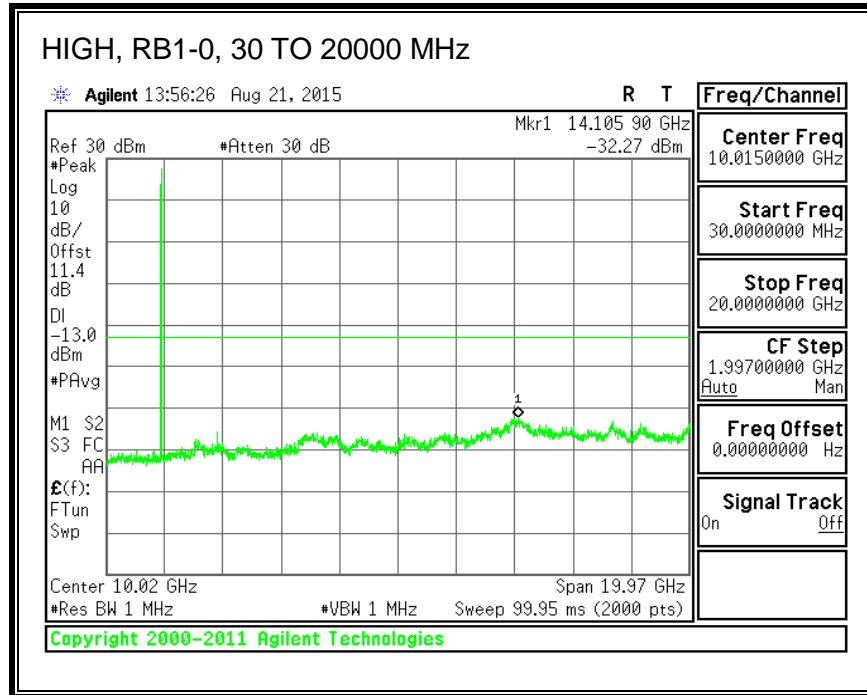




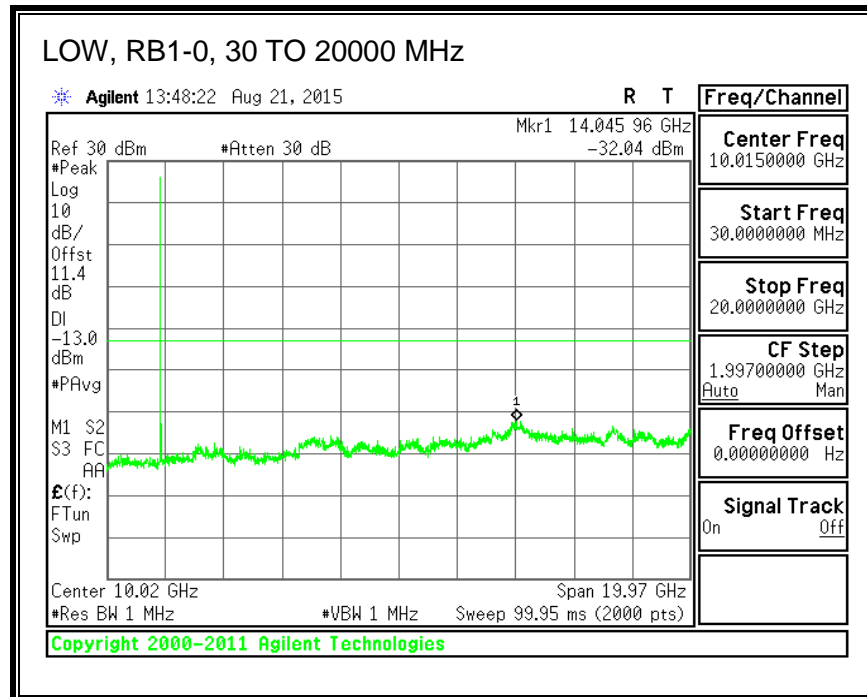
8.3.7. LTE BAND 25

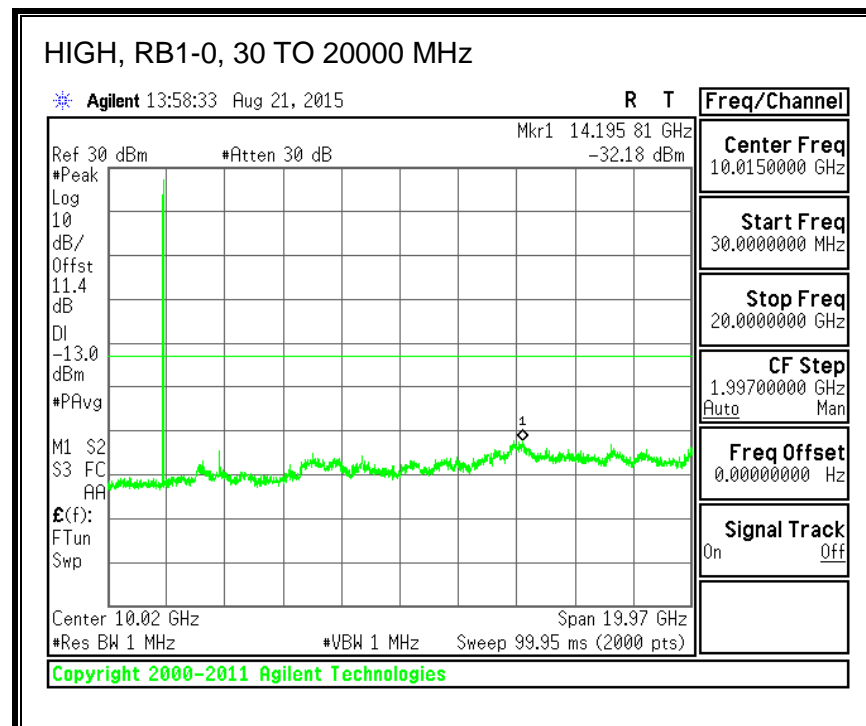
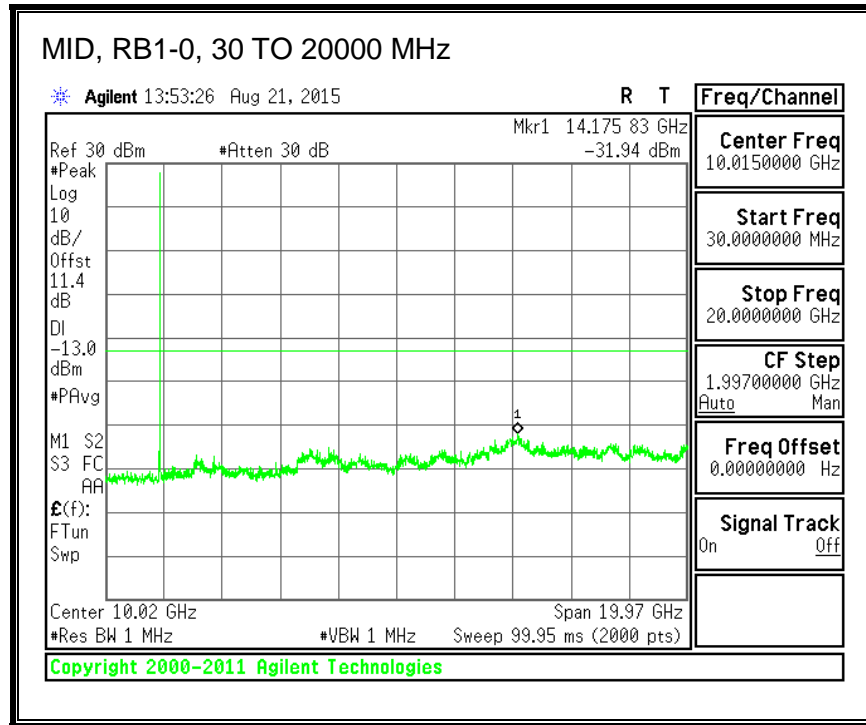
QPSK, (1.4 MHz BAND WIDTH)



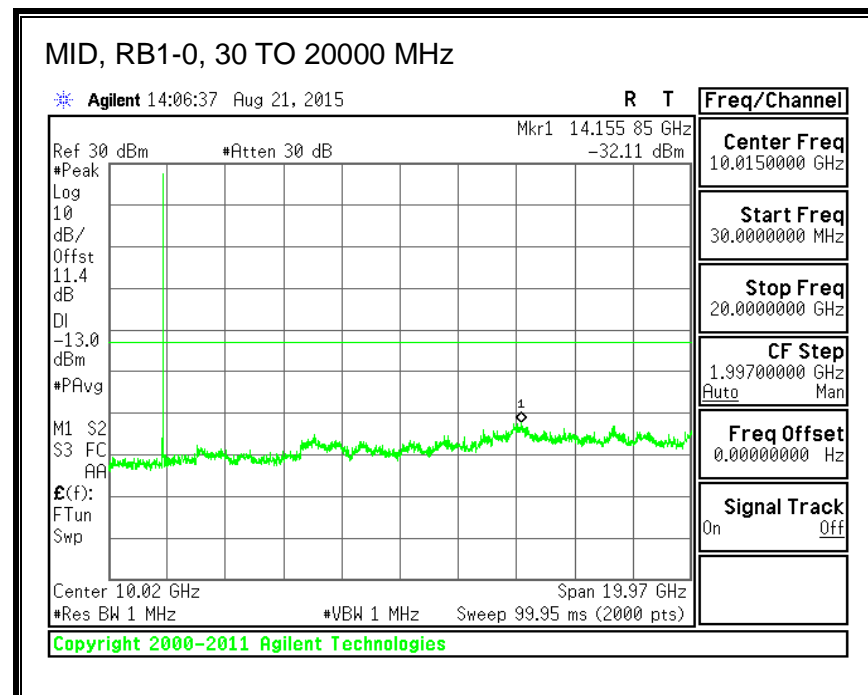
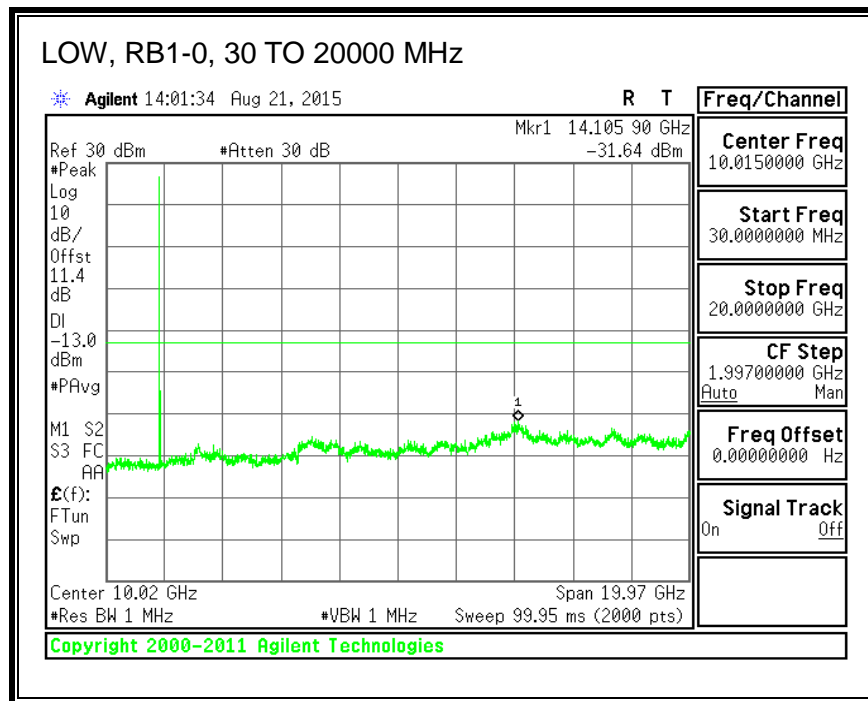


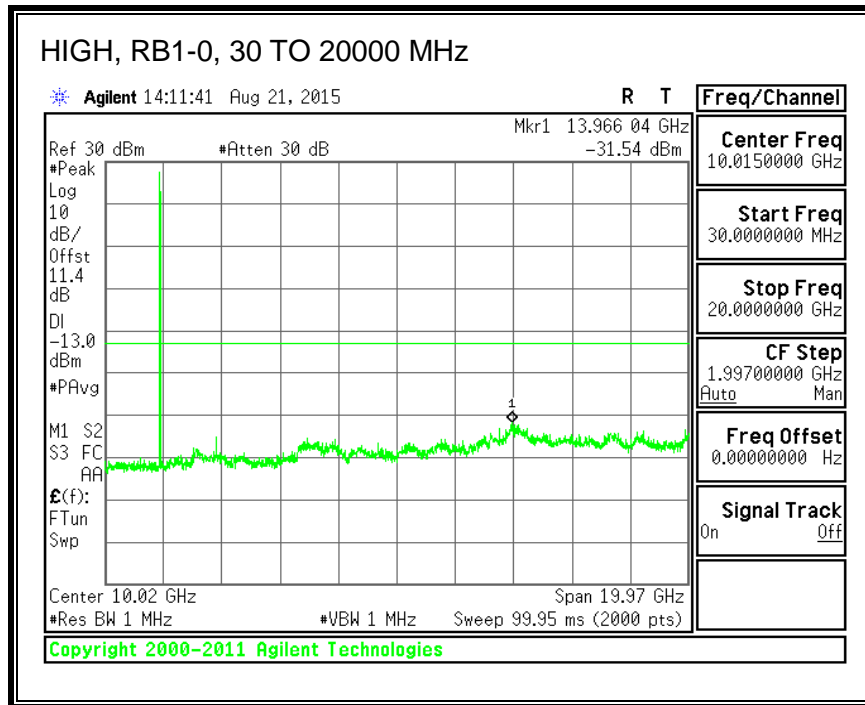
16QAM, (1.4 MHz BAND WIDTH)



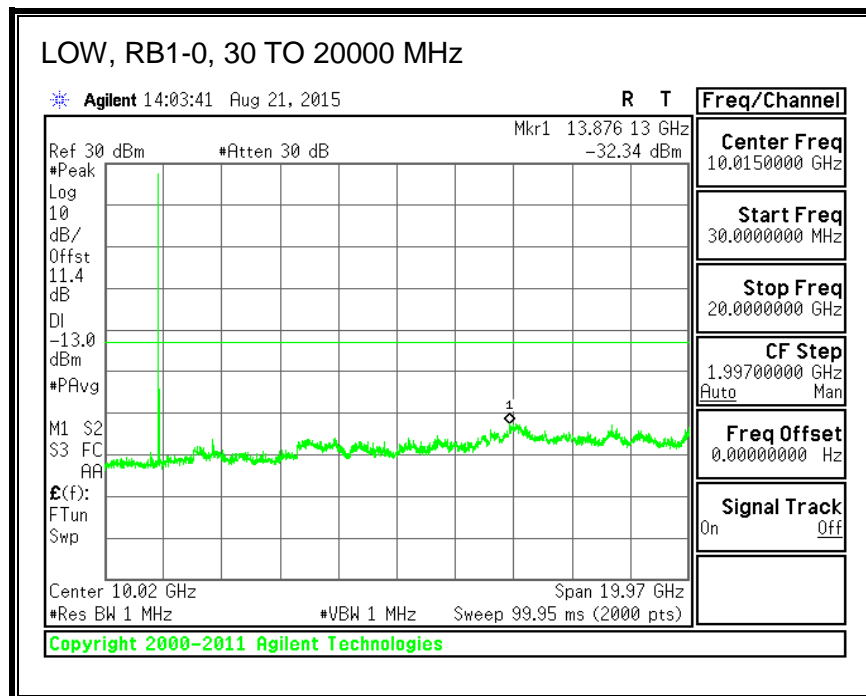


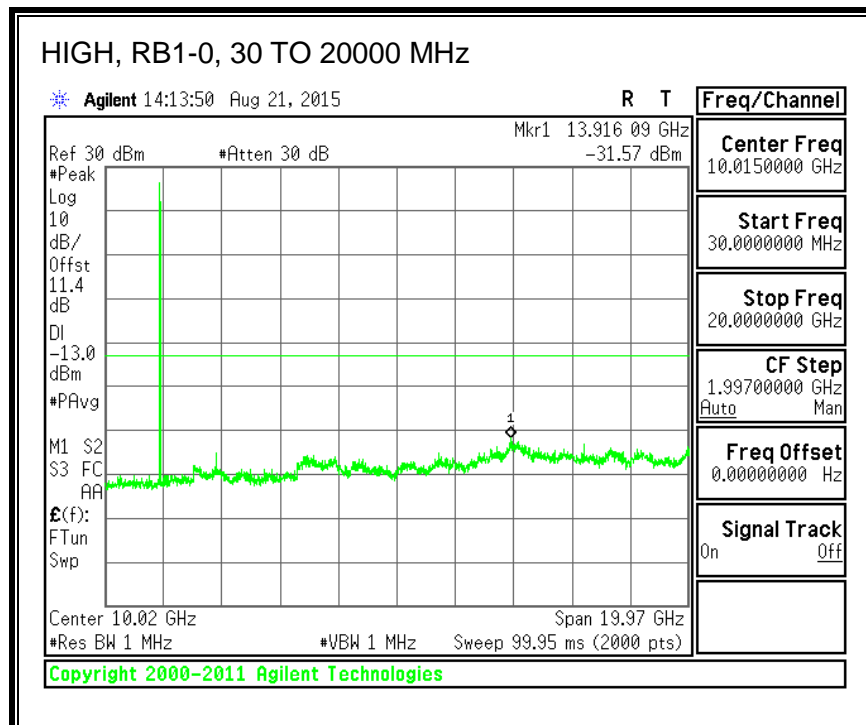
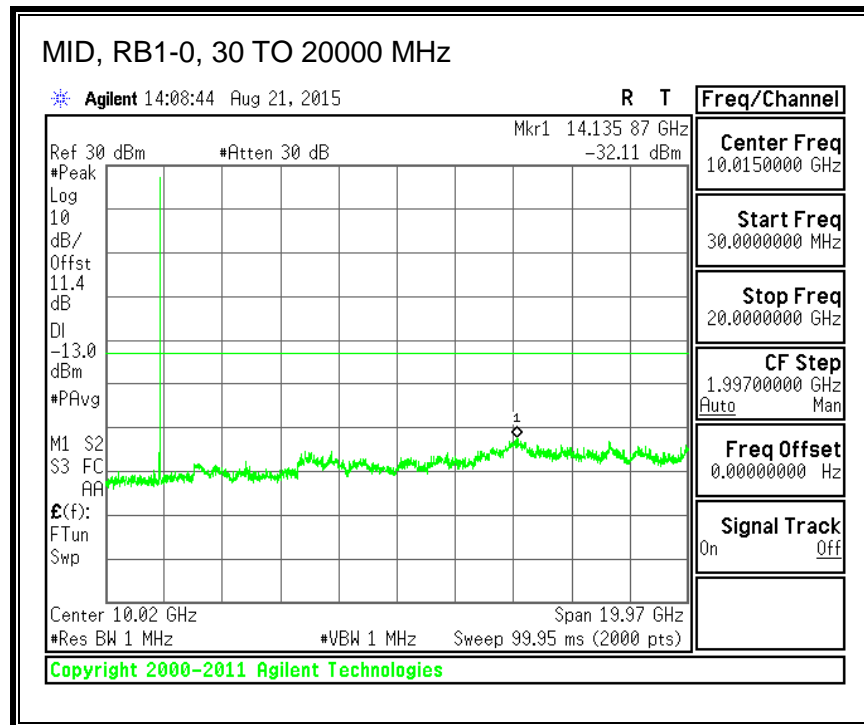
QPSK, (3.0 MHz BAND WIDTH)



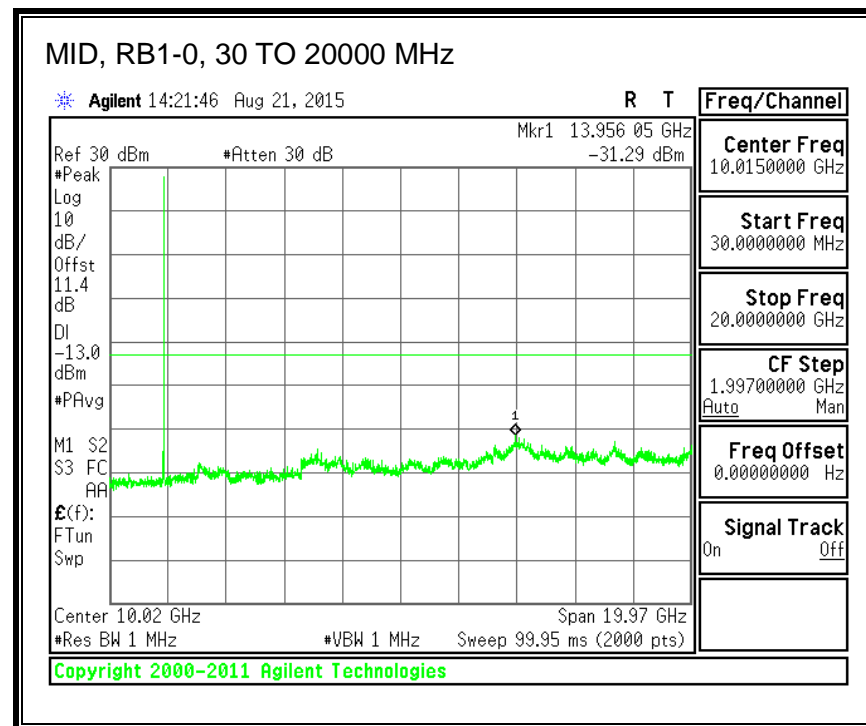
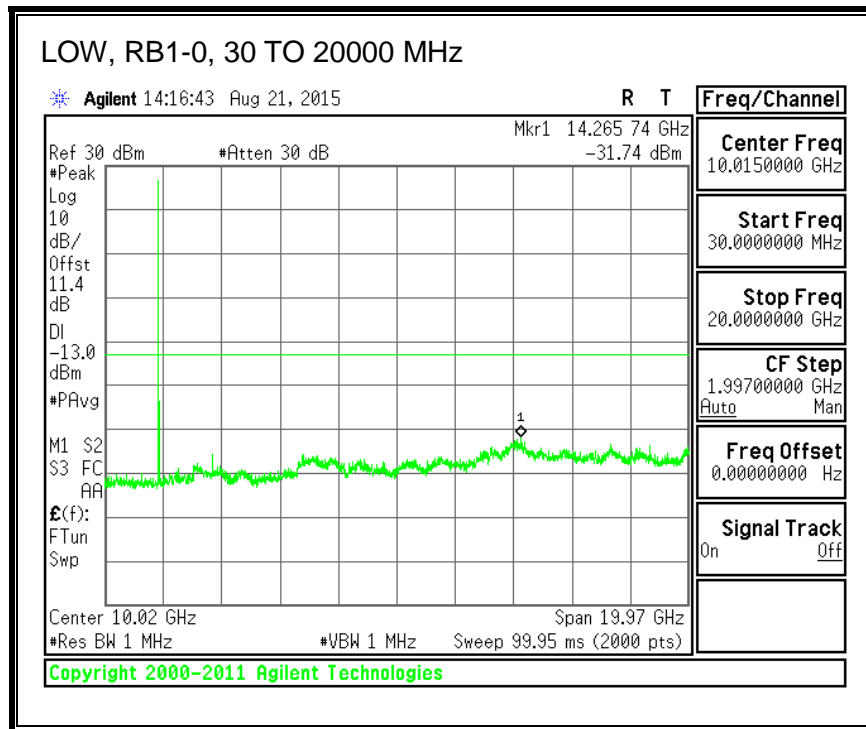


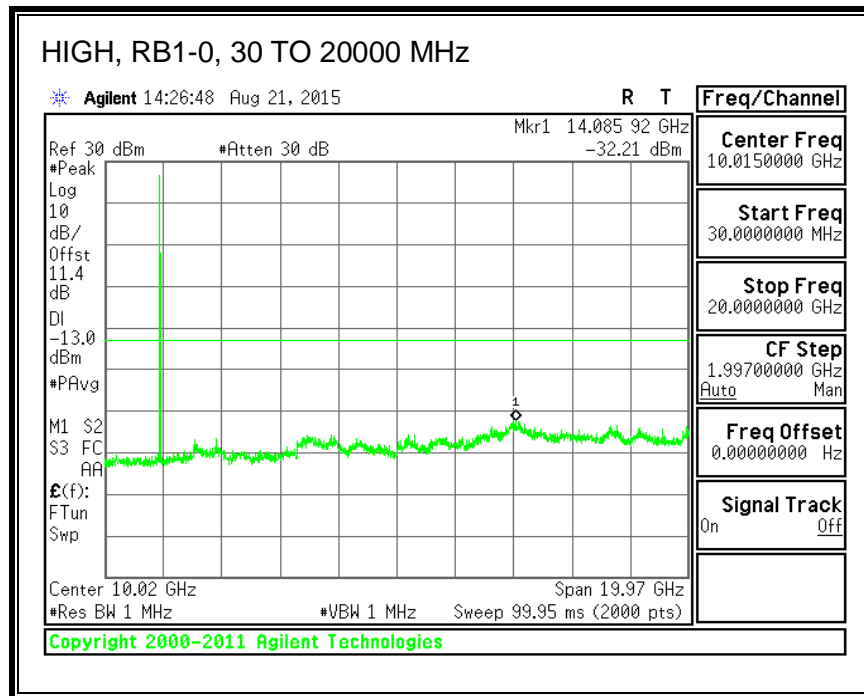
16QAM, (3.0 MHz BAND WIDTH)



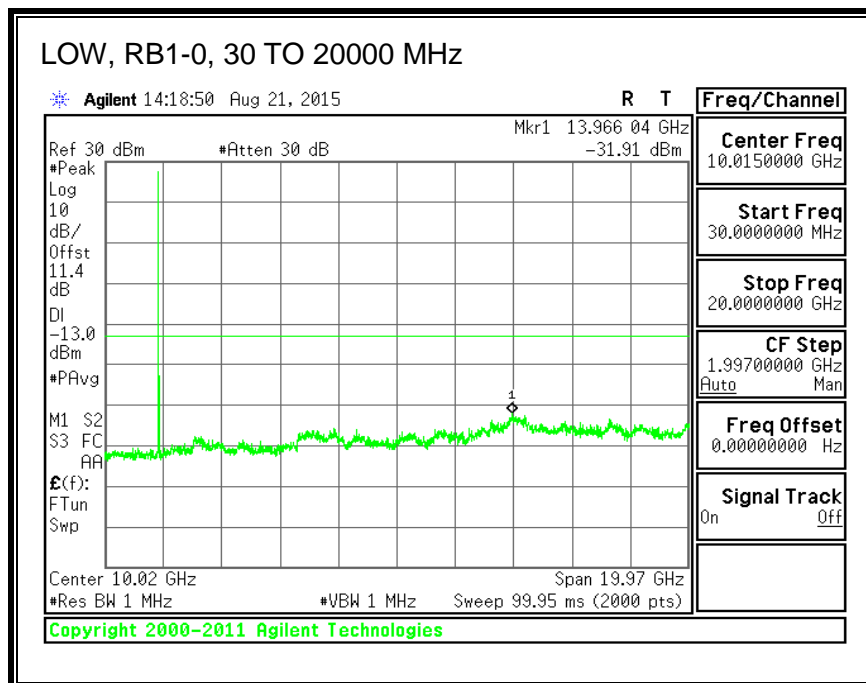


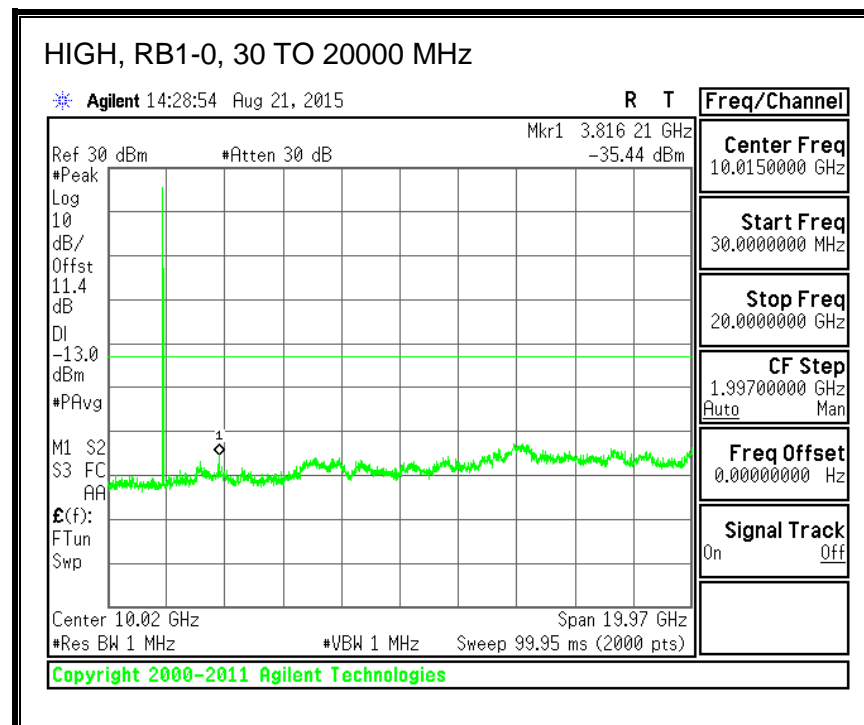
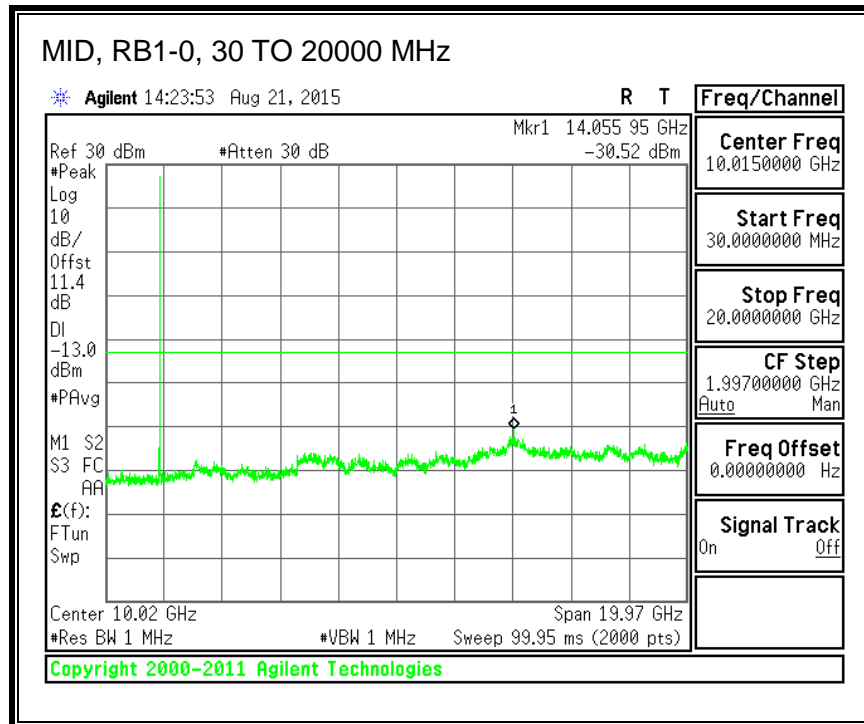
QPSK, (5.0 MHz BAND WIDTH)



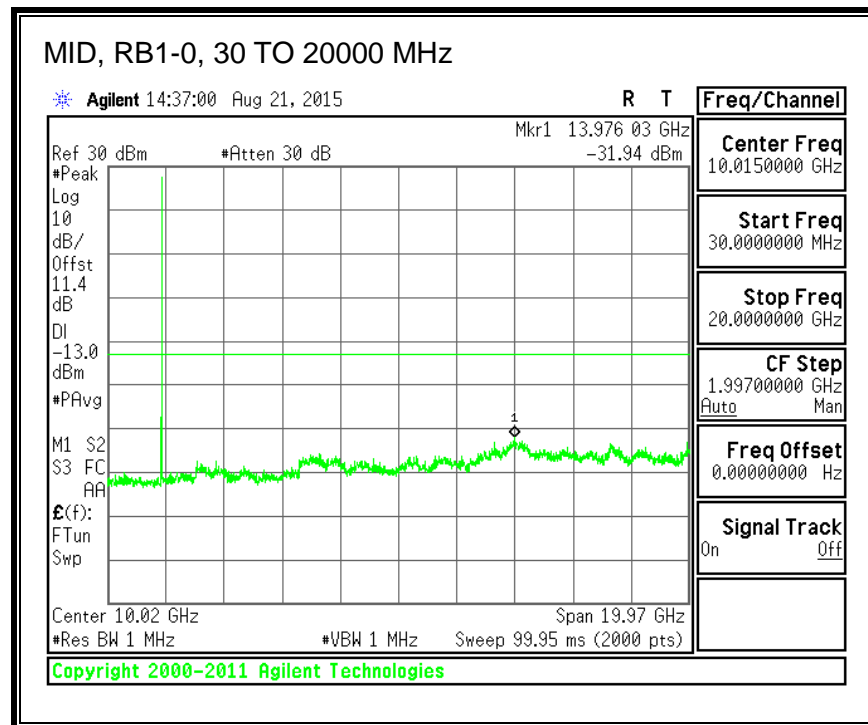
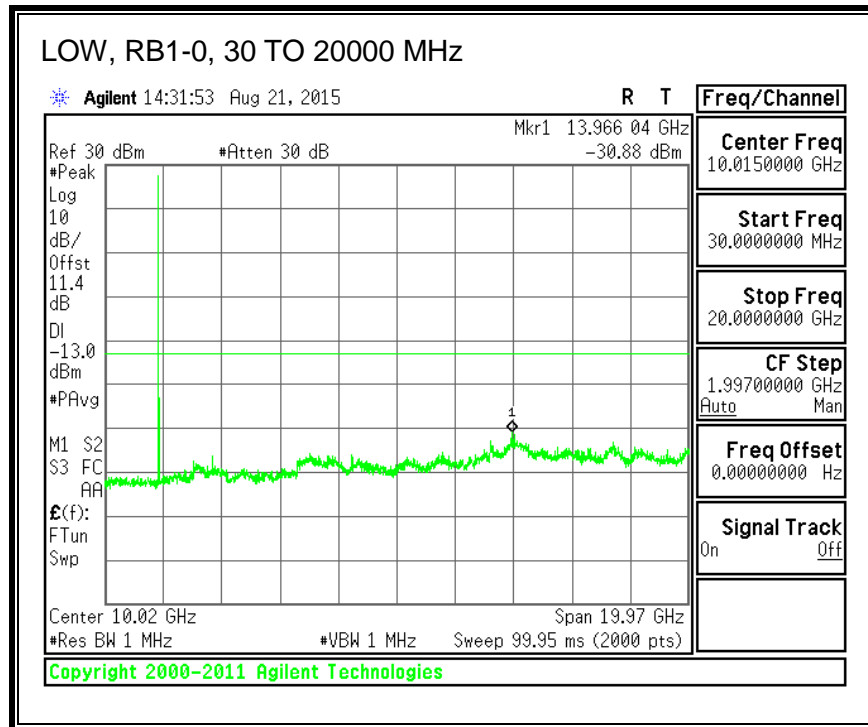


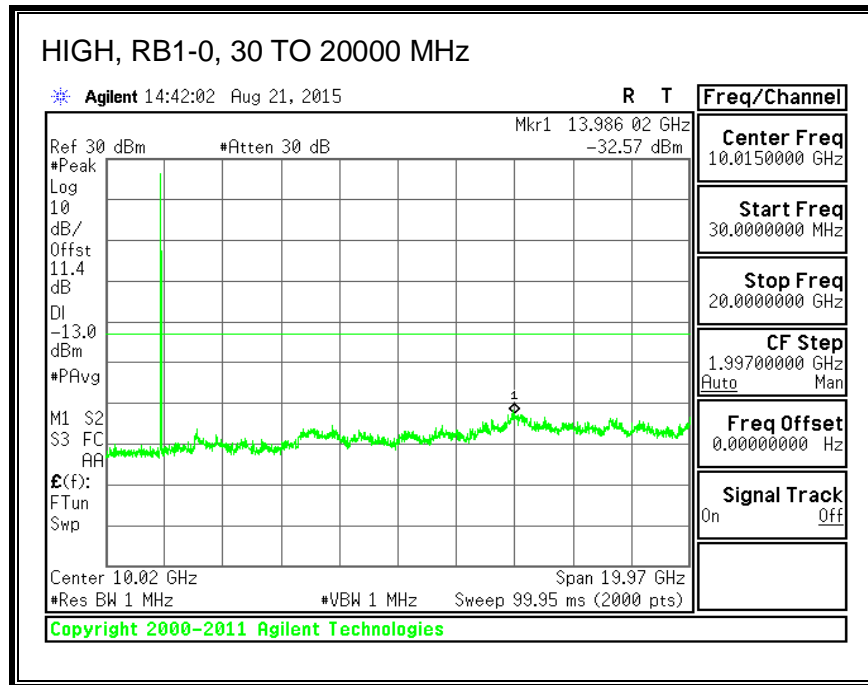
16QAM, (5.0 MHz BAND WIDTH)



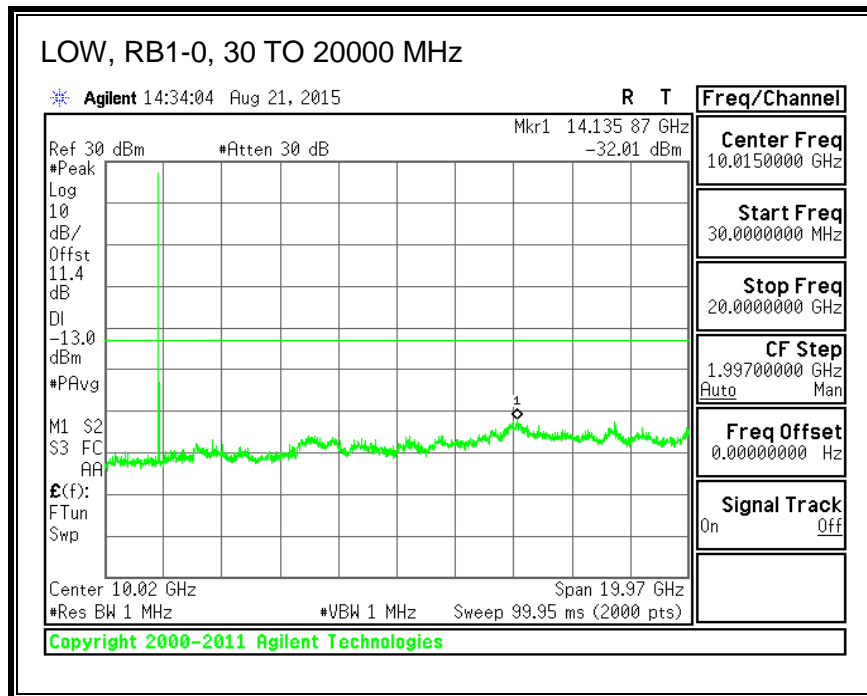


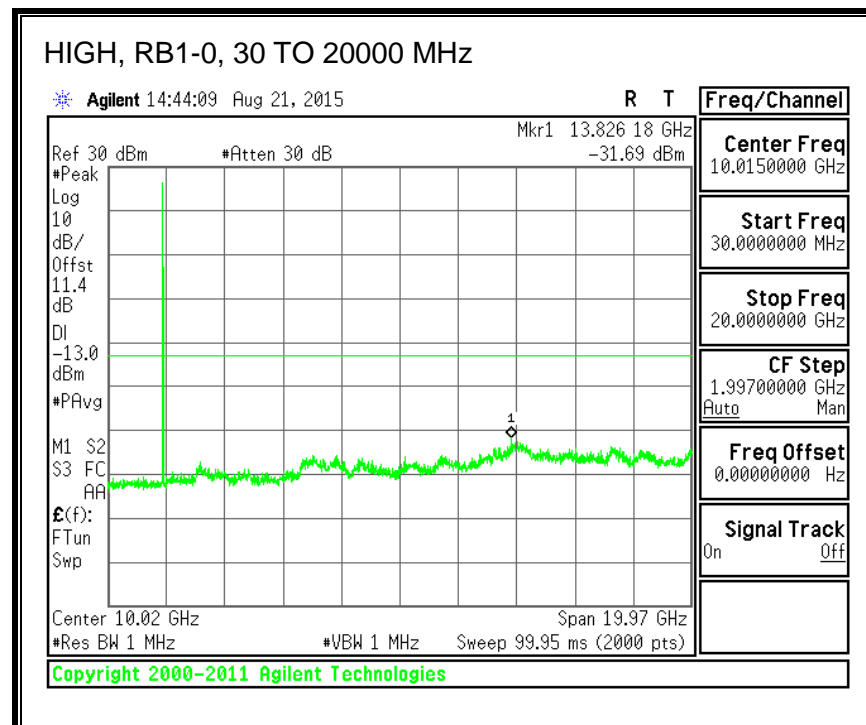
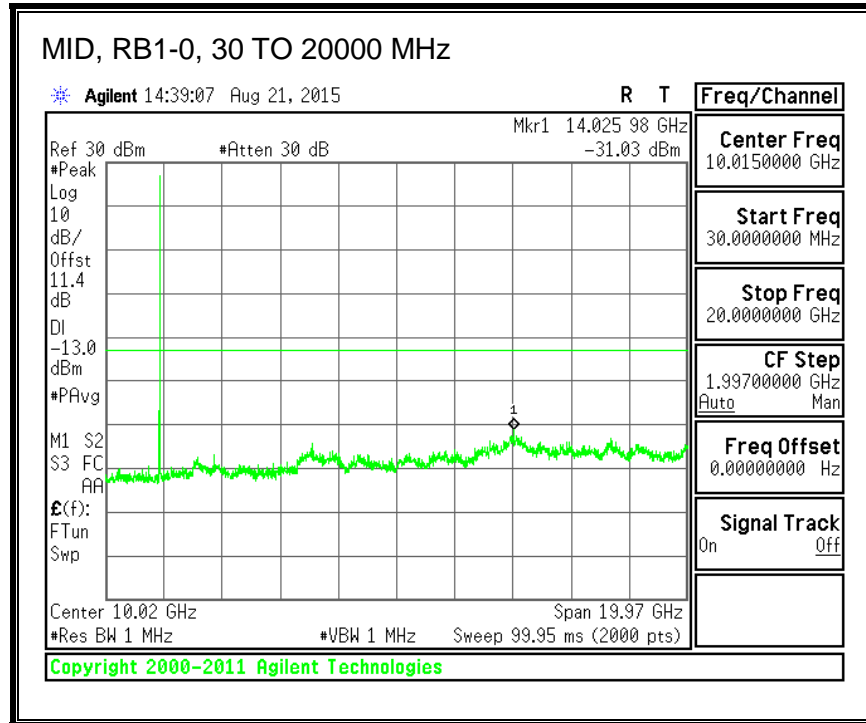
QPSK, (10.0 MHz BAND WIDTH)



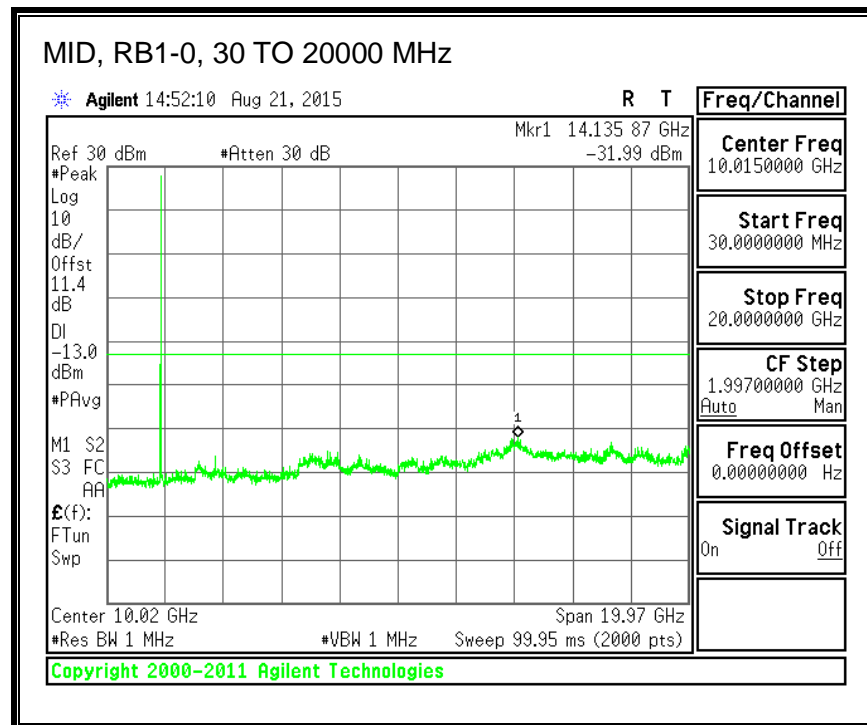
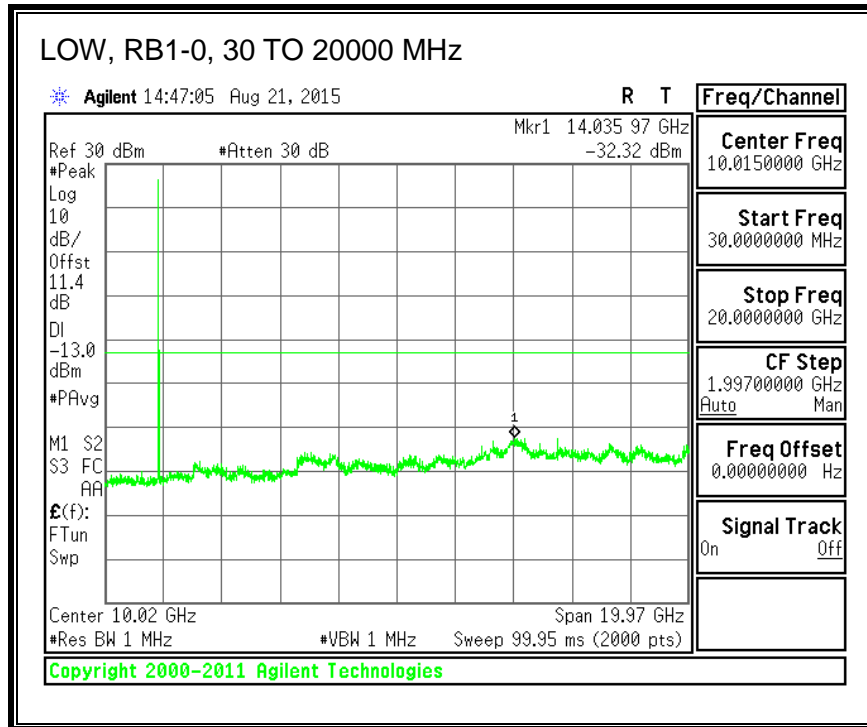


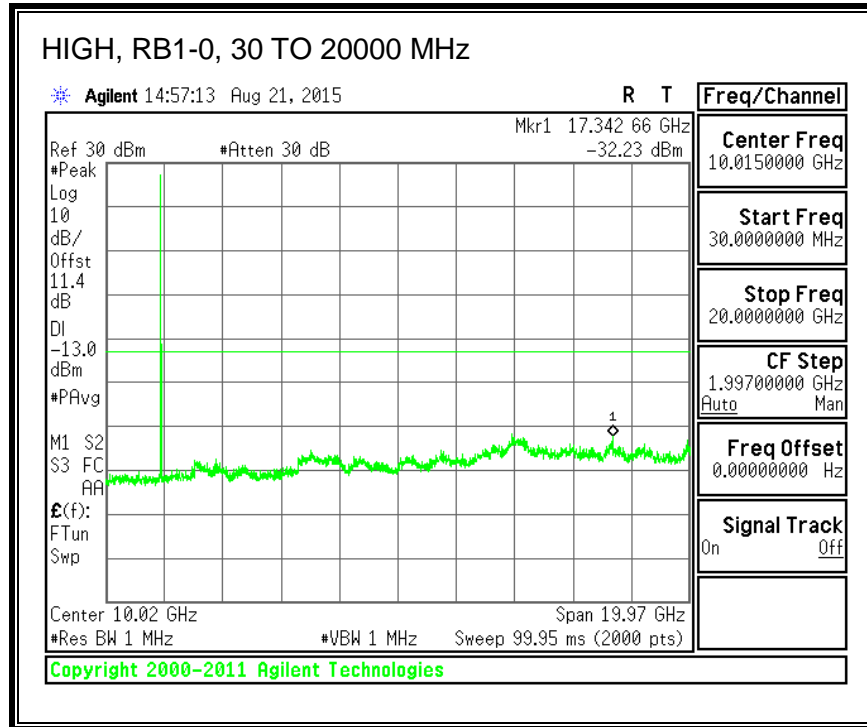
16QAM, (10.0 MHz BAND WIDTH)



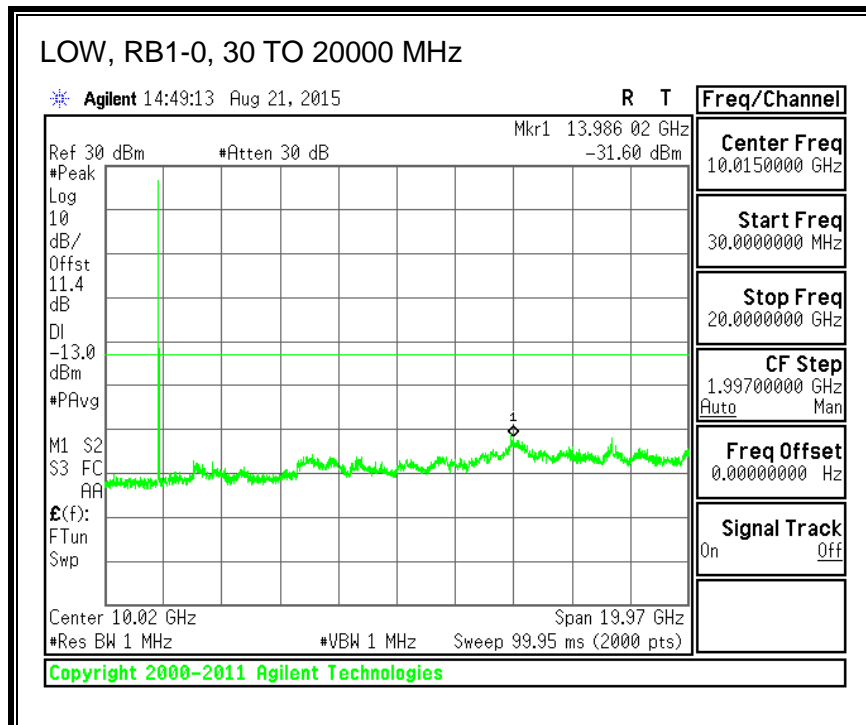


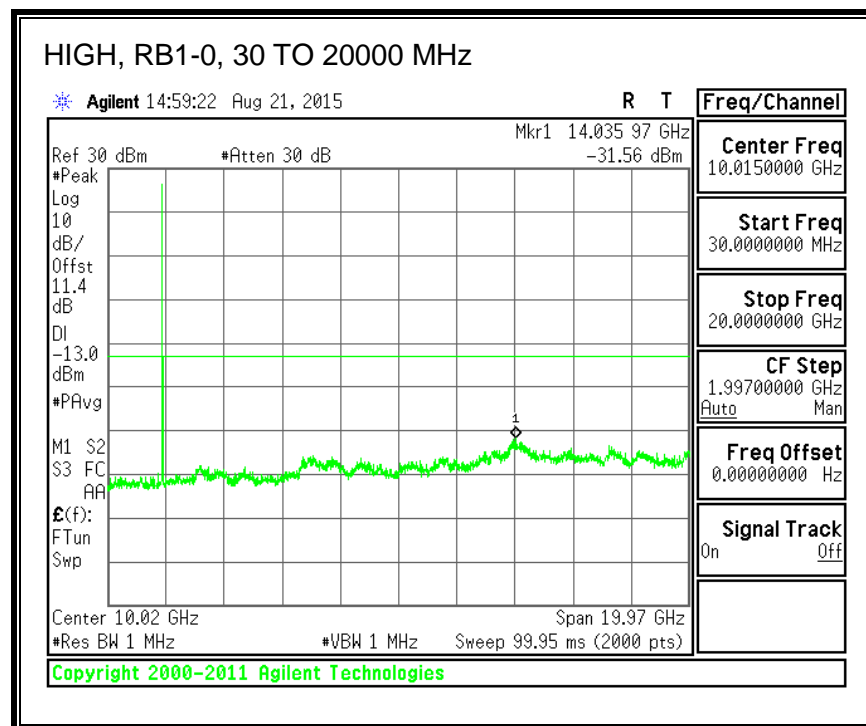
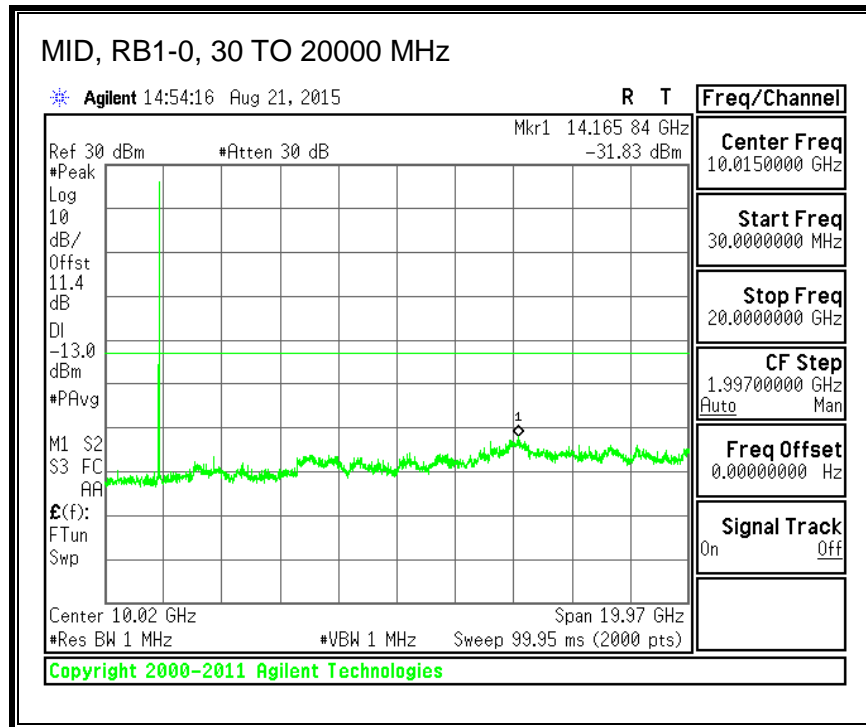
QPSK, (15.0 MHz BAND WIDTH)



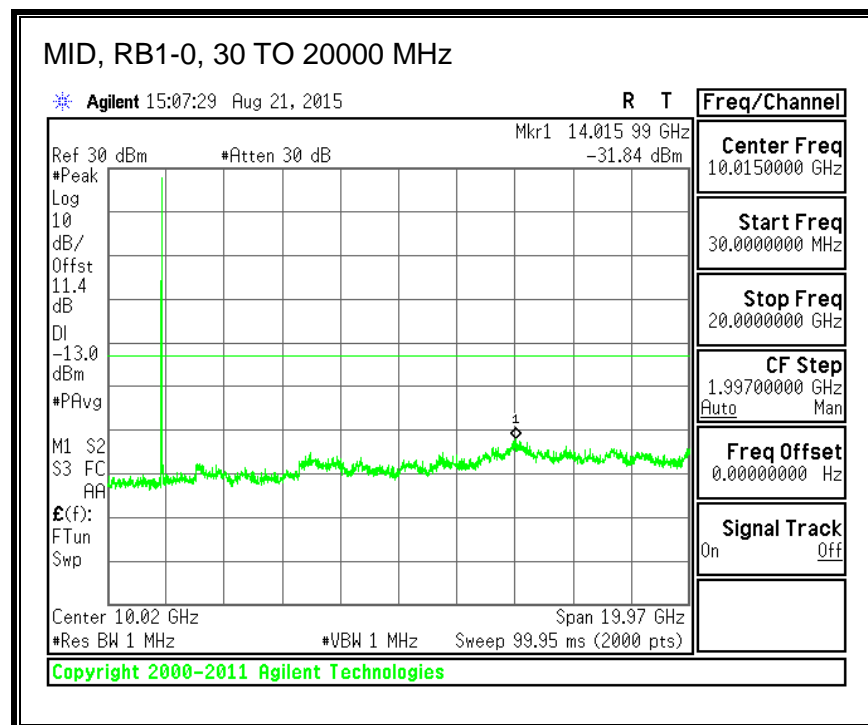
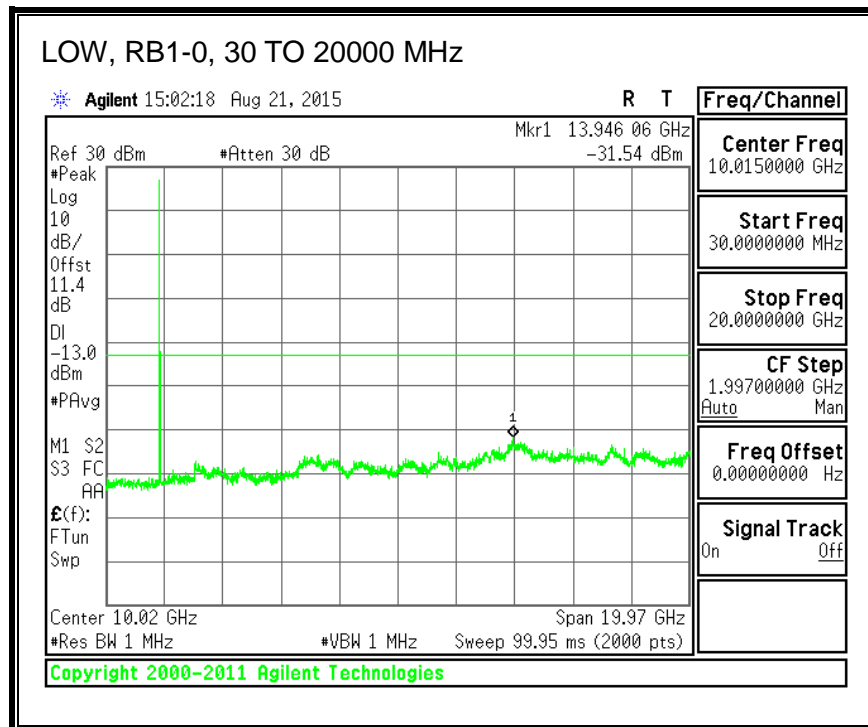


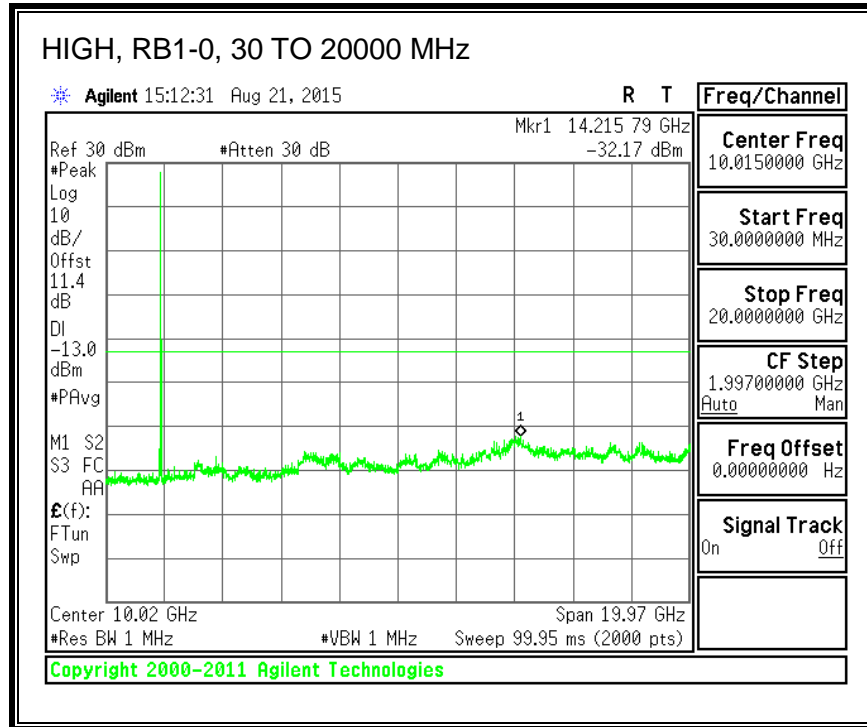
16QAM, (15.0 MHz BAND WIDTH)



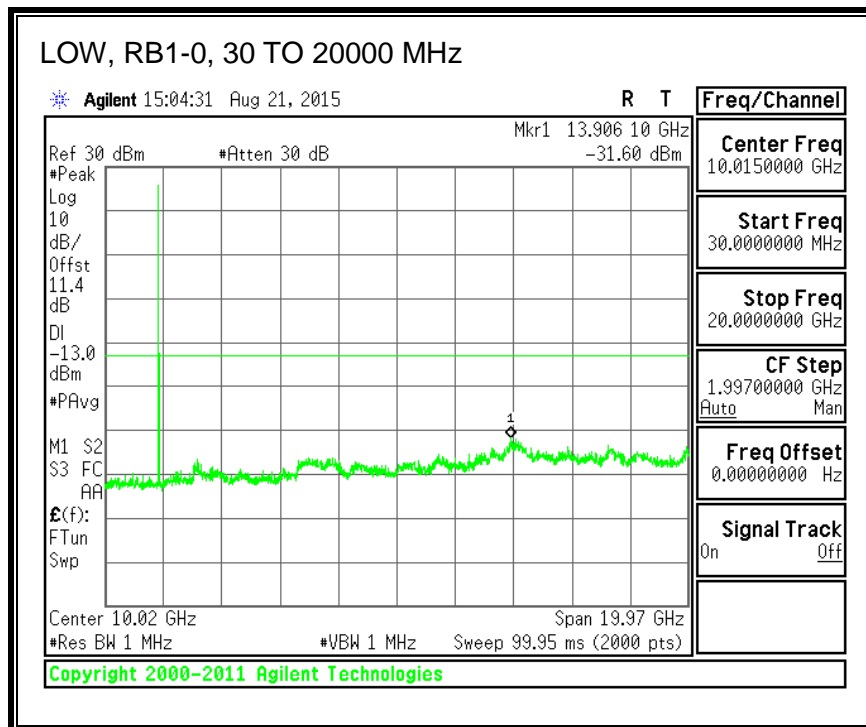


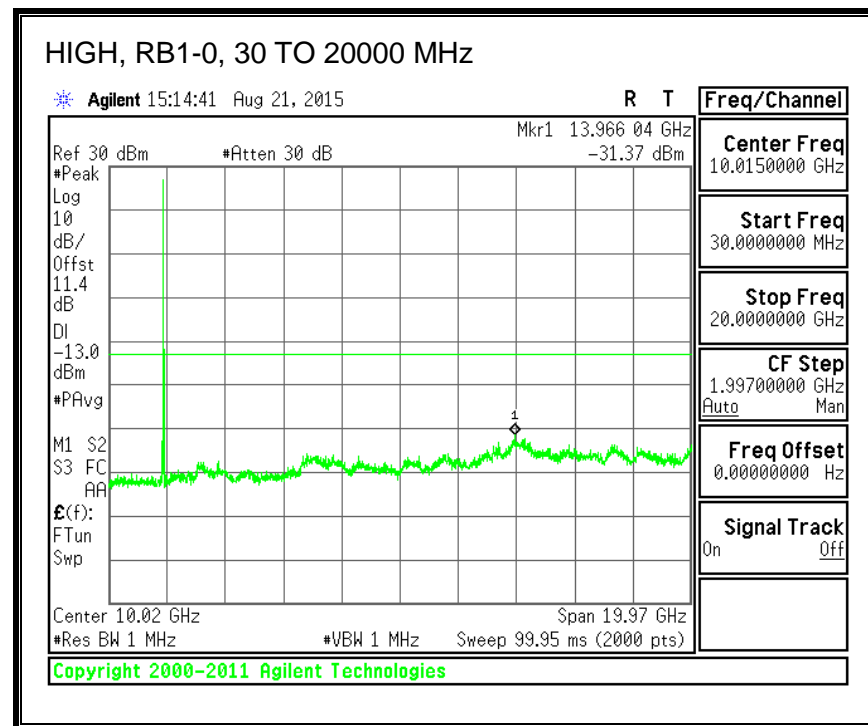
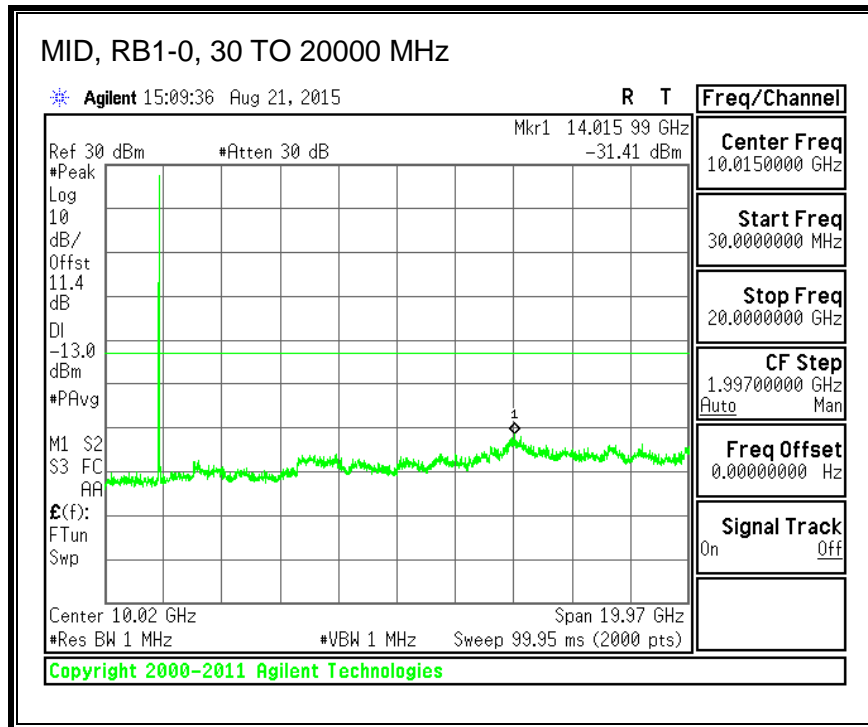
QPSK, (20.0 MHz BAND WIDTH)





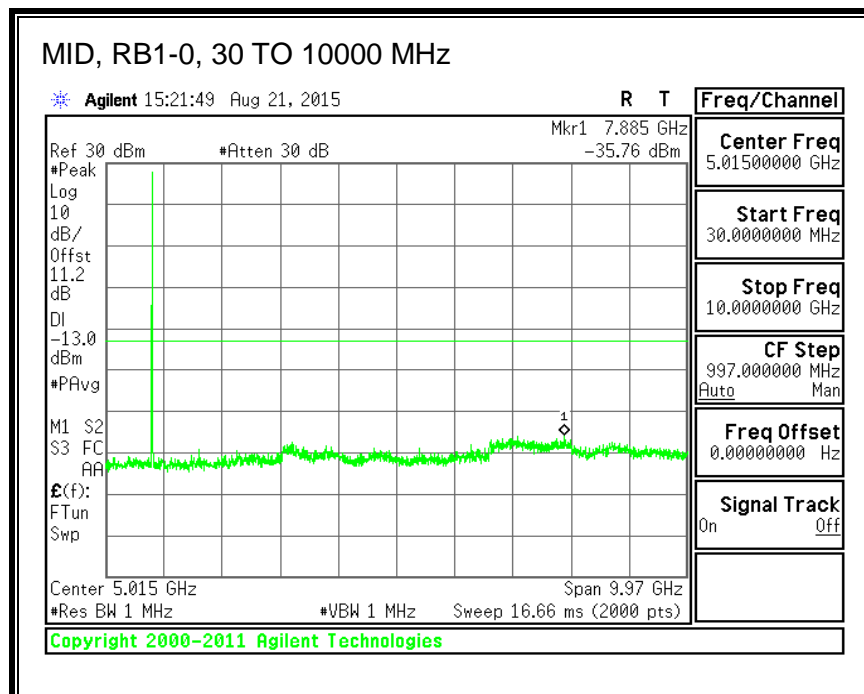
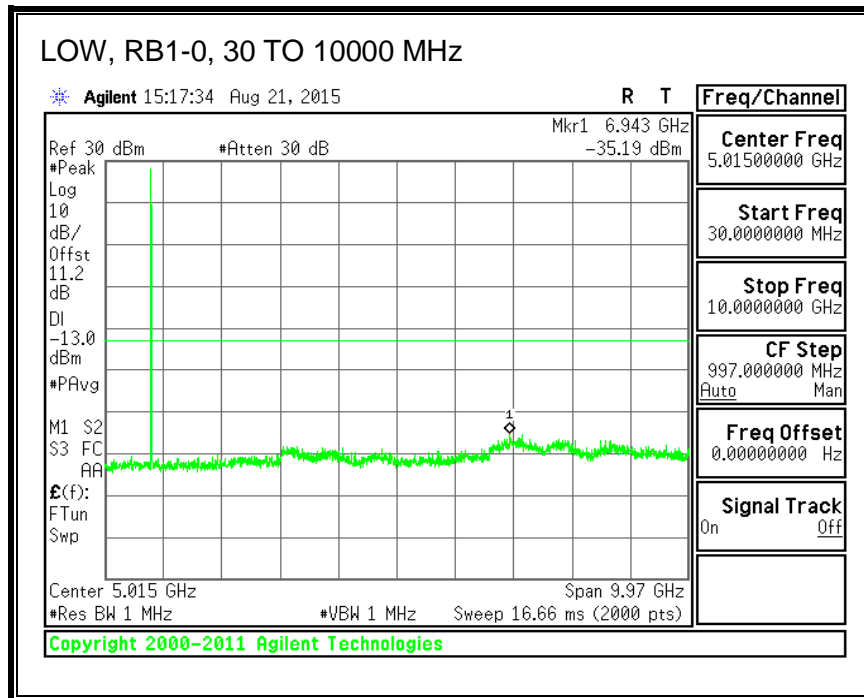
16QAM, (20.0 MHz BAND WIDTH)

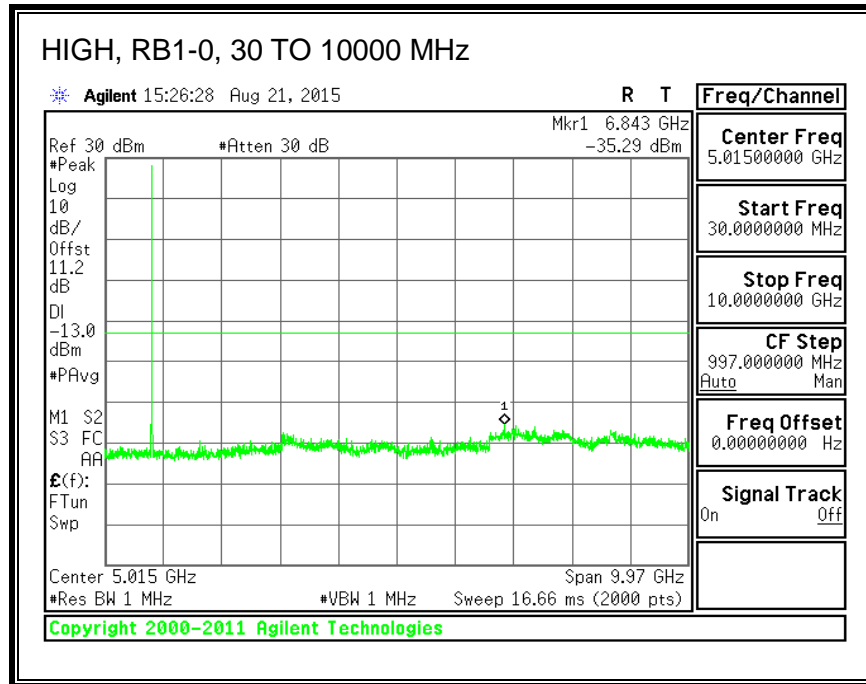




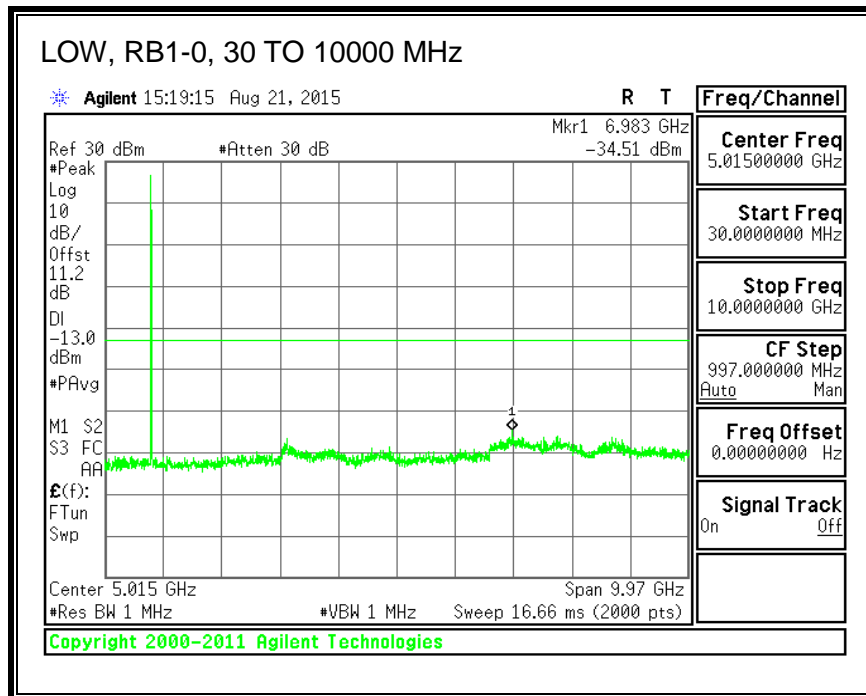
8.3.8. LTE BAND 26

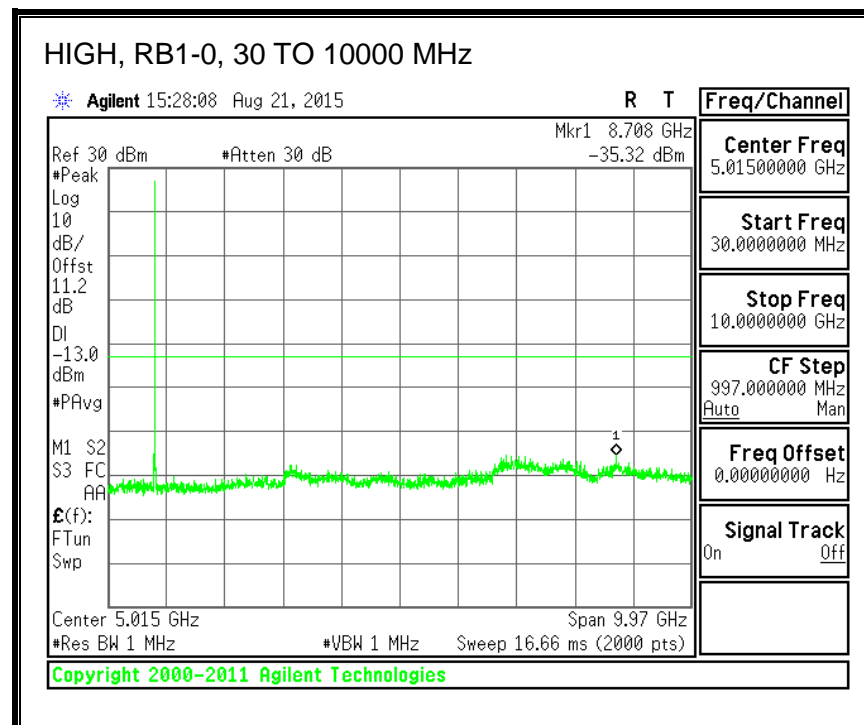
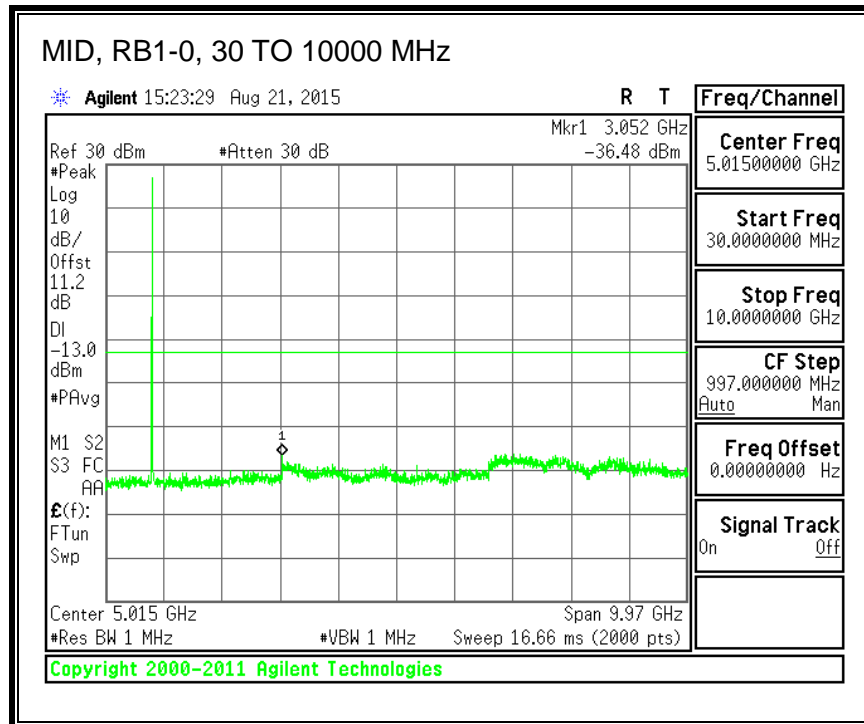
QPSK, (1.4 MHz BAND WIDTH)



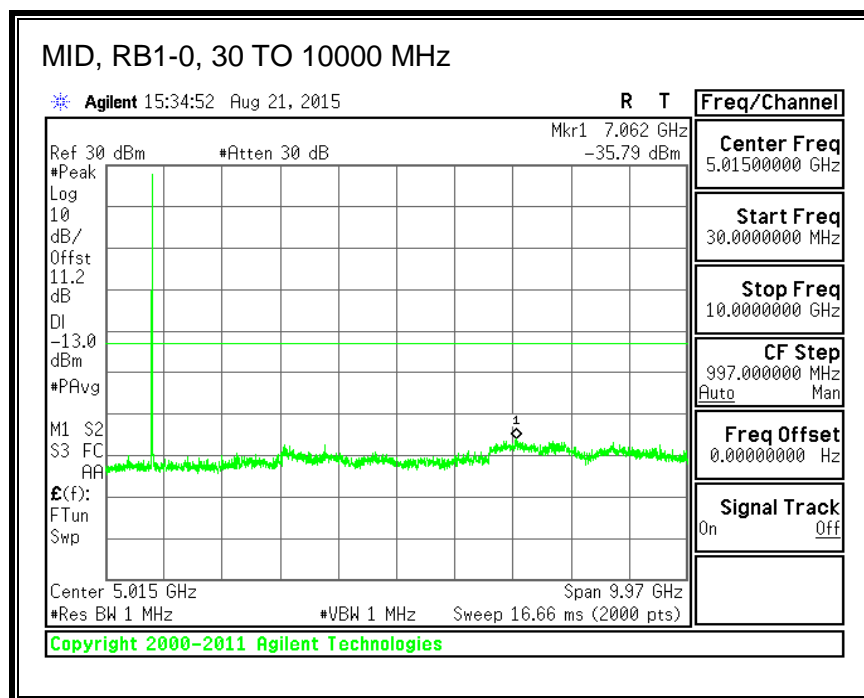
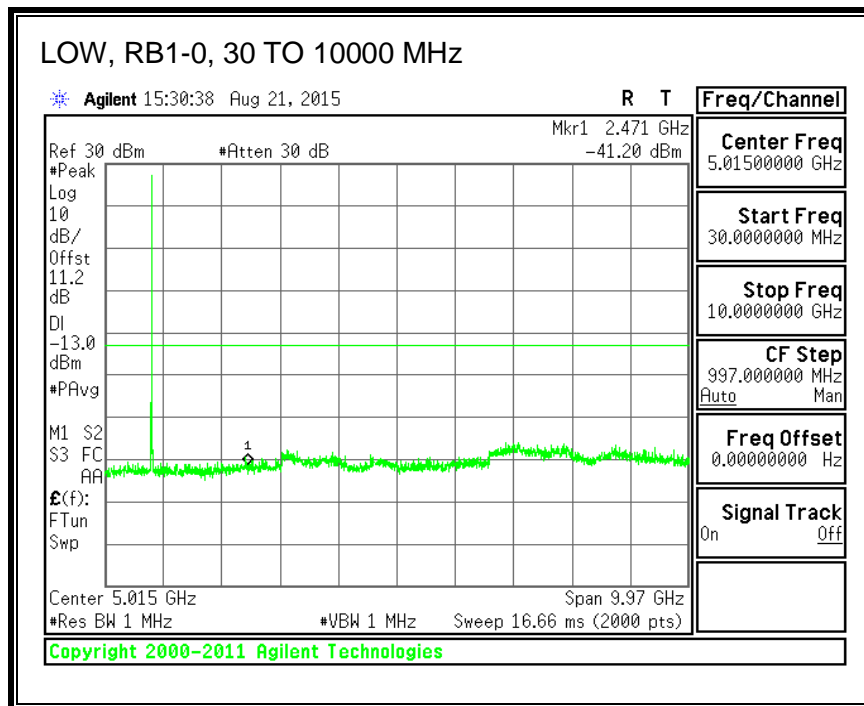


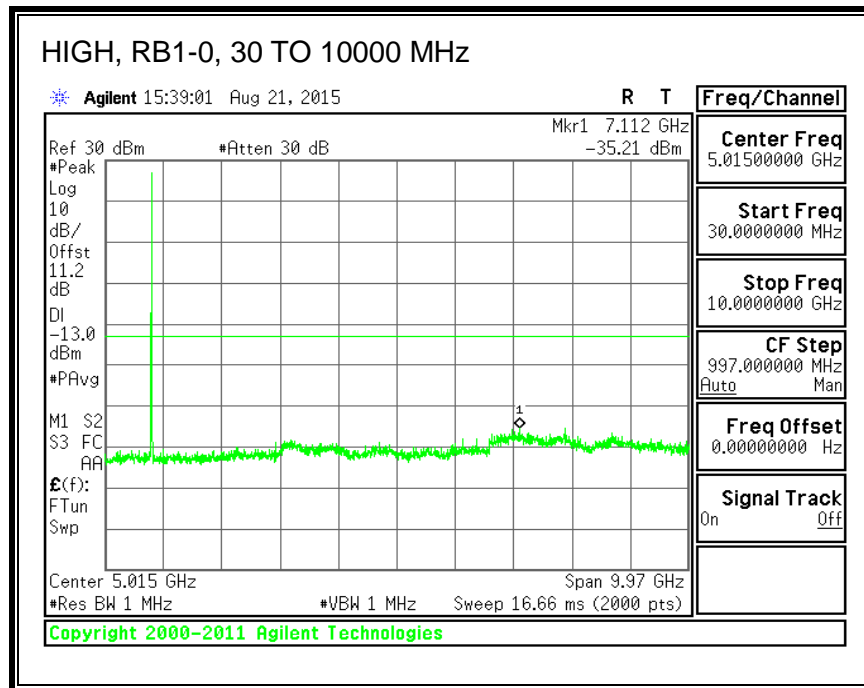
16QAM, (1.4 MHz BAND WIDTH)



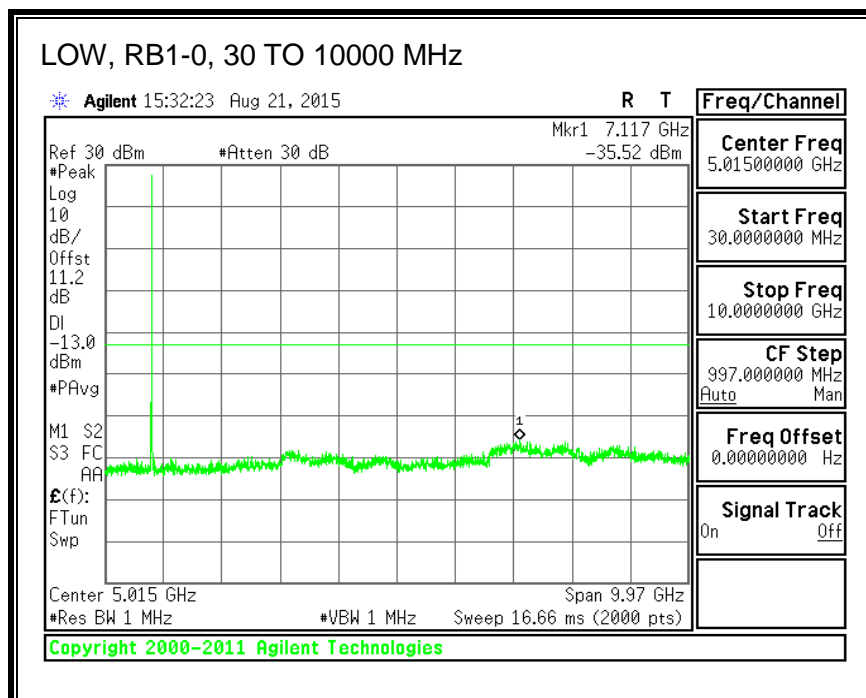


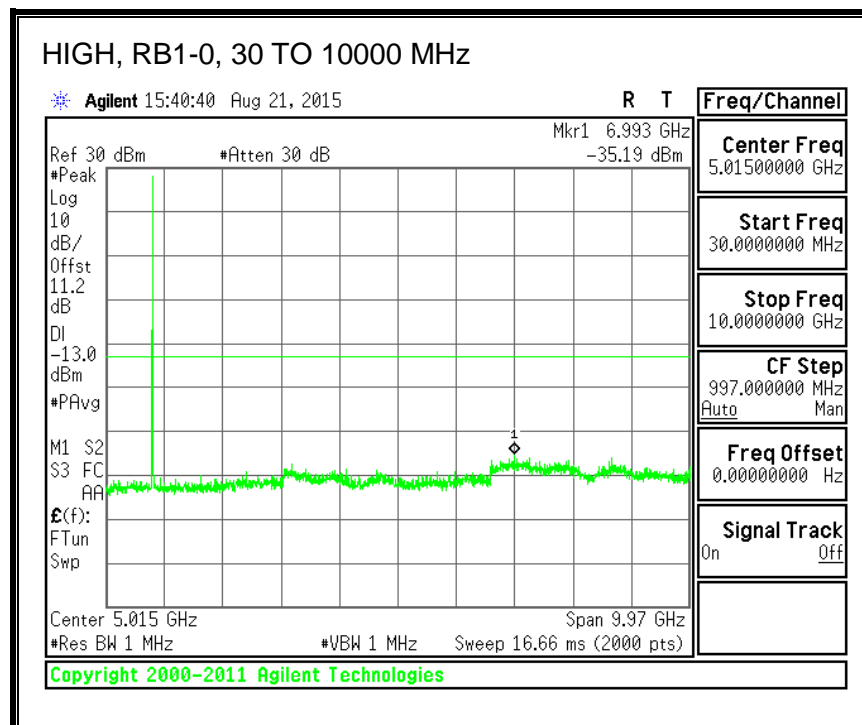
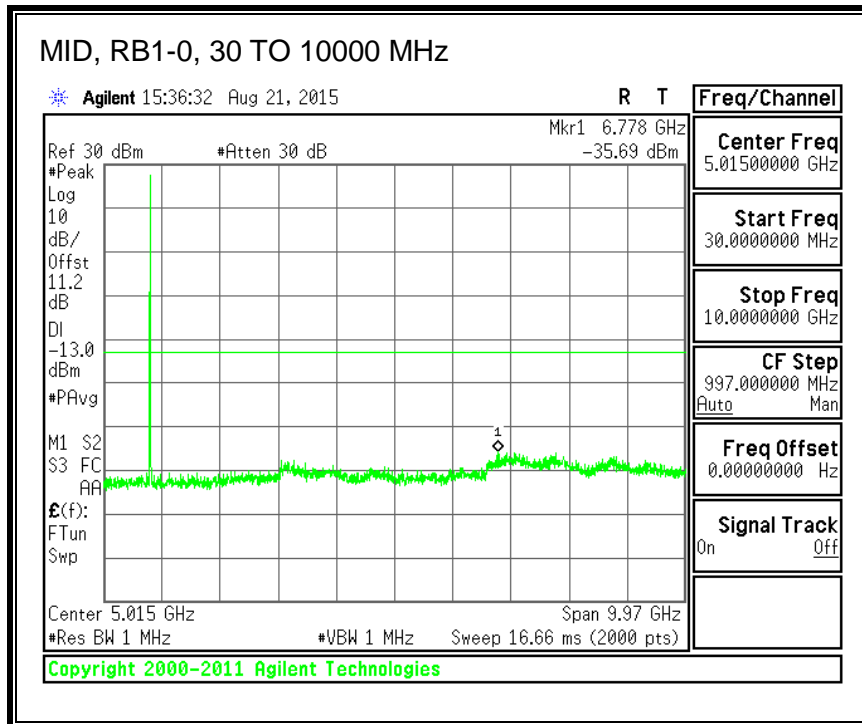
QPSK, (3.0 MHz BAND WIDTH)



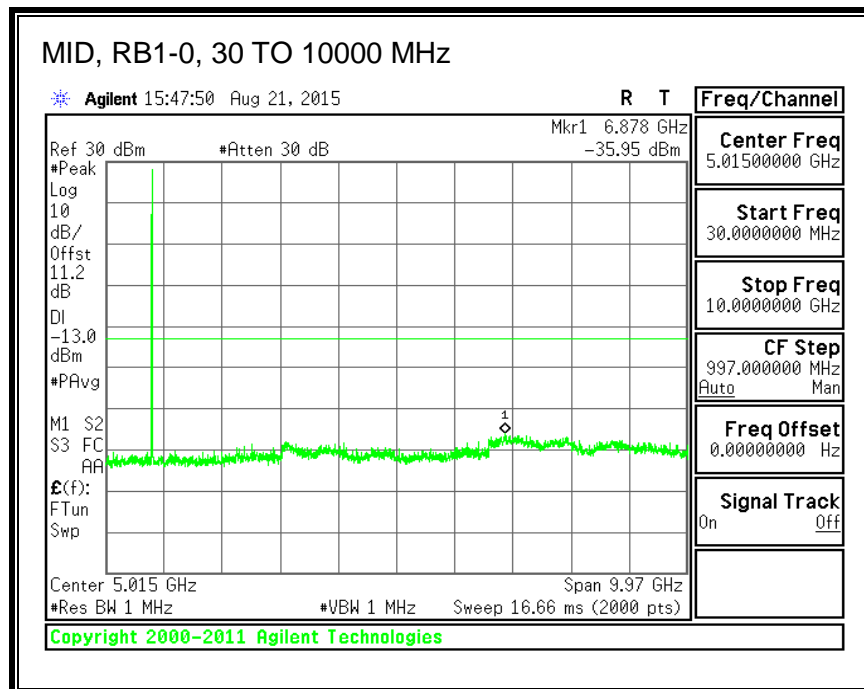
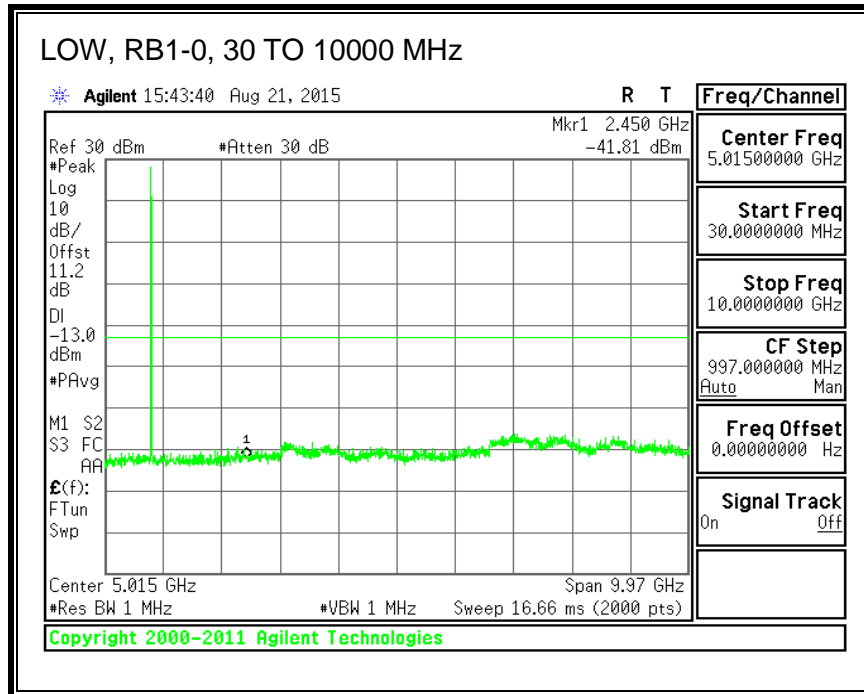


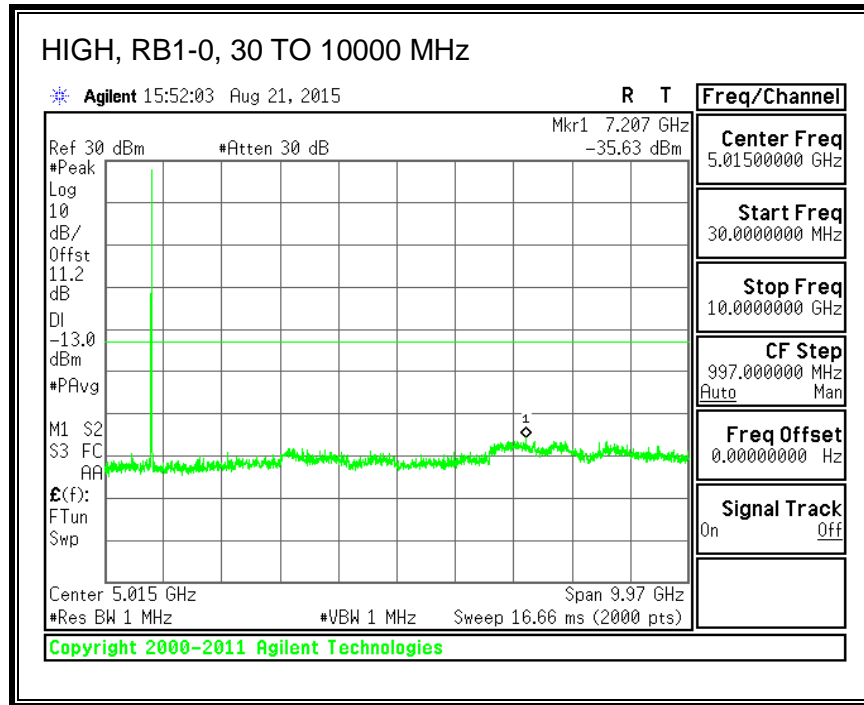
16QAM, (3.0 MHz BAND WIDTH)



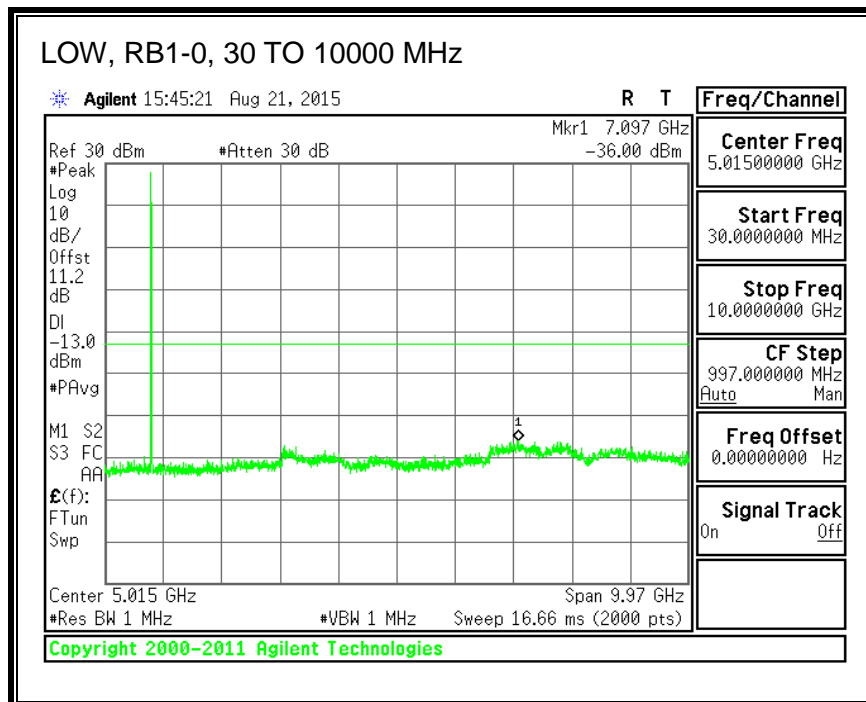


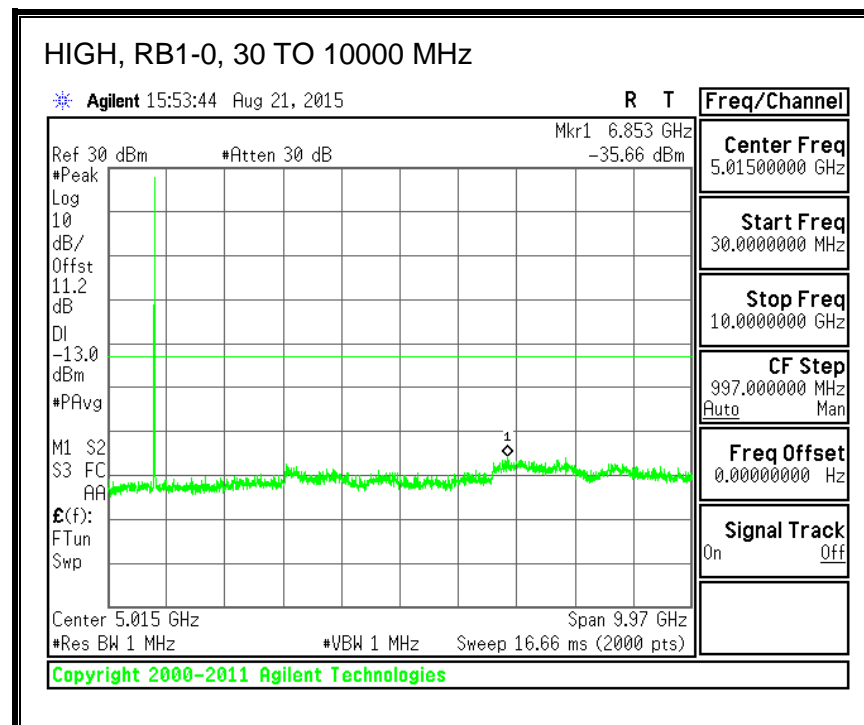
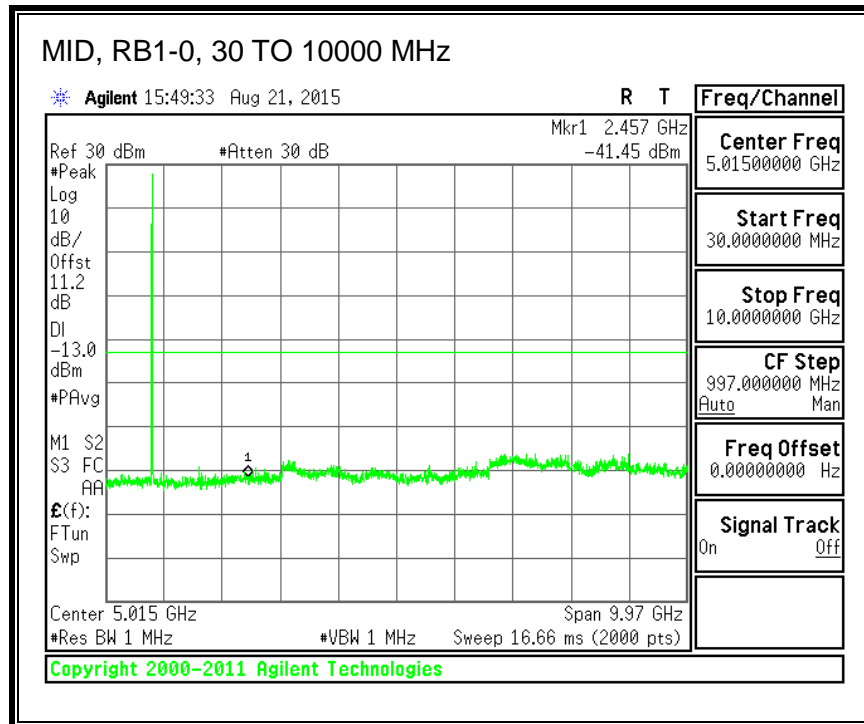
QPSK, (5.0 MHz BAND WIDTH)



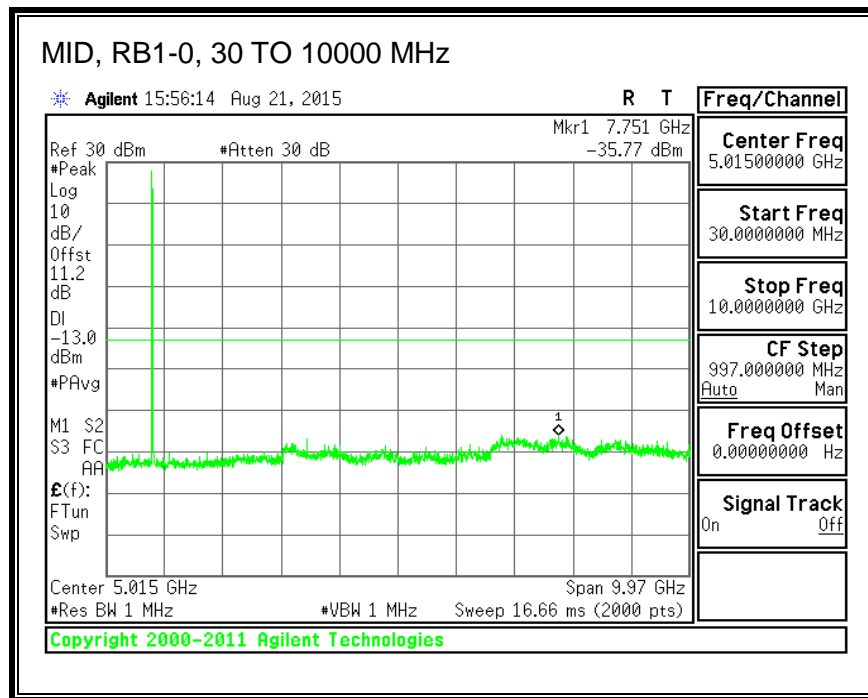


16QAM, (5.0 MHz BAND WIDTH)

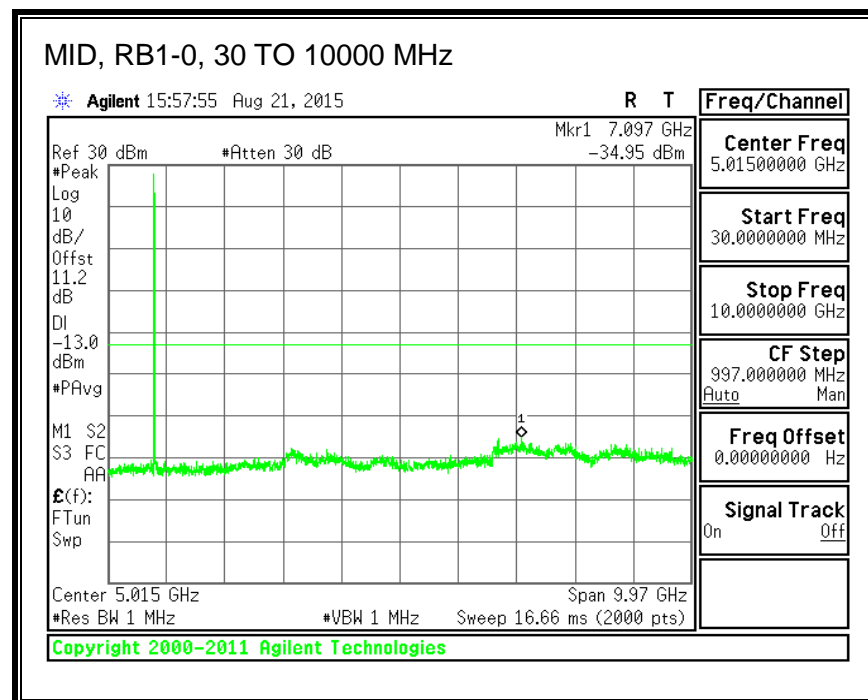




QPSK, (10.0 MHz BAND WIDTH)

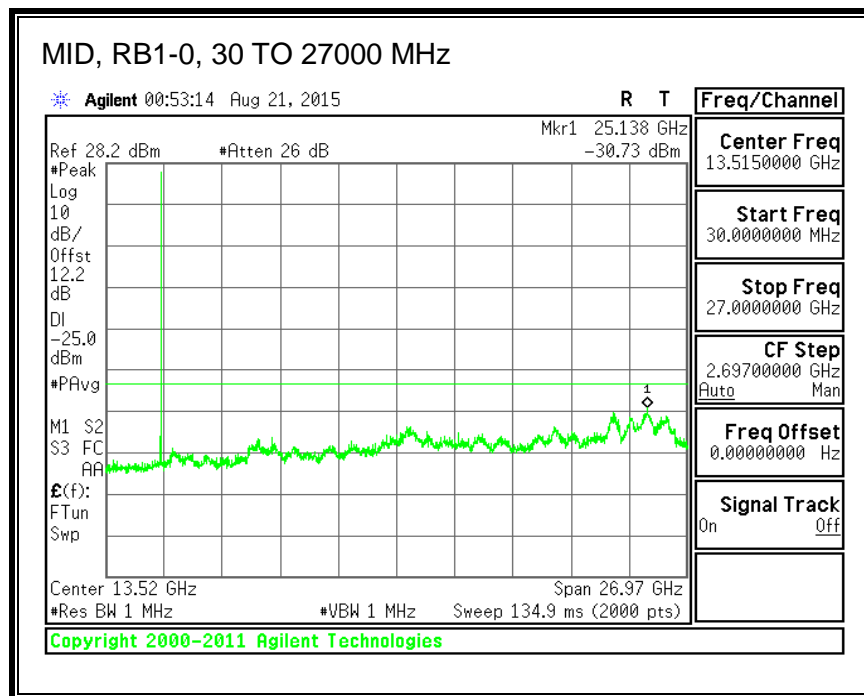
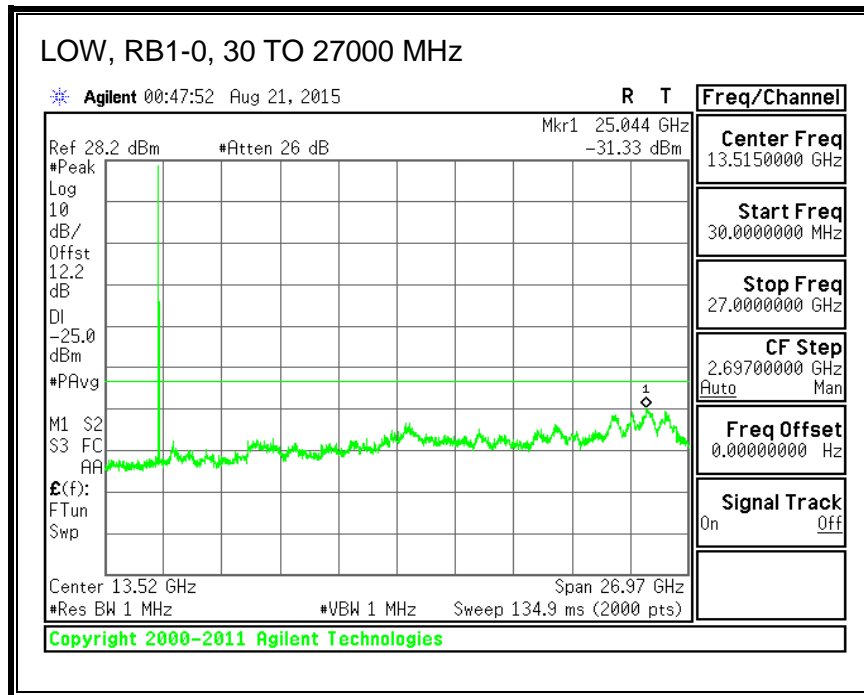


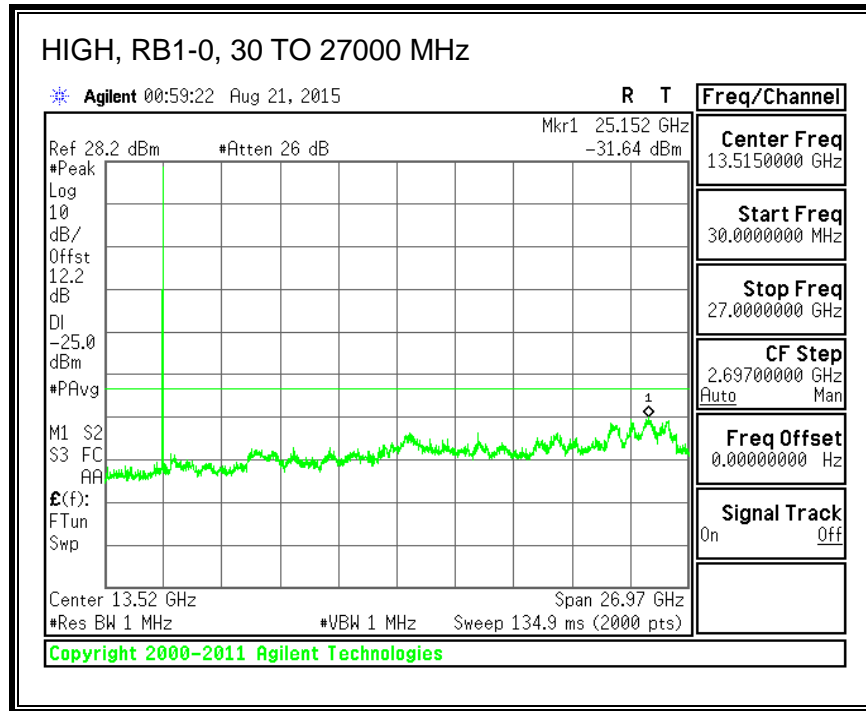
16QAM, (10.0 MHz BAND WIDTH)



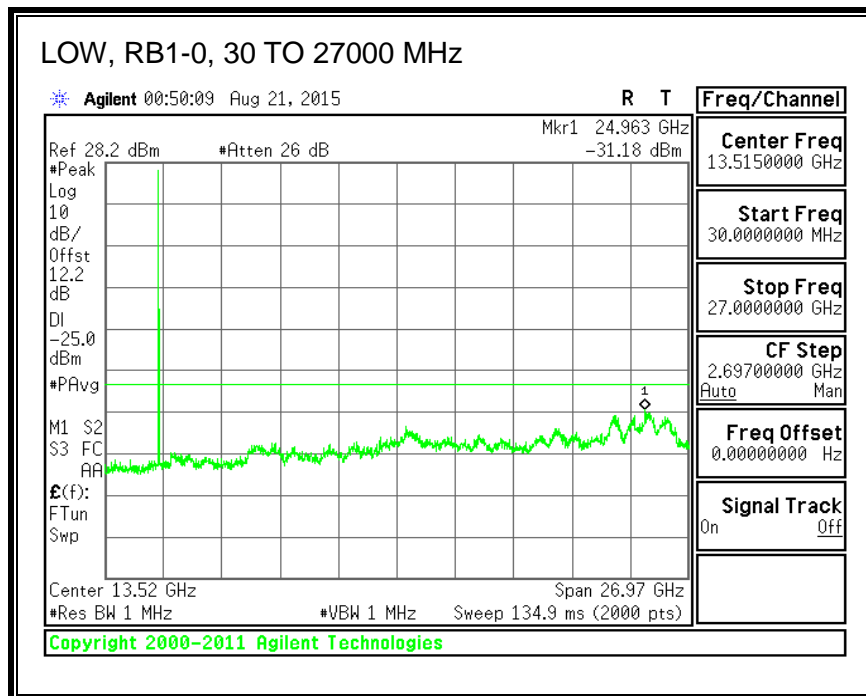
8.3.9. LTE BAND 41

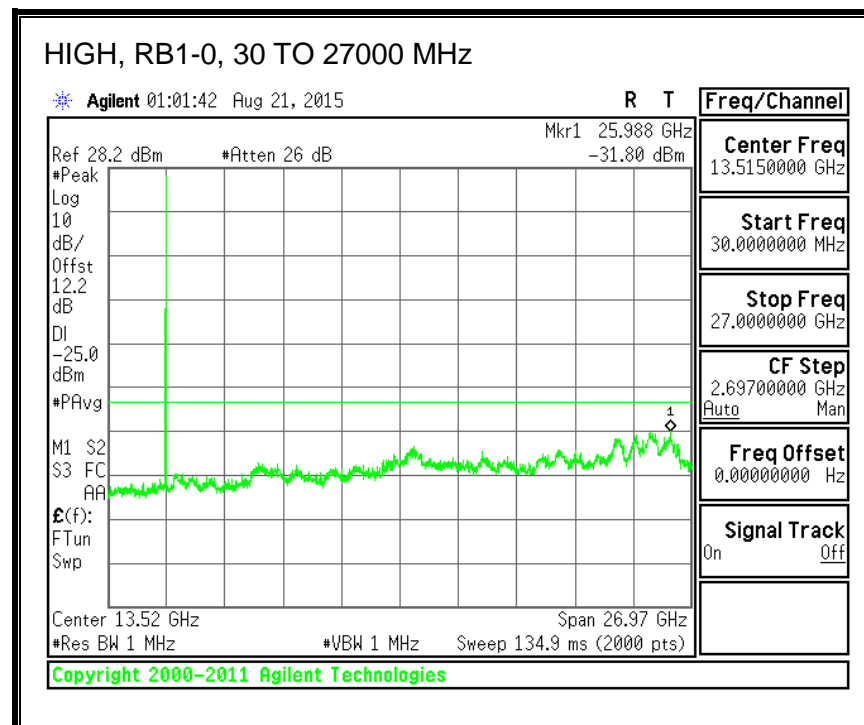
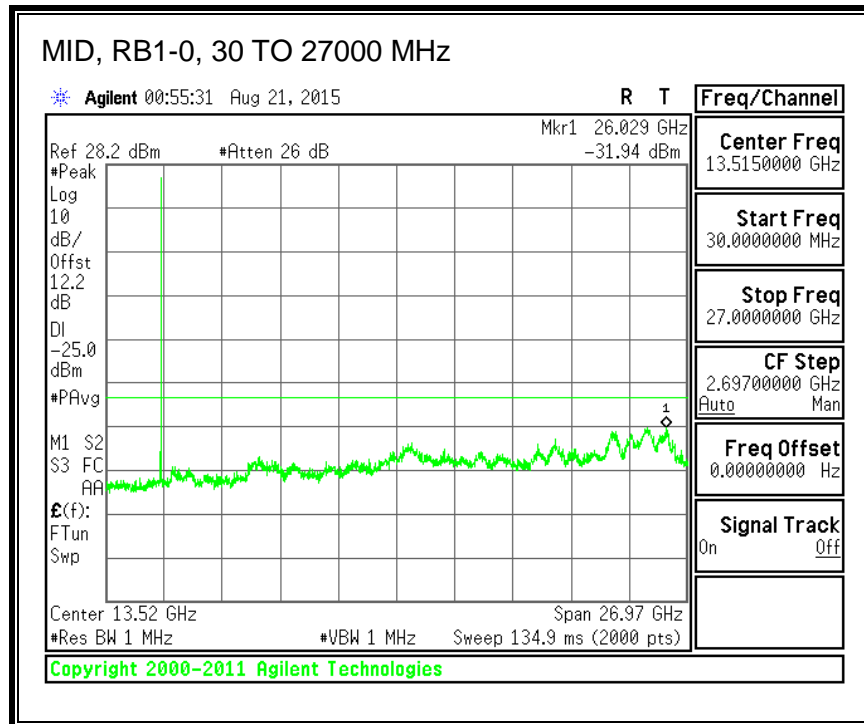
QPSK, (5.0 MHz BAND WIDTH)



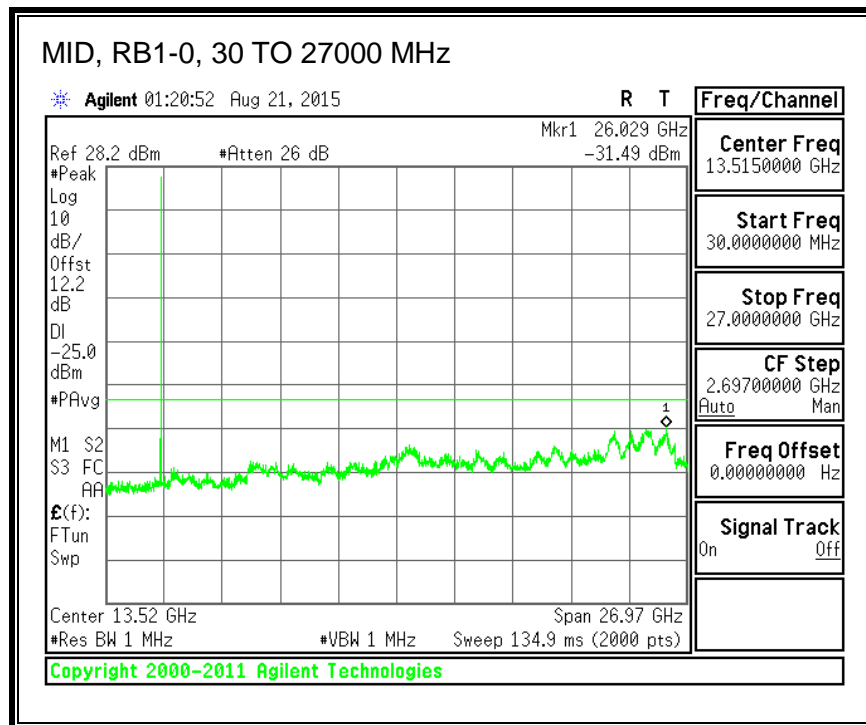
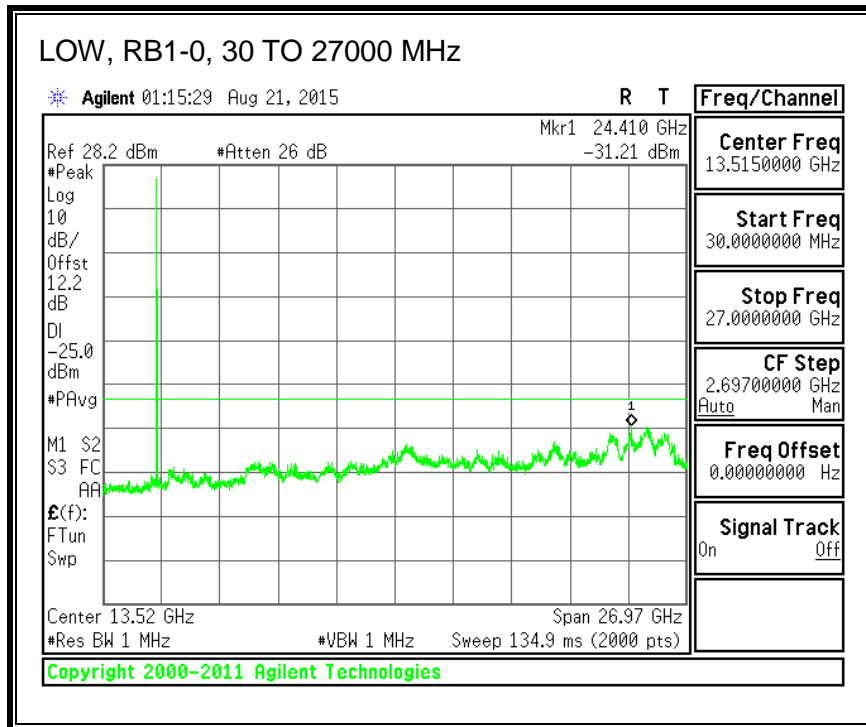


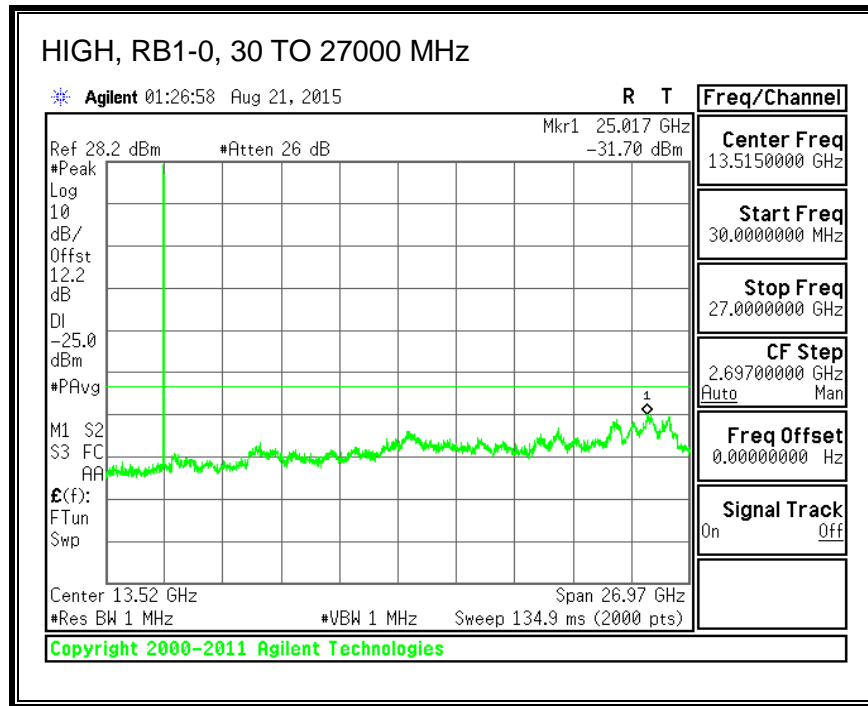
16QAM, (5.0 MHz BAND WIDTH)



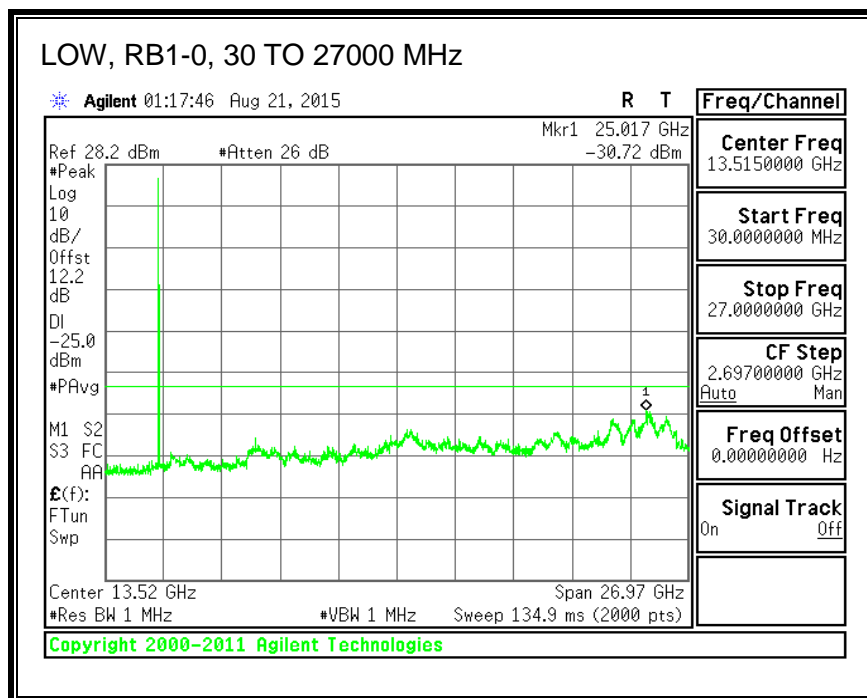


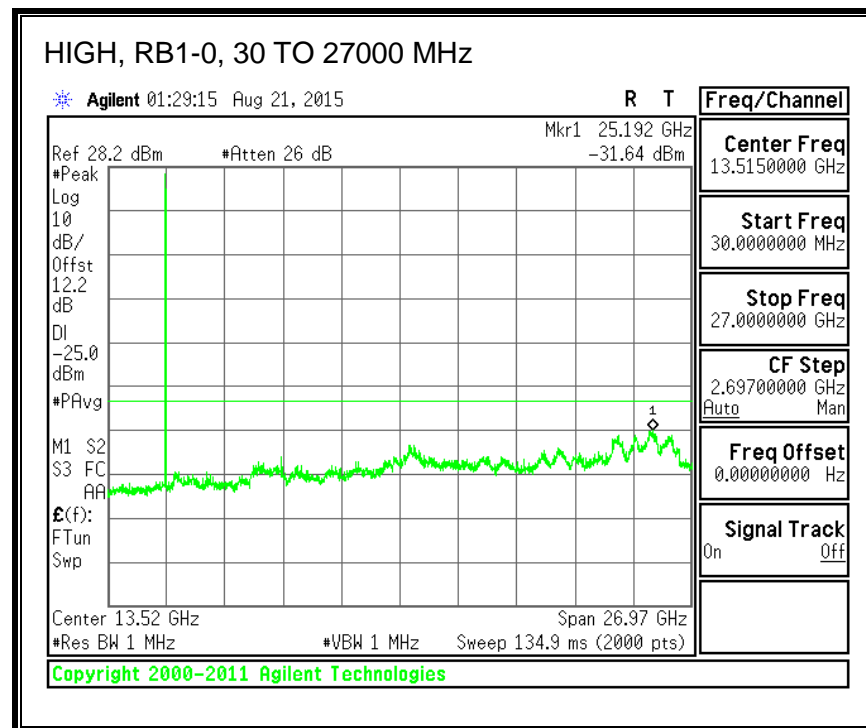
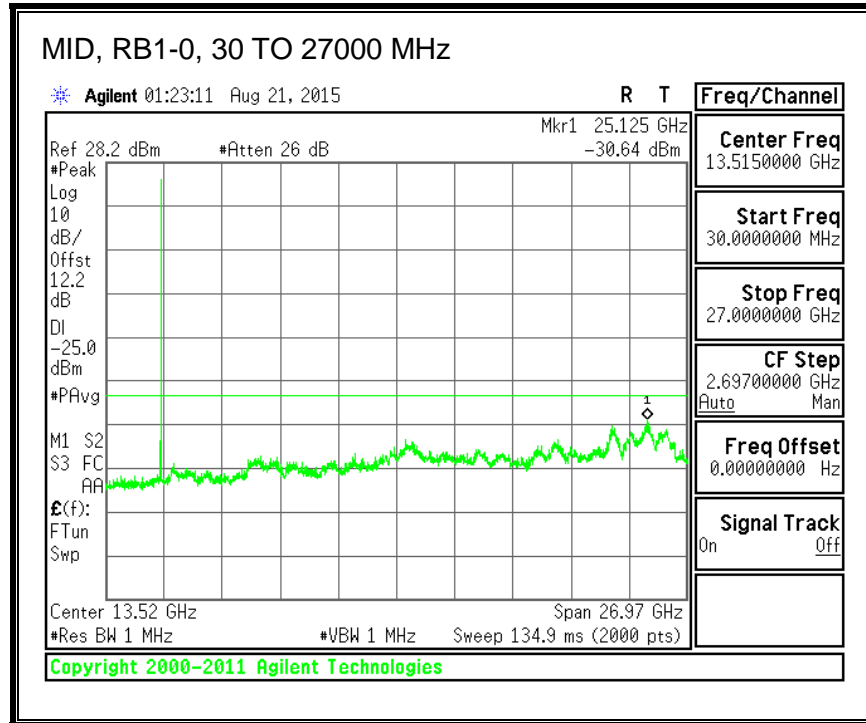
QPSK, (10.0 MHz BAND WIDTH)



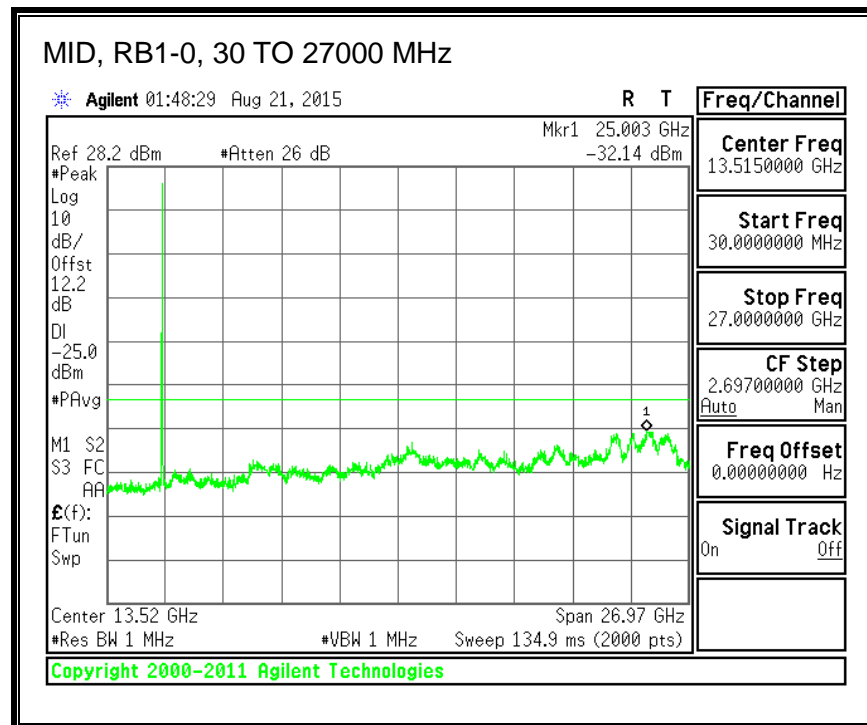
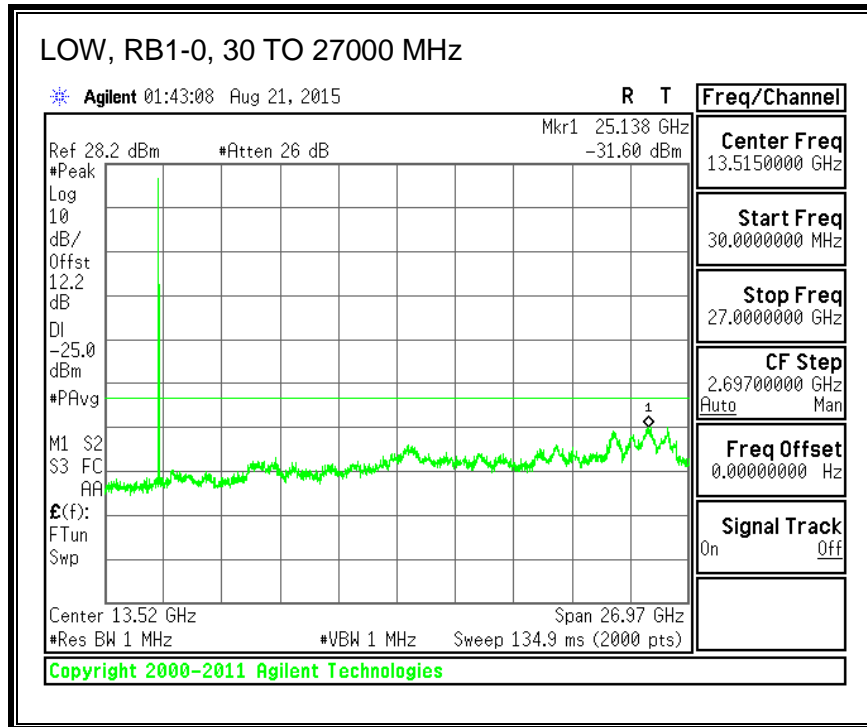


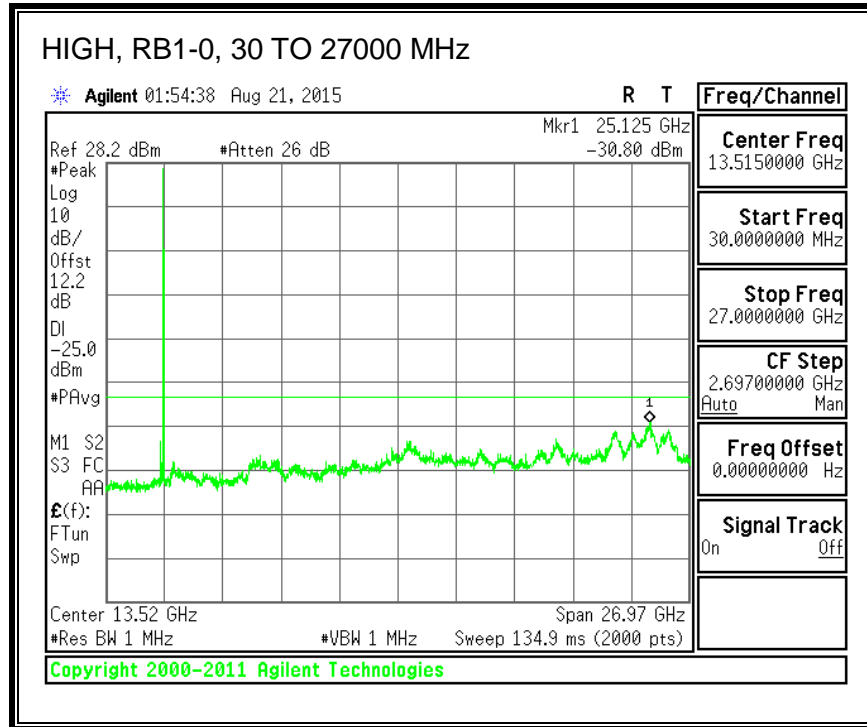
16QAM, (10.0 MHz BAND WIDTH)



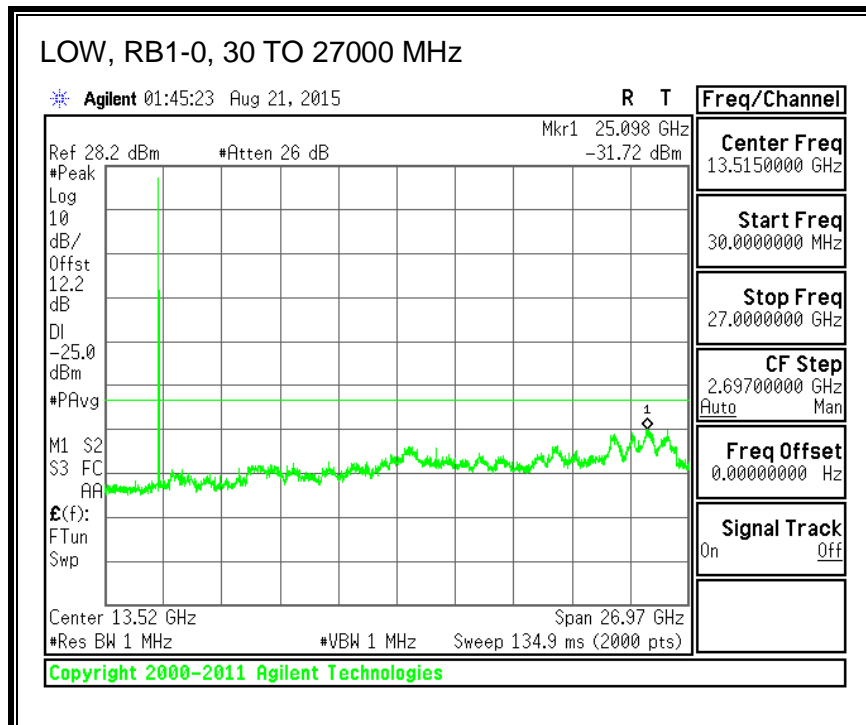


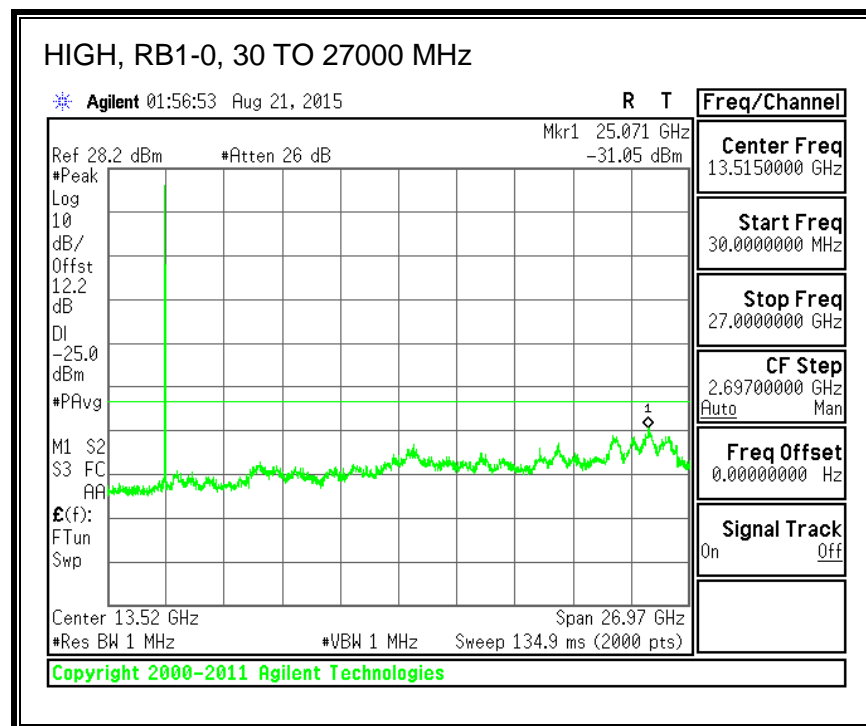
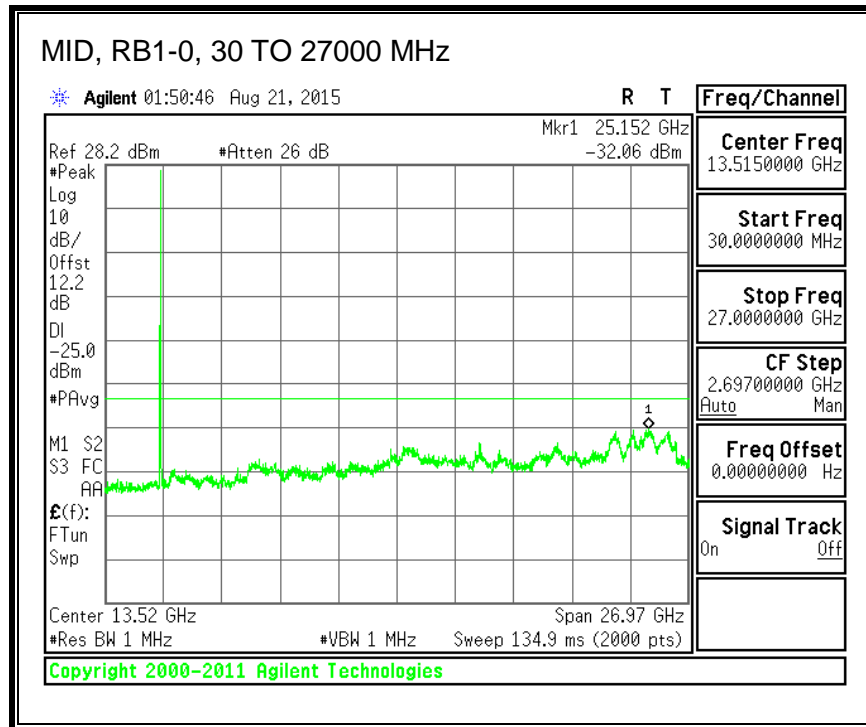
QPSK, (15.0 MHz BAND WIDTH)



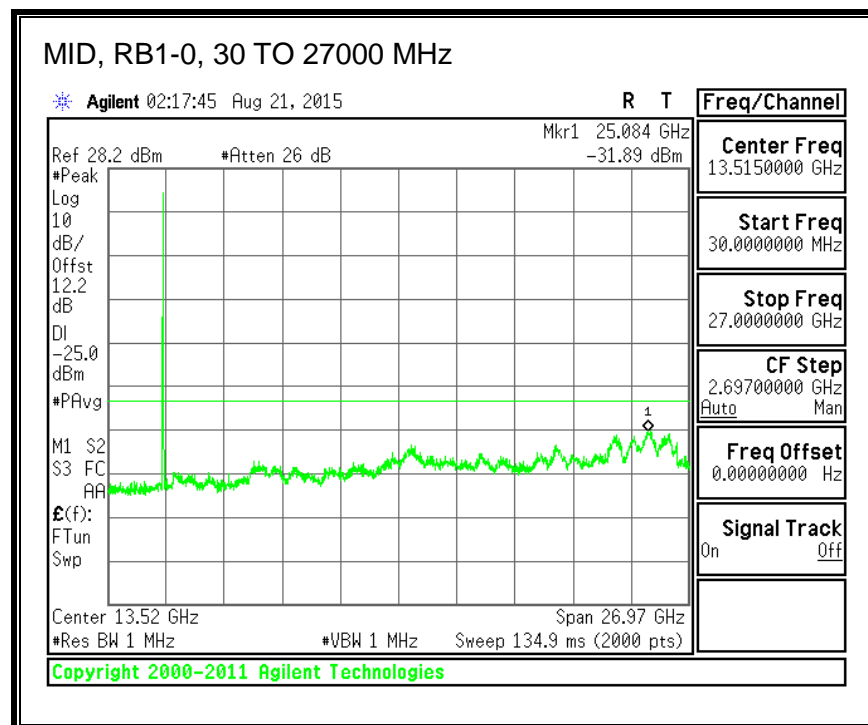
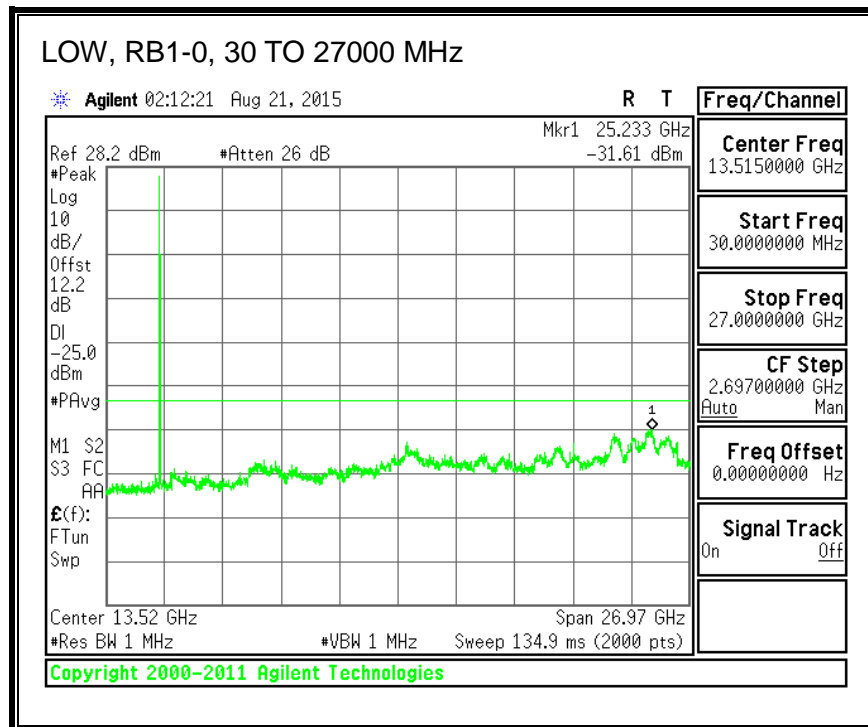


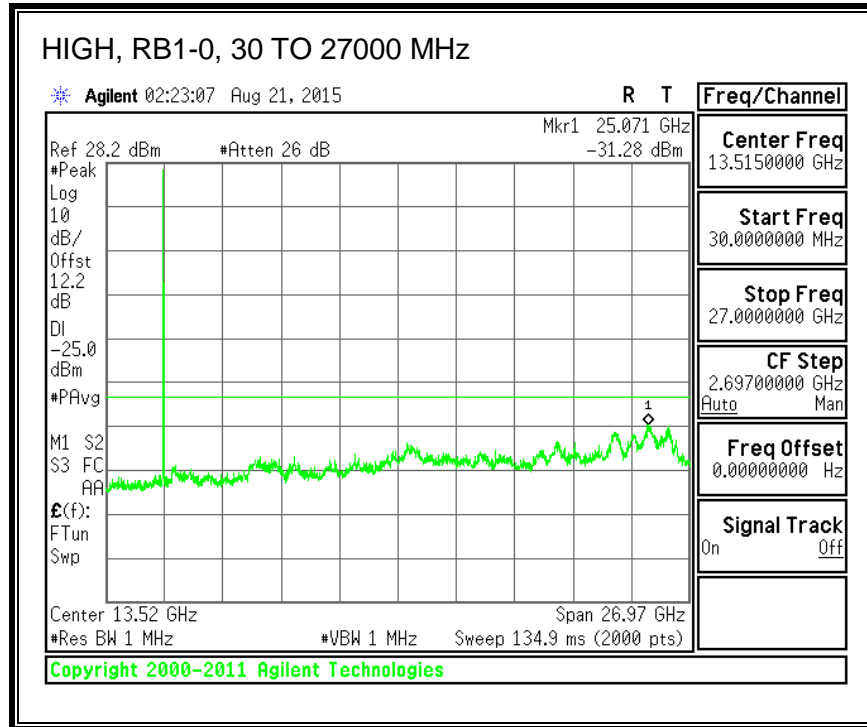
16QAM, (15.0 MHz BAND WIDTH)



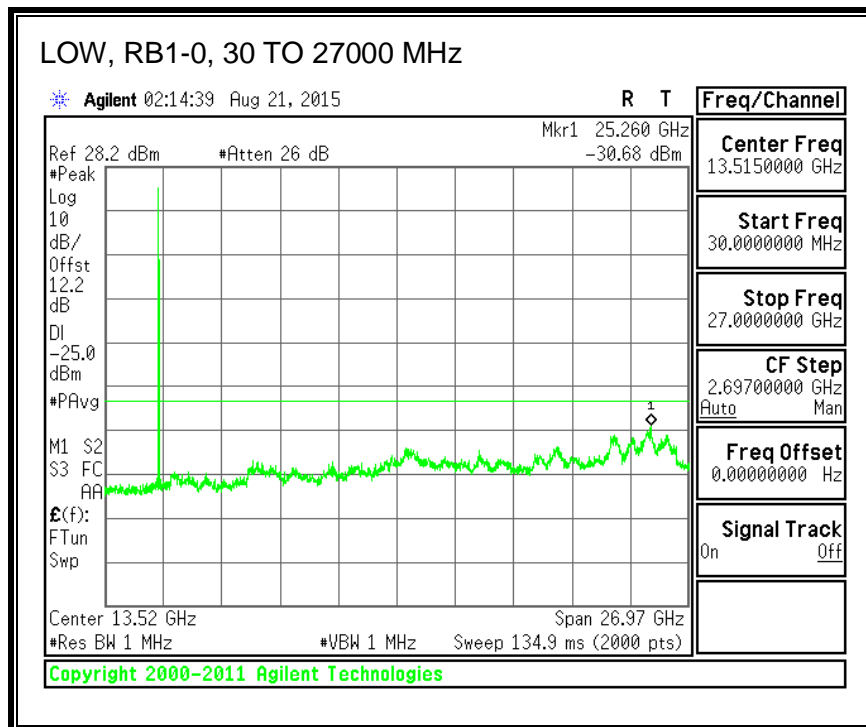


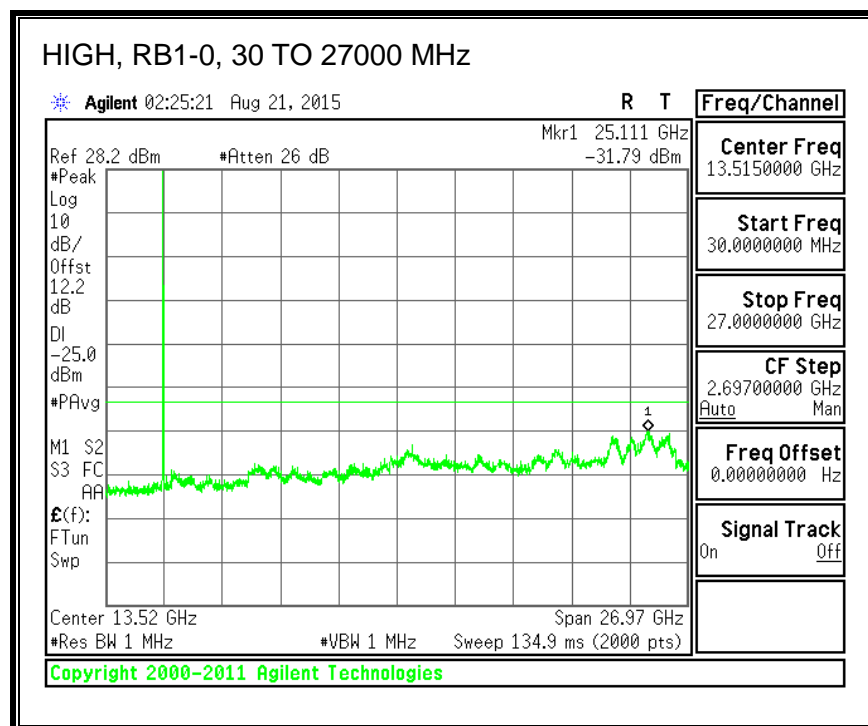
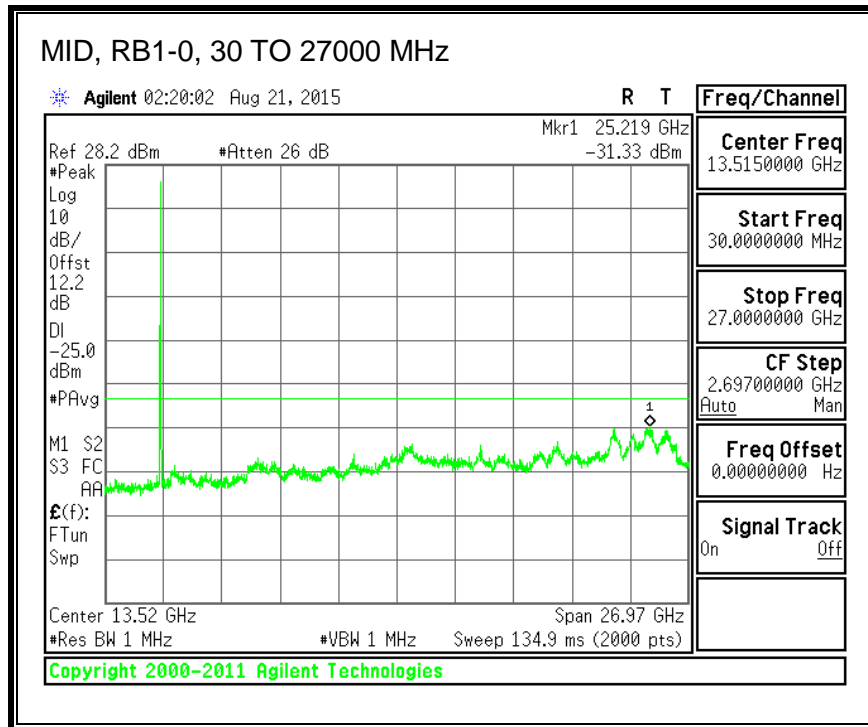
QPSK, (20.0 MHz BAND WIDTH)





16QAM, (20.0 MHz BAND WIDTH)





8.4. 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 $+50^{\circ}\text{C}$
- Voltage = low voltage, 3.4VDC, Normal, 3.8VDC and High voltage, 4.3VDC.

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 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	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0204	1908.9860		
Extreme (50C)		1851.0204	1908.9860	-2.2	-0.001
Extreme (40C)		1851.0204	1908.9860	-1.1	-0.001
Extreme (30C)		1851.0204	1908.9860	-2.6	-0.001
Extreme (10C)		1851.0204	1908.9860	-2.7	-0.001
Extreme (0C)		1851.0204	1908.9860	-3.5	-0.002
Extreme (-10C)		1851.0204	1908.9860	-4.7	-0.002
Extreme (-20C)		1851.0204	1908.9860	-5.8	-0.003
Extreme (-30C)		1851.0204	1908.9860	-6.1	-0.003
25C	10%	1851.0204	1908.9860	-7.0	-0.004
	-10%	1851.0204	1908.9860	-6.9	-0.004
	End Point	1851.0204	1908.9860	-6.5	-0.003

16QAM, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0203	1908.9856		
Extreme (50C)		1851.0203	1908.9856	-2.1	-0.001
Extreme (40C)		1851.0203	1908.9856	-1.9	-0.001
Extreme (30C)		1851.0203	1908.9856	-3.2	-0.002
Extreme (10C)		1851.0203	1908.9856	-2.5	-0.001
Extreme (0C)		1851.0203	1908.9856	-3.5	-0.002
Extreme (-10C)		1851.0203	1908.9856	-4.6	-0.002
Extreme (-20C)		1851.0203	1908.9856	-5.5	-0.003
Extreme (-30C)		1851.0203	1908.9856	-3.6	-0.002
25C	10%	1851.0203	1908.9856	-2.9	-0.002
	-10%	1851.0203	1908.9856	-2.5	-0.001
	End Point	1851.0203	1908.9856	-3.4	-0.002

8.4.2. LTE BAND 4

QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1711.0125	1753.9785		
Extreme (50C)		1711.0125	1753.9785	-2.9	-0.002
Extreme (40C)		1711.0125	1753.9785	-3.9	-0.002
Extreme (30C)		1711.0125	1753.9785	-2.1	-0.001
Extreme (10C)		1711.0125	1753.9785	-4.7	-0.003
Extreme (0C)		1711.0125	1753.9785	-5.6	-0.003
Extreme (-10C)		1711.0125	1753.9785	-6.7	-0.004
Extreme (-20C)		1711.0125	1753.9785	-7.7	-0.004
Extreme (-30C)		1711.0125	1753.9785	6.9	0.004
25C	10%	1711.0125	1753.9785	-7.0	-0.004
	-10%	1711.0125	1753.9785	-7.5	-0.004
	End Point	1711.0125	1753.9785	-7.0	-0.004

16QAM, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1711.0118	1753.9820		
Extreme (50C)		1711.0118	1753.9820	-2.0	-0.001
Extreme (40C)		1711.0118	1753.9820	-2.9	-0.002
Extreme (30C)		1711.0118	1753.9820	-3.3	-0.002
Extreme (10C)		1711.0118	1753.9820	-4.6	-0.003
Extreme (0C)		1711.0118	1753.9820	-6.1	-0.004
Extreme (-10C)		1711.0118	1753.9820	-7.5	-0.004
Extreme (-20C)		1711.0118	1753.9820	-8.7	-0.005
Extreme (-30C)		1711.0118	1753.9820	9.1	0.005
25C	10%	1711.0118	1753.9820	8.7	0.005
	-10%	1711.0118	1753.9820	8.5	0.005
	End Point	1711.0118	1753.9820	9.0	0.005

8.4.3. LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	824.5051	848.4993		
Extreme (50C)		824.5051	848.4993	-3.0	-0.004
Extreme (40C)		824.5051	848.4993	-2.3	-0.003
Extreme (30C)		824.5051	848.4993	-2.5	-0.003
Extreme (10C)		824.5051	848.4993	-2.8	-0.003
Extreme (0C)		824.5051	848.4993	-3.3	-0.004
Extreme (-10C)		824.5051	848.4993	-4.4	-0.005
Extreme (-20C)		824.5051	848.4993	-1.0	-0.001
Extreme (-30C)		824.5051	848.4993	-1.0	-0.001
25C	10%	824.5051	848.4993	-0.1	0.000
	-10%	824.5051	848.4993	0.1	0.000
	End Point	824.5051	848.4993	0.5	0.001

16QAM, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	824.5083	848.4973		
Extreme (50C)		824.5083	848.4972	-2.0	-0.002
Extreme (40C)		824.5083	848.4972	-2.2	-0.003
Extreme (30C)		824.5083	848.4972	-2.5	-0.003
Extreme (10C)		824.5083	848.4972	-2.6	-0.003
Extreme (0C)		824.5083	848.4972	-3.5	-0.004
Extreme (-10C)		824.5083	848.4972	-4.3	-0.005
Extreme (-20C)		824.5083	848.4972	-0.5	-0.001
Extreme (-30C)		824.5083	848.4972	-1.4	-0.002
25C	10%	824.5083	848.4973	-0.1	0.000
	-10%	824.5083	848.4973	-0.1	0.000
	End Point	824.5083	848.4973	-0.2	0.000

8.4.4. LTE BAND 7

QPSK, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0227	2568.9988		
Extreme (50C)		2501.0227	2568.9988	-4.3	-0.002
Extreme (40C)		2501.0227	2568.9988	4.9	0.002
Extreme (30C)		2501.0227	2568.9988	-0.2	0.000
Extreme (10C)		2501.0227	2568.9988	-4.3	-0.002
Extreme (0C)		2501.0227	2568.9988	-5.3	-0.002
Extreme (-10C)		2501.0227	2568.9988	-5.5	-0.002
Extreme (-20C)		2501.0227	2568.9988	-6.4	-0.003
Extreme (-30C)		2501.0227	2568.9988	-5.3	-0.002
25C	10%	2501.0227	2568.9988	-6.1	-0.002
	-10%	2501.0227	2568.9988	-5.9	-0.002
	End Point	2501.0227	2568.9988	-5.6	-0.002

16QAM, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0237	2569.0035		
Extreme (50C)		2501.0237	2569.0035	-2.8	-0.001
Extreme (40C)		2501.0237	2569.0035	-4.1	-0.002
Extreme (30C)		2501.0237	2569.0035	-3.3	-0.001
Extreme (10C)		2501.0237	2569.0035	-3.5	-0.001
Extreme (0C)		2501.0237	2569.0035	-5.6	-0.002
Extreme (-10C)		2501.0237	2569.0035	-6.8	-0.003
Extreme (-20C)		2501.0237	2569.0035	-7.4	-0.003
Extreme (-30C)		2501.0237	2569.0035	-5.0	-0.002
25C	10%	2501.0237	2569.0035	-4.2	-0.002
	-10%	2501.0237	2569.0035	-5.0	-0.002
	End Point	2501.0237	2569.0035	-5.6	-0.002

8.4.5. LTE BAND 12

QPSK, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	699.5032	715.4954		
Extreme (50C)		699.5032	715.4954	-2.0	0.00
Extreme (40C)		699.5032	715.4954	-1.2	0.00
Extreme (30C)		699.5032	715.4954	-1.6	0.00
Extreme (10C)		699.5032	715.4954	-1.5	0.00
Extreme (0C)		699.5032	715.4954	0.0	0.00
Extreme (-10C)		699.5032	715.4954	-1.3	0.00
Extreme (-20C)		699.5032	715.4954	1.4	0.00
Extreme (-30C)		699.5032	715.4954	-1.7	0.00
25C	10%	699.5032	715.4954	-2.0	0.00
	-10%	699.5032	715.4954	-1.8	0.00
	End Point	699.5032	715.4954	-1.6	0.00

16QAM, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	699.5053	715.4925		
Extreme (50C)		699.5053	715.4925	-2.0	0.00
Extreme (40C)		699.5053	715.4925	-1.2	0.00
Extreme (30C)		699.5053	715.4925	-1.6	0.00
Extreme (10C)		699.5053	715.4925	-1.5	0.00
Extreme (0C)		699.5053	715.4925	-0.4	0.00
Extreme (-10C)		699.5053	715.4925	-1.3	0.00
Extreme (-20C)		699.5053	715.4925	1.1	0.00
Extreme (-30C)		699.5053	715.4925	-2.2	0.00
25C	10%	699.5053	715.4925	-2.0	0.00
	-10%	699.5053	715.4925	-1.8	0.00
	End Point	699.5053	715.4925	-1.6	0.00

8.4.6. LTE BAND 17

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	704.5069	715.4958		
Extreme (50C)		704.5069	715.4958	0.0	0.000
Extreme (40C)		704.5069	715.4958	0.5	0.001
Extreme (30C)		704.5069	715.4958	-1.0	-0.001
Extreme (10C)		704.5069	715.4958	-0.6	-0.001
Extreme (0C)		704.5069	715.4958	1.6	0.002
Extreme (-10C)		704.5069	715.4958	1.0	0.001
Extreme (-20C)		704.5069	715.4958	-1.0	-0.001
Extreme (-30C)		704.5069	715.4958	-1.1	-0.002
25C	10%	704.5069	715.4958	1.2	0.002
	-10%	704.5069	715.4958	1.3	0.002
	End Point	704.5069	715.4958	1.5	0.002

16QAM, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	704.5072	715.4905		
Extreme (50C)		704.5072	715.4905	-0.5	-0.001
Extreme (40C)		704.5072	715.4905	-0.6	-0.001
Extreme (30C)		704.5072	715.4905	0.8	0.001
Extreme (10C)		704.5072	715.4905	-1.0	-0.001
Extreme (0C)		704.5072	715.4905	1.2	0.002
Extreme (-10C)		704.5072	715.4905	0.5	0.001
Extreme (-20C)		704.5072	715.4905	1.1	0.002
Extreme (-30C)		704.5072	715.4905	1.2	0.002
25C	10%	704.5072	715.4905	2.4	0.003
	-10%	704.5072	715.4905	3.1	0.004
	End Point	704.5072	715.4905	3.0	0.004

8.4.7. LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0216	1913.9819		
Extreme (50C)		1851.0216	1913.9819	2.9	0.002
Extreme (40C)		1851.0216	1913.9819	3.7	0.002
Extreme (30C)		1851.0216	1913.9819	-1.3	-0.001
Extreme (10C)		1851.0216	1913.9819	-2.3	-0.001
Extreme (0C)		1851.0216	1913.9819	-3.3	-0.002
Extreme (-10C)		1851.0216	1913.9819	-3.7	-0.002
Extreme (-20C)		1851.0216	1913.9819	-4.6	-0.002
Extreme (-30C)		1851.0216	1913.9819	5.6	0.003
25C	10%	1851.0216	1913.9819	5.1	0.003
	-10%	1851.0216	1913.9819	5.2	0.003
	End Point	1851.0216	1913.9819	5.9	0.003

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0210	1913.9922		
Extreme (50C)		1851.0210	1913.9922	3.6	0.002
Extreme (40C)		1851.0210	1913.9922	4.4	0.002
Extreme (30C)		1851.0210	1913.9922	-3.5	-0.002
Extreme (10C)		1851.0210	1913.9922	-2.5	-0.001
Extreme (0C)		1851.0210	1913.9922	-3.5	-0.002
Extreme (-10C)		1851.0210	1913.9922	-4.1	-0.002
Extreme (-20C)		1851.0210	1913.9922	-4.9	-0.003
Extreme (-30C)		1851.0210	1913.9922	5.8	0.003
25C	10%	1851.0210	1913.9922	5.7	0.003
	-10%	1851.0210	1913.9922	6.1	0.003
	End Point	1851.0210	1913.9922	6.3	0.003

8.4.8. LTE BAND 26

QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	814.5054	823.4981		
Extreme (50C)		814.5054	823.4981	-2.3	-0.003
Extreme (40C)		814.5054	823.4981	-1.5	-0.002
Extreme (30C)		814.5054	823.4981	-2.5	-0.003
Extreme (10C)		814.5054	823.4981	-3.1	-0.004
Extreme (0C)		814.5054	823.4981	-4.6	-0.006
Extreme (-10C)		814.5054	823.4981	-5.0	-0.006
Extreme (-20C)		814.5055	823.4981	2.8	0.003
Extreme (-30C)		814.5055	823.4981	1.0	0.001
25C	10%	814.5055	823.4981	1.6	0.002
	-10%	814.5055	823.4981	1.5	0.002
	End Point	814.5055	823.4981	1.1	0.001

16QAM, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	814.5058	823.4931		
Extreme (50C)		814.5058	823.4931	-2.5	-0.003
Extreme (40C)		814.5058	823.4931	-1.8	-0.002
Extreme (30C)		814.5058	823.4931	-2.5	-0.003
Extreme (10C)		814.5058	823.4931	-1.9	-0.002
Extreme (0C)		814.5058	823.4931	-4.5	-0.005
Extreme (-10C)		814.5058	823.4931	-4.6	-0.006
Extreme (-20C)		814.5058	823.4931	1.1	0.001
Extreme (-30C)		814.5058	823.4931	0.9	0.001
25C	10%	814.5058	823.4931	2.0	0.002
	-10%	814.5058	823.4931	2.2	0.003
	End Point	814.5058	823.4931	2.9	0.004

8.4.9. LTE BAND 41

QPSK, (20MHz BANDWIDTH)

Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)	Delta (Hz)	Frequency Stability (ppm)
Temperature	Voltage				
Normal (25C)	Normal	2496.9690	2689.0830		
Extreme (50C)		2496.9690	2689.0830	-6.7	-0.003
Extreme (40C)		2496.9690	2689.0829	-23.5	-0.009
Extreme (30C)		2496.9690	2689.0830	-10.5	-0.004
Extreme (10C)		2496.9690	2689.0830	6.4	0.002
Extreme (0C)		2496.9690	2689.0830	-8.2	-0.003
Extreme (-10C)		2496.9690	2689.0830	-0.5	0.000
Extreme (-20C)		2496.9690	2689.0830	12.8	0.005
Extreme (-30C)		2496.9689	2689.0829	-32.9	-0.013
25C	10%	2496.9690	2689.0830	-6.5	-0.003
	-10%	2496.9690	2689.0830	-10.2	-0.004
	End Point	2496.9690	2689.0830	12.0	0.005

16QAM, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2496.9170	2689.0773		
Extreme (50C)		2496.9169	2689.0773	-27.9	-0.011
Extreme (40C)		2496.9170	2689.0773	-22.3	-0.009
Extreme (30C)		2496.9170	2689.0774	8.2	0.003
Extreme (10C)		2496.9170	2689.0773	-5.8	-0.002
Extreme (0C)		2496.9170	2689.0774	6.8	0.003
Extreme (-10C)		2496.9170	2689.0773	-0.6	0.000
Extreme (-20C)		2496.9170	2689.0774	13.5	0.005
Extreme (-30C)		2496.9169	2689.0773	-33.3	-0.013
25C	10%	2496.9170	2689.0773	-7.5	-0.003
	-10%	2496.9170	2689.0773	-11.5	-0.004
	End Point	2496.9170	2689.0774	12.5	0.005

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP), LAT

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 603-D 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 7
- LTE Band 12
- 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	24.17	261.22
		1880.0	24.71	295.80
		1909.3	24.49	281.19
1.4MHz Band 16QAM	1/0	1850.7	23.27	212.32
		1880.0	23.81	240.44
		1909.3	23.59	228.56

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	24.07	255.27
		1880.0	24.31	269.77
		1908.5	24.59	287.74
3.0MHz Band 16QAM	1/0	1851.5	23.27	212.32
		1880.0	23.46	221.82
		1908.5	23.64	231.21

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	24.17	261.22
		1880.0	24.41	276.06
		1907.5	24.48	280.54
5.0MHz Band 16QAM	1/0	1852.5	23.37	217.27
		1880.0	23.49	223.36
		1907.5	23.55	226.46

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	24.37	273.53
		1880.0	24.61	289.07
		1905.0	24.68	293.76
10.0MHz Band 16QAM	1/0	1855.0	23.47	222.33
		1880.0	23.66	232.27
		1905.0	23.73	236.05

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	24.36	272.90
		1880.0	24.51	282.49
		1902.5	24.47	279.90
15MHz Band 16QAM	1/0	1857.5	23.56	226.99
		1880.0	23.56	226.99
		1902.5	23.57	227.51

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	24.36	272.90
		1880.0	24.61	289.07
		1900.0	24.46	279.25
20MHz Band 16QAM	1/0	1860.0	23.42	219.79
		1880.0	23.71	234.96
		1900.0	23.51	224.39

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	23.81	240.44
		1732.5	24.01	251.77
		1754.3	24.06	254.68
1.4 MHZ BAND 16QAM	1/0	1710.7	23.07	202.77
		1732.5	23.25	211.35
		1754.3	23.17	207.49

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	23.92	246.60
		1732.5	24.01	251.77
		1753.5	24.05	254.10
3.0 MHZ BAND 16QAM	1/0	1711.5	23.05	201.84
		1732.5	23.18	207.97
		1753.5	23.14	206.06

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	23.92	246.60
		1732.5	24.01	251.77
		1752.5	24.25	266.07
5.0 MHZ BAND 16QAM	1/0	1712.5	23.05	201.84
		1732.5	23.25	211.35
		1752.5	23.29	213.30

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	23.84	242.10
		1732.5	24.05	254.10
		1750.0	24.17	261.22
10.0 MHZ BAND 16QAM	1/0	1715.0	23.04	201.37
		1732.5	23.10	204.17
		1750.0	23.25	211.35

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	24.10	257.04
		1732.5	23.95	248.31
		1747.5	24.00	251.19
15.0 MHZ BAND 16QAM	1/0	1717.5	23.34	215.77
		1732.5	23.85	242.66
		1747.5	23.70	234.42

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	24.03	252.93
		1732.5	24.00	251.19
		1745.0	23.91	246.04
20.0 MHZ BAND 16QAM	1/0	1720.0	23.23	210.38
		1732.5	23.25	211.35
		1745.0	23.11	204.64

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	20.73	118.30
		836.5	20.54	113.24
		848.3	20.69	117.22
1.4MHz Band 16QAM	1/0	824.7	19.63	91.83
		836.5	19.44	87.90
		848.3	19.59	90.99

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	20.63	115.61
		836.5	20.44	110.66
		847.5	20.69	117.22
3.0 MHZ BAND 16QAM	1/0	825.5	19.73	93.97
		836.5	19.54	89.95
		847.5	19.59	90.99

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	20.73	118.30
		836.5	20.54	113.24
		846.5	20.69	117.22
5MHz Band 16QAM	1/0	826.5	19.73	93.97
		836.5	19.64	92.04
		846.5	19.59	90.99

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	20.73	118.30
		836.5	20.64	115.88
		844.0	20.69	117.22
10.0 MHZ BAND 16QAM	1/0	829.0	19.83	96.16
		836.5	19.64	92.04
		844.0	19.59	90.99

EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2502.5	30.46	1111.73
		2535.0	30.32	1076.47
		2567.5	30.61	1150.80
5.0 MHZ BAND 16QAM	25/0	2502.5	29.40	870.96
		2535.0	29.52	895.36
		2567.5	29.55	901.57

EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2505.0	30.36	1086.43
		2535.0	30.38	1091.44
		2565.0	30.42	1101.54
10.0 MHZ BAND 16QAM	50/0	2505.0	29.42	874.98
		2535.0	29.46	883.08
		2565.0	29.50	891.25

EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2507.5	30.10	1023.29
		2535.0	30.42	1101.54
		2562.5	30.31	1073.99
15.0 MHZ BAND 16QAM	75/0	2507.5	29.22	835.60
		2535.0	29.50	891.25
		2562.5	29.45	881.05

EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2510.0	30.28	1066.60
		2535.0	30.58	1142.88
		2560.0	30.41	1099.01
20.0 MHZ BAND 16QAM	100/0	2510.0	29.48	887.16
		2535.0	29.61	914.11
		2560.0	29.49	889.20

ERP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	699.7	18.07	64.12
		707.5	18.13	65.01
		715.3	18.07	64.12
1.4MHz Band 16QAM	1/0	699.7	17.07	50.93
		707.5	17.23	52.84
		715.3	17.17	52.12

ERP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	700.5	18.17	65.61
		707.5	18.13	65.01
		714.5	18.27	67.14
3.0 MHZ BAND 16QAM	1/0	700.5	17.17	52.12
		707.5	17.23	52.84
		714.5	17.37	54.58

ERP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
5MHz Band QPSK	1/0	701.5	18.07	64.12
		707.5	18.03	63.53
		713.5	18.17	65.61
5MHz Band 16QAM	1/0	701.5	17.10	51.29
		707.5	17.08	51.05
		713.5	17.30	53.70

ERP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP (Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	704.0	18.17	65.61
		707.5	18.13	65.01
		711.0	18.37	68.71
10.0 MHZ BAND 16QAM	1/0	704.0	17.30	53.70
		707.5	17.18	52.24
		711.0	17.40	54.95

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	18.20	66.07
		710.0	18.40	69.18
		713.5	18.22	66.37
5MHz Band 16QAM	1/0	706.5	17.24	52.97
		710.0	17.50	56.23
		713.5	17.32	53.95

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	18.47	70.31
10.0 MHZ BAND 16QAM		710.0	17.60	57.54

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	23.93	247.17
		1882.5	24.48	280.54
		1914.3	24.18	261.82
1.4 MHZ BAND 16QAM	1/0	1850.7	23.01	199.99
		1882.5	23.52	224.91
		1914.3	23.26	211.84

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	24.03	252.93
		1882.5	24.42	276.69
		1913.5	24.13	258.82
3.0 MHZ BAND 16QAM	1/0	1851.5	23.03	200.91
		1882.5	23.32	214.78
		1913.5	23.23	210.38

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	24.46	279.25
		1882.5	24.12	258.23
		1912.5	24.37	273.53
5.0 MHZ BAND 16QAM	1/0	1852.5	23.33	215.28
		1882.5	23.30	213.80
		1912.5	23.27	212.32

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	24.03	252.93
		1882.5	24.22	264.24
		1910.0	24.54	284.45
10.0 MHZ BAND 16QAM	1/0	1855.0	23.13	205.59
		1882.5	23.22	209.89
		1910.0	23.46	221.82

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	24.22	264.24
		1882.5	24.12	258.23
		1907.5	24.48	280.54
15.0 MHZ BAND 16QAM	1/0	1857.5	23.12	205.12
		1882.5	23.22	209.89
		1907.5	23.35	216.27

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	24.04	253.51
		1882.5	24.44	277.97
		1905.0	24.27	267.30
20.0 MHZ BAND 16QAM	1/0	1860.0	23.02	200.45
		1882.5	23.32	214.78
		1905.0	23.20	208.93

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	19.44	87.90
		819.0	20.23	105.44
		823.3	20.00	100.00
1.4 MHZ BAND 16QAM	1/0	814.7	18.64	73.11
		819.0	19.38	86.70
		823.3	19.20	83.18

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	19.74	94.19
		819.0	20.21	104.95
		822.5	20.25	105.93
3.0 MHZ BAND 16QAM	1/0	815.5	19.04	80.17
		819.0	19.24	83.95
		822.5	19.42	87.50

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	19.94	98.63
		819.0	20.24	105.68
		821.5	20.10	102.33
5.0 MHZ BAND 16QAM	1/0	816.5	18.97	78.89
		819.0	19.23	83.75
		821.5	19.21	83.37

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	20.26	106.17
10.0 MHZ BAND 16QAM	1/0	819.0	19.29	84.92

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	28.63	729.46
		2593.0	29.34	859.01
		2687.5	28.39	690.24
5.0 MHZ BAND 16QAM	25/0	2498.5	27.68	586.14
		2593.0	28.32	679.20
		2687.5	27.42	552.08

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	28.99	792.50
		2593.0	29.14	820.35
		2685.0	28.28	672.98
10.0 MHZ BAND 16QAM	50/0	2501.0	28.01	632.41
		2593.0	28.13	650.13
		2685.0	27.39	548.28

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	28.91	778.04
		2593.0	29.24	839.46
		2682.5	28.87	770.90
15.0 MHZ BAND 16QAM	75/0	2503.5	28.00	630.96
		2593.0	28.30	676.08
		2682.5	27.87	612.35

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	29.40	870.96
		2593.0	29.50	891.25
		2680.0	28.57	719.45
20.0 MHZ BAND 16QAM	100/0	2506.0	28.44	698.23
		2593.0	28.57	719.45
		2680.0	27.65	582.10

9.1.1. LTE BAND 2

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

High Frequency Fundamental Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.851	16.3	V	0.98	8.05	23.33	33.0	-9.7	
1.851	17.1	H	0.98	8.05	24.17	33.0	-8.8	
Mid Ch								
1.880	16.2	V	0.98	8.03	23.23	33.0	-9.8	
1.880	17.7	H	0.98	8.03	24.71	33.0	-8.3	
High Ch								
1.909	16.3	V	0.98	8.05	23.36	33.0	-9.6	
1.909	17.4	H	0.98	8.05	24.49	33.0	-8.5	
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 #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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								
1.851	15.5	V	0.98	8.05	22.53	33.0	-10.5	
1.851	16.2	H	0.98	8.05	23.27	33.0	-9.7	
Mid Ch								
1.880	15.4	V	0.98	8.03	22.43	33.0	-10.6	
1.880	16.8	H	0.98	8.03	23.81	33.0	-9.2	
High Ch								
1.909	15.5	V	0.98	8.05	22.56	33.0	-10.4	
1.909	16.5	H	0.98	8.05	23.59	33.0	-9.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.852	16.1	V	0.98	8.05	23.13	33.0	-9.9	
1.852	17.0	H	0.98	8.05	24.07	33.0	-8.9	
Mid Ch								
1.880	16.3	V	0.98	8.03	23.33	33.0	-9.7	
1.880	17.3	H	0.98	8.03	24.31	33.0	-8.7	
High Ch								
1.909	16.4	V	0.98	8.05	23.46	33.0	-9.5	
1.909	17.5	H	0.98	8.05	24.59	33.0	-8.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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								
1.852	15.4	V	0.98	8.05	22.43	33.0	-10.6	
1.852	16.2	H	0.98	8.05	23.27	33.0	-9.7	
Mid Ch								
1.880	15.7	V	0.98	8.03	22.73	33.0	-10.3	
1.880	16.4	H	0.98	8.03	23.46	33.0	-9.5	
High Ch								
1.909	15.6	V	0.98	8.05	22.66	33.0	-10.3	
1.909	16.6	H	0.98	8.05	23.64	33.0	-9.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.853	16.4	V	0.98	8.05	23.43	33.0	-9.6	
1.853	17.1	H	0.98	8.05	24.17	33.0	-8.8	
Mid Ch								
1.880	16.7	V	0.98	8.03	23.73	33.0	-9.3	
1.880	17.4	H	0.98	8.03	24.41	33.0	-8.6	
High Ch								
1.908	16.4	V	0.98	8.04	23.45	33.0	-9.5	
1.908	17.4	H	0.98	8.04	24.48	33.0	-8.5	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.6	V	0.98	8.05	22.63	33.0	-10.4	
1.853	16.3	H	0.98	8.05	23.37	33.0	-9.6	
Mid Ch								
1.880	15.8	V	0.98	8.03	22.83	33.0	-10.2	
1.880	16.4	H	0.98	8.03	23.49	33.0	-9.5	
High Ch								
1.908	15.7	V	0.98	8.04	22.75	33.0	-10.2	
1.908	16.5	H	0.98	8.04	23.55	33.0	-9.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.855	16.7	V	0.98	8.05	23.73	33.0	-9.3	
1.855	17.3	H	0.98	8.05	24.37	33.0	-8.6	
Mid Ch								
1.880	16.2	V	0.98	8.03	23.23	33.0	-9.8	
1.880	17.6	H	0.98	8.03	24.61	33.0	-8.4	
High Ch								
1.905	16.6	V	0.98	8.04	23.65	33.0	-9.4	
1.905	17.6	H	0.98	8.04	24.68	33.0	-8.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.855	15.8	V	0.98	8.05	22.83	33.0	-10.2	
1.855	16.4	H	0.98	8.05	23.47	33.0	-9.5	
Mid Ch								
1.880	15.3	V	0.98	8.03	22.33	33.0	-10.7	
1.880	16.6	H	0.98	8.03	23.66	33.0	-9.3	
High Ch								
1.905	15.7	V	0.98	8.04	22.75	33.0	-10.3	
1.905	16.7	H	0.98	8.04	23.73	33.0	-9.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.858	16.2	V	0.98	8.04	23.22	33.0	-9.8	
1.858	17.3	H	0.98	8.04	24.36	33.0	-8.6	
Mid Ch								
1.880	16.2	V	0.98	8.03	23.23	33.0	-9.8	
1.880	17.5	H	0.98	8.03	24.51	33.0	-8.5	
High Ch								
1.903	16.3	V	0.98	8.03	23.34	33.0	-9.7	
1.903	17.4	H	0.98	8.03	24.47	33.0	-8.5	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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								
1.858	15.3	V	0.98	8.04	22.32	33.0	-10.7	
1.858	16.5	H	0.98	8.04	23.56	33.0	-9.4	
Mid Ch								
1.880	15.3	V	0.98	8.03	22.33	33.0	-10.7	
1.880	16.5	H	0.98	8.03	23.56	33.0	-9.4	
High Ch								
1.903	15.4	V	0.98	8.03	22.44	33.0	-10.6	
1.903	16.5	H	0.98	8.03	23.57	33.0	-9.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		15U21635						
Date:		12/11/2015						
Test Engineer:		T wang						
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	16.8	V	0.98	8.04	23.82	33.0	-9.2	
1.860	17.3	H	0.98	8.04	24.36	33.0	-8.6	
Mid Ch								
1.880	16.8	V	0.98	8.03	23.83	33.0	-9.2	
1.880	17.6	H	0.98	8.03	24.61	33.0	-8.4	
High Ch								
1.900	16.3	V	0.98	8.02	23.33	33.0	-9.7	
1.900	17.4	H	0.98	8.02	24.46	33.0	-8.5	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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	15.9	V	0.98	8.04	22.92	33.0	-10.1	
1.860	16.4	H	0.98	8.04	23.42	33.0	-9.6	
Mid Ch								
1.880	15.9	V	0.98	8.03	22.93	33.0	-10.1	
1.880	16.7	H	0.98	8.03	23.71	33.0	-9.3	
High Ch								
1.900	15.4	V	0.98	8.02	22.43	33.0	-10.6	
1.900	16.5	H	0.98	8.02	23.51	33.0	-9.5	
Rev. 10.24.13								

9.1.2. LTE BAND 4

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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	15.8	V	0.95	8.27	23.14	30.0	-6.9	
1.711	16.5	H	0.95	8.27	23.81	30.0	-6.2	
Mid Ch								
1.733	16.3	V	0.95	8.23	23.57	30.0	-6.4	
1.733	16.7	H	0.95	8.23	24.01	30.0	-6.0	
High Ch								
1.754	15.8	V	0.95	8.18	23.02	30.0	-7.0	
1.754	16.8	H	0.95	8.18	24.06	30.0	-5.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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	15.0	V	0.95	8.27	22.34	30.0	-7.7	
1.711	15.8	H	0.95	8.27	23.07	30.0	-6.9	
Mid Ch								
1.733	15.4	V	0.95	8.23	22.67	30.0	-7.3	
1.733	16.0	H	0.95	8.23	23.25	30.0	-6.8	
High Ch								
1.754	15.0	V	0.95	8.18	22.22	30.0	-7.8	
1.754	15.9	H	0.95	8.18	23.17	30.0	-6.8	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.5	V	0.95	8.27	22.84	30.0	-7.2	
1.712	16.6	H	0.95	8.27	23.92	30.0	-6.1	
Mid Ch								
1.733	15.8	V	0.95	8.23	23.07	30.0	-6.9	
1.733	16.7	H	0.95	8.23	24.01	30.0	-6.0	
High Ch								
1.754	15.7	V	0.95	8.18	22.92	30.0	-7.1	
1.754	16.8	H	0.95	8.18	24.05	30.0	-5.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	14.8	V	0.95	8.27	22.14	30.0	-7.9	
1.712	15.7	H	0.95	8.27	23.05	30.0	-6.9	
Mid Ch								
1.733	15.2	V	0.95	8.23	22.47	30.0	-7.5	
1.733	15.9	H	0.95	8.23	23.18	30.0	-6.8	
High Ch								
1.754	15.1	V	0.95	8.18	22.32	30.0	-7.7	
1.754	15.9	H	0.95	8.18	23.14	30.0	-6.9	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.9	V	0.95	8.27	23.24	30.0	-6.8	
1.713	16.6	H	0.95	8.27	23.92	30.0	-6.1	
Mid Ch								
1.733	16.0	V	0.95	8.23	23.27	30.0	-6.7	
1.733	16.7	H	0.95	8.23	24.01	30.0	-6.0	
High Ch								
1.753	16.1	V	0.95	8.18	23.32	30.0	-6.7	
1.753	17.0	H	0.95	8.18	24.25	30.0	-5.7	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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	15.1	V	0.95	8.27	22.44	30.0	-7.6	
1.713	15.7	H	0.95	8.27	23.05	30.0	-7.0	
Mid Ch								
1.733	15.2	V	0.95	8.23	22.47	30.0	-7.5	
1.733	16.0	H	0.95	8.23	23.25	30.0	-6.8	
High Ch								
1.753	15.2	V	0.95	8.18	22.42	30.0	-7.6	
1.753	16.1	H	0.95	8.18	23.29	30.0	-6.7	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.4	V	0.95	8.26	22.73	30.0	-7.3	
1.715	16.5	H	0.95	8.26	23.84	30.0	-6.2	
Mid Ch								
1.733	15.5	V	0.95	8.23	22.77	30.0	-7.2	
1.733	16.8	H	0.95	8.23	24.05	30.0	-6.0	
High Ch								
1.750	15.9	V	0.95	8.19	23.13	30.0	-6.9	
1.750	16.9	H	0.95	8.19	24.17	30.0	-5.8	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	14.6	V	0.95	8.26	21.93	30.0	-8.1	
1.715	15.7	H	0.95	8.26	23.04	30.0	-7.0	
Mid Ch								
1.733	14.6	V	0.95	8.23	21.87	30.0	-8.1	
1.733	15.8	H	0.95	8.23	23.10	30.0	-6.9	
High Ch								
1.750	15.1	V	0.95	8.19	22.33	30.0	-7.7	
1.750	16.0	H	0.95	8.19	23.25	30.0	-6.8	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 15U21635 Date: 12/11/2015 Test Engineer: T wang 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	15.8	V	0.95	8.26	23.13	30.0	-6.9	
1.718	16.8	H	0.95	8.26	24.10	30.0	-5.9	
Mid Ch								
1.733	16.5	V	0.95	8.23	23.77	30.0	-6.2	
1.733	16.7	H	0.95	8.23	23.95	30.0	-6.1	
High Ch								
1.748	15.9	V	0.95	8.19	23.13	30.0	-6.9	
1.748	16.8	H	0.95	8.19	24.00	30.0	-6.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.4	V	0.95	8.26	22.73	30.0	-7.3	
1.718	16.0	H	0.95	8.26	23.34	30.0	-6.7	
Mid Ch								
1.733	15.6	V	0.95	8.23	22.87	30.0	-7.1	
1.733	16.6	H	0.95	8.23	23.85	30.0	-6.2	
High Ch								
1.748	15.7	V	0.95	8.19	22.93	30.0	-7.1	
1.748	16.5	H	0.95	8.19	23.70	30.0	-6.3	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	15.2	V	0.95	8.25	22.52	30.0	-7.5	
1.720	16.7	H	0.95	8.25	24.03	30.0	-6.0	
Mid Ch								
1.733	15.5	V	0.95	8.23	22.77	30.0	-7.2	
1.733	16.7	H	0.95	8.23	24.00	30.0	-6.0	
High Ch								
1.745	15.6	V	0.95	8.20	22.84	30.0	-7.2	
1.745	16.7	H	0.95	8.20	23.91	30.0	-6.1	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 15U21635								
Date: 12/11/2015								
Test Engineer: T wang								
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	14.4	V	0.95	8.25	21.72	30.0	-8.3	
1.720	15.9	H	0.95	8.25	23.23	30.0	-6.8	
Mid Ch								
1.733	14.1	V	0.95	8.23	21.37	30.0	-8.6	
1.733	16.0	H	0.95	8.23	23.25	30.0	-6.8	
High Ch								
1.745	14.5	V	0.95	8.20	21.74	30.0	-8.3	
1.745	15.9	H	0.95	8.20	23.11	30.0	-6.9	
Rev. 10.24.13								

9.1.3. LTE BAND 5

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G											
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 QPSK 1.4MHz BW											
Test Equipment: Receiving: Sunol T899, and Chamber G 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	14.98	V	0.6	0.0	14.36	16.51	38.45	40.60	-24.1		
824.70	21.35	H	0.6	0.0	20.73	22.88	38.45	40.60	-17.7		
Mid Ch											
836.50	15.66	V	0.6	0.0	15.04	17.19	38.45	40.60	-23.4		
836.50	21.16	H	0.6	0.0	20.54	22.69	38.45	40.60	-17.9		
High Ch											
848.30	15.64	V	0.6	0.0	15.02	17.17	38.45	40.60	-23.4		
848.30	21.31	H	0.6	0.0	20.69	22.84	38.45	40.60	-17.8		
Rev. 10.24.13											

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 16QAM 1.4MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	13.88	V	0.6	0.0	13.26	15.41	38.45	40.60	-25.2	
824.70	20.25	H	0.6	0.0	19.63	21.78	38.45	40.60	-18.8	
Mid Ch										
836.50	14.56	V	0.6	0.0	13.94	16.09	38.45	40.60	-24.5	
836.50	20.06	H	0.6	0.0	19.44	21.59	38.45	40.60	-19.0	
High Ch										
848.30	14.64	V	0.6	0.0	14.02	16.17	38.45	40.60	-24.4	
848.30	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 QPSK 3MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	15.08	V	0.6	0.0	14.46	16.61	38.45	40.60	-24.0	
825.50	21.25	H	0.6	0.0	20.63	22.78	38.45	40.60	-17.8	
Mid Ch										
836.50	15.76	V	0.6	0.0	15.14	17.29	38.45	40.60	-23.3	
836.50	21.06	H	0.6	0.0	20.44	22.59	38.45	40.60	-18.0	
High Ch										
847.50	15.94	V	0.6	0.0	15.32	17.47	38.45	40.60	-23.1	
847.50	21.31	H	0.6	0.0	20.69	22.84	38.45	40.60	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company:										
Project #: 15U21635										
Date: 12/17/2015										
Test Engineer: T wang										
Configuration: EUT only										
Mode: LTE Band 5 16QAM 3MHz BW										
Test Equipment:										
Receiving: Sunol T899, and Chamber G 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	14.08	V	0.6	0.0	13.46	15.61	38.45	40.60	-25.0	
825.50	20.35	H	0.6	0.0	19.73	21.88	38.45	40.60	-18.7	
Mid Ch										
836.50	14.76	V	0.6	0.0	14.14	16.29	38.45	40.60	-24.3	
836.50	20.16	H	0.6	0.0	19.54	21.69	38.45	40.60	-18.9	
High Ch										
847.50	15.04	V	0.6	0.0	14.42	16.57	38.45	40.60	-24.0	
847.50	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 QPSK 5MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	14.98	V	0.6	0.0	14.36	16.51	38.45	40.60	-24.1	
826.50	21.35	H	0.6	0.0	20.73	22.88	38.45	40.60	-17.7	
Mid Ch										
836.50	15.46	V	0.6	0.0	14.84	16.99	38.45	40.60	-23.6	
836.50	21.16	H	0.6	0.0	20.54	22.69	38.45	40.60	-17.9	
High Ch										
846.50	15.94	V	0.6	0.0	15.32	17.47	38.45	40.60	-23.1	
846.50	21.31	H	0.6	0.0	20.69	22.84	38.45	40.60	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 16QAM 5MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	14.08	V	0.6	0.0	13.46	15.61	38.45	40.60	-25.0	
826.50	20.35	H	0.6	0.0	19.73	21.88	38.45	40.60	-18.7	
Mid Ch										
836.50	14.56	V	0.6	0.0	13.94	16.09	38.45	40.60	-24.5	
836.50	20.26	H	0.6	0.0	19.64	21.79	38.45	40.60	-18.8	
High Ch										
846.50	14.94	V	0.6	0.0	14.32	16.47	38.45	40.60	-24.1	
846.50	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 QPSK 10MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	15.08	V	0.6	0.0	14.46	16.61	38.45	40.60	-24.0	
829.00	21.35	H	0.6	0.0	20.73	22.88	38.45	40.60	-17.7	
Mid Ch										
836.50	15.76	V	0.6	0.0	15.14	17.29	38.45	40.60	-23.3	
836.50	21.26	H	0.6	0.0	20.64	22.79	38.45	40.60	-17.8	
High Ch										
844.00	15.84	V	0.6	0.0	15.22	17.37	38.45	40.60	-23.2	
844.00	21.31	H	0.6	0.0	20.69	22.84	38.45	40.60	-17.8	
Rev. 10.24.13										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 5 16QAM 10MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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	14.18	V	0.6	0.0	13.56	15.71	38.45	40.60	-24.9	
829.00	20.45	H	0.6	0.0	19.83	21.98	38.45	40.60	-18.6	
Mid Ch										
836.50	14.76	V	0.6	0.0	14.14	16.29	38.45	40.60	-24.3	
836.50	20.26	H	0.6	0.0	19.64	21.79	38.45	40.60	-18.8	
High Ch										
844.00	14.84	V	0.6	0.0	14.22	16.37	38.45	40.60	-24.2	
844.00	20.21	H	0.6	0.0	19.59	21.74	38.45	40.60	-18.9	
Rev. 10.24.13										

9.1.4. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T Wang Configuration: EUT only Mode: LTE Band 7 QPSK 5MHz BW								
Test Equipment: Receiving: Horn T862, and Chamber G 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								
2.503	22.3	V	1.15	9.34	30.46	33.0	-2.5	
2.503	20.5	H	1.15	9.34	28.66	33.0	-4.3	
Mid Ch								
2.535	22.1	V	1.16	9.38	30.32	33.0	-2.7	
2.535	20.3	H	1.16	9.38	28.47	33.0	-4.5	
High Ch								
2.568	22.4	V	1.17	9.43	30.61	33.0	-2.4	
2.568	20.5	H	1.17	9.43	28.71	33.0	-4.3	
Rev. 10.24.13								

16QAM EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T Wang Configuration: EUT only Mode: LTE Band 7 16QAM 5MHz BW								
Test Equipment: Receiving: Horn T862, and Chamber G 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								
2.503	21.2	V	1.15	9.34	29.40	33.0	-3.6	
2.503	19.5	H	1.15	9.34	27.66	33.0	-5.3	
Mid Ch								
2.535	21.3	V	1.16	9.38	29.52	33.0	-3.5	
2.535	19.2	H	1.16	9.38	27.37	33.0	-5.6	
High Ch								
2.568	21.3	V	1.17	9.43	29.55	33.0	-3.4	
2.568	19.6	H	1.17	9.43	27.81	33.0	-5.2	
Rev. 10.24.13								

QPSK EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company: Project #: 15U21635 Date: 12/17/2015 Test Engineer: T Wang Configuration: EUT only Mode: LTE Band 7 QPSK 10MHz BW								
Test Equipment: Receiving: Horn T862, and Chamber G 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								
2.505	22.2	V	1.15	9.34	30.36	33.0	-2.6	
2.505	20.1	H	1.15	9.34	28.26	33.0	-4.7	
Mid Ch								
2.535	22.2	V	1.16	9.38	30.38	33.0	-2.6	
2.535	20.3	H	1.16	9.38	28.47	33.0	-4.5	
High Ch								
2.565	22.2	V	1.17	9.43	30.42	33.0	-2.6	
2.565	20.2	H	1.17	9.43	28.41	33.0	-4.6	
Rev. 10.24.13								

16QAM EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		15U21635						
Date:		12/17/2015						
Test Engineer:		T Wang						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 10MHz BW						
Test Equipment:								
Receiving: Horn T862, and Chamber G 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								
2.505	21.2	V	1.15	9.34	29.42	33.0	-3.6	
2.505	18.0	H	1.15	9.34	26.20	33.0	-6.8	
Mid Ch								
2.535	21.2	V	1.16	9.38	29.46	33.0	-3.5	
2.535	18.6	H	1.16	9.38	26.79	33.0	-6.2	
High Ch								
2.565	21.2	V	1.17	9.43	29.50	33.0	-3.5	
2.565	18.1	H	1.17	9.43	26.37	33.0	-6.6	
Rev. 10.24.13								

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		15U21635						
Date:		12/17/2015						
Test Engineer:		T Wang						
Configuration:		EUT only						
Mode:		LTE Band 7 QPSK 15MHz BW						
Test Equipment:								
Receiving: Horn T862, and Chamber G 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								
2.508	21.9	V	1.15	9.34	30.10	33.0	-2.9	
2.508	20.2	H	1.15	9.34	28.36	33.0	-4.6	
Mid Ch								
2.535	22.2	V	1.16	9.38	30.42	33.0	-2.6	
2.535	20.0	H	1.16	9.38	28.17	33.0	-4.8	
High Ch								
2.563	22.1	V	1.17	9.42	30.31	33.0	-2.7	
2.563	20.0	H	1.17	9.42	28.20	33.0	-4.8	
Rev. 10.24.13								

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		15U21635						
Date:		12/17/2015						
Test Engineer:		T Wang						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 15MHz BW						
Test Equipment:								
Receiving: Horn T862, and Chamber G 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								
2.508	21.0	V	1.15	9.34	29.22	33.0	-3.8	
2.508	18.2	H	1.15	9.34	26.40	33.0	-6.6	
Mid Ch								
2.535	21.3	V	1.16	9.38	29.50	33.0	-3.5	
2.535	18.2	H	1.16	9.38	26.39	33.0	-6.6	
High Ch								
2.563	21.2	V	1.17	9.42	29.45	33.0	-3.5	
2.563	17.9	H	1.17	9.42	26.16	33.0	-6.8	
Rev. 10.24.13								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		15U21635						
Date:		12/17/2015						
Test Engineer:		T Wang						
Configuration:		EUT only						
Mode:		LTE Band 7 QPSK 20MHz BW						
Test Equipment:								
Receiving: Horn T862, and Chamber G 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								
2.510	22.1	V	1.15	9.35	30.28	33.0	-2.7	
2.510	20.0	H	1.15	9.35	28.17	33.0	-4.8	
Mid Ch								
2.535	22.4	V	1.16	9.38	30.58	33.0	-2.4	
2.535	20.2	H	1.16	9.38	28.37	33.0	-4.6	
High Ch								
2.560	22.2	V	1.17	9.42	30.41	33.0	-2.6	
2.560	19.9	H	1.17	9.42	28.10	33.0	-4.9	
Rev. 10.24.13								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		15U21635						
Date:		12/17/2015						
Test Engineer:		T Wang						
Configuration:		EUT only						
Mode:		LTE Band 7 16QAM 20MHz BW						
Test Equipment:								
Receiving: Horn T862, and Chamber G 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								
2.510	21.3	V	1.15	9.35	29.48	33.0	-3.5	
2.510	18.1	H	1.15	9.35	26.31	33.0	-6.7	
Mid Ch								
2.535	21.4	V	1.16	9.38	29.61	33.0	-3.4	
2.535	18.3	H	1.16	9.38	26.49	33.0	-6.5	
High Ch								
2.560	21.2	V	1.17	9.42	29.49	33.0	-3.5	
2.560	17.8	H	1.17	9.42	26.06	33.0	-6.9	
Rev. 10.24.13								

9.1.5. LTE BAND 12

QPSK EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 QPSK 1.4MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
699.70	9.40	V	0.55	0.0	8.85	11.00	34.77	36.99	-26.0	
699.70	18.62	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
Mid Ch										
707.50	9.55	V	0.55	0.0	9.00	11.15	34.77	36.99	-25.8	
707.50	18.68	H	0.55	0.0	18.13	20.28	34.77	36.99	-16.7	
High Ch										
715.30	9.17	V	0.55	0.0	8.62	10.77	34.77	36.99	-26.2	
715.30	18.62	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
Rev. 10.24.13										

16QAM EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 16QAM 1.4MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
699.70	8.50	V	0.55	0.0	7.95	10.10	34.77	36.99	-26.9	
699.70	17.62	H	0.55	0.0	17.07	19.22	34.77	36.99	-17.8	
Mid Ch										
707.50	9.55	V	0.55	0.0	9.00	11.15	34.77	36.99	-25.8	
707.50	17.78	H	0.55	0.0	17.23	19.38	34.77	36.99	-17.6	
High Ch										
715.30	9.17	V	0.55	0.0	8.62	10.77	34.77	36.99	-26.2	
715.30	17.72	H	0.55	0.0	17.17	19.32	34.77	36.99	-17.7	
Rev. 10.24.13										

QPSK EIRP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 QPSK 3MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
700.50	9.60	V	0.55	0.0	9.05	11.20	34.77	36.99	-25.8	
700.50	18.72	H	0.55	0.0	18.17	20.32	34.77	36.99	-16.7	
Mid Ch										
707.50	10.15	V	0.55	0.0	9.60	11.75	34.77	36.99	-25.2	
707.50	18.68	H	0.55	0.0	18.13	20.28	34.77	36.99	-16.7	
High Ch										
714.50	10.07	V	0.55	0.0	9.52	11.67	34.77	36.99	-25.3	
714.50	18.82	H	0.55	0.0	18.27	20.42	34.77	36.99	-16.6	
Rev. 10.24.13										

16QAM EIRP POWER FOR LTE BAND 12 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 16QAM 3MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
700.50	8.60	V	0.55	0.0	8.05	10.20	34.77	36.99	-26.8	
700.50	17.72	H	0.55	0.0	17.17	19.32	34.77	36.99	-17.7	
Mid Ch										
707.50	9.25	V	0.55	0.0	8.70	10.85	34.77	36.99	-26.1	
707.50	17.78	H	0.55	0.0	17.23	19.38	34.77	36.99	-17.6	
High Ch										
714.50	9.17	V	0.55	0.0	8.62	10.77	34.77	36.99	-26.2	
714.50	17.92	H	0.55	0.0	17.37	19.52	34.77	36.99	-17.5	
Rev. 10.24.13										

QPSK EIRP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 QPSK 5MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
701.50	9.50	V	0.55	0.0	8.95	11.10	34.77	36.99	-25.9	
701.50	18.62	H	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
Mid Ch										
707.50	9.75	V	0.55	0.0	9.20	11.35	34.77	36.99	-25.6	
707.50	18.58	H	0.55	0.0	18.03	20.18	34.77	36.99	-16.8	
High Ch										
713.50	10.17	V	0.55	0.0	9.62	11.77	34.77	36.99	-25.2	
713.50	18.72	H	0.55	0.0	18.17	20.32	34.77	36.99	-16.7	
Rev. 10.24.13										

16QAM EIRP POWER FOR LTE BAND 12 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company: Project #: 15U21635 Date: 12/16/2015 Test Engineer: T wang Configuration: EUT only Mode: LTE Band 12 16QAM 5MHz BW										
Test Equipment: Receiving: Sunol T899, and Chamber G 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										
701.50	8.50	V	0.55	0.0	7.95	10.10	34.77	36.99	-26.9	
701.50	17.65	H	0.55	0.0	17.10	19.25	34.77	36.99	-17.7	
Mid Ch										
707.50	8.85	V	0.55	0.0	8.30	10.45	34.77	36.99	-26.5	
707.50	17.63	H	0.55	0.0	17.08	19.23	34.77	36.99	-17.8	
High Ch										
713.50	9.27	V	0.55	0.0	8.72	10.87	34.77	36.99	-26.1	
713.50	17.85	H	0.55	0.0	17.30	19.45	34.77	36.99	-17.5	
Rev. 10.24.13										

QPSK EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G										
Company:										
Project #: 15U21635										
Date: 12/16/2015										
Test Engineer: T wang										
Configuration: EUT only										
Mode: LTE Band 12 QPSK 10MHz BW										
Test Equipment:										
Receiving: Sunol T899, and Chamber G 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										
704.00	10.10	V	0.55	0.0	9.55	11.70	34.77	36.99	-25.3	
704.00	18.72	H	0.55	0.0	18.17	20.32	34.77	36.99	-16.7	
Mid Ch										
707.50	9.85	V	0.55	0.0	9.30	11.45	34.77	36.99	-25.5	
707.50	18.68	H	0.55	0.0	18.13	20.28	34.77	36.99	-16.7	
High Ch										
711.00	10.17	V	0.55	0.0	9.62	11.77	34.77	36.99	-25.2	
711.00	18.92	H	0.55	0.0	18.37	20.52	34.77	36.99	-16.5	
Rev. 10.24.13										